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Seismic Assessment of Large Number of Buildings Based on Visual Inspection

Course No: S04-022 Credit: 4 PDH

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1. Introduction & Understanding Rapid Visual Screening Procedure

The FEMA P-154: "Report, Rapid Visual Screening of Buildings for Potential Seismic Hazards: A Handbook, 3rd Edition", is the first of a two-volume publication on recommended methodology for rapid visual screening of buildings for potential seismic hazards. The technical basis for the methodology, including the scoring system and its development, is contained in the companion volume, FEMA P-155 report, Rapid Visual Screening of Buildings for Potential Seismic Hazards: Supporting Documentation (FEMA, 2015). Both this document and the companion document are third editions of similar documents first published by FEMA in 1988 and updated in 2002.

The rapid visual screening (RVS) procedure has been developed to identify, inventory, and screen buildings that are potentially seismically hazardous. Once identified as potentially hazardous, such buildings should be further evaluated by a design professional experienced in seismic design to determine if, in fact, they are seismically hazardous. The RVS procedure uses a methodology based on a sidewalk survey of a building and a Data Collection Form, which the person conducting the survey completes, based on visual observation of the building from the exterior, and if possible, the interior. Buildings may be reviewed from the sidewalk without the benefit of building entry, structural drawings, or structural calculations. Reliability and confidence in building attribute determination are increased, however, if the structural framing system can be verified during interior screening or using construction documents.

The two-page Data Collection Form (shown in Figure 1 and 2) includes space for documenting building identification information, including its use and size, a photograph of the building, sketches, and documentation of pertinent data related to seismic performance. Based on the data collected during the survey, a <u>score is calculated that provides an indication of the expected seismic performance of the building.</u>

Rapid Visual Screening of Buildings for Po FEMA P-154 Data Collection Form		Level 1 eismicity
	Address:	
	Zip:	
	Other Identifiers:	
	Building Name:	
	Use:	
	Latitude: Longitude:	
PHOTOGRAPH	S ₅ : S ₁ :	
	Screener(s): Date/Time:	
	No. Stories: Above Grade: Below Grade: Year Buil	It: 🗆 EST
	Total Floor Area (sq. ft.): Code Yea	r:
1	Additions: Voc Voc(s) Built:	

Screen									Screener(s): Date/Time:															
											No. Stories: Above Grade: Below Grade: Year Built: D EST													
1											al Floor				_			Code	e Year:					
1									Add	litions:		one 🖸	Yes, Y	ear(s) B	uilt:									
1													Oco	upancy		embly	Commer		Emer. S			sinotei		er
															Utili	striel Y	Office Warehou		School Residen	tiel, ≢Un		overnmen	ıt	
													Soi	Type:		B						NK	-	-
															Hard Rock	Avg Rock	Dens Soil	-			oor F. oil	DNK, assi	ume Type	D.
													Geo	logic Ha	azards:	Liquefac	tion: Yes	/No/DNK	CLands	lide: Yes/	No/DNK	Surf. Ru	ipt.: Yes/	No/DNK
													Adj	acency:		D PC	ounding		Falling H	azards fro	om Taller	r Adjacen	t Building	
													Irre	gularitie	8:		ertical (typ		ity)					
																	an (type)							
														erior Fal ards:	ling	_	nbraced (arapets	Chimney	s	_	ivy Clado iendages	ting or H	eavy Ver	reer
													1102	aruo.		80				L	renuuges			
									-				CO	MMENT	S:	_	_							
	-	-			-			-	-	+			_											
	-	-			-		-	-	\rightarrow	+		\vdash	_											
-										+	_		_											
										+	_		_											
_								_		_			_											
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						94	ETCH							Addition	al ekoteb		nments o							
						ON.	ETUP		SIC S	со	RE, MO	DIFIE						_						
FEN	A BU	ILDIN	TYPE		1	Do Not	W	1 1	AtW	W2	S1	S2	\$3	\$4	S5	C1	C2	C3	PC1	PC2	RM	RM2	URM	MH
						Know					(MRF)	(BR)	(110)	(RC SW)	(URM INF)	(MRF)	(811)	(URM INF)	σu		(FD)	(RD)		
	ic Sco						3.6		3.2 -1.2	2.9 -1.2	2.1	2.0	2.6	2.0	1.7 -0.8	1.5 -0.9	2.0	1.2 -0.7	1.6	1.4	1.7	1.7	1.0 -0.7	1.5 NA
		rtical li Vertica					-1.3		-0.7	-1.2	-1.0	-1.0	-1.1	-1.0	-0.5	-0.9	-1.0	-0.7	-1.0 -0.6	-0.9	-0.9	-0.9	-0.7	NA
		larity,					-1.		-1.0	-1.0	-0.8	-0.7	-0.9	-0.7	-0.6	-0.6	-0.8	-0.5	-0.7	-0.6	-0.7	-0.7	-0.4	NA
	Code						-1.1	-	-1.0	-0.9	-0.6	-0.6	-0.8	-0.6	-0.2	-0.4	-0.7	-0.1	-0.5	-0.3	-0.5	-0.5	0.0	-0.1
	Bend Type /						1.6		1.9 0.3	2.2	1.4	1.4	1.1	1.9	NA 0.5	1.9 0.4	2.1 0.5	NA 0,3	2.0	2.4	2.1	2.1	NA 0.3	1.2
		E (1-3	stories)			0.2		0.2	0.1	-0.2	-0.4	0.2	-0.1	-0.4	0.0	0.0	-0.2	-0.3	-0.1	-0.1	-0.1	-0.2	-0.4
	44	E (> 3	_)			-0.3	-	-0.6	-0.9	-0.6	-0.6	NA	-0.6	-0.4	-0.5	-0.7	-0.3	NA	-0.4	-0.5	-0.6	-0.2	NA
		Score,				-	1.1	1	0.9	0.7	0.5	0.5	0.6	0.5	0.5	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.2	1.0
FIN	AL L	EVEL	.1 50	ORE	, S _{L1}	≥ S _{MN}	¢																	
		то	FRE	VIE	w						OTHE						ION RE	-						
	erior:				Partial] Aeria		Are Ther				4		ed Struct							
	Interior: None Visible Entered Detailed Structura Drawings Reviewed: Yes No										es, unkno es, score l				r other bi	uilding								
Soi	Soil Type Source: cut-off, if kr								ac 35 0[2	-		es, score i es, other i												
		Haza		ource:	_						🗌 Fallir	ig hazar		aller adja	cent									
Cor	ILACT P	Person	к.	_							build Geol		cards or S	oil Type	F		ed Nonst							
LE	VEL	2 S	CRE	ENI	NG P	ERF	ORN	IED'	?	1	🗌 Signi	ficant da	amage/de				es, nonstr o, nonstru							
	Yes, i	Final L	evel 2	Score	e, S ₁₂			_	No No		the s	tructural	l system				o, nonstru tailed eva				nay requ	are midg	aaon, ou	
Nor	struct	ural ha	zards	?	۱	/es											o, no non:				ed [DNK		
			И								ener sha													
Lege	nd:			MR	F≡Mo	ment-re	sisting f	reme	R		inforced co	ncrete		JRM INF :	= Unreinfo	rced maso	onry infil	MH	= Menufe	ctured Ho.	using Fl	D = Flexib	le diaphra	gm

Figure 1. RVS Level 1 Data Collection Form for High seismicity region

Rapid Visual Screening of Buildings for Potential Seismic Hazards
EEMA P-154 Data Collection Form
Optional Level 2 data collection to be performed by a civil or structural engineering professional, architect, or graduate student with background in seismic evaluation or design of buildings.

Bldg Name:				Final Level 1 Score:					consider S _{MIN})	
Screener:			Level 1 Irregularity Modifiers: Vertical Irregularity, VL				Plan In	egularity, P _{L1} =		
Date/Time:	ADJUSTED BASELINE SCORE: $S' = (S_{L1} - V_{L1} - P_{L1}) =$									
STRUCTURA	STRUCTURAL MODIFIERS TO ADD TO ADJUSTED BASELINE SCORE									
Topic		If statement is true, circle th			he modifier)			Yes	Subtotals	
Vertical	Sloping				side of the building to the	other.		-1.2		
Irregularity, VL2	Site	-0.3	1							
2	Weak			d cripple wall is visible in th	n one side of the building to ne crawl space.			-0.6	1	
	and/or				a garage opening without a	steel m	noment frame.		1	
	Soft Story				cupied floors above, use 10			-1.2		
	(circle one	W1A building open front:	There are o	penings at the ground sto	ry (such as for parking) ove	r at leas	st 50% of the		1	
	maximum)	length of the building.						-1.2		
					han 50% of that at story ab	ove or h	eight of any]	
		story is more than 2.0 tin						-0.9	4	
					en 50% and 75% of that at	story a	bove or height			
	Setback			mes the height of the story		helew e	aurice the	-0.5	{	
	Setback	diaphragm to cantilever a		h at an upper story are out	board of those at the story	Delow C	ausing the	-1.0		
				a at upper stories are inho	ard of those at lower storie:			-1.0	{	
					than the length of the elen			-0.3	{	
	Short				rs) along a column line in th		l system have	-0.5	{	
	Column/			he nominal height/depth ra		ie ionero	asystemmate	-0.5		
	Pier) is less than one half of th	e deoth	of the spandrel.		1	
				ors that shorten the column				-0.5		
	Solit Level	There is a split level at or						-0.5	1	
	Other				ously affects the building's	seismic	performance.	-1.0	V _{L2} =	
	Irregularity				nay affect the building's sei			-0.5	(Cap at -1.2)	
Plan	Torsional irre	egularity: Lateral system do								
Irregularity, PL2	include the V	W1A open front irregularity	listed above.)				-0.7		
		system: There are one or r						-0.4		
		orner: Both projections from						-0.4		
		opening: There is an openi				width at	that level.	-0.2		
		ing out-of-plane offset: The						-0.4	P12=	
		arity: There is another obse				c pertor	mance.	-0.7	(Cap at -1.1)	
Redundancy		has at least two bays of lat					(0	+0.3	-	
Pounding		eparated from an adjacent : 1% of the height of the sho		The floors do not align v	ertically within 2 feet. e stories taller than the oth		(Cap total pounding	-1.0	{	
		adjacent structure and:	nerorne	The building is at the en		er.	modifiers at -1.2)		{	
S2 Building		geometry is visible.		The building is at the en	o of the block.		mouners at -r.ej	-1.0	1	
C1 Building		rves as the beam in the mo	ment frame					-0.4	1	
PC1/RM1 Bldg		of-to-wall ties that are visib		rom drawings that do not r	elv on cross-orain bending	(Do no	t combine with	+0.3	1	
		nark or retrofit modifier.)								
PC1/RM1 Bldg		has closely spaced, full he	ight interior v	valls (rather than an interio	r space with few walls such	h as in a	warehouse).	+0.3	1	
URM	Gable walls	are present.						-0.4	1	
MH	There is a su	upplemental seismic bracin	g system pro	vided between the carriag	e and the ground.			+1.2]	
Retrofit	Comprehens	sive seismic retrofit is visible	e or known fr	om drawings.				+1.4	M=	
FINAL LEVEL	2 SCORE,	$S_{L2} = (S' + V_{L2} + P_{L2} + P_{L2})$	·M)≥S _{MIN}					(Transfer	to Level 1 form)	
		deterioration or another co			ng's seismic performance:	Y	es 🗌 No			
If yes, describe th	e condition in	the comment box below an	d indicate or	the Level 1 form that deta	iled evaluation is required	indepen	dent of the build	ing's score		
000000000000000000000000000000000000000										
		UCTURAL HAZARDS	j							
Location Exterior		Check "Yes" or "No")		an unberned second formed		Yes	No	Com	ment	
Exterior		unbraced unreinforced mas		or unbraced unreinforced	masonry chimney.					
		vy cladding or heavy venee		the second s	and an address of the					
	There is a ne	eavy canopy over exit door	s or pedestrik	an walkways that appears	nadequatery supported.					
	There is an unreinforced masonry appendage over exit doors or pedestrian walkways.									
	There is a sign posted on the building that indicates hazardous materials are present. There is a taller adjacent building with an unanchored URM wall or unbraced URM parapet or chimney.									
	There is a taller adjacent building with an unanchored URM wall or unbraced URM parapet or chimney. Other observed exterior nonstructural falling hazard:									
Interior		blow clay tile or brick partiti								
				and a series and thirds.						
Estimated Nons	Other observed interior nonstructural falling hazard: timated Nonstructural Seismic Performance (Check appropriate box and transfer to Level 1 form conclusions)									
	stimated Nonstructural Seismic Performance (Unex appropriate box and transfer to Level 1 form conclusions) Potential nonstructural hazards with significant threat to occupant life safety → Detailed Nonstructural Evaluation recommended									
	Proteina indistructura hazards identified with significant threat to occupant tile safety —>Detailed Norshructural evaluation recommended Nonstructural hazards identified with significant threat to occupant tile safety —>Detailed Norshructural Evaluation required									
		no nonstructural hazard thre								
Comments:										
L										

Figure 2. RVS Level 2 Optional Data Collection Form for High seismicity region.

Once the decision to conduct rapid visual screening for a community or group of buildings has been made, the screening effort can be expedited by pre-field planning, including the training of screeners, and careful overall management of the process.

Completion of the Data Collection Form in the field begins with identifying the primary structural seismic force-resisting system and structural materials of the building. Basic Scores for various building types are provided on the form, and the screener circles the appropriate one. The screener modifies the Basic Score by identifying and circling Score Modifiers. The Score Modifiers are related to observed performance attributes and are then added (or subtracted) to the Basic Score to arrive at a Final Score. <u>A more detailed screening of the building can be documented by using the optional form presented on the second page of the Data Collection Form. This optional form allows the user to adjust the Final Score with additional Score Modifiers. Basic Scores, Score Modifiers, and Final Scores relate to the probability of building collapse, should a rare earthquake occur (that is, a ground shaking level equivalent to the Maximum Considered Earthquake (MCE) currently used in national design and evaluation standards for the evaluation of existing buildings). Final Scores typically range from 0 to 7, with higher scores corresponding to better expected seismic performance and a lower potential for collapse.</u>

The scores are based on average expected ground shaking levels for the seismicity region and are intended to reflect the seismic design and construction practices for that region. In general, there are little or no seismic design requirements in Low seismicity regions, limited seismic design requirements in Moderate seismicity regions, and extensive seismic design requirements in Moderately High, High, and Very High seismicity regions. Consequently, a building in a high seismicity region will have generally been constructed with more seismic resistance than a similar building in a Low seismicity region. Seismic design and construction practices, however, vary regionally and are not necessarily uniform across regions of similar seismic risk. Western states and particularly California have historically imposed stricter seismic design requirements sooner than other places, in large part because of greater awareness among design professionals. Moderately High, High, and Very High seismicity regions in other areas may have no seismic design provisions or may have only just recently adopted and begun to enforce seismic design provisions. The methodology provides Score Modifiers to adjust scores to reflect buildings built before seismic provisions were implemented (known as "pre-code") and after modern seismic provisions were required (known as the "benchmark" year). By identifying pre-code and benchmark years that accurately reflect the local design and construction practices, the RVS procedure can be implemented in any area.

In this edition (FEMA P-154), seismicity regions have been updated to consider risktargeted Maximum Considered Earthquake (MCER) ground motions. These ground motions are described in more detail in FEMA P-155. Figure 3 provides a map of seismicity regions in the United States.

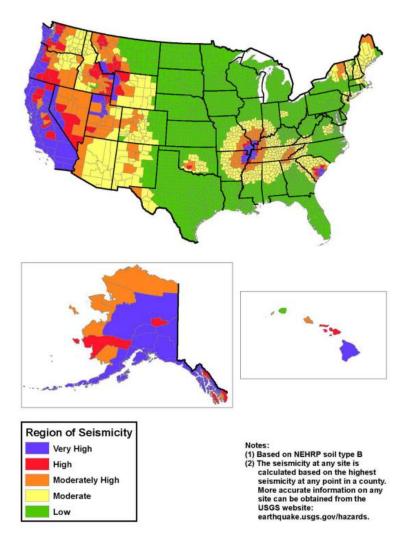


Figure 3.Map showing Very High, High, Moderately High, Moderate, and Low seismicity regions in the United States. A different RVS Data Collection Form has been developed for each of these regions.

The Data Collection Form used for rapid visual screening has now been extended with an optional second page, where the first page represents a Level 1 screening and the second page represents an optional Level 2 screening. <u>The Level 2 screening is more detailed than the</u>

Level 1 screening, and requires greater expertise to complete, but it is still rapid and visual. In both levels, the screener fills out the form and determines a score for the building. This score provides an indication of the expected seismic performance of the building. The Level 2 score can be higher than the Level 1 score (indicating less seismic risk), because Score Modifiers within the Level 1 screening score have more conservative values. In some instances, the Level 2 score can be lower than the Level 1 score, because the Level 2 screening evaluates some items in more detail and includes some items not covered by the Level 1 screening. For both levels, the screeners require training, and, for quality assurance purposes, the screening program must be overseen by a design professional knowledgeable in seismic design, evaluation, and risk assessment.

There are five versions of each form as shown in Appendix A, one each for regions of Low, Moderate, Moderately High, High, and Very High seismicity. The forms for Moderate, Moderately High, High, and Very High seismicity regions vary only in the values assigned to the Basic Scores and Score Modifiers and in the criteria used to assess pounding.

The entity that decides to conduct an RVS program may <u>be a state legislature, city</u> <u>council, private company, school district, or other organization and is known as the "RVS Authority</u>." Use of RVS on a community-wide basis enables the RVS Authority to divide screened buildings into two categories: those that are expected to have acceptable seismic performance, and those that may be seismically hazardous and should be studied further. <u>A Final Score of 2 is suggested as a "cut-off," based on present seismic design criteria. Using this cut-off level, buildings with Final Score of 2 or less should be investigated by a design professional experienced in seismic design.</u>

If a building receives a high score (i.e., above a specified cut-off score), the building is considered to have adequate seismic resistance to prevent collapse during a rare earthquake. The building score reflects probability of collapse or partial collapse only, and is not meant to be an indicator of the probability that the building will be usable following an earthquake. If a building receives a low score on the basis of this RVS procedure, it should be evaluated by a design professional experienced in seismic design. On the basis of a detailed inspection, engineering analyses, and other detailed procedures, a final determination of the seismic adequacy and the need for retrofit can be made.

Seismic Assessment of Existing Buildings Requires the following:

- 1) Rapid Visual Screening (Tier 1) (FEMA P-154) (Current Course)
- 2) Detailed Evaluation Phase (Tier 2) (ASCE41-13, FEMA P-807, FEMA P-58)

**Screening Phase (Tier 1) uses a Rapid Visual Screening (RVS) methodology, while the Tier 2 needs more detailed and sophisticated analysis

Table 1 provides a simplified comparison of all the seismic evaluation methods with respect to the time required to perform the evaluation, the relative cost, and the qualifications needed to perform the evaluation.

	Seismic Ev	aluation Tools	Tiered App	roach	
For Evaluating Safety of Existing Buildings	Undamaged Buildings	FEMA P-154	ASCE 41-13 Tier 1	ASCE 41-13 Tier 2	ASCE 41-13 Tier 3 FEMA P-807 FEMA P-58
For Forensic Engineering Purpose	Earthquake- Damaged Buildings	ATC-20 Rapid	ATC-20 Detailed	FEMA 352 ATC-52-4	FEMA 306 ATC-52-4
	Time Required	Minutes	Hours	Days	Weeks
	Relative Cost	\$	\$\$	\$\$\$	\$\$\$\$
	Qualifications	Trained building professionals	Structural engineer	s experienced in seis	mic evaluation and design

Table 1. Comparison of Prominent Seismic Evaluation Methods in the United States

The procedure presented in the FEMA P-154 Handbook is meant to be the preliminary screening phase of a multi-phase procedure for identifying potentially hazardous buildings. Buildings identified by this procedure as potentially hazardous should be analyzed in more detail by an experienced seismic design professional. The RVS method identifies building attributes that may contribute to poor seismic performance, and conservative assumptions have been made in developing the methodology. However, because rapid visual screening is designed to be performed from the sidewalk, with interior inspection not always possible, hazardous details will not always be visible, and seismically hazardous buildings may not be identified as such. Conversely, buildings initially identified as potentially hazardous by RVS may prove to be adequate.

The methodology presented here (FEMA P-154) can serve as an efficient step in assessing risk as part of a broader seismic risk-management program. Its cost is 15 to 75 minutes of inspection time for each building of interest, plus travel time between buildings, potentially several person-days of preparation time, and potentially several person-days to

compile results into decision-making information. Its benefits can be much greater, potentially eliminating the need for detailed seismic analysis of a large fraction of the buildings in question. Each such detailed evaluation that is avoided can save hours, days, or more of effort by an engineering professional.

2. Advantages and Limitations of the RVS Method

The RVS method described in FEMA P-154 has a number of advantages as well as limitations that need to be understood when developing and implementing a screening program, and when using the results.

2.1 Advantages of RVS

- 1) The primary advantages of the RVS method are speed and ability to use screeners who are not necessarily structural engineers.
- 2) As noted above, RVS has a unique niche in the spectrum of available seismic evaluation tools, as other tools require greater effort, expertise, and cost.
- 3) Because screening can be done quickly, large portfolios of buildings can be evaluated in a cost-effective manner
- 4) The method has also been used by many different people and jurisdictions throughout the United States for over 25 years. As a result, it has had a long track record of actual use and opportunities for scrutiny and improvement, including both the second and third edition updates of FEMA P-154.

2.2 Limitations of RVS

- 1) Limited review—often only from the exterior, typically without the benefit of drawing review, and without calculation—means the accuracy of the RVS method is anticipated to be less than that of more detailed, time-consuming, and expensive reviews.
- 2) Determining the seismic force-resisting system is integral to the method (and to any seismic evaluation). In some cases, the seismic force-resisting system cannot be identified by a rapid visual screening because the structure is covered by architectural finishes. A Detailed Structural Evaluation will be required to determine the building type.
- 3) An interior review is desirable, but not always possible given either the available time or access limitations. As such, interior hazards can be missed, and an understanding of the structural system and some of its deficiencies is necessarily limited.

- 4) <u>The RVS method is applicable to conventional building types only</u>. Bridges, large towers, and other non-building structure types, however, are not covered by this procedure.
- 5) In more detailed evaluation methods, drawings are reviewed and calculations are done, providing a more refined understanding of the individual building's structural characteristics. With drawing review, it may be possible to spot deficiencies known to be of concern that cannot be seen in a rapid visual screening. Seismic evaluation calculations determine the relationship between demands on members and their associated capacities and whether they are expected to have more desirable ductile behaviors or less desirable non-ductile behaviors. The RVS method does not include calculations, so assessments of seismic capacity are based on more general considerations related to building type, geometric irregularities, and site soil conditions.
- 6) Because large numbers of buildings are often screened and the level of expertise can vary widely, errors are inevitable. It is essential to have a thorough quality assurance program to minimize the extent of the errors. Given the large data collection effort and the potential flexibility in program goals, it is important to manage the program thoughtfully and with organizational skill to derive the most efficient use of personnel and to organize the collected information in the most useful way.

NOTE: The updated version of the FEMA P-154 Handbook (3rd Edition) provides advice to help minimize the limitations of the method so that the program can be as successful as possible.

3. Key Players in an RVS Program

Table 2 provides a description of the key players in an RVS program, including the roles and responsibilities of each, as well as the recommended qualification for each position.

Entity	Description	Examples	Qualifications	Responsibilities
RVS Authority	Entity that has decided to conduct an RVS program and will use the results.	State legislature, city council, school district, private building owner.	Has authority to conduct an RVS program.	Sets the goals and objectives of the program and describes how the results will be used. Chooses the Program Manager and the Supervising Engineer. Approves the plan developed by the Program Manager.
Program Manager	Entity that will manage the RVS program on behalf of the RVS Authority.	Building department, qualified technical branch of government, outside consultant.	Knowledgeable about RVS. Capable of managing the project.	Defines the scope of the program and develops the budget. Oversees implementation of the screening program. Allocates screener resources to ensure efficient use of their time and minimize travel time. Program Manager likely has administrative staff to develop the record keeping system, conduct the pre-field data collection, and perform data entry.
Supervising Engineer	Individual who will provide the technical expertise necessary to run the RVS program.	Structural engineer (may be the Program Manager).	Structural engineer with a background in seismic evaluation and risk assessments. Understands RVS methodology and its technical basis as described in FEMA P- 155.	Selects and modifies the Data Collection Form. Determines the key seismic code adoption dates and benchmark years. Determines cut- off score (with RVS Authority and Program Manager). May train the screeners. Available for screeners to consult with during field screening. Reviews completed forms. Assists in interpreting the results of the program.
Level 1 Screener	Individual who will conduct Level 1 screenings of buildings.	Civil or structural engineer, architect, design professional, building official, construction contractor, facility manager, firefighter, architectural or engineering student, or another individual with a general familiarity or background in building design or construction.	Receives appropriate FEMA P-154 training.	Performs Level 1 field screening.
Level 2 Screener	Individual who will conduct both Level 1 and Level 2 screenings of buildings.	Civil or structural engineering professional, architect, or graduate student with background in seismic evaluation or design of buildings.	Receives appropriate FEMA P-154 training.	Performs Level 1 and Level 2 field screenings.

Table 2. Key Players in an RVS Program

4. Planning and Implementing an RVS Program

There are several steps involved in planning a successful RVS program. As a first step, the RVS Authority should define the goals and objectives of the RVS program and describe

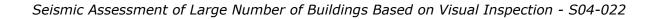
how the RVS results will be used. The RVS Authority should then select a Program Manager to manage the program and a Supervising Engineer to provide the technical expertise necessary to conduct an RVS program. Next, the Program Manager, in consultation with the Supervising Engineer, should define the scope of the project. Defining the scope is done in conjunction with and concurrent to developing the project budget. Scope issues, such as deciding how many buildings will be screened, screener resources and experience, and whether Level 2 screenings will be performed, have a direct impact on the budget. Coordination is required to bring the project scope and the budget in line with one another.

Once the project scope and the project budget have been defined by the Program Manager and approved by the RVS Authority, implementation of the RVS program continues with additional <u>Pre-Field Activities</u>, such as the following:

- Pre-field planning, including selection and development of a recordkeeping system, and development of maps that document local seismic hazard information.
- Selection of the Data Collection Form based on the seismic hazard and review and modification of the Data Collection Form for the individual needs of the RVS program.
- Selection and training of screening personnel.
- Acquisition and review of pre-field data, including review of available building files and databases to collect existing information on the buildings to be screened (e.g., address, lot number, number of stories, design date) and identifying soil types for the survey area.
- Review of existing building plans, if available.

Following the completion of these pre-field activities, field screening of individual buildings is performed. The RVS program concludes after the screening data are checked for quality and the screening results are filed in the record-keeping system or database. The RVS Authority can then use the RVS results for decision making.

The general sequence of implementing the RVS procedure is depicted in Figure 4.



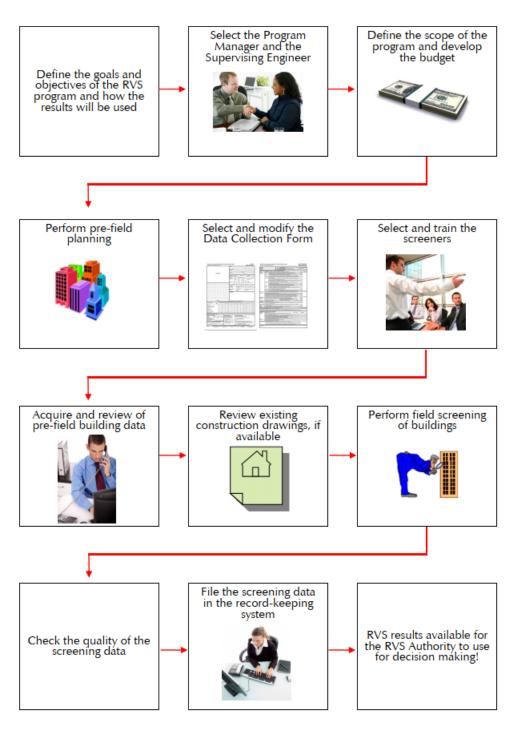


Figure 4. Rapid visual screening implementation sequence

5. Selecting the RVS Program Manager and the Supervising Engineer

The RVS Authority determines who will manage the RVS program. The Program Manager is responsible for defining the program scope, developing the program budget, and overseeing implementation of the screening program. The Program Manager must be knowledgeable about RVS and capable of managing the project. Whether the RVS Authority decides to manage the program itself or whether it decides to hire an outside consultant will depend on the capabilities of the RVS Authority, as well as the size and complexity of the program. If the RVS Authority is a building department, for example, it may be possible for individuals within the department to manage the program. If the RVS Authority is a state legislature, on the other hand, it will be desirable to hire a consultant to manage the program or assign the task to a qualified technical branch of government.

A Supervising Engineer is also required to run a successful RVS program. The Supervising Engineer should be a local practicing structural engineer with a background in seismic evaluation and risk assessments. The Supervising Engineer should ideally also have experience with the FEMA RVS methodology. If the Supervising Engineer is not knowledgeable about the technical basis of FEMA P-154, he or she should become so by reviewing both FEMA P-154 and FEMA P-155.

In addition to overall quality assurance, the Supervising Engineer has the following responsibilities:

- Selecting and modifying the Data Collection Form.
- Determining key seismic code adoption dates for the area being screened.
- Determining benchmark years for the area being screened.
- Determining the cut-off score to be used in concert with the RVS Authority and Program Manager.
- Training the screeners (alternatively, training courses may be available through FEMA).
- Being available for the screeners to consult with during the field screenings.
- Reviewing the completed forms.
- Providing assistance in interpreting the results of the RVS screening.

If the Program Manager is an experienced structural engineer, he or she can perform the role of Supervising Engineer.

5.1 Deciding Which Buildings to Screen

The RVS Program Manager may decide that because of budget, time, or other constraints, priorities should be set and certain areas within the region should be surveyed immediately, whereas other areas can be surveyed at a later time because they are assumed to be less hazardous. An area may be selected because it contains an older building stock and may have a higher density of potentially seismically hazardous buildings relative to other areas. For example, an area with older buildings within the RVS Authority region that consists mainly of unreinforced masonry buildings may be of higher priority than a newer area with mostly warehouse facilities, or a residential section of a city consisting of wood frame single-family dwellings.

The Program Manager may also decide that only buildings with certain attributes, such as a particular building type or occupancy, will be screened. For example, it may be decided to screen only school buildings.

5.2 Determining Screeners

Potential RVS screeners for Level 1 range from individuals with a general familiarity or background in building design or construction to experienced engineers and architects. Engineers and architects are likely to be more costly on an hourly basis than nonprofessionals, but this cost may be offset by the efficiency of the screener in the field, and the increased accuracy of the screenings, which in turn reduces the Supervising Engineer's effort. Of course, if the decision has been made to perform Level 1 and Level 2 screenings of all buildings at the same time, then all the screeners must be engineers or other qualified professionals.

Level 1 screeners should be generally familiar with the design and construction of buildings. This could include knowledge or hands-on experience with the structural elements of a building or historical interest in building materials or construction practices. All Level 1 and Level 2 screeners should receive the appropriate amount of FEMA P-154 training to help ensure competency.

6. Instructions of Filling Data Collection Form level I

1) Selection of the Data Collection Form

There are five Data Collection Forms, one for each of the following five regions of seismicity: Low, Moderate, Moderately High, High, and Very High. Each Data Collection Form has a Level 1 page and an optional Level 2 page. Full-sized versions of each form are provided in Appendix A.

Determination of Seismicity Region

To select the appropriate Data Collection Form, it is first necessary to determine the seismicity of the region that is to be screened as mentioned at the right top corner of Level 1 form as shown in the below image.

Rapid Visual Screening of Buildings for Potential Seismic Hazards

(Adopted from FEMA P-154 Data Collection Form)

LEVEL 1 MODERATE Seismicity

If the RVS program covers a large geographic area, different seismicity regions may apply for different building sites. The seismicity region can be determined by finding the county covering the surveyed region on the seismicity maps provided in Fig. 3, and identify the corresponding seismicity region. Each county shown in the Fig. 3 maps is assigned its seismicity designation on the basis of the highest seismicity in that county, even though it may only apply to a small portion of the county.

Table 3 can then be used to select the appropriate seismicity region, assuming that the highest seismicity level defined by the parameters in Table 3 shall govern.

Table 3. Seismicity Region Determination from MCER Spectral Acceleration Response(ASCE/SEI 41-13)

Se	eismicity Region	Spectral Acceleration Response, S _s (short-period, or 0.2 seconds)	Spectral Acceleration Response, S ₁ (long-period, or 1.0 second)
	Low	less than 0.250g	less than 0.100g
	Moderate	greater than or equal to 0.250g but less than 0.500g	greater than or equal to 0.100g but less than 0.200g
	Moderately High	greater than or equal to 0.500g but less than 1.000g	greater than or equal to 0.200g but less than 0.400g
	High	greater than or equal to 1.000g but less than 1.500g	greater than or equal to 0.400g but less than 0.600g
	Very High	greater than or equal to 1.500g	greater than or equal to 0.600g

Notes: g = acceleration of gravity in horizontal direction

2) Building Identification

LEVEL 1 MODERATE Seismicity

Address:	City:
Other ID:	Use:
Building Name:	
Latitude:	
Longitude:	
Screener:	Date/Time:

Notes:

Latitude and Longitude and Site Seismicity

S_s: Spectral Acceleration Response (Short Period) or 0.2 Sec.

S₁: Spectral Acceleration Response (long Period) or 1 Sec.

3) Building Information

#Stories - Above G	round:	. Below Grou	nd:	Year Built:	Est				
Total Floor Area (s	Total Floor Area (sft):								
Additions:	□ None	🗆 Yes, Yea	rs Built	t					
Occupancy:	□ Assembly		cial	Emergency Services	Historic				
	Industrial	□ Office		□ Schools	Government				
	Utility	□ Warehou	se	Residential,#Units:	□ Shelter				
Soil Type:	A: Hard Ro	ock	□ C:	Soft Rock	E: Soft Soil				
	B: Normal	Rock	D: Hard Soil / DNK		F: Poor Soil				
Geohazards:	L İq UC	faction:	🗆 Ye	es, □ No, □ DNK					
	∟ar	ndslide:	🗆 Ye						
	Surface R	upture:	□ Yes, □ No, □ DNK						
Adjacency:	Pounding		🗆 Fa	Illing Hazards from Taller A	djacent Building				
Irregularities:	Severe Ve	rtical Irregula	rity	Plan Irregularity	,				
	□ Moderate \	Vertical Irregu	larity						
	Unbraced	Chimneys	🗆 He	eavy Cladding or Heavy Vei	neer				
E∗ terior Falling Hazards:	Parapets		🗆 Ap	opendages					
	Other:								

#Stories - Above Ground: Mention the number of floors above the natural ground level. The number of stories is a good measure for the height of the building.

Stories - Below Ground: Mention the number of floors below the natural ground level.

#Year Built: Mention the year in which the building was completed. If the "year built" cannot be available in some cases. At this case, the screeners can make estimation of building's year built by looking at the architectural and built styles from the street. If the screener fills that year built by approximation basic, check the EST box beside so that the data can be known as estimated.

Total Floor Area (sqft): Mention the total floor area of the building in square feet unit. If the building is multis*toried*, total floor area can be estimated by multiplying floor area of one story by the number of floors. The purpose of this data is to estimate the building cost or value and to estimate the occupancy load. If the building total floor area is on approximate basic, please put "EST" behind the data.

#Code Year: Describe the year of the building code that was used to design the building. "Code Year" can be checked on the drawings of the building. Some buildings may be constructed without following any Building Code or may be constructed before the Building Code was adopted. If the "Building Code" is not known, leave it blank.

#Additions: This information is related to the separate portions of the main building. Some extra or extended buildings are constructed attached to the main building. Extended building may be constructed as independent structures with separate joints or may be integrally attached to the main building. If additional buildings are present, the "YES" box should be checked and the built year for that additional building should be enumerated. If the year the addition was on the estimate basic, "EST" should be added beside the year data

4) Occupancy

Occupancy:	□ Assembly	Commercial	Emergency Services	□ Historic
	Industrial	□ Office	□ Schools	Government
	Utility	□ Warehouse	□ Residential,#Units:	□ Shelter

Check the relevant use or occupancy of the building. In RVS Form, there are 9 general occupancy classes and 3 occupancy designations, Table (4). These occupancy types can be correlated with the "Use" of the building. For example, the restaurant building is surveyed, screener may fill the "Use" as "Restaurant" and he or she can choose the "Occupancy" as "Commercial". If the building doesn't not fall on these mentioned occupancy classes, detailed explanations should be included in the "Comments" section. For occupancy designation, screener can check the relevant block; Historic, Government, or Shelter. Some school occupancies are used as an emergency, the screener will circle "School" and check the "Shelters" box.

	Occupancy Classes
Assembly	Public assembly where 300 or more people gather. Examples include theaters, auditoriums, community centers, performance halls, and churches.
Commercial	Retail and wholesale businesses, financial institutions, restaurants, parking structure, and light warehouses.
Emergency Services	Critical facilities including police, fire stations, hospitals, and communication centers.
Industrial	Large facilities including factories, assembly plants, and heavy manufacturing facilities.
Office	Typical office buildings that house clerical and management functions.
Residential	Houses, townhouses, dormitories, motels, hotels, apartments and condominiums, and residences for the aged or disabled.
School	All public and private educational facilities from nursery school to university level.
Warehouse	Large warehouses used for product and commercial warehouses. (In FEMA - 154 Second Edition "Industrial" class included large warehouses).
Utility	Water, wastewater, power, gas, and electric facilities. (Captured as "Industrial" class facilities in FEMA - 154 Second Edition).
	Occupancy Designations
Government	Local, state, and federal non-emergency related buildings.
Historic	Many variations from community to community.
Shelter	Designated shelters or buildings specifically identified as shelters for post-event occupancy ("Emergency Services")

Table 4. Occupancy Classes and Occupancy Designations

5) Soil Type

Soil Type:	A: Hard Rock	C: Soft Rock	E: Soft Soil
	B: Normal Rock	D: Hard Soil / DNK	F: Poor Soil

The soil type should be identified and documented on the Data Collection Form (see Figure above) during pre-field planning. If the soil type has not been determined as part of that process, it needs to be identified by the screener during the building site visit. If there is no basis for classifying the soil type, "DNK" should be selected and Soil Type D should be assumed.

Soil Type/Site Class	Shear Wave Velocity ¹ , V _s ³⁰	Standard Blow Count ¹ , N	Undrained Shear Strength of the upper 100ft ¹ , s _u
A. Hard Rock	$V_{s}^{30} > 5000 \text{ ft/s}$		
B. Rock	2500 ft/s $< V_s^{30} < 5000$ ft/s		
C. Very Dense Soil and Soft Rock	1200 ft/s $< V_s^{30} < 2500$ ft/s	N >50	s _u >2000 psf
D. Stiff Soil	$600 \text{ ft/s} < V_s^{30} < 1200 \text{ ft/s}$	15 < N <50	1000psf < s _u < 2000 psf
E. Soft Clay Soil	$V_{\rm S}^{30} \le 600$ ft/s	N < 15	<i>s</i> _{<i>u</i>} < 1000 psf
	More than 10 feet of soft soil with water content $w > 40\%$, and $s_u < 40\%$	•	PI > 20,
F. Poor Soil	 Soils requiring site-specific evalua Soils vulnerable to potential loading, such as liquefiable s collapsible weakly-cemented Thicker than 10 feet of peat Very high plasticity clays (25 More than 120 ft of soft or n 	failure or collapse oils, quick and hi I soils. or highly organic feet with <i>PI</i> > 75	ghly-sensitive clays, clay. ;).

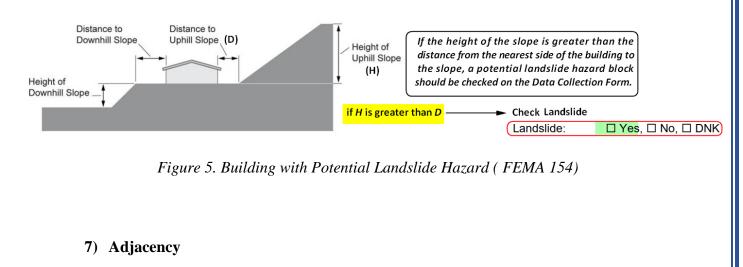
Table 5. Soil Type Definitions (ASCE/SEI 7-10)

¹ Average values.

6) Geohazards

Geohazards:	Liquefaction:	□ Yes, □ No, □ DNK	
Landslide:		□ Yes, □ No, □ DNK	
Surface Rupture:		□ Yes, □ No, □ DNK	

<u>NOTE:</u> If the height of the slope is greater than the distance from the nearest side of the building to the slope, a *potential landslide hazard* block should be *checked* on the Data Collection Form. Refer to figure below for landslide hazard potential.



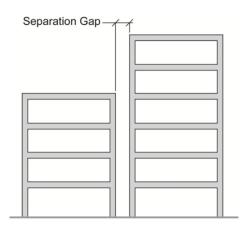
Adjacency:
Pounding
Falling Hazards from Taller Adjacent Building

Pounding is checked when TWO issues are happening together and they are:

1. When the separation between adjacent buildings is less than:

- 2" times number of stories in shorter building (in Very High seismicity region)
- 1 ¹/₂ "times number of stories in shorter building (in High seismicity region)
- 1" times number of stories in shorter building (in Moderately High seismicity region)
- ¹/₂ "times number of stories in shorter building (in Moderate and Low seismicity region)

Refer to the Figure 6 for Pounding Calculation and Consideration example



Examples:

- a) Two 2-story buildings next to each other in High seismicity region: Minimum Separation = $1 \frac{1}{2} \times 2 = 3^{"}$
- b) 6-story building next to a 4-story building in Moderate seismicity region: Minimum Separation = $1/2'' \times 4 = 2''$

Figure 6.Separation Gap Calculation Examples (FEMA 154)

AND

2. One or more of the following conditions apply:

a) Floors are separated vertically by more than two feet, as shown in Figure 7. Damage and potential collapse are considered to be more likely when the floor mass of one building can directly impact the columns or walls of the adjacent building.

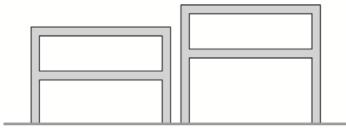


Figure 7. Schematic illustration of floors not aligning vertically.

 b) One building is two or more stories taller than the adjacent building, as illustrated in Figure 8. Damage may concentrate in the taller building at the roof level of the shorter building.

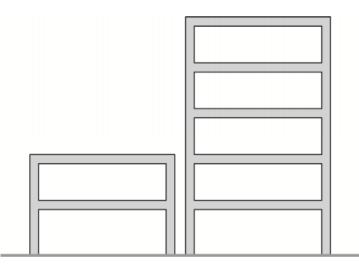


Figure 8. Schematic illustration of buildings of different height

c) The building is at the end of a row of three or more buildings, as illustrated in Figure 9. Higher demands are imposed on the end building when the adjacent building moves toward it and because it does not have a building on the other side to balance the loads. Higher levels of damage have been observed at end buildings in past earthquakes.

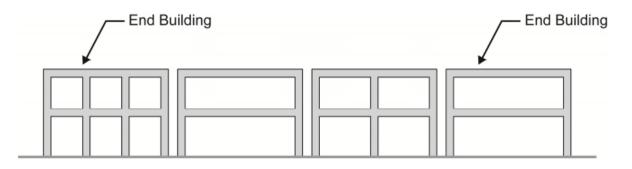
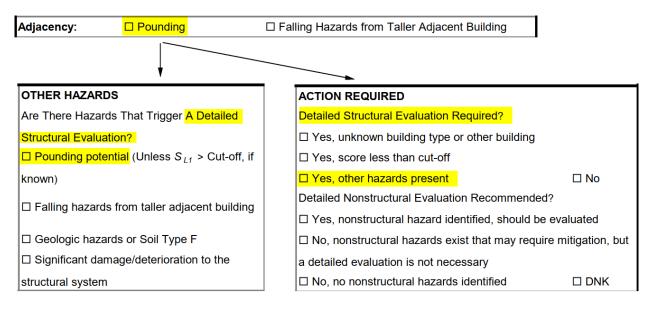


Figure 9. Schematic illustration of end buildings.

If the building meets any of the three criteria above plus item 1, the screener checks the "Pounding" box and a Detailed Structural Evaluation is triggered in the "Other Hazards" and "Action Required" fields at the bottom of the Level 1 form.



Similarly, if falling hazards from an adjacent building are identified, the screener checks the "Falling Hazards" box and a Detailed Structural Evaluation is triggered in the "Other Hazards" and "Action Required" fields at the bottom of the Level 1 form.

Adjacency:	Pounding	<mark>□ F</mark>	□ Falling Hazards from Taller Adjacent Building							
OTHER HAZAR	DS		ACTION REQUIRED							
Are There Haza	rds That Trigger <mark>A Detail</mark>	led	Detailed Structural Evaluation R	equired?						
Structural Evalu	ation?		□ Yes, unknown building type o	r other building						
Pounding pot	ential (Unless S _{L1} > Cut	t-off, if	□ Yes, score less than cut-off							
known)			☐ Yes, other hazards present		□ No					
□ Falling hazar	ds from taller adjacent bu	uilding	Detailed Nonstructural Evaluatio							
Geologic haz	ards or Soil Type F		□ No, nonstructural hazards exi	st that may requi	re mitigation, but					
□ Significant da	amage/deterioration to the	e	a detailed evaluation is not nece	essary						
structural syster	n		□ No, no nonstructural hazards	identified						

8) Irregularities

<mark>Irregularities:</mark>	□ Severe Vertical Irregularity	Plan Irregularity	
	□ Moderate Vertical Irregularity		

Irregularities: Check the relevant block of "Severe Vertical Irregularities", "Moderate Vertical Irregularities" and "Plan Irregularities". See the tables below for detailed explanations of each irregularity case, Table 6 and Table 7.

	Vertical Irregularity	Severity	Level 1 Instructions
Sloping Site		Varies	Apply if there is more than a one-story slope from one side of the building to the other. Evaluate as Severe for W1 buildings as shown in Figure (a), evaluate as Moderate for all other building types as shown in Figure (b).
Unbraced Cripple v√all		Moderate	Apply if unbraced cripple walls are observed in the crawlspace of the building. This applies to W1 buildings. If the basement is occupied, consider this condition as a soft story.
Weak and/ or Soft Story		Severe	Apply: Figure (a): For a W1 house with occupied space over a garage with limited or short wall lengths on both sides of the garage opening. Figure (b): For a W1A building with an open front at the ground story (such as for parking). Figure (c): When one of the stories has less wall or fewer columns than the others (usually the bottom story). Figure (d): When one of the stories is taller than the others (usually the bottom story).
Out-of plane Setback	(a) (b)	Severe	Apply if the walls of the building do not stack vertically in plan. This irregularity is most severe when the vertical elements of the lateral system at the upper levels are outboard of those at the lower levels as shown in Figure (a). The condition in Figure (b) also triggers this irregularity. If non stacking walls are known to be nonstructural, this irregularity does not apply. Apply the setback if greater than or equal to 2 feet.
In-plane Setback		Moderate	Apply if there is an in-plane offset of the lateral system. Usually, this is observable in braced frame (Figure (a)) and shear wall buildings (Figure (b)).
Short Column/ Pier		Severe	Apply if: Figure (a): Some columns/ piers are much shorter than the typical columns/ piers in the same line. Figure (b): The columns/ piers are narrow compared to the depth of the beams. Figure (c): There are infill walls that shorten the clear height of the column. Note this deficiency is typically seen in older concrete and steel building types.
Split Levels		Moderate	Apply if the floors of the building do not align or if there is a step in the roof level.

Table 6. Vertical Irregularity Reference Guide (FEMA 154)

	Plan Irregularity	Level 1 Instructions
Torsion	(a) Solid Wall (b) Solid Wall Solid Wall Solid Wall	Apply if there is good lateral resistance in one direction, but not the other, or if there is eccentric stiffness in plan (as shown in Figures (a) and (b); solid walls on two or three sides with walls with lots of openings on the remaining sides).
Non-Parallel Systems		Apply if the sides of the building do not form 90-degree angles.
Reentrant Corner		Apply if there is a reentrant corner, i.e., the building is L, U, T, or + shaped, with projections of more than 20 feet. Where possible, check to see if there are seismic separations where the wings meet. If so, evaluate for pounding.
Diaphragm Openings		Apply if there is a opening that has a width of over 50% of the width of the diaphragm at any level.
Beams do not align with columns		Apply if the exterior beams do not align with the columns in plan. Typically, this applies to concrete buildings, where the perimeter columns are outboard of the perimeter beams.

Table 7. Plan Irregularity Reference Guide (FEMA 154)

9) Exterior Falling Hazards

	Unbraced Chimneys	Heavy Cladding or Heavy Veneer
Exterior Falling Hazards:	Parapets	□ Appendages
	□ Other:	

Exterior Falling Hazards: Check the relevant exterior falling hazards in the form. "Un-braced chimneys" are common falling hazards for masonry and wood frame building as they are unreinforced and not adequately tied the main building." Parapets", "Heavy cladding or heavy veneer", and "appendages" or "canopies" or "architectural elements" are in the same problem with chimneys. If these are not properly anchored or properly unreinforced, the appropriate box should be checked. Detailed explanations can be put in the "Comments" section checking "Other" box in this part.

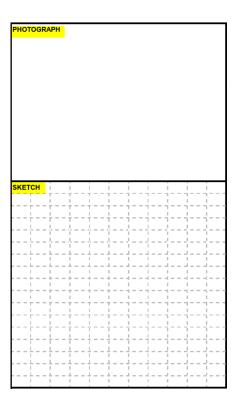
10) Comments

COMMENTS

□ Additional sketches or comments on separate page

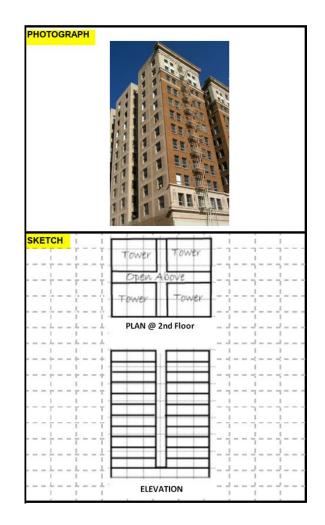
In "Comments" space, write down the detailed explanations of the building describing important structural features.

11) Photographs and Sketch Part



Photographs: There is the space on Level 1 Data Collection Form for attaching photos. Put the recorded photos of the building in that space. If possible, the screener should take the photos of the building targeting each side of the building and any important features such as observing adjacency, pounding, exterior falling hazards for the identification purposes. Screener can take one or more photos of the building, but have to sure that the other photos are also attached with the Form (either electronic format or hard copy format).

Sketch: Draw a sketch of the surveyed building in that area. The screener can draw a plan sketch or elevation sketch indicating the significant features of the building as per preferences. At least the screener should draw the plan of the building. More detailed information or important features can be recorded on the sketch. See to the following example.



12) Basic Score, Modifiers and Final Score

Table 8. Matrix a	of Basic	scores and	Score	<i>Modifiers</i>

BASIC SCORE, MODIFIERS, AND FINAL LEVEL 1 SCORE, S _{L1}																							
BUILDING TYPE	DNK	W1	W1A	W2	S1	S2	S3	S4	S5	C1	C2	C3	PC1	PC2	RM1	RM2	URM	MH	BN1	BN2			
Basic Score		5.1	4.5	3.8	2.7	2.6	3.5	2.5	2.7	2.1	2.5	2.0	2.1	1.9	2.1	2.1	1.7	2.9	1.7	3.2			
Severe Vertical Irregularity, V _{L1}		-1.4	-1.4	-1.4	-1.2	-1.2	-1.4	-1.1	-1.2	-1.1	-1.2	-1.0	-1.1	-1.0	-1.1	-1.1	-1.0	NA	-1.0	-0.9			
Moderate Vertical Irregularity, V _{L1}		-0.9	-0.9	-0.9	-0.8	-0.7	-0.9	-0.7	-0.7	-0.7	-0.7	-0.6	-0.7	-0.6	-0.7	-0.7	-0.6	NA	-0.6	-0.6			
Plan Irregularity, <i>P</i> _1		-1.4	-1.3	-1.2	-1.0	-0.9	-1.2	-0.9	-0.9	-0.8	-1.0	-0.8	-0.9	-0.8	-0.8	-0.8	-0.7	NA	-0.7	-0.8			
Pre-Code		-0.3	-0.5	-0.6	-0.3	-0.2	-0.2	-0.3	-0.3	-0.3	-0.4	-0.3	-0.2	-0.2	-0.2	-0.2	-0.1	-0.5	NA	NA			
Post-Benchmark		1.4	2.0	2.5	1.5	1.5	0.8	2.1	NA	2.0	2.3	NA	2.1	2.5	2.3	2.3	NA	1.2	NA	NA			
Soil Type A or B		0.7	1.2	1.8	1.1	1.4	0.6	1.5	1.6	1.1	1.5	1.3	1.6	1.3	1.4	1.4	1.3	1.6	1.3	0.8			
Soil Type E (1-3 stories)		-1.2	-1.3	-1.4	-0.9	-0.9	-1.0	-0.9	-0.9	-0.7	-1.0	-0.7	-0.8	-0.7	-0.8	-0.8	-0.6	-0.9	-0.6	-1.1			
Soil Type E (>3 stories)		-1.8	-1.6	-1.3	-0.9	-0.9	NA	-0.9	-1.0	-0.8	-1.0	-0.8	NA	-0.7	-0.7	-0.8	-0.6	NA	NA	NA			
Minimum Score, S _{MIN}		1.6	1.2	0.9	0.6	0.6	0.8	0.6	0.6	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.2	1.5	0.2	0.8			
FINAL LEVEL 1 SCORE, $S_{L1} \ge S_{MIN}$												NAL LEVEL 1 SCORE, $S_{11} \ge S_{MW}$											

The structural scoring system consists of a matrix of Basic Scores (one for each FEMA Building Type and its associated seismic force-resisting system) and Score Modifiers to account for observed attributes that modify seismic performance. The five forms vary from each other only in the values of these Basic Scores and Score Modifiers and the Level 2 pounding criteria. The Basic Scores and Score Modifiers are based on (1) time-dependent seismic design and construction practices in the region; (2) attributes known to decrease or increase seismic resistance capacity; and (3) maximum considered ground motions for the seismicity region under consideration. The Basic Score, Score Modifiers, and Final Score all relate to the probability of building collapse, should the maximum ground motions considered by the RVS procedure occur at the site. Final Scores typically range from 0 to 7. For choosing Basic Score, Modifiers and Final Score, building type must be known. Refer to table (7) below for Building Type. Circle the relevant score according to building type and sum them. After that, balance with S_{MIN}. Final Level Score, SL₁ must be greater than S_{MIN} in all building type. A higher score means that the building has smaller probability of collapse.

Two key characteristics of seismic performance are construction material (e.g., wood, concrete) and type of seismic force-resisting-system (moment frame, braced frame, or shear wall). A building classification system allows buildings with similar materials and seismic force-resisting systems to be grouped together, facilitating the fast identification of a building's likely strengths and vulnerabilities, and thus the building's expected performance during an earthquake. The FEMA P-154 RVS procedure groups the most common combinations of construction materials and seismic force-resisting systems in the United States into 17 types, referred to here as "FEMA Building Types." Each FEMA Building Type has its own Basic Score for each seismicity region, providing a measure of the expected performance of each FEMA Building Type in each seismicity region.

Following are the 17 FEMA Building Types considered in the FEMA P-154 RVS procedure, as shown in Table 9.

Table 9. FEMA P-154 Building Types

	Building Type							
DNK	If the building type cannot significantly identified, or engineer is not sure the building type							
W1	Light wood frame single- or multiple-family dwellings of one or more stories in height							
W1A	Light wood frame multi-unit, multi-story residential buildings with plan areas on each floor of greater than 3,000 ft ²							
W2	Wood frame commercial and industrial buildings with a floor area larger than 5,000 square feet. For commercial and industrial buildings with less than 5,000 square feet, the W2 type can be used as well.							
S1	Steel moment-resisting frame buildings							
S2	Braced steel frame buildings							
S 3	Light metal buildings							
S4	Steel frame buildings with cast-in-place concrete shear walls							
S 5	Steel frame buildings with unreinforced masonry infill walls							
C 1	Concrete moment-resisting frame buildings							
C2	Concrete shear wall buildings							
C 3	Concrete frame buildings with unreinforced masonry infill walls							
PC1	Tilt-up buildings							
PC2	Precast concrete frame buildings							
RM1	Reinforced masonry buildings with flexible floor and roof diaphragms							
RM2	Reinforced masonry buildings with rigid floor and roof diaphragms							
URM	Unreinforced masonry bearing wall buildings							
MH	Manufactured Housing							
BN1	Good Brick Nogging Building							
BN2	Poor constructed Brick Nogging Building							

Pre-Code: One of the key issues that must be addressed in the planning process is the determination of the year in which seismic codes were initially adopted and enforced by the local jurisdiction; and the year in which significantly improved seismic codes were adopted and enforced (this latter year is known as the benchmark year). On the Very High, High, Moderately High, and Moderate seismicity forms, Basic Scores are provided for buildings built after the initial adoption of seismic codes, but before substantially improved codes were adopted (benchmark year). This generally corresponds to buildings designed based on the Uniform Building Code (UBC) in the period between 1941 and 1975. Score Modifiers designated as "Pre-Code" and "Post-Benchmark" are provided, respectively, for buildings built before the adoption of codes and for buildings built after the adoption of substantially improved codes. In Low seismicity regions, the Basic Scores have been calculated assuming the buildings were built without consideration of seismic codes. For buildings in these regions, the Score

Modifier designated as "Pre-Code" is not applicable (N/A), and the Score Modifier designated as "Post-Benchmark" is applicable for buildings built after the adoption of seismic codes.

EXTENT OF REVIEW				OTHER HAZARDS	ACTION REQUIRED		
Exterior:	Partial	All Sides	□ Aerial	Are There Hazards That Trigger A Detailed	Detailed Structural Evaluation Required?		
Interior:	□ None	□ Visible	Entered	Structural Evaluation?	Yes, unknown building type or other building		
Drawing Reviewd:		□ No	\Box Pounding potential (Unless S_{L1} > Cut-off, if	□ Yes, score less than cut-off			
Soil Type Source:				known)	Yes, other hazards present	□ No	
Geohazards Source:				□ Falling hazards from taller adjacent building	Detailed Nonstructural Evaluation Recommended?		
Contact Person:					Yes, nonstructural hazard identified, should be evaluated		
LEVEL 2 SCREENING PERFORMED?				□ Geologic hazards or Soil Type F	D No, nonstructural hazards exist that may require mitigation, but		
\Box Yes, Final Level 2 Score, S_{L2} : \Box No		⊐ No	□ Significant damage/deterioration to the	a detailed evaluation is not necessary			
Nonstructu	ural Hazards?	I	⊐ Yes □ No	structural system	No, no nonstructural hazards identified		
Where information cannot be verified, screener shall note the following: EST = Estimated or unreliable data (OR) DNK = Do Not Know							

13) Extent of Review, Other Hazards, and Action Required

Extent of Review: This section cover the whole screening process identifying whether the screener had access the Exterior and Interior sides of the building, Drawing, Soil Type and Geohazards Source, and Contact Person. If the level 1 score is less than cut-off point or if the screener thinks that the building requires further investigation, it is checked "Yes" in "Level 2 Screening Performed?" A score of 2.0 is suggested as a cut-off point for standard occupancy buildings, based on present seismic design criteria.

Other Hazards: Check the relevant box concerning "Pounding potential", Falling Hazards", "Geologic Hazards of Soil Type" and "Significant Damage/ Deterioration to the structural system". These hazards are not considered in the score system of the Level 1 form, but they can cause damage to the building. If one of these hazards conditions exists in the building, a "Detailed Structural Evaluation" is required even though the Level 1 score is less than the cut-off point.

Action Required: As per consequences of above hazards conditions and overall screening process, tick the appropriate box in the form for further process. It is the final part of Level 1 Data Collection Form. There are two parts in the "Action Required" section; structural and non-structural evaluation parts. Check the relevant box in each part. See the following sections for choosing criteria of each option. "DNK" (Do not know) option is also presented in the form.

For Detailed Structural Evaluation,

Tick "*Yes, unknown FEMA Building Type or other building*" if the screener has little or no confidence about any choice for the structural system, or if the building does not conform to any of the (17) FEMA Building Types considered on the form, the screening cannot be used to conclude that the building is not potentially hazardous. Therefore, a Detailed Structural Evaluation of the building should be conducted by an experienced design professional. In some cases, the Supervising Engineer or another more experienced screener may be able to determine the FEMA Building Type and complete the screening.

Tick "*Yes, score less than cut-off*" if the building receives a score that is less than the cut-off, it may be seismically hazardous and should receive a Detailed Structural Evaluation by an experienced design professional.

Tick **"Yes, other hazards present"** if other hazards are present, as indicated in the "Other Hazards" section of the form, the building may be seismically hazardous and should receive a Detailed Structural Evaluation by an experienced design professional.

Tick "**No**" if the building receives a score greater than the cut-off, and no other hazards are present, then a Detailed Structural Evaluation is not required.

For Detailed Nonstructural Evaluation,

Tick "Yes, nonstructural hazards identified that should be evaluated" if a nonstructural hazard has been observed and further nonstructural evaluation is recommended to determine whether the identified potential falling hazard is actually a threat. For example, a detailed evaluation would be necessary to determine whether a building's heavy cladding is properly anchored. If the detailed evaluation reveals that it is properly anchored, the heavy cladding is no longer considered a falling hazard.

"No, nonstructural hazards exist that may require mitigation, but a detailed evaluation is not necessary" This box is checked if a nonstructural hazard that is a known threat has been observed; eg; an unreinforced brick chimney. In these cases, additional evaluation is not necessary, although mitigation will be necessary if the threat is to be reduced. The jurisdiction may decide to make mitigation of these falling hazards mandatory.

"No, no nonstructural hazards identified" If no exterior falling hazards have been observed during the screening, further nonstructural evaluation is not necessary.

7. Instructions of Filling Data Collection Form Level II (Optional)

Level 2 Data Collection Form is optional type and it should be filled by a civil or structural engineering professional, architect, or graduate student who has experiences and background knowledge on seismic evaluation of design of buildings. It should be noted that the screener applies same type of seismicity region to both Level 1 and Level 2 Form. If possible, Level 1 and Level 2 should be screened by same person. In Level 2 Data Collection Form, it includes four main sections;

(1) Building Information and Adjusted Base Line Score

(2) Structural Modifiers to Add to Adjusted Baseline Score

(3) Observable Nonstructural Hazards

(4) Comments

1) Building Information and Adjusted Base Line Score

Rapid Visual Screening of Buil	dings for Potential Seismic Hazards	LEVEL 2 (Optional)										
(Adopted from FEMA P-154 Data Collection Form	n)	MODERATE Seismicity										
Optional Level 2 Data Collection to be performed by a civil or	tonal Level 2 Data Collection to be performed by a civil or structural engineering professional, architect, or graduate student with background in seismic evaluation or design of buildings											
Building Name :	Final Level 1 Score: S _{I 1} =	(Do not consider S _{MIN})										
Screener :	Level 1 Irregularity Modifiers: Vertical Irregularity, VII =	Plan Irregularity, $P_{l,t}$ =										
Date/ Time	ADJUSTED BASELINE $S' = (S_{11} - V_{11} - P_{11}) =$											

Building Name: Mention the name of the building so that it can be easily known and identify.

Screener: Fill in the name of the screener. It is important as the screener can have more information on the building that he or she did survey. This information can be useful at a later stage.

Date/ Time: Describe the date and time at which the building is screened/ surveyed.

Final Level 1 Score: Take the SL1 value from Level 1 Data Collection Form.

Level 1 Irregularities Modifiers; Vertical Irregularity: Fill in the Level 1 Vertical Irregularity Score.

Level 1 Irregularities Modifiers; Plan Irregularity: Fill in the Level 1 Plan Irregularity Score.

Adjusted Baseline Score: Fill in the S' value by calculating with the following equation. VL1 and PL1 values are taken from the above Vertical Irregularity Modifier and Plan Irregularity Modifier.

$$S' = S_{Ll} - V_{Ll} - P_{Ll}$$

2) Structural Modifiers to Add to Adjusted Baseline Score

In this part, there are three main modifiers that can give different score modifiers.

- Verticals Irregularity, VL2
- Plan Irregularity, PL2
- Miscellaneous, M (Comprising of Redundancy, Pounding, S2, C1, PC1, RM1, URM, MH Building, and Retrofit features)

Circle the relevant score modifiers for each section, and then sum all and get the V_{L2} , P_{L2} , and M Score Modifiers respectively. Final Level 2 Score, SL2 is the summing of Adjusted Baseline Score, (S' value from *Building Information and Adjusted Base Line Score for Level 2* section), Vertical Irregularity (V_{L2} Score Modifier), Plan Irregularity (P_{L2} Score Modifier), and M Score Modifiers. See the equation below for Final Level 2 Score. SL2 score can be transfer to Level 1 Form so that it can be judged with S_{MIN}.

Final Level 2 Score, $S_{L2} = S' + V_{L2} + P_{L2} + M \ge S_{MIN}$ $S' + V_{L2} + P_{L2} + M \ge S_{MIN}$

In the last part of Final Level 2 score, there is a "Yes" / "No" question stating that the building has observable damage or deterioration or another condition that negatively affects the building's seismic performance. If the screener checks the "Yes" box, more detailed explanations can be filled out in the "Comments" section al the last part of Level 2 Data Collection Form.

Table 10. '	"Structural Modifiers	to Add to	Adjusted	Baseline	Score"	Portion of Level 2 Data
Collection I	Form Level 2 Form					

Topic		Statement (If statement is	true, circle "Yes" modifier; otherwise cross out the modifie	я)	Yes	Subtota
Vertical	Sloping Site	W1 Building : There is at least a full sto	ry grade change from one side of the building to the other.		-1.4	
rregularity,		Non-W1 Building : Ther is at least a full	story grade change from one side of the building to the other.		-0.4	
V ₁₂	Weak	W1 Building Cripple Wall : An unbraced	d cripple wall is visible in the crawl space.		-0.7	
VL2	and/or Soft Storv	W1 House over Garage : Underneath a	n occupied story, there is a garage opening without a steel mon	nent frame, and there is		
	(Circle one	less than 8 ft of wall on the same line (f	or multiple occupied floors above, use 16 ft of wall minimum)		-1.4	
	maximum)	W1A Building Open Front : There are o	penings at the ground story (such as for parking) over at least 5	0 % of the length of the		
		building.		-	-1.4	
			tem at any story is less than 50 % of that at story above or heig	ht of any story is more		
				in or any story is more	-1.1	
		than 2.0 times the height of the story at				
			tem at any story is between 50 % and 75 % of that at story abo	ve or height of any story is		
		between 1.3 and 2.0 times the height of	f the story above.		-0.6	
	Setback	Vertical elements of the lateral system a	at an upper story are outboard of those at the story below causi	ng the diaphragm to		
		cantilever at the offset.			-1.2	
		Vertical elements of the lateral system	at upper stories are inboard of those at lower stories.		-0.6	
		There is an in-plane offset of the lateral	elements that is greater than the length of the elements.		-0.4	
	Short Column/	C1,C2,C3,PC1,PC2,RM1,RM2 : At leas	at 20 % of columns (or piers) along a column line in the lateral s	ystem have height/depth		
	Pier	ratios less than 50 % of the nominal he	ight/depth ratio at that level.		-0.5	
		C1,C2,C3,PC1,PC2,RM1,RM2 : The co	olumn depth (or pier width) is less than one half of the depth of t	he spandrel, or there are		
		infill walls or adjacent floors that shorter	n the column.		-0.5	
	Split Level	There is a split level at one of the floor			-0.6	
	Other		tical irregularity that obviously affects the building's seismic per	formance.	-1.2	V _{L2} =
	Irregularity	There is another observable moderate	vertical irregularity that may affect the building's seismic perforn	nance.	-0.6	(Cap at -1
Plan	Torsional Irre	gularity: Lateral system does not appea	r relatively well distributed in plan in either or both directions. (D	o not include the W1A	-1	
Irregularity,	open front irr	egularity listed above)			-1	
P _{L2}	Non-parallel	System: There are one or more major ve	ertical elements of the lateral system that are not orthogonal to	each other.	-0.5	
. 12	Reentrant Co	orner: Both projections from an interior c	orner exceed 25 % of the overall plan dimensions in that direction	on.	-0.5	
	Diaphragm C	pening: There is an opening in the diapl	hragm with a width over 50 % of the total diaphragm width at tha	at level.	-0.3	
	C1, C2 Build	ings Out-of-plane Offset: The exterior be	ams do not align with the columns in plan.		-0.4	P _{L2} =
	Other Irregul	arity: There is another observable plan ir	regularity that obviously affects the building's seismic performa	nce.	-1	(Cap at -1
edundancy	The building	has at least two bays of lateral elements	on each side of the building in each direction.		0.4	
Pounding	Building is se	eparated from an adjacent structure by	The floors do not align vertically within 2 feet.	(Cap total	-1.2	
	less than 1.5	% of the height of the shorter of the	One building is 2 or more stories taller than the other.	pounding modifiers	-1.2	
	building and	adjacent structure and:	The building is at the end of the block.	at -0.9)	-0.6	
2 Building		eometry is visible.			-1.2	
1 Building	Flat plate se	ves as the beam in the moment frame.			-0.5	
C1/ RM1	There are ro	of-to-wall ties that are visible or known fr	om drawings that do not rely on cross-grain bending. (Do not co	mbine with post-		1
uilding	benchmark o	r retrofit modifier)			0.4	
			alls (rather than an interior space with few walls such as in a wa	(rehouse)	0.4	
RM	Gable walls			101104007	-0.5	
Н			vided between the carriage and the ground.		1.2	
etrofit	-	ive seismic retrofit is visible or known fro	om drawings.		1.4	M =
		$S_{L2} = (S' + V_{L2} + P_{L2} + M) \ge S_{MN}$:		(Terrer for	4- 4-	vel 1 Fo

3) Observable Nonstructural Hazards

Table 11. "Observable Nonstructural Hazards" Portion of Level 2 Data Collection Form

Location	Statement (Check "Yes" or "No")		Yes A	Vo	Comments
Exterior	There is an unbraced unreinforced masonry parapet or unbraced unreinforce	ed masonry chimney.			
	There is heavy cladding or heavy veneer.				
	There is a heavy canopy over exit doors or pedestrian walkways that appea	rs inadequately supported.			
	There is an unreinforced masonry appendage over exit doors or pedestrian	walkways.			
	There is a sign posted on the building that indicates hazardous materials an	e present.			
	There is a taller adjacent builling with an unanchored URM wall or unbrace	d URM parapet or chimney.			
	Other observed exterior nonstructural falling hazard.				
Interior	There are hollow clay tile or brick partitions at any stair or exit corridor.				
	Other observed interior nonstructural falling hazard.				
Estimated	Nonstructural Seismic Performance (Check appropriate box and transfer to	Level 1 form conslusions)			
	otential nonstructural hazards with significant threat to occupant life safety.	> Detailed Nonstructural Evaluation	on reco	ommende	d.
🗆 No	onstructural hazards identified with significant threat to occupant life safety.	> But no Detailed Nonstructural E	valuat	ion require	ed.
	w or no nonstructural hazard threat to occupant life safety.	> No Detailed Nonstructural Evalu	uation i	required.	

Check the relevant statement stating "Yes" or "No". The main non-structural hazards are exterior and interior location of the building. In both exterior and interior non-structural hazard parts, it is required that the screener read each and every statement and checks the relevant box. If the screener chooses "Yes" box, there is comments section at the right side of the statement. Describe the important features or characteristics on this comments section. There are seven statements concerning with Exterior Observable Non-Structural Hazards and two statements stating Interior Observable Non-Structural Hazards.

After reviewing each of the statements, the screener uses judgment to estimate the nonstructural seismic performance of the building. There are three boxes in this part;

- Potential Nonstructural Hazards with significant threat to occupant life safety.
- Nonstructural hazards identified with significant threat to occupant life safety.
- Low or no nonstructural hazard threat to occupant life safety.

If the screener chooses first option, then the relevant measures will be "Detailed Nonstructural Evaluation Recommended." For second option, the relevant option will be "Detailed Nonstructural Evaluation is recommended But not required". For the third option, the measure is "No Detailed Nonstructural Evaluation is required".

4) Comments

Comments :

Describe the special conditions or important features in the "Comments" space. The screener should fill in the detailed information of what he or she found out. If required, the screener can use extra sheet of paper to note down the information ensuring that this sheet is attached to the Data Collection Form.

8. Examples of Rapid Visual Screening Programs

Example 1: It is required to perform rapid visual screening RVS for 3703 Roxbury Street.

Field Screening of the Building

• Upon arriving at the site, the screener observed the building as a whole (Figure 10) and began the process of verifying the information in the building identification portion of the form (upper right corner), starting with the street address. The screener added her name and the date and time of the field screening to the building identification portion of the form.



Figure 10. Exterior view of 3703 Roxbury Street.

• The FEMA Building Type (S2, steel braced frame) was verified by looking at the building with binoculars (Figure 11)



Figure 11. Close-up view of 3703 Roxbury Street exterior showing perimeter braced steel framing.

- The number of stories (10) was confirmed by inspection, and the year built noted on the form (1986) appeared appropriate.
- The base dimensions of the building were estimated by pacing off the distance along each face, assuming 3 feet per stride, resulting in the determination that it was 75 feet by 100 feet in plan. On this basis, the listed square footage of 76,000 square feet was verified as correct.
- No additions to the building were observed.
- Sketches of the plan and elevation views of the building were drawn in the "Sketch" portion of the form. Several digital photographs were taken of the building, to be added to the form later.

- The building use (office) was circled in the "Occupancy" portion of the form.
- No adjacent buildings were observed
- The next step for the screener was to identify any vertical or plan irregularities. The screener consulted the Vertical and Plan Irregularity Reference Guides (FEMA P-154, Appendix B.5 & B.6) and found that none of the listed irregularities applied to the building being screened.

• No falling hazards were observed, as glass cladding is not considered as heavy cladding.

Identification of the Modifiers in Level 1 Form & Final Decision

- The next step in the process was to circle the appropriate Basic Score and the appropriate Score Modifiers. Having verified the FEMA Building Type as S2, the screener circled "S2" on the form along with the Basic Score beneath it.
- No irregularities were observed, so none of the irregularity modifiers was circled.
- The screener checked the Quick Reference Guide and found that the building did not qualify for the Post-Benchmark modifier.
- Since the building is on Soil Type D, no soil modifiers were applied.
- The Final Level 1 Score, S_{L1} , was determined to be 2.0
- The screener completed the Extent of Review portion of the form, indicating that she viewed the exterior of the building from all sides, but was not able to enter the building to inspect the interior. The soil type source and geologic hazards source were entered during the pre-field phase. The screener noted that no Level 2 screening was performed.
- She then reviewed the Other Hazards portion of the form and did not identify any other hazards that might trigger a detailed evaluation.
- Because this score was equal to the cut-off score of 2.0, the screener checked the "Yes" box in the Detailed Structural Evaluation Required field and "No" in the Detailed Nonstructural Evaluation Required field as no nonstructural hazards were identified.

Figure 12 shows the completed Level 1 form for 3703 Roxbury.

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Eleva					I											
	ЕТСН								nments or							
SK	ЕТСН	SIC SC			S, AN	ND FIN	IAL LE	EVEL	1 SCOF	RE, SL	1			-		
SKI FEMA BUILDING TYPE Do Not Know	BA		2 \$1 (MRF)		85, AN	ND FIN	S5 (URM INF)	C1 (MRF)	1 SCOF	C3 (LFIM INF)	t PC1 (דטון	PC2	RM1 (FD)	RM2 (FD)	URM	MH
SKI FEMA BUILDING TYPE Do Not Know Basic Score	BA	SIC SC(W1A W 32 2	2 S1 (MRF) 9 2.1	2	S, AN 53 0.M 2.6	ND FIN (RC SW) 2.0	S5 (URM INF) 1.7	C1 (MRF) 1.5	C2 (5/4) 2.0	C3 (LFIM (NF) 1.2	t PC1 (דיון 1.6	PC2	(FD)	FID) 1.7	1.0	1.5
SKI FEMA BUILDING TYPE Do Not Know Basic Score Severe Vertical kregularity, V.,	ETCH BA W1 3.6 -1.2	SIC SC(W1A W 32 2 -1.2 -1	2 S1 (MRF) 9 2.1 2 -1.0	(SZ) (20) -1.0	S, AN S3 0.M 2.6 -1.1	ND FIN (#0 SW) 2.0 -1.0	S5 (URM INF) 1.7 -0.8	C1 (MRF) 1.5 -0.9	C2 (SW) 2.0 -1.0	C3 (LFIM (NF) 12 -0.7	f (TU) 1.6 -1.0	PC2 1.4 -0.9	(FD) 1.7 -0.9	FID) 1.7 -0.9	1.0 -0.7	1.5 NA
SKI FEMA BUILDING TYPE Do Not Know Basic Score Severe Vertical Irregularity, Vi / Moderate Vertical Irregularity, Vi /	BA	SIC SC(W1A W 32 2	2 S1 (MRP) 9 2.1 2 -1.0 7 -0.6	2	S, AN 53 0.M 2.6	ND FIN (RC SW) 2.0	S5 (URM INF) 1.7	C1 (MRF) 1.5	C2 (5/4) 2.0	C3 (LFIM (NF) 1.2	t PC1 (דע) 1.6	PC2	(FD)	FID) 1.7	1.0	1.5 NA NA
SKI FEMA BUILDING TYPE Do Not Know Basic Score Severe Vertical Irregularity, Vi, Moderate Vertical Irregularity, Vi, Plan Irregularity, Pi,	ETCH BA W1 3.6 -1.2 -0.7	SIC SC(W1A W 32 2 -1.2 -1 -0.7 -0	2 S1 (MRP) 9 2.1 2 -1.0 7 -0.6 0 -0.8	20 -1.0 -0.6	2.6 -1.1 -0.7	ND FIN S4 (RC SW) 2.0 -1.0 -0.6	S5 (URM INF) 1.7 -0.8 -0.5	C1 (MRF) 1.5 -0.9 -0.5	C2 (SW) 2.0 -1.0 -0.6	C3 (LFM NF) 12 -0.7 -0.4	PC1 (TU) 1.6 -1.0 -0.6	PC2 1.4 -0.9 -0.5	(FD) 1.7 -0.9 -0.5	FID) 1.7 -0.9 -0.5	1.0 -0.7 -0.4	1.5 NA NA
SKI FEMA BUILDING TYPE Do Not Know Basic Score Severe Vertical Irregularity, Vi. Plen Irregularity, Vi. Pre-Code Pre-Code Post-Benchmark	ETCH BA 3.6 -1.2 -0.7 -1.1 -1.1 1.6	SIC SCO W1A W 3.2 2 -1.2 -1 -0.7 -0 -1.0 -1 -1.0 -2 1.9 2	2 S1 (MRF) 9 2.1 2 -1.0 7 -0.6 0 -0.8 9 -0.6 2 1.4	20 -1.0 -0.6 -0.7 -0.6 1.4	2.6 -1.1 -0.7 -0.8 1.1	S4 (RC SW) 2.0 -1.0 -0.6 -0.7 -0.6 1.9	S5 (URM INF) 1.7 -0.8 -0.5 -0.6 -0.2 NA	C1 (MRF) -0.9 -0.5 -0.6 -0.4 1.9	C2 (SW) 2.0 -1.0 -0.6 -0.8 -0.7 2.1	RE, SL (LFM NF) 12 -0.7 -0.4 -0.5 -0.1 NA	PC1 (TU) 1.6 -1.0 -0.6 -0.7 -0.5 2.0	PC2 1.4 -0.9 -0.5 -0.6 -0.3 2.4	FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1	FID) 1.7 -0.9 -0.5 -0.7 -0.5 2.1	1.0 -0.7 -0.4 -0.4 0.0 NA	1.5 NA NA -0.1 1.2
SKI FEMA BUILDING TYPE Do Not Know Basic Score Severe Vertical Irregularity, Vi, Moderate Vertical Irregularity, Vi, Pre-Code Post-Benchmark Sol Type A or B	ETCH BA 3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1	SIC SCC W1A W 32 2 -1.2 -1 -0.7 -0 -1.0 -1 -1.0 -0 1.9 2 0.3 0.	2 S1 (MRF) 9 2.1 2 -1.0 7 -0.6 0 -0.8 9 -0.6 2 1.4 5 0.4	52 55 -1.0 -0.6 -0.7 -0.6 1.4 0.6	S5, AN S3 (M) 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1	ND FIN S4 (FIC SWI) 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6	IAL LE S5 (URM INF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5	C1 (MRF) 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4	2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5	C3 (JFM INF) 12 -0.7 -0.4 -0.5 -0.1 NA 0.3	PC1 (TU) 1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6	PC2 1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4	FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5	FID) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3	1.5 NA NA -0.1 1.2 0.3
SKI FEMA BUILDING TYPE Do Not Know Basic Score Severe Vertical Irregularity, Vi, 1 Pre-Code Post-Benchmark Soll Type C 13 stories)	ETCH BA 3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2	ASIC SCC W1A W 32 2 -1.2 -1 -0.7 -0 -1.0 -1 -1.0 -0 1.9 2 0.3 0 0.2 0	2 S1 (MRF) 9 2.1 2 -1.0 7 -0.6 0 -0.8 9 -0.6 2 1.4 5 0.4 1 -0.2	52 55 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4	2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2	ND FIN S4 (FIC SWI) 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 -0.1	IAL LE S5 (URM INF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4	C1 (MRF) -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0	C2 (SM) 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0	C3 (JFM INF) 12 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2	PC1 T.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3	PC2 1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1	FDI 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2	1.5 NA NA -0.1 1.2 0.3 -0.4
SKI FEMA BUILDING TYPE Do Not Know Basic Score Severe Vertical Irregularity, Vi, Moderate Vertical Irregularity, Vi, Pre-Code Post-Benchmark Sol Type A or B	ETCH BA 3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1	SIC SCC W1A W 32 2 -1.2 -1 -0.7 -0 -1.0 -1 -1.0 -0 1.9 2 0.3 0.	2 S1 (NFF) 9 2.1 2 -1.0 7 -0.6 0 -0.8 9 -0.6 2 1.4 5 0.4 1 -0.2 9 -0.6	52 55 -1.0 -0.6 -0.7 -0.6 1.4 0.6	S5, AN S3 (M) 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1	ND FIN S4 (FIC SWI) 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6	IAL LE S5 (URM INF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5	C1 (MRF) 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4	2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5	C3 (JFM INF) 12 -0.7 -0.4 -0.5 -0.1 NA 0.3	PC1 (TU) 1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6	PC2 1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4	FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5	FID) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3	1.5 NA NA -0.1 1.5 0.5 -0.4 NA
SKI FEMA BUILDING TYPE Do Not Know Basic Score Severe Vertical Irregularity, Vi, Moderate Vertical Irregularity, Vi, Plen Irregularity, Pi, Pre-Code Post-Benchmark Sol Type E (-1 stories) Sol Type E (-3 stories)	ETCH BA 3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3 <i>1.1</i>	ASIC SCC W1A W 32 2 -1.2 -1 -0.7 -0 -1.0 -1 -1.0 -0 1.9 2 0.3 0 0.2 0.0 -0.6 -0	2 S1 (NFF) 9 2.1 2 -1.0 7 -0.6 0 -0.8 9 -0.6 2 1.4 5 0.4 1 -0.2 9 -0.6	52 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.6	2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA	ND FIN S4 (RC SW0) -1.0 -0.6 -0.7 -0.6 1.9 0.6 -0.1 -0.6	IAL LE S5 (LRM) INF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 -0.4	C1 (MRF) -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5	C2 (SM) 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7	C3 (LFIM MF) 12 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3	PC1 (TU) 1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA	PC2 1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1 -0.4	FDI 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5	FID) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.6	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2	1.5 NA NA -0.1 1.5 0.5 -0.4 NA
SKI FEMA BUILDING TYPE Do Not Know Basic Score Severe Vertical Irregularity, V.; Moderate Vertical Irregularity, V.; Plan Irregularity, V.; Plan Irregularity, V.; Plan Irregularity, V.; Post-Senchmark Soil Type A or B Soil Type E (1-3 stories) Soil Type E (1-3 stories) Soil Type E (2-3 stories) Minimum Score, Sunn FINAL LEVEL 1 SCORE, SLITE SMOKE EXTENT OF REVIEW	ETCH BA 3.6 -1.2 -0.7 -1.1 -1.1 -1.1 1.6 0.1 0.2 -0.3 <i>1.1</i>	ASIC SCC W1A W 32 2 -1.2 -1 -0.7 -0 -1.0 -1 -1.0 -0 1.9 2 0.3 0 0.2 0 0.2 0 0.2 0 0.9 0	2 S1 (MRF) 9 2.1 2 -1.0 7 -0.6 0 -0.8 9 -0.6 2 1.4 5 0.4 1 -0.2 9 -0.6 7 0.5	20 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.6 0.5	S, AN S3 0.M 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6	ND FIN S4 (FC SM) 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 -0.1 -0.6 0.5	IAL LE S5 (LRM) INF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 -0.4	C1 (MRF) 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5 0.3	C2 (SM) 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7	RE, S _L (FM) (FM) NP) 12 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3	f PC1 001 -1.6 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2	PC2 1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1 -0.4	FDI 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5	FID) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.6	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2	1.5 NA NA -0.1 1.5 0.5 -0.4 NA
SKI FEMA BUILDING TYPE Do Not Know Basic Score Severe Vertical Irregularity, V.; Moderate Vertical Irregularity, V.; Plan Irregularity, V.; Plan Irregularity, V.; Plan Irregularity, V.; Post-Senchmark Soil Type A or B Soil Type E (1-3 stories) Soil Type E (1-3 stories) Soil Type E (2-3 stories) Minimum Score, Sunn FINAL LEVEL 1 SCORE, SLITE SMOKE EXTENT OF REVIEW	ETCH BA 3.6 -1.2 -0.7 -1.1 -1.1 -1.1 1.6 0.1 0.2 -0.3 <i>1.1</i>	ASIC SCC W1A W 32 2 -1.2 -1 -0.7 -0 -1.0 -1 -1.0 -0 1.9 2 0.3 0 0.2 0 0.2 0 0.2 0 0.9 0	2 S1 (MRF) 9 2.1 2 -1.0 7 -0.6 0 -0.8 9 -0.6 2 1.4 5 0.4 1 -0.2 9 -0.6 7 0.5 7 0.5	20 -10 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.4 -0.6 0.5 2.0	S, AN S3 0.04 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6 ARDS	ND FIN S4 (RC SW) 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 -0.1 -0.6 0.5	IAL LE S5 (URM INF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 -0.5 -0.4 -0.5	CT (ARF) 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5 0.3 ACT	1 SCOF C2 (20) -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3	RE, SL C3 (LFM MF) 12 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C	f PC1 00 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2 ED	PC2 1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1 -0.4 0.2	FDI 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 0.3	FID) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.6	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2	1.5 NA NA -0.1 1.5 0.5 -0.4 NA
SKI FEMA BUILDING TYPE Do Not Know Basic Score Severe Vertical Irregularity, V.; Moderate Vertical Irregularity, V.; Plan Irregularity, V.; Plan Irregularity, V.; Plan Irregularity, V.; Post-Senchmark Soil Type A or B Soil Type E (1-3 stories) Soil Type E (1-3 stories) Soil Type E (2-3 stories) Minimum Score, Sunn FINAL LEVEL 1 SCORE, SLITE SMOKE EXTENT OF REVIEW	ETCH BA 3.6 -1.2 -0.7 -1.1 -1.1 -1.1 1.6 0.1 0.2 -0.3 <i>1.1</i>	ASIC SCC W1A W 32 2 -1.2 -1 -0.7 -0 -1.0 -1 -1.0 -0 1.9 2 0.3 0 0.2 0 0.2 0 0.2 0 0.9 0	2 S1 (MRF) 9 21 2 -1.0 7 -0.6 0 -0.8 9 -0.6 2 1.4 5 0.4 1 -0.2 9 -0.6 7 0.5 0THE Are The	20 -1.0 -0.8 -0.7 -0.6 1.4 0.6 -0.4 -0.6 0.5 2.0 R HAZ/	S, AN S3 0.04 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.2 NA 0.6 ARDS That T	ND FIN S4 (RC SW) 2.0 -1.0 -0.6 -0.7 -0.6 -0.1 -0.6 0.5	IAL LE S5 (URM INF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 -0.5 -0.4 -0.5	C1 (MRF) -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5 -0.6 -0.4 1.9 0.4 Detail	1 SCOF C2 (SM) 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3 ION RE ed Structo	RE, S _L C3 (JFRM NF) 1.2 -0.7 -0.4 -0.5 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 C3 C3 C3 C3 C3 C3 C3 C3 C3 C	r PC1 (FU) 1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2 ED luation	PC2 1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1 -0.4 0.2 Require	FDI 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 0.3 0.3	FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.6 0.3	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2	1.5 NA NA -0.1 1.5 0.5 -0.4 NA
SKI FEMA BUILDING TYPE Do Not Know Basic Score Severe Vertical Irregularity, V.; Moderate Vertical Irregularity, V.; Plan Irregularity, P.; Pre-Code Post-Senchmark Soil Type P. A or B Soil Type P. Stories) Soil Type P. Stories) Soil Type P. Stories Stories Store Store Store FINAL LEVEL 1 SCORE, SLITE Samc EXTENT OF REVIEW Exterior: Partial Taterior: Partial Store D Store D Store St	ETCH BA W1 -1.2 -0.7 -1.1 -1.1 -1.1 -1.1 0.1 0.2 -0.3 <i>I.1</i> All Sides [Visible [ASIC SCC W1A W 32 2 -1.2 -1 -0.7 -0 -1.0 -1 -1.0 -0 1.9 2 0.3 0 0.2 0.0 -0.6 -0	2 S1 (MRF) 9 2.1 2 -1.0 7 -0.6 0 -0.8 9 -0.6 2 1.4 5 0.4 1 -0.2 9 -0.6 7 0.5 OTHE Are The Detailed Detailed	52 55 -1.0 -0.6 1.4 0.6 1.4 0.6 0.5 2.0 R HAZA re Hazardi Structura nding pote	2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6 ARDS 5 That T I Evalu	ND FIN S4 (TC SW) 2.0 -1.0 -0.6 1.9 0.6 -0.7 -0.6 1.9 0.6 -0.7 -0.6 1.9 0.6 -0.7 -0.6 1.9 0.6 -0.7 -0.6 1.9 0.6 -0.7 -0.6 -0.5 -	ALLE S5 (J.RM INF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 -0.5	C1 (MRF) -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5 -0.6 -0.4 1.9 0.4 Detail	1 SCOF 20 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3 ION RE ed Structure es, sunknow es, score le	RE, SL C3 (LFUM INF) 12 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 C3 C3 C3 C3 C3 C4 C4 C4 C4 C4 C4 C4 C4 C4 C4	1 PC1 I.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2 ED luation	PC2 1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.4 -0.4 0.2 Require	FDI 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 0.3 0.3	FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.6 0.3	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2	1.5 NA NA -0.1 1.5 0.5 -0.4 NA
SKI FEMA BUILDING TYPE Do Not Know Basic Score Do Not Know Basic Score Severe Vertical Irregularity, Vi, Pre-Code Post-Benchmark Soil Type E (1-3 stories) Soil Type E (1-3 stories) Soil Type E (2-3 stories) Minimum Score, Sure FINAL LEVEL 1 SCORE, SLr≥ Starc EXTENT OF REVIEW Extension: Drawings Reviewed: None Dawings Reviewed: Yes	ETCH BA W1 3.6 -1.2 -0.7 -1.1 1.6 0.1 0.2 -0.3 <i>1.1</i> All Sides [Visible] No oggist	ASIC SC(W1A W 3.2 2. -1.2 -1 -0.7 -0 -1.0 -1 -1.0 -0 0.7 0 0.3 0. 0.3 0. 0.6 -0 0.9 0.	2 S1 (MRF) 9 2.1 2 -1.0 7 -0.6 0 -0.8 9 -0.6 2 1.4 5 0.4 1 -0.2 9 -0.6 7 0.5 OTHE Are The Detailed □ Poou cut-	52 55 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.4 -0.5 2.0 R HAZA Structura Structura Structura	2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6 ARDS s That T I Evalu Intial (un n)	S4 (FIC SM) 2.0 -1.0 -0.6 -0.7 -0.6 -0.1 -0.6 -0.1 -0.6 0.5 Trigger A ation?	S5 (URMA INF) 1.7 -0.8 -0.5 -0.6 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 0.5	C1 (MRF) 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5 0.3 ACT Detail	1 SCOF C2 (SM) 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3 ION RE ed Structu es, score la es, other h	RE, SL C3 (LFUM INF) 12 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 C3 C3 C3 C3 C3 C4 C4 C4 C4 C4 C4 C4 C4 C4 C4	1 PC1 I.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2 ED luation	PC2 1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.4 -0.4 0.2 Require	FDI 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 0.3 0.3	FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.6 0.3	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2	1.5 NA NA -0.1 1.5 0.5 -0.4 NA
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Figure 12. Completed Data Collection Form for Example 1, 3703 Roxbury Street.

Example 2: It is required to perform rapid visual screening RVS for 3711 Roxbury Street.

Unlike Example 1, there was little information in the building identification portion of the form (only street address, zip code, parcel number and soil type were provided).



Figure 13. Exterior view of 3711 Roxbury Street

Field Screening of the Building

- The screener determined the number of stories to be 12 and the building use to be commercial and office.
- He paced off the building plan dimensions and estimated the plan size as 58 feet by 50 feet. Based on this information, the total square footage was estimated to be 34,800 square feet (12 stories by 50 feet by 58 feet), and the number of stories, use, and square footage were written on the form.
- Based on a review of information in Appendix D of FEMA P-154, the construction era was estimated to be in the 1940s. The screener wrote in the year of construction as 1945 and checked the "EST" box to note that the date was estimated.
- The screener circled both "Office" and "Commercial" to indicate the observed occupancies
- The screener noted that an adjacent 11-story building was separated from the building being screened by only 12 inches. The screener determined the minimum separation gap for pounding per the Level 1 Pounding Guide (1 ¹/₂ inches per story for 11 stories equals 16.5 inches) and found that the actual separation was less than the minimum. In addition, the building being screened was at the end of the block. Based on these two conditions, the screener checked the "Pounding" box in the Adjacency section of the form.
- The screener consulted the Vertical and Plan Irregularity Reference Guides (FEMA P-154, Appendix B.5 & B.6) and determined that the four individual towers extending above the base represented an out-of-plane offset. The screener noted this severe vertical irregularity.
- Sketches of the plan and elevation views of the building were drawn in the "Sketch" portion of the form. The cornices at roof level were observed, and entered on the form.

Identification of the Modifiers in Level 1 Form & Final Decision

• Noting that it was a 12-story building, a review of the material in Table D-6 (FEMA P-154, Appendix D), indicated that the likely options for FEMA Building Type were S1, S2, S5, C1, C2, or C3. On more careful examination of the building exterior with the use of binoculars (see Figure 14), it was determined the building was Type C3, concrete frame with unreinforced masonry infill, and this alpha-numeric code, and accompanying Basic Score, were circled on the Data Collection Form.



Figure 14. Close-up view of 3711 Roxbury Street building showing exterior infill frame construction

- Because the four individual towers extending above the base represented a vertical irregularity, this modifier was circled. The screener checked the Quick Reference Guide and compared the estimated date of construction to the pre-code year for FEMA Building Type C3. <u>Since 1945 was after the pre-code year of 1941</u>, the screener did not circle the pre-code modifier.
- Noting that the soil is Type E, as determined during the pre-field data acquisition phase, and that the number of stories was 12, the modifier for Soil Type E (> 3 stories) was circled. The total of the Basic Score plus applicable Score Modifiers was 1.2 0.7 0.3 = 0.2. Noting that this is less than the minimum score, $S_{MIN} = 0.3$, the screener indicated that the Final Level 1 Score, SL1, was 0.3.
- Under Extent of Review, the screener noted that he was not able to view all sides of the building by checking the "Partial" box under Exterior. He indicated that he was not able to view the interior of the building by checking "None" under Interior.

- Under Other Hazards, he noted that pounding potential of the building with its neighbor triggers a Detailed Structural Evaluation.
- Because the building's Final Score was less than the cut-off score of 2.0, and because of the other hazards present (pounding), the building required a Detailed Structural Evaluation by an experienced seismic design professional.
- Because of the cornices, the building required a Detailed Nonstructural Evaluation.

A completed version of the Level 1 form, including photographs attached at a later date, is provided in Figure 15. Completed form for 3711 Roxbury Street.Figure 15.

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						9 A	ap is .nd,	11 build	x 1.5 ing b	5 = 1 being	1.6.5" 1 scre	> 1 enec	2" es	vistin	a aa	ø.	
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FEMA BUILDING TYPE Do 1	SKETCH B ot W1	W1A	W2	S1 (MRF)	\$2 (BR)	g A P □ RS, AI	Addition	11 build ling Al sketch IAL LE	x 1.5 ing l poter sorcor EVEL	ments C2 SV0	on separa	> 1 cenec ts. ts. PC1 (TU)	2" ex d is a	RM1 (FII	g ga d of RM2 (FD)	þ. block urm	MH
FEMA BUILDING TYPE Do t Kn Basic Score	SKETCH B w w 3.6	W1A 3.2	W2 2.9	\$1 (MRF) 2.1	\$2 (BR) 2.0	gi A P RS, AI 25	Addition Addition ND FIN St St St St St St St St St St St St St	11 build ling Al sketch IAL LI SS (JEM (JEF) 1.7	x 1.5 ing l poter es or con EVEL	ments c2 swo 2.0	on separa	> 1. cenec ts. t PC1 (TU) 1.6	2" ex d is a PC2 1.4	RM1 FRM1 FRM1 FRM1 FRM1 FRM1 FRM1 FRM1	RM2 (FD) 1.7	p. block urm 1.0	мн 1.5
FEMA BUILDING TYPE Do 1 Kn Basic Score Severe Vertical Inegularity, Mr	SKETCH B iot W1 w 3.6 -1.2	W1A 3.2 -1.2	W2 2.9 -1.2	\$1 (AFF) 2.1 -1.0	S2 (BR) 2.0 -1.0	9 A P RS, AI 25 -1.1	Additions Additions ND FIN S4 (RC SM) 2.0 -1.0	11 build ling Al sketch IAL LE S5 (JEM INF) 1.7 -0.8	x 1.5 ing b poter EVEL C1 [NFF] 1.5 -0.9	5 = 1 peine ntial ments 1 SCO C2 (SVI) 2.0 -1.0	on separa	> 1. cenec 5. tenec 5. PC1 (TU) 1.6 -1.0	2" ex d is a PC2 1.4 -0.9	RM1 (70) 1.7 -0.9	RM2 (FD) 1.7 -0.9	р. block urm 1.0 -0.7	MH 1.5 NA
FEMA BUILDING TYPE Do h Kn Basic Score Severe Vertical Inegularity, V.1 Moderate Vertical Inegularity, V.1	SKETCH B w w 3.6	W1A 3.2	W2 2.9	\$1 (MRF) 2.1	\$2 (BR) 2.0	gi A P RS, AI 25	Addition Addition ND FIN St St St St St St St St St St St St St	11 build ling Al sketch IAL LI SS (JEM (JEF) 1.7	x 1.5 ing l poter es or con EVEL	ments c2 swo 2.0	on separa	> 1. cenec ts. t PC1 (TU) 1.6	2" ex d is a PC2 1.4	RM1 FRM1 FRM1 FRM1 FRM1 FRM1 FRM1 FRM1	RM2 (FD) 1.7	p. block urm 1.0	MH 1.5 NA
FEMA BUILDING TYPE Do / Kn Basie Score Severe Verlical Irregularity, V., Moderate Verlical Irregularity, V., Tean Irregularity, P.,	SKETCH B ot W1 7W 3.6 -1.2 -0.7	W1A 3.2 -1.2 -0.7	W2 2.9 -1.2 -0.7 -1.0 -0.9	S1 (MRF) 2.1 -1.0 -0.6	\$2 (BR) 2.0 -1.0 -0.6	g A P RS, Al 25 -1.1 -0.7	Addition ND FIN 2.0 -1.0 -0.6	11. build ling A sketch IAL LE SS (JEM INF) 1.7 -0.8 -0.5	x 1.5 ing b poter es or con EVEL C1 MFF1 1.5 -0.9 -0.5	5 = 1 peing ntial 1 SCO C2 S ^(N) 2.0 -1.0 -0.6	on separa RE, SL 04	> 1. enec 5. te page .1 PC1 (TU) 1.6 -1.0 -0.6 -0.7 -0.5	2" ex d is a PC2 1.4 -0.9 -0.5	RM1 (TEI 1.7 -0.9 -0.5 -0.7 -0.5	RM2 (FD) 1.7 -0.9 -0.5 -0.7 -0.5	p. block URM 1.0 -0.7 -0.4	MH 1.5 NA NA
FEMA BUILDING TYPE Do 7 Kn Basic Score Severe Vertical Irregularity, Vi. Moderate Vertical Irregularity, Vi. Pan Irregularity, P., Pro-Code Post-Benchmark	SKETCH B 1001 W1 7W 3.6 -1.2 -0.7 -1.1 -1.1 1.6	W1A 3.2 -1.2 -0.7 -1.0 -1.0 1.9	W2 2.9 -1.2 -0.7 -1.0 -0.9 2.2	S1 (MEP) 2.1 -1.0 -0.6 -0.8 -0.6 1.4	S2 (ER) -1.0 -0.6 -0.7 -0.6 1.4	gi A P RS, Al 2.5 -1.1 -0.7 -0.9 -0.8 1.1	Addition Addition ND FIN 54 50 -0.6 -0.7 -0.6 1.9	11 build ling sketch IAL LE 55 (JRM INF) 1.7 -0.8 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 NA	x 1.5 ing b poter es or con EVEL C1 MFF1 1.5 -0.9 -0.5 -0.6 -0.4 1.9	5 = 1 peing ntial 1 SCC 2.0 -1.0 -0.6 -0.8 -0.7 2.1	on separa ORE, SI	> 1. cenec 5. te page .t PC1 (TU) 1.6 -1.0 -0.5 -0.7 -0.5 2.0	2" ex d is a PC2 1.4 -0.9 -0.5 -0.6 -0.3 2.4	RM1 (FDI 1.7 -0.9 -0.5 -0.7 -0.5 2.1	RM2 (RD) 1.7 -0.5 -0.7 -0.5 2.1	URM 1.0 -0.7 -0.4 -0.4 NA	MH 1.5 NA NA -0.1 1.2
FEMA BUILDING TYPE Do / Kn Basic Score Severe Verical Irregularity, V., Moderate Vertical Irregularity, V., Pan Irregularity, P., Pro-Code Post-Benchmark Sol Type A or B	SKETCH E 001 W1 7W 3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1	W1A 3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3	W2 -1.2 -0.7 -1.0 -0.9 2.2 0.5	S1 (MHP) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 0.4	\$2 (3F0) -1.0 -0.6 -0.7 -0.6 1.4 0.6	gi A P RS, Al 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1	Addition Addition ND FIN 2.0 -1.0 -0.6 1.9 0.6	11 build ling (ARM (NF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5	x 1.5 ing b poten sor con EVEL C1 MFF1 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4	5 = 1 Define	an separa RE, SL 01 02 04 -0.4 -0.4 -0.4 -0.1 NA 0.3	> 1. eenec 5. to page 1.6 -0.6 -0.7 -0.5 2.0 0.6	2" ex d is a pc2 1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4	RM1 0°C1 1.7 -0.9 -0.5 2.1 0.5	RM2 (FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5	URM 1.0 -0.7 -0.4 -0.4 0.0 NA 0.3	MH 1.5 NA NA -0.1 1.2 0.3
FEMA BUILDING TYPE Do f Kn Basic Score Severe Vertical Inegularity, V.r Moderate Vertical Inegularity, V.r Pre-Code Post-Benchmark Soil Type A or B Soil Type A or B Soil Type (A steins)	SKETCH B ot W1 3.6 -1.2 -0.7 -1.1 1.6 0.1 0.2	W1A 3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2	W2 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1	S1 (MEP) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 0.4 -0.2	S2 BP0 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4	GA P RS, AI 2.5 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2	Addition Addition ND FIN 34 90 -0.6 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.7	11. build ling ALLE S5 (HRM INF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4	x 1.5 ing b poter es or con EVEL C1 MFF 15 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0	5 = 1 2 2 2 3 2 3 2 3 3 2 3 3 2 3 3 3 2 3 3 3 3 3 3 3 3 3 3 3 3 3	an separa RE, SL -0.4 -0.5 -0.1 NA 0.3 -0.2	> 1. eenec 5.	2" es d is a 1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1	RM1 FU 17 -09 -05 -07 -05 -07 -05 -01	RM2 (FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1	D. block 1.0 -0.7 -0.4 -0.4 -0.4 0.0 NA 0.3 -0.2	MH 1.5 NA NA -0.1 1.2 0.3 -0.4
FEMA BUILDING TYPE Do 7 Kn Basic Score Severe Vertical Inegularity, M ₂₁ Moderate Vertical Inegularity, M ₂₁ Plan Imegularity, P ₂₁ Pro-Code Post-Benchmark Sol Type E (-1-3 stories) Sol Type E (-3 stories)	SKETCH E 001 W1 7W 3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1	W1A 3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3	W2 -1.2 -0.7 -1.0 -0.9 2.2 0.5	S1 (MHP) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 0.4	\$2 (3F0) -1.0 -0.6 -0.7 -0.6 1.4 0.6	gi A P RS, Al 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1	Addition Addition ND FIN 2.0 -1.0 -0.6 1.9 0.6	11 build ling (ARM (NF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5	x 1.5 ing b poten es or con EVEL C1 MFF1 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4	5 = 1 Define	an separa RE, SL 01 02 04 -0.4 -0.4 -0.4 -0.1 NA 0.3	> 1. eenec 5. to page 1.6 -0.6 -0.7 -0.5 2.0 0.6	2" ex d is a pc2 1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4	RM1 0°C1 1.7 -0.9 -0.5 2.1 0.5	RM2 (FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5	URM 1.0 -0.7 -0.4 -0.4 0.0 NA 0.3	MH 1.5 NAA -0.1 1.2 0.3 -0.4 NA
FEMA BUILDING TYPE Do 7 Kn Basic Score Severe Vertical Inegularity, M ₂₁ Moderate Vertical Inegularity, M ₂₁ Plan Imegularity, M ₂₁ Pro-Code Post-Benchmark Sol Type E (+3 stories) Sol Type E (+3 stories) Sol Type E (+3 stories)	SKETCH B tot W 3.6 -1.2 -0.7 -1.1 -1.1 -1.1 0.2 -0.3 <i>f.1</i>	W1A 3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2 -0.6	W2 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9	\$1 (AFF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 0.4 -0.2 -0.6	S2 BP0 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.4 -0.6	g A P P RS, AI 2.5 -1.1 -0.7 -0.9 -0.8 1.1 0.2 NA	Addition Addition ND FIN 54 90 4.0 4.0 4.0 50 4.0 90 4.0 90 90 90 90 90 90 90 90 90 90 90 90 90	11. build ling IAL LI S5 (RRM INF) -0.8 -0.5 -0.8 -0.5 -0.8 -0.5 -0.8 -0.5 -0.4 -0.4 -0.4	X 1.5 ing b potes sorcor EVEL 15 -09 -05 -06 -04 19 -04 00 -05	5 = 1 peing pe	C.5" scre exist RE, S ₁ -0.4 -0.5 -0.1 NA 0.3 -0.3 -0.3	> 1. eenec is.	2" ex d is a 1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1 -0.4	RM11 (TL) (17 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 0.3	g ga d of ялл ялл ялл ялл ялл ялл ялл ялл ялл ял	p. block 1.0 -0.7 -0.4 -0.4 0.0 NA 0.2 -0.2 0.2	MH 1.5 NA -0.1 1.2 0.3 -0.4 NA -0.4 NA
FEMA BUILDING TYPE Do f Kn Basic Score Severe Vertical Irregularity, V.r Moderate Vertical Irregularity, V.r Pian Irregularity, V.r Pian Irregularity, V.r Pro-Code Post-Benchmark Soil Type E (> 3 stories) Soil Type E (> 3 stories) Soil Type E (> 3 stories) Marimum Score, Sum FINAL LEVEL 1 SCORE, SLr & S	SKETCH B tot W 3.6 -1.2 -0.7 -1.1 -1.1 -1.1 0.2 -0.3 <i>f.1</i>	W1A 3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2 -0.6	W2 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9	81 (MEF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 0.4 -0.2 -0.6 0.5	\$2 (EP) -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.6 0.5	GA P RS, AI 2.5 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6	Addition Add	11. build ling IAL LI S5 (RRM INF) -0.8 -0.5 -0.8 -0.5 -0.8 -0.5 -0.8 -0.5 -0.4 -0.4 -0.4	x 1.5 poter poter sorcor CI 15 -09 -0.5 -0.6 -0.4 0.0 -0.5 0.3	5 = 1 peing ntial 1 SCC 2.0 -1.0 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3	C.5" scre exist RE, S ₁ (2) 0.4 -0.5 -0.1 NA -0.5 -0.1 NA -0.5 -0.1 NA -0.5 -0.1 -0.5 -0.	> 1 eenec s. PC1 00 1.6 -1.0 -0.5 2.0 0.6 -0.3 NA 0.2 0.7-	2" es 2 is a 1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1 -0.4 0.2	RM11 (TL) (17 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 0.3	g ga d of ялл ялл ялл ялл ялл ялл ялл ялл ялл ял	p. block 1.0 -0.7 -0.4 -0.4 0.0 NA 0.2 -0.2 0.2	MH 1.5 NA -0.1 1.2 0.3 -0.4 NA -0.4 NA
FEMA BUILDING TYPE Do 7 Kn Basic Score Severe Vertical Inegularity, M ₁ Moderate Vertical Inegularity, M ₁ Plan Inegularity, M ₁ Pro-Code Post-Benchmark Soil Type E (>3 stories) Soil Type E (>3	SKETCH B 00t W1 3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3 <i>f.1</i> www.	W1A 3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2 -0.6 0.9	W2 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7	S1 (AFF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5 OTHEF	S2 BP0 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.6 0.5 R HAZ	GA P P RS, AI 53 0.04 2.5 -0.7 -0.9 -0.8 1.1 0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6 ARDS	Addition Pouna Addition ND FIN 34 980 -0.6 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.1 -0.6 -0.1 -0.6	11. build ling 	x 1.5 ing b poter poter sorcor CI 15 -09 -0.5 -0.6 -0.4 0.0 -0.5 -0.5 -0.6 -0.4 0.0 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	5 = 1 5	C.5" scre exist RE, S ₁ (12) 0.4 -0.5 -0.1 NA -0.5 -0.1 NA -0.5 -0.1 NA -0.5 -0.1 -0.5 -0.2 -0.5 -0	> 1. eenec 5. PC1 (10) 1.6 -1.0 0.5 2.0 0.5 2.0 0.5 -0.3 0.5 2.0 0.5 -0.7 -0.5 2.0 0.5 -0.7 -0.5 2.0 0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	2" es d is a pc2 1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1 -0.4 0.3 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	RM11 RE 17 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 -0.1 -0.5 -0.2 -2.2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	g ga d of ялл ялл ялл ялл ялл ялл ялл ялл ялл ял	p. block 1.0 -0.7 -0.4 -0.4 0.0 NA 0.2 -0.2 0.2	MH 1.5 NA -0.1 1.2 0.3 -0.4 NA -0.4 NA
FEMA BUILDING TYPE Do P Kn Basic Score Severe Vertical Inegularity, Vi.r Moderate Vertical Inegularity, Vi.r Pre-Code Post-Benchmark Soil Type E (> 3 stories) Soil Type E (> 3 stories) Soil Type E (> 3 stories) Minimum Score, Sum FINAL LEVEL 1 SCORE, SL:r ≥ S EXTENT OF REVIEW Exterior: ⊠ Partial Interior: ⊠ Partial	SKETCH B tot W1 3.6 -1.2 -0.7 -1.1 1.6 0.1 0.2 -0.3 <i>1.1</i> www. All Sides Visible	W1A 3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2 -0.6 0.9 Aer	W2 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7 ial	81 (MEF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 0.4 -0.2 -0.6 0.5	S2 BP0 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.6 0.5 R HAZ e Hazard	GAP P RS, AI 25 -1.1 -0.7 -0.9 -0.8 1.1 0.2 NA 0.6 ARDS ds That 1	Addition Pouna Addition ND FIN 54 900 -0.6 900 -0.6 900 -0.6 900 -0.6 900 -0.6 900 -0.6 900 -0.6 900 -0.6 900 -0.6 900 -0.6 900 -0.6 900 -0.6 9000 -0.6 9000 -0.6 9000 -0.6 9000 -0.6 9000 -0.6 9000 -0.6 9000 -0.6 9000 -0.6 9000 -0.6 9000 -0.6 9000 -0.6 9000 -0.6 9000 -0.6 9000 -0.6 9000 -0.6 9000 -0.6 9000 -0.6 9000 -0.6 9000 -0.5 9000 -0.6 90000 -0.6 90000 -0.6 90000 -0.6 90000 -0.6 900000 -0.6 900000 -0.6 900000000000000000000000000000000000	11. build ling 	X 1.5 potes potes EVEL - C1 MEP 15 -0.9 -0.5 -0.6 -0.4 -0.4 -0.4 -0.5 -0.5 -0.4 -0.4 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	5 = 1 5	LG.5" SCYCE EXIST ON SEPARA ON	> 1. eenec 5. te page 5. PC1 1.6 -1.0 -0.5 -0.7 -0.5 -0.3 NA 0.2 -0.7- RED	2" es 2 " es 4 is a PC2 1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1 -0.4 0.2 0.5=c Require	RM1 000 1.7 -0.9 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	g ga d of #D 1.7 -0.9 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.1 -0.8 -0.3 -0.3 -0.3; u	p. block 1.0 -0.7 -0.4 -0.4 0.0 NA 0.2 -0.2 0.2	MH 1.5 NA -0.1 1.2 0.3 -0.4 NA -0.4 NA
FEMA BUILDING TYPE Do P Kn Basic Score Severe Vertical Inegularity, Vi.r Moderate Vertical Inegularity, Vi.r Pre-Code Post-Benchmark Soil Type E (> 3 stories) Soil Type E (> 3 stories) Soil Type E (> 3 stories) Minimum Score, Sum FINAL LEVEL 1 SCORE, SL:r ≥ S EXTENT OF REVIEW Exterior: ⊠ Partial Interior: ⊠ Partial	SKETCH B tot W1 3.6 -1.2 -0.7 -1.1 1.6 0.1 0.2 -0.3 <i>1.1</i> www. All Sides Visible	W1A 3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2 -0.6 0.9	W2 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7 ial	S1 (AEF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5 OTHEF Are Ther Detailed	S2 BP0 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.6 0.5 R HAZ e Hazaro Structure	9 A P RRS, AH 25 -1.1 -0.7 -0.9 -0.8 -1.1 0.1 0.2 NA 0.6 ARDS is That I	Addition Addition ND FIN -0.6 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.1 -0.6 -0.1 -0.6 -0.1 -0.6 -0.1 -0.6 -0.1 -0.6 -0.1 -0.6 -0.1 -0.6 -0.1 -0.6 -0.1 -0.6 -0.1 -0.6 -0.1 -0.6 -0.6 -0.7 -0.6 -0.7 -0.7 -0.7 -0.7 -0.7 -0.7 -0.7 -0.7	11 build ing 	X 1.5 potes po	5 = 1 5	an separation of the separatio	> 1. eenec S. to page 1. PC1 (70) 1.6 -0.5 2.0 0.5 2.0 0.5 0.3 NA 0.2 0.7 -0.5 2.0 0.5 Abuild	2" es 2 is a is a PC2 1.4 -0.9 -0.5 -0.6 -0.3 -0.5 -0.4 -0.4 -0.1 -0.1 -0.2 -0.3=C Require Require a	RM1 000 1.7 -0.9 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	g ga d of #D 1.7 -0.9 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.1 -0.8 -0.3 -0.3 -0.3; u	p. block 1.0 -0.7 -0.4 -0.4 0.0 NA 0.2 -0.2 0.2	MH 1.5 NA -0.1 1.2 0.3 -0.4 NA -0.4 NA
FEMA BUILDING TYPE Do / Kin Basic Score Severe Vertical Inegularity, V., Moderate Vertical Inegularity, V., Pre-Dode Post-Benchmark Soil Type E (+3 stories) Soil Type E (+3 stories) Soil Type E (+3 stories) Soil Type E (+3 stories) Minimum Score, Sum FINAL LEVEL 1 SCORE, SLr ≥ S EXTENT OF REVIEW Exterior: Partial Interior: None Drawings Reviewed: Yes Soil Type Source: State Gre	SKETCH B tot W1 W1 3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3 I.1 W0 W1 W1 W1 W1 W1 W1 W1 W1 W1 W1	W1A 3.2 -1.2 -0.7 -1.0 1.9 0.3 0.2 -0.6 0.9 Aer	W2 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7 ial	S1 (ABP) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.6 1.4 -0.2 -0.6 0.5 OTHER Detailed X Poun cuto	S2 BP() -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.6 0.5 R HAZ e Hazaro Structur ding pot ff, if know	9 A P RS, Al 2.5 -1.1 -0.7 -0.9 -0.8 1.1 0.2 NA 0.6 ARDS ds That II al Evalue antial (un m)	ap is nd, ouna Addition Additi	11	X 1.5 ing b potes sorcor EVEL 15 -0.9 -0.5 -0.6 -0.4 1.9 -0.5 -0.4 1.9 -0.4 -0.5 -0.4 1.9 -0.4 -0.5 -0.4 -0.5 -0.4 -0.4 -0.5 -0.4 -0.4 -0.5 -0.4 -0.4 -0.5 -0.4 -0.4 -0.5 -0.4 -0.4 -0.5 -0.4 -0.4 -0.5 -0.4 -0.5 -0.4 -0.5 -0.4 -0.5 -0.4 -0.5 -0.4 -0.5 -0.4 -0.5 -0.4 -0.5 -0.4 -0.5 -0.4 -0.5 -0.5 -0.5 -0.4 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.4 -0.5	5 = 1 5	LG.5" SCYCE EXIST ON SEPARA ON	> 1. eenec 5. to page 1.6 -1.0 -0.5 2.0 0.6 -0.7 -0.5 2.0 0.6 0.6 0.7 -0.7 -0.7 -0.7 -0.4 building	2" es 2 " es	RM11 (TT (TT) -0.5 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 -0.1 -0.5 -0.1 -0.5 -0.1 -0.5 -0.7 -0.5 2.2 < 0 -0.5 -0.7 -0.5 -0.5 -0.7 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	RM2 60 1.7 -0.9 -0.5 2.1 -0.7 -0.5 2.1 -0.7 -0.5 -0.5 -0.5 -0.7 -0.5 -0.5 -0.7 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	p. block 1.0 -0.7 -0.4 -0.4 0.0 NA 0.2 -0.2 0.2	MH 1.5 NA -0.1 1.2 0.3 -0.4 NA -0.4 NA
FEMA BUILDING TYPE Do f Kn Basic Score Severe Vertical Inegularity, Vi. Basic Score Severe Vertical Inegularity, Vi. Pre-Code Post-Benchmark Soil Type E (1-3 stories) Soil Type E (2-3 stories) Minimum Score, Sum FINAL LEVEL 1 SCORE, SLITE S EXTENT OF REVIEW Exterior: Drawings Reviewed: Yes Orawings Reviewed: Yes Gold Type Source: State Ge Goologic Hazards Source: State Ge	SKETCH B tot W1 W1 3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3 I.1 W0 W1 W1 W1 W1 W1 W1 W1 W1 W1 W1	W1A 3.2 -1.2 -0.7 -1.0 1.9 0.3 0.2 -0.6 0.9 Aer	W2 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7 ial	S1 (ABP) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 0.4 -0.2 -0.6 0.5 OTHEF Are Ther Detailed ☑ Poun cuto	S2 BP0 2.0 -1.0 -0.6 -0.7 -0.6 1.4 -0.6 -0.4 -0.6 0.5 R HAZ Bructur ding pota Structur ding pota Structur Struc	9 A P RS, Al 2.5 -1.1 -0.7 -0.9 -0.8 1.1 0.2 NA 0.6 ARDS ds That II al Evalue antial (un m)	Addition Addition ND FIN -0.6 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.1 -0.6 -0.1 -0.6 -0.1 -0.6 -0.1 -0.6 -0.1 -0.6 -0.1 -0.6 -0.1 -0.6 -0.1 -0.6 -0.1 -0.6 -0.1 -0.6 -0.1 -0.6 -0.6 -0.7 -0.6 -0.7 -0.7 -0.7 -0.7 -0.7 -0.7 -0.7 -0.7	11	X 1.5 potes po	5 = 1 0 0 0 0 0 0 0 0 0 0 0 0 0	on separate exist on separate on separate	> 1. eenec 5. PC1 (70) 1.6 -1.0 0.6 -0.5 2.0 0.6 -0.5 2.0 0.6 -0.5 2.0 0.6 -0.5 -0.7 -0.5 2.0 0.6 -0.5 -0.7 -0.5 -0.7 -0.5 -0.5 -0.5 -0.5 -0.5 -0.7 -0.5 -0.7 -0.5 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5	2" es d is a pc2 1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.4 -0.1 -0.3 -0.3 2.4 0.4 -0.1 -0.3 -0.5 -0.3 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	RM11 TT TT TT TT TT TT TT TT TT	RM2 (#D) 1.7 -0.9 -0.7 -0.5 -0.1 -0.5 -0.1 -0.5 -0.1 -0.5 -0.1 -0.5 -0.3 -0.3 ; u uilding	p. block 10 -0.7 -0.4 -0.4 -0.4 -0.2 -0.2 -0.2 58 Smoothered Second	MH 1.5 NA NA -0.1 1.2 0.3 -0.4 <u>NA</u> <u>1.0</u> -0.4 <u>1.0</u>
FEMA BUILDING TYPE Do P Kn Basic Score Severe Vertical Inegularity, Vi.r Moderate Vertical Inegularity, Vi.r Pre-Code Post-Benchmark Soil Type E (> 3 stories) Soil Type E (> 3 stories) Soil Type E (> 3 stories) Minimum Score, Sum FINAL LEVEL 1 SCORE, SL:r ≥ S EXTENT OF REVIEW Exterior: ⊠ Partial Interior: ⊠ Partial	SKETCH B tot W1 W1 3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3 I.1 W0 W1 W1 W1 W1 W1 W1 W1 W1 W1 W1	W1A 3.2 -1.2 -0.7 -1.0 1.9 0.3 0.2 -0.6 0.9 Aer	W2 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7 ial	S1 (ABP) 2.1 -1.0 -0.6 -0.8 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5 OTHEF Are Ther Detailed ⊠ Poun cut-o Cut-o E poin cut-o	52 BR0 -1.0 -0.6 -0.7 -0.6 -0.4 -0.5 -0.7 -0.6 -0.5 -0.7 -0.6 -0.7 -0.6 -0.4 -0.5 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.5 -0.7 -0.6 -0.7 -0.6 -0.4 -0.5 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.4 -0.5 -0.	9 A P RS, AI 2.5 -1.1 -0.7 -0.9 -0.8 1.1 0.2 -1.1 0.7 -0.9 -0.8 1.1 0.2 -0.9 -0.8 -1.1 -0.7 -0.9 -0.8 -1.1 -0.7 -0.9 -0.8 -1.1 -0.7 -0.9 -0.8 -1.1 -0.7 -0.9 -0.8 -1.1 -0.7 -0.9 -0.8 -1.1 -0.7 -0.9 -0.8 -1.1 -0.7 -0.9 -0.8 -1.1 -0.7 -0.9 -0.8 -1.1 -0.7 -0.9 -0.8 -1.1 -0.7 -0.9 -0.8 -0.7 -0.9 -0.7 -0.9 -0	ap is and is an	11. build ling ABM 4 MAL LE 5 0.8 -0.5 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 -0.4 -0.5	X 1.5 potes po	5 = 1 0 0 0 0 0 0 0 0 0 0 0 0 0	LG.S ⁴¹ scree exist on separate exist on separate exist on separate exist on separate exist on separate on se	> 1. eenec 5. PC1 (70) 1.6 -1.0 0.6 -0.5 2.0 0.6 -0.5 2.0 0.6 -0.5 2.0 0.6 -0.5 -0.7 -0.5 2.0 0.6 -0.5 -0.7 -0.5 -0.7 -0.5 -0.5 -0.5 -0.5 -0.5 -0.7 -0.5 -0.7 -0.5 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5	2" es d is a pc2 1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.4 -0.1 -0.3 -0.3 2.4 0.4 -0.1 -0.3 -0.5 -0.3 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	RM11 TT TT TT TT TT TT TT TT TT	RM2 (#D) 1.7 -0.9 -0.7 -0.5 -0.1 -0.5 -0.1 -0.5 -0.1 -0.5 -0.1 -0.5 -0.3 -0.3 ; u uilding	p. block 10 -0.7 -0.4 -0.4 -0.4 -0.2 -0.2 -0.2 58 Smoothered Second	MH 1.5 NA NA -0.1 1.2 0.3 -0.4 <u>NA</u> <u>1.0</u> -0.4 <u>1.0</u>
FEMA BUILDING TYPE Do f Kn Basic Score Severe Vertical Inegularity, Vi. Basic Score Severe Vertical Inegularity, Vi. Pre-Code Post-Benchmark Soil Type A B Soil Type E (> 3 stories) Soil Type E (> 3 stories) Minimum Score, Sum FINAL LEVEL 1 SCORE, SLIE S EXTENT OF REVIEW Exterior: ☑ Partial Interviewed: Yes Orawings Reviewed: Yes Goologic Hazards Source: State Ge	SKETCH E 00 01 02 02 02 02 02 02 02 02 02 02	W1A 3.2 -1.2 -0.7 -1.0 1.9 0.3 0.2 -0.6 0.9 ☐ Aero gist	W2 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7 ial	S1 (48P) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 0.4 -0.6 1.4 0.4 -0.6 0.5 OTHEF Are Ther Detailed ZI Poun cut-o E Fallin build	52 BR) 20 -1.0 -0.6 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.5 -0.7 -0.6 -0.5 -0.7 -0.6 -0.5 -0.7 -0.6 -0.5 -0.7 -0.6 -0.5 -0.7 -0.6 -0.5 -0.7 -0.6 -0.5	g A A P C RRS, AI 25 -4.11 -0.7 -0.9 -0.8 -0.7 -0.7 -0.9 -0.8 -0.7 -0.9 -0.8 -0.7 -0.8 -0.7 -0.8 -0.7 -0.8 -0.7 -0.8 -0.7 -0.9 -0.8 -0.7 -0.8 -0.7 -0.8 -0.7 -0.7 -0.8 -0.7 -0.8 -0.7 -0.8 -0.7 -0.8 -0.7 -0.7 -0.8 -0.7 -0.7 -0.7 -0.7 -0.7 -0.7 -0.7 -0.7	ap is nd, ouna Addition Additi	11. build build ling 11. cos 0.5 0.5 0.2 0.5 0.4 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	x 1.5 potes po	5 = 1 2.0 -1.0 -0.6 1 SCC2 2.0 -0.6 -0.6 -0.7 2.1 0.0 -0.7 0.3 -0.7 0.3 ION R ss, schort ss, schort ss, schort -0.6 -0.7 0.3 -0.7 -0.3	n separa exist on separa RRE, SJ -0.4 -0.5 -0.1 NA 0.3 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.4 -0.5 -0.1 EQUIR Etural Eve exist	> 1. enec: 3. to page 3. PC1 0.0 0.5 2.0 0.7 0.2 0.2 0.7 0.2 0.7 0.2 0.2 0.2 0.7 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	2" es 2 is a 2 is a	RM1 000 000 000 000 000 000 000 0	RM2 (#D) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.7 -0.5 2.1 0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.5 -0.7 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	p. block 1.0 -0.7 -0.7 -0.2 -0.2 0.2 SE Sano valuated	MH 1.5 NA NA -0.1 1.2 0.3 -0.4 NA -0.1 1.2 0.3 -0.4 NA -0.1 1.2 0.3 -0.4 NA -0.1 -0.2 -0.2 -0.2 -0.2 -0.3 -0.4 -0.2 -0.3 -0.4 -0.2 -0.3 -0.4 -0.2 -0.3 -0.4 -0.4 -0.5 -
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Figure 15. Completed form for 3711 Roxbury Street.

Example 3: It is required to perform rapid visual screening RVS for 5020 Ebony Drive building

The building was a high-rise residential building (Figure 19) in a new part of the city in which new development had begun within the last few years. <u>The building was not included in the electronic Building RVS Database; consequently, there was not a partially prepared Data Collection Form for this building (No Pre-field Planning Stage).</u> The screeners wrote the address of the building on a blank form along with their names and date and time of the screening.



Figure 16. Exterior view of 5020 Ebony Drive

Field Screening of the Building

Based on visual inspection, the screeners determined that:

- The building had 22 stories above grade, including a tall occupied penthouse story, and 2 additional stories of parking below grade.
- No additions
- It was designed after 2000 by estimation
- Its use was both commercial (in the first story) and residential in the upper stories. The building uses (Commercial and Residential) were circled in the "Occupancy" portion.
- The screeners paced off the building plan dimensions to estimate the plan size to be approximately 270 feet by 180 feet. Based on this information and considering the symmetric but non-rectangular floor plan, the total square footage was estimated to be 712,800 square feet.
- The screeners photographed the building and drew a sketch of a portion of the plan view of the building in the space on the form allocated for a "Sketch."
- The screeners did not know the soil type, but assumed <u>Soil Type D</u>, based on the instructions in FEMA P-154 when soil type is unknown, as well as their knowledge that an adjacent site only a quarter mile away was on Soil Type D.
- The screeners observed the building's plan irregularity (reentrant corners) and noted it on the form.
- Given the design date of 2000, the anchorage for the heavy cladding on the exterior of the building was assumed to have been designed to meet the anchorage requirements initially adopted in 1967 (per the information provided in the Quick Reference Guide). No other falling hazards were observed.
- The window spacing in the upper stories and the column spacing at the first floor level indicated the building was either a <u>steel moment frame building</u>, or a <u>concrete moment frame building</u>. The screeners attempted to view the interior but were not provided with permission to do so. They elected to indicate that the building was either an <u>S1 (steel moment-resisting frame) or C1 (concrete moment-resisting frame)</u> type on the Data Collection Form and circled both types, along with their Basic Scores.

Identification of the Modifiers in Level 1 Form & Final Decision

• In addition, the screeners circled the Post-Benchmark Score Modifiers, given that the estimated design date (year 2000) occurred after the benchmark years for both FEMA Building Type S1 and FEMA Building Type C1 (per the information on the Quick

Reference Guide, FEMA P-154), and the Score Modifiers for plan irregularity (in both the S1 and C1 columns).

<u>By adding the circled numbers in both the S1 and C1 columns</u>, scores of 2.7 and 2.8 were determined for the two FEMA Building Types. <u>Using the lesser score of the two, the screener noted the Final Level 1 Score</u>, *S_{L1}*, as 2.7. Because this is greater than the cut-off score of 2.0, <u>a Detailed Structural Evaluation</u> of the building by an experienced seismic design professional <u>was not required</u>. Before leaving the site, the screeners completed the Extent of Review, Other Hazards, and Action Required portions of the form. A completed version of the Data Collection Form is provided in Figure 17.

Rapid Visual Screening o FEMA P-154 Data Collection		-	for	Potenti	ial Se	ismic	: Haza	ards						HIGI	H Sei	Lev ismi	
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FEMA BUILDING TYPE Do Not	W1	W1A	W2	S1	\$2	\$3	S4	S5	CI	C2	C3	PC1	PC2	RM1	RM2	URM	MH
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Moderate Vertical Irregularity, Vin	-0.7	-0.7	-0.7		-0.6	-0.7	-0.6	-0.5	-0.5	-0.6	-0.4	-0.6	-0.5	-0.5	-0.5	-0.4	NA
Plan Irregularity, PL1	-1.1	-1.0	-1.0		-0.7	-0.9	-0.7	-0.6	0.6	-0.8	-0.5	-0.7	-0.6	-0.7	-0.7	-0.4	NA
Pre-Code	-1.1	-1.0	-0.9		-0.6	-0.8	-0.6	-0.2	-0.4	-0.7	-0.1	-0.5	-0.3	-0.5	-0.5	0.0	-0.1
Post-Benchmark Soil Type A or B	1.6 0.1	1.9 0.3	2.2		1.4 0.6	1.1 0.1	1.9 0.6	NA 0.5	1.9	2.1	NA 0.3	2.0	2.4 0.4	2.1	2.1	NA 0.3	1.2
Soil Type E (1-3 stories)	0.2	0.2	0.1	-0.2	-0.4	0.2	-0.1	-0.4	0.0	0.0	-0.2	-0.3	-0.1	-0.1	-0.1	-0.2	-0.4
Soil Type E (> 3 stories)	-0.3	-0.6	-0.9	414	-0.6	NA	-0.6	-0.4	-0.5	-0.7	-0.3	NA	-0.4	-0.5	-0.6	-0.2	NA
Minimum Score, Serv	1.1	0.9	0.7		0.5	0.6	0.5	0.5	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.2	1.0
FINAL LEVEL 1 SCORE, $S_{L1} \ge S_{MW}$		\leq	Su	= 2.7	$\mathbf{>}$				2.8								
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Soil Type Source:					ding pot f, if knov	ential (ur wn)	indess 3(2	-		es, score es, other							
Geologic Hazards Source:				Fallin	g hazar	dis from ta	aller adja	cent	X N			- oboit					
Contact Person:				buildi		anda *	-	F	Detail	ed Nons	tructura	l Evalua	tion Red	ommen	ded? (ch	eck one)
LEVEL 2 SCREENING PERF	ORME	D?				ards or S mage/de							identified				
Yes, Final Level 2 Score, SL2	STUME	No R	, I			mage/de system	war full draft	AL 102		o, nonstr	uctural h	azards e	xist that				
Nonstructural hazards? Yes										rtailed ev o, no nor			cessary is identifi	ed [
Where information	cannot b	_	_	eener shal	note th	ne follow	ing: ES	ST = Est	_						_		
Legend: MRF = Moment-r				Reinforced			-	NF = Unre				_	anufactum			Flexible	lanhran

Figure 17. Completed Data Collection form for 5020 Ebony Drive

Example 4: It is required to perform rapid visual screening RVS for the main classroom building at Roosevelt Elementary School.



Figure 18. Exterior view of modern reinforced brick masonry building at Roosevelt Elementary School

Pre-field Planning Stage

In this stage, the screener determined the following information:

- Address
- Number of stories
- Year built
- Soils information

Field Screening of the Building

After walking around the building and through the interior of the building, the screener identified the followings:

- The screener verified the pre-field information. She checked Soil Type D and indicated liquefaction potential, based on the pre-filled information in the "Extent of Review" portion of the form (Level 1).
- The building as a FEMA Building Type *RM2* (reinforced masonry building with rigid floor and roof diaphragms) and sketched the plan of the building.
- All of the interior walls were finished, but she was able to identify which walls were structural versus nonstructural by tapping on them. Those walls that sounded solid were deemed structural, and those that sounded hollow were deemed nonstructural. She added this information to the sketch.

Identification of the Modifiers in Level 1 Form

Using the Vertical Irregularity Reference Guide (FEMA P-154, Appendix B.5), she identified the building as having *a short column irregularity* due to the presence of infill walls at the first floor that effectively shortened the length of the columns. Because the east-west walls were all concentrated at the center of the building, the screener identified the building as *torsionally irregular*. Considering the *plan and vertical irregularities*, the screener calculated a score of 0.1(Basic Score = 1.7, Sever VI. Irreg. V_{L1} = -0.9, Plan Irreg. P_{L1}= -0.7, the sum. = 1.7-0.9-0.7=0.1), but used *S_{MIN}* to set the Level 1 Final Score at 0.3. See to filled Level 1 Form (Figure 19).

Identification of the Modifiers in Level 2 Form

The screener completed the Level 2 portion of the form, reviewing each of the Level 2 statements, and the nonstructural portion of the Level 2 form. The Level 2 Final Score, which included a more modest penalty for short columns and a positive modifier for redundancy, was calculated as +0.8.

Final Decision

This score was transferred back onto the Level 1 form. Under "Other Hazards," the screener checked the "Geologic Hazards or Soil Type F" box to acknowledge that liquefaction potential at the site is a trigger for a Detailed Structural Evaluation. Under "*Action Required*,"

the screener checked both "Yes, score less than cut-off" and "Yes, other hazards present" (because of the liquefaction potential). No exterior falling hazards were observed in either the Level 1 or the Level 2 screening.

The completed Level 1 Data Collection Form for the main classroom building is shown in Figure 22. The completed Level 2 Data Collection Form is shown in Figure 23.

FEMA P-154 Data Co	llectio	n For	m												HIGI	H Sei	smic	city
							Add	iress:	169 P	arkwa	v Blv	d						-
							-	_		n City,	_			2	Zip: 9	0922		
							Oth	er Identi				Elem	entary	/ Scho	ool			
		d			10			lding Na	me:	Main	Buildi	ng						
Concession of the					2202	_ 1	Use	itude: 4	10 282	206			a maile	day	-74.31	0460		
		T		d	10-		Lat Ss:	tude: <u>-</u>		300			Longitu S₁:	0e: 0.39	-74.5	10409		
	$\pm\pm$	T		1				eener(s)		Catz			_	ate/Tim	e: 8,	/14/:	13 1	рт
	-		-	11	193	H	Tot	Stories: al Floor / ditions:			842	Belov 3 sqft (ear(s) B	v Grade	: 0		r Built: e Year:	1993	🗆 EST
				-				upancy	Ass	embly strial	Comme Office Wareho	rcial	Emer. S School	rervices	G	istoric overnmen	□ Shel t	ter
	struct	ural	walls				Soi	Type:	Hard Rock	Avg Rock	Den	se St	iff S	oft P		NK DNK, assi	ume Type	D.
			tura				Geo	logic Ha								Surf. Ru	ipt.: Yes	NoDN
		titio			-			acency:			Pounding	-			\sim	er Adjacer		\sim
	wal	ls					_	gularitie	s:			type/sev	erity)	Shor	t Coli	umns/	/Seve	-
	I	T			T		-				Plan (typ					mmei		
21'	\vdash	+			_			erior Fal ards:	ling	D P	Parapets Other:	Chimne	ys		endage	ding or He s	eavy ver	leer
8'		• + •			╸┿╺		co	MMENT	S:		Juner.							
° 🖛 † 🗕	1 🗆		1		-+-		1									lirecti		
		111					1.									terio		
21'		┍┙┼╺┶					1									iest w herefo		are
	84' (0	6 hai	10 1	40	+	-	1.					ally i			re. 11	nererc	re,	
	0 T (b bug			-		1.	0074	10001	10 00	1 51071	ung n	rege					
First floo	or pla	n (21	nd fla	or s	sim)	N		Infil	l at f	irst f	loor d	cause:	s sho	rt co	lumn	s.		
	SKE	тсн						Additiona	al sketch	es or con	nments c	on separa	ile page					
		В	ASIC	sco	RE, MO	DIFIE	RS, A	ND FIN	IAL LE	EVEL 1	1 SCO	RE, S	.1					
FEMA BUILDING TYPE	Do Not Know	W1	W1A	W2	S1 (MRF)	\$2 (BR)	\$3 (LM)	\$4 (RC SW)	S5 (URM INF)	C1 (MRF)	C2 (SW)	C3 (URM INF)	PC1 (TU)	PC2	RM1 (FD)	(RD)	URM	MH
Basic Score		3.6	3.2	2.9	2.1	2.0	2.6	2.0	1.7	1.5	2.0	1.2	1.6	1.4	1.7	2	1.0	1.5
Severe Vertical Irregularity, V _{L1} Moderate Vertical Irregularity, V _{L1}		-1.2 -0.7	-1.2 -0.7	-1.2	-1.0	-1.0 -0.6	-1.1 -0.7	-1.0 -0.6	-0.8 -0.5	-0.9 -0.5	-1.0 -0.6	-0.7 -0.4	-1.0 -0.6	-0.9 -0.5	-0.9	-0.5	-0.7 -0.4	NA NA
Plan Irregularity, PL1		-1.1	-1.0	-1.0	-0.8	-0.7	-0.9	-0.7	-0.6	-0.6	-0.8	-0.5	-0.7	-0.6	-0.7	0	-0.4	NA
Pre-Code		-1.1	-1.0	-0.9	-0.6	-0.6	-0.8	-0.6	-0.2	-0.4	-0.7	-0.1	-0.5	-0.3	-0.5	-0.5	0.0	-0.1
Post-Benchmark Soil Type A or B		1.6 0.1	1.9 0.3	2.2	1.4	1.4 0.6	1.1 0.1	1.9	NA 0.5	1.9 0.4	2.1 0.5	NA 0.3	2.0 0.6	2.4 0.4	2.1	2.1 0.5	NA 0.3	1.2
Soil Type E (1-3 stories)		0.2	0.2	0.1	-0.2	-0.4	0.2	-0.1	-0.4	0.0	0.0	-0.2	-0.3	-0.1	-0.1	-0.1	-0.2	-0.4
Soil Type E (> 3 stories)		-0.3	-0.6	-0.9	-0.6	-0.6	NA	-0.6	-0.4	-0.5	-0.7	-0.3	NA	-0.4	-0.5	-0.6	-0.2	NA
Minimum Score, Serv		1.1	0.9	0.7	0.5	0.5	0.6	0.5	0.5	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.2	1.0
FINAL LEVEL 1 SCORE, SLI	≥ S _{MW} :			_						1.7-	0.9-	0.7 =	0.1	; use	S _{MW} =	= 0.3		
EXTENT OF REVIEW					OTHE							EQUIF						
Exterior: Partia Interior: None			Aeri		Are Ther Detailed				•			tural Ev.						
Drawings Reviewed: Ves		No		0+00	Pour				>			wn FEM less tha		ng type o	r other b	uilding		
Soil Type Source: Vs30 M	aps - Ty	/pe D				ff, if knov		1000 U()	-	X Ye	es, other	hazards	present					
	State G	ieologis	st - Liq.	Pot.	Fallir	g hazard		aller adja	cent									
Contact Person:					build E Geol	ng ngic harr	urle or C	Soil Tune	F	Detaile	ed Nons	tructura	Evalua	tion Rec	ommen	ded? (ch	eck one))
LEVEL 2 SCREENING	PERFO	RME	D?		Sign	Rant da	mage/de	eterioratio	n to							ould be ev		
Yes, Final Level 2 Score, Su	0.			0	the s	tructural	system					uctural h aluation				uire mitiga	ation, bui	ta
						``	(line	InFack	in m 1							_		
Nonstructural hazards?	Yes		XN	0			(iiqu	iefact	1011)	X No	o, no non	structura	il hazard	ls identifi	ed [] DNK		
Nonstructural hazards?			e verifie	d, scr	ener shai Reinforced			ving: ES	T = Esti	-	r unrelia	ble data	<u>OR</u>		o Not K	now	Flexible di	

Figure 19. Completed Level 1 Data Collection Form for the main building at Roosevelt Elementary School

	Data Collection Form	(08/26/14)			HIGH S	
-	ta collection to be performed by a civil or sevelt Elementary – Main Bld	Final Level 1 Score: St.	-	ackground in seis		design of build consider S
Screener: P. Co Date/Time: 8/1	tz	Level 1 Irregularity Modifiers: Ve	rtical Irregularity, V = (S _{L1} – V _{L1} – P _{L1})			
	MODIFIERS TO ADD TO ADJ					
Topic /ertical		the "Yes" modifier; otherwise cross out the mo t least a full story grade change from one side		other.	-1.2	Subtota
rregularity, VL2		e is at least a full story grade change from one			-0.3	1
		I: An unbraced cripple wall is visible in the cra			-0.6	
		Underneath an occupied story, there is a gan of wall on the same line (for multiple occupie				
	(circle one W1A building open from	t: There are openings at the ground story (su			the	1
	maximum) length of the building.	th of lateral materia is any stars in lass than 6	Of a fibrat at alars, ab	ere estelettefe	-1.2	-
		th of lateral system at any story is less than 5 imes the height of the story above.	0% of that at story ab	ove or neight of a	-0.1	
	Non-W1 building: Leng	th of lateral system at any story is between 50		story above or h		1
		1.3 and 2.0 times the height of the story abov		holow coucing th	-0,5	-
	diaphragm to cantileve	elateral system at an upper story are outboard at the offset.	of those at the story	below causing th	-10	
	Vertical elements of the	lateral system at upper stories are inboard of			-0.5	1
		set of the lateral elements that is greater than			-4.3	-
		I1,RM2: At least 20% of columns (or piers) alo than 50% of the nominal height/depth ratio at		ie lateral system	nave 0.5	
		1,RM2: The column depth (or pier width) is le	ss than one half of th	e depth of the sp	andrel,	1
		or adjacent floors that shorten the column.	>		-0.5	2
		one of the floor levels or at the roof. vable severe vertical irregularity that obviously	affects the building's	seismic performa		VL2=-0
		vable moderate vertical irregularity that may at				(Cap at -
lan rogularitu Du		does not appear relatively well distributed in pla	an in either or both di	ections. (Do not	-0.7	
rregularity, PL2	include the W1A open front irregularit Non-parallel system: There are one of	more major vertical elements of the lateral sy	stem that are not orth	oconal to each o		-
		om an interior comer exceed 25% of the overa			-0.	1
		ning in the diaphragm with a width over 50% o		width at that leve	-0 <u>2</u> -04	PL2=C
		he exterior beams do not align with the column servable plan irregularity that obviously affects		c performance.	-47	(Cap at -)
Redundancy		ateral elements on each side of the building in	each direction.		(+0.3))
ounding	Building is separated from an adjacen			(Cap tota		
	by less than 1% of the height of the si building and adjacent structure and:	The building is 2 or more stor The building is at the end of the		er. pounding modifiers		-
2 Building	"K" bracing geometry is visible.	The building is at the end of th	ie block.	· mouniora	-1.0	1
1 Building	Flat plate serves as the beam in the n				-04	1
C1/RM1 Bldg	There are roof-to-wall ties that are vis post-benchmark or retrofit modifier.)	ble or known from drawings that do not rely or	n cross-grain bending	. (Do not combine	with +0.3	
C1/RM1 Bldg		eight interior walls (rather than an interior spa	ce with few walls such	as in a warehou	se). + 1.3	1
JRM	Gable walls are present.				-0.4	1
/H	There is a supplemental seismic brack Comprehensive seismic retrofit is visit	ng system provided between the carriage and	the ground.		1.2	M= +0
Retrofit		Here or known from drawings. + M) ≥ S _{MIN} : 1.7 - 0.5 - 0.7	03 = 0 0			to Level 1 fr
		ondition that negatively affects the building's s		🗌 Yes 🛛 😿	No	to Level 1 h
f yes, describe th	e condition in the comment box below a	nd indicate on the Level 1 form that detailed e	valuation is required	independent of th	e building's score) .
DBSERVABL	NONSTRUCTURAL HAZARD	s				
ocation	Statement (Check "Yes" or "No")	-		Yes No	Com	nment
xterior		sonry parapet or unbraced unreinforced mase	onry chimney.	×		
	There is heavy cladding or heavy ven There is a heavy canopy over exit do	eer. vrs or pedestrian walkways that appears inade	quately supported	X		
		endage over exit doors or pedestrian walkway		×		
	There is a sign posted on the building	that indicates hazardous materials are presen	it.	X		
		an unanchored URM wall or unbraced URM p	parapet or chimney.	X		
nterior	Other observed exterior nonstructural There are hollow clay tile or brick part			x x		
NOT OT	Other observed interior nonstructural			Ŷ		
stimated Nonst	ructural Seismic Performance (Chee	k appropriate box and transfer to Level 1 form				
		ith significant threat to occupant life safety ->				
	Nonstructural hazards identified v					

Figure 20. Completed Level 2 Data Collection Form for the main building at Roosevelt Elementary School

Example 5: It is required to perform rapid visual screening RVS for the Main Building plus Addition at Washington Middle School. The screener performed Level 1 and Level 2 screenings of the main classroom building at Washington Middle School.



Figure 21. Photo of exterior of Washington Middle School

Pre-field Planning Stage

In this stage, the screener determined the following information:

- Address,
- Number of stories,
- Year built, and
- Soils information
- Seismicity zone (High)
- Year built of addition was 1994

Field Screening of the Building

- The screener verified the pre-field information. He checked Soil Type C and indicated that no geologic hazards were present, based on the pre-filled information in the "Extent of Review" portion of the form.
- After walking around the building and through the interior of the building, he identified the original building as a C2 (concrete shear wall). He confirmed that the walls were concrete and not stucco over metal or wood framing by knocking on the walls and verifying that they were solid.
- He observed steel braces at the addition and concluded that it was an S2 (steel braced frame).
- He sketched a plan of the building, including the addition, and an elevation
- He calculated the area of the building and found that the area provided on the form did not appear to include the area of the addition. He crossed out the provided area and wrote in a revised value.

Identification of the Modifiers in Level 1 Form

- The screener consulted the Level 1 Building Additions Reference Guide, which indicated that because the addition and the original building had different structural framing, they should be evaluated separately and pounding should be considered. He checked pounding using the Level 1 Pounding Reference Guide and found that pounding potential does exist because the roof of the addition does not align with the floor of the original building.
- While he could have used a separate form for the addition, he opted to use a single Level 1 form for both portions of the building. He calculated a Level 1 score for the original building, and a second Level 1 score for the addition.
- The screener did not observe any of the irregularities listed in the Vertical Irregularity Reference Guide in the main building. Because the addition has braced frames on only three sides, the screener identified the addition as torsionally irregular using the Plan Irregularity Reference Guide.
- Considering the original building is pre-code, the screener calculated the Level 1 Score for the original building as 1.3. Considering the plan irregularity and the soil type, the screener calculated the Level 1 Score for the addition as 1.3.

Identification of the Modifiers in Level 2 Form & Final Decision

- Prior to performing the Level 2 portion of the form, the screener consulted the Level 2 Building Additions Reference Guide. Based on the Level 2 guide, the screener treated the original plus addition as a single building. He applied (1) the reentrant corner modifier to account for the difference in the plan dimension between the original and the addition; (2) the setback modifier to account for the difference in height; and (3) the torsional irregularity modifier to account for the difference in structural systems. He also applied modifiers for split level (because the roof of the addition does not align with any of the original floor levels) and redundancy (because there are multiple bays of lateral elements in both directions on both sides of the building.
- He made sure to apply the appropriate caps to V_{L2} and P_{L2} as instructed on the Level 2 form. The Level 2 score was calculated as -0.3, so *SMIN* (for the original building) was used as the Final Level 2 Score, $S_{L2} = 0.3$. This score was transferred back onto the Level 1 form.
- No exterior falling hazards were observed in the Level 1 screening. During the Level 2 screening, however, the screener observed what appeared to be hollow clay tile partitions. He noted this on the Level 2 form.
- Detailed structural evaluation is required because the score less than cut-off besides the detailed nonstructural evaluation is recommended.

The completed Level 1 Data Collection Form for the building is shown in Figure 22. The completed Level 2 Data Collection Form is shown in Figure 23.

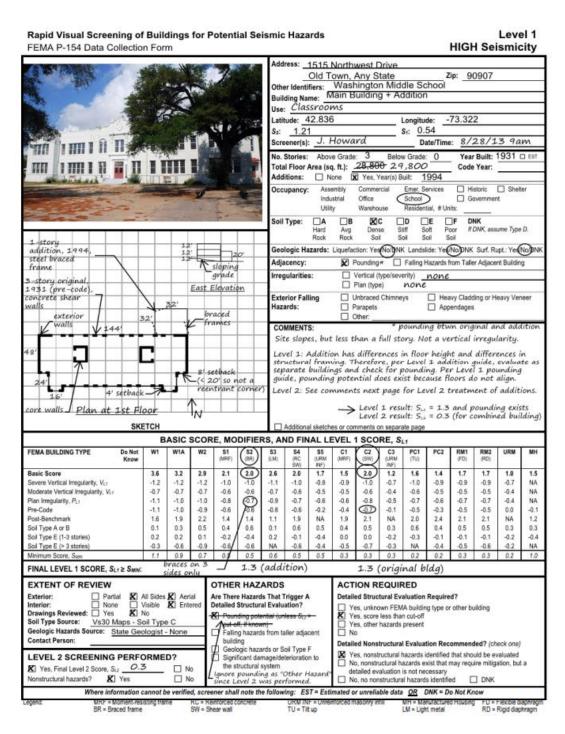


Figure 22. Completed Level 1 Data Collection Form for the main building (original plus addition) at Washington Middle School.

Rapid Visual Screening of Buildings for Potential Seismic Hazards

Level 2 (Optional) HIGH Seismicity

FEMA P-154 Data Collection Form HIGH Seismici Optional Level 2 data collection to be performed by a civil or structural engineering professional, architect, or graduate student with background in seismic evaluation or design of build

	<u>MS - Main</u> Howard		l evel 1	Final Level 1 Score: Irregularity Modifiers:	S _{L1} = 1.3 Vertical Irregula	rity V = 0		Plan Irregu		consider S_M
	/28/13			ED BASELINE SCORE:	$S' = (S_{L1} - V_{L1})$.3	ion in ogo	manny,	10-0
		RS TO ADD TO ADJU			ha madifica (Vee	Subtotals
Topic Vertical	Statement (If statement is true, circle t		ry grade change from on		to the other			-1.2	Subtotals
vertical Irregularity, V _{L2}	Siloping			ry grade change from on ill story grade change from					-1.2 -0.3	
ineguianty, viz	Weak			cripple wall is visible in t		ung to the out	я.		-0.6	
	and/or			n occupied story, there is		thout a steel m	oment fr		-0.0	
	Soft Story			same line (for multiple or					-1.2	
	(circle one			penings at the ground sto				the		
	maximum)	length of the building.				-			-1.2	
				stem at any story is less t	han 50% of that at st	ory above or he	ight of a	iny		
		story is more than 2.0 tir							-0.9	
				stem at any story is betwe		that at story ab	ove or h	eight		
	Setback			the height of the story at an upper story are out		stop: holow or	using th	-	-0.5	
	Setback	diaphragm to cantilever		at an upper story are out	board of those at the	sury below ca	using tri		-1.0 -	
				at upper stories are inbo	ard of those at lower	stories.			-0.5	
				al elements that is greater				\rightarrow	-0.3	
	Short			st 20% of columns (or pie			system	have		
	Column/			e nominal height/depth ra			-		-0.5	
	Pier			olumn depth (or pier width		If of the depth of	of the sp	andrel,		
				rs that shorten the column	1.				-0.5	
	Split Level	There is a split level at o			and whether the first	dia dia mandri dia			-0.5	
	Other Irregularity			ertical irregularity that obv					-1.0	$V_{L2} = -1.0$ (Cap at -1.1)
Plan		egularity: Lateral system do		vertical irregularity that n					-0.5	[Cap at -1.
Irregularity, PL2		W1A open front irregularity			and plan in elulier or c	our directions.	100 100	*	0.7)	
in egalanity, r ce		system: There are one or			ral system that are n	ot orthogonal ti	o each o		-0.4	
	Reentrant co	orner: Both projections from	m an interior c	orner exceed 25% of the	overall plan dimensio	on in that direct	ion.	*	(0.4)	
	Diaphragm of	opening: There is an openi	ing in the diap	hragm with a width over 5	50% of the total diaph	ragm width at l	hat leve	l	-0.2	
		ting out-of-plane offset: Th							-0.4	PL2=1
D. J. J.		larity: There is another obs					nance.		-0.7	(Cap at -1.1
Redundancy Pounding		has at least two bays of la eparated from an adjacent		The floors do not align v			Cap tota		0.3 -1.0	
Pounding		1% of the height of the sho		One building is 2 or mor			poundin		-1.0	
		adjacent structure and:		The building is at the en			nodifiers		-0.5	
S2 Building	"K" bracing of	geometry is visible.							-1.0	
C1 Building		rves as the beam in the mo	oment frame.						-0.4	
PC1/RM1 Bldg		of-to-wall ties that are visib	ole or known fr	om drawings that do not	ely on cross-grain be	ending. (Do not	combin	e with	+0.3	
		mark or retrofit modifier.)								
PC1/RM1 Bldg		has closely spaced, full he	eight interior w	alls (rather than an interio	or space with few wal	ls such as in a	warehou		+0.3	
URM MH	Gable walls			ided between the coorden	a and the arround				+1.2	
Retrofit		upplemental seismic bracin sive seismic retrofit is visibl			e and the ground.				+1.2	M=_+0.3
100.0		$S_{L2} = (S' + V_{L2} + P_{L2})$		4	1:07-	0.5; use !	c -		1.174	o Level 1 for
		deterioration or another co						No 110	di/S/01 i	O LEVER / IOF
		the comment box below ar							score.	
								e sanong e		
		UCTURAL HAZARDS	S							
Location		(Check "Yes" or "No")				Yes	No		Com	nent
Exterior		unbraced unreinforced mas		or unbraced unreinforced	masonry chimney.	_	<u>x</u>	<u> </u>		
		avy cladding or heavy vene eavy canopy over exit door			in de suele la sue se d		<u>x</u>	<u> </u>		
		eavy canopy over exit door unreinforced masonry appe				ied.	<u>×</u>	<u> </u>		
		ion posted on the building t					<u>×</u>	<u> </u>		
		aller adjacent building with a				nev.	×	<u> </u>		
		ved exterior nonstructural f		s allon man or anaraceu (and percepter or climit		x	<u> </u>		
Interior		ollow clay tile or brick partit		air or exit corridor.		×	~	corrido	or app	ears to be
		ved interior nonstructural fa					X	hollow	clay 1	ale
Estimated Nons	tructural Seis	mic Performance (Check	k appropriate b							
	X Potentia	al nonstructural hazards wit	th significant th	hreat to occupant life safe	ty -> Detailed Nonst					
	Nonstru	ctural hazards identified wi	ith significant t	hreat to occupant life safe				tion required	d	
		no nonstructural hazard thr	reat to occupa	nt life safety -> No Detail	ed Nonstructural Eva	luation required	i			
Comments: +	Low or r									

Figure 23. Completed Level 2 Data Collection Form for the main building (original plus addition) at Washington Middle School

9. APPENDIX A: DATA COLLECTION FORMS

HOTOGRAPH							Ad	dress:							City:					
						Bu														
							La	titude:							S.:					
							Long	gitude:							S1:					
							Scr	eener:							Date/	Time:				
						#Stori	es - At	ove Gr	round:		. Below	Groun	d:		Year E	Bullt:		🗆 Est		
						Total	Floor A	Area (st	rt):						Code	Year: .				
						Add	Itions:		I Non	e	🗆 Yes	, Years	s Bullt:							
						Occup	pancy:		C Ass	embly	Con	nmercl	al	🗆 Em	ergenc	y Servi	Ce5	🗆 Hist	oric	
	Industrial Office						al 🗆 Office 🗆 Schools					Governmer								
						🗆 Utility 🗆 W						Warehouse Residential,#Units:					5:			
										ard Ro	ock		🗆 C: S	Soft Ro	ck			DE: S	oft So	1
гсн									🗆 B: N	ormal	Rock		D D: H	lard So	DN / DN	к		D F: P	oor So	oli
			Geoh	azarda			Lique	faction:		Yes		, 🗆 DN	IK 🗌				_			
										Lan	idsilde:		🗆 Yes	, 🗆 No	, 🗆 DN	IK 👘				
									Sur	face R	upture:		C Yes	, 🗆 No	, 🗆 DN	IK				
		13				Adjac	-		D Pou	nding			🗆 Fal	ing Ha	zards fi	rom Ta	iller Ad	acent I	Bulldin	9
						Irregu	larities		C Sev	ere Ve	rtical Im	egulari	ty		🗆 Plar	n Irregu	ularity			
									□ Mod	erate \	/ertical	Irregul	arity							
						Exteri	or Fall	Inc	🗆 Unb	raced (Chimne	ys	🗆 Hea	ivy Cla	dding o	or Heav	vy Vene	er		
					i (= = =	Hazar		ing .	🗆 Para	apets			🗆 Арр	endag	es					
<u> i i i i i i i i</u>									C Othe	er:										
						COMM	IENTS													
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					0.05				es or co				page							
UILDING TYPE	DNK	W1	W1A	W2	S1	S2	S3	S4	NAL LE	C1	C2	C3	PC1	PC2	RM1	RM2	URM	MH	BN1	Е
asic Score	DINK	2.1	1.9	1.8	1.5	1.4	1.6	1.4	1.2	1.0	1.2	0.9	1.1	1.0	1.1	1.1	0.9	1.1	0.9	
	\vdash	-0.9	-0.9	-0.9	-0.8	-0.7	-0.8	-0.7	-0.7	-0.7	-0.8	-0.6	-0.7	-0.7	-0.7	-0.7	-0.6	NA	-0.6	H
evere Vertical Irregularity, V _{L1} oderate Vertical Irregularity, V _{L1}	\vdash	-0.9	-0.9	-0.9	-0.6	-0.7	-0.0	-0.7	-0.7	-0.7	-0.0	-0.0	-0.7	-0.4	-0.7	-0.7	-0.8	NA	-0.0	H
ian Irregularity, PL	\vdash	-0.6	-0.5	-0.5	-0.4	-0.4	-0.5	-0.4	-0.5	-0.4	-0.4	-0.3	-0.4	-0.4	-0.4	-0.4	-0.3	NA	-0.3	H
re-Code	\vdash	-0.3	-0.3	-0.3	-0.3	-0.2	-0.3	-0.4	-0.1	-0.4	-0.2	0.0	-0.2	-0.4	-0.4	-0.2	0.0	0.0	NA	H
ost-Benchmark	\vdash	1.9	1.9	2.0	1.0	1.1	1.1	1.5	NA	1.4	-0.2	NA	1.5	1.7	1.6	1.6	NA	0.5	NA	H
oll Type A or B	\vdash	0.5	0.5	0.4	0.3	0.3	0.4	0.3	0.2	0.2	0.3	0.1	0.3	0.2	0.3	0.3	0.1	0.3	0.1	H
oll Type E (1-3 stories)	┝─┼	0.0	-0.2	-0.4	-0.3	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2	0.0	-0.2	-0.1	-0.2	-0.2	0.0	-0.1	0.0	H
oll Type E (>3 stories)	\vdash	-0.4	-0.4	-0.4	-0.3	-0.3	NA	-0.3	-0.1	-0.1	-0.3	-0.1	NA	-0.1	-0.2	-0.2	0.0	NA	NA	H
linimum Score, S _{MN}	\vdash	0.7	0.7	0.7	0.5	0.5	0.5	0.5	0.5	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.2	1.0	0.2	H
INAL LEVEL 1 SCORE, SLI 2 SMW																				<u> </u>
XTENT OF REVIEW				OTHE	R HA	ZARDS					ACTIO	N REC	UIRE	0						_
xterior:		🗆 Aerl	al					rigger A	A Detalle	ed	Detalle	ed Stru	ctural E	Evaluat	Ion Re	quired?	2			
			ered			valuatio											suliding			
								e66 S .	, > Cut-	off, If	I Yes									
terior: 🗆 None 🗆 Visible					-							, other								
terlor:				lknow!							1									
terlor: □ None □ Visible rawing Reviewd: □ Yes oli Type Source:				know	·						Detaile	ed Non	structu	ral Eva	luation	Recor	nmend	ed?		
terior: ONONE Visible rawing Reviewd: Yes oil Type Source:					·	zards f	rom tal	ler adja	icent bu	Iding	I						mmend should l		uated	
terlor: None Visible rawing Reviewd: Yes OII Type Source: eohazards Source: ontact Person:				🗆 Fal	í Ilng ha					lding	🗆 Yes	i, nonst	tructura	il haza	rd Ideni	tified, s	should	be eval		
tterlor: None Visible rawing Reviewd: Yes oil Type Source: eohazards Source: ontact Person: EVEL 2 SCREENING PERFORMED				🗆 Fal	ologic	hazardi	s or So	II Туре			□ Yes □ No,	i, nonst	tructura uctural	il hazaı hazarı	rd Ideni ds exist	tified, s t that m		be eval		

Rapid Visual Screening of Buildings for Potential Seismic Hazards (Adopted from FEMA P-154 Data Callection Form)

LEVEL 2 (Optional) VERY HIGH Seismicity

Building Nan		a be performed by a civil or	Final	Level 1 Score: c.	raduate student with background i				not co	nsider S _M
Screener	1		Level 1 Irregula	anty Modifiers: Vert	cal Irregularity . V		Pla	n Irregularity, P, , -		
)ate/ Time	1		ADJUST	TED BASELINE 😪 🖬	(S,, - V,, - P,,) =					
	L MODIFIER	S TO ADD TO ADJUS								
Topic				-	odifler; otherwise cross o		ifier)		Yes	Subtota
Vertical	Sloping Site				one side of the building to t				-0.9	
Irregularity,	Weak				om one side of the building	to the other	r.		-0.2	
V.2	and/or Soft			cripple wall is visible	in the crawl space. e is a garage opening witho	ut a steel m	oment fr	ame, and there is	-0.5	
	Story	1	-					anie, and there is	-0.9	
	(Circle one maximum)				loors above, use 16 ft of wal				-0.3	
	meximumy		Front : There are o	penings at the ground	story (such as for parking)	over at leas	at 50 % of	the length of the		
		building.							-0.9	
		Non-W1 Building : Le	ength of lateral sys	tem at any story is les	s than 50 % of that at story	above or he	eight of a	ny story is more		
		than 2.0 times the he							-0.7	Į į
		Non-W1 Building : Le	ength of lateral sys	tem at any story is be	tween 50 % and 75 % of tha	at at story al	bove or h	eight of any story is		
		between 1.3 and 2.0	times the height of	f the story above.					-0.4	
	Setback	Vertical elements of	the lateral system a	at an upper story are o	outboard of those at the stor	ry below cau	using the	dlaphragm to		
		cantilever at the offse	et.						-0.7	
		Vertical elements of	the lateral system a	at upper stories are in	board of those at lower stor	les.			-0.4	1
					ter than the length of the ele				-0.2	
	Short Column/	C1,C2,C3,PC1,PC2,	RM1,RM2 : At leas	t 20 % of columns (or	plers) along a column line l	n the latera	l system	have height/depth		
	Pler			ight/depth ratio at that					-0.4	1
		C1,C2,C3,PC1,PC2,	RM1,RM2 : The co	lumn depth (or pler w	idth) is less than one half of	the depth o	of the spa	ndrel, or there are		
		Infili walls or adjacen	t floors that shorter	n the column.					-0.4	
		There is a split level	at one of the floor I	evels or at the roof.					-0.4	
	Other Irregularity				bylously affects the building			ce.	-0.7	
Plan					t may affect the building's so uted in plan in either or both			actuale the 1874 A	-0.4	(Cap at -0.)
				r relatively well distrib	ated in plan in easier or both	urecaulta.	(Do not i	house the with	-0.5	
Irregularity,	-	egularity listed above		allest standards of the	Internet as referen alterat and and				-0.2	
PL2					lateral system that are not of			iner.	-0.2	
					the overall plan dimensions er 50 % of the total diaphrac			1	-0.2	
		Ings Out-of-plane Offs							-0.2	P., -
	Other Irregul	arity: There is another	r observable plan ir	regularity that obvious	sly affects the building's sels	smic perform	nance.		-0.5	(Cap at -0.)
Redundancy	The building	has at least two bays	of lateral elements		uliding in each direction.				0.2	
Pounding	Building is se	eparated from an adja	cent structure by		n vertically within 2 feet.			(Cap total	-0.7	1
	less than 1.5	% of the height of the	e shorter of the	One building is 2 or r	more stories tailer than the o	other.		pounding modifiers	-0.7	
	building and	adjacent structure and	d:	The building is at the	end of the block.			at -0.9)	-0.4	
S2 Building		eometry is visible.		-				-	-0.7	1
C1 Building		rves as the beam in th							-0.3	1
PC1/RM1	There are ro	of-to-wall ties that are	visible or known fr	om drawings that do r	ot rely on cross-grain bendl	ng. (Do not	combline	with post-		
Building		or retrofit modifier)							0.2	
URM	The building Gable walls	has closely spaced, f	ull height interior w	alls (rather than an Int	erior space with few walls s	uch as in a	warehou	se)	0.2	
MH		are present. Ipplemental selsmic b	racing system prov	ided between the car	flace and the ground.				-0.5	1
Retrofit		lve seismic retrofit is							1.2	м-
FINAL LEVE	2 SCORE, S	S ₁₂ = (S' + V ₁₂ + P ₁₂	+ M)≥ S _{MN} :					(Transfer	to Le	vel 1 For
There is obse	rvable damag	e or deterioration or a	another condition th	at negatively affects t	he building's seismic perfor	mance: 🗆 '	Yes 🗆 N	0		
			x below and Indicat	e on the Level 1 form	that detailed evaluation is re	equired inde	ependent	of the building's sco	re.	
		ICTURAL HAZARDS								
Location		Check "Yes" or "No"					Yes No	Comr	nents	
Exterior		vy cladding or heavy v		or unbraced unreinfor	ced masonry chimney.		\vdash			
				n walkways that appea	ars Inadequately supported.					
	There is an u	inreinforced masonry	appendage over ex	xit doors or pedestrian	walkways.					
		gn posted on the build								
				URM wall or unbrace	ed URM parapet or chimney					
-lades		ed exterior nonstructu Now clay tile or brick p		ir or exit conidor			\vdash			
nterior		ved Interior nonstructu		an er som vertikert.			\vdash			
Estimated No				ate box and transfer to	D Level 1 form consilusions)					
		ctural hazards with sig			> Detailed Nonstructur	ral Evaluatio	on recom	mended.		
		ards identified with si			> But no Detailed Non					
		uctural hazard threat t			> No Detailed Nonstru	ctural Evalu	uation rec	ulred.		
	ALL NOT HALL AND									

Rapid Visual Screening of Buildings for Potential Seismic Hazards

LEVEL 1

PHOTOGRAPH						Ad	dress:							City:			H Se		
							her ID:												
					Bu														
						-													
							·												
										_									
										Below									
					_	Floor A	urea (st	· · ·											
					_	itions:		Non		Yes,									
					Occup	ancy:				Com				-	y Servi		Hist		
								🗆 Indu	strial		e		C Sch	ools			C GOV	emme	nt
										🗆 War					il,#Unit	5:	She		
					Soll T	ype:		DA:H	ard Ro	ck		🗆 C: S	oft Ro	ck			0 E: S	oft Sol	
SKETCH	i i		i i					DB: N	iormal F	Rock		D D: H	lard So	II / DN	K		O F: P	oor So	•
	1.1		1		Geoha	zards:			Liquef	action:		🗆 Yes,	. 🗆 No	, 🗆 DI	NK				
	1		100						Lan	dslide:	1	🗆 Yes,		. 🗆 Dł	NK .				
			1					Sur	face Ri	upture:		🗆 Yes,		. 🗆 🗖	NK _				
	1000		3773		Adjace	ency:		D Pou	nding			🗆 Falli	ing Haa	zards f	rom Ta	iller Adj	acent I	Building	3
			1		Irregu	larities	c	C Sev	ere Ver	tical Irre	egularit	by .		🗆 Pla	n Irregi	ularity			
	1 1		1 1					C Mod	erate V	ertical I	Irregula	arity							
	11		11					🗆 Unb	raced (Chimney	y6	🗆 Hea	vy Cla	dding (or Heav	vy Vene	er		
	1		1		Exterio Hazaro	or Falli	ing	🗆 Para	apets		1	🗆 App	endag	es					
	11-				Hazaro	38.		C Othe	erc				-						
	1111		1111		COMN	IENTS													
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	<u>i i</u>		ini																
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	+ + -				CI Add	Itional	sketch	es or co	mment	5 00 58	narate	nane							
			SIC SC							s on se		page							
			SIC SCO	DRE, N						SCORE	E, S ₁₁		PC2	RM1	RM2	URM	MH	BN1	BN
BUILDING TYPE	DNK	W1 W1/	W2	S1	S2	ERS, A	ND FI	NAL LE S5	VEL 1 C1	SCORE C2	C3	PC1	PC2	RM1	RM2	URM	MH	BN1	BN
Basic Score		W1 W1/ 3.6 3.2	W2 2.9	S1 2.1	S2 2.0	ERS, # S3 2.6	ND FI S4 2.0	NAL LE S5 1.7	C1 1.5	C2 2.0	C3	PC1	1.4	1.7	1.7	1.0	1.5	1.0	1.4
Basic Score Severe Vertical Irregularity, V _{L1}		W1 W1/ 3.6 3.2 -1.2 -1.2	W2 2.9 -1.2	S1 2.1 -1.0	S2 2.0 -1.0	ERS, # S3 2.6 -1.1	S4 2.0 -1.0	NAL LE S5 1.7 -0.8	VEL 1 C1 1.5 -0.9	SCORE C2 2.0 -1.0	C3 1.2 -0.7	PC1 1.6 -1.0	1.4 -0.9	1.7 -0.9	1.7 -0.9	1.0 -0.7	1.5 NA	1.0 -0.7	1./ -0.
Basic Score Severe Vertical Irregularity, V _{L1} Moderate Vertical Irregularity, V _{L1}		W1 W1/ 3.6 3.2 -1.2 -1.2 -0.7 -0.7	W2 2.9 -1.2 -0.7	S1 2.1 -1.0 -0.6	S2 2.0 -1.0 -0.6	ERS, A S3 2.6 -1.1 -0.7	S4 2.0 -1.0 -0.6	NAL LE S5 1.7 -0.8 -0.5	VEL 1 C1 1.5 -0.9 -0.5	SCORE C2 2.0 -1.0 -0.6	C3 1.2 -0.7 -0.4	PC1 1.6 -1.0 -0.6	1.4 -0.9 -0.5	1.7 -0.9 -0.5	1.7 -0.9 -0.5	1.0 -0.7 -0.4	1.5 NA NA	1.0 -0.7 -0.4	1. -0. -0.
Basic Score Severe Vertical Irregularity, V _{L1} Moderate Vertical Irregularity, V _{L1} Plan Irregularity, P _{L1}		W1 W1/ 3.6 3.2 -1.2 -1.2 -0.7 -0.7 -1.1 -1.0	W2 2.9 -1.2 -0.7 -1.0	S1 2.1 -1.0 -0.6 -0.8	10DIFI S2 2.0 -1.0 -0.6 -0.7	ERS, # S3 2.6 -1.1 -0.7 -0.9	ND FI S4 2.0 -1.0 -0.6 -0.7	NAL LE S5 1.7 -0.8 -0.5 -0.6	VEL 1 C1 1.5 -0.9 -0.5 -0.6	SCORE C2 2.0 -1.0 -0.6 -0.8	E, S ₁₁ C3 1.2 -0.7 -0.4 -0.5	PC1 1.6 -1.0 -0.6 -0.7	1.4 -0.9 -0.5 -0.6	1.7 -0.9 -0.5 -0.7	1.7 -0.9 -0.5 -0.7	1.0 -0.7 -0.4 -0.4	1.5 NA NA NA	1.0 -0.7 -0.4 -0.4	1. -0. -0.
Basic Score Severe Vertical Irregularity, V _{L1} Moderate Vertical Irregularity, V _{L1} Plan Irregularity, P _{L1} Pre-Code		W1 W1/ 3.6 3.2 -1.2 -1.2 -0.7 -0.7 -1.1 -1.0 -1.1 -1.0	 W2 2.9 -1.2 -0.7 -1.0 -0.9 	S1 2.1 -1.0 -0.6 -0.8 -0.6	S2 2.0 -1.0 -0.6 -0.7 -0.6	ERS, # S3 2.6 -1.1 -0.7 -0.9 -0.8	ND FI S4 2.0 -1.0 -0.6 -0.7 -0.6	NAL LE S5 1.7 -0.8 -0.5 -0.6 -0.2	VEL 1 C1 1.5 -0.9 -0.5 -0.6 -0.4	SCORE C2 2.0 -1.0 -0.6 -0.8 -0.7	E, S _{L1} C3 1.2 -0.7 -0.4 -0.5 -0.1	PC1 1.6 -1.0 -0.6 -0.7 -0.5	1.4 -0.9 -0.5 -0.6 -0.3	1.7 -0.9 -0.5 -0.7 -0.5	1.7 -0.9 -0.5 -0.7 -0.5	1.0 -0.7 -0.4 -0.4 0.0	1.5 NA NA NA -0.1	1.0 -0.7 -0.4 -0.4 NA	1. -0. -0. N
Basic Score Severe Vertical Irregularity, V _{L1} Moderate Vertical Irregularity, V _{L1} Plan Irregularity, P _{L1} Pre-Code Post-Benchmark		W1 W1/ 3.6 3.2 -1.2 -1.2 -0.7 -0.7 -1.1 -1.0 -1.1 -1.0 1.6 1.9	 W2 2.9 -1.2 -0.7 -1.0 -0.9 2.2 	S1 2.1 -1.0 -0.6 -0.8 -0.6 1.4	AODIFI S2 2.0 -1.0 -0.6 -0.7 -0.6 1.4	ERS, A S3 2.6 -1.1 -0.7 -0.9 -0.8 1.1	ND FI S4 2.0 -1.0 -0.6 -0.7 -0.6 1.9	NAL LE S5 1.7 -0.8 -0.5 -0.6 -0.2 NA	VEL 1 C1 1.5 -0.9 -0.5 -0.6 -0.4 1.9	C2 2.0 -1.0 -0.6 -0.8 -0.7 2.1	E, S _{L1} C3 1.2 -0.7 -0.4 -0.5 -0.1 NA	PC1 1.6 -1.0 -0.6 -0.7 -0.5 2.0	1.4 -0.9 -0.5 -0.6 -0.3 2.4	1.7 -0.9 -0.5 -0.7 -0.5 2.1	1.7 -0.9 -0.5 -0.7 -0.5 2.1	1.0 -0.7 -0.4 -0.4 0.0 NA	1.5 NA NA -0.1 1.2	1.0 -0.7 -0.4 -0.4 NA NA	1. -0. -0. N
Basic Score Severe Vertical Irregularity, V _{L1} Moderate Vertical Irregularity, V _{L1} Plan Irregularity, P _{L1} Pre-Code Post-Benchmark Soll Type A or B		W1 W1/ 3.6 3.2 -1.2 -1.2 -0.7 -0.7 -1.1 -1.0 -1.1 -1.0 1.6 1.9 0.1 0.3	W2 2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5	S1 2.1 -1.0 -0.6 -0.8 -0.6 1.4 0.4	NODIFI S2 2.0 -1.0 -0.6 -0.7 -0.6 1.4 0.6	ERS, # S3 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1	ND FI S4 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6	NAL LE S5 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5	VEL 1 C1 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4	SCORE C2 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5	E, S _{L1} C3 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3	PC1 1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6	1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3	1.5 NA NA -0.1 1.2 0.3	1.0 -0.7 -0.4 -0.4 NA NA 0.3	1./ -0. -0. N/ N/
Basic Score Severe Vertical Irregularity, V _{L1} Moderate Vertical Irregularity, V _{L1} Plan Irregularity, P _{L1} Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 stories)		W1 W1/ 3.6 3.2 -1.2 -1.2 -0.7 -0.7 -1.1 -1.0 -1.1 -1.0 1.6 1.9 0.1 0.3 0.2 0.2	W2 2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1	S1 2.1 -1.0 -0.6 -0.8 -0.6 1.4 0.4 -0.2	VODIFI S2 2.0 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4	ERS, # S3 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2	ND FI S4 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 -0.1	NAL LE S5 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4	VEL 1 C1 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0	SCORE C2 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0	E, S _{L1} C3 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2	PC1 1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3	1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2	1.5 NA NA -0.1 1.2 0.3 -0.4	1.0 -0.7 -0.4 -0.4 NA NA 0.3 -0.2	1. -0. -0. N/ N/ 0. -0.
Basic Score Severe Vertical Irregularity, V _{L1} Moderate Vertical Irregularity, V _{L1} Plan Irregularity, P _{L1} Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 stories) Soll Type E (~3 stories)		W1 W1/ 3.6 3.2 -1.2 -1.2 -0.7 -0.7 -1.1 -1.0 -1.1 -1.0 0.1 0.3 0.2 0.2 -0.3 -0.6	W2 2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9	S1 2.1 -1.0 -0.6 -0.8 -0.6 1.4 0.4 -0.2 -0.6	VODIFI S2 2.0 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.4 -0.6	ERS, # S3 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA	ND FI S4 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 -0.1 -0.6	NAL LE S5 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4	VEL 1 C1 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5	SCORE C2 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7	E, S ₁ , C3 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3	PC1 1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA	1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1 -0.4	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.6	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2	1.5 NA NA -0.1 1.2 0.3 -0.4 NA	1.0 -0.7 -0.4 -0.4 NA NA 0.3 -0.2 NA	1./ -0. -0. N/ N/ 0./ -0.
Basic Score Severe Vertical Irregularity, V ₄₇ Moderate Vertical Irregularity, V ₄₇ Plan Irregularity, P ₄₇ Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 storles) Soll Type E (-3 storles) Soll Type E (-3 storles) Minimum Score, S _{MM}		W1 W1/ 3.6 3.2 -1.2 -1.2 -0.7 -0.7 -1.1 -1.0 -1.1 -1.0 1.6 1.9 0.1 0.3 0.2 0.2	W2 2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9	S1 2.1 -1.0 -0.6 -0.8 -0.6 1.4 0.4 -0.2	VODIFI S2 2.0 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4	ERS, # S3 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2	ND FI S4 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 -0.1	NAL LE S5 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4	VEL 1 C1 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0	SCORE C2 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0	E, S _{L1} C3 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2	PC1 1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3	1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2	1.5 NA NA -0.1 1.2 0.3 -0.4	1.0 -0.7 -0.4 -0.4 NA NA 0.3 -0.2	1./ -0. -0. N/ N/ 0./ -0.
Basic Score Severe Vertical Irregularity, V_{zr} Moderate Vertical Irregularity, V_{zr} Plan Irregularity, P_{zr} Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 storles) Soll Type E (-3 storles) Soll Type E (-3 storles) Minimum Score, S_{MW} FINAL LEVEL 1 SCORE, $S_{zr} \ge S_{MW}$		W1 W1/ 3.6 3.2 -1.2 -1.2 -0.7 -0.7 -1.1 -1.0 -1.1 -1.0 0.1 0.3 0.2 0.2 -0.3 -0.6	W2 2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7	S1 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.4 -0.2 -0.6 0.5	VODIFI S2 2.0 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.6 0.5	ERS, # S3 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA	ND FI S4 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 -0.1 -0.6	NAL LE S5 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4	VEL 1 C1 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5	SCORE C2 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3	E, S _{L1} C3 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3	PC1 1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2	1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.4 -0.1 -0.4 0.2	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.6	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2	1.5 NA NA -0.1 1.2 0.3 -0.4 NA	1.0 -0.7 -0.4 -0.4 NA NA 0.3 -0.2 NA	1./ -0. -0. N/ N/ 0./ -0.
Basic Score Severe Vertical Irregularity, V_{LT} Moderate Vertical Irregularity, V_{LT} Pian Irregularity, P_{LT} Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 stories) Soll Type E (-3 stories) Soll Type E (-3 stories) Soll Type E (-3 stories) Minimum Score, S_{LMW} FINAL LEVEL 1 SCORE, $S_{LT} \ge S_{MW}$ EXTENT OF REVIEW		W1 W1/ 3.6 3.2 -1.2 -1.2 -0.7 -0.7 -1.1 -1.0 -1.1 -1.0 0.1 0.3 0.2 0.2 -0.3 -0.6	W2 2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7 OTHE	S1 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5 R HAZ	ARDS	ERS, A S3 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6	ND FI S4 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 -0.1 -0.6 0.5	NAL LE S5 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 0.5	VEL 1 C1 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5 0.3	SCORE C2 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3 ACTIO	E, S _{L1} C3 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 N REG	PC1 1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2 UIREE	1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.4 -0.1 -0.4 -0.2	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 0.3	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.6 0.3	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2 0.2	1.5 NA NA -0.1 1.2 0.3 -0.4 NA	1.0 -0.7 -0.4 -0.4 NA NA 0.3 -0.2 NA	1./ -0. -0. N/ N/ 0./ -0.
Basic Score Severe Vertical Irregularity, V _{±1} Moderate Vertical Irregularity, V _{±1} Plan Irregularity, P _{±1} Pre-Code Post-Benchmark Soll Type A or B Soll Type A or B Soll Type E (>3 stories) Soll Type E (>3 stories) Soll Type E (>3 stories) Minimum Score, S _{MW} FINAL LEVEL 1 SCORE, S _{±1} ≥ S _{MW} EXTENT OF REVIEW Exterior: □ Partial □ All Sides		W1 W1/ 3.6 3.2 -1.2 -1.2 -0.7 -0.7 -1.1 -1.0 -1.1 -1.0 0.1 0.3 0.2 0.2 -0.3 -0.6	W2 2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7 OTHE	S1 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5 R HAZ	ARDS	ERS, A S3 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6	ND FI S4 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 -0.1 -0.6 0.5	NAL LE S5 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4	VEL 1 C1 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5 0.3	SCORE C2 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3	E, S _{L1} C3 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 N REG	PC1 1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2 UIREE	1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.4 -0.1 -0.4 -0.2	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 0.3	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.6 0.3	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2 0.2	1.5 NA NA -0.1 1.2 0.3 -0.4 NA	1.0 -0.7 -0.4 -0.4 NA NA 0.3 -0.2 NA	1. -0. -0. N 0. N
Basic Score Severe Vertical Irregularity, V _± , Moderate Vertical Irregularity, V _± , Plan Irregularity, P _± , Pre-Code Post-Benchmark Soll Type A or B Soll Type E (-3 stories) Soll Type E (-3 stories) Soll Type E (-3 stories) Minimum Score, S _{MW} FINAL LEVEL 1 SCORE, S _± ≥ S _{MW} EXTENT OF REVIEW Exterior: □ Partial □ All Sides		W1 W1/ 3.6 3.2 -1.2 -1.2 -0.7 -0.7 -1.1 -1.0 -1.1 -1.0 1.6 1.9 0.1 0.3 0.2 0.2 -0.3 -0.6 1.1 0.9	W2 2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7 Amountain of the second s	S1 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.6 0.4 -0.6 0.5 R HAZ ere Haz	ARDS	ERS, A S3 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6	ND FI S4 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 -0.1 -0.6 0.5	NAL LE S5 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 0.5	VEL 1 C1 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5 0.3	SCORE C2 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3 ACTIO	E, S ₁₁ C3 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 0.3 N REG	PC1 1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2 OURED ctural E	1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.1 -0.4 -0.1 -0.4 0.2	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 0.3	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.6 0.3	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2 0.2	1.5 NA NA -0.1 1.2 0.3 -0.4 NA	1.0 -0.7 -0.4 -0.4 NA NA 0.3 -0.2 NA	1. -0. -0. N 0. N
Basic Score Severe Vertical Irregularity, V _{±1} Moderate Vertical Irregularity, V _{±1} Plan Irregularity, P _{±1} Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 stories) Soll Type E (≤3 stories) Minimum Score, S _{MW} FINAL LEVEL 1 SCORE, S _{L1} ≥ S _{MW} EXTENT OF REVIEW Exterior: Partial All Sides Interior: None Visible		W1 W1/ 3.6 3.2 -1.2 -1.2 -0.7 -0.7 -1.1 -1.0 -1.1 -1.0 1.6 1.9 0.1 0.3 0.2 0.2 -0.3 -0.6 1.1 0.9	W2 2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 2.7 0.5 0.1 -0.9 2.7 0.5 0.1 -0.9 0.7 OTHEI Are Th Structure	S1 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.6 0.4 -0.2 -0.6 0.5 R HAZ ere Ha ural Ev	MODIFI S2 2.0 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.6 0.5 0.5 ARDS azards	ERS, # S3 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6 That Tr n?	ND FI S4 2.0 -1.0 -0.6 -0.7 -0.6 -0.7 -0.6 -0.1 -0.6 0.5	NAL LE S5 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 0.5	VEL 1 C1 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5 0.3 ed	SCORE C2 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3 ACTIO Detalle	E, S _{L1} C3 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 NREG ad Struct, unkno	PC1 1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2 DUIRED Ctural E swn bul	1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.4 -0.4 -0.1 -0.4 -0.2	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 0.3	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.6 0.3	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2 0.2	1.5 NA NA -0.1 1.2 0.3 -0.4 NA	1.0 -0.7 -0.4 -0.4 NA NA 0.3 -0.2 NA	1. -0. -0. N 0. N
Basic Score Severe Vertical Irregularity, V _± , Moderate Vertical Irregularity, V _± , Plan Irregularity, P _± , Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 storles) Soll Type E (≤3 storles) Minimum Score, S _{MW} FINAL LEVEL 1 SCORE, S _{L1} ≥ S _{MW} EXTENT OF REVIEW Exterior: Partial All Sides Interior: None Visible		W1 W1/ 3.6 3.2 -1.2 -1.2 -0.7 -0.7 -1.1 -1.0 -1.6 1.9 0.1 0.3 0.2 0.2 -0.3 -0.6 1.1 0.9 D Aertal Entered D No No	W2 2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 2.7 0.5 0.1 -0.9 2.7 0.5 0.1 -0.9 0.7 OTHEI Are Th Structure	S1 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.6 1.4 -0.6 -0.5 -0.6 0.5 -0.6 0.5 -0.6 -0.8 -0.8 -0.6 -0.8 -0.8 -0.8 -0.8 -0.8 -0.8 -0.8 -0.8	MODIFI S2 2.0 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.6 0.5 0.5 ARDS azards	ERS, # S3 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6 That Tr n?	ND FI S4 2.0 -1.0 -0.6 -0.7 -0.6 -0.7 -0.6 -0.1 -0.6 0.5	NAL LE S5 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 0.5 -0.4 -0.4 -0.5	VEL 1 C1 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5 0.3 ed	SCORE C2 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3 ACTIO Detalle □ Yes,	E, S _{L1} C3 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 NREQ NREQ N REQ Struct	PC1 1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2 WIREC WUREC SWIN DUI less th	1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.4 -0.1 -0.4 -0.2 -0.4 -0.2	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 0.3 don Re ype or -off	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.6 0.3	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2 0.2	1.5 NA NA -0.1 1.2 0.3 -0.4 NA 1.0	1.0 -0.7 -0.4 -0.4 NA NA 0.3 -0.2 NA	1. -0. -0. N 0. N
Basic Score Severe Vertical Irregularity, V_{LT} Moderate Vertical Irregularity, V_{LT} Plan Irregularity, P_{LT} Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 storles) Soll Type E (-3 storles) Minimum Score, S_{MW} FINAL LEVEL 1 SCORE, $S_{LT} \ge S_{MW}$ Extent OF REVIEW Extentor: Partial All Sides Interior: None Visible Drawing Reviewd: Yes Soll Type Source: Source:		W1 W1/ 3.6 3.2 -1.2 -1.2 -0.7 -0.7 -1.1 -1.0 -1.6 1.9 0.1 0.3 0.2 0.2 -0.3 -0.6 1.1 0.9 D Aertal Entered D No No	W2 2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 -0.7 0.7 OTHEN Are Th Structu Pour known -0.9	S1 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5 R HAZ wrat Ev noting)	4000IF1 S2 2.0 -1.0 -0.6 1.4 0.6 0.5 0.5 4ARDS azards aluatio potenti	ERS, <i>J</i> S3 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.2 NA 0.6 That Tr n? al (Unite	ND FI S4 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 0.5 1gger <i>J</i> ress S _L	NAL LE S5 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 0.5 -0.4 -0.5	VEL 1 C1 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5 0.3 ed off, if	SCORE C2 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3 ACTIO Detaile □ Yes, □ Yes,	E, S ₁₁ C3 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 0.3 N REG ad Structory , unknow , score , other	PC1 1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2 DUIRED Ctural E WIRED Ctural E State the hazard	1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.1 -0.4 -0.1 -0.4 0.2	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 0.3 lon Re ype or -off ent	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.6 0.3 quired	1.0 -0.7 -0.4 -0.4 0.0 NA -0.2 -0.2 0.2 0.2 7	1.5 NA NA -0.1 1.2 0.3 -0.4 NA 1.0	1.0 -0.7 -0.4 -0.4 NA 0.3 -0.2 NA 0.2	1. -0 -0 -0 N N 0.
Basic Score Severe Vertical Irregularity, V_{zr} Moderate Vertical Irregularity, V_{zr} Plan Irregularity, P_{Lr} Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 storles) Soll Type E (-3 storles) Minimum Score, S_{LWW} FINAL LEVEL 1 SCORE, $S_{Lr} \ge S_{MW}$ EXTENT OF REVIEW Extentor: \Box None \Box Visible Drawing Reviewd: \Box Yes		W1 W1/ 3.6 3.2 -1.2 -1.2 -0.7 -0.7 -1.1 -1.0 -1.6 1.9 0.1 0.3 0.2 0.2 -0.3 -0.6 1.1 0.9 D Aertal Entered D No No	W2 2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 -0.7 0.7 OTHEN Are Th Structu Pour known -0.9	S1 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5 R HAZ wrat Ev noting)	4000IF1 S2 2.0 -1.0 -0.6 1.4 0.6 0.5 0.5 4ARDS azards aluatio potenti	ERS, <i>J</i> S3 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.2 NA 0.6 That Tr n? al (Unite	ND FI S4 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 0.5 1gger <i>J</i> ress S _L	NAL LE S5 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 0.5 -0.4 -0.4 -0.5	VEL 1 C1 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5 0.3 ed off, if	SCORE C2 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3 ACTIO Detalle Yes, Yes, Yes,	E, S ₁₁ C3 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 0.3 N REG ed Struc, unkno, score other dd None	PC1 1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2 DUIRED Curral E bun bul less th hazard	1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.1 -0.4 -0.1 -0.4 0.2 -0.4 -0.2 -0.4 -0.2 -0.4 -0.2 -0.5 -0.6 -0.3 -0.6 -0.3 -0.6 -0.3 -0.5 -0.6 -0.5 -0.6 -0.3 -0.5 -0.6 -0.5 -0.6 -0.3 -0.5 -0.6 -0.3 -0.5 -0.6 -0.3 -0.5 -0.6 -0.3 -0.5 -0.6 -0.3 -0.5 -0.6 -0.3 -0.4 -0.1 -0.5 -0.6 -0.3 -0.5 -0.6 -0.3 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 2.1 0.5 0.3 0.5 0.3 0.0 0.3	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 2.1 0.5 -0.1 -0.6 0.3 quired ⁻ other t	1.0 -0.7 -0.4 -0.4 -0.4 0.0 NA -0.2 -0.2 0.2 0.2	1.5 NA NA -0.1 1.2 0.3 -0.4 NA 1.0	1.0 -0.7 -0.4 -0.4 NA 0.3 -0.2 NA 0.2	1. -0. -0. N 0. N
Basic Score Severe Vertical Irregularity, V_{zr} Moderate Vertical Irregularity, V_{zr} Plan Irregularity, P_{zr} Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 storles) Soll Type E (-3 storles) Minimum Score, S_{MW} FINAL LEVEL 1 SCORE, $S_{zr} \ge S_{MW}$ Extentor: Partial Interior: None Visible Drawing Reviewd: Yes Soll Type Source: Source:		W1 W1/ 3.6 3.2 -1.2 -1.2 -0.7 -0.7 -1.1 -1.0 -1.6 1.9 0.1 0.3 0.2 0.2 -0.3 -0.6 1.1 0.9 D Aertal Entered D No No	↓ W2 2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7 OTHEI Are Th Structu Pou known □ □ Fall	S1 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5 R HAZ were Ha ural Ev ural Ev ural Ev ural Ev) Ing haz	4000IF1 S2 2.0 -1.0 -0.6 1.4 0.6 0.5 0.5 4ARDS azards aluatio potenti	ERS, A S3 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6 That Tr n? al (Unle rom tall	AND FI S4 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 -0.1 -0.6 0.5 1gger <i>J</i> ess S ₁ , er adja	NAL LE S5 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.5 -0.4 0.5 -0.4 0.5 -0.4 0.5	VEL 1 C1 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5 0.3 ed off, if	SCORE C2 2.0 -1.0 -0.6 -0.7 2.1 0.5 0.0 -0.7 0.3 ACTIO Detaile □ Yes, □ Yes, □ Yes, □ Yes,	E, S ₁₁ C3 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 0.3 N REQ ed Struct, unkno, score, other dd Nonst	PC1 1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2 20 0.6 -0.3 NA 0.2 20 0.6 -0.3 NA 0.2 20 0.6 -0.3 NA 0.2 20 0.6 -0.3 NA 0.2 20 0.6 -0.3 NA 0.2 20 0.6 -0.3 NA 0.2 20 0.5 -0.3 NA 0.2 20 0.5 -0.3 NA 0.2 20 0.5 -0.3 NA 0.2 20 0.5 -0.3 NA 0.2 20 0.5 -0.3 NA 0.2 20 0.5 -0.3 -0.3 -0.3 -0.5 -0.5 -0.3 -0.5	1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.4 -0.4 -0.4 -0.4 -0.2 -0.4 -0.4 -0.2 -0.4 -0.2 -0.4 -0.2 -0.4 -0.2 -0.5 -0.6 -0.5 -0.6 -0.5 -0.6 -0.5 -0.6 -0.5 -0.6 -0.5 -0.6 -0.5 -0.6 -0.5 -0.6 -0.5 -0.6 -0.5 -0.6 -0.5 -0.6 -0.5 -0.6 -0.5 -0.6 -0.5 -0.6 -0.3 -0.4 -0.4 -0.4 -0.4 -0.4 -0.4 -0.4 -0.4	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 0.3 ion Re ype or -off ent luation rd Iden	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.6 0.3 quired: other to Recor	1.0 -0.7 -0.4 -0.4 -0.4 -0.4 -0.2 -0.2 -0.2 -0.2 -0.2 -0.2 -0.2 -0.2	1.5 NA NA -0.1 1.2 0.3 -0.4 NA 1.0 ed?	1.0 -0.7 -0.4 -0.4 NA 0.3 -0.2 NA 0.2 NO	1. -0. -0. N/ N/ 0. -0. N/ 0.
Basic Score Severe Vertical Irregularity, $V_{s,t}$ Moderate Vertical Irregularity, $V_{s,t}$ Plan Irregularity, $P_{s,t}$ Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 storles) Soll Type E (-3 storles) Minimum Score, S_{MW} FINAL LEVEL 1 SCORE, $S_{s,t} \ge S_{MW}$ Extent OF REVIEW Exterior: Partial Drawing Reviewd: I Yes Soil Type Source: Contact Person: LEVEL 2 SCREENING PERFORMED		W1 W1/ 3.6 3.2 -1.2 -1.2 -0.7 -0.7 -1.1 -1.0 -1.6 1.9 0.1 0.3 0.2 0.2 -0.3 -0.6 1.1 0.9 D Aertal Entered D No No	↓ W2 2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7 OTHEI Are Th Structu POU Innown Fall	S1 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.6 1.4 -0.6 0.5 -0.6 0.5 -0.6 0.5 -0.6 0.5 -0.6 0.5 -0.6 0.5 -0.6 0.5 -0.6 -0.8 -0.8 -0.8 -0.8 -0.8 -0.8 -0.8 -0.8	MODIFI S2 2.0 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.6 0.5 -0.4 -0.5 -0.4 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	ERS, 4 S3 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6 That Tr n? al (Unle rom tall s or Sol	AND FI S4 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 0.5 1gger <i>J</i> eess S ₁ , eess S ₁	NAL LE S5 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 0.5 -0.4 -0.4 0.5 -0.4 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	VEL 1 C1 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5 0.3 ed off, if Ilding	SCORE C2 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3 -0.7 Detaile Yes, □ Yes, □ Yes, □ Yes, □ Yes, □ Yes, □ No,	E, S ₁₁ C3 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 0.3 N REG A Struct , score , other id Nons , nonstrue	PC1 1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2 DUIRED Ctural E bwn bul less th hazard structura	1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.4 -0.4 -0.4 -0.4 -0.4 -0.4 -0.2 -0.4 -0.2 -0.4 -0.2 -0.4 -0.4 -0.2 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 0.3 0.3 don Re ent luation rd Iden ts exis	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 2.1 0.5 -0.1 -0.6 0.3 quired other t thete, s t that n	1.0 -0.7 -0.4 -0.4 -0.4 -0.4 -0.2 -0.2 -0.2 -0.2 -0.2 -0.2 -0.2 -0.2	1.5 NA NA -0.1 1.2 0.3 -0.4 NA 1.0 ed?	1.0 -0.7 -0.4 -0.4 NA 0.3 -0.2 NA 0.2 NO	1.4 -0. -0. -0. N/ 0.1 -0.
Basic Score Severe Vertical Irregularity, V_{zr} Moderate Vertical Irregularity, V_{zr} Plan Irregularity, P_{zr} Pre-Code Post-Benchmark Soll Type A or B Soll Type E (-3 storles) Soll Type E (-3 storles) Minimum Score, S_{MW} FINAL LEVEL 1 SCORE, $S_{zr} \ge S_{MW}$ Extent OF REVIEW Extentor: Partial Drawing Reviewd: Yes Soll Type Source: Geohazards Source: Gontact Person: Contact Person:		W1 W1/ 3.6 3.2 -1.2 -1.2 -0.7 -0.7 -1.1 -1.0 -1.1 -1.0 1.6 1.9 0.1 0.3 0.2 0.2 -0.3 -0.6 1.1 0.9 -1.1 0.9	↓ W2 2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7 OTHEI Are Th Structu POU Innown Fall	S1 2.1 -1.0 -0.6 -0.8 -0.6 1.4 0.4 -0.6 0.5 0.5 0.5 R HAZ ere H: ural Ev ural Ev ural Ev long haz skogle I	MODIFI S2 2.0 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.6 0.5 -0.4 -0.6 0.5 -0.4 -0.5 -0.4 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	ERS, 4 S3 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6 That Tr n? al (Unle rom tall s or Sol	AND FI S4 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 0.5 1gger <i>J</i> eess S ₁ , eess S ₁	NAL LE S5 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.5 -0.4 0.5 -0.4 0.5 -0.4 0.5	VEL 1 C1 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5 0.3 ed off, if Ilding	SCORE C2 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3 -0.7 Detaille Yes, I Yes, Yes, Vetaille Yes, Vetaille Yes, Vetaille Yes,	E, S _{L1} C3 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 0.3 N REQ ed Struct , unkno , score , other id Nonstru nonstru nonstru led eva	PC1 1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2 DUIRED Ctural E Source the second structure ructural less the hazard structure ructural structure	1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.1 -0.4 -0.1 -0.4 -0.2 -0.4 -0.2 -0.4 -0.2 -0.4 -0.2 -0.4 -0.2 -0.4 -0.2 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 0.3 -0.1 -0.5 0.3 -0.1 -0.5 0.3	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.6 0.3 -0.1 -0.6 0.3 -0.1 -0.6 t.1 -0.6 t.1 -0.5 -0.1 -0.5 -0.7 -0.5 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.5 -0.7 -0.5 -0.7 -0.5 -0.5 -0.7 -0.5 -0.7 -0.5 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.7 -0.5 -0.7 -0.7 -0.5 -0.7 -0.5 -0.7 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2 0.2 0.2 0.2	1.5 NA NA -0.1 1.2 0.3 -0.4 NA 1.0 ed? ee eval ulre mt	1.0 -0.7 -0.4 -0.4 NA 0.3 -0.2 NA 0.2 NO	1, -0, -0, -0, N/ 0, -0, N/ 0, -0, N/ 0, -0, -0, -0, -0, -0, -0, -0, -0, -0,

Rapid Visual Screening of Buildings for Potential Seismic Hazards

LEVEL 1

(Adopted from FEMA P-154 Data Coll PHOTOGRAPH	- and the late						A.4	draces						Othe			H Se		iony
PHOTOGRAPH								dress:						-					
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						Bu	liding	Name:											
							La	titude:						S.					
							Long	ltude:						s,					
							Scr	eener:						Date	/Time:				
						#Storl	es - Ab	ove Gr	ound:		. Below	Ground	t	Year	Built .		🗆 Est		
						Total I	Floor A	rea (sf	t):					Code	Year:				
						Add	itions:		. Non	e	□ Yes	Years	Bullt						
						Occur	ancy:					nmercla		Emergen					-
							anoj.							Schools	,				nt
												rehouse		Residenti	al #Ulat		C She		
						Soll T			DA:H	·			C: Soft		ai,#Uni			Soft So	
SKETCH						SOILI	ype.												
SKEICH									🗆 B: N				D: Har				UP:P	oor So	
		$\frac{1}{2}$				Geoha	azards:				action:		🗆 Yes, 🗆						
	4 i										dslide:		🗆 Yes, 🗆	-					
	ii										upture:		🗆 Yes, 🗆						
	()).]			Adjace			C Pou	-			🗆 Falling				acent i	Bulldin	9
	1					Irregu	larities	c –	C Sew	ere Ver	tical Im	egularity	у	🗆 Pla	an Irreg	ularity			
	1]]	_					Mod	erate \	/ertical	Irregula	rity						
	1 1								🗆 Unb	raced (Chimne	ys I	🗆 Heavy	Cladding	or Hea	vy Vene	er		
	1 1					Exteri	or Falli	ng	🗆 Para	pets			Append	lages					
	11					i lazar	uo.		C Othe	er:									
	1111					COMN	IENTS												
	<u>1i</u>																		
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	DNK	W1	W1A	W2	S1	S2	S3	S4	S5	C1	C2		PC1 P	2 RM1	RM2	URM	MH	BN1	BN2
BUILDING TYPE	UNK		_							_			_	-					_
Basic Score	\square	3.6	3.2	2.9	2.1	2.0	2.6	2.0	1.7	1.5	2.0	1.2		4 1.7	1.7	1.0	1.5	1.0	1.4
Severe Vertical Irregularity, VL1		_	-1.2	-1.2	-1.0	-1.0	-1.1	-1.0	-0.8	-0.9	-1.0	-0.7		.9 -0.9	-0.9	-0.7	NA	-0.7	-0.8
Moderate Vertical Irregularity, V ₄₁			-0.7	-0.7	-0.6	-0.6	-0.7	-0.6	-0.5	-0.5	-0.6	-0.4		.5 -0.5	-0.5	-0.4		0.4	-0.5
	1 I	-1.1	-1.0	-1.0	-0.8	-0.7					_						NA	-0.4	_
Plan Irregularity, PLT							-0.9	-0.7	-0.6	-0.6	-0.8	-0.5		.6 -0.7	-0.7	-0.4	NA	-0.4	-0.5
Pre-Code			-1.0	-0.9	-0.6	-0.7	-0.9 -0.8	-0.7 -0.6			-0.8 -0.7	-0.5 -0.1		.6 -0.7 .3 -0.5	-0.7 -0.5				NA
Pre-Code Post-Benchmark					-0.6 1.4				-0.6	-0.6		-0.1 NA	-0.5 -0			-0.4 0.0 NA	NA -0.1 1.2	-0.4	NA NA
Pre-Code		-1.1	-1.0	-0.9	-0.6	-0.6	-0.8	-0.6	-0.6 -0.2	-0.6 -0.4	-0.7	-0.1	-0.5 -0 2.0 2	.3 -0.5	-0.5	-0.4 0.0	NA -0.1	-0.4 NA	NA
Pre-Code Post-Benchmark		-1.1 1.6	-1.0 1.9	-0.9 2.2	-0.6 1.4	-0.6 1.4	-0.8 1.1	-0.6 1.9	-0.6 -0.2 NA	-0.6 -0.4 1.9	-0.7 2.1	-0.1 NA	-0.5 -0 2.0 2 0.6 0	.3 -0.5 .4 2.1	-0.5 2.1	-0.4 0.0 NA	NA -0.1 1.2	-0.4 NA NA	NA NA
Pre-Code Post-Benchmark Soll Type A or B		-1.1 1.6 0.1 0.2	-1.0 1.9 0.3	-0.9 2.2 0.5	-0.6 1.4 0.4	-0.6 1.4 0.6	-0.8 1.1 0.1	-0.6 1.9 0.6	-0.6 -0.2 NA 0.5	-0.6 -0.4 1.9 0.4	-0.7 2.1 0.5	-0.1 NA 0.3	-0.5 -0 2.0 2 0.6 0 -0.3 -0	.3 -0.5 A 2.1 A 0.5	-0.5 2.1 0.5	-0.4 0.0 NA 0.3	NA -0.1 1.2 0.3	-0.4 NA NA 0.3	NA NA 0.9
Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 stories) Soll Type E (~3 stories)		-1.1 1.6 0.1 0.2	-1.0 1.9 0.3 0.2	-0.9 2.2 0.5 0.1	-0.6 1.4 0.4 -0.2	-0.6 1.4 0.6 -0.4	-0.8 1.1 0.1 0.2	-0.6 1.9 0.6 -0.1	-0.6 -0.2 NA 0.5 -0.4	-0.6 -0.4 1.9 0.4 0.0	-0.7 2.1 0.5 0.0	-0.1 NA 0.3 -0.2	-0.5 -0 2.0 2 0.6 0 -0.3 -0 NA -0	.3 -0.5 A 2.1 A 0.5 .1 -0.1	-0.5 2.1 0.5 -0.1	-0.4 0.0 NA 0.3 -0.2	NA -0.1 1.2 0.3 -0.4	-0.4 NA NA 0.3 -0.2	NA NA 0.9 -0.6
Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 storles) Soll Type E (>3 storles) Minimum Score, S May		-1.1 1.6 0.1 0.2 -0.3	-1.0 1.9 0.3 0.2 -0.6	-0.9 2.2 0.5 0.1 -0.9	-0.6 1.4 0.4 -0.2 -0.6	-0.6 1.4 0.6 -0.4 -0.6	-0.8 1.1 0.1 0.2 NA	-0.6 1.9 0.6 -0.1 -0.6	-0.6 -0.2 NA 0.5 -0.4 -0.4	-0.6 -0.4 1.9 0.4 0.0 -0.5	-0.7 2.1 0.5 0.0 -0.7	-0.1 NA 0.3 -0.2 -0.3	-0.5 -0 2.0 2 0.6 0 -0.3 -0 NA -0	.3 -0.5 .4 2.1 .4 0.5 .1 -0.1 .4 -0.5	-0.5 2.1 0.5 -0.1 -0.6	-0.4 0.0 NA 0.3 -0.2 -0.2	NA -0.1 1.2 0.3 -0.4 NA	-0.4 NA 0.3 -0.2 NA	NA NA 0.9 -0.6 NA
Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 stories) Soll Type E (~3 stories) Minimum Score, S _{MAN} FINAL LEVEL 1 SCORE, S _{L1} ≥ S _{MAN}		-1.1 1.6 0.1 0.2 -0.3	-1.0 1.9 0.3 0.2 -0.6	-0.9 2.2 0.5 0.1 -0.9 0.7	-0.6 1.4 0.4 -0.2 -0.6 0.5	-0.6 1.4 0.6 -0.4 -0.6 0.5	-0.8 1.1 0.1 0.2 NA	-0.6 1.9 0.6 -0.1 -0.6	-0.6 -0.2 NA 0.5 -0.4 -0.4	-0.6 -0.4 1.9 0.4 0.0 -0.5	-0.7 2.1 0.5 0.0 -0.7 0.3	-0.1 NA 0.3 -0.2 -0.3 0.3	-0.5 -0 2.0 2 0.6 0 -0.3 -0 NA -0 0.2 0	.3 -0.5 .4 2.1 .4 0.5 .1 -0.1 .4 -0.5	-0.5 2.1 0.5 -0.1 -0.6	-0.4 0.0 NA 0.3 -0.2 -0.2	NA -0.1 1.2 0.3 -0.4 NA	-0.4 NA 0.3 -0.2 NA	NA NA 0.9 -0.6 NA
Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 storles) Soll Type E (>3 storles) Minimum Score, S_{MW} FINAL LEVEL 1 SCORE, $S_{L1} \ge S_{MW}$ EXTENT OF REVIEW		-1.1 1.6 0.1 0.2 -0.3 1.1	-1.0 1.9 0.3 0.2 -0.6 0.9	-0.9 2.2 0.5 0.1 -0.9 0.7	-0.6 1.4 0.4 -0.2 -0.6 0.5	-0.6 1.4 0.6 -0.4 -0.6 0.5	-0.8 1.1 0.1 0.2 NA 0.6	-0.6 1.9 0.6 -0.1 -0.6 0.5	-0.6 -0.2 NA 0.5 -0.4 -0.4 0.5	-0.6 -0.4 1.9 0.4 0.0 -0.5 0.3	-0.7 2.1 0.5 0.0 -0.7 0.3	-0.1 NA 0.3 -0.2 -0.3 0.3	-0.5 -0 2.0 2 0.6 0 -0.3 -0 NA -0 0.2 0	.3 -0.5 .4 2.1 .4 0.5 .1 -0.1 .4 -0.5 .2 0.3	-0.5 2.1 0.5 -0.1 -0.6 0.3	-0.4 0.0 NA 0.3 -0.2 -0.2 0.2	NA -0.1 1.2 0.3 -0.4 NA	-0.4 NA 0.3 -0.2 NA	NA NA 0.9 -0.6 NA
Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 stories) Soll Type E (>3 stories) Minimum Score, S _{MAW} FINAL LEVEL 1 SCORE, S _{L1} ≥ S _{MAW} EXTENT OF REVIEW Extentor: □ Partial □ All Sides		-1.1 1.6 0.1 0.2 -0.3 1.1 Aerta	-1.0 1.9 0.3 0.2 -0.6 0.9	-0.9 2.2 0.5 0.1 -0.9 0.7 OTHE Are Tr	-0.6 1.4 -0.2 -0.6 0.5 R HA2	-0.6 1.4 0.6 -0.4 -0.6 0.5 XARDS azards	-0.8 1.1 0.2 NA 0.6	-0.6 1.9 0.6 -0.1 -0.6 0.5	-0.6 -0.2 NA 0.5 -0.4 -0.4	-0.6 -0.4 1.9 0.4 0.0 -0.5 0.3	-0.7 2.1 0.5 0.0 -0.7 0.3 ACTIO Detaile	-0.1 NA 0.3 -0.2 -0.3 0.3 N REQ	-0.5 -0 2.0 2 0.6 0 -0.3 -0 0.2 0 UIRED tural Eva	.3 -0.5 .4 2.1 .4 0.5 .1 -0.1 .4 -0.5 .2 0.3	-0.5 2.1 0.5 -0.1 -0.6 0.3	-0.4 0.0 NA 0.3 -0.2 -0.2 0.2	NA -0.1 1.2 0.3 -0.4 NA 1.0	-0.4 NA 0.3 -0.2 NA	NA NA 0.9 -0.6 NA
Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 storles) Soll Type E (-3 storles) Minimum Score, S May FINAL LEVEL 1 SCORE, S (1 ≥ S MAY) EXTENT OF REVIEW Exterior: □ Partial □ All Sides Interior: □ None □ Visible		-1.1 1.6 0.1 0.2 -0.3 1.1 Aerta	-1.0 1.9 0.3 0.2 -0.6 0.9 al	-0.9 2.2 0.5 0.1 -0.9 0.7 OTHE Are Tr Struct	-0.6 1.4 0.4 -0.2 -0.6 0.5 R HA2 here H	-0.6 1.4 0.6 -0.4 -0.6 0.5 ARDS azards valuatio	-0.8 1.1 0.1 0.2 NA 0.6 That Tr	-0.6 1.9 0.6 -0.1 -0.6 0.5	-0.6 -0.2 NA 0.5 -0.4 -0.4 0.5 Detalle	-0.6 -0.4 1.9 0.4 0.0 -0.5 0.3	-0.7 2.1 0.5 0.0 -0.7 0.3 ACTIO Detalle	-0.1 NA 0.3 -0.2 -0.3 0.3 NN REQ ed Structory, unkno	-0.5 -0 2.0 2 0.6 0 -0.3 -0 NA -0 0.2 0 UIRED tural Eva wn bulldh	.3 -0.5 .4 2.1 .4 0.5 .1 -0.1 .4 -0.5 .1 -0.1 .4 -0.5 .1 -0.1 .4 -0.5 .1 -0.1 .4 -0.5 .1 -0.1 .14 -0.5 .2 0.3 Illuation Resolution Resolution Resolution Resolution	-0.5 2.1 0.5 -0.1 -0.6 0.3	-0.4 0.0 NA 0.3 -0.2 -0.2 0.2	NA -0.1 1.2 0.3 -0.4 NA 1.0	-0.4 NA 0.3 -0.2 NA	NA NA 0.9 -0.6 NA
Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 storles) Soll Type E (-3 storles) Minimum Score, S _{MM} FINAL LEVEL 1 SCORE, S _{k1} ≥ S _{MM} Extremt OF Review Exterior: Partial Interior: None Visible Drawing Reviewd: Yes		-1.1 1.6 0.1 0.2 -0.3 1.1 Aeria Ente No	-1.0 1.9 0.3 0.2 -0.6 0.9 al	-0.9 2.2 0.5 0.1 -0.9 0.7 OTHE Are Tr Struct	-0.6 1.4 0.4 -0.2 -0.6 0.5 R HA2 here H ural Eb unding	-0.6 1.4 0.6 -0.4 -0.6 0.5 ARDS azards valuatio	-0.8 1.1 0.1 0.2 NA 0.6 That Tr	-0.6 1.9 0.6 -0.1 -0.6 0.5	-0.6 -0.2 NA 0.5 -0.4 -0.4 0.5	-0.6 -0.4 1.9 0.4 0.0 -0.5 0.3	-0.7 2.1 0.5 0.0 -0.7 0.3 ACTIO Detaile U Yes	-0.1 NA 0.3 -0.2 -0.3 0.3 NN REQ ed Struc , unkno	-0.5 -0 2.0 2 0.6 0 -0.3 -0 NA -0 0.2 0 UIRED tural Eva wn bulidii less than	.3 -0.5 .4 2.1 .4 0.5 .1 -0.1 .4 -0.5 .2 0.3	-0.5 2.1 0.5 -0.1 -0.6 0.3	-0.4 0.0 NA 0.3 -0.2 -0.2 0.2	NA -0.1 1.2 0.3 -0.4 NA 1.0	-0.4 NA 0.3 -0.2 NA 0.2	NA NA 0.9 -0.6 NA
Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 storles) Soll Type E (>3 storles) Minimum Score, S tanv FINAL LEVEL 1 SCORE, S tail > S anno EXTENT OF REVIEW Exterior: Partial Interior: Partial Interior: Partial Drawing Reviewd: Yes Soil Type Source: Soil Type Source:		-1.1 1.6 0.1 0.2 -0.3 1.1 Aerl: Ente No	-1.0 1.9 0.3 0.2 -0.6 0.9 al	-0.9 2.2 0.5 0.1 -0.9 0.7 OTHE Are Tr Struct	-0.6 1.4 0.4 -0.2 -0.6 0.5 R HA2 here H ural Eb unding	-0.6 1.4 0.6 -0.4 -0.6 0.5 ARDS azards valuatio	-0.8 1.1 0.1 0.2 NA 0.6 That Tr	-0.6 1.9 0.6 -0.1 -0.6 0.5	-0.6 -0.2 NA 0.5 -0.4 -0.4 0.5 Detalle	-0.6 -0.4 1.9 0.4 0.0 -0.5 0.3	-0.7 2.1 0.5 0.0 -0.7 0.3 ACTIO Detalle U Yes U Yes	-0.1 NA 0.3 -0.2 -0.3 0.3 N REQ ed Struc , unkno , score , other I	-0.5 -0 2.0 2 0.6 0 -0.3 -0 NA -0 0.2 0 UIRED tural Eva wn bulldh less than hazards p	.3 -0.5 .4 2.1 .4 0.5 .1 -0.1 .4 -0.5 .2 0.3 uation Ring type or cut-off resent	-0.5 2.1 0.5 -0.1 -0.6 0.3 equired	-0.4 0.0 NA 0.3 -0.2 -0.2 0.2 7 culiding	NA -0.1 1.2 0.3 -0.4 NA 1.0	-0.4 NA 0.3 -0.2 NA	NA NA 0.9 -0.6 NA
Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 storles) Soll Type E (>3 storles) Minimum Score, S tanv FINAL LEVEL 1 SCORE, S tries S tanv EXTENT OF REVIEW Exterior: Partial Partial All Sides Interior: None Utside Visible Drawing Reviewd: Yes Soll Type Source: Geohazards Source:		-1.1 1.6 0.1 0.2 -0.3 1.1 Aerta Ente No	-1.0 1.9 0.3 0.2 -0.6 0.9 al	-0.9 2.2 0.5 0.1 -0.9 0.7 OTHE Are Tr Struct El Pou knowr	-0.6 1.4 0.4 -0.2 -0.6 0.5 R HA2 here H ural Ev unding	-0.6 1.4 0.6 -0.4 -0.6 0.5 ZARDS azards valuatio potenti	-0.8 1.1 0.2 NA 0.6 That Tr n? tal (Unit	-0.6 1.9 0.6 -0.1 -0.6 0.5	-0.6 -0.2 NA 0.5 -0.4 -0.4 0.5 Detalle	-0.6 -0.4 1.9 0.4 0.0 -0.5 0.3	-0.7 2.1 0.5 0.0 -0.7 0.3 ACTIO Detalle U Yes Detalle Detalle	-0.1 NA 0.3 -0.2 -0.3 0.3 0.3 N REQ ed Struc , unkno , score , other I ed Nons	-0.5 -0 2.0 2 0.6 0 -0.3 -0 NA -0 0.2 0 UIRED tural Eva wn bulldh less than hazards p tructural	.3 -0.5 .4 2.1 .4 0.5 .1 -0.1 .4 -0.5 .1 -0.1 .4 -0.5 .1 -0.1 .4 -0.5 .1 -0.1 .4 -0.5 .2 0.3 Juation Registric	-0.5 2.1 0.5 -0.1 -0.6 0.3 equired	-0.4 0.0 NA 0.3 -0.2 -0.2 0.2 ? pullding	NA -0.1 1.2 0.3 -0.4 NA 1.0	-0.4 NA 0.3 -0.2 NA 0.2	NA NA 0.9 -0.6 NA
Pre-Code Post-Benchmark Soll Type A or B Soll Type E (+3 storles) Soll Type E (+3 storles) Minimum Score, S MAN FINAL LEVEL 1 SCORE, S L + ≥ S MAN EXTENT OF REVIEW Exterior: □ Partial Drawing Reviewd: □ Yes Soil Type Source: Geohazards Source: Contact Person: Contact Person:		-1.1 1.6 0.1 0.2 -0.3 1.1 Aerta Ente No	-1.0 1.9 0.3 0.2 -0.6 0.9 al	-0.9 2.2 0.5 0.1 -0.9 0.7 OTHE Are Tr Struct El Pou knowr	-0.6 1.4 0.4 -0.2 -0.6 0.5 R HA2 here H ural Ev unding	-0.6 1.4 0.6 -0.4 -0.6 0.5 ZARDS azards valuatio potenti	-0.8 1.1 0.2 NA 0.6 That Tr n? tal (Unit	-0.6 1.9 0.6 -0.1 -0.6 0.5	-0.6 -0.2 NA 0.5 -0.4 -0.4 0.5 Octalle	-0.6 -0.4 1.9 0.4 0.0 -0.5 0.3	-0.7 2.1 0.5 0.0 -0.7 0.3 ACTIO Detalle U Yes Detalle Detalle	-0.1 NA 0.3 -0.2 -0.3 0.3 0.3 N REQ ed Struc , unkno , score , other I ed Nons	-0.5 -0 2.0 2 0.6 0 -0.3 -0 NA -0 0.2 0 UIRED tural Eva wn bulldh less than hazards p	.3 -0.5 .4 2.1 .4 0.5 .1 -0.1 .4 -0.5 .1 -0.1 .4 -0.5 .1 -0.1 .4 -0.5 .1 -0.1 .4 -0.5 .2 0.3 Juation Registric	-0.5 2.1 0.5 -0.1 -0.6 0.3 equired	-0.4 0.0 NA 0.3 -0.2 -0.2 0.2 ? pullding	NA -0.1 1.2 0.3 -0.4 NA 1.0	-0.4 NA 0.3 -0.2 NA 0.2	NA NA 0.9 -0.6 NA
Pre-Code Post-Benchmark Soll Type E (1-3 storles) Soll Type E (-3 storles) Minimum Score, S_MW FINAL LEVEL 1 SCORE, S_L ≥ S_MW EXTENT OF REVIEW Exterior: □ Partial Exterior: □ Partial Drawing Reviewd: □ Yes Soil Type Source: Geohazards Source:		-1.1 1.6 0.1 0.2 -0.3 1.1 Aerta Ente No	-1.0 1.9 0.3 0.2 -0.6 0.9 al	-0.9 2.2 0.5 0.1 -0.9 0.7 OTHE Are TI Struct D Pou knowr	-0.6 1.4 0.4 -0.2 -0.6 0.5 R HA2 mere H ural Eh ural Eh ural Ing ha	-0.6 1.4 0.6 -0.4 -0.6 0.5 ZARDS azards valuatio potenti	-0.8 1.1 0.1 0.2 NA 0.6 That Tr n? all (Unik	-0.6 1.9 0.6 -0.1 -0.6 0.5	-0.6 -0.2 NA 0.5 -0.4 -0.4 0.5 Oetalle , > Cut-	-0.6 -0.4 1.9 0.4 0.0 -0.5 0.3	-0.7 2.1 0.5 0.0 -0.7 0.3 ACTIO Detaile U Yes Detaile Detaile	-0.1 NA 0.3 -0.2 -0.3 0.3 NN REQ ed Struc , unkno , score , other I ed Nons , nonstr	-0.5 -0 2.0 2 0.6 0 -0.3 -0 NA -0 0.2 0 UIRED tural Eva wn bulldh less than hazards p tructural	.3 -0.5 .4 2.1 .4 0.5 .1 -0.1 .4 0.5 .1 -0.1 .4 -0.5 .1 -0.1 .4 -0.5 .2 0.3	-0.5 2.1 0.5 -0.1 -0.6 0.3 equired	-0.4 0.0 NA 0.3 -0.2 -0.2 0.2 7 5 5 0.2 0.2	NA -0.1 1.2 0.3 -0.4 NA 1.0 ed?	-0.4 NA 0.3 -0.2 NA 0.2	NA NA 0.9 -0.6 NA 0.2
Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 storles) Soll Type E (~3 storles) Milnimum Score, S MANN FINAL LEVEL 1 SCORE, S L ≥ S MANN EXTENT OF REVIEW Exterior: □ Partial □ All Sides Interior: □ None □ Visible Drawfing Reviewd: □ Yes Soll Type Source:		-1.1 1.6 0.1 0.2 -0.3 1.1 Aerta Ente No	-1.0 1.9 0.3 0.2 -0.6 0.9 al	-0.9 2.2 0.5 0.1 -0.9 0.7 OTHE Are Tr Struct D Pou knowr D Fal	-0.6 1.4 0.4 -0.2 -0.6 0.5 R HA2 nere H ural Et unding 1) ling ha	-0.6 1.4 0.6 -0.4 -0.6 0.5 2 ARDS azards valuatio potenti zards fi hazards	-0.8 1.1 0.2 NA 0.6 That Tr n? tal (Unite rom tall	-0.6 1.9 0.6 -0.1 -0.6 0.5 1gger <i>A</i> sess S ₁ , er adja	-0.6 -0.2 NA 0.5 -0.4 -0.4 0.5 Oetalle , > Cut-	-0.6 -0.4 1.9 0.4 0.0 -0.5 0.3 ed	-0.7 2.1 0.5 0.0 -0.7 0.3 ACTIO Detalle U Yes Detalle U Yes Detalle U Yes Detalle U Yes Detalle	-0.1 NA 0.3 -0.2 -0.3 0.3 0.3 N REQ ed Struc , unkno , score , other I ed Nons , nonstru	-0.5 -0 2.0 2 0.6 0 -0.3 -0 NA -0 0.2 0 UIRED tural Eva wn bulldli less than hazards p tructural h	.3 -0.5 .4 2.1 .4 0.5 .1 -0.1 .4 -0.5 .1 -0.1 .4 -0.5 .2 0.3	-0.5 2.1 0.5 -0.1 -0.6 0.3 equired r other to n Recoo	-0.4 0.0 NA 0.3 -0.2 -0.2 0.2 7 5 5 0.2 0.2	NA -0.1 1.2 0.3 -0.4 NA 1.0 ed?	-0.4 NA 0.3 -0.2 NA 0.2	NA NA 0.9 -0.6 NA 0.2
Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 storles) Soll Type E (~3 storles) Minimum Score, S MW FINAL LEVEL 1 SCORE, S L > 2 MW EXTENT OF REVIEW Exterior: □ Partial □ All Sides Interior: □ None □ Visible Drawfing Reviewd: □ Yes Soll Type Source:)?	-1.1 1.6 0.1 0.2 -0.3 1.1 — Aerta — Rete	-1.0 1.9 0.3 0.2 -0.6 0.9 al ered	-0.9 2.2 0.5 0.1 -0.9 0.7 OTHE Are Tr Struct D Pou knowr D Fal	-0.6 1.4 0.4 -0.2 -0.6 0.5 R HA2 here H ural Ev ural Ev ural Ing ha blogic nifican	-0.6 1.4 0.6 -0.4 -0.6 0.5 2ARDS azards valuatio potenti tazards t dama	-0.8 1.1 0.2 NA 0.6 That Tr n? tal (Unite rom tall	-0.6 1.9 0.6 -0.1 -0.6 0.5 1gger <i>A</i> sess S ₁ , er adja	-0.6 -0.2 NA 0.5 -0.4 -0.4 0.5 Oetalle , > Cut- cent bui	-0.6 -0.4 1.9 0.4 0.0 -0.5 0.3 ed	-0.7 2.1 0.5 0.0 -0.7 0.3 ACTIO Detaile Ves Pesale Detaile Ves Detaile Ves Detaile No, a detai	-0.1 NA 0.3 -0.2 -0.3 0.3 N REQ ed Struc , unkno , score , other I ed Nons r, other I ed Nons r, nonstru	-0.5 -0 2.0 2 0.6 0 -0.3 -0 NA -0 0.2 0 UIRED tural Eva wn bulldii less than hazards p tructural ha ictural ha	.3 -0.5 .4 2.1 .4 0.5 .1 -0.1 .4 -0.5 .1 -0.1 .4 -0.5 .2 0.3	-0.5 2.1 0.5 -0.1 -0.6 0.3 equired r other t n Recon titfled, 1 st that n ssary	-0.4 0.0 NA 0.3 -0.2 -0.2 0.2 0.2 7 shouliding should t may req	NA -0.1 1.2 0.3 -0.4 NA 1.0 ed? be eval	-0.4 NA 0.3 -0.2 NA 0.2	NA NA 0.9 -0.6 NA 0.2

Rapid Visual Screening of Buildings for Potential Seismic Hazards

LEVEL 2 (Optional) HIGH Seismicity

ptional Level 27		4 Data Collection Forr		professional, erchitect, or g	reduele student with beckgr	ound in seismic eve	Austion or	dea	ian of buildings.	Sei	smicity
Building Nan			Final	Level 1 Score: S., -						not co	nsider S _{AM}
Screener	1		Level 1 Irregula	arity Modifiers: Vertic	cal Irregularity , V _{L1} =		P	lan	Irregularity, P _{L1} =		
)ate/ Time	1			TED BASELINE S' - (S., - V., - P.,)=						
	L MODIFIER	S TO ADD TO ADJU									
Topic		-		true, circle "Yes" mo	-		imer)			Yes	Subtotal
Vertical	Sloping Site			ory grade change from				_		-1.2	
Irregularity,	Weak			I story grade change fr		Iding to the othe	er.	_		-0.5	
V _{L2}	and/or Soft			d cripple wall is visible		without a steal of			no and there is	-0.0	
	Story		-	an occupied story, then				II di	ne, and there is	-1.2	
	(Circle one maximum)			for multiple occupied fi						-1.2	
	meximumy		Front: There are o	penings at the ground	story (such as for pan	ung) over at lea	ST 50 %	OT	the length of the		
		building.								-1.2	
		-		tem at any story is les	s than 50 % of that at i	story above or h	height of	an	y story is more		
		than 2.0 times the he								-0.9	ļ
		Non-W1 Building : Le	ength of lateral syst	tem at any story is bet	ween 50 % and 75 %	of that at story a	above or	he	ight of any story is		
		between 1.3 and 2.0	times the height of	f the story above.						-0.5	
	Setback	Vertical elements of	the lateral system a	at an upper story are o	utboard of those at the	e story below ca	ausing th	e d	laphragm to		
		cantilever at the offse	et.							-1.0	
		Vertical elements of	the lateral system a	at upper stories are int	board of those at lower	r storles.				-0.5	
	Short			elements that is great						-0.3	
	Column/	C1,C2,C3,PC1,PC2,	RM1,RM2 : At leas	st 20 % of columns (or	plers) along a column	line in the latera	al syster	n h	ave height/depth		
	Pler			lght/depth ratio at that						-0.5	
		C1,C2,C3,PC1,PC2,	RM1,RM2 : The co	olumn depth (or pler wi	dth) is less than one h	alf of the depth	of the sp	ban	drel, or there are		
		Infill walls or adjacen	t floors that shorter	n the column.						-0.5	
	Split Level	There is a split level								-0.5	
	Other Irregularity			fical irregularity that of					e.		V _{L2} = (Cap at -1.2
Plan				vertical Irregularity that ir relatively well distribu					aluda tha W/1A	-0.5	(Cap at -1.2
				r relatively well distribu	ned in plan in either of	bour directions.	. (00 10	L In	clude the WIA	-0.7	
		egularity listed above		ertical elements of the	Internal curricum that are	ant otherses!	to each	att		-0.4	
P				omer exceed 25 % of 1				our	er.	-0.4	
				hragm with a width ove				el		-0.2	
				eams do not align with				-		-0.4	Pu2 -
	Other Irregul	arity: There is another	r observable plan ir	rregularity that obvious	ly affects the building	s seismic perior	mance.			-0.7	(Cap at -1.1)
Redundancy	The building	has at least two bays	of lateral elements	s on each side of the b	uliding in each directio	n.		_		0.3	
Pounding	Building is se	eparated from an adja	cent structure by	The floors do not alig	n vertically within 2 fe	et.			(Cap total	-1	l
	less than 1.5	% of the height of the	e shorter of the	One building is 2 or n	nore stories taller than	the other.			pounding modifiers	-1	
	building and	adjacent structure and	d:	The building is at the	end of the block.			٦	at -0.9)	-0.5	1
S2 Building	"K" bracing g	eometry is visible.								-1	1
C1 Building	Flat plate ser	rves as the beam in th	e moment frame.							-0.4	
PC1/ RM1	There are roo	of-to-wall ties that are	visible or known fro	rom drawings that do n	ot rely on cross-grain t	bending. (Do no	t combir	ne v	with post-		
Building	benchmark o	r retrofit modifier)								0.3	
			ull height interior w	alls (rather than an Int	erior space with few w	alls such as in a	wareho	USE	2)	0.3	1
JRM	Gable walls a		racing system prov	vided between the carr	have and the encured					-0.4	-
Retrofit		ive seismic retrofit is			lage and the ground.			_		1.4	м-
		SL2 = (S' + VL2 + PL2						-	(Transfer		vel 1 Form
				hat negatively affects ti	he building's seismic p	erformance: 🗆	Yes 🗆 I	No			
f yes, describ	e the conditio	In the comment boy	x below and Indicat	te on the Level 1 form	that detailed evaluation	n is required ind	lepender	nt o	f the building's scor	e.	
BSERVABL	E NONSTRU	ICTURAL HAZARDS									
ocation		Check "Yes" or "No"					Yes N	0	Comm	nents	
Exterior				or unbraced unreinford	ed masonry chimney.						
		vy cladding or heavy v		n walkways that appea	er loadequately suppo	rted		4			
				alt doors or pedestrian		area.	\vdash	╡		_	
				hazardous materials ar				╡			
				d URM wall or unbrace	d URM parapet or chir	nney.					
		ed exterior nonstructu						1			
nterior		ilow clay tile or brick p red interior nonstructu		air or exit comoor.			+	+			
Schmatod Nr			-	late box and transfer to	Level 1 form constus	(ons)					
		ctural hazards with sig			> Detailed Nonst		ion reco	mo	nended.		
		the second of the second of the second of the									
Pote		ards identified with si	onificant threat to o	occupant life safety.	> But no Detalled				equired.		
Pote Non	structural haz	zards identified with si uctural hazard threat t			> But no Detailed > No Detailed No						

(Adopted from FEMA P-154 Data Colle	calon Ho	rmy												DE	KAI	ELY	HIG	H Se	ISM	ICIT												
PHOTOGRAPH															City:																	
						_									Use:																	
						BU	~	Name:																								
								titude:							· · ·																	
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								Area (si												_												
							Itions:		I Non																							
							pancy:										/ Services 🗆 Historic															
									🗆 Indu] Sch	-																	
												rehous	e C	I Res	Identia	al,#Units:																
	3H i i i i i i i i				Soll T	VDe:			<u> </u>									Soft So														
SKETCH								DB:N				D D: H			к																	
KETCH				Geoh	azarda			Liquef	action:		🗆 Yes,			ĸ		E F: Poor Soll																
									dslide:		U Yes,																					
				-			Sur	face R	upture:		I Yes.																					
				<u>.</u>	Adjac	ency:		D Pou	nding			D Fallir	ig Haz	ards fr	rom Ta	ller Adj	acent I	Buildin	g													
				9	Irregu	larities		C Sev	ere Ver	tical Im	egulart	ty	-	🗆 Plar	n Irregi	Jarity	Adjacent Building															
			1		[Mod	lerate \	/ertical	Irregul						a.														
							_		🗆 Unb	raced (Chimne	ys	Heavy Cladding or Heavy Ve					er														
																		Exteri	or Fall de:	Ing	🗆 Para	apets			🗆 Appe	ndage	25					
															The second			C Othe	er:													
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BUILDING TYPE			N1A	W2	S1	S2	S3	S4	S5	C1	C2	C3		PC2	RM1	RM2	URM	MH	BN1	BN												
Basic Score		_	3.7 -1.3	3.2	2.3	2.2	2.9	2.2	2.0	1.7	2.1	1.4 -0.8	1.8	1.5 -0.9	1.8	1.8	1.2 -0.8	2.2 NA	-0.8	2.												
Severe Vertical Irregularity, VL1		_	-1.3	-1.3	-0.7	-0.6	-1.2	-0.6	-0.9	-0.6	-1.1 -0.6	-0.0	_	-0.9	-0.6	-0.6	-0.0	NA	-0.0	-0												
Moderate Vertical Irregularity, VL1		_	-1.2	-0.0	-0.7	-0.8	-0.0	-0.6	-0.0	-0.6	-0.0	-0.5	-0.8	-0.6	-0.0	-0.6	-0.5	NA	-0.5	-0												
Plan Irregularity, PL1 Pre-Code			-0.9	-0.9	-0.5	-0.5	-0.7	-0.6	-0.2	-0.7	-0.7	-0.0		-0.7	-0.5	-0.5	-0.0	-0.3	NA	N												
Post-Benchmark			1.9	2.3	1.4	-0.5	1.0	1.9	-0.2 NA	1.9	2.1	NA	2.1	2.4	2.1	2.1	NA NA	1.2	NA	N												
Soll Type A or B			0.6	0.9	0.6	0.9	0.3	0.9	0.9	0.6	0.8	0.7	0.9	0.7	0.8	0.8	0.6	0.9	0.6	1.												
Soll Type E (1-3 stories)			-0.1	-0.3	-0.4	-0.5	0.0	-0.4	-0.5	-0.2	-0.2	-0.4		-0.3	-0.4	-0.4	-0.3	-0.5	-0.3	-1												
Soll Type E (>3 stories)		_	-0.8	-1.2	-0.7	-0.7	NA	-0.7	-0.6	-0.6	-0.8	-0.4	NA	-0.5	-0.6	-0.7	-0.3	NA	NA	N												
Minimum Score, S MN			1.2	0.8	0.5	0.5	0.9	0.5	0.5	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.2	1.4	0.2	0.												
FINAL LEVEL 1 SCORE, SL1 ≥ SMN																																
EXTENT OF REVIEW				OTHE	R HAZ	ZARDS					ACTIC	N REC	UIRED																			
Exterior: 🗆 Partial 🗆 All Sides) Aerla		Are T	here H	azards	That T	rigger /	A Detalk	ed	Detaile	ed Stru	ctural E	valuati	on Rei	quired?																
interior: 🗆 None 🗆 Visible] Enter	ed			valuatio					L		own bull			·																
Drawing Reviewd: 🗆 Yes		3 No						ess S _L	, > Cut-	off, If			less that				-															
Soll Type Source:				knowr	-		~		-				hazarda																			
Geohazards Source:					÷											Recor	nmend	ed?														
Contact Person:				🗆 Fal	ling ha	zards f	rom tal	ier adja	Jacent building Detailed Nonstructural Evaluation Recommended?																							
				🗆 Ge	ologic	hazard	s or So	I Type	F				uctural h							n, bi												
LEVEL 2 SCREENING PERFORMED?					-																											
Yes, Final Level 2 Score, S ₁₂ :	Yes, Final Level 2 Score, S ₁₂ : No Significant Nonstructural Hazards? Yes No structural svs			t dama	ge/det	rioratic	on to the		a deta	ed eva	aluation	Is not	neces	sarv																		

Rapid Visual Screening of Buildings for Potential Seismic Hazards (Adopted from FEMA P-154 Data Collection Form)

LEVEL 2 (Optional) MODERATELY HIGH Seismicity

	Data Collection to	4 Data Collection Form be performed by a civil or	structural engineering (orofessional, architect, or gr Level 1 Score: Sr, =	aduate student with background in a	elamic eval	luation or o	dea			-
Building Nan Screener	ne :		Level 1 Irregula	rity Modifiers: Vertic	 M. vitraturant las 		DI	20	(Do Irregularity, Pr	not co	nsider Sum
Date/ Time			ADJUST	ED BASELINE S' = (Six - V(x - P(x) =		E b		inequilation, P14 -		
STRUCTURA	L MODIFIER	S TO ADD TO ADJUS	STED BASELINE S	CORE							
Topic		Statemer	nt (if statement is i	true, circle "Yes" mo	difier; otherwise cross out	the mod	ifler)			Yes	Subtotals
Vertical	Sloping Site	W1 Building : There I	is at least a full sto	ry grade change from (one side of the building to the	other.				-1.3	
Irregularity,					om one side of the building to	the othe	r			-0.3	Į.
V _{L2}	Weak and/or Soft			cripple wall is visible i				_		-0.6	
-	story		-		e is a garage opening without			Ial	me, and there is	-1.3	
	•				pors above, use 16 ft of wall n			_		-1.3	1
	тахтиту		Front : There are of	penings at the ground	story (such as for parking) ov	er at leas	st 50 % (oft	the length of the		
		building.						_		-1.3	Į.
		-			s than 50 % of that at story at	oove or n	eight of	anj	y story is more		
		than 2.0 times the he								-1	
		-			ween 50 % and 75 % of that a	at story a	bove or	ne	ight of any story is		
	Setback	between 1.3 and 2.0						_		-0.5	1
	Setback		-	at an upper story are o	utboard of those at the story i	below ca	using the	e d	laphragm to		
		cantilever at the offse								-1	ļ
					coard of those at lower stories			_		-0.5	
	Short				er than the length of the elem plers) along a column line in f		a system	n h	ave helight/depth	0.0	
	Column/			ght/depth ratio at that						-0.5	
	Pler				dth) is less than one half of th	e deoth o	of the sp	an	drel, or there are		1
		Infill walls or adjacent			,					-0.5	
	Split Level	There is a split level a								-0.5	
	Other				viously affects the building's	selsmic p	performa	ino	e.	-1	V.2 -
					may affect the building's sels					-0.5	(Cap at -1.3)
Plan	Torsional Irre	gularity: Lateral syste	em does not appear	relatively well distribu	ted in plan in either or both di	rections.	(Do not	In	clude the W1A	-0.8	
Irregularity,		egularity listed above)									
P12					lateral system that are not ort			oth	her.	-0.4	
					he overall plan dimensions in r 50 % of the total diaphragm			al.		-0.4	
				ams do not align with t		mutrat	u lat revi	CI.		-0.4	P., -
					ly affects the building's seism	ic perform	mance.			-0.8	(Cap at -1.3)
Redundancy	The building	has at least two bays	of lateral elements		uliding in each direction.			_		0.3	
Pounding	Building is se	eparated from an adjac	cent structure by		n vertically within 2 feet.			4	(Cap total	-1	
	less than 1.5	% of the height of the	e shorter of the	-	nore stories tailer than the oth	er.			pounding modifiers	-1	Į
		adjacent structure and	d:	The building is at the	end of the block.				at -0.9)	-0.5	1
S2 Building C1 Building		eometry is visible. ves as the beam in th	a manage frame							-1	ł
PC1/ RM1				an desudance that do no	ot rely on cross-grain bending	(De est			dib aget	-0.5	ł
Building		r retrofit modifier)	visible of known in	un urawings that up hi	ot rely on cross-grain behang	, (Do not	Combin	e 1	an pose	0.3	
outong			ull height interior wa	alls (rather than an inte	erior space with few walls suc	h as in a	wareho		2)	0.3	
JRM	Gable walls a	are present.	an neight interfor wa	and fractier that all the	citor opace with tew walls out		Waterio	000	=)	-0.4	1
MH				Ided between the carrl	age and the ground.					1.2	м-
Retrofit		we selsmic retrofit is v		m drawings.				_		1.4	
		$S_{12} = (S' + V_{12} + P_{12})$		t nonstively affects th	e building's seismic performa	2009: D			(Transfer	10 Le	vel 1 Form
If yes, describ	e the conditio	n In the comment box	c below and Indicate	e on the Level 1 form t	that detailed evaluation is req	ulred Inde	epender	it o	f the building's scor	e.	
OBSERVABL	E NONSTRU	CTURAL HAZARDS					-	-	-		
Location		Check "Yes" or "No")				Yes No	0	Comm	nents	
Exterior				or unbraced unreinforc	ed masonry chimney.						
		vy cladding or heavy v		walkways that annea	rs Inadequately supported.			+			
	There is an u	nreinforced masonry	appendage over ex	It doors or pedestrian	walkways.			╉			
	There is a sig	n posted on the build	ing that indicates h	azardous materials ar	e present.			t			
				URM wall or unbrace	d URM parapet or chimney.			1			
stades		ed exterior nonstructu llow clay tile or brick p		ir or exit corridor				+			
Interior		ed Interior nonstructur		I GI CAR COTTOUT.				+			
Estimated N				ate box and transfer to	Level 1 form consilusions)			+			
Pote	ential nonstruc	ctural hazards with sig	nificant threat to or	ccupant life safety.	> Detailed Nonstructural						
				ccupant life safety.							
	or no nonstru	ictural hazard threat to	o occupant life safe	sy.	> No Detailed Nonstruct	ural Evalu	uation re	qu	ired.		
Comments :											

Rapid Visual Screening of Buildings for Potential Seismic Hazards

LEVEL 1 MODERATE Seismicity

PHOTOGRAPH						Address						C	MOD				
						Other ID						Us					
					Bulld	ing Name											
				- H		Latitude											
						ongitude							-				
				- F		Screener											
					Stories				Below Ground: Year Bullt: D E								
				- F	Total Floor Area (sft):				Code Year:								
				- 1	Additio		Non										
					Occupan				Yes, Years Bullt: Commercial Eme				ency Se			Istoric	
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										rehouse		I Reside	ential,#U	nits:		helter	
					Soll Type		DA:H				C: So					Soft So	0
SKETCH	тсн							B: Normal F			D: Ha					Poor Se	
			Geohaza	rds:		Liquef	action:		Yes, O No, O DNK					L1.F00130			
	- 7 7	1				Lan	dslide:		Yes, O No, O DNK								
· · · · · · · · · · · · · · · · · · ·	- 1 1	1			Sur	face Ri	upture:		🗆 Yes, I								
	1773			/	Adjacend	y:	D Pour	nding		l	🗆 Fallin	g Hazar	ds from '	Taller.	Adjacer	t Bulldin	g
	(***)				rregular	ities:	□ Seve	ere Ver	tical im	egularit	у		Plan Irre	gulari	y		
	111						Mod	erate \	/ertical	Irregula	arity						
	1.1						Unb	raced (Chimne	ys I	🗆 Heav	y Cladd	ing or He	avy V	eneer		
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	1				incon do.		C Othe	er:									
	1111	111		(COMME	NTS											
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			- i - i														
		4 -			□ Additic	nal sketch	ies or co	mment	is on se	parate	page						
			BASIC SCO								page						
BUILDING TYPE	DNK	_	BASIC SCO /1A W2		ODIFIEF					E, S ₁₁		PC2 R	M1 RM	12 UR	M MH	BN1	BN
BUILDING TYPE Basic Score	DNK	W1 W 5.1 4	/1A W2 4.5 3.8	S1 2.7	S2 2.6	LS, AND F 33 S4 3.5 2.5	INAL LE S5 2.7	VEL 1 C1 2.1	SCOR	E, S _{L1} C3 2.0	PC1 F	1.9 2	2.1 2.1	1 1.	7 2.9	1.7	3.2
Basic Score Severe Vertical Irregularity, VL1		W1 W 5.1 4 -1.4 -	/1A W2 4.5 3.8 1.4 -1.4	S1 2.7 1.2	ODIFIER S2 2 2.6 3 -1.2 -	LS, AND F 33 S4 3.5 2.5 1.4 -1.1	INAL LE S5 2.7 -1.2	VEL 1 C1 2.1 -1.1	SCOR C2 2.5 -1.2	E, S _{L1} C3 2.0 -1.0	PC1 F 2.1 -1.1	1.9 2 -1.0 -1	2.1 2.1 1.1 -1.1	1 1. 1 -1.	7 2.9 0 NA	1.7 -1.0	3.2
Basic Score Severe Vertical Irregularity, V _{L1} Moderate Vertical Irregularity, V _{L1}		W1 W 5.1 4 -1.4 - -0.9 -0	/1A W2 4.5 3.8 1.4 -1.4 0.9 -0.9	DRE, M S1 2.7 -1.2 -0.8	ODIFIER S2 1 2.6 3 -1.2 - -0.7 -	IS, AND F 33 S4 3.5 2.5 1.4 -1.1 0.9 -0.7	NAL LE S5 2.7 -1.2 -0.7	VEL 1 C1 2.1 -1.1 -0.7	SCOR C2 2.5 -1.2 -0.7	E, S _{L1} C3 2.0 -1.0 -0.6	PC1 F 2.1 -1.1 -	1.9 2 -1.0 -1 -0.6 -0	2.1 2.1 1.1 -1.1 0.7 -0.1	1 1. 1 -1. 7 -0.	7 2.9 0 NA 6 NA	1.7 -1.0 -0.6	3.2 -0.9 -0.6
Basic Score Severe Vertical Irregularity, V _{L1} Moderate Vertical Irregularity, V _{L1} Plan Irregularity, P _{L1}		W1 W 5.1 4 -1.4 - -0.9 -0 -1.4 -	/1A W2 4.5 3.8 1.4 -1.4 0.9 -0.9 1.3 -1.2	DRE, M S1 2.7 -1.2 -0.8 -1.0	ODIFIER S2 2 2.6 3 -1.2 - -0.7 - -0.9 -	IS, AND F 33 S4 3.5 2.5 1.4 -1.1 0.9 -0.7 1.2 -0.9	NAL LE S5 2.7 -1.2 -0.7 -0.9	VEL 1 C1 2.1 -1.1 -0.7 -0.8	SCOR C2 2.5 -1.2 -0.7 -1.0	E, S _{L1} C3 2.0 -1.0 -0.6 -0.8	PC1 F 2.1 -1.1 - -0.7 -	1.9 2 -1.0 -1 -0.6 -0 -0.8 -0	2.1 2.1 1.1 -1. 0.7 -0.3 0.8 -0.3	1 1. 1 -1. 7 -0. 8 -0.	7 2.5 0 NA 6 NA 7 NA	1.7 -1.0 -0.6 -0.7	3.2 -0.9 -0.0
Basic Score Severe Vertical Irregularity, V _{L1} Moderate Vertical Irregularity, V _{L1} Plan Irregularity, P _{L1} Pre-Code		W1 W 5.1 4 -1.4 - -0.9 - -1.4 - -0.3 -	/1A W2 4.5 3.8 1.4 -1.4 0.9 -0.9 1.3 -1.2 0.5 -0.6	S1 2.7 -1.2 -0.8 -1.0 -0.3	ODIFIER S2 5 2.6 5 -1.2 - -0.7 - -0.9 - -0.2 -	IS, AND F S3 S4 3.5 2.5 1.4 -1.1 0.9 -0.7 1.2 -0.9 0.2 -0.3	NAL LE S5 2.7 -1.2 -0.7 -0.9 -0.3	VEL 1 C1 2.1 -1.1 -0.7 -0.8 -0.3	C2 2.5 -1.2 -0.7 -1.0 -0.4	E, S _{L1} C3 2.0 -1.0 -0.6 -0.8 -0.3	PC1 F 2.1 -1.1 - -0.7 - -0.9 - -0.2 -	1.9 2 -1.0 -1 -0.6 -0 -0.8 -0 -0.2 -0	2.1 2.1 1.1 -1.' 0.7 -0.' 0.8 -0.' 0.2 -0.'	1 1. 1 -1. 7 -0. 8 -0. 2 -0.	7 2.9 0 NA 6 NA 7 NA 1 -0.9	1.7 -1.0 -0.6 -0.7 5 NA	3.2 -0.9 -0.0 -0.0 NA
Basic Score Severe Vertical Irregularity, V ₄₇ Moderate Vertical Irregularity, V ₄₇ Plan Irregularity, P ₄₇ Pre-Code Post-Benchmark		W1 W 5.1 4 -1.4 - -0.9 - -1.4 - -0.3 - 1.4 2	/1A W2 4.5 3.8 1.4 -1.4 0.9 -0.9 1.3 -1.2 0.5 -0.6 2.0 2.5	DRE, M S1 -1.2 -0.8 -1.0 -0.3 1.5	ODIFIER S2 1 2.6 3 -1.2 - -0.7 - -0.9 - -0.2 - 1.5 0	IS, AND F 33 S4 3.5 2.5 1.4 -1.1 0.9 -0.7 1.2 -0.9 0.2 -0.3 0.8 2.1	NAL LE S5 2.7 -1.2 -0.7 -0.9 -0.3 NA	VEL 1 C1 2.1 -1.1 -0.7 -0.8 -0.3 2.0	C2 2.5 -1.2 -0.7 -1.0 -0.4 2.3	E, S ₁₁ C3 2.0 -1.0 -0.6 -0.8 -0.3 NA	PC1 8 2.1 -1.1 - -0.7 - -0.9 - -0.2 - 2.1	1.9 2 -1.0 -1 -0.6 -0 -0.8 -0 -0.2 -0 2.5 2	2.1 2.1 1.1 -1.1 0.7 -0.1 0.8 -0.3 0.2 -0.3 2.3 2.3	I 1. 1 -1. 7 -0. 8 -0. 2 -0. 3 N	7 2.9 0 NA 6 NA 7 NA 1 -0.9 A 1.2	1.7 -1.0 -0.6 -0.7 5 NA NA	3.2 -0.9 -0.0 -0.0 NA
Basic Score Severe Vertical Irregularity, V ₄₇ Moderate Vertical Irregularity, V ₄₇ Plan Irregularity, P ₄₇ Pre-Code Post-Benchmark Soll Type A or B		W1 W 5.1 4 -1.4 - -0.9 - -1.4 - -0.3 - 1.4 2 0.7 1	/1A W2 4.5 3.8 1.4 -1.4 0.9 -0.9 1.3 -1.2 0.5 -0.6 2.0 2.5 1.2 1.8	DRE, M S1 2.7 -1.2 -0.8 -1.0 -0.3 1.5 1.1	ODIFIER S2 3 2.6 3 -1.2 - -0.7 - -0.9 - -0.2 - 1.5 (IS, AND F S3 S4 8.5 2.5 1.4 -1.1 0.9 -0.7 1.2 -0.9 0.2 -0.3 0.8 2.1 0.6 1.5	NAL LE S5 2.7 -1.2 -0.7 -0.9 -0.3 NA 1.6	VEL 1 C1 -1.1 -0.7 -0.8 -0.3 2.0 1.1	SCORI C2 2.5 -1.2 -0.7 -1.0 -0.4 2.3 1.5	E, S ₁₁ C3 2.0 -1.0 -0.6 -0.8 -0.3 NA 1.3	PC1 F 2.1 -1.1 · -0.7 · -0.9 · -0.2 · 2.1 1.6	1.9 2 -1.0 -1 -0.6 -0 -0.8 -0 -0.2 -0 2.5 2 1.3 1	2.1 2.1 1.1 -1.1 0.7 -0.1 0.8 -0.1 0.2 -0.3 2.3 2.3 1.4 1.4	1 1. 1 -1. 7 -0. 8 -0. 2 -0. 3 N. 4 1.	7 2.9 0 NA 6 NA 7 NA 1 -0.9 A 1.2 3 1.6	1.7 -1.0 -0.6 -0.7 5 NA NA 1.3	3.2 -0.9 -0.0 -0.0 NA NA 0.8
Basic Score Severe Vertical Irregularity, V ₄₇ Moderate Vertical Irregularity, V ₄₇ Plan Irregularity, P ₄₇ Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 stories)		W1 W 5.1 4 -1.4 - -0.9 - -1.4 - -0.3 - 1.4 2 0.7 1 -1.2 -	/1A W2 4.5 3.8 1.4 -1.4 0.9 -0.9 1.3 -1.2 0.5 -0.6 2.0 2.5 1.2 1.8 1.3 -1.4	ORE, M S1 2.7 -1.2 -0.8 -1.0 -0.3 1.5 1.1 -0.9	ODIFIER S2 3 -1.2 - -0.7 - -0.9 - -0.2 - 1.5 (-0.9 -	IS, AND F 33 S4 3.5 2.5 1.4 -1.1 0.9 -0.7 1.2 -0.9 0.2 -0.3 0.8 2.1 0.6 1.5 1.0 -0.9	NAL LE S5 2.7 -1.2 -0.7 -0.9 -0.3 NA 1.6 -0.9	VEL 1 C1 2.1 -1.1 -0.7 -0.8 -0.3 2.0 1.1 -0.7	SCORI C2 2.5 -1.2 -0.7 -1.0 -0.4 2.3 1.5 -1.0	E, S ₁₁ C3 2.0 -1.0 -0.6 -0.8 -0.3 NA 1.3 -0.7	PC1 5 2.1 -1.1 -0.7 -0.9 -0.2 2.1 1.6 -0.8	1.9 2 -1.0 -1 -0.6 -0 -0.8 -0 -0.2 -0 2.5 2 1.3 1 -0.7 -0	2.1 2.1 1.1 -1.1 0.7 -0.1 0.8 -0.3 0.2 -0.3 2.3 2.3 1.4 1.4 0.8 -0.3	1 1. 1 -1. 7 -0. 8 -0. 2 -0. 3 Ni 4 1. 8 -0.	7 2.9 0 NA 6 NA 7 NA 1 -0.9 A 1.2 3 1.6 6 -0.9	1.7 -1.0 -0.6 -0.7 5 NA NA 1.3 -0.6	3.2 -0.3 -0.0 -0.0 N/ N/ 0.8 -1.2
Basic Score Severe Vertical Irregularity, V ₄₇ Moderate Vertical Irregularity, V ₄₇ Plan Irregularity, P ₄₇ Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 stories) Soll Type E (~3 stories)		W1 W 5.1 4 -1.4 - -0.9 - -1.4 - -0.3 - 1.4 2 0.7 1 -1.2 -	/1A W2 4.5 3.8 1.4 -1.4 0.9 -0.9 1.3 -1.2 0.5 -0.6 2.0 2.5 1.2 1.8 1.3 -1.4 1.5 -1.4	DRE, M S1 2.7 -1.2 -0.8 -1.0 -0.3 1.5 1.1 -0.9 -0.9 -0.9	ODIFIER S2 3 -1.2 - -0.7 - -0.9 - -0.2 - 1.5 (-0.9 - -0.2 - 1.4 (-0.9 -	IS, AND F 33 S4 3.5 2.5 1.4 -1.1 0.9 -0.7 1.2 -0.9 0.2 -0.3 0.8 2.1 0.6 1.5 1.0 -0.9 NA -0.9	NAL LE S5 2.7 -1.2 -0.7 -0.9 -0.3 NA 1.6 -0.9 -1.0	VEL 1 C1 2.1 -1.1 -0.7 -0.8 -0.3 2.0 1.1 -0.7 -0.8	SCOR C2 2.5 -1.2 -0.7 -1.0 -0.4 2.3 1.5 -1.0 -1.0	E, S _{L1} C3 2.0 -1.0 -0.6 -0.8 -0.3 NA 1.3 -0.7 -0.8	PC1 8 2.1 -1.1 -0.7 -0.9 -0.2 -0.2 -0.2 -2.1 1.6 -0.8 -0.8 NA	1.9 2 -1.0 -1 -0.6 -0 -0.8 -0 -0.2 -0 2.5 2 1.3 1 -0.7 -0	2.1 2.1 1.1 -1. 0.7 -0. 0.8 -0. 0.2 -0.3 2.3 2.3 1.4 1.4 0.8 -0.0 0.7 -0.1	1 1. 1 -1. 7 -0. 8 -0. 2 -0. 3 N. 4 1. 8 -0. 8 -0. 8 -0.	7 2.9 0 NA 6 NA 7 NA 1 -0.9 A 1.2 3 1.6 6 -0.9 6 NA	1.7 -1.0 -0.6 -0.7 NA NA 1.3 -0.6 NA	3.2 -0.1 -0.1 -0.1 N/4 0.8 -1.1
Basic Score Severe Vertical Irregularity, V _{LT} Moderate Vertical Irregularity, V _{LT} Plan Irregularity, P _{LT} Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 stories) Soll Type E (~3 stories) Minimum Score, S _{MMY}		W1 W 5.1 4 -1.4 - -0.9 - -1.4 - -0.3 - 1.4 2 0.7 1 -1.2 -	/1A W2 4.5 3.8 1.4 -1.4 0.9 -0.9 1.3 -1.2 0.5 -0.6 2.0 2.5 1.2 1.8 1.3 -1.4	ORE, M S1 2.7 -1.2 -0.8 -1.0 -0.3 1.5 1.1 -0.9	ODIFIER S2 3 -1.2 - -0.7 - -0.9 - -0.2 - 1.5 (-0.9 - -0.2 - 1.4 (-0.9 -	IS, AND F 33 S4 3.5 2.5 1.4 -1.1 0.9 -0.7 1.2 -0.9 0.2 -0.3 0.8 2.1 0.6 1.5 1.0 -0.9	NAL LE S5 2.7 -1.2 -0.7 -0.9 -0.3 NA 1.6 -0.9	VEL 1 C1 2.1 -1.1 -0.7 -0.8 -0.3 2.0 1.1 -0.7	SCORI C2 2.5 -1.2 -0.7 -1.0 -0.4 2.3 1.5 -1.0	E, S ₁₁ C3 2.0 -1.0 -0.6 -0.8 -0.3 NA 1.3 -0.7	PC1 8 2.1 -1.1 -0.7 -0.9 -0.2 -0.2 -0.2 -2.1 1.6 -0.8 -0.8 NA	1.9 2 -1.0 -1 -0.6 -0 -0.8 -0 -0.2 -0 2.5 2 1.3 1 -0.7 -0	2.1 2.1 1.1 -1.1 0.7 -0.1 0.8 -0.3 0.2 -0.3 2.3 2.3 1.4 1.4 0.8 -0.3	1 1. 1 -1. 7 -0. 8 -0. 2 -0. 3 N/ 4 1. 8 -0. 8 -0. 8 -0.	7 2.9 0 NA 6 NA 7 NA 1 -0.9 A 1.2 3 1.6 6 -0.9 6 NA	1.7 -1.0 -0.6 -0.7 NA NA 1.3 -0.6 NA	3.2 -0.9 -0.0 -0.0 NA
Basic Score Severe Vertical Irregularity, V _{LT} Moderate Vertical Irregularity, V _{LT} Plan Irregularity, P _{LT} Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 stories) Soll Type E (>3 stories) Soll Type E (>3 stories) Minimum Score, S _{MW} FINAL LEVEL 1 SCORE, S _{LT} ≥ S _{MW}		W1 W 5.1 4 -1.4 - -0.9 - -1.4 - -0.3 - 1.4 2 0.7 1 -1.2 -	/1A W2 4.5 3.8 1.4 -1.4 0.9 -0.9 1.3 -1.2 0.5 -0.6 2.0 2.5 1.2 1.8 1.3 -1.4 1.6 -1.3 1.2 0.9	DRE, M S1 2.7 -1.2 -0.8 -1.0 -0.3 1.5 1.1 -0.9 -0.9 0.6	ODIFIER S2 3 2.6 3 -1.2 - -0.7 - -0.9 - -0.2 -4 1.5 0 1.4 0 -0.9 - -0.9 - 0.6 0	IS, AND F 33 S4 3.5 2.5 1.4 -1.1 0.9 -0.7 1.2 -0.9 0.2 -0.3 0.8 2.1 0.6 1.5 1.0 -0.9 NA -0.9	NAL LE S5 2.7 -1.2 -0.7 -0.9 -0.3 NA 1.6 -0.9 -1.0	VEL 1 C1 2.1 -1.1 -0.7 -0.8 -0.3 2.0 1.1 -0.7 -0.8	SCOR C2 2.5 -1.2 -0.7 -1.0 -0.4 2.3 1.5 -1.0 -1.0 0.3	E, S _{L1} C3 2.0 -1.0 -0.6 -0.8 -0.3 NA 1.3 -0.7 -0.8 0.3	PC1 F 2.1 -1.1 -0.7 -0.9 -0.2 -0.2 -2.1 1.6 -0.8 NA 0.3	1.9 2 -1.0 -1 -0.6 -0 -0.8 -0 -0.2 -0 2.5 2 1.3 1 -0.7 -0	2.1 2.1 1.1 -1. 0.7 -0. 0.8 -0. 0.2 -0.3 2.3 2.3 1.4 1.4 0.8 -0.0 0.7 -0.1	1 1. 1 -1. 7 -0. 8 -0. 2 -0. 3 N. 4 1. 8 -0. 8 -0. 8 -0.	7 2.9 0 NA 6 NA 7 NA 1 -0.9 A 1.2 3 1.6 6 -0.9 6 NA	1.7 -1.0 -0.6 -0.7 NA NA 1.3 -0.6 NA	3.2 -0.9 -0.0 NA NA 0.8 -1.7
Basic Score Severe Vertical Irregularity, V _{LT} Moderate Vertical Irregularity, V _{LT} Plan Irregularity, P _{LT} Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 stories) Soll Type E (>3 stories) Soll Type E (>3 stories) Minimum Score, S _{MW} FINAL LEVEL 1 SCORE, S _{LT} ≥ S _{MW} EXTENT OF REVIEW		W1 W 5.1 4 -1.4 - -0.9 - -1.4 - -0.3 - -0.3 - 1.4 2 0.7 1 -1.2 - -1.8 - 1.6 1	/1A W2 4.5 3.8 1.4 -1.4 0.9 -0.9 1.3 -1.2 0.5 -0.6 2.0 2.5 1.2 1.8 1.3 -1.4 1.6 -1.3 1.2 0.9	CRE, M S1 2.7 -1.2 -0.8 -1.0 -0.3 1.5 1.1 -0.9 -0.9 0.6 R HAZ/	ODIFIER S2 3 2.6 3 -1.2 - -0.7 - -0.9 - -0.2 -4 1.5 (1.4 (-0.9 - -0.9 - 0.6 (IS, AND F 33 S4 35 2.5 1.4 -1.1 0.9 -0.7 1.2 -0.9 0.2 -0.3 0.8 2.1 0.6 1.5 1.0 -0.9 0.6 1.5 0.8 0.6	NAL LE S5 2.7 -1.2 -0.7 -0.9 -0.3 NA 1.6 -0.9 -1.0 0.6	VEL 1 C1 2.1 -1.1 -0.7 -0.8 -0.3 2.0 1.1 -0.7 -0.8 0.3	SCOR C2 2.5 -1.2 -0.7 -1.0 -0.4 2.3 1.5 -1.0 -1.0 0.3 ACTIO	E, S _{L1} C3 2.0 -1.0 -0.6 -0.8 -0.3 NA 1.3 -0.7 -0.8 0.3 NR EQ	PC1 F 2.1 -1.1 -0.7 -0.9 -0.2 -0.2 -0.2 -0.2 -0.2 -0.2 -0.2 -0.3 -0.8 -0.8 -0.8 -0.8 -0.3 -0.3	1.9 2 -1.0 -1 -0.6 -(-0.8 -(-0.2 -(2.5 2 1.3 1 -0.7 -(-0.7 -(0.2 0	2.1 2.1 1.1 -1. 0.7 -0.' 0.8 -0. 0.2 -0.2 1.4 1.4 0.8 -0. 0.7 -0.3 0.3 0.3	1 1. 1 -1. 7 -0. 8 -0. 2 -0. 3 N. 4 1. 8 -0. 8 -0. 8 -0. 3 0.	7 2.9 0 NA 6 NA 7 NA 1 -0.9 A 1.2 3 1.6 6 -0.9 6 NA	1.7 -1.0 -0.6 -0.7 NA NA 1.3 -0.6 NA	3.2 -0.1 -0.1 -0.1 N/4 0.8 -1.1
Basic Score Severe Vertical Irregularity, V _{L1} Moderate Vertical Irregularity, V _{L1} Plan Irregularity, P _{L1} Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 stories) Soll Type E (-3 stories) Soll Type E (W1 W 5.1 4 -1.4 - -0.9 - -1.4 - -0.3 - 1.4 2 0.7 1 -1.2 - -1.8 -1 1.6 1	/1A W2 4.5 3.8 1.4 -1.4 0.9 -0.9 1.3 -1.2 0.5 -0.6 2.0 2.5 1.2 1.8 1.3 -1.4 1.6 -1.3 1.2 0.9 OTHEE	ORE, M S1 2.7 -1.2 -0.8 -1.0 -0.3 1.5 1.1 -0.9 0.6	ODIFIER S2 2 2.6 3 -1.2 - -0.7 - -0.9 - -0.2 - 1.5 (-0.9 - -0.9 - 0.09 - 0.09 - 0.09 - 0.09 - 0.09 - 0.09 - 0.09 - 0.6 (ARDS -	IS, AND F 33 S4 3.5 2.5 1.4 -1.1 0.9 -0.7 1.2 -0.9 0.2 -0.3 0.8 2.1 0.6 1.5 1.0 -0.9 NA -0.9	NAL LE S5 2.7 -1.2 -0.7 -0.9 -0.3 NA 1.6 -0.9 -1.0 0.6	VEL 1 C1 2.1 -1.1 -0.7 -0.8 -0.3 2.0 1.1 -0.7 -0.8 0.3	SCOR C2 2.5 -1.2 -0.7 -1.0 -0.4 2.3 1.5 -1.0 -1.0 0.3 ACTIO Detaile	E, S _{L1} C3 2.0 -1.0 -0.6 -0.8 -0.3 NA 1.3 -0.7 -0.8 0.3 0.3 NREQ ed Struct	PC1 8 2.1 -1.1 - -0.7 - -0.9 - -0.2 - 2.1 1.6 -0.8 - NA - 0.3 WIRED tural Ev	1.9 2 -1.0 -1 -0.6 -(-0.8 -(-0.2 -(2.5 2 1.3 1 -0.7 -(-0.2 0	2.1 2.1 1.1 -1. 0.7 -0.' 0.8 -0.' 0.2 -0.2' 2.3 2.3' 1.4 1.4 0.8 -0.0' 0.7 -0.3' 0.3 0.3'	1 1. 1 -1. 7 -0. 8 -0. 2 -0. 3 N. 4 1. 8 -0. 3 0. 3 0.	7 2.9 0 NA 6 NA 7 NA 1 -0.9 3 1.6 6 -0.9 6 NA 2 1.5	1.7 -1.0 -0.6 -0.7 NA NA 1.3 -0.6 NA	3.: -0. -0. -0. N/ N/ 0.: -1.
Basic Score Severe Vertical Irregularity, V _{L1} Moderate Vertical Irregularity, V _{L1} Plan Irregularity, P _{L1} Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 stories) Soll Type E (-3 stories) Minimum Score, S _{MW} FINAL LEVEL 1 SCORE, S _{L1} ≥ S _{MW} EXTENT OF REVIEW Exterior: Partial All Sides		W1 W 5.1 4 -1.4 - -0.9 - -1.4 - -0.3 - 1.4 2 0.7 1 -1.2 - -1.8 - 1.6 1 D Aertal -	/1A W2 4.5 3.8 1.4 -1.4 0.9 -0.9 1.3 -1.2 0.5 -0.6 2.0 2.5 1.2 1.8 1.3 -1.4 1.6 -1.3 1.2 0.9 OTHEE Are The Structure	ORE, M S1 2.7 -1.2 -0.8 -1.0 -0.3 1.5 1.1 -0.9 0.6 R HAZA were Haza ural Eva	ODIFIER S2 3 -1.2 - -0.7 - -0.2 - 1.5 (1.4 (-0.9 - -0.9 - 0.6 (ARDS zards Th Juation? -	IS, AND F 33 S4 8.5 2.5 1.4 -1.1 0.9 -0.7 1.2 -0.9 0.2 -0.3 0.8 2.1 0.6 1.5 1.0 -0.9 0.4 -0.9 0.8 0.6 1.8 0.6	NAL LE S5 2.7 -1.2 -0.7 -0.9 -0.3 NA 1.6 -0.9 -1.0 0.6	VEL 1 C1 2.1 -1.1 -0.7 -0.8 -0.3 2.0 1.1 -0.7 -0.8 0.3 0.3 -0.3 -0.3 -0.3 -0.3 -0.3 -0.4	C2 2.5 -1.2 -0.7 -1.0 -0.4 2.3 1.5 -1.0 -1.0 0.3 ACTIO Detaile	E, S _{L1} C3 2.0 -1.0 -0.6 -0.8 -0.3 NA 1.3 -0.7 -0.8 0.3 0.3 0N REQ ed Structory , unkno	PC1 F 2.1 -1.1 - -0.7 - -0.9 - -0.2 - 2.1 1.6 -0.8 - 0.3 - UIRED tural Ev wm bulk	1.9 2 -1.0 -1 -0.6 -(-0.7 -(-0.7 -(-0.7 -(0.2 0	2.1 2.1 1.1 -1. 0.7 -0. 0.8 -0. 0.2 -0.3 2.3 2.3 1.4 1.4 0.8 -0. 0.7 -0.3 0.3 0.3 0.3 0.3	1 1. 1 -1. 7 -0. 8 -0. 2 -0. 3 N. 4 1. 8 -0. 3 0. 3 0.	7 2.9 0 NA 6 NA 7 NA 1 -0.9 3 1.6 6 -0.9 6 NA 2 1.5	1.7 -1.0 -0.6 -0.7 NA NA 1.3 -0.6 NA	3.: -0. -0. -0. N/ N/ 0.: -1.
Basic Score Severe Vertical Irregularity, V⊥r Vioderate Vertical Irregularity, V⊥r Plan Irregularity, P⊥r Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 storles) Soll Type E (×3 storles) Vinimum Score, S _{LW} FINAL LEVEL 1 SCORE, S⊥r ≥ S _{MW} ExterNor G REVIEW ExterNor G Reviewd: Drawing Reviewd:		W1 W 5.1 4 -1.4 - -0.9 - -1.4 - -0.3 - 1.4 2 0.7 1 -1.2 - -1.8 - 1.6 1 D Aertal - No -	11A W2 4.5 3.8 1.4 -1.4 0.9 -0.9 1.3 -1.2 0.5 -0.6 2.0 2.5 1.2 1.8 1.3 -1.4 1.6 -1.3 1.2 0.9 OTHE Are The Structu □ Pou	ORE, M M S1 2.7 -1.2 -0.8 -1.0 -0.3 1.5 1.1 -0.9 -0.6 R HAZZ Nerre Hazural Eva 2.7	ODIFIER S2 3 -1.2 - -0.7 - -0.2 - 1.5 (1.4 (-0.9 - -0.9 - 0.6 (ARDS zards Th Juation? -	IS, AND F 33 S4 35 2.5 1.4 -1.1 0.9 -0.7 1.2 -0.9 0.2 -0.3 0.8 2.1 0.6 1.5 1.0 -0.9 0.6 1.5 0.8 0.6	NAL LE S5 2.7 -1.2 -0.7 -0.9 -0.3 NA 1.6 -0.9 -1.0 0.6	VEL 1 C1 2.1 -1.1 -0.7 -0.8 -0.3 2.0 1.1 -0.7 -0.8 0.3 0.3 -0.3 -0.3 -0.3 -0.3 -0.3 -0.4	SCOR C2 2.5 -1.2 -0.7 -1.0 -0.4 2.3 1.5 -1.0 -0.4 2.3 1.5 -1.0 0.3 ACTIO Detaile D Yes C Yes	E, S _{L1} C3 2.0 -1.0 -0.6 -0.8 -0.3 NA 1.3 -0.7 -0.8 0.3 NA 1.3 -0.7 -0.8 0.3 NA 5 Sorresson Sor	PC1 F 2.1 -1.1 - -0.7 - -0.9 - -0.2 - 2.1 1.6 -0.8 - NA - 0.3 - UIRED tural Ev wm bulk less tha	1.9 2 -1.0 -1 -0.6 -0 -0.8 -0 -0.2 -0 2.5 2 1.3 1 -0.7 -0 -0.2 0 valuation 0 ding type an cut-of	2.1 2.1 1.1 -1. 0.7 -0. 0.8 -0. 0.2 -0.3 2.3 2.3 1.4 1.4 0.8 -0. 0.7 -0.3 0.3 0.3 0.3 0.3 n Require or other	1 1. 1 -1. 7 -0. 8 -0. 2 -0. 3 N. 4 1. 8 -0. 3 0. 3 0.	7 2.9 0 NA 6 NA 7 NA 1 -0.9 3 1.6 6 -0.9 6 NA 2 1.5	1.7 -1.0 -0.6 -0.7 5 NA 1.3 0 -0.6 NA 0.2	3.3 -0. -0. -0. N/ N/ 0.1 1. N/
Basic Score Severe Vertical Irregularity, V _{±1} Moderate Vertical Irregularity, V _{±1} Plan Irregularity, P _{±1} Pre-Code Post-Benchmark Soli Type A or B Soli Type E (1-3 stories) Soli Type E (-3 stories) Minimum Score, S _{±W} FINAL LEVEL 1 SCORE, S _{±1} ≥ S _{MW} Extent of REVIEW E		W1 W 5.1 4 -1.4 - -0.9 - -1.4 - -0.3 - 1.4 2 0.7 1 -1.2 - -1.8 - 1.6 1 D Aertal - No -	/1A W2 4.5 3.8 1.4 -1.4 0.9 -0.9 1.3 -1.2 0.5 -0.6 2.0 2.5 1.2 1.8 1.3 -1.4 1.6 -1.3 1.2 0.9 OTHEE Are The Structure	ORE, M M S1 2.7 -1.2 -0.8 -1.0 -0.3 1.5 1.1 -0.9 -0.6 R HAZZ Nerre Hazural Eva 2.7	ODIFIER S2 3 -1.2 - -0.7 - -0.2 - 1.5 (1.4 (-0.9 - -0.9 - 0.6 (ARDS zards Th Juation? -	IS, AND F 33 S4 8.5 2.5 1.4 -1.1 0.9 -0.7 1.2 -0.9 0.2 -0.3 0.8 2.1 0.6 1.5 1.0 -0.9 0.4 -0.9 0.8 0.6 1.8 0.6	NAL LE S5 2.7 -1.2 -0.7 -0.9 -0.3 NA 1.6 -0.9 -1.0 0.6	VEL 1 C1 2.1 -1.1 -0.7 -0.8 -0.3 2.0 1.1 -0.7 -0.8 0.3 0.3 -0.3 -0.3 -0.3 -0.3 -0.3 -0.4	SCOR C2 2.5 -1.2 -0.7 -1.0 -0.4 2.3 1.5 -1.0 -1.0 0.3 ACTIO Detaile Detaile Pres C Yes C Yes	E, S _{L1} C3 2.0 -1.0 -0.6 -0.8 -0.3 NA 1.3 -0.7 -0.8 0.3 0.3 DN REQ ed Struct s, unkno s, score s, other	PC1 F 2.1 - -1.1 - -0.7 - -0.7 - -0.2 - 2.1 - 1.6 - -0.8 - -0.8 - 0.3 - UURED - VUIRED - www.nbulk - less tha - hazards -	1.9 2 -1.0 -1 -0.6 -0 -0.8 -0 -0.2 -0 2.5 2 1.3 1 -0.7 -0 -0.2 0 valuation -0 ding type -0 an cut-of -0	2.1 2.1 1.1 -1.' 0.7 -0.' 0.8 -0.' 0.2 -0.' 2.3 2.3 1.4 1.4 0.8 -0.' 0.7 -0.' 0.3 0.3 0.3 0.3 0.4 1.4 1.4 1.4 1.4 1.4 1.3 0.3 0.3 0.3 0.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.3 0.3 0.3 0.3 0.4 1.4 1.4 1.4	1 1. 1 -1. 7 -0. 8 -0. 2 -0. 3 N/ 4 1. 8 -0. 8 -0. 8 -0. 3 0. 4 1. 8 -0. 9 -0.	7 2.9 0 NA 6 NA 6 NA 7 NA 1 -0.3 3 1.6 6 -0.9 3 1.6 6 NA 2 1.5	1.7 -1.0 -0.6 -0.7 NA NA 1.3 -0.6 NA	3.: -0. -0. -0. N/ N/ 0.: -1. N/
Basic Score Severe Vertical Irregularity, V_{LT} Vioderate Vertical Irregularity, V_{LT} Plan Irregularity, P_{LT} Pre-Code Past-Benchmark Soll Type A or B Soll Type E (1-3 storles) Soll Type E (-3 storles) Vinimum Score, S_{MW} FINAL LEVEL 1 SCORE, $S_{LT} \ge S_{MW}$ EXTENT OF REVIEW Solerior: Danial All Sides nterfor: None Orawing Reviewd: Yes Soil Type Source: Source:		W1 W 5.1 4 -1.4 - -0.9 - -1.4 - -0.3 - 1.4 2 0.7 1 -1.2 - -1.8 - 1.6 1 D Aertal - No -	11A W2 4.5 3.8 1.4 -1.4 0.9 -0.9 1.3 -1.2 0.5 -0.6 2.0 2.5 1.2 1.8 1.3 -1.4 1.3 -1.4 1.3 -1.4 N.5 -0.9 VTHE Are Tre Structh □ Pou known	ORE, M S1 2.7 -1.2 -0.8 -1.0 -0.3 1.5 1.1 -0.9 -0.9 0.6 R HAZ/ Amere Hai ural Eva ural Eva unding p)	ODIFIER S2 3 2.6 3 -1.2 - -0.7 - -0.9 - -0.2 - 1.5 (-0.9 - -0.9 - -0.9 - -0.9 1 0.6 (ARDS - zards Th - aluation? -	IS, AND F 33 S4 8.5 2.5 1.4 -1.1 0.9 -0.7 1.2 -0.9 0.2 -0.3 0.8 2.1 0.6 1.5 1.0 -0.9 0.4 -0.9 0.8 0.6 1.8 0.6	NAL LE S5 2.7 -1.2 -0.7 -0.9 -0.3 NA 1.6 -0.9 -1.0 0.6	VEL 1 C1 2.1 -1.1 -0.7 -0.8 -0.3 2.0 1.1 -0.7 -0.8 0.3 2.0 1.1 -0.7 -0.8 0.3 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.7 -0.8 -0.3 -0.7 -0.8 -0.7 -0.7 -0.8 -0.7 -0.8 -0.7 -0.7 -0.8 -0.7 -0.7 -0.8 -0.7 -0.7 -0.8 -0.7 -0	SCOR C2 2.5 -1.2 -0.7 -1.0 -0.4 2.3 1.5 -1.0 0.3 ACTIC Detaile Pess Detaile Detaile	E, S _{L1} C3 2.0 -1.0 -0.6 -0.8 -0.3 NA 1.3 -0.7 -0.8 0.3 0.3 DN REQ ed Struct s, unknow s, score s, other Honson	PC1 F 2.1 -1.1 - -1.1 - - - -0.7 - - - -0.2 - - - -0.2 - - - 2.1 1.6 - - -0.8 - - - 0.3 - - - UIRED - - - vwn bulk less tha - - hazards - - -	1.9 2 -1.0 -1 -0.6 -0 -0.7 -0 2.5 2 1.3 1 -0.7 -0 -0.2 0 valuation 0 ding type in cut-off present Evaluation	2.1 2.1 1.1 -1.2 0.7 -0.2 0.8 -0.1 0.2 -0.2 2.3 2.3 1.4 1.4 0.8 -0.1 0.7 -0.3 0.3 0.3 0.3 0.3 0.4 1.4 1.4 1.4 1.4 1.4 0.8 -0.1 0.3 0.3 0.3 0.3 0.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 0.3 0.3 0.3 0.3 0.4 1.4 1.4 1.4 1.4 1.4 1.4 1.4 1.5 1.4 1.5 1.5 1.6 1.4 1.7 1.4 1.4 1.4 1.4 1.4 1.5	1 1. 1 1. 1 -1. 7 -0. 8 -0. 2 -0. 3 Ni 4 1. 8 -0. 8 -0. 3 0. 3 0. 4 c. 7 r build	7 2.9 0 NA 6 NA 7 NA 1 -0.9 3 1.6 6 -0.1 5 NA 2 1.5 7 NA 1 -0.9 7 NA 2 1.5 7 NA 1 -0.9 7 N	□ 1.7 -1.0 -0.6 -0.7 5 NA NA 1.3 0 -0.6 NA 0.2	3. -0. -0. N. 0. -1. N. 0.
Basic Score Severe Vertical Irregularity, V_{LT} Vioderate Vertical Irregularity, V_{LT} Plan Irregularity, P_{LT} Pre-Code Past-Benchmark Soll Type A or B Soll Type E (1-3 storles) Soll Type E (-3 storles) Vinimum Score, S_{MW} FINAL LEVEL 1 SCORE, $S_{LT} \ge S_{MW}$ EXTENT OF REVIEW Exterior: Partial All Sides Interior: None Orawing Reviewd: Yes Soil Type Source: Source: Source Person: Source		W1 W 5.1 4 -1.4 - -0.9 - -1.4 - -0.3 - 1.4 2 0.7 1 -1.2 - -1.8 - 1.6 1 D Aertal - No -	/1A W2 4.5 3.8 1.4 -1.4 0.9 -0.9 1.3 -1.2 0.5 -0.6 2.0 2.5 1.2 1.8 1.3 -1.4 1.6 -1.3 1.2 0.9 OTHE Are Tr ed Struct. □ Pou known □ Fall	SI SI 2.7 -1.2 -0.8 -1.0 -0.3 1.5 1.1 -0.9 -0.9 0.6 R HAZ/ even Haz ural Eva nding p) lng haz	ODIFIEF S2 S2 <t< td=""><td>IS, AND F 33 S4 3.5 2.5 1.4 -1.1 0.9 -0.7 1.2 -0.9 0.2 -0.3 0.8 2.1 0.6 1.5 1.0 -0.9 VA -0.9 0.8 0.6 unless 0.6</td><td>NAL LE S5 2.7 -1.2 -0.7 -0.9 -0.3 NA 1.6 -0.9 -1.0 0.6</td><td>VEL 1 C1 2.1 -1.1 -0.7 -0.8 -0.3 2.0 1.1 -0.7 -0.8 0.3 2.0 1.1 -0.7 -0.8 0.3 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.7 -0.8 -0.3 -0.7 -0.8 -0.7 -0.7 -0.8 -0.7 -0.8 -0.7 -0.8 -0.7 -0.8 -0.7 -0.7 -0.8 -0.7 -0.7 -0.8 -0.7 -0.7 -0.8 -0.7 -0</td><td>SCOR C2 2.5 -1.2 -0.7 -1.0 -0.4 2.3 1.5 -1.0 0.3 ACTIO Detaile Pess Pess Detaile Pess Detaile Pess Pe</td><td>E, S_{L1} C3 2.0 -1.0 -0.6 -0.8 -0.3 NA 1.3 -0.7 -0.8 0.3 0.3 ON REQ on Structure of the struct</td><td>PC1 F 2.1 -1.1 - -1.1 - - - -0.7 - - - -0.2 - - - - -0.2 - - - - - 1.6 - 0.8 -<td>1.9 2 -1.0 -1.0 -1.0 -1.0 -0.6 -0.7 -0.8 -0.7 -0.2 2.5 2 2.5 2 1.3 1 -0.7 -0.7 -</td><td>2.1 2.1 1.1 -1.1 0.7 -0.1 0.8 -0.1 0.2 -0.3 2.3 2.3 1.4 1.4 0.8 -0.1 0.7 -0.3 0.3 0.3 0.3 0.3 0.4 1.4 1.4 1.4 1.4 1.4 0.3 0.3 0.3 0.3 0.3 0.3 1 Requirre e or other r t tition Rec identified </td><td>1 1. 1 1. 1 -1. 7 -0. 8 -0. 8 -0. 3 N/ 4 1. 8 -0. 3 0. 4 1. 1 -1. 7 -0. 9 -0. 3 N/ 4 1. -0. 3 0. -0. -0. -0. -0. -0. -0. -0. -</td><td>7 2.9 0 NA4 6 NA 7 NA 1 -0.9 3 1.6 6 -0.9 6 NA 2 1.5 7 NA 2 1.5 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9</td><td>1.7 -1.0 -0.6 -0.7 NA NA 1.3 -0.6 NA 1.3 0 -0.6 NA 0.2</td><td>3. -0. -0. N. 0. -1. N.</td></td></t<>	IS, AND F 33 S4 3.5 2.5 1.4 -1.1 0.9 -0.7 1.2 -0.9 0.2 -0.3 0.8 2.1 0.6 1.5 1.0 -0.9 VA -0.9 0.8 0.6 unless 0.6	NAL LE S5 2.7 -1.2 -0.7 -0.9 -0.3 NA 1.6 -0.9 -1.0 0.6	VEL 1 C1 2.1 -1.1 -0.7 -0.8 -0.3 2.0 1.1 -0.7 -0.8 0.3 2.0 1.1 -0.7 -0.8 0.3 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.3 -0.7 -0.8 -0.7 -0.8 -0.3 -0.7 -0.8 -0.7 -0.7 -0.8 -0.7 -0.8 -0.7 -0.8 -0.7 -0.8 -0.7 -0.7 -0.8 -0.7 -0.7 -0.8 -0.7 -0.7 -0.8 -0.7 -0	SCOR C2 2.5 -1.2 -0.7 -1.0 -0.4 2.3 1.5 -1.0 0.3 ACTIO Detaile Pess Pess Detaile Pess Detaile Pess Pe	E, S _{L1} C3 2.0 -1.0 -0.6 -0.8 -0.3 NA 1.3 -0.7 -0.8 0.3 0.3 ON REQ on Structure of the struct	PC1 F 2.1 -1.1 - -1.1 - - - -0.7 - - - -0.2 - - - - -0.2 - - - - - 1.6 - 0.8 - <td>1.9 2 -1.0 -1.0 -1.0 -1.0 -0.6 -0.7 -0.8 -0.7 -0.2 2.5 2 2.5 2 1.3 1 -0.7 -0.7 -</td> <td>2.1 2.1 1.1 -1.1 0.7 -0.1 0.8 -0.1 0.2 -0.3 2.3 2.3 1.4 1.4 0.8 -0.1 0.7 -0.3 0.3 0.3 0.3 0.3 0.4 1.4 1.4 1.4 1.4 1.4 0.3 0.3 0.3 0.3 0.3 0.3 1 Requirre e or other r t tition Rec identified </td> <td>1 1. 1 1. 1 -1. 7 -0. 8 -0. 8 -0. 3 N/ 4 1. 8 -0. 3 0. 4 1. 1 -1. 7 -0. 9 -0. 3 N/ 4 1. -0. 3 0. -0. -0. -0. -0. -0. -0. -0. -</td> <td>7 2.9 0 NA4 6 NA 7 NA 1 -0.9 3 1.6 6 -0.9 6 NA 2 1.5 7 NA 2 1.5 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9</td> <td>1.7 -1.0 -0.6 -0.7 NA NA 1.3 -0.6 NA 1.3 0 -0.6 NA 0.2</td> <td>3. -0. -0. N. 0. -1. N.</td>	1.9 2 -1.0 -1.0 -1.0 -1.0 -0.6 -0.7 -0.8 -0.7 -0.2 2.5 2 2.5 2 1.3 1 -0.7 -0.7 -	2.1 2.1 1.1 -1.1 0.7 -0.1 0.8 -0.1 0.2 -0.3 2.3 2.3 1.4 1.4 0.8 -0.1 0.7 -0.3 0.3 0.3 0.3 0.3 0.4 1.4 1.4 1.4 1.4 1.4 0.3 0.3 0.3 0.3 0.3 0.3 1 Requirre e or other r t tition Rec identified	1 1. 1 1. 1 -1. 7 -0. 8 -0. 8 -0. 3 N/ 4 1. 8 -0. 3 0. 4 1. 1 -1. 7 -0. 9 -0. 3 N/ 4 1. -0. 3 0. -0. -0. -0. -0. -0. -0. -0. -	7 2.9 0 NA4 6 NA 7 NA 1 -0.9 3 1.6 6 -0.9 6 NA 2 1.5 7 NA 2 1.5 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	1.7 -1.0 -0.6 -0.7 NA NA 1.3 -0.6 NA 1.3 0 -0.6 NA 0.2	3. -0. -0. N. 0. -1. N.
Basic Score Severe Vertical Irregularity, V_{LT} Vioderate Vertical Irregularity, V_{LT} Plan Irregularity, P_{LT} Pre-Code Post-Benchmark Soll Type A or B Soll Type E (1-3 storles) Soll Type E (-3 storles) Vinimum Score, S_{MW} FINAL LEVEL 1 SCORE, $S_{LT} \ge S_{MW}$ EXTENT OF REVIEW Exterior Or None Utable Drawing Reviewd: Utable Orawing Reviewd: Yes Soil Type Source: Soin Type Source: Scole Source:		W1 W 5.1 4 -1.4 - -0.9 - -1.4 - -0.3 - 1.4 2 0.7 1 -1.2 - -1.8 - 1.6 1 D Aertal - No -	/1A W2 4.5 3.8 1.4 -1.4 0.9 -0.9 1.3 -1.2 0.5 -0.6 2.0 2.5 1.2 1.8 1.3 -1.4 1.6 -1.3 1.2 0.9	RE, M S1 S1 2.7 -1.2 -0.8 -1.0 -0.0 -0.3 1.5 1.1 -0.9 -0.9 -0.6 -0.9 -0.6 R HAZ/ Margin and and a state of the state o	ODIFIEF S2 S2 <t< td=""><td>IS, AND F 33 S4 3.5 2.5 1.4 -1.1 0.9 -0.7 1.2 -0.9 0.2 -0.3 0.8 2.1 0.8 2.1 0.8 2.1 0.8 0.6 1.0 -0.9 0.8 0.6 0.8 0.7 0.8 0</td><td>NAL LE S5 2.7 -1.2 -0.7 -0.9 -0.3 NA 1.6 -0.9 -1.0 0.6</td><td>VEL 1 C1 2.1 -1.1 -0.7 -0.8 0.3 2.0 1.1 -0.7 -0.8 0.3 ed off, if kiding</td><td>SCOR C2 2.5 -1.2 -0.7 -1.0 -0.4 2.3 1.5 -1.0 -1.0 0.3 ACTIO Detaile Pess Pess Detaile Pess Detaile Pess Detaile Pess No, Pess No, Pess No, Pess Pess No, Pess Pess No, Pess Pes</td><td>E, S_{L1} C3 2.0 -1.0 -0.6 -0.8 -0.3 NA 1.3 -0.7 -0.8 0.3 ON REQ odd Struct s, correction of the structure of th</td><td>PC1 F 2.1 -1.1 -0.7 -0.9 -0.2 -2.2 2.1 1.6 -0.8 -0.8 WIRED -0.8 bttracted by with bulk -0.8 bttracted by with bulk -0.8 bttracted by with bulk -0.8 bttractural by with bulk -0.8 bttractural by with bulk -0.8</td><td>1.9 2 1.0 -1.0 -1.0 -0.6 -(.0.8) -(.0.8) -(.0.8) -0.2 -(.2.5) 2 -(.2.5) 2 1.3 1 -(.7) -(.0.7) <</td><td>2.1 2.1 2.1 1.1 1.1 1.1 1.7 -0.0 -0.0 0.8 -0.0 -0.0 2.3 2.3 2.3 1.4 1.4 1.4 0.8 -0.0 -0.0 0.7 -0.1 -0.3 0.3 0.3 0.3</td><td>1 1. 1 1. 1 1. 1 1. 7 -0. 8 -0. 3 N/ 4 1. 8 -0. 3 0.</td><td>7 2.9 0 NA4 6 NA 7 NA 1 -0.9 3 1.6 6 -0.9 6 NA 2 1.5 7 NA 2 1.5 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9</td><td>1.7 -1.0 -0.6 -0.7 NA NA 1.3 -0.6 NA 1.3 0 -0.6 NA 0.2</td><td>3. -0. -0. N. 0. -1. N.</td></t<>	IS, AND F 33 S4 3.5 2.5 1.4 -1.1 0.9 -0.7 1.2 -0.9 0.2 -0.3 0.8 2.1 0.8 2.1 0.8 2.1 0.8 0.6 1.0 -0.9 0.8 0.6 0.8 0.7 0.8 0	NAL LE S5 2.7 -1.2 -0.7 -0.9 -0.3 NA 1.6 -0.9 -1.0 0.6	VEL 1 C1 2.1 -1.1 -0.7 -0.8 0.3 2.0 1.1 -0.7 -0.8 0.3 ed off, if kiding	SCOR C2 2.5 -1.2 -0.7 -1.0 -0.4 2.3 1.5 -1.0 -1.0 0.3 ACTIO Detaile Pess Pess Detaile Pess Detaile Pess Detaile Pess No, Pess No, Pess No, Pess Pess No, Pess Pess No, Pess Pes	E, S _{L1} C3 2.0 -1.0 -0.6 -0.8 -0.3 NA 1.3 -0.7 -0.8 0.3 ON REQ odd Struct s, correction of the structure of th	PC1 F 2.1 -1.1 -0.7 -0.9 -0.2 -2.2 2.1 1.6 -0.8 -0.8 WIRED -0.8 bttracted by with bulk -0.8 bttracted by with bulk -0.8 bttracted by with bulk -0.8 bttractural by with bulk -0.8 bttractural by with bulk -0.8	1.9 2 1.0 -1.0 -1.0 -0.6 -(.0.8) -(.0.8) -(.0.8) -0.2 -(.2.5) 2 -(.2.5) 2 1.3 1 -(.7) -(.0.7) <	2.1 2.1 2.1 1.1 1.1 1.1 1.7 -0.0 -0.0 0.8 -0.0 -0.0 2.3 2.3 2.3 1.4 1.4 1.4 0.8 -0.0 -0.0 0.7 -0.1 -0.3 0.3 0.3 0.3	1 1. 1 1. 1 1. 1 1. 7 -0. 8 -0. 3 N/ 4 1. 8 -0. 3 0.	7 2.9 0 NA4 6 NA 7 NA 1 -0.9 3 1.6 6 -0.9 6 NA 2 1.5 7 NA 2 1.5 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	1.7 -1.0 -0.6 -0.7 NA NA 1.3 -0.6 NA 1.3 0 -0.6 NA 0.2	3. -0. -0. N. 0. -1. N.
Basic Score Severe Vertical Irregularity, V_{LT} Vioderate Vertical Irregularity, V_{LT} Plan Irregularity, P_{LT} Pre-Code Past-Benchmark Soll Type A or B Soll Type E (1-3 storles) Soll Type E (-3 storles) Vinimum Score, S_{MW} FINAL LEVEL 1 SCORE, $S_{LT} \ge S_{MW}$ EXTENT OF REVIEW Solerior: Danial All Sides nterfor: None Orawing Reviewd: Yes Soil Type Source: Source:		W1 W 5.1 4 -1.4 - -0.9 4 -1.4 - -0.3 - -1.4 - -0.3 - -1.4 - -0.3 - -1.4 - -0.3 - -1.4 - -0.3 - -1.4 - -0.7 1 -1.2 - -1.8 - -1.8 - -1.8 - -1.4 - -1.8	/1A W2 4.5 3.8 1.4 -1.4 0.9 -0.9 1.3 -1.2 0.5 -0.6 2.0 2.5 1.2 1.8 1.3 -1.4 1.6 -1.3 1.2 0.9	RE, M M 2.7 -1.2 -0.8 -1.0 -0.3 1.5 1.1 -0.9 -0.9 0.6 R HAZ/2 Market Rais ural Eva mdlng p) ing hazi logic himiticant	ODIFIEF S2 S2 <t< td=""><td>IS, AND F 33 S4 3.5 2.5 1.4 -1.1 0.9 -0.7 1.2 -0.9 0.2 -0.3 0.8 2.1 0.6 1.5 1.0 -0.9 VA -0.9 0.8 0.6 unless 0.6</td><td>NAL LE S5 2.7 -1.2 -0.7 -0.9 -0.3 NA 1.6 -0.9 -1.0 0.6</td><td>VEL 1 C1 2.1 -1.1 -0.7 -0.8 0.3 2.0 1.1 -0.7 -0.8 0.3 ed off, if kiding</td><td>SCOR C2 2.5 -1.2 -0.7 -1.0 -0.4 2.3 1.5 -1.0 -1.0 0.3 ACTIO Detaile Pess Pess Detaile Pess Pess Detaile Pess Pe</td><td>E, S_{L1} C3 2.0 -1.0 -0.6 -0.8 -0.3 NA 1.3 -0.7 -0.8 0.3 NA 1.3 -0.7 -0.8 0.3 NA 0.3 NA 1.3 -0.7 -0.8 0.3 NA 1.3 -0.7 -0.8 0.3 NA 1.3 -0.7 -0.8 -0.</td><td>PC1 F 2.1 -1.1 -0.7 -0.9 -0.2 2.1 1.6 -0.8 -0.8 -0.3 VUIRED -0.3 VUIRED -0.3 structural Ev -0.3 -0.1 -0.3</td><td>1.9 2 1.0 -1 1.0.6 -(0.8 -(0.2 -(2.5 2 1.3 1 0.7 -(0.2 0 valuation </td><td>2.1 2.1 1.1 -1.1 0.7 -0.1 0.8 -0.1 0.2 -0.3 2.3 2.3 1.4 1.4 0.8 -0.1 0.7 -0.3 0.3 0.3 0.3 0.3 0.4 1.4 1.4 1.4 1.4 1.4 0.3 0.3 0.3 0.3 0.3 0.3 1 Requirre e or other r t tition Rec identified </td><td>1 1. 1 -1. 7 -0. 8 -0. 2 -0. 3 N. 4 1. 8 -0. 3 0. 3 0. 3 0. cd? r r build commet . i, shou t</td><td>7 2.9 0 NA4 6 NA 7 NA 1 -0.9 3 1.6 6 -0.9 6 NA 2 1.5 7 NA 2 1.5 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9</td><td>1.7 -1.0 -0.6 -0.7 NA NA 1.3 -0.6 NA 1.3 0 -0.6 NA 0.2</td><td>3.3 -0. -0. N/ N/ 0.1 -1. N/</td></t<>	IS, AND F 33 S4 3.5 2.5 1.4 -1.1 0.9 -0.7 1.2 -0.9 0.2 -0.3 0.8 2.1 0.6 1.5 1.0 -0.9 VA -0.9 0.8 0.6 unless 0.6	NAL LE S5 2.7 -1.2 -0.7 -0.9 -0.3 NA 1.6 -0.9 -1.0 0.6	VEL 1 C1 2.1 -1.1 -0.7 -0.8 0.3 2.0 1.1 -0.7 -0.8 0.3 ed off, if kiding	SCOR C2 2.5 -1.2 -0.7 -1.0 -0.4 2.3 1.5 -1.0 -1.0 0.3 ACTIO Detaile Pess Pess Detaile Pess Pess Detaile Pess Pe	E, S _{L1} C3 2.0 -1.0 -0.6 -0.8 -0.3 NA 1.3 -0.7 -0.8 0.3 NA 1.3 -0.7 -0.8 0.3 NA 0.3 NA 1.3 -0.7 -0.8 0.3 NA 1.3 -0.7 -0.8 0.3 NA 1.3 -0.7 -0.8 -0.	PC1 F 2.1 -1.1 -0.7 -0.9 -0.2 2.1 1.6 -0.8 -0.8 -0.3 VUIRED -0.3 VUIRED -0.3 structural Ev -0.3 -0.1 -0.3	1.9 2 1.0 -1 1.0.6 -(0.8 -(0.2 -(2.5 2 1.3 1 0.7 -(0.2 0 valuation	2.1 2.1 1.1 -1.1 0.7 -0.1 0.8 -0.1 0.2 -0.3 2.3 2.3 1.4 1.4 0.8 -0.1 0.7 -0.3 0.3 0.3 0.3 0.3 0.4 1.4 1.4 1.4 1.4 1.4 0.3 0.3 0.3 0.3 0.3 0.3 1 Requirre e or other r t tition Rec identified	1 1. 1 -1. 7 -0. 8 -0. 2 -0. 3 N. 4 1. 8 -0. 3 0. 3 0. 3 0. cd? r r build commet . i, shou t	7 2.9 0 NA4 6 NA 7 NA 1 -0.9 3 1.6 6 -0.9 6 NA 2 1.5 7 NA 2 1.5 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	1.7 -1.0 -0.6 -0.7 NA NA 1.3 -0.6 NA 1.3 0 -0.6 NA 0.2	3.3 -0. -0. N/ N/ 0.1 -1. N/

Rapid Visual Screening of Buildings for Potential Seismic Hazards

LEVEL 2 (Optional)

Building Nai			Final	Level 1 Score: S.,	reduate student with backgrou				ugn of buildings. (Do:	not co	nsider S.,
Screener			Level 1 Irregula	arity Modifiers: Mad	cal International International			Nan	Irregularity, Pre =	101.00	
Date/ Time			ADJUST	ED BASELINE S'-	(Survey and the Dury and			101	Internation, P/4 -		
au-1150-11-7		S TO ADD TO ADJU		ANDE:	GO - VO - FOU-						
					odifier; otherwise cros	a out the most	(Her)	_		Yes	Subtot
Topic							illier)	_		-1.4	SUDIOL
Vertical	Sloping Site				one side of the building						1
Irregularity,	Weak				rom one side of the build	ling to the othe	r.			-0.4	
V _{L2}	and/or Soft			cripple wall is visible						-0.7	Į į
•13	Story	W1 House over Gara	age : Underneath a	n occupled story, ther	e is a garage opening w	thout a steel n	noment	fra	me, and there is		I
	(Circle one	less than 8 ft of wall	on the same line (i	or multiple occupied f	loors above, use 16 ft of	wall minimum)			-1.4	
	maximum)	W1A Building Open	Front : There are o	penings at the ground	story (such as for parkl	no) over at lea	st 50 %	of	the length of the		1
		building.								-1.4	
								_		1.4	1
		Non-W1 Building : Le	ength of lateral sys	tem at any story is les	is than 50 % of that at st	ory above or h	elght o	fan	y story is more		I
	1	than 2.0 times the he	eight of the story ab	ove.						-1.1	
		Non-W1 Building : Le	ength of lateral sys	tem at any story is be	tween 50 % and 75 % of	f that at story a	bove o	r he	eight of any story is		1
		between 1.3 and 2.0				-				-0.6	
	Sethack		-		outboard of those at the	steer helew ee	urles i	_	dashenen is		{
	00.000	venical elements of	the lateral system of	at an upper story are	bulboard of those at the	story below ca	using u	ne	aaphragm to		
	1	cantilever at the offse	et.							-1.2	
	1	Vertical elements of	the lateral system a	at upper stories are in	board of those at lower	storles.				-0.6	
		There is an in-plane	offset of the lateral	elements that is grea	ter than the length of the	e elements.				-0.4	1
	Short	C1,C2,C3,PC1,PC2,	RM1,RM2 : At leas	t 20 % of columns (or	plers) along a column li	ne in the latera	al syste	mh	ave height/depth		
	Column/ Pler	ratios less than 50 %	of the nominal hel	ght/depth ratio at that	level.					-0.5	
	Pier				ldth) is less than one ha	If of the depth (of the s	nar	drel or there are	-	1
						of the deputy		Pue	area, or more are	-0.5	
		Infill walls or adjacen	t floors that shorter	n the column.							1
	Split Level	There is a split level								-0.6	
	Other				bylously affects the build				æ.	-1.2	
	Irregularity				t may affect the building					-0.6	(Cap at -1
Plan	Torsional Irre	agularity: Lateral syste	em does not appea	r relatively well distrib	uted in plan in either or t	ooth directions.	. (Do no	ot In	clude the W1A	-1	
Irregularity,	open front In	regularity listed above))							· ·	1
Pta	Non-parallel	System: There are on	ne or more maior ve	ertical elements of the	lateral system that are i	not orthogonal	to each	1 ot	her.	-0.5	1
-12					the overall plan dimensi					-0.5	i –
					er 50 % of the total diap			vel.		-0.3	í –
		Ings Out-of-plane Offs								-0.4	P
					sly affects the building's	seismic perfor	mance			-1	
Redundancy					uilding in each direction					0.4	
Pounding		eparated from an adja			n vertically within 2 fee	t			(Cap total	-1.2	t
Founding					more stories tailer than t			-		-1.2	
	less than 1.5	5% of the height of the	e shorter of the			ne other.		_	pounding modifiers		
		adjacent structure and	d:	The building is at the	end of the block.				at -0.9)	-0.6	1
S2 Building		geometry is visible.								-1.2	
C1 Building	Flat plate se	rves as the beam in th	ne moment frame.							-0.5	
PC1/ RM1	There are ro	of-to-wall ties that are	visible or known fr	om drawings that do r	ot rely on cross-grain be	ending. (Do not	t combi	ne	with post-		1
Building	benchmark o	or retrofit modifier)								0.4	
			ull height interior w	alls (rather than an In	erior space with few wal	le cuch ac in a	wareh	0.00	e)	0,4	1
URM	Gable walls		on neight interfor w		citor opace maillen ma		nelsi	000	=1	-0.5	1
MH	There is a su	pplemental selsmic b	racing system prov	ided between the car	rlage and the ground.			_		1.2	1
Retrofit	Comprehens	sive seismic retrofit is	visible or known fro							1.4	
FINAL LEVE	L 2 SCORE,	S ₁₂ = (S' + V ₁₂ + P ₁₂	+ M) ≥ S _{MN} :						(Transfer	to Le	vel 1 For
There is obse	ervable damag	e or deterioration or a	another condition th	at negatively affects t	he building's seismic pe	rformance: 🗆	Yes 🗆	No			
f yes, describ	be the condition	on In the comment boy	x below and Indicat	e on the Level 1 form	that detailed evaluation	is required ind	epende	ent (of the building's scor	e.	
OBSERVAR	E NONSTRI	ICTURAL HAZARDS				-			-		
Location		Check "Yes" or "No"	"				Yes /	le l	Comn	aanta	
Exterior				or unbraced unreinfor	ced masonry chimney.		1621	10	Com	1011LO	
Exterior		vy cladding or heavy v		or enorable enternor	ceannaconny criminey.			-			
				walkways that appe	ars Inadequately support	ed		-			
		unreinforced masonry						-			
		gn posted on the build						-			
					ed URM parapet or chim	ney.	+				
		ved exterior nonstructu			1						
nterior		low clay tile or brick p		Ir or exit corridor.							
		ved Interior nonstructu									
				ate box and transfer t	o Level 1 form consilusio	ns)		-			
Estimated N				ccupant life safety.	> Detailed Nonstru		on reco	omo	nended.		
	ential ponstru				and the second of the second of the				and the second se		
🗆 Pot				coupant life safety	> But no Detailed	Nonstructural P	Evaluat	lon	required		
Pot Nor	nstructural haz	zards identified with sig uctural hazard threat b	gnificant threat to o		> But no Detailed I > No Detailed Non						

LEVEL 1 Rapid Visual Screening of Buildings for Potential Seismic Hazards (Adopted from FEMA P-154 Data Collection Form) LOW Seismicity PHOTOGRAPH Address: City: Other ID: Use: Building Name: Latitude: S.: Longitude: Date/Time: Screener: ... Year Bullt: 🗆 Est Total Floor Area (sft): ... Code Year: ... None Yes, Years Bullt.... Additions: Assembly Commercial Emergency Services Historic Occupancy: 🗆 Industrial 🛛 Office Schools Government Utility UWarehouse Residential,#Units: Shelter C: Soft Rock Soll Type: A: Hard Rock E E: Soft Soll B: Normal Rock D: Hard Soll / DNK E F: Poor Soll SKETCH _____ Geohazarda: Liquefaction: Yes, No, DNK Landslide: 🛛 Yes, 🗆 No, 🗆 DNK Surface Rupture: Yes, No, DNK Pounding Failing Hazards from Taller Adjacent Building Adjacency: irregularities: Severe Vertical Irregularity Plan Irregularity Moderate Vertical Irregularity Unbraced Chimneys Heavy Cladding or Heavy Veneer Exterior Failing Parapets Appendages Hazards: Other: COMMENTS -----. Additional sketches or comments on separate page BASIC SCORE, MODIFIERS, AND FINAL LEVEL 1 SCORE, SLI DNK W1 W1A W2 S1 S2 S3 S4 S5 C1 C2 C3 PC1 PC2 RM1 RM2 URM MH BN1 BN2 6.2 5.9 5.7 3.8 3.9 4.4 4.1 4.5 3.3 4.2 3.5 3.8 3.3 3.7 3.7 3.2 4.6 3.2 3.9 BUILDING TYPE Basic Score -1.5 -1.5 -1.5 -1.4 -1.3 -1.6 -1.2 -1.3 -1.3 -1.2 -1.1 -1.3 -1.1 -1.1 -1.1 -1.2 NA -1.2 -1.0 Severe Vertical Irregularity, VLT -1.0 -0.9 -0.9 -0.9 -0.8 -1.0 -0.7 -0.7 -0.7 -0.7 -0.6 -0.8 -0.6 -0.6 -0.6 -0.7 NA -0.7 -0.7 Moderate Vertical Irregularity, VL1 Plan Irregularity, PL1 -1.6 -1.4 -1.3 -1.2 -1.1 -1.4 -1.0 -1.1 -1.0 -1.0 -0.9 -1.2 -0.9 -0.9 -0.9 -1.0 NA -1.0 -1.1 Pre-Code Post-Benchmark 2.2 2.4 2.5 2.0 1.6 1.4 2.1 NA 2.3 2.2 NA 1.9 2.6 2.3 2.3 NA 1.8 NA NA 0.9 1.1 1.3 1.0 1.2 0.8 1.3 1.4 0.9 1.2 1.2 1.3 1.3 1.4 1.4 1.3 0.9 1.3 0.5 -1.2 -1.7 -2.3 -1.2 -1.4 -1.0 -1.7 -2.0 -1.4 -2.0 -1.6 -1.7 -1.7 -1.5 -2.1 -1.5 -0.6 Soll Type A or B Soll Type E (1-3 stories) -1.7 -2.0 -2.2 -1.2 -1.4 NA -1.7 -1.9 -1.3 -1.9 -1.6 NA -1.6 -1.6 -1.7 -1.4 NA NA NA Soll Type E (>3 storles) Minimum Score, S MN 2.7 2.1 1.5 0.9 0.8 1.2 0.8 0.9 0.5 0.6 0.5 0.6 0.4 0.6 0.5 0.4 2.5 0.2 0.9 FINAL LEVEL 1 SCORE, $S_{L1} \ge S_{MN}$ EXTENT OF REVIEW OTHER HAZARDS ACTION REQUIRED Exterior: 🗆 Partial 🗆 All Sides 🛛 Aerial Are There Hazards That Trigger A Detailed Detailed Structural Evaluation Required? None Visible Interior: Entered Structural Evaluation? Yes, unknown building type or other building Devending potential (Unless S1, > Cut-off, If Devenue and Pounding potential (Unless S1, > Cut-off, If Devenue and Pounding Pound Drawing Reviewd: Yes No Soll Type Source:..... Yes, other hazards present known) Detailed Nonstructural Evaluation Recommended? Geohazards Source:.... Falling hazards from taller adjacent building Contact Person:... Yes, nonstructural hazard identified, should be evaluated. LEVEL 2 SCREENING PERFORMED? Geologic hazards or Soll Type F No, nonstructural hazards exist that may require mitigation, but

Significant damage/deterioration to the

Where Information cannot be verified, screener shall note the following: EST = Estimated or unreliable data (OR) DNK = Do Not Know

No structural system

a detailed evaluation is not necessary

No, no nonstructural hazards identified

Yes, Final Level 2 Score, S₁₂:
 No

Yes

Nonstructural Hazards?

niding Nar		o be performed by a civil or a	ructural engineering Frinal	Level 1 Score: S.,	raduate atudent with backgrou	and in setures evaluation	tion or d		not on	nsider S		
reener			Level 1 Irregula	arity Modifiers: Verti	cal Irregularity V.		Pla	in Irregularity, P., -	not co	naider S		
ite/ Time			ADJUST	TED BASELINE S'	(S., - V., - P.,) =			in incogniting, the				
RUCTUR/	L MODIFIER	S TO ADD TO ADJUST										
Topic		Statement	(If statement is	true, circle "Yes" mo	odifier; otherwise cros	s out the modif	ier)		Yes	Subto		
Vertical	Sloping Site	W1 Building : There is	at least a full sto	ry grade change from	one side of the building	to the other.			-1.5			
regularity,					om one side of the build	ling to the other.			-0.4			
V _{L2}	Weak and/or Soft	W1 Building Cripple W							-0.7			
	Story	-			e is a garage opening w		menti	ame, and there is				
	(Circle one maximum)				oors above, use 16 ft of				-1.5			
	meximumy	W1A Building Open Fr	ont : There are o	penings at the ground	story (such as for park)	ng) over at least	50 % 0	r the length of the				
		building.							-1.5			
		-			s than 50 % of that at st	ory above or hel	ght of a	iny story is more				
		than 2.0 times the help	· ·						-1.3			
		Non-W1 Building : Len	gth of lateral sys	tem at any story is bei	tween 50 % and 75 % of	f that at story ab	we or t	height of any story is				
	Contract.	between 1.3 and 2.0 ti							-0.6			
	Setback	Vertical elements of th	e lateral system	at an upper story are o	outboard of those at the	story below caus	ing the	diaphragm to				
		cantilever at the offset. • Vertical elements of the lateral system at upper stories are inboard of those at lower stories. • There is an in-plane offset of the lateral elements that is greater than the length of the elements. •										
	Short				ter than the length of the plers) along a column li		system	hous balabtidenth	-0.4			
	Column/			-		ne in the lateral	system	nave neighvoeput	-0.6			
	Pler	ratios less than 50 % of			idth) is less than one ha	f of the depth of	the cor	and and the second				
					outine less than one ha	i or the deput of	uie apa	anurei, or there are	-0.6			
	Sollt Level	Infill walls or adjacent f There is a split level at							-0.6			
	Other				bylously affects the bulk	linn's seismin ne	doma	009		V12 -		
	Irregularity				t may affect the building				-0.6	(Cap at -		
Plan	Torsional Irre	gularity: Lateral system	i does not appea	r relatively well distrib.	uted in plan in either or t	oth directions. (Do not	Include the W1A	-1.1			
regularity,	open front Irr	egularity listed above)							-1.1			
Pu	Non-parallel	System: There are one	or more major v	ertical elements of the	lateral system that are r	not orthogonal to	each o	other.	-0.6			
					the overall plan dimensi				-0.6			
					er 50 % of the total diap	hragm width at ti	iat leve	4.	-0.4	P., -		
		ings Out-of-plane Offse			the columns in plan. Ily affects the building's	selsmic perform	2000		-1.1	Cap at -		
dundancy					uliding in each direction		anve.		0.4			
Pounding		parated from an adjace			n vertically within 2 fee			(Cap total	-1.3			
-	less than 1.5	% of the height of the s	shorter of the	One building is 2 or r	more stories tailer than t	he other.		pounding modifiers	-1.3			
		adjacent structure and:		The building is at the	end of the block.			at -0.9)	-0.6			
Building		eometry is visible.		-				ur (0.2)	-1.3			
Building	Flat plate ser	ves as the beam in the	moment frame.						-0.6			
21/ RM1	There are ro	of-to-wall ties that are vi	sible or known fr	om drawings that do n	ot rely on cross-grain be	ending. (Do not o	ombine	e with post-				
ilding	benchmark o	r retrofit modifier)							0.4			
	The building	has closely spaced, full	height Interior w	alls (rather than an Int	erior space with few wai	ls such as in a w	arehou	se)	0.4			
RM H	Gable walls a	are present. Ipplemental selsmic bra	dina system and	died between the carr	bourse and the around				-0.6			
trofft		ive seismic retrofit is vi			lage and the ground.				1.6	м-		
NAL LEVE		SL2 = (S' + VL2 + PL2 +		,				(Transfer		vel 1 Fo		
				at negatively affects t	he building's seismic pe	rformance: 🗆 Y	es 🗆 N	0				
es, descrit	be the condition	in In the comment box t	elow and Indicat	te on the Level 1 form	that detailed evaluation	is required indep	endent	t of the building's scor	e.			
BSERVAB	E NONSTRU	CTURAL HAZARDS										
cation		Check "Yes" or "No")				١	/es No	Comn	nents			
terlor		inbraced unreinforced n vy cladding or heavy ve		or unbraced unreinford	ced masonry chimney.		-					
				n walkways that appea	ars inadequately support	ed.	+	1				
		nreinforced masonry a						1				
		gn posted on the buildin										
				o URM wall or unbrace	ed URM parapet or chim	ney.	+					
order		ed exterior nonstructura llow clay tile or brick pa		air or exit corridor			+					
erlor		ed Interior nonstructura		an of east collidor.			+					
timated N			-	ate box and transfer to	o Level 1 form conslusio	ns)						
		ctural hazards with sign			-> Detailed Nonstru		recon	nmended.				
	structural has	ards identified with slor	ficant threat to o	occupant life safety.	-> But no Detailed I	Nonstructural Ev	aluation	n regulred.				
		ctural hazard threat to			-> No Detailed Non							

References

- 1) FEMA P-154, Rapid visual screening of buildings for potential seismic hazards: a handbook. Washington DC: Federal Emergency Management Agency; 2015.
- FEMA P-155 Report, Rapid Visual screening of Buildings for Potential Seismic Hazards: Supporting Documentation (FEMA, 2015), 3rd Edition", Washington DC: Federal Emergency Management Agency; 2015.
- UN-Habitat. (n.d.). Guideline for rapid visual screening of buildings for potential seismic hazards. Available at: https://unhabitat.org/sites/default/files/2020/01/31_guideline-for-rapid-visual-screeningof-buildings-for-potential-seismic-hazards.pdf