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2019 FEB 12 PM 12:00

CASE NO. 19-03

NOTICE OF PUBLIC HEARING BY THE
PLANNING BOARD

ON APPLICATION FOR DESIGN AND SITE PLAN REVIEW

Notice is hereby given that the Belmont Planning Board will hold a public hearing on THURSDAY, FEBRUARY 21, 2019, at 7:00 p.m. in the Board of Selectmen's Meeting Room, Town Hall, 455 Concord Ave., to consider the application of the Belmont Hill School for DESIGN AND SITE PLAN REVIEW under Section 7.3.2 of the Zoning By-Law to RENOVATE THE EXISTING Chapel Building by constructing more than 2,500 square feet of additions and associated site improvements at 350 PROSPECT STREET located in a Single Residence A Zoning District.

Planning Board

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BELMONT, MA

2019 FEB 12 PM 12:00

Town of Belmont
Planning Board

APPLICATION FOR DESIGN AND SITE PLAN REVIEW

Date: 02/01/2019

Planning Board
Homer Municipal Building
19 Moore Street
Belmont, MA 02478

To Whom It May Concern:

Pursuant to the provisions of Section 7.3, Design and Site Plan Review, of the Town of Belmont Zoning By-Laws, I/We the undersigned, being owner(s) of certain parcel of land (with the buildings thereon) situated on 350 Prospect St. Street/Road, hereby make application to your Board for **DESIGN AND SITE PLAN REVIEW** for the erection or alteration on said premises or the use thereof under the applicable Section of the Zoning By-Laws of said Town for the construction of the addition to Hamilton Chapel located on the Belmont Hill School campus. The addition also includes the relocation of existing utilities, installation of new utilities, installation of a stormwater management system, and improvements to pedestrian and vehicular pathways, on the ground that the same will be in harmony with the general purpose and intent of said Zoning By-Law.

Petitioner(s) are further to comply with the requirements of Section 7.3.5 of said Zoning By-Law attached.

Signature of Petitioner _____

Print Name Jay Bounty

Address 350 Prospect Street
Belmont, MA 02478

DaytimeTelephone Number 617-993-5313

Stantec

Stantec Planning and Landscape Architecture P.C.
226 Causeway St. 6th Floor
Boston, MA 02114

February 1, 2019
File: 210801630

Attention: Mr. Jeffrey Wheeler
Planning Division
Town of Belmont
Office of Community Development

Dear Mr. Wheeler,

Reference: Design and Site Plan Review Draft Application Belmont Hill School – Hamilton Chapel Addition

Please find the enclosed the Application for the Design and Site Plan Approval, filing fee, Neighborhood Letters, Certified Plot Plan, Zoning Compliance Checklist, Elevations and Interior Layout Plans, Site Plans, and Stormwater Memorandum. The Site Plans includes the Zoning Setbacks Plan, the Site Preparation Plans and Details, Layout and Materials Plan, Grading Plan, Utility Plan, and Site Details; please refer to the cover sheet for a full index of plans. As discussed, Belmont Hill School (School) is proposing a new addition to the existing Hamilton Chapel (Chapel) on campus.

PROJECT NARRATIVE

SUMMARY

The description below is part of the Design and Site Plan Review application for the proposed Hamilton Chapel addition for Belmont Hill School (Project) as shown on the included plans. Please refer to Sheet LP-1.0 which shows locations of all work associated with this application. The submitted plans indicate the proposed Chapel addition at The Belmont Hill School is located in the southeastern area of the campus. The project will not increase student enrollment or staffing at the school. Within the limit of work, there are two (2) existing maintenance buildings with a storage yard and transformers, the Chapel, a synthetic turf athletic field, landscaping, paved pathways, and parking. The Project includes,

- Construction of an addition to the Chapel,
- Removal of existing ADA access ramp,
- Installation of new entry plaza that is ADA accessible,
- Relocation of existing utilities,
- Installation of new utilities,
- Installation of new stormwater management system,
- Installation of a new condenser pad,
- Additional pathways and an entry plaza into the Chapel addition,
- Removal of an existing transformer bank and switchgear, and
- Installation of new transformer pad to feed the maintenance buildings, Chapel, and Eliot House.

The Hamilton Chapel was built in 1840 and moved from Connecticut to a prominent position on the Belmont Hill campus in 1960. Since then, it has housed weekly assemblies, occasional lectures, and fall and spring

school concerts. For quite a while, the chapel has been too small to accommodate both the faculty and students. The primary impetus for the current expansion is to increase the seat count so that the school's 450 students and 75 faculty members can attend all-school assemblies.

The existing building is approximately 8,250 gross square feet in total area and is 2-stories above grade with a basement. The above grade levels are utilized for assembly gathering space which includes fixed bench seating on the ground floor and balcony. The basement is currently underutilized. The addition includes a new footprint area of 2,500 gross square feet for 5,000 square feet of added program space for a total of 12,000 gross square feet. The renovation will include new electrical and mechanical systems, an enlarged stage platform, added bench pews, and the fit out of the basement level. All the exterior materials being used will match those that already exist on the chapel. As the construction budget is over 30% of the assessed value of the building, upgrades will be required in order to comply with 521 CMR for Existing Buildings.

While the primary purpose of the project is to increase the seating capacity, the project will bear numerous secondary, and equally noteworthy, benefits for the school community. With the renovation and expansion, the building will provide:

- A fully accessible entry for students, staff, and visitors
- An elevator providing access to restrooms, Green Room, and Multi-Purpose Room
- Improved sight lines and accessible seating
- A larger and accessible stage
- Ability to load equipment into the chapel from an at-grade entrance
- Infrastructural improvements such as access and underground utilities

TEMPORARY IMPACTS (NEIGHBORHOOD)

The school is planning a neighborhood meeting with all abutters prior to planning board review. The temporary impact from construction along the construction access road will be limited to construction hours allowed by the town. The school will work with their construction manager and provide contact information to address any issues or concerns during construction. With no enrollment or staffing increase, abutters and the surrounding neighborhood will not be impacted by the project once complete.

SITE DRAINAGE

The stormwater management system has been designed to comply with standards of the Massachusetts Department of Environmental Protection (MassDEP) Stormwater Standards, and with the Town of Belmont Stormwater Management and Erosion Control By-Laws and Rules and Regulations. The proposed stormwater system captures the runoff produced by the chapel addition. Roof runoff is directed to one (1) of several downspouts. It is then conveyed through a network of pipes to a subsurface stormwater system where it enters the system through an isolator row eventually infiltrating and recharging the groundwater below. Any overflow exits through an outlet control structure and connects to the existing drainage network on site. The majority of stormwater runoff over land, parking areas, and pathways within the limits of work is captured and conveyed to the subsurface stormwater system where it is treated as described above. The existing chapel and northern portion of the site operate similar to existing conditions. The runoff flows overland, eventually captured by an existing catch basin downslope where it enters the drainage network on site. See the Grading Plan, Utilities Plan, and Stormwater Memo attached for additional information.

Reference: **Design and Site Plan Review Draft Application Belmont Hill School – Hamilton Chapel Addition**

UTILITIES

A large portion of the project includes the relocation of several existing utilities and the installation of new utilities to feed the Chapel addition

Electrical/Communications

The existing power to the Chapel, Eliot House, and maintenance buildings is fed by a transformer bank on the west side of the maintenance building. The transformer bank, switchgear, and associated conduit will be removed and replaced with one (1) transformer and associated conduit. The new location of the transformer will be slightly west of its existing location, on the opposite side of the parking area. New conduit will be run to each building and a portion of the existing primary duct bank will be rerouted to the new transformer location. Refer to the utility plan on sheet C-1.0.

Sewer

An existing sewer line from the Chapel exits the east side of the building and traverses the site south where it ultimately connects into a main line. The new addition will conflict with a portion of the existing route. This portion of sewer line will be rerouted around the building. A new building sewer line will be installed as part of the addition. This line will connect to the rerouted sewer line.

ZONING REGULATIONS

The Zoning Setbacks Plan shows the proposed site and the required lot area, setbacks, and height regulations for the Single Resident-A. The plan illustrates that the proposed chapel does meet the setbacks regulations. A Zoning Compliance Checklist has been completed. It is attached and can be referenced for further information. Please let me know if you have any questions or concerns and I will be glad to assist you with any additional information. Refer to sheet ZP-1.0 for zoning compliance plan.

PARKING AND SITE CIRCULATION

With no increase in student enrollment or staffing at the School, the existing parking remains adequate. The improvements to the campus circulation will include the relocation of four (4) existing parking spaces adjacent to Eliot Building to the east of the maintenance building. Refer to the parking plan on sheet PP-1.0.

The redesigned pathways will improve site circulation. Well-defined paths that mimic that include the campus's signature brick edging will provide cohesion throughout this area of campus. The new paths will also provide direct routes to the new Chapel entrance and other areas of campus. Refer to sheet PP-1.0 for parking plan.

SIGNAGE AND LANDSCAPING

No new signs are being proposed during this project. The landscaping plan will mimic current tree spacing and species type on campus. A mix of deciduous, ornamental, and evergreen trees and shrubs will be planted on site. The planting beds along the proposed walkway into the new chapel will be filled with groundcover plantings and reduce the amount of impervious surface. Most of the existing plantings within the limit of work and not effected by the new building construction and will remain and be protected. A few

Reference: **Design and Site Plan Review Draft Application Belmont Hill School – Hamilton Chapel Addition**

trees near the chapel addition and transformer relocation will come down. Refer to sheet LP-1.0 for landscape plan.

ENVIRONMENTAL CONTROLS

Two new 8' LED pedestrian lights will be installed along the proposed walkway next to Eliot Building and the proposed chapel addition. The lights will match those installed throughout campus. All proposed fixtures are placed at a distance of 220' or greater from the property line where they will have 0.0 foot-candle spill at the property line. A condenser pad is being added on the western side of the chapel and is to be fully enclosed and screened by an 8' cedar fence to mitigate the sound from the condenser. This new condenser is 320' from the property line. No new dumpsters or areas to dispose of refuse or other waste are being added during this project. All waste is to be collected internally and transported to an existing dumpster area within the maintenance yard which is screened with vegetation and fencing.

Regards,

Stantec Planning and Landscape Architecture P.C.

David Nardone RLA, LEED AP
David.Nardone@Stantec.com
Phone: 617-654-6003

Attachment: See transmittal for attachments.

lj v:\2108\active\210801630\design\permits\site plan review\town documents\spr-narrative.docx

January 28, 2019

Dear Neighbor:

I am excited to announce to you that Belmont Hill plans to expand its iconic Hamilton Chapel on campus. While you can be assured that all work will fully comply with Town of Belmont bylaws regarding work hours, noise, and other concerns, I wanted to invite you to join us for a closer look at the project in advance of any public meetings.

On Thursday, February 7 from 7:00-8:00 PM in the Wadsworth Room, on the second floor of the Jordan Athletic Center at Belmont Hill, we will hold an informational meeting to explain the project and have drawings available for your review. Our architect and general contractor will be present to review the details of the project and you will have the opportunity to have any questions answered. Refreshments will be served.

I look forward to seeing you on the 7th. If you are unable to attend, please feel free to contact Director of Operations Jay Bounty at bounty@belmonthill.org with any questions.

Sincerely,

Gregory J. Schneider
Head of School
Belmont Hill School

350 Prospect Street, Belmont, MA 02478 • 617.484.4410 • www.belmonthill.org

Town of Belmont Design and Site Plan Review Criteria

The below list is a response on how the proposed project addresses the points made on the Town of Belmont Zoning By-Laws "Design and Site Plan Review Criteria"

1. The dimensions of the proposed building comply with the table form per Section 4 of the Town By-laws. See attached Zoning Compliance Check List

2. Section 5.1 Off-street Parking and Loading
   a. 5.1.1 Number of spaces
      i. There is no increase in parking demand
      ii. There are 4 existing spaces that are to be relocated next to the existing maintenance building. Locations are highlighted and called out on the Zoning Compliance Plan
   b. 5.1.2 Schedule of Requirements
      i. Other uses: number of space to be determined by the building inspector
   c. 5.1.3 Parking and Loading Area Location and Design
      i. Section a – N/A
      ii. Section b - Complies
      iii. Section c – Complies. New spaces conform to size requirements
      iv. Section d – Complies. New spaces conform to surface requirements
      v. Section e – N/A
      vi. Section f – Complies
      vii. Section g – Complies
      viii. Section h – Complies
      ix. Section i – N/A
      x. Section j - Complies

3. Section 5.2 Signs
   a. No new signs are proposed

4. Section 5.3 Landscaping
   a. 5.3.2 Plantings
      i. Internal tree plantings are installed to mimic the current tree spacing and species type and will be a minimum caliper of 4½". A mix of evergreen and deciduous shrubs will be planted on the site. The existing trees along the existing parking lot edge will be replaced where utility work occurred and new shrubs to match will be installed to fill in the gaps. Refer to sheet LP-1.0 SITE AND LANDSCAPING PLAN for details and locations of proposed plantings.
   b. 5.3.3 Requirements

i. N/A
ii. N/A
iii. Existing parking lot plantings will be protected and maintained. Any disturbed plantings will be replaced with similar species and size to the extent possible.
iv. N/A

c. 5.3.4 Screening
   i. Condenser pad area is fenced with 8' tall cedar board fence.
d. 5.3.5 Existing Vegetation
   i. Existing trees along parking lot edge are to be removed for site utility installations. All trees will be replaced, and any removed shrubs will be replaced to match the existing condition with like species and size.
e. 5.3.6 Exception
   i. N/A
f. 5.3.7 Maintenance
   i. Will conform
g. 5.3.4 Non-conforming Landscaping and Screening
   i. N/A

5. Method of wastes
   a. Refuse is collected internally and transported to an existing dumpster area within the maintenance yard which is screened with vegetation and fencing/walls

6. Section 5.4 Environmental Controls
   a. 5.4.1 Permitted Activity
      i. There is no change in existing activity
   b. 5.4.2 Noise
      i. Conforms
   c. 5.4.3 Lighting and Glare
      i. The fixture proposed is a type-3
      ii. Lighting Limitations – N/A
      iii. Fixtures will not flicker
      iv. See sheet L3.1-SITE DETAILS for a fixture cut-sheet. Fixture is a cut-off fixture with an 8'-0" mounting height and LED lamping. Only one fixture is new, the other two fixtures are being relocated with 10' of their existing location. All proposed (new) fixtures are placed at a distance where they will have 0.0 foot-candle spill at the property line.
   d. 5.4.4 Air Quality
      i. N/A
   e. 5.4.5 Hazardous Materials
      i. N/A
   f. 5.4.6 Vibration
      i. N/A

g. 5.4.7 Electrical Disturbances
   i. N/A
h. 5.4.8 Special Permits
   i. N/A

Zoning Compliance Check List
(Registered Land Surveyor)

Property Address: 350 Prospect Street **Zone:** SR-A

Surveyor Signature and Stamp: _____ **Date:** _____

	REQUIRED	EXISTING	PROPOSED
Lot Area	25,000 sf	1,299,830sf	1,299,830sf
Lot Frontage	125 feet	2070 Lf	2070 Lf
Floor Area Ratio	blank	N/A	N/A
Lot Coverage	20% maximum	11.20%	11.41%
Open Space	50% minimum	79.55%	79.20%
Front Setback	30'-0"	422'-0"	466'-1"
Side Setback	15'-0"	284'-0"	243'-7"
Side Setback	15'-0"	836'-0"	818'-10"
Rear Setback	40'-0"	833'-0"	786'-6"
Building Height	36'-0"	32'-8 1/2"	32'-8 1/2"
Stories	2.5 (maximum)	2 stories	2 stories
½ Story Calculation	no 1/2 story		

NOTES:

March 27, 2006

Town of Belmont Design and Site Plan Review – Existing Conditions Images

Image 1 - Existing view from northeast corner of Hamilton Chapel – Front Entrance

Image 2 - Existing view from northwest corner of Hamilton Chapel – Front Entrance

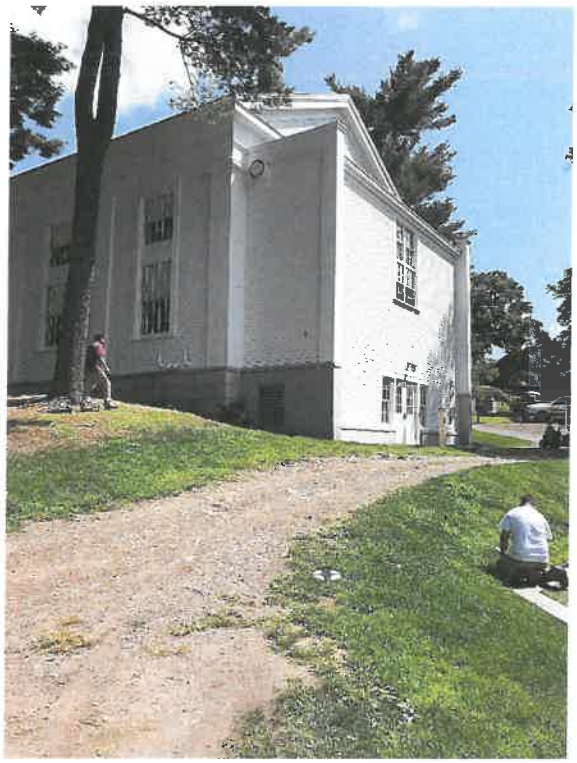


Image 3 - Existing view from southwest corner of Hamilton Chapel near existing field – Basement Entrance

Image 4 - Existing view from southeast corner of Hamilton Chapel near existing field – Basement Entrance

Image 5 - Existing light fixture and paving/ brick edging to be matched

Image 6 - Existing parking spaces (4) to be relocated to the east of maintenance building

Town of Belmont Design and Site Plan Review – Proposed Renderings

Historic Entrance

Bruner/Cott
ARCHITECTS

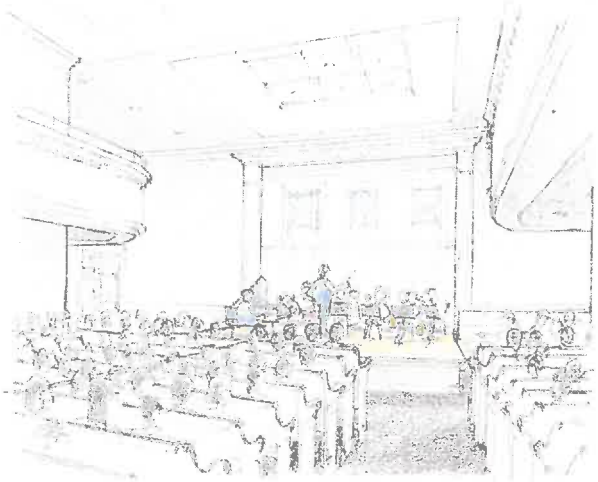
New Program Entrance

Bruner/Cott
ARCHITECTS

View from Fields

Bruner/Cott
ARCHITECTS

Chapel Interior



Bruner/Cott
ARCHITECTS

Stantec

Memo

To:	Ara Yogurtian Assistant Director/Project Manager Community Development – Engineering Division	From:	Jordan Loffredo Stantec Planning and Landscape Architecture P.C.
File:	210801630	Date:	February 1, 2019

Reference: Belmont Hill School – Hamilton Chapel – Site Plan Review – Stormwater Memorandum

PROJECT SUMMARY

The Belmont Hill School (Owner) is proposing to construct a 2,730 SF addition on the existing Hamilton Chapel (Chapel) building on campus, at 350 Prospect Street in Belmont, Massachusetts. The Chapel is situated on the east side of campus, south of the quad and north of the maintenance buildings. The addition is proposed to be constructed on the south side of the Chapel. The addition will impact the existing site circulation and utilities. As a result, an improved pedestrian and vehicular pathway layout will be constructed. Existing utilities will be rerouted around the addition and new utilities that feed the building will be installed. The improvements to the site will not result in an increase in impervious area.

To manage the stormwater within the limits of work, a new stormwater management system will be installed. The system will include several roof drains to capture the new roof runoff and area drains and trench drains to capture the majority of the remaining runoff. The captured runoff will be conveyed to a subsurface stormwater system. The runoff will enter the system through an isolator row that will provide pretreatment. Stormwater will then infiltrate to recharge groundwater or overflow through an outlet control structure, eventually entering the campus's main drainage system.

A portion of the site's stormwater runoff will behave as it did in existing conditions, flowing overland in the westerly direction, entering an existing catch basin, and eventually connecting to the campus's main drainage system.

The proposed stormwater management system has been designed in accordance with both the Massachusetts Department of Environmental Protection's *Stormwater Management Standards* and the Town of Belmont's *Stormwater and Erosion Control By-Laws and Rules & Regulations.* This memorandum documents the Project's compliance with the previously noted State and Municipal standards for stormwater management.

STORMWATER MANAGEMENT STANDARDS AND HANDBOOK

STANDARD 1

Standard 1 requires that the project demonstrate that there are no new untreated discharges and that the new discharges will not cause erosion or scour to downstream wetlands. There are no new stormwater discharges proposed for this project. The building addition and new pavement will be captured and conveyed to the subsurface stormwater system that discharges to the campus's existing drainage system. The remaining runoff on site will behave as it did in existing conditions, flowing in a westerly direction over land, entering an existing catch basin, and eventually connecting to the campus's existing drainage system.

Reference: **Belmont Hill School – Hamilton Chapel – Site Plan Review – Stormwater Memorandum**

STANDARD 2

Standard 2 requires that the peak discharge rates of the post-development area not exceed the existing peak discharge rates. A HydroCAD analysis has been completed for both the existing conditions and proposed conditions to determine these rates. The post-development peak discharge rates will not exceed the pre-development peak discharge rates for the 2-year, 10-year, 20-year (Town required analysis), 25-year, and 100-year storm. These results are summarized in the table below, *Table-1 Peak Discharge Rates.*

Table 1 – Peak Discharge Rates

Design Point		2-Yr Storm (3.22")	10-Yr Storm (4.87")	20-Yr Storm (5.74")	25-Yr Storm (6.17")	100-Yr Storm (8.85")
DP1	Existing Rate (cfs)	0.78	1.62	2.12	2.36	3.96
	Proposed Rate (cfs)	0.18	1.28	1.73	1.93	3.54

STANDARD 3

Standard 3 requires that computations or demonstrations be fulfilled in order to satisfy the stormwater recharge requirements. The recharge volume was calculated based on Standards requirement to capture 0.60 of runoff for the Hydrologic Soil Group A. The subsurface stormwater system will provide more than the required volume of 688 CF. These results are summarized in the table below, *Table 2 – Required Recharge Volume.*

Table 2 – Required Recharge Volume

Infiltration BMP	Hydrologic Soil Group	Contributing Impervious Area (sf)	Required Recharge Volume (cf)	Provided Recharge Volume (cf)
Subsurface Chamber System	A (0.60")	13,768	688	810

Per the requirements of Standard 3, the system must also drain within 72 hours. The system will drain within 8.54 hours. This result is summarized in the table below, *Table 3 – 72 Hour Drawdown.*

Table 3 – 72 Hour Drawdown

Infiltration BMP	K (in/hr)	Bottom Area (sf)	Drawdown Time (hr)
Subsurface Chamber System	1.42*	802	8.54

**Haley & Aldrich, Inc. completed a subsurface exploration between October 30, 2018 and November 1, 2018 that included four (4) test pits. Field saturated hydraulic conductivity tests were completed in each test pit with the use of a Guelph permeameter. The K value noted is a result of these tests.*

Reference: **Belmont Hill School – Hamilton Chapel – Site Plan Review – Stormwater Memorandum**

STANDARD 4

Standard 4 requires that stormwater management systems be designed to remove 80% of the average annual post-construction load of Total Suspended Solid (TSS). This Standard is met when:

a.) Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;

b.) Structural stormwater best management practices are sized to capture the required water quality volume as determined in accordance with the Massachusetts Stormwater Handbook; and

c.) Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.

A long-term pollution prevention plan for the Project will be included as part of the Operation and Maintenance Plan that will be issued to the Owner.

The required water quality treatment volume is equal to the product of one-half inch and the total impervious area. The water quality volume calculations are summarized in the table below, *Table 4 – Water Quality Volume Summary*.

Table 4 – Water Quality Volume Summary

Infiltration BMP	Contributing Impervious Area (sf)	Required Water Quality Volume (cf)	Provided Water Quality Volume (cf)
Subsurface Chamber System	11,925	496	810

A subsurface system with a pretreatment BMP, an isolator row, has been designed to meet the required 80% TSS removal.

STANDARD 5

The Belmont Hill School campus is not considered a land use with Higher Potential Pollutant loads; therefore, Standard 5 is not applicable to this project.

STANDARD 6

The Belmont Hill School campus is not in a critical area; therefore, Standard 6 is not applicable to this project.

STANDARD 7

Standard 7 requires that a redevelopment project meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4,5, and 6.

The Belmont Hill School Hamilton Chapel project is a redevelopment project. However, the Project does meet all the Stormwater Management Standards.

Reference: **Belmont Hill School – Hamilton Chapel – Site Plan Review – Stormwater Memorandum**

STANDARD 8

Standard 8 requires that a plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities be developed and implements. Pollution prevention and erosion and sedimentation control measures will be implemented during the Belmont Hill School Hamilton Chapel project and will control construction related impacts during construction and land disturbance activities.

STANDARD 9

Standard 9 requires that a long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed. A long-term operation and maintenance plan will be prepared and issued to the Owner.

STANDARD 10

Standard 10 prohibits illicit discharges to stormwater management systems. As stated in the handbook, "The stormwater management system is the system for conveying, treating, and infiltrating stormwater on-site, including stormwater best management practices and any pipes intended to transport stormwater to the groundwater, a surface water, or municipal separate storm sewer system. Illicit discharges to the stormwater management system are discharges that are not entirely comprised of stormwater."

The Illicit Discharge Compliance Statement for the Project is as follows:

Illicit Discharge Compliance Statement

Per the requirements of Standard 10 of the Massachusetts Stormwater Management Standards, it shall be stated that no illicit discharges are proposed as part of the Belmont Hill School Hamilton Chapel Project located at 350 Prospect Street, Belmont, Massachusetts, as described herein this stormwater memorandum.

Stantec Planning and Landscape Architecture P.C.

Jordan Loffredo, P.E
Jordan.Loffredo@stantec.com
Phone: 617-654-6092

Stantec

RECEIVED
TOWN CLERK
BELMONT, MA

2019 FEB 12 PM 12:00

BELMONT HILL SCHOOL DESIGN AND SITE PLAN REVIEW : HAMILTON CHAPEL ADDITION

LOCUS PLAN
NTS

OWNER

BELMONT HILL SCHOOL
350 PROSPECT STREET
BELMONT, MA 02478
617-484-4410

LANDSCAPE ARCHITECT / CIVIL ENGINEER

STANTEC PLANNING AND LANDSCAPE ARCHITECTURE P.C.
226 CAUSEWAY STREET
BOSTON, MA 02114
617-523-8103

ARCHITECT

BRUNER/COTT ARCHITECTS
225 FRIEND STREET, SUITE 701
BOSTON, MA 02114
617-492-8400

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	EXISTING CONDITIONS PLAN II
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LP-1.0	SITE AND LANDSCAPING PLAN
PP-1.0	PARKING PLAN
SP-1.0	SITE PREPARATION PLAN
L-1.0	LAYOUT AND MATERIALS PLAN
L-2.0	GRADING PLAN
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A-102	SECOND FLOOR PLAN
A-103	ATTIC FLOOR PLAN
A-104	ROOF PLAN
A-301	EXTERIOR ELEVATIONS
A-302	EXTERIOR ELEVATIONS

FEBRUARY 1, 2019

Project Number: 210801630

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2019/02/01 9:41 AM By: Wyman, Jeffrey
LAYOUT: B011 ARCH D

LEGEND

- SEWER MANHOLE
- DRAIN MANHOLE
- ELECTRIC MANHOLE
- HYDRANT
- WATER SHUT OFF/WATER GATE
- ROUND CATCH BASIN
- LIGHT POLE
- ELECTRIC HANDHOLE
- FLOOD LIGHT
- BOLLARD
- POST
- STAND PIPE/SIAMESE CONNECTION
- GAS METER
- ELECTRIC METER
- HANDICAP PARKING SPACE
- IRRIGATION CONTROL VALVE
- DECIDUOUS TREE
- CONIFEROUS TREE

BC	BOTTOM OF CURB
BCB	BIT. CONC. BERM
BIT	BITUMINOUS
BOT=	BOTTOM ELEVATION
BS	BOTTOM OF STEPS
BW	BOTTOM OF WALL
CBL	COBBLESTONE
CONC	CONCRETE
ENT	ENTRANCE
FFE	FINISH FLOOR ELEVATION
GRAN	GRANITE
I=	INVERT ELEVATION
(INACC.)	INACCESSIBLE
M&S	MULCH & SHRUBS
NVP	NO VISIBLE PIPES
R=	RIM ELEVATION
(R)	RECORD
TBM	TEMPORARY BENCH MARK
TC	TOP OF CURB
TH	THRESHOLD
TR=	CENTERLINE OF TROUGH
TS	TOP OF STEPS
TW	TOP OF WALL
TYP	TYPICAL
D	DRAIN
S	SEWER
E	ELECTRIC
G	GAS
W	WATER
12"D(CI)	PIPE SIZE AND MATERIAL
PVC	POLYVINYL CHLORIDE
VCP	VITRIFIED CLAY PIPE

EDGE OF TREE CANOPY / DRIP LINE

2018-12-14 DRAFT

12/07/2018	FIELD SURVEY ADDED WITHIN CLOUDED AREAS
10/28/2016	ADDED GAS, WATER, AND ELECTRIC UTILITIES

TOPOGRAPHIC PLAN
BELMONT HILL SCHOOL
BELMONT, MASS.

FELDMAN LAND SURVEYORS
152 HAMPDEN STREET
BOSTON, MASS. 02119

OCTOBER 15, 2016

PHONE: (617)357-9740
www.feldmansurveyors.com

FELDMAN LAND SURVEYORS

10 0 5 10 20 40

SCALE: 1"=10'

RESEARCH	FIELD CHIEF JN	PROJ. MGR DJR	APPROVED	SHEET NO. 2 OF 2
CALC	CADD UAK	FIELD CHECKED	CRD FILE 16524	JOB NO. 16524

FILENAME: V:\21081\acsw\21080163\design\drawing\Document\016-30_Existing Conditions.dwg

NOTES:

2018-12-14 DRAFT

12/07/2018	FIELD SURVEY ADDED WITHIN CLOUDED AREAS
10/08/2016	ADDED GAS, WATER, AND ELECTRIC UTILITIES

TOPOGRAPHIC PLAN
BELMONT HILL SCHOOL
BELMONT, MASS.

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10 0 5 10 20 40

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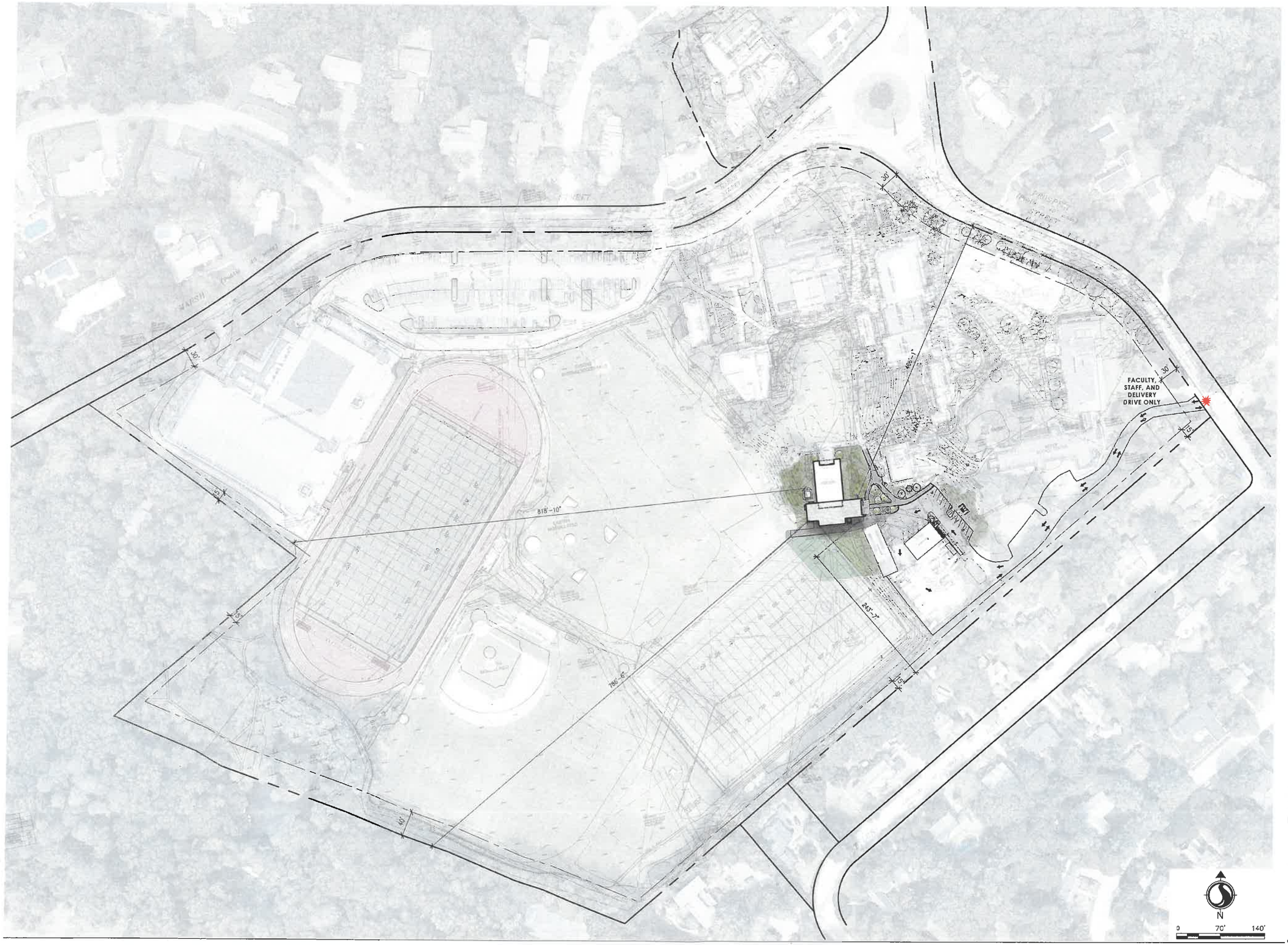
RESEARCH	FIELD CHIEF JN	PROJ MGR DJR	APPROVED	SHEET NO. 1 OF 2
CALC	CADD MAK	FIELD CHECKED	CRD FILE 16524	JOB NO. 16524

FILENAME: V:\2108\active\210801630\design\drawing\Ocurrent\01630_Existing Conditions.dwg



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Date	FEBRUARY 1 2019
Scale	As Shown
Project Number	18.011
Drawn By	

Belmont Hill School

Hamilton Chapel
350 Prospect Street
Belmont, MA 02478

DESIGN & SITE PLAN REVIEW
CIVIL AND LANDSCAPE

ZONING COMPLIANCE/
PLOT PLAN

ZP-1.0

PLANTING NOTES

1. EXISTING CONDITIONS INFORMATION IS REPRODUCED FROM THE SURVEY PREPARED BY FELDMAN LAND SURVEYORS OF 152 HAMPDEN STREET, BOSTON, MA, ON OCTOBER 15, 2016.
2. THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN ARE BASED ON THE SURVEY REFERENCED ABOVE. THE CONTRACTOR SHALL CONTACT DIGSAFE AND THE PROPER LOCAL AUTHORITIES OR RESPECTIVE UTILITY COMPANIES TO CONFIRM THE LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. ANY DAMAGE DUE TO FAILURE OF THE CONTRACTOR TO CONTACT THE PROPER AUTHORITIES SHALL BE BORNE BY THE CONTRACTOR.
3. CONTRACTOR SHALL BEGIN MAINTENANCE IMMEDIATELY AFTER PLANTING AND WILL CONTINUE UNTIL FINAL WRITTEN ACCEPTANCE OF PLANT MATERIAL.
4. LANDSCAPE ARCHITECT TO FLAG ALL TREES TO BE TRANSPLANTED PRIOR TO CONSTRUCTION START.
5. CONTRACTOR SHALL VERIFY ALL TREE REMOVALS AND/OR TRANSPLANTS WITH OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION START.
6. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM ALL BUILDING FOUNDATIONS, STRUCTURES, AND PLANTING BEDS.
7. MAXIMUM SLOPE WITHIN DISTURBED AREAS SHALL NOT EXCEED 3:1, UNLESS OTHERWISE NOTED.
8. THE LANDSCAPE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE ALL PLANTINGS SHOWN ON THIS DRAWING.
9. ALL MATERIALS SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.
10. ALL PLANTS SHALL BEAR THE SAME RELATIONSHIP TO FINISH GRADE AS TO ORIGINAL GRADES BEFORE DIGGING.
11. ALL PLANTS TO BE BALLED IN BURLAP OR CONTAINERIZED.
12. MULCH FOR PLANTED AREAS TO BE AGED PINE BARK: PARTIALLY DECOMPOSED, DARK BROWN IN COLOR AND FREE OF WOOD CHIPS THICKER THAN 1/4 INCH.
13. PLANTING SOIL MIX: LOAM THOROUGHLY INCORPORATED WITH ROTTED MANURE PROPORTIONED 5 C.Y. TO 1 C.Y. OR EQUIVALENT. FERTILIZER ADDED PER RECOMMENDED RATES OF SOILS ANALYSIS.
14. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIALS FOR ONE (1) FULL YEAR FROM DATE OF ACCEPTANCE.
15. ALL PLANT MATERIALS ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT, AT THE NURSERY, AND AT THE SITE.
16. ALL AREAS OF THE SITE WHICH HAVE BEEN DISTURBED AND NOT OTHERWISE DEVELOPED SHALL BE LOAMED AND SEEDED WITH A MINIMUM DEPTH OF 6" DEPTH TOPSOIL.
17. PLANT SPECIES AS INDICATED IN THE PLANT LIST ARE SUGGESTIONS ONLY.* FINAL SELECTION OF SPECIES SHALL OCCUR AT THE TIME OF PLANT PURCHASE, DEPENDING ON AVAILABILITY.* PLANT SIZE AND QUANTITY SHALL NOT CHANGE WITHOUT APPROVAL OF OWNER'S REPRESENTATIVE. This is not to be used for permit drawings - not for construction documents

PLANT SCHEDULE

SYM	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	NOTES
	1	DECIDUOUS TREES			
GP	1	QUERCUS PALUSTRIS	PIN OAK	4 1/2" cal.	
	5	ORNAMENTAL / FLOWERING TREES			
CC	3	CERCIS CANADENSIS	EASTERN REDBUD	12-14' B&B	
MW	2	MAGNOLIA STELLATA 'WATERLILY'	STAR MAGNOLIA	10'-12' B&B	MULTI-STEM
SK	2	STEWARTIA KOREANA	KOREAN STEWARTIA	12-14' B&B	
	2	EVERGREEN TREES			
AC	2	ABIES CONCOLOR	WHITE FIR	8-10' HT.	
	4	EVERGREEN SHRUBS			
IG	4	ILEX GLABRA 'COMPACTA'	COMPACT INKBERRY	24"-30" B&B	
MI	500	MIX 1			
	150	HEMEROCALLIS 'HAPPY RETURNS'	DAYLILY	2 YR., #1 POT	24" O.C.
	150	HEMEROCALLIS 'APRICOT SPARKLES'	DAYLILY	2 YR., #1 POT	18" O.C.
	200	HEMEROCALLIS 'STELLA D'ORO'	DAYLILY	2 YR., #1 POT	12" O.C.

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- DECIDUOUS TREE
- ORNAMENTAL TREE
- EVERGREEN TREE
- EVERGREEN SHRUB
- GROUNDCOVER PLANTING
- LOAM AND SOD
- EXISTING LIGHTPOLE TO REMAIN
- PROPOSED LIGHTPOLE TO MATCH EXISTING (2)

N

0 20' 40'

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Stantec

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Project Number	18011
Drawn By	JTW

Belmont Hill School

Hamilton Chapel
350 Prospect Street
Belmont, MA 02478

DESIGN & SITE PLAN REVIEW
CIVIL AND LANDSCAPE

SITE AND LANDSCAPING PLAN

LP-1.0

LEGEND

- 4 PARKING SPACES TO BE REMOVED
- 4 PARKING SPACES TO BE ADDED

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CIVIL AND LANDSCAPE

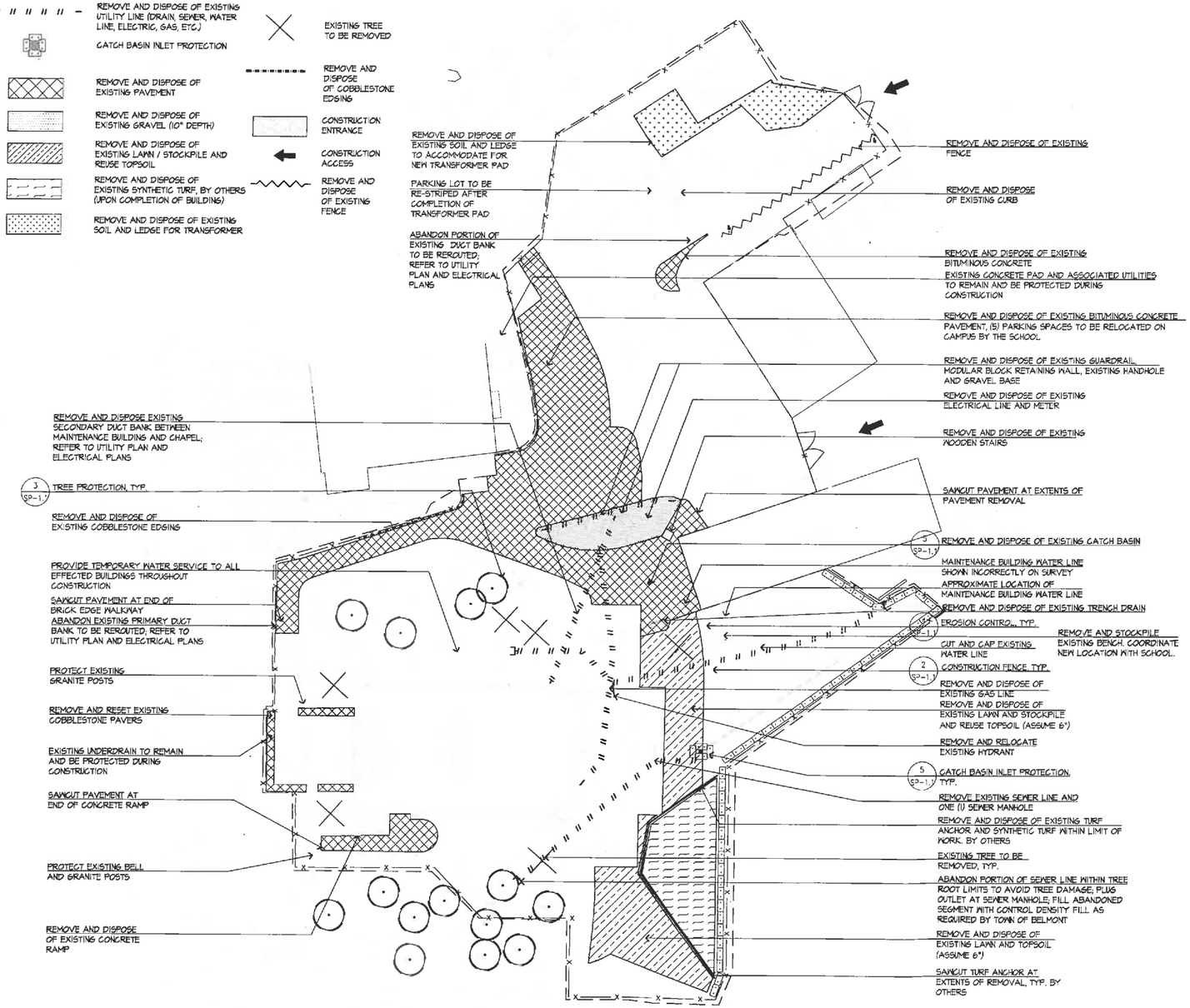
PARKING PLAN

0 20' 40'

PP-1.0

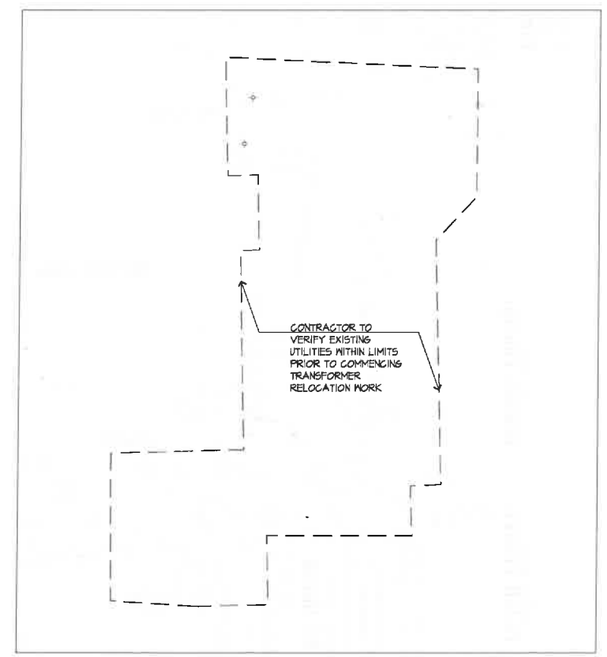
LEGEND

- LIMIT OF WORK
- EROSION CONTROL
- TEMPORARY CONSTRUCTION FENCE
- REMOVE AND DISPOSE OF EXISTING UTILITY LINE (DRAIN, SEWER, WATER LINE, ELECTRIC, GAS, ETC.)
- CATCH BASIN INLET PROTECTION
- REMOVE AND DISPOSE OF EXISTING PAVEMENT
- REMOVE AND DISPOSE OF EXISTING GRAVEL (10" DEPTH)
- REMOVE AND DISPOSE OF EXISTING LAWN / STOCKPILE AND REUSE TOPSOIL
- REMOVE AND DISPOSE OF EXISTING SYNTHETIC TURF, BY OTHERS (UPON COMPLETION OF BUILDING)
- REMOVE AND DISPOSE OF EXISTING SOIL AND LEDGE FOR TRANSFORMER
- UTILITY LINE CAP
- TREE PROTECTION
- EXISTING TREE TO BE REMOVED
- REMOVE AND DISPOSE OF COBBLESTONE EDGING
- CONSTRUCTION ENTRANCE
- CONSTRUCTION ACCESS
- REMOVE AND DISPOSE OF EXISTING FENCE



SITE PREPARATION AND EROSION CONTROL NOTES

1. EXISTING CONDITIONS INFORMATION IS REPRODUCED FROM THE SURVEY PREPARED BY FELDMAN LAND SURVEYORS OF 152 HAMPDEN STREET, BOSTON, MA, ON OCTOBER 15, 2016.
2. PRIOR TO THE START OF ANY EXCAVATION FOR THE PROJECT, BOTH ON AN OFF SITE, THE CONTRACTOR SHALL NOTIFY DIGSAFE AND BE PROVIDED WITH A DIGSAFE NUMBER INDICATING THAT ALL EXISTING UTILITIES HAVE BEEN LOCATED AND MARKED.
3. THE OWNER'S REPRESENTATIVE SHALL BE CONSULTED AND WILL REVIEW THE WORK ON SITE WITH THE CONTRACTOR BEFORE ANY WORK SHALL COMMENCE.
4. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD AND REPORT ANY DISCREPANCIES BETWEEN PLANS AND ACTUAL CONDITIONS TO THE OWNER'S REPRESENTATIVE PRIOR TO STARTING WORK.
5. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING CONDITIONS TO REMAIN THAT ARE DUE TO CONTRACTOR OPERATIONS.
6. ALL ITEMS TO BE REMOVED THAT ARE NOT STOCKPILED FOR LATER REUSE ON THE PROJECT OR DELIVERED TO THE OWNER SHALL BE LEGALLY DISPOSED OF OFF SITE BY THE CONTRACTOR.
7. THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED ON THE SURVEY REFERENCED ABOVE. THE CONTRACTOR SHALL CONTACT DIGSAFE AND THE PROPER LOCAL AUTHORITIES OR RESPECTIVE UTILITY COMPANIES TO CONFIRM THE LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. ANY DAMAGE DUE TO FAILURE OF THE CONTRACTOR TO CONTACT THE PROPER AUTHORITIES SHALL BE BORNE BY THE CONTRACTOR.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING DEMOLITION EFFORTS WITH ALL TRADES.
9. THE CONTRACTOR SHALL COORDINATE ALL ADJUSTMENT OR ABANDONMENT OF UTILITIES WITH THE RESPECTIVE UTILITY COMPANY.
10. THE CONTRACTOR SHALL MAINTAIN OR ADJUST TO NEW FINISH GRADE AS NECESSARY ALL UTILITY AND SITE STRUCTURES SUCH AS LIGHT POLES, SIGN POLES, MAN HOLES, CATCH BASINS, HAND HOLES, WATER AND GAS GATES, HYDRANTS, ETC., OTHERWISE NOTED OR DIRECTED BY THE OWNER'S REPRESENTATIVE.
11. THE CONTRACTOR SHALL INSTALL CONSTRUCTION FENCING AND GATES PER THE PLANS AND SPECIFICATIONS AND/OR PROVIDE ADDITIONAL TEMPORARY CONSTRUCTION FENCE TO MAINTAIN A SECURE SITE. THE CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO FENCING TO REMAIN.
12. THE CONTRACTOR SHALL CUT AND CAP ALL EXISTING UTILITY LINES NOTED ON THIS PLAN. SHOULD THE CONTRACTOR REQUIRE THE CUT AND CAP OF ADDITIONAL UTILITIES TO PERFORM WORK, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
13. EXISTING TREES TO REMAIN SHALL BE LIMBED TO REMOVE DEAD OR DYING BRANCHES, WORK TO BE COORDINATED WITH THE OWNER. TREES TO BE REMOVED SHALL BE COORDINATED WITH THE OWNER.
14. THE CONTRACTOR SHALL INSPECT AND CLEAN OUT ALL EXISTING DRAINAGE STRUCTURES TO REMAIN WITHIN THE LIMITS OF WORK. REFER TO STORMWATER DRAINAGE SPECIFICATIONS.



NORTH CAMPUS TRANSFORMER RELOCATION AREA

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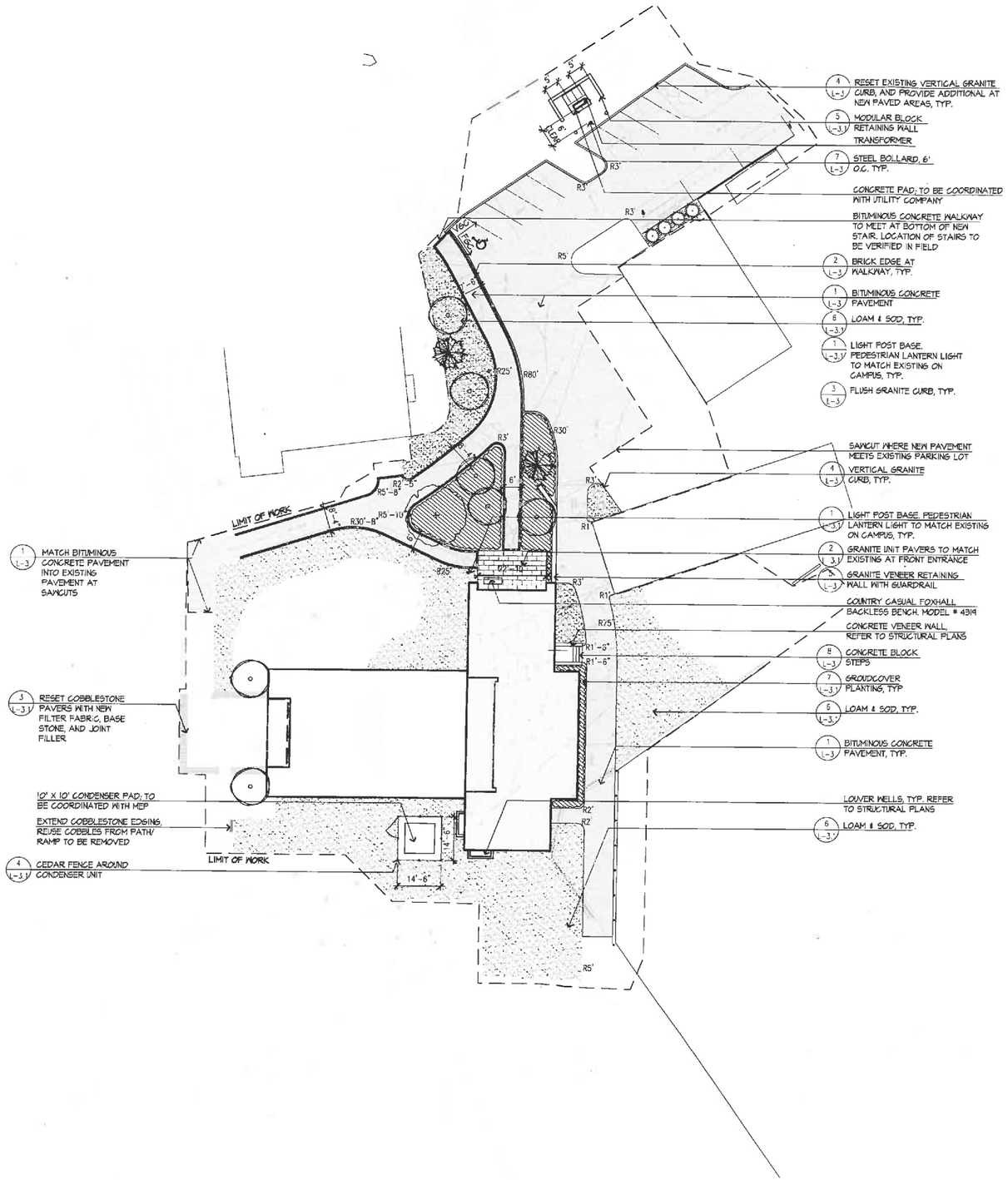
DESIGN & SITE PLAN REVIEW
CIVIL AND LANDSCAPE

SITE PREPARATION AND EROSION CONTROL PLAN

0 20' 40'

SP-1.0



LAYOUT AND MATERIAL NOTES

1. EXISTING CONDITIONS INFORMATION IS REPRODUCED FROM THE SURVEY PREPARED BY FELDMAN LAND SURVEYORS OF 152 HAMPDEN STREET, BOSTON, MA, ON OCTOBER 15, 2016
2. THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN ARE BASED ON THE SURVEY REFERENCED ABOVE. THE CONTRACTOR SHALL NOTIFY DIGSAFE AND THE PROPER LOCAL AUTHORITIES OR RESPECTIVE UTILITY COMPANIES TO CONFIRM THE LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. ANY DAMAGE DUE TO FAILURE OF THE CONTRACTOR TO CONTACT THE PROPER AUTHORITIES SHALL BE BORNE BY THE CONTRACTOR.
3. CONTRACTOR SHALL THOROUGHLY FAMILIARIZE THEMSELVES WITH ALL CONSTRUCTION DOCUMENTS, SPECIFICATIONS, AND SITE CONDITIONS PRIOR TO BIDDING AND PRIOR TO CONSTRUCTION.
4. ANY DISCREPANCIES BETWEEN DRAWINGS, SPECIFICATIONS, AND SITE CONDITIONS SHALL BE REPORTED IMMEDIATELY TO THE OWNER'S REPRESENTATIVE FOR CLARIFICATION AND RESOLUTION PRIOR TO BIDDING OR CONSTRUCTION.
5. SEE ARCHITECTURAL DRAWINGS FOR EXACT BUILDING DIMENSIONS AND ALL DETAILS CONTIGUOUS TO THE BUILDING, INCLUDING SIDEWALKS, RAMPS, UTILITY ENTRANCE LOCATIONS, WALL PACKS, CONCRETE DOOR PADS, ROOF DRAINS, ETC.
6. ACCESSIBLE CURB RAMPS SHALL BE PER THE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD (AAB) AND THE AMERICANS WITH DISABILITIES ACT (ADA) ACCESSIBILITY GUIDELINES, WHICHEVER IS MORE STRINGENT.
7. THE FOLLOWING LAYOUT CRITERIA SHALL CONTROL UNLESS OTHERWISE NOTED ON THE PLAN: ALL DIMENSIONS ARE TO OUTSIDE FACE OF BUILDING. ALL DIMENSIONS ARE TO FACE OF CURB AT GUTTER LINE. ALL DIMENSIONS ARE TO CENTER OF PAVEMENT MARKINGS. ALL TIES TO PROPERTY LINES ARE PERPENDICULAR TO THE PROPERTY LINE UNLESS OTHERWISE NOTED.
8. SCREENED IMAGES SHOW EXISTING CONDITIONS. WHERE EXISTING CONDITIONS LIE UNDER OR ARE IMPINGED UPON BY PROPOSED BUILDINGS AND/OR SITE ELEMENTS, THE EXISTING CONDITION WILL BE REMOVED, ABANDONED AND/OR CAPPED OR DEMOLISHED AS REQUIRED.

LEGEND

- PROPERTY LINE
- LIMIT OF WORK
- SITE LIGHTING
- BRICK EDGING
- DECIDUOUS TREE
- ORNAMENTAL TREE
- EVERGREEN TREE
- EVERGREEN SHRUB
- GROUNDCOVER PLANTING
- LOAM AND SOD
- VGC VERTICAL GRANITE CURB
- FGC FLUSH GRANITE CURB
- GRANITE PAVERS
- BITUMINOUS CONCRETE PAVING

N

0 20' 40'

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REV.	DATE	REMARKS

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DESIGN & SITE PLAN REVIEW
CIVIL AND LANDSCAPE

LAYOUT AND MATERIALS PLAN

L-1.0

IF THIS SHEET IS 34 X 11 22" - 36" IT HAS BEEN REDUCED FROM FULL SCALE
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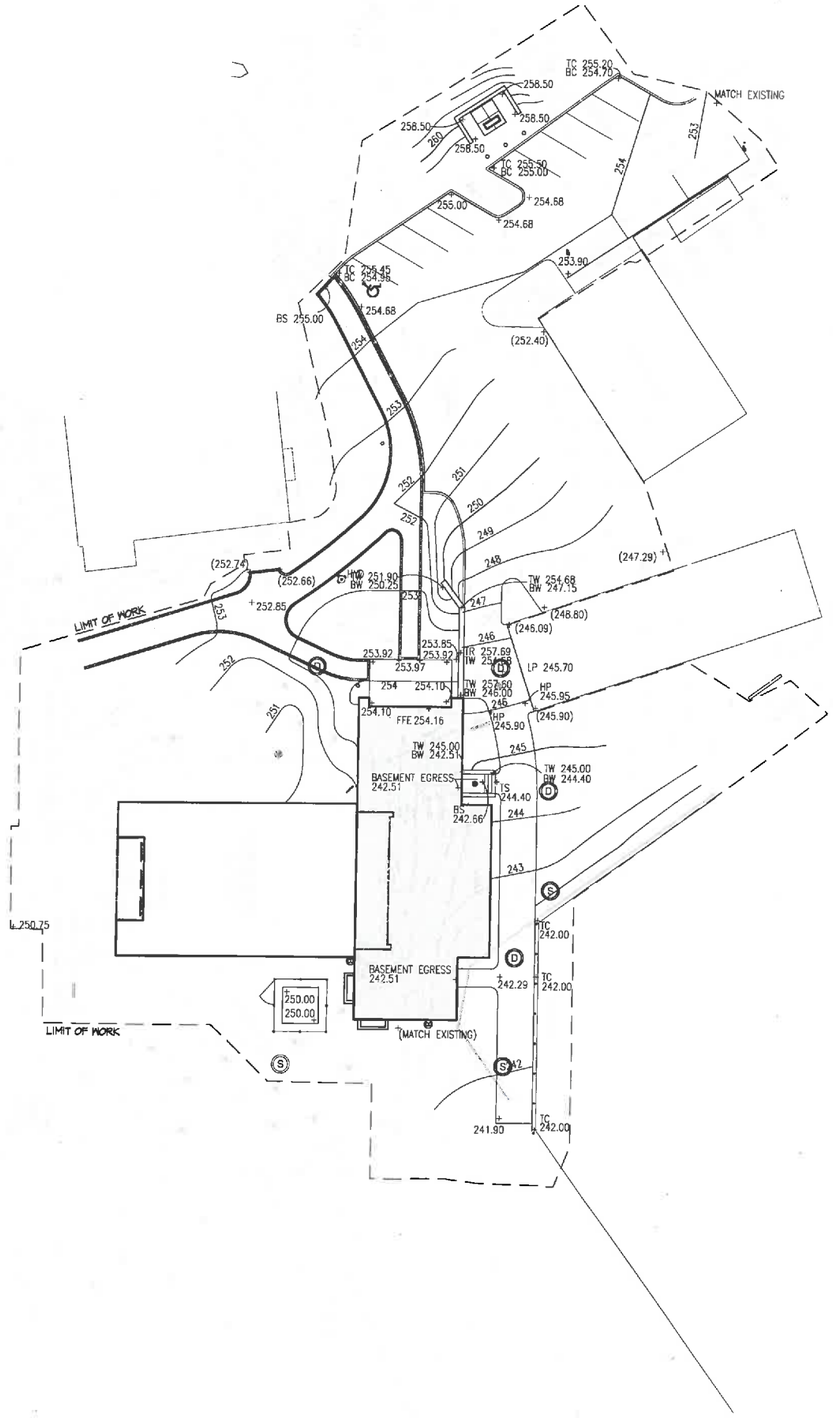

GRADING NOTES

1. EXISTING CONDITIONS INFORMATION IS REPRODUCED FROM THE SURVEY PREPARED BY FELDMAN LAND SURVEYORS OF BOSTON, MA AND IS DATED OCTOBER 15, 2016.
2. PRIOR TO THE START OF ANY EXCAVATION FOR THE PROJECT, BOTH ON AND OFF THE SITE, THE CONTRACTOR SHALL NOTIFY DIGSAFE AND BE PROVIDED WITH A DIGSAFE NUMBER INDICATING THAT ALL EXISTING UTILITIES HAVE BEEN LOCATED AND MARKED.
3. WHERE PROPOSED GRADES MEET EXISTING GRADES, CONTRACTOR SHALL BLEND GRADES TO PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING AND NEW WORK. PONDING AT TRANSITION AREAS WILL NOT BE ALLOWED.
4. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM ALL BUILDING FOUNDATIONS, STRUCTURES AND PLANTING BEDS.
5. MAXIMUM SLOPE IN DISTURBED AREAS SHALL NOT EXCEED 3:1, UNLESS OTHERWISE NOTED.
11. THE CONTRACTOR SHALL MEET THE REQUIREMENTS OF 521 CMR OF THE ARCHITECTURAL ACCESS BOARD REGULATIONS. ALL GRADES ON WALKWAYS, RAMPS, CURB CUTS AND PARKING AREAS AS DEFINED BY 521 CMR SHALL COMPLY WITH THE MAXIMUM ALLOWABLE GRADES. GRADES SHALL BE MEASURED AT TWO FOOT INTERVALS. CROSS SLOPES ON ALL WALKS, PATHS OF TRAVEL AND ACCESSIBLE ROUTES AS DEFINED IN 521 CMR SHALL NOT EXCEED 1.5%. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY IF DISCREPANCIES ARISE BETWEEN THE ACTUAL GRADES SHOWN ON THE PLANS AND THE MAXIMUM ALLOWABLE GRADES INDICATED IN 521 CMR.
12. ALL WALKWAYS SHALL BE GRADED TO A MAXIMUM 4.5% RUNNING SLOPE (PARALLEL TO THE DIRECTION OF TRAVEL). THE CROSS PITCH OF ALL WALKWAYS, PATHS AND PLAZAS SHALL NOT EXCEED 1.5% (PERPENDICULAR TO THE DIRECTION OF TRAVEL). THE SLOPE OF ALL RAMPS AND SIDE SLOPES OF HANDICAP CURB CUTS AS DEFINED BY SECTION 21.1 OF 521 CMR SHALL BE CONSTRUCTED AT 7.5% MAXIMUM. RAMPS AS DEFINED IN SECTION 24.1 OF 521 CMR SHALL BE CONSTRUCTED TO A MAXIMUM SLOPE OF 7.5%.
13. ENSURE ALL EXISTING (TO REMAIN), AND PROPOSED MANHOLE COVERS PROPERLY IDENTIFY UTILITY SERVICED.
14. CONTRACTOR SHALL VERIFY EXISTING GRADES AND NOTIFY OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES.
15. BITUMINOUS CONCRETE ELEVATIONS AT CATCH BASINS TO BE 1/4 INCH ABOVE RIM ELEVATION SHOWN FOR CATCH.
16. CONTRACTOR TO ADJUST UTILITY ELEMENT MEANT TO BE FLUSH WITH GRADE (CLEAN-OUTS, UTILITY MANHOLES, CATCH BASINS, INLETS, ETC) THAT IS AFFECTED BY SITE WORK OR GRADE CHANGES, WHETHER SPECIFICALLY NOTED ON PLANS OR NOT.
17. SCREENED IMAGES SHOW EXISTING CONDITIONS. WHERE EXISTING CONDITIONS LIE UNDER OR ARE IMPINGED UPON BY PROPOSED BUILDINGS AND/OR SITE ELEMENTS, THE EXISTING CONDITION WILL BE REMOVED, ABANDONED AND/OR CAPPED OR DEMOLISHED AS REQUIRED.
18. NO GRADE FROM THE FACE OF BUILDING TO 6' BEYOND BUILDING HORIZONTALLY SHALL BE LOWER THAN 242.18'.

GRADING LEGEND

———	PROPERTY LINE
— —	LIMIT OF WORK LINE
———	PROPOSED CONTOUR MAJOR LINE
———	PROPOSED CONTOUR MINOR LINE
+246.00	SPOTGRADE
+ (246.00)	EXISTING SPOTGRADE

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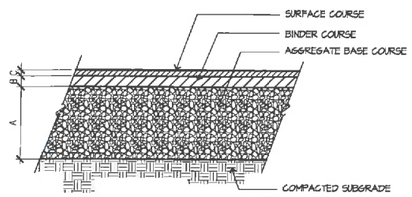
DESIGN & SITE PLAN REVIEW
CIVIL AND LANDSCAPE

GRADING PLAN

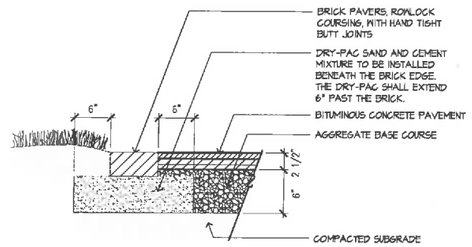
L-2.0

	A	B	C
BIT. CONCRETE WALK	6"	1 1/2"	1"
BIT. CONCRETE DRIVE	12"	2 1/2"	1 1/2"*

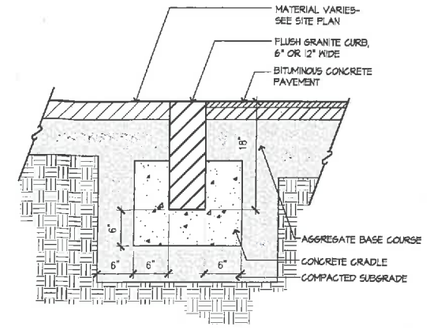
* SUBJECT TO FINAL GEOTECHNICAL APPROVAL.



1 BITUMINOUS CONCRETE PAVEMENT
SCALE: NTS



2 BRICK EDGE AT WALKWAY
SCALE: NTS



3 FLUSH GRANITE CURB
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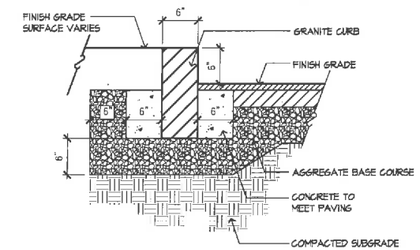
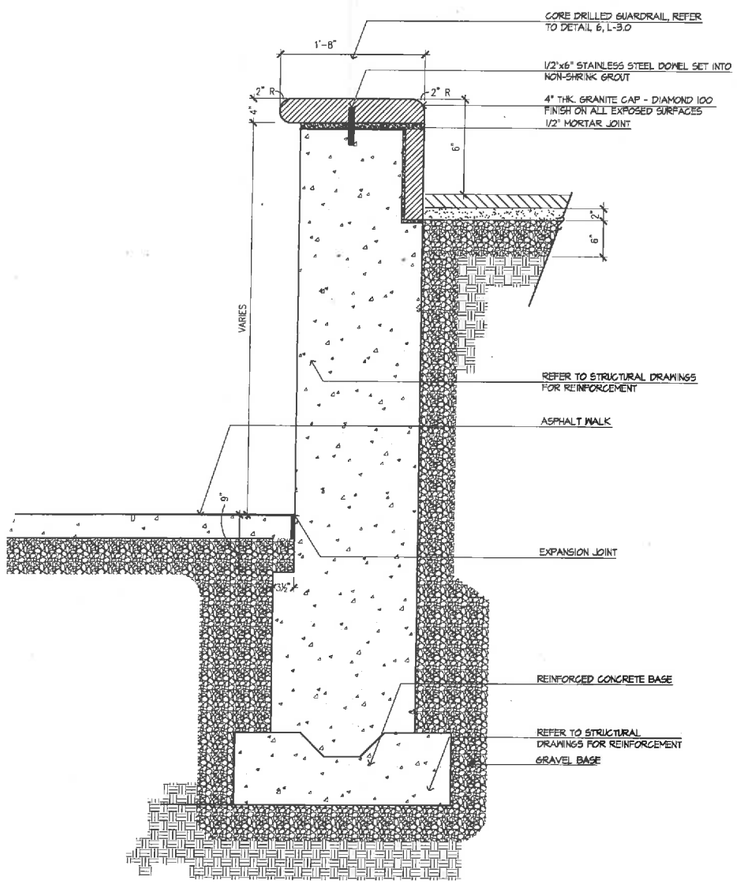
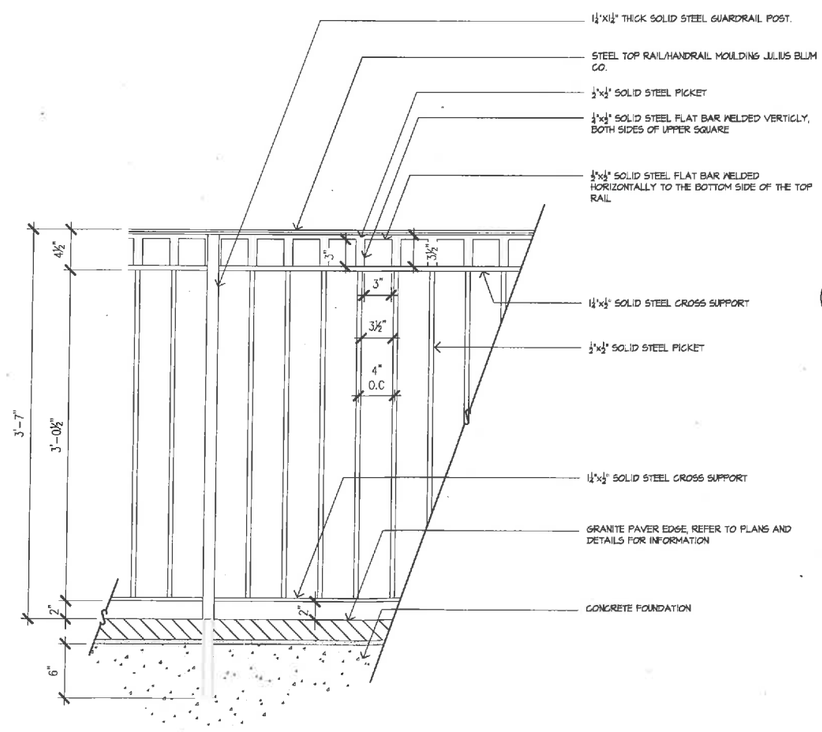


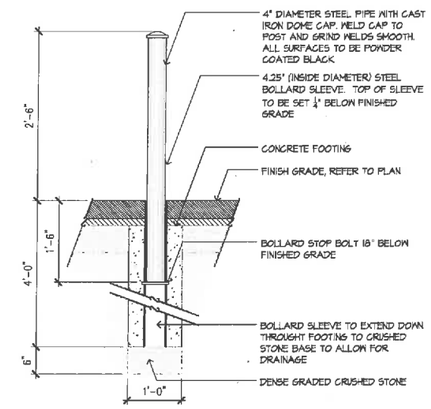
4 VERTICAL GRANITE CURB
SCALE: NTS



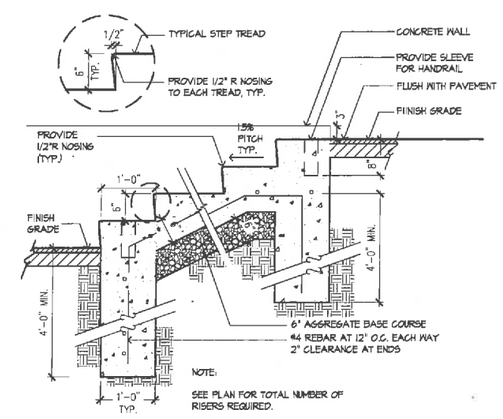
5 GRANITE VENEER WALL
SCALE: NTS



6 GUARDRAIL
SCALE: NTS



7 STEEL BOLLARD
SCALE: NTS



8 CONCRETE BLOCK STEPS
SCALE: NTS

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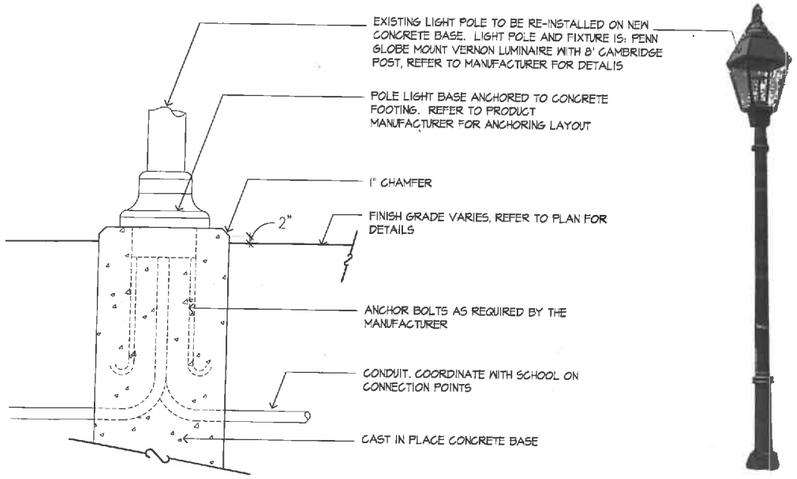
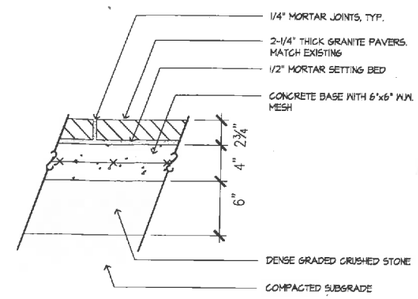
CIVIL AND LANDSCAPE

SITE DETAILS I

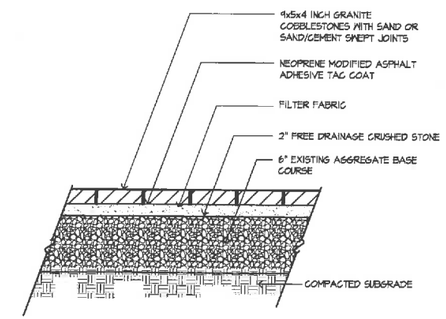
L-3.0



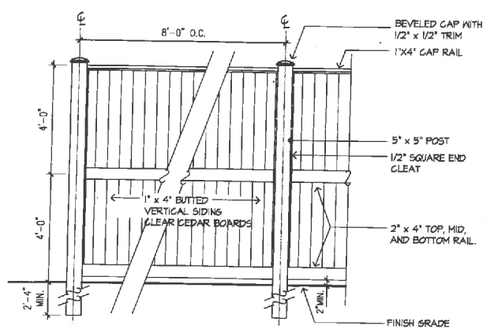
1 LIGHT POST BASE
SCALE: NTS



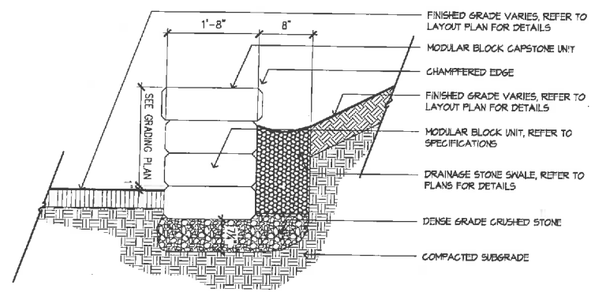
2 GRANITE PAVERS ON CONCRETE BASE
SCALE: NTS



3 RESET COBBLESTONE PAVERS
SCALE: NTS



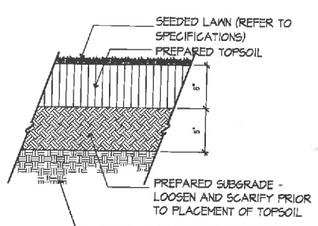
4 CEDAR FENCE AT CONDENSER PAD
SCALE: NTS



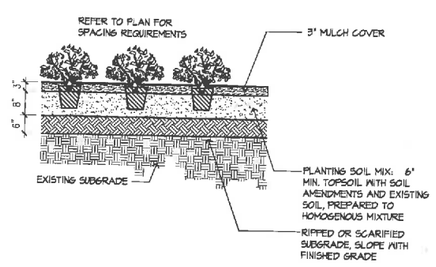
NOTES:

1. INSTALLATION OF INTERLOCKING RETAINING WALL SHOULD FOLLOW THE MANUFACTURER'S RECOMMENDATIONS AS SUITED TO EXISTING SITE CONDITIONS
2. MODULAR BLOCK UNITS SHALL BE 7.25"X48"X20" WITH A MAXIMUM TOLERANCE OF +/- 1/8" FOR EA. DIMENSION. BLOCK UNITS SHALL BE SIENA STONE GRAVITY RETAINING WALL, OR APPROVED EQUAL, AS PROVIDED BY UNILOCK NEW ENGLAND, 33 COMMERCE DRIVE, UXBRIDGE, MA 01569. (508)278-4536

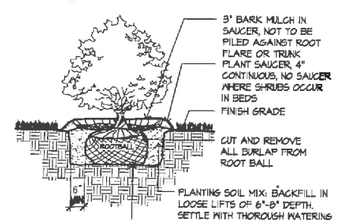
5 MODULAR BLOCK RETAINING WALL
SCALE: NTS



6 LOAM AND SOD
SCALE: NTS



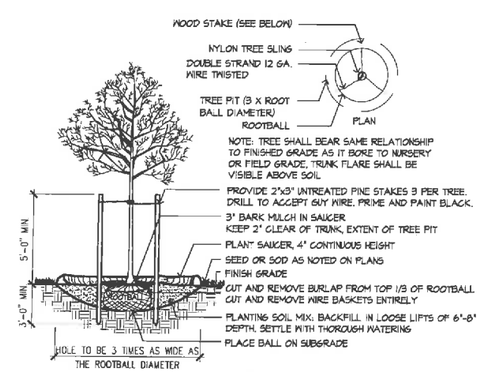
7 GROUNDCOVER PLANTING
SCALE: NTS



NOTES:

1. SHRUB SHALL BEAR SAME RELATIONSHIP TO FINISHED GRADE AS IT BORE TO NURSERY OR FIELD GRADE
2. WHERE SHRUBS OCCUR IN GROUPINGS IN PLANT BEDS, PROVIDE 2 - FOOT DEEP CONTINUOUS LOAM BED.

8 SHRUB PLANTING
SCALE: NTS



9 TREE PLANTING
SCALE: NTS

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Date	Remarks

Date	FEBRUARY 1, 2019
Scale	As Shown
Project Number	18.011
Drawn By	JTW

Belmont Hill School

Hamilton Chapel
350 Prospect Street
Belmont, MA 02478

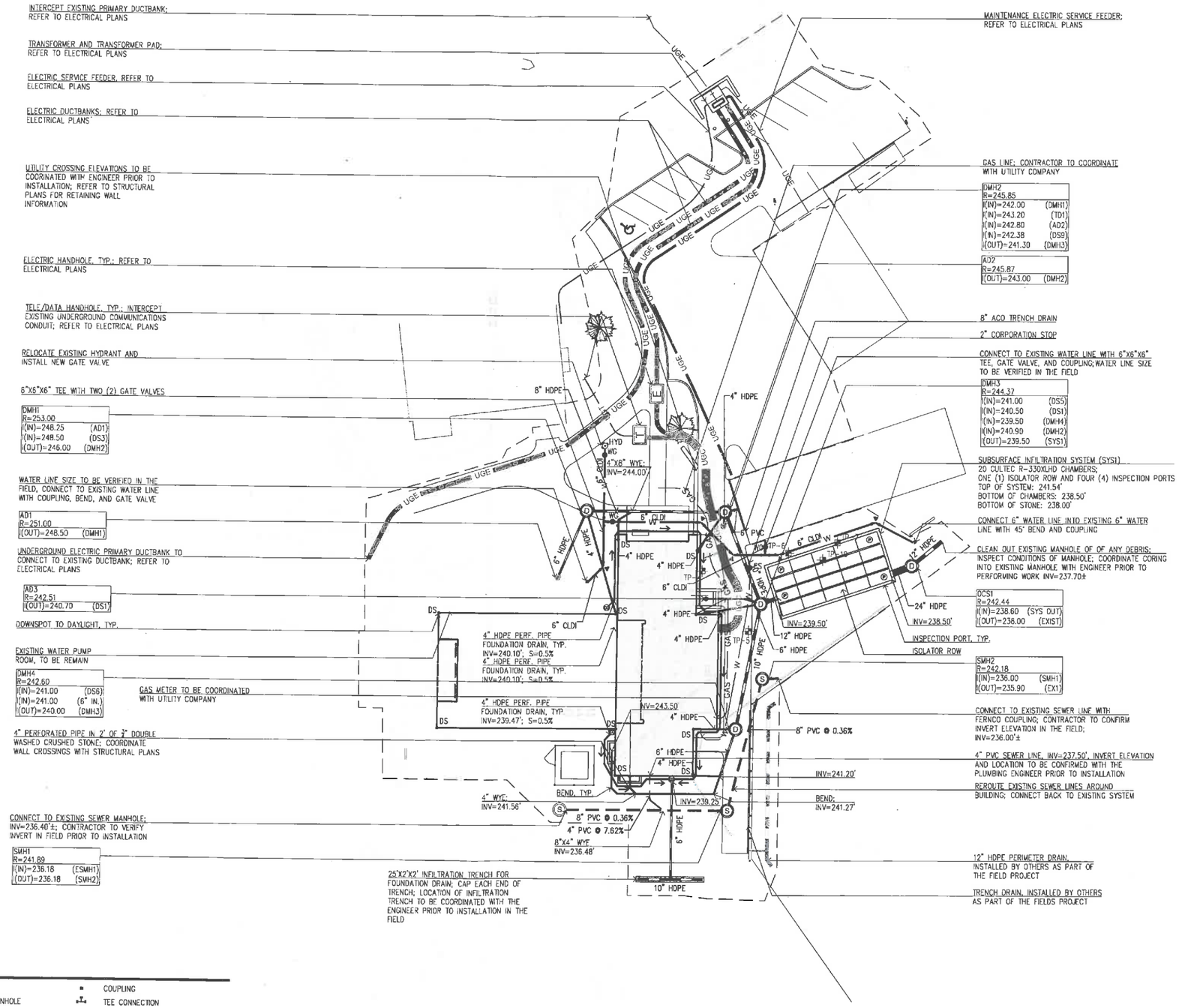
DESIGN & SITE PLAN REVIEW
CIVIL AND LANDSCAPE

SITE DETAILS II

L-3.1

UTILITY NOTES

1. EXISTING CONDITIONS INFORMATION IS REPRODUCED FROM THE SURVEY PREPARED BY FELDMAN LAND SURVEYORS OF BOSTON, MASSACHUSETTS, DATED OCTOBER 15, 2016.
2. PRIOR TO THE START OF ANY EXCAVATION FOR THE PROJECT, BOTH ON AND OFF THE SITE, THE CONTRACTOR SHALL NOTIFY DIGSAFE AND BE PROVIDED WITH A DIGSAFE NUMBER INDICATING THAT ALL EXISTING UTILITIES HAVE BEEN LOCATED AND MARKED.
3. ALL CONSTRUCTION TO BE DONE IN ACCORDANCE WITH THE TOWN OF BELMONT PUBLIC WORKS DEPARTMENT SPECIFICATIONS.
4. ALL EROSION AND SEDIMENTATION CONTROLS SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF ANY EARTH MOVING ACTIVITIES. REFER TO SITE PREPARATION PLAN FOR COMPLETE EROSION AND SEDIMENTATION CONTROLS.
5. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS 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 THAT MAY BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ALL UNDERGROUND UTILITIES.
6. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION, AT THE CONTRACTOR'S EXPENSE.
7. THE CONTRACTOR SHALL MAINTAIN OR ADJUST TO NEW FINISH GRADE, AS NECESSARY, ALL UTILITY AND SITE STRUCTURES SUCH AS LIGHT POLES, SIGN POLES, MANHOLES, CATCH BASINS, HAND HOLES, WATER AND GAS GATES, HYDRANTS, ETC., FROM MAINTAINED UTILITY AND SITE SYSTEMS, UNLESS OTHERWISE NOTED OR DIRECTED BY OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING DRAIN AND SEWER STRUCTURES, AS NECESSARY, FOR CHANGES IN GRADE. CONTRACTOR SHALL RESET UTILITY FRAMES, GRATES, AND COVERS MEANT TO BE FLUSH WITH GRADE (CLEANOUTS, UTILITY MANHOLES, CATCH BASINS, INLETS, ETC.) THAT ARE AFFECTED BY SITE WORK OR GRADE CHANGES, WHETHER SPECIFICALLY NOTED ON PLANS OR NOT.
8. SITE LIGHTING IS SHOWN ON THIS PLAN FOR COORDINATION PURPOSES ONLY. REFER TO ELECTRICAL PLANS FOR EXACT TYPE AND LOCATION.
9. THE LOCATION, SIZE, DEPTH, AND SPECIFICATIONS FOR CONSTRUCTION OF PRIVATE UTILITY SERVICES SHALL BE PROVIDED BY, AND APPROVED BY, THE RESPECTIVE UTILITY COMPANY (GAS/TELEPHONE/ELECTRICAL) AND INSTALLED ACCORDING TO THOSE REQUIREMENTS. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION, ALTERATION, OR ADJUSTMENT OF THE UTILITY CONNECTIONS WITH THE RESPECTIVE COMPANIES PRIOR TO ANY UTILITY CONSTRUCTION.
10. ALL TRENCH EXCAVATION CONTRACTORS SHALL COMPLY WITH MASSACHUSETTS GENERAL LAWS CHAPTER 82A, TRENCH EXCAVATION SAFETY REQUIREMENTS, TO PROTECT THE GENERAL PUBLIC FROM UNAUTHORIZED ACCESS TO UNATTENDED TRENCHES. TRENCH EXCAVATION PERMITS ARE REQUIRED. THIS APPLIES TO ALL TRENCHES ON PUBLIC AND PRIVATE PROPERTY.
11. ALL SEWER PIPES SHALL BE PVC PER ASTM D3034, SDR-35 AND ASTM D1784 WITH RUBBER GASKET JOINTS, UNLESS OTHERWISE NOTED.
12. ALL CEMENT LINED DUCTILE IRON JOINTS AT FITTINGS (CLASS 52,) VALVES, AND HYDRANT LATERALS SHALL BE MECHANICAL WITH NEOPRENE GASKETS. JOINTS AT OTHER LOCATIONS SHALL BE PUSH-ON TYPE WITH NEOPRENE OR SYNTHETIC RUBBER GASKETS. ALL WATER GATES SHALL OPEN AS PER MUNICIPAL REQUIREMENTS. ALL WATER LINES SHALL HAVE A MINIMUM OF FIVE FEET OF GROUND COVER AND A MINIMUM SEPARATION OF TEN FEET FROM THE SEWER SYSTEM. AT WATER AND SEWER CROSSINGS, THE SEWER LINE SHALL BE ENCASED. REFER TO SEWER LINE ENCASEMENT DETAIL FOR FURTHER INFORMATION.
13. PROTECT AND MAINTAIN EXISTING ON-SITE DRAINAGE STRUCTURES AND PIPES UNLESS OTHERWISE NOTED.
14. ENSURE ALL EXISTING (TO REMAIN) AND PROPOSED MANHOLE COVERS PROPERLY IDENTIFY UTILITIES SERVICED.
15. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE AWAY FROM ALL BUILDING FOUNDATIONS, STRUCTURES AND PLANTING BEDS.
16. BITUMINOUS CONCRETE ELEVATIONS SHALL BE 1/4 INCH ABOVE THE RIM ELEVATION SHOWN FOR EACH CATCH BASIN.
17. ALL PROPOSED STORM DRAIN LINES SHALL BE 12" NON-PERFORATED HDPE UNLESS OTHERWISE NOTED ON PLANS.
18. REFER TO ARCHITECTURAL/PLUMBING PLANS FOR PROPOSED LOCATION OF UTILITY SERVICE STUBS AT BUILDING. FINAL DESIGN AND LOCATIONS OF UTILITY SERVICE STUBS WILL BE PROVIDED BY THE ARCHITECT.
19. WHERE AN EXISTING UTILITY IS FOUND TO BE IN CONFLICT WITH THE PROPOSED WORK, THE CONTRACTOR SHALL ACCURATELY DETERMINE THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY AND TRANSMIT THIS INFORMATION TO THE ENGINEER WITHOUT DELAY.
20. THE ENGINEER-OF-RECORD SHALL WITNESS INSTALLATION OF ALL SUBSURFACE INFILTRATION SYSTEMS. IF THE SUBSURFACE SOIL CONDITIONS DIFFER FROM THAT SHOWN ON THE PLAN, THE DESIGN SHALL BE MODIFIED AND RESUBMITTED TO THE CITY/TOWN OF BELMONT FOR APPROVAL PRIOR TO CONTINUING INSTALLATION.
21. THE USE OF FIRE HYDRANTS FOR CONSTRUCTION IS NOT PERMITTED WITHOUT PRIOR APPROVAL FROM THE CITY/TOWN OF BELMONT WATER AND SEWER DEPARTMENT AND FIRE DEPARTMENT.
22. CONTRACTOR SHALL COORDINATE ANY WATER SHUT DOWNS WITH THE BELMONT HILL SCHOOL OF BELMONT.
23. FOUNDATION DRAIN SHALL BE 4" PERFORATED HDPE PIPE WITH 0.5% SLOPE, SURROUNDED BY 1' OF ¾" DOUBLE WASHED CRUSHED STONE AND WRAPPED IN FILTER FABRIC.



UTILITY LEGEND

PROPERTY LINE	
LIMIT OF WORK	
STORM DRAIN LINE	
SANITARY SEWER LINE	
W	WATER LINE
GAS	GAS LINE
UGE	UNDERGROUND ELECTRIC
UGT	UNDERGROUND COMMUNICATIONS
UGC	UNDERGROUND CONDUIT (ELECTRIC AND COMMUNICATIONS)
	AREA DRAIN
S	SANITARY SEWER MANHOLE
HYD	HYDRANT
WG	WATER GATE VALVE
CS	CORPORATION STOP
E	ELECTRIC HANDHOLE
T	COMMUNICATIONS HANDHOLE
D	STORM DRAIN MANHOLE; OUTLET CONTROL STRUCTURE
TP-7	TEST PIT PERFORMED BY HALEY & ALDRICH, INC. BETWEEN OCTOBER 31, 2018 AND NOVEMBER 1, 2018
	COUPLING
	TEE CONNECTION
	INSPECTION PORT
	CLEANOUT
HDPE	HIGH DENSITY POLYETHYLENE
CLDI	CEMENT LINED DUCTILE IRON
AD	AREA DRAIN
	FOUNDATION DRAIN FLOW DIRECTION
	ISOLATOR ROW

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Rev.	Date	Remarks

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Project Number	18011
Drawn By	JEL

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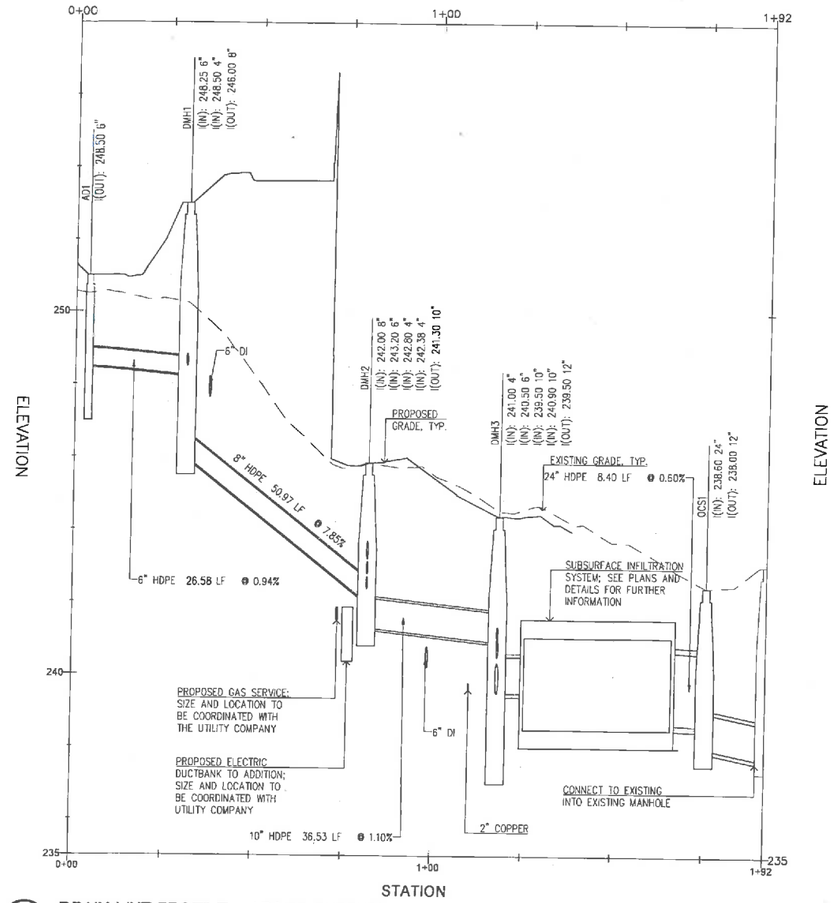
DESIGN & SITE PLAN REVIEW
CIVIL AND LANDSCAPE

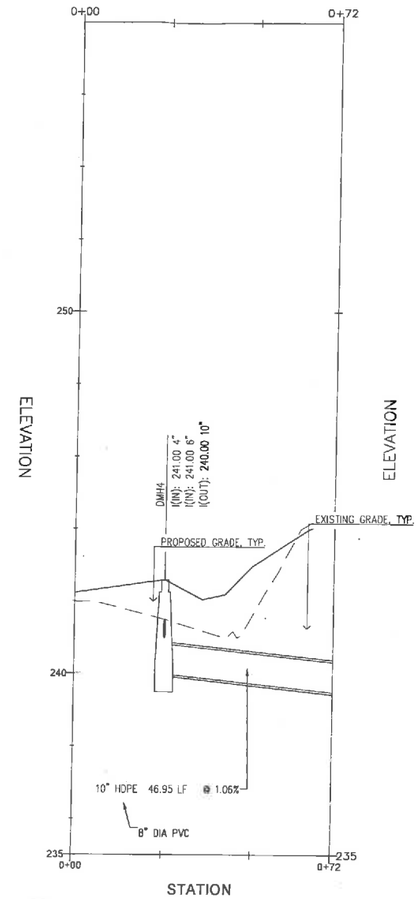
UTILITY PLAN

C-1.0



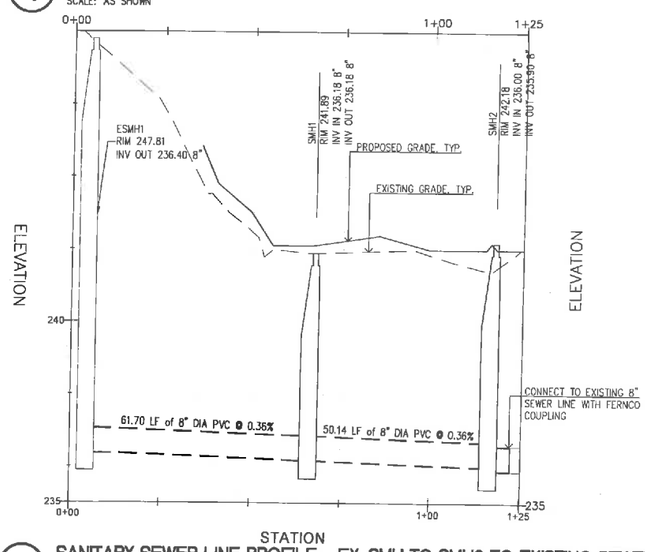
1 DRAIN LINE PROFILE - AD1 TO SUBSURFACE INFILTRATION SYSTEM TO EXISTING DRAIN MANHOLE

SCALE: AS SHOWN



2 DRAIN LINE PROFILE - AD4 TO DMH4

SCALE: AS SHOWN



1 SANITARY SEWER LINE PROFILE - EX. SMH TO SMH2 TO EXISTING SEWER LINE

SCALE: AS SHOWN

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REV	DATE	REMARKS

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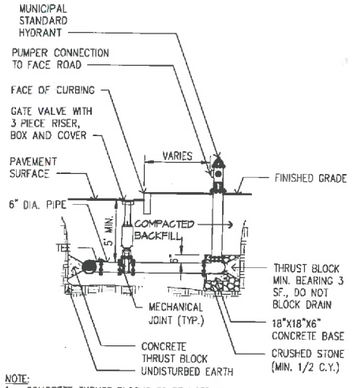
DESIGN & SITE PLAN REVIEW
CIVIL AND LANDSCAPE

UTILITY PROFILES

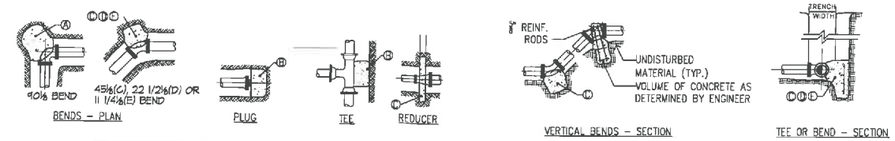
C-1.1



NOTE:
1. CONCRETE THRUST BLOCKS TO BE USED ONLY WHERE THEY CAN BEAR ON UNDISTURBED EARTH. USE CLAMPS AND TIE RODS OR OTHER ACCEPTABLE METHOD OF JOINT RESTRAINT WHERE SOIL CONDITIONS PROHIBIT THE USE OF THRUST BLOCKS.

1 HYDRANT CONNECTION
SCALE: NTS

NOTES:
1. POUR THRUST BLOCKS AGAINST UNDISTURBED MATERIAL. WHERE TRENCH WALL HAS BEEN DISTURBED, EXCAVATE LOOSE MATERIAL AND EXTEND THRUST BLOCK TO UNDISTURBED MATERIAL. NO JOINTS SHALL BE COVERED WITH CONCRETE.
2. ON BENDS AND TEES, EXTEND THRUST BLOCKS FULL LENGTH OF FITTING.
3. PLACE SOLID CONCRETE BLOCKS IN FRONT OF ALL PLUGS BEFORE POURING THRUST BLOCK.
4. REQUIREMENTS OF THE ABOVE TABLE PRESUME MINIMUM SOIL BEARING OF 1 TON PER SQUARE FOOT, AND MAY BE VARIED BY THE ENGINEER TO MEET OTHER CONDITIONS ENCOUNTERED.
5. MEGA-LUG RETAINER GLANDS ARE REQUIRED FOR ALL MECHANICAL JOINTS. THESE GLANDS DO NOT REDUCE THE REQUIREMENTS FOR THRUST RESTRAINT.
6. ALL FITTINGS SHALL BE WRAPPED IN POLYETHYLENE OR BUILDING PAPER PRIOR TO INSTALLATION OF CONCRETE RESTRAINT.
7. THREADED ROD SHALL BE ANSI A242 FY50 PIPE RESTRAINT NUTS TO MATCH AWWA C111. THREADED RODS AND NUTS TO BE FIELD COATED WITH BITUMINOUS PAINT.
8. THRUST RESTRAINT IS REQUIRED FOR ALL TEES, BENDS, REDUCERS, CAPS, PLUGS, OR CROSSES.
9. INSTALL LIFT HOOKS INTO THRUST BLOCKS AT END CAPS AND PLUGS.

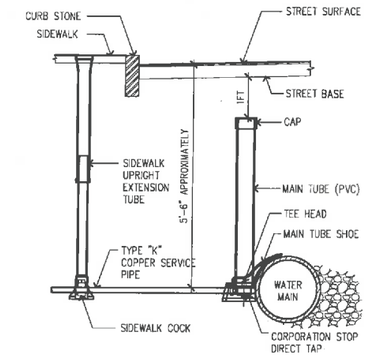


THRUST BLOCK SCHEDULE
SQUARE FEET OF CONCRETE THRUST BLOCKING BEARING ON UNDISTURBED MATERIAL

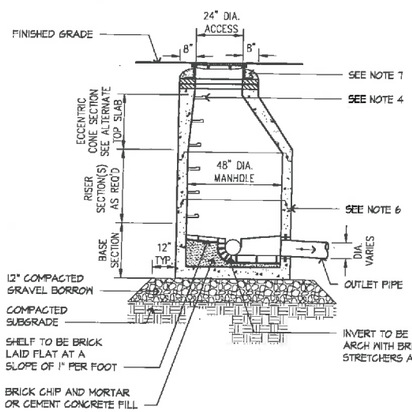
TYPE REACTION	PIPE SIZE 4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"
Ⓐ	1.78	4.38	7.84	11.14	16.52	21.82	30.82	36.04	48.12	69.28	107.66	154.78
Ⓑ	1.30	3.10	5.52	8.38	12.18	16.74	21.78	27.74	34.02	46.98	76.12	109.44
Ⓒ	0.96	2.38	4.24	6.02	9.32	11.82	15.68	19.42	26.04	37.50	58.26	83.76
Ⓓ	0.50	1.2	2.16	3.08	4.74	6.02	8.50	9.94	13.28	19.12	29.70	42.70
Ⓔ	0.26	0.60	1.08	1.54	2.38	3.04	4.24	5.02	6.66	9.58	14.90	21.42

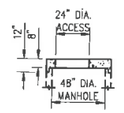
OTHER TEST PRESSURES FOR THE ABOVE REACTIONS: ABOVE DIMENSIONS ARE MINIMUM THRUST BLOCK SIZES. THEY HAVE BEEN CALCULATED USING A PRESSURE OF 200 PSI.
TEST PRESSURE TO BE 150 PSI MIN, OR AS REQUIRED BY BWSC.
SQUARE FEET OF CONCRETE THRUST BLOCKING FOR OTHER TEST PRESSURES IS DIRECTLY PROPORTIONAL TO THE ABOVE TABLE. FOR INSTANCE, AT 225 PSI TEST PRESSURE ABOVE NUMBERS SHOULD BE MULTIPLIED BY 1.125 (225 PSI/200 PSI=1.125).

2 THRUST BLOCK
SCALE: NTS



3 CORPORATION STOP W/ CURB STOP
SCALE: NTS

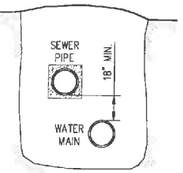




ALTERNATE TOP SLAB
(STEEL REINFORCED FOR H5-20 LOADING)

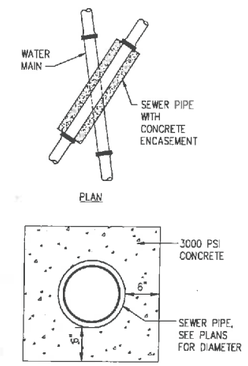
NOTES:
1. BASE SECTION SHALL BE MONOLITHIC WITH A 48" INSIDE DIAMETER.
2. ALL SECTIONS SHALL BE DESIGNED FOR H5-20 LOADING.
3. PRECAST CONCRETE SHALL BE COMPRESSIVE STRENGTH 4000 PSI, TYPE II CEMENT.
4. MANHOLE STEPS SHALL BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE.
5. ALL EXTERIOR SURFACES SHALL BE GIVEN TWO COATS OF BITUMINOUS WATERPROOFING MATERIAL.
6. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE BUTYL RUBBER.
7. STANDARD SEWER MANHOLE FRAME AND GRATE SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM).

4 SANITARY SEWER MANHOLE
SCALE: NTS

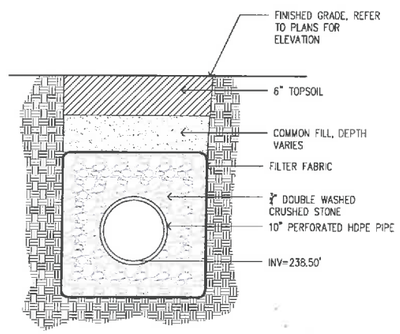


SECTION

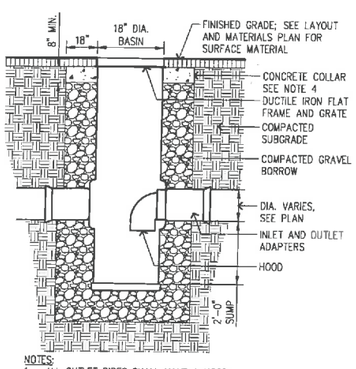
NOTE:
AT SEWER CROSSINGS SEWER SHALL BE ENCASED WHEN 18" VERTICAL CLEARANCE IS NOT MET. ENCASEMENT OF SEWER SHALL ALSO BE REQUIRED WHERE SEWER PASSES OVER WATER OR AS NOTED ON THE PLANS. THE SEWER SECTION MUST BE PRESSURE TESTED ACCORDING TO SPECIFICATIONS.



5 SEWER LINE ENCASEMENT
SCALE: NTS

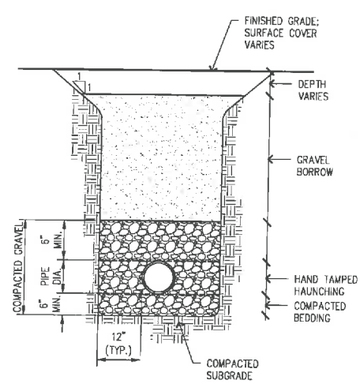


6 INFILTRATION TRENCH
SCALE: NTS



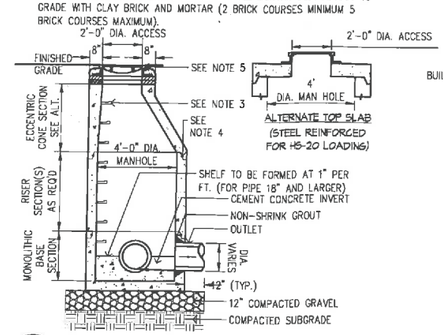
NOTES:
1. ALL OUTLET PIPES SHALL HAVE A HOOD.
2. INLET PIPE OPTIONAL; SEE UTILITY PLAN.
3. FRAME AND GRATE SHALL BE DUCTILE IRON AND MEET ADA REGULATIONS.
4. CONCRETE COLLAR NOT REQUIRED IN LANDSCAPED/LAWN AREAS.

7 AREA DRAIN
SCALE: NTS



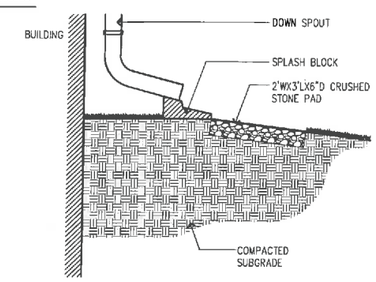
8 UTILITY TRENCH
SCALE: NTS

NOTES:
1. ALL SECTIONS SHALL BE DESIGNED FOR H5-20 LOADING.
2. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 1" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
3. COPOLYMER MANHOLE STEPS SHALL BE INSTALLED AT 12" O.C. FOR THE FULL DEPTH OF THE STRUCTURE.
4. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
5. DRAIN MANHOLE FRAME SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES MINIMUM 5 BRICK COURSES MAXIMUM).



ALTERNATE TOP SLAB
(STEEL REINFORCED FOR H5-20 LOADING)

9 DRAIN MANHOLE
SCALE: NTS



10 DOWN SPOUT WITH SPLASH BLOCK
SCALE: NTS

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Rev.	Date	Remarks

Date	FEBRUARY 1, 2019
Scale	As Shown
Project Number	18.011
Drawn By	JEL

Belmont Hill School

Hamilton Chapel
350 Prospect Street
Belmont, MA 02478

DESIGN & SITE PLAN REVIEW
CIVIL AND LANDSCAPE

UTILITY DETAILS 1

C-2.0

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CODE SUMMARY

The project consists of an addition and renovation to the Hamilton Chapel on Belmont Hill School in Belmont, Massachusetts. The existing Hamilton Chapel building is approximately 8,250 gross square feet in area and 2-stories above grade with a basement. The above grade levels are utilized for assembly gathering space which includes fixed bench seating and a raised platform. The basement is currently not used, however was previously utilized as multi-purpose space. The project is proposed to consist of a substantial renovation and addition to the existing building with the goal of expanding the existing seating capacity. The scope of the addition includes a footprint area of approximately 2,500 square feet and the renovation will include the fit out of the existing basement level. As part of this project it was determined that 30% of the full and fair cash value of the building will be exceeded and building upgrades will be required in order to comply with 521 CMR in full.

The following variances are pending the MAAB approval.
1. 521 CMR 14.4.1, 20.1 & 28.1 relative to providing an accessible route and accessible features at the balcony seating level
2. 521 CMR 25.1 relative to the existing North Building entrance
3. 521 CMR 27.2 relative to the two existing winder stairs at the North end of the building
4. 521 CMR 20.1 & 27.4 relative to providing an accessible route to the tiered seating at the rear of the Chapel Building.

APPLICABLE CODES

Code Type	Applicable Code (Model Code Basis)
Building	780 CMR – Massachusetts State Building Code 9th Edition, which is an amended version of the 2015 International Building Code (IBC) 780 CMR 34.00, which is an amended version of the 2015 International Existing Building Code (IEBC), herein referred to as the MEBC.
Fire Safety & Prevention	527 CMR - Massachusetts Comprehensive Fire Safety Code, which is an amended version of the 2015 Edition of NFPA 1, Uniform Fire Code The 2015 International Fire Code (IFC) is applicable for fire code references in 780 CMR not addressed by 527 CMR
Plumbing	248 CMR 10.00 Uniform State Plumbing Code
Electrical	527 CMR 12.00 - Massachusetts Electrical Code, which is an amended version of the 2017 Edition of NFPA 70, National Electrical Code
Mechanical	2015 International Mechanical Code (IMC) as amended by 780 CMR 28.00
Energy Code	780 CMR 13.00, which is an amended version of the 2015 International Energy Conservation Code (IECC)
Accessibility	521 CMR - Architectural Access Board (AAB) Rules and Regulations and the 2010 ADA Standards for Accessible Design
Elevator	524 CMR – Massachusetts Board of Elevator Regulations, which adopts and amends the 2013 Edition of ANSI A 17.1, Safety Code for Elevators and Escalators.
Other	National Fire Protection Association (NFPA) Standards, as referenced by the above codes, including the following: - 2013 NFPA 10: *Standard for Portable Fire Extinguishers* - 2013 NFPA 13: *Standard for the Installation of Sprinkler Systems* - 2013 NFPA 72: *National Fire Alarm and Signaling Code*

USE GROUP CLASSIFICATION

NOTE: Refer to G-101 for additional information

Group / Occupancy Classification		Building Area
Group A-3	Assembly	Lecture Hall, Meeting space
Group S-2	Low Hazard Storage	Storage & MEP building service

DESIGN METHODOLOGY

The MEBC has 3 different compliance methods that can be used to evaluate a renovation project
- Prescriptive Method (MEBC Chapter 4)
- Work Area Method (MEBC Chapters 6-13)
- Performance Method (MEBC Chapter 14)

The **Work Area Compliance Method** is anticipated for use on this project based on the anticipated scope of work (MEBC 301.1). The classification of work being performed within the existing building is anticipated to be classified as an **Alteration Level 3 and Addition** as more than 50% of the aggregate building area will be altered and additional floor area will be added to the building. The project is required to comply with MEBC Chapters 7, 8, 9, and 11. The project is not planned to include a change of use or occupancy classification.

VERTICAL OPENINGS AND VERTICAL EXITS

Exit / Opening	Code Approach
Stair 1 ST1-B	1 hr fire rating at new construction is required to separate the basement and first floor such that all three floor levels are not interconnected. A "bump down" is required to have the fire separation at the basement instead of the first floor. The 1 hr rated walls and 60-min fire door is achieved at the basement level instead of the first floor. An exit door is located 15'-0" outside of the stair enclosure and discharges directly to the exterior.
Stair 2 ST2-B	1 hr fire rating at new construction is required to separate the basement and first floor such that all three floor levels are not interconnected. A "bump down" is required to have the fire separation at the basement instead of the first floor. The 1 hr rated walls and 60-min fire door is achieved at the basement level instead of the first floor. An exit door is located within the stair and discharges directly to the exterior.
Existing Stair 3 ST3-B	30-minute fire rated construction is required to separate the basement and first floor such that all three floor levels are not interconnected. A 30-min rated fire door at the first floor and gwb at the window opening will separate the basement and first floor
Stair 1 ST1-1	Communicating stair from first to second floor
Stair 2 ST2-1	Communicating stair from first to second floor
Existing Stair 3 ST3-1	Existing communicating stair from first to second floor. Refer to submitted variance letter. 521 CMR 27.2 relative to the existing winder stairs
Existing Stair 4 ST4-1	Existing communicating stair from first to second floor. Refer to submitted variance letter. 521 CMR 27.2 relative to the existing winder stairs
Existing Stair 3 ST3-2	Existing stair to attic. No public access.

HAZARD, HEIGHT, AND AREA

Minimum Construction Type

Existing and New Construction: The building meets requirements of Type VB, combustible, unprotected.

Table 1012.5 - Heights and Area Hazard Categories

Relative Hazard	Occupancy Classifications
1 (Highest Hazard)	H
2	A-1, A-2, A-3, A-4, R-1, R-2, R-4
3	E, F-1, S-1, M
4 (Lowest Hazard)	B, F-2, S-2, A-5, R-3, U

Height

2 stories above grade.

Based on the existing condition elevations, the basement is not classified as a story above grade as the first floor is not more than 6 feet above grade plane, or more than 12 feet above the finished ground level at any point (780 CMR 202.1). Further, the balcony on the second floor level is not classified as a mezzanine as it exceeds one-third of the room which it is located (780 CMR 505.2).

Area

16,150 gross square feet
Basement: 5,550 sf
First Floor: 5,300 sf
Second Floor: 5,300 sf

PLUMBING REQUIREMENTS

The Belmont Hill School is an all-boys school with 70% male faculty and 30% female faculty. An occupancy ratio of 50% for each sex will not be utilized for this project (248 CMR 10.10(18)(b)(v)). Occupants of the building will be students, faculty and visitors per the breakdown below:

Assembly A-3 Uses:
All-School Assembly and lecture presentations - one to two times per week
450 male students, 76 faculty (55 male, 21 female), 20 visitors (10 male, 10 female) = 515 male, 31 female
Public speaking classes, daily
450 male students, 2 faculty (1 male, 1 female) = 451 male, 1 female
School musical concerts 6 times per year
50 male students, 4 faculty (2 male, 2 female), 200 visitors (100 male, 100 female) = 152 male, 102 female
Weddings 2 times per year
200 visitors (100 male, 100 female) = 100 male, 100 female

The Chapel assembly space on the first floor and the Multi-Purpose room in the basement will not have simultaneous occupancy. Plumbing fixtures for first floor assembly space are located in the basement within a travel distance of 300 feet.

School Assembly & Lectures
Based on 248 CMR Table 10.10(18) Table 1 : A-3 Hall, Museums Group Occupancy

PLUMBING FIXTURE TYPE	TOTAL POPULATION			P/FIXTURE	FIXTURE req'd	FIXTURE PROVIDED
	515 Male 31 Female					
Water Closets	A-3	M	515	100	6 (4T, 2U)	8* (3T, 3U)**
		F	31	50	1	1*
Lavatories	A-3	M	515	200	3	4*
		F	31	200	1	1*
Water Fountain	A-3			n/a	0	1
Service Sink	A-3			n/a	0	1

Concerts and Weddings
Based on 248 CMR Table 10.10(18) Table 1 : A-3 Hall, Museums Group Occupancy

PLUMBING FIXTURE TYPE	TOTAL POPULATION			P/FIXTURE	FIXTURE req'd	FIXTURE PROVIDED
	152 Male 102 Female					
Water Closets	A-3	M	152	100	2 (2T, 0U)	4* (1T, 3U)**
		F	102	50	3	3*
Lavatories	A-3	M	152	200	1	2*
		F	102	200	1	3*

* A dedicated Men's room has 3 urinals, 1 toilet, and 2 lavatories. Three unisex toilets are provided for male and female faculty and visitors.
**Up to 33% of male toilet fixtures can be substituted with urinals. Urinal counts are higher because of practical usage for high student volume at assemblies and lectures.

INTERIOR FINISH REQUIREMENTS

All interior finish materials within the work areas are required to comply with the requirements of Chapter 8 of 780 CMR for new construction. The table below summarizes the interior flame spread requirements (tested in accordance with ASTM E 84 or UL 723) for interior wall and ceiling finishes contained in 780 CMR Section 803.11 (MEBC 803.4). The existing wall and ceiling finishes within exits and corridors are required to be consistent with the requirements of 780 CMR for new construction (MEBC Section 803.4 and 903.3).

Interior Finish Requirements

Use Group	Required Vertical Exits and Passageways	Exit Access Corridors	Rooms or Enclosed Spaces
Group A-3	B	B	C
Group B	C	C	C

All newly installed interior floor finishes are required to comply with the requirements of the DOC FF-1 "pill test" (CPSC 16 CFR Part 1630) (MEBC 702.2; 780 CMR 804.4.1).
All newly installed interior trim requirements are required to comply with the requirements of 780 CMR Section 806 (MEBC 702.3).

FIRE RESISTANCE RATINGS

STRUCTURAL ASSEMBLY RATINGS BASED ON CONSTRUCTION TYPE

Building Element	Type VB Fire Resistance Rating (Hrs)
Structural Frame	0
Exterior Bearing Wall including columns along the ext. wall	0
Interior Bearing Walls	0
Floor Construction	0
Roof Construction	0

Fire-Resistance Separations

Type of Assembly	Construction	Code Reference
Corridors serving all occupancies	No fire rating required	780 CMR 1020.1
Elevator machine room	1 hour fire barrier	780 CMR 3005.4
Furnace room with equipment > 400,000 BTU/hr input	Smoke Tight	780 CMR 509.4
Boiler room where the largest piece of equipment is >15 psi and 10 hp	Smoke Tight	780 CMR 509.4
Shafts connecting 3 or fewer stories	1 hr fire barrier	780 CMR 713.4

EXTERIOR WALL FIRE RATINGS

Exterior walls are permitted to remain as a result of this project. New exterior walls are required to comply with the requirements of new construction in accordance with 780 CMR 602 & 705.8. The rating and opening limitations for new or altered nonbearing exterior walls are based on the fire separation distance for each wall. Fire separation distance is defined as the distance measured from the building face to the closest interior lot line, the centerline of a street, alley, or public way, or to an imaginary lot line between two building (780 CMR 202). The distance is required to be measured at right angles from the face of the wall. Table 1 indicates the fire-resistance ratings and opening limitations required for the exterior walls based on fire separation distance (780 CMR 602 & 705.8).

780 CMR 602 & 705.8 Nonbearing Exterior Wall Fire Rating and Opening Limitations

Fire Separation Distance	Rating Groups A-3 & S-2	Allowable Area
0 <= X < 3	1 hour	Not Permitted
3 <= X < 5	1 hour	15%
5 <= X < 10	1 hour	25%
X >= 10	0 hour	No Limit

See site plan on G-101 for exterior wall fire rated locations. 1 hr exterior walls are only required at the southeast corner of the new construction.

MEANS OF EGRESS

Any alterations to the existing means of egress are required to be done in a manner that maintains the level of protection provided for the means of egress (MEBC 704.1). Newly configured spaces are required to be provided with adequate means of egress in accordance with 780 CMR Chapter 10.

780 CMR 1005.3 requires that the total width of means of egress in inches to be not less than the total occupant load served by the means of egress multiplied by 0.2 inches per occupant for stairways and by 0.15 inches per occupant for other egress components in buildings. The occupant loads were based upon the occupancies of each floor and the occupant load factors from 780 CMR 1004.2

Floor	Intended Use	Floor Area	Occupant Load	Total Egress Capacity (persons)
Basement	A-3, S-2	5,550 GSF	119	652
First	A-3	5,300 GSF	498	1,351
Second	A-3	5,300 GSF	180	780

See plans on G-101 for specific egress locations and requirements.

INSULATION

Massachusetts 780 CMR 13.00, which is an amended version of the 2015 International Energy Conservation Code (IECC)

Massachusetts is in 5A climate zone.
Required insulation R-values for new construction:
Attic and other: R-38
Mass wall = R-11.4
The new construction will meet these requirements.

Existing building construction:
Wood framed walls: Requires R 20. Existing walls above the foundation have 2.5" of existing batt insulation in the wood stud walls. This project does not remove exterior clapboards or interior finishes and does not upgrade the exterior walls.
The existing roof will be insulated and foundation walls will be insulated on the interior.

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Belmont Hill School

HAMILTON CHAPEL
350 Prospect Street
Belmont, MA 02478

DESIGN & SITE PLAN REVIEW
CIVIL AND LANDSCAPE

CODE SUMMARY

G-100

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CODE KEY

	100 NSF / OCC	OFFICE
	300 GSF / OCC	STORAGE / MECHANICAL
	18" / OCC	ASSEMBLY FIXED SEATING
	15NSF / OCC	ASSEMBLY UNCONCENTRATED

30-MIN FIRE RESISTANT ASSEMBLY

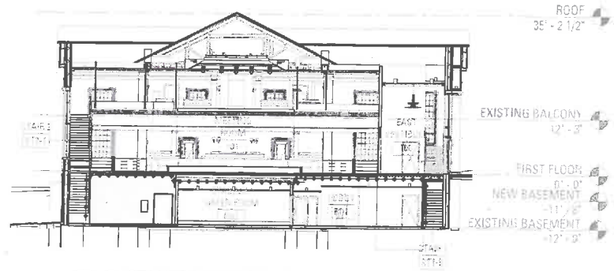
1-HOUR FIRE RESISTANT ASSEMBLY

2-HOUR FIRE RESISTANT ASSEMBLY

SMOKE BARRIER ASSEMBLY

OCCUPANT LOAD

PATH OF TRAVEL



5 EAST/WEST SECTION AT ADDITION
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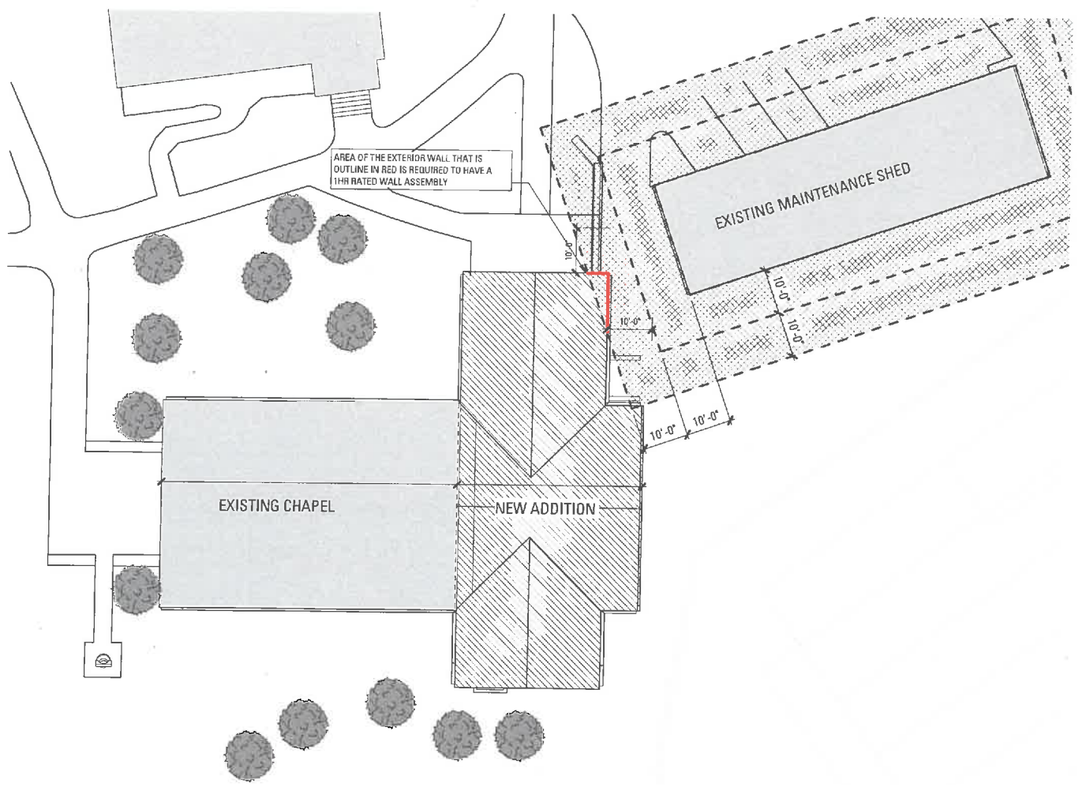

4 SITE PLAN
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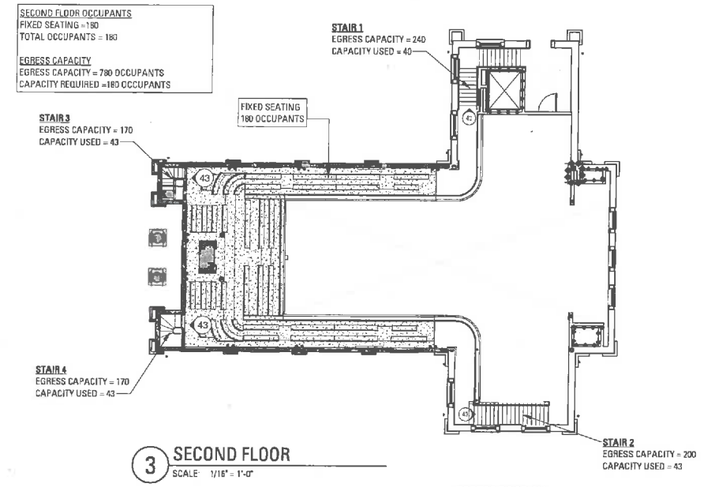

3 SECOND FLOOR
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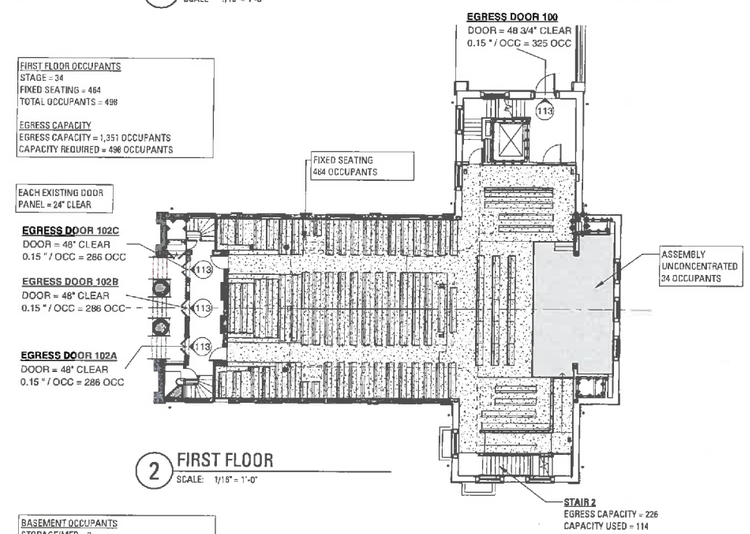

2 FIRST FLOOR
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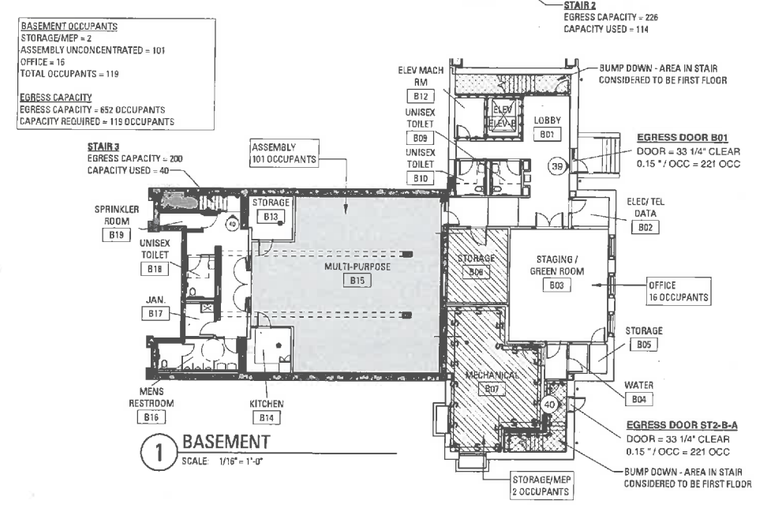

1 BASEMENT
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Belmont Hill School

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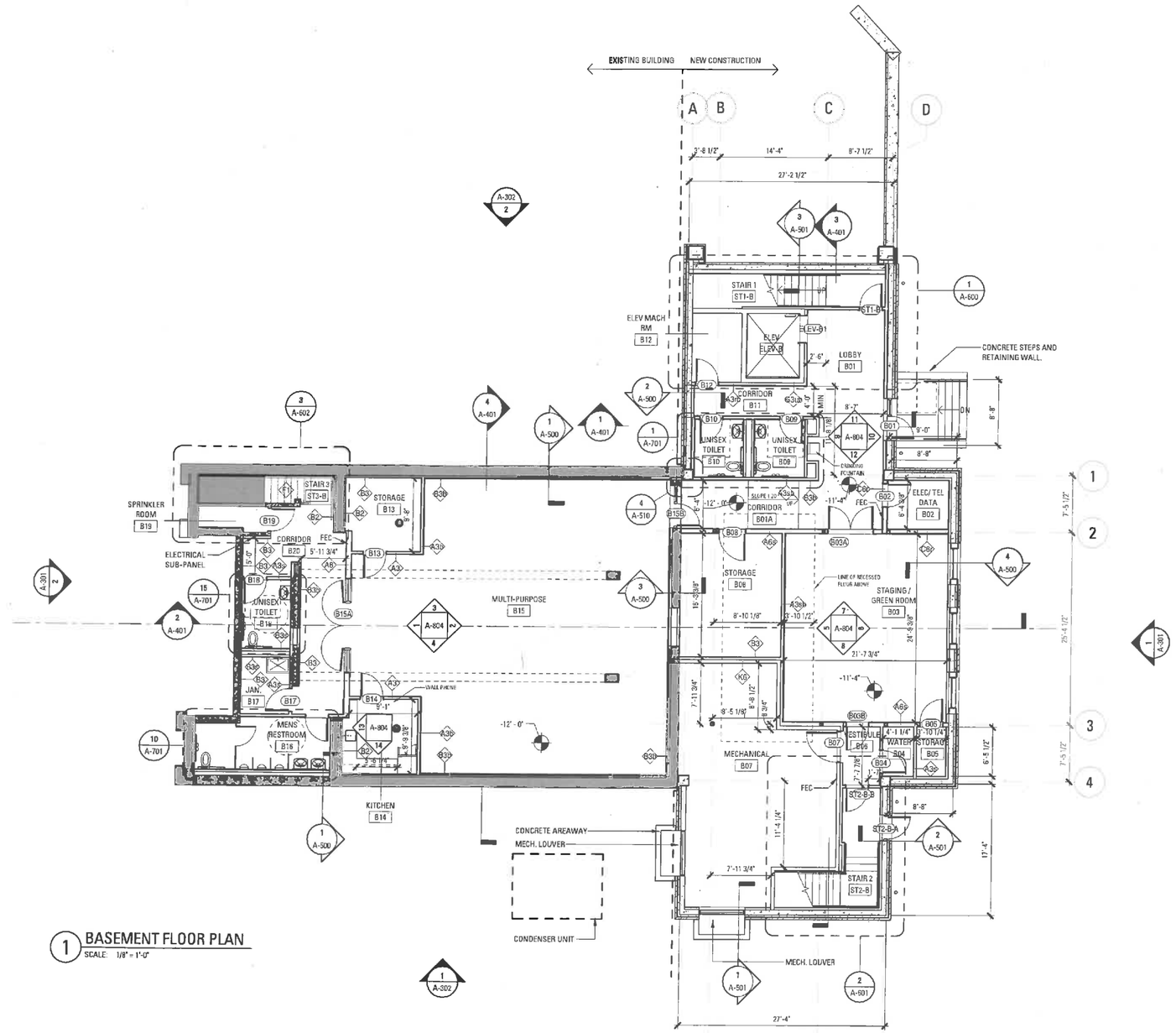
DESIGN & SITE PLAN REVIEW
CIVIL AND LANDSCAPE

CODE PLANS AND LEGEND

G-101



1 BASEMENT FLOOR PLAN
SCALE: 1/8" = 1'-0"

GENERAL PLAN NOTES

1. ALL WORK IS NEW UNLESS OTHERWISE NOTED
2. ALL DIMENSIONS ARE TO FINISH FACE UON. CONTRACTOR SHALL COORDINATE NEW OPENINGS WITH DOOR SCHEDULE
3. PATCH EXISTING PLASTER AND WOOD AT DEMOLISHED WALLS, CEILINGS, FIXTURES AND EQUIPMENT
4. PAINT ALL EXISTING AND NEW EXTERIOR AND INTERIOR WALLS, TRIM, WAINSCOT AND CEILINGS.
5. SAND EXISTING WOOD MEETING ROOM FIRST AND SECOND FLOOR, STAIN AND APPLY POLYURETHANE.
6. SEE FINISH PLANS FOR PEW NOTES

FLOOR PLAN LEGEND

- EXISTING CONSTRUCTION TO REMAIN
- NEW WALLS OR OTHER CONSTRUCTION
- AREA OF ADDED PLYWOOD SHEATHING AT ROOF

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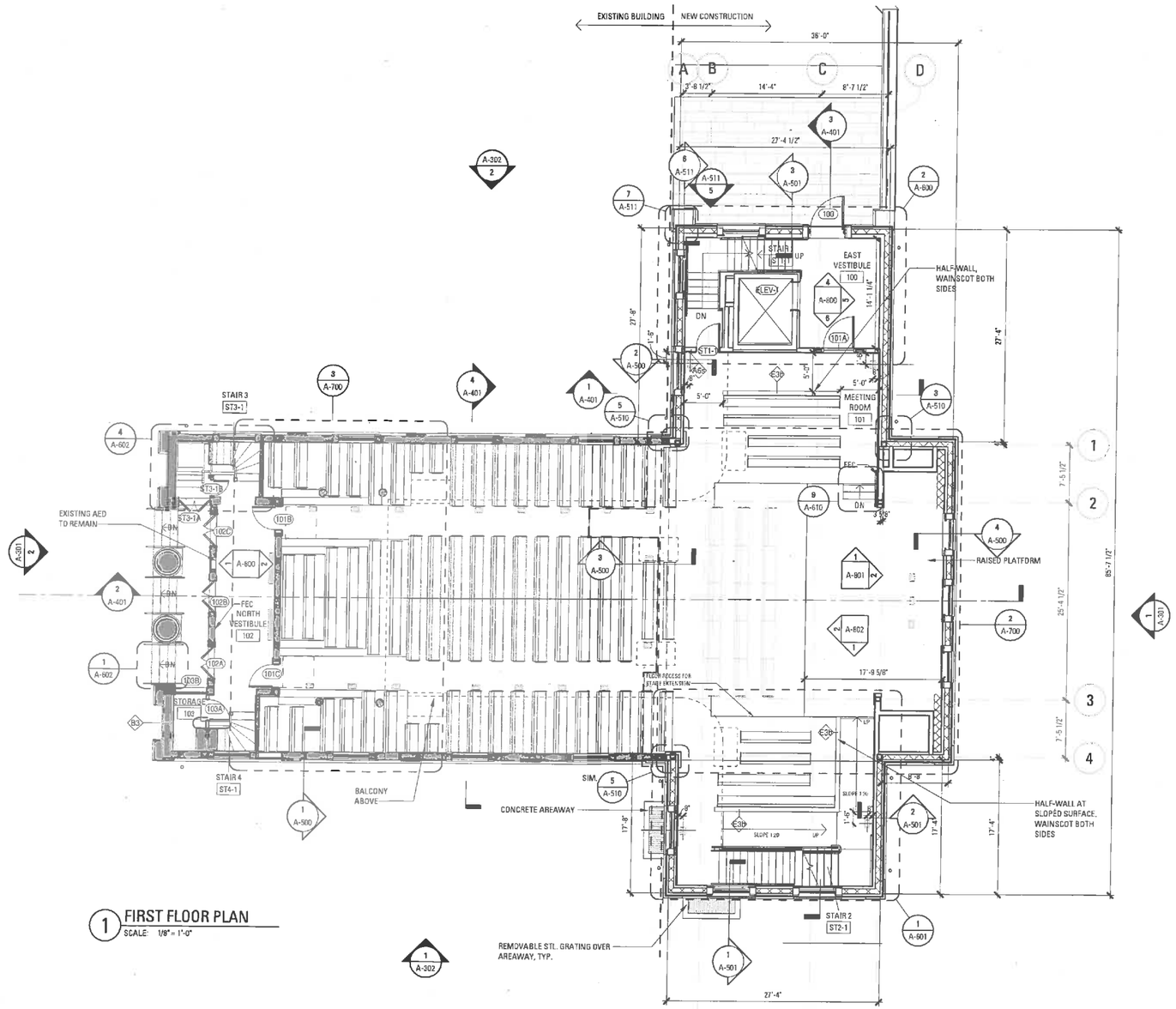
DESIGN & SITE PLAN REVIEW
CIVIL AND LANDSCAPE

BASEMENT FLOOR PLAN

A-100



1 FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"

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DESIGN & SITE PLAN REVIEW
CIVIL AND LANDSCAPE

FIRST FLOOR PLAN

A-101

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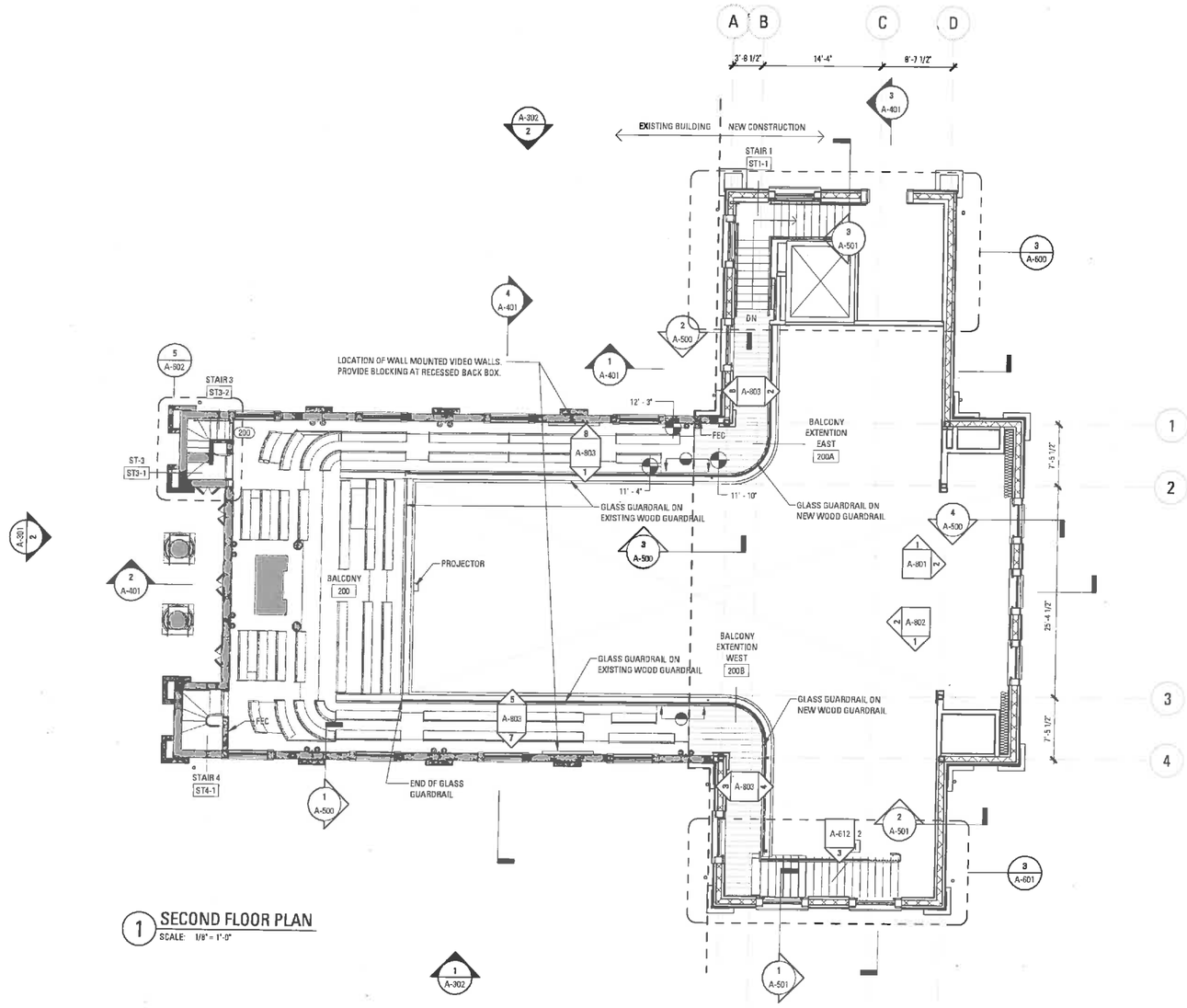

1 SECOND FLOOR PLAN
SCALE: 1/8" = 1'-0"

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Belmont Hill School

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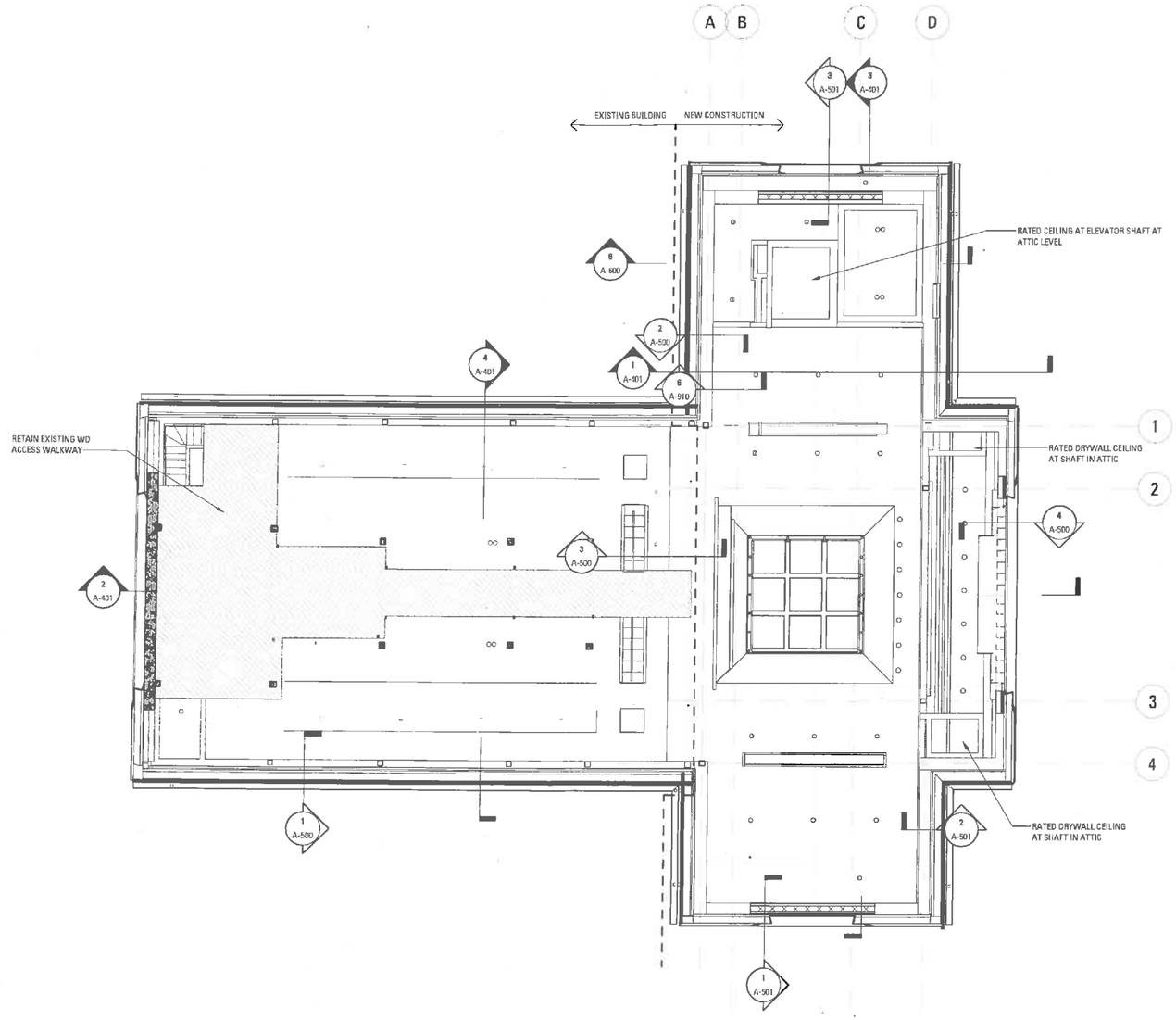
DESIGN & SITE PLAN REVIEW
CIVIL AND LANDSCAPE

SECOND FLOOR PLAN

A-102



1 ATTIC FLOOR PLAN
SCALE 1/8" = 1'-0"

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FLOOR PLAN LEGEND

EXISTING CONSTRUCTION TO REMAIN

NEW WALLS OR OTHER CONSTRUCTION

AREA OF ADDED PLYWOOD SHEATHING AT ROOF

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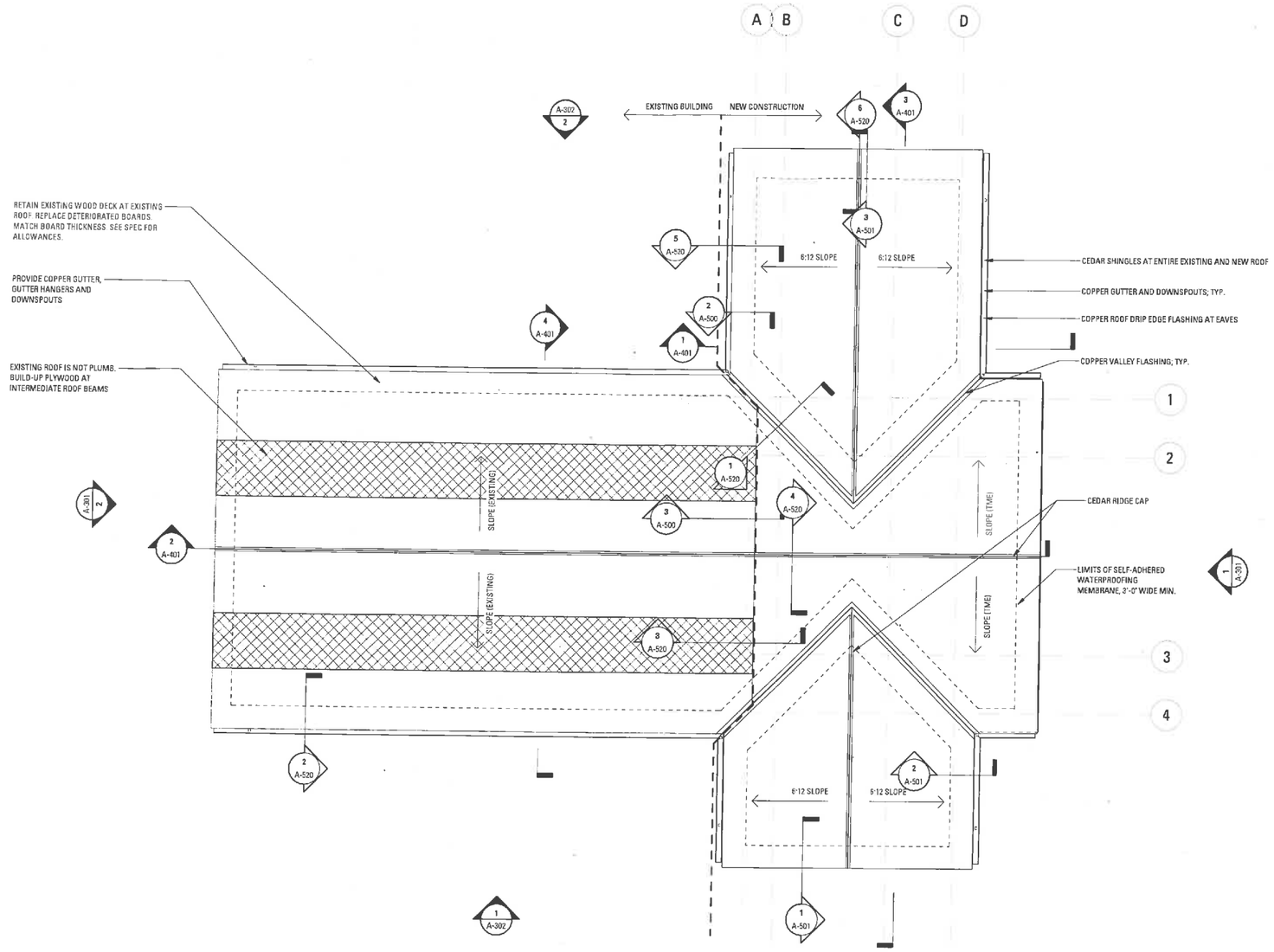
DESIGN & SITE PLAN REVIEW
CIVIL AND LANDSCAPE

ATTIC FLOOR PLAN

A-103



1 ROOF PLAN
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1. ALL WORK IS NEW UNLESS OTHERWISE NOTED
2. ALL DIMENSIONS ARE TO FINISH FACE UON. CONTRACTOR SHALL COORDINATE NEW OPENINGS WITH DOOR SCHEDULE
3. PATCH EXISTING PLASTER AND WOOD AT DEMOLISHED WALLS, CEILINGS, FIXTURES AND EQUIPMENT
4. PAINT ALL EXISTING AND NEW EXTERIOR AND INTERIOR WALLS, TRIM, WAINSCOT AND CEILINGS.
5. SAND EXISTING WOOD MEETING ROOM FIRST AND SECOND FLOOR, STAIN AND APPLY POLYURETHANE.
6. SEE FINISH PLANS FOR NEW NOTES

FLOOR PLAN LEGEND

- EXISTING CONSTRUCTION TO REMAIN
- NEW WALLS OR OTHER CONSTRUCTION
- AREA OF ADDED PLYWOOD SHEATHING AT ROOF

TRUE NORTH
PROJECT NORTH

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Rev	Date	Remarks

Date	JANUARY 31, 2019
Scale	As indicated
Project Number	18.011
Drawn By	ac/nz

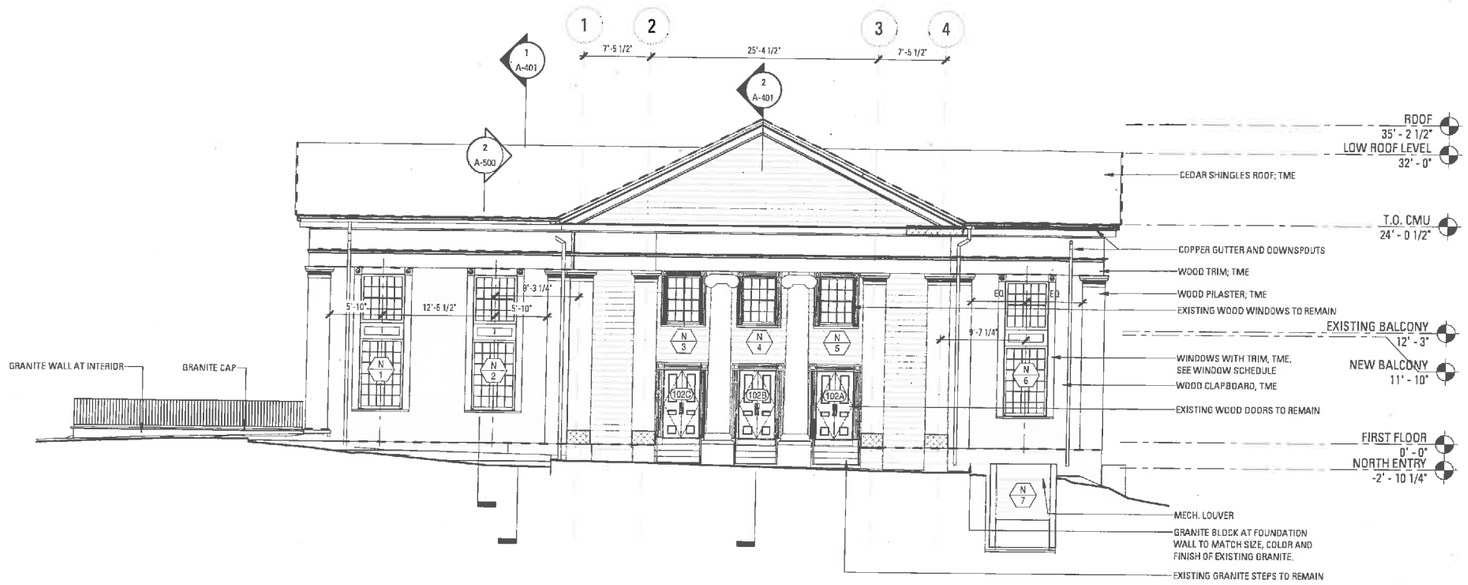
Belmont Hill School

HAMILTON CHAPEL
350 Prospect Street
Belmont, MA 02478

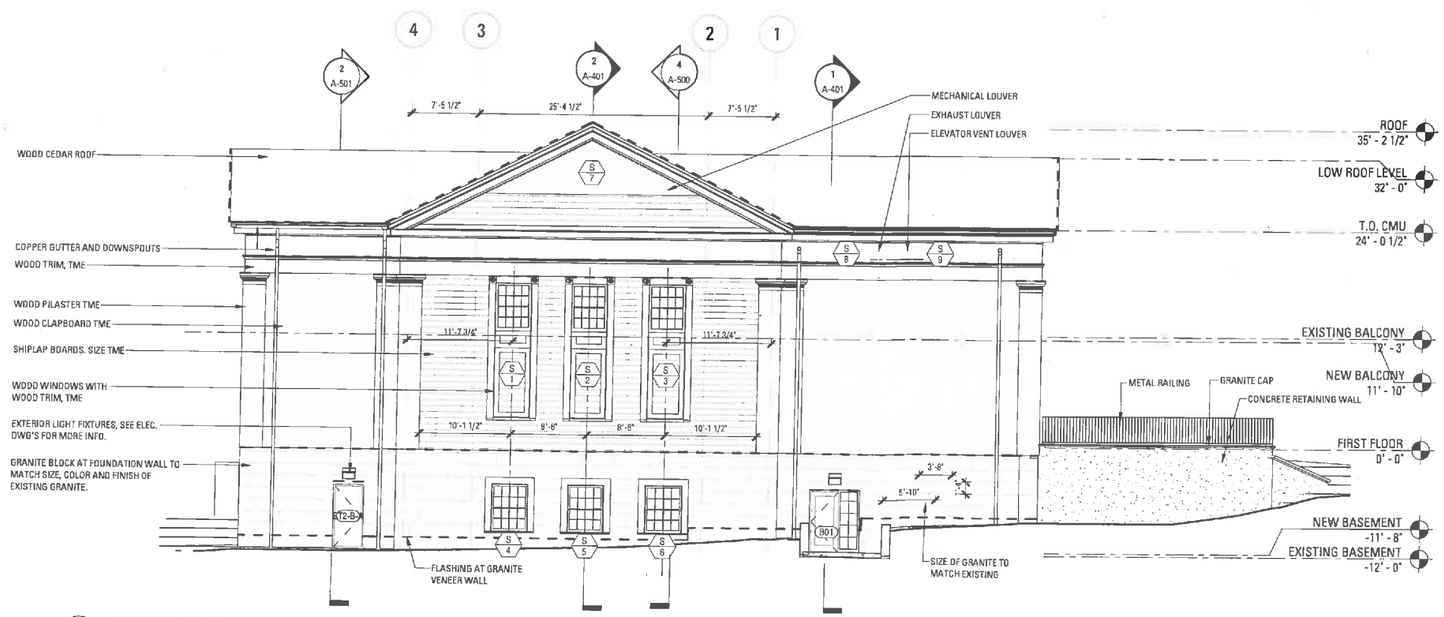
DESIGN & SITE PLAN REVIEW
CIVIL AND LANDSCAPE

ROOF PLAN

A-104



2 NORTH ELEVATION
1/8" = 1'-0"



1 SOUTH ELEVATION
1/8" = 1'-0"

ELEVATION LEGEND

NEW FLASHING

NEW WOOD DUTCHMAN AT EXISTING LOCATIONS

ELEVATION NOTES

1. ALL WORK IS NEW UNLESS OTHERWISE NOTED
2. PAINT ALL EXISTING AND NEW SIDING, TRIM, AND SOFFITS.
3. NEW CLAPBOARD AND SHIPLAP TO MATCH DIMENSIONS OF EXISTING.
4. NEW EXTERIOR PILASTER VERTICAL BOARDS AND CAPITAL MOLDINGS TO MATCH PROFILE AND DIMENSIONS OF EXISTING.
5. NEW SOFFIT, FASCIA AND CORNICE MOLDINGS TO MATCH PROFILES AND DIMENSIONS OF EXISTING.
6. NEW WINDOW EXTERIOR AND INTERIOR TRIM TO MATCH EXISTING. PROVIDE CORNER BULLSEYE MOLDING AT INTERIOR AND EXTERIOR WINDOW CASING.
7. CLEAN GRANITE FOUNDATION.
8. BACKPRIME AND ALL NEW WOOD CLAPBOARDS AND SHIPLAP SIDING.
9. EXISTING EXTERIOR WOOD REPAIR
   A. EPOXY WOOD FILLER REPAIR AT EXISTING EXTERIOR SIDING, MOLDINGS AND PILASTERS. SEE SPEC FOR ALLOWANCES.
   B. WOOD DUTCHMAN REPLACEMENT AT SIDING, TRIM AND MOLDING IN ADDITION TO DUTCHMAN REPLACEMENT INDICATED ON ELEVATIONS. SEE SPEC FOR ALLOWANCES.

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DESIGN & SITE PLAN REVIEW
CIVIL AND LANDSCAPE

EXTERIOR ELEVATIONS

A-301

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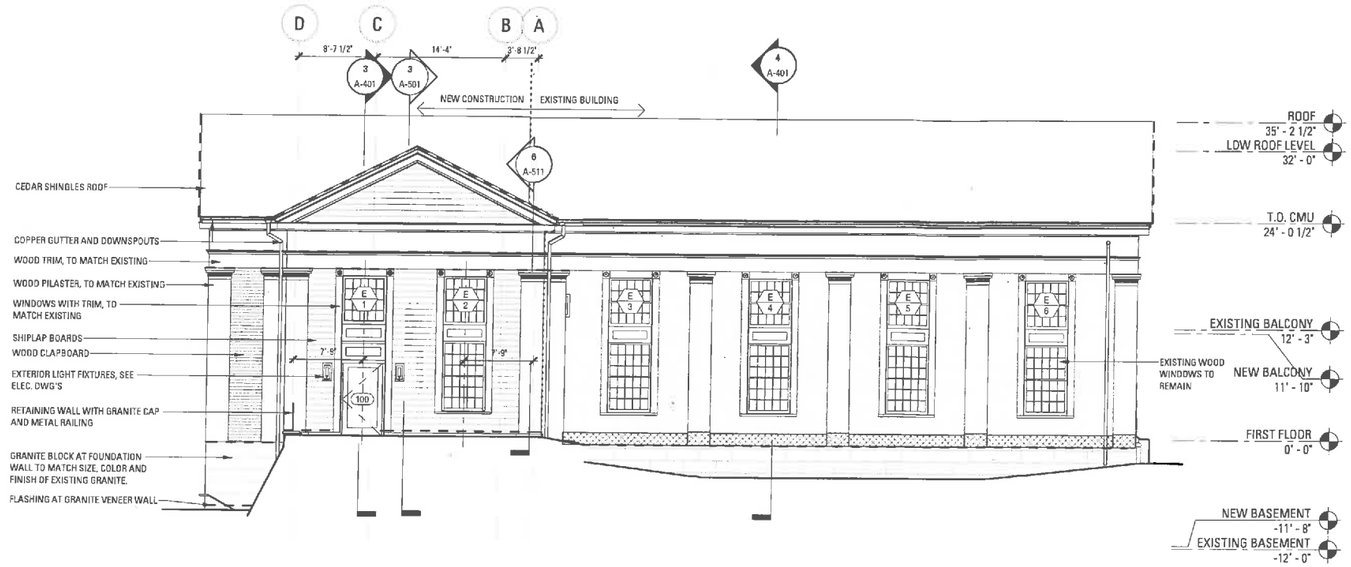
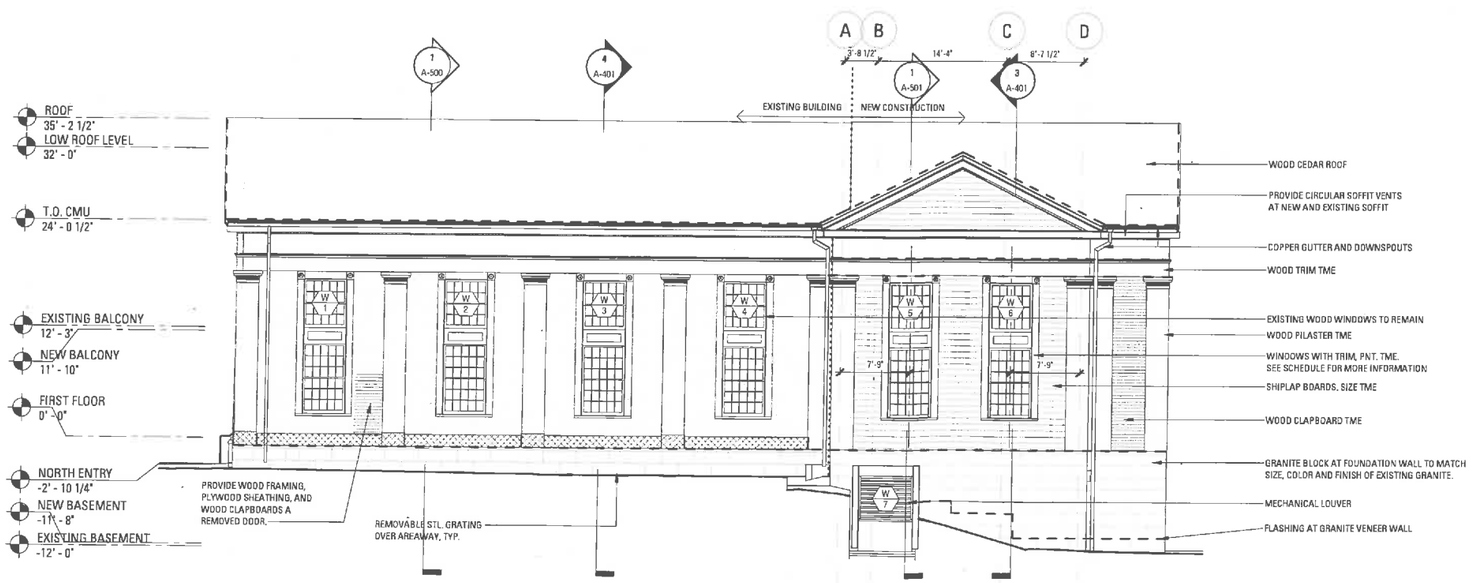


2 EAST ELEVATION
SCALE 1/8" = 1'-0"



1 WEST ELEVATION
SCALE: 1/8" = 1'-0"

ELEVATION LEGEND

- - - - - NEW FLASHING

NEW WOOD DUTCHMAN AT EXISTING LOCATIONS

ELEVATION NOTES

1. ALL WORK IS NEW UNLESS OTHERWISE NOTED
2. PAINT ALL EXISTING AND NEW SIDING, TRIM, AND SOFFITS.
3. NEW CLAPBOARD AND SHIPLAP TO MATCH DIMENSIONS OF EXISTING.
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   B. WOOD DUTCHMAN REPLACEMENT AT SIDING, TRIM AND MOLDING IN ADDITION TO DUTCHMAN REPLACEMENT INDICATED ON ELEVATIONS. SEE SPEC FOR ALLOWANCES.

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DESIGN & SITE PLAN REVIEW
CIVIL AND LANDSCAPE

EXTERIOR ELEVATIONS

A-302

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