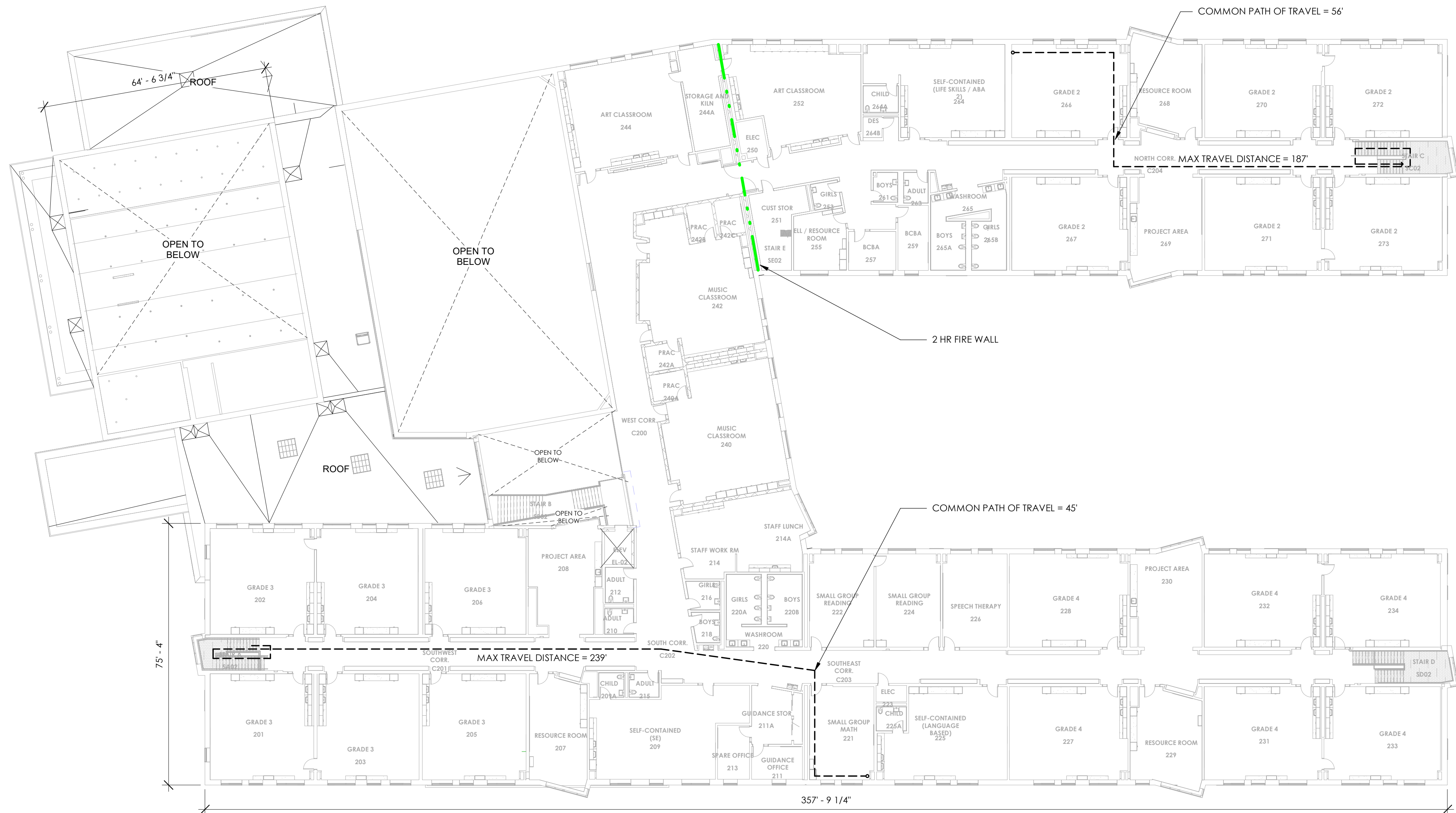


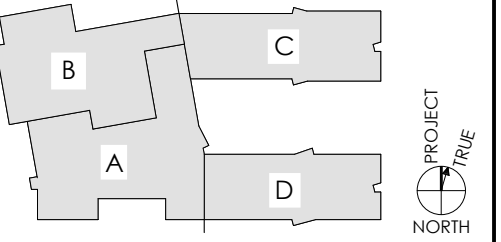


12 FIRST FLOOR PLAN OVERALL - EGRESS
1" = 20'-0"



12 SECOND FLOOR PLAN OVERALL EGRESS
1" = 20'-0"

EGRESS NOTES & LEGEND		
SEE ALSO PARTITION TYPES		
START		
----->	INDICATES LONGEST PATH OF TRAVEL	
➡	INDICATES EGRESS/EXIT DOOR	
EXIT WIDTH CALCULATION		
MINIMUM EXIT WIDTH ALLOWED	120"	
MINIMUM EXIT WIDTH PROPOSED	120"	
TRAVEL DISTANCE		
MAXIMUM TRAVEL DISTANCE ALLOWED	250 FT	
MAXIMUM TRAVEL DISTANCE PROPOSED	239 FT	
SPRINKLER SYSTEM		



NO.	DESCRIPTION	DATE
1	1.1 EARLY RELEASE DECK AND JOIST PACKAGE	04/13/2022
2	2 EARLY RELEASE FOUNDATION PACKAGE	05/02/2022

ZONING ANALYSIS

PROPOSED USE	EDUCATION (K-4)
USE GROUP	GROUP E WITH ACCESSORY A (A-2/A-3/A-4), B
CONSTRUCTION CLASSIFICATION	TYPE IIB (NONRATED NONCOMBUSTIBLE)
BUILDING AREA	109,855 SF
GROUND FLOOR FOOTPRINT	65,639 SF - NOTE 1
TOTAL LOT SIZE	TOTAL 857,889 SF
ZONING DISTRICT	P - PUBLIC USE DISTRICT
ZONING SUBDISTRICT	N/A

DIMENSIONAL REGULATIONS	REQUIRED TOWN OF GROTON ZONING BYLAW, CHAPTER 218, 2021-05-01	PROPOSED
MAXIMUM FAR	N/A	0.128
MINIMUM LOT SIZE	40,000 SF - NOTE 2	857,889 SF
LOT WIDTH (MIN.)	N/A	662 FT
LOT FRONTAGE (MIN.)	175 FT - NOTE 2	232 FT
FRONT YARD SETBACK (MIN.)	50 FT	815 FT
SIDE YARD SETBACK (MIN.)	15 FT	83 FT
REAR YARD SETBACK (MIN.)	15 FT	163 FT
BUILDING		
STORIES (MAX)	3	2
FEET (MAX)	35 FT	31 FT

OTHER REGULATIONS	REQUIRED	PROPOSED
OFF-STREET PARKING	1.5 PER CLASSROOM - MIN 3 PER CLASSROOM - MAX	108 SPACES = 2.6 PER CLASSROOM
OFF STREET LOADING	N/A	1

ZONING NOTES
1. INCLUDES 1,634 SF FOR ROOFED AREA OF PATIO
2. NO MINIMUM FOR NONRESIDENTIAL USES

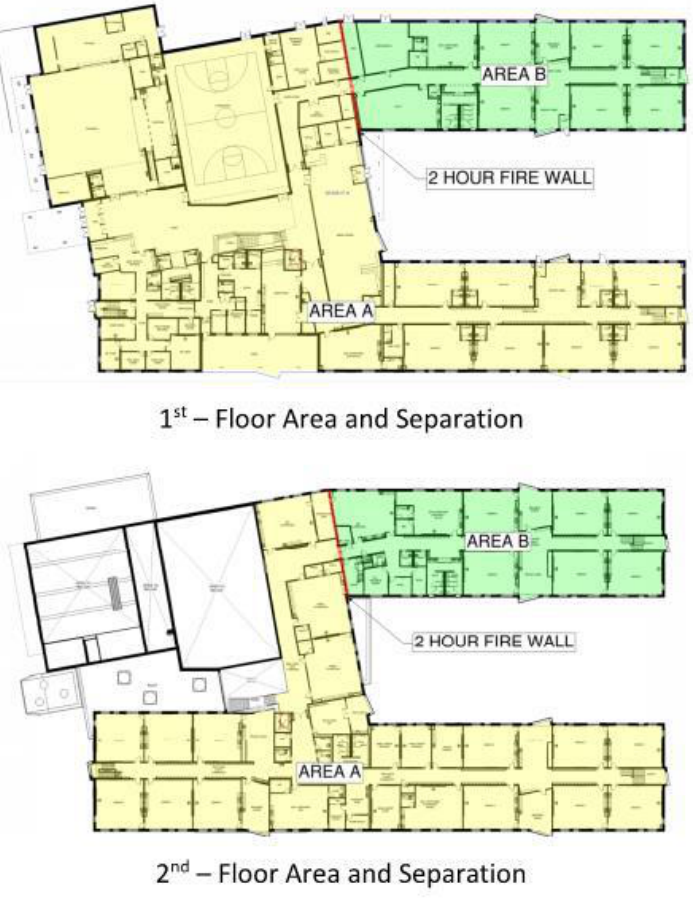
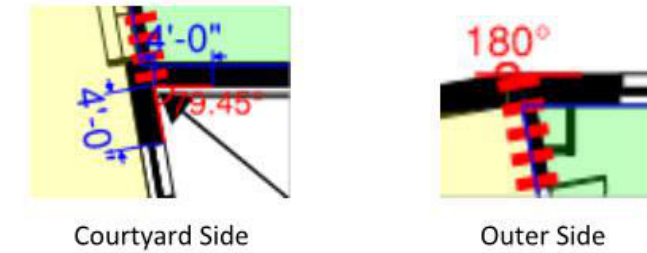
ENVELOPE PERFORMANCE			
ASSEMBLY	PROPOSED	MA CODE BASELINE	LEED V4 BASELINE
ROOF	ASSEMBLY U-FACTOR = 0.025 (R-40 C.I.)	ASSEMBLY U-FACTOR = 0.027 (R-35 C.I.)	ASSEMBLY U-FACTOR = 0.0476 (R-20 C.I.)
WALL	ASSEMBLY U-FACTOR = 0.040 (R-25 EQUIVALENT)	ASSEMBLY U-FACTOR = 0.047 (R-21 EQUIVALENT)	ASSEMBLY U-FACTOR = 0.064 (R-15.5 EQUIVALENT)
WINDOW	DOUBLE GLAZED U-VALUE = 0.33 (AVG) SHGC = 0.28 WITH FRAMES	DOUBLE GLAZED U-VALUE = 0.357 (AVG) SHGC = 0.47 WITH FRAMES	DOUBLE GLAZED U-FACTOR = .050 (AVG) SHGC = 0.46 WITH FRAMES
WINDOW-TO-WALL RATIO (WWR)	20%	22% (PER APPENDIX G)	24%
INFILTRATION	0.20 CFM/SF OF WALL	0.20 CFM/SF OF WALL	0.20 CFM/SF OF WALL
NOTES:	(SHGC) SOLAR HEAT GAIN COEFFICIENT	ALL BASELINE VALUES INCORPORATE IECC C406.8 UA REQUIREMENTS	ALL BASELINE VALUES PER ASHRAE 90.1-2010

Executive Summary

The Florence Roche Elementary School project involves the construction of a new elementary school building. The building will be 2 stories above grade plane and include: classrooms, project areas, special education, media center, art & music spaces, a cafeteria (w/kitchen) with a stage/platform, a gymnasium, and administrative offices.

Massachusetts General Law Chapter 148 Section 26G	The building is greater than 7,500 gsf in aggregate area. M.G.L. Chapter 148 Section 26G is applicable and requires sprinklers to be installed throughout. Sprinklers are also required under 780 CMR Table 903.
Fire Department Access	Fire department access criteria of 527 CMR is satisfied (every point of the grade floor exterior wall is within 250 feet of 20' wide apparatus access roads). The access has been reviewed and approval by the Groton Fire Department.
Uses	<ul style="list-style-type: none">Educational, Group EAccessory Assembly, Group A (A-2/A-3/A-4)Accessory Business, Group B
Special Uses	The only special use is the platform located in the cafeteria. The platform complies with Section 410.
Mixed Use Approach	A non-separated mixed-use approach is being used.
Height & Area	Height (Feet)..... 36'6" Feet Height (Stories)..... 2 Stories Maximum Footprint Area..... 62,907 ^g gsf Aggregate Area 106,901 ^h gsf ^a This is the gross area of 1 st Floor not including exterior wall thickness per the 780 CMR definition of Gross Area and including the roofed area of the patio. ^b This is the gross area of 1 st & 2 nd Floors not including exterior wall thickness per the 780 CMR definition of Gross Area and including the roofed area of the patio.
Allowable Construction	Type IIB (Nonrated noncombustible) will be used. A fully sprinklered E use building with 100% open perimeter is allowed: Height (Feet)..... 75'0" Feet Height (Stories)..... 3 Stories Maximum Footprint Area..... 54,375 gsf Aggregate Area 108,750 gsf A Fire Wall is being provided to separate the building into two areas for construction classification purposes. Area A: Max Footprint = 49,670 gsf Aggregate Area = 80,427 gsf Area B: Max Footprint = 13,237 gsf Aggregate Area = 26,474 gsf Each Area is within the limits for Type IIB Construction.

Executive Summary (Continued)

Fire Wall	The fire wall separates the two building areas per Section 706.  1 st – Floor Area and Separation 2 nd – Floor Area and Separation The fire wall is permitted to be 2 hour per Table 706.4 Footnote a.
Exterior Walls	Exterior walls may be non-rated because the fire separation distance allows unlimited unprotected openings.
Fire Wall	The fire wall will extend to the interior face of the exterior sheathing of the exterior wall(s). The exterior walls on the courtyard side are less than 180 degrees from one another. Therefore, the exterior walls within 4 foot of the fire wall will be 1 hour rated. The exterior walls on the outer side are not within 180 degrees of each other and do not require any ratings. 

Executive Summary (Continued)

Exterior Openings	Unlimited unprotected openings are permitted because the fire separation distance is greater than 20 feet.
Fire Wall	No openings are located within 4 feet of the courtyard rated walls.
Sprinklers & Standpipes	Sprinklers will be provided throughout in accordance with NFPA 13 (903.3.1.1). Standpipes are not required because the 2 nd Floor is less than 30 feet above the lowest level of fire department access (905.3.1).
Fire Alarm	A voice alarm system is being provided throughout (907.2.3).
CO Detection	CO Detection is required throughout classrooms if fossil fuel burning equipment is provided in the building (915.2.3).
Two Way Communication Systems	Two-way communication systems are being provided between each elevator lobby/landing and an approved location (1009.8).
Fire extinguishers	Fire extinguishers are being provided at a maximum travel distance of 75' (906.1 and NFPA 10).
Emergency Responder Radio Coverage	Emergency Responder Radio Coverage is being provided throughout (916.1).
Risk Category	The building is a Risk Category III (Table 1604.5).
Wind Borne Debris	Wind-Borne Debris glazing is not required (V _W = 121 mph per Table 1604.1).
Accessibility	The building will be fully accessible.
Plumbing Fixtures	Fixtures are provided for up to 960 students and 480 staff. Fixtures in the lobby can serve an 800 person special event.

Florence Roche Elementary School
Design Development
Code Compliance Report

March 24, 2022
BFA # SGA 19-004
Page 1

INTRODUCTION

BACKGROUND

Studio G Architects has retained Building, Fire & Access, Inc. to provide fire protection, life safety, and accessibility consulting services for the proposed Florence Roche Elementary School Project. The building will be located at 342 Main Street, Groton, MA 01450. This report serves as the Code Compliance Report for the project and describes the code compliance considerations based on the unique aspects of the design.

PROJECT DESCRIPTION

The Florence Roche Elementary School project involves the construction of a new elementary school building. The building will be 2 stories above grade plane and include: classrooms, project areas, special education, media center, art & music spaces, a cafeteria (w/kitchen) with a stage/platform, a gymnasium, and administrative offices.

APPLICABLE CODES

The following codes are applicable to this project (this report focuses on 780 and 521 CMR):

- Accessibility**
 - Massachusetts Architectural Access Board (521 CMR).
 - The Americans with Disabilities Act, 2010 ADA Standards for Accessible Design (ADA).
- Building Code** - Massachusetts State Building Code Ninth Edition (780 CMR). 780 CMR is an amended version of the 2015 International Building Code.
 - Energy Conservation Code** – 780 CMR Appendix AA. Appendix AA (also known as the Stretch Energy Code) is an amended version of the 2018 International Energy Code (IECC)
 - Mechanical** - International Mechanical Code, 2015, as adopted by 780 CMR (IMC).
 - NFPA 13** – 2013 - Standard for the Installation of Sprinklers
 - NFPA 14** – 2013 - Standard for the Installation of Standpipes
 - NFPA 72** – 2013 - National Fire Alarm Code
 - NFPA 25** – 2014 - Standard for the Inspection, Testing & Maintenance of Water Based Fire Protection
- Fire Code** - Massachusetts Comprehensive Fire Safety Code (527 CMR). 527 CMR is an amended version of the 2015 NFPA 1, National Fire Code.
 - Electrical Code** - Massachusetts Electrical Code, 527 CMR 12.00. The Massachusetts Electrical Code is an amended version of the 2020 National Electrical Code (NFPA 70).
- Plumbing** - Massachusetts Fuel Gas and Plumbing Codes (248 CMR). 248 CMR is unique to Massachusetts.
 - NFPA 54** – National Fuel Gas Code with Amendments
- Elevator** – Massachusetts Elevator Regulations (524 CMR). 524 CMR is an amended version of the 2013 Edition of ASME A17.1, Safety Code for Elevators and Escalators.

Building, Fire & Access, Inc.

STAMP

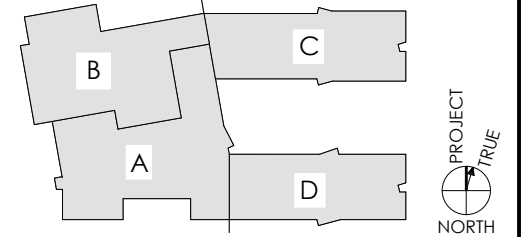
CONSULTANT

CLIENT

Groton-Dunstable
Regional School District
& Town of Groton
344 Main Street
Groton, MA 01450

NOT FOR CONSTRUCTION

KEY PLAN



PROJECT TITLE
FLORENCE ROCHE
ELEMENTARY SCHOOL

342 Main Street
Groton, MA 01450

NO.	DESCRIPTION	DATE
1	1.1 EARLY RELEASE DECK AND JOIST PACKAGE	04/13/2022
2	2 EARLY RELEASE FOUNDATION PACKAGE	05/02/2022

PROJECT NO 21915.1

DRAWN BY Author

CHECKED BY Checker

SCALE 1/4" = 1'-0"

DATE 10/21/2022

SHEET TITLE

CODE ANALYSIS

SHEET NO

G002