



## ADMINISTRATIVE BULLETIN

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**NO. AB-109**

**DATE** : August 21, 2014 (Updated 01/01/2017 for code references)

**SUBJECT** : Seismic Evaluation of Private School Facilities

**TITLE** : Application of Engineering Criteria in SFEB Section 329

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**PURPOSE** : The purpose of this Bulletin is to establish acceptable evaluation criteria and reporting standards for complying with Section 329 of the 2016 San Francisco Existing Building Code, as amended by Ordinance No. 202-14.

**REFERENCE** : Chapter 4, 2016 San Francisco Existing Building Code  
ASCE 41-13, Seismic Evaluation and Retrofit of Existing Buildings

**ATTACHMENTS** : Template Scope Report, available at [sfdbi.org](http://sfdbi.org)  
Template Evaluation Report, available at [sfdbi.org](http://sfdbi.org)

**DISCUSSION** : SFEB Section 329, created with Ordinance 202-14, mandates the seismic evaluation of certain existing buildings and non-building structures used by schools that are not under the jurisdiction of the Division of the State Architect's Structural Safety section.

**SCOPE** : Part A of this Bulletin provides regulations to implement the general requirements of SFEB Section 329, as well as background commentary. Part B of this Bulletin provides interpretation and additional guidance regarding the application of technical provisions in ASCE 41-13, referenced by SFEB Section 329.

## **Part A. Regulations and Commentary for SFEBC Section 329**

Part A of this Bulletin restates the provisions of Section 329 and provides corresponding interpretations and background commentary. Commentary is shown in italic font. Section numbers refer to SFEBC Section 329.

### **Submittal schedule**

SFEBC Sections 329.3 and 329.4 provide two submittal deadlines:

The Evaluation Scope document for each school is to be submitted within one year of the effective date of Section 329.

The Evaluation Report for each school building and non-building structure is to be submitted within three years of the effective date of Section 329.

Report templates for each submittal are provided as attachments to this Bulletin.

### **329.1 General.**

The intent of Section 329.1 is to cover certain E-occupancy buildings that are not under the jurisdiction of the Division of State Architect's Structural safety section and non-building structures accessory to those buildings.

The intent of Section 329.1 is to cover all the buildings and non-building structures on the school campus that are used primarily for school purposes, including cafeterias, gyms and multipurpose rooms. Schools will have the opportunity to use the Scoping Document to state buildings they intend to evaluate.

For purposes of Section 329, a "non-building structure" is defined in SFBC Chapter 2 as a structure that does not support or shelter any use or occupancy and is also defined in ASCE 7-10 Chapter 15. The intent of Section 329.1 is to include non-building structures such as retaining walls, covered walkways, patio covers, and other structures that are prone to earthquake damage, but only when these non-building structures serve buildings subject to Section 329. It is not the intent of Section 329.1 to include lightweight structures with no history of poor earthquake performance, such as well-anchored playground equipment or light wood or metal fences. Some Department judgment is expected to apply during review of the Evaluation Scope document.

It is not the intent of Section 329.1 to cover:

- Buildings off of the school's campus, even if used by students or faculty.
- Buildings on the school's campus that are used primarily for non-school purposes, such as churches or convents, including such buildings occupied by 25 or more persons for less than 12 hours per week or four hours in any given day. SFBC Section 305.1.1 applies to spaces associated with the functions of the place of religious worship to which they are accessory. It is the intent of SFEBC Section 329.1 that classrooms in buildings used for religious worship are within the scope of Section 329.1 if they are used for educational purposes for an amount of time that exceeds the time restrictions listed in 329.1 Exception 1.
- Buildings occupied by 25 or more persons for less than 12 hours per week or four hours in any given day.
- Schools where the average enrollment of the past three years is 25 or fewer students.

In accordance with SFBC Section 303.1.3, school gyms, auditoriums, and other spaces or structures used for assembly purposes that are nevertheless assigned an E occupancy and are thus within the scope of Section 329.1.

Evaluations shall be conducted under the supervision of a licensed design professional.

### **329.2 Scope and Criteria**

For purposes of Section 329, previous versions of ASCE 41, specifically ASCE 31-03 and ASCE 41-06, are not acceptable as alternatives to ASCE 41-13. See Part B of this Bulletin for modifications and interpretations of ASCE 41-13 criteria.

**Commentary:** *The intent of the evaluation is to identify hazards known to be associated with earthquake-related severe injury or death*

*In addition to the tabulated scope, voluntary mitigation of contents hazards is encouraged. Such mitigation could include bracing, restraint, or removal of supplies, stored items, or furnishings prone to hazardous tipping or sliding. It might also include nonstructural mitigation that is not required by Section 329. References regarding contents bracing have been developed by FEMA, the Division of the State Architect, and others. For example, see "Guide and Checklist for Nonstructural Earthquake Hazards in California Schools," available at <http://www.documents.dgs.ca.gov/dsa/pubs/SB1122.pdf>.*

### **329.5 Voluntary Minimum Life-Safety Retrofit**

**Commentary:** *Section 329 requires evaluation only. Section 329.5, however, anticipates that some schools will perform voluntary mitigation or retrofit either before or after completing their evaluation. To encourage this work and to relieve these schools from unknown future requirements, Section 329.5 provides, for a period of 20 years after the effective date of Section 329, that any building or non-building structure within the scope of Section 329 for which voluntary seismic strengthening is performed to meet or exceed the criteria of ASCE 41-13, S-3 N-C with the BSE-1E hazard shall not be identified as a seismic hazard pursuant to any local building standards adopted after the effective date of Section 329 unless the building incurred disproportionate damage, or otherwise has been damaged or altered so that it no longer meets the engineering criteria under which it was retrofitted.*

## **Part B. APPLICATION OF ASCE 41-13 TO EVALUATION**

Part B of this Bulletin makes modifications to and interpretations of ASCE 41-13 as they relate to compliance with SFEBBC Section 329. The section numbers refer to section numbers in ASCE 41-13.

### **1.4 Seismic Evaluation Process**

With reference to Figure C1-1, Tier 3 Systematic evaluation is required for certain buildings, subject to Bulletin modifications to Section 3.3. Where Tier 3 Systematic evaluation is not required, Tier 1 Screening is required for all evaluations, and Tier 2 Deficiency-Based Evaluation is optional.

#### **1.4.1 Selection of Performance Objective**

Omit. The evaluation objective is given in SFEBBC Section 329.2.

#### **1.4.2 Level of Seismicity**

The level of seismicity shall be taken as High for all schools subject to SFEBBC Section 329.

#### **1.4.4 Evaluation Procedures**

Tier 1 Screening is required. Tier 2 Deficiency-Based Evaluation is optional. Tier 3 Systematic evaluation is not required.

#### **1.4.5 Evaluation Report**

Omit. The template report required by ASCE 41 is not to be used in this case. Evaluation reports should use the attached Template Evaluation Report.

### **1.5 Seismic Retrofit Process**

Omit. Retrofit is beyond the scope of SFEBBC Section 329.

### **2.1 Scope – 2.3 Target Building Performance Levels**

Omit. Evaluation objectives are given in SFEBBC Section 329.2.

### **2.4 Seismic Hazard**

Per SFEBBC Section 329.2, all evaluations are required to consider only the BSE-1E hazard.

For purposes of compliance with SFEBBC Section 329, the Site-Specific Procedure of Section 2.4.2 need not be used.

#### **2.4.1 General Procedure for Hazard Due to Ground Shaking**

Per SFEBBC Section 329.2, all evaluations are required to consider only the BSE-1E hazard.

Seismicity parameters for the BSE-1E hazard may be obtained using the USGS tool available at <http://geohazards.usgs.gov/designmaps/us/application.php>. From the Design Code Reference Document menu, select "2013 ASCE 41." From the Earthquake Hazard Level menu, select "BSE-1E".

For purposes of calculating seismicity parameters with the USGS tool, Site Class F need not be assumed.

##### **2.4.1.6.1 Site Classes**

Where the Site Class is known from available documents, the known Site Class should be used. Where the Site Class is not known, for purposes of compliance with SFEBBC Section 329, the Site

Class may be estimated from the USGS map available at <http://earthquake.usgs.gov/regional/nca/soiltype/map/>.

Unless site-specific investigations indicate otherwise, Site Class F shall be assumed for any site located within a zone of required investigation for liquefaction on the 2000 Department of Conservation map available at [http://gmw.consrv.ca.gov/SHMP/download/pdf/ozn\\_sf.pdf](http://gmw.consrv.ca.gov/SHMP/download/pdf/ozn_sf.pdf).

Otherwise, Site Class F need not be assumed.

For purposes of compliance with SFEBC Section 329, site-specific investigation of potential Site Class F sites is not required as long as potential liquefaction is noted on the Deficiency List in the seismic evaluation report.

## **2.5 Level of Seismicity**

The level of seismicity shall be taken as High for all schools subject to SFEBC Section 329.

### **3.2.4 Site and Foundation Information**

For purposes of compliance with SFEBC Section 329, any requirement in ASCE41-13 for site-specific soils or geotechnical investigation is waived. Owners may perform and report the results of such investigations voluntarily.

#### **3.3.1 Limitations on the Use of the Tier 1 and 2 Evaluation and Retrofit Procedures**

For purposes of compliance with SFEBC Section 329, Tier 3 evaluation is not required. However, if ASCE 41-13 Section 3.3.1 would require Tier 3 evaluation, each Tier 1 checklist item subject to that requirement (which in some cases might be only those on Immediate Occupancy but not Life Safety checklists) shall be listed in the Deficiency List with a note indicating potential non-compliance subject to Tier 3 analysis.

Originally signed by:  
Tom C. Hui, S.E., C.B.O. 11/17/2014  
Director  
Department of Building Inspection

Approved by Building Inspection Commission on 8/20/2014



# Earthquake Evaluation of Private School Structures

## SCOPE REPORT – NO FEE

San Francisco Existing Building Code Section 329 requires the seismic evaluation of certain school buildings and non-building structures and submittal of reports to the Department of Building Inspection. This template should be used to comply with Section 329.3, which requires submittal of a document "listing each structure to be evaluated and other information requested by the Department." **This Scope Report does not constitute a seismic evaluation and does not represent an engineering judgment with respect to any building or non-building structure.**

The deadline for submitting this Scope Report is November 2, 2015. Submit the completed Scope Report either:

- As a PDF attachment to [quakesafeschools@sfgov.org](mailto:quakesafeschools@sfgov.org), with "Private School Scope Report" in the subject line, or
- As a hardcopy to Private School Seismic Evaluation Program, Earthquake Safety Implementation Program, San Francisco City Hall Room 362, 1 Dr. Carlton B. Goodlett Place, San Francisco, CA 94012

FOR QUESTIONS OR CONCERNS PLEASE CONTACT US AT (415) 554-4925 or online at [www.sfgov.org/esip](http://www.sfgov.org/esip)

Yes      No

Does this Scope Report replace or supplement a previously submitted Scope Report for the same school?

    

### SECTION 1 – SCHOOL INFORMATION

\_\_\_\_\_  
School name

\_\_\_\_\_  
School street address

\_\_\_\_\_  
Block / Lot number(s)

### SECTION 2 – CONTACT INFORMATION

\_\_\_\_\_  
Property/Building owner (individual or institution)

\_\_\_\_\_  
Owner's representative (individual)

\_\_\_\_\_  
Owner's representative telephone

\_\_\_\_\_  
Owner's representative email

\_\_\_\_\_  
Owner's representative mailing address

\_\_\_\_\_  
School representative (if different from owner's representative)

\_\_\_\_\_  
School representative telephone

\_\_\_\_\_  
School representative email

\_\_\_\_\_  
School representative mailing address

1660 Mission Street - San Francisco CA 94103  
Office (415) 558-6699 - [www.sfdbi.org](http://www.sfdbi.org)

**EARTHQUAKE EVALUATION OF PRIVATE SCHOOL STRUCTURES, SCOPE REPORT**  
**Page 2 of 3**

School Name (as on page 1) \_\_\_\_\_

**SECTION 3 – LIST OF SCHOOL BUILDINGS & NON-BUILDING STRUCTURES**

*Complete Section 3A for structures expected to be addressed in a later seismic evaluation report, as required by SFEBC Section 329. Complete Section 3B for structures expected to be exempt from evaluation.*

**SECTION 3A – STRUCTURES EXPECTED TO BE SUBJECT TO SEISMIC EVALUATION**

*In the following table, list each stand-alone building on the school campus that serves school functions. If the school has more than one campus, or the campus buildings have more than one street address, include that information in the building description. Include here any buildings and non-building structures that are also listed in Section 4.*

Building name or identifier	Primary use or function

Does the school campus contain any of the following non-building structures?

Yes      No

Retaining walls (structural walls creating a change of grade greater than 3 ft)

    

Masonry or concrete fences

    

Covered patios or outdoor seating areas

    

Covered walkways or bus shelters

    

Outdoor bleachers or stadium seating

    

Optional: Use this space to identify specific non-building structures that are not explicitly exempt from evaluation and are not represented in the foregoing list. The Department can then assist you in determining whether they are subject to evaluation.

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**SECTION 3B – STRUCTURES EXPECTED TO BE EXEMPT FROM SEISMIC EVALUATION**

Does the school campus contain any of the following?

Yes      No

Buildings used entirely for non-school purposes (not classified as E occupancy)

    

If yes, identify briefly:

\_\_\_\_\_

\_\_\_\_\_

Buildings less than 250 square feet in floor area

    

Structures for which no building permit would be required (*Reference: SFBC Section 105.2*)

    

Optional: Use this space to identify other structures that might be exempt from evaluation. The Department can then assist you in determining whether they are subject to evaluation.

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# SEISMIC EVALUATION REPORT

School:  
Building Name/ID:  
Building Address:

Report Date:  
Previous Versions:

Page 1 of 13

*This is a template document intended to ensure complete and consistent reports to DBI. It is not meant to preclude separate correspondence or reporting between engineers and clients. Blue highlights are instructions to the engineer using this template. Remove all instructions and highlights before submittal. In most sections, the template text should be retained, but the engineer should modify or correct any misstatements and may supplement the text as needed. The format and outline of the report are required to be maintained, however, any specific wording may be modified where deemed appropriate by the design professional.*

*A single report may be used to cover multiple buildings or non-building structures subject to the same criteria. Alternatively, each building and non-building structure may have its own report. Clarity of presentation, subject to Department approval, is the priority.*

This report complies with requirements of San Francisco Existing *SE seal and signature*  
Building Code Section 329.

**Report Outline** *It is not necessary to provide page numbers*

1. Evaluation process and criteria
  2. Site and building description
  3. Deficiency list
- Appendix A. Approved Scope Report  
Appendix B. ASCE 41-13 Tier 1 Checklists  
Appendix C. Structural calculations  
Appendix D. Photographs and details

*Date signed*

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## **FOR DBI USE ONLY**

Report is incomplete or requires revision. See separate comment form.

Report appears complete as to form and is assumed correct based on the statement of the Structural Engineer whose seal and signature appear above.

DBI Reviewer: \_\_\_\_\_

Date: \_\_\_\_\_

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*SE Firm Name (Logo optional)*  
*SE Address, phone (website or email address optional)*

# SEISMIC EVALUATION REPORT

School:  
Building Name/ID:  
Building Address:

Report Date:  
Previous Versions:

Page 2 of 13

## 1. Evaluation process and criteria

### 1.1 Purpose

The purpose of this report is to comply with San Francisco Existing Building Code Section (SFEBBC) 329, as implemented by Department of Building Inspection Administrative Bulletin 109 (AB-109).

### 1.2 Scope

This report covers only the following buildings and non-building structures on the school campus. See Appendix A for a list of other buildings and non-building structures on the school campus that might be subject to SFEBBC Section 329 but are not covered in this report.

*Insert list; coordinate with site plan in Section 2.*

### 1.3 Evaluation criteria: Modifications to ASCE 41-13

As provided in SFEBBC Section 329.2 and AB-109, the evaluation applied the engineering standard known as ASCE 41-13<sup>1</sup> with the following evaluation objective:

	Performance Level	Hazard Level
Structural components	Life Safety	BSE-1E
Nonstructural components	Life Safety	BSE-1E

In accordance with SFEBBC Section 329.2 and AB-109, the following modifications were applied to the standard ASCE 41-13 requirements:

*Following is a list of variations allowed or required by AB-109. Retain the ones that apply to this evaluation. Delete the others. Add items as needed to reflect the work that was actually done:*

- The Site Class was taken from the USGS map at <http://earthquake.usgs.gov/regional/nca/soiltype/map/>.
- The Site Class is possibly Site Class F, but no site-specific soils or geotechnical investigation was performed.
- Liquefaction and landslide potential were assumed from the Department of Conservation map at [http://gmw.consrv.ca.gov/SHMP/download/pdf/ozn\\_sf.pdf](http://gmw.consrv.ca.gov/SHMP/download/pdf/ozn_sf.pdf).
- Despite a lack of original design and construction documentation, investigation of existing details was limited for budget and disruption purposes.
- Tier 3 Systematic Evaluation is required for this building by ASCE 41-13 Section 3.3 but for budget purposes was not done.

<sup>1</sup> *Seismic Evaluation and Retrofit of Existing Buildings* (ASCE/SEI 41-13), American Society of Civil Engineers, 2013.

# SEISMIC EVALUATION REPORT

School:  
Building Name/ID:  
Building Address:

Report Date:  
Previous Versions:

## 1.4 Document review

The following documents were used to complete the evaluation, in general compliance with ASCE 41-13 Section 3.2.2. The Set ID is used to identify the documents cited in Appendix B of this report.

Set ID	Date	Description
		<i>For each document (set of plans, report, etc.), give the title and author, indicate the number of sheets or pages (especially if only part of the set was available), and state the context in which the document was produced (original construction, alteration, retrofit, repair, etc.)</i>

# SEISMIC EVALUATION REPORT

School:  
Building Name/ID:  
Building Address:

Report Date:  
Previous Versions:

Page 4 of 13

## 1.5 Site visit

A site visit was made to verify certain information and to assist in completing the evaluation, in general compliance with ASCE 41-13 section 3.2.

Date of site visit:

Visiting engineer(s) and staff:

School contact:

School on-site liaison:

The scope of the site visit was based on our judgment, accessibility of certain areas, and convenience of the school on-site liaison. The purpose of the following list is merely to record the work that was done. That some listed items are not checked does not indicate an incomplete evaluation. The site visit included:

- Interview w/ on-site liaison  
*Engineer may add optional notes after each item to clarify the scope, make specific observations, reference photographs in Appendix, suggest need for destructive investigation, etc.*
- Grounds, for observation of soil, slopes, drainage, general condition
- Exterior observation to verify basic massing, configuration, general condition
- Interior observation to verify use, wall line configuration, general condition
- Roof
- Basement
- Ceiling plenum
- Unfinished spaces (mechanical rooms, closets, crawl spaces, etc.)
- Details of structure-architecture interaction
- Roof-to-wall connections
- Gravity system framing
- Seismic force resisting system elements or components
- Adjacent buildings subject to pounding or falling hazard
- Other:

*Engineer to edit and/or complete the following paragraph as needed, using the table format for more detailed descriptions:*

The site visit confirmed that the existing structure generally conforms to the available drawings listed in Section 1.4, with the following exceptions:

Set ID	Condition shown on plans	Condition observed at site visit
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# SEISMIC EVALUATION REPORT

School:  
Building Name/ID:  
Building Address:

Report Date:  
Previous Versions:

Page 5 of 13

## 2. Site and building description

### 2.1 Site plan

*If the school contains more than one structure, as listed in Appendix A, provide a site plan identifying each building, in coordination with the building names in Appendix A and Section 1.2.*

### 2.2 Structure description

*If this report addresses more than one building or non-building structure, provide all the information required by this section for each structure, using structure IDs in coordination with Section 1.2.*

Year originally built:

Number of stories above grade:

Number of stories below grade:

Total floor area [sq ft, approx]:

Original design code

History of significant structural alteration (non-seismic)

*For purposes of this report, “significant alteration” means work that could have affected the building’s seismic demands by changing the weight or the distribution of story shear or overturning forces. It would generally not include replacement of finishes, upgrade of HVAC equipment (except possibly for heavy tanks or rooftop units), or architectural work that did not involve changes to structural elements. Describe the changes to structural elements.*

History of seismic retrofit

*If applicable, give the retrofit design code/criteria/performance objective, as well as dates and reference to Set ID(s) in Section 1.4.*

*SE Firm Name (Logo optional)*

*SE Address, phone (website or email address optional)*

# SEISMIC EVALUATION REPORT

School:  
Building Name/ID:  
Building Address:

Report Date:  
Previous Versions:

Page 6 of 13

Exterior elevation photograph, looking *\*\*direction\*\**, taken *\*\*date\*\**:

*Provide one or two exterior elevation photographs sufficient to give a general sense of the building's massing.*

- *Complete the caption above the photo box by adding a compass direction and the date of the photo.*
- *Additional annotations (north arrow, grid lines, etc. to match the plan sketch below) are useful but optional.*
- *If two photos are provided here, provide a similar caption above the second photo.*
- *Additional photographs, if needed, should be provided in Appendix D.*

Plan sketch:

*Provide a rough sketch of a plan section showing:*

- *Plan configuration, with approximate overall dimensions*
- *Substantially different parts of the building – original v. additions, different heights, different uses, etc.*
- *Grid lines or key notes, so that other sections of this report can reference certain areas or SFRS elements consistently*
- *Location and orientation of key SFRS walls and frame lines*
- *Project North arrow*

*If the building plan varies over the height, show the first story and other stories as needed to convey significant information regarding basic SFRS configuration.*

# SEISMIC EVALUATION REPORT

School:  
 Building Name/ID:  
 Building Address:

Report Date:  
 Previous Versions:

## 2.3 BSE-1E Seismicity Parameters

Latitude:  
 Longitude:  
 Site Class:  
 Basis for Site Class: *See AB-109 re ASCE 41-13 Section 2.4.1.6.1. If unknown, list the USGS map. If known, cite the Set ID and page/detail from the list in Section 1.4.*

Period [sec]	Mapped BSE-1E values [g]	Site Coefficients	$S_a$ spectral values [g]	Need not exceed values (optional) [g]
0.2	$S_{S,20/50} =$	$F_a =$	$S_{XS,BSE-1E} = F_a S_{S,20/50} =$	$S_{XS,BSE-1N} =$
1.0	$S_{I,20/50} =$	$F_v =$	$S_{XI,BSE-1E} = F_v S_{I,20/50} =$	$S_{XI,BSE-1N} =$

## 2.4 Gravity system

Roof diaphragm and framing

*For each item, briefly describe the structural material and structural elements.*

Typical floor diaphragm and framing

Ground floor framing

Vertical load-bearing elements

Basement walls

Foundation

# SEISMIC EVALUATION REPORT

School:  
 Building Name/ID:  
 Building Address:

Report Date:  
 Previous Versions:

## 2.5 Seismic force resisting system

Common building type per ASCE 41-13 Section 3.2.1		North-South	East-West
Wood frame, Light	W1	<input type="checkbox"/>	<input type="checkbox"/>
Wood frame, multi-story, multi-unit residential	W1A	<input type="checkbox"/>	<input type="checkbox"/>
Wood frame, commercial / industrial	W2	<input type="checkbox"/>	<input type="checkbox"/>
Steel moment frame, rigid diaphragm	S1	<input type="checkbox"/>	<input type="checkbox"/>
Steel moment frame, flexible diaphragm	S1A	<input type="checkbox"/>	<input type="checkbox"/>
Steel braced frame, rigid diaphragm	S2	<input type="checkbox"/>	<input type="checkbox"/>
Steel braced frame, flexible diaphragm	S2A	<input type="checkbox"/>	<input type="checkbox"/>
Steel light frame	S3	<input type="checkbox"/>	<input type="checkbox"/>
Dual system w/ backup steel moment frame	S4	<input type="checkbox"/>	<input type="checkbox"/>
Steel frame w/ infill masonry shear wall, rigid diaphragm	S5	<input type="checkbox"/>	<input type="checkbox"/>
Steel frame w/ infill masonry shear wall, flexible diaphragm	S5A	<input type="checkbox"/>	<input type="checkbox"/>
Steel plate shear wall	S6	<input type="checkbox"/>	<input type="checkbox"/>
Concrete moment frame	C1	<input type="checkbox"/>	<input type="checkbox"/>
Concrete shear wall, rigid diaphragm	C2	<input type="checkbox"/>	<input type="checkbox"/>
Concrete shear wall, flexible diaphragm	C2A	<input type="checkbox"/>	<input type="checkbox"/>
Concrete frame w/ infill masonry shear wall, rigid diaphragm	C3	<input type="checkbox"/>	<input type="checkbox"/>
Concrete frame w/ infill masonry shear wall, flexible diaphragm	C3A	<input type="checkbox"/>	<input type="checkbox"/>
Precast/tilt-up concrete shear wall, flexible diaphragm	PC1	<input type="checkbox"/>	<input type="checkbox"/>
Precast/tilt-up concrete shear wall, rigid diaphragm	PC1A	<input type="checkbox"/>	<input type="checkbox"/>
Precast concrete frame w/ shear walls	PC2	<input type="checkbox"/>	<input type="checkbox"/>
Precast concrete frames w/o shear walls	PC2A	<input type="checkbox"/>	<input type="checkbox"/>
Reinforced masonry bearing wall, flexible diaphragm	RM1	<input type="checkbox"/>	<input type="checkbox"/>
Reinforced masonry bearing wall, rigid diaphragm	RM2	<input type="checkbox"/>	<input type="checkbox"/>
Unreinforced masonry bearing wall, flexible diaphragm	URM	<input type="checkbox"/>	<input type="checkbox"/>
Unreinforced masonry bearing wall, rigid diaphragm	URMA	<input type="checkbox"/>	<input type="checkbox"/>
Seismic Isolation or Passive Dissipation	SI/PD	<input type="checkbox"/>	<input type="checkbox"/>
Combination of type(s) checked above and the following other SFRS type(s):		<input type="checkbox"/>	<input type="checkbox"/>
<i>List the other SFRS type(s) here.</i>			
None of the above		<input type="checkbox"/>	<input type="checkbox"/>
<i>List the present SFRS type(s) here.</i>			

### Benchmark year check:

In accordance with ASCE 41-13 Section 4.3 and Table 4-6, the structure qualifies **\*\*or [select one, delete the other]\*\*** does not qualify as a benchmark building. *If the building qualifies, state the building type and qualifying provisions.*

*See ASCE 41-13 Section 4.3 and Table 4-6. State whether the combination(s) of common building type and design/retrofit/evaluation provisions qualify the building as a benchmark building. Note: Benchmark year exemptions apply only to structural elements.*

SE Firm Name (Logo optional)  
 SE Address, phone (website or email address optional)

# SEISMIC EVALUATION REPORT

School:  
Building Name/ID:  
Building Address:

Report Date:  
Previous Versions:

Page 9 of 13

*For each item following, give a brief response or description.*

- |                                 |   |
|---------------------------------|---|
| Horizontal system combinations  | <i>If more than one common building type is indicated in the table above, describe the horizontal combination, if any. Distinguish combinations in a single direction from combinations that involve a single system in each direction. In particular, address the Tier 1 &amp; Tier 2 eligibility conditions for combined systems given in ASCE 41-13 Section 3.3.1.2.</i> |
| Vertical system combinations    | <i>If more than one common building type is indicated in the table above, describe the vertical combination, if any. In particular, address the Tier 1 &amp; Tier 2 eligibility conditions for combined systems given in ASCE 41-13 Section 3.3.1.2.</i>  |
| SFRS foundation Gravity loading | <i>Describe the degree to which the SFRS elements also carry gravity load, distinguishing as appropriate between elements on different frame lines or in different directions.</i>  |
| System details                  | <i>Give a brief description of the typical and critical SFRS elements in each direction to supplement the SFRS description by common building type. For example, describe column and girder sizes, infill thickness, spacing of roof-to-wall ties, etc.</i>   |
| Structural materials            | <i>List concrete, rebar, and masonry specified material properties, as well as the source of information, citing documents by Set ID and page/detail as listed in Section 1.4. See ASCE 41-13 section 4.2.3 for default values.</i>   |

*SE Firm Name (Logo optional)*  
*SE Address, phone (website or email address optional)*

# SEISMIC EVALUATION REPORT

School:  
 Building Name/ID:  
 Building Address:

Report Date:  
 Previous Versions:

## 3. Deficiency list

As further described in Appendix B, the following Deficiency List is based on:

- Tier 1 evaluation only
- Tier 1 evaluation, plus voluntary Tier 2 analysis for selected items
- Tier 1, Tier 2, and Tier 3 evaluation due to requirements of ASCE 41-13 Section 3.3

The Deficiency List includes the following checklist items associated with full structural collapse:  
*After completing Appendix B and the summary list of NC and U items below, complete this table to highlight those items associated with structural collapse. The engineer may add items at the bottom of the list at his or her discretion.*

	Non-compliant condition	Unknown condition
Load Path	<input type="checkbox"/>	<input type="checkbox"/>
Weak Story	<input type="checkbox"/>	<input type="checkbox"/>
Soft Story	<input type="checkbox"/>	<input type="checkbox"/>
Vertical Irregularities	<input type="checkbox"/>	<input type="checkbox"/>
Geometry	<input type="checkbox"/>	<input type="checkbox"/>
Mass	<input type="checkbox"/>	<input type="checkbox"/>
Torsion	<input type="checkbox"/>	<input type="checkbox"/>
***Additional system-specific items to be added	<input type="checkbox"/>	<input type="checkbox"/>
Slope Failure	<input type="checkbox"/>	<input type="checkbox"/>
Surface Fault Rupture	<input type="checkbox"/>	<input type="checkbox"/>
Other: <i>**for building-specific conditions. Provide reference to checklist item in summary table below**</i>	<input type="checkbox"/>	<input type="checkbox"/>

The following table summarizes the potential deficiencies identified in Appendix B of this report.  
*Instructions for the tables below*

- *Deficiencies correspond to discrete items in the Tier 1 checklists.*
- *Do NOT list an item here as a potential deficiency if Tier 2 or Tier 3 analysis has shown the corresponding condition to be acceptable, even if the corresponding condition is non-compliant by Tier 1.*
- *In the column labeled “Additional evaluation recommended,” indicate whether additional work would likely result in the potential deficiency being removed from the list. There is no need to provide details or scope. Possible entries in this column are*
  - *None*
  - *Tier 2 evaluation*
  - *Tier 3 evaluation*
  - *Additional non-destructive investigation*
  - *Destructive investigation*
  - *Material testing*

# SEISMIC EVALUATION REPORT

School:  
Building Name/ID:  
Building Address:

Report Date:  
Previous Versions:

Non-compliant condition	Discussion	Additional evaluation recommended
<i>Restate in this column the titles of each checklist item marked NC.</i>	<i>For each item, describe:</i> <ul style="list-style-type: none"><li data-bbox="581 552 1360 611">• <i>The extent of non-compliance: Isolated? Widespread? Only in certain directions, along certain lines, in certain stories?</i></li></ul>	

Unknown condition	Discussion	Additional evaluation recommended
<i>Restate in this column the titles of each checklist item marked U.</i>	<i>For each item, describe:</i> <ul style="list-style-type: none"><li data-bbox="534 921 1214 1012">• <i>The extent of non-compliance: Isolated? Widespread? Only in certain directions, along certain lines, in certain stories?</i></li></ul>	

# SEISMIC EVALUATION REPORT

School:  
Building Name/ID:  
Building Address:

Report Date:  
Previous Versions:

Page 12 of 13

## Appendix A. Approved Scope Report

*Provide a copy of the DBI-approved Scope Report.*

## Appendix B. ASCE 41-13 Tier 1 Checklists

Tier 1 and Tier 2 eligibility check:

*See ASCE 41-13 Section 3.3.1 and Table 3-2. Provide a statement indicating whether the building is eligible for Tier 1 and Tier 2 procedures alone, or whether Tier 3 evaluation is necessary. Give building details as needed to address the various cases covered in Sections 3.3.1.1 and 3.3.1.2.*

Applicable Tier 1 checklists: *Edit the following list as appropriate to the building type or types.*

- Life Safety Basic Configuration Checklist (ASCE 41-13 Section 16.1.2LS)
- Life Safety Structural Checklist for Building Type \*\*\* (ASCE 41-13 Section 16.\*\*\*LS)
- Nonstructural Checklist (ASCE 41-13 Section 16.17)

*Provide completed Tier 1 checklists, in ASCE 41-13 sequence. Instructions for formatting the checklists:*

- *For each checklist item, indicate C, NC, N/A, or U. Recommended means of indicating C, NC, N/A, or U: Do not insert a circle or other graphic element that could get separated from the text. Instead select the response and use "Borders and Shading" to put a box/border around just the selected text.*
- *IMPORTANT: For each evaluation statement, provide a brief note citing the source of the information that justifies C, NC, etc. Refer to the Set ID and page/detail as listed in Section 1.4. Where applicable, provide additional discussion, Quick Check calculation, etc.*
- *Lengthy explanations, Tier 2 calculations, photos, etc. may be added here if convenient to do so. Otherwise, provide those in the Appendix C or D, and provide a reference there to the relevant Appendix B checklist item.*

## Appendix C. Structural Calculations

*Provide calculations or calc summary directly or insert graphics/screenshots from spreadsheet, hand calcs, etc.*

*Alternatively, if appendix materials are provided in a separate file, use Appendix C to provide a table of contents or guide to that file indicating what's in it and how many pages it is. If a separate file is provided, each of its pages must include all of the identifying information shown in the header and footer to this report.*

*Provide the general calculations as needed to complete the evaluation of Appendix B. These will likely include weight take-offs, period calculation, base shear calculation and distribution, and general analysis results (such as story shear distributions by frame line).*

*Provide calculations and supporting information needed to complete the response to specific checklist items. Brief calculations or explanations should go in Appendix B directly. If this appendix section is used, organize it by the title of the checklist item. It is acceptable to omit checklist items from this appendix if no information is needed to supplement what's already provided in Appendix B.*

# SEISMIC EVALUATION REPORT

School:  
Building Name/ID:  
Building Address:

Report Date:  
Previous Versions:

Page 13 of 13

## Appendix D. Photographs and Details

*Provide additional photographs or graphic information, with captions, in this optional appendix.*