UNIVERSITY OF CALIFORNIA

BUILDING REPORT REQUIREMENTS
ASCE 41-17 TIER 1 SEISMIC EVALUATIONS

BUILDING REPORT

1) UC Campus: Los Angeles
2) Building Name: Engineering IV - Bridge 1
3) Building CAAN ID:
4) Auxiliary Building ID: 4256A.2
5) Date of Evaluation: 9/15/2020
6) Evaluation by: Englekirk, TAS/FS
7) Seismic Performance Rating and Basis of Rating: V, ASCE 41-17 Tier 1

8) Plan Image or Aerial Photo

9) Exterior Elevation Photo

10) Site Location
   (a) Latitude Decimal Coordinates: 34.0687997
   (b) Longitude Decimal Coordinates: -118.4440275
11) ASCE 41-17 Model Building Type and Description
   (a) Longitudinal Direction: S2 and S2a: Steel concentrically braced frame
   (b) Transverse Direction: S2 and S2a: Steel eccentrically braced frame
12) Number of Stories
   (a) Above grade: 5
   (b) Below grade: 0
13) Original Building Design Code & Year: UBC-1979
14) Retrofit Building Design Code & Year (if applicable):
15) Cost Range to Retrofit (if applicable): (Low, Medium, High or Very High): High

Comments: The building consists of EBF frames as the lateral force resisting system in the transverse direction. The closest standard checklist that we can use is the S2/S2A form but it is inadequate in providing a cursory evaluation of the components of an EBF frame. The following is a list of issues that we suggest need to be investigated further: 1) The shear links need further study, 2) the beam outside

the link needs further study, 3) A quick check was performed to compare the shear capacity of the EBF link to the the axial capacity of the braces. The ratios are high (0.74) considering no gravity loads were considered in the braces. Also, the framing system did not satisfy the 1.5% separation criteria for a building in a high seismic area (16" provided vs. 18" required for the quick check) and the overturning of the frames.

BACKGROUND INFORMATION

Site Information

16) Site Class (A – F) and Basis of Assessment
- (a) Site Class: D
- (b) Site Class Basis: Unknown (Default)
- (c) Site Class Company: None
- (d) Site Class Report Date: None
- (e) Site Class Ref Page No.: None

17) Geologic Hazards
- (a) Fault Rupture (Yes, No or Unknown) and Basis of Assessment: No, CGS Maps
- (b) Liquefaction (Yes, No or Unknown) and Basis of Assessment: No, CGS Maps
- (c) Landslide (Yes, No or Unknown) and Basis of Assessment: No, CGS Maps

18) Site-specific Ground Motion Study? (Yes or No) No

Seismic design acceleration parameters of interest:	
For BSE-1N	1.629 and 0.826
For BSE-1E	0.897 and 0.516

19) Estimated Fundamental Period (seconds)
- (a) Longitudinal: 0.63
- (b) Transverse: 0.96

20) Falling Hazards Assessment Summary: No deficiency noted

21) Structural Non-Compliances/Findings Significantly Affecting Rating Determination Summary
Significant Structural Deficiencies, Potentially Affecting *Seismic Performance Rating* Designation:

- (a) Lateral System Stress Check (wall shear, column shear or flexure, or brace axial as applicable): No deficiency noted
- (b) Load Path: No deficiency noted
- (c) Adjacent Buildings: Yes, deficiency noted
- (d) Weak Story: No deficiency noted
- (e) Soft Story: No deficiency noted
- (f) Geometry (vertical irregularities): No deficiency noted
- (g) Torsion: No deficiency noted
- (h) Mass – Vertical Irregularity: No deficiency noted
- (i) Cripple Walls: Not Applicable

(j) Wood Sills (bolting): Not Applicable
(k) Diaphragm Continuity: No deficiency noted
(l) Openings at Shear Walls (concrete or masonry): Not Applicable
(m) Liquefaction: No
(n) Slope Failure: No
(o) Surface Fault Rupture: No
(p) Masonry or Concrete Wall Anchorage at Flexible Diaphragm: Not Applicable
(q) URM wall height to thickness ratio: Not Applicable
(r) URM Parapets or Cornices: Not Applicable
(s) URM Chimney: Not Applicable
(t) Heavy Partitions Braced by Ceilings: Not Applicable
(u) Appendages: No deficiency noted

22) Brief Description of Anticipated Failure Mechanism
Failure of EBF links. Premature buckling of W12x65 braces .

23) Seismic Retrofit Concept Sketches/Description (only required for buildings rated V or worse)
Strengthening of EBF links. As an alternate, the addition of supplemental damping systems may be a more cost effective approach to reconcile deficiencies the EBF frame system.

Building Report Appendices

A) ASCE 41-17 Tier 1 Checklists (Structural only)

B) Quick Check Calculations