Rating form completed by: **RICHARD NIEWIAROWSKI, S.E.**
Evaluator: RWN
Date: 07/22/19

Text in green is to be part of UCSF building database and may be part of UCOP database.

DATE: 07-22-2019 (Group 1 Building Assessment was performed in December, 2018)

REGISTERED PROFESSIONAL ENGINEER
RICHARD WILLIAM NIEWIAROWSKI
2079
Exp. 12/31/19
CIVIL
STATE OF CALIFORNIA

7/22/2019

UCSF building seismic ratings

1320 3rd Avenue – Single Family Residence

CAAN #2005
1320 3rd Avenue, San Francisco, CA 94122
UCSF Campus: Parnassus Heights

Plan

West elevation (looking east)

Rating summary	Entry	Notes
UC Seismic Performance Level (rating)	V	Based on drawing review and ASCE 41 Checklists, the expected seismic performance is likely to pose a low risk to occupant life safety[1].
Rating basis	Tier 1	ASCE 41-17
Date of rating	Dec., 2018	
Recommended UCSF priority category for retrofit	B	Priority A=Retrofit ASAP Priority B=Retrofit at next permit application for modification
Ballpark total project cost to retrofit to IV rating	Very High	See recommendations on further evaluation and retrofit.
Is 2018-2019 rating required by UCOP?	Yes	
Further evaluation recommended?	No	

Building information used in this evaluation

- Limited Architectural plans of prior modifications, dated 8/12/1985 (UCSF Archives).

Additional building information known to exist

- Architectural plans for prior renovations exist in UCSF Drawings Archive. Architectural, and in some cases Structural, drawings are available in the UCSF Archives for the other eight similar, single-family residential buildings along 3rd Avenue.

Scope for completing this form

A site visit was made on 10/9/2018 to observe the exterior (street front) of the residences on the 3rd Avenue slope. Also, observations were made inside one of these similar structures during renovation/retrofit work in 2013. Limited architectural plans of minor renovations (1985) were reviewed, along with plans of the other eight "sister" residential buildings on 3rd Avenue. Tier 1 Checklists were completed.

Brief description of structure

The building is a three-story plus attic, wood framed, single-family residential structure of about 3750 GSF, on a steeply sloped street. The upper two floors have multiple interior walls of varying lengths in both the transverse and longitudinal directions, and several of these walls align vertically, floor to floor. The ground floor level is essentially open with little interior walls. Exterior wall sill plates are bolted to concrete strip footings. All interior wall faces are sheathed with sheetrock, and floors are likely to have 1x straight T&G sheathing. There is adequate lateral force resistance in the longitudinal direction. In the transverse direction, adequate lateral resistance is likely to exist in the upper two floors, but only a limited number of effective walls are likely to exist at the ground floor level, and the exterior street-front wall has large openings in it. The building appears to be in good condition, with no obvious signs of damage, disrepair, or foundation settlement.

This building is one of nine similar single-family residential buildings along 3rd Avenue. Architectural drawings of past renovation work are available in the UCSF Drawings Archives for all nine of the buildings, but structural drawings are available in only isolated cases. All nine are similar structures: three-story plus attic, wood framed residences with multiple interior walls in the upper two levels, an essentially open ground floor level (although interior walls have been added in the ground floor level of a few of the nine buildings), sheetrock wall sheathing and 1x floor sheathing (the structural drawing for one of the buildings indicates plywood wall sheathing, but that is likely an isolated case). This building (1320 3rd Ave.) is the northernmost and lowest (down slope) of the nine. All of these buildings abut their neighbors to either side with essentially no separation between them. The floor levels of adjacent buildings do not align due to the steeply sloped street. This building has a ±4" separation joint between it and a multi-unit, wood-framed, residential apartment building on its north (downhill) side.

Building response in 1989 Loma Prieta Earthquake: Unknown.

Brief description of seismic deficiencies and expected seismic performance including mechanism of nonlinear response and structural behavior modes

The principal deficiencies of this building are:

- Inadequate transverse-direction shear resistance in the lower level (especially at the narrow/short shear wall panels due to the large opening in the front (west) exterior wall).
- Sheetrock wall sheathing and 1x T&G straight floor sheathing in three-story wood framed structures on a steeply sloped site.

However, given the tightly packed condition of this building and its neighbors, collapse is very unlikely (there is simply no room for the building to deflect enough to collapse, and its downhill neighbor as well as the few other sister residences that do have adequate lower level interior transverse walls, will ultimately prevent collapse from occurring). Thus, it is very unlikely that the building poses a significant life-safety threat to its occupants.

Structural deficiency	Affects rating?	Structural deficiency	Affects rating?
Lateral system stress check (wall shear, column shear or flexure, or brace axial as applicable)	Y	Openings at shear walls (concrete or masonry)	Y
Load path	Y	Liquefaction	N
Adjacent buildings	Y	Slope failure	N
Weak story	Y	Surface fault rupture	N
Soft story	Y	Masonry or concrete wall anchorage at flexible diaphragm	N
Geometry (vertical irregularities)	N	URM wall height-to-thickness ratio	N
Torsion	N	URM parapets or cornices	N
Mass – vertical irregularity	N	URM chimney	N
Cripple walls	N	Heavy partitions braced by ceilings	N
Wood sills (bolting)	N	Appendages	N
Diaphragm continuity	N		

Summary of review of nonstructural life-safety concerns, including at exit routes. [1]

No review of non-structural life-safety concerns was made. However, other than possible light fixtures and furniture/contents, there are very few items that could pose a falling-hazard risk to life-safety in these single-family residences.

UCOP non-structural checklist item	Life safety hazard?	UCOP non-structural checklist item	Life safety hazard?
Heavy ceilings, feature or ornamentation above large lecture halls, auditoriums, lobbies or other areas where large numbers of people congregate	None observed	Unrestrained hazardous materials storage	None observed
Heavy masonry or stone veneer above exit ways and public access areas	None observed	Masonry chimneys	None observed
Unbraced masonry parapets, cornices or other ornamentation above exit ways and public access areas	None observed	Unrestrained natural gas-fueled equipment such as water heaters, boilers, emergency generators, etc.	None observed

Basis of Seismic Performance Level rating

The number of structural deficiencies existing in this structure, especially the relative lack of ground floor level interior walls and partitions, the large openings in the front exterior wall, uncertain load path and element connectivity, and sloped site, collectively contribute to the rating of V. However, given the relatively low threat to occupant life-safety, the building was assigned to Priority Category B

Recommendations for further evaluation or retrofit

No further evaluation of this building is recommended. Also, given the relatively low risk to occupant life-safety posed by this type of residential building (refer to Building Description section above), immediate seismic retrofit of this structure is not recommended. However, should the University undertake any modifications, improvements, or renovations of the building requiring a building permit, then some seismic improvements should be included in the work such as: (a) add one or more transverse shear walls or frames in the ground floor level, (b) replace the sheetrock wall sheathing with plywood on selected shear walls, (c) install additional anchor bolts at shear wall-to-footing sill plates, and (d) add vertical floor-to-floor ties and holddowns to footings at the ends of transverse shear walls.

[1] For these Tier 1 evaluations, we do not visit all spaces of the building; we rely on campus staff to report to us their understanding of if and where nonstructural hazards may occur.

Peer review comments on rating

The four structural engineer members of the UCSF Seismic Review Committee (in Dec., 2018) were unanimous that the rating is on the high end of V, that the expected seismic performance will likely represent a low risk to occupant life safety, and that the building should be assigned to Priority Category B for future seismic retrofit.

Additional building data	Entry	Notes
Latitude	37.7640	UCSF Group 1 Buildings Geotechnical Characteristics and Geohazards, Egan (2019)
Longitude	-122.4597	UCSF Group 1 Buildings Geotechnical Characteristics and Geohazards, Egan (2019)
Are there other structures besides this one under the same CAAN#	No	
Number of stories above lowest perimeter grade	3	
Number of stories (basements) below lowest perimeter grade	0	
Building occupiable area (OGSF)	3750	UCSF Data
Risk Category per 2016 CBC 1604.5	II	
Building structural height, h_n	32 ft	ASCE 7-16 Section 11.2
Coefficient for period, C_t	0.02	ASCE 41-17 Section 4.4.2.4
Coefficient for period, β	0.75	ASCE 41-17 Section 4.4.2.4
Estimated fundamental period	0.27 sec	Estimated using ASCE 41-17 equation 4-4
Site data		
975-year hazard parameters S_s, S_1	1.547g, 0.61g	SEAOC/OSHPD Seismic Design Maps Tool
Site class	D	
Site class basis	Geotech Parameters	UCSF Group 1 Buildings Geotechnical Characteristics and Geohazards, Egan (2019)
Site parameters F_a, F_v	1.000, 1.700	SEAOC/OSHPD Seismic Design Maps Tool
Ground motion parameters S_{cs}, S_{c1}	1.547g, 1.037g	UCSF Group 1 Buildings Geotechnical Characteristics and Geohazards, Egan (2019) W = 135 kips, V base = 209 kips
S_a at building period	1.547g	
Site V_{s30}	345 m/s	
V_{s30} basis	Estimated	UCSF Group 1 Buildings Geotechnical Characteristics and Geohazards, Egan (2019)
Liquefaction potential/basis	No	UCSF Group 1 Buildings Geotechnical Characteristics and Geohazards, Egan (2019)
Landslide potential/basis	No	UCSF Group 1 Buildings Geotechnical Characteristics and Geohazards, Egan (2019)
Active fault-rupture hazard identified at site?	No	UCSF Group 1 Buildings Geotechnical Characteristics and Geohazards, Egan (2019)
Site-specific ground motion study?	No	

Applicable code		
Applicable code or approx. date of original construction	Unknown	Date of construction unknown
Applicable code for partial retrofit	None	No prior partial retrofit known
Applicable code for full retrofit	None	No prior full retrofit known
Model building data		
Model building type North-South	W1A	
Model building type East-West	W1A	
FEMA P-154 score	N/A	ASCE 41 Tier 1 evaluation was performed instead
Previous ratings		
Most recent rating	V	By the UCSF Seismic Review Committee; as part of 2013 campus Buildings Rating Program
Date of most recent rating	2013	"UCSF Building Seismic Survey and Ratings"
2nd most recent rating	--	
Date of 2nd most recent rating	--	
3rd most recent rating	--	
Date of 3rd most recent rating	--	
Appendices		
ASCE 41 Tier 1 checklist included here?	Yes	Refer to attached checklist file

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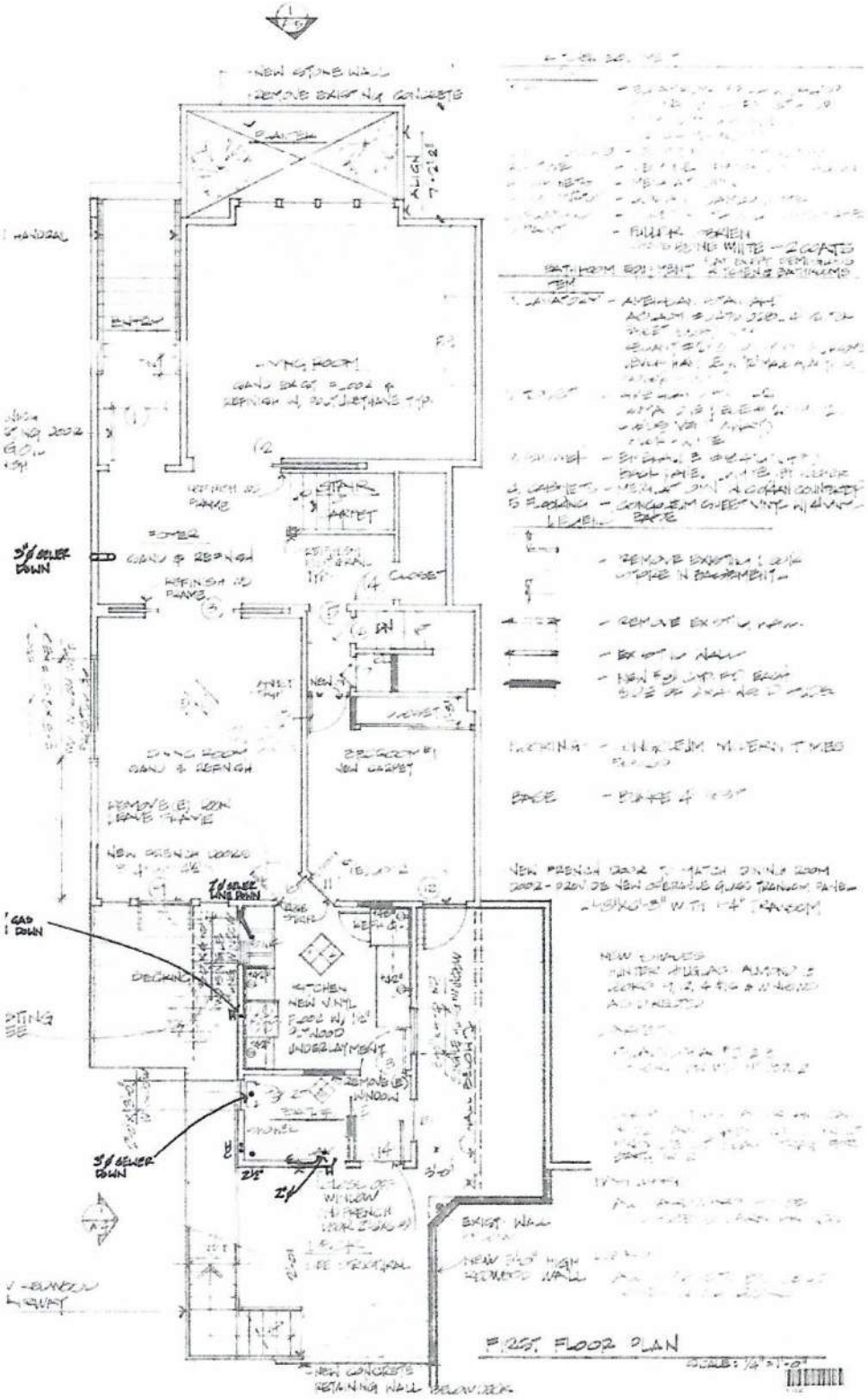
Appendix A

Additional Images



UCSF building seismic ratings
1320 3rd Avenue, CAAN #2005

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Appendix B

ASCE 41- 17 Tier 1 Checklists (Structural)

UC Campus:	UCSF Parnassus Heights			Date:	12/21/2018		
Building CAAN:	2005	Auxiliary CAAN:		By Firm:	Richard Niewiarowski, SE		
Building Name:	Single Family Residence			Initials:	*RWN*	Checked:	
Building Address:	1320 3rd Avenue, San Francisco, CA			Page:	1	of	3

ASCE 41-17
Collapse Prevention Basic Configuration Checklist

LOW SEISMICITY

BUILDING SYSTEMS - *GENERAL*

	Description
C ☐ NC ☉ N/A ☐ U ☐	LOAD PATH: The structure contains a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation. (Commentary: Sec. A.2.1.1. Tier 2: Sec. 5.4.1.1) **Comments: It is presumed that gaps in the load path exist due to discontinuous walls and lack of adequate connections.**
C ☐ NC ☉ N/A ☐ U ☐	ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 0.25% of the height of the shorter building in low seismicity, 0.5% in moderate seismicity, and 1.5% in high seismicity. (Commentary: Sec. A.2.1.2. Tier 2: Sec. 5.4.1.2) **Comments: Adjacent buildings have very small separation joints and floor levels do not align. However, the abutting buildings will essentially protect the building from collapse.**
C ☐ NC ☐ N/A ☉ U ☐	MEZZANINES: Interior mezzanine levels are braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure. (Commentary: Sec. A.2.1.3. Tier 2: Sec. 5.4.1.3) **Comments:**

BUILDING SYSTEMS - *BUILDING CONFIGURATION*

	Description
C ☐ NC ☉ N/A ☐ U ☐	WEAK STORY: The sum of the shear strengths of the seismic-force-resisting system in any story in each direction is not less than 80% of the strength in the adjacent story above. (Commentary: Sec. A2.2.2. Tier 2: Sec. 5.4.2.1) **Comments: Limited amount of interior walls/partitions in ground floor level.**
C ☐ NC ☉ N/A ☐ U ☐	SOFT STORY: The stiffness of the seismic-force-resisting system in any story is not less than 70% of the seismic-force-resisting system stiffness in an adjacent story above or less than 80% of the average seismic-force-resisting system stiffness of the three stories above. (Commentary: Sec. A.2.2.3. Tier 2: Sec. 5.4.2.2) **Comments: Limited amount of interior walls/partitions in ground floor level.**

Note: C = Compliant **NC =** Noncompliant **N/A =** Not Applicable **U =** Unknown

ASCE 41-17
Collapse Prevention Basic Configuration Checklist

C	NC	N/A	U	
☐	☒	☐	☐	VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation. (Commentary: Sec. A.2.2.4. Tier 2: Sec. 5.4.2.3) **Comments: It is presumed that several interior walls/partitions are discontinuous or do not align floor to floor.**
☒	☐	☐	☐	GEOMETRY: There are no changes in the net horizontal dimension of the seismic-force-resisting system of more than 30% in a story relative to adjacent stories, excluding one-story penthouses and mezzanines. (Commentary: Sec. A.2.2.5. Tier 2: Sec. 5.4.2.4) **Comments:**
☒	☐	☐	☐	MASS: There is no change in effective mass of more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered. (Commentary: Sec. A.2.2.6. Tier 2: Sec. 5.4.2.5) **Comments:**
☒	☐	☐	☐	TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension. (Commentary: Sec. A.2.2.7. Tier 2: Sec. 5.4.2.6) **Comments:**

MODERATE SEISMICITY (COMPLETE THE FOLLOWING ITEMS IN ADDITION TO THE ITEMS FOR LOW SEISMICITY)

GEOLOGIC SITE HAZARD

	Description
C ☒ NC ☐ N/A ☐ U ☐	LIQUEFACTION: Liquefaction-susceptible, saturated, loose granular soils that could jeopardize the building's seismic performance do not exist in the foundation soils at depths within 50 ft (15.2m) under the building. (Commentary: Sec. A.6.1.1. Tier 2: 5.4.3.1) **Comments: Liquefaction potential of site soils is moderate, but probably low.**
C ☒ NC ☐ N/A ☐ U ☐	SLOPE FAILURE: The building site is located away from potential earthquake-induced slope failures or rockfalls so that it is unaffected by such failures or is capable of accommodating any predicted movements without failure. (Commentary: Sec. A.6.1.2. Tier 2: 5.4.3.1) **Comments: Building is on a steeply sloped site but there is no evidence of a potential slope failure hazard.**

Note: **C =** Compliant **NC =** Noncompliant **N/A =** Not Applicable **U =** Unknown

UC Campus:	UCSF Parnassus Heights			Date:	12/21/2018		
Building CAAN:	2005	Auxiliary CAAN:		By Firm:	Richard Niewiarowski, SE		
Building Name:	Single Family Residence			Initials:	*RWN*	Checked:	
Building Address:	1320 3rd Avenue, San Francisco, CA			Page:	3	of	3

ASCE 41-17
Collapse Prevention Basic Configuration Checklist

MODERATE SEISMICITY (COMPLETE THE FOLLOWING ITEMS IN addition TO THE ITEMS FOR LOW SEISMICITY)

GEOLOGIC SITE HAZARD

C	NC	N/A	U	
☉	☐	☐	☐	SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated. (Commentary: Sec. A.6.1.3. Tier 2: 5.4.3.1) **Comments:**

HIGH SEISMICITY (COMPLETE THE FOLLOWING ITEMS IN ADDITION TO THE ITEMS FOR MODERATE SEISMICITY)

FOUNDATION CONFIGURATION

				Description
C	NC	N/A	U	
☉	☐	☐	☐	OVERTURNING: The ratio of the least horizontal dimension of the seismic-force-resisting system at the foundation level to the building height (base/height) is greater than $0.6S_a$. (Commentary: Sec. A.6.2.1. Tier 2: Sec. 5.4.3.3) **Comments: The building footprint of exterior walls aligns vertically ground to roof.**
C	NC	N/A	U	
☐	☐	☐	☉	TIES BETWEEN FOUNDATION ELEMENTS: The foundation has ties adequate to resist seismic forces where footings, piles, and piers are not restrained by beams, slabs, or soils classified as Site Class A, B, or C. (Commentary: Sec. A.6.2.2. Tier 2: Sec. 5.4.3.4) **Comments:**

UC Campus:	UCSF Parnassus Heights			Date:	12/21/2018		
Building CAAN:	2005	Auxiliary CAAN:		By Firm:	Richard Niewiarowski, SE		
Building Name:	Single Family Residence			Initials:	*RWN*	Checked:	
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ASCE 41-17
Collapse Prevention Structural Checklist For Building Type W1-W1A

LOW AND MODERATE SEISMICITY

SEISMIC-FORCE-RESISTING SYSTEM

C	NC	N/A	U	Description
☒	☐	☐	☐	REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2. (Commentary: Sec. A.3.2.1.1. Tier 2: Sec. 5.5.1.1) **Comments: In addition to the exterior perimeter walls, there are m,ultiple interior walls and partitions in both directions, except for the ground floor level.**
☐	☒	☐	☐	SHEAR STRESS CHECK: The shear stress in the shear walls, calculated using the Quick Check procedure of Section 4.4.3.3, is less than the following values: (Commentary: Sec. A.3.2.7.1. Tier 2: Sec. 5.5.3.1.1) Structural panel sheathing: 1,000 lb/ft (14.6 kN/m) Diagonal sheathing: 700 lb/ft (10.2 kN/m) Straight sheathing: 100 lb/ft (1.5 kN/m) All other conditions: 100 lb/ft (1.5 kN/m) **Comments: Longitudinal (E-W) direction shear is compliant. Transverse (N-S) direction shear is likely non-compliant.**
☒	☐	☐	☐	STUCCO (EXTERIOR PLASTER) SHEAR WALLS: Multi-story buildings do not rely on exterior stucco walls as the primary seismic-force-resisting system. (Commentary: Sec. A.3.2.7.2. Tier 2: Sec. 5.5.3.6.1) **Comments: No stucco observed on exterior walls.**
☐	☒	☐	☐	GYPSUM WALLBOARD OR PLASTER SHEAR WALLS: Interior plaster or gypsum wallboard is not used for shear walls on buildings more than one story high with the exception of the uppermost level of a multi-story building. (Commentary: Sec. A.3.2.7.3. Tier 2: Sec. 5.5.3.6.1) **Comments: All interior wall/partition finishes are assumed to be either gypsum wallboard/sheetrock or plaster finished.**
☐	☒	☐	☐	NARROW WOOD SHEAR WALLS: Narrow wood shear walls with an aspect ratio greater than 2-to-1 are not used to resist seismic forces. (Commentary: Sec. A.3.2.7.4. Tier 2: Sec. 5.5.3.6.1) **Comments: All available interior walls and partitions, regardless of H:L ratio, are presumed to participate in the resistance of lateral loads.**

ASCE 41-17
Collapse Prevention Structural Checklist For Building Type W1-W1A

C	NC	N/A	U	
☐	☒	☐	☐	WALLS CONNECTED THROUGH FLOORS: Shear walls have an interconnection between stories to transfer overturning and shear forces through the floor. (Commentary: Sec. A.3.2.7.5. Tier 2: Sec. 5.5.3.6.2) **Comments: It is presumed that floor-to-floor vertical wall/partition ties are not provided.**
☐	☒	☐	☐	HILLSIDE SITE: For structures that are taller on at least one side by more than one-half story because of a sloping site, all shear walls on the downhill slope have an aspect ratio less than 1-to-1. (Commentary: Sec. A.3.2.7.6. Tier 2: Sec. 5.5.3.6.3) **Comments: Building is on a steeply sloped site and some interior walls/partitions have H:L ratios higher than 1:1**
☒	☐	☐	☐	CRIPPLE WALLS: Cripple walls below first-floor-level shear walls are braced to the foundation with wood structural panels. (Commentary: Sec. A.3.2.7.7. Tier 2: Sec. 5.5.3.6.4) **Comments: No cripple walls observed.**
☐	☒	☐	☐	OPENINGS: Walls with openings greater than 80% of the length are braced with wood structural panel shear walls with aspect ratios of not more than 1.5-to-1 or are supported by adjacent construction through positive ties capable of transferring the seismic forces. (Commentary: Sec. A.3.2.7.8. Tier 2: Sec. 5.5.3.6.5) **Comments: The front exterior wall has large openings, but the remaining wall elements are participating as part of the overall lateral force resisting system.**

CONNECTIONS

C	NC	N/A	U	Description
☒	☐	☐	☐	WOOD POSTS: There is a positive connection of wood posts to the foundation. (Commentary: Sec. A.5.3.3. Tier 2: Sec. 5.7.3.3) **Comments: Compliance is inferred as being likely based on observations at other adjacent similar buildings.**
☒	☐	☐	☐	WOOD SILLS: All wood sills are bolted to the foundation. (Commentary: Sec. A.5.3.4. Tier 2: Sec. 5.7.3.3) **Comments: Compliance is inferred as being likely based on observations at other adjacent similar buildings.**

ASCE 41-17
Collapse Prevention Structural Checklist For Building Type W1-W1A

C	NC	N/A	U	
☐	☐	☐	☒	GIRDER-COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support. (Commentary: Sec. A.5.4.1. Tier 2: Sec. 5.7.4.1) **Comments:**

HIGH SEISMICITY (COMPLETE THE FOLLOWING ITEMS IN ADDITION TO THE ITEMS FOR LOW AND MODERATE SEISMICITY)

CONNECTIONS

				Description
C	NC	N/A	U	WOOD SILL BOLTS: Sill bolts are spaced at 6 ft or less with acceptable edge and end distance provided for wood and concrete. (Commentary: Sec. A.5.3.7. Tier 2: Sec. 5.7.3.3) **Comments: Compliance is inferred as being likely based on observations at other adjacent similar buildings.**

DIAPHRAGMS

				Description
C	NC	N/A	U	DIAPHRAGM CONTINUITY: The diaphragms are not composed of split-level floors and do not have expansion joints. (Commentary: Sec. A.4.1.1. Tier 2: Sec. 5.6.1.1) **Comments: There are no split levels or separation joints in the building.**
☐	☐	☐	☒	ROOF CHORD CONTINUITY: All chord elements are continuous, regardless of changes in roof elevation. (Commentary: Sec. A.4.1.3. Tier 2: Sec. 5.6.1.1) **Comments:**
☒	☐	☐	☐	STRAIGHT SHEATHING: All straight-sheathed diaphragms have aspect ratios less than 2-to-1 in the direction being considered. (Commentary: Sec. A.4.2.1. Tier 2: Sec. 5.6.2) **Comments: Whether straight or diagonally sheathed, all diaphragms have less than 2:1 aspect ratios.**

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ASCE 41-17
Collapse Prevention Structural Checklist For Building Type W1-W1A

C	NC	N/A	U	
☐	☒	☐	☐	SPANS: All wood diaphragms with spans greater than 24 ft (7.3 m) consist of wood structural panels or diagonal sheathing. (Commentary: Sec. A.4.2.2. Tier 2: Sec. 5.6.2) **Comments: All horizontal wood diaphragms are likely to have straight sheathing.**
☒	☐	☐	☐	DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 40 ft (12 m) and have aspect ratios less than or equal to 4-to-1. (Commentary: Sec. A.4.2.3. Tier 2: Sec. 5.6.2) **Comments: All diaphragm spans are less than 40 ft.**
☐	☐	☒	☐	OTHER DIAPHRAGMS: The diaphragms do not consist of a system other than wood, metal deck, concrete, or horizontal bracing. (Commentary: Sec. A.4.7.1. Tier 2: Sec. 5.6.5) **Comments:**

Note: **C** = Compliant **NC** = Noncompliant **N/A** = Not Applicable **U** = Unknown

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Appendix C

UCOP Seismic Safety policy Falling Hazards Assessment Summary

UC Campus:	UCSF Parnassus			Date:	07/24/2019		
Building CAAN:	2005	Auxiliary CAAN:		By Firm:	Richard Niewiarowski		
Building Name:	Single Family Residence			Initials:	*RWN*	Checked:	
Building Address:	1320 3rd Avenue, San Francisco, CA			Page:	1	of	1

UCOP SEISMIC SAFETY POLICY
Falling Hazard Assessment Summary

	Description
P ☐ N/A ☒	**Heavy ceilings, features or ornamentation above large lecture halls, auditoriums, lobbies, or other areas where large numbers of people congregate (50 ppl or more)** **Comments:**
P ☐ N/A ☒	**Heavy masonry or stone veneer above exit ways or public access areas** **Comments:**
P ☐ N/A ☒	**Unbraced masonry parapets, cornices, or other ornamentation above exit ways or public access areas** **Comments:**
P ☐ N/A ☒	**Unrestrained hazardous material storage** **Comments:**
P ☐ N/A ☒	**Masonry chimneys** **Comments:**
P ☐ N/A ☒	**Unrestrained natural gas-fueled equipment such as water heaters, boilers, emergency generators, etc.** **Comments:**
P ☐ N/A ☒	**Other:** **Comments:**
P ☐ N/A ☒	**Other:** **Comments:**
P ☐ N/A ☒	**Other:** **Comments:**

Falling Hazards Risk: *Low*

Note: P= Present, N/A = Not Applicable; Falling Hazards Risk: Low, Moderate, or High

Appendix D

Quick Check Calculations

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Structural Engineer

1946 Whitecliff Court
Walnut Creek, CA 94596
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1320 3RD AVE.

AREA & WT ESTIMATE
All dimensions are approx.

Total Area = 3750 over 3 levels
⇒ 1250 ft²/FL.

ROOF WT: ±20psf
FL WT: ± 15psf
WALL WT: ± 10psf

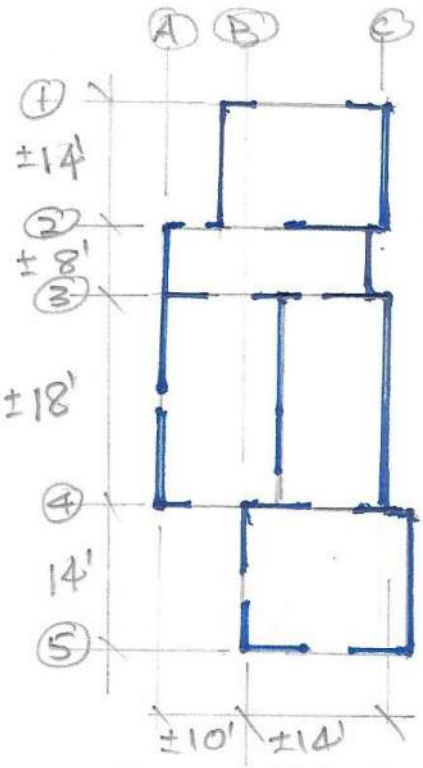
$H_1 = H_2 = 10'$
$H_3 = 12'$

$W_R \approx 1250^{ft^2} \times 20^{\#} + \frac{12'}{6}(285^{LF})(10^{\#}) \approx 42^K$

$W_3 = 1250 \times 15 + \left(\frac{10}{2} + \frac{12}{2}\right)(285)(10^{\#}) \approx 50^K$

$W_2 = 1250 \times 15 + \left[\left(\frac{10}{2}\right)(285) + \left(\frac{10}{2}\right)(200)\right](10) = 43^K$

$W_T = 135^K$



APPROX. 2ND & 3RD FL.

LONG. WALLS ≈ 160 LF
TRANS. WALLS ≈ 125 LF
} AT 2ND & 3RD FL.

LONG. WALLS ≈ 120 LF
TRANS WALLS ≈ 80 LF
} GROUND FL.

PERFORMANCE LEVEL : CP@BSE-C (2E)

for BSE-C; $S_{DS} = 1.547g$; $S_{d1} = 1.037$

$T = C_t h_n^{\beta} = (0.02)(32)^{0.75} = 0.27s$

$S_a = S_{d1}/T \leq S_{DS} = \frac{1.037}{0.27} = 3.84 \leq 1.547$

$\therefore S_a = 1.547$

$V = C S_a W = (1.0)(1.547)(135^K) = 209^K$

LEVEL	H_x	W_x	$W_x \times h_x$	$Wh_x/\Sigma Wh$	F_x	STORY V
ROOF	32'	42	1344	0.48	100	100
3RD	20'	50	1000	0.36	75	175
2ND	10'	43	430	0.16	34	209
Σ	—	135	2774	1.00	209	—

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AVERAGE WALL SHEARS: $v_{avg} = \frac{V/L}{M_S}$

For CP performance $M_S = 4.5$

STORY	V/M_S	LONGITUDINAL		TRANSVERSE	
		L_W	V_{avg}	L_W	V_{avg}
3-R	22.2	160 LF	139 plf	125 LF	178 plf
2-3	38.9	160 LF	243 plf	125 LF	311 plf
1-2	46.4	120 LF	387 plf	80 LF	580 plf

All V_{avg} shear stress levels > 100 plf (Assumed for gyp. board walls)

All shear walls (N/C)