

DRI 674 Stone Bank Development

**Chimney and Fireplace
Proposal**

8 Union Court Addition

Dunn Family, LLC Applicant

**Reid "Sam" Dunn Applicant's
Agent**





Chimneys & Fireplaces: Past Actions

- On July 6, 2023 the Commission denied as modifications metal chimneys on multiple buildings based on aesthetics/appearance
- On September 7, 2023 the Commission denied Chimneys and Fireplaces at 2, 8, and 16 Union Court as modifications because they could not have been detected in previously reviewed plans. A remove or remedy letter was issued
- On September 21, the Commission approved an aesthetics/appearance proposal for all Chimneys. However, Chimneys at 2, 8 and 16 Union Court remained denied for other reasons

Chimney/Fireplace Denial: Subject Buildings





2 Union Court



8 Union Court



16 Union Court

Applicant's Proposal

To keep or install gas fireplaces in the three addresses:

- All Electric cooking in three residential units
- Electric Ovens in four residential units
- Electric hot water in two residential units
- Electric hot water in five commercial units

According to the Applicant's Agent, the aforementioned electric appliances are installed save for one range in a residential unit





Gas & Fireplace Data

cooking and hot water. Four units were to have wood burning fireplaces.

As built only six of the units have gas cooking only seven have gas hot water, a reduction of five gas appliances. As built there are three additional gas fireplaces, an addition of three gas appliances.

Unit	Fireplace Status	Fireplace Fuel	Cooking Fuel	Hot Water Fuel
2 Union Court B (R-11)	None	NA	Electric	Electric
2 Union Court C (R-10)	None	NA	Electric	Electric
2 Union Court D (R-12)	Not on Plans	Gas	Gas	Gas
8 Union Court B (R-9)	Not on Plans	Gas	Gas	Gas
16 Union Court D (R-3)	Not on Plans	Wood	Gas	Gas
20 Union Court C (R-4)	On Plans	Wood	Gas	Gas
20 Union Court D (R-5)	On Plans	Wood	Electric	Gas
26 Union Court (R-7)	On Plans	Gas	Gas	Gas
30 Union Court (R-8)	On Plans	Wood	Gas	Gas

Analysis of Gas Usage at Stone Bank

September 12, 2023

The purpose of this analysis is to show that, even with the addition of three gas fireplaces, the project still uses far less gas than was allowed in the MVC decision for the project.

The project is permitted to have gas cooking and gas water heating. However some units have utilized electric ranges, electric water heaters and/or dual-fuel ranges (meaning the ovens are electric), resulting in less gas usage than is allowed by the decision. **This analysis measures the reduction in annual gas usage from what has been allowed, and compares it to the increase in annual usage caused by adding three gas fireplaces.** See following page for assumptions, methodology and calculations.

Reductions:

Two Units use electric water heating	$2 \times 132 \text{ Therms/yr} =$	264 Therms/yr
Three Units use electric cooking	$3 \times 146 \text{ Therms/yr} =$	438 Therms/yr
Four Units use dual fuel ranges	$4 \times 62 \text{ Therms/yr} =$	<u>248 Therms/yr</u>

Total reduction **950 Therms/yr**

Increases:

Three Units use gas fireplaces $3 \times 108 \text{ Therms/yr} =$ **324 Therms/yr**

Net Usage Reduction: **626 Therms/yr**

Conclusion:

There is a significant reduction in the gas usage allowed by the MVC decision. Accordingly the energy goals of the project are still met with room to spare.



Facts and Assumptions

Range Tops:

The typical unit has a 30" Bosch 5-burner slide-in range. The burners use between 5,000 and 48,000 BTU depending on size. Assuming two burners using an average of 10,000 BTU for two hours per day = 40,000 BTU per day, or 0.4 Therms/day*

$$0.4 \text{ Therms} \times 365 \text{ days} = 146 \text{ Therms/Year}$$

Ovens:

A 30" Bosch Gas Oven uses 17,000 BTU. Assuming use for one hour per day = 0.17 Therms/day

$$0.17 \text{ Therms/day} \times 365 \text{ days} = 62 \text{ Therms/Year}$$

Water Heaters:

The typical unit uses a Rinnai RL 94 tankless gas water heater. According to AttainableHome.com the average 2 bedroom home uses 11 Therms per month.

$$11 \text{ Therms} \times 12 \text{ months} = 132 \text{ Therms/Year}$$

Gas Fireplaces:

The typical unit will use a 16" Peterson Fyre G45 gas burner. This produces a maximum of 50,000 BTU. Assume a medium usage of 30,000 BTU or 0.3 Therms, for 3 hours per day for four months of the year.

$$0.3 \text{ Therms} \times 3 \text{ hours/day} \times 120 \text{ days} = 108 \text{ Therms/Year}$$

*One Therm = 100,000 BTU and is equivalent to One Gallon of Gas

8 Union Court Addition & Sprinkler Room Allowance

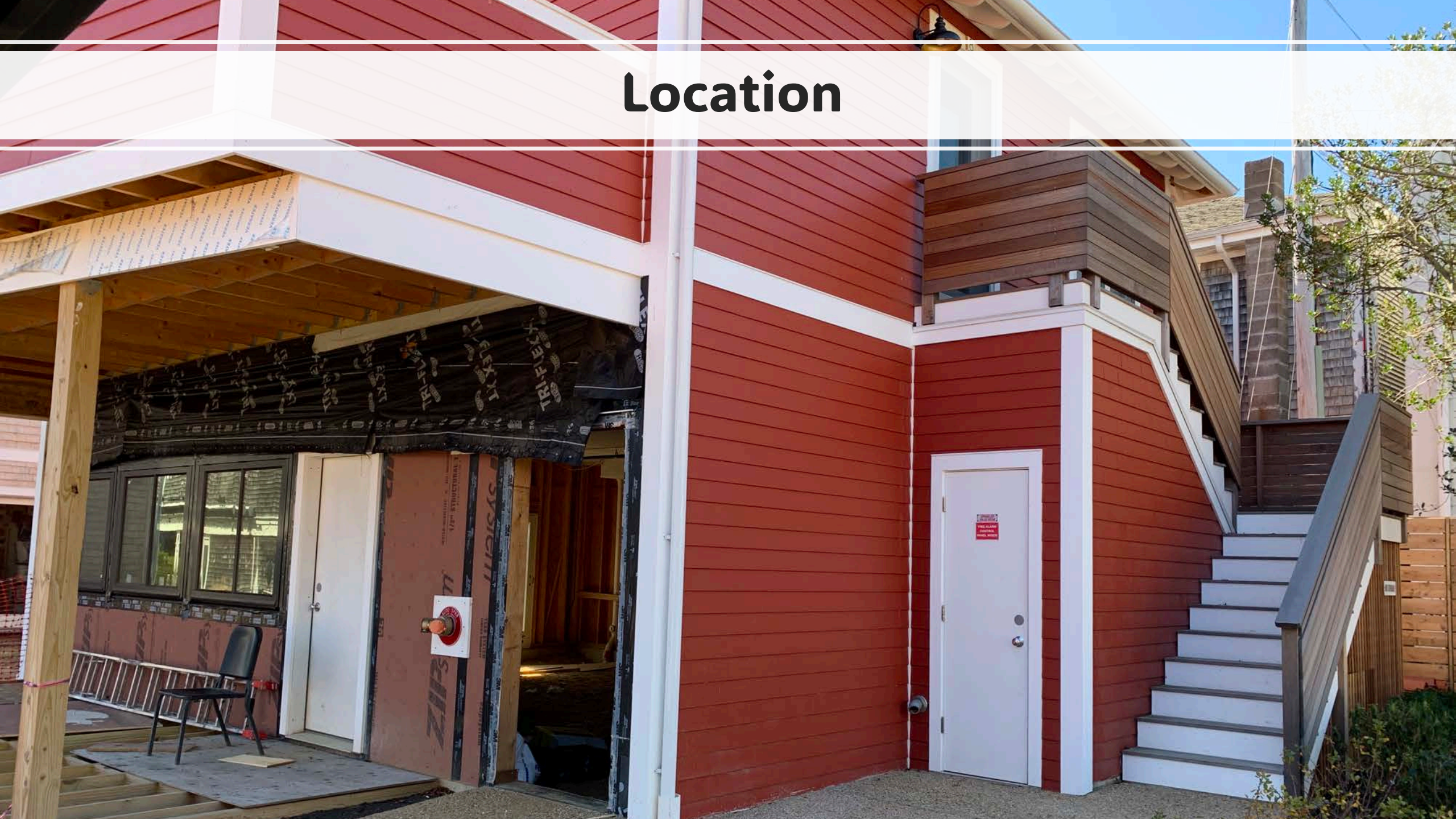




Proposal

- To relocate an interior restroom outside the footprint of the building as an addition
- To allow the Sprinkler Room to be expanded beyond its current footprint if state or local officials deem it inadequately sized

Location



SPRINKLER / WATER HTR
DRY STORAGE

K08

24" X 60"

EMPLOYEE SERVICES

K05

K02

K01

TOILET

K06

TOILET

K07

1'-6" CL
FLOOR

12" MIN

K62

K03

K06

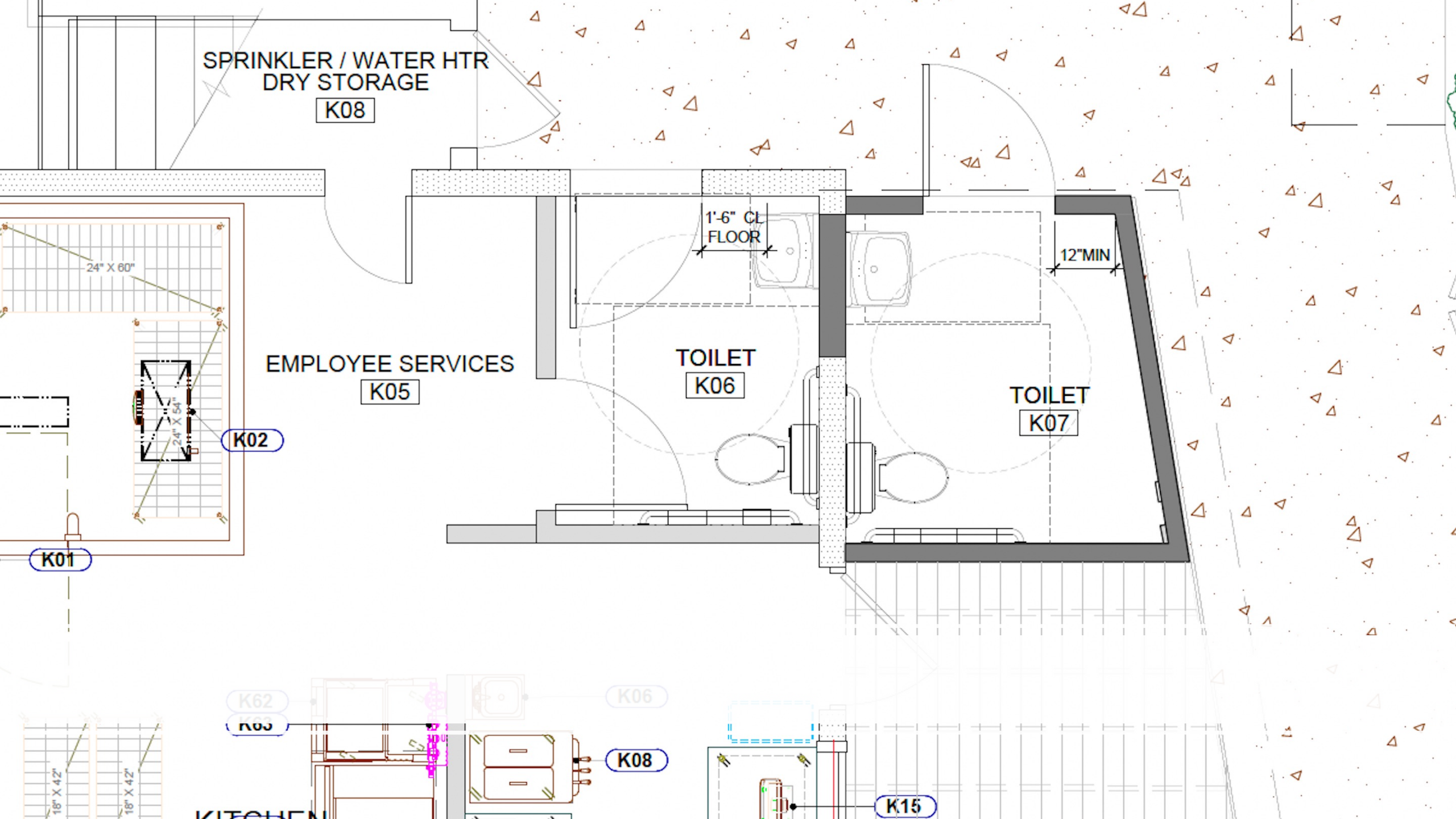
K08

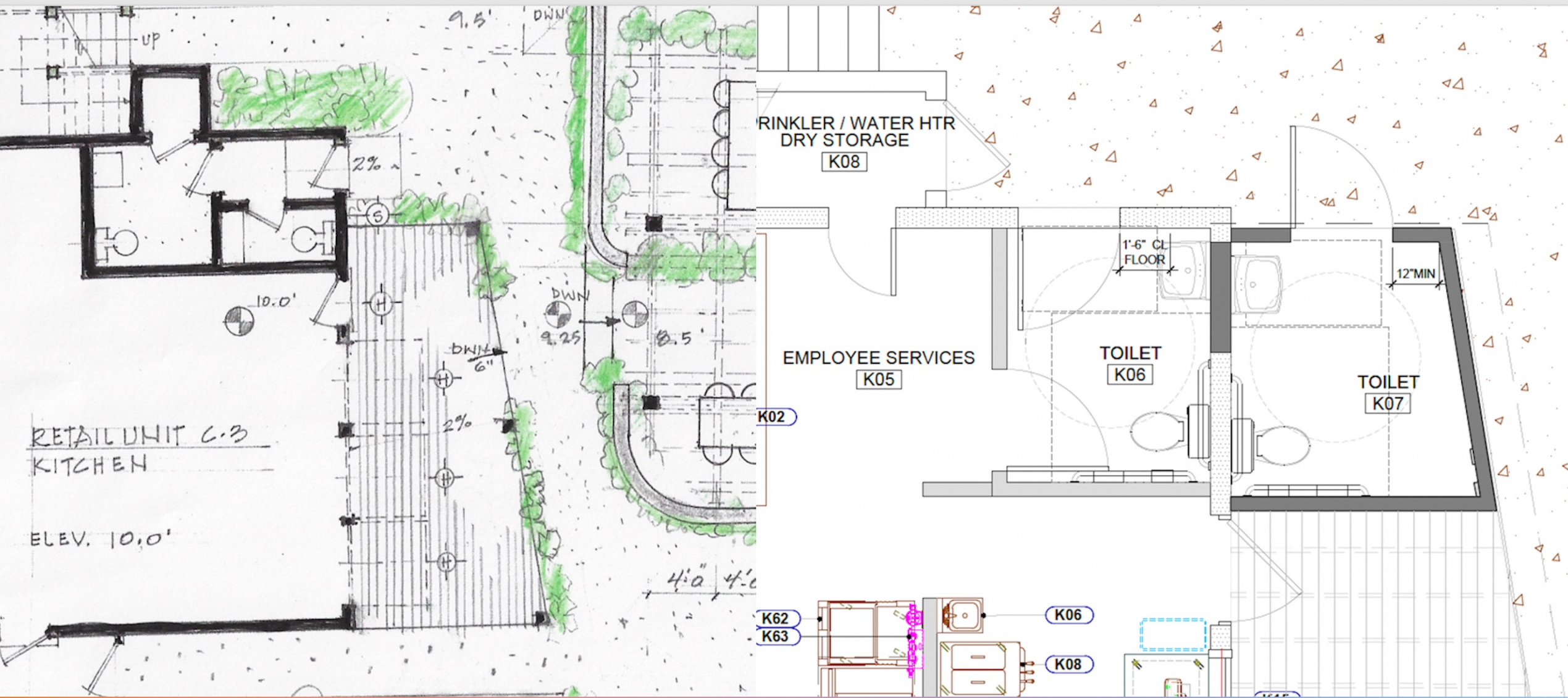
K15

KITCHEN

18" X 42"

18" X 42"





DRI 674 M3 Plan

Present Plan



Fire Department Connection

**SPRINKLER
VALVE ROOM**

**FIRE ALARM
CONTROL
PANEL INSIDE**

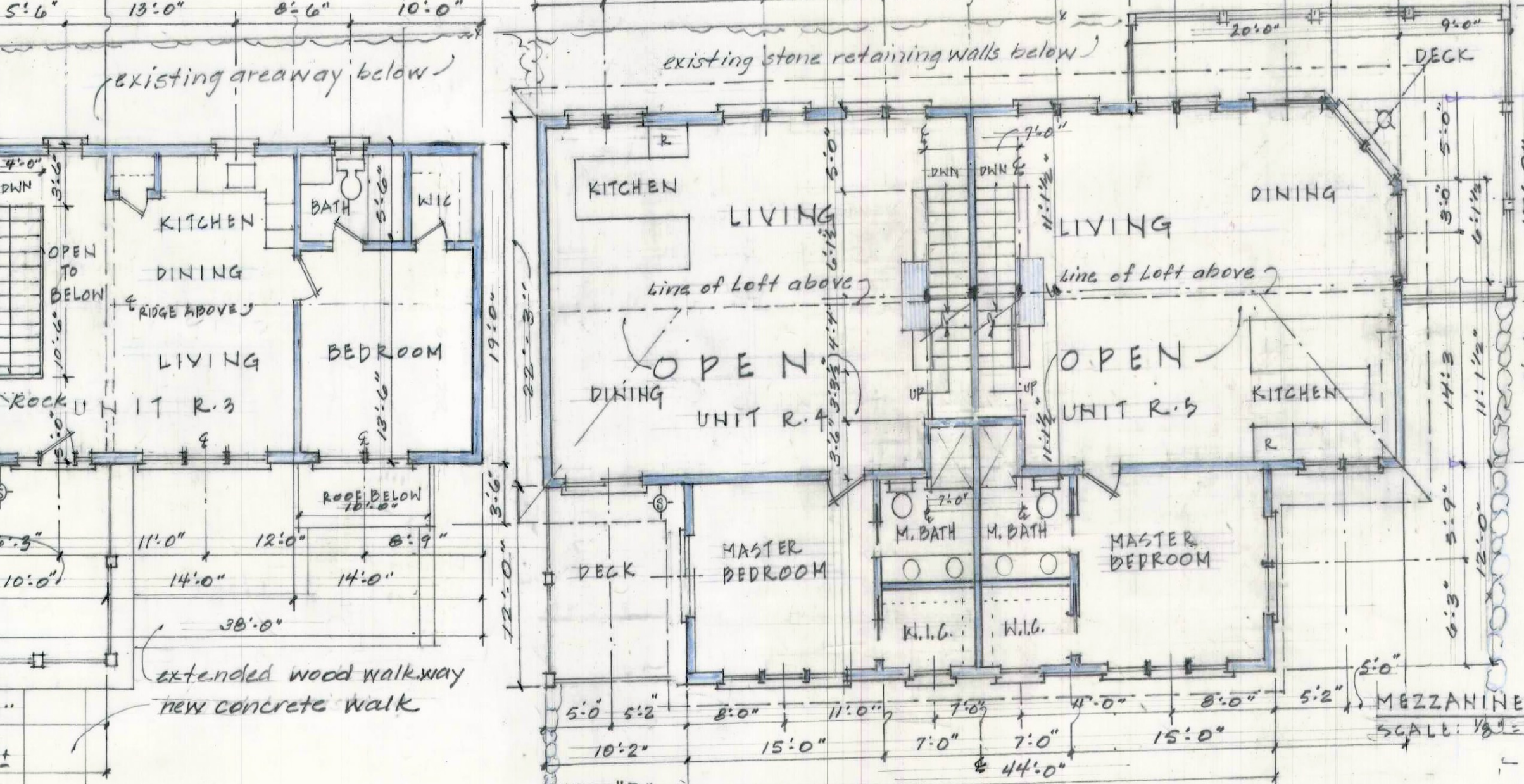
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Sprinkler Room



Other Views

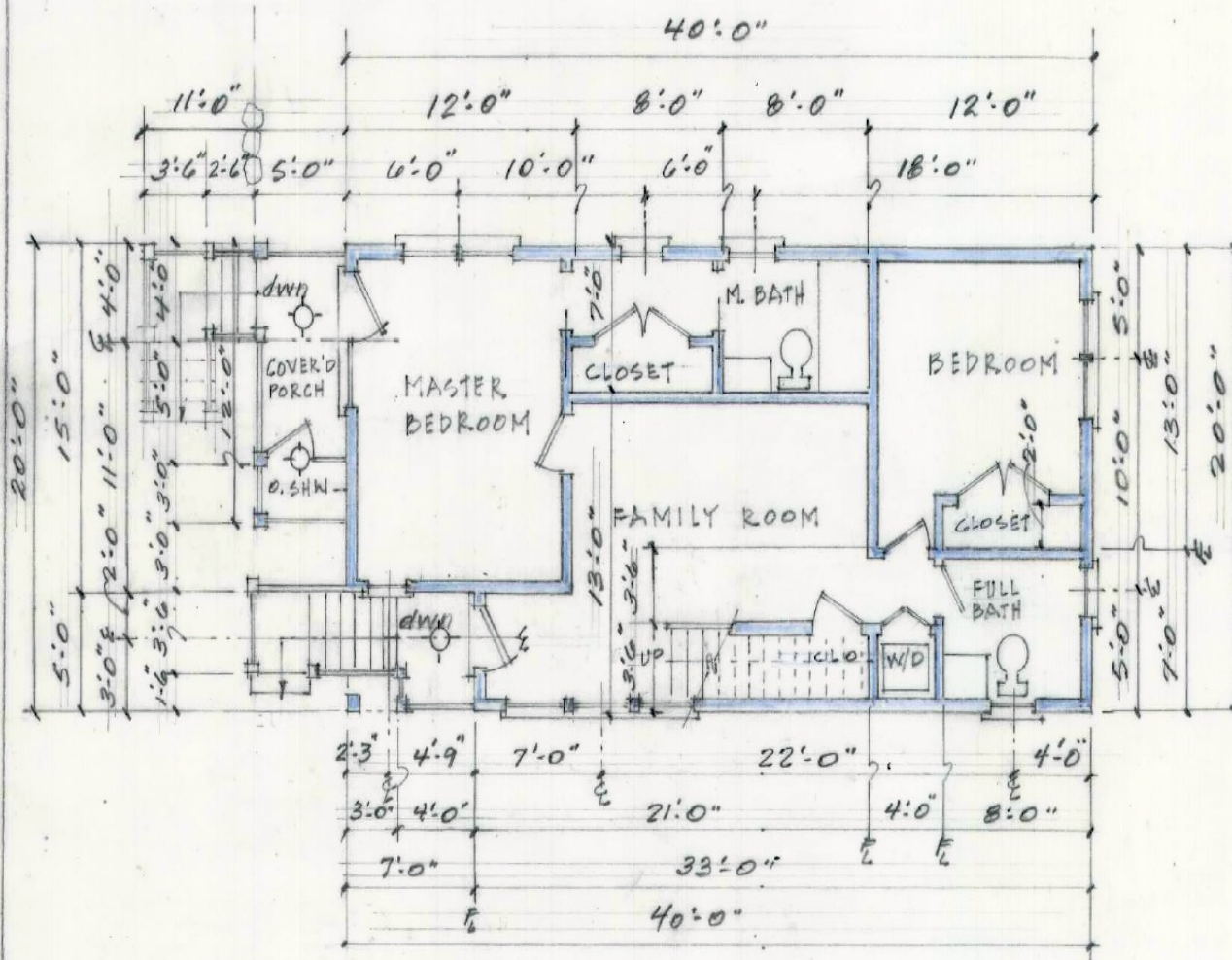


SECOND FLOOR PLAN UNITS R.4 & R.5

SCALE: 1/8" = 1'-0" 12.17.2020 01.05.2021 REVISED 03.07.2021

BUILDING "A"

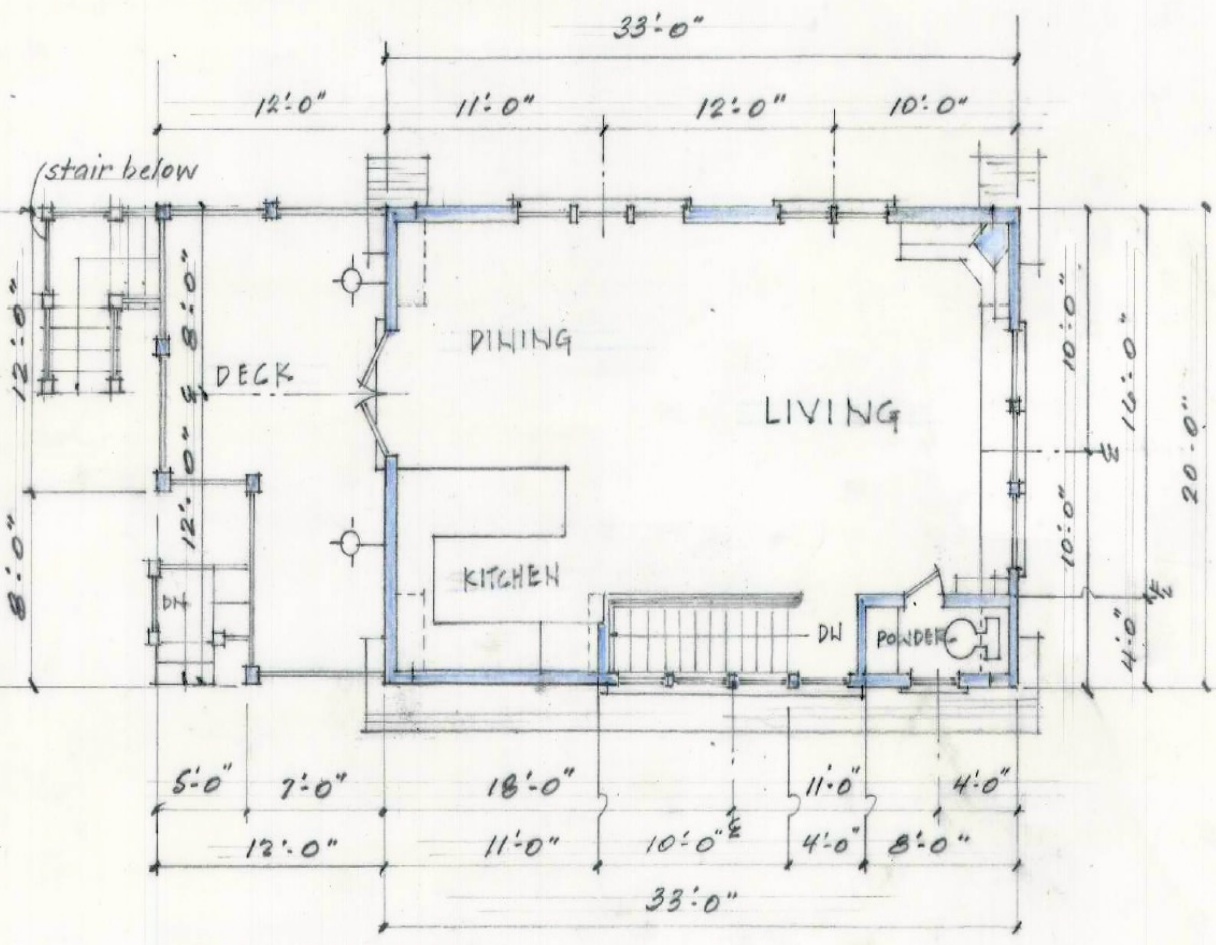




BUILDING "D-1"
LOWER FLOOR PLAN UNIT R.7

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

02.07.21, 04.21.21



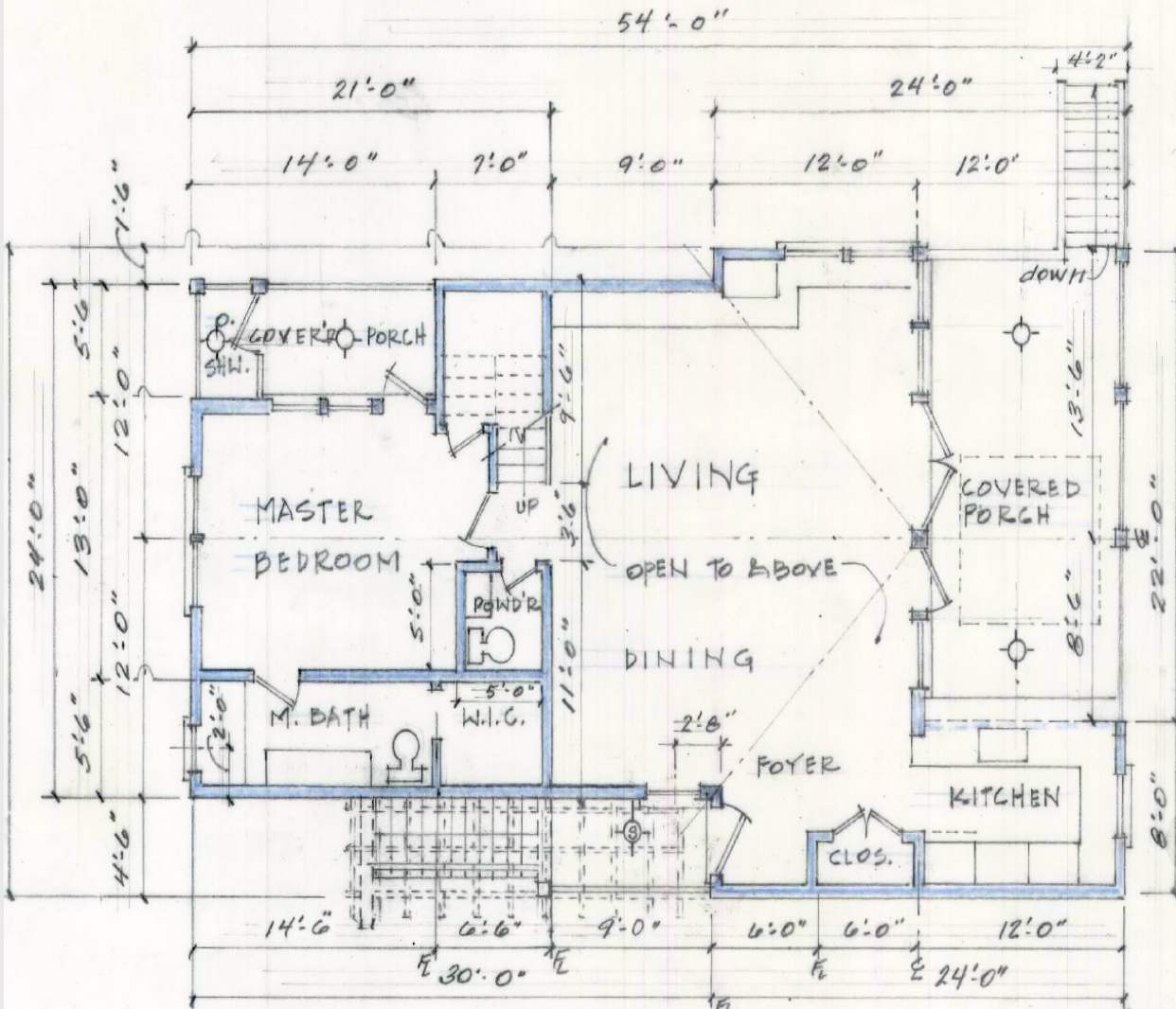
BUILDING "D-1"
UPPER FLOOR PLAN UNIT R.7

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

02.07.21, 04.21.21

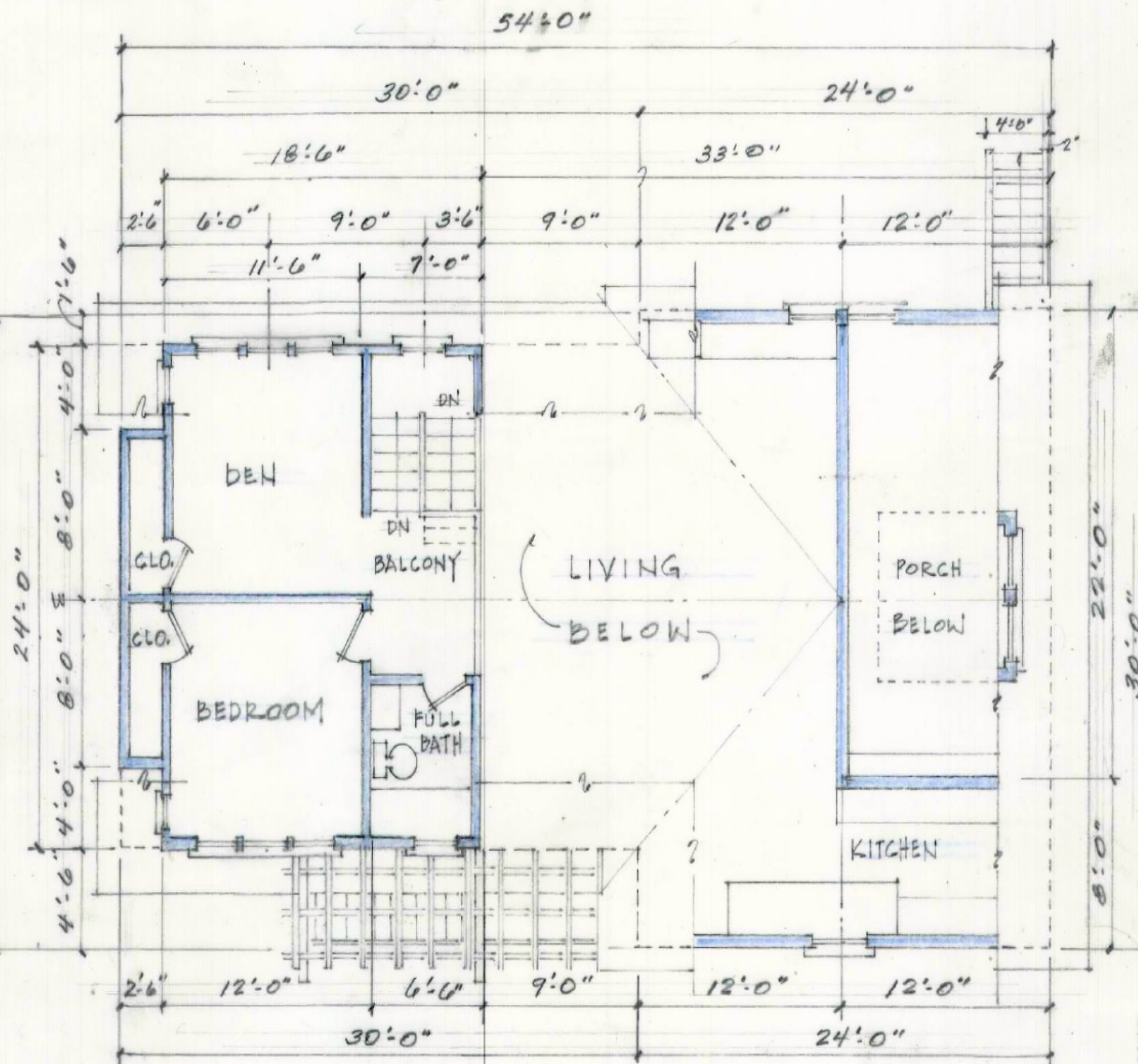
SCALE: 1/8" = 1'-0"

02.07.21, 04.21.21



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

02.07.21, 04.21.21, 08.15.21



Additional lateral support for chimney above roof (or enclosed in chase) if needed

Non-combustible roof flashing maintains minimum clearance around chimney

Support straps on rafter support chimney (not shown)

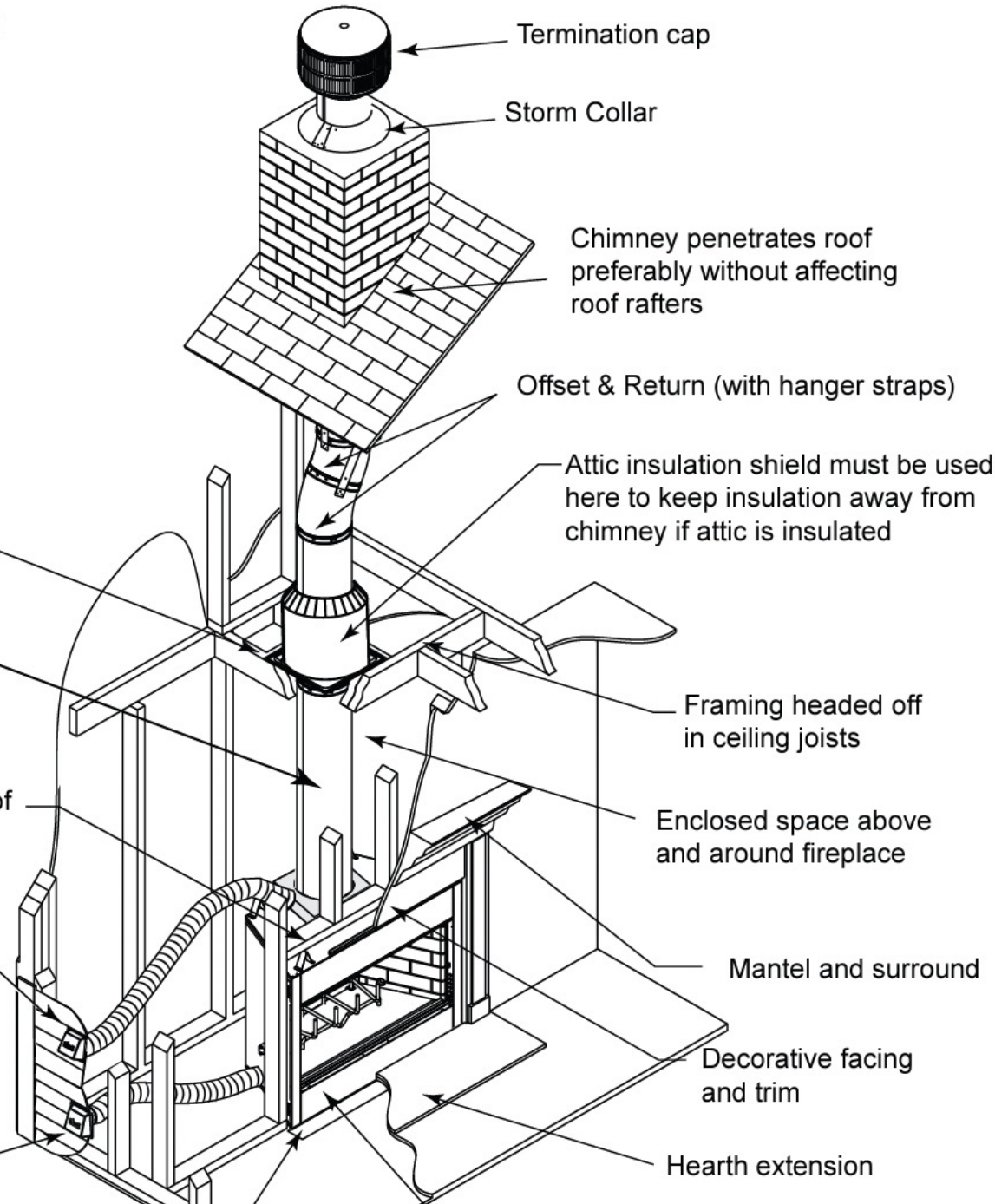
Ceiling firestop on floor of attic

Chimney system

Combustible framing/header on top of V-shaped standoffs

Chimney Air Kit Required in Canada. Outlet must be no less than 4 ft. (1.22 m) off ground level.

Outside



Termination cap

Storm Collar

Chimney penetrates roof preferably without affecting roof rafters

Offset & Return (with hanger straps)

Attic insulation shield must be used here to keep insulation away from chimney if attic is insulated

Framing headed off in ceiling joists

Enclosed space above and around fireplace

Mantel and surround

Decorative facing and trim

Hearth extension