ttCampus: UCSF
Building Name: Mission Bay Hospital Parking
CAAN ID: 3053
Auxiliary Building ID: NA

UNIVERSITY OF CALIFORNIA

Date: 8/16/2019

FORM 1
CERTIFICATE OF SEISMIC PERFORMANCE LEVEL
☒ **UC-Designed & Constructed Facility**
☐ **Campus-Acquired or Leased Facility**

BUILDING DATA
Building Name: Mission Bay Hospital Parking Garage
Address: 1835 Owens St.
Site location coordinates: Latitude 37.7659 Longitudinal -122.3912

UCOP SEISMIC PERFORMANCE LEVEL (OR "RATING"): III

ASCE 41-17 Model Building Type:
a. Longitudinal Direction: C2: Concrete Shear Walls
b. Transverse Direction: C2: Concrete Shear Walls

Gross Square Footage: 223,905
Number of stories *above* grade: 0
Number of basement stories *below* grade: 10

Year Original Building was Constructed: 2013
Original Building Design Code & Year: CBC-2010
Retrofit Building Design Code & Code (if applicable): NA

SITE INFORMATION
Site Class: E Basis: (USGS Soil Type and Shaking Hazard in the San Francisco Bay Area, 8/14/2019, NA)
Geologic Hazards:
Fault Rupture: No Basis: UCSF Presumptive Buildings – Geotechnical Assessment, Egan (2019)
Liquefaction: No Basis: UCSF Presumptive Buildings – Geotechnical Assessment, Egan (2019)
Landslide: No Basis: UCSF Presumptive Buildings – Geotechnical Assessment, Egan (2019)

ATTACHMENT
Original Structural Drawings: (UCSF Medical Center at Mission Bay Parking Structure, Walker, 3/14/2011, S-001) or
Seismic Evaluation: NA
Retrofit Structural Drawings: NA

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CERTIFICATION & PRESUMPTIVE RATING VERIFICATION STATEMENT

I, Maryann T. Phipps, a California-licensed structural engineer, am responsible for the completion of this certificate, and I have no ownership interest in the property identified above. My scope of review to support the completion of this certificate included both of the following ("No" responses must include an explanation):

a) the review of structural drawings indicating that they are as-built or record drawings, or that they otherwise are the basis for the construction of the building: ☑ Yes ☐ No
b) visiting the building to verify the observable existing conditions are reasonably consistent with those shown on the structural drawings: ☑ Yes ☐ No

Based on my review, I have verified that the UCOP Seismic Performance Level (SPL) is presumptively permitted by the following UC Seismic Program Guidebook provision (choose one of the following):

☑ 1) Contract documents indicate that the original design and construction of the aforementioned building is in accordance with the benchmark design code year (or later) building code seismic design provisions for UBC or IBC listed in Table 1 below.

☐ 2) The existing SPL rating is based on an acceptable basis of seismic evaluation completed in 2006 or later.

☐ 3) Contract documents indicate that a comprehensive[1] building seismic retrofit design was fully-constructed with an engineered design based on the 1997 UBC/1998 ***or later*** CBC, and (choose one of the following):

☐ the retrofit project was completed by the UC campus. Further, the design was based on ground motion parameters, at a minimum, corresponding to BSE-1E (or BSE-R) and BSE-2E (or BSE-C) as defined in ASCE 41, or the full design basis ground motion required in the 1997 UBC/1998 CBC ***or later*** for EXISTING buildings, and is presumptively assigned an SPL rating of IV.
☐ the retrofit project was completed by the UC campus. Further, the design was based on ground motion parameters, at a minimum, corresponding to BSE-1 (or BSE-1N) and BSE-2 (or BSE-2N) as defined in ASCE 41, or the full design basis ground motion required in the 1997 UBC/1998 ***or later*** CBC for NEW buildings, and is presumptively assigned an SPL rating of III.
☐ the retrofit project was not completed by the UC campus following UC policies, and is presumptively assigned an SPL rating of IV.

[1] A comprehensive retrofit addresses the entire building structural system as indicated by the associated seismic evaluation, as opposed to addressing selective portions of the structural system.

UNIVERSITY OF CALIFORNIA

Date: 8/16/2019

CERTIFICATION SIGNATURE

Maryann T. Phipps	President
Print Name	Title
S2995	6/30/2020
CA Professional Registration No.	License Expiration Date
Maryann T. Phipps	8/16/2019
Signature	Date

Estructure, (510) 235-3116, 1144 65th St Suite A, Oakland
Firm Name, Phone Number, and Address

AFFIX SEAL HERE

9/4/2019

Table 1: Benchmark Building Codes and Standards

Building Type[a,b]	Building Seismic Design Provisions	
	UBC	IBC
Wood frame, wood shear panels (Types W1 and W2)	1976	2000
Wood frame, wood shear panels (Type W1a)	1976	2000
Steel moment-resisting frame (Types S1 and S1a)	1997	2000
Steel concentrically braced frame (Types S2 and S2a)	1997	2000
Steel eccentrically braced frame (Types S2 and S2a)	1988[g]	2000
Buckling-restrained braced frame (Types S2 and S2a)	[f]	2006
Metal building frames (Type S3)	[f]	2000
Steel frame with concrete shear walls (Type S4)	1994	2000
Steel frame with URM infill (Types S5 and S5a)	[f]	2000
Steel plate shear wall (Type S6)	[f]	2006
Cold-formed steel light-frame construction—shear wall system (Type CFS1)	1997[h]	2000
Cold-formed steel light-frame construction—strap-braced wall system (Type CFS2)	[f]	2003
Reinforced concrete moment-resisting frame (Type C1)[i]	1994	2000
Reinforced concrete shear walls (Types C2 and C2a)	1994	2000
Concrete frame with URM infill (Types C3 and C3a)	[f]	[f]
Tilt-up concrete (Types PC1 and PC1a)	1997	2000
Precast concrete frame (Types PC2 and PC2a)	[f]	2000
Reinforced masonry (Type RM1)	1997	2000
Reinforced masonry (Type RM2)	1994	2000
Unreinforced masonry (Type URM)	[f]	[f]
Unreinforced masonry (Type URMa)	[f]	[f]
Seismic isolation or passive dissipation	1991	2000

Note: This table has been adapted from ASCE 41-17 Table 3-2. Benchmark Building Codes and Standards for Life Safety Structural Performed at BSE-1E.

Note: UBC = *Uniform Building Code*. IBC = *International Building Code*.

[a] Building type refers to one of the common building types defined in Table 3-1 of ASCE 41-17.

[b] Buildings on hillside sites shall not be considered Benchmark Buildings.

[c] not used

[d] not used

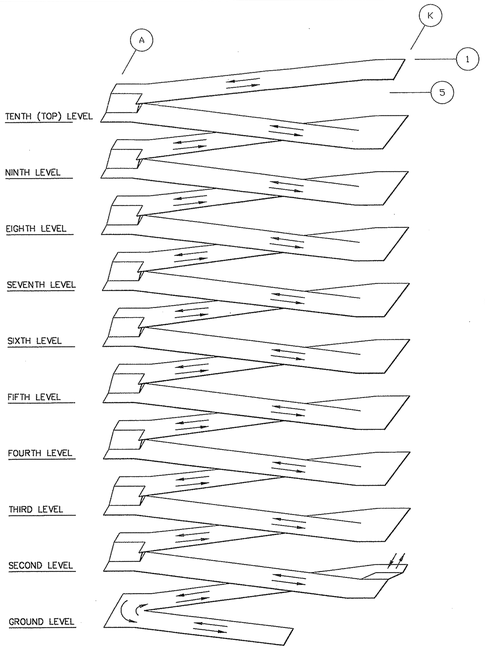
[e] not used

[f] No benchmark year; buildings shall be evaluated in accordance with Section III.J.

[g] Steel eccentrically braced frames with links adjacent to columns shall comply with the 1994 UBC Emergency Provisions, published September/October 1994, or subsequent requirements.

[h] Cold-formed steel shear walls with wood structural panels only.

[i] Flat slab concrete moment frames shall not be considered Benchmark Buildings.



ISOMETRIC
SUGGESTED POUR SEQUENCE

The location of closure pours, construction joints, and weakened plane joints shown on the structural drawings shall not be changed without the approval of the structural engineer. The layout of the joints is to allow for movement of the concrete without damage or distress to the surrounding walls, frames and slabs. Bids and construction schedule shall be based on the location of the joints shown. Contractors shall not deviate from the structural drawings, without Engineers approval.

GENERAL NOTES

I. GENERAL

A. Construction

1. Construction shall be in accordance with all applicable Federal, State of California and City of San Francisco codes and ordinances (CBC 2010) including fire codes.
2. This structure is classified as an open parking structure, see Architectural drawings for occupancy group and construction type.
3. The contractor shall check all plans, sections and details shown on the Structural Drawings for conformance with the Architectural Drawings. The Structural Drawings show only the structural elements of the building including all framed floors and roof construction and all bearing and shear walls. See Architectural Drawings for wall and column layout dimensions, size and location of wall openings, floor elevations and depressions. Discrepancies, if any, between the Drawings shall be reported to the Engineer for clarification or adjustments before proceeding with work.
4. In the event that certain features of the construction are not shown on the Drawings, or called for in the specifications, then their construction shall be of the same general character as similar conditions that are shown or specified.

B. Design Live Loads:

	Description	Load
1.	Roof, stair/elevator towers	20 psf
2.	Parking – Passenger vehicles	40 psf
	Office	50 psf
	Actual reduced live load for each component to be per applicable Building Code equations considering tributary area.	
3.	Concentrated wheel load (an 4.5" x 4.5" area)	3000 lb
4.	Bumper impact load, on 1'-0" sq, 18" or 27" above finished floor	6000 lb
5.	Slabs on grade (Parking)	40 psf
6.	Office Areas	50 psf
7.	Stairs, landings and lobbies	100 psf
8.	Elevator machine room	150 psf
9.	Wind design criteria	
a.	Basic wind speed (3 second gust)	90 mph
b	Wind load importance factor (Iw)	1.0
c.	Wind exposure	C
d.	Internal pressure coefficient	±0.18
e.	Components and cladding	see specifications
10.	Earthquake design criteria	
a.	Seismic importance factor (Ie)	1.0
b	Spectral response acceleration for short period (Ss)	1.50g
c.	Spectral response acceleration at 1-second period (S_1)	0.623g
d.	Site class	D
e.	Design Spectral response acceleration for short period (S_{DS})	1.001g
f.	Design spectral response acceleration for 1-second period (S_{D1})	0.623g
g.	Seismic design category	D
h.	Resisting system in East-West direction	Special Reinforced Concrete
1)	Basic structural system	Shear Walls
2)	Response modification factor (R)	6.0
3)	Deflection amplification factor (Cd)	5.0
4)	Analysis procedure	Modal Response Spectrum Analysis
5)	T	0.49 sec
6)	Base shear	4733k
i.	Resisting system in North-South direction	Special Reinforced Concrete
1)	Basic structural system	Shear Walls
2)	Response modification factor (R)	6.0
3)	Deflection amplification factor (Cd)	5.0
4)	Analysis procedure	Modal Response Spectrum Analysis
5)	T	0.54 sec
6)	Base shear	4733k
j.	See sheet S-102, Note 29 for seismic drifts	
11.	Mechanical, Electrical, Plumbing (Dead Load)	3 psf
12.	Per PCI Design Handbook (6th Edition)	
a.	Design temperature differential	40 degrees Farenheit
b	Annual average ambient relative humidity	30%

C. Fire ratings, conforming to MNL-124-89 and ASTM E11 are as follows:

	Structural Element	Parking
1.	Post-tensioned concrete slabs	1 hour
2.	Post-tensioned concrete beams	1 hour
3.	Concrete columns	1 hour
4	Concrete Walls	1 hour
5.	Stair/Elevator towers	1 hour

D. Future Expansion

This parking facility is designed for future horizontal expansion to the south.

E. Existing Construction:

Field verify all existing elevations, dimensions, and conditions shown on Drawings before any material fabrication and erection or concrete placement for new construction. Immediately report all discrepancies to Engineer,

II. FOUNDATION WORK

A. Foundations, retaining walls, basement walls, foundation drainage and slabs on grade have been designed in accordance with the recommendations of Geomatrix, Report #13370.000, dated April 2008. For more information see sections of Specification Division 2.

B. Foundation Design

	Description	Allowable Load
1.	Driven Piles	refer to soils report

C. Retaining Wall Design

1.	Design equivalent fluid pressure behind basement type walls laterally supported top and bottom	55 psf/ft
2.	Design equivalent fluid pressure behind cantilevered retaining walls	35 psf/ft*
3.	Coefficient of sliding friction	
4.	Passive pressure	400 psf/ft

* plus seismic increment active pressure.

D. See Specification Sections of Division 2 for excavation, dewatering and compaction.

E. Footings shall bear on:
1. Undisturbed natural soil, having a consistency of at least dense and/or properly compacted fill.

F. Before placement of granular fill below slab-on-grade, the entire surface shall be proof rolled and observed by the testing agency for soft or unstable material. Remove unacceptable material and replace with approved granular fill.

III. CONCRETE

A. Material Properties – Concrete:

		f'c, psi at 28 days	Max W/C Ratio	Max Slump, Inches +/- 1"
1.	Cast-in-place concrete			
a.	Footings/Tie beams	4000	0.50	4
b.	Grade Beams	4000	0.50	4
c.	Columns	See Schedule on S-610	0.45	3*
d.	Walls	4000, UN	0.50	4
e.	Shear Walls	See S-702 and S-703	0.50	4
f.	Superstructure Slabs, Beams**	5000	0.45	3*
g.	Structural Slab-on-Grade	5000	0.50	4
h.	Stairs, Landings, Lobbies	4000	0.50	4
i.	All other	4000	0.45	4
j.	Piles	by Contractor		
2.	Other Concrete			
	Masonry Wall Grout Fill	2400	8-10	No test
	Non-shrink, Non-stain Grout	8000	0	No test

* Prior to adding water reducer.

** Aggregate used for post-tensioned concrete shall be hard rock aggregate with a minimum 35 day shrinkage rate equal to or less than 0.04%.

3. For additional information regarding Air Entrainment, see Specification Section 03300.

4. All concrete is Normal Weight: 145 pcf, unless noted.

B. Material Properties – Reinforcing and Connection Steel:

		Fy, psi	ASTM
1.	All bars, unless noted	60,000	A706**
2.	All bars in Shear Walls & Ductile Frames	60,000	A706
3.	All Chord bars	60,000	A706
4.	Welded bars	60,000	A706*
5.	Welded wire reinforcement (Smooth)	65,000	A185
6.	Post-tensioning strand	270,000 (fpu)	A416
5.	Coil bolts and Coil rods	65,000 UN	
6.	Welding for steel reinf. bars		AWS D1.4-96
7.	Deformed bar anchors	70,000	A496
8.	Headed anchor studs	60,000, (fs)	A108
9.	Headed/terminator bars	60,000	A970

* with proper preheat per AWS standards.

** or A615 equivalent per ACI 318 Section 21.1.5.2.

C. General Notes for Cast-in-Place and Precast Concrete

1. Column reinforcing shall be continuous, or shall be spliced according to ACI 318-Latest edition, Section 12.14
2. Welded wire reinforcement shall be spliced per ACI 318-Latest edition, Section 12.19
3. Provide extra reinforcing around all openings, including door openings: two #5 bars all four sides of each opening and extend 2 feet beyond the corners of the opening. Add two #5 bars 4 feet long as diagonal bars at each corner.
4. Where shown hooked, provide standard 90 degree hooks unless noted otherwise
5. When reinforcement is lap spliced, provide Class B splice typical, unless noted otherwise. See details for splice locations.
6. Provide a 3/4 inch chamfer on all exposed corners of concrete. Top edges of wall may be tooled.
7. Provide control/construction joints as shown on the Drawings. For more information, see Specification Section 03300.
8. All inserts and coil rods shall be Galvanized. See Division 3 Specifications for more information.
9. Do not place backup bars for PT anchor plates in contact with the plates. Allow one inch between anchor plate and rebar.
10. Do not bundle more than two slab tendons in a single bundle without prior written acceptance by Engineer.
11. For shoring calculations, account for construction loads and assume that beams and slabs below will support a live load of 30 psf when concrete reaches its 28 day compressive strength.
14. For post-tensioning, stress slab tendons parallel to beams first, then tendons perpendicular to beams, then stress beams, and then stress girders. Do not change the order of stressing.
15. Shore beams to stressed tiers below as required.
16. All plates or inserts required for connections to post-tensioned members shall be cast in the post-tensioned member. Use of power propelled fasteners or drilled-in anchors is prohibited, unless accepted in writing by the Engineer.
17. Precast embed shop drawings must be approved and embedded items installed where required prior to placing concrete.

D. Additional notes for precast concrete:

1. The Parking Structure contract Drawings are based on performance type design for precast facade. An integral part of this Project is preparation of final Design Drawings, Design Calculations, and Shop Drawings necessary for fabrication and construction of all precast facade components and required accessories in accordance with all code and design requirements. See Specification Section 03410 for more requirements.
2. Provide all openings, reveals, drips, blockouts, inserts, etc., cast into precast according to Architectural, Mechanical and Electrical Drawings. Coordinate exact sizes and locations with respective Contractor.
3. Provide (2)#4 L bars minimum (3'-0" legs) at each corner of precast panels.
4. See Drawings for protection of embedded metals.
5. The structure is designed for its final service condition. Contractor shall be responsible for piece design to withstand handling and erection forces, and bracing as required to assure structural stability during construction. Bracing must remain in place until final stability is achieved through realization of required cast-in-place concrete strength. See structural details.
6. Minimum additional load factor of 1.2 shall be used for design of all facade connections unless superseded by seismic requirements of applicable building code. See specifications section 03410 for more information.

E. Concrete Protection for Reinforcement:

1. The minimum concrete protection for reinforcement shall be per ACI 318-Latest edition, Section 7.7
2. For prestressed and non-prestressed reinforcement in prestressed/precast concrete members, the minimum concrete protection at top of members shall be 1-1/2" inches consistent with ACI 362.1R-97, "Guide for the Design of Durable Parking Structures."
3. For prestressed and non-prestressed reinforcement in cast-in-place, post-tensioned concrete, the minimum concrete protection shall be as follows:

		Concrete Cover (inches) Parking
a.	Slab reinforcement	1"
b.	Beam top reinforcement UN	2"
c.	Beam stirrups at sides	2"
d.	Beam stirrups at top and bottom	1-1/2"
e.	Column Ties	2"

F. Epoxy Coating for Reinforcement

1. See Specification Section 03300 regarding Epoxy Coating.

IV. CONCRETE MASONRY

see RFI#52 CMU Block

A. Material Properties

1. Compressive strength of masonry, fm = 1800 psi
2. Mortar type "M" or "S"

B General Concrete Masonry Notes

1. Provide dowels between foundations and walls equal to size and spacing of the vertical wall reinforcing, unless noted otherwise.
2. Minimum reinforcement for masonry walls subject to bumper loads shall be #5 at 16 inches on center for a height of 2 feet above floor and grout all block cores solid up to 2 feet above floor. Minimum reinforcement for masonry walls not subject to bumper loads shall be #5 at 16 inches on center plus one #5 vertical at corners, edges of openings, and ends of walls. Grout all block cells full.
3. In masonry walls, provide 8 inch wide bond beam lintels reinforced with two #5 bars continuous unless shown otherwise on Drawings. Concrete block for three courses directly below bond beam bearing and extending two #5 bars continuous unless shown otherwise on Drawings. Concrete block for three courses directly below bond beam bearing and extending out at on angle of 45 degrees shall be solid block or shall be grouted solid, unless noted otherwise.
4. Provide control joints in masonry walls at 20 feet on center maximum or as noted on the Drawings.

V. STRUCTURAL STEEL

		Fy,psi	ASTM
A.	Structural shapes		
1.	W-shapes	50,000	A992
2.	M-shapes, S-shapes, HP-shapes, channels, angles	36,000	A36
B.	Hollow Structural Sections		
1.	Rectangular and square	46,000	A500 GR. B
2.	M-shapes, S-shapes,	42,000	A500 GR. B
C.	Steel Pipes	35,000	A53 GR. B
D.	Structural Plates and Bars	36,000	A36
E.	Bolts		
1.	1/2" dia to 1" dia, UN	92,000	A325
2.	1-1/8" dia to 1-1/2" dia, UN	81,000	A325
F.	Anchor Rods	36,000	F1554 GR. 36
G.	Welding Electrodes	E90XX	AWS D1.1-96

H. General Structural Steel Notes

1. Lintels shall have a minimum end bearing on masonry of 8 inches, but not less than 1 inch of such bearing for each foot of opening.

I. Contractor shall submit Welding Procedure Specification (WPS) to the special inspection agency for approval prior to starting construction.

All welding shall be performed in accordance with the approved welding procedures and shall be verified by the special inspector. A copy of the approved WPS shall be available at the job site for reference.

With approval from the engineer of record, single pass fillet welds may be exempted from this requirement provided it is not on the reinforcing bars.

VI. MISCELLANEOUS

A. For exact sizes and locations of mechanical and electrical items and openings, consult respective subcontractors.

B. See Specifications for additional information.

C. Inserts called out on Drawings shall be as designated below for diameters indicated. Nomenclature is for Dayton/Richmond Concrete Accessories.

1.	1/2 inch diameter,	Type B-16
2.	3/4 inch diameter,	Type F-56, 2 Strut
3.	1 inch diameter,	Type F-56, 2 Strut
4.	1-1/4 inch diameter,	Type F-58, 4 Strut
5.	Provide coil bolts and rods with the necessary penetration into inserts to develop their full strength per the manufacturer's recommendations.	

D. Abbreviations

1.	AB	=	anchor bolt
2.	BOT	=	bottom
3.	CIP	=	cast-in-place concrete
4.	CJ	=	control joint/construction joint
5.	CLR	=	clear
6.	CMU	=	concrete masonry unit
7.	DBA	=	deformed bar anchor
8.	DIA	=	diameter
9.	DP	=	drilled pier
10.	EF	=	each face
11.	EJ	=	expansion joint
12.	EL	=	elevation
13.	FTG	=	footing
14.	EW	=	each way
15.	EWEF	=	each way, each face
16.	FD	=	floor drain
17.	GC	=	general contractor
18.	HAS	=	headed anchor studs
19.	OC	=	on center
20.	PC	=	precast concrete
21.	PT	=	post-tensioned concrete
22.	RD	=	roof drain
23.	SOG	=	slab on grade
24.	STL	=	steel
25.	TYP	=	typical
26.	UN	=	unless noted
27.	WWR	=	welded wire reinforcement

E. DO NOT SCALE THE DRAWINGS

VII. DEFERRED SUBMITTALS

A. The following items are portions of the design that will not be submitted at the of the building permit application. Design of these items will be performed and submitted by a specialty contractor during the construction phase of the project. The contractor shall submit shop drawings and calculations stamped and signed by a Professional Engineer licensed in the State of California. Shop drawings shall indicate all members sizes, reinforcing steel, connections, embedded items, etc. necessary for construction and erection. The design shall be according to the requirements of the California Building Code, latest edition. The members shall support their own weight plus all superimposed loads including impact, wind and earthquake.

B. The Engineer of Record shall review the drawings and calculations prepared by the contractor, and forward them to the Building Official with a notation indicating that the deferred submittal documents have been reviewed and that they have been found to be in general conformance with the design of the building. The deferred submittal items shall not be installed until their design and submittal documents have been approved by the Building Official.

1. Auger cast drilled piers
2. Concrete filled metal pan stairs
3. Exterior screens, fences, and signs
4. Curtainwall

C. The Parking office area is designed for a sprinkler system with an equivalent weight equal to 3 psf over the entire floor area. This loading was used for the design of both gravity and seismic lateral resisting systems. The method of attachment also complies with Chapter Six of the National Fire Protection Association Standard 13, wherein, the design shown can support five (5) times with weight of water-filled pipe plus 250 pounds at each support point of the piping system. Our review of the sprinkler shop drawings shall determine that the loading and the method of attachment, hangers and anti-sway bracing, conform to the structural requirements. The sprinkler contractor shall be responsible for the installation of the sprinkler system per the approved shop drawings.

D. The Building is designed for light weight non-structural components that attach to the building. Our review of miscellaneous steel shop drawings will verify that loading and the method of attachment conform to the structural requirements. The contractor shall be responsible for the installation per the approved shop drawings.

VIII. FIELD VISITS

A. The Structural Engineer of Record shall be retained by the Owner to provide occasional observation during construction. The Engineer shall report his observations to the Owner and Contractor. All work not conforming to the approved plans shall be reported by the Engineer to the Owner and Building Official, by a written letter. The Engineer shall submit a letter to the Building Official upon substantial completion, stating that all work related to the structural drawings has been completed according to the approved plans. Occasional Observation means the visual observation at infrequent intervals, of the structural system. Structural observation does not include or waive the responsibility for the inspection required by CBC Section 108, 1702 or other sections of the California Building Code.

B. During field visits by Walker Parking Consultants' Representatives, information communicated to the Special Inspection Agency or General Contractor is understood to be advisory only. It shall not be construed to supersede the responsibility of the Special Inspector and General Contractor to ensure that the building is constructed according to the approved plans and specifications. This advisory information is generated from a cursory review of the job site, which shall not be construed as a complete or thorough review. No deviation from the plans and specifications shall be allowed without the prior written approval of the Engineer.

IX. TESTING and INSPECTION NOTES:

A. The following tests and inspection shall be performed by an independent testing and inspection agency employed by the owner and approved by the structural engineer and the building official. Test and inspection reports shall be submitted for approval to the structural engineer and the building official. Conform to the requirements of CBC Sections 109 and 1704.

X. GRADE 75 REINFORCING MAY BE SUBSTITUTED FOR GRADE 60 REINFORCING AS FOLLOWS:

1. The total number of bars may be changed by multiplying the specified number of bars by the ratio of 60/75 and rounding up to the next whole number.
   For example:
   (18)#11 Grade 60 may be changed to (15)#11 Grade 75. 18 bars x 60/75 = 14.4 bars which rounds up to 15 bars. In some instances it may be desirable to round up to the next even number, in this example 16 bars.
2. The spacing of the bars may be changed by multiplying the specified spacing by the ratio of 60/75 and rounding down to the nearest convenient spacing.
   For example:
   #6 at 10" Grade 60 may be changed to #6 at 12" Grade 75. 10" X 75/60 = 12.5" and rounded down to 12". The maximum spacing of bars shall not exceed 18".
3. The length of lap splices and depth of embedment shall be increased by the ratio of 75/60 for Grade 75 reinforcing and rounded up to the next convenient length.
   For example:
   A 48" lap on Grade 60 bars shall be increased to 60" for Grade 75 bars.
   48" x 75/60 = 60".
4. If it is desired to change both the bar size and spacing, or the bar size and total number bars, then the structural engineer shall be consulted to provide the changes.

	Required Verification and Inspection of Construction	Continuous	Periodic
A.	Concrete Construction CBC Table 1704.4		
1.	Inspection of reinforcing steel, including prestressing tendons, and placement		X
2.	Inspection of reinforcing steel welding in accordance with Table 1704.3, Item 5b.		
3.	Inspect bolts to be installed in concrete prior to and during placement of concrete where allowable loads have been increased.	X	
4.	Verifying use of required design mix		X
5.	At the time fresh concrete is sampled to fabricate specimens for strength tests, and determine the temperature of the concrete.	X	
6.	Inspection of concrete and shotcrete placement for proper application techniques	X	
7.	Inspection for maintenance of specified curing temperature and techniques		X
8.	Inspection of prestressed concrete:		
a.	Application of prestressing forces	X	
b.	Grouting of banded prestressing tendons in the seismic-force-resisting system.	X	
9.	Erection of precast concrete members		X
10.	Verification of in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs		X
11.	Inspect formwork for shape, location and dimensions of the concrete member being formed.		X
B.	Steel Construction CBC Table 1704.3		
1.	Material verification of high-strength bolts, nuts, and washers:		
a.	Identification markings to conform to ASTM standards specified in the approved construction documents		X
b.	Manufacturer's certificate of compliance required		X
2.	Inspection of high-strength bolting:		
a.	Bearing-type connections		X
b.	Slip-critical connections (see IBC 1704.3.3)	X	X
3.	Material verification of structural steel:		
a.	Identification markings to conform to ASTM standards specified in the approved construction documents		
b.	Manufacturers' certified mill test reports		
4.	Material verification of weld filler materials:		
a.	Identification markings to conform to AWS specification in the approved construction documents		
b.	Manufacturer's certificate of compliance required.		
5.	Inspection of welding:		
a.	Structural Steel:		
1)	Complete and partial penetration groove welds	X	
2)	Multi-pass fillet welds	X	
3)	Single-pass fillet welds > 5/16"	X	
4)	Single-pass fillet welds ≤ 5/16"		X
5)	Floor and roof deck welds		X
b.	Reinforcing Steel:		
1)	Verification of weldability of reinforcing steel other than ASTM A 706		X
2)	Reinforcing steel-resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special reinforced concrete shear walls and shear reinforcement.	X	
3)	Shear reinforcement	X	
4)	Other reinforcing steel		X
6.	Inspection of steel frame joint details for compliance with approved construction documents:		X
a.	Details such as bracing and stiffening		
b.	Member locations		
c.	Application of joint details at each connection		
C.	Masonry Construction CBC Table 1704.5.1		
1.	As masonry construction begins, the following shall be verified to ensure compliance.		
a.	Properties of site-prepared mortar		X
b.	Construction of mortar joints		X
c.	Location of reinforcement, connectors, and anchorages		X
2.	The inspection program shall verify:		
a.	Size and location of structural elements		X
b.	Type, size, and location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction		X
c.	Specified size, grade, type, and type of reinforcement		X
d.	Welding of reinforcing bars	X	
e.	Protection of masonry during cold weather (temperature below 40T) or hot weather (temperature above 90T)		X
3.	Prior to grouting, the following shall be verified to ensure compliance:		
a.	Grout space is clean		X
b.	Placement of reinforcement, connectors and anchorages		X
c.	Construction of mortar joints		X
4.	Grout placement shall be verified to ensure compliance with code and construction document provisions.	X	
5.	Preparation of any required grout specimens, mortar specimens and/or prisms shall be observed.	X	
6.	Compliance with required inspection provisions of the construction documents and the approved submittals shall be verified.		X
D.	Required verification and inspection of soils CBC Table 1704.7		
1.	Verify materials below footings are adequate to achieve the design bearing capacity		X
2.	Verify excavations are extended to proper depth and have reached proper material.		X
3.	Perform classification and testing of controlled fill materials		X
4.	Verify use of proper materials, densities and lift thicknesses during placement and compaction of controlled fill.	X	
5.	Prior to placement of controlled fill, observe subgrade and verify that site has been prepared properly.		X
E.	Required verification and inspection of Pile Foundations CBC Table 1704.8		
1.	Verify pile materials, sizes and lengths comply with the requirements.	X	
2.	Determine capacities of test piles and conduct additional load tests as required	X	
3.	Observe driving operations and maintain complete and accurate records for each pile	X	
4.	Verify placement locations and plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and document any pile damage.	X	
5.	For steel piles, perform additional inspections in accordance with Section 1704.3		
6.	For concrete piles and concrete-filled piles, perform additional inspections in accordance with Section 1704.4		
7.	For specialty piles, perform additional inspections as determined by the registered design professional in responsible charge.		
8.	For augered uncased piles and caisson piles, perform inspections in accordance with Section 1704.9		
F.	Required verification and inspection of Pier Foundations CBC Table 1704.9		
1.	Observe drilling operations and maintain complete and accurate records for each pier.	X	
2.	Verify placement locations and plumbness, confirm pier diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable) and adequate end bearing strata capacity.	X	
3.	For concrete piers, perform additional inspections in accordance with Section 1704.4		
4.	For masonry piers, perform additional inspections in accordance with Section 1704.5		

If this drawing is not 30"x42", then the drawing has been revised from its original size. Noted scales must be adjusted. This line should be equal to one inch

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NO.	ISSUES/REVISIONS	DATE
	PERMIT SET	03-14-2011
	DSA BACK CHECK SET	09-26-2011

FILE No: 38-UCSF

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
01-111902 INCR-
AC_Ally Watts___FLS___SS____
DATE : 7 / 01 / 2011
REGION 01 DSA ACS COMPLIANCE

UNIVERSITY OF CALIFORNIA
SAN FRANCISCO
FIRE MARSHAL
CDF-OFFICE OF STATE FIRE MARSHAL
APPROVED 7/11/11
Approval of this plan does not authorize or approve any omission or deviation from applicable regulations. Final approval is subject to field inspection. One set of approved plans shall be available on the project site at all times.
Reviewed by: _____
Project #: M9470
Authorization #: SE0107

REGISTERED PROFESSIONAL ENGINEER
DAVID C. ROSKO
No. 27652
Exp. 8/31/12
CIVIL
STATE OF CALIFORNIA

UCSF MEDICAL CENTER AT MISSION BAY PARKING STRUCTURE

1835 OWENS ST SAN FRANCISCO, CA

CONTRACT NO. DB:10010 PROJECT NO. M9470

KEY PLAN

DATE: 03/14/2011 DRAWN BY: AME
SCALE: NO SCALE CHECKED BY: KEN

SHEET TITLE:

GENERAL NOTES

337922

SHEET NO:

S-001