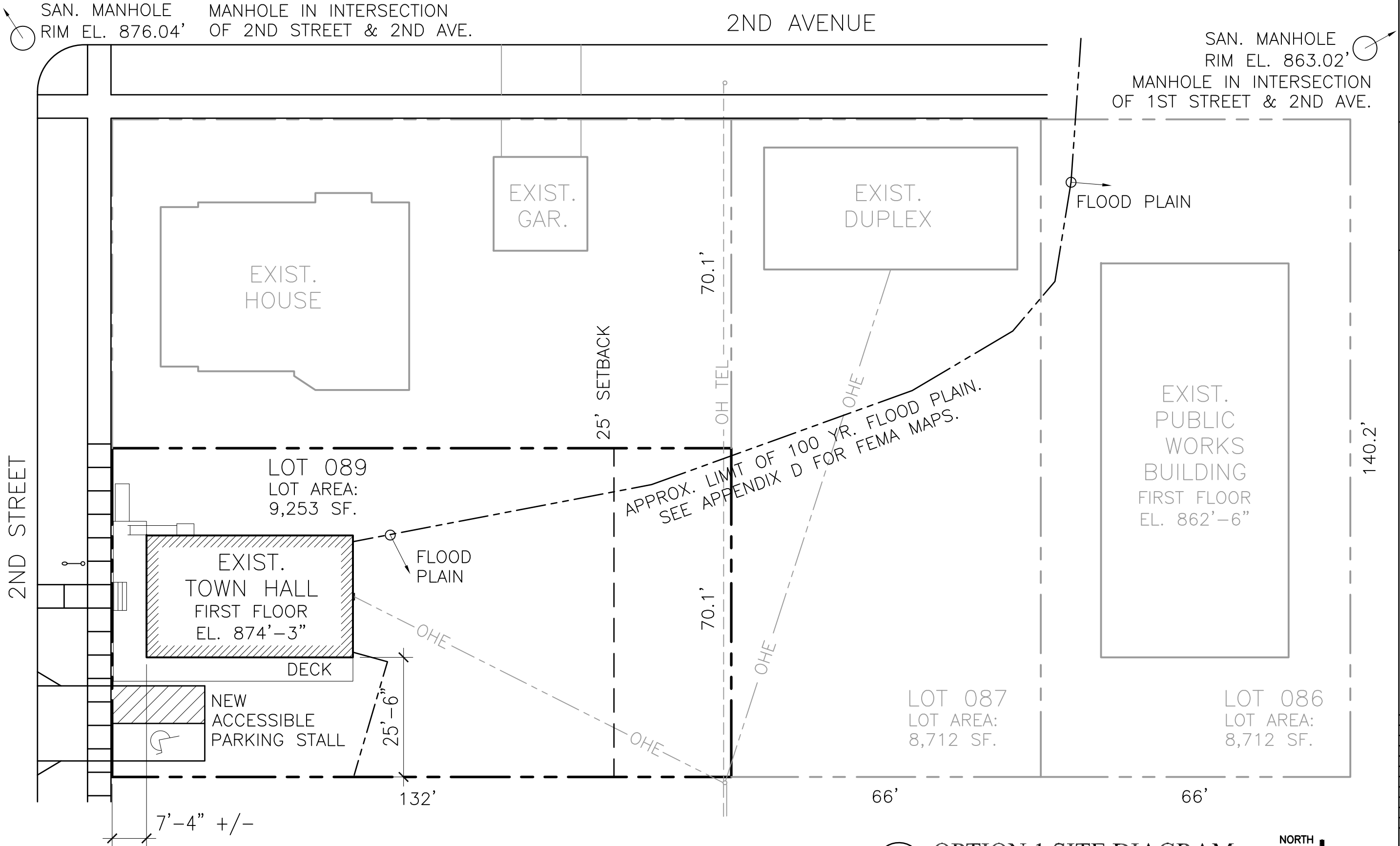
Appendix B – Site & Building Configuration Options.



1 OPTION 1 SITE DIAGRAM

0 5' 10' 20'

McGowan ARCHITECTURE
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PO Box 572 New Glarus, WI 53574
Ph. (608) 235-2751
Fax (608) 938-1351
mcgowanarch@tds.net

x

Old Town Hall - Town of New Glarus

Feasibility Study

206 Second Street
New Glarus, WI
53574

Rev. #	Date
1	x
2	
3	

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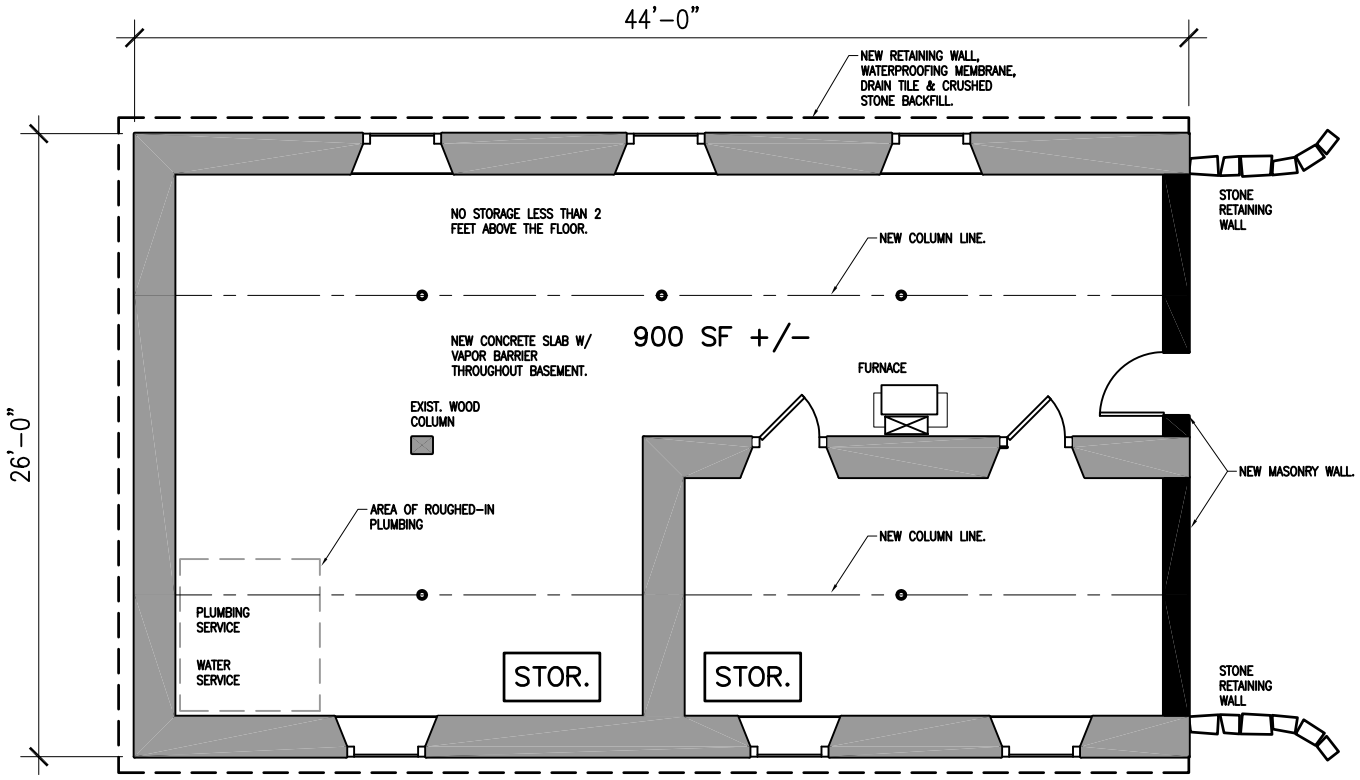
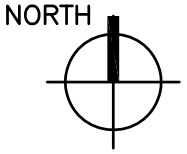
11/25/2009

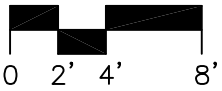
Site Plan

C100-1



1 OPTION 1 BASEMENT DIAGRAM





EXISTING WALLS

PROPOSED WALLS

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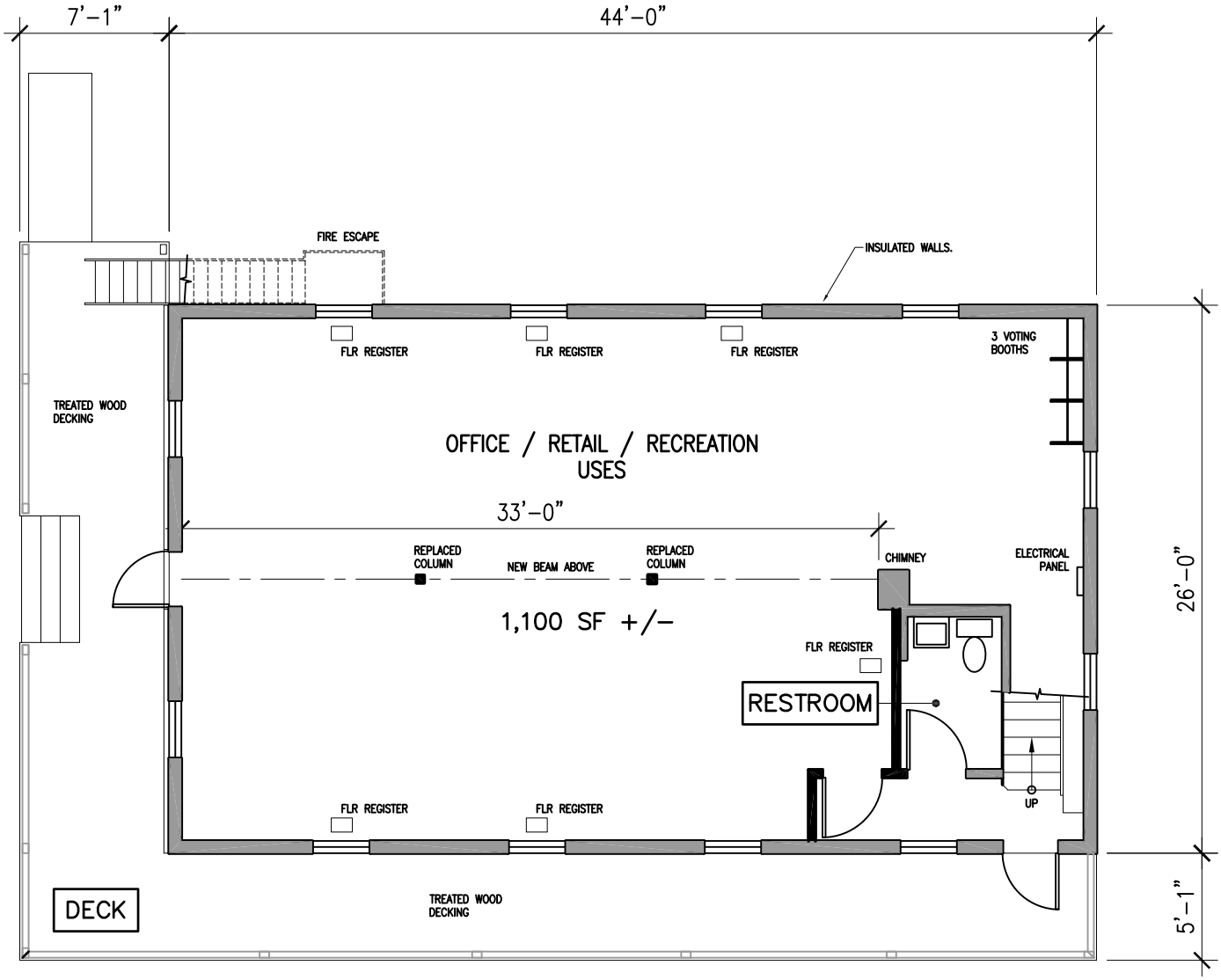
Floor Plan

A200-1



1 OPTION 1 - FIRST FLOOR DIAGRAM

NORTH

0 2' 4' 8'

EXISTING WALLS

PROPOSED WALLS

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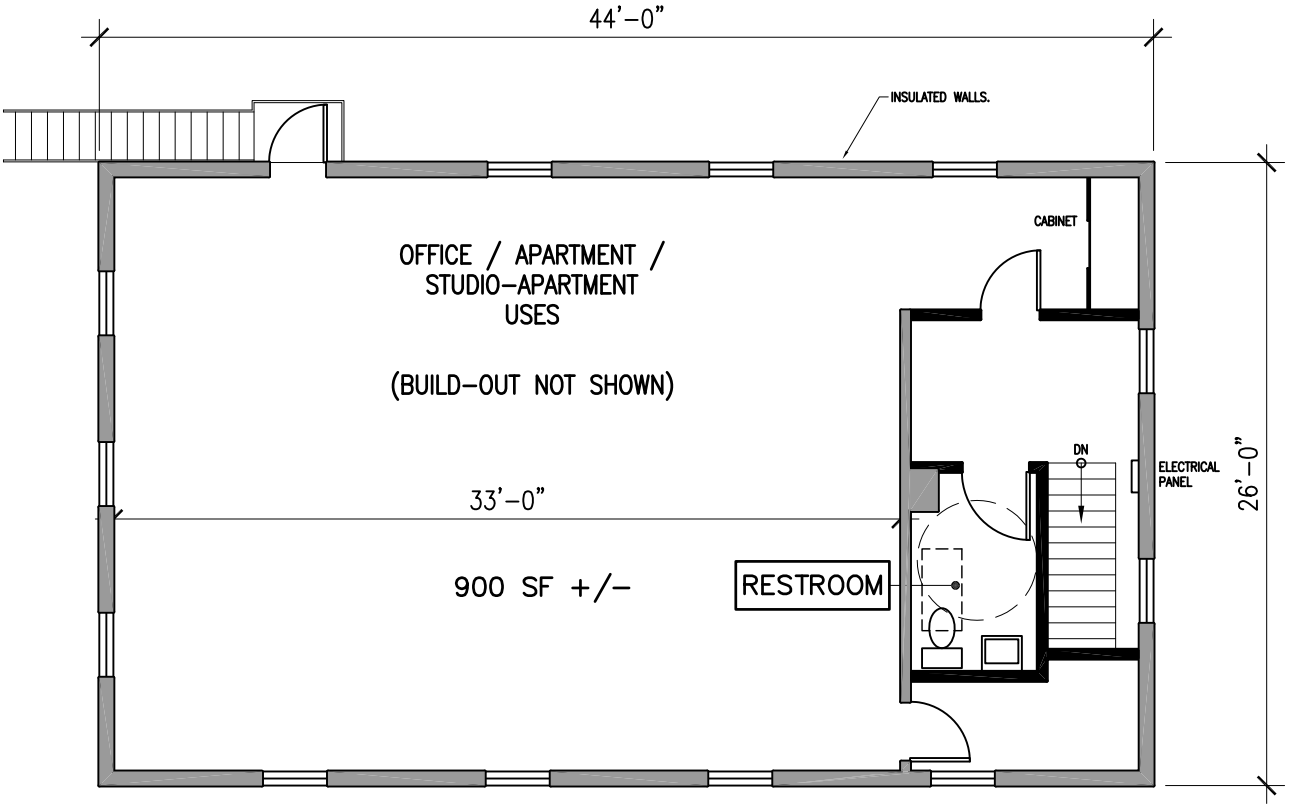
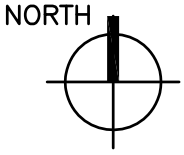
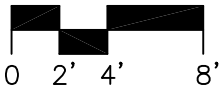
Floor Plan

A201-1



1 OPTION 1 SECOND FLOOR DIAGRAM





EXISTING WALLS

PROPOSED WALLS

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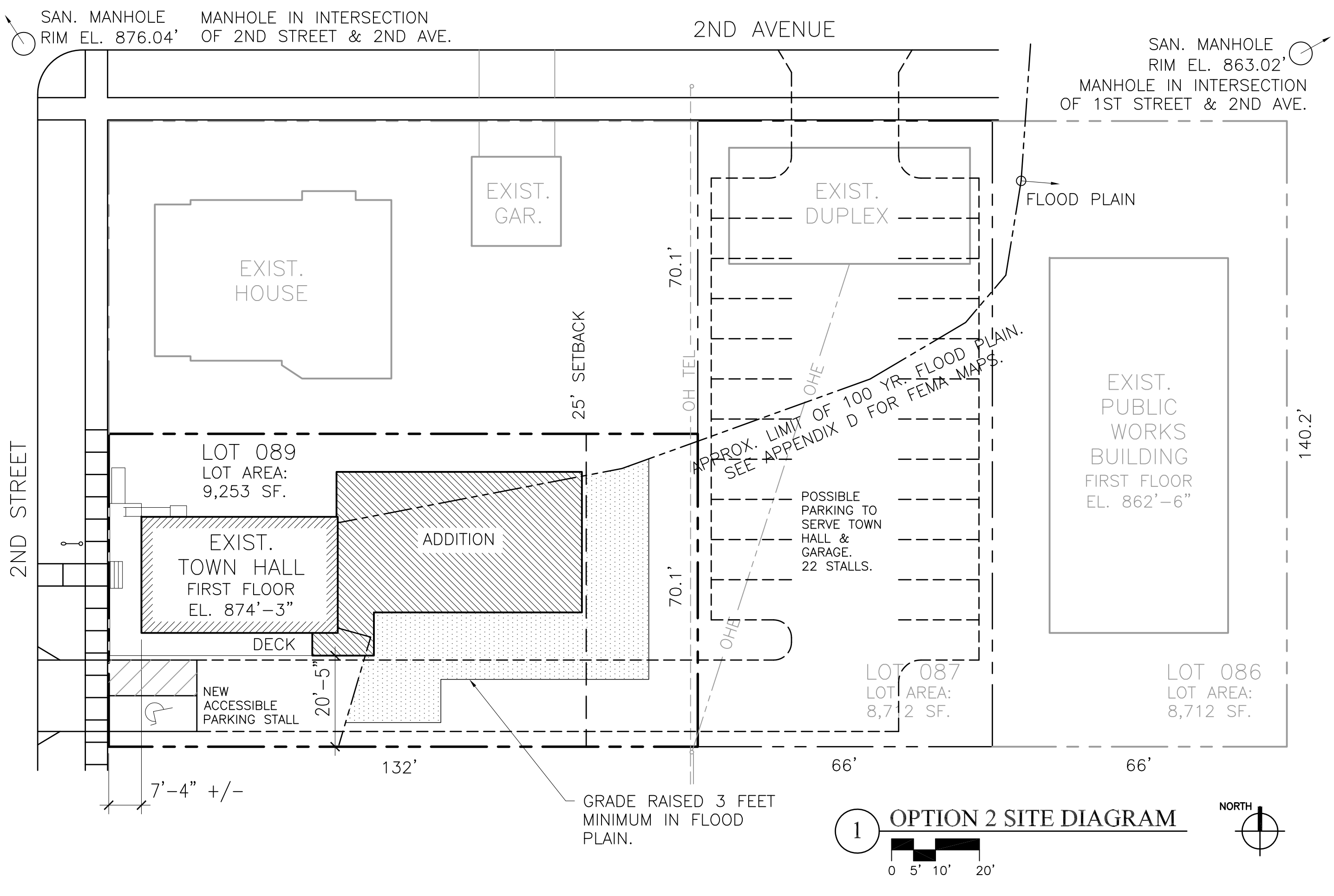
11/25/2009

Floor Plan

A202-1



1 OPTION 2 SITE DIAGRAM

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1	x
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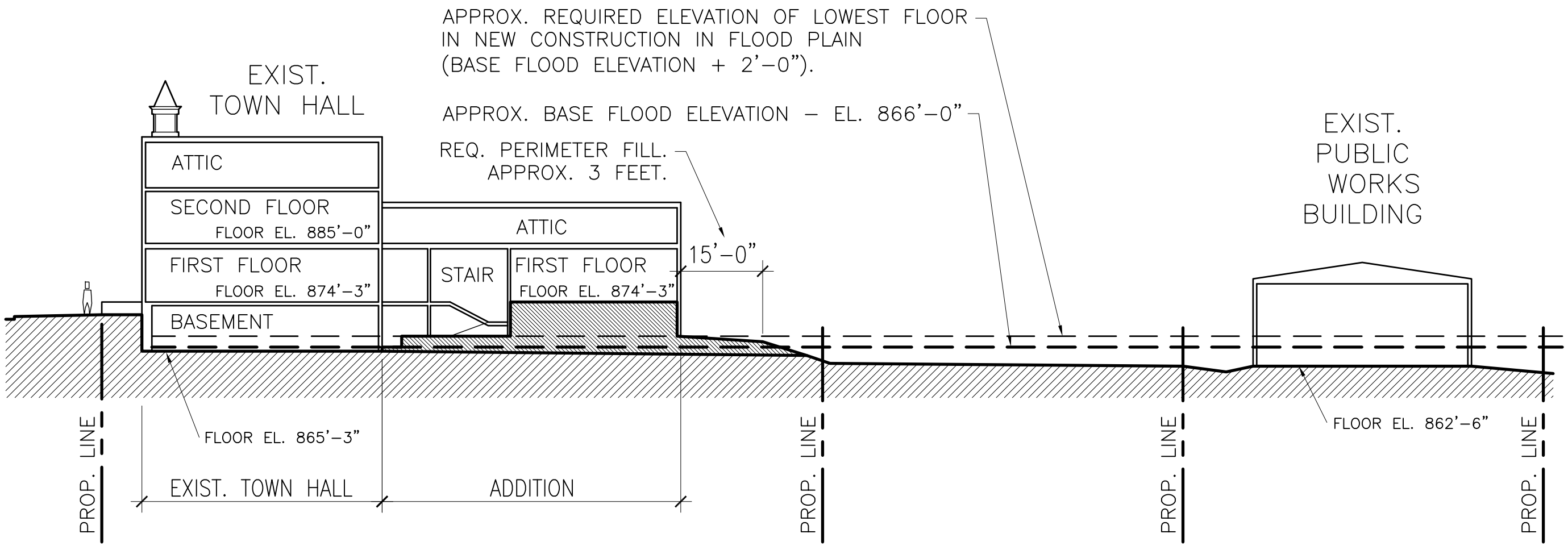
Site Plan

C100-2



1 OPTION 2 SITE SECTION

0 5' 10' 20'

NOTES:
ELEVATIONS HAVE NOT BEEN SURVEYED. THEY HAVE BEEN APPROXIMATED USING EXISTING BENCHMARKS, LEVELS AND LINE OF SIGHT.

BENCHMARKS OBTAINED FROM VILLAGE OF NEW GLARUS, DEPARTMENT OF WATER & LIGHT DRAWINGS FOR 2ND AVENUE UTILITY IMPROVEMENTS. DOCUMENTS PRODUCED BY TOWN & COUNTRY ENGINEERING.

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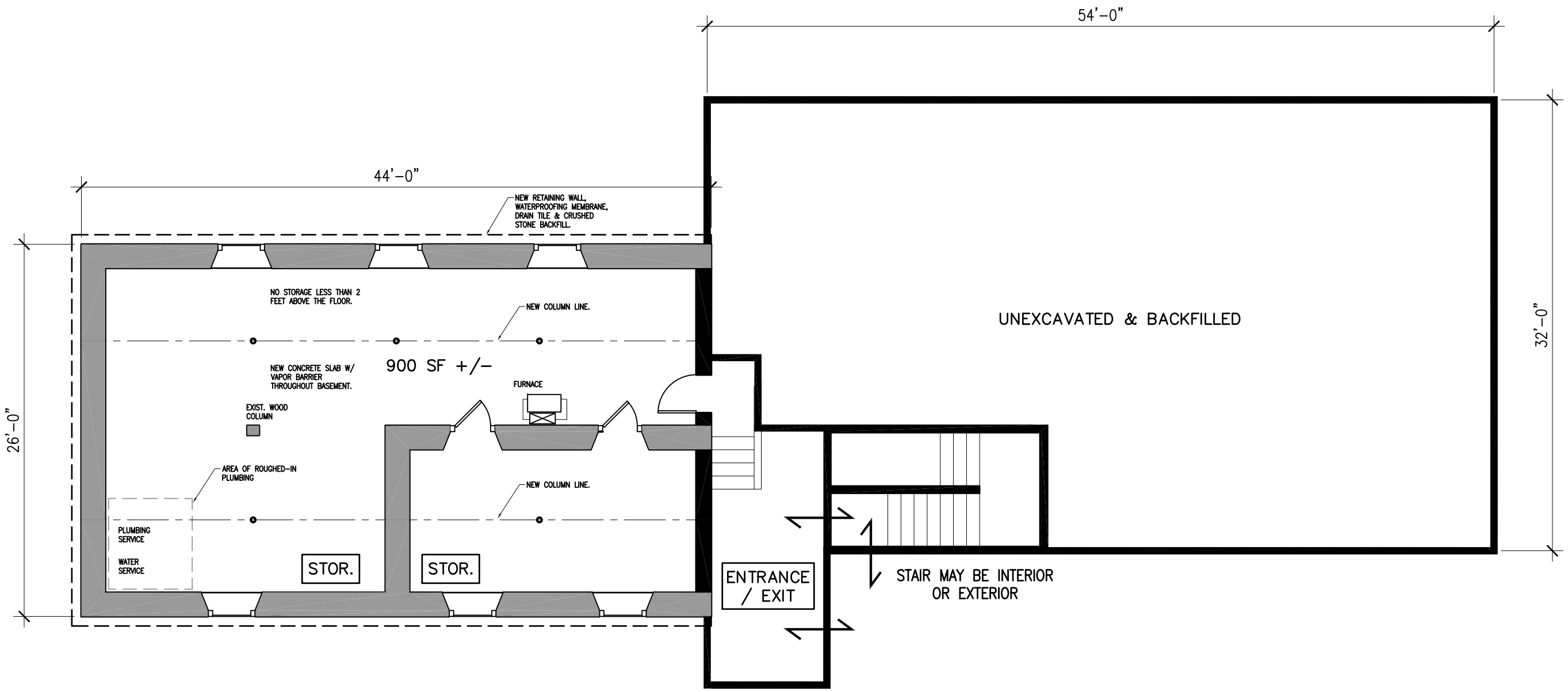
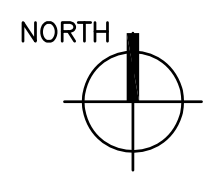
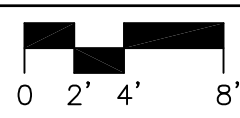
Site Section

C101-2



1 OPTION 2 BASEMENT DIAGRAM





EXISTING WALLS

PROPOSED WALLS

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Rev. #	Date
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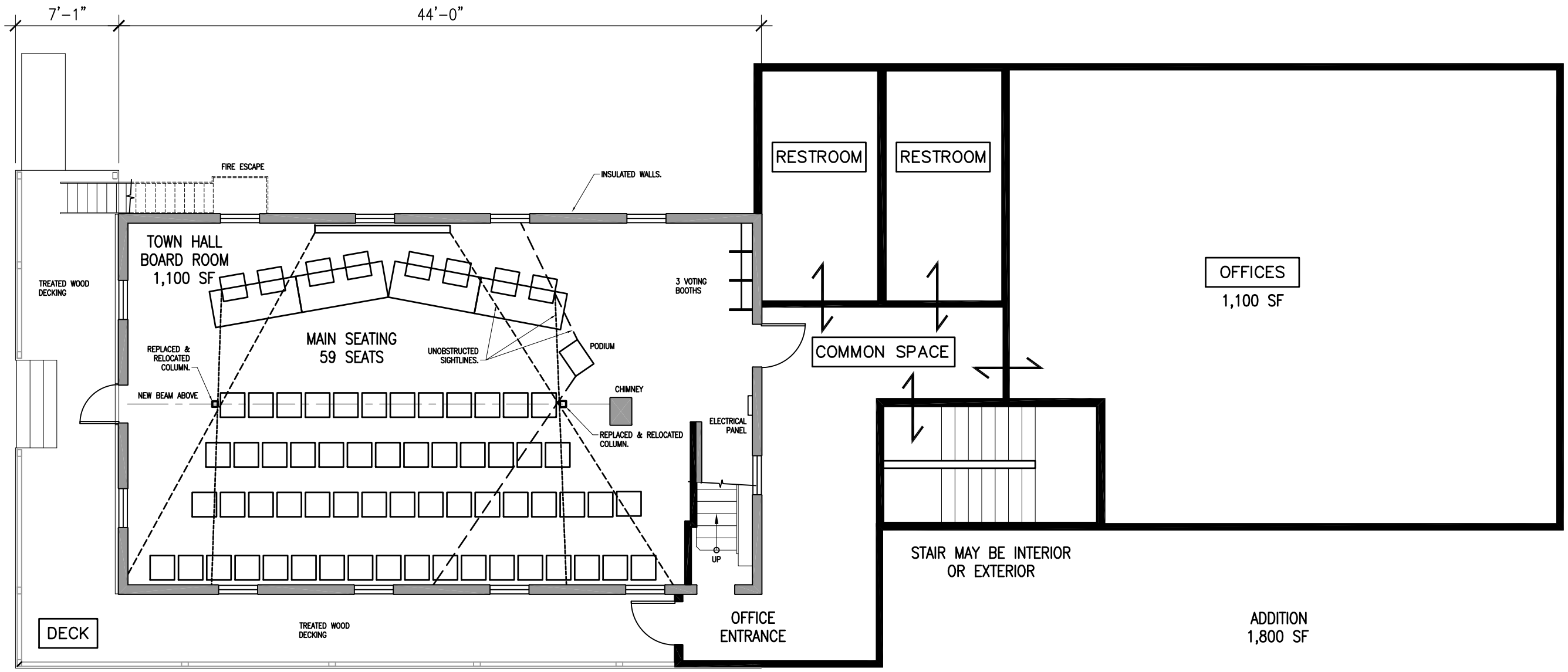
11/25/2009

Site Plan

A200-2



1 OPTION 2 - FIRST FLOOR DIAGRAM

NORTH

0 2' 4' 8'

EXISTING WALLS

PROPOSED WALLS

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Rev. #	Date
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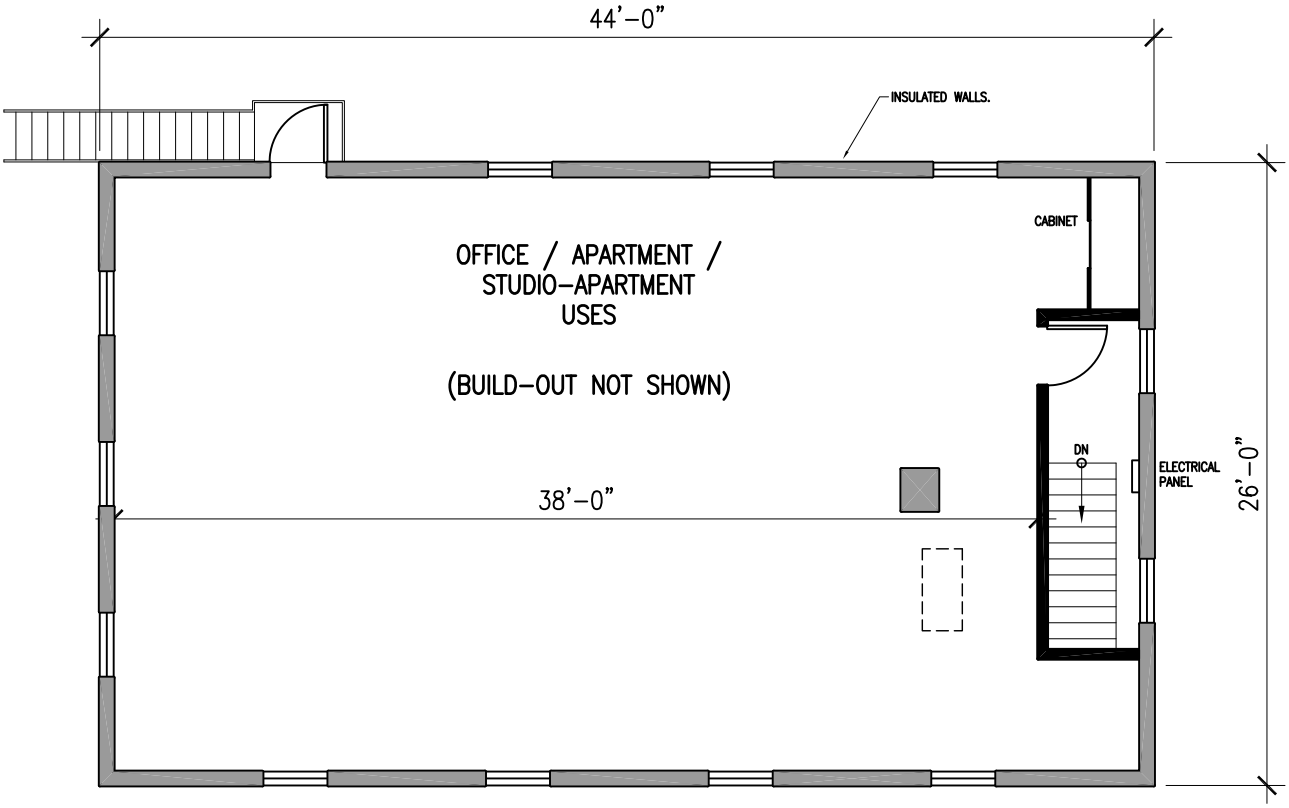
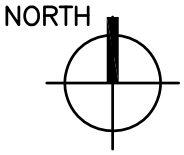
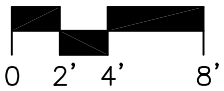
Site Plan

A201-2



1 OPTION 2 SECOND FLOOR DIAGRAM





EXISTING WALLS

PROPOSED WALLS

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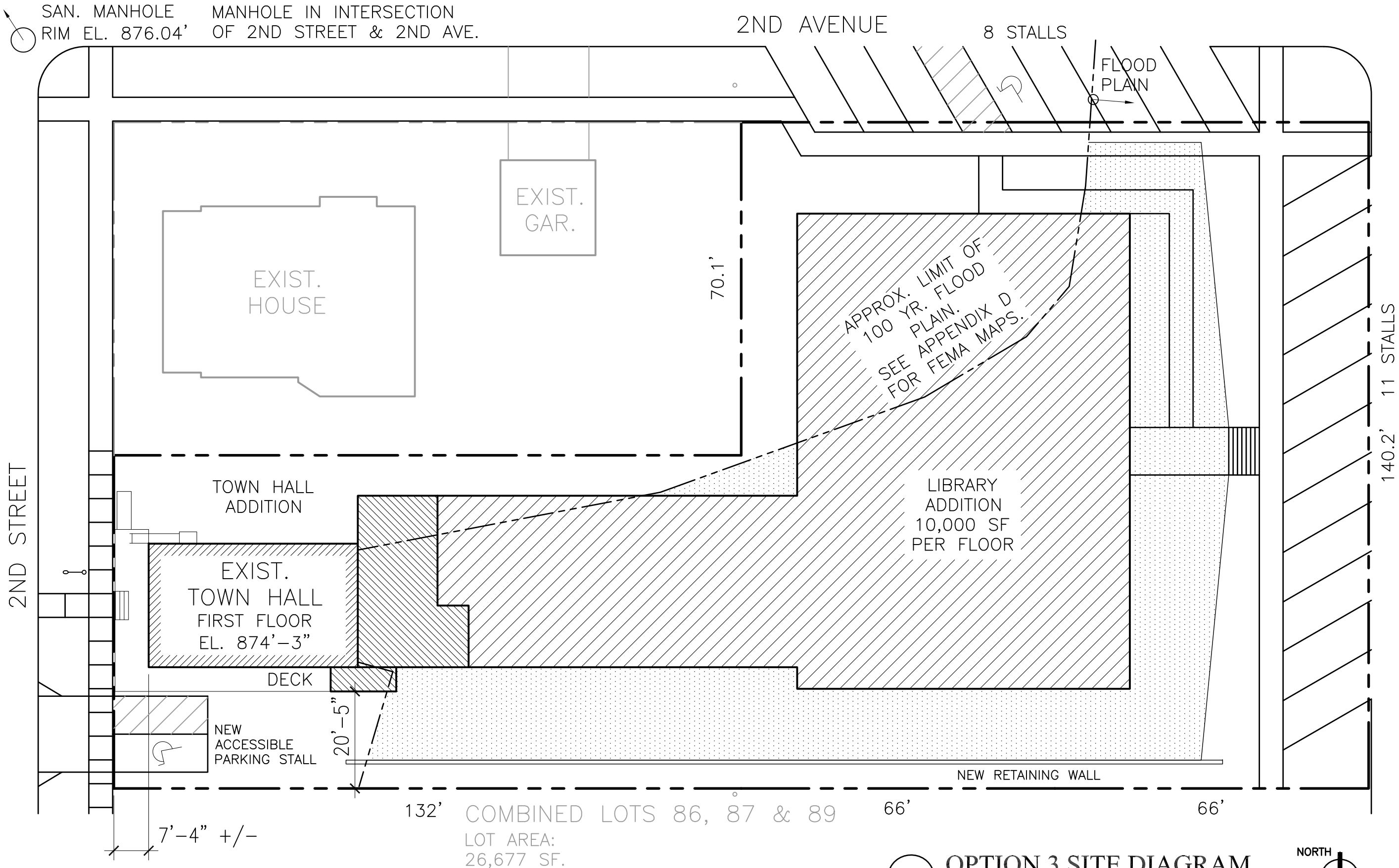
Floor Plan

A202-2



1 OPTION 3 SITE DIAGRAM

0 5' 10' 20'

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53574

Rev. #	Date
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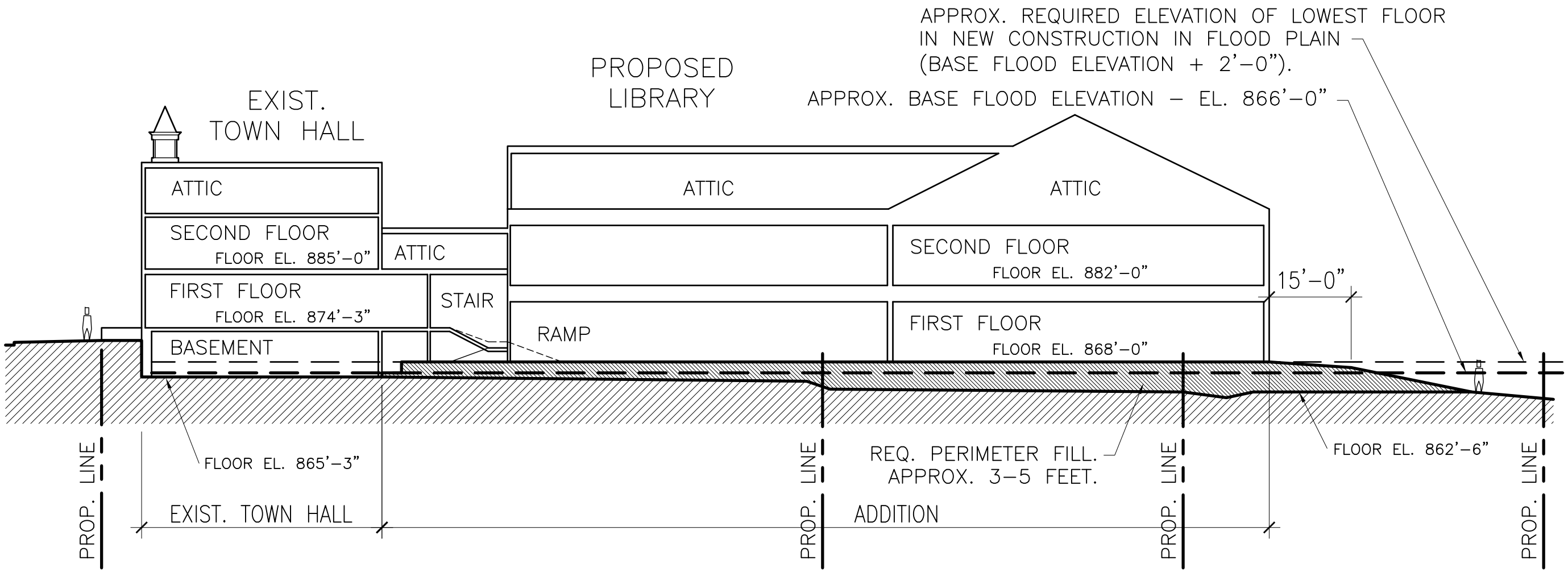
11/25/2009

Site Plan

C100-3



1 OPTION 3 SITE SECTION

0 5' 10' 20'

NOTES:
ELEVATIONS HAVE NOT BEEN SURVEYED. THEY HAVE BEEN APPROXIMATED USING EXISTING BENCHMARKS, LEVELS AND LINE OF SIGHT.

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Feasibility Study
206 Second Street
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53574

Rev. #	Date
1	x

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11/25/2009

Site Section

C101-3

Appendix C – Structural Engineer's Report

STRUCTURAL integrity INC.
7702 Terrace Ave. Suite 1
Middleton, WI 53562
phone 608.833.8830

November 18, 2009

Patrick McGowan, AIA
McGowan Architecture, LLC
P.O. Box 572
New Glarus, WI 53574

SUBJECT: Old Town Hall, New Glarus
Condition Assessment and Report Letter

Dear Patrick:

We appreciate the opportunity to provide structural engineering services on this project. In accordance with our discussions, this letter is being forwarded to provide a description of the structural systems present in the building and a summary of conditions discovered during our visit on Monday, November 16, 2009. We understand that the findings contained in this structural work will be used as a guide to develop repair strategies for the building and in finding a purpose for the structure.

Approach:

The scope of the work included a survey of the building. We understand that the age of the building is slightly more than 120 years. The survey was walk-through in nature. Approximately 3 hours was spent at the site reviewing the structural systems. Only accessible elements were reviewed. The following systems were not accessible:

- Second floor framing. We were able to extend a tape measure into the floor space and measure the depth of the framing at a damaged section of floor decking.
- Wall framing. The entire perimeter was concealed behind finishes. We were able to make some speculation about the framing based on access to the joist space and our experience.
- Rooftop cupola at the front of the building (due to concerns about the ladder to the hatch), we were able to view portions from the ground.

The scope did not include selective removal or demolition to access framing other than enlarging a fracture in a floor board on second floor. The content of this letter represents our opinions based on observations. This letter is your use for the purposes stated, and not for the use by others without the expressed written permission of Structural Integrity, Inc., and McGowan Architecture.

Where deemed important, dimensions were taken of the member sizes and spacing. The review of the framing included determining the type and configuration of the framing, direction of the members' spans, and locating bearing walls or other columns and load collecting systems. We performed brief calculations on the floor systems to speculate about general structural adequacy.

In several areas, some deterioration was discovered in the building but lack of access and limited scope of work may not have allowed us to investigate and consequently understand the full extent of deterioration. Please refer to that section of the framing in the "*Findings/Existing Conditions*" section of this letter for additional comment.

Structural Systems:

The building is wood framed. The roof is framed with approximately 1x decking over trusses. Currently, the 1x decking is covered with a contemporary sheathing material (OSB). The supporting trusses are composed of a 2x6 top chords, 2x6 bottom chords. The webs of the trusses are of 1x6 material. Each truss has at least three webs. The trusses are spaced at approximately 22" centers. The end walls are sheathing over 2x vertical studs.

We discovered a broken floorboard that we were able to push inward to observe the joist space in the second floor. It appears that the second floor is balloon framed with the second floor joists fastened to the sides of the wall studs. The floor framing appears to be 2x10 joists spaced at 12" centers, spanning the width of the building. A portion of the joists spans are supported near the centerline of the building by an interior column line of light wood framing. The framing consists of a 5x5 beam supported by 4.5x4.5 and 5x5 columns. The columns align with a masonry wall and a column in the basement supporting the first floor. The floor sheathing at second was 1x6 material.

The first floor was supported by bearing walls at the ends and by an 8x8 beam line and a masonry wall in the center of the building. The framing is 1x sheathing material over 2x8 floor joists at 16" centers. The perimeter of the building contains a 4x6 sill beam collecting the floor joists.

The walls of the building appear to be 2x6 construction. The faces of the wall are covered with siding and sheathing.

The foundations are constructed of mortared limestone masonry. The thickness varies; it is approximately 20-24". The depths of the foundations are unknown. The basement has a gravel/dirt floor.

A contemporary treated wood framed uncovered porch wrapped from the northwest corner of the building completely along the south side of the building to the southeast corner. The width of the porch was approximately 6 ft.

A chimney was present near the back of the building. The chimney was brick masonry. The chimney skewed slightly from the ceiling of the second floor through the roof.

Findings/Existing Conditions:

We believe that the building is generally in good condition.

We found the roof framing to be in good condition. There were areas that were stained but appeared to be sound. The truss framing appeared to be functioning well. We found no obvious signs of distress; the planes of the roof and the ridge all appeared true.

It appears that the second floor framing was fitted at some point with the beam and columns present on the first floor. It is likely that the framing was found to be quite bouncy by the users driving the need to add support. A portion of the second floor framing near the stair bears on a wall. We noted some minor long term deflections in the second floor.

The first floor is in good condition and performing as intended. We noted a relatively high level of moisture present. The second floor is performing well, although we note that the central beam is not structurally sufficient.

Our brief review of the capacities in the first and second floor shows that the capacity of the first floor is approximately 30 to 40 psf. The capacity of the second floor (knowing the central beam is improperly sized) has no additional capacity; assuming the central beam is replaced with a structurally adequate beam and column system, the system has an additional capacity of 75 to 80 psf.

We speculate that the most appropriate future use (and their code required capacities) for the building may be:

- Retail 100 psf.
- Public Assembly 100 psf
- School 50 psf with 15 psf additional for partitions
- Residential 40 psf

We note that in its present configuration, the building has only enough capacity to serve as a residence on the first floor. To gain additional capacities, we recommend structural reinforcement. For the first floor, the easiest reinforcement would be to place new beams, columns and footings in the basement at halfway points in the existing spans to more than double the capacity. For the second floor, we recommend the replacement of the existing central beam with a structurally suitable beam and column set to get the 75 to 80 psf. capacity.

The wood stud wall construction appears to be functioning as intended. We did note some racking on the exterior; the building appears to be leaning to the north approximately 4" in two stories. We have seen similar performance in other buildings the age of this building, especially taken in context with foundation issues.

We noticed some deterioration in the edges of the rooftop cupola. We suspect that some of the rafter ends are deteriorated as well as some of the roof sheathing is involved.

The foundations are in fair condition. Although they are performing as intended, obvious signs of foundation movements are present. Viewed from the back of the building, the bottoms of the north and south walls appear to be pushed inward. The magnitude of the movement is approximately 4 to 6". Several cracks associated with the movements were noted in the foundation walls. All of the interior faces of the foundation walls were all likely parged. Currently, the lower sections of the exterior walls retaining soil have lost their parge and appear to be absorbing, holding, and venting moisture from the adjacent soils. We have noted several areas that have been patched with Portland Cement mortar.

We suspect that the back wall of the building at the basement level used to be at one time masonry matching other foundation walls of the building. We noted that large patch areas were present at the ends of the existing walls where the masonry would have been toothed in. We suspect that this wall does not have foundations that extend to a depth to provide protection against frost heaving.

The porch framing appears to be in good condition.

The fire escape is supported by a plate spanning over a portion of the window bearing on two lag bolts set into a header over the window on the northwest corner. The connection is not adequate. We also have concerns about how the top of the landing is tied into the building.

The lower portions of the chimney appear to be in fair condition. We noted some light efflorescence at the top.

Recommendations:

We recommend that the second floor wood beam be replaced with a suitable new wood beam. We recommend an engineered solution be provided; the early retrofit framing does not appear to be sufficient. The reinforced floor should provide a reasonable amount of live load capacity; the final use of the building may determine that even additional capacity is necessary. The scope of the design is beyond the scope of this work.

We recommend that the deteriorated sections of the masonry foundations be repaired. We recommend a two-part solution for addressing the wall movements. First, we recommend the addition of a floor slab to reduce the amount of moisture in the building and to provide lateral resistance to soil loads in the foundation from the outside soils. Secondly, we recommend an engineered concrete retaining wall system laminated against the outside wall to restrain the soils so that the stone walls don't have to. The water infiltration into the walls can be addressed at this time as well by the addition of new waterproofing. We recommend that the addition of these outside walls be coordinated with the presence of the existing wrap-around porch. Cracking in the walls should also be addressed with new lime cement mortar pointing and patching. We recommend that the missing original back wall be replaced. We recommend that the foundations at the back of the building be protected against frost heave through new underpinning or placement of new insulation below grade.

We believe that the racking in the building is stabile. We recommend that the extent of the movements be documented and monitored against the initial documentation over time to verify that the building continues to be stabile.

Some repair is expected to the corners and possibly the soffit ends of the roof. We noted holes in the soffit. There may be some damage to sheathing or rafter ends.

We recommend minor repairs to the cupola; rafters should be sistered, sheathing should be replaced.

We recommend a more thorough evaluation and analysis of the fire escape if it is to be used as a secondary exit.

We recommend that a qualified mason review the condition of the chimney to confirm that the upper portions of the brick and mortar is sound.

This concludes the report portion of the work. We appreciated the opportunity to work with you on this project. Please call me if you have any questions.

Sincerely;

Kurtis J. Straus, P.E.
Structural *Integrity*, Inc.

A view of a typical masonry wall repair at support of the first floor framing. The header over the window is the rim joist for the framing. A pocket is visible in the rim joist for support of the floor joists. The walls are crudely coursed limestone and lime mortar; the gray areas are Portland Cement

patches. This particular masonry wall corner is cracked from the top of the wall to the lower right corner of the window.

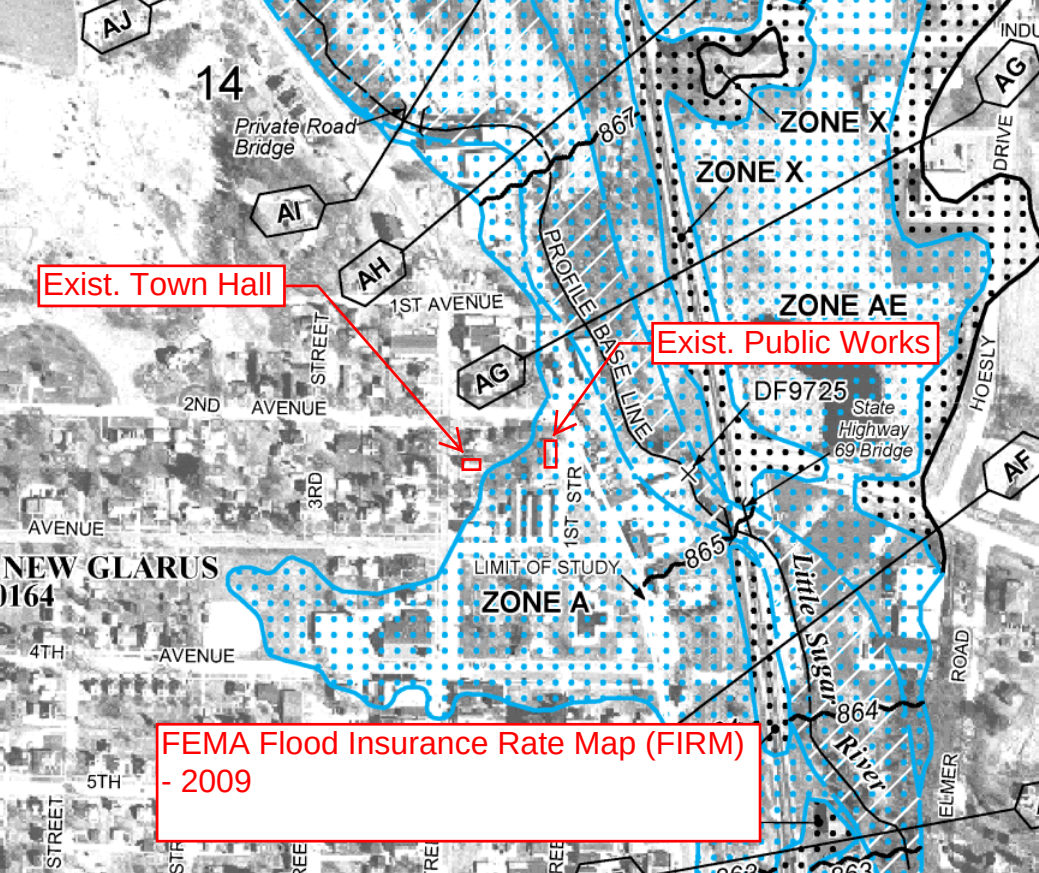
Joists are supported by the foundation wall and rim joist at the exterior wall. Many of the joists are drilled with excessively large holes for the electrical. The holes weaken the joists. The image also shows the back wall of the building. We speculate that the back wall of the building used to be

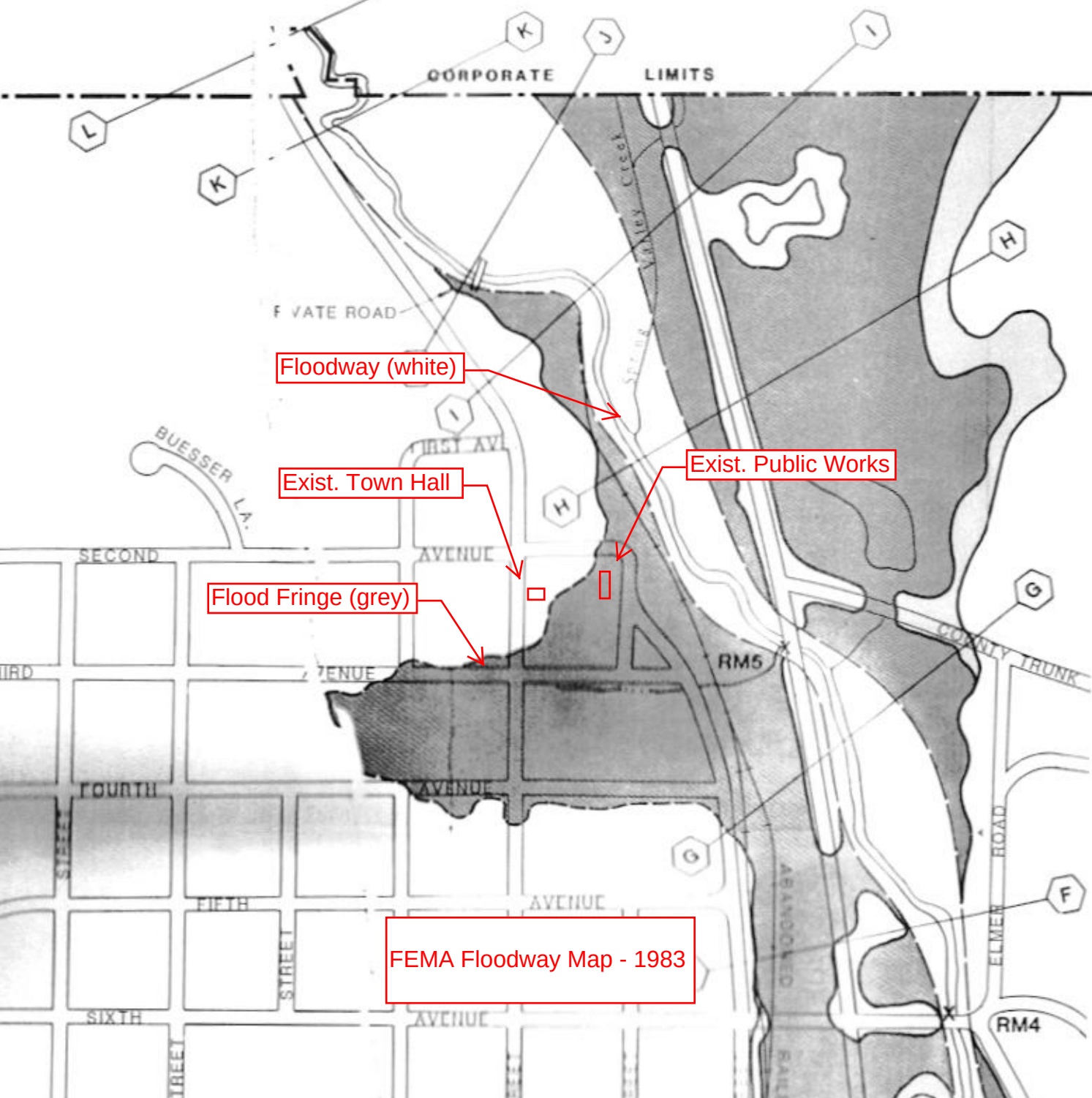
masonry similar to the foundation walls at the north and south. The mechanical work appears to have generally been placed without damaging the important components of the framing.

This image shows the same corner from the outside. The movement of the bottom the wall is dramatic. Although the wall has moved, it appears to be stabile. The wall on the south side has similar performance.

We noted that the fire escape attachment does not appear to be strong enough to meet current codes.

Appendix D – Flood Plain Maps


Exist. Town Hall
Exist. Public Works
FEMA Flood Insurance Rate Map (FIRM) - 2009
14
AJ
AI
AH
AG
AF
Private Road Bridge
867
865
864
863
ZONE X
ZONE X
ZONE AE
ZONE A
LIMIT OF STUDY
PROFILE BASE LINE
DF9725
State Highway 69 Bridge
Little Sugar River
1ST AVENUE
2ND AVENUE
3RD AVENUE
4TH AVENUE
5TH STREET
1ST STR
HOESLY DRIVE
ELMER ROAD
NEW GLARUS
0164


CORPORATE LIMITS
Floodway (white)
Exist. Town Hall
Exist. Public Works
Flood Fringe (grey)
FIRST AVE
BUESSER LA.
SECOND AVENUE
FOURTH AVENUE
FIFTH AVENUE
SIXTH AVENUE
STREET
RM5
RM4
COUNTY TRUNK
ELMER ROAD
ABANDONED
FEMA Floodway Map - 1983

Appendix E – Remediation Documents

WISCONSIN
DEPT. OF NATURAL RESOURCES

Carroll D. Besadny
Secretary

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Southern District Headquarters
3911 Fish Hatchery Road
Fitchburg, Wisconsin 53711
TELEPHONE 608-275-3266
TELEFAX 608-275-3338

August 14, 1992

FILE REF: 125

Mr. George Eichelkraut
Town of New Glarus
N8720 Marty Road
New Glarus, WI 53524

Subject: Town of New Glarus Garage Railroad Street, New Glarus

Dear Mr. Eichelkraut:

The Strand Associates, Inc., UST Site Investigation Report for June, 1992 has been received and reviewed. The information was submitted to the Southern District Close Out Committee and a favorable determination for closure has been reached.

The site had previously been submitted for close out. Additional work was requested and complied with. Two additional wells have been in place and quarterly monitoring has been conducted with the last three analytical results having a determination of no detect for volatile organic compounds. At this time the Department has determined that there appears to be no significant threat to the environment. Should future evidence indicate the presence of a more significant threat, the Department reserves the right to request further investigation and remediation.

If you have any questions regarding this determination you should contact me at the number listed below.

Sincerely,

Wendell J. Wojner
LUST Coordinator
Telephone: (608) 275-3297

WJW:cwl
9209\SW1EICHE.WJW
cc: Mr. Steve Karklins, Strand Associates, Inc., 910 West Wingra Drive, Madison, WI 53715

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SECTION 4
DISCUSSION

4.01 SOIL CONTAMINATION

Approximately 140 cu yd of potentially contaminated soils were removed from the former UST excavation in May of 1989 and disposed of at an DNR approved landfill. All but approximately one cu yd of potentially contaminated soils were removed from the UST excavation. A soil test pit was constructed in the former UST excavation to assess the degree and extent of the remaining potentially contaminated soils. Field screening and laboratory analysis of test pit soil samples did not indicate detectable concentrations of soil contamination above the general DNR guidance of ten ppm TPH for defining soil contamination.

Field screened soil samples collected from MW-1, MW-2, and MW-3 indicated HNu readings of zero. Two laboratory verification sampled collected from MW-1 indicated no detectable concentrations of TPH. Laboratory verification samples collected from MW-2 and MW-3 indicated no detectable concentrations of TPH or BETX.

4.02 GROUNDWATER CONTAMINATION

Groundwater was impacted in MW-1 only with VOC compounds. Benzene was detected in three of the seven sample rounds with values ranging from 1.67 to 3.61 μg/L. Benzene was not detected in the last three sample rounds for MW-1. Bromoform and 1,2-dichloroethane were detected during one sampling round of MW-1, however, these compounds are not suspected to be UST related. All compounds detected in MW-1 were below the DNR Enforcement Standard for these compounds. There were no detects for any of the compounds in the last three sample rounds.

The DNR requested this investigation in response to potentially increasing concentrations of benzene found in MW-1 and the close proximity of municipal Well No. 1 to the site. This investigation indicates that the shallow groundwater at the site is flowing east, however, Well No. 1 is northwest of the site. Volatile organic compounds have not been detected during the last three sample rounds of all on-site monitoring wells. The Wisconsin Geologic and Natural History Survey personnel, Roger Peters has indicated that Well No. 1 draws water primarily from the Wonewoc sandstone formation which is confined by the Saint Lawrence formation. It does not appear that soils on site are in hydraulic connection with the Wonewoc formation. Well No. 1 has not been actively used in the last five years and may be recased or abandoned in the near future.

SECTION 5
CONCLUSIONS AND RECOMMENDATIONS

5.01 CONCLUSIONS

- Soil contamination related to the UST appears to have been removed or volatilized . A soil test pit constructed in the area of the former UST excavation suspected of having residue soil contamination indicated no detectable concentrations of VOC or TPH compounds.

- Soil contamination related to the UST was not detected in field screened or analytical soil samples collected during MW-1, MW-2 and MW-3 construction.

- Site groundwater flow is east towards Wildwood Creek at an average horizontal hydraulic gradient of 0.03 foot/foot.

- New Glarus municipal Well No. 1 is northwest of the site, confined by the Saint Lawrence formation, and has not been actively used in the past five years.

- Groundwater VOC compounds were detected in three out of seven sample rounds for MW-1 only, at values below NR 140 Enforcement Standards, but the last three sampling rounds showed no detects.

5.02 RECOMMENDATIONS

It is recommended that the Town of New Glarus do the following:

- Notify the Wisconsin Department of Natural Resources of the results of this investigation by submittal of this report.

- Maintain the integrity of the bituminous surface in the area of the former UST excavation.

- Based on the degree and extent of impacted soil and groundwater at this site, a request should be made to the DNR for clean closure.

- Abandonment of all on-site monitoring wells in accordance with the Wisconsin Administrative Code, Chapter NR 141.

Appendix F – Historic Register Designation

WISCONSIN HISTORICAL SOCIETY

Wisconsin National Register of Historic Places

Wisconsin National Register Full Record View

County: **Green**	City: **New Glarus**	Civil Town:	Reference Number: **08000286**
Historic Name: **New Glarus Town Hall**		Address: **206 Second Street**	
Certification: **LISTED IN THE STATE AND NATIONAL REGISTER**		Certification Date: **4/11/2008**	

Historic Function:	**SOCIAL** **GOVERNMENT**	Historic Subfunction:	**MEETING HALL** **CITY HALL**
Architectural Style:	**MID 19TH CENTURY**	Architect:	**unknown**
Area of Significance:	**SOCIAL HISTORY** **POLITICS/GOVERNMENT**	Applicable Criteria:	**EVENT**
		Resource Type:	**BUILDING**
Period of Significance:	**1886-1957**		

Number of Contributing				Number of Non-Contributing			
Buildings	Sites	Structures	Objects	Buildings	Sites	Structures	Objects
1	0	0	0	0	0	0	0

New Glarus Town Hall (T. Nichols photo, 2007)

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