Campus: NA
Building Name: 2 North Point Street
CAAN ID: 3627
Auxiliary Building ID: 2 North Point Street

UNIVERSITY OF CALIFORNIA

Date: 5/20/2020

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

BUILDING DATA
Building Name: 2 North Point Street
Address: 2 North Point Street, San Francisco, CA 94133
Site location coordinates: Latitude 37.8076 Longitudinal -122.4085

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

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

Gross Square Footage: 152,000
Number of stories *above* grade: 3
Number of basement stories *below* grade: 1

Year Original Building was Constructed: 1973
Original Building Design Code & Year: UBC-1970
Retrofit Building Design Code & Code: ASCE 41-17

SITE INFORMATION
Site Class: F Basis: Slate Geotechnical Consultants, 2/8/2019
Geologic Hazards:
Fault Rupture: No Basis: Slate Geotechnical Consultants, 2/8/2019
Liquefaction: Yes Basis: Slate Geotechnical Consultants, 2/8/2019
Landslide: No Basis: Slate Geotechnical Consultants, 2/8/2019

ATTACHMENT
Original Structural Drawings: Embarcadero Triangle Office Building, by Roger A. Singer, (S1-S15) dated April 4, 1973
Seismic Evaluation: Seismic Review 2 North Point Street San Francisco, CA, by Estructure, dated May 8, 2018 (ASCE 41-13 Tier 2)
Retrofit Structural Drawings: UCSF 2 Northpoint Seismic and TI by Tipping Structural Engineers, (S1.1-S5.2, 26 sheets) dated November 15, 2019 (Sheet S1.01 attached)

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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):

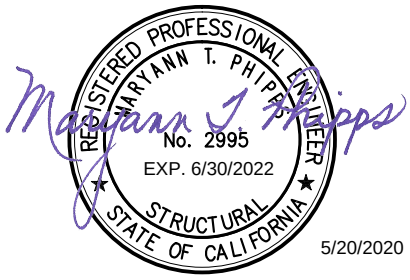
☒ the retrofit project was completed by the UC campus. Further, the design was based on ground motion parameters, at a minimum, corresponding to BSE-1E (or BSE-R) and BSE-2E (or BSE-C) as defined in ASCE 41, or the full design basis ground motion required in the 1997 UBC/1998 CBC ***or later*** for EXISTING 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.

CERTIFICATION SIGNATURE

AFFIX SEAL HERE

Maryann T. Phipps	President
Print Name	Title
S2995	6/30/2022
CA Professional Registration No.	License Expiration Date
Maryann T. Phipps	5/20/2020
Signature	Date



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]	[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.

STRUCTURAL ABBREVIATIONS

A	
A.B.	ANCHOR BOLT
ABT	ABOUT
ABV	ABOVE
ADD'L	ADDITIONAL
ADJ.	ADJACENT
ALT.	ALTERNATE
AMP.	AMPLITUDE
AGGR.	AGGREGATE
APPROX.	APPROXIMATE(LY)
ARCH.	ARCHITECT(URE)(URAL)
B	
BD	BOARD
BF	BRACED FRAME
B.F.	BOUNDARY FASTENER
B.L.	BOTTOM LOWER
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
B.N.	BOUNDARY NAIL(ING)
BOT.	BOTTOM
B.O.	BOTTOM OF
B.O.C.	BOTTOM OF CONCRETE
B.O.F.	BOTTOM OF FOOTING
B.O.S.	BOTTOM OF STEEL
BRG	BEARING
B.S.	BOTH SIDES
BSMT	BASEMENT
B.U.	BOTTOM UPPER
BTWN	BETWEEN
C	
C	CHANNEL (STEEL SHAPE)
CFS	COLD-FORMED STEEL
CIDH	CAST-IN-DRILLED HOLE
C.I.P.	CAST-IN-PLACE
C.J.	CONSTRUCTION JOINT
C.J.P.	COMPLETE JOINT PENETRATION (GROOVE WELD)
CLG	CEILING
CLR	CLEAR, CLEARANCE
C.M.U.	CONCRETE MASONRY UNIT
COL.	COLUMN
COLL.	COLLECTOR
CONC.	CONCRETE
CONN.	CONNECTION
CONST.	CONSTRUCT(ING)(ION)
CONT.	CONTINUOUS
CONTR.	CONTRACT(OR)
CRVD.	CURVED
C.P.	COMPLETE PENETRATION (WELD)
CST.	CONSTRUCTION
CTR	CENTER, CENTRAL
CTSK	COUNTERSINK
CWT	COUNTERWEIGHT
CVN	CHARPY V-NOTCH
D	
d	PENNY WEIGHT (NAIL)
D.B.A.	DEFORMED BAR ANCHOR
DBL.	DOUBLE
DEMO.	DEMOLITION
DTL	DETAIL
DIA.	DIAMETER
DIAG.	DIAGONAL
DIM.	DIMENSION
DISCONT.	DISCONTINUOUS
DN	DOWN
DO	DITTO
DP	DEEP
DWG	DRAWING
E	
(E)	EXISTING
EA.	EACH
E.F.	EACH FACE
E.G.	SUCH AS
EL.	ELEVATION
ELEC.	ELECTRICAL
ELEVR	ELEVATOR
E.J.	EXPANSION JOINT
EMBED.	EMBEDMENT
E.N.	EDGE NAIL(ING)
E.O.	EDGE OF
E.O.S.	EDGE OF SLAB
E.P.S.	EXPANDED POLYSTYRENE
EQ.	EQUAL (EQUIVALENT)
EQ. SP.	EQUALLY SPACED
EQUIP.	EQUIPMENT
E.S.	EACH SIDE
E.W.	EACH WAY
E.W.E.F.	EACH WAY, EACH FACE
E/W	EAST/WEST
EXP.	EXPANSION
EXT.	EXTERIOR

F	
FB	FLAT BAR (STEEL SHAPE)
F.D.	FLOOR DRAIN
FDN	FOUNDATION
F.F.	FAR FACE OR FIELD FASTENER
FIN.	FINISH(ED)
FLG.	FLANGE
FLR	FLOOR
F.N.	FIELD NAIL
F.O.	FACE OF
F.O.C.	FACE OF CONCRETE
F.O.S.	FACE OF STUD OR FACE OF STEEL
F.P.	FULL PENETRATION (WELD)
FPRF.	FIREPROOFING
FRMG	FRAMING
F.S.	FAR SIDE
FT	FEET OR FOOT
FTG.	FOOTING
G	
ga	GAUGE
GALV.	GALVANIZED
GAR.	GARAGE
G.B.	GRADE BEAM
G.C.	GENERAL CONTRACTOR
GEN.	GENERAL
GR.	GRADE
GYP.	GYPSUM
H	
(H), HORIZ.	HORIZONTAL
HD	HOLDOWN
H.D.G.	HOT-DIP GALVANIZED
HDPE	HIGH-DENSITY POLYETHYLENE
HDR	HEADER
HGR	HANGER
HK	HOOK
H.S.	HEADED STUD OR HIGH STRENGTH (BOLT)
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
I	
I.D.	INSIDE DIAMETER
I.E.	THAT IS, SPECIFICALLY
I.F.	INSIDE FACE
IN.	INCH
INCL.	INCLUDED
INFO.	INFORMATION
INSP.	INSPECTION
INSUL.	INSULATION
INT.	INTERIOR
IRREG.	IRREGULAR
J	
JCT.	JUNCTION
JST	JOIST
JT, JNT	JOINT
K	
K	KIP (1,000 POUNDS)
K.D.	KILN DRIED
KSI	KIPS PER SQUARE INCH
KSF	KIPS PER SQUARE FOOT
L	
L	ANGLE (STEEL SHAPE)
LB.	POUND
LGS	LIGHT-GAUGE STEEL
L.L.B.B.	LONG LEGS BACK TO BACK
L.L.H.	LONG LEG HORIZONTAL
L.L.V.	LONG LEG VERTICAL
L.S.	LONG SLOTTED (HOLE)
LSLH	LONG SLOTTED (HOLE) W/ LONG AXIS HORIZ.
LSLT.	LONG SLOTTED (HOLE)
LSLV	LONG SLOTTED (HOLE) W/ LONG AXIS VERT.
LTWT	LIGHTWEIGHT
LWC	LIGHTWEIGHT CONCRETE
M	
MANUF.	MANUFACTURER
MATL	MATERIAL
MAX.	MAXIMUM (NO MORE THAN; AT MOST)
M.B.	MACHINE BOLT
MC	MISCELLANEOUS CHANNEL (STEEL SHAPE)
MECH.	MECHANICAL
MEP	MECHANICAL, ELECTRICAL, PLUMBING
MEZZ.	MEZZANINE
MF	MOMENT FRAME
MFR	MANUFACTURE(R)
M.I.	MALLEABLE IRON
MIN.	MINIMUM (NO LESS THAN; AT LEAST)
MISC.	MISCELLANEOUS
MOD.	MODIF(Y)(ICATION)
MT	MISCELLANEOUS TEE (STEEL SHAPE)
MTL	METAL

N	
N	NORTH
(N)	NEW
N/A	NOT APPLICABLE
N.F.	NEAR FACE
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
NOM.	NOMINAL
N&FS	NEAR & FAR SIDE
N.T.S.	NOT TO SCALE
NR	NEAR
N.S.	NEAR SIDE
N/S	NORTH/SOUTH
N.W.	NORMAL WEIGHT
NWC	NORMAL WEIGHT CONCRETE
O	
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
O.F.	OUTSIDE FACE
O.H.	OPPOSITE HAND
OPG	OPENING
OPNG	OPENING
OPP.	OPPOSITE
ORIG.	ORIGINAL
O.S.	OVERSIZED (HOLE)
P	
P.A.F.	POWDER ACTUATED FASTENER(S)
PC, PCS	PIECE, PIECES
PCF	POUNDS PER CUBIC FOOT
PCI	POUNDS PER CUBIC INCH
P.D.	POWDER DRIVEN
P.D.F.	POWDER DRIVEN FASTENER(S)
PERF.	PERFORATED
PIPE-X	EXTRA STRONG PIPE
PIPE-XX	DOUBLE EXTRA STRONG PIPE
P.J.P.	PARTIAL JOINT PENETRATION (GROOVE WELD)
PL	PLATE
P.L.	PROPERTY LINE
P.P.	PARTIAL PENETRATION (WELD)
PREFAB.	PREFABRICATE(D)
PRELIM.	PRELIMINARY
PRESTR.	PRESTRESSED
PREV.	PREVIOUS(LY)
PROJ.	PROJECT(ED)(ING)(ION)
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT
P.T.	POST-TENSION(ED)(ING)
R	
(R)	REUSED
RAD.	RADIUS
RB	ROUND BAR (STEEL SHAPE)
R.C.	REINFORCED CONCRETE
REINF.	REINFORC(ED)(ING)
REBAR	REINFORCING BAR
REF.	REFERENCE
REQ'D	REQUIRED
RET.	RETAINING
REV.	REVIS(E)(ION)
RF	ROOF
RFG	ROOFING
RND	ROUND
R.O.	ROUGH OPENING
S	
S.A.D.	SEE ARCHITECTURAL DRAWINGS
S.B.	SOLID BLOCKING
S.C.D.	SEE CIVIL DRAWINGS
SCHED.	SCHEDULE
SECT.	SECTION
S.E.D.	SEE ELECTRICAL DRAWINGS
SEP.	SEPARATION
SEOR	STRUCTURAL ENGINEER OF RECORD
SFHCS	SOCKET FLAT HEAD CAP SCREW
SHT	SHEET
SHTG	SHEATHING
SIM.	SIMILAR
S.L.B.B.	SHORT LEGS BACK TO BACK
S.L.D.	SEE LANDSCAPE DRAWINGS
SLRS	SEISMIC LOAD RESISTING SYSTEM
S.M.D.	SEE MECHANICAL DRAWINGS
S.M.S.	SHEET METAL SCREW
S.O.G.	SLAB ON GRADE
SPC.	SPAC(ES)(ING)
S.P.D.	SEE PLUMBING DRAWINGS
SPEC(S).	SPECIFICATION(S)
SQ.	SQUARE
S.S.	STAINLESS STEEL
S.S.	SHORT SLOTTED (HOLE)
SSLT.	SHORT SLOTTED (HOLE)
ST	AMERICAN STANDARD TEE (STEEL SHAPE)
STAG.	STAGGER(ED)
STAGG.	STAGGER(ED)
STD	STANDARD
STFNR.	STIFFENER
STL	STEEL
STRUC.	STRUCTURAL
SUP	SUPPORT
SUSP.	SUSPENDED
SYM.	SYMMETRICAL
T	
T&B	TOP & BOTTOM
T.B.D.	TO BE DETERMINED
TD	TIE DOWN
THD	THREADED
THK	THICK(NESS)
THRD	THREADED
THRU	THROUGH
T.L.	TOP LOWER
T.O.	TOP OF
T.O.C.	TOP OF CONCRETE ELEVATION
T.O.F.	TOP OF FOOTING
T.O.S.	TOP OF STEEL
TS	TUBE STEEL
T.U.	TOP UPPER
TYP.	TYPICAL
U	
U.O.N.	UNLESS OTHERWISE NOTED
V	
(V), VERT.	VERTICAL
VOL.	VOLUME
V.I.F.	VERIFY IN FIELD
V.W.M.	VERIFY W/ MANUF.
W	
W/	WITH
WF	WIDE FLANGE
W.H.	WEB HORIZONTAL
W/IN	WITHIN
WKG	WORKING
W.O.	WHERE OCCURS
W/O	WITHOUT
W.P.	WORK POINT
WPFG	WATERPROOFING
WT	WIDE-FLANGE TEE (STEEL SHAPE)
WT.	WEIGHT
X	
XS	EXTRA STRONG (PIPE)
XXS	DOUBLE EXTRA STRONG (PIPE)

SPECIAL CHARACTERS

&	AND
°	ANGLE (MEASUREMENT)
@	AT
℄	CENTER LINE
ø	DIAMETER OR ROUND
℘	PLATE, PROPERTY LINE
#	POUND OR NUMBER
±	TOLERANCE

OTHER ABBREVIATIONS (PRODUCT ABBREVIATIONS):

FOR POWDER-DRIVEN FASTENERS AND CONCRETE ANCHOR ABBREVIATIONS, SEE HILTI NORTH AMERICAN PRODUCT TECHNICAL GUIDE (available at www.us.hilti.com) AND SIMPSON STRONG-TIE ANCHOR SYSTEMS CATALOG (available at www.strongtie.com).

FOR LIGHT-GAUGE STEEL CONNECTOR ABBREVIATIONS, SEE STEEL NETWORK LIGHT STEEL FRAMING CONNECTION CATALOG (available at www.steelnetwork.com) AND SIMPSON STRONG-TIE COLD-FORMED STEEL CONNECTORS CATALOG (available at www.strongtie.com).

"THRD STUD" INDICATES FULL FUSION WELDED STUD PER SPECIFICATION SECTION 05 12 00.

STRUCTURAL NOTES

DIVISION 01: GENERAL CONDITIONS

SECTION A: GENERAL REQUIREMENTS

1. These Structural Notes supplement the Project Specifications, and provide design loads and material properties not listed in the Project Specifications.
2. These structural drawings are copyrighted instruments of service of Tipping Structural Engineers (TSE), for sole use for this project.
3. The Structural Drawings show the structural features. Some dimensions and elevations are defined on the Architectural Drawings. See Architectural and other project drawings for finishes, depressions, curbs, openings, inserts and other features that need to be coordinated with these drawings.
4. Bound specifications have been prepared for this project. These notes complement the project specifications that will, among other things, define responsibilities, products, and workmanship issues. Reading these notes without reading the specifications can result in misunderstandings. There is not a one-to-one correspondence between these notes and the specifications, i.e., some numbered sections appear in the notes but not the specifications and vice versa.
5. In the event of conflict between these structural notes, the project specifications and the drawings, consult with the Architect before proceeding.
6. Verify all existing conditions and proposed dimensions at the job site. Compare structural drawings with architectural, mechanical, and electrical and plumbing drawings before commencing work. Notify Architect of any discrepancies and do not proceed with affected work until they are resolved. In the case of conflict between the drawings and the specifications, the most costly option to the Contractor applies unless otherwise expressly allowed by the Architect's response to RFI.
7. Do not scale the drawings to determine dimensions, instead use written dimensions. Where no dimension is provided, consult with the Architect for clarification before proceeding with the work. Where member locations are not specifically dimensioned, members are either located on column lines, or equally spaced between members on column lines or between members otherwise located.
8. Unless otherwise shown or noted, all typical details shall be used where applicable. All details shall be considered typical at similar conditions.
9. Submit shop drawings, design-build calculations, and product data for review as required by specifications prior to fabrication. Do not fabricate prior to receiving review comments. In addition submit the following:
   1. Except for mock-ups, samples, and as otherwise specified, all submittals to be in electronic form (Adobe Portable Document Format).
   2. Submit shop drawings, design-build calculations, and product data for review as required by specifications prior to fabrication. Do not fabricate prior to receiving review comments. In addition submit the following:
      1. Survey of existing column centerlines, wall lines and floor elevations.
      2. Shop drawings and structural calculations for lateral and vertical supports of any equipment exceeding 400 pounds.
      3. Penetration plans, using structural drawings as backgrounds, showing the size and location of all slab openings, sleeves, cores and penetrations, including HVAC, electrical, telephone, fire sprinkler, plumbing and any other utilities. This includes pipes or conduits routed through or embedded within structural elements such as beams, slabs or walls.
10. Safety Measures:
    1. Contractor is solely and completely responsible for job site conditions including safety of people and property, and for all necessary independent engineering reviews of these conditions.
    2. Install shoring and bracing of soil, and of existing and new structures, where needed to adequately support imposed vertical and lateral loads. Maintain shoring and bracing until the new structure can support the anticipated loads. Submit shoring calculations by independent engineer for information only.
    3. Engineer's job site visits are not intended to include review of adequacy of Contractor's safety measures.
11. Any openings, holes, cuts or discontinuities not shown on the structural drawings and extending into or through structural elements require Engineer's prior approval and may require special structural detailing.

SECTION B: STRUCTURAL TESTING, INSPECTION, AND OBSERVATION

1. Tests and inspections for all items will be provided as required by California Building Code and all applicable local ordinances.
2. The owner will retain an independent testing agency to perform all required testing and inspections.
3. The Contractor is responsible for coordinating with Owner's Testing Agency and Special Inspector to schedule all required tests and inspections. See specifications for specific items requiring testing and inspection.
4. Structural Observation: In addition to inspection by Special Inspector, Structural Engineer will review construction for general conformance with Structural Drawings. Contractor shall notify Architect and Structural Engineer at least five working days prior to concealing structural elements. Structural Engineer will then determine if a site visit is appropriate. Notification shall include the following items:
   1. Reinforcement, post-tensioning tendons, and embedded items, prior to concrete or shotcrete placement.
   2. Structural framing and shear walls, prior to concealment by fireproofing or finish surfaces.

SECTION C: STRUCTURAL DESIGN BASIS

1. Design is based on the 2016 California Building Code and applicable local ordinances.
2. Design vertical live loads (unfactored loads not including live load reductions):
   1. Office Buildings
      1. Typical Floors — 50 psf (2,000 lbs on 2'-6"x2'-6" area)
      2. Partitions — 15 psf
      3. Lobbies — 100 psf (2,000 lbs on 2'-6"x2'-6" area)
      4. First Floor Corridors — 100 psf (2,000 lbs on 2'-6"x2'-6" area)
      5. Upper Floor Corridors — 80 psf (2,000 lbs on 2'-6"x2'-6" area)
   2. Parking Garages
      1. Passenger Vehicles — 40 psf (3,000 lbs on 4.5" x 4.5" area)
      2. Vehicle Barriers — 6,000 lbs at 1'-6"height over 12"x12"area
   3. Driveways and Sidewalks Accessible to Vehicles
      1. Truck Loading — 250 psf (8,000 lbs on 4.5" x 4.5" area)
   4. Stairs
      1. Treads and Landings — 100 psf (300 lbs on 2" x 2" area)
      2. Railings — 50 plf (200 lbs any direction)
   5. Roofs
      1. Ordinary — 20 psf (300 lbs on 2'-6"x2'-6" area)
3. Design lateral loads are based on the following criteria:
   1. Risk Category — II
   2. Wind
      1. Basic Wind Speed — 110 mph (3-second gust)
      2. Exposure Category — D
      3. Importance Factor, Iw — 1.00
      4. Internal Pressure Coef — +/- 0.18 for main bldg
      5. Cladding Pressure — 46.3psf, unless specifications require design-build calculations
   3. Seismic
      1. Importance Factor, I — 1.00
      2. S-s — 1.5g (0.2 sec site specific response)
      3. S-1 — 0.6g (1.0 sec site specific response)
      4. Site Soil Class — F
      5. S-ds — 0.9g (0.2 sec site specific response)
      6. S-d1 — 0.32g (1.0 sec site specific response)
      7. SDC — D (Seismic Design Category)
      8. Basic Lateral System: — Item A.2, Ordinary Reinforced Concrete Shear Walls
      9. T-a — 0.40 sec (Approximate Fundamental Period)
      10. C-s — 0.12 g (Seismic Response Coefficient)
      11. R — 5.0 (Response Modification Factor)
      12. Design Base Shear — 2,542 kips
      13. Analysis Procedure — Nonlinear Response Time History
      14. Hazard Levels of BSE-C and BSE-R per UCSF and CEBC
4. The seismic load resisting system (SLRS) of the structure comprises the following elements described in the drawings:
   1. Shear walls, collectors, and associated connections;
   2. Driven piles & Grade beams supporting SLRS walls; and
   3. Other elements labeled "COLL" and "SLRS" in the drawings.
5. Commentary on the Seismic Analysis and Design:

   The evaluation and retrofit design rely upon nonlinear response history procedures to ascertain existing vulnerabilities and design retrofit measures to achieve a rating of IV in accordance with the UCOP Seismic Safety Policy in the context of Peer and UCSF Seismic Review Committee (SRC) Review. These analyses form the basis for expectations of seismic performance:
   1. Concrete shearwalls are expected to rock on relatively soft, pile-supported foundations.
   2. The primary energy dissipation mechanisms are expected to be plunging of the piles in the soil, flexural yielding in the foundation and walls.
   3. By the retrofit measures, shear mechanisms in the walls are expected to be avoided.
   4. The retrofit includes shear reinforcement in the certain areas of the foundation in order to mitigate the possibility of shear mechanisms.
   5. Softening of the slab/column connections is expected, and the steel brackets and supplementary steel columns are meant to provide secondary means of supporting the slab in case the connections become compromised.
   6. According the geotechnical investigation by Slate, lateral spreading is a risk at this site. The existing slab in the basement is 12" thick and well-reinforced according to the original design drawings. Should lateral spreading occur, damage (significant cracking) in the slab would be expected, but not to the extent that lateral stability of the super-structure is expected to be compromised.

SECTION D: DESIGN-BUILD CRITERIA

1. General:
   1. Submit shop drawings and structural calculations for all design-build items, stamped and signed by a California-licensed Civil or Structural Engineer.
2. Design-build metal stairs:
   1. Shall satisfy deflection compatibility with the primary structure under seismic loads, and shall maintain egress function after a code design-basis earthquake. Assume a maximum allowable code drift of 2.0% unless otherwise noted.
3. Cladding and glazing:
   1. Shall accommodate interstory seismic drifts of at least 2.2 percent without damage that could result in falling hazards or injuries. At half this drift limit, the cladding and glazing must remain weathertight and be substantially free of damage.
   2. Design-build metal stud and mullion out-of-plane deflections shall not exceed L/240 for exterior facades under code minimum design loads, unless designer demonstrates that facade can accommodate greater deflections without loss of watertightness.
4. Interior partitions:
   1. Out-of-plane deflection shall not exceed L/240.
   2. Elevator shaft walls shall be designed for elevator "piston effect" pressures defined by the elevator manufacturer.
5. Mechanical, electrical, plumbing and fire protection systems and equipment:
   1. Contractor is responsible for vertical and lateral support and anchorage of all equipment and utilities, and transfer of such forces back to primary structural elements shown on the structural drawings.
   2. Support and bracing shall be designed to comply with CBC and ASCE 7, Chapter 13.
   3. Lateral seismic design forces on all life-safety systems and equipment shall be increased by an importance factor of 1.50.
   4. Shop drawings and structural calculations shall be submitted for support and bracing of all floor-mounted equipment over 400 pounds and all ceiling-hung equipment over 100 pounds.
   5. Pipes, conduits and ducts: Unless specifically designed by a California-licensed Civil or Structural Engineer, bracing shall conform to Seismic Hazard Level A in SMACNA "Seismic Restraint Manual: Guidelines for Mechanical Systems," most recent edition, except:
      1. Bracing of life-safety systems and components shall be increased by 50% (importance factor = 1.50).
      2. Hangers 12 inches or less in length shall be capable of swaying at least 30 degrees out of plumb in either direction without losing strength, unless augmented by seismic bracing.
      3. Ducts four square feet or greater in cross-sectional area shall be braced.
      4. Pipes:
         1. Brace all pipes containing gas or liquid fuel.
         2. Brace all pipes 1 ¼ inch nominal diameter or greater in boiler, electrical and mechanical rooms.
         3. Brace all other pipes 2 ½ inch nominal diameter or greater.
         4. Fire sprinkler pipe bracing shall comply with both ASCE 7, Chapter 13, and NFPA 13.
6. Fiber-Reinforced Polymer (FRP):
   1. Properties provided in Section 03 24 00 are to be used as basis of design.

DIVISION 31: EARTHWORK

SECTION 31 60 00: FOUNDATIONS

1. The foundation design is based on a Geotechnical Report prepared by Slate Geotechnical Consultants dated February 08,2019.
2. Except where otherwise shown, excavations shall be made as near as possible to the neat lines required by the size and shape of the structure. Foundations may be poured without the use of side forms where possible. If the trenches cannot stand, fully form sides to dimensions shown.
3. Do not allow water to stand in trenches. If bottoms of trenches become softened due to rain or other water before concrete is cast, excavate softened material and replace with properly compacted backfill or concrete at no cost to the owner.
4. Notify the owner ten days prior to excavation and subgrade preparation work to allow owner to schedule observation by the Geotechnical Engineer. Excavations and subgrade preparation will be observed by the Geotechnical Engineer.

DIVISION 03: CONCRETE

SECTION 03 20 00: REINFORCING STEEL

1. All mild-steel reinforcing steel shall have a minimum yield stress (Fy) of 60 ksi (420 MPa). For additional requirements see Specifications.
2. Reinforcing bars shall be:T-heads:
   1. A615, except as otherwise noted.
   2. A706 for members of the seismic load resisting system (SLRS)
3. T-heads:
   1. T1-Head: End anchorage plate with net area at least 4 times reinforcing bar area.
   2. T2-Head: End anchorage plate with net area at least 9 times reinforcing bar area.
   3. T2-heads shall be used unless otherwise noted on the drawings.
   4. See specifications for additional T-head requirements.
4. Anchor Bolts and Rods (unless otherwise noted on the drawings):
   1. Steel Framing:
      1. Anchor rods for typical base plates and steel connections: F1554, Gr. 55.
      2. Anchor rods for braced frame and moment frame columns and collector ties: ASTM F1554 Gr. 105.
   2. Nuts and Washers: see Specifications.
5. Concrete Cover: Unless otherwise shown on the drawings, maintain coverage to face of reinforcing bars as follows:

Location	Clear Cover
Cast against earth:	3 in.
Slab-on-grade over earth or VB:	2 in.
Exposed to earth or weather:	
Slabs, walls	2 in. (1 ½ in. for #5 & smaller)
Beam ties	1 ½ in.
Beam primary reinf.	1 ½ in.
Not exposed to earth or weather:	
Slabs, walls	¾ in. (1 in. for shotcrete)
Beam & column ties	1 ½ in.
Beam & column primary reinf.	1 ½ in.

Notes:
1. Tolerances per ACI 117, except that clear cover may not be reduced in fire-rated members or assemblies.
2. Pipes, Conduits and Other Embedded Items: See Specifications.

SECTION 03 24 00: FIBER-REINFORCED POLYMER (FRP) REINFORCEMENT

1. Intent of composite strengthening system is to provide shear strengthening to existing concrete columns.
2. The system is to consist of the following properties and meet the following requirements:
   1. Composite fabric: unidirectional glass or carbon fiber impregnated with epoxy
   2. Minimal design stiffness per layer: 151.5 kips per inch
3. See specifications for other requirements.

SECTION 03 25 00: CONCRETE ANCHORS

1. Epoxy dowels in concrete:
   1. Epoxy dowels are not permitted for shear wall holdown or braced frame anchor rods.
   2. Owner's Testing Agency to verify diameter, depth and cleanliness of drilled holes.
   3. Owner's Testing Agency to test 25% of the first 100 dowels installed in direct tension to the following values:

#3 bar	5,000	⅜" Thrd. Rod	3,500 #
#4 bar	9,000	½" Thrd. Rod	6,000 #
#5 bar	14,000	⅝" Thrd. Rod	9,000 #
#6 bar	20,000	¾" Thrd. Rod	12,000 #
#7 bar	27,000	⅞" Thrd. Rod	18,000 #
#8 bar	36,000	1" Thrd. Rod	22,000 #

   4. If testing of the first 100 dowels results in a "pass" rate of 95% or better, sampling may be reduced to 10% of the remaining work.
   5. It is permitted to use Hilti HIT-RE 100 or Simpson SET-XP except where specifically denoted on plans as high strength assembly, for anchoring reinforcing steel or threaded dowels in concrete.
2. Mechanical anchors: Owner's Testing Agency to make periodic inspections during anchor installation to verify anchor type and dimensions, concrete thickness and type (normal weight vs. lightweight), anchor embedment, and adherence to manufacturer's installation instructions.
3. Scan existing slab prior to post-installation of concrete anchors. Person in charge of scanning must have 5 years experience of similar type work or capable of demonstrating ability to scan and recognize tendons to satisfaction of special inspectors.
4. Use of shotpins shall comply with ESR-2138 with additional limitations:
   1. Shotpins with ¾" length may be installed without necessity to scan slab prior to installation.
   2. Design tension capacity of 50# shall be used for 0.157"φx¾" shotpins.

SECTION 03 30 00: CAST-IN-PLACE CONCRETE

1. Concrete Mix Schedule:

Location	f'c (psi)	Age (days)	Aggr. Type	Max. Size (inches)	Portland (lb/cy)	SCM* (%)
Fdn./S.O.G.	6,000	28	Normal	¾ - 1 ½	350	50-70
Beams	6,000	28	Normal	¾ - 1 ½	450	50-70
Shotcrete	6,000	28	Normal	½	300	30-60

* SCM = Supplementary Cementitious Material content, measured as percentage of total cementitious material by weight. See Specifications for further SCM requirements.

2. Water-to-cementitious material (W/CM) ratio not to exceed 0.45. Use water-reducing admixtures as needed.

DIVISION 05: METALS

SECTION 05 12 00: STRUCTURAL STEEL

1. Structural steel wide-flange shapes shall conform to ASTM A913 or ASTM A992 (Fy = 50 ksi). See Specifications for additional requirements for moment frame members and members with flange thickness exceeding 2 inches.
2. Pipe sections shall conform to ASTM A53, Type E or S, Grade B (Fy = 35 ksi). Finish black, except where required to receive hot-dip galvanized coating.
3. Round HSS shall conform to ASTM A500 Grade B (Fy = 42 ksi); ASTM A847 (Fy = 50 ksi) may be substituted.
4. Square or rectangular HSS shall conform to ASTM A500 Grade B (Fy = 46 ksi); ASTM A847 (Fy = 50 ksi) may be substituted.
5. HP sections shall conform to A572 Grade 50.
6. Structural steel channels, angles and miscellaneous iron shall conform to ASTM A36 (Fy = 36 ksi); ASTM A572 Grade 50 may be substituted.
7. Non-seismically loaded structural steel plates and bars:
   1. ASTM A36 (Fy = 36 ksi); ASTM A572 Grade 50 may be substituted.
   2. See Specifications for additional requirements where thickness exceeds 2 inches.
8. Seismically loaded structural steel plates and bars:
   1. ASTM A572 Grade 50 meeting minimum notch toughness requirements given in Specifications.
   2. Seismically loaded plates include, but are not limited to, gusset and connection plates in braced frames, splice plates in collectors, continuity plates in moment frames and any other plate designated "SLRS" or "CVN tough" on the drawings.
9. Sheet steel shall conform to ASTM A570 or A606.
10. "Group A" or "A325" indicates a high-strength bolt assembly conforming to ASTM A325 Type 1 or F1852, with ASTM A563 heavy hex nuts and ASTM F436 or F959 Grade 325 washers as required by RCSC. ASTM A325 Type 3 bolts may be substituted only where hot-dip galvanizing is not required.
11. "Group B" or "A490" indicates a high-strength bolt assembly confirming to ASTM A490 or F2280, with ASTM A563 heavy hex nuts and ASTM F436 or F959 Grade 490 washers as required by RCSC.
12. All high-strength bolts shall be fully pretensioned unless otherwise noted. Bolts other than high-strength shall be installed snug-tight.
13. For anchor bolt material specifications, see Section 03 20 00, Reinforcing Steel.
14. Threaded studs and headed shear studs shall conform to AWS D1.1, and shall be carbon steel studs conforming to ASTM A108 Grades 1010 through 1020, unless otherwise noted. Stud bases shall be full-fusion arc welded. Stud welding shall be qualified through tests per AWS D1.1, Section 7.6-7.8. Where stainless steel studs are required by the Notes or Drawings, studs to be post-annealed as required to prevent brittle failure.

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S2.01	LEVEL 1 FLOOR PLAN
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S4.01	TYPICAL CONCRETE DETAILS
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S5.01	COLUMN BRACKET DETAILS
S5.02	SUPPLEMENTAL COLUMN DETAILS

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