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Date: 2019-09-04

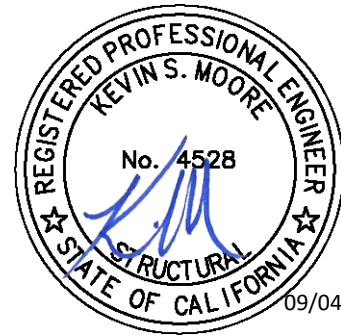
UCSF Building Seismic Ratings

CP Ammonia Facility

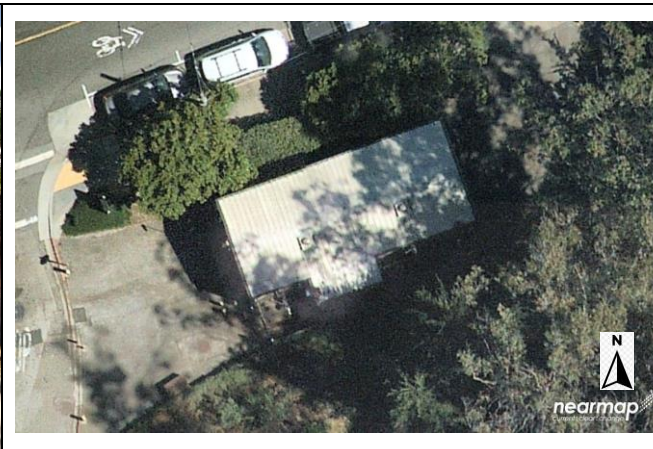
CAAN# 2213

2 Medical Center Way, San Francisco, CA 94133

UCSF Campus Site: *Parnassus*



09/04/2019



Rating summary	Entry	Notes
UC Seismic Performance Level (rating)	IV	Findings based on a drawing review and ASCE 41-17 Tier 1 evaluation ¹
Rating basis	Tier 1	ASCE 41-17
Date of rating	2019	
Recommended UCSF priority category for retrofit	NA	Priority A=Retrofit ASAP Priority B=Retrofit at next permit application for modification
Ballpark total project cost to retrofit to IV rating	NA	Current rating is IV, no retrofit required.
Is 2018-2019 rating required by UCOP?	No	Revised Policy Program Guidebook (dated 8 October 2019) would exempt this building.
Further evaluation recommended?	None	

¹ The evaluations at UCSF translate the Tier 1 evaluation to a Seismic Performance Level rating using professional judgment discussed among the Seismic Review Committee. Non-compliant items in the Tier 1 evaluation do not automatically put a building into a particular rating category, but such items are evaluated along with the combination of building features and potential deficiencies, focused on the potential for collapse or serious damage to the gravity supporting structure that may threaten occupant safety.

Building information used in this evaluation

- Structural as-built drawing – *Spill Containment Structural Plans*, Physical Plant Department, last as-built revision dated 27 March 1998. Drawings only contain foundation plans and details. Metal building drawings not available.

Scope for completing this form

Reviewed structural drawings (foundation only). Made a visit to the building and performed an ASCE 41-17 Tier 1 evaluation.

Brief Description of Structure

The CP Ammonia Facility is a one-story 790 sq ft pre-fabricated building. The building is separated into two rooms, which include a main room and an adjacent control room (approximately 100 sq ft). The ammonia tank is underground within the footprint of the main room (approximately 690 sq ft). The main room is generally empty. The control room houses electrical equipment.

Identification of Levels: The building is sited on a relatively flat site with grade on the north side being approximately 3 ft higher than the south. A 6 in. retaining wall occurs on the north side extending above and cast monolithically with the concrete foundation wall.

Foundation System: The foundation comprises reinforced concrete perimeter walls supported on continuous strip footings. The underground tank bears on a bed of compacted gravel supported on a 10 in. reinforced slab-on-grade.

Structural system for Vertical (Gravity) Load: The gabled roof framing comprises sheet metal spanning to steel channel purlins. The purlins are supported on a gabled steel moment frame of wide flange shapes. The wide flange columns are anchored to the concrete foundation walls.

Structural System for Lateral Forces: The lateral load-resisting system comprises steel moment frame bents with bolted end plate connections at the columns and at the roof peak in the short direction. The lateral load-resisting system in the long direction comprises tension only rod bracing in a single bay along each perimeter wall coupled with an EIFS type wall system. The roof diaphragm comprises some type of sheet material with diagonal steel rod bracing.

Brief description of seismic deficiencies and Expected Seismic Performance

Identified seismic deficiencies of the building include the following:

- Axial stress in rod bracing is greater than $0.5F_y$ assuming grade 36 rod. DCR is approximately 3.0.

This building is one-story and lightweight with adequate load paths. While the calculations indicate that the rod bracing is not adequate, past performance of single-story pre-fabricated buildings in earthquakes has been generally satisfactory, especially buildings without mezzanines or heavy contents that load the lightweight structural systems.

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)	N
Load path	N	Liquefaction	N
Adjacent buildings	N	Slope failure	N
Weak story	N	Surface fault rupture	N
Soft story	N	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

The building is unoccupied and used for storage. There are no nonstructural life safety hazards. Two drums are suspended off the southern wall. The drums are supported on a shelf that is structurally connected to structural wall and frame members.

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 extant	Unrestrained hazardous materials storage	None observed
Heavy masonry or stone veneer above exit ways and public access areas	None extant	Masonry chimneys	None observed
Unbraced masonry parapets, cornices or other ornamentation above exit ways and public access areas	Not applicable	Unrestrained natural gas-fueled equipment such as water heaters, boilers, emergency generators, etc.	None observed

Basis of seismic performance level rating

The building rating of IV can be attributed to the lack of critical deficiencies and the good performance of single-story, lightweight pre-fabricated metal buildings in past earthquakes. The building has an adequate load path transferring roof diaphragm forces to the moment frames and braces and down to the foundation through adequate anchorage.

Recommendations for further evaluation or retrofit

We recommend that the University consider the rating in the context of the minimal quantification provided by a Tier 1 evaluation. If acceptable, no further evaluation or retrofit is necessary.

Peer review comments on rating

The structural members of the UCSF Seismic Review Committee (SRC) reviewed the evaluation on 4 September 2019 and agree that the rating is IV. The SRC agrees that further study is not necessary for this building.

Additional building data	Entry	Notes
Latitude	37.76392°	
Longitude	-122.45582°	
Are there other structures besides this one under the same CAAN#	No	
Number of stories above lowest perimeter grade	1	
Number of stories (basements) below lowest perimeter grade	0	
Building occupiable area (OGSF)	790	From UCOP spreadsheet
Risk Category per 2016 CBC 1604.5	I	
Building structural height, h_n	20 ft	As defined per ASCE 7-16 Section 11.2
Coefficient for period, C_t	0.02	ASCE 41-17 equation 4-4 and 7-18
Coefficient for period, ζ	0.75	ASCE 41-17 equation 4-4 and 7-18
Estimated fundamental period	0.19 sec	ASCE 41-17 equation 4-4 and 7-18
Site data		
975 yr hazard parameters S_s, S_1	1.53, 0.603	UCSF Group 3 Buildings, Geotechnical Characteristic and Geohazards (2019)
Site class	C	UCSF Group 3 Buildings, Geotechnical Characteristic and Geohazards (2019)
Site class basis	Assumed	UCSF Group 3 Buildings, Geotechnical Characteristic and Geohazards (2019)
Site parameters F_a, F_v	1.2, 1.4	UCSF Group 3 Buildings, Geotechnical Characteristic and Geohazards (2019)
Ground motion parameters S_{cs}, S_{c1}	1.836, 0.844	UCSF Group 3 Buildings, Geotechnical Characteristic and Geohazards (2019)
S_a at building period	1.836	Calculated
Site V_{s30}	730 m/s	UCSF Group 3 Buildings, Geotechnical Characteristic and Geohazards (2019)
V_{s30} basis	Estimated	UCSF Group 3 Buildings, Geotechnical Characteristic and Geohazards (2019)
Liquefaction potential	No	UCSF Group 3 Buildings, Geotechnical Characteristic and Geohazards (2019)
Liquefaction assessment basis	Estimated	UCSF Group 3 Buildings, Geotechnical Characteristic and Geohazards (2019)
Landslide potential	No	UCSF Group 3 Buildings, Geotechnical Characteristic and Geohazards (2019)
Landslide assessment basis	Flat Site	Rutherford + Chekene Study, 2006

Active fault-rupture hazard identified at site?	No	UCSF Group 3 Buildings, Geotechnical Characteristic and Geohazards (2019)
Site-specific ground motion study?	No	
Applicable code		
Applicable code or approx. date of original construction	As-Built Foundation Drawings Dated: 1998	
Applicable code for partial retrofit	None	No partial retrofit known
Applicable code for full retrofit	None	No full retrofit known
Model building data		
Model building type North-South	S3	Metal building
Model building type East-West	S3	Metal building
FEMA P-154 score	N/A	Not included here because we performed ASCE 41 Tier 1 evaluation.
Previous ratings		
Most recent rating	None	
Date of most recent rating	-	
2 nd most recent rating	-	
Date of 2 nd most recent rating	-	
3 rd most recent rating	-	
Date of 3 rd most recent rating	-	
Appendices		
ASCE 41 Tier 1 checklist included here?	Yes	Refer to attached checklist file

Appendix A

Building Photos



Photo 1. West Elevation.



Photo 2. Moment Frame and Roof Framing.



Photo 3



Photo 4. Interior showing rod bracing.



Photo 5. Interior showing rod bracing and moment connection.



Photo 6



Photo 7



Photo 8



Photo 9

Appendix B

Checklists

UC Campus:	San Francisco – Parnassus			Date:	4 September 2019		
Building CAAN:	2213	Auxiliary CAAN:		By Firm:	Simpson Gumpertz & Heger		
Building Name:	CP Ammonia Facility			Initials:	KDP	Checked:	KSM
Building Address:	2 Medical Center Way, San Francisco			Page:	1	of	3

ASCE 41-17 Collapse Prevention Basic Configuration Checklist

LOW SEISMICITY

BUILDING SYSTEMS - GENERAL

	Description
C NC N/A U <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<p>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)</p> <p>Comments: Load path is clearly defined from roof to foundation.</p>
C NC N/A U <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<p>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)</p> <p>Comments: No surrounding buildings with 1.5% of shed height.</p>
C NC N/A U <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	<p>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)</p> <p>Comments: Single story building w/ no mezzanine.</p>

BUILDING SYSTEMS - BUILDING CONFIGURATION

	Description
C NC N/A U <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	<p>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. A.2.2.2. Tier 2: Sec. 5.4.2.1)</p> <p>Comments: Single-story building.</p>
C NC N/A U <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	<p>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)</p> <p>Comments: Single-story building.</p>
C NC N/A U <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	<p>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)</p> <p>Comments: Single-story building.</p>

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

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ASCE 41-17 Collapse Prevention Basic Configuration Checklist

C <input type="radio"/> NC <input type="radio"/> N/A <input checked="" type="radio"/> U <input type="radio"/>	<p>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)</p> <p>Comments: Single-story building.</p>
C <input type="radio"/> NC <input type="radio"/> N/A <input checked="" type="radio"/> U <input type="radio"/>	<p>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)</p> <p>Comments: Single-story building.</p>
C <input checked="" type="radio"/> NC <input type="radio"/> N/A <input type="radio"/> U <input type="radio"/>	<p>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)</p> <p>Comments: Symmetric single story building.</p>

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

GEOLOGIC SITE HAZARD

	Description
C <input checked="" type="radio"/> NC <input type="radio"/> N/A <input type="radio"/> U <input type="radio"/>	<p>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)</p> <p>Comments: Liquefaction potential is negligible.</p>
C <input type="radio"/> NC <input type="radio"/> N/A <input type="radio"/> U <input checked="" type="radio"/>	<p>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)</p> <p>Comments: R+C study shows unlikely susceptibility.</p>
C <input checked="" type="radio"/> NC <input type="radio"/> N/A <input type="radio"/> U <input type="radio"/>	<p>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)</p> <p>Comments: Faults are adequately distant and do not pose a risk at this site.</p>

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Building Address:	2 Medical Center Way, San Francisco			Page:	3	of	3

**ASCE 41-17
Collapse Prevention Basic Configuration Checklist**

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

FOUNDATION CONFIGURATION

	Description
C NC N/A U <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>	<p>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)</p> <p>Comments: The base/height ratio is slightly less than $0.6S_a$ in the short direction.</p>
C NC N/A U <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	<p>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)</p> <p>Comments: Foundation is a perimeter continuous strip footing.</p>

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

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Building Address:	2 Medical Center Way, San Francisco, CA			Page:	1	of	2

ASCE 41-17 Collapse Prevention Structural Checklist For Building Type S3

LOW AND MODERATE SEISMICITY

SEISMIC-FORCE-RESISTING SYSTEM

	Description
C NC N/A U <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>	BRACE AXIAL STRESS CHECK: The axial stress in the diagonals, calculated using the Quick Check procedure of Section 4.4.3.4, is less than $0.50F_y$. (Commentary: Sec. A.3.3.1.2. Tier 2: Sec. 5.5.4.1) Comments: Axial stress is approximately 3.0Fy assuming grade 36 rods.

CONNECTIONS

	Description
C NC N/A U <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	TRANSFER TO STEEL FRAMES: Diaphragms are connected for transfer of seismic forces to the steel moment frames. (Commentary: Sec. A.5.2.2. Tier 2: Sec. 5.7.2) Comments: In-plane diagonal rods are provided.
C NC N/A U <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	STEEL COLUMNS: The columns in seismic-force-resisting frames are anchored to the building foundation. (Commentary: Sec. A.5.3.1. Tier 2: Sec. 5.7.3.1) Comments: Columns are anchored to foundation with rods.

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

SEISMIC-FORCE-RESISTING SYSTEM

	Description
C NC N/A U <input type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/>	MOMENT-RESISTING CONNECTIONS: All moment connections are able to develop the elastic moment ($F_y S$) of the adjoining members. (Commentary: Sec. A.3.1.3.4. Tier 2: Sec. 5.5.2.2.1) Comments: Beam sizes are unknown.
C NC N/A U <input type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/>	COMPACT MEMBERS: All frame elements meet compact section requirements in accordance with AISC 360, Table B4.1. (Commentary: Sec. A.3.1.3.8. Tier 2: Sec. 5.5.2.2.4) Comments: Beam and column sizes unknown.

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

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Building CAAN:	2213	Auxiliary CAAN:		By Firm:	Simpson Gumpertz & Heger		
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Building Address:	2 Medical Center Way, San Francisco, CA			Page:	2	of	2

ASCE 41-17
Collapse Prevention Structural Checklist For Building Type S3

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

SEISMIC-FORCE-RESISTING SYSTEM

DIAPHRAGMS

				Description
C	NC	N/A	U	OTHER DIAPHRAGMS: 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)
<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Comments: Diaphragm comprises horizontal rod bracing.

CONNECTIONS

				Description
C	NC	N/A	U	ROOF PANELS: Where considered as diaphragm elements for lateral resistance, metal, plastic, or cementitious roof panels are positively attached to the roof framing to resist seismic forces. (Commentary: Sec. A.5.5.1. Tier 2: Sec. 5.7.5)
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Comments: Diaphragm comprises horizontal rod bracing.
C	NC	N/A	U	WALL PANELS: Where considered as shear elements for lateral resistance, metal, fiberglass, or cementitious wall panels are positively attached to the framing and foundation to resist seismic forces. (Commentary: Sec. A.5.5.2. Tier 2: Sec. 5.7.5)
<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Comments: Lateral-force resisting system comprises diagonal rod bracing in the long direction and moment-resisting frames in the short direction.

Appendix C

UCOP Seismic Safety Policy Falling Hazards Assessment Summary

UC Campus:	UCSF – Parnassus			Date:	4 September 2019		
Building CAAN:	2213	Auxiliary CAAN:		By Firm:	Simpson Gumpertz & Heger		
Building Name:	CP Ammonia Facility			Initials:	KDP	Checked:	KSM
Building Address:	2 Medical Center Way, San Francisco			Page:	1	of	1

UCOP SEISMIC SAFETY POLICY Falling Hazard Assessment Summary

		Description
P <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	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: No areas of congregation of over 50 people are located within the building.
P <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	Heavy masonry or stone veneer above exit ways or public access areas Comments: No masonry or stone veneer is located near exit ways or public access areas.
P <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	Unbraced masonry parapets, cornices, or other ornamentation above exit ways or public access areas Comments: There are no masonry parapets, cornices, or other ornamentation.
P <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	Unrestrained hazardous material storage Comments: Ammonia is housed in a buried underground tank.
P <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	Masonry chimneys Comments: No masonry chimneys are in the building.
P <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	Unrestrained natural gas-fueled equipment such as water heaters, boilers, emergency generators, etc. Comments: No unrestrained equipment in the building.
P <input type="checkbox"/>	N/A <input type="checkbox"/>	Other: Comments:
P <input type="checkbox"/>	N/A <input type="checkbox"/>	Other: Comments:
P <input type="checkbox"/>	N/A <input type="checkbox"/>	Other: Comments:

Falling Hazards Risk: *Low*

Appendix D

Tier 1 Calculations

CLIENT UCSF
SUBJECT CP AMMONIA QUICK CHECKS

SHEET NO. _____

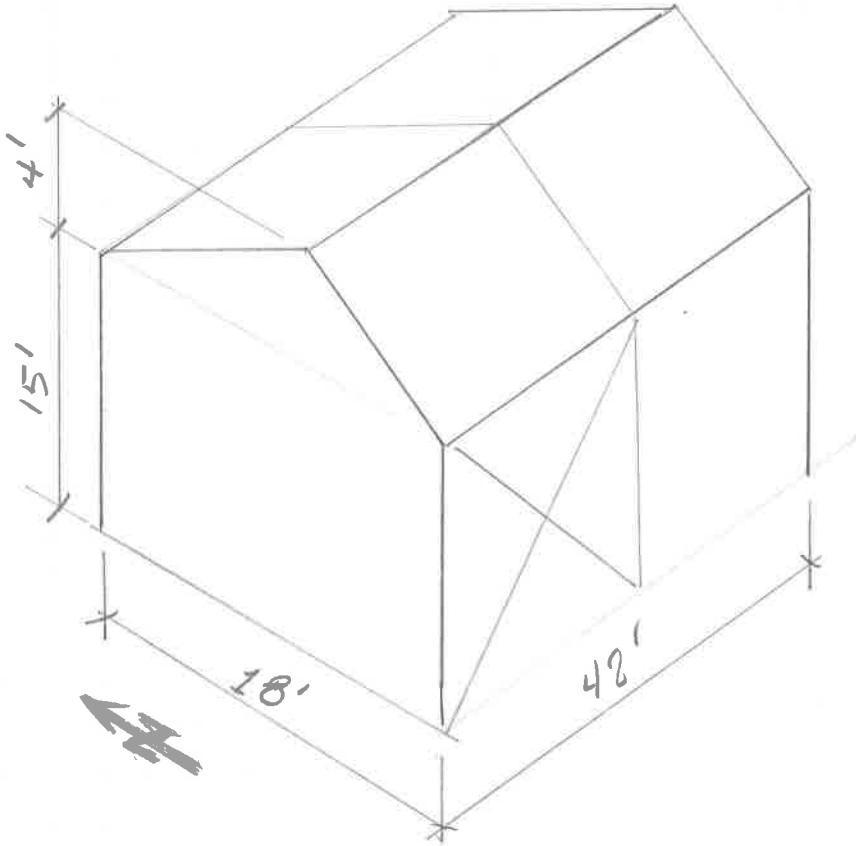
PROJECT NO. _____

DATE 8/26/19

BY KDP

CHECKED BY _____

DL = 10 psf



SEISMIC WEIGHT

NORTH & SOUTH WALLS $2(48)(15)(10 \text{ psf}) = 12.6 \text{ K}$
 EAST & WEST WALLS $2[(18)(15) + \frac{1}{2}(4)(18)](10 \text{ psf}) = 6.1 \text{ K}$
 ROOF $2[48\sqrt{48^2 + 9^2}](10 \text{ psf}) = 8.3 \text{ K}$

WEIGHT TRIB TO ROOF = $0.5(12.6 + 6.1) + 8.3 = 18 \text{ K}$

SEISMIC DEMAND = $C_s a W = 1.4 (1.836) (18 \text{ K}) = 45 \text{ K}$



CLIENT UCSF

SUBJECT CP AMMONIA QUICK CHECK

DEMAND ON N & S LINES = $45/2 = 22.5^k$

ROD BRACING

$1/2" \phi$

$A_g F_y = \frac{\pi (0.5)^2}{4} (36) = 7.1^k$

$< 22.5^k$

IGNORING
ROD
INCLINATION

NO GOOD

STUCCO PANELS

$P_n = 100 \text{ psf} \times 42' = 4.2^k$ NO GOOD

Appendix E

Structural Drawing - S-02

PLOTTED: / /

D

C

B

A

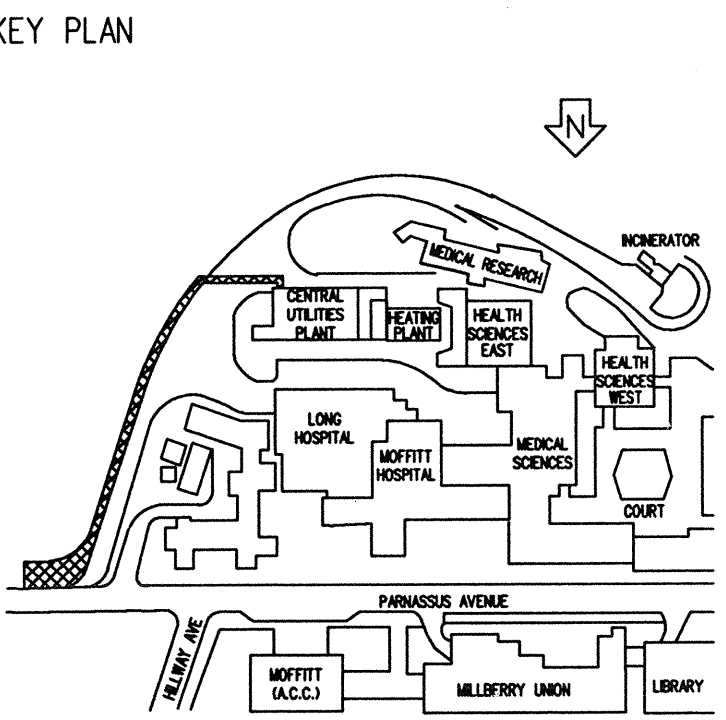
UCSF
UNIVERSITY OF CALIFORNIA
SAN FRANCISCO
 FACILITIES MANAGEMENT
 ARCHITECTURAL DESIGN AND ENGINEERING DEPT.
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 1403 WESSEX STREET, SAN FRANCISCO, CA 94103

WILDMAN & MORRIS
 ARCHITECTS - ENGINEERS
 120 HOWARD ST., STE.500, SAN FRANCISCO, CA 94105

REV	DESCRIPTION	BY	DATE
AS BUILT		JWD	3/27/98
4	LANDSCAPE COORDINATION	JWD	7/9/97
3	LANDSCAPE CHANGES	JWD	6/26/97
2	PULL-THROUGH CHANGE	JWD	6/9/97
1	FINAL SUBMITTAL	JWD	4/4/97
0	100% DESIGN SUBMITTAL	JWD	3/24/97



PROJECT
CENTRAL UTILITIES PLANT
PARNASSUS AVENUE CAMPUS
SAN FRANCISCO, CALIFORNIA

SHEET TITLE
SPILL CONTAINMENT
STRUCTURAL PLAN,
SECTIONS AND DETAILS

DRAWN BY: RAM	UCSF FILE No. 3989
DESIGNED BY RFW	PROJECT No. M 1060A
APPROVED BY RFW	DRAWING No. S-02
DATE: 9 JUNE 97	AS BUILT

