
Town of Enfield Municipal Buildings

Conceptual Design Study

Final Report

Prepared for:

Town of Enfield
Enfield, NH

Prepared by:

Bread Loaf Corporation
Middlebury, VT

Date:

July 31, 2020
Revised September 9, 2020

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Executive Summary

BACKGROUND

Bread Loaf Corporation (BLC) was engaged by the Town of Enfield, NH in October of 2019 to provide Conceptual Design Services, including Programming, Conceptual Design, Scheduling and Budgeting, for planning of a new Public Safety Facility and renovations for the Public Library and Municipal Offices. BLC's services for Conceptual Design have been performed in collaboration with the Municipal Facilities Advisory Committee (MFAC). BLC deliverables provided to the MFAC are summarized in this Final Report. BLC's Conceptual Design Services shall be completed upon delivery of the Final Report and Power Point Presentation.

PROJECT PROGRAM

Programming for the Public Library and Municipal Offices focused on developing a program for rehabilitation and addition to the historic Whitney Hall. The final desired program area for the Whitney Hall portion of the project totaled 11,556 NSF/16,300 GSF. The current total facility area at Whitney Hall is 7,036 NSF/10,254 GSF.

Programming for the new Public Safety Facility considered Police, Fire, EMS and Common Areas. The final desired program area for the Public Safety Facility portion of the project totaled 14,482 NSF/18,392 GSF. The current facility area (located in various buildings) is 7,279 NSF.

CONCEPTUAL DESIGN

The Conceptual Design for rehabilitation/addition to Whitney Hall is comprised of three floors consistent with the historic structure. Municipal Offices are located on the Lower Level with the primary public entrance on the north elevation at the junction of the historic building and addition. The Public Library is located on the Main Level and access from both Main Street, via the historic façade, and the primary public access, via new elevator and stairs. Adult reading areas are located in the historic building with teens, children and meeting spaces located in the addition. The Upper Floor Level contains the historic meeting hall, with proscenium arch and stage curtain preserved, two smaller meeting spaces and support spaces within the historic building. Access is provided via rehabilitated historic stair from Main Street and primary public entrance via new elevator and stairs. Alternates, as shown herein, provide design options to enhance Municipal Offices, Public Library, Meeting Hall and building systems. Access to the site is provided from the existing Main Street sidewalks and curbcut. Parking is located to the back of the addition.

The Conceptual Design for the new Public Safety facility is comprised of one floor zoned to accommodate Police, Fire, EMS and shared common areas. Police functions are located on the west side of the facility with the primary public entrance and common areas in the center and Fire/EMS on the east side. Alternates, as shown herein, provide design options to enhance the exterior finishes and building systems. Access to the site is provided from a new road to be developed at Lindopp Lane and the existing driveway and curbcut serving the MVRSD. Public parking is located at the front of the building (south), Sallyport access is located to the west from Lindopp Lane, and Fire/EMS access located to the east from MVRSD. Expansion of the bunk room is planned to occur to the north.

PROJECT TIMELINE

Two alternative schedules have been developed for consideration. The schedule alternative with "Overlapping" construction of Whitney Hall and the Public Safety Facility is 93 weeks in duration. This 93 week duration includes procurement of final design and pre-construction services, final design and construction documents, permitting,

bidding, award and construction for both projects. The schedule alternative with “Nose-to-Tail” construction of Whitney Hall and the Public Safety Facility is 145 weeks in duration. This 145 week duration includes: procurement of final design and pre-construction services, final design and construction documents, permitting of both projects, proceeding with bid, award and construction of the Public Safety Building, and upon completion of Public Safety Building construction, proceeding with bid, award and construction of Whitney Hall.

Although there are pros and cons to each timeline approach, BLC believes the 93 week “Overlapping” schedule will provide the best value in bidding and constructing the overall project.

TOTAL PROJECT BUDGET

The Total Project Budget indicates construction costs for Whitney Hall, Library and Town Offices are \$3,820,000; and, construction costs for the Public Safety Facility are \$4,406,000.

Addition of a recommended construction contingency of 10%, and total professional fees assumed at 6.5%, results in a total budget of \$4,475,000 for Whitney Hall and \$5,162,000 for the Public Safety Facility.

Because the above budget amounts are based on a Conceptual Design and Preliminary Project Schedule (as represented by the attached Conceptual Design Drawings, Project Scope Narratives and Schedule with Overlapping Construction - 93 weeks), BLC recommends construction contingency and professional fees be included in the budget at the above percentage amounts. These amounts reflect budgets for future costs related to development of final designs, preparation of construction documents, permit acquisition, bidding and award of the projects.

The Total Project Budget shows “Alternate” costs for potential Whitney Hall and Public Safety Building design adjustments and revisions. Alternate costs represent the construction cost adjustment to incorporate each corresponding adjustment or revision and are described in detail in the Project Scope Narratives.

All costs provided by BLC are represented in 2020 dollars. Costs are subject to adjustment based on future inflationary or deflationary pressures, economic effects related to COVID 19, or other unforeseen conditions that may affect future design and construction costs.

The Total Project Budget also indicates Owner Costs that are typically associated with design and construction projects of this type. Owner Costs must be taken into consideration to fully recognize and plan for all costs that may be incurred when a project is developed and constructed. BLC has shown budgeted amounts for Independent Testing and Inspection, Builder’s Risk Insurance, Electric Service Upgrade and Performance & Payment Bond for Whitney Hall and the Public Safety Building.

Of critical importance are Owner Costs for “Land Costs” and “Develop Road/Infrastructure/Utilities to Property” for the Public Safety Facility. These costs are NOT included in the Total Project Budget prepared by BLC.

It is BLC’s understanding that “Land Costs” shall be identified as a result of future discussions by appropriate parties and “Develop Road/Infrastructure/Utilities to Property” costs are being considered and developed by Pathways Consulting LLC while working directly for the Town of Enfield.

Pathways Consulting LLC is also working with the Town to evaluate and confirm assumptions made by BLC regarding MVRSD site conditions (related to soils, ledge, ground water, stormwater design, etc.) in preparing the site development estimate for the Public Safety Facility.

CLOSURE

BLC wishes to thank members of the MFAC, representatives of the Town of Enfield and members of the community who participated in the development of this Conceptual Design Study. It has been a pleasure to work with everyone.

James Pulver, Architect
Bread Loaf Corporation

Project Program

Programs for Whitney Hall (Municipal Offices, Library and Auditorium) and the Public Safety Facility were prepared by Bread Loaf Corporation (BLC) in collaboration with the Municipal Facilities Advisory Committee (MFAC) based on programmatic information provided.

Each program is organized to indicate: Program Component, Space/Name, Current Facility Area, Desired Program Area, and the Areas for each space shown by the Conceptual Plan (for each Program Component). All spaces are listed by Size in Feet (FT) and Area by Net Square Feet (NSF). The Desired Program Area Over/Under Existing Facility Area and Conceptual Plan Area Over/Under Program Area are also indicated.

The NET SF (NSF) subtotal of each department is shown and a summary of each building is provided to indicate the NET SF, the NET to GROSS Multiplier and the GROSS SF (GSF) Area.

Total net and gross square foot (SF) areas for Whitney Hall (Municipal Offices, Library and Auditorium) and the Public Safety Facility are summarized as follows:

Total Whitney Hall Areas:

Current Facility Area	7,036 NSF	10,254 GSF
Desired Program Area	11,756 NSF	16,300 GSF
Conceptual Plan Area	12,357 NSF	17,644 GSF

Total Public Safety Facility Areas:

Current Facility Area	7,279 NSF	^^ GSF
Desired Program Area	14,482 NSF	18,392 GSF
Conceptual Plan Area	14,884 NSF	18,831 GSF

^^ - A GSF summary of Total Current Facility Area is not represented in the Program document since Current Facility Areas are located in various buildings.

For a full break down of the Project Program for Whitney Hall (Municipal Offices, Library and Auditorium) and the Public Safety Facility refer to the program spreadsheets on the following pages.

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Whitney Hall (Municipal Offices, Library and Auditorium)		Current Facility Area		Desired Program Area			Conceptual Plan 06-18-2020		Over or Under Program (Existing Library)	NOTES
Program Component	Space/Name	Existing Size (FT)	Existing Area(NSF)	Size (FT)	Area(NSF)	Over or Under Existing Facility	Size (FT)	Area (NSF)		
Municipal Offices (First Floor/Lower Level)										
	Town Manager's Office	12' x 13'	156	15' x 15'	225		69	13'-3" x 15'-6"	198	-27
	Assittant Town Manager's Office	9' x 10' - 3"	92	14' x 14'	196		104	12' x 15'-6"	186	-10
	Bookkeeper's Office	10' x 7'	70	12' x 12'	144		74	12' x 12'-6"	150	6
	Reception Area	6' x 4'	24	18' x 18'	324		300	21'-7" x 16'-6"	364	40
	Receptionist/Assistant	N/A	0	12' x 12'	144		144	19'-6" x 10'-1"	195	51
	Lobby	11' - 6" x 12' - 6"	144		0		-144		0	0
	File Storage	10' x 5' + 3' x 8'	74	10' x 10'	100		26	10'-6" x 10'-1"	105	5
	Restrooms	7' x 5' (2)	70	8' x 6' (4)	184		114	6'-6" x 10'-1" + 9'-6" x 9'-1"	151	-33
	IT Server/Storage Room	5' x 4'- 3" + 2' x 4'	29	9' x 9'	81		52	7'-6" x 10'-1"	75	-6
	Subtotal Administration/Finance		659		1398		739		1424	26
	Assessing Administrator's Office	10' x 9' - 3"	93	12' x 18'	216		123	21'-1" x 12'-8"	265	49
	Property Records & File Room Storage	9' x 9'	81	15' x 20'	300		219	14'-9" x 16'-6"	298	-2
	Public Space	5' -6" x 3'	17	10' x 10'	100		83	10' x 11'	132	32
	Subtotal Assessing/Property Records		191		616		425		695	79
	Land Use & Comm. Dev. Admin. Office	18' - 6" x 10'	185	12' x 12'	144		-41	12'-6" x 13'-6"	152	8
	Building Inspector's Office	11' x 10'	110	12' x 12'	144		34	12'-6" x 13'-6"	152	8
	Subtotal Land Use/Inspection Servies		295		288		-7		304	16
	Tax Collector's Office	7' - 6" x 12'	90	12' x 12'	144		54	10'-6" x 12'	127	-17
	Town Clerk's Office	6' x 5'	30	12' x 12'	144		114	10'-6" x 12'-6"	132	-12
	Customer Service Windows (4 @ 8 x 12)	9' x 6' - 6" (2)	117	24' x 12'	288		171	21'-7" x 11'-6"	237	-51
	Subtotal Town Clerk/Tax Collector		237		576		339		496	-80
	Vault	13' x 9' - 6"	124	17' x17'	289		165	20'-1" x 14"-4"	288	-1
	Conference (Hearing) Room*	N/A	0		0		0		0	0
	Meeting/Multi-purpose Room	17' x 13'	221	16' x 16'	256		35	16'-6" x 16'-6"	272	16
	Kitchen Area	7' - 6' x 5' - 6"	41	14' x 7'	98		57	7'-6" x 12'	90	-8
	Office Storage	6' - 6" x 1' - 6"	10	10' x 10'	100		90	10'-6" x 12'	126	26
	Shared Office Functions	11' - 6" x 6'	69	10' x 10'	100		31	10'-6" x 12'	126	26
	Building Supplies Storage	6' x 4' - 3"	26	6' x 8'	48		22		0	-48
	Library/Storage/Work	N/A	0		0		0		0	0
	Utilities, Building Maintenance Room	7' x 5' + 8' x 2' + 18' x 9'	213	15' x 15'	225		12	14'-6" x 14'	232	7
	Subtotal Shared Spaces*		704		1116		412		1134	18
	Human Services Director Office	N/A	0	12' x 12'	144		144	12' x 12'-6"	150	6
	Subtotal Human Services		0		144		144		150	6
	Total Municipal Offices w/o Recreation *		2086		4138		2052		4203	65
	Rec. Director & Regional Rec. Coord. Office	N/A	0	12' x 12'	144		144		0	-144
	Multi-purpose Activity Room	N/A	0	26' x 30'	780		780		0	-780
	Storage	N/A	0	10' x 10'	100		100		0	-100
	Subtotal Recreation		0		1024		1024		0	-1024
	Total Municipal Offices w/ Recreation *		2086		5162		3076		4203	-959
* Note 780 SF for Hearing Room moved to Third Floor/Upper Level 5,162 SF + 780 SF = 5,942 SF which matches the Summary of Estimated Space Needs										

* Note 780 SF for Hearing Room moved to Third Floor/Upper Level
5,162 SF + 780 SF = 5,942 SF which matches the Summary of Estimated Space Needs

Whitney Hall (Municipal Offices, Library and Auditorium)		Current Facility Area		Desired Program Area		Conceptual Plan 06-18-2020		Over or Under Program (Existing Library)	
Program Component	Space/Name	Existing Size (FT)	Existing Area(NSF)	Size (FT)	Area(NSF)	Over or Under Existing Facility	Size (FT)	Area (NSF)	
49	Library (Second Floor/Middle Level)								
50	Public Stack Space	(As noted below)	(As noted below)	(As noted below)	(As noted below)				
51	Children thru Elementary - Public Stack Space/Play,	34' x 26'	884	25 x 28 + 14 x 12	868	-16	30' x 30'	904	20
52	Teens - Public Stack Space	15' x 4' - 6"	68	11 x 13 + 16 x 21	369	301	16' x 27'-5"	438	370
53	Teens - Reading, Hang-out, Work and Gaming Space	N/A	0	24 x 14	336	336	27' x 10'-6"	288	288
54	Adult Fiction and Non-fiction - Public Stack Space; DVD's and Audio Books	13' - 6" x 10' x 21' + 12' - 6" x 25' + 9' x 1' + 19' x 1'					27'-6" x 60' + 14' x 30'-6"		
		19' - 6" x 8' - 6"	848	40 x 41	1640	792	14' x 30'-6"	2060	1212
		22' - 6" x 16'	166	20 x 19	380	214	20'-4" x 21'	409	243
			360	18 x 18 + 14 x 32	772	412		0	-360
57	Meeting Room (#1 & #2)	N/A	0	0	0	0	18' x 13'-6"	243	243
58	Meeting Room (#3)/Enfield History Room	N/A	0	0	0	0	20'-6" x 16'-6"	355	355
59	Meeting Room (#4) - Hearing Room*	N/A	0	0	0	0		0	0
60	Information Desk/Circulation	11' - 6" x 10' - 6"	121	13 x 11	143	22	13' x 14'	165	44
61	Book Processing/Tech Services	7' - 6" x 8'	60	12 x 7	84	24	13'-8" x 13'-6"	185	125
62	Storage	9' x 20'	180		0	-180	11' x 8'-6"	93	-87
63	Director's Office	10' x 11'	110	13 x 9	117	7	9'-4" x 13'-6"	126	16
64	Kitchen	6' x 14' - 6"	27		0	-27	7' x 13'-6"	95	68
65	Café Space	N/A	0	5 x 12	60	60	0 x 0	0	0
66	Bathrooms	17' x 11'	187	6 x 7 (2)	84	-103	6'-6" x 10'-1" + 8'-10" x 9'-6"	149	-38
67	Public Foyer	5' x 11'	55			-55			-55
68	Historian Space	12' x 9'	108		0	-108		0	-108
69	Utilities, Janitor, Data/Comm (See lines _____)	N/A	0			0			0
70	Total Library		3174		4853	1679		5510	2336
71									
72	Theater/Election Hall/Meeting Room (Third Floor/Upper Level)								
73	Conference (Hearing) Room	42 x 40	1680	42 x 40	1680	0	42'-6" x 41'-6"	1710	30
74	Conference 1	12' x 17'	204	13 x 17	221	17	16'-2" x 13'-8"	225	4
75	Conference 2	N/A	0	20 x 18	360	360	13'-4" x 20'-4"	277	-83
76	Historian Space	N/A	0	13 x 14 + 5 x 10	232	232		0	-232
77	Kitchen	N/A	0	8 x 7	56	56	6'-6" x 8'-9"	57	1
78	Bathrooms	N/A	0	6 x 7 (2)	84	84	6'-6" x 10'-1" + 8'-10" x 9'-6"	149	65
79	Storage	14' x 30' + 11' x 30'	750	11 x 12	132	-618	9'-2" x 21'-8"	216	84
80	Closet	7' x 6'	42		0	-42	2' x 5'	10	10
81	Total Theater/Election Hall/Meeting Room		2676		2765	89		2644	-121
67	Total Whitney Hall (NET SF)				11756	12357			
68	NET to GROSS SF Multiplier				1.39 Multiplier	1.43 Multiplier			
69	Total Whitney Hall (GROSS SF)				16300 GSF	17644 GSF			

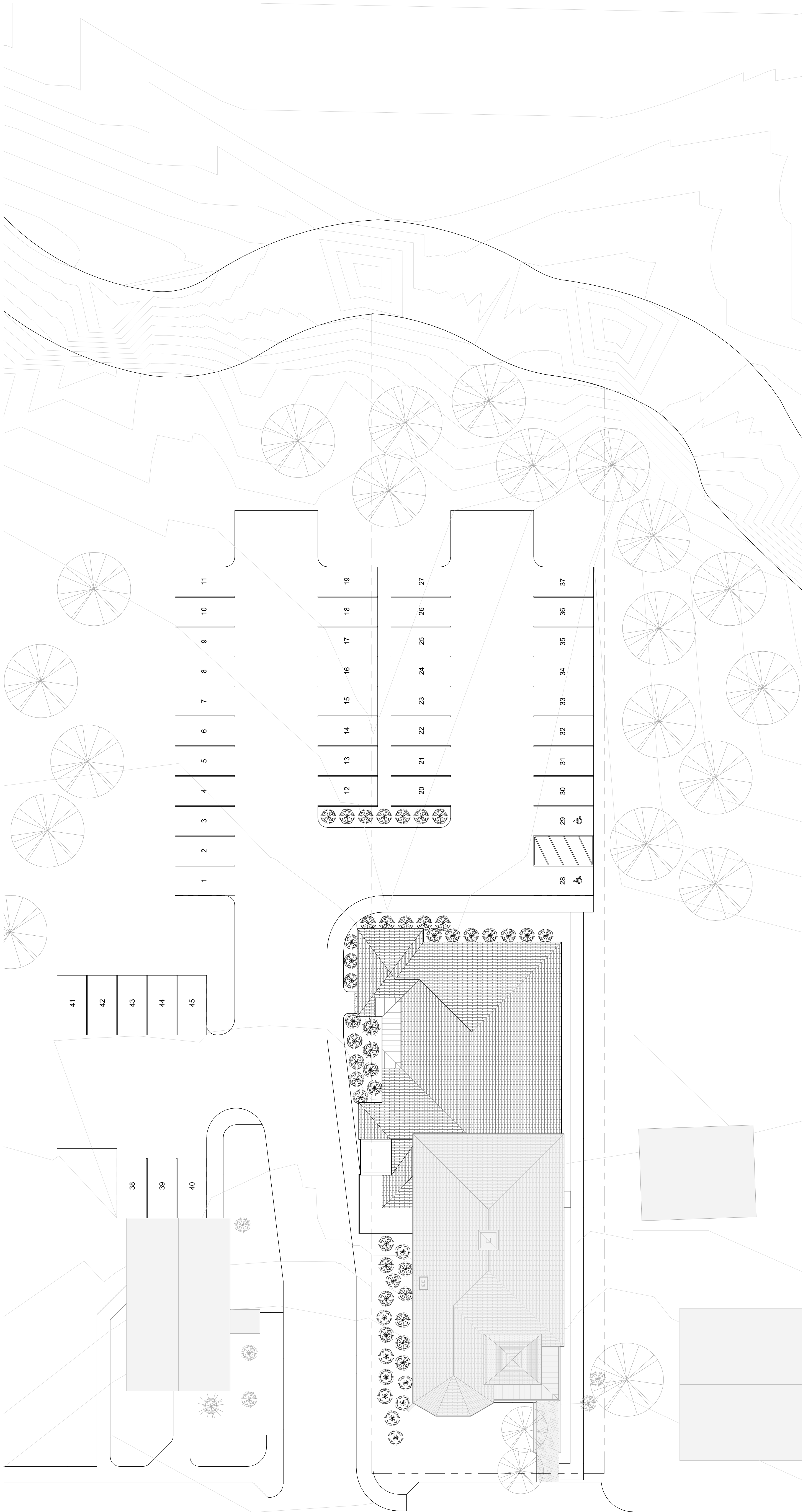
Public Safety Facility		Current Facility Area		Desired Program Area		Conceptual Plan 06-18-2020		Over or Under Program	NOTES
Program Component	Space/Name	Existing Size (FT)	Existing Area(NSF)	Size (FT)	Area(NSF)	Over or Under Existing Facility	Size (FT)	Area (NSF)	
1	Police Department								
2	Chief's Office	14' x 12'	168	12' x 14'	168	0.0	12'-6" x 14'-3"	178	10
3	Supervisor's Office	11' x 10'	110	12' x 14'	168	58.0	12'-6" x 14'-3"	178	10
4	Patrol Office	17' x 14'	238	14' x 16'	224	-14.0	16'-10" x 14'-8"	246	22
5	Investigations	N/A	0	12' x 14'	168	168.0	12'-3" x 14'-8"	179	11
6	Receptionist	5' x 10'	50	14' x 14'	196	146.0	15'-1" x 14'-3"	215	19
7	Secured File Storage - Personnel Records	N/A	0	10' x 8'	80	80.0	10'-6" x 8'-3"	86	6
8	Male Locker Room	11' x 5'-6"	61	16' x 18'	288	227.5	16 x 10'-9"	168	-120
9	Female Locker Room	5' x 7'	35	16' x 14'	224	189.0	14'-6" x 10'	142	-82
10	Conference Room	0	0	12' x 20'	240	240.0	20'-8" x 12'-4"	255	15
11	General Storage (20 x 25 = 500 SF)**	5' x 7' (2)	70	12' x 14'	168	98.0	16'-3" x 5'	144	-24
12	Special Computer Needs		35	10' x 10'	100	65.0	12'-6" x 10'-3"	128	28
13	Armory	N/A	0	12' x 12'	144	144.0	12'-4" x 8'	99	-45
14	Subtotal Police Administration		767		2168	1401.5		2018	-150
15									
16	Sallyport (40 x 22 = 880) ***	22' x 13'	286	27' x 22'	594	308.0	25' x 28'-3"	707	113
17	Booking/Processing Room	26' x 13'	338	25' x 11'	275	-63.0	13'-10" x 20'-3"	276	1
18	Evidence Room	6"-6" x 18'	117	16' x 22'	352	235.0	16'-9" x 25'-8"	430	78
19	Interview Room	5' x 7'	35	8' x 8'	64	29.0	8'-3" x 8'-5"	69	5
20	Subtotal Policing Area		776		1285	509.0		1482	197
21	Total Police Department		1543		3453	1910.5		3500	47
22									
23	Fire Department								
24	Chief's Office ^	10'-4" x 12'-3"	127	12' x 12'	144	17.5	14'-6" x 14'-9"	214	70
25	Staff's Office	N/A	0	14' x 14'	196	196.0	14'-6" x 30'	435	239
26	Storage	45'-6" x 7'-9"	353	35' x 12'	420	67.4	35'-8" x 12'-9"	454	34
27	Male Locker Room (shared w EMS)	8'-4" x 7'-9"	65	16' x 18'	288	223.4	12'-10" x 22'	280	-8
28	Female Locker Room (shared w EMS)	N/A	0	16' x 14'	224	224.0	12'-4" x 22'	270	46
29	Kitchen	10' x 12'	120	N/A	0	-120.0	N/A	0	0
30	Meeting Room	26' x 19'	494	N/A	0	-494.0	N/A	0	0
31	Subtotal Fire Administration		1158		1272	114.3		1653	381
32									
33	Vehicle Bays (Primary)	64'-3" x 36'	2313	75' x 70'	5250	2937.0	71' x 17' (4)	4828	-422
34	Vehicle Bays (Secondary)	31'-8" x 15'-6"	491	N/A	0	-490.9	N/A	0	0
35	Explosive/Hazmat Storage	N/A	0	30' x 12'	360	360.0	35' x 12'-3"	427	67
36	Gear Storage	N/A	0	35' x 2'	70	70.0	47' x 2'-6"	131	61
37	Gear Wash	9'-4" x 7'-6"	70		0	-70.0	10'-10" x 9'-4"	105	105
38	Bunkroom	N/A	0	16' x 16'	256	256.0	16'-7" x 14'-3"	255	-1
39	Subtotal Fire Response		2874		5936	3062.1		5746	-190
40	Total Fire Department		4032		7208	3176.415		7399	191
41									

Conceptual Design Drawings

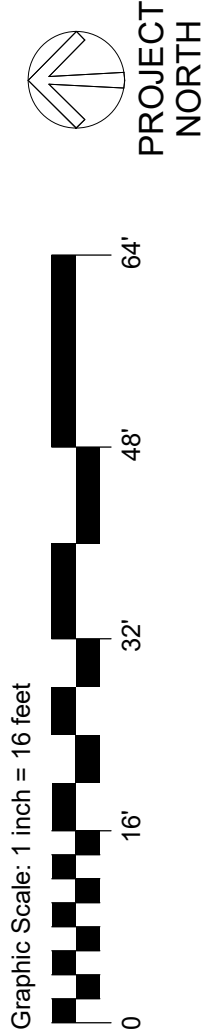
Conceptual Design Drawings for Whitney Hall (Municipal Offices, Library and Auditorium) and the Public Safety Facility were prepared by Bread Loaf Corporation (BLC) in collaboration with the Municipal Facilities Advisory Committee (MFAC) based on the programmatic information indicated in the previous section of this report.

The designs illustrated herein were reviewed by the MFAC, department staff and members of the community during MFAC meetings and BLC has developed the Conceptual Designs based on input received.

Refer to the following pages for Whitney Hall (Municipal Offices, Library and Auditorium) and Public Safety Facility Conceptual Design Drawings.



1 Site Plan
A-1.2 1/16" = 1'-0"



Revised		
No.	Date	Description

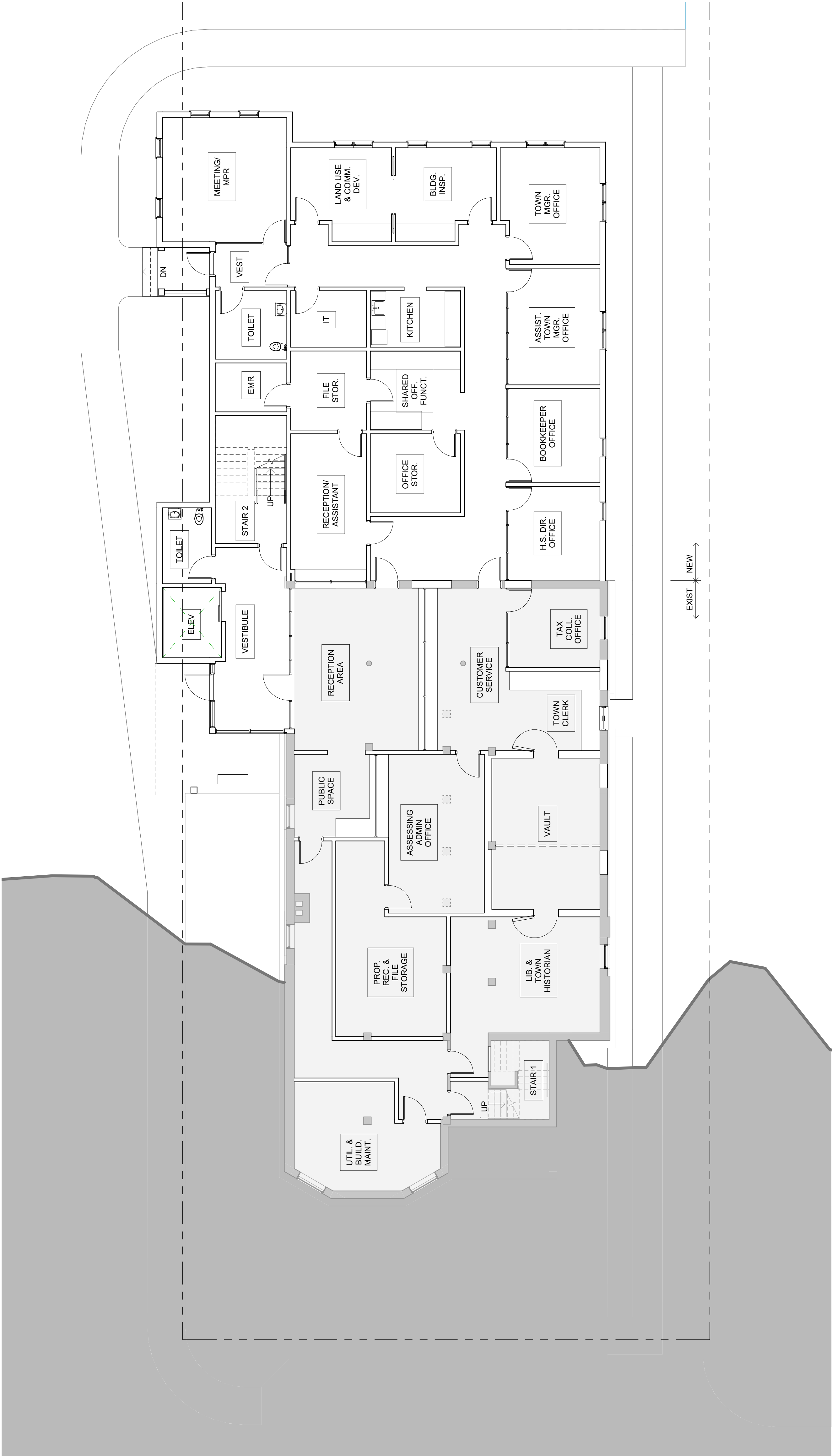
Enfield Municipal
Buildings Concept Design
23 Main St
Enfield, NH 03748

Proj. No: 19311 Drawn: Author
Date: 06/26/20 Chk'd: Checker

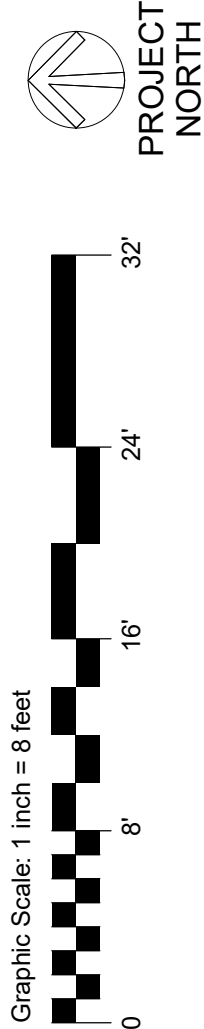
Lower Floor

Whitney Hall Addition

A-2.4



1 1st Sub Floor Plan
Architects 1/8" = 1'-0"



1293 Route 7 South
Middlebury, VT
05753
P 802 388 9871
F 802 388 3815
www.breadloaf.com

Civil Engineer
address
city, state, zip
phone

Structural Engineer
address
city, state, zip
phone

Mechanical Engineer
address
city, state, zip
phone

Electrical Engineer
address
city, state, zip
phone

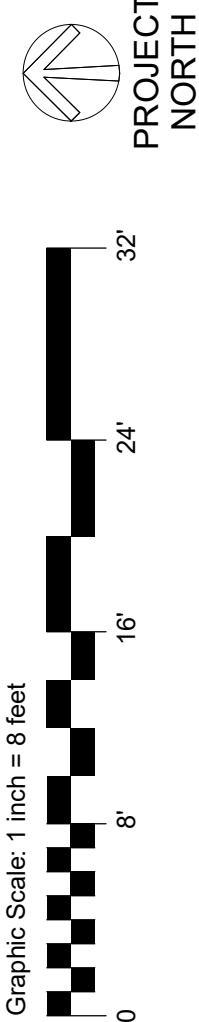
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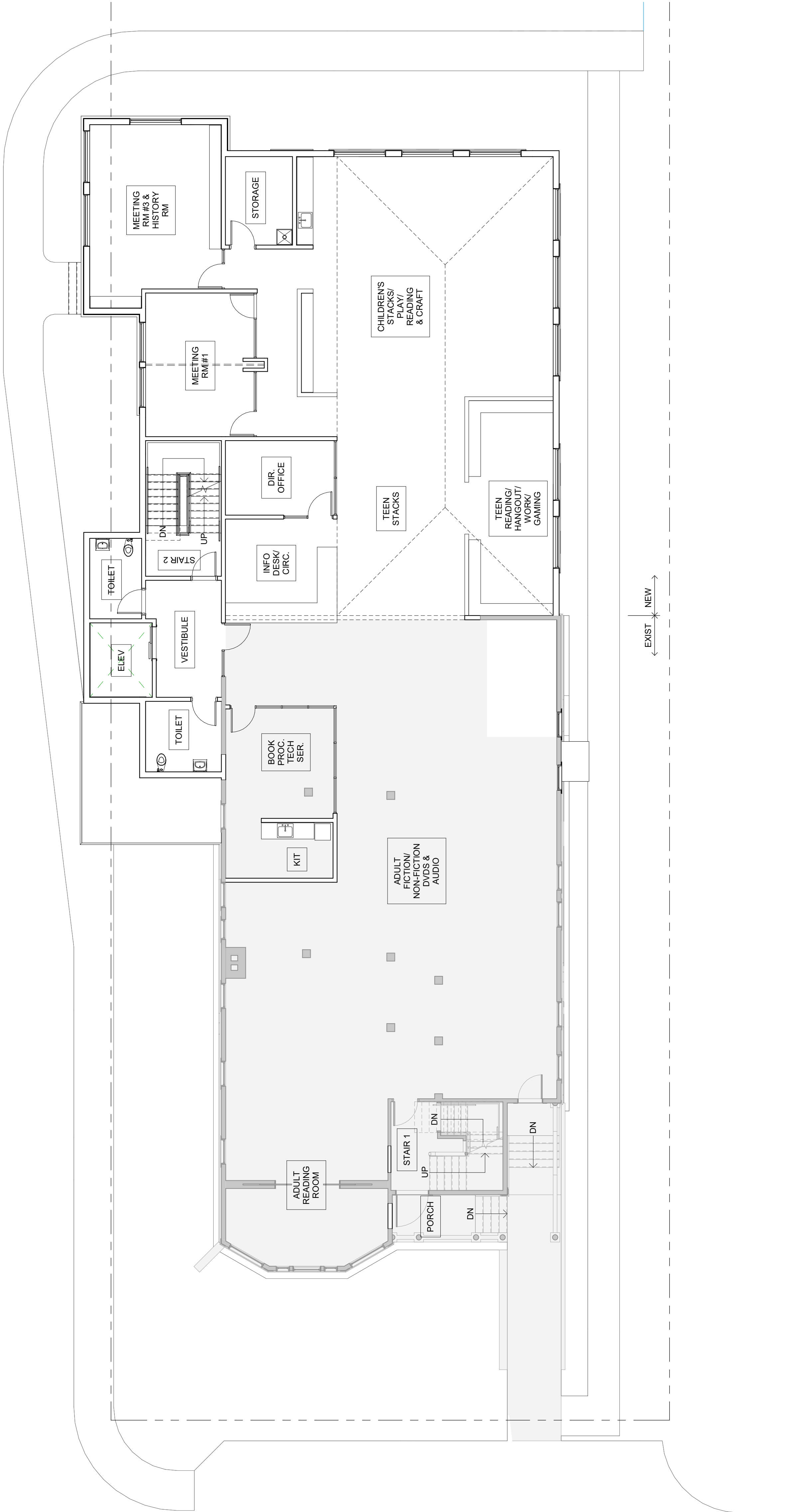
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First Floor Plan

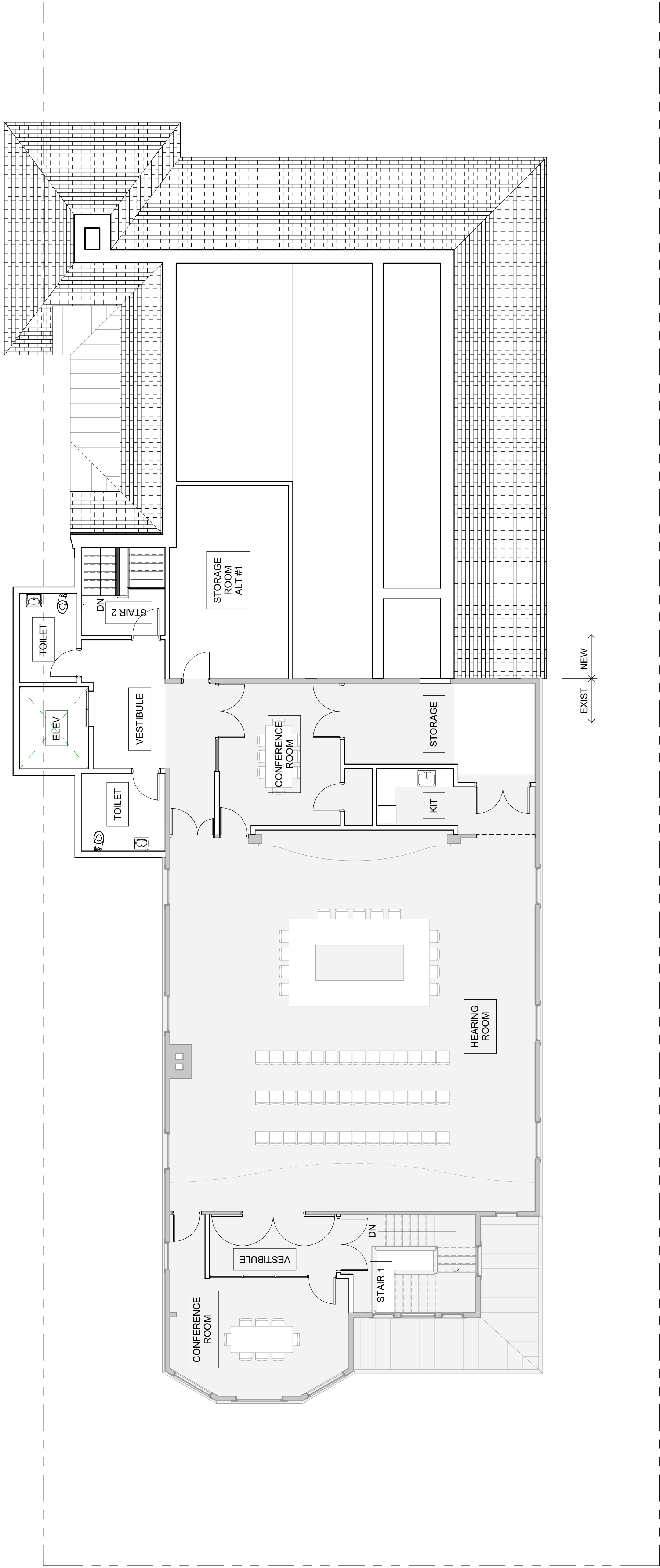


Whitney Hall Addition

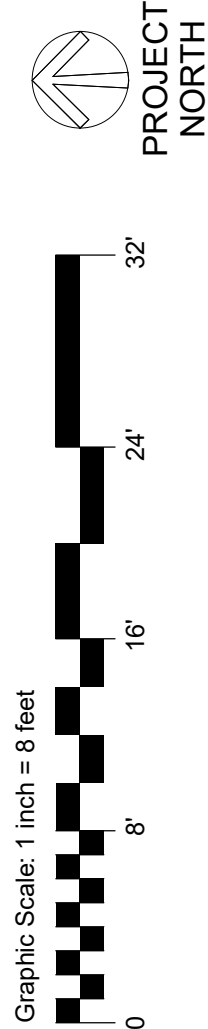
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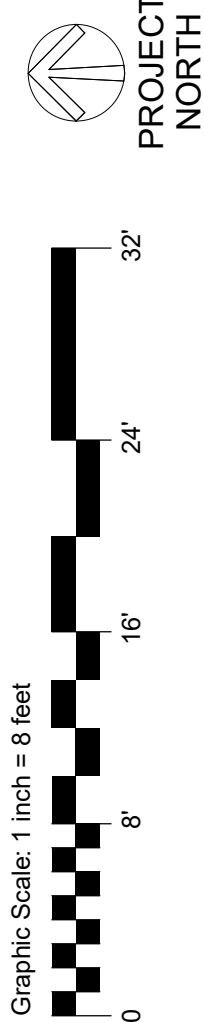


1 Ground Floor (1st Floor) Plan
As Shown
1/8" = 1'-0"



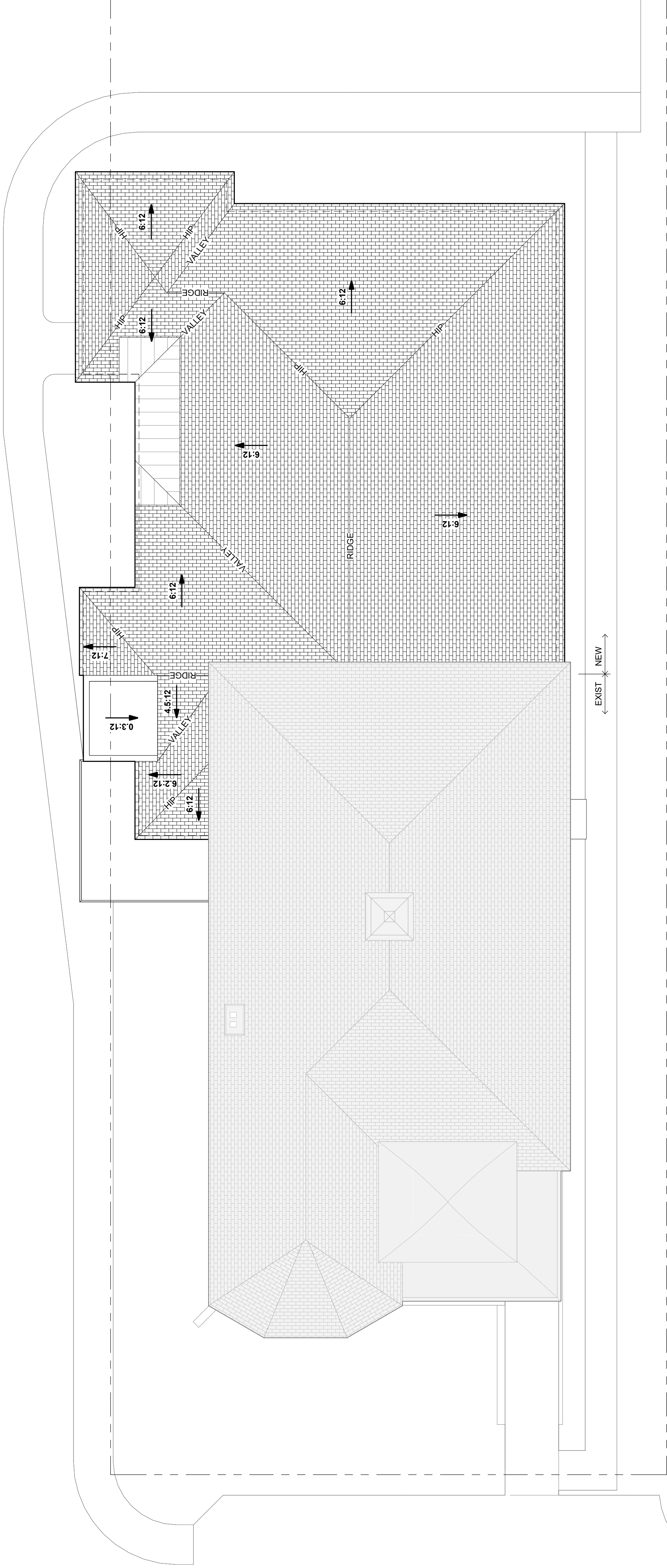
1 2nd Floor Plan
AS SHOWN 1/8" = 1'-0"



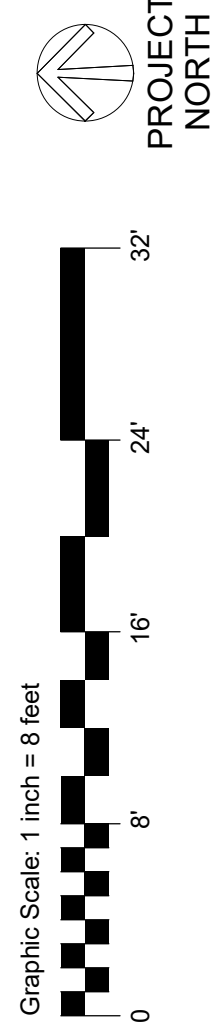


ROOF PLAN TAGGED NOTES

ROOF SCHEDULE	
Type Mark	Description



1 Roof Plan
As Shown 1/8" = 1'-0"



Revised		
No.	Date	Description

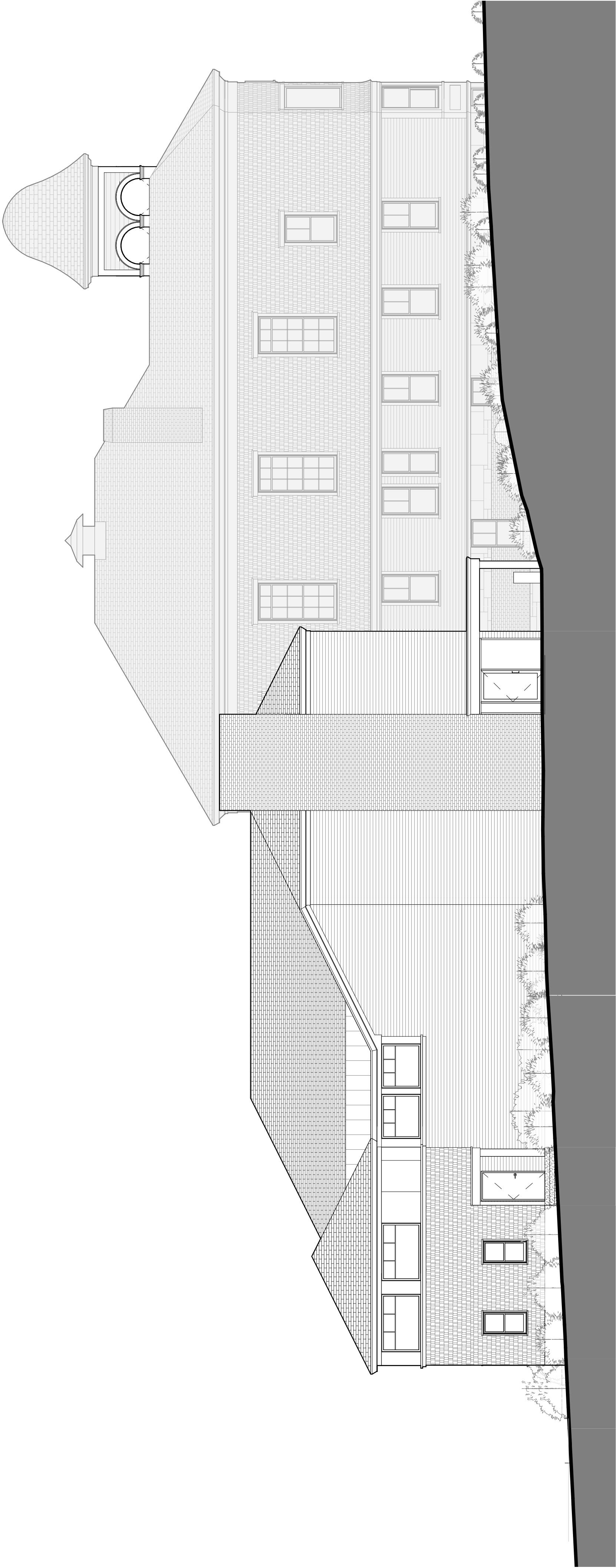
Enfield Municipal
Buildings Concept Design
23 Main St
Enfield, NH 03748

Proj. No: 19311 Drawn: Author
Date: 06/26/20 Chk'd: Checker

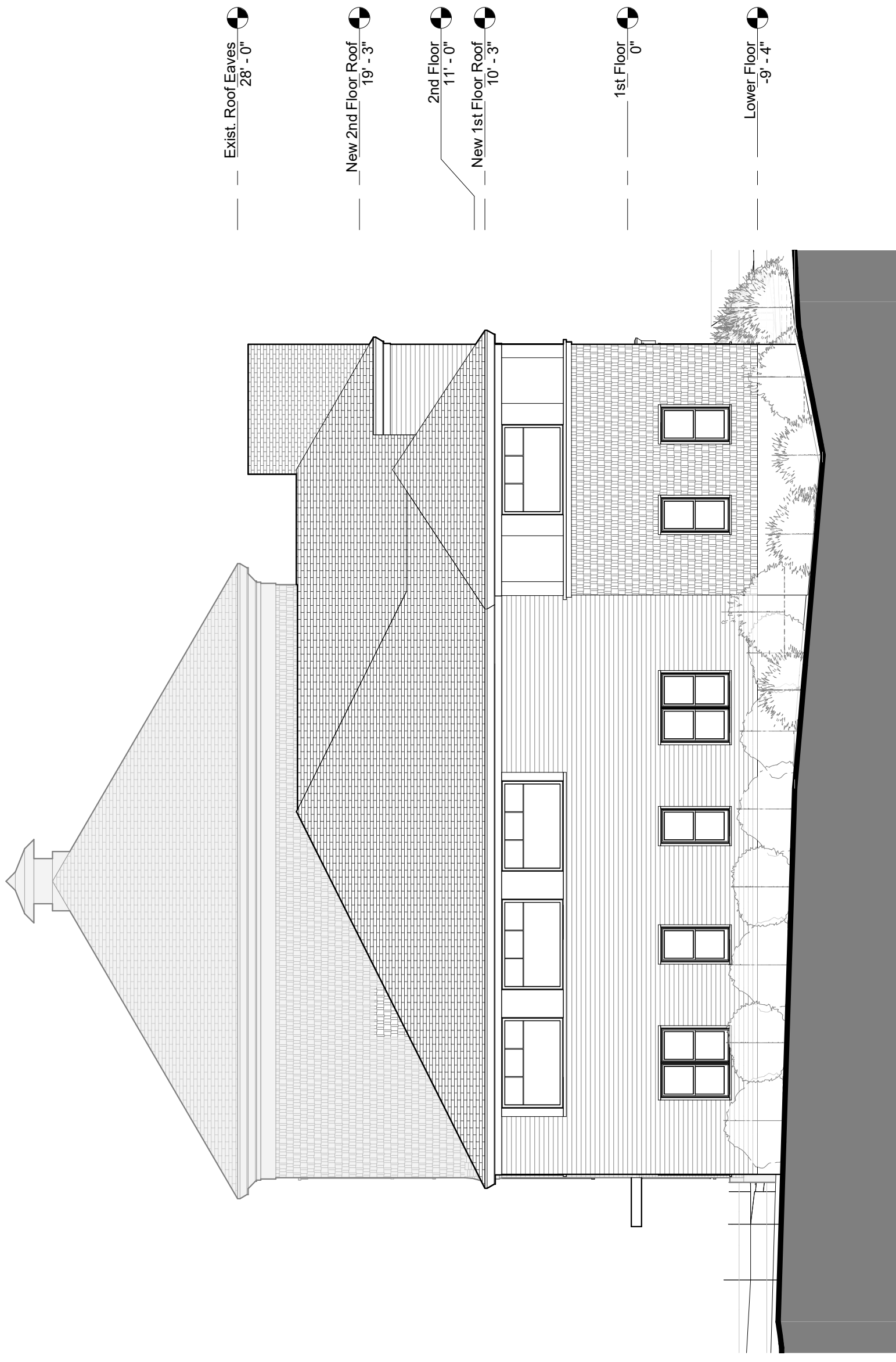
Exterior
Elevations

Whitney Hall Addition

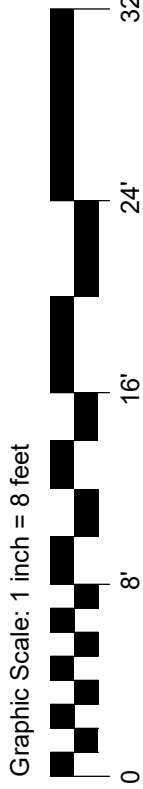
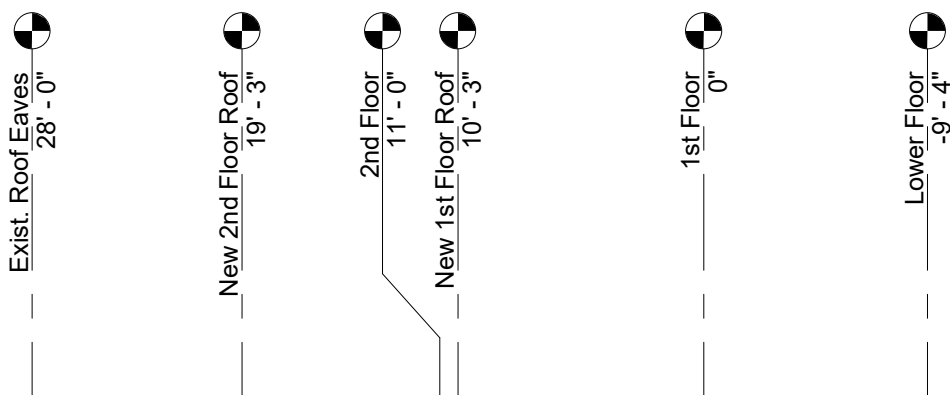
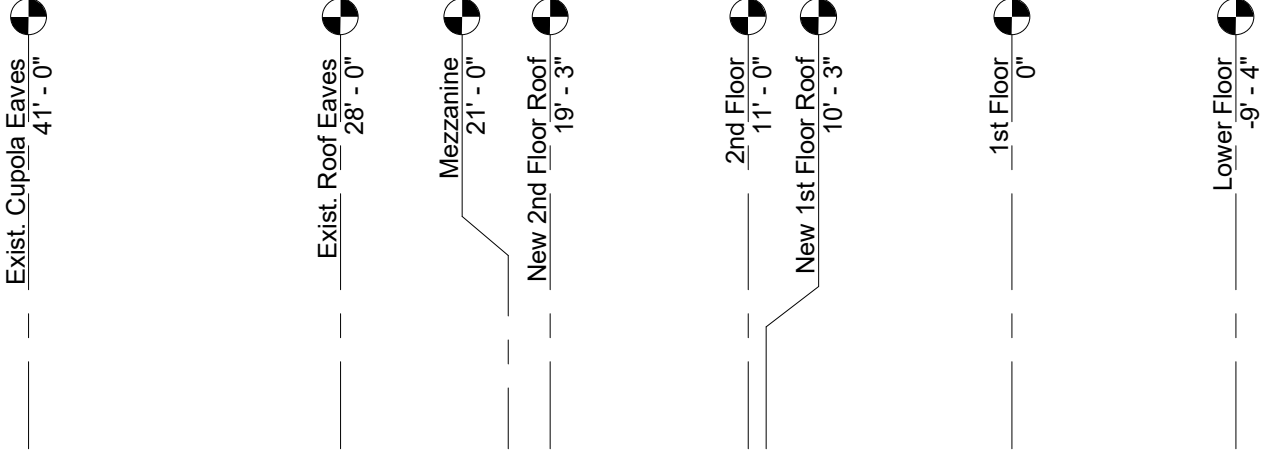
A-4.1



1 North Elevation
1/8" = 1'-0"



2 East Elevation
1/8" = 1'-0"



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address
city, state, zip
phone

Structural Engineer
address
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No.	Date	Description

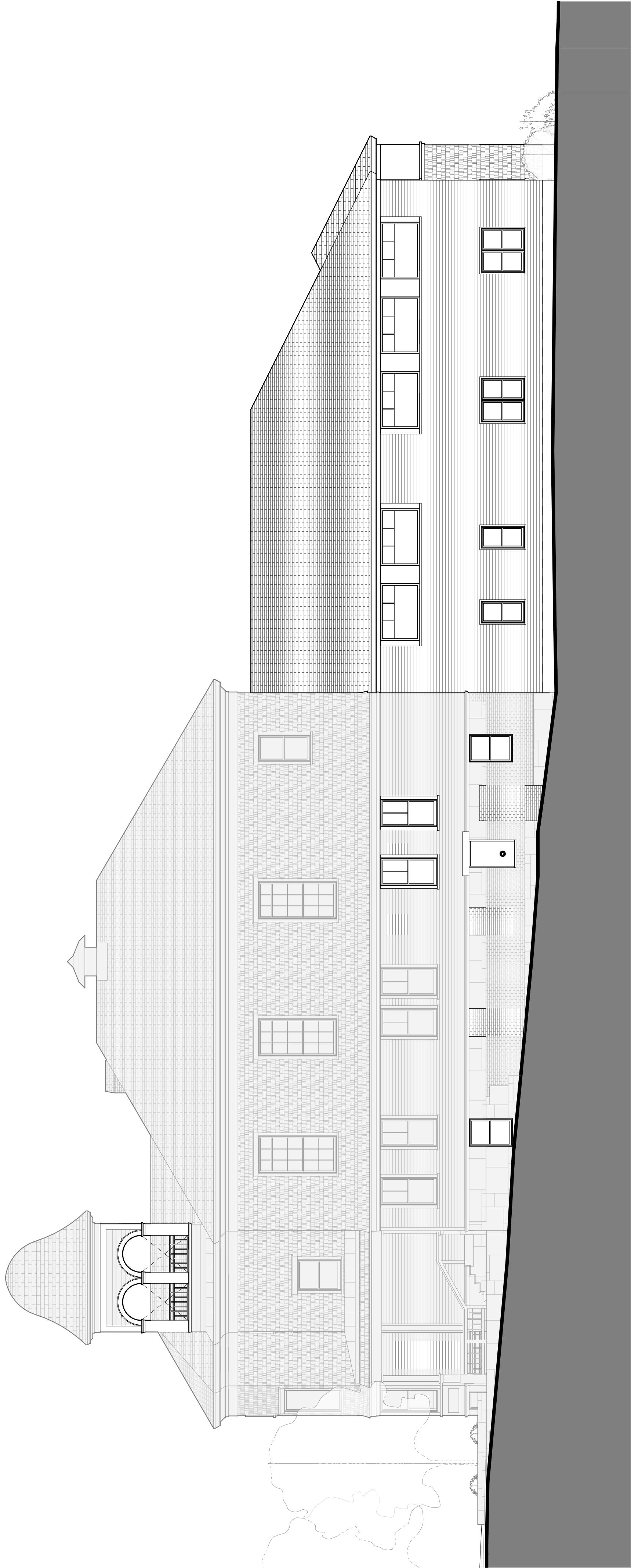
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23 Main St
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Proj. No: 19311 Drawn: Author
Date: 06/26/20 Chkd: Checker

Exterior
Elevations

Whitney Hall Addition

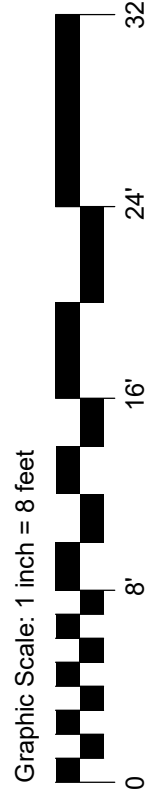
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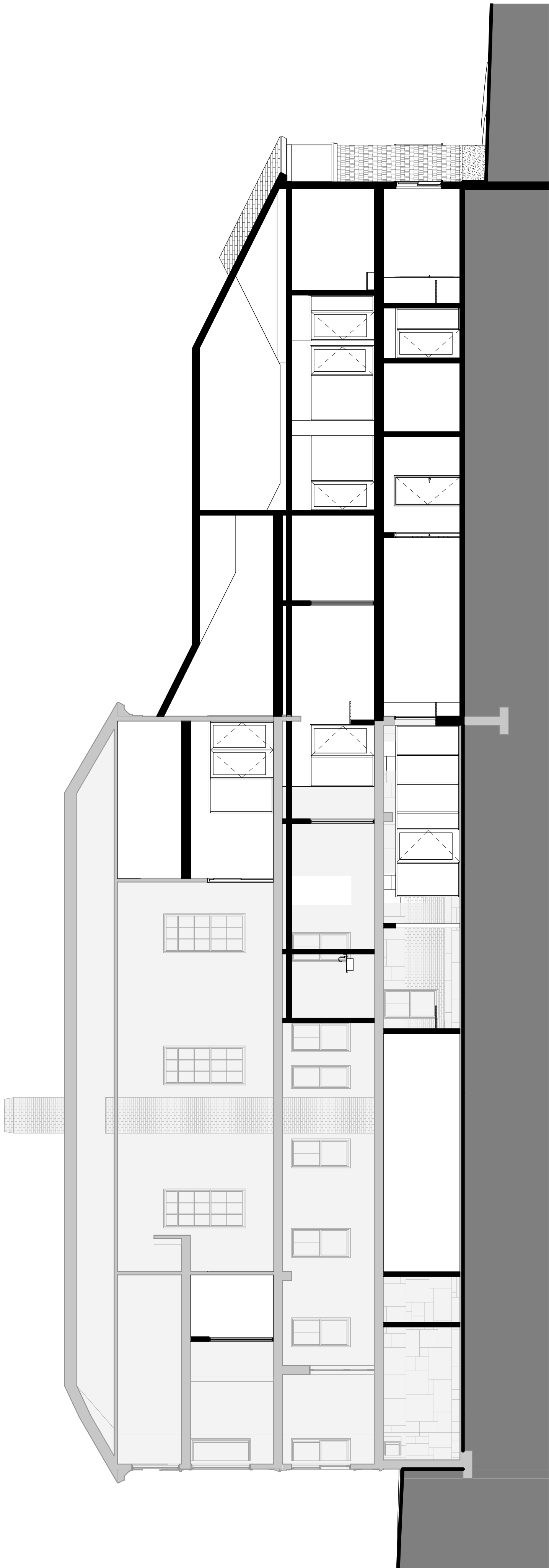
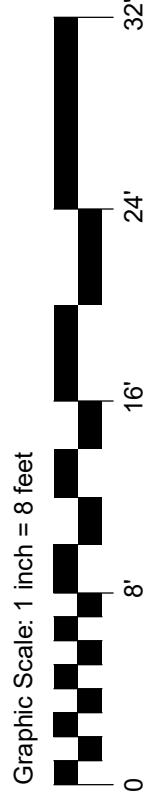


1 South Elevation
A-4.2 1/8" = 1'-0"



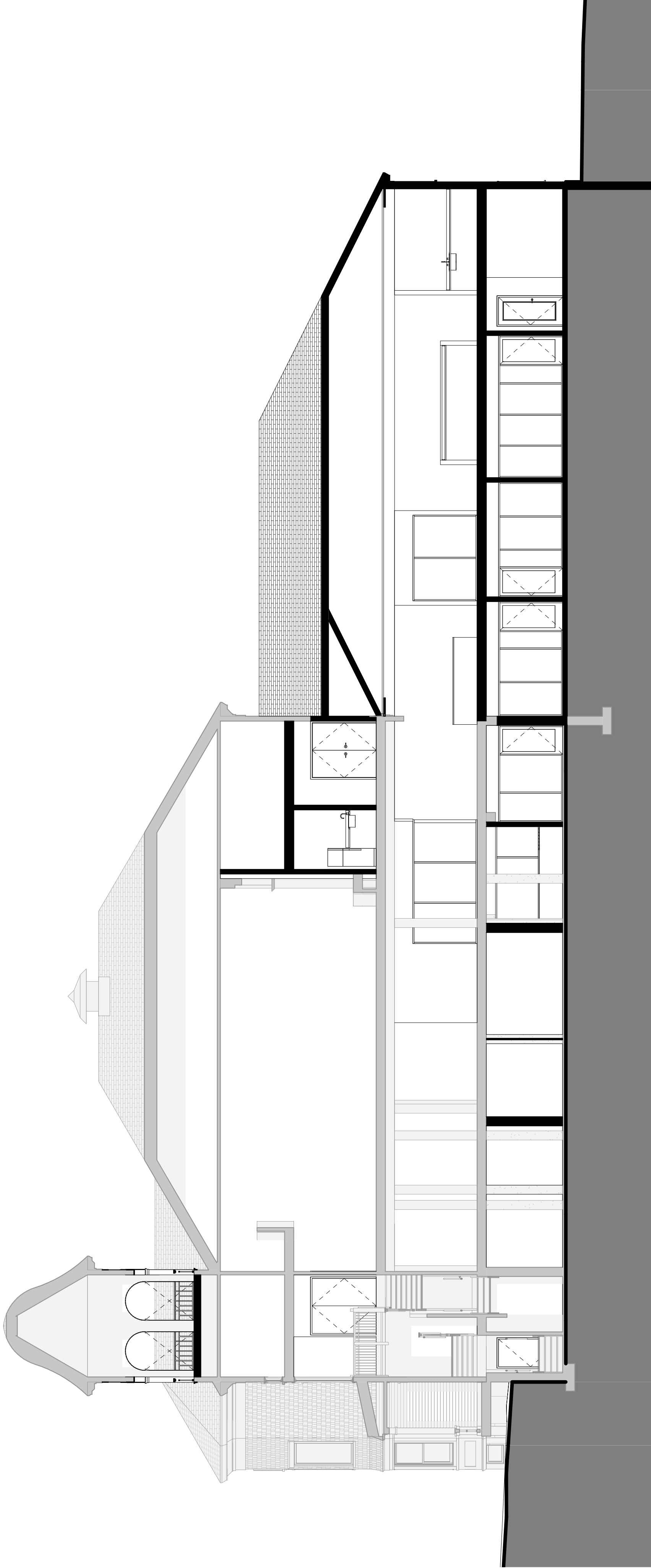
2 West Elevation
A-4.2 1/8" = 1'-0"





- Exist. Roof Eaves
28'-0"
- Mezzanine
21'-0"
- 2nd Floor
11'-0"
- New 1st Floor Roof
10'-3"
- 1st Floor
0"
- Lower Floor
-9'-4"

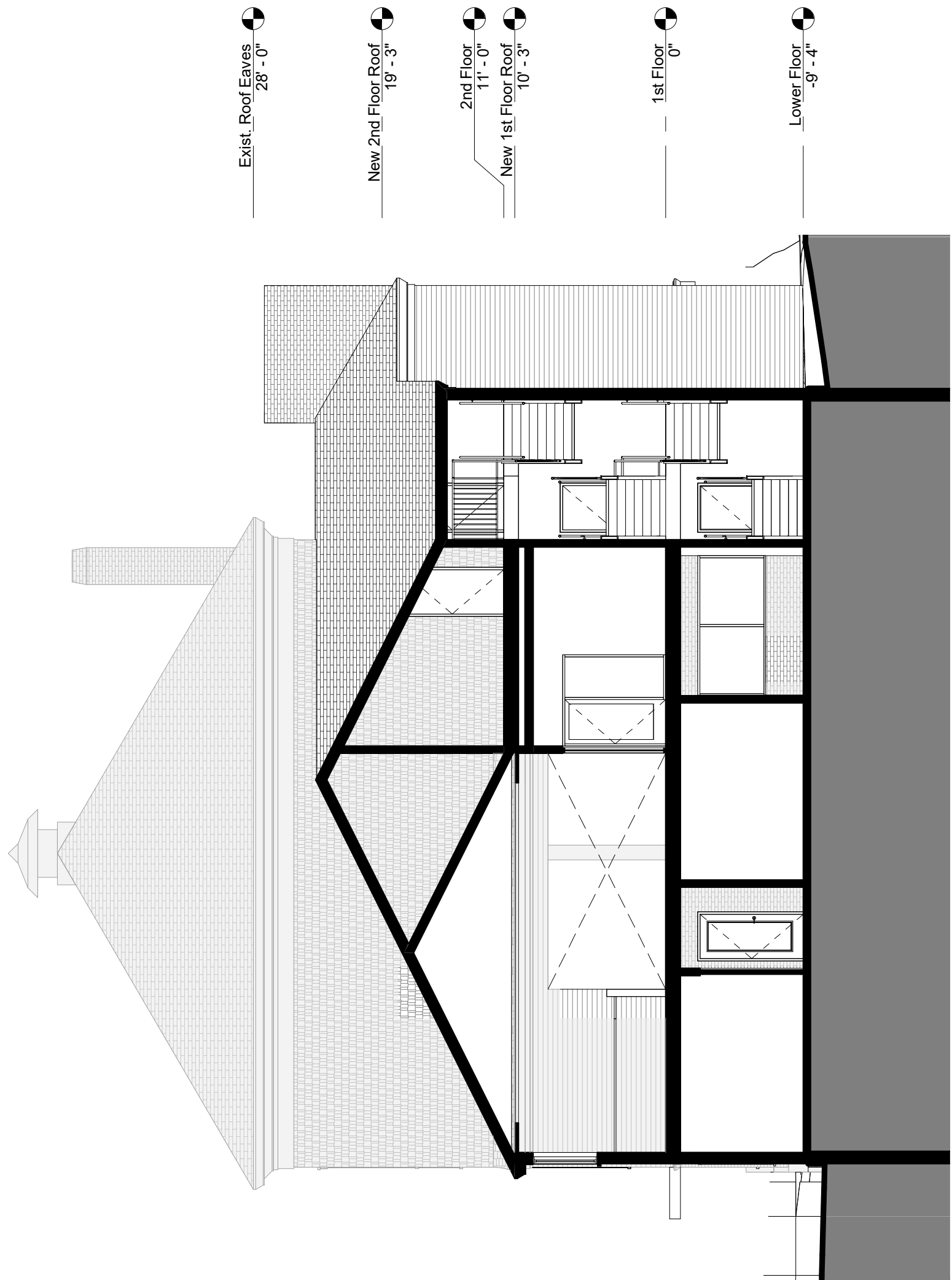
1 Building Section
A-5.1/A-5.1.1 1/8" = 1'-0"



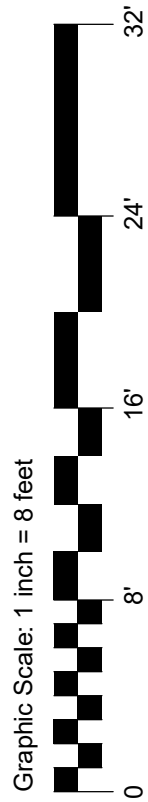
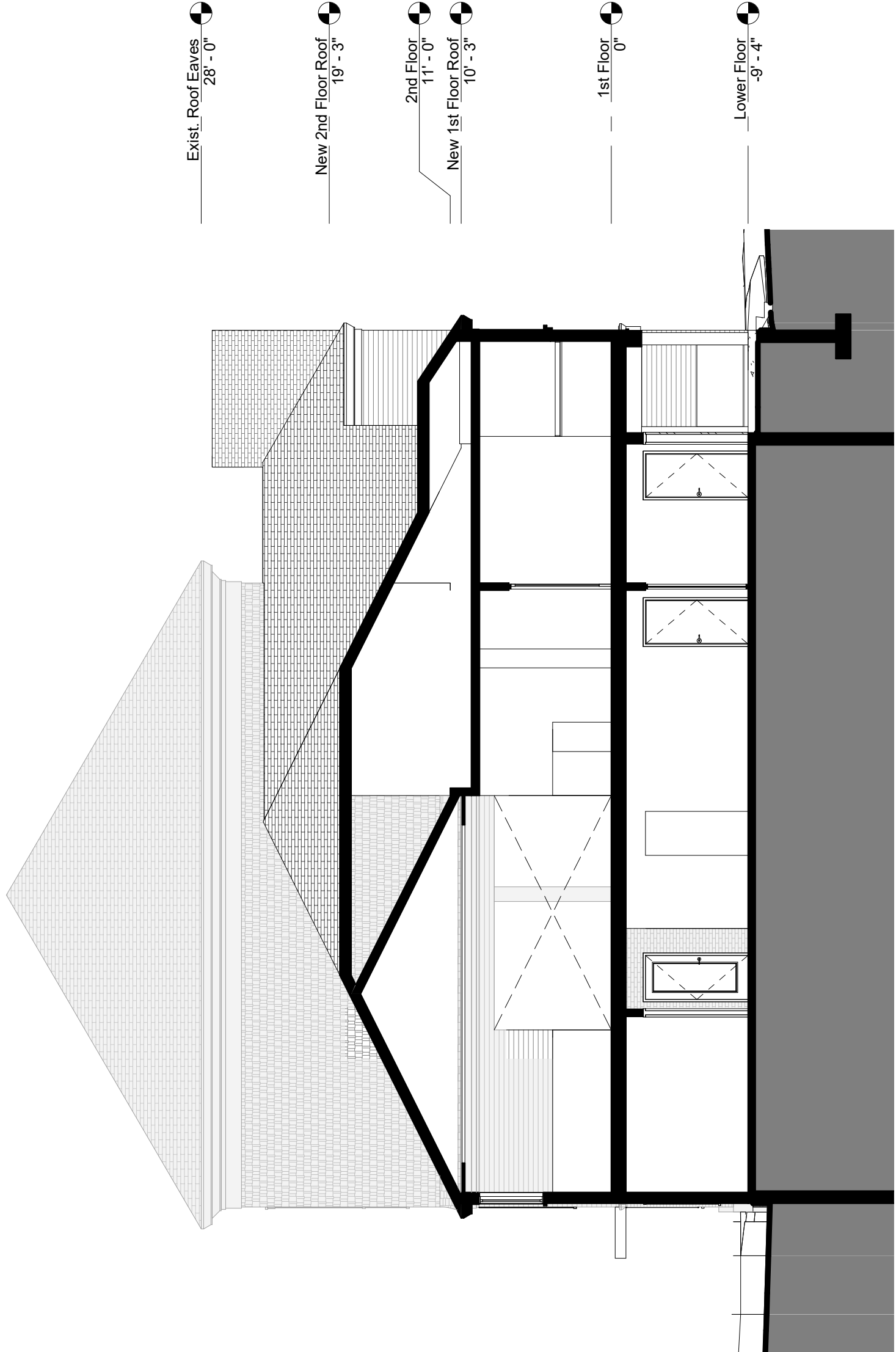
- Exist. Roof Eaves
28'-0"
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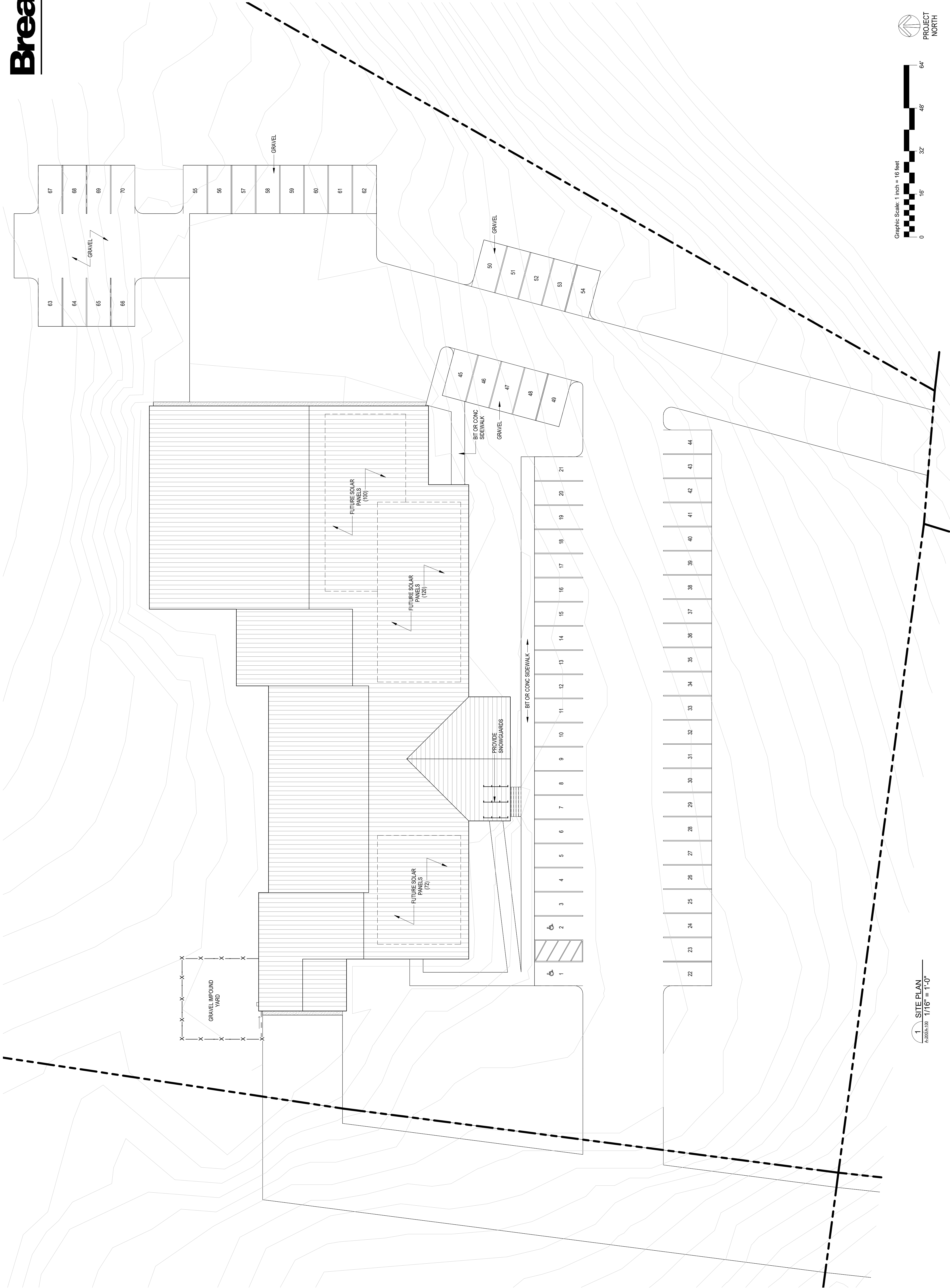
2 Building Section
A-5.1/A-5.1.1 1/8" = 1'-0"

1 Building Section
ASUS&L 1/8" = 1'-0"



2 Building Section
ASUS&L 1/8" = 1'-0"





1 SITE PLAN
A2024.100 1/16" = 1'-0"



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Middlebury, VT
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F 802 388 3815
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Civil Engineer
address
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address
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CONCEPT DESIGN

Sheet Issue Date: 06/18/20

Issue / Revision History		
No.	Date	Description

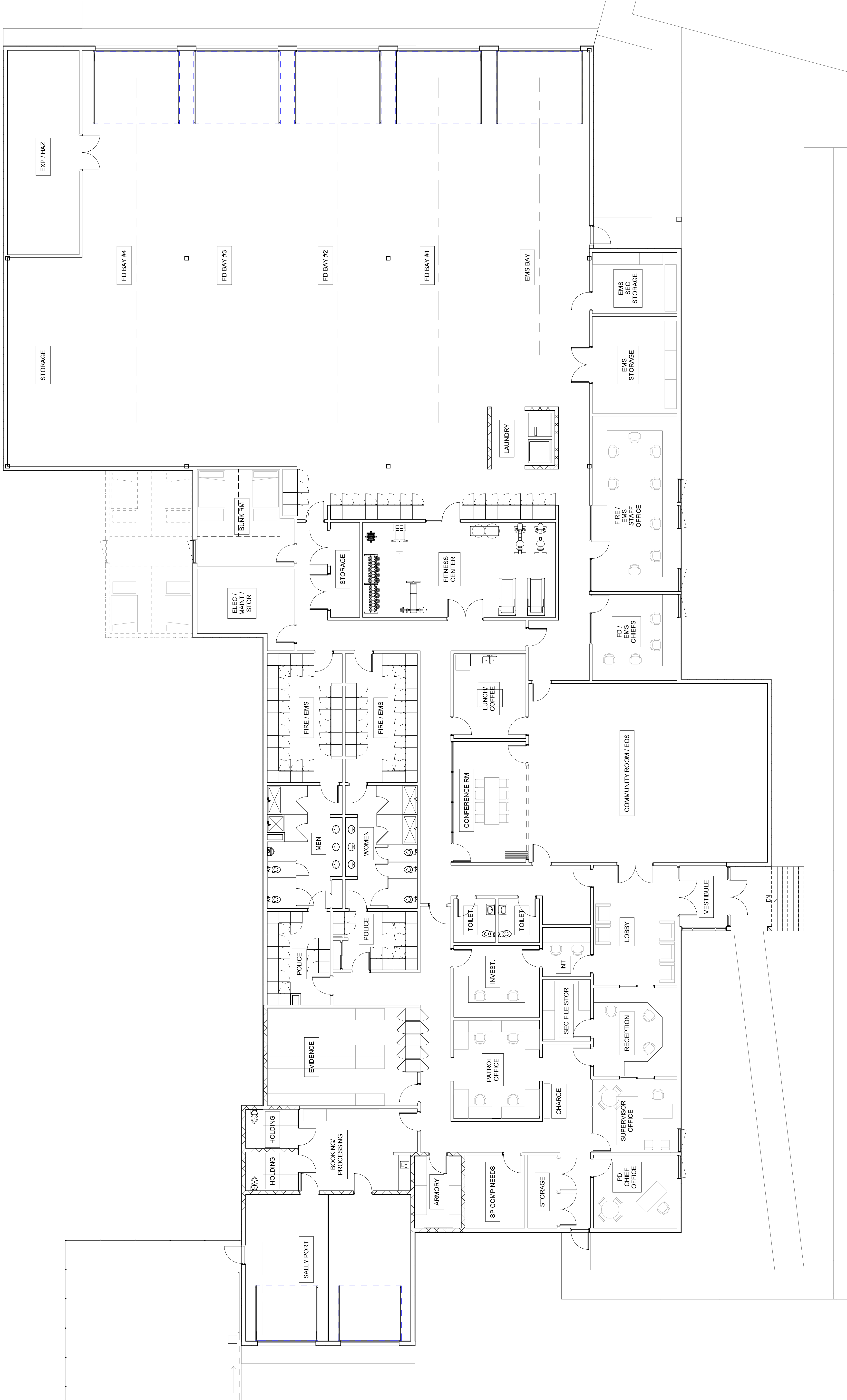
Enfield Municipal
Buildings - Public
Safety Facility
Enfield, NH

PROJECT NO.: 19311
DRAWN BY: Author
CHECKED BY: Checker

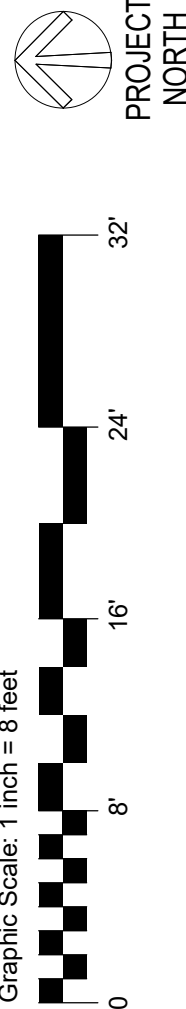
1ST FLOOR PLAN

A-101

1ST FLOOR TAGGED NOTES



1 Ground Floor (1st Floor)
A-101/A-101 1/8" = 1'-0"



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CONCEPT DESIGN

Sheet Issue Date: 06/18/20

Issue / Revision History		
No.	Date	Description

Enfield Municipal
Buildings - Public
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Enfield, NH

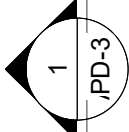
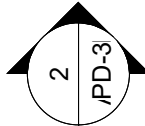
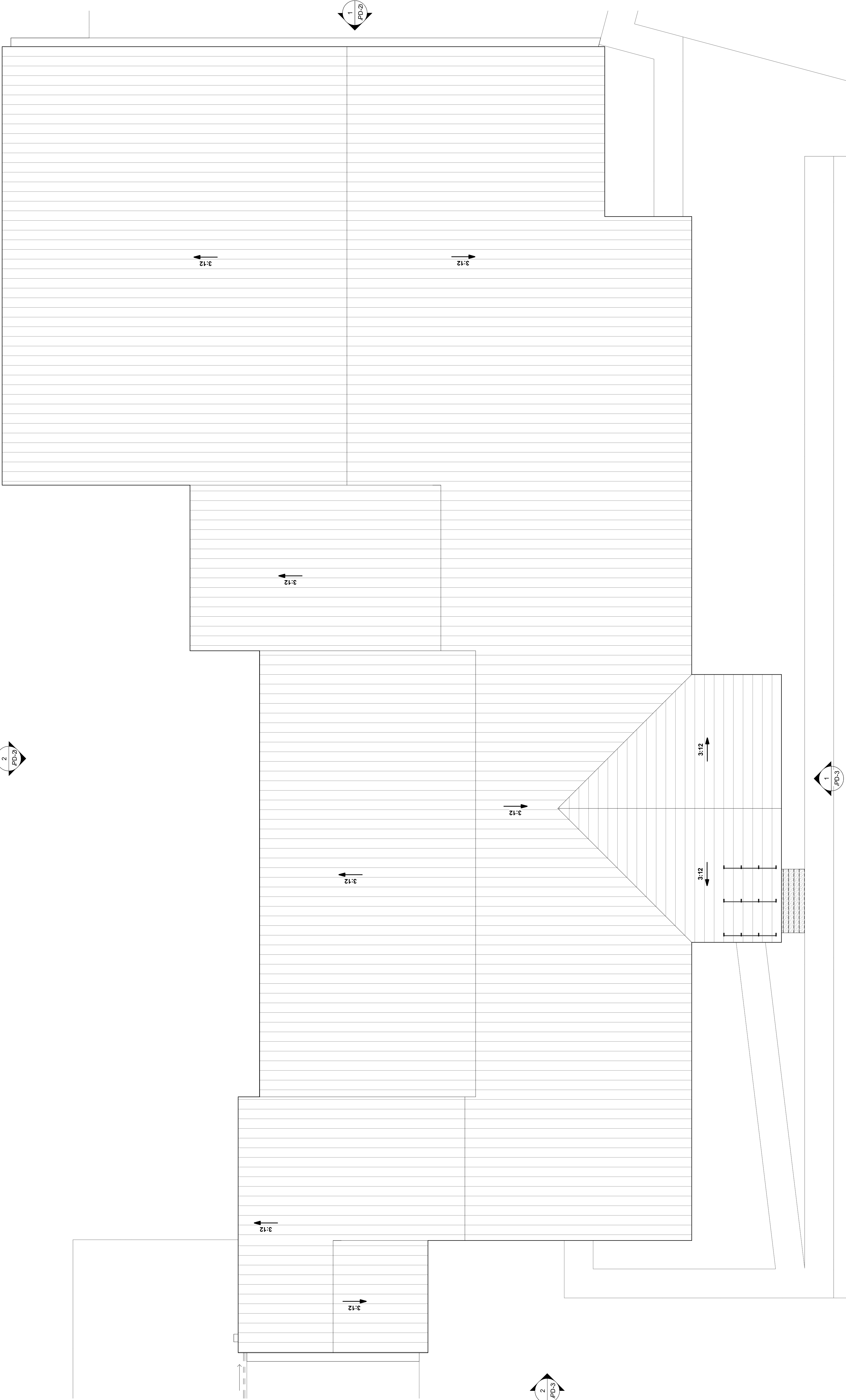
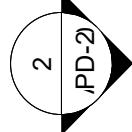
PROJECT NO.: 19311
DRAWN BY: Author
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ROOF PLAN

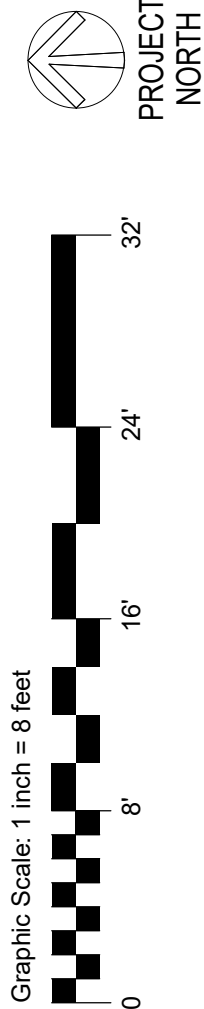
A-120

ROOF SCHEDULE	
Type Mark	Description

ROOF PLAN TAGGED NOTES



1 Roof Plan
As Shown 1/8" = 1'-0"



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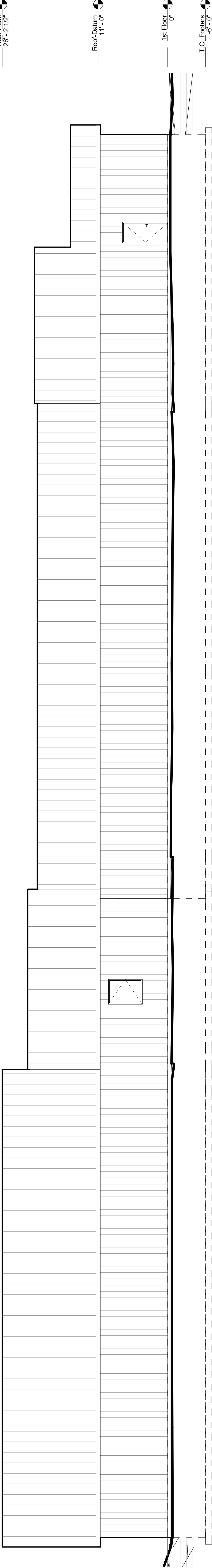
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No.	Date	Description

Enfield Municipal
Buildings - Public
Safety Facility
Enfield, NH

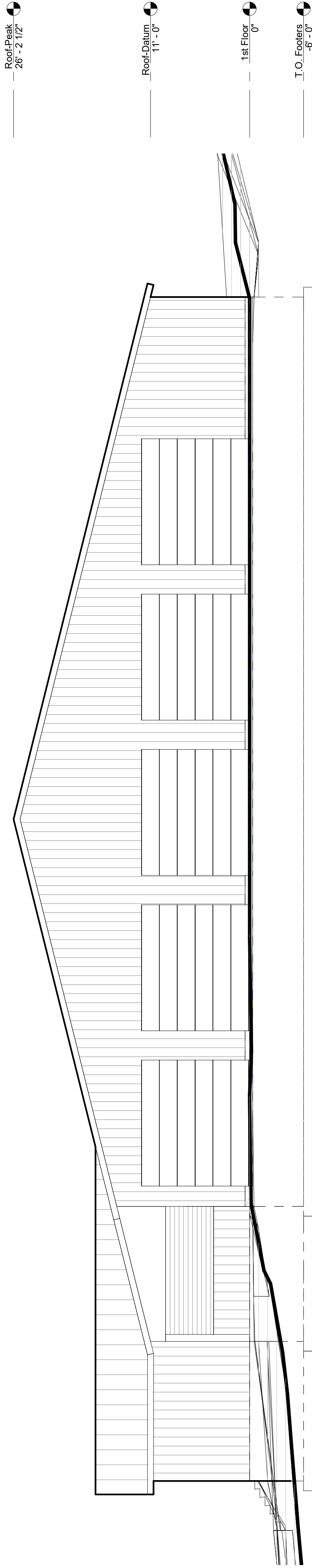
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CHECKED BY: Checker

EXTERIOR
ELEVATIONS

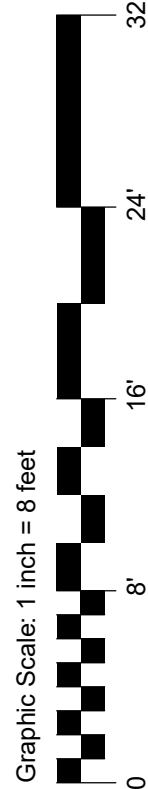
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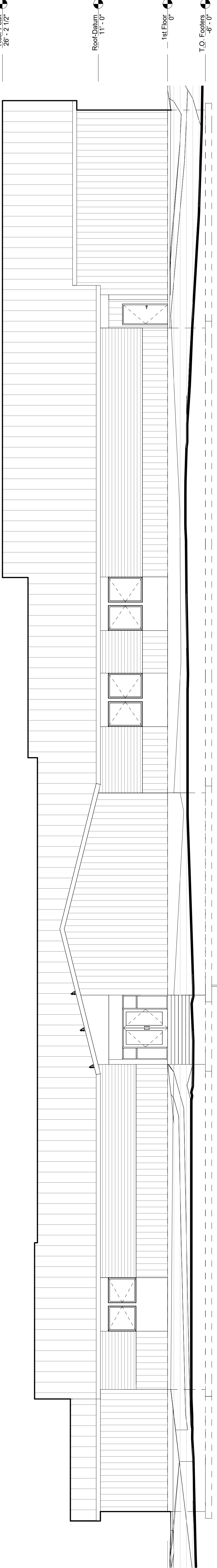


1 North Elevation
A-200/A-200 1/8" = 1'-0"

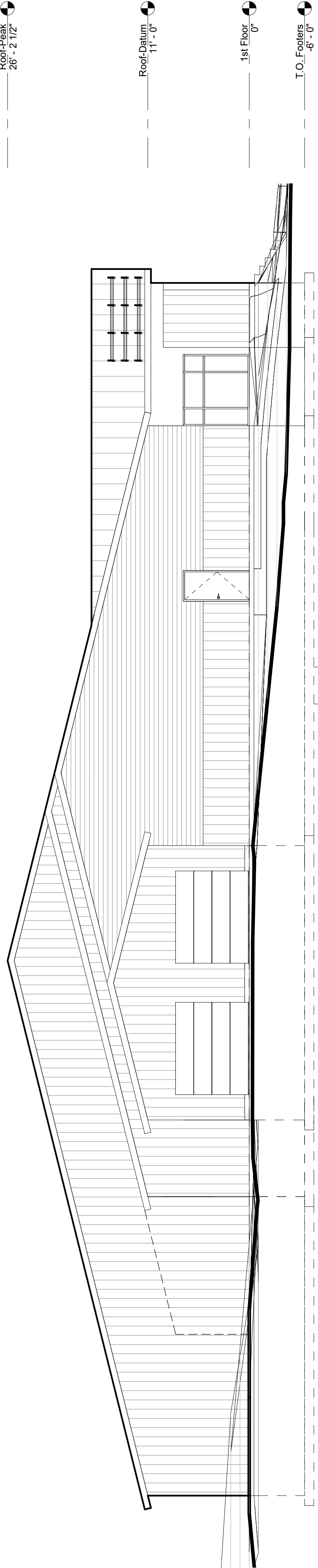


2 East Elevation
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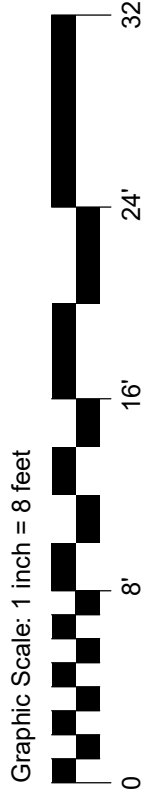




1 South Elevation
A-201(A-201) 1/8" = 1'-0"



2 West Elevation
A-201(A-201) 1/8" = 1'-0"



Project Scope Narratives

Narratives indicating anticipated project scope for Whitney Hall (Municipal Offices, Library and Auditorium) and the Public Safety Facility were prepared by Bread Loaf Corporation (BLC) in collaboration with the Municipal Facilities Advisory Committee (MFAC) based on previous BLC project experience, discussions with MFAC representatives and department staff.

The attached Narratives were reviewed by the MFAC, department staff and members of the community during MFAC meetings. BLC has developed the Narratives based on input received.

Refer to the following pages for Whitney Hall (Municipal Offices, Library and Auditorium) and Public Safety Facility Narratives v1.4 and v1.7 respectively.

Whitney Hall - Narrative v1.4

Town of Enfield

June 18, 2020

GENERAL PROJECT DESCRIPTION

Owner: Town of Enfield

Integrated Project Manager: Bread Loaf Corporation – Architects, Planners, Builders

Floor Area: 17,644 GSF.

Floor to Floor Heights: 9 FT – 4 IN Lower Floor to First Floor; 11 FT – 1 IN First Floor to Second Floor.

Building Heights: +/- 52 FT from ground to top of roof; +/- 62 FT from ground to top of tower.

Building Codes: The following standards as amended by the NH State Building Code shall apply.

NH State Building Code (Effective as of September 15, 2019)

The NH State Building Code has been amended in accordance with BCR 300.

Guidance Document - Codes and Standards References

International Building Code 2015

International Energy Conservation Code 2015

International Existing Building Code 2015

International Mechanical Code 2015

International Plumbing Code 2015

National Electrical Code 2017 (NOTE: The Electrical Code is available on the NFPA website – not the ICC website)

NFPA 909, Standard for the Protection of Cultural Resources Including Museums, Libraries, Places of Worship, and Historic Properties, 2001 edition, as a rule within the State Fire Code.

NFPA 914, Code for Fire Protection of Historic Structures, 2001 edition, as a rule within the State Fire Code; "All persons renovating, modifying, maintaining or operating any historic structure and all owners or occupants of historic structures shall comply with the requirements of NFPA 914.

The State Building Code in RSA 155-A:2, III., provides that "to the extent that there is any conflict between the state building code and the state fire code, the state fire code shall take precedence unless otherwise determined by the [State Building Code Review] board..." As a result, for historic structures the provisions of NFPA 909 and 914 in the State Fire Code supersede those of the State Building Code.

The Secretary of the Interior's Standards for Rehabilitation - Rehabilitation may be considered as a treatment when repair and replacement of deteriorated features are necessary; when alterations or additions to the property are planned for a new or continued use; and when its depiction at a particular period of time is not appropriate. Prior to undertaking work, a documentation plan for rehabilitation should be developed.

Energy Efficiency, Renewable Energy and Historic Preservation: A Guide for Historic District Commissions.

Zoning: CB Community Business District

Structural Frame: Stone, brick and concrete foundations; Wood frame bearing walls and columns with masonry (CMU) bearing walls at locations required for fire protection and security; Wood truss roof.

Fireproofing: None.

Fire protection: Fully sprinklered per NFPA 13.

Taxes: Tax-exempt.

Bond: To Be Determined (TBD)

Alternates:

Alternate No. 1 – Provide Storage Room at Second Floor adjacent to Vestibule and Conference Room. Support floor of Storage Room on Information Desk/Circulation and Directors Office wall framing below and alter configuration of roof trusses/framing to accommodate addition of Storage Room.

Alternate No. 2 – Change roofing material on addition from “Asphalt Shingles” to “Standing Seam Metal Roofing”.

Alternate No. 3 – Provide Vaulted Ceiling in Teen Stacks, Teen Hangout/Work/Gaming and Children’s Stacks/Play/Reading and Craft area of the Library at First Floor. Alter configuration of structure and roof trusses/framing to accommodate addition of Vaulted Ceiling area.

Alternate No. 4: Change from “Low temperature air source heat pump system to allow for low temperature operations below negative 13°F DB outdoor ambient air conditions” to provide “Low temperature air source heat pump system to allow for negative 21°F DB outdoor ambient air source”.

Alternate No. 5: Add “Storage Mezzanine” at the Second Floor above the Kitchen, Conference Room and (northern half of) Storage room.

Alternate No. 6: Change from “single-phase” electrical service to “3-phase” electrical service. Includes the extension of 3-phase overhead service along Main Street +/- 540 ft. from the intersection of Main Street and Route 4 to the pole across Main Street from Whitney Hall.

Alternate No. 7: Add lowering new and existing floor elevation 1’-6” from existing floor elevation in all Lower Floor level spaces except for Utility & Building Maintenance, Stair 1 and Library & Town Historian. Interior and exterior wall heights, and ceiling heights, shall be increased 1’-6” in areas where the floor elevation is lowered. An elevated slab, supported on foam blocks, shall be poured over the lowered Vault slab in the portion of the Vault accessed by the Library & Town Historian allowing direct access to the Vault from both existing and lowered floor elevations.

Alternate No. 8: Add exterior walk-up transaction window to the Town Clerk’s Office with associated roof canopy, sidewalk and snow-guards at roof of existing building and building addition where roof is adjacent to walk-up transaction window sidewalk.

DIVISION 31 –EARTHWORK

Demolition: Prior renovations and additions at Whitney Hall that conflict with historic building rehabilitation and the proposed addition shall be removed. No work is anticipated at the existing Police Station.

Topography: Moderate grades.

Subsurface Exploration: TBD

Site Area:

Total Area: +/- 0.88 Acres

Acres to Clear: +/- 0.50 Acres

Clearing and Grubbing: Removal of minimal landscaping and existing site improvements such as parking and sidewalks is required.

Topsoil: None.

Soil Type: TBD. (Note - Preparation of the Conceptual Estimate has assumed that existing soils shall be suitable for construction of building foundations, parking areas, driveways, stormwater treatment systems and other site improvements. Costs to address concerns such as low soil bearing capacity, organic materials or similar other conditions are not included in the Conceptual Estimate.)

Rock Expected: TBD. (Note - Preparation of the Conceptual Estimate has assumed that ledge and large boulders shall not be encountered in construction of building foundations, parking areas, driveways, stormwater treatment systems and other site improvements. Costs to address concerns such as ledge, large boulders or similar other conditions are not included in the Conceptual Estimate.)

Ground Water Expected: TBD. (Note - Preparation of the Conceptual Estimate has assumed that existing ground water conditions shall be suitable for construction of building foundations, parking areas, driveways, stormwater treatment systems and other site improvements. Costs to address concerns such as high ground water, perched ground water or other similar conditions are not included in the Conceptual Estimate.)

Ground Water Disposal by TBD.

Excavation: Grade and fill with imported materials.

Sheeting Required: No.

Protect Existing Structures: Yes.

Backfill:

Paving Area: 2,475 SY

Landscape Area: 1,000 SY

Building Area: 6,788 GSF (Lower Floor area only)

Water Control: Ditching.

DIVISION 32 –EXTERIOR IMPROVEMENTS

Drainage: Storm Drains: Pre-cast catch basins and manholes; Swales; Stormwater retention.

Building Sub Drains: Provide sub drains to move water away from existing stone and brick foundations.

Rip Rap: None.

Roads and Walks:

Driveways: Bituminous.

Parking Areas:

Public Parking and Staff Parking Areas: Bituminous.

Existing Police Building Exterior Parking Area: Bituminous.

Curbs:

Driveways: Concrete.

Public Parking and Staff Parking: Concrete.

Parking Bumpers: None.

Painting Lines: Provide at Public Parking and Staff Parking.

Guardrail: None.

Signs: See Division 10 – Specialties.

Sidewalks: 5 FT wide x 4 IN thick concrete sidewalks.

Site Improvements:

Fencing: Provide wood screen/fencing at dumpster pad.

Retaining Walls: None.

Lawns and Planting:

Topsoil: Spread 6 IN thick minimum topsoil from on-site stockpile located at PSF Project site.

Lawn: Seed and mulch disturbed areas.

Trees and Shrubs: Allowance included for trees and shrubs.

DIVISION 33 – UTILITIES

Water Supply: Pressure and flow is assumed to be adequate to serve building's domestic water and fire protection requirements; 6 IN diameter water service extended from existing water main to building.

Sewers: Capacity is assumed to be adequate to serve building; Gravity flow is assumed; No sewage pump station required; 8 IN diameter sewer service extended from sewer main to building.

Electrical Service: Existing utility power on Main Street is assumed to be adequate to serve building; new 120/208 single phase underground secondary electrical service shall be extended from exiting pole on opposite side of Main Street to building. See Alternate No. 6 to change from "single-phase" electrical service to "3-phase" electrical service.

Telecommunications Service: Telecommunication service on Main Street is assumed to be adequate to serve building; new underground telecommunication service shall be extended from exiting pole across Main Street to building.

Heating Fuel: Fuel service is currently oil. (LP serves existing generator)

DIVISION 3 – CONCRETE

Foundations

Bearing on: Native soil.

Footings: Spread footings.

Piers: None.

Anchor bolts: Provided at sill.

Underslab fill: 8 IN minimum thick compacted gravel.

Vapor Barrier: 15 MIL

Perimeter Insulation: See Division 7 – Thermal & Moisture Protection

Slab on Grade:

Typical Interior Slab: 4 IN thick with welded wire mesh reinforcing.

Slab Finish: Float at slabs to receive finish flooring systems; Trowel at exposed slabs.

Curing: Wet cured; No curing compounds shall be used that may conflict with finish flooring systems.

Elevated Slab System:

Vault: Pre-cast concrete plank.

DIVISION 4 – MASONRY

Brick Walls: Provide 4 IN NOM brick veneer at elevator tower.

CMU Walls: Provide load-bearing 8 IN CMU interior and exterior walls at Vault.

DIVISION 5 – METALS

Structural Framing: Provide structural steel and/or engineered wood framing to reinforce existing wood structure and existing wood roof trusses.

Fasteners: Provide bolts, screws, nails, connectors and other fasteners.

Railings: Provide pipe railings at exterior stairs.

DIVISION 6 – WOOD, PLASTICS & COMPOSITES

Framing:

Exterior walls shall be framed of 2 x 6 studs at 16 IN o.c.

Roof shall be framed of wood trusses at 16 IN o.c. See Alternate No. 1 for alternative truss configuration required for Storage Room at Second Floor. See Alternate No. 3 for alternative structure/truss configuration required for Vaulted Ceiling at First Floor.

Exterior wall sheathing shall be Advantech or equal.

Roof sheathing shall be Advantech or equal.

Sill plates at exterior walls, or other wood in exterior assemblies in direct contact with concrete or CMU, shall be pressure-treated.

Cabinets: Custom-grade pre-finished base and wall cabinets shall be provided at locations shown on drawings.

Countertops: Post-formed plastic laminate counter tops shall be provided at all countertops.

Shelving: See Division 10 – Specialties.

Window Trim: Provide painted wood window sill at interior of exterior windows.

DIVISION 7 – THERMAL & MOISTURE PROTECTION

Air Barrier: Continuous air barrier shall be provided through out building thermal envelope.

Building Insulation:

Perimeter insulation at exterior foundation walls below slab on grade shall be R-10 for 24 IN.

Perimeter insulation at exterior foundation walls shall be R-7.5 ci.

Insulation at exterior wood framed walls and CMU masonry walls shall be R-13 + R-7.5 ci or R-20 + R-3.8 ci.

Insulation at lower chord of roof trusses shall be R-49.

Shingles: Provide asphalt shingle roofing as described by Alternate No. 2.

Preformed Roofing & Siding:

Provide pre-finished standing seam metal roofing as described by Alternate No. 2.

Provide field-finished wood clapboard siding as shown on elevations.

Provide field-finished wood shingles as shown on elevations.

Provide field-finished MDO panels as shown on the elevations.

Sheet Metal:

Provide pre-finished metal flashings.

DIVISION 8 – OPENINGS

Hollow Metal Door and Window Frames:

Provide 16 GA galvanized hollow metal door frames at door and window openings.

Exterior door frames shall be provided with thermal break.

Hollow Metal Doors:

Provide hollow metal doors with 18 GA face at back-of-house (staff only) locations.

Provide honeycomb core at interior doors and insulated core at exterior doors (U = 0.43 max).

Wood Doors: Provide paneled solid wood doors at front-of-house (public and semi-public) locations.

Folding Door: See Division 10 – Specialties.

Windows: Exterior windows shall be double hung or fixed type with pre-finished metal frames (U = 0.36 max).

Door Hardware:

Doors shall be provided with commercial-grade, ADA compliant hardware.

Electronic locks shall be provided at main entrance and rear entrance for secured access.

Electronic door strike controlled by Receptionist shall be provided at interior Reception Area door between Reception Area and Corridor.

Glass and Glazing:

Except as indicated below, exterior windows shall be standard insulating glass meeting thermal requirement indicated in "Windows" above.

Exterior windows (such as at doors and low windows) shall be standard insulating tempered glass as required by code.

Interior windows shall be standard tempered glass.

Mirrors shall be standard sheet glass with frames.

Exterior Walk-up Transaction Window (Alternate No. 8):

Provide bullet resistant pass, service and teller window unit as described by Alternate No. 8. Window unit shall be equipped with a 30 IN. W x 32 IN. H level 3 bullet resistant fixed glass window, electric transfer drawer, call button, speakers and full intercom system.

13 IN W x 6 ½ IN. D x 19 IN L transfer area shall automatically lock when drawer is in closed position.

DIVISION 9 – FINISHES

Drywall:

Framed walls shall be 5/8 IN gypsum board taped and finished level 4.

Interior wall framing shall be 3 5/8 IN metal studs spaced 24 IN o.c.

Ceilings, except where indicated as ACT, shall be 5/8 IN gypsum board taped and finished level 4 suspended on 650 suspension grid.

Flooring:

Ceramic Tile: Provide 4 x 4 IN NOM ceramic tile wainscot at wet walls in Toilet Rooms; Provide 2 x 2 IN NOM ceramic tile floors in Toilet Rooms.

Carpet:

Lower Floor: Provide carpet tile in Vestibule, Reception Area, Customer Service, Town Clerk, Tax Collector, Accessing Admin Office, Public Space, Receptionist Assistant, Corridor (east), Human Services Director Office, Bookkeeping Office, Assistant Town Manager Office, Town Manager Office, Land Use & Community Development/Building Inspector Office, and Meeting/Multipurpose Room.

First Floor: Provide carpet tile in Vestibule, Information Deck/Circulation, Director's Office, Adult Fiction/Non-Fiction, Adult Reading Room, Teen Stacks, Teen Reading/Hangout/Work/Gaming, Children's Stacks/Play/Reading/Craft, Meeting Room #1, Meeting Room #3 & History Room.

Second Floor: Provide carpet Tile at Vestibule(s), and Conference Rooms.

VCT:

Lower Floor: Provide VCT floor tile in Corridor (west), Property Records/File Storage Room, Library Storage & Town Historian, Office Storage, Shared Office Function, Kitchen, File Storage.

First Floor: Provide VCT in Book Processing/Tech Services, Kitchen and Storage.

Second Floor: Provide VCT in Kitchen and Storage.

Wood Flooring: Rehabilitate or replace existing wood flooring at Hearing Room.

Concrete Sealer: Provide sealed concrete flooring at Vault, Utility & Building Maintenance, Elevator Machine Room, Stairs and I/T.

Walk-Off Mat: See Division 10 – Specialties.

Base:

Provide 4 IN high vinyl cove base at all areas of VCT flooring.

Provide 8 IN high 2-piece wood base at carpet tile flooring and wood flooring.

Provide 4 x 4 IN NOM ceramic tile cove base at ceramic tile flooring.

Painting:

Exterior: Provide painted finish at exposed ferrous metals, clap boards, shingles and exposed wood trim and soffits.

Interior: Provide painted finish at walls, ceilings, metal doors, metal door frames and window frames.

Interior: Provide stained semi-transparent finish at wood doors, wood door frames and wood trim.

ACT Ceiling: Provide 2 x 2 FT ACT ceiling in Lower Floor Corridor (west), Property Records/File Storage Room, Library Storage & Town Historian, Office Storage, Shared Office Function, Kitchen, File Storage; in First Floor Book Processing/Tech Services, Kitchen and Storage; in Second Floor Kitchen and Storage.

DIVISION 10 – SPECIALTIES

Toilet Accessories:

Public Toilets: Provide toilet paper dispenser, soap dispenser, paper towel dispenser, waste receptacle, napkin receptacle, baby changing station, grab bars and framed mirror in each Toilet.

Utility & Building Maintenance and Storage Rooms: Wall mounted mop holder shall be provided at mop receptor in Utility & Building Maintenance and Storage Rooms.

Marker Boards and Bulletin Boards:

Marker boards and bulletin boards shall be provided by the Owner.

Directory Board and Display Case:

Directory board and display case shall be provided by the Owner.

Fire Extinguishers:

Fire Extinguishers: Fire extinguishers shall be provided to comply with building code.

Fire Extinguisher Cabinets: Fire extinguisher cabinets shall be provided for fire extinguishers in areas only accessible to the public.

Wall Brackets: Wall brackets shall be provided for fire extinguishers in all remaining areas.

Flagpole: Flagpole shall be provided by the Owner.

Accordion Folding Partition: Provide manual folding partition at Meeting Room #1.

Shelving: Painted plywood shelving 24 IN wide by 3 shelves tall shall be provided in Storage, EMS Storage and EMS Secure Storage.

Signs:

Code Required Signs: Signs required to obtain Certificate of Occupancy shall be provided; Code required signage shall include standard ADA signs at handicapped parking spaces and toilet room signage.

Building Signage and Directional Signage: Building signage and directional signage shall be provided by the Owner.

Walk-Off Mat: Provide recessed walk-off mat in Vestibule at Lower Floor.

DIVISION 11 – EQUIPMENT

Appliances;

Kitchens: Space and utility accommodations shall be provided for refrigerator, stove, hood and micro-wave appliances to be provided by Owner.

DIVISION 12 – FURNISHINGS

Window Treatments: Blinds and shades at windows shall be provided by the Owner.

Furniture: Furniture shall be provided by the Owner.

DIVISION 13 – SPECIAL CONSTRUCTION

Not Used.

DIVISION 14 – CONVEYING SYSTEMS

Elevator: A 3,500 LB capacity, 3 stop, single phase, hydraulic elevator shall be provided.

DIVISION 21 – FIRE SUPPRESSION

Provide fire protection (sprinkler) system in accordance with NFPA 13.

DIVISION 22 – PLUMBING

Building Drainage:

Floor drains shall be provided at each Toilet Room.

Sanitary System: Sanitary system shall connect to sanitary sewer at a point 5 FT outside of building foundation.

Domestic Cold Water:

Domestic cold water system shall be provided from water service at a point 5 FT outside of building foundation.

Backflow preventer and Pressure reducing valve shall be provided as needed.

Water meter, water filtration and water conditioning, if required, shall be provided by Owner.

Domestic Hot Water:

Heat pump water heater or electric water heater to provide domestic hot water.

Piping: Piping material, valves and piping connections shall be of materials that comply with plumbing code.

Insulation: Pipe insulation R value and pipe insulation materials shall comply with plumbing and energy codes.

Fixtures:

Water Closets: Floor mounted porcelain toilets with tanks shall be provided at all Toilet Rooms.

Lavatories: Wall hung porcelain lavatories shall be provided at all Toilet Rooms.

Drinking Fountain: One ADA compliant water cooler with bottle filler shall be provided at each floor level.

Sinks:

Kitchens: Drop-in counter mounted single bowl stainless steel sink shall be provided in each Kitchen.

Utility & Building Maintenance and Storage Room: Cast fiberglass floor mounted mop receptor shall be provided in Utility & Building Maintenance Room and First Floor Storage Room.

Hose Bibbs:

Exterior: Two (2) hose bibbs shall be provided at the building exterior, east and west.

Division 23 - HEATING, VENTILATING AND AIR CONDITIONING

HVAC:

Air Conditioning: Furnish and install low temperature air source heat pump system with back up electric resistant heat for office areas. Units shall be provided with accessories to allow for low temperature operations below negative 13°F DB outdoor ambient air conditions. Alternate No. 4 to provide for negative 21°F DB outdoor ambient air source heat pumps.

Provide a separate split system Air Conditioning with DX Cooling to serve the Critical Service IT Room.

Furnish and install Ventilation System(s) for the building including restrooms exhaust. The ventilation System(s) shall incorporate energy recovery to maximize energy efficiency. The system shall be sized to applicable ASHRAE and NH ventilation codes.

Insulation: Duct insulation R value and duct insulation materials shall comply with mechanical and energy codes.

Provide pipe insulation per ASHRAE standards and NH codes for Energy Efficient Commercial Construction.

All duct systems shall be fabricated installed in accordance with SMACNA standards.

Provide Testing and balancing by an independent T&B contractor.

Provide System start-up and one year warranty on the complete installation.

Provide Owner instructional walk-thru.

DIVISION 26 – Electrical

Service:

120/208 single phase underground secondary electrical service shall be extended from exiting pole on opposite side of Main Street to building as indicated in Division 33 – Utilities.

Panels: Panels shall be provided in the Elec/Maintenance/Storage Room for distribution, power and lighting and as required throughout the facility.

Distribution:

Wire and Conduit: Wire and conduit shall comply with electrical code.

Power: Receptacles shall comply with electrical code.

Emergency Power: Emergency power shall comply with code requirements and shall be coordinated with emergency system to provide necessary power in an emergency.

Lighting Fixtures:

Interior Lighting Fixtures: Interior lighting fixtures shall be LED commercial quality, comply with energy savings requirements and be designed to perform in specific application anticipated.

Exterior Lighting Fixtures: Exterior lighting fixtures shall be LED commercial quality, comply with energy savings requirements and be designed to perform in specific application anticipated.

Lighting Controls shall be provided to meet current NH energy guidelines.

Emergency lighting shall be via self- contained battery powered emergency lights.

Exit signage shall be per code and be via self-contained battery back-up exit signs.

Provide building grounding per code.

DIVISION 27 - COMMUNICATIONS

Telephone and Data System:

Distribution: Conduit, cable and termination boxes shall be provided for telephone and data system.

Equipment: Telephone and data system equipment, racks, backboards, and equipment installation shall be provided by the Owner.

DIVISION 28 – ELECTRONIC SAFETY & SECURITY

Fire Alarm System:

Fire Alarm System shall be a Code compliant, fully addressable system consisting of but not limited to pull stations, horn/strobes, smoke detectors, carbon monoxide sensors (in Mechanical Room(s) and as required), duct smoke detectors (supplied and installed by MC and wired by EC), Fire Alarm Control Panel, and Remote Annunciator Station.

Security System:

Distribution: Conduit, and termination boxes shall be provided for security system.

Equipment: Security system equipment, wiring and equipment installation shall be provided by the Owner.

END

Public Safety Facility - Narrative v1.7

Town of Enfield

September 9, 2020

GENERAL PROJECT DESCRIPTION

Owner: Town of Enfield

Integrated Project Manager: Bread Loaf Corporation – Architects, Planners, Builders

Floor Area: 18,831 GSF.

Floor to Ceiling Height: 8 FT in all spaces except Apparatus Bay; 16 FT in Apparatus Bay.

Building Codes: The following standards as amended by the NH State Building Code shall apply.

NH State Building Code (Effective as of September 15, 2019)

The NH State Building Code has been amended in accordance with BCR 300.

Guidance Document - Codes and Standards References

International Building Code 2015

International Energy Conservation Code 2015

International Existing Building Code 2015

International Mechanical Code 2015

International Plumbing Code 2015

National Electrical Code 2017 (NOTE: The Electrical Code is available on the NFPA website – not the ICC website)

Zoning: RT 4 US Route 4 District

Structural Frame: Concrete foundations; Wood frame bearing walls with masonry (CMU) bearing walls at locations required for security; Steel frame to support Apparatus Bay roof trusses; Wood truss roof.

Fireproofing: None.

Fire protection: Fully sprinklered per NFPA 13.

Taxes: Tax-exempt.

Bond: To Be Determined (TBD)

Alternates:

Alternate No. 1 – Asphalt Shingle Roofing with 4:12 roof slope shall be assumed to be the “base cost” for the Conceptual Estimate. For Alternate No.1 change from “Asphalt Shingle Roofing with 4:12 Roof Slope” to “Pre-finished Standing Seam Metal Roofing with 3:12 Roof Slope”.

Alternate No. 2 – Change from “Low temperature air source heat pump system to allow for low temperature operations below negative 13°F DB outdoor ambient air conditions” to provide “Low temperature air source heat pump system to allow for negative 21°F DB outdoor ambient air source”.

Alternate No. 3 – Change from “Four (4) paddle fans” to “Four (4) Arius Destratification Fans” to circulate air in the Apparatus Bay.

Alternate No. 4 – Change from “vinyl/metal siding” to “Hardie siding” at exterior elevations. Vinyl horizontal and vinyl vertical siding with flat metal panels shall be assumed to be the “base cost” for the Conceptual Estimate. For Alternate No.4 change from “Premier grade 5 in double clapboard horizontal vinyl siding, 0.048 in thick board & batten vertical vinyl siding and MBCI, Flexloc, 24 ga. flat metal siding panels” to “Hardie Plank Lap Siding Cedar mill 7.25 in clapboard horizontal siding, Hardie Panel Cedar Mill 4 x 10 x 5/16 vertical siding and Hardie Panel Smooth 4 x 10 x 5/6 flat siding panels”.

Alternate No. 5 – Change from “vinyl/metal siding” to “metal siding” at exterior elevations. Vinyl horizontal and vinyl vertical siding with flat metal panels shall be assumed to be the “base cost” for the Conceptual Estimate. For Alternate No.5 change from “Premier grade 5 in double clapboard horizontal vinyl siding, 0.048 in thick board & batten vertical vinyl siding and MBCI, Flexloc, 24 ga. flat metal siding panels” to “MBCI Master Line 16, 22 ga. horizontal siding, MBCI Classic, 22 ga. vertical siding and MBCI, Flexloc, 24 ga. flat metal siding panels”.

Alternate No. 6 – Change from “LP Gas unit heaters and perimeter insulation” to “Radiant floor heating system, hot water unit heaters and underslab rigid insulation” at 6,405 SF of Apparatus Bay and 952 SF of Sallyport.

Alternate No. 7 – Change from “Level 7 bullet-proof glass” to “Level 3 bullet-proof glass” at interior Receptionist window indicated to be provided with bullet-proof glass.

Alternate No. 8 – Change from “Insulated Concrete Form (ICF) system” to “Concrete foundation, wood-framed walls and building insulation” at exterior walls.

DIVISION 31 –EARTHWORK

Demolition: None.

Topography: Moderate grades.

Subsurface Exploration: TBD

Site Area:

Total Area: +/- 3.5 Acres

Acres to Clear: +/- 3.0 Acres

Clearing and Grubbing: Light.

Topsoil: Strip and stockpile topsoil on site.

Soil Type: TBD. (Note - Preparation of the Conceptual Estimate has assumed that existing soils shall be suitable for construction of building foundations, parking areas, driveways, stormwater treatment systems and other site improvements. Costs to address concerns such as low soil bearing capacity, organic materials or similar other conditions are not included in the Conceptual Estimate.)

Rock Expected: TBD. (Note - Preparation of the Conceptual Estimate has assumed that ledge and large boulders shall not be encountered in construction of building foundations, parking areas, driveways, stormwater treatment systems and other site improvements. Costs to address concerns such as ledge, large boulders or similar other conditions are not included in the Conceptual Estimate.)

Ground Water Expected: TBD. (Note - Preparation of the Conceptual Estimate has assumed that existing ground water conditions shall be suitable for construction of building foundations, parking areas, driveways, stormwater treatment systems and other site improvements. Costs to address concerns such as high ground water, perched ground water or other similar conditions are not included in the Conceptual Estimate.)

Ground Water Disposal: TBD.

Excavation: Grade and fill on site. (Note - Preparation of the Conceptual Estimate has assumed that existing soils shall be suitable for use as backfill for construction of building foundations, parking areas, driveways and other site improvements. Costs to address concerns such as removal and export of unsuitable soils, replacement of unsuitable soils with imported backfill material or other similar conditions are not included in the Conceptual Estimate.)

Sheeting Required: No.

Protect Existing Structures: No.

Backfill:

Paving Area: 3,720 SY

Landscape Area: 7,620 SY

Building Area: 19,100 GSF; existing excavated material is assumed to be suitable for use as backfill under building and paved areas.

Water Control: Ditching.

DIVISION 32 –EXTERIOR IMPROVEMENTS

Drainage: Storm Drains: Pre-cast catch basins and manholes; Swales; Stormwater retention.

Building Sub Drains: None.

Rip Rap: None.

Roads and Walks:

Driveways: Bituminous.

Parking Areas:

Public Parking and Staff Parking Areas: Bituminous.

Fire/EMS Exterior Parking Area: Gravel.

Overflow Parking Area: Gravel.

Impound Lot: Gravel.

Curbs:

Driveways: None.

Public Parking and Staff Parking: Concrete.

Overflow Parking: None.

Parking Bumpers: None.

Painting Lines: Provide at Public Parking and Staff Parking.

Guardrail: None.

Signs: See Division 10 – Specialties.

Sidewalks: 5 FT wide x 4 IN thick concrete sidewalks and concrete steps at ADA and Public Entrance; 5 FT wide x 4 IN thick bituminous sidewalks at Police and Fire/EMS entrance.

Site Improvements:

Fencing: 8 FT high chain link at Impound Lot perimeter with 10 FT wide gate access to Sallyport driveway.

Retaining Walls: None.

Lawns and Planting:

Topsoil: Spread 6 IN thick minimum topsoil from on-site stockpile; Unused topsoil shall remain in stockpile.

Lawn: Seed and mulch disturbed areas and unused topsoil in stockpile.

Trees and Shrubs: Allowance included for trees and shrubs.

DIVISION 33 – UTILITIES

Water Supply: New water main to be extended to site by Town; Pressure and flow is assumed to be adequate to serve building's domestic water and fire protection requirements; 6 IN diameter water service extended from property line to building.

Sewers: New sewer main to be extended to site by Town; Capacity is assumed to be adequate to serve building; Gravity flow is assumed; No sewage pump station required; 8 IN diameter sewer service extended from property line to building.

Electrical Service: New overhead incoming service to be extended to site by Town; Power supply is assumed to be adequate to serve building; Underground secondary electrical service shall be extended from pole mounted transformer to building.

Telecommunications Service: New overhead incoming service to be extended to site by Town; Telecommunication service is assumed to be adequate to serve building; Underground telecommunication service extended from property line to building.

Heating Fuel: Fuel service is assumed to be propane; Underground propane tanks, gas line to regulator and regulator shall be provided by Town's Fuel Supplier; Excavation, trenching and backfill for underground propane tanks and gas line to regulator provided; Gas line extended from regulator to (required locations within) building.

DIVISION 3 – CONCRETE

Foundations and Exterior Walls: Provide Insulated Concrete Form (ICF) system; R 24 with 6 IN core and R 24 with 10 IN core at Apparatus Bay as "base cost" foundation and exterior wall material as described by Alternate No.8.

Foundations:

Walls: 8 IN reinforced concrete walls as "alternate cost" foundation as described by Alternate No.8.

Bearing on: Native soil.

Footings: Spread footings.

Piers: None.

Anchor bolts: Provided at sill.

Underslab fill: 8 IN minimum thick compacted gravel.

Vapor Barrier: 15 MIL

Underslab and Perimeter Insulation: See Division 7 – Thermal & Moisture Protection including Alternate No.6 and Alternate No.8.

Slab on Grade:

Typical Interior Slab: 4 IN thick with welded wire mesh reinforcing.

Sallyport Slab: 5 IN thick with welded wire mesh reinforcing.

Concrete Apron at Sallyport Overhead Doors: 5 IN thick with bar reinforcing.

Fire/EMS Apparatus Slab: 7 IN thick with bar reinforcing.

Concrete Apron at Fire/EMS Overhead Doors: 8 IN thick with bar reinforcing.

Slab Finish: Float at slabs to receive finish flooring systems; Trowel at exposed slabs.

Curing: Wet cured; No curing compounds shall be used that may conflict with finish flooring systems.

Elevated Slab System:

Armory: Pre-cast concrete plank.

DIVISION 4 – MASONRY

CMU Walls:

Provide 8 IN CMU exterior walls at Sallyport, Holding Cells, Booking Evidence Room, and Armory.

Provide 8 IN CMU interior walls at Holding Cells and Armory.

Provide 8 IN CMU interior walls at washer and dryer in Apparatus Bay.

DIVISION 5 – METALS

Structural Framing: Provide structural steel framing to support wood roof trusses at Apparatus Bay.

Fasteners: Provide bolts, screws, nails, connectors and other fasteners.

Overhead Door Frames:

Provide C channel frames at head and jambs of overhead doors.

Provide steel angles at sills of overhead doors.

Bollards: Provide pipe bollards at each overhead door jamb.

Railings: Provide pipe railings at exterior stairs.

DIVISION 6 – WOOD, PLASTICS & COMPOSITES

Framing:

Exterior walls framed of 2 x 6 studs at 16 IN o.c. shall be “alternate cost” for exterior walls described by Alternate No.8.

Roof shall be framed of wood trusses at 16 IN o.c. See Alternate No. 1 for alternative roof slopes required for roofing alternatives.

Exterior wall sheathing shall be Advantech or equal.

Roof sheathing shall be Advantech or equal.

Sill plates at exterior walls, or other wood in exterior assemblies in direct contact with concrete or CMU, shall be pressure-treated.

Cabinets: Custom-grade pre-finished base and wall cabinets shall be provided in the Lunch/Coffee Room and INTOX Testing in Booking/Processing.

Countertops:

Post-formed plastic laminate counter tops shall be provided in the Lunch/Coffee Room, Receptionist, Patrol Office, Investigators, Booking/Processing, Charge, Fire/EMS Staff Office, and Fire/EMS Chief Office.

Corian or quartz countertops shall be provided in Men’s and Women’s Toilet areas associated with Police and FD/EMS Locker Rooms.

Shelving: See Division 10 – Specialties.

Window Trim: Provide painted wood window sill at interior of exterior windows.

DIVISION 7 – THERMAL & MOISTURE PROTECTION

Air Barrier: Continuous air barrier shall be provided through out building thermal envelope.

Building Insulation:

For Alternate No. 6 “alternate cost” for underslab insulation at 6,405 SF of Apparatus Bay and 952 SF of Sallyport shall be 3 IN, R15, 60 PSI rigid insulation board.

For Alternate No. 8 “alternate cost” for perimeter insulation at exterior foundation walls below slab on grade shall be R-10 for 24 IN.

For Alternate No. 8 “alternate cost” for perimeter insulation at exterior foundation walls shall be R-7.5 ci.

For Alternate No. 8 “alternate cost” for insulation at exterior wood framed walls and CMU masonry walls shall be R-13 + R-7.5 ci or R-20 + R-3.8 ci.

Insulation at lower chord of roof trusses shall be R-49.

Shingles: Provide asphalt shingle roofing as “base cost” roofing material as described by Alternate No. 1.

Preformed Roofing & Siding:

Provide pre-finished standing seam metal roofing as “alternate cost” roofing material as described by Alternate No. 1.

Provide pre-finished horizontal and vertical vinyl siding, and metal flat panels, as “base cost” as described by Alternates No. 4, Alternate No. 5 and as shown on the elevations.

Provide pre-finished Hardie siding as “alternate” horizontal siding, vertical siding and flat panel material as described by Alternate No. 4 and as shown on the elevations.

Provide pre-finished Metal siding as “alternate” horizontal siding, vertical siding and flat panel material as described by Alternate No. 5 and as shown on the elevations.

Sheet Metal:

Provide pre-finished metal fascia at roof edges.

Provide pre-finished metal flashings.

DIVISION 8 – OPENINGS

Hollow Metal Door and Window Frames:

Provide 16 GA galvanized hollow metal door frames at door and window openings.

Exterior door frames shall be provided with thermal break.

Hollow Metal Doors:

Provide hollow metal doors with 18 GA face.

Provide honeycomb core at interior doors and insulated core at exterior doors (U = 0.43 max).

Folding Panel Divider: See Division 10 – Specialties.

Overhead Doors:

Provide heavy –duty, thermally insulated overhead doors (R-4.75 min).

Overhead doors at Sallyport shall have no glazing units.

Overhead doors at Apparatus Bays shall have one continuous row of glazing units.

Overhead doors shall be electrically operated.

Windows:

Exterior windows shall be fixed type with pre-finished metal frames (U = 0.36 max).

Door Hardware:

Doors shall be provided with commercial-grade, ADA compliant hardware.

Electronic locks shall be provided at Booking/Processing doors, Evidence Room door, Armory door, Special Computer Needs door, door separating Police Corridor from Fire/EMS Corridor and door separating Police Locker Rooms from shared Toilet areas.

Electronic door strikes controlled by Receptionist shall be provided at interior Vestibule door and at door between Lobby and Corridor.

Glass and Glazing:

Exterior windows shall be standard insulating glass meeting thermal requirement indicated in "Windows" above.

Except as indicated below, interior windows shall be standard tempered glass.

Interior window between Receptionist and Lobby shall be provided with Level 7 bullet-proof glass. See Alternate No. 6 to change to Level 3 bullet-proof glass.

Mirrors shall be standard sheet glass with frames.

DIVISION 9 – FINISHES

Drywall:

Framed walls shall be 5/8 IN gypsum board taped and finished level 4.

Interior wall framing shall be 3 5/8 IN metal studs spaced 24 IN o.c.

Ceilings, except where indicated as ACT, shall be 5/8 IN gypsum board taped and finished level 4 suspended on 650 suspension grid.

Flooring:

Ceramic Tile: Provide 4 x 4 IN NOM ceramic tile wainscot at wet walls in Toilet Rooms; Provide 2 x 2 IN NOM ceramic tile floors in Toilet Rooms.

Carpet: Provide broadloom carpeting in Lobby, Interview, Community Room/EOC, Conference Room, Receptionist, Supervisor Office, Police Chief Office, Investigators, Patrol Office, and Bunk Room.

VCT: Provide VCT floor tile in Corridors, Lunch/Coffee Room, Locker Rooms, Fitness Center, Fire/EMS Staff Office, Fire/EMS Chief Office.

Epoxy: Provide epoxy floor coating in Booking/Processing, Holding Cells and Sallyport.

Concrete Sealer: Provide sealed concrete flooring at Special Computer Needs, Armory, Evidence, (Police) Storage, Secure File Storage, Apparatus Bay, Washer/Dryer, Explosion/Hazardous Materials, EMS Storage, EMS Secured Storage, (Apparatus Bay) Storage and Elec/Maintenance/Storage.

Walk-Off Mat: See Division 10 – Specialties.

Base:

Provide 4 IN high vinyl cove base at all areas of flooring except carpet flooring and ceramic tile flooring.

Provide 4 IN high vinyl straight base at carpet flooring.

Provide 4 x 4 IN NOM ceramic tile cove base at ceramic tile flooring.

Provide 4 IN high integral epoxy base with cove at epoxy flooring.

Painting:

Exterior: Provide painted finish at exposed ferrous metals and exposed wood trim and soffits.

Interior: Provide painted finish at walls, ceilings, doors, door frames, window frames, and trim; Exposed piping/ducts/conduits in Apparatus Bay.

ACT Ceiling: Provide 2 x 2 FT ACT ceilings in Lobby, Interview, Community Room/EOC, Conference Room, Receptionist, Supervisor Office, Police Chief Office, Investigators, Patrol Office, Corridors, Lunch/Coffee Room, Locker Rooms, Toilet Rooms, Fitness Center, Fire/EMS Staff Office, Fire/EMS Chief Office and Bunk Room.

DIVISION 10 – SPECIALTIES

Toilet Accessories:

Public Toilets: Provide toilet paper dispenser, soap dispenser, paper towel dispenser, waste receptacle, napkin receptacle, baby changing station, grab bars and framed mirror in each public Toilet.

Locker Room Toilets: Provide toilet paper dispensers, soap dispensers, paper towel dispensers, waste receptacles, napkin receptacle, grab bars, robe hooks, towel bars and framed mirrors in each Locker Room Toilet.

Elec/Maintenance/Storage: Wall mounted mop holder shall be provided at mop receptor in Elec/Maintenance/Storage Room.

Marker Boards and Bulletin Boards:

Marker boards and bulletin boards shall be provided by the Owner.

Directory Board and Display Case:

Directory board and display case shall be provided by the Owner.

Fire Extinguishers:

Fire Extinguishers: Fire extinguishers shall be provided to comply with building code.

Fire Extinguisher Cabinets: Fire extinguisher cabinets shall be provided for fire extinguishers in areas only accessible to the public.

Wall Brackets: Wall brackets shall be provided for fire extinguishers in all remaining areas.

Flagpole: Flagpole shall be provided by the Owner.

Lockers:

Personal Lockers: Full height, enclosed, ventilated metal lockers for storage of personal items shall be provided in Police/Fire/EMS Locker Rooms; Locks shall be provided by Owner.

Gear Lockers: Full height, open, metal mesh lockers for storage of personal firefighting gear shall be provided in Apparatus Bay.

Folding Panel Divider Partition: Provide manual folding partition between Conference Room and Community Room/EOC.

Toilet Partitions:

Shower Partitions: Floor mounted, solid plastic (HPDE), shower partitions with doors shall be provided to separate showers and create shower compartments in each Locker Room Toilet.

Toilet Partitions: Floor mounted, solid plastic (HPDE), toilet partitions with doors shall be provided to separate toilets and create toilet compartments in each Locker Room Toilet.

Urinal Screens: Wall hung, solid plastic (HPDE), urinal screens shall be provided in Men's Locker Room Toilet to separate adjacent urinals.

Shelving: Painted plywood shelving 24 IN wide by 3 shelves tall shall be provided in Storage, EMS Storage and EMS Secure Storage.

Signs:

Code Required Signs: Signs required to obtain Certificate of Occupancy shall be provided; Code required signage shall include standard ADA signs at handicapped parking spaces and toilet room signage.

Building Signage and Directional Signage: Building signage and directional signage shall be provided by the Owner.

Walk-Off Mat: Provide recessed walk-off mat in Vestibule.

DIVISION 11 – EQUIPMENT

Appliances:

Lunch/Coffee Room: Space and utility accommodations shall be provided for refrigerator, stove, hood and micro-wave appliances to be provided by Owner.

Washer/Dryer: Space and Space and utility accommodations shall be provided for commercial extractor and dryer to be provided by Owner.

Fitness Equipment:

Fitness Center: Space and utility accommodations shall be provided for fitness equipment to be provided by Owner.

Communication Equipment:

Reception: Space and utility accommodations shall be provided for communication equipment provided by Owner.

Detention and Security Equipment:

Holding Cell: Provide 12 gauge woven steel (front) wall barrier and door.

Handgun Locker: Hopper style pistol storage locker with compartments for storage of 12 handguns shall be provided.

Unloading Station: Provide unloading station for unloading of service weapons.

Handcuff Rail: Provide stainless steel handcuff rail.

Benches: Provide 2 extra heavy gauge formed steel pan fully welded benches with baked on factory applied polyester powder coat finish intended for use in holding cells.

Detention Stools: Provide 3 stainless steel stools with handcuff rings.

Evidence Pass-through Locker: 12 door pass through locker for deposit/transmission of evidence from Corridor into Evidence Room shall be provided.

Evidence Locker: 12 door (non-pass through) locker for storage of evidence in Evidence Room shall be provided.

Refrigerant Evidence Locker: 6 door refrigerated locker for storage of evidence in Evidence Room shall be provided.

DIVISION 12 – FURNISHINGS

Window Treatments: Blinds and shades at windows shall be provided by the Owner.

Explosion/Hazardous Material Cabinets: Explosion/hazardous material cabinets shall be provided by the Owner.

Furniture: Furniture shall be provided by the Owner.

DIVISION 13 – SPECIAL CONSTRUCTION

Not Used.

DIVISION 14 – CONVEYING SYSTEMS

Not Used.

DIVISION 21 – FIRE SUPPRESSION

Provide fire protection (sprinkler) system in accordance with NFPA 13.

DIVISION 22 – PLUMBING

Building Drainage:

Floor drains connected to oil/grit separator shall be provided at Sallyport and Apparatus Bay. 16"x16"sediment indirect waste heavy duty type drains.

Floor drains shall be provided at each Locker Room Toilet, Holding Cells and Washer/Dryer.

Sanitary System: Sanitary system shall connect to sanitary sewer at a point 5 FT outside of building foundation.

Domestic Cold Water:

Domestic cold water system shall be provided from water service at a point 5 FT outside of building foundation.

Backflow preventer and pressure reducing valve shall be provided.

Water meter, water filtration and water conditioning, if required, shall be provided by Owner.

Provide a mixing valve assembly to temper the domestic hot water supply temperature.

Provide a domestic hot water recirculation loop and pump with aqua-stat controller.

Provide (pending site water capacity) fire truck fill located in the Apparatus Bay

Domestic Hot Water:

Gas fired LP water or Air Source Heat Pump water heater shall provide domestic hot water as "base cost" for Alternate No.6.

Boiler shall provide hot water as "alternate cost" for Alternate No. 6.

Piping: Piping material, valves and piping connections shall be of materials that comply with plumbing code.

Insulation: Pipe insulation R value and pipe insulation materials shall comply with plumbing and energy codes.

Compressed Air System: Provide compressed air piping to connect to Owner furnished air compressor. Compressed air system will include drops with quick disconnects, isolation valves, hangers, and fittings equally spaced in each Apparatus Bay

Fixtures:

Water Closets: Floor mounted porcelain toilets with tanks shall be provided at all locations except Booking/Processing.

Security Water Closet/Lavatory: Floor mounted stainless steel combination toilet and lavatory shall be provided in each Holding Cell.

Lavatories: Wall hung porcelain lavatories shall be provided in public Toilets.

Lavatories at Countertops: Undercounter mounted Corian or quartz lavatories shall be provided at Men's and Women's Toilet areas associated with Police and FD/EMS Locker Rooms.

Showers: Showers shall be ADA compliant one-piece fiberglass units at Men's and Women's Toilet areas associated with Police and FD/EMS Locker Rooms.

Urinals: Urinals shall be wall-hung porcelain in Men's Toilet area associated with Police and FD/EMS Locker Rooms.

Drinking Fountain: One ADA compliant water cooler shall be provided.

Sinks:

Lunch/Coffee Room: Drop-in counter mounted single bowl stainless steel sink shall be provided in Lunch/Coffee Room.

Elec/Maintenance/Storage: Cast fiberglass floor mounted mop receptor shall be provided in Elec/Maintenance/Storage Room.

Extractor Connection: Hot and cold water connection shall be provided at extractor in Washer/Dryer area.

Hose Bibbs:

Interior: One (1) hose bibb shall be provided at Sallyport and two (2) hose bibbs shall be provided at Apparatus Bay.

Exterior: One (1) hose bibb shall be provided at Sallyport and two (2) hose bibbs shall be provided at Apparatus Bay.

Division 23 - HEATING, VENTILATING AND AIR CONDITIONING

Gas Supply System: Provide gas piping from gas regulator to appliances that require gas connection.

Air Conditioning: Furnish and install low temperature air source heat pump system with back up electric resistant heat for office areas. Units shall be provided with accessories to allow for low temperature operations below negative 13°F DB outdoor ambient air conditions. Alternate No. 2 to provide for negative 21°F DB outdoor ambient air condition air source heat pumps.

Provide a separate split system Air Conditioning with DX Cooling to serve the Critical Service IT Room.

Provide LP Gas fired Unit Heater(s) in the Sallyport as "base cost" for Alternate No.6.

Provide Radiant Floor Heating System (Gas fired boiler, circulation pumps, headers, valves, controls, pipe insulation, radiant tubing and accessories) and Unit Heaters(s) (unit heaters supplied by hot water from boiler) in the Sallyport (952 SF) as "alternate cost" for Alternate No.6.

Provide LP Gas fired Unit Heaters in the Apparatus Bays as "base cost" for Alternate No.6.

Provide Radiant Floor Heating System and Unit Heaters(s) (unit heaters supplied by hot water from boiler) in the Apparatus Bays (6,405 SF) and Sallyport (925 SF) as "alternate cost" for Alternate No.6.

Provide an Exhaust Fan interlocked with an intake damper / louver to bring in outside air when the exhaust fan is activated in the Sallyport. The exhaust fan shall be activated in two ways; 1) whenever the overhead door is opened and / or 2) whenever a carbon monoxide sensor located in the space senses an elevated CO level in the Sallyport.

Furnish and install an Exhaust and Ventilation System(s) for the Building including Locker Rooms/Shower/Restrooms exhaust. The Exhaust and Ventilation System(s) shall incorporate energy recovery to maximize energy efficiency.

Provide four (4) paddle fans to circulate air in the Apparatus Bay. See Alternate No. 3 to change from four (4) paddle fans to four (4) Arius Destratification Fans.

Furnish and install sidewall exhaust fan and louvered intake damper assembly ultra-low leak damper or equal in the Apparatus Bays and Explosive/Hazmat Storage Room. Ventilation in Apparatus Bays is for general summer ventilation and secondary backup ventilation for the carbon monoxide control system. Unit will be controlled with a remote wall-mounted line voltage switch and will be integrated into the carbon monoxide system with an on-off-auto starter.

Furnish and install engine exhaust removal systems manufactured by Air Vacuum Corporation with 4-stage filter pack. Units will be operated by a central control panel with local annunciation and door photo eye's/door switches. A carbon monoxide sensor shall be installed in the Apparatus Bay and connected to the Air-Vac control panel. If the pre-determined carbon monoxide limit is reached, the sidewall exhaust fan described above shall be activated as an emergency back-up system to the Air-Vac units.

Insulation: Duct insulation R value and duct insulation materials shall comply with mechanical and energy codes.

Provide pipe insulation per ASHRAE standards and NH codes for Energy Efficient Commercial Construction.

Provide required Instrumentation and Controls for the HVAC and Plumbing Systems including but not limited to programmable thermostats, control valves, variable frequency drives for fans and pumps, low voltage wiring, controllers, airflow monitoring stations, return air duct CO2 sensors to control ventilation rates. If cost effective, provide DDC web-accessible/based controls, sensors including outdoor air temperature sensors and all other appurtenances for a complete and operable system.

All duct systems shall be fabricated installed in accordance with SMACNA standards.

Provide Testing and balancing by an independent T&B contractor.

Provide System start-up and one year warranty on the complete installation.

Provide owner instructional walk-thru.

DIVISION 26 – Electrical

Service:

Single phase underground service shall be provided from a pole located at the property line to the building.

Panels: Panels shall be provided in the Elec/Maintenance/Storage Room for distribution, power and lighting.

Emergency System:

Generator: Gas (or diesel) back-up generator shall be provided by the Owner. Transfer Switch: Automatic transfer switch shall be provided.

Distribution:

Wire and Conduit: Wire and conduit shall comply with electrical code.

Power: Receptacles shall comply with electrical code.

Emergency Power: Emergency power shall comply with code requirements and shall be coordinated with emergency system to provide necessary power in an emergency.

Lighting Fixtures:

Interior Lighting Fixtures: Interior lighting fixtures shall be LED commercial quality, comply with energy savings requirements and be designed to perform in specific application anticipated. Illumination levels shall be as recommended by IES handbook for general office, training, apparatus and corridor spaces.

Lighting Controls shall be provided to meet current NH energy guidelines

Exterior Lighting Fixtures: Exterior lighting fixtures shall be LED commercial quality, comply with energy savings requirements and be designed to perform in specific application anticipated.

Explosion Proof Lighting: Explosion proof light shall be provided in Explosion/Hazardous Materials Room.

Emergency Lighting: Emergency lighting shall comply with code requirements and shall be coordinated with emergency system to provide necessary lighting in an emergency.

Emergency lighting shall be via self- contained battery powered emergency lights. If generator is deemed emergency power then light fixtures will act as emergency lights.

Exit signage shall be per code and be via self-contained battery back-up exit signs.

Provide building grounding per code.

DIVISION 27 - COMMUNICATIONS

Telephone and Data System:

Distribution: Conduit, cable and termination boxes shall be provided for telephone and data system.

Equipment: Telephone and data system equipment and equipment installation shall be provided by the Owner.

DIVISION 28 – ELECTRONIC SAFETY & SECURITY

Fire Alarm System:

Fire Alarm System shall be a Code compliant, fully addressable system consisting of but not limited to pull stations, horn/strobes, smoke detectors, carbon monoxide sensors (in Mechanical Room(s) and as required), duct smoke detectors (supplied and installed by MC and wired by EC), Fire Alarm Control Panel, and Remote Annunciator Station.

Security System:

Distribution: Conduit, and termination boxes shall be provided for security system.

Equipment: Security system equipment, wiring and equipment installation shall be provided by the Owner.

END

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Project Timeline

Project Timelines indicating anticipated project schedule for Whitney Hall (Municipal Offices, Library and Auditorium) and the Public Safety Facility and alternative approaches to construction where prepared by Bread Loaf Corporation (BLC) based on previous BLC project experience.

Each Timeline indicates the following Phase/Activity:

- RFP and Award
- Design, Documents and Approvals
- Permits and Approvals
- Bidding and Award
- Construction for Public Safety Facility and Whitney Hall
- Owner Temporary Relocations and Final Occupancy

The primary difference between the two alternatives is Project Timeline – Preliminary Project Schedule for Public Safety Facility and Whitney Hall with Overlapping Construction alternative indicates the entire project can be completed in 93 weeks and Project Timeline – Preliminary Project Schedule for Public Safety Facility and Whitney Hall with Nose-to-Tail Construction alternative indicates the entire project can be completed in 145 weeks.

With the 93 week alternative, both the Whitney Hall and Public Safety Facility buildings are bid and awarded at the same time with construction of both buildings occurring concurrently.

With the 145 week alternative, the Public Safety Facility building is bid, awarded and constructed prior to Whitney Hall being bid, awarded and constructed.

Although there are pros and cons associated with each alternative that include temporary relocations and potential leasing of temporary space, BLC believes that the 93 week alternative will provide the best value in bidding and constructing the overall project.

The attached Timelines were reviewed by the MFAC, department staff and members of the community during a MFAC meeting. Based on this review and a brief discussion of the information noted above, the MFAC indicated the timeline alternatives shall be evaluated to determine which Timeline alternative is best suited for the project.

Refer to the following pages for Project Timeline – Preliminary Project Schedule for Public Safety Facility and Whitney Hall with Overlapping Construction - 93 weeks; and, Project Timeline – Preliminary Project Schedule for Public Safety Facility and Whitney Hall with Nose-to-Tail Construction - 145 weeks respectively.

Enfield, NH - Preliminary Project Schedule for Public Safety Facility and Whitney Hall with Overlapping Construction - 93 Weeks

May 6, 2020

Bread Loaf Corporation

Bread Loaf Corporation			Duration (Weeks)	
Phase/Activity				
RFP and Award				
Town of Enfield RFP			0	
Submit Proposal			4	
Notice of Contract Award			0	
Execute Design and Pre-Construction Agreement			1	
Design, Documents and Approvals				
Review and Update Conceptual Designs for PSF and WH			2	
Owner Approval - Conceptual Designs for PSF and WH			0	
Schematic Designs for PSF and WH			6	
Owner Approval - Schematic Designs for PSF and WH			0	
Design Development for PSF and WH			6	
Owner Approval - Design Development for PSF and WH			0	
Final Design and Construction Documents for PSF and WH			4	
Complete Construction Documents for PSF and WH			6	
Owner Approval - Construction Documents for PSF and WH			1	
Permits and Approvals				
Prepare and Submit Permit Applications for PSF and WH				
Site Plan Review			4	
Driveway			4	
Stormwater			6	
Water Supply			6	
NH Energy Code Certification			4	
Building Permit			4	
Bidding and Award				
Subcontractor and Vendor Bidding for PSF and WH			5	
Bids Due			0	
Analyze Bids and Review with Owner			2	
Execute Agreement for Construction			0	
Construction				
Public Safety Facility (PSF)				
Mobilization			1	
Construction Activities			46	
Substantial Completion			0	
Punch List			2	
Final Completion			1	
Whitney Hall (WH)				
Mobilization			1	
Construction Activities			47	
Substantial Completion			0	
Punch List			3	
Final Completion			1	
Owner Temporary Relocations and Final Occupancies				
Municipal Office Relocation to Temporary Office Space			2	
Library Relocation to Temporary Library Space			2	
Police Department Relocation to Public Safety Facility			1	
Fire/EMS Relocation to Public Safety Facility			1	
Municipal Office Relocation to Rehabilitated Whitney Hall			2	
Library Relocation to Rehabilitated Whitney Hall			2	
Project Complete			0	

Enfield, NH - Preliminary Project Schedule for Public Safety Facility and Whitney Hall with Nose to Tail Construction - 145 Weeks

May 6, 2020

Bread Loaf Corporation

Bread Loaf Corporation					
Phase/Activity	Duration (Weeks)	Month 1	Month 2	Month 3	Month 4
RFP and Award		1	2	3	4
Town of Enfield RFP	0				
Submit Proposal	4				
Notice of Contract Award	0				
Execute Design and Pre-Construction Agreement	1				
Design, Documents and Approvals					
Review and Update Conceptual Designs for PSF and WH	2				
Owner Approval - Conceptual Designs for PSF and WH	0				
Schematic Designs for PSF and WH	6				
Owner Approval - Schematic Designs for PSF and WH	0				
Design Development for PSF and WH	6				
Owner Approval - Design Development for PSF and WH	0				
Final Design and Construction Documents for PSF and WH	4				
Complete Construction Documents for PSF and WH	6				
Owner Approval - Construction Documents for PSF and WH	1				
Permits and Approvals					
Prepare and Submit Permit Applications for PSF and WH					
Site Plan Review	1+1+4				
Driveway	4				
Stormwater	6				
Water Supply	6				
NH Energy Code Certification	1+4				
Building Permit	4				
Bidding and Award					
Subcontractor and Vendor Bidding for PSF and WH	5				
Bids Due	0				
Analyze Bids and Review with Owner	2				
Execute Agreement for Construction	0				
Construction					
Public Safety Facility (PSF)					
Mobilization	1				
Construction Activities	46				
Substantial Completion	0				
Punch List	2				
Final Completion	1				
Whitney Hall (WH)					
Mobilization	1				
Construction Activities	47				
Substantial Completion	0				
Punch List	3				
Final Completion	1				
Owner Temporary Relocations and Final Occupancies					
Police Department Relocation to Public Safety Facility	1				
Fire/EMS Relocation to Public Safety Facility	1				
Municipal Office Relocation to Existing Police Station	2				
Library Relocation to Existing Police Station	2				
Municipal Office Relocation to Rehabilitated Whitney Hall	2				
Library Relocation to Rehabilitated Whitney Hall	2				
Project Complete	0				

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Total Project Budget

A Total Project Budget indicating the anticipated order of magnitude cost for Whitney Hall (Municipal Offices, Library and Auditorium) and the Public Safety Facility were prepared by Bread Loaf Corporation (BLC) based on the Conceptual Design Drawings, Project Scope Narratives, Project Timeline – Preliminary Project Schedule for Public Safety Facility and Whitney Hall with Overlapping Construction - 93 weeks and previous BLC project experience.

Order of magnitude costs were also prepared for various Alternates based on discussions with MFAC representatives and department staff. Alternates address various alternative types of materials for use at the Public Safety Facility as well and alternative design features at Whitney Hall.

All Total Project Budget values are shown in 2020 dollars. Values shall be adjusted to reflect potential future cost escalation that may occur depending upon when the project may actually proceed.

The attached Total Project Budget and Alternates were reviewed by the MFAC, department staff and members of the community during MFAC meetings. BLC has developed the Total Project Budget and Alternates based on input received.

The budget to “Develop Road/Infrastructure/Utilities to Property” was noted as a critical aspect of the Total Project Budget. Services performed by Pathways Consulting LLC for the MVRSD Property evaluation identify a budget for this item and generally confirm assumptions (related to soils, ledge, ground water, stormwater design, etc.) indicated in the project scope Narratives which serve as the basis for development of the Total Project Budget Construction Cost.

Refer to the following pages for Total Project Budget v1.6 – Conceptual Design (Order of Magnitude) 6/18/2020, Revised September 9, 2020 and Alternates, Revised August 21, 2020 (Printed September 9, 2020) respectively.

Enfield, NH - Public Safety Building & Library/Town Offices

Total Project Budget - Conceptual Design (Order of Magnitude) v1.6

6/18/2020

Revised September 9, 2020

		Public Safety Building		Whitney Hall: Library & Town Offices	
1	BUILDING AREAS:				
2	Renovations	N/A	SF	9,653	SF
3	New Construction	18,831	SF	7,991	SF
4	Total Area	18,831	SF	17,644	SF
5					
6	CONSTRUCTION COST:				
7	Site Development & Demolition	\$1,008,000		\$ 404,000	
8	General Construction	\$3,398,000		\$3,416,000	
9	Construction Cost	\$4,406,000		\$ 3,820,000	
10	Construction Contingency 10%	\$441,000		\$382,000	
11	TOTAL PROFESSIONAL FEES: (Architecture, Engineering, Pre-Construction and Construction Administration @ 6.5%)	\$ 315,000		\$ 273,000	
12	OWNER COSTS				
13	Land Costs	\$80,000		N/A	
14	Develop Road/Infrastructure/Utilities to Property (See Note Below)	\$407,000		N/A	
15	Independent Testing Inspection	\$5,000		\$5,000	
16	Phase 1 Environmental Site Assessment	\$2,500		\$5,000	
17	Builder's Risk Insurance	\$6,500		\$6,500	
18	Permit Fee's:	-----		-----	
19	: Local Building Permit	N/A		N/A	
20	: Zoning	N/A		N/A	
21	: MEP Permits	N/A		N/A	
22	: Storm Permit (Alteration of Terrain Permit & Shoreline Protection)	\$3,125		\$1,000	
23	Utility Charges & Fees:	-----		-----	
24	: Electrical Service Upgrade	\$40,000		\$25,000	
25	: Water Hook-Up Fee	No Fee		No Fee	
26	: Sewer Hook-Up Fee	No Fee		No Fee	
27	Telephone System (Handsets and Hardware)	\$15,000		\$12,000	
28	Data System - Servers & Network Equipment	\$15,000		\$10,000	
29	Security System	\$75,000		\$37,500	
30	Audio - Visual Equipment:	-----		-----	
31	Furniture, Fixtures and Equipment	\$70,000		\$120,000	
32	Signage	\$9,400		\$11,000	
33	Performance & Payment Bond	\$47,000		\$40,000	
34	Owner Contingency 5% of Owner Costs	\$38,750		\$13,650	
35	TOTAL OWNER COSTS	\$814,275		\$286,650	
36	TOTAL PROJECT BUDGET	\$5,976,275		\$4,761,650	

37 Note: Line No. 14 "Develop Road/Infrastructure/Utilities to Property" value is
38 based on Preliminary Conceptual Engineers Opinion of Probable Cost,
39 Town of Enfield Public Safety Facility, Prepared by Pathways Consulting, LLC
40 Updated August 11, 2020 Post Facilities Committee Meeting

Public Safety Building

ADD ALTERNATES:		ADD
Alt. 1	Metal roof in lieu of asphalt shingle roof	\$191,000
Alt. 2	Low temp heat pump system, (FD Bays & Sally Port not included)	\$114,000
Alt. 3	Destratification fans in lieu of ceiling fans	\$9,000
Alt. 4	Change from "Vinyl/Metal" siding to "Hardie" siding	\$85,000
Alt. 5	Change from "Vinyl/Metal" siding to "Metal" siding	\$371,000
Atl. 6	Radiant floor, hot water unit heaters and underslab insulation in lieu of LP gas fired unit heaters and perimeter insulation at 6,405 SF of Apparatus Bay and 952 SF of Sallyport	\$93,000
DEDUCT ALTERNATES:		DEDUCT
Alt. 7	Level 3 BR Glass in lieu of Level 7 @ Reception	-\$25,000
Atl. 8	Concrete Foundation, Wood Framing and Insulation in lieu of ICF System	-\$48,000

Whitney Hall: Library & Town Offices

ADD ALTERNATES:		ADD
Alt. 1	Storage Room	\$49,000
Alt. 2	Metal roof in lieu of asphalt shingle roof	\$37,000
Alt. 3	Vaulted ceiling @ Library	\$71,000
Alt. 4	Low temp heat pump system	\$163,000
Alt. 5	Mezzanine	\$47,000
Alt. 6	Upgrade Power to 3 phase	\$125,000
Alt. 7	Lower Ground Level by 1'-6"	\$114,000
Alt. 8	Add exterior transaction window	\$39,000

NET ZERO READY ALTERNATE

Municipal facilities that are sustainably designed and operated as NET ZERO buildings can provide long term benefits to taxpayers with operational cost savings that result over the lifespan of these facilities. NET ZERO buildings can also provide long term benefits to residents and staff by providing healthy environments for their use and occupancy.

Designing to a NET ZERO performance level may be considered during the future design and pre-construction phase for Whitney Hall and the Public Safety Facility. During this design and pre-construction phase the architect, consultants and cost estimators would work closely with Town of Enfield representatives to consider short term cost and benefits as well as long term costs and benefits of sustainable design and NET ZERO Ready features. Additional performance testing and commissioning would occur during construction.

The potential design and construction cost implication to improve the Public Safety Facility project and/or Whitney Hall project from a “Code Compliant” performance level to a “NET ZERO Ready” performance level are shown below. These cost projections are based on prior project costs and may vary depending upon the actual design approach and systems that are selected for Whitney Hall and the Public Safety Facility in the future design and pre-construction phase.

NOTE - The cost to create the source of energy to serve Whitney Hall and the Public Safety Facility projects (solar, bio-mass, hydro, etc.) are NOT included in these cost projections. The costs to develop and/or provide the source of energy to serve Whitney Hall and the Public Safety Facility must be considered in the future as well. Renewable Energy Developers and Utility Companies should be engaged during the future design process to consider viable renewable energy source opportunities.

Potential NET ZERO Ready Cost Implication		
	Public Safety Facility	Whitney Hall
Construction Cost at “Code Compliant” Performance Level	\$4,406,000	\$3,820,000
Consulting Services for Modeling, Testing and Commissioning 1.5 % to 2.0 % Increase	\$66,000 to \$88,000	\$57,000 to \$76,000
Construction Cost 5.0 % to 6.0 % Increase	\$220,000 to \$264,000	\$191,000 to \$229,000
Potential Cost Increase to improve to “NET ZERO Ready” Performance Level	\$286,000 to \$352,000	\$248,000 to \$305,000

Supplemental Information

The supplemental information included in this section was developed by BLC during preparation of the Conceptual Design Study, reviewed with representatives of the MFAC, department staff and community members, and is included in this report for future reference. A brief synopsis of the attached supplemental information is provided in the introduction of each item/area of concern.

Cost Escalation

The attached Historical Cost Indexes from RS Means for 2020 was provided to the MFAC. The indexes provide for calculation of time adjustment construction costs for costs that date from 1970 to 2019.

Additionally to calculation the time adjustment for construction cost from 2020 to 2021, BLC recommends multiplying the 2020 cost by 1.04 (+0.04%) to arrive at the time adjusted 2021 cost.

Refer to cost escalation information sheets on the following page.

Update 2009 Public Library Cost

The MFAC requested BLC provide an update of the Enfield Public Library Total Project Cost, prepared (by others) and dated March 9, 2009.

Total Project Cost of \$3,208,550 (in 2009 dollars) is now \$4,259,657 (in 2020 dollars).

The above cost update is based on RS Means Historical Cost Index calculation shown below.

$$2020/2009 = 239.1/180.1 = 1.3276$$

$$\$3,208,550 \times 1.3276 = \$4,259,657$$

Update 2006 Whitney Hall Library & Town Offices

In addition, BLC also updated the Whitney Hall Library & Town Offices Construction Cost, prepared (by others) and dated November 21, 2006.

Total Project Cost of \$3,100,672 (in 2006 dollars) is now \$4,576,362 (in 2020 dollars).

The above cost update is based on RS Means Historical Cost Index calculation shown below.

$$2020/2006 = 239.1/162.0 = 1.476$$

$$\$3,100,672 \times 1.476 = \$4,576,362$$

Historical Cost Indexes

The table below lists both the RSMeans® historical cost index based on Jan. 1, 1993 = 100 as well as the computed value of an index based on Jan. 1, 2020 costs. Since the Jan. 1, 2020 figure is estimated, space is left to write in the actual index figures as they become available through the quarterly RSMeans Construction Cost Indexes.

To compute the actual index based on Jan. 1, 2020 = 100, divide the historical cost index for a particular year by the actual Jan. 1, 2020 construction cost index. Space has been left to advance the index figures as the year progresses.

Year	Historical Cost Index Jan. 1, 1993 = 100		Current Index Based on Jan. 1, 2020 = 100		Year	Historical Cost Index Jan. 1, 1993 = 100		Current Index Based on Jan. 1, 2020 = 100		Year	Historical Cost Index Jan. 1, 1993 = 100		Current Index Based on Jan. 1, 2020 = 100	
	Est.	Actual	Est.	Actual			Actual	Est.	Actual			Actual	Est.	Actual
Oct 2020*					July 2005	151.6	63.4			July 1987	87.7	36.7		
July 2020*					2004	143.7	60.1			1986	84.2	35.2		
Apr 2020*					2003	132.0	55.2			1985	82.6	34.6		
Jan 2020*	239.1		100.0	100.0	2002	128.7	53.8			1984	82.0	34.3		
July 2019		232.2	97.1		2001	125.1	52.3			1983	80.2	33.5		
2018		222.9	93.2		2000	120.9	50.6			1982	76.1	31.8		
2017		213.6	89.3		1999	117.6	49.2			1981	70.0	29.3		
2016		207.3	86.7		1998	115.1	48.1			1980	62.9	26.3		
2015		206.2	86.2		1997	112.8	47.2			1979	57.8	24.2		
2014		204.9	85.7		1996	110.2	46.1			1978	53.5	22.4		
2013		201.2	84.1		1995	107.6	45.0			1977	49.5	20.7		
2012		194.6	81.4		1994	104.4	43.7			1976	46.9	19.6		
2011		191.2	80.0		1993	101.7	42.5			1975	44.8	18.7		
2010		183.5	76.7		1992	99.4	41.6			1974	41.4	17.3		
2009		180.1	75.3		1991	96.8	40.5			1973	37.7	15.8		
2008		180.4	75.4		1990	94.3	39.4			1972	34.8	14.6		
2007		169.4	70.8		1989	92.1	38.5			1971	32.1	13.4		
▼ 2006		162.0	67.8		▼ 1988	89.9	37.6			▼ 1970	28.7	12.0		

Adjustments to Costs

The "Historical Cost Index" can be used to convert national average building costs at a particular time to the approximate building costs for some other time.

Example:

Estimate and compare construction costs for different years in the same city.

To estimate the national average construction cost of a building in 1970, knowing that it cost \$900,000 in 2020:

INDEX in 1970 = 28.7

INDEX in 2020 = 239.1

Time Adjustment Using the Historical Cost Indexes:

$$\frac{\text{Index for Year A}}{\text{Index for Year B}} \times \text{Cost in Year B} = \text{Cost in Year A}$$

$$\frac{\text{INDEX 1970}}{\text{INDEX 2020}} \times \text{Cost 2020} = \text{Cost 1970}$$

$$\frac{28.7}{239.1} \times \$900,000 = .120 \times \$900,000 = \$108,000$$

The construction cost of the building in 1970 was \$108,000.

Note: The city cost indexes for Canada can be used to convert U.S. national averages to local costs in Canadian dollars.

Example:

To estimate and compare the cost of a building in Toronto, ON in 2020 with the known cost of \$600,000 (US\$) in New York, NY in 2020:

INDEX Toronto = 115.6

INDEX New York = 137.1

$$\frac{\text{INDEX Toronto}}{\text{INDEX New York}} \times \text{Cost New York} = \text{Cost Toronto}$$

$$\frac{115.6}{137.1} \times \$600,000 = .843 \times \$600,000 = \$505,908$$

The construction cost of the building in Toronto is \$505,908 (CN\$).

*Historical Cost Index updates and other resources are provided on the following website:
<http://info.thegordiangroup.com/RSMeans.html>

EXAMPLE:

PROJECT COST IN 1987 = \$1,000,000

$$\frac{2020 = 239.1}{1987 = 87.7} = 2.73$$

$$\begin{array}{r} \$1,000,000 \\ \times 2.73 \\ \hline \end{array}$$

$$\$2,730,000$$

+4% For 2021

$$\times 1.04$$

$$\$2,839,200 \text{ ESTIMATED COST IN 2021}$$

NET ZERO READY Premium

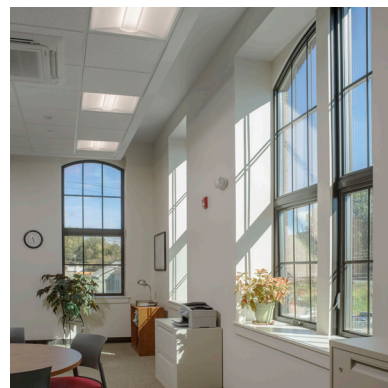
BLC is a proponent of sustainably designed and operated buildings. We work closely with our clients to consider short term cost and benefits as well as long term costs and benefits of sustainable design features. We believe municipal facilities provide a great opportunity to be designed and operated as NET ZERO buildings.

Municipal projects are well suited to provide a long term benefit to taxpayers given the operational savings that result over the lifespan of these facilities. Designing a NET ZERO performance project is key to achieving these operational savings and should be considered in future planning for Whitney Hall and the Public Safety Facility.

Two examples of projects taking different approaches to achieving NET ZERO performance are provided below and illustrated on the following pages.

- *NET ZERO READY goal is set at the beginning of the design process* - The Hartford Town Office project was designed and built as a NET ZERO READY project. Upon initiation of the project, the Town of Hartford set a design goal that the project would be NET ZERO READY when completed. The design process performed by BLC was managed in a manner where sustainable design options were considered and evaluated with the final design achieving the Town's NET ZERO performance goal and project budget. See Town of Hartford, Town Hall Renovation project information on the following page.
- *NET ZERO READY goal is met as incremental energy improvement during the design process* - The Town of Middlebury took a different approach to design of their Town Offices. In Middlebury the cost premium to move the project from "code compliant" to "NET ZERO READY" was broken out of the budget and identified as an "Alternative" additional cost. The NET ZERO READY cost premium was determined to be 7.5% for construction and 2.0% for consultant services. This translated into roughly an additional \$30/SF cost for the project (in 2016 dollars). Today, given the changes in MEP equipment, technology and associated costs, we would expect this premium to be reduced. See Town of Middlebury, Town Offices project information on the following pages.

Prior to moving forward with the next phase of design, BLC recommends the Town of Enfield evaluate if achieving a NET ZERO performance design goal with Whitney Hall or the Public Safety Facility is appropriate. And if this goal is agreed upon, clearly communicate this performance goal with the community and the design team.



Town of Hartford *Town Hall Renovations - Net Zero Ready Building*

Sustainable design features:

- Net Zero ready building
- No fossil or biomass fuel systems
- Embodied energy conservation by preserving existing building materials
- Energy Efficient Building Shell: R-20 foundation; R-40 walls; R50 Roof
- High-performance air sealing of the building envelope
- Indoor lighting uses 30% less energy than code
- Outdoor lighting uses 90% less energy than code
- Day lighting controls
- All electric air source heat pump with simultaneous heating and cooling rated to -13°F
- Point of use domestic water heaters for each bathroom
- Low flow plumbing fixtures

The Town of Hartford devoted several years evaluating options to address its outdated municipal offices that were housed in a former early 19th century school. The Town selected Bread Loaf for the design and construction of a complete renovation of the existing facility.

The building is a Net Zero ready facility featuring an open transparent lobby that connects the Bridge Street side of the historic building with public parking and Lyman Park. Municipal department offices and public meeting rooms flank the main lobby on each of the three floors. Flood proofing of the building was required by code, which was creatively achieved by allowing future flood water to travel through the building basement. A complete structural rebuild of the floor framing systems was required after construction began and Bread Loaf was able to fit this added work into the budget and schedule.

The renovated building is fully accessible with installation of a new elevator, entrance ramps and other ADA compliant amenities. Design emphasis was placed on creating healthy workspaces with access to daylight, fresh air, and outdoor views in a highly efficient design that resulted in a Net Zero ready building. The fully renovated Hartford Town Hall embraces its historic past while celebrating the modern era in which it was reconstructed.

Awards:

Best of the Best in Commercial Building Design & Construction, 2015

Major Renovation, Honor Award
Efficiency Vermont

Vermont's Greenest - 2016 Commercial Building
Vermont Green Building Network





"It was a true pleasure working with all the Bread Loaf folks through the long process of renovating the Hartford Town Hall. They demonstrated persistent professionalism even at the times that our large volunteer advisory committee did not. With so many diverse people on the committee overseeing the project, I am sure it was like herding cats at times, but they managed to hear the greater interests of the group over the noise of us all, and keep the project on time and under budget."

Alan Johnson
Selectboard Member
Town of Hartford





Town of Middlebury *Town Offices - Net Zero Ready Building*

Sustainable design features:

- Net Zero ready building
- No fossil or biomass fuel systems
- Super insulated and air tight envelope
- Passive solar heating
- Natural daylighting of all work and public spaces and ventilation
- Exterior solar shading to reduce glare and summer solar heat gain
- Air to air heat pump system for
- Energy monitoring display in public lobby
- Indigenous plantings
- LED light fixtures with occupancy control
- Water conserving plumbing fixtures
- Highly durable materials
- Low VOC's and formaldehyde free material
- Minimal construction waste practices
- Collaboration with Efficiency Vermont during planning, design, construction and commissioning phases
- Enhanced Commissioning of the building envelope and mechanical systems
- Siting of town offices in the downtown
- The Town has contracted with a local solar array to provide electrical supply in excess of that required by the building

Awards:

Vermont's Greenest - 2017 Commercial Building
Vermont Green Building Network

Best of the Best in Commercial Building Design & Construction, 2016
New Construction, Honor Award
Efficiency Vermont

Best Builder's Award, 2016
Outstanding Quality of Work and Effort in Building, New Construction, Net Zero Energy Ready
Associated General Contractors of Vermont—AGC

The Town of Middlebury had used the former High School for its Town Offices since 1961. The Municipal Gym, built in 1934 as a WPA project, was attached to the old High School and had surpassed its useful life. Studies had been conducted over a 20 year period to determine whether to renovate the existing structures, rebuild on site, or build new facilities on other sites in Town.

Bread Loaf was selected to study an option to build a new Town Hall on a downtown site and a new Recreation Center next to existing playing fields outside of downtown. Our first phase of services focused on developing building programs, conceptual designs and a total project budget to be presented to the community. After approval by voters, Bread Loaf was retained to provide Design/Build services for both projects.

The new 10,300 sf Town Hall is a two-story, efficient, modern building and is designed as an abstraction of the architectural context of historic downtown Middlebury. The building is highly flexible and features a passive solar, south facing lobby and a large meeting room that can be reconfigured to accommodate many different meeting sizes and configurations. An outdoor public plaza helps to activate the downtown.

The Town of Middlebury Town Office building is the first municipal building in Vermont to be Net Zero ready for its energy usage. The building features an air source heat pump system for heating and cooling, eliminating the need for any fossil fuel use in the building. The building relies entirely on a locally installed photovoltaic array that will generate more power than the building will use. A super tight and highly insulated building envelope will allow the new facility to weather the extremes of the Vermont climate with ease. Advanced building envelope and mechanical systems commissioning were employed to ensure that building systems were installed and will operate according to the strict performance criteria set for this cutting edge building.



ICF (Insulated Concrete Form) Option

BLC investigated Insulated Concrete Form (ICF) option for the Public Safety Facility building by obtaining subcontractor pricing for use of the ICF system on exterior walls and foundation walls. BLC also discussed the use of ICF's at the Warner Fire Station with SMP (the Warner Fire Station's Architect) and arranged a tour of the Warner Fire Station with SMP, Groen, BLC and Town of Enfield representatives. The tour occurred on July 24, 2020.

A summary of BLC's ICF discussion with SMP is indicated on the following pages.

The Public Safety Facility is a prime candidate for ICF since it is a new, one-story, one level building to be built on a green-field site. Based on BLC's discussions with ICF suppliers, subcontractors and Groen Construction (the ICF subcontractor on the Warner Fire Station), BLC estimated the cost premium to change from "Concrete foundation walls, exterior wood framed walls and related thermal insulation" to "6 in. core ICF foundations and exterior walls (R23 – R24) at the Administration area and 10 in. core ICF foundations and exterior walls (R23 – R24) at the Apparatus Bay" of the Public Safety Facility. This cost premium is estimated to be \$48,000.

ICF was not considered for use at Whitney Hall during the Conceptual Design Study due to complexities related to adding an ICF addition on to the existing Whitney Hall structure. These include: matching new floor elevations of the addition to the existing Whitney Hall floor elevations (at lower, first and second floor levels); building an ICF addition of three stories in height tied into the existing wood-framed structure; coordinating the ICF exterior wall thicknesses with the existing exterior wall thicknesses of the historic structure.

Assuming appropriate conditions ICF has many potential benefits that make it worthy of consideration. These benefits include: thermal performance, minimal air infiltration, maintenance of temperature and humidity level, lower heating and cooling costs, minimal thermal bridging, high-strength durable walls and accelerated construction.

As with any construction product there are some disadvantages and shortcomings. ICF systems are typically comprised of two materials that have comparatively high environmental impacts: ready-mixed concrete and polystyrene. Both of these materials have relatively high embodied carbon emissions and the question of how sustainable ICF is for any project should be based on a sustainability assessment of the ICF system compared with other sustainable alternatives. Such an assessment could determine the performance and embodied CO² of ICF and alternative materials, among other parameters, including a full life cycle analysis.

Although a sustainability assessment is not part of the Conceptual Design Study, BLC recommends the Town of Enfield include this activity in the design services required for the next phase of design. Testing of the completed building envelopes to confirm air-tightness of the overall buildings (openings for doors, windows, HVAC equipment, etc.) should be considered as well.

BLC also recommends that rather than the Town prescribing use of a specific building system (such as ICF), energy performance requirements and budgets for the Whitney Hall and Public Safety Facility projects be established by the Town and the designer/builder be held accountable to meet these goals by utilizing buildings systems determined to be most energy efficient and cost effective for the respective projects.

ICF Questions
June 24, 2020

With respect to the ICF system used at the Warner Fire Station:

1. What was the R-value? **SMP Architecture:** The straight R-value is between 23 and 24 for that system, without considering the effect of the thermal mass of the concrete. The manufacturer now has thicker foam panels available for an increased r-value.
2. What was the concrete core thickness? **SMP Architecture:** It varied – the admin section was single story with 6” core, the apparatus bay is a tall single story with a 10” core.
3. Was there a significant amount of concrete reinforcing? **SMP Architecture:** yes a fair amount. The contractor who did the install is the ICF guru and has been working with it for 20 years worked with the engineer to revise and simplify details.
4. What was the overall wall thickness? **SMP Architecture:** the foam is 2 5/8” on each side plus the core.
5. What was the added cost for ICF system? **SMP Architecture:** on Warner the total added cost for the budget was roughly 22,000 as compared to the wood framed option. We have another project that is a 2-story office addition and the ICF was priced as an 18,000 savings.
6. What manufacturer and system was used? **SMP Architecture:** Nudura
7. Was the system used at exterior walls only, or at both interior and exterior walls? **SMP Architecture:** exterior walls plus the interior dividing wall between the apparatus bay and admin wing.
8. If ICF was used at interior walls (such as interior bearing walls), what were the interior wall locations and why was it beneficial to use ICF in these interior wall locations? **SMP Architecture:** just the dividing wall- this was done for 2 reasons; 1 it was a load bearing wall so is simplified the structural work, 2. It was also a rated wall which was easy to achieve.
9. Were gable ends above ceilings framed with wood framing or was ICF system extended to roof deck? **SMP Architecture:** roof framing was done with wood trusses, so gables were just gable end trusses.
10. Were there any issues raised during the permitting process? **SMP Architecture:** none.
11. Were there any concerns raised by the structural engineer? **SMP Architecture:** They had limited experience with ICF and began to engineer the walls as if it was traditional cast-in-place; this turns out to be common and not as necessary. Use an engineer with ICF experience and get the ICF manufacturer to work with them during design.
12. Was a blower door test performed? **SMP Architecture:** no
13. If so, what was the infiltration rate for the building envelope? **SMP Architecture:** -
14. Were there any details that became problematic in achieving desired R-value or infiltration goals? **SMP Architecture:** Not really, the biggest detail challenge was at the overhead doors and insulating the edge of the radiant slab. However, this was not specifically an ICF issue.
15. Was a Class I or II vapor retarder provided on the interior side of the exterior wall? **SMP Architecture:** not in addition to the ICF, which uses EPS insulation as the block and has a tested perm rating of around .62 which meets the requirements of a vapor retarder.
16. How did you treat the exposed insulation above grade/below exterior siding? **SMP Architecture:** the building was strapped with 1x vertical furring and sided with fiber cement. The weak point is between the siding and the grade where the foam should be covered. On Warner this was cut out due to cost reductions; on other projects we are covering this with 1/2” thick pvc panel to just below grade. If its protected from damage then a trowel on coating

with mesh reinforcing is the most cost effective.

17. Did you have an exterior foundation drainage mat that was attached to the face of the insulation to address stormwater runoff or high ground water? **SMP Architecture:** no, this was slab on grade with no high groundwater at the site so this was not incorporated. We had a self-adhesive waterproof membrane planned, but that was cut due to cost reductions. This was mainly to protect the foam from infestation.
18. Did windows and doors finish flush with the exterior with deep interior recesses? **SMP Architecture:** yes, though the flashing detail with the furring was a challenge to get executed correctly.
19. Was the detail between SOG and interior wall an expansion joint filler covered by the wall finish? **SMP Architecture:** generally no, except at the apparatus bay, which had a finished concrete slab, this joint was filled with traffic grade sealant.
20. Were there issues that arose that created cost or scheduling concerns? **SMP Architecture:** nothing ICF related.
21. Are there other issues or questions we should be considering? **SMP Architecture:** Warner was redesigned for ICF (from wood framed wall) and we laid out the walls to work with the ICF block units to minimize waste. It was a good exercise to do but time intensive and, in the end, not worthwhile. Cutting blocks in length is not an issue and usually needs to be done for window and door layout anyway. Vertically however you should set your top of footing so the top of wall is a full block in height; Nudura blocks are 18" high so we set top of wall and work down to set footing elevation; you should work out the top of wall detail with the connection to the roof system early on to resolve your footings. This means committing to an ICF manufacturer early and working with them through design.

One other note we have found is this system lends itself well to winter work; the concrete is fully protected with insulation all you need to do is protect the footings and the top of wall. We did a house in Sunapee with ICF and they were pouring concrete in January when it was single digit temps. The contractor took a section of wall apart and confirmed the concrete had not failed. Also once the roof is on you have an enclosed building that is easy to heat through construction.

We are continually amazed at how quite the building is.
22. Would you use an ICF system again for commercial construction and recommend it to others? **SMP Architecture:** We just finished another and have 2 other projects currently in design with this system.

END

COVID 19 Considerations

COVID 19 presents a considerable and evolving challenge to operation, use and maintenance of our public buildings. Information made available and reviewed with the MFAC during the Conceptual Design Study is indicated below.

Additional information related to addressing COVID 19 for building design and building operations will evolve and be developed in the future. This future information should be reviewed, vetted and considered for incorporation into the project should the Public Safety Facility or Whitney Hall proceed.

- Touchless Bathroom Fixtures – A wide variety of touchless faucets, flush toilets flush valve-type toilets and urinals are readily available on the commercial market. System types include battery, hard-wired or “solar” electric and are activated by motion sensor. See the following:

Jim Pulver

From: Jim Pulver
Sent: Wednesday, June 17, 2020 11:22 AM
To: 'Ryan Aylesworth'
Cc: Lockehaven Farm; John Johnston; Jim Pulver
Subject: RE: Touchless bathrooms

Ryan,

Here are a few thoughts on touchless fixtures.

A good approach would be to replace current lav and sink faucets with touchless faucets thus reusing the existing fixtures.

There are a variety of touchless faucets that are available that could be retrofitted to existing lavatories or sinks.



The retrofit faucet would need to be coordinated with the spacing/locations of openings in each fixture for supply connections.

Battery, plug-in or hard wired electrical supply types are available. Using a battery type electrical supply would likely be the easiest and most cost effective for retrofit.

Touchless flush toilets may be a little more complicated.

If you have tank type toilets they likely cannot be replaced with a flush valve type toilet because the water supply to the tank toilet is too small for a flush valve toilet.

Therefore tank type toilets would need to be replaced with touchless flush tank type toilets.



Clean Collection

Clean ActiVate Touchless Flush
Right Height Elongated 1.28gpf
Toilet

Model Number(s): 701AA, 106, 070

US Patent / Write a Review

FINISH: White (020)



Store Locator

Or depending upon the age and brand of the existing toilet, some manufacturers have replacement tanks that are now equipped with a touchless flush feature.

This type of tank toilet generally uses a battery electrical supply for the flush valve that is located in the tank. With these products being relatively new, there may be some bugs that would crop up with use in a commercial setting.

If tank toilets are replaced the back-set dimension to the waste pipe connection on the new toilet would need to be the same as the existing toilet.

Finally - Flush valve type toilets and urinals could potentially have the existing flush valves replaced or retrofitted with touchless flush valves.



Manual



Sensor



Retrofit

For example Sloan – The company illustrated above provides a manual, sensor or retrofit flush valve that is interchangeable.

Accordingly the best replacement or retrofit of a touchless flush valve will be dependent upon the existing toilet and existing flush valve.

If you pursue this further I would recommend working with a mechanical/plumbing contractor to retrofit faucets, tanks and valves on existing fixtures and would be hesitant to recommend buying new fixtures to replace existing fixtures with the expectation that the new fixtures would be relocated to the new buildings.

Several concerns with this approach are that fixtures relocated to the new facilities would not have a warranty, they may not be of the desired type/size/dimension, or may not have the supply/waste size desired.

I'm cc'ing JJ with this reply in case he has additional observations or recommendations.

Hope this helps address your question.

jim

From: Ryan Aylesworth [mailto:raylesworth@enfield.nh.us]
Sent: Wednesday, June 17, 2020 9:37 AM
To: Jim Pulver <jpulver@breadloaf.com>
Cc: Lockehaven Farm <lockehavenfarm@gmail.com>
Subject: Touchless bathrooms

△ External Sender △

Hi Jim,

As you may be aware, municipalities across NH (and I'm sure VT Governor is doing something similar) have been allocated a certain amount of funding to cover COVID-19 related expenses. The Town of Enfield's total allocation is roughly \$111,000 and funds are disbursed on a reimbursement basis. There are a number of eligible classes of expenditure, and one category pertains to municipal building upgrades/retrofitting intended to minimize spread of virus. Along these lines, I started looking into "touchless" bathroom fixtures and have since learned that several other municipalities are doing the same. Given that the Enfield DPW Facility and Community Building are not currently slated for any major renovations, I'm inclined to pursue upgrades at these two facilities at a minimum. However, it would be nice to do something along these lines for Whitney Hall and perhaps the PD/FD as well... but, want to be careful about doing that if the fixtures we install would not be very transferrable down the road if/when the municipal building and PSF projects move forward. What are your thoughts?

Very best,
Ryan

Ryan J. Aylesworth | Town Manager | p. 603.632.5026 x 5405 | raylesworth@enfield.nh.us

Town of Enfield | Town Manager's Office
23 Main Street, PO Box 373, Enfield NH 03748 | f. 603.632.5182 | www.enfield.nh.us

- Drive-up Alternatives/Exterior Transaction Drawer was evaluated for Whitney Hall. See the following pages:

1293 Route 7 South
Middlebury, VT
05753
P 802 388 9871
F 802 388 3815
www.breadloaf.com

Civil Engineer
address
city, state, zip
phone

Structural Engineer
address
city, state, zip
phone

Mechanical Engineer
address
city, state, zip
phone

Electrical Engineer
address
city, state, zip
phone

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Seal:

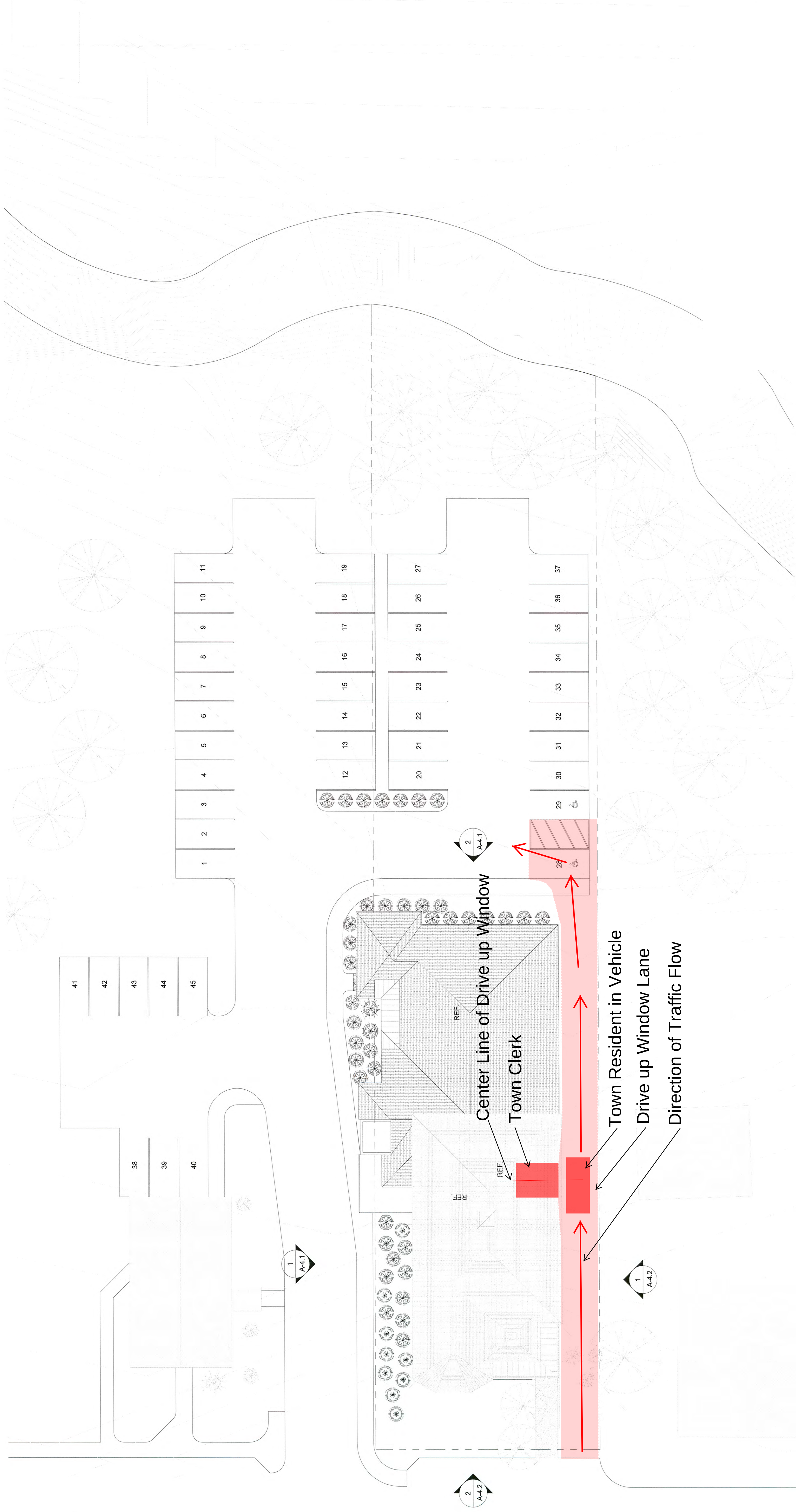
Revised		
No.	Date	Description

**Enfield Municipal
Buildings Concept Design**
23 Main St
Enfield, NH 03748

Proj. No: 19311	Drawn: Author
Date: 04/21/20	Chk'd: Checker

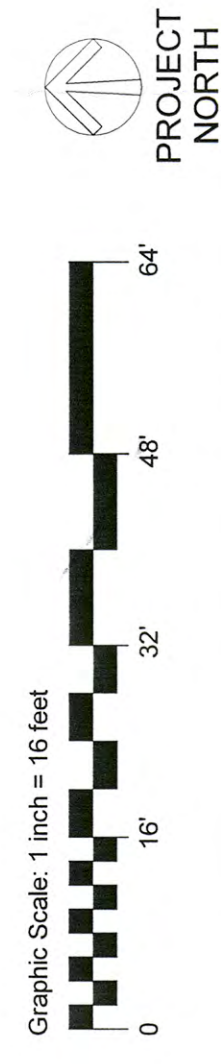
Architectural
Site Plan

Whitney Hall Addition



1 Site Plan
A-4.1 A-1.2 1/16" = 1'-0"

DRIVE UP #1



Whitney Hall Addition

1293 Route 7 South
Middlebury, VT
05753
P 802 388 9871
F 802 388 3815
www.breadloaf.com

Civil Engineer
address
city, state, zip
phone

Structural Engineer
address
city, state, zip
phone

Mechanical Engineer
address
city, state, zip
phone

Electrical Engineer
address
city, state, zip
phone

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Seal:

Revised	
No.	Date

Description

Enfield Municipal
Buildings Concept Design
23 Main St
Enfield, NH 03748

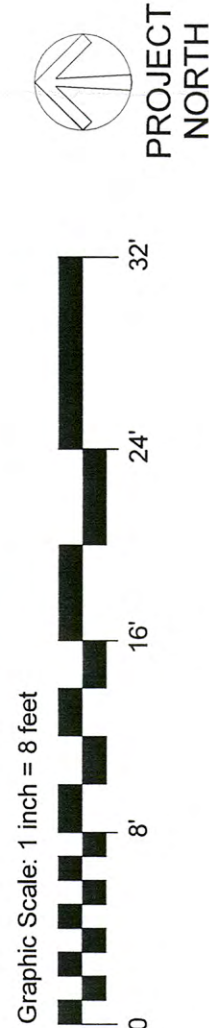
Proj. No: 19311 Drawn: Author
Date: 04/21/20 Chk'd: Checker

Lower Floor



1 1st Sub Floor Plan
A-2.4/A-2.4 1/8" = 1'-0"

DRIVE UP #1

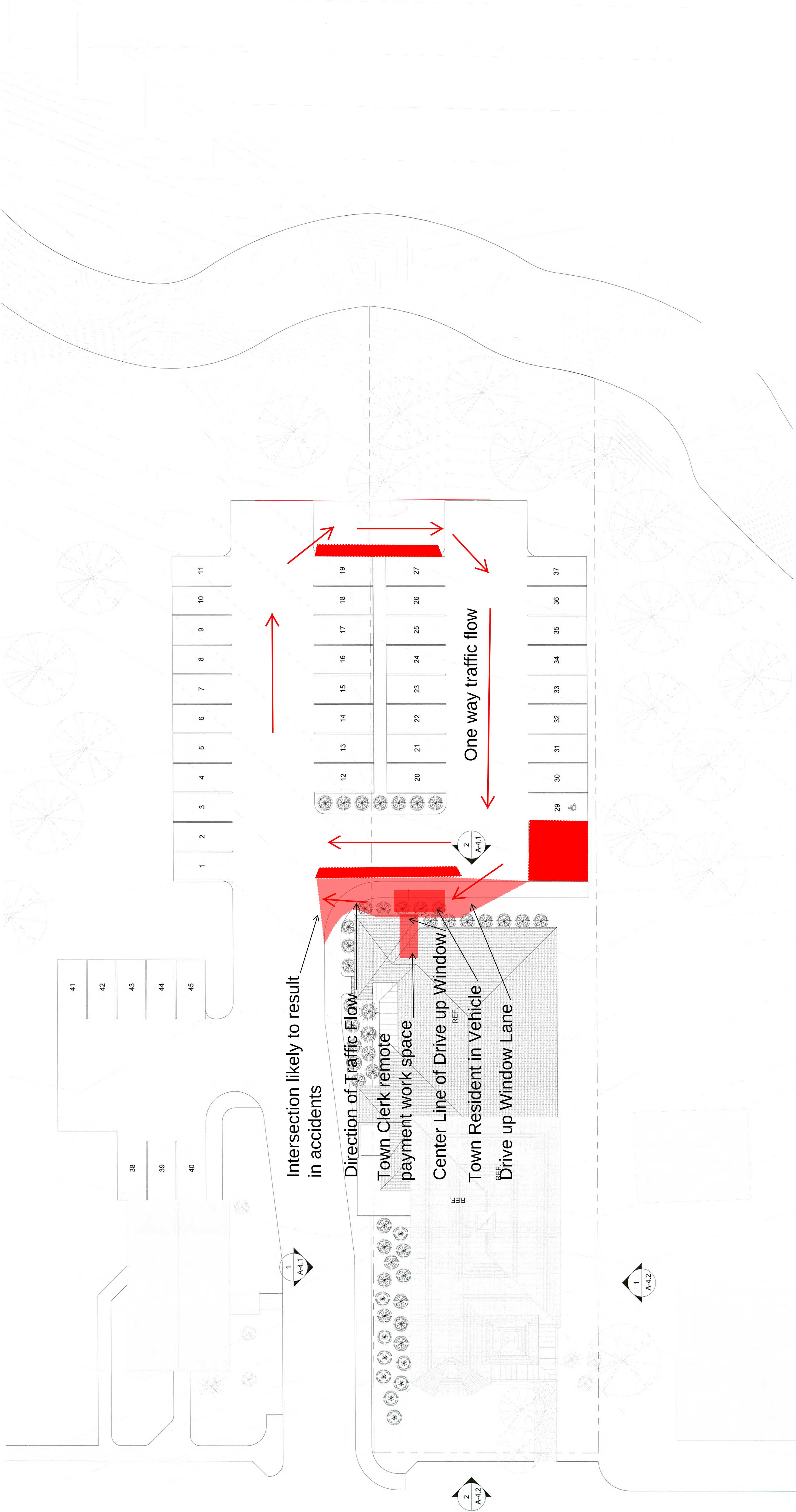


Revised		
No.	Date	Description

Enfield Municipal
Buildings Concept Design
23 Main St
Enfield, NH 03748

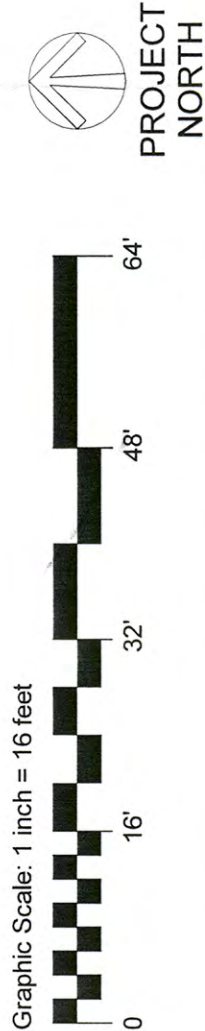
Proj. No: 19311 Drawn: Author
Date: 04/21/20 Chk'd: Checker

Architectural
Site Plan



1 Site Plan
A-1.1 to A-1.2 1/16" = 1'-0"

DRIVE UP #2



1293 Route 7 South
Middlebury, VT
05753
P 802 388 9871
F 802 388 3815
www.breadloaf.com

Civil Engineer
address
city, state, zip
phone

Structural Engineer
address
city, state, zip
phone

Mechanical Engineer
address
city, state, zip
phone

Electrical Engineer
address
city, state, zip
phone

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Seal:

Revised	
No.	Date

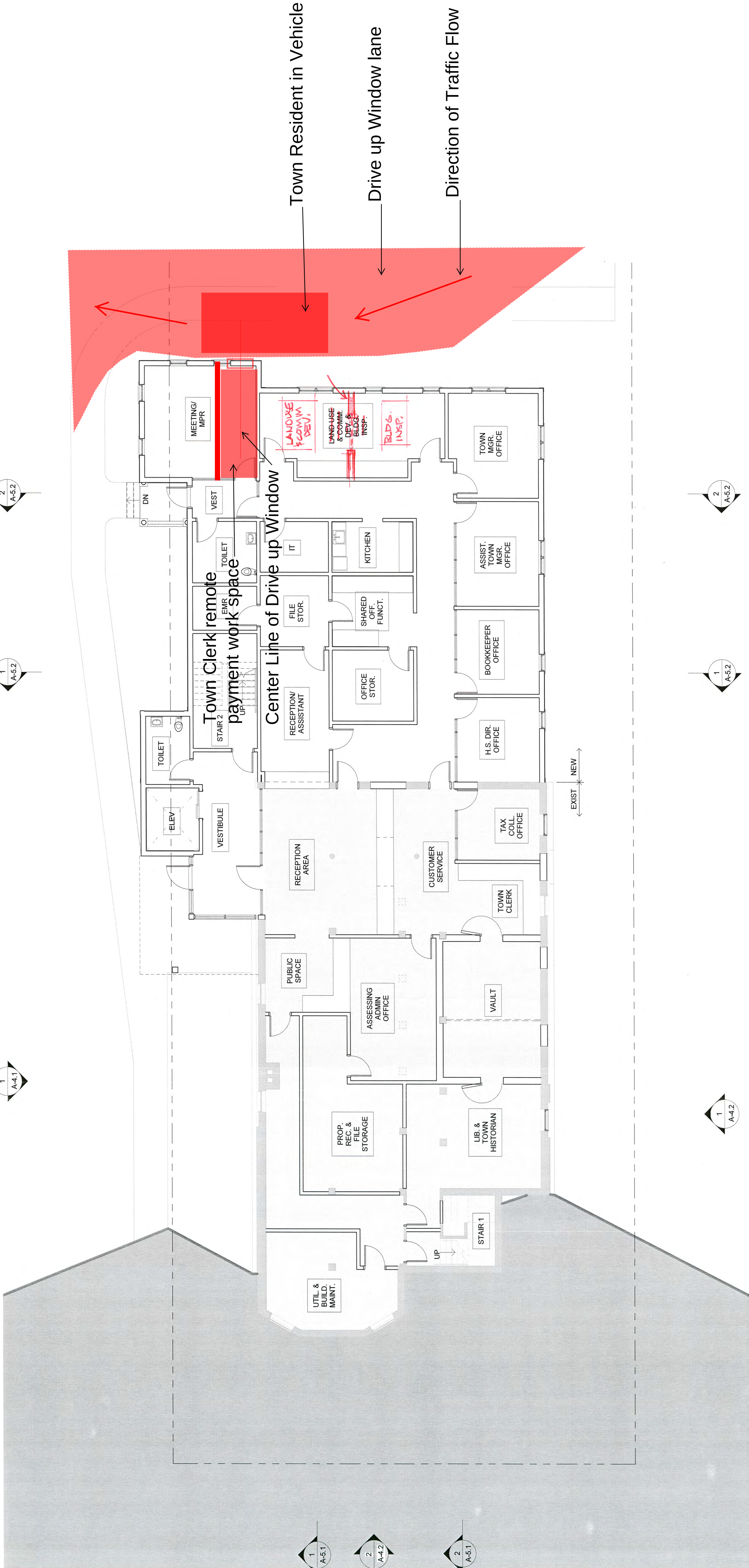
Description

Enfield Municipal
Buildings Concept Design
23 Main St
Enfield, NH 03748

Proj. No: 19311 Drawn: Author
Date: 04/21/20 Chk'd: Checker

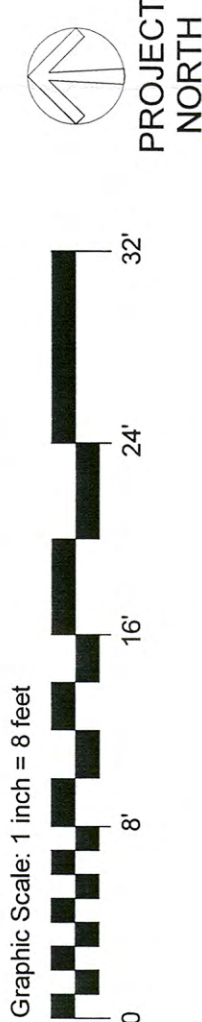
Lower Floor

A-2.4



1 1st Sub Floor Plan
A-1/A-2.4 1/8" = 1'-0"

DRIVE UP #2



Whitney Hall Addition

- COVID 19 Considerations – see the following page:

COVID-19 Considerations

Enfield, NH

May 5, 2020

Attached for MFAC review and information are several articles¹ regarding the COVID-19 virus, building design and occupancy considerations. Since a clear understanding of the virus, knowledge of transmission and how the virus will impact our built environment are in early stages of advancement, information considered to be reliable, trustworthy and accurate appears to be limited.

In this context, building design and occupancy considerations identified by the attached articles which focus on reduction of virus transmission through building environments include:

- Reduce occupancy density
- Reduce direct contact between individuals
- Limit shared workspaces
- Provide for proper handwashing
- Provide for chemical deactivation of viral particles on surfaces
- Remove items from around sinks
- Provide soap dispensers, hand sanitizers
- Implement surface cleaning protocols

Accepting that air filtration systems have a limited effectiveness against pathogen containment due to the small size of the virus, enhanced building HVAC systems and operational practices may reduce the potential for virus spread including:

- Proper filter installation and maintenance
- Higher air exchange rates with increased outside air
- Reduced air flow velocities
- Maintaining a Relative Humidity (RH) of >40% and <60%
- Treat ventilation air with UV germicidal irradiation

Other building design considerations may include:

- Provide operable windows
- Provide abundant daylight/sunlight
- Provide automated doors, elevator, light switches and other controls
- Provide foot pulls in lieu of hand pulls
- Provide thermal scanners, limited seating, delineation of “safe zones” for social distancing, “clean desk” policies, sneeze guards/shields, and video meeting, touchless check out and payment tools

Assuming the Whitney Hall and Public Safety Facility projects progress in the future these ideas (and other ideas not yet imagined) can be considered and developed as appropriate during the next phase of project design.

¹ Attached articles: The Washington Post, “The post-pandemic workplace will hardly look like the one we left behind”, April 23, 2020; Architecture + Design, “How the COVID-19 Pandemic Will Change the Built Environment”, March 18, 2020; and, American Society for Microbiology MSys, “2019 Novel Coronavirus (COVID-19) Pandemic: Built Environment Considerations to Reduce Transmission”, March/April 2020.

Gender Neutral Locker Room Alternative

Design of Gender Neutral Locker Rooms was discussed with the MFAC. See the following drawings for a gender neutral locker room alternative for the Public Safety Facility and an example of a gender neutral changing area designed for the Upper Valley Aquatic Center by BLC.

X	9	10	11	12	13	14	15	X	X	7	8	X	9	10	11	12	13	X	24	25	26	27	28	29	30
8	7	6	5	4	3	2	1	16	9	8	7	6	5	4	3	2	1	20	21	22	23	24	25	26	27
6	5	4	3	2	1	19	18	17	16	15	14	13	12	11	10	9	8	22	23	24	25	26	27	28	
X	4	3	2	1				20	19	18	17	16	15	14	13	12	11	22	23	24	25	26	27	28	

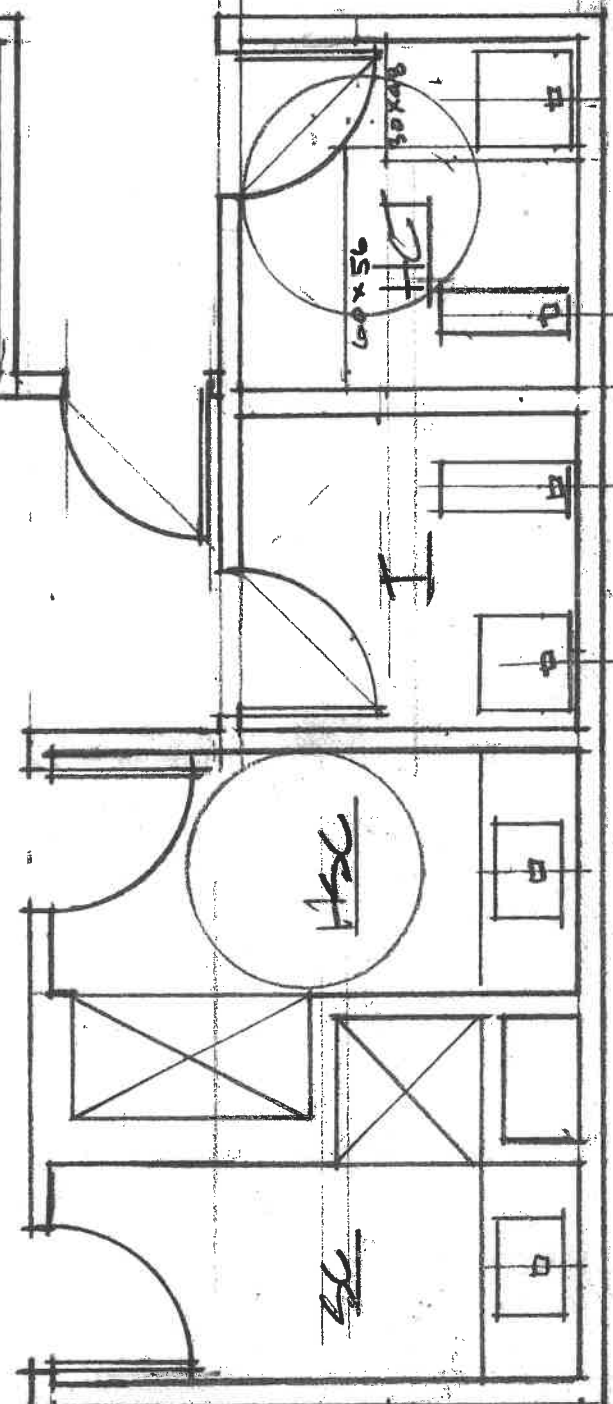
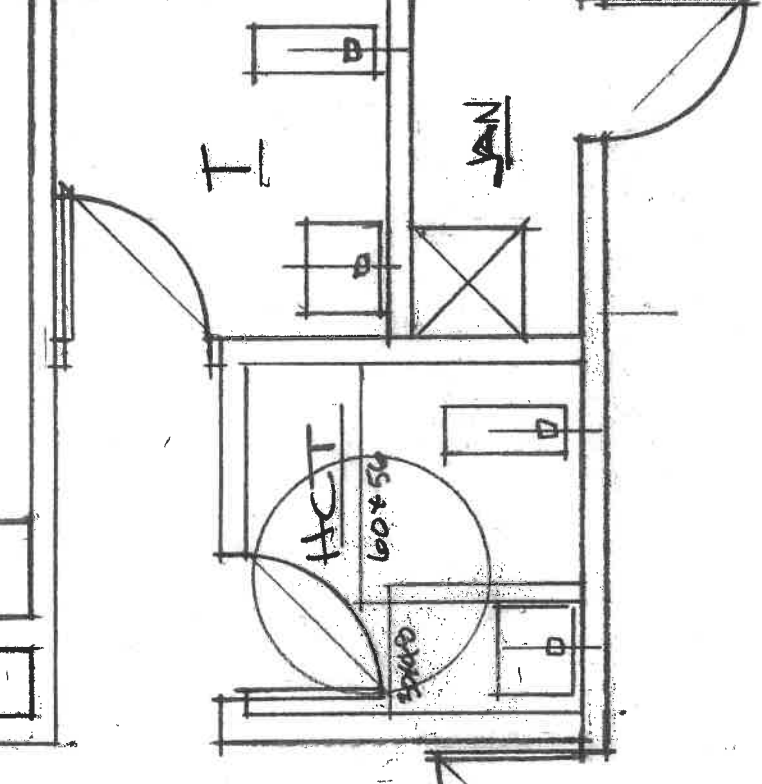
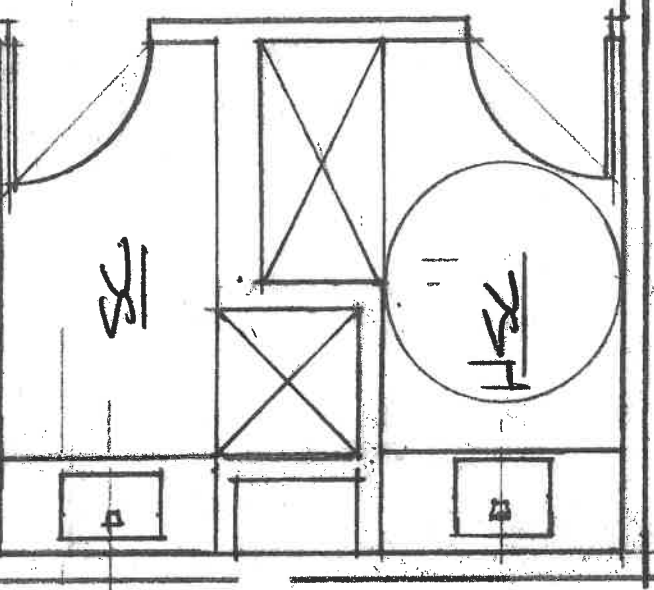
LOCKERS

PO/EMS LOCKERS

28	29	30
31	32	33

14	15	16
17	18	19

20	21	22	23
24	25	26	27



PUBLIC SAFETY FACILITY - LOCKER ROOMS. GENDER NEUTRAL OPTION

PHASE 2. NH.

04/14/2020

PLC

0248

1293 Route 7 South
Middlebury, VT 05753
P 802 388 9871
F 802 388 3815
www.breadloaf.com

Civil Engineer

Engineering Ventures
85 Mechanic St., Suite 52-2
Lebanon, NH 03766
P 603 442 9333

Structural Engineer

Engineering Ventures
208 Flynn Ave., Suite 2A
Burlington, VT 05401
P 802 883 6225

Mechanical Engineer

Vermont Heating and Ventilating
16 Tigan St., Suite A
Winooski, VT 05404
P 802 655 8805

Electrical Engineer

Interstate Electrical Services
281 Olcott Drive
White River Junction, VT 05001
P 855 500 4372

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Seal:

No.	Date	Description
0	5/19/16	Bulletin 1
1	5/23/16	Bulletin 2
2	8/19/16	Bulletin 5-IFC
3	10/17	Bulletin 8
4	2/27/17	Bulletin 9
5	8/25/17	RECORD DOCUMENT

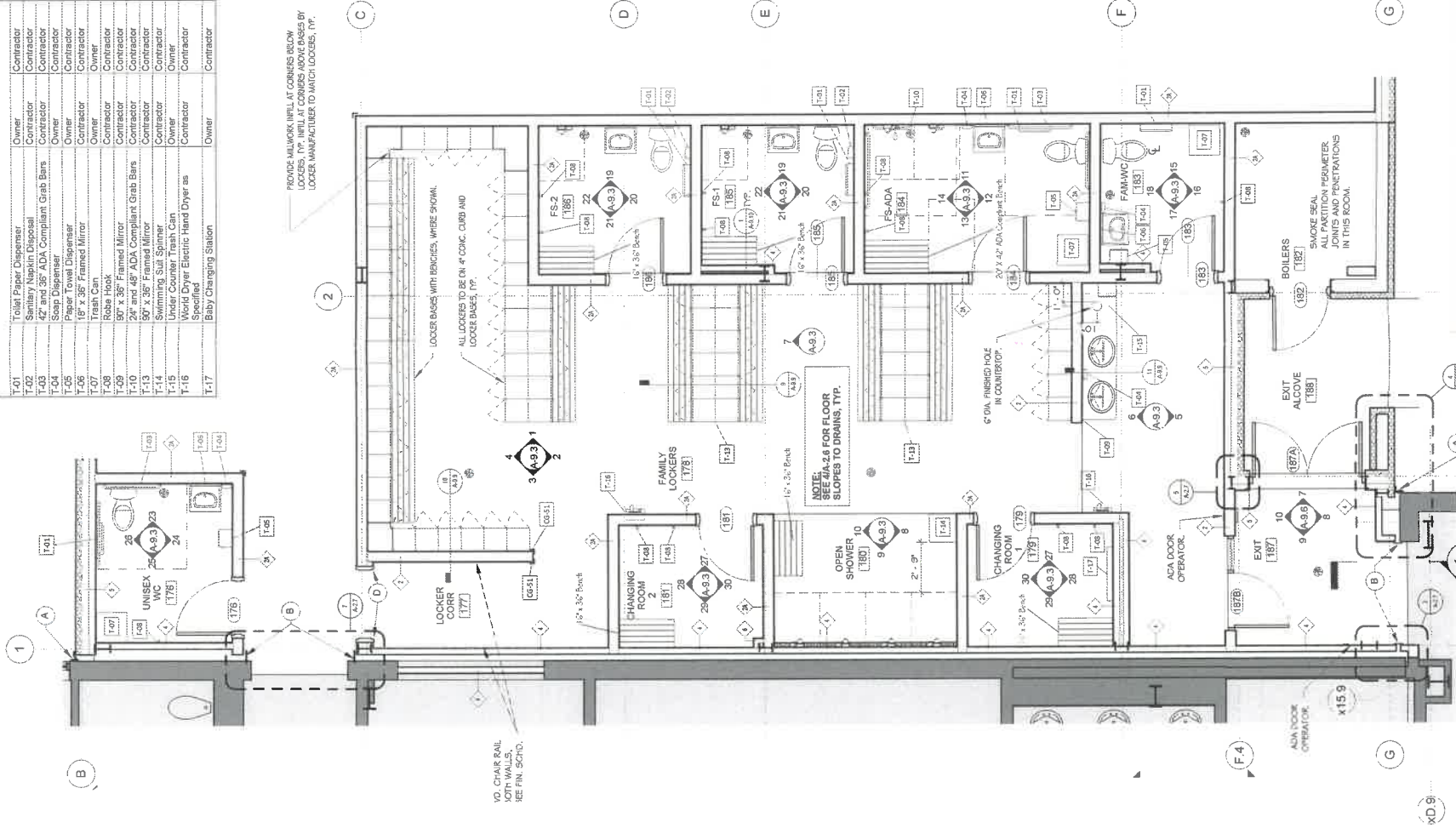
Upper Valley Aquatic
Center Expansion
Hartford, VT

Proj. No. 15509 Drawn:
Date: 5/16/2016 CHK'd:
Enlarged Plans

A-2.5 TAGGED NOTES

A	EXT. EXPANSION JOINT COVER
B	INT. EXPANSION JOINT COVER
C	PARTITION WALL DETAIL 2 / A-9.10
D	FLOOR FIN. 177 SIDE OF WALL TO BR/ASS
	COL. FEM. 7/A2.7

Mark	Description	Supplied By	Installed By
T-01	Toilet Paper Dispenser	Owner	Contractor
T-02	Sanitary Napkin Dispenser	Contractor	Contractor
T-03	42" and 36" ADA Compliant Grab Bars	Contractor	Contractor
T-04	Soap Dispenser	Owner	Contractor
T-05	Paper Towel Dispenser	Owner	Contractor
T-06	18" x 36" Framed Mirror	Contractor	Contractor
T-07	Trash Can	Owner	Contractor
T-08	18" x 36" Framed Mirror	Contractor	Contractor
T-09	18" x 36" Framed Mirror	Contractor	Contractor
T-10	24" and 48" ADA Compliant Grab Bars	Contractor	Contractor
T-11	UNISEX WC	Contractor	Contractor
T-12	50" x 36" Framed Mirror	Contractor	Contractor
T-13	Swimming Suit Spinner	Contractor	Contractor
T-14	Under Counter Trash Can	Contractor	Contractor
T-15	World Drier Electric Hand Dryer as Specified	Owner	Contractor
T-16	World Drier Electric Hand Dryer as Specified	Contractor	Contractor
T-17	Baby Changing Station	Owner	Contractor



1 Locker Room Enlarged Plan
AS SHOWN 1/4" = 1'-0"

Whitney Hall – Old Post Card Views vs Current View

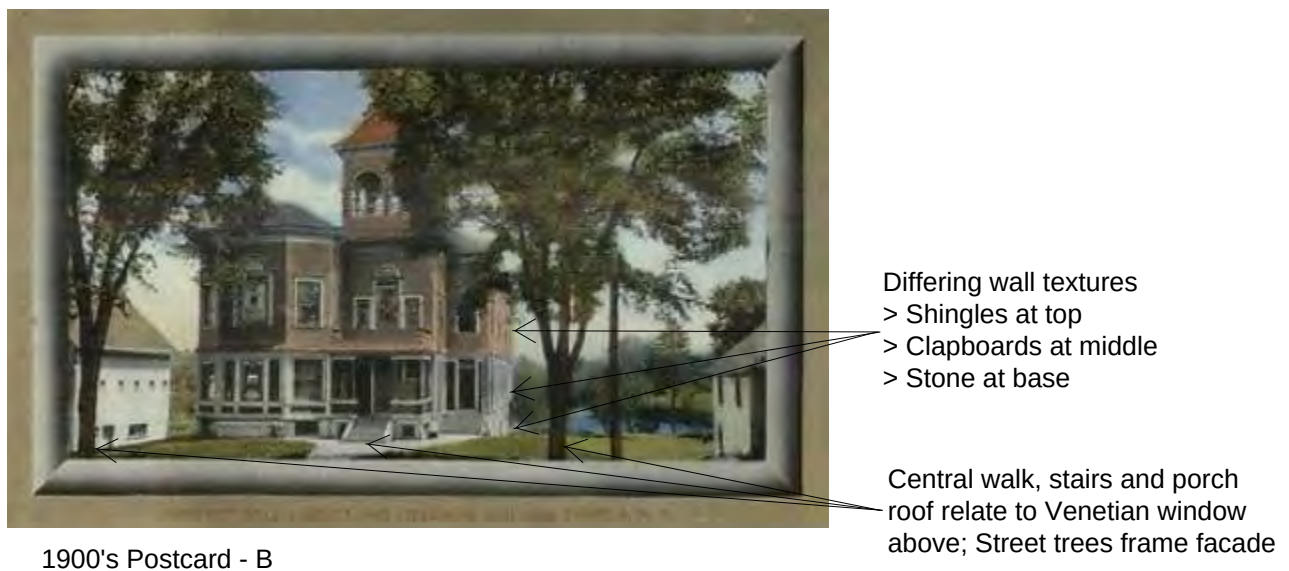
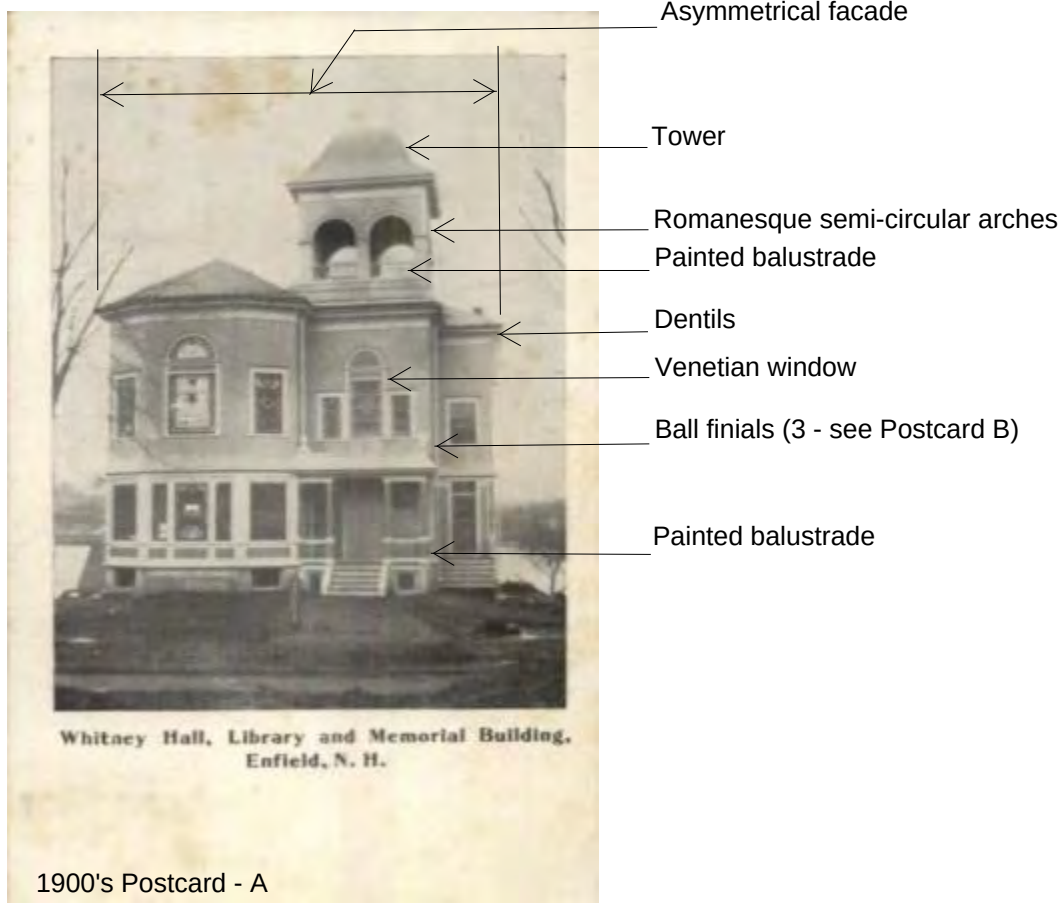
By researching old Whitney Hall post cards BLC reviewed the modifications that have been made to the primary façade of Whitney Hall since its original construction. The prior modifications of Whitney Hall's primary elevation were reviewed with the MFAC in an effort to confirm the extent of rehabilitation that should be performed at Whitney Hall within the scope of this project.

After review and discussion the MFAC agreed it was not desirable to rehabilitate the primary façade of Whitney Hall to its original design but to leave in place modifications made in prior renovations. Therefore the proposed scope of Whitney Hall primary façade rehabilitation is as shown by the Conceptual Design drawings included herein.

Whitney Hall - Old Post Card Views vs. Current View

Enfield, NH

April 21, 2020





1900's Postcard - C

Monochromatic color scheme with contrasting light color trim

Porch covers all or part of facade including primary entry



2020 - Current View

Arches in-filled

Porch has been extended around primary facade corner and returns to side entry

Relationship of the central walk/stair and porch to venetian window above have been significantly compromised by alteration of historic walk, stair and porch

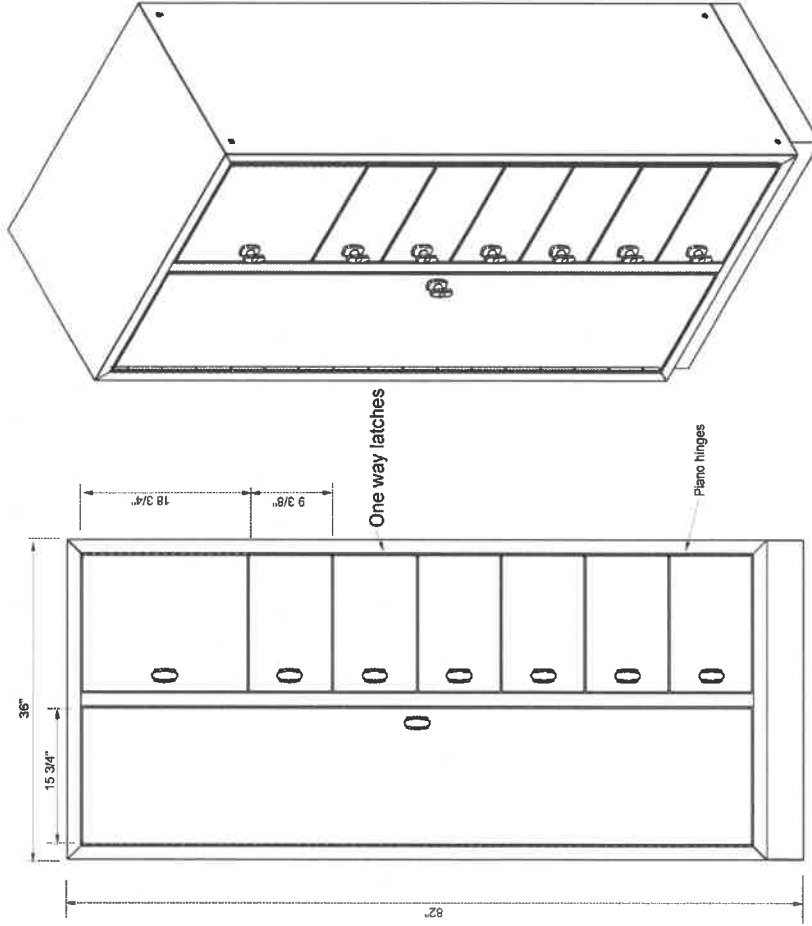
Central walk and stair have been removed

Over time the addition of flagpole, signage and trees have also encroached upon the defining elements of the historic design

FFE for Public Safety Facility and Holding Cell Lav/Toilet

In developing the Conceptual Design Study BLC considered various types of Furniture, Fixtures and Equipment (FFE) for layout and conceptual design of the project.

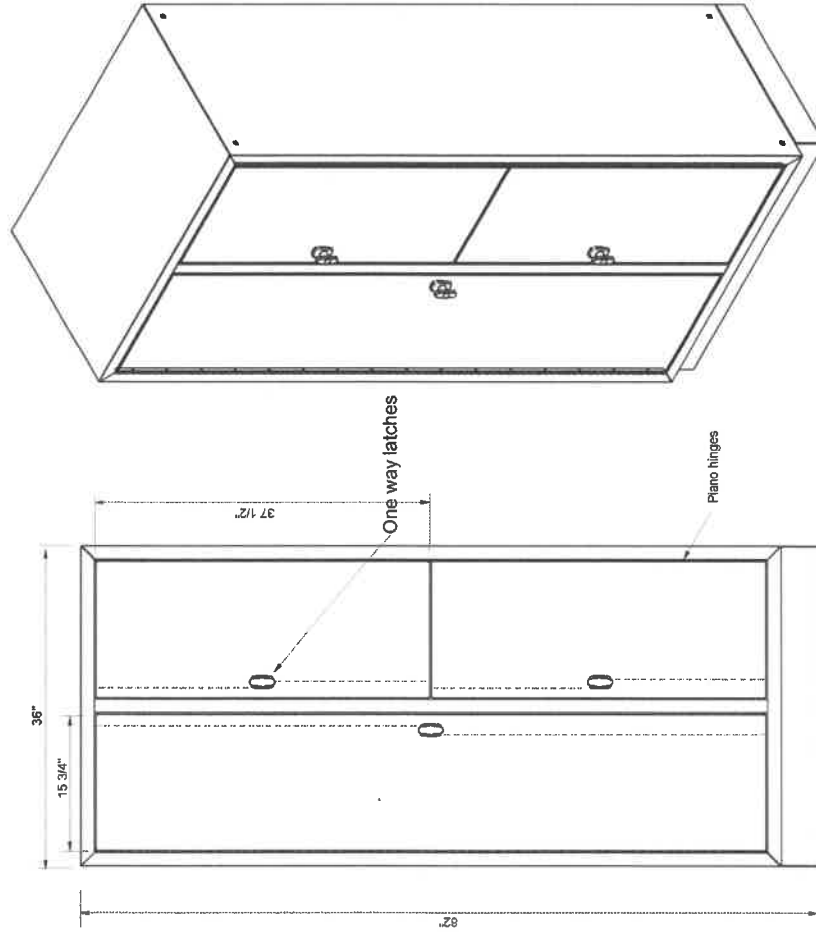
Refer to the FFE information sheets considered by BLC in developing the Conceptual Design on the following pages.



ELP-772-0108A PASS THRU
 ELN-772-0108A NON PASS THRU

Project	
Customer	
Drawn by	DP
Check	

FASCO SECURITY PRODUCTS
 14522 Naples St 763-434-9841
 Hom Lake MN 55304 fax 763-208-0979

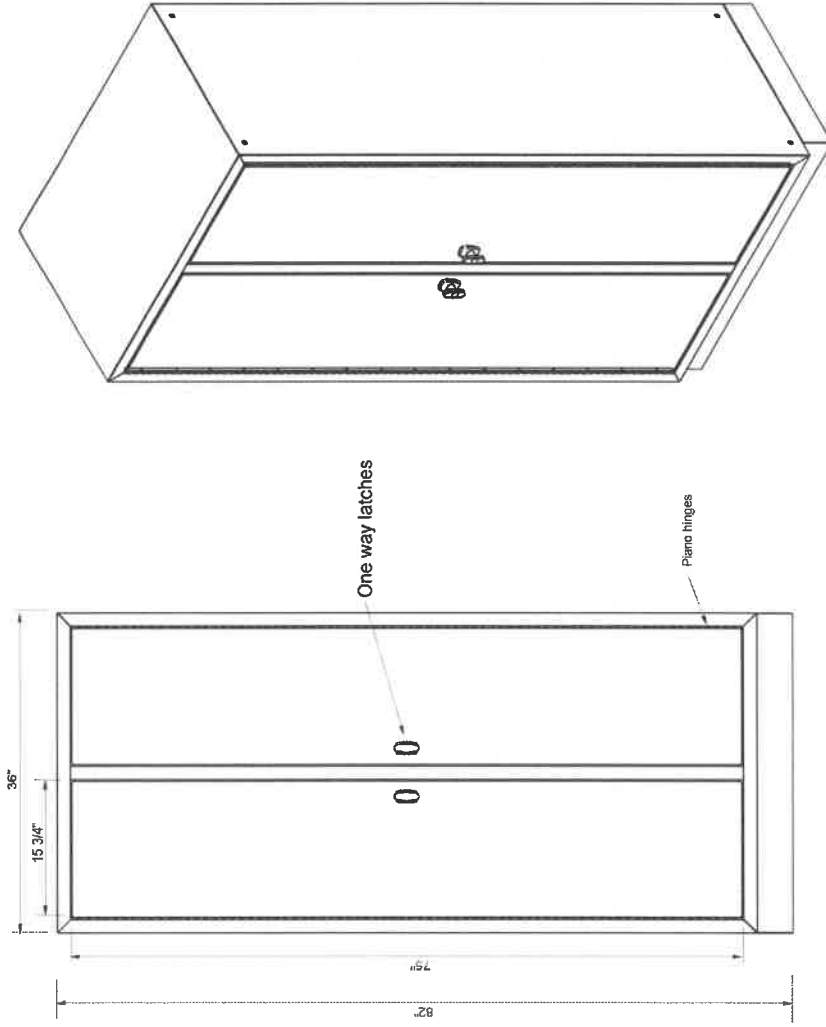


ELP-772-0103 PASS THRU

ELN-772-0103 NON PASS THRU

FASCO SECURITY PRODUCTS
 14522 Naples St 763-434-9841
 Ham Lake MN 55304 fax 763-208-0979

Project	
Customer	
Drawn by	DP
Date	

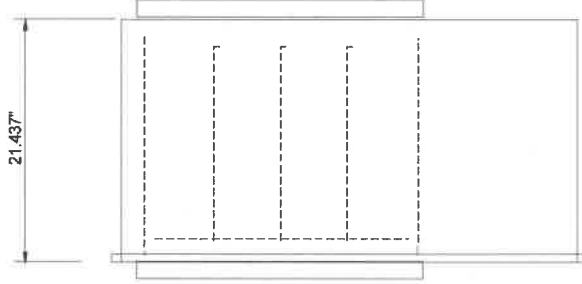


ELP-772-0102 PASS THRU
ELN-772-0102 NON PASS THRU

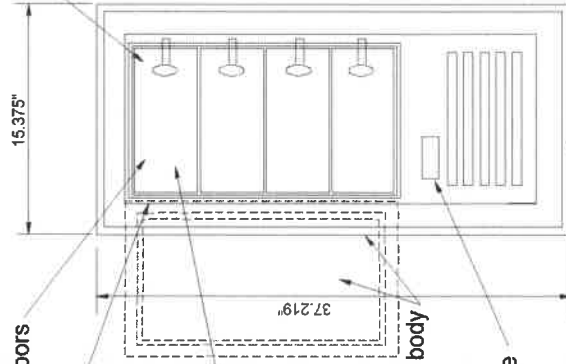
FASCO SECURITY PRODUCTS
14522 Napier St 763-434-9841
Ham Lake MN 55304 fax 763-208-0979

Project	
Customer	
Drawn by	DP
Date	

One way keyless locks
w/ internal release



SIDE VIEW



FRONT VIEW

12 ga stainless steel doors
piano hinges

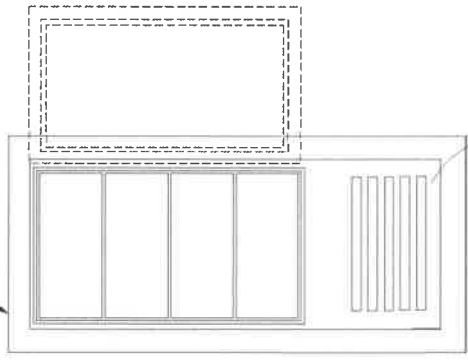
Clear opening 10" w x 3 3/4" h

stainless steel insulated doors & body
w/ magnetic strip seal

Digital temperature gage

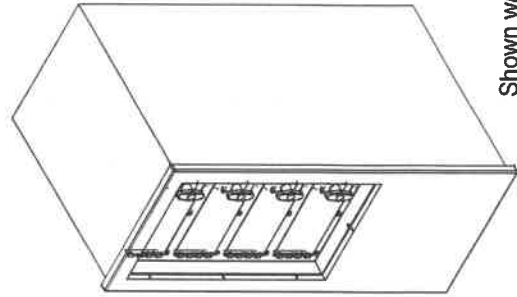
Stainless steel mount frame

14 ga ss body



REAR VIEW

power cord
hard wire or plug



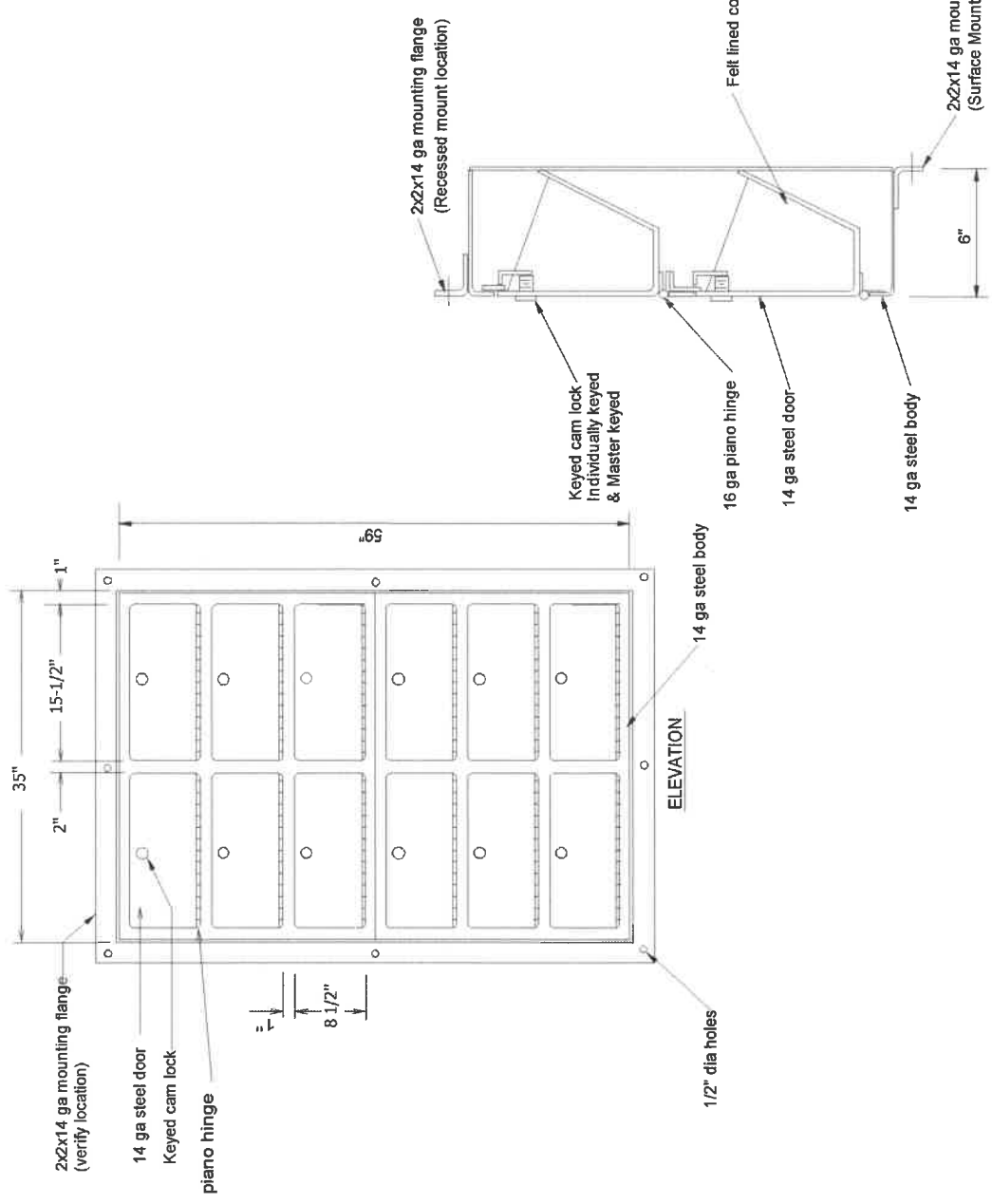
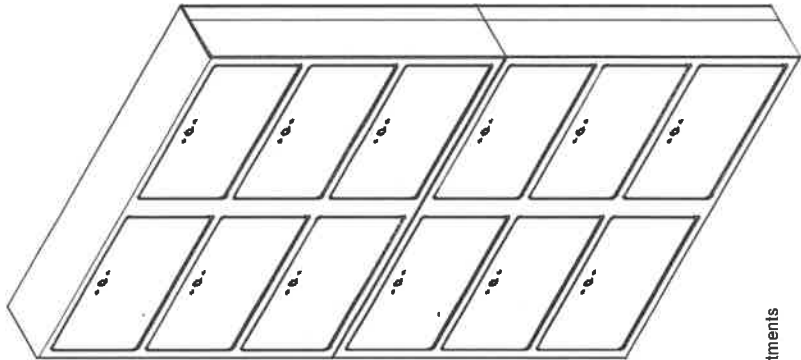
Shown w/o front door

ELRI-004 REFRIGERATED EVIDENCE LOCKER

All stainless steel doors & body
115 V Power

Project	
Customer	
Drawn by:	DP
Date:	4-2009

FASCO SECURITY PRODUCTS
14522 Naples St 763-434-9841
Ham Lake MN 55304 fax 763-208-0979



FL-714-12
MEDIUM DUTY TIP OUT COMPARTMENT
PISTOL LOCKER

Powder coat finish

Project	SECTION
Customer	
Drawn by: DP	
Date:	

FASCO SECURITY PRODUCTS
14522 Naples St 763-434-9841
Ham Lake MN 55304 fax 763-208-0979

UNLOADING STATIONS

TYPE
IIIA OR III



PSP's Unloading Stations are designed to provide safe and easy unloading of service weapons, catching ejected rounds and safely containing accidental discharges to the rated ballistic level.

The cone opening catches the round ejected from semi-automatic handguns. The wide opening of the cone allows the entire handgun to be placed in the unloading station so that the ejected round is caught and does not fall to the floor. If accidental discharge occurs the bullet will hit the cone and be stopped by the ballistic material.

FEATURES

- Packed Ballistics:** Each cone contains a minimum of 32 lbs. of woven ballistic fiber
- Cone:** Made from high density polyethylene, which will not damage the service weapon or ejected round
- Canister:** Made of 16-gauge steel
- Configurations:** Floor or wall mount, angle adjustable for different users
- Levels:** Level IIIA or Level III models

LEVEL	SERVICE WEAPONS	OTHER SERVICE ROUNDS
IIIA	All service handguns including: .45 ACP, 9mm Luger, .40 S&W, 10mm Auto, .357 SIG, .357 Magnum, .44 Magnum	12-gauge 00 Buck - maximum velocity 1600 ft/s 12-gauge 1 oz. rifle slug - maximum velocity 1600 ft/s
III	Same as IIIA	Same as IIIA, plus: 5.56 NATO (.223 Remington) - 62 gr. FMJ - max vel. 3000 ft/s 7.62 NATO (.308 Winchester) - M80 Ball 150 gr. FMJ - max vel. 2780 ft/s

THE STATION ASSEMBLY SHOULD BE INSPECTED REGULARLY AND MUST BE REPLACED IF PHYSICALLY DAMAGED OR SHOT

124 Fourth Avenue | Arnprior, ON K7S 0A9
TOLL FREE (888) 997-9923 | FAX (613) 623-6169
www.pacsafety.com

Free StyleTM

PERSONAL STORAGE LOCKER

Make it up as you go.

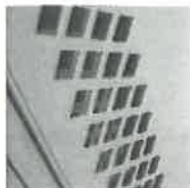


AIR EXTRACTION READY

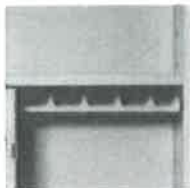
All full-height lockers and accessories include a number of standard features, which naturally promote air circulation through the locker.

Add air extraction mechanicals now or later.

- **Accessory Spacing:** To promote air flow, all accessories are positioned away from the rear locker panel.
- **Built-in Air Baffle:** Adjustable vent enables lockers to be balanced for air circulation after installation.



Visibility/Circulation
Diamond perforated doors offer visibility as well as natural air circulation and ventilation.



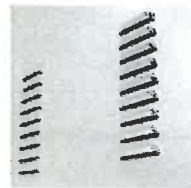
Adjustable Shelf with Integral Garment Hanger
Provides clothing separation for better drying.



Louvered Shelf
For ventilation and drying – great for body armor.



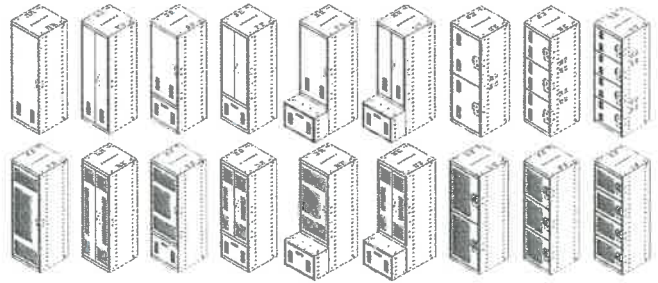
Ventilation Rack
Sliding rack that sits in bench drawer for ventilation.



Louvered Doors and Drawers
Louvers help direct optimal air circulation.



SOUTHWEST SOLUTIONS GROUP
business organization systems



**CHANGE BEGINS WITH A FLEXIBLE
RANGE OF SIZES AND OPTIONS**

FreeStyle adapts to your needs, and your space, from the start. Here's a system that's available in a full range of dimensions: with three heights from 72* to 90 inches and five widths from 12 to 36 inches.**

FreeStyle is available with an external access drawer or a bench drawer; with single or double, plain or diamond perforated doors; and a broad range of accessories.



* Ask about our ADA compliant locker.

** 2-, 3- and 4-tier lockers available in 12, 18 and 24 inch widths (pictured above).



The Storage Solution Experts



Strategic Solutions
for Fire Storage





Standard Wall Mount Locker Sizes



Standard Wall Mount Lockers

GearGrid's Standard Wall Mount Lockers come in a variety of sizes to meet your department's exact storage needs. Our patented design promotes maximum air movement, which minimizes odor build-up and allows damp items to dry faster. Above floor mounting eliminates the need for separate base and makes cleaning easier than ever. No matter the size of your space, GearGrid has the perfect storage solution for your department.

- A** 18" W x 20" D x 74-½" H
- B** 20" W x 20" D x 74-½" H
- C** 24" W x 20" D x 74-½" H
- D** 24" W x 24" D x 74-½" H
- E** 24" W x 32" D x 74-½" H
Note: Locker size not shown above
- F** 30" W x 24" D x 74-½" H
- G** 36" W x 24" D x 74-½" H



Standard Wall Mount Lockers

GearGrid's Standard Wall Mount Lockers are the strongest and most versatile line of fire lockers available. Our patented design promotes maximum air movement, which minimizes odor build-up and allows damp items to dry faster. Above floor mounting eliminates the need for separate base and makes cleaning easier than ever. GearGrid offers complete customization of our lockers to match your design specifications, so you can build your locker system in any combination.

Frame: Heavy-duty 1-1/4" steel tubing

Side & Back Grids: High-strength 1/4" wire,
3" x 3" square grid pattern

Secure Door Options:

- Heavy-duty, welded 1-1/4" OD, 16-gauge steel tube with 3" x 3" grid infill
- Heavy-duty, welded 1-1/4" OD, 16-gauge steel tubing with solid MDF core laminate

Shelves/Hooks: Two shelves constructed of high-strength 1/4" wire, and three apparel hooks per locker

Adjustability: Wire shelves adjustable in 3" increments

Name Plate: 20 GA. sheet metal, accepts 2" x 16" custom printed name plate. 2" x 12" nameplate on Secure Door

Mounting Brackets: 11 GA. steel

Finish: Super Durable TGIC powder coat

Colors: 7 standard colors

Shipping: Ships knocked down for ease of handling and reduced shipping costs

Assembly: With simple tools it's fast and easy

www.geargrid.com

Available sizes:

Width18"
Depth20"
Height74-1/2"

Width20"
Depth20"
Height74-1/2"

Width24"
Depth20"
Height74-1/2"

Width24"
Depth24"
Height74-1/2"

Width24"
Depth32"
Height74-1/2"

Width30"
Depth24"
Height74-1/2"

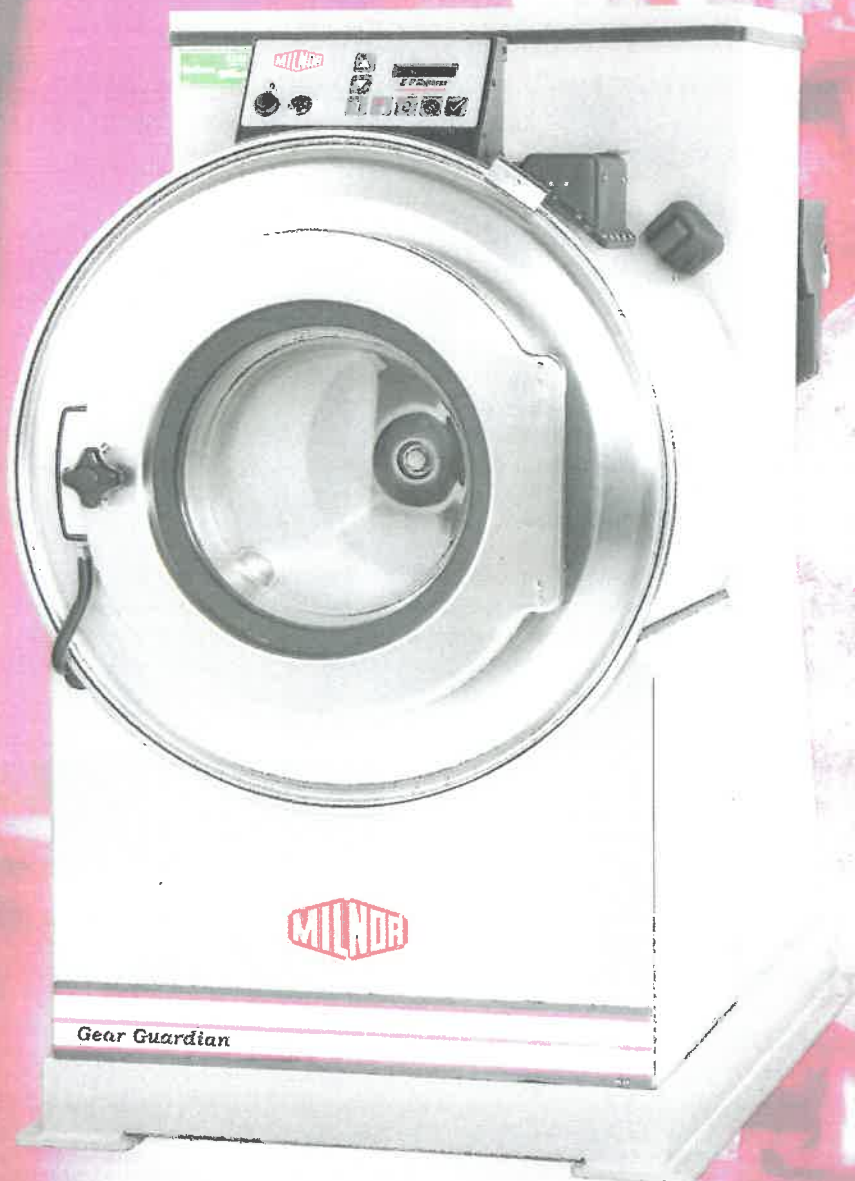
Width36"
Depth24"
Height74-1/2"

Locker size includes Top-Side Storage Shelf.
Not available with Secure Door option.



GEAR GUARDIAN® WASHER-EXTRACTORS

FOR PROPER PROCESSING OF FIREFIGHTER GEAR



30015 T6X

Helps protect Firefighters' health and safety • Saves on cleaning costs • Can prolong gear's life

PROTECT FIREFIGHTER GEAR WITH GEAR GUARDIAN® WASHER-EXTRACTORS

Designed specifically for firefighter gear

Gear Guardian washer-extractors have 30 different programmable wash formulas, including 10 pre-programmed strictly for decontaminating firefighter gear (all 10 can be re-programmed). User-friendly microprocessor controls prompt you through each programming step and prevent errors. And, all Gear Guardian washer-extractors comply with NFPA 1851 standards in maintenance and care of protective gear.

Pre-programmed wash formulas get you started quickly:

- | | |
|---------------------------------|-------------------------|
| 1. Light soil turnouts | 6. Brush gear |
| 2. Heavy soil turnouts/gloves | 7. Hoods/suspenders |
| 3. Light soil moisture barriers | 8. SaniFlush Wash Out |
| 4. Heavy soil moisture barriers | 9. Stationwear |
| 5. Oil-contaminated gear | 10. Sheets/pillow cases |

Easy Operation

Anyone can operate a MILNOR Gear Guardian washer-extractor. Formula choices are clear. Just pick the right formula, and press the start button. Then full automation takes over. The machine also keeps you informed by displaying information, including what function is underway and how much formula time remains. Any trouble with the machine? Check troubleshooting messages to minimize downtime. Control protects turnouts by not allowing gear to tumble during fill. And automatic supply injection means no attention is needed while the machine is washing.

Roomy wash cylinders

Firefighting gear is bulky, so the spacious Gear Guardian cylinder is essential for a fast, commercial-quality wash. Big ribs lift and drop gear to help remove heavy soil. The large cylinder cuts processing time, and you can launder more gear per load.

Speeds processing

Heavily-soiled firefighting gear needs effective rinsing. Intermediate extractions "sling" water and chemicals from gear prior to the next rinse. Gear gets cleaner faster! Gear Guardian washer-extractors have the unique ability to allow as many intermediate extractions as you need, since they use continuous duty (rather than intermittent duty) motors. Low extract speeds are designed into MILNOR Gear Guardian machines to better protect turnout gear. High spin cycles can damage these valuable goods.

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B22SL91032/19366

Helps avoid vibration

A special load distribution speed before extraction prevents bulky gear from creating an imbalance inside the cylinder. This helps avoid vibration during the extraction. Besides saving time (since you don't have to stop the machine to manually correct the load), less vibration means longer machine life.

Distribution speed also protects gear by preventing tumbling action while water is draining from the cylinder.

Rugged Construction

Bulky, heavy turnouts can be rough on a machine, but not a Gear Guardian washer-extractor. It's built for long service under tough conditions by the most respected name in commercial laundry machinery.

The T-Series and V-Series models feature continuous (rather than spot) welding, large tapered roller bearings, a triple shaft seal to shield bearings from water on most models, heavy gauge console materials, and heavy-duty motors.

A choice in sizes

Gear Guardian washer-extractors are available from 40 lb. to 80 lb. capacities. The size you choose depends on the amount of gear you need to process within a given timeframe.



40 lb. model

Budget models, too! If you're on a tight budget, T-series machines and cabinet models are available with lower extraction rates.

60 lb. model



PELLERIN MILNOR CORPORATION
P.O. BOX 400 - Kenner, LA 70063
504/467-9591
Email: milnorinfo@milnor.com
www.milnor.com

Machine model	MWT16X5	30015T6X + VRJ	MWT18X4	MWT27X5	30022T6X + VRJ	36021 V5Z
Maximum capacity-lb.	35	40	45	60	60	80
Cylinder diameter x depth-in.	23 x 18	30 X 15	28 x 18	30 x 22	30 x 22	36 x 21
Gross cylinder volume-cu. Ft	4.2 (117)	6.14 (174)	6.4 (180)	9 (255)	9 (255)	12.37 (350)
Overall width x depth x height	29 x 42.13 x 43.19	34.5 x 48.62 x 56.44	34.45 x 47.41 x 52.7	34.45 x 51.75 x 56.25	34.5 x 55.56 x 56.44	44.07 x 55.15 x 67
Approx. gross weight-lb.	581	1,080	816	1,164	1,100	1,455
No. of full sets of gear*	1 to 2	2 to 3	3	4 to 5	4 to 5	6 to 7

*Depending on density and soil content of goods. Specifications and appearance subject to change without notice. Other models available. Consult factory for acoustics data.



GEAR GUARDIAN® WASHER-EXTRACTOR CAPACITIES

	MILNOR 25 lb. models	MILNOR 40 lb. models	MILNOR 60 lb. models	MILNOR 80 lb. models	MILNOR 100 lb. models	MILNOR 140 lb. models
No. of sets of gear *	1	2 to 3	4 to 5	6 to 7	8 to 9	11 to 13

**These figures are based on sample items. Weights and sizes of some brands differ, and therefore the figures should be used only as guidelines*

GEAR GUARDIAN® DRYING CABINET CAPACITIES

	FC-3	FC-6
	Drying cabinet	Drying cabinet
No. of sets of gear	3	6

*These figures are based on **complete** sets of turnout gear, including bib, jacket, boots, hat liner, and gloves.
Stainless steel racks and insertion tubes optional.*

PELLERIN MILNOR CORPORATION
P.O. Box 400, Kenner, LA 70063-0400
Phone: 504-712-7656
www.milnor.com E-mail: milnorinfo@milnor.com

Property Investigations for MVRSD Property and Whitney Hall

In developing the Conceptual Design Study the MFAC requested BLC provide information related to property evaluations and investigations typically performed by clients prior to the purchase of a property for development and/or for final project design.

In response BLC provided the information shown on the following pages.

A portion of the suggested evaluation and investigation work is currently being performed for the Town at the MVRSD site by Pathways Consulting, LLC. The MVRSD site is being considered by the Town for the future Public Safety Facility.

Potential Investigations for MVRSD Property and Whitney Hall

Town of Enfield

March 26, 2020

Design and construction of a Public Safety Facility on Mascoma Valley Regional School District (MVRSD) property and rehabilitation/addition to Whitney Hall merit investigation of existing conditions at each location. From an architectural and pre-construction perspective, investigation of existing conditions is recommended to occur early in project development since information obtained by these investigations will be used to inform future design, scheduling and estimating activities.

In consideration of performance of due diligence investigations, the Town's attorney may also advise that certain investigations and the resulting information be conditional to purchase of the MVRSD property. And depending upon the type of project financing used, additional investigations imposed or conditioned by financing requirements may be applicable as well. These matters should be addressed with the Town's legal counsel as the project progresses.

Based on an initial architectural review of the MVRSD property, and visual observations made at Whitney Hall, the following investigation activities are recommended for consideration. The general scope, suggested sequence and who would perform investigations are outlined below.

MVRSD Property (MP)

Initial Investigations

MP 1.1 Confirm existence, location and/or extent (if applicable) of wetlands, vernal pools, rare or endangered plants, etc. [Services performed by an Environmental Consultant]

MP 1.2 Confirm existence, location and/or extent (if applicable) of chemical, air and water pollution, hazardous materials, or other environmental conditions above surface or sub-surface by performing a Phase 1 Environmental Site Assessment (ESA). [Services performed by an Environmental Consultant]

A Phase 1 Environmental Site Assessment (ESA) is report that identifies potential or existing environmental contamination liabilities. The ESA report should address both underlying land as well as physical improvements to the property and is generally considered the first step in the process of environmental due diligence. Actual sampling of soil, air, groundwater and/or building materials is typically not conducted during a Phase 1 ESA.

If site is considered contaminated, a Phase II environmental site assessment may be conducted to confirm the actual level(s) of contamination. A Phase II ESA is a more detailed investigation involving sampling and chemical analysis for hazardous substances and/or petroleum hydrocarbons. [See MP 2.1 below]

MP 1.3 Confirm existence of any easements, planning or zoning approvals and/or legal limitations. [Services performed by Registered Surveyor or by Title search]

MP 1.4 Indicate potential boring and/or probe locations on site plan. [Services performed by Geotechnical Engineer in consultation with BLC]

MP 1.5 Locate building, parking area and driveway footprints along with potential boring and/or probe locations provided by Geotechnical Engineer/BLC. [Services performed by Registered Surveyor]

MP 1.6 Conduct field work to obtain geotechnical information, prepare Geotechnical Engineering Report and identify concerns which impact site development. [Services performed by Geotechnical Engineer and Drilling Contractor]

Secondary Investigation – After initial investigations identify and consider risks associated with potential development of the property, the following activity may proceed as needed.

MP 2.1 If site is considered contaminated after performance of the Phase 1 ESA, a Phase II ESA may be conducted. A Phase II ESA is a more detailed investigation involving sampling and chemical analysis for hazardous substances and/or petroleum hydrocarbons. Information can also be prepared to identify estimated remediation costs (if any) and time frame for remediation. [Services performed by an Environmental Consultant]

Document Existing Site Conditions – After review and consideration confirming the property is viable for purchase, proceed with obtaining information necessary for development of site and building designs.

MP 3.1 Boundary and Topographic Survey describing physical characteristics of the property including but not limited to: legal limitations and utility locations for the property; grades and lines of driveways, streets, pavements, and adjoining property and structures; adjacent water and sewer systems; storm drainage, rights-of way, restrictions, easements, encroachments, deed restrictions, boundaries and contours of the property; Information concerning available utility services and lines, for both public and private, above and below grade. [Services performed by Registered Surveyor]

Whitney Hall (WH)

Initial Investigation

WH 1.1 Confirm existence, location and/or extent (if applicable) of chemical, air and water pollution, hazardous materials, or other environmental conditions above surface or sub-surface by performing a Phase 1 Environmental Site Assessment (ESA). [Services performed by an Environmental Consultant]

A Phase 1 Environmental Site Assessment (ESA) is report that identifies potential or existing environmental contamination liabilities. The ESA report should address both underlying land as well as physical improvements to the property and is generally considered the first step in the process of environmental due diligence.

Phase I ESA can include visual inspections or records review searches for: Asbestos Containing Building Materials (ACBM); Lead-Based Paint; Lead in Drinking Water; Mold; Radon, PCB's, Mercury, etc. Actual sampling of soil, air, groundwater and/or building materials is typically not conducted during a Phase 1 ESA.

If site or building is considered contaminated, a Phase II environmental site assessment may be conducted to confirm the actual level(s) of contamination. A Phase II ESA is a more detailed investigation involving sampling and chemical analysis for hazardous substances and/or petroleum hydrocarbons. [See WH 2.1 below]

WH 1.2 Confirm existence of any easements, planning or zoning approvals and/or legal limitations which would preclude or impact development of the site. [Services performed by Registered Surveyor or by Title search]

WH 1.3 Indicate potential boring and/or probe locations on site plan. [Services performed by Geotechnical Engineer in consultation with BLC]

WH 1.4 Locate building, parking area and driveway footprints along with potential boring and/or probe locations provided by Geotechnical Engineer/BLC. [Services performed by Registered Surveyor]

WH 1.5 Conduct field work to obtain geotechnical information, prepare Geotechnical Engineering Report and identify concerns which would impact site development. [Services performed by Geotechnical Engineer and Drilling Contractor]

Secondary Investigation – After initial investigations identify and consider risks associated with potential rehabilitation of the building and additional development of the property, the following activity may proceed as needed.

WH 2.1 If building or site is considered contaminated after performance of a Phase 1 ESA, a Phase II ESA may be conducted. A Phase II ESA is a more detailed investigation involving chemical analysis for hazardous substances and/or petroleum hydrocarbons. Information can also be prepared to identify estimated remediation costs (if any) and time frame for remediation. [Services performed by an Environmental Consultant]

Document Existing Site Conditions – After review and consideration of the condition of the building and site, proceed with obtaining information necessary for development of site and building designs.

WH 3.1 Boundary and Topographic Survey describing physical characteristics of the property including but not limited to: legal limitations and utility locations for the property; grades and lines of driveways, streets, pavements, and adjoining property and structures; adjacent water and sewer systems; storm drainage, rights-of way, restrictions, easements, encroachments, deed restrictions, boundaries and contours of the property; Information concerning available utility services and lines, for both public and private, above and below grade. [Services performed by Registered Surveyor]

END

END
