Campus: UCSF
Building Name: Precision Cancer Medicine Building
CAAN ID: 3073
Auxiliary Building ID: NA

UNIVERSITY OF CALIFORNIA

Date: 11/18/2019

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

BUILDING DATA
Building Name: MB Precision Cancer Medicine Building
Address: 1825 4th St., San Francisco
Site location coordinates: Latitude 37.7662 Longitudinal -122.3903

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

ASCE 41-17 Model Building Type:
a. Longitudinal Direction: S2: Buckling Restrained Braced Frames (C2: Special Concrete Shear Wall at Linac Structure)
b. Transverse Direction: S2: Buckling Restrained Braced Frames (C2: Special Concrete Shear Wall at Linac Structure)

Gross Square Footage: 170,000
Number of stories *above* grade: 6
Number of basement stories *below* grade: 0

Year Original Building was Constructed: 2019
Original Building Design Code & Year: CBC-2013
Retrofit Building Design Code & Code (if applicable): NA

SITE INFORMATION
Site Class: C Basis: (Rutherford & Chekene, 6/14/2017, S0.01)
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- Mission Bay Precision Cancer Medicine Building, Rutherford & Chekene, 6/14/2017, S0.01) or
Seismic Evaluation: NA
Retrofit Structural Drawings: NA

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.

CERTIFICATION SIGNATURE

AFFIX SEAL HERE

Maryann T. Phipps	President
Print Name	Title
S2995	6/30/2020
CA Professional Registration No.	License Expiration Date
Maryann T. Phipps	11/18/2019
Signature	Date

11/18/2019

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

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]
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.

BRBs were design in accordance with the 2013 CBC and incorporated AISC 341-10 requirements

GENERAL

A. FOR MORE DETAILED INFORMATION, SEE PROJECT SPECIFICATIONS. THE SPECIFICATIONS SHALL TAKE PRECEDENCE OVER THESE NOTES.

B. ALL CONSTRUCTION SHALL CONFORM TO THE CALIFORNIA BUILDING CODE (CBC), TITLE 24, 2013 EDITION.

C. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE JOB SITE BEFORE COMMENCING WORK AND SHALL REPORT ANY DISCREPANCIES TO THE ARCHITECT

D. OMISSIONS OR CONFLICTS BETWEEN VARIOUS ELEMENTS OF THE DRAWINGS, NOTES, AND DETAILS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND RESOLVED BEFORE PROCEEDING WITH THE WORK.

E. DETAILS SHOWN SHALL BE INCORPORATED INTO THE PROJECT AT ALL APPROPRIATE LOCATIONS WHETHER SPECIFICALLY CALLED OUT OR NOT.

F. THE CONTRACTOR MUST SUBMIT IN WRITING ANY REQUESTS FOR MODIFICATIONS TO THE PLANS AND SPECIFICATIONS. SHOP DRAWINGS SUBMITTED TO THE ARCHITECT FOR REVIEW DO NOT CONSTITUTE "IN WRITING" UNLESS IT IS CLEARLY NOTED THAT SPECIFIC CHANGES ARE BEING REQUESTED.

G. UNLESS SPECIFICALLY SHOWN ON THESE PLANS, NO STRUCTURAL MEMBER SHALL BE CUT, DRILLED, OR NOTCHED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE ARCHITECT.

DIMENSIONAL CONTROL

A. DO NOT USE SCALED DIMENSIONS. WHERE NO WRITTEN DIMENSION IS PROVIDED, CONSULT WITH THE ARCHITECT FOR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.

B. THE FOLLOWING MEMBERS CAN BE LOCATED WITHOUT WRITTEN DIMENSIONS:

1. CENTER MEMBERS ON GRID LINES THAT ARE SHOWN LOCATED ON GRID LINES.

2. SPACE MEMBERS EQUALLY BETWEEN MEMBERS ON GRID LINES OR MEMBERS OTHERWISE LOCATED, WHERE MEMBERS ARE SHOWN EQUALLY SPACED.

C. ELEVATIONS NOTED ON THE STRUCTURAL DRAWINGS USE THE FOLLOWING CONVENTIONS:

1. ACTUAL ELEVATIONS ARE DESIGNATED IN FEET (EXAMPLE: EL +14'-6"), REFERENCING TO LEVEL 1 TOP OF CONCRETE ELEVATION. REFER TO ARCHITECTURAL AND CIVIL DRAWINGS FOR LEVEL 1 ELEVATION RELATIVE TO PROJECT DATUM.
2. FEATURES THAT ARE CLOSELY RELATED TO OTHER SIMILAR ELEMENTS AT INDIVIDUAL FLOORS, ARE REFERENCED TO THE ELEVATION OF THE TYPICAL ELEMENT AT THAT LEVEL. DIMENSIONS ARE GIVEN IN INCHES.
   a. TOP OF CONCRETE AT DEPRESSED AREAS IS RELATED TO REFERENCE TOP OF CONCRETE ELEVATION FOR THAT LEVEL (EXAMPLE: T.O.C. -2").
   b. TOP OF STEEL IS REFERENCED TO TOP OF CONCRETE ELEVATION FOR THAT LEVEL [EXAMPLE W12x14 (1'-1")].

D. DIMENSION POINTS ARE AS FOLLOWS, UNLESS OTHERWISE INDICATED:

1. TYPICAL, U.O.N.: CENTERLINE.

2. WALLS: FACE OF CONCRETE OR MASONRY SURFACES OR FACE OF STUDS.

3. STEEL ANGLES AND CHANNELS: FACE.

4. FLAT FRAMING: TOP OF STEEL OR TOP OF CONCRETE.

E. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONAL CONTROL FOR THE FOLLOWING STRUCTURAL FEATURES, UNLESS DIMENSIONS ARE NOTED ON THE STRUCTURAL DRAWINGS:

1. SLAB EDGES AT BUILDING PERIMETER AND SHAFTS.

2. PLAN LOCATION OF CHANGES IN ELEVATION OF TOP OF CONCRETE SLABS, INCLUDING DEPRESSIONS, STEPS, AND TRENCHES.

3. LOCATION OF SLOPE BREAKS IN PLAN AND TOP OF SLAB PROFILE AT RAMPS AND SLOPED SLABS.

4. LOCATION AND SIZE OF CURBS AND PADS.

COORDINATION OF DOCUMENTS

A. ALTHOUGH WATERPROOFING AND DRAINAGE ITEMS ARE SOMETIMES PICTURED ON THE STRUCTURAL DRAWINGS FOR REFERENCE, THESE ITEMS ARE THE DESIGN RESPONSIBILITY OF OTHERS AND ARE DETAILED AND/OR SPECIFIED ELSEWHERE.

B. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION AND DETAILS OF NON-BEARING INTERIOR AND EXTERIOR WALL CONSTRUCTION.

C. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, TELECOM, SECURITY, AUDIOVISUAL AND PLUMBING DRAWINGS FOR LOCATIONS AND SIZES OF THE FOLLOWING ITEMS:

1. ANCHOR BOLTS, INSERTS AND HANGERS FOR ATTACHMENT OF NONSTRUCTURAL BUILDING COMPONENTS.

2. CONCRETE PADS AND CURBS FOR SUPPORT OF EQUIPMENT AND PIPING.

3. ITEMS EMBEDDED IN STRUCTURAL ELEMENTS, INCLUDING DRAINS, SLEEVES, CONDUITS, AND BOXES.

4. OPENINGS AND RECESSES IN SLAB.

D. ITEMS THAT ARE NOT SHOWN ON STRUCTURAL DRAWINGS, BUT AFFECT STRUCTURAL ELEMENTS, SHALL BE SUBJECT TO LIMITATIONS OF THE STRUCTURAL DETAILS LISTED BELOW, EXCEPT AS APPROVED BY OWNER'S REPRESENTATIVE.

ITEM	DETAIL REFERENCE
PENETRATIONS THROUGH GRADE BEAMS	3/S4.15
CONDUITS THROUGH SLAB OR CONCRETE WALL	12/S4.01
CONDUITS IN SLAB	3/S4.22
DRILLED DOWELS	16/S4.00
WEB OPENINGS IN STEEL BEAMS	1 & 2/S5.01
LARGE OPENINGS IN DECK AND CONCRETE FILL	6/S5.42
SMALL OPENINGS IN DECK AND CONCRETE FILL	5/S5.42
ROUND PENETRATION IN CONCRETE FILL OVER STEEL DECK	4/S5.42
CONDUITS IN FILL OVER STEEL DECK	NOT PERMITTED
SUSPENDED LOADS FROM STEEL DECK	14/S5.41

E. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION AND DETAILS OF MISCELLANEOUS STEEL ITEMS, INCLUDING BUT NOT LIMITED TO:

1. FRAMING THAT SERVES SOLELY AS A COMPONENT OF NON-BEARING STUD WALL OR CURTAINWALL ASSEMBLY, INCLUDING JAMB FRAMING AT ROLL-DOWN DOORS, JAMB AND/ OR HEAD REINFORCEMENT AT OTHER STUD AND CURTAIN ASSEMBLIES, CANTILEVER FRAMING FOR SILLS AND PARTIAL HEIGHT WALLS.

2. ORNAMENTAL METAL, INCLUDING RAILINGS, SUN CONTROL DEVICES AND TRELLISES.

DESIGN CRITERIA

A. APPLICABLE CODE: ALL WORK SHALL CONFORM TO THE CALIFORNIA BUILDING CODE (CBC), TITLE 24, 2013 EDITION.

B. LIVE LOADS AND VIBRATION CRITERIA: SEE LIVE LOAD/VIBRATION CRITERIA KEY PLANS ON SHEET S0.07.

C. OCCUPANCY CATEGORY PER 2013 CBC TABLE 1604.5 : CATEGORY II

D. WIND DESIGN PARAMETERS

1. BASIC WIND SPEED: 110 MPH (3-SECOND GUST, ULTIMATE)
2. EXPOSURE: C
3. RISK CATEGORY: II

E. SEISMIC DESIGN

1. SEISMIC DEMAND:

   a. LOCATION:
   37.8 DEGREES NORTH LATITUDE AND 122.4 DEGREES WEST LONGITUDE.

   b. SITE CLASS: C

   c. SITE PARAMETERS:

   i. MAPPED SPECTRAL RESPONSE ACCELERATION PARAMETER: Ss = 1.50, S_I = 0.60
   ii. SITE COEFFICIENT, Fa = 1.0, Fv = 1.3
   iii. ADJUST MCE SPECTRAL RESPONSE ACCELERATION PARAMETER, S_{MS} = 1.50 S_{M1} = 0.78
   iv. DESIGN SPECTRAL ACCELERATION PARAMETER, S_{DS} = 1.00g, S_{D1} = 0.520g
   v. SITE-SPECIFIC RESPONSE SPECTRUM:

PERIOD (SCEONDS)	MCE RESPONSE STECTRA (g) FOR FAULT NORMAL COMPONENT	DESIGN BASE RESPONSE SPECTRA (g) FOR FAULT NORMAL COMPONENT
0.01 (PGA)	0.718	0.479
0.02	0.773	0.515
0.03	0.860	0.573
0.05	1.033	0.688
0.075	1.249	0.833
0.10	1.465	0.977
0.15	1.500	1.000
0.20	1.517	1.012
0.25	1.500	1.000
0.30	1.500	1.000
0.50	1.500	1.000
0.75	1.040	0.693
1.00	0.780	0.520
1.50	0.520	0.347
2.00	0.390	0.260
3.00	0.260	0.173
4.00	0.203	0.136
5.00	0.168	0.112
7.50	0.105	0.070
10.00	0.708	0.052

   d. RISK CATEGORY : II (ASSUMES HAZARDOUS CONTENTS LIMITED).

   e. SEISMIC DESIGN CATEGORY: D

   f. SEISMIC IMPORTANCE FACTOR: I_E=1.0

   g. SEISMIC FORCE-RESISTING SYSTEM:

   i. MAIN STRUCTURE: BUCKLING RESTRAINED BRACED FRAMES WITH MOMENT CONNECTIONS
   R- FACTOR. R = 8.0 Cd = 5.0 ; Ωo = 2.5

   ii. LINAC STRUCTURE: SPECIAL REINFORCED CONCRETE SHEAR WALLS
   R- FACTOR. R = 5.0 Cd = 5.0 ; Ωo = 2.5

   h. METHODOLOGY:
   ASCE 7-10, AS MODIFIED BY CBC 2013.
   i. MAIN STRUCTURE: MODAL RESPONSE SPECTRUM ANALYSIS.
   ii. LINAC STRUCTURE: EQUIVALENT LATERAL FORCE PROCEDURE

   i. BUILDING PARAMETERS
   i. MAIN STRUCTURE: T = 1.3 SEC (ASCE 7-10 - 12.8.2) ; Cs= 0.05 (STRENGTH, N-S AND E-W)
   ii. LINAC STRUCTURE: T= 0.2 SEC (APPROXIMATE FROM ASCE 7-10); Cs=0.20 (STRENGTH, N-S AND E-W)

F. INTERSTORY SEISMIC DRIFT : THE MAXIMUM INTERSTORY DRIFT BETWEEN ANY LEVEL AND THE FLOOR BELOW FOR THE BUILDING IS AS FOLLOWS, AT DESIGN EARTHQUAKE LEVEL:

LEVEL	N-S DIRECTION	E-W DIRECTION
ROOF	1.50"	1.25"
6	1.50"	1.25"
5	1.38"	1.13"
4	1.31"	1.00"
3	1.38"	1.13"
2	1.25"	1.00"

LINAC STRUCTURE MAXIMUM INTERSTORY DRIFT, AT DESIGN EARTHQUAKE LEVEL: 0.10" BOTH N-S AND E-W DIRECTION

G. PERIMETER FRAMING DEFLECTION:
1. STEEL FRAMING : MAXIMUM OF 1/2" DEFLECTION UNDER POST-COMPOSITE AND DESIGN LIVE LOADS.
2. CONCRETE FRAMING: MAXIMUM LONG TERM DEFLECTION UNDER SUSTAINED LOADS OCCURRING AFTER ATTACHMENT OF CLADDING ELEMENTS AND INMEDIATE DEFLECTION DUE TO ANY ADDITIONAL LIVE LOADS: 1/2", TYP.

H. SLAB DEFLECTION FOR DESIGN OF INTERIOR PARTITION WALL HEAD DETAILS: MAXIMUM OF 3/4" DEFLECTION

I. FOUNDATION DESIGN CRITERIA

1. THE FOUNDATION DESIGN IS BASED ON CRITERIA AND RECOMMENDATIONS PRESENTED IN THE DECEMBER, 2016 GEOTECHNICAL REPORT "ENGINEERING GEOLOGIC AND GEOTECHNICAL INVESTIGATION REPORT, UCSF MEDICAL CENTER AT MISSION BAY, PRECISION CANCER MEDICINE BUILDING, UNIVERSITY OF CALIFORNIA, SAN FRANCISCO" PREPARED BY AMEC FOSTER WHEELER.

2. BEARING PRESSURES FOR STRIP AND SPREAD FOOTINGS (ASD LEVEL):

   DEAD + LIVE = 6000 PSF (ROCK)
   (SF=3) = 3000 PSF (OTHER)
   DEAD + LIVE + SEISMIC/WIND = 9000 PSF (ROCK)
   (SF=2) = 4500 PSF (OTHER)

3. FOUNDATION LATERAL CAPACITIES
   a. ULTIMATE FRICTION COEFFICIENT BETWEEN SOIL AND FOOTING: 0.40
   b. ULTIMATE PASSIVE SOIL RESISTANCE (EQUIVALENT FLUID PRESSURE):
   ROCK = 1000 PCF
   OTHER = 400 PCF

4. ANGER CAST PRESSURE GROUTED PILES
   a. ALLOWABLE PILE CAPACITIES, SEE S4.10

5. DESIGN GROUNDWATER ELEVATION: ELEVATION VARIES. REFER TO GEOTECHNICAL REPORT.

CONCRETE

A. REINFORCING STEEL

1. ALL BARS, U.O.N.: ASTM A615 (OR ASTM A706 WHERE REQUIRED), GR 60 DEFORMED.
   a. ASTM A706 FOR BARS TO BE WELDED.
   b. ASTM A615 Gr. 75, WHERE SHOWN ON DRWGS.
2. WELDED WIRE FABRIC: ASTM A1064.
   a. AT LAP SPLICE, OVERLAP CROSSING WIRES 6" MINIMUM, U.O.N.
3. HEADED BARS: ASTM A970 CLASS HA
   a. HRC 555 HEADED BAR, BY HEADED REINFORCEMENT CORP. (ICC ESR-2935)
   b. BARTECH MECHANICAL ANCHOR, BY DEXTRA MANUFACTURING CO. (ICC ESR-2166)
   c. LENTON TERMINATOR D16 (TAPER THREADED); BY ERICO (IAPMO ESR-0188)

4. MECHANICAL BAR SPLICES: COVER AND CLEARANCE REQUIREMENTS SHALL BE MAINTAINED AT BAR COUPLERS.
   a. WHERE MECHANICAL SPLICES ARE SHOWN, PROVIDE TYPE 2 COUPLERS, U.O.N.
   b. MECHANICAL SPLICES WILL BE PERMITTED AT OTHER LOCATIONS AT CONTRACTOR'S OPTION, SUBJECT TO APPROVAL OF CONTRACTING OFFICER FOR LOCATION AND TYPE OF COUPLER.
      i. LENTON, ERICO, INC. (IAPMO ESR-0129)
      ii. BARTEC, DEXTRA AMERICA, INC. (ICC ESR-1705)
      iii. TAPERLOCK, DAYTON SUPERIOR (IAPMO ESR-0319)
      iv. HRC 500/510, HEADED REINFORCEMENT CORP (ICC ESR-2764)
      v. BAR-LOCK, DAYTON SUPERIOR (ICC ESR-2495)

B. CONCRETE MIXES. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

CONCRETE MIXES. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.									
USE	MIX	AGG. TYPE	MINIMUM STRENGTH (PSI)	AGG. SIZE	MAX. SLUMP (IN)	MIN. CEMENT-ITIOUS (PCY)	MAX WATER (PCY)	MAX W/C RATIO	NOTES
FOUNDATIONS, PILE CAPS, GRADE BEAMS, STEM WALLS	A	NWC	4,000 AT 28 DAYS	57	6±1	-	-	-	25% FLY ASH
CONC. SLABS: 1ST FLR SLAB, 2ND FLR CONC. FILL OVER DECK, FLOOR & LID OF VAULTS	B	NWC	4,000 AT 28 DAYS	67	6±1	550	275	0.45	MRWR. SHRINKAGE CONTROLLED AGGREGATE
VAULT WALLS	C	NWC	4,000 AT 28 DAYS	67	8±1	-	275	-	HRWR. SHRINKAGE CONTROLLED AGGREGATE
TOPPING AND IN-FILL SLABS @ LEVEL 1	D	NWC	4,000 AT 28 DAYS	7	4±1	600	285	-	15% FLY ASH, SRA, MRWR. SHRINKAGE CONTROLLED AGGREGATE
3RD FLR TO ROOF CONC. FILL OVER STEEL DECK	E	LWC	4,000 AT 28 DAYS	3/8"	7 @ PUMP	600	-	-	15% FLY ASH, MRWR, VMA
AUGER CAST PILE									SEE SPECIFICATION 31 63 17 AND SHEET S4.10

DRILLED DOWELS

A. HIT-RE 500 V3, ADHESIVE, HILTI, INC. (ICC ESR-3814).

STEEL

A. W-SHAPES: ASTM A992.
B. ANGLES, CHANNELS, BENT PLATES AND FLAT BARS: ASTM A36, U.O.N.
C. PLATE: ASTM A572, GRADE 50 TYPICAL; ASTM A36 AND ASTM A572 GRADE 42 WHERE NOTED.
D. ROUND, SQUARE, AND RECTANGULAR TUBES: ASTM A500, GRADE B.
E. PIPES: ASTM A53, TYPE E, GRADE B, TYP. U.O.N. ASTM A53, TYPE S, GRADE B FOR AESS SHAPES.
F. HIGH STRENGTH BOLTS: ASTM A325, SLIP CRITICAL, U.O.N. BOLTS ARE INSTALLED AS PRETENSIONED, U.O.N. IF CONTRACTOR CHOOSES TO USE TWIST-OFF TENSION-CONTROL TYPE BOLTS, ASTM 1852 MAYBE SUBSTITUTED FOR ASTM A325.
G. MACHINE BOLTS AND THRU-BOLTS: ASTM A307.
H. STANDARD ANCHOR BOLTS: ASTM F1554, GRADE 36, U.O.N.
I. HIGH STRENGTH ANCHOR BOLTS: ASTM F1554, GRADE 1O5.
J. SHEAR CONNECTOR STUDS: AWS D1.1, TYPE B, AUTOMATICALLY END WELDED.
K. WELDING :
1. ELECTRODES: E70XX
2. SEISMIC CRITICAL WELDS: WELDS USED FOR CONNECTIONS IN THE SEISMIC LOAD-RESISTING SYSTEM, INCLUDING COMPLETE PENETRATION, PARTIAL PENETRATION AND FILLET WELDS. SEE SPECIFICATIONS FOR REQUIREMENTS. EXCEPT AS SPECIFICALLY NOTED ON DRAWINGS, ALL WELDS AT THE FOLLOWING LOCATIONS SHALL BE CONSIDERED SEISMIC WELDS:
   a. COLLECTOR BEAM END CONNECTIONS.
   b. CONNECTIONS AS DESIGNATED ON DRAWINGS.
3. DEMAND CRITICAL WELDS: ALL COMPLETE PENETRATION SEISMIC WELDS. SEE SPECIFICATIONS FOR REQUIREMENTS.

L. EXPANSION OR WEDGE ANCHORS: HILTI KWIK BOLT TZ EXPANSION ANCHOR, OR APPROVED EQUAL
M. U.O.N., STEEL ELEMENTS AT EXTERIOR LOCATIONS ARE HOT DIPPED GALVANIZED INCLUDING AESS CONNECTORS. AESS MEMBERS ARE NOT HOT-DIPPED GALVANIZED; SEE SPECIFICATIONS FOR PRIMER REQUIREMENTS. PROVIDE GALVANIZING RELIEF HOLES ARE REQUIRED, AND FILL WITH FREEZE PLUGS.

N. THREADED SHEAR STUDS: A108

STEEL DECK

A. ASTM A653 GRADE 33, GALVANIZED G60 AT INTERIOR, G90 AT EXTERIOR.

B. SHEAR CONNECTION STUDS: AWS D1.1 AUTOMATICALLY END WELDED TO PROVIDE COMPLETE FUSION BETWEEN END OF STUD AND STEEL MEMBER, AS-WELDED SIZE AS NOTED.

Stantec
www.stantec.com
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Agency

DEPARTMENT OF CITY PLANNING
SAN FRANCISCO
FIRE MARSHAL
OSF-OFFICE OF STATE FIRE MARSHAL
APPROVED 6/16/2017
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 # 15-870
Authorization # SE0138

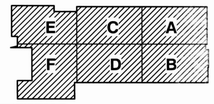
Revision

REGISTERED PROFESSIONAL ENGINEER
HELEN M. FENG
No. 3244
Exp. 12/31/17
STRUCTURAL
STATE OF CALIFORNIA

Revision

	By	Appd	YYYY.MM.DD

Key Plan



Issued Title

SUPERSTRUCTURE PERMIT
06/14/2017

Client/Project
UCSF Medical Center - Mission Bay
Precision Cancer Medicine Building

1825 4th Street
San Francisco, California 94158

Title
GENERAL NOTES

Project No.
2014020000

Scale
1" = 1'-0"

Drawing No.
S0.01

6/15/2017 11:58:13 AM

ORIGINAL SHEET - ARCH E1