

 **SCANNED**



**E-MAILED**  
4/26/18  
DNR

## **1403 - LIVE BURN PLAN**

**Fire Department:** Northfield Area Fire and Rescue  
**Burn Location:** 2500 320<sup>th</sup> Street West Northfield, MN 55057  
**Cross Street:** Canada Avenue  
**Burn Date:** Saturday May 19, 2018 0800

**Incident Commander:** Gerry Franek

**Instructor in Charge:** Chip Lohmiller - FIRE

**Safety Officer:** Dean Erickson

**Instructors:** **F-I-R-E Burn Team**

### **Goals and Objectives:**

The goal of this training is to provide live burn training to the Northfield Area Fire, Nerstrand, Fairbault, Randolph Hampton Fire Departments following the NFPA 1403 Standard. Live Burn Training will consist of Level I Burns and Level II Burns. The Northfield Area Fire Academy Students will complete their Live Burn for NFPA 1001 Certification.

**Level I Burns:** This level consists of the students kneeling down and watching the start of the fire and its growth. The students will observe the first stage incipient fire and its growth to a second stage fire where the flames will start to spread across the ceiling area. At that time, the student will make an attack on the fire. The students will rotate, and each will have the opportunity to extinguish the fire. Once all the students have been through the rotation they will perform overhaul and hydraulic ventilation. This training will be performed within the confines of one room. The main goal of the level I Burn is to teach fire behavior in a compartment, as well as communication, fire control, overhaul, ventilation, SCBA, accountability, and teamwork.

**Level II Burns:** Level two burns are more complex. In addition to the interior fire attack training, crews will perform duties such as accountability, size up, reading smoke, structural stability, and risk/benefit analysis. Prior to entering the structure firefighters will demonstrate checking the hose line for proper pressure, volume, nozzle pattern, communications (portable radio), and accountability. Once the team enters the structure the students will demonstrate advancing hose lines, checking for fire or victims as they proceed through the building, sizing up the fire on the interior, attacking a fire, overhauling a fire, ventilation, checking for extension, salvage, working as a team, SCBA air management, communications, progress reports, exiting the structure as a team and a debriefing with instructor.

**A pre-burn briefing meeting will take place at the burn site prior to the burn. The Instructor in Charge (or designee) and the Incident Commander will coordinate the pre-burn briefing. All instructors and students will participate in the pre-burn briefing and do a walkthrough of the structure prior to the training.**

**Student to Instructor Ratio:**

Interior team members will be maximum 4 students to 1 lead instructor. An interior instructor backup/fire control team will consist of at least two instructors and one control team member for all rotations.

**Students:**

Students participating in live burn evolutions shall have received training to meet the minimum job performance requirements for Firefighter I of the NFPA 1001 Standard related to the following subjects; safety, fire behavior, portable extinguishers, personal protective equipment, ladders fire hose appliances and streams, overhaul, water supply, ventilation, forcible entry, and building construction.

Firefighters who have underlying medical conditions or are not feeling well on burn day should not participate in live burn training. The local incident commander and/or officers must work with firefighters to identify potential problems. Firefighters also must take personal responsibility and not participate if an underlying issue could compromise safety.

**Incident Command:**

The local fire agency hosting the training shall appoint an incident commander for the training. The incident command position may be rotated to officers in training or officer candidates. If command is rotated to a junior officer or officer candidate, a senior officer should work closely with them during the training evolutions. The incident commander is in charge of the entire scene operation. Transfer of command can take place for each burn rotation.

**Safety:**

Safety of all participants will be the highest priority. A safety officer shall be appointed by the incident commander. The person performing safety officer duties shall be considered competent by the incident commander. Throughout the training, the safety officer position may rotate to other competent personnel. The safety officer has the authorization to stop operations any time they feel safety is compromised. Safety will coordinate closely with the incident command, instructor in charge, and/or live burn instructors. All firefighter participants are asked to keep safety as the highest priority and point out any problems to officers or instructors. Safety officers should pay particular attention to the hazard zone. **No freelancing will be allowed!**

**All participants are required to do a walkthrough the building prior to evolutions starting.**

**Training Institution:**

The training institution is responsible for providing competent live burn instruction and will provide guidance on setup and operations. The burn instructors will be responsible only for the training evolutions. Once training evolutions have been completed, they will ensure team accountability and conduct post burn debriefings.

**Accountability:**

The local fire agency hosting the training shall use its own accountability system to account for all firefighters in the hazard zone. A second accountability system shall be used by the F-I-R-E to account for the instructors, control team, and students. This accountability system will have the following information; the training rotation, and instructor/student's teams listed. This accountability board will be located outside the hazard zone and teams should check in and out with the F-I-R-E accountability board location when entering or exiting the hazard zone.

Prior to entering and exiting the building, the lead instructor shall do a head count of all students to provide an accountability check and to ensure proper donning of PPE and SCBA.

**Rehabilitation Area:**

Incident Command and/or safety shall provide for a rehabilitation area. Students and instructors should drink fluids to stay ahead of dehydration. After burn rotations are complete, the students will check in with accountability and then proceed to the Rehabilitation area for recycling and medical assessment if needed.

**Radio Channels:**

On Scene Operations Communication will use channel **NFD Fire 2**. Water Supply and other communication will use channel **NFD 2**.

**PSAP** shall be notified prior to training commencing and upon completion of burn.

Law Enforcement; contact PSAP (County Dispatch Center) or **NFD 2**.

**Evacuation Signal:**

If for any reason an evacuation of the structure is needed, a redundant system shall be used:

1. Long blast on air horns of Engine(s)
2. Radio communication on channel **NFD 2**. to evacuate.
3. Someone yelling in front door "Get out, Get out, Get out!"

If evacuation is called, lead instructor will take a head count of all participants in rotation upon exiting the building. PAR check of interior teams will be conducted upon exit. The rallying point after and evacuation shall be at the incident command post.

**Mayday:**

"**Mayday**" shall be the term crew members will utilize if they are in need of help and will be broadcast over the radio to operations channel. No "practice" maydays will be allowed. If "**Mayday**" is called it is a real emergency.

**No live victims will be allowed during live burns.**

**Go/No Go Sequence:**

Prior to the ignition of any fires, a Go/No Go sequence shall be used. The fire control team shall coordinate with Instructor in charge. Instructor in charge will coordinate with Command and Safety teams are in place and ready for action. If a "Go" is indicated, training fire will be ignited. If a "No Go" is indicated, the fire will not be lit until the problem is corrected or everyone is ready. If the fire is lit and a "No Go" is indicated, it will be controlled or extinguished by the fire control team if possible.

**Equipment:**

Two separate engines will be used for the training. Attack line and backup lines (fire control line) will be supplied from two different engines. They will be laid out and tested prior to the training.

Primary water supply will be from Drop Tanks. Tenders will fill from Hydrants from the municipal water supply of 1,000,000 Gallons. The Hydrant is 3 Miles from Training Site

**Crew Rotation:**

The Students will rotate in teams as stated on the F-I-R-E Accountability Board which will be set up prior to the start of the training exercise. The control team on deck will act as RIT/RIC for the teams during the Student Team rotation exercise.

If possible, the incident commander should identify prior to training how many burn rotations are desired, the Instructor in Charge needs to plan the structure and materials to achieve objectives and modifying the number of burns will complicate operations.

**Burn Sequence:**

Initial training will consist of the Level I training burns which will be performed on the second level of the structure. Once it is determined that the structure is unsafe to continue training burns on the upper level we will then begin Level I burns on the main floor if needed. Once all Level I training has been completed, Level II burns will utilize the structure for the balance of the training.

**Burn Structure:**

The burn structure is a type 5 – two story Balloon Framed structure with a full depth basement under the Charlie side of the structure. The floor system is 2x material. The basement exterior walls are rock and masonry.

**Structure Safety:**

Throughout the burn, the Incident Commander, Safety Officer, and Instructor in Charge will continually assess the structure for stability and safety of operations.

**Burn Materials:**

Only wood-based products will be used in fire sets. For this burn, untreated wooden pallets, straw, hay, and cardboard will be utilized.

**Medical Plan:** Northfield Ambulance will provide a BLS crew on scene with transport capability. The BLS crew will be dedicated to this training burn.

Nearest Hospital & Phone #: **Northfield Hospital**                      **507-646-1000**

Helicopter Service: Can be called through PSAP

**Demobilization:**

It should be noted, once interior training evolutions are complete, the training agency will transfer all operational responsibility to local incident commander.

A final head count should be taken to account for all participants (students and instructors).

Upon completion of training, the incident commander will release resources as they see fit. All apparatus should be refueled, and all equipment checked and made ready for response.

Fire Instructors will have an on-site safety meeting. Any safety issues identified will be considered for corrective action. Fire instructors will also identify items the students performed well and need to work on. These items will be relayed to the Incident Commander and to a representative from all participating Departments prior to leaving the training site.

**This Burn Plan** should be used as a guide for this training burn. It is important to realize, due to unforeseen circumstances, Incident Command and the Instructor in Charge may need to revise it as necessary to provide for safety of all persons.

**Final Burn Down:**

The final burn down is the responsibility of the Northfield Area Fire and Rescue. There are no structures within 200 feet of the structure. There are storage structures around the property that will need to be watched depending on wind direction

**Traffic Control:** Traffic control may be needed depending on wind direction. Signage on 320<sup>th</sup> Street should be placed to notify drivers of the training.

## Minimum Water Supply & Required Flow Rate

**Fire Department:** Northfield Area Fire and Rescue  
**Burn Location:** 2500 320<sup>th</sup> Street West  
**Burn Date:** Saturday May 19, 2018 0800

**MWS – Minimum Water Supply Calculation:**

**Building Size:** 44' L X 34'  $\frac{50}{12}$  X 22'H (18' S  $\frac{50}{12}$  wall + 8' Roof/2) = 32,912 Cu Ft.  
**Total: 32,912 Cu Ft.**

**Occupancy Hazard = 7**  
**Construction Class is Type 5 = 1.5**  
**Exposure Hazard = 1.5**  
**32,912 / 7 = 4,701 X 1.5 X 1.5 = 10,577 Gallons**

NAFR Engine 8125	1000 Gallons
NAFR Engine 8115	500 Gallons
NAFR T8116	2000 Gallons
NAFR T8126	2000 Gallons
Drop Tank 1	1500 Gallons
Drop Tank 2	1500 Gallons
<b>TOTAL Gallons</b>	<b>8,500 Gallons</b>
	<b>On Site</b>

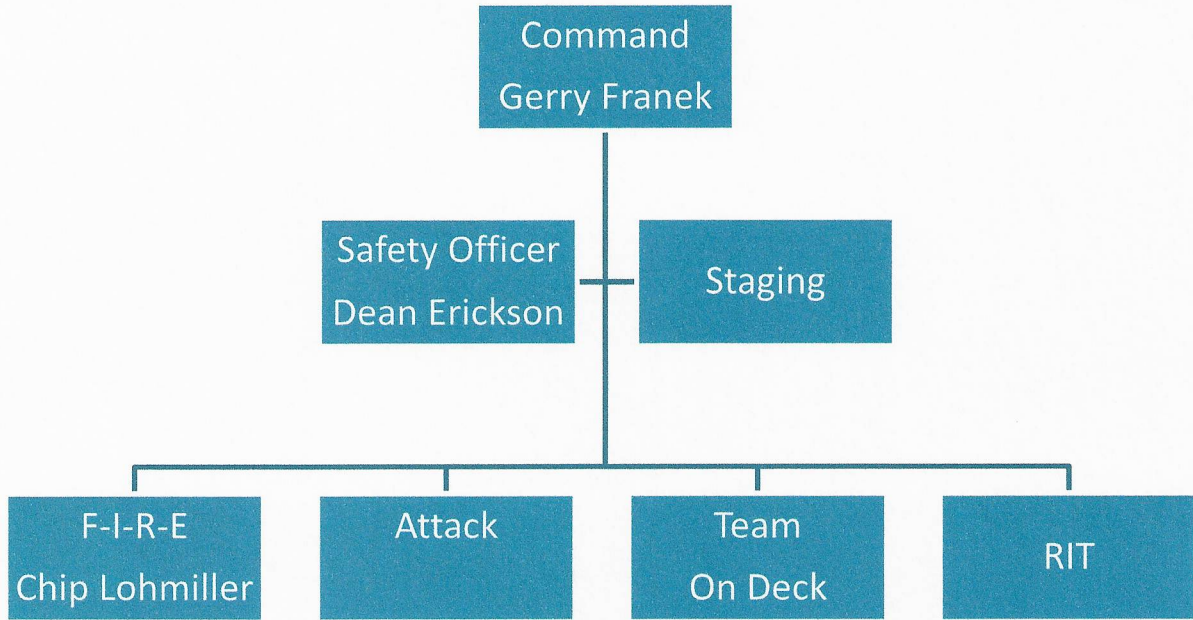
**Water Tower Capacity: 1mm Gallons**  
**Hydrant Location: 3 Miles from Site**

**FFR – Minimum Fire Flow Calculations:**

**L X W /3**  
**Main: 44' L X 34'  $\frac{50}{12}$  / 3 = 498 GPM**  
**Second Floor: 498 GPM X 1.25 = 622 GPM**  
**Unforeseen Circumstances 622 GPM X 1.5 = 933 GPM Needed**

Attack Line Side A	1 $\frac{3}{4}$	125 GPM
Fire Control Team Side A	1 $\frac{3}{4}$	125 GPM
RIT Line Side A	1 $\frac{3}{4}$	125 GPM
Attack Line Side B	1 $\frac{3}{4}$	125 GPM
Attack Line Side B	1 $\frac{3}{4}$	125 GPM
Deck Gun	2 $\frac{1}{2}$	500 GPM
Blitz Line Side A	2 $\frac{1}{2}$	250 GPM
<b>TOTAL:</b>		<b><u>1,375 GPM</u></b>

**\*\* Note; Attack and Backup Lines shall each come from a separate Engine.**



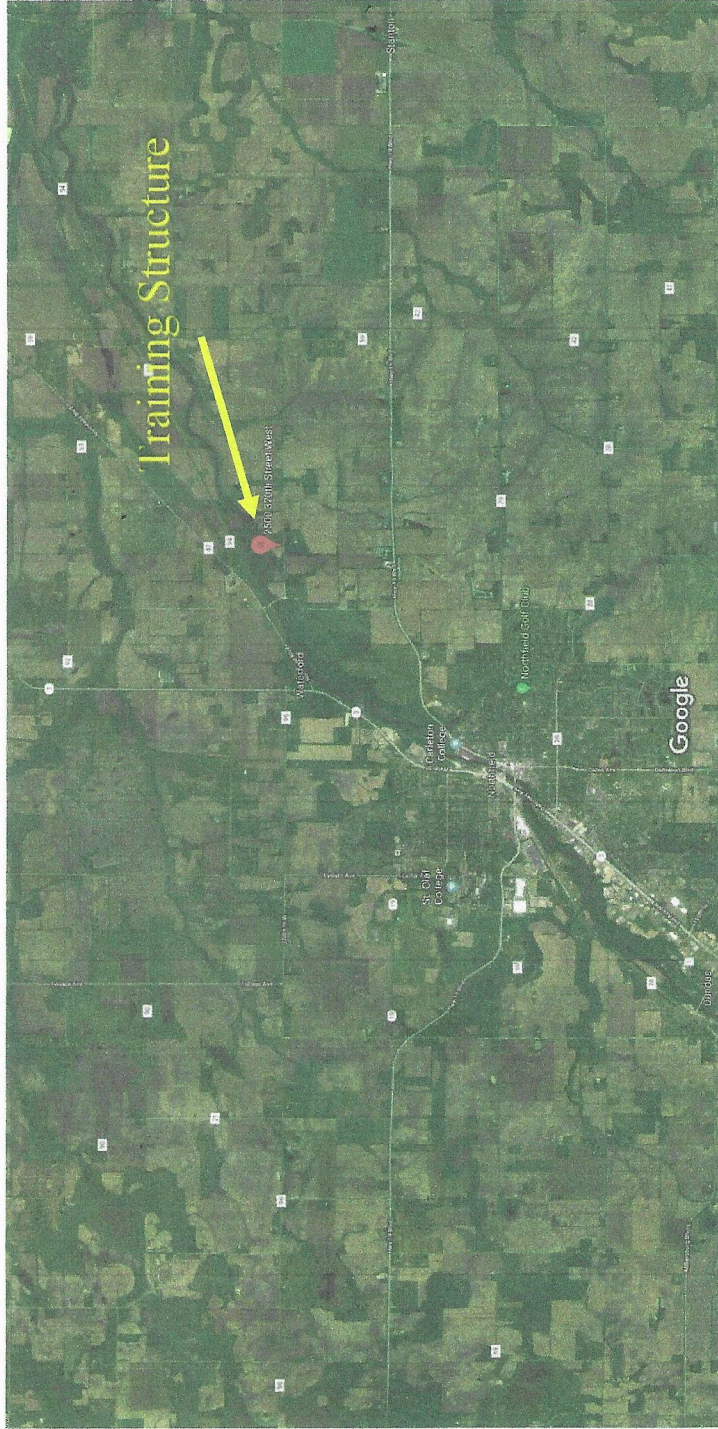
4/25/2018

2500 320th St W - Google Maps

Google Maps

2500 320th St W

Northfield Live Burn - Saturday May 19, 2018



Imagery ©2018 Google, Map data ©2018 Google 2000 ft

<https://www.google.com/maps/place/2500+320th+St+W,+Northfield,+MN+55057/@44.4752593,-93.1502233,10635m/data=!3m1!1e3!1m5!3m4!1s0x87652e652363ef0xc91eda4b3f0903718m2!3c44.4660714d-9>





NORTH

2500 320th St W - Google Maps

4/25/2018

Google Maps 2500 320th St W  
Northfield Live Burn Site



Google

Imagery ©2018 Google, Map data ©2018 Google 100 ft



<https://www.google.com/maps/place/2500+320th+St+W,+Northfield,+MN+55057/@44.4647011,-93.1180759,349m/data=!3m1!1e3!4m5!3m4!1s0x87f652ec652363ef0xc9f1eda4b3f0903718m2:3d44.48601714d-93.1>

2500 320<sup>th</sup> Street W



SIDE A



SIDE B

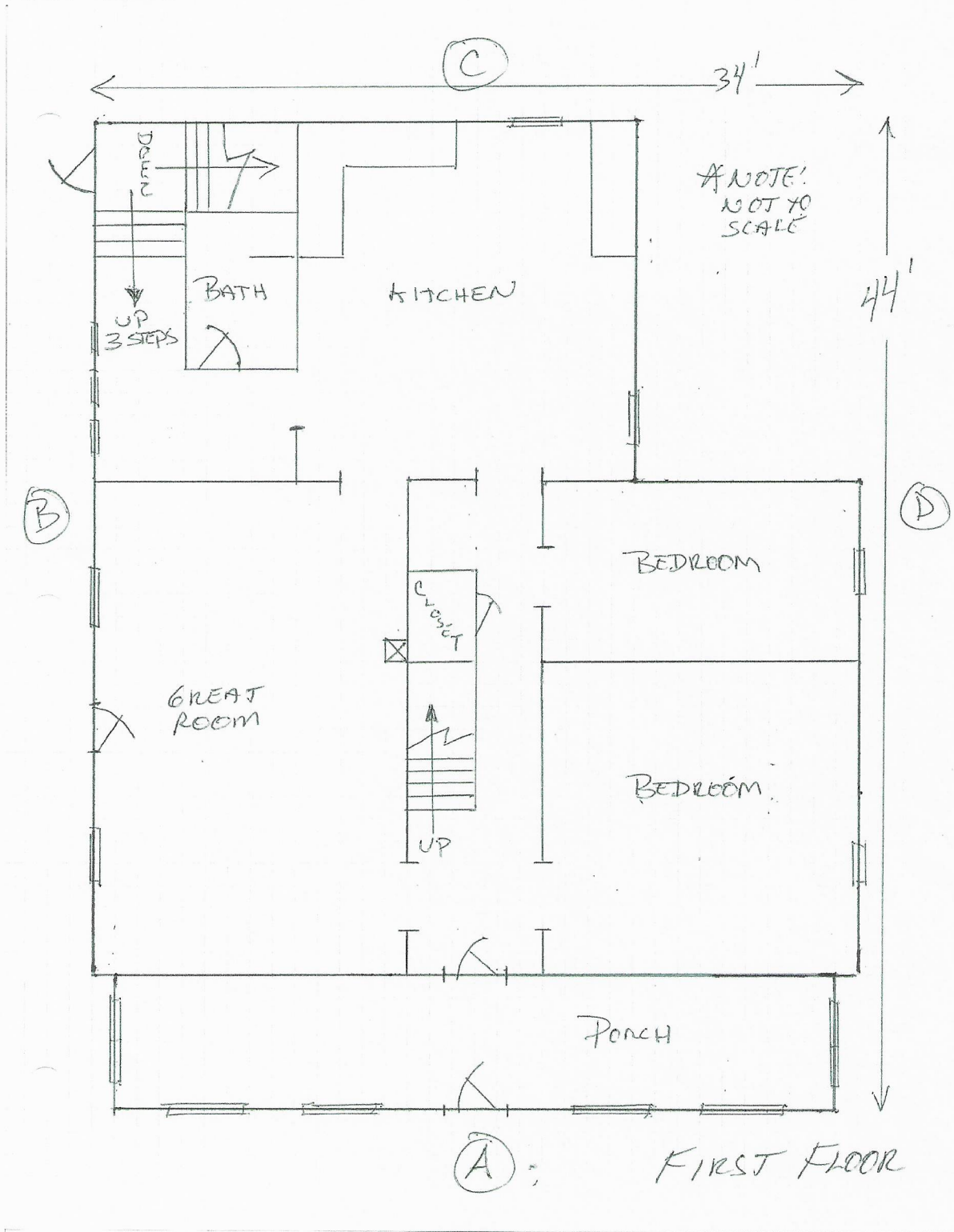



SIDE C



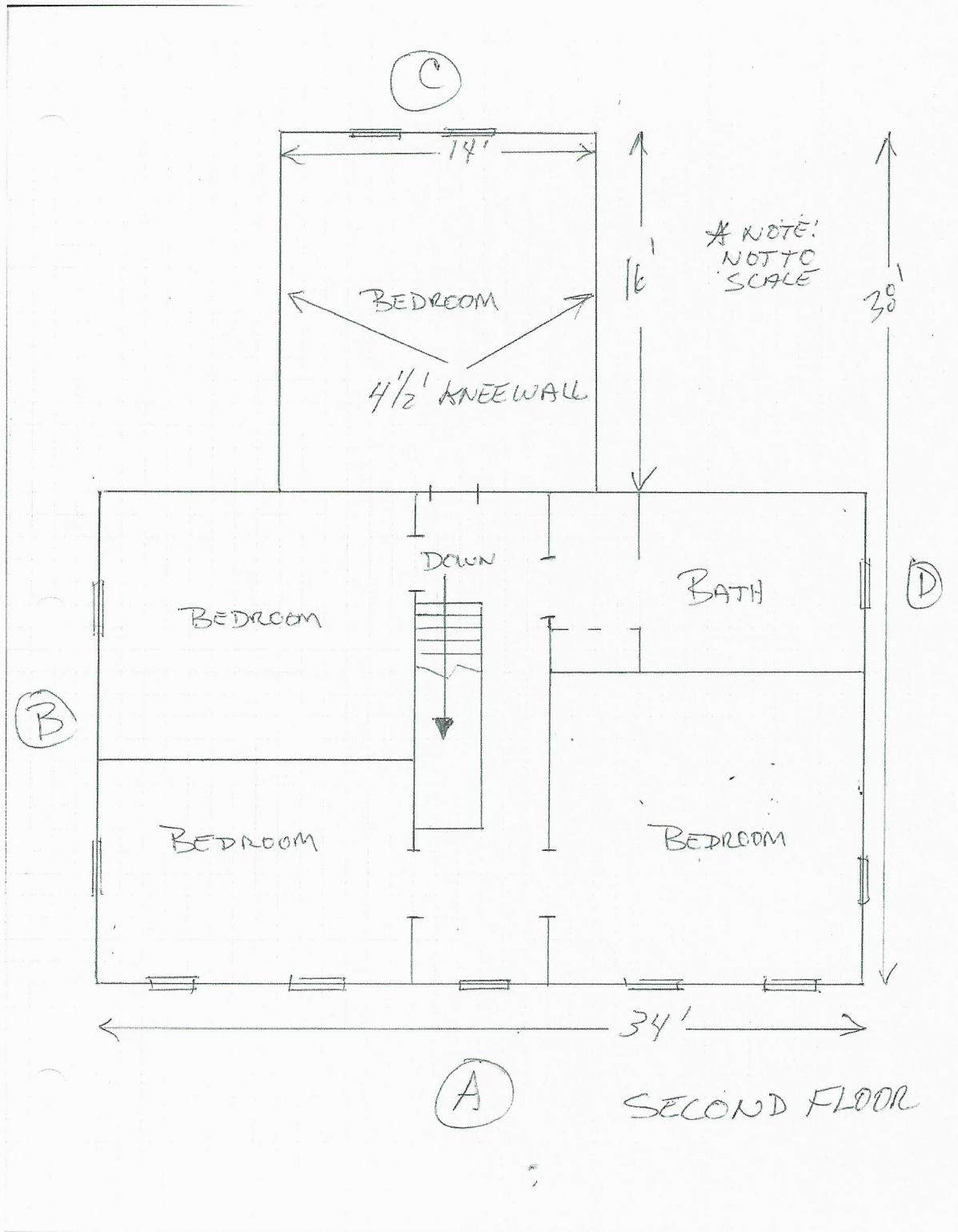
SIDE D

FIRST FLOOR



NORTH 

SECOND FLOOR



NORTH 