

# Seismic Assessment of Large Number of Buildings Based on Visual Inspection

Course No: S04-022

Credit: 4 PDH

Ibrahim M. Metwally, Ph.D., P.E.



Continuing Education and Development, Inc.

P: (877) 322-5800 info@cedengineering.com

# **Table of Contents**

1.	Introducti	ion & Understanding Rapid Visual Screening Procedure	1
2.	Advantag	es and Limitations of the RVS Method	8
	2.1	Advantages of RVS	8
	2.2	Limitations of RVS	8
3.	Key Playe	rs in an RVS Program	g
4.	Planning a	and Implementing an RVS Program	10
5.		the RVS Program Manager and the Supervising Engineer	
	5.1	Deciding Which Buildings to Screen	
	5.2	Determining Screeners	14
6.	Instructio	ns of Filling Data Collection Form level I	
7.		ns of Filling Data Collection Form Level II (Optional)	
8.		of Rapid Visual Screening Programs	
9.		( A: DATA COLLECTION FORMS	
Figu	ıre 2. RVS l	Level 1 Data Collection Form for High seismicity region	
_	•	United States. A different RVS Data Collection Form has been developed for	
eac	h of these	regions	5
		d visual screening implementation sequence	
Figu	ıre 5. Build	ing with Potential Landslide Hazard ( FEMA 154)	20
		ration Gap Calculation Examples (FEMA 154)	
		matic illustration of floors not aligning vertically	
		matic illustration of buildings of different height	
		matic illustration of end buildings	
Figu	ıre 10. Exte	erior view of 3703 Roxbury Street	39
Figu	ire 11. Clos	se-up view of 3703 Roxbury Street exterior showing perimeter braced steel	
frar	ning		40
Figu	ıre 12. Con	npleted Data Collection Form for Example 1, 3703 Roxbury Street	42
Fiøi	ire 13 Exte	erior view of 3711 Roxbury Street	43

Figure 14. Close-up view of 3711 Roxbury Street building showing exterior infill frame	
construction	45
Figure 15. Completed form for 3711 Roxbury Street	47
Figure 16. Exterior view of 5020 Ebony Drive	48
Figure 17. Completed Data Collection form for 5020 Ebony Drive	51
Figure 18. Exterior view of modern reinforced brick masonry building at	52
Figure 19. Completed Level 1 Data Collection Form for the main building at Roosevelt	
Elementary School	55
Figure 20. Completed Level 2 Data Collection Form for the main building at Roosevelt	
Elementary School	56
Figure 21. Photo of exterior of Washington Middle School	57
Figure 22. Completed Level 1 Data Collection Form for the main building (original plus	
addition) at Washington Middle School	60
Figure 23. Completed Level 2 Data Collection Form for the main building (original plus	
addition) at Washington Middle School	61
List of Tables	
Table 1. Comparison of Prominent Seismic Evaluation Methods in the United States	7
Table 2. Key Players in an RVS Program	10
Table 3. Seismicity Region Determination from MCER Spectral Acceleration Response	
(ASCE/SEI 41-13)	15
Table 4. Occupancy Classes and Occupancy Designations	18
Table 5. Soil Type Definitions (ASCE/SEI 7-10)	19
Table 6. Vertical Irregularity Reference Guide (FEMA 154)	25
Table 7. Plan Irregularity Reference Guide (FEMA 154)	26
Table 8. Matrix of Basic scores and Score Modifiers	
Table 9. FEMA P-154 Building Types	31
Table 10. "Structural Modifiers to Add to Adjusted Baseline Score" Portion of Level 2 Data	
Collection Form Level 2 Form	36
Table 11. "Observable Nonstructural Hazards" Portion of Level 2 Data Collection Form	37

# 1. Introduction & Understanding Rapid Visual Screening Procedure

The FEMA P-154: "Report, Rapid Visual Screening of Buildings for Potential Seismic Hazards: A Handbook, 3<sup>rd</sup> 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 score is calculated that provides an indication of the expected seismic performance of the building.

							f Build on For		for	Potent	ial Se	eismic	Haza	ards						HIGI	H Sei	Leve	
$\overline{}$												Add											
ı												Add	ress:							E			
l												L	<del>.</del>							ip:			
l												Oth	er Ident	ifiers:									
l														me: _									
ı												Use	_										
ı												Lati	tude: _					Longitu	de:				
ı						PHOT	OGRAP	н				Ss:						S <sub>1</sub> :					
l												Scre	ener(s)						ate/Time	9:			
l														: Abov		E	Belo	w Grade		Yea Code	r Built: 9 Year:		□ EST
l														Area (se		T Yes Y				Code	e rear.		
l														: Ass				<del>-</del>	ervices	Пн	istoric	□ Shell	
l												000	upancy		etrial						overnmen		
l														Utili	ty	Wareho	use	Residen	tial, #Un	nite:			
l												Soil	Type:	ПА	ПВ	П	СГ	ID F	JE [	TF D	NK		
$\vdash$			_	_	_				_			┩¯¯¯	Jps.	Hard	Avg	Den	se S	iff S	oft P	oor #	DNK, assi	ите Туре	D.
														Rock	Rock	So		oil S					
												Geo	logic H	azards:	Liquefac	tion: Ye	No/DN	K Lands	lide: Yes	No/DNK	Surf. Ru	ıpt.: Yes/	No/DNK
						+			$\neg$		$\vdash$	Adia	ecency:		□ P	ounding		Falling H	azards fn	om Taller	r Adjacent	t Building	)
-			+	+	+		_		-	_			gularitie		_ N	ertical (ty	na/cauar	iha					
$\vdash$		-	+	+	+	+	-	+	$\dashv$	-		- Inne	gunaritie	rui.		erucai (iy lan (type)		-97					
_		-	-	-	+	-	_	-	-	_		Exte	rior Fal	llina	Пυ	nbraced	Chimney	rs .	□ Hea	ovy Clad	ding or H	eavy Ver	neer
													ards:			arapets				endages			
l																ther:				-			
												CO	MMENT	8:	_								
			+	+	+		_	-	-			_											
L		-	-	-	+-	+		-	-			_											
					$\top$																		
$\vdash$			+	+	+	+	_	+	$\rightarrow$			_											
<u> </u>		-	+	+	+	+	-	-	-	-		_											
												_											
l						0.11	ETCH						A station	al eksist		umantr :		do esse					
⊢						ON		ASIC	sco	RE. MO	DIEIE			al sketch									
FEI	IA BU	ILDIN	G TYP	E		Do Not	T W1	WIA	W2		S2	S3	S4	S5	C1	C2	C3	PC1	PC2	RM1	RM2	URM	MH
			• • • • • • • • • • • • • • • • • • • •	-		Know	""		""	(MRF)	(BR)	(11/1)	(RC SW)	(URM INF)	(MRF)	(8//)	(URM INF)	(TU)		(FD)	(RD)	- Citali	
	ic Sc						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	1.7	1.0	1.5
				arity, V			-1.2	-1.2	-1.2		-1.0	-1.1	-1.0	-0.8	-0.9	-1.0	-0.7	-1.0	-0.9	-0.9	-0.9	-0.7	NA
				ularity	, V <sub>L1</sub>		-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
	Imeg Code	ularity,	Ptr				-1.1 -1.1	-1.0 -1.0	-1.0 -0.9		-0.7 -0.6	-0.9 -0.8	-0.7 -0.6	-0.6	-0.6 -0.4	-0.8 -0.7	-0.5 -0.1	-0.7 -0.5	-0.6 -0.3	-0.7 -0.5	-0.7 -0.5	-0.4 0.0	NA -0.1
		hmark					1.6	-1.0 1.9	-0.9 2.2		-0.6 1.4	1.1	-0.6 1.9	-0.2 NA	1.9	-0.7 2.1	-0.1 NA	-0.5 2.0	-0.3 2.4	-0.5 2.1	-0.5 2.1	0.0 NA	-0.1 1.2
		anman A or B					0.1	0.3	0.5		0.6	0.1	0.6	0.5	0.4	0.5	0.3	0.6	0.4	0.5	0.5	0.3	0.3
			storie	s)			0.2	0.2	0.1		-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
			storie				-0.3	-0.6	-0.9		-0.6	NA	-0.6	-0.4	-0.5	-0.7	-0.3	NA	-0.4	-0.5	-0.6	-0.2	NA
			SMV				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	EVE	L18	COR	E, SL	≥ S <sub>MN</sub>	:																
EX	TEI	IT O	F R	EVIE	w					OTHE	R HAZ	ARDS			ACT	ION R	EQUIF	RED					
Ext	erior:				Partia		All Sides	☐ Aer	ial	Are Ther	e Hazar	ds That 1	rigger /	A	Detail	ed Struc	tural Ev	aluation	Require	d?			
	Interior: None Visible Entered I			Detailed									ng type o		uildina								
Drawings Reviewed: ☐ Yes ☐ No ☐ Pounding Soil Type Source: ☐ No ☐ Pounding						less S <sub>L2</sub>	>	□ Y	es, score	less tha	n cut-off	3 97-0											
				oues-					$\dashv$		ff, if kno				Y	es, other	hazards	present					
		: Haza Perso		ource					$\dashv$	Fallin build		ds from t	aller adja	cent	□ N				e		4-45		
⊢				_					$\dashv$	☐ Geol	ogic haz										<b>ded?</b> (ch ould be ev		
							ORME			☐ Signi			terioratio	on to							ula be ev uire mitig:		
										the s	tructural	system			de	tailed ev	aluation	is not ne	cessary				_
Nor	struc	tural h	azard	5?		Yes			lo							o, no nor	structura	al hazard	s identifi	ed [	DNK		
Г				Where	e infor	mation	cannot b	e verifie	d, scr	eener sha	II note ti	he follow	ing: E	ST = Esti	mated o	r unrelia	ble data	OR I	DNK = D	o Not Ki	now		
Lege	_						sisting fran			einforced co				= Unreinfo									

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

#### Level 2 (Optional) Rapid Visual Screening of Buildings for Potential Seismic Hazards FEMA P-154 Data Collection Form **HIGH Seismicity** 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 buildin Bldg Name Final Level 1 Score: S<sub>L1</sub> = (do not consider S<sub>MN</sub>) Level 1 Irregularity Modifiers: Vertical Irregularity, $V_{L1}$ = ADJUSTED BASELINE SCORE: $S' = (S_{L1} - V_{L1} - P_{L1})$ = Plan Irregularity, P<sub>L1</sub> = STRUCTURAL MODIFIERS TO ADD TO ADJUSTED BASELINE SCORE Subtotals W1 building: There is at least a full story grade change from one side of the building to the other. Irregularity, V<sub>L2</sub> Site Non-W1 building: There is at least a full story grade change from one side of the building to the other Weak W1 building cripple wall: An unbraced cripple wall is visible in the crawl space. W1 house over garage: Underneath an occupied story, there is a garage opening without a steel moment frame, -0.6 and/or Soft Story -1.2 and there is less than 8' of wall on the same line (for multiple occupied floors above, use 16' of wall minim W1A building open front: There are openings at the ground story (such as for parking) over at least 50% of the -1.2 maximuml length of the building. Non-W1 building: Length of lateral system at any story is less than 50% of that at story above or height of any story is more than 2.0 times the height of the story above -0.9 Non-W1 building: Length of lateral system at any story is between 50% and 75% of that at story above or height of any story is between 1.3 and 2.0 times the height of the story above. -0.5 Vertical elements of the lateral system at an upper story are outboard of those at the story below causing the Setback diaphragm to cantilever at the offset. Vertical elements of the lateral system at upper stories are inboard of those at lower stories. -0.5 There is an in-plane offset of the lateral elements that is greater than the length of the elements. C1,C2,C3,PC1,PC2,RM1,RM2: At least 20% of columns (or piers) along a column line in the lateral system have -0.3 Column/ height/depth ratios less than 50% of the nominal height/depth ratio at that level. -0.5 C1,C2,C3,PC1,PC2,RM1,RM2: The column depth (or pier width) is less than one half of the depth of the spandrel, or there are infill walls or adjacent floors that shorten the column. Split Level There is a split level at one of the floor levels or at the roof. Other There is another observable severe vertical irregularity that obviously affects the building's seismic performance. -0.5 -1.0 V12= Irregularity There is another observable moderate vertical irregularity that may affect the building's seismic performance Torsional irregularity: Lateral system does not appear relatively well distributed in plan in either or both directions. (Do not -0.5 (Cap at -1.2) -0.7 Irregularity, PL2 include the W1A open front irregularity listed above.) Non-parallel system: There are one or more major vertical elements of the lateral system that are not orthogonal to each other -0.4 Reentrant comer: Both projections from an interior corner exceed 25% of the overall plan dimension in that direction. Disphragm opening: There is an opening in the diaphragm with a width over 50% of the total diaphragm width at that level -0.4 -0.2 Po= C1. C2 building out-of-plane offset: The exterior beams do not align with the columns in plan er irregularity: There is another observable plan irregularity that obviously affects the building's seismic performance. -0.7 (Cap at -1.1) Redundancy The building has at least two bays of lateral elements on each side of the building in each direction +0.3 Pounding Building is separated from an adjacent structure by less than 1% of the height of the shorter of the building and adjacent structure and: The floors do not align vertically within 2 feet. One building is 2 or more stories taller than the other. The building is at the end of the block. -1.0 -1.0 -0.5 -1.0 modifiers at -1.2) S2 Building "K" bracing geometry is visible. Flat plate serves as the beam in the moment frame. -0.4 PC1/RM1 Bldg There are roof-to-wall ties that are visible or known from drawings that do not rely on cross-grain bending. (Do not combine with +0.3 post-benchmark or retrofit modifie PC1/RM1 Bldg +0.3 The building has closely spaced, full height interior walls (rather than an interior space with few walls such as in a warehouse). -0.4 Gable walls are present There is a supplemental seismic bracing system provided between the carriage and the ground. +1.2 Comprehensive seismic retrofit is visible or known from drawings +1.4 FINAL LEVEL 2 SCORE, $S_{L2} = (S' + V_{L2} + P_{L2} + M) \ge S_{MIN}$ (Transfer to Level 1 form) There is observable damage or deterioration or another condition that negatively affects the building's seismic performance: ☐ Yes on in the comment box below and indicate on the Level 1 form that detailed evaluation is required in OBSERVABLE NONSTRUCTURAL HAZARDS Statement (Check "Yes" or "No") No Comment There is an unbraced unreinforced masonry parapet or unbraced unreinforced masonry chimney. There is a heavy canopy over exit doors or pedestrian walkways that appears 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 are pres There is a taller adjacent building with an unanchored URM wall or unbraced URM parapet or chimney Other observed exterior nonstructural falling hazard There are hollow clay tile or brick partitions at any stair or exit corridor. Other observed interior nonstructural falling hazard: Interior Estimated Non ructural Seismic Performance (Check appropriate box and transfer to Level 1 form conclusions)

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

Potential nonstructural hazards with significant threat to occupant life safety → Detailed Nonstructural Evaluation recommended
 Nonstructural hazards identified with significant threat to occupant life safety → But no Detailed Nonstructural Evaluation required

■ Low or no nonstructural hazard threat to occupant life safety →No Detailed Nonstructural Evaluation required

Comments:

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. 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.

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 risk-targeted 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.

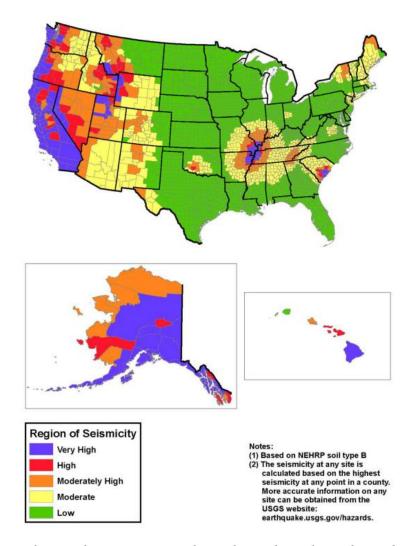


Figure 3.Map showing Very High, High, Moderately High, Moderate, and Low seismicity regions in the United States. A different RVS Data Collection Form has been developed for each of these regions.

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. The Level 2 screening is more detailed than the

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 be a state legislature, city council, private company, school district, or other organization and is known as the "RVS Authority." 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. 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.

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) (<u>Current Course</u>)
- 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 Eva	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 engineers	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) The RVS method is applicable to conventional building types only. 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 (3<sup>rd</sup> 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.

Table 2. Key Players in an RVS Program

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.

# 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.

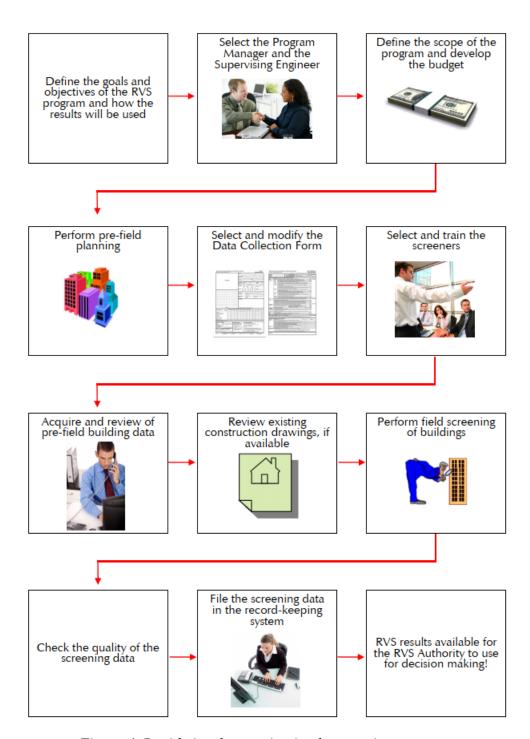


Figure 4. Rapid visual screening implementation sequence

# 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

LEVEL 1

(Adopted from FEMA P-154 Data Collection Form)

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)

Seismicity 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<sub>s</sub>: Spectral Acceleration Response (Short Period) or 0.2 Sec.

S<sub>1</sub>: Spectral Acceleration Response (long Period) or 1 Sec.

# 3) Building Information

-								
<b>#Stories</b> - Above G	Stories - Above Ground: Below Ground: Year Built: 🗆 Est							
Total Floor Area (s	sft):			Code Year:				
Additions:	□ None	☐ Yes, Year	s Built					
Occupancy:	☐ Assembly	□ Commerc	ial	☐ Emergency Services	☐ Historic			
	☐ Industrial	☐ Office		☐ Schools	☐ Government			
	□ Utility	☐ Warehous	se	☐ Residential,#Units:	☐ Shelter			
Soil Type:	☐ A: Hard Ro	ock	□ C:	Soft Rock	☐ E: Soft Soil			
	☐ B: Normal	Rock ☐ D: Hard Soil / DNK		Hard Soil / DNK	☐ F: Poor Soil			
Geohazards:	ւ iq uet	faction:	□ Yes, □ No, □ DNK					
	∟ar	ndslide:	☐ Yes, ☐ No, ☐ DNK					
	Surface R	upture:	☐ Yes, ☐ No, ☐ DNK					
Adjacency:	☐ Pounding		□ Fa	lling Hazards from Taller A	djacent Building			
Irregularities:	☐ Severe Ve	rtical Irregular	ity	☐ Plan Irregularity	,			
	☐ Moderate \	Vertical Irregu	larity					
_ ,	☐ Unbraced	Chimneys	□ Не	avy Cladding or Heavy Ver	neer			
E <sub>x</sub> terior Falling Hazards:	☐ Parapets		☐ Appendages					
	☐ 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 multistoried, 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.

Table 4. Occupancy Classes and Occupancy Designations

	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")

# 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.

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

Soil Type/Site Class	Shear Wave Velocity $^1$ , $V_{ m S}{}^{30}$	Standard Blow Count <sup>1</sup> , N	Undrained Shear Strength of the upper 100ft $^1$ , $s_u$				
A. Hard Rock	$V_{\rm S}^{30} > 5000 \text{ ft/s}$						
B. Rock	$2500 \text{ ft/s} < V_{\rm S}^{30} < 5000 \text{ ft/s}$						
C. Very Dense Soil and Soft Rock	1200 ft/s $< V_s^{30} < 2500$ ft/s	N >50	s <sub>u</sub> >2000 psf				
D. Stiff Soil	$600 \text{ ft/s} < V_s^{30} < 1200 \text{ ft/s}$	15 < N <50	1000psf < s <sub>u</sub> < 2000 psf				
E. Soft Clay Soil	$V_{\rm S}^{30} \le 600 \text{ ft/s}$	N < 15	$s_u < 1000 \text{ psf}$				
	More than 10 feet of soft soil with plasticity index $PI > 20$ , water content $w > 40\%$ , and $s_u < 500$ psf						
F. Poor Soil	<ul> <li>Soils requiring site-specific evaluations.</li> <li>Soils vulnerable to potential failure or collapse under seismic loading, such as liquefiable soils, quick and highly-sensitive clays, collapsible weakly-cemented soils.</li> <li>Thicker than 10 feet of peat or highly organic clay.</li> <li>Very high plasticity clays (25 feet with PI &gt; 75).</li> <li>More than 120 ft of soft or medium stiff clays.</li> </ul>						

<sup>&</sup>lt;sup>1</sup> Average values.

#### 6) Geohazards

Geohazards:	Liquefaction:	☐ Yes, ☐ No, ☐ DNK	
	Landslide:	☐ Yes, ☐ No, ☐ DNK	
	Surface Rupture:	$\square$ Yes, $\square$ No, $\square$ 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.

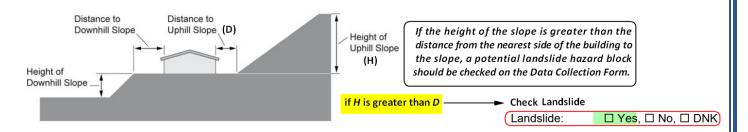


Figure 5. Building with Potential Landslide Hazard (FEMA 154)

# 7) Adjacency

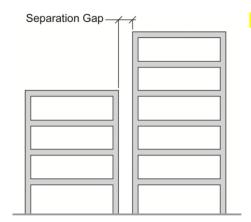
Adjacency:	☐ Pounding	☐ Falling Hazards from Taller Adjacent Building
------------	------------	---

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 ½ "times number of stories in shorter building (in High seismicity region)
- 1" times number of stories in shorter building (in Moderately High seismicity region)
- ½ "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 =  $1 \frac{1}{2}$ " x 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)

#### <u>AND</u>

### 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.

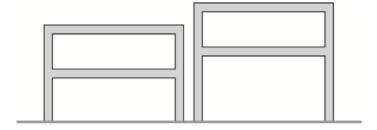


Figure 7. Schematic illustration of floors not aligning vertically.

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.

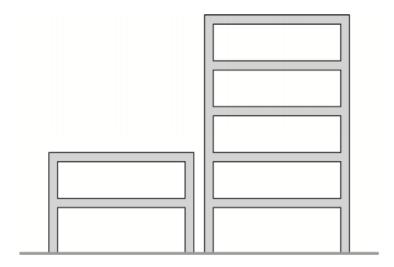


Figure 8. Schematic illustration of buildings of different height

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.

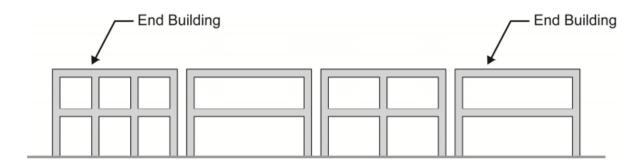
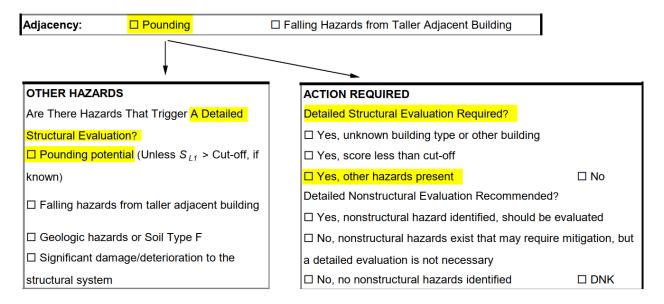
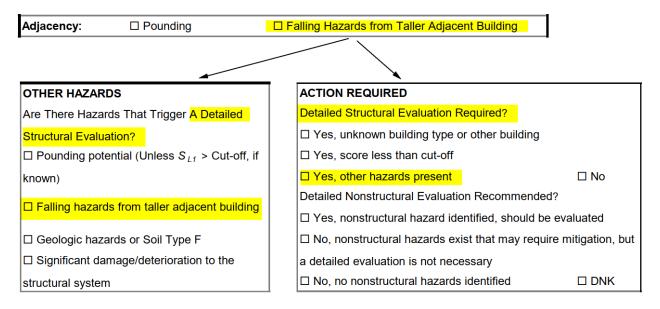


Figure 9. Schematic illustration of end buildings.

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.



Irregularities:	☐ Severe Vertical Irregularity	☐ Plan Irregularity
	☐ Moderate Vertical Irregularity	
Vertical Irregula		evere Vertical Irregularities", "Moderate the tables below for detailed explanations

Table 6. Vertical Irregularity Reference Guide (FEMA 154)

	Vertical Irregularity	Severity	Level 1 Instructions
Sloping Site	(a) (b)	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	(c) (d)	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	(a) (b)	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	(c)	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 7. Plan Irregularity Reference Guide (FEMA 154)

	Plan Irregularity	Level 1 Instructions
Torsion	Solid Wall  (a)  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.

# 9) Exterior Falling Hazards

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

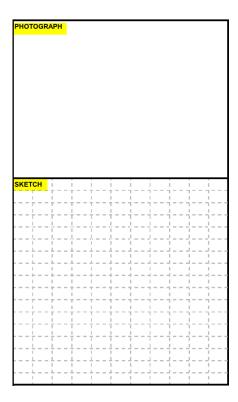
**Exterior Falling Hazards**: Check the relevant exterior falling hazards in the form. "Un-braced chimneys" are common falling hazards for masonry and wood frame building as they are unreinforced and not adequately tied the main building." Parapets", "Heavy cladding or heavy veneer", and "appendages" 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	

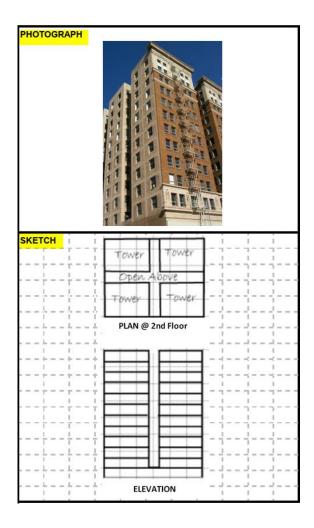
In "Comments" space, write down the detailed explanations of the building describing important structural features.

### 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 of Basic scores and Score Modifiers

	DAUG	1014	10/4 A	14/0	04	00	00	0.4	0.5	04	00	00	D04	DOO	D144	D140	LIDM		DNIA	DAY
BUILDING TYPE	DNK	W1	W1A	W2	S1	S2	S3	S4	S5	C1	C2	C3	PC1	PC2	RM1	RM2	URM	МН	BN1	BN
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 <sub>L1</sub>		-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, P <sub>L1</sub>		-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 <sub>MIN</sub>		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

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<sub>MIN</sub>. Final Level Score, S<sub>L1</sub> must be greater than S<sub>MIN</sub> 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 <sup>2</sup>
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
<b>S</b> 3	Light metal buildings
S4	Steel frame buildings with cast-in-place concrete shear walls
<b>S</b> 5	Steel frame buildings with unreinforced masonry infill walls
C1	Concrete moment-resisting frame buildings
C2	Concrete shear wall buildings
<b>C</b> 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
МН	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.

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

EXTENT O	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 R	eviewd:	☐ Yes	□ No	$\square$ 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 S	SCREENING F	PERFORMED?		☐ Geologic hazards or Soil Type F	☐ No, nonstructural hazards exist that may require mitigatio	n, but		
☐ Yes, Fir	nal Level 2 Sco	ore, S <sub>L2</sub> :	□ No	☐ Significant damage/deterioration to the	a detailed evaluation is not necessary			
Nonstructural Hazards? ☐ Yes ☐ No		structural system	☐ No, no nonstructural hazards identified ☐ DN	١K				
	Whe	ere information	cannot be verified,	screener shall note the following: EST = Estimate	ed or unreliable data (OR) DNK = Do Not Know			

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

(Adopted from FEMA P-154 Data Collection Form)

#### 1) Building Information and Adjusted Base Line Score

#### Rapid Visual Screening of Buildings for Potential Seismic Hazards

LEVEL 2 (Optional)
MODERATE Seismicity

Optional Level 2 Data Collection to be performed by a civil o	r structural engineering professional, architect, or graduate student with background in seisn	nic evaluation or design of buildings.
Building Name :	Final Level 1 Score: S <sub>1.1</sub> =	(Do not consider S <sub>MIN</sub> )
Screener :	Level 1 Irregularity Modifiers: Vertical Irregularity, V <sub>1.1</sub> =	Plan Irregularity, P <sub>1.1</sub> =
Date/ Time ·	ADJUSTED BASELINE S' = (St Vt Pt.) =	

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.

$$S' = S_{L1} - V_{L1} - P_{L1}$$

#### 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, V<sub>L2</sub>
- 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 Form Level 2 Form

Topic		Statement (If statement is	SCORE true, circle "Yes" modifier; otherwise cross out the modifier)		Yes	Subtotal
Vertical		· · · · · · · · · · · · · · · · · · ·	bry grade change from one side of the building to the other.		-1.4	
	Sloping Site		story grade change from one side of the building to the other.		-0.4	
Irregularity,	Weak		d cripple wall is visible in the crawl space.		-0.7	
$V_{L2}$	and/or Soft		in occupied story, there is a garage opening without a steel moment fran	me and there is		
	Story	_		,	-1.4	
	(Circle one maximum)	,	for multiple occupied floors above, use 16 ft of wall minimum)		-1.4	
	maximumij	W1A Building Open Front : There are o	penings at the ground story (such as for parking) over at least 50 % of the	he length of the		
		building.			-1.4	
		Non-W1 Building : Length of lateral sys	tem at any story is less than 50 % of that at story above or height of any	story is more		
		than 2.0 times the height of the story at	bove.		-1.1	
		Non-W1 Building : Length of lateral sys	tem at any story is between 50 % and 75 % of that at story above or hei	ight of any story is		
		between 1.3 and 2.0 times the height of			-0.6	
	Setback		at an upper story are outboard of those at the story below causing the di	ianhragm to		
			at all upper story are outboard or those at the story below causing the di	iapiliagili to	-1.2	
		cantilever at the offset.				
			at upper stories are inboard of those at lower stories.		-0.6 -0.4	
	Short		elements that is greater than the length of the elements.		-0.4	
	Column/	C1,C2,C3,PC1,PC2,RM1,RM2 : At leas	st 20 % of columns (or piers) along a column line in the lateral system ha	ave neight/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 the spand	drel, 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 I	levels or at the roof.		-0.6	
	Other	There is another observable severe ver	tical irregularity that obviously affects the building's seismic performance	е.	-1.2	V <sub>L2</sub> =
	Irregularity	There is another observable moderate	vertical irregularity that may affect the building's seismic performance.			(Cap at -1.
			vertical irregularity that may affect the building's seismic performance.		-0.6	(out at it
Plan	Torsional Irre		r relatively well distributed in plan in either or both directions. (Do not inc	clude the W1A		(
	1			clude the W1A	-0.6	(
rregularity,	open front in	egularity: Lateral system does not appea regularity listed above)				
	open front in Non-parallel	egularity: Lateral system does not appea regularity listed above) System: There are one or more major ve	r relatively well distributed in plan in either or both directions. (Do not inc		-1	
rregularity,	open front irr Non-parallel Reentrant Co	egularity: Lateral system does not appea regularity listed above) System: There are one or more major ve orner: Both projections from an interior co	r relatively well distributed in plan in either or both directions. (Do not inc ertical elements of the lateral system that are not orthogonal to each oth		-0.5	
rregularity,	open front in Non-parallel Reentrant Co Diaphragm C	egularity: Lateral system does not appea regularity listed above) System: There are one or more major ve orner: Both projections from an interior or Opening: There is an opening in the diapl	r relatively well distributed in plan in either or both directions. (Do not inc ertical elements of the lateral system that are not orthogonal to each oth orner exceed 25 % of the overall plan dimensions in that direction.		-0.5 -0.5 -0.3	P <sub>L2</sub> =
rregularity,	open front im Non-parallel Reentrant Co Diaphragm C C1, C2 Build	egularity: Lateral system does not appea regularity listed above) System: There are one or more major ve orner: Both projections from an interior or Opening: There is an opening in the diapl ings Out-of-plane Offset: The exterior be	r relatively well distributed in plan in either or both directions. (Do not inc ertical elements of the lateral system that are not orthogonal to each oth orner exceed 25 % of the overall plan dimensions in that direction. hragm with a width over 50 % of the total diaphragm width at that level.		-0.5 -0.5 -0.3	P <sub>L2</sub> =
rregularity, P <sub>L2</sub>	open front in Non-parallel Reentrant Co Diaphragm C C1, C2 Build Other Irregul	egularity: Lateral system does not appea regularity listed above) System: There are one or more major ve orner: Both projections from an interior or Opening: There is an opening in the diapl ings Out-of-plane Offset: The exterior be arity: There is another observable plan in	r relatively well distributed in plan in either or both directions. (Do not incertical elements of the lateral system that are not orthogonal to each other orner exceed 25 % of the overall plan dimensions in that direction.  The distribution of the total diaphragm width at that level.		-0.5 -0.5 -0.3 -0.4	P <sub>L2</sub> =
rregularity,	open front in Non-parallel Reentrant Co Diaphragm ( C1, C2 Build Other Irregul The building	egularity: Lateral system does not appea regularity listed above) System: There are one or more major ve orner: Both projections from an interior or Opening: There is an opening in the diapl ings Out-of-plane Offset: The exterior be arity: There is another observable plan in	r relatively well distributed in plan in either or both directions. (Do not incertical elements of the lateral system that are not orthogonal to each other order exceed 25 % of the overall plan dimensions in that direction.  The plan with a width over 50 % of the total diaphragm width at that level.  The plan with a width over 50 % of the total diaphragm width at that level.  The plan with the columns in plan.  The plan with that obviously affects the building's seismic performance.  The plan with the columns in plan.		-0.5 -0.5 -0.3 -0.4	
P <sub>L2</sub>	open front in Non-parallel Reentrant Co Diaphragm C C1, C2 Build Other Irregul The building Building is so	egularity: Lateral system does not appea regularity listed above)  System: There are one or more major veorrer: Both projections from an interior or Opening: There is an opening in the diaplings Out-of-plane Offset: The exterior be arity: There is another observable plan in has at least two bays of lateral elements	relatively well distributed in plan in either or both directions. (Do not incertical elements of the lateral system that are not orthogonal to each other orner exceed 25 % of the overall plan dimensions in that direction.  The gam with a width over 50 % of the total diaphragm width at that level.  The gam with a width over 50 % of the total diaphragm width at that level.  The gam do not align with the columns in plan.  The floors do not align vertically within 2 feet.	er.	-0.5 -0.5 -0.3 -0.4 -1	P <sub>L2</sub> =
P <sub>L2</sub>	open front im Non-parallel Reentrant Co Diaphragm C C1, C2 Build Other Irregul The building is Building is so less than 1.5	egularity: Lateral system does not appearegularity listed above)  System: There are one or more major veorner. Both projections from an interior or opening: There is an opening in the diaplings Out-of-plane Offset: The exterior be arity: There is another observable plan in has at least two bays of lateral elements exparated from an adjacent structure by it would be sometime.	ertical elements of the lateral system that are not orthogonal to each other orner exceed 25 % of the overall plan dimensions in that direction. The ams do not align with the columns in plan.  Tregularity that obviously affects the building's seismic performance.  To neach side of the building in each direction.  The floors do not align vertically within 2 feet.  One building is 2 or more stories taller than the other.	er.  Cap total pounding modifiers	-1 -0.5 -0.5 -0.3 -0.4 -1 0.4	P <sub>L2</sub> =
P <sub>L2</sub> edundancy Pounding	open front in Non-parallel Reentrant Co Diaphragm Control Con	egularity: Lateral system does not appear regularity listed above)  System: There are one or more major vectorer. Both projections from an interior of opening: There is an opening in the diaplings Out-of-plane Offset: The exterior be arity: There is another observable plan in has at least two bays of lateral elements exparated from an adjacent structure by if word in the height of the shorter of the adjacent structure and:	ertical elements of the lateral system that are not orthogonal to each other orner exceed 25 % of the overall plan dimensions in that direction. The ams do not align with the columns in plan.  Tregularity that obviously affects the building's seismic performance.  To neach side of the building in each direction.  The floors do not align vertically within 2 feet.  One building is 2 or more stories taller than the other.	er.	-1 -0.5 -0.3 -0.4 -1 0.4 -1.2 -1.2	P <sub>L2</sub> =
P <sub>L2</sub> edundancy Pounding 2 Building	open front in Non-parallel Reentrant Cr Diaphragm Cr C1, C2 Build Other Irregul The building Building is seless than 1.5 building and "K" bracing g	egularity: Lateral system does not appea regularity listed above)  System: There are one or more major ve orner: Both projections from an interior or opening: There is an opening in the diaplings Out-of-plane Offset: The exterior be arity: There is another observable plan in has at least two bays of lateral elements eparated from an adjacent structure by is % of the height of the shorter of the adjacent structure and:	ertical elements of the lateral system that are not orthogonal to each other orner exceed 25 % of the overall plan dimensions in that direction. The ams do not align with the columns in plan.  Tregularity that obviously affects the building's seismic performance.  To neach side of the building in each direction.  The floors do not align vertically within 2 feet.  One building is 2 or more stories taller than the other.	er.  Cap total pounding modifiers	-1 -0.5 -0.5 -0.3 -0.4 -1 -1.2 -1.2 -0.6	P <sub>L2</sub> =
edundancy Pounding  2 Building 1 Building	open front in Non-parallel Reentrant C Diaphragm C C1, C2 Build Other Irregul The building Building is seless than 1.5 building and "K" bracing g Flat plate se	egularity: Lateral system does not appea regularity listed above)  System: There are one or more major vorner: Both projections from an interior or Opening: There is an opening in the diaplings Out-of-plane Offset: The exterior be arity: There is another observable plan in has at least two bays of lateral elements eparated from an adjacent structure by in % of the height of the shorter of the adjacent structure and: peometry is visible.	relatively well distributed in plan in either or both directions. (Do not incertical elements of the lateral system that are not orthogonal to each other orner exceed 25 % of the overall plan dimensions in that direction. The plan with a width over 50 % of the total diaphragm width at that level. I wans do not align with the columns in plan.  The floors do not align with the columns in plan.  The floors do not align vertically within 2 feet.  One building is 2 or more stories taller than the other.  The building is at the end of the block.	(Cap total pounding modifiers at -0.9)	-1 -0.5 -0.3 -0.4 -1 0.4 -1.2 -1.2	P <sub>L2</sub> =
regularity, PL2 edundancy Pounding 2 Building 1 Building C1/ RM1	open front im Non-parallel Reentrant C Diaphragm C C1, C2 Build Other Irregul The building Building is st less than 1.5 building and "K" bracing g Flat plate se There are ro	egularity: Lateral system does not appea regularity listed above)  System: There are one or more major vorner: Both projections from an interior or opening: There is an opening in the diaplings Out-of-plane Offset: The exterior be arity: There is another observable plan in has at least two bays of lateral elements eparated from an adjacent structure by is % of the height of the shorter of the adjacent structure and: peometry is visible.  Types as the beam in the moment frame.  Of-to-wall ties that are visible or known from the structure of the shorter of the adjacent structure and:	ertical elements of the lateral system that are not orthogonal to each other orner exceed 25 % of the overall plan dimensions in that direction. The ams do not align with the columns in plan.  Tregularity that obviously affects the building's seismic performance.  To neach side of the building in each direction.  The floors do not align vertically within 2 feet.  One building is 2 or more stories taller than the other.	(Cap total pounding modifiers at -0.9)	-1 -0.5 -0.3 -0.4 -1 0.4 -1.2 -0.6 -1.2	P <sub>L2</sub> =
rregularity, PL2 edundancy Pounding 2 Building 1 Building C1/ RM1	open front in Non-parallel Reentrant Co Diaphragm Co C1, C2 Build Other Irregul The building Building is stated building and "K" bracing of Flat plate se There are robenchmark of	egularity: Lateral system does not appea regularity listed above)  System: There are one or more major ve orner: Both projections from an interior or opening: There is an opening in the diapl ings Out-of-plane Offset: The exterior be arity: There is another observable plan in has at least two bays of lateral elements eparated from an adjacent structure by is % of the height of the shorter of the adjacent structure and: peometry is visible. rives as the beam in the moment frame. of-to-wall ties that are visible or known from or retrofit modifier)	relatively well distributed in plan in either or both directions. (Do not incertical elements of the lateral system that are not orthogonal to each other orner exceed 25 % of the overall plan dimensions in that direction. The plan with a width over 50 % of the total diaphragm width at that level. I wans do not align with the columns in plan.  The floors do not align well acach direction.  The floors do not align vertically within 2 feet.  One building is 2 or more stories taller than the other.  The building is at the end of the block.	(Cap total pounding modifiers at -0.9)	-1 -0.5 -0.3 -0.4 -1 0.4 -1.2 -0.6 -1.2 -0.5	P <sub>L2</sub> =
rregularity, PL2  edundancy Pounding  2 Building 1 Building C1/RM1 uilding	open front in Non-parallel Reentrant Co Diaphragm Co C1, C2 Build Other Irregul The building Building is so less than 1.5 building and "K" bracing of Flat plate se There are robenchmark of The building and	egularity: Lateral system does not appearegularity listed above)  System: There are one or more major veorner: Both projections from an interior or opening: There is an opening in the diaplings Out-of-plane Offset: The exterior be arity: There is another observable plan in has at least two bays of lateral elements exparated from an adjacent structure by is % of the height of the shorter of the adjacent structure and: peometry is visible.  Invest as the beam in the moment frame.  Of-to-wall ties that are visible or known from retrofit modifier)	relatively well distributed in plan in either or both directions. (Do not incertical elements of the lateral system that are not orthogonal to each other orner exceed 25 % of the overall plan dimensions in that direction. The plan with a width over 50 % of the total diaphragm width at that level. I wans do not align with the columns in plan.  The floors do not align with the columns in plan.  The floors do not align vertically within 2 feet.  One building is 2 or more stories taller than the other.  The building is at the end of the block.	(Cap total pounding modifiers at -0.9)	-1 -0.5 -0.3 -0.4 -1 -1.2 -1.2 -0.6 -1.2 -0.5 -0.4	P <sub>L2</sub> =
edundancy Pounding 2 Building 1 Building C1/ RM1 uilding RM	open front in Non-parallel Reentrant Cr Diaphragm C C1, C2 Build Other Irregul The building Building and "K" bracing G Flat plate se There are robenchmark C The building Gable walls	egularity: Lateral system does not appea regularity listed above)  System: There are one or more major veorner: Both projections from an interior or opening: There is an opening in the diaplings Out-of-plane Offset: The exterior be arity: There is another observable plan in has at least two bays of lateral elements exparated from an adjacent structure by 6 % of the height of the shorter of the adjacent structure and: geometry is visible.  Types as the beam in the moment frame. of-to-wall ties that are visible or known from retrofit modifier)  has closely spaced, full height interior ware present.	relatively well distributed in plan in either or both directions. (Do not incorrectical elements of the lateral system that are not orthogonal to each other orner exceed 25 % of the overall plan dimensions in that direction. The orner exceed 25 % of the overall plan dimensions in that direction. The orner exceed 25 % of the overall plan dimensions in that direction. The do not align with the columns in plan.  Tregularity that obviously affects the building's seismic performance. In the floors do not align vertically within 2 feet.  One building is 2 or more stories taller than the other.  The building is at the end of the block.	(Cap total pounding modifiers at -0.9)	-1 -0.5 -0.5 -0.3 -0.4 -1.2 -0.6 -1.2 -0.5 -0.4 -0.5	P <sub>L2</sub> =
regularity, PL2  edundancy Pounding  2 Building 1 Building C1/ RM1 uilding RM	open front in Non-parallel Reentrant Con Diaphragm Control Tregular The building Building is set than 1.5 building and "K" bracing Control The building and "K" building and "K" building and "K" building and "K" building and There are rous benchmark control The building Gable walls in There is a su	egularity: Lateral system does not appea regularity listed above)  System: There are one or more major vorner: Both projections from an interior or opening: There is an opening in the diaplings Out-of-plane Offset: The exterior be arity: There is another observable plan in has at least two bays of lateral elements eparated from an adjacent structure by 6 % of the height of the shorter of the adjacent structure and: peometry is visible.  The exterior is a the dead of the shorter of the adjacent structure and: peometry is visible.  The adjacent structure and: of the shorter of the adjacent structure and: peometry is visible.  The adjacent structure and the moment frame.  The adjacent structure and the moment frame of the shorter of t	relatively well distributed in plan in either or both directions. (Do not incertical elements of the lateral system that are not orthogonal to each other orner exceed 25 % of the overall plan dimensions in that direction.  Thragm with a width over 50 % of the total diaphragm width at that level. I was do not align with the columns in plan.  The gularity that obviously affects the building's seismic performance.  The floors do not align vertically within 2 feet.  One building is 2 or more stories taller than the other.  The building is at the end of the block.  The building is at the end of the block.  The floors do not align vertically within 2 feet.  One building is 2 or more stories taller than the other.  The building is at the end of the block.	(Cap total pounding modifiers at -0.9)	-1 -0.5 -0.5 -0.3 -0.4 -1.2 -1.2 -0.6 -1.2 -0.5 -0.4 -0.4 -0.5 -1.2	P <sub>L2</sub> = (Cap at -1.
edundancy Pounding  2 Building 1 Building C1/ RM1 uilding RM H etrofit	open front in Non-parallel Reentrant Consideration Control Con	egularity: Lateral system does not appea regularity listed above)  System: There are one or more major veorner: Both projections from an interior or opening: There is an opening in the diaplings Out-of-plane Offset: The exterior be arity: There is another observable plan in has at least two bays of lateral elements exparated from an adjacent structure by 6 % of the height of the shorter of the adjacent structure and: geometry is visible.  Types as the beam in the moment frame. of-to-wall ties that are visible or known from retrofit modifier)  has closely spaced, full height interior ware present.	relatively well distributed in plan in either or both directions. (Do not incertical elements of the lateral system that are not orthogonal to each other orner exceed 25 % of the overall plan dimensions in that direction.  Thragm with a width over 50 % of the total diaphragm width at that level. I was do not align with the columns in plan.  The gularity that obviously affects the building's seismic performance.  The floors do not align vertically within 2 feet.  One building is 2 or more stories taller than the other.  The building is at the end of the block.  The building is at the end of the block.  The floors do not align vertically within 2 feet.  One building is 2 or more stories taller than the other.  The building is at the end of the block.	(Cap total pounding modifiers at -0.9)	-1 -0.5 -0.5 -0.3 -0.4 -1 -1.2 -0.6 -1.2 -0.5 -0.4 -0.4 -0.4 -1.2 -1.2 -0.5	P <sub>L2</sub> = (Cap at -1.

#### 3) Observable Nonstructural Hazards

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

OBSERVAE	BLE NONSTRUCTURAL HAZARDS				
Location	Statement (Check "Yes" or "No")		Yes	No	Comments
Exterior	There is an unbraced unreinforced masonry parapet or unbraced unreinforced	ced masonry chimney.		П	
	There is heavy cladding or heavy veneer.			П	
	There is a heavy canopy over exit doors or pedestrian walkways that appear	ars inadequately supported.		П	
	There is an unreinforced masonry appendage over exit doors or pedestrian	walkways.		П	
	There is a sign posted on the building that indicates hazardous materials at	re present.		П	
	There is a taller adjacent building with an unanchored URM wall or unbrace	d URM parapet or chimney.			
	Other observed exterior nonstructural falling hazard.			П	
Interior	There are hollow clay tile or brick partitions at any stair or exit corridor.			П	
	Other observed interior nonstructural falling hazard.			П	
Estimated I	Nonstructural Seismic Performance (Check appropriate box and transfer to	Level 1 form conslusions)			
□ Po	tential nonstructural hazards with significant threat to occupant life safety.	> Detailed Nonstructural Evaluation	on re	comn	mended.
□ No	onstructural hazards identified with significant threat to occupant life safety.	> But no Detailed Nonstructural E	valu	ation	required.
□ Lo	w or no nonstructural hazard threat to occupant life safety.	> No Detailed Nonstructural Evalu	uatio	n requ	uired.

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 Non-structural 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

Co	m	m	ei	nts	
•	•	•	•		

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.

FEMA P-154 Data Collecti	of Build on Forr	m												HIG	H Se	ismic	ity
- 4		1	1	-		Add	ress:	3703	Roxbi	ury St	reet						
		1	1	-		5,000		Anypl	lace	and the second			- 2	Др: 9	91234		
				-		Pare	el Numi			02703	5: S2	ě			100		
	1/8		1				ding Na										
		1				Use		77									
	12/2	11					tude:					Longitu	de:				
				+		Ss:	_		9311111			S <sub>1</sub> :					
				4		Scre	ener(s)	D.	Taylo	or		D	ate/Tim	e: 2	/28/	14 10	am
			1			No	Stories:	Abov	e Grade	10	Belov	w Grade	0	Yea	r Built	19861	1 EST
	-	1				10000	I Floor			76,00				- 00000	e Year:	1500	
							litions:	X N		Yes, Y		uit		7 530			
	-					Occ	upancy:	Asse	embly	Comme	cial	Emer. S	ervices	Пн	istoric	☐ Shelt	er
						1		Indu		Office		School			overnme	t	
								Utilit	У	Warehou	use	Resider	tial, #U	nits:			
THE STATE OF THE S				ų,		Soil	Type:	□A	□B						NK		
						1		Hard Rock	Avg Rock	Dens				oor /f	DNK, ass	ите Туре	D.
K-1	00ft-	->	J.			Geo	logic Ha							-			
1		-		-			Charles and the Control of	Laus.		No. of Street		Caller	Umanda	from Tall		et De delle	
						-	acency:			ounding			mazaros	irom i aii	er Adjace	nt Buildin	9
			75 A	t		Irreg	gularitie	S:		Vertical (t Plan (type		enity) _					_
N																	
<b>\</b>			1				erior Fall ards:	ing		inbraced arapets	Chimne	ys		avy Clad pendage:		eavy Ver	ieer
Elevator /DI	n Vie					naz	arus.		100				LI API	pendage			
Tower	III VIE	W	_	+		CO	MMENT	S-		ZUINE.							
		-	-	+	-	1 **	OVERY.										
		100					No	irre	gulari	ties.	adia	ent	build	inas.	or fe	Illing	
	_																
		$\overline{}$				1							Duna	,			
						1				rved.			Dana	,			
													Dana				
													Dana	,			
													Juna				
Elev	ation	View											Jana	,			
		View					haz	eards	obse	rved.				,			
	ETCH					_	haz Additiona	cards	obse	rved.	n separa	ste page					
SI	ETCH B	ASIC	SCOR	-	DDIFIER	RS, AI	haz	eards	obse	rved-	n separa RE, S <sub>i</sub>	ate page	i		DM3	Lion	· ·
SI	ETCH B			RE, MC	DDIFIEF	_	Additional ND FIN	al sketche	obse	rved.	n separa	ste page		RM1	RM2	URM	МН
SH FEMA BUILDING TYPE Do Not Know	ETCH B/	ASIC :	SCOR W2	S1 (MRF)	(2)	88, AN 83 (JM)	Additions ND FIN	eards al sketchel	obse	mments o	n separa	ate page	PC2	RM1 FDI	(RD)	7.57	188
SHEMA BUILDING TYPE Do Not Know	Bi W1	ASIC :	SCOR W2	\$1 (MRF)	(52)	S3 (JM) 2.6	Additions ND FIN	sketchel	obse	nments o	n separa	PC1	PC2	RM1		1.0	1.5
SI FEMA BUILDING TYPE Do Not Know Sasic Score Revere Vertical Irregularity, V. 1	ETCH B/	ASIC :	SCOR W2	S1 (MRF)	20	88, AN 83 (JM)	Additions ND FIN	eards al sketchel	obse	mments o	n separa RE, S <sub>i</sub> (G3 (LRIM INF)	ate page	PC2	RM1 (FD) 1.7	1.7	7.57	1.5 NA
SHEMA BUILDING TYPE Do Not Know Sasic Score Severe Vertical Irregularity, V. r Anderate Vertical Irregularity, V. r	B/W1 3.6	ASIC : W1A 3.2 -1.2	SCOR W2 2.9 -1.2	\$1 (MRF) 2.1 -1.0	(SZ) (20) -1.0	83 (JM) 2.6 -1.1	Additions ND FIN S4 (RC SW) 2.0 -1.0	SS (LEAN)	obse es or con EVEL 1 (ARF) 1.5 -0.9	nments of SCO	n separa RE, S <sub>i</sub> C3 (LEMI INF) 1.2 -0.7	PC1 (PU)	PC2	RM1 FDI 1.7 -0.9	1.7 -0.9	1.0 -0.7	1.5 NA
Do Not Know  Sasic Score  Evere Vertical Irregularity, V.;  Adderate Vertical Irregularity, V.;  Plan Irregularity, P.;  Tre-Code	3.6 -1.2 -0.7 -1.1	32 -12 -0.7 -1.0 -1.0	2.9 -1.2 -0.7 -1.0 -0.9	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6	20 -1.0 -0.6 -0.7 -0.6	2.6 -1.1 -0.7 -0.9	Additions ND FIN S4 (RC SW) -1.0 -0.6 -0.7 -0.6	S5 (LEMA INF) -0.8 -0.5 -0.6 -0.2	obse	rved- ments of SCO C2 (SW) 2.0 -1.0 -0.6 -0.8 -0.7	C3 (LFIM INF) 1.2 -0.7 -0.4 -0.5 -0.1	PC1 (FU) 1.6 -1.0 -0.6 -0.7 -0.5	PC2 1.4 -0.9 -0.5 -0.6 -0.3	RM1 FDI 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	1.5 NA NA NA -0.
SI  FEMA BUILDING TYPE  Do Not Know  Sasic Score  Severe Vertical Irregularity, V. 1  Valon Irregularity, P. 1  Ter-Code  Ter-Code	3.6 -1.2 -0.7 -1.1 -1.1 1.6	32 -1.2 -0.7 -1.0 -1.0 1.9	2.9 -1.2 -0.7 -1.0 -0.9 2.2	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4	20 -1.0 -0.6 -0.7 -0.6 1.4	2.6 -1.1 -0.7 -0.8 1.1	Additions ND FIN S4 (RC SW) 2.0 -0.6 -0.7 -0.6 1.9	S5 (JRM INF) 1.7 -0.8 -0.5 -0.2 NA	obse es or con EVEL 1 0.6FF) 1.5 -0.9 -0.5 -0.6 -0.4 1.9	rved- ments of SCO  C2 (SW) -0.6 -0.8 -0.7 -2.1	n separa RE, S <sub>1</sub> C3 (JEM) INF) 12 -0.7 -0.4 -0.5 -0.1 NA	PC1 (FU) 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	RM1 FD/ 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 NA -0.1
SHEMA BUILDING TYPE Do Not Know Sasic Score Severe Vertical Irregularity, Vi. 1 Anderstand Vertical Irregularity, Vi. 1 Iran Irregularity, Pi. 1 I	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1	32 -1.2 -0.7 -1.0 -1.0 1.9 0.3	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5	\$1 (AFIF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 0.4	-1.0 -0.6 -0.7 -0.6 1.4 0.6	2.6 -1.1 -0.7 -0.8 1.1 0.1	Additions ND FIN S4 (R)(2) -1.0 -0.6 -0.7 -0.6 1.9 0.6	S5 (LEGAL) 1.7 -0.6 -0.2 NA 0.5	0bse es or con EVEL 1 C1 (ARF) 1.5 -0.9 -0.5 -0.4 1.9 0.4	rved- mments o 1 SCO C2 SM -1.0 -0.6 -0.8 -0.7 -2.1 0.5	n separa RE, S <sub>1</sub> G3 (J.Filld INF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3	PC1 (PU) 1.6 -1.0 -0.5 -0.7 -0.5 2.0 0.6	PC2 1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4	RM1 FDI 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 NA -0. 1.3
EMA BUILDING TYPE  Do Not Know  Sasic Score  Gevere Vertical Irregularity, V.;  doderate Vertical Irregularity, V.;  re-Code  out-Benchmark  out Type A or B  out Type E (1-3 stories)	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2	32 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2	2.9 -1.2 -0.7 -1.0 -0.9 2.2	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4	20 -1.0 -0.6 -0.7 -0.6 1.4	2.6 -1.1 -0.7 -0.8 1.1	Additions ND FIN S4 (RC SW) 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 -0.1	S5 (JEMA INT) -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4	obse es or con EVEL 1 0.6FF) 1.5 -0.9 -0.5 -0.6 -0.4 1.9	rved- ments of SCO  C2 (SW)  -0.6 -0.8 -0.7 -2.1	C3 (JFIM NF) 12 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2	PC1 (FU) 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	RM1 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	1.5 NA NA -0. 1.5 0.5
SI  FEMA BUILDING TYPE  Do Not Know  Basic Score  Everer Vertical Irregularity, V. r  Moderate Vertical Irregularity, V. r  Plan Irregularity, P. r  Pre-Code  Soil Type A or B  Soil Type E (1-3 stories)  Soil Type E (1-3 stories)	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1	32 -1.2 -0.7 -1.0 -1.0 1.9 0.3	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 0.4 -0.2	-1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4	2.6 -1.1 -0.7 -0.8 1.1 0.1	Additions ND FIN S4 (R)(2) -1.0 -0.6 -0.7 -0.6 1.9 0.6	S5 (LEGAL) 1.7 -0.6 -0.2 NA 0.5	0bse es or con EVEL 1 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4	rved- mments o 1 SCO C2 (SW) 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0	n separa RE, S <sub>1</sub> G3 (J.Filld INF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3	1.6 -1.0 -0.6 -0.7 -0.5 -0.6 -0.3	PC2 1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.4	RM1 FDI 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 -0.2	1.5 N/ N/ -0. 1.5 0.5
SHEMA BUILDING TYPE  Do Not Know  Basic Score  Everer Vertical Irregularity, V. ;  Volan Irregularity, P. ;  Vertical Irregularity, V. ;  Volan Irregularity, P. ;  Volan Irregularity, V. ;  Volan Irre	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3	32 -12 -07 -10 -10 1.9 0.3 0.2 -0.6	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.4 -0.2 -0.6	-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	Additions ND FIN S4 (RC SW) 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 -0.1 -0.6	SS (LEGAL INF) 1.7 - 0.8 - 0.5 - 0.6 - 0.2 NA 0.5 - 0.4 - 0.4 - 0.4	obse es or con EVEL 1 (ARF) 1.5 -0.9 -0.5 -0.4 1.9 0.4 0.0 0.0 0.5	rved- mments of 1 SCO C2 (SW) -1.0 -0.6 -0.8 -0.7 -2.1 0.5 0.0 -0.7	n separa RE, S <sub>j</sub> C3 (LFRM) INF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3	1.6 -1.0 -0.5 -0.7 -0.5 -0.3 NA	PC2 1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1	RM1 FD/ 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 N/ N/ -0. 1.5 0.5
SI  EMA BUILDING TYPE  De Not Know  Sasic Score  Everer Vestical Irregularity, V. 1  Adortant Vertical Irregularity, V. 1  Plan Irregularity, P. 1  Pre-Code  Toolt-Benchmark  Soil Type A or B  Soil Type E (1-3 stories)  Soil Type E (2-3 stories)  Adminum Score, Sum  FINAL LEVEL 1 SCORE, S.t. ≥ Sam  FINAL LEVEL 1 SCORE 1 S	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3	32 -12 -07 -10 -10 1.9 0.3 0.2 -0.6	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9	\$1 (MFF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5	-1.0 -0.6 -0.7 -0.6 1.4 -0.6 -0.4 -0.6 -0.5	2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6	Additions ND FIN 20 -1.0 -0.6 -0.7 -0.6 -0.1 -0.6 -0.5	SS (LEGAL) (NF) 1.7 - 0.8 - 0.5 - 0.6 - 0.2 NA 0.5 - 0.4 - 0.4 - 0.4	obse es or con EVEL 1 1.5 -0.9 -0.5 -0.4 1.9 0.4 0.0 -0.5	2.0 (2.1) (3.1) (4	n separa RE, S, C3 R,FM NP1 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3	1.6 -1.0 -0.6 -0.7 -0.5 -0.3 NA -0.2	PC2 1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1	RM1 FD/ 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 N/ N/ -0. 1.5 0.5
SH  FEMA BUILDING TYPE  Do Not Know  Basic Score  Bewere Vertical Irregularity, V.   Plan Irregularity, P.   Plan Scott Spec (3 stories)  Soil Type E (3 stories)  July pec E (3 stories)  July P.   July Stories  July	SETCH Bi 3.6 -1.2 -0.7 -1.1 -1.1 -1.6 0.1 0.2 -0.3 -1.1	3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2 -0.6 0.9	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5	-1.0 -0.6 -0.7 -0.6 1.4 -0.6 -0.4 -0.6 -0.5	2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6	Additions ND FIN S4	S5 (LEAN 1.7 -0.8 -0.5 -0.2 NA 0.5 -0.4 -0.4	obse es or con EVEL 1 1.5 -0.9 -0.5 -0.4 1.9 0.0 -0.5 0.3	2.0 (3.1) (3	n separa RE, S, G3 (JEM/NP) NP) -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3	1.6 -1.0 -0.6 -0.7 -0.5 -0.3 NA 0.2	PC2 1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.1 -0.4 -0.2	RM1 FD 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	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2	1.5 N/ N/ -0. 1.5 0.5
SHEMA BUILDING TYPE  Do Not Know  Sasic Score  Severe Vertical Irregularity, V.;  Van Irreg	SETCH Bi 3.6 -1.2 -0.7 -1.1 -1.1 -1.6 0.1 0.2 -0.3 -1.1	3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2 -0.6 0.9	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5	\$2 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.6 0.5 2-0 R HAZ	S3 0.M4 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6	Additions ND FIN  S4 (RC SW) 2.0 -0.6 -0.7 -0.6 -0.1 -0.6 -0.1 -0.6 -0.5	S5 (LEAN 1.7 -0.8 -0.5 -0.2 NA 0.5 -0.4 -0.4	obse es or con 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 1.9 0.3  ACTI Details	2.0 -1.0 -0.8 -0.7 -0.7 -0.3	n sepera RE, S <sub>j</sub> C3 NF) 12 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3	1.6 -1.0 -0.5 -0.7 -0.5 2.0 0.8 -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	RM11 FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 -0.1	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 N/ N/ -0. 1.5 0.5
SI  SEMA BUILDING TYPE  Do Not Know  Basic Score  Severe Vestical Irregularity, V. r  Monterate Vestical Irregularity, V. r  Man Irregularity, P. r  Pre-Code  Soil Type A or B  Soil Type E (1-3 stories)  Soil Type E (2-3 stories)  Minimum Score, Sum  FINAL LEVEL 1 SCORE, S. r  EXTERNT OF REVIEW  Exterior:   Partial    Interior:   Partial    None    Interior:   None    Interior:   Partial    Interior:   Partial    Interior:   Partial    Interior:   Partial    Interior:   None    Interior:   None    Interior:   None    Interior:   None    Interior:   Partial    Interior	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3	3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2 -0.6 0.9	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5 OTHEI	\$2 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.6 0.5 2 · O	S3 0.M 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6	Additions: ND FIN 94 (FC) 900 1-0.0 6-0.7 -0.6 -0.1 1-0.6 0.5	S5 (LFRM INF) 1.7 -0.8 -0.5 -0.4 -0.4 -0.5	obse es or con  C1 1.5 -0.9 -0.5 -0.6 -0.4 0.0 0.3  ACT  Detaile	2.0 (-1.0.6 (-0.8 (-0.7 (-0.7 (-0.8 (-0.7	n separa RE, S, C3 (LFM) NF) 12 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 -0.3	1.6 -1.0 -0.5 -0.7 -0.5 -0.3 NA 0.2	PC2  1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1 -0.4 -0.2	RM11 FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 -0.1	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 N/ N/ -0. 1.5 0.5
SI  FEMA BUILDING TYPE  Do Not Know  Basic Score  Bewere Vertical Irregularity, V.   Plan Irregularity, P.   Soli Type E (3 stories)  Soli Type E (3 stories)  Soli Type E (3 stories)  Marimum Score, Sum  FINAL LEVEL 1 SCORE, SLr ≥ Same  EXTENT OF REVIEW  Exterior: □ Partial □  Trawainings Reviewed: □ Yes □	SETCH  BJ  3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3 J.J  C.  All Sides Visible	3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2 -0.6 0.9	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7	\$1 0.00 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5 OTHEI	\$2 -1.0 -0.8 -0.7 -0.6 1.4 -0.6 -0.4 -0.6 0.5 2 · O R HAZard Structura	85, AN 83 0.00 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6 ARDS s That 1 all Evaluations (un	Additions: ND FIN 94 (FC) 900 1-0.0 6-0.7 -0.6 -0.1 1-0.6 0.5	S5 (LFRM INF) 1.7 -0.8 -0.5 -0.4 -0.4 -0.5	obse es or con EVEL 1 1.5 -0.9 -0.5 -0.4 1.9 0.0 -0.5 0.3  ACT: Detail	2.0 -1.0 -0.8 -0.7 -0.7 -0.3	n separa RE, S <sub>1</sub> C3 12 12 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 -0.3	PC1	1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1 -0.4 -0.2	RM11 FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 -0.1	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 N/ N/ -0. 1.5 0.5
SHEMA BUILDING TYPE  Do Not Know  Sasic Score  Revere Vertical Irregularity, V. 1  Noderate V. 1  Noderate Vertical Irregularity, V. 1  Noderate Vertical Irregularity, V. 1  Noderate Vertical Irregularity, V. 1  Noderate V.	B. W1 3.6 -1.2 -0.7 -1.1 1.6 0.1 0.2 -0.3 /./ C. All Sides Visible No. Ogist	3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2 -0.6 0.9	2.9 -1.2 -0.7 -1.0 -0.9 -2.2 0.5 0.1 -0.9 0.7	\$1 0.4 -0.6 -0.6 -0.6 -0.6 -0.6 1.4 -0.2 -0.6 0.5	\$2 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.6 0.5 2 · O	2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6 ARDS s That I at Value of the Value	Additions ND FIN S4 (FIC) SW() 2.0 -1.0.6 -0.7 -0.6 -0.7 -0.6 -0.1 1.9 0.6 -0.5 ITrigger A ation?	sketcher LE S5 (NPM NPF) 1.7 - 0.8 - 0.5 - 0.2 NA 0.5	obse es or con EVEL 1 1.5 -0.9 -0.5 -0.4 1.9 0.0 -0.5 0.3  ACT: Detail	Type	n separa RE, S <sub>1</sub> C3 12 12 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 -0.3	PC1	1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1 -0.4 -0.2	RM11 FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 -0.1	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 N/ N/ -0. 1.5 0.5
SI  SEMA BUILDING TYPE  Do Not Know  Sasic Score  Severe Vertical Irregularity, V. r  Moderate Vertical Irregularity, V. r  Moderate Vertical Irregularity, V. r  Moderate Vertical Irregularity, V. r  Mon Irregularity, P. r  Pre-Code  Total Genchmarik  Soil Type A or B  Soil Type E (1-3 stories)  Soil Type E (2-3 stories)  Mirimum Score, Sum  FINAL LEVEL 1 SCORE, S.Lr ≥ Sum  EXTENT OF REVIEW  Exterior:   Partial   Mone   Mone	B. W1 3.6 -1.2 -0.7 -1.1 1.6 0.1 0.2 -0.3 /./ C. All Sides Visible No. Ogist	3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2 -0.6 0.9	2.9 -1.2 -0.7 -1.0 -0.9 -2.2 0.5 0.1 -0.9 0.7	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5 OTHEI Pour cut-c Falliebuild	\$2 682 1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.6 0.5 2.0 R HAZJ re Hazard Structura- ding pote off, if known	2.6 (M) 2.6 (M	Additions  ND FIN  S4 (IC) SW9  -0.6 -0.7 -0.6 -0.9 -0.6 -0.1 -0.6 -0.5  Trigger A ation?	stands sketching	0bse es or com EVEL 1 1.5 -0.9 -0.5 -0.6 -0.4 0.0 -0.5 0.3  ACTT Details	2.0 (%) (%) (%) (%) (%) (%) (%) (%) (%) (%)	n separri RE, S <sub>1</sub> C3 (SFR) MF) 12 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 -0.2 -0.3 -0.3 -0.3 -0.3 -0.3 -0.3 -0.3	1.6 -1.0 -0.6 -0.7 -0.5 -0.3 -0.3 -0.2 -0.3 -0.2 -0.3 -0.2 -0.3 -0.2 -0.3 -0.2 -0.3 -0.2 -0.3 -0.2 -0.3 -0.2 -0.3 -0.2 -0.3 -0.3 -0.2 -0.3 -0.2 -0.3 -0.3 -0.2 -0.3 -0.3 -0.2 -0.3 -0.3 -0.2 -0.3 -0.3 -0.2 -0.3 -0.3 -0.2 -0.3 -0.3 -0.2 -0.3 -0.3 -0.2 -0.3 -0.3 -0.2 -0.3 -0.3 -0.2 -0.3 -0.3 -0.3 -0.3 -0.3 -0.3 -0.3 -0.3	PC2  1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.1 -0.4 -0.1 -0.2  Requirements	RM1 FD) 1.7 -0.9 -0.5 -0.7 -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	1.5 NA NA NA -0. 1.3 -0. NA J.O
SHEMA BUILDING TYPE  Do Not Know  Sasic Score  Severe Vertical Irregularity, V <sub>1</sub> Moderate Vertical Irregularity, V <sub>2</sub> Moderate Vertical Irregularity, V <sub>3</sub> Pre-Code  Oct-Benchmark  Soil Type A or B  Soil Type E (1-3 stories)  Soil Type E (3 stories)  Soil Type E (3 stories)  FINAL LEVEL 1 SCORE, S <sub>LET</sub> ≥ See  EXTENT OF REVIEW  EXTERIOR   Partial   20  EXTERIOR   Partial   20  EXTERIOR   Partial   20  EXTERIOR   Partial   20  Soil Type Source: State Geol  Seologic Hazards Source: State  Contact Person:	## 3.6 -1.2 -0.7 -1.1 -1.1 -1.6 0.1 0.2 -0.3 -1.1 -1.1 0.2 -0.3 -1.1 -1.1 Gradies Visible No. Ogist Geolog	32 -1.2 -0.7 -1.0 -1.0 -1.0 0.3 0.2 -0.6 0.9 Aeri	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7	\$1 (AFF)  2.1 -1.0 -0.6 -0.8 -0.8 -0.6 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	\$2 -1.0 -0.6 -0.7 -0.6 1.4 -0.6 -0.4 -0.6 -0.5 2.0 R HAZJ re Hazard Structura- ding pote off, if known in hazard ling logic hazard	2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.2 NA 0.6 ARDS s That I all Evaluntial (unital unital uni	Additions ND FIN  S4 (IIC) SMI 2.0 -0.6 -0.7 -0.6 -0.1 -0.6 0.5  Trigger A ation?	st sketcher   St   Sketcher   Ske	obse es or con EVEL 1 1.5 -0.6 -0.5 -0.6 1.9 0.4 1.9 0.0 0.0 0.5 0.3  ACTI V 23 Y 6 V Detaile	2.0 (%) (%) (%) (%) (%) (%) (%) (%) (%) (%)	n separa RE, S; G3 (JERM) I12 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 EQUIF	1.6 -1.0 -0.5 -0.7 -0.5 -0.3 NA -0.2 RED alluation cut-off present	PC2  1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1 -0.4 0.2  Requirements of the property of the proper	RM11 FD 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -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 NA -0. 1.2 0.3 -0.4 NA
SI  FEMA BUILDING TYPE  Do Not Know Basic Score Severe Vertical Irregularity, V. r Moderate Vertical Irregularity, V. r Moderate Vertical Irregularity, V. r Plan Irregularity, P. r Pre-Code Soil Type E (3-3 stories) Soil Type E (1-3 stories) Soil Type E (1-3 stories) Minimum Score, Sum  FINAL LEVEL 1 SCORE, S. r EXTENT OF REVIEW Exterior:   Partial   Drawings Reviewed:   Drawings Reviewed:   Drawings Reviewed:   Soil Type Source: State Geol Geologic Hazard's Source: State Contact Person:  LEVEL 2 SCREENING PERF	## 3.6 -1.2 -0.7 -1.1 -1.1 -1.6 0.1 0.2 -0.3 -1.1 -1.1 0.2 -0.3 -1.1 -1.1 Gradies Visible No. Ogist Geolog	32 -1.2 -0.7 -1.0 -1.0 -1.0 -1.0 -1.0 -1.0 -1.0 -1.0	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7	\$1 (ARIF)  2.1 -1.0 -0.6 -0.8 -0.8 -0.6 -0.8 -0.6 -0.5  OTHER Pour cut-to-to-to-to-to-to-to-to-to-to-to-to-to	S2 S2 -1.0 -0.6 -0.7 -0.6 1.4 0.6 0.5 2.0 R HAZ re Hazard Structurading pote ding loogic hazar ficant dar	2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6 ARDS s That I at least units of the control of the co	Additions ND FIN  S4 (IIC) SMI 2.0 -0.6 -0.7 -0.6 -0.1 -0.6 0.5  Trigger A ation?	st sketcher   St   Sketcher   Ske	obse es or con EVEL 1 1.5 -0.9 -0.5 -0.4 1.9 0.4 1.9 0.4 0.0 0.5 0.3	Type	n seperar RE, Si C3 L2 L5 L5 L7 L0 L7 L0 L7 L0 L7	1.6 -1.0 -0.6 -0.7 -0.5 -0.3 NA 0.2 RED aluation cut-off pre-saluation acut-off pre-saluati	PC2  1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1 -0.4 0.2  Require	RM1 FD 1.7 1.7 -0.9 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.1 0.5 -	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 NA -0. 1.3 -0. NA 7.6
SI  EMA BUILDING TYPE  Do Not Know  Basic Score  Everer Vertical Irregularity, V. /  Plan Irregularity, P. /  Plan Irregularity, V. /  Plan Irregu	## 3.6 -1.2 -0.7 -1.1 -1.1 -1.6 0.1 0.2 -0.3 -1.1 -1.1 0.2 -0.3 -1.1 -1.1 Gradies Visible No. Ogist Geolog	3.2 -1.2 -0.7 -1.0 -1.0 -1.0 -0.6 -0.9	2.9 -1.2 -0.7 -1.0 -0.9 -0.5 0.1 -0.9 0.7	\$1 (ARIF)  2.1 -1.0 -0.6 -0.8 -0.8 -0.6 -0.8 -0.6 -0.5  OTHER Pour cut-to-to-to-to-to-to-to-to-to-to-to-to-to	\$2 -1.0 -0.6 -0.7 -0.6 1.4 -0.6 -0.4 -0.6 -0.5 2.0 R HAZJ re Hazard Structura- ding pote off, if known in hazard ling logic hazard	2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6 ARDS s That I at least units of the control of the co	Additions ND FIN  S4 (IIC) SMI 2.0 -0.6 -0.7 -0.6 -0.1 -0.6 0.5  Trigger A ation?	st sketcher   St   Sketcher   Ske	obse es or con EVEL 1 C1 -0.9 -0.5 -0.4 1.9 0.4 0.0 0.3  ACT Detaile	2.0 1.0 0.8 0.7 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	n separa RE, S, C3 RFW MP) 12 10-0.7 -0.4 -0.5 -0.3 0.3 0.3 EQUIF Latural P. Latural P. Latural III	PC1	PC2  1.4 -0.9 -0.5 -0.6 -0.3 -0.4 -0.1 -0.4 -0.2  Requirmg type o	RM1 FD) 1.7 -0.9 -0.5 -0.7 -0.5 -0.1 -0.5 -0.1 -0.5 -0.1 -0.5 -0.1 in the beautiful for other beautiful for other beautiful first shear and a second first shear and a seco	1.7 -0.9 -0.5 -0.7 -0.5 -0.1 -0.6 -0.5 -0.1 -0.6 -0.3 -0.5 -0.1 -0.6 -0.3 -0.5 -0.1 -0.6 -0.8 -0.3 -0.8 -0.8 -0.8 -0.8 -0.8 -0.8 -0.8 -0.8	1.0 -0.7 -0.4 -0.4 -0.0 NA 0.3 -0.2 -0.2 0.2	1.1 N/ N/ N/ -0. 1.1 0.1 -0. N/
EMA BUILDING TYPE  Do Not Know  lastic Score  evere Vertical Irregularity, V. 1  from Irregulari	### All Sides  All Sides  All Sides  ORMEI  CORME	3.2 -1.2 -0.7 -1.0 -1.0 -1.0 0.3 0.2 -0.6 0.9  Aeric	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7	\$1 (AFF)  2.1 (-1.0 (-0.6 (-0.8 (-0.	20 -1.0 -0.6 -0.7 -0.6 -0.7 -0.6 -0.5 -0.5 -0.5 Structural ending pote hazard structural ending pote hazard structural ending pote hazard structural ending pote hazard structural ending sogic hazard ending sogic	83 0.M 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6 0.6 1 I Evaluation of the control of the contr	Additions ND FIN S4 (IC) SW() -0.6 -0.7 -0.6 -0.1 -0.6 -0.1 -0.6 -0.5  Trigger A ation?	st sketchel	observed   continue   continue	2.0 (-1.0 (-0.6 (-0.7 (-	n separa RE, S <sub>i</sub> C3 L2 -0.7 -0.4 1.2 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 -0.2 -0.3 -0.2 -0.3 -0.2 -0.3 -0.2 -0.3 -0.3 -0.3 -0.3 -0.3 -0.3 -0.3 -0.3	PC1	PC2  1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.1 -0.4 -0.2  Requirement tion Residentified to set the set of t	RM1 FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 0.3 ad?	1.7 -0.9 -0.5 -0.7 -0.5 -0.1 -0.6 -0.3 -0.3 -0.8 -0.3 -0.8 -0.9 -0.5 -0.1 -0.6 -0.3 -0.8 -0.9 -0.9 -0.9 -0.9 -0.9 -0.9 -0.9 -0.9	1.0 -0.7 -0.4 -0.4 -0.0 NA 0.3 -0.2 -0.2 0.2	1. Ni Ni Ni -0. 1. 0. -0. Ni

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 (1½ 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. Since 1945 was after the pre-code year of 1941, 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,  $S_{L1}$ , 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.

FEMA P-154 Data Collectio	f <b>Build</b> n Forn	107				(08/26								HIGH	1 Se	ismic	ity
A.	- 70	17-10	The		1	Add	ress:	3711	Roxbi	ury S	treet						
	<b>7 III</b>	B 3				8	onorm <del>a</del>	Anyp	lace	-			2	5p: 9	1234		
Alteria			E.S	1		Parc	cel Num	-	74690	02703	34						
		916	1	550	1	1	ding Na	-									
A STATE OF THE STA						Use	: Co	mme	rcial	with	office	es ab	ove				
11111 TEENT	- 162		ALC:				tude:					ongitu					
11 1 1	- 101				V	Ss:					_	S <sub>f</sub> :	-				
<b>以111 建物产</b>	_20			$ \mathbf{A} $	N		eener(s)	: A.	Jones	S	- 0	_	ate/Time	e: 2/	28/	14 1	ian
別代書職	1				7	Tota	Stories: al Floor	Area (so		34	,800				Built: Year:	1945	EST
O ICA DEPT. N	100					and the same	upancy:	condition some		Yes, Comme	Year(s) B	ult: _ Emer. S	envires	Пн	istoric	☐ Shelt	er
Time.					-	000	аралоу		strial (	Office Wareho	)	School	tial, #Ur	☐ G	overnmen	17 TO 18	1108
13	3				X	Soil	Type:	□A Hard Rock	Avg Rock	Den So	se St	iff S	oft P		NK DNK, ass	ume Type	D.
Tower Towe	-	$\Box$				Geo	logic Ha	azards:	None								
						Adja	acency:		K P	ounding		Falling I	Hazards I	from Talle	er Adjace	nt Buildin	g
Open Above	$\dashv$		120			Irrec	gularitie	s:	X V	Vertical (	type/seve	rity) C	Dut-of	f-plan	e setl	back (	seve
Tower Towe	r			ijacen		1				Plan (typ	e)			-2/-			
Plan @ 2nd floo		1	T blo	L-stor dg wit L" gap	h		erior Fal ards:	ling	□ P	arapets	Cornic		☐ App	evy Clado endage:		leavy Ver	1000
		V			-	co	MMENT	S-	-	AUTOL.	551146	95 00	1001				
	$\dashv$ r		$\neg$	-	-	-					_	n		1			· v
			_			P	er L	evel:	I Po	undi	ng Ri	etere	ence	Guid	e, re	quire	ed
	_																
	31					9	ap is	11	x 1.5	5 = 1	-6.5"	> 1	2" ex	kistin	g ga	р.	
	1	H	+		+	A	ind,	build	ing b	peing	scre	enec	2" ex l is a	kistin It en	g ga d of	p. block	
			1			A	ind,	build	ing b	peing	scre exist	enec	2" ex d is a	kistin It en	g ga d of	p. block	:.
						A	ind,	build	ing b	peing	scre	enec	2" ex d is a	kistin It en	g ga d of	p. block	:.
						A	ind,	build	ing b	peing	scre	enec	2" ex l is a	kistin It en	g ga d of	p. block	:.
Elevation						A	ind,	build	ing b	peing	scre	enec	2" ex d is a	kistin It en	g ga d of	p. block	<b>.</b> .
	ETCH					AP	ind, Pound	build ling	ing b potes	peing	scre exist	enea s.	l is a	kistin it en	g ga d of	p. block	
	ETCH BA	ASIC S	SCOR	RE, MO	DIFIEI	P	and,	build ling	ing b potes	peing ntial	scre exist	enec	l is a	kistin it en	g ga d of	p. block	£-
		A SIC S	SCOR W2	RE, MO	DIFIEI	P	Addition	build ling   al sketch	ing b potes	peing ntial	scre exist	enec	l is a	RM1	g ga d of	p. block	МН
SKI FEMA BUILDING TYPE Do Not Know	BA			S1 (MRF)	S2	RS, AI	Addition	build ling al sketch	ing b	ments of SCO	exist	te page	d is a	RM1	RM2	block	
SKI FEMA BUILDING TYPE Do Not Know Basic Score	W1	W1A	W2	S1	\$2 (BR)	RS, AI	Addition	build ling   al sketch	ing b	ntial	exist	enec	l is a	t en	d of	URM	мн
SKI  FEMA BUILDING TYPE Do Not Know  Basic Score Severe Vertical Irregularity, M.  Moderate Vertical Irregularity, V.	W1 3.6	W1A	W2 2.9	\$1 (MHF)	\$2 (BR) 2.0 -1.0 -0.6	RS, AI \$3 0M 2.6 -1.1 -0.7	Additions ND FIN S4 (RC SW) 2.0 -1.0 -0.6	build ling   al sketch NAL LE SS (JEM) 1.7 -0.8 -0.5	es or con EVEL 1 15 -09 -05	nments 1 SCO C2 (SW) -1.0 -0.6	on separa	te page	PC2	RM1	RM2 (HD) 1.7 -0.9 -0.5	URM 1.0	MH 1.5
FEMA BUILDING TYPE Do Not Know Basic Score Severe Vertical Irregularity, M. Plan Irregularity, P. Plan Irregularity, P.	3.6 -1.2 -0.7 -1.1	3.2 -1.2 -0.7 -1.0	W2 2.9 -1.2 -0.7 -1.0	\$1 (AHF) 2.1 -1.0 -0.6 -0.8	\$2 (BP) 2.0 -1.0 -0.6 -0.7	RS, AI S3 UM 2.5 -1.1 -0.7 -0.9	Additions ND FIN S4 (RC SW) 2.0 -1.0 -0.6 -0.7	build ling   al sketchi NAL LE SS (JEM) 1.7 -0.8 -0.5 -0.6	es or con EVEL 1  15 -09 -05 -06	ments 1 SCO C2 (SW) -1.0 -0.6 -0.8	on separa	te page 1 PC1 (TU) 1.6 -1.0 -0.6 -0.7	PC2	RM1 (FD) 1.7 -0.9 -0.5 -0.7	RM2 (FD) 1.7 -0.9 -0.5 -0.7	URM 1.0 -0.7 -0.4 -0.4	MH 1.5 NA NA
FEMA BUILDING TYPE Do Not Know  Basic Score Severe Vertical Irregularity, Vi.   Moderate Vertical Irregularity, Vi.   Pire-Code	3.6 -1.2 -0.7 -1.1 -1.1	3.2 -1.2 -0.7 -1.0 -1.0	W2 -1.2 -0.7 -1.0 -0.9	\$1 (MHF) 2.1 -1.0 -0.6 -0.8 -0.6	\$2 BF() 2.0 -1.0 -0.6 -0.7 -0.6	RS, AI S3 0.54 2.5 -1.1 -0.7 -0.9 -0.8	Addition	build ling al sketch NAL LE S5 (JRM INF) 1.7 -0.8 -0.5 -0.6 -0.2	es or con  EVEL 1  15 -09 -05 -06 -04	ments 1 SCO (28) (1.0 -0.6 -0.8 -0.7	on separa	te page .1 PC1 (TU) 1.6 -1.0 -0.6 -0.7 -0.5	PC2	RM1 (FD) 1.7 -0.9 -0.5 -0.7 -0.5	RM2 (FD) 1.7 -0.9 -0.5 -0.7 -0.5	URM 1.0 -0.7 -0.4 -0.4	MH 1.5 NA NA NA
SKI  FEMA BUILDING TYPE Do Not Know  Basic Score  Severe Vertical Irregularity, Vi.,  Moderate Vertical Irregularity, Vi.,  Plan Irregularity, P.,  Pro-Code  Post-Benchmark	3.6 -1.2 -0.7 -1.1 -1.1	W1A 3.2 -1.2 -0.7 -1.0 -1.0 1.9	W2 -1.2 -0.7 -1.0 -0.9 2.2	\$1 (AFF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4	\$2 EHO -1.0 -0.6 -0.7 -0.6 1.4	2.6 -1.1 -0.7 -0.9 -0.8 1.1	Addition/ ND FIN 90 90 90 10 -0.6 -0.7 -0.6 1.9	build ling al sketch NAL LE S5 (JRM INF) 1.7 -0.8 -0.5 -0.5 -0.2 NA	es or con  EVEL 1  1.5  -0.9  -0.5  -0.6  -0.4  1.9	ments 1 SCO (28%) -1.0 -0.6 -0.8 -0.7 -2.1	on separa	te page .f 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	RM1 (FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1	RM2 (ED) 1.7 -0.9 -0.5 -0.7 -0.5 2.1	URM 1.0 -0.7 -0.4 -0.4 0.0 NA	MH 1.5 NA NA NA -0.1 1.2
SKI  FEMA BUILDING TYPE Do Not Know  Basic Score Severe Vertical Irregularity, M.; Moderate Vertical Irregularity, V.; Plan Irregularity, P.; Pre-Code Post-Benchmark Soil Type A or B	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1	3.2 -1.2 -0.7 -1.0 -1.0	W2 -1.2 -0.7 -1.0 -0.9 2.2 0.5	\$1 (MHF) 2.1 -1.0 -0.6 -0.8 -0.6	\$2 BF() 2.0 -1.0 -0.6 -0.7 -0.6	RS, AI S3 0.54 2.5 -1.1 -0.7 -0.9 -0.8	Addition	build ling al sketch NAL LE S5 (JRM INF) 1.7 -0.8 -0.5 -0.6 -0.2	ing b potes es or con EVEL 1 15 -09 -0.5 -0.6 -0.4 1.9 0.4	ments 1 SCO (28) (1.0 -0.6 -0.8 -0.7	on separa  ORE, Si  12  12  13  04  05  01  NA  03	te page 1 PC1 (TU) 1.6 -1.0 -0.5 -0.7 -0.5 -0.0 0.6	PC2	RM1 (FD) 1.7 -0.9 -0.5 -0.7 -0.5	RM2 (FID) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5	URM 1.0 -0.7 -0.4 -0.4	MH 1.5 NA NA -0.1 1.2 0.3
SKI  FEMA BUILDING TYPE Do Not Know  Basic Score Severe Vertical Irregularity, V <sub>L</sub> Moderate Vertical Irregularity, V <sub>L</sub> Pre-Code Post-Banchmank Soil Type A or B Soil Type A or B	3.6 -1.2 -0.7 -1.1 -1.1	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	\$1 (AHF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 0.4	\$2 6F0 -1.0 -0.6 -0.7 -0.6 1.4 0.6	RS, AI 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1	Addition: ND FIN S4 (90 -1.0 -0.6 -0.7 -0.6 1.9 0.6	build ling   al sketch NAL LE S5 (JEBM (NF) 1.7 -0.8 -0.5 -0.5 -0.2 NA 0.5	es or con  EVEL 1  1.5  -0.9  -0.5  -0.6  -0.4  1.9	nments   SCO   SW   -1.0   -0.6   -0.8   -0.7   2.1   0.5	on separa	te page .f 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 0.4	RM1 FDI 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5	RM2 (ED) 1.7 -0.9 -0.5 -0.7 -0.5 2.1	URM 1.0 -0.7 -0.4 -0.4 0.0 NA 0.3	MH 1.5 NA 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  Soil Type E (1-3 stories)  Soil Type E (1-3 stories)	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2	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	\$1 (4HP) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 0.4 -0.2	\$2 BR) -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4	RS, Al 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1	Additions ND FIN 20 -1.0 -0.6 -0.7 -0.6 -0.1	build ling     sketch   NAL LE   S5   (JEEM   INF)   1.7   -0.8   -0.5   -0.2   NA   0.5   -0.4	ing b potes es or con EVEL 1 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0	nments of SCO (SC) (SW) (1.0 - 0.6 - 0.8 - 0.7 2.1 0.5 0.0	on separa RE, S <sub>1</sub> 12 -0.4 -0.5 -0.1 NA 0.3 -0.2	tte page 1.6 1.6 1.0 1.6 1.0 1.6 1.0 1.6 1.0 1.6 1.0 1.6 1.0 1.6 1.0 1.6 1.0 1.6 1.0 1.6 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	PC2  1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.4 -0.1	RM1 FEI 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1	RM2 (FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1	URM 1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2	MH 1.5 NA NA -0.1 1.2 0.3 -0.4
SKI  FEMA BUILDING TYPE Do Not Know  Basic Score Severe Vertical Irregularity, M.: Moderate Vertical Irregularity, M.: Plan Irregularity, P.: Pro-Code  Post-Benchmark Soil Type E (1-3 stories) Soil Type E (1-3 stories) Minimum Score, Sum	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3	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 (#FF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.2 -0.6	\$2 BR) -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.6	A P P S3 (LM) 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA	Addition ND FIN 20 -1.0 -0.6 -0.7 -0.6 1.9 0.6 -0.1 -0.6	build ling     sketch   NAL LE   S5   URM   INF    1.7   -0.8   -0.5   -0.6   -0.2   NA   0.5   -0.4   -0.4	es or con EVEL 1 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.0 -0.5	ntial sco c2 swo -1.0 -0.6 -0.8 -0.7 -0.5 -0.0 -0.7	on separa RE, S <sub>1</sub>	1.6 -1.0 -0.5 -0.7 -0.5 -0.3 NA -0.2	PC2  1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1 -0.4	RM1 FT1 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5	RM2 (FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 -0.5 -0.1 -0.6 0.3	URM 1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2	MH 1.5 NA NA NA -0.1 1.2 0.3 -0.4 NA
SKI  FEMA BUILDING TYPE Do Not Know  Basile Score  Severe Vertical Irregularity, V.;  Moderate Vertical Irregularity, V.;  Pre-Code  Post-Benchmank  Soil Type A or B  Soil Type E (1-3 stories)  Soil Type E (2-3 stories)  Minimum Score, Sum  FINAL LEVEL 1 SCORE, SL; ≥ Sanc.	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3	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 -0.2 -0.6 0.5	\$2 EFO -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.6	A P P S3 (M) 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6	Addition. ND FIN S4 -0.6 -0.7 -0.6 -0.7 -0.6 -0.1 -0.6 -0.1	build ling     sketch   NAL LE   S5   URM   INF    1.7   -0.8   -0.5   -0.6   -0.2   NA   0.5   -0.4   -0.4	ing b potes es or con EVEL 1 1.5 -0.9 -0.5 -0.6 -0.4 0.0 -0.5 0.3	2.0 (-1.0 (-0.5) (-0.7) (-0.7) (-0.7) (-0.7)	on separate exist (12) (13) (14) (14) (15) (16) (17) (17) (17) (17) (17) (17) (17) (17	tte page 1.6 1.6 -0.5 -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	RM1 FT1 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5	RM2 (FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 -0.5 -0.1 -0.6 0.3	URM 1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2	MH 1.5 NA NA NA -0.1 1.2 0.3 -0.4 NA
SKI  FEMA BUILDING TYPE Do Not Know  Basic Score  Severe Vertical Irregularity, M.;  Moderate Vertical Irregularity, M.;  Pire-Code  Post-Benchmark Soil Type (4-9 stories) Soil Type (5-9 stories) Minimum Score, Sum  FINAL LEVEL 1 SCORE, Sur & Sanot  EXTENT OF REVIEW	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3	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 (44F) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5	\$2 BH0 -1.0 -0.6 -0.7 -0.6 1.4 -0.6 -0.4 -0.6 0.5	ARS, AI 2.6 -1.1 -0.7 -0.9 8 1.1 0.1 0.2 NA 0.6	Addition: ND FIN S4 -0.6 -0.6 -0.6 -0.1 -0.6 -0.5	build king     AL LE   S.H.M.   NPI     -0.8   -0.5   -0.2   -0.2   -0.4   -0.4   -0.5	ing b pootes es or con EVEL 1 1.5 -0.9 -0.5 -0.4 -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 -0.5 -0.5 -0.5 -0.5 -0.5	nments 1 SCO  2.0  -1.0  -0.6  -0.7  2.1  0.5  0.0  0.7  2.1  0.5  0.0  0.7  0.7  0.7  0.7  0.8	on separa RE, S <sub>1</sub> 12 30 40 40 40 40 40 40 40 40 40 40 40 40 40	tte page 1.1 PC1 (10) 1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 0.3 0.2 0.7 - RED	PC2 1.4 -0.9 -0.5 -0.6 -0.3 -0.4 -0.1 -0.4 -0.2 -0.3=-0	RM11 (FL) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 -0.1 0.5 -0.1 0.5 -0.1	RM2 (FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 -0.5 -0.1 -0.6 0.3	URM 1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2	MH 1.5 NA NA NA -0.1 1.2 0.3 -0.4 NA
SKI  FEMA BUILDING TYPE  Do Not Know  Basile Score  Severe Vertical Irregularity, M.;  Moderate Vertical Irregularity, M.;  Pire-Code  Post-Benchmark Soil Type 6 (4-3 stories) Soil Type 6 (4-3 stories) Minimum Score, Sum  FINAL LEVEL 1 SCORE, Scr & Sanot.  EXTENT OF REVIEW	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3	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 (AHP) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5 OTHEF	\$2 BF0 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.6 0.5	ARS, AI  S3  -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6  ARDS Is That I	Addition: ND FIN S4 (90) -1.0 -0.6 -1.9 0.6 -0.7 -0.6 -0.1 -0.6 -0.5	build king     AL LE   S.H.M.   NPI     -0.8   -0.5   -0.2   -0.2   -0.4   -0.4   -0.5	ing b pootes EVEL 1 C1 PMF1 1.5 -0.9 -0.6 -0.4 1.9 0.0 -0.5 0.3	2.0 -1.0 -0.6 -0.8 -0.7 -0.7 -0.7 -0.3	on separa RE, S <sub>1</sub> OH OA	1.6 -1.0 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.8 -0.7 -0.5 -0.8 -0.7 -0.5 -0.8 -0.7 -0.5 -0.8 -0.8 -0.7 -0.5 -0.8 -0.8 -0.8 -0.8 -0.8 -0.8 -0.8 -0.8	PG2  1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.1 -0.4 -0.1 -0.4 -0.2 -0.5=-0	RM1 (T) 1.7 -0.9 -0.7 -0.5 2.1 -0.1 -0.5 -0.1 -0.5 -0.2 -0.2	RM2 FD 1.7 -0.9 -0.5 -0.7 -0.5 -0.1 -0.6 0.3 0.3; u	URM 1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2	MH 1.5 NA NA NA -0.1 1.2 0.3 -0.4 NA
SKI  FEMA BUILDING TYPE  Do Not Know  Basic Score  Severe Vertical Irregularity, M.  Moderate Vertical Irregularity, M.  Plan Irregularity, P.  Pre-Code  Post-Benchmark  Soil Type A or B  Soil Type E (3-3 stories)  Soil Type E (3-3 stories)  Minimum Score, Sum  FINAL LEVEL 1 SCORE, Sar & Stance  EXTENT OF REVIEW  Exterior:  Partial        Interior:    None      Drawings Roviewed:   Yes	8/A W1 3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3 1.1  All Sides Visible No	3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2 -0.6	W2 29 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7	\$1 (4HF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5 OTHEF Are Therr Detailed	\$2 BHO -1.0 -0.6 -0.7 -0.6 1.4 -0.6 -0.4 -0.6 0.5 R HAZ	RS, AI  S3  UM  2.5  -1.1  -0.7  -0.9  -0.8  1.1  0.1  0.1  0.1  ARDS  Is That I al Evalue	Additions  Additions  ND FIN  S4 -0.6 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.5  Inigger A action?	build sketch NAL LE SS (MAN) -0.8 -0.5 -0.2 -0.4 -0.5	ing b	2.0 (2.8 %) (2.0 -1.0 (3.0 %) (3.0 %) (3.0 %) (3.0 %) (3.0 %) (4.0 %)	on separa RE, S <sub>1</sub> O1  O2  O3  O2  O3  I.2-  EQUIR	tte page 1.6 1.6 -0.7 -0.5 0.6 -0.3 NA 0.2 0.7 -0.8 ED	PC2 1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 0.1 -0.4 0.2 0.3=0	RM1 (T) 1.7 -0.9 -0.7 -0.5 2.1 -0.1 -0.5 -0.1 -0.5 -0.2 -0.2	RM2 FD 1.7 -0.9 -0.5 -0.7 -0.5 -0.1 -0.6 0.3 0.3; u	URM 1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2	MH 1.5 NA NA NA -0.1 1.2 0.3 -0.4 NA
SKI  FEMA BUILDING TYPE  Do Not Know  Basic Score Severe Vertical Irregularity, M.  Moderate Vertical Irregularity, M.  Pre-Code Post-Benchmank Soil Type 6 (4-3 stories) Soil Type E (3-3 stories) Minimum Score, Sum  FINAL LEVEL 1 SCORE, Scr & Stand.  EXTENT OF REVIEW  Exterior: Drawings Reviewed: Soil Type 5 (2-3 stories)  Drawings Reviewed: Soil Type 5 (3-3 stories)  EXTENT OF REVIEW  Exterior: Drawings Reviewed: Soil Type 5 (3-3 stories)  Soil Type 5 (3-3 stories)  Soil Type 5 (3-3 stories)  EXTENT OF REVIEW  Exterior: Soil Stories Soil Type 5 (3-3 stories)  Soil Type 5 (3-3 stories)  Soil Type 5 (3-3 stories)  Exterior: Soil Type 5 (3-3 stories)	8/4 W1 3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3 f./	W1A  3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2 -0.6 0.9  Aeri	W2 29 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7	\$1 64(F)  2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.4 -0.6 0.5  OTHER	\$2 BHO -1.0 -0.6 -0.7 -0.6 1.4 -0.6 -0.4 -0.6 0.5 R HAZ	ARS, AI  \$3 0.5 -1.1 -0.7 -0.9 -0.8 -1.1 0.1 0.2 NA 0.6  ARDS is That It all Evaluarities (unitable)	Additions  Additions  ND FIN  S4 -0.6 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.5  Inigger A action?	build sketch NAL LE SS (MAN) -0.8 -0.5 -0.2 -0.4 -0.5	ing b	2.0 -1.0 -0.8 -0.7 -0.3 ION R sus, sunkon sis, score sis, unkon sis, score si	on separa exist on separate exist on separ	1.6 -1.0 -0.6 -0.7 -0.5 -0.7 -0.5 -0.6 -0.7 -0.5 -0.6 -0.7 -0.6 -0.6 -0.7 -0.7 -0.6 -0.6 -0.7 -0.6 -0.7 -0.7 -0.7 -0.7 -0.7 -0.7 -0.7 -0.7	PC2  1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.1 -0.4 -0.1 -0.4 -0.2 -0.3=-0	RM1 (T) 1.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 rother b	RM2 FD 1.7 -0.9 -0.5 -0.7 -0.5 -0.1 -0.6 0.3 0.3; u	URM 1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2	MH 1.5 NA NA NA -0.1 1.2 0.3 -0.4 NA
SKI  FEMA BUILDING TYPE  Do Not Know  Basic Score  Severe Vertical Irregularity, V.  Moderate Vertical Irregularity, V.  Pre-Code  Post-Benchmark  Soil Type A or B  Soil Type E (*3 stories)  Minimum Score, Sum  FINAL LEVEL 1 SCORE, Str & Story  EXTENT OF REVIEW  EXTENT OF REVIEW  EXTENTOR Drawings Reviewed: Yes Soil Type Type Type Type Type Type Type Type	8/4 W1 3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3 f./	W1A  3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2 -0.6 0.9  Aeri	W2 2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7	\$1 (4FF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5 OTHEF Are Then Detailed:	\$2 #R0 2.0 -1.0 -0.6 -0.7 -0.6 -0.4 -0.6 -0.5 R HAZZ 	ARDS Is That I all Evaluation	Additions  Additions  ND FIN  S4 -0.6 -0.7 -0.6 -0.7 -0.6 -0.7 -0.6 -0.5  Inigger A attion?	build sketch was LE S5 -0.8 -0.5 -0.5 -0.4 -0.5	ing b	2.0 (2.0 (2.0 (2.0 (2.0 (2.0 (2.0 (2.0 (	on separa RE, S <sub>1</sub> O1  O2  O3  O2  O3  I.2-  EQUIR	1.6 -1.0 -0.6 -0.7 -0.5 -0.7 -0.5 -0.6 -0.7 -0.5 -0.6 -0.7 -0.6 -0.6 -0.7 -0.7 -0.6 -0.6 -0.7 -0.6 -0.7 -0.7 -0.7 -0.7 -0.7 -0.7 -0.7 -0.7	PC2  1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.1 -0.4 -0.1 -0.4 -0.2 -0.3=-0	RM1 (T) 1.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 -0.5 -0.7 rother b	RM2 FD 1.7 -0.9 -0.5 -0.7 -0.5 -0.1 -0.6 0.3 0.3; u	URM 1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2	MH 1.5 NA NA NA -0.1 1.2 0.3 -0.4 NA
Basic Score Severe Vertical Irregularity, V. Moderate Vertical Irregularity, V. Moderate Vertical Irregularity, V. Pre-Code Post-Banchmark Soil Type & Or B Soil Type & Or B Soil Type & C 3 stories) Minimum Score, Sum FINAL LEVEL 1 SCORE, Sar & Stanc.  EXTENT OF REVIEW EXTENT OF REVIEW Collaboration Collaborat	8/4 W1 3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3 f./	W1A  3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2 -0.6 0.9  Aeri	W2 2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7	S1 (MFF)  2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5  OTHER Are Then Detailed:    Poun cut-ol	\$2 #R0 2.0 -0.6 -0.7 -0.6 -0.4 -0.4 -0.6 0.5 R HAZ R H	ARS, AI  2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.2 NA 0.6 ARDS la Evalue min) is from ta	Addition/Pill S4	build king	ing b potes	2.0 (2.0 (2.0 (2.0 (2.0 (2.0 (2.0 (2.0 (	on separa exist on separate exist on separ	to page 1 PC1 (10) 1.6 -1.0 -0.5 2.0 0.7 -0.5 2.0 0.7 -0.5 2.0 0.7 -0.5 -0.3 NA 0.2 -0.7 -0.5 -0.8 -0.8 -0.8 -0.8 -0.8 -0.8 -0.8 -0.8	PC2  1.4 -0.9 -0.5 -0.6 -0.4 -0.1 -0.4 -0.2 -0.3=-0  Require	RM1   FT   1.7   -0.9   -0.5   -0.7   -0.5	RM2 (#D) -0.5 -0.7 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	URM 1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2 -0.2 SE S <sub>moo</sub>	MH 1.5 NA NA NA -0.1 1.2 0.3 -0.4 NA -0.5 -0.4 NA -0.5
Basic Score Severe Vertical Irregularity, M. Basic Score Severe Vertical Irregularity, M. Moderate Vertical Irregularity, M. Pro-Code Post-Benchmark Soil Type 6 (4-3 stories) Soil Type E (3-3 stories) Minimum Score, Sum FINAL LEVEL 1 SCORE, Str & Stand.  EXTENT OF REVIEW Exterior: Drawings Reviewed: Soil Type Source: State Geold Geologic Hazards Source: State Geold Contact Person:	84 W1 3.6 -1.2 -0.7 -1.1 1.6 0.1 0.2 -0.3 f./ shisble No. egist Geolog	3.2 -1.2 -0.7 -1.0 -1.0 -1.0 0.3 0.2 -0.6 0.9	W2 2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7	S1 (48F)  2.1 -1.0 -0.6 -0.8 -0.6 1.4 0.4 -0.5 0.5  OTHEF Are There is a cut-of Fallin building Geological Geo	\$2 80 -1.0 -0.6 -0.7 -0.6 -0.4 -0.6 -0.5 R HAZZ Structur g hazard mg c hazard g g hazard g g hazard	P  S3  LM  S3  LM  C3.5  -1.1  -0.7  -0.9  1.1  0.1  NA  0.6  ARDS  Is That I al Evaluation of S  is from to is from to	Addition.  ND FIN  S4 (90 0.6 0.7 0.6 1.9 0.6 0.1 0.6 0.5 Trigger A action?	build ling   1   1   1   1   1   1   1   1   1	ing be potentially a serior content of the potential of t	SCO   SWO	on separa PRE, S <sub>1</sub> On Separa On Separa PRE, S <sub>1</sub> On Separa O	PC1 (70)  1.6 -1.0 -0.5 -0.7 -0.5 -0.3 NA 0.2 -0.7 -0.8 ED aluation or cut-off present	PC2  1.4 -0.9 -0.5 -0.6 -0.3 -0.4 -0.1 -0.4 -0.1 -0.4 -0.1 -0.4 -0.1 (poun	RM1   FT   1.7   -0.9   -0.5   -0.1   -0.5   -0.1   -0.5   -0.1   -0.5   -0.1   -0.5   -0.1   -0.5   -0.5   -0.1   -0.5   -0.5   -0.1   -0.5	RM2 909 -0.5 -0.1 -0.6 -0.1 -0.6 -0.3 -0	URM 1.0 -0.7 -0.4 -0.9 0.0 NA 0.3 -0.2 -0.2 -0.2 -0.2 -0.2	MH 1.5 NA NA NA -0.1 1.2 0.3 -0.4 NA NA -0.2
Basic Score Severe Vertical Irregularity, V. Moderate Vertical Irregularity, V. Moderate Vertical Irregularity, V. Pre-Code Post-Banchmark Soil Type & Or B Soil Type & (1-3 stories) Soil Type & (2-3 stories) Minimum Score, Sum FINAL LEVEL 1 SCORE, Sar a Story, EXTENT OF REVIEW EXTENT OF REVIEW EXTENTOR REVIEW EXTENTOR REVIEW Exterior: Drawings Reviewed: Yes & Soil Type Source: State Geold Geologic Hazards Source: State Geold Contact Person:	84 W1 3.6 -1.2 -0.7 -1.1 1.6 0.1 0.2 -0.3 f./ shisble No. egist Geolog	3.2 -1.2 -0.7 -1.0 -1.0 -1.0 0.3 0.2 -0.6 0.9 Aeri Enter	W2 29 -1.2 -0.7 -1.0 -0.9 22 0.5 0.1 -0.9 0.7	S1 (48F)  2.1 -1.0 -0.6 -0.8 -0.8 -0.5 -0.5 -0.6 -0.5 -0.6 -0.6 -0.6 -0.6 -0.6 -0.6 -0.6 -0.6	\$2 BR0 2.0 -1.0 -0.6 -0.7 -0.6 -0.4 -0.4 -0.6 0.5 R HAZ z Hazard ding potential services of the s	ARS, AR  \$3 2.5 -1.1 -0.7 -0.9 -0.8 1.1 0.2 NA 0.6  ARDS Is That I all Evaluation (unim) is from ta	Addition/Pill S4	build ling   1   1   1   1   1   1   1   1   1	ing be potentially be properly by the potential by the po	2.0 (-1.0 (-2.0 (-	on separa  RE, S <sub>1</sub> Other  Ot	to page  1 PC1 (10) 1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 0.2 0.7 -0.8 ED shuation A buildiff present	PC2  1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.4 -0.1 -0.1 -0.2  C GOUNG	RM1 (FT) 1.7 -0.9 -0.5 -0.7 -0.5 -0.1 -0.5 -0.3 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	RM2 90) 1.7 -0.9 -0.5 -0.1 -0.6 -0.3 -0.3 -0.3 -0.3 -0.3 -0.3	URM  1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 0.2 0.2 SEE Smooneeck one)	MH 1.5 NA NA NA -0.1 1.2 0.3 -0.4 NA 7.0
Basic Score Severe Vertical Irregularity, M. Basic Score Severe Vertical Irregularity, M. Moderate Vertical Irregularity, M. Pro-Code Post-Benchmark Soil Type 6 (4-3 stories) Soil Type E (3-3 stories) Minimum Score, Sum FINAL LEVEL 1 SCORE, Str & Stand.  EXTENT OF REVIEW Exterior: Drawings Reviewed: Soil Type Source: State Geold Geologic Hazards Source: State Geold Contact Person:	84 W1 3.6 -1.2 -0.7 -1.1 1.6 0.1 0.2 -0.3 f./ shisble No. egist Geolog	3.2 -1.2 -0.7 -1.0 -1.0 -1.0 0.3 0.2 -0.6 0.9	W2 29 -1.2 -0.7 -1.0 -0.9 22 0.5 0.1 -0.9 0.7	S1 (48F)  2.1 -1.0 -0.6 -0.8 -0.8 -0.5 -0.5 -0.6 -0.5 -0.6 -0.6 -0.6 -0.6 -0.6 -0.6 -0.6 -0.6	\$2 80 -1.0 -0.6 -0.7 -0.6 -0.4 -0.6 -0.5 R HAZZ Structur g hazard mg c hazard g g hazard g g hazard	ARS, AR  \$3 2.5 -1.1 -0.7 -0.9 -0.8 1.1 0.2 NA 0.6  ARDS Is That I all Evaluation (unim) is from ta	Addition.  ND FIN  S4 (90 0.6 0.7 0.6 1.9 0.6 0.1 0.6 0.5 Trigger A action?	build ling   1   1   1   1   1   1   1   1   1	ing be bootes or come	peinantial  score 1 SCO G2 9.0 1.0 0.8 0.7 2.1 0.5 0.0 0.7 0.3  ION R ss, scoress, other o, nonstructures, o,	on separa RRE, S1  O4  O5  O4  O5  O1  O2  O3  J.2-  EQUIR  tural Eva  turate Eva  turate tural in turatural	te page 1 PC1 1.6 -1.0 -0.5 2.0 0.6 -0.3 NA 0.2 0.7 - ED ala building present Evalua seards scards exards e	PC2  1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1 -0.4 -0.2 0.5=0 Require (poun dion Recidentified dissistant for the constraint for th	RM1 (FT)  1.79 -0.5 -0.7 -0.5 2.1 0.5 -0.7 -0.5 2.2 < comment that sho may required.	RM2 90) 1.7 -0.9 -0.5 -0.1 -0.6 -0.3 -0.3 -0.3 -0.3 -0.3 -0.3	URM  1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 0.2 0.2 SEE Smooneeck one)	MH 1.5 NA NA -0.1 1.2 0.3 -0.4 NA -0.0

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. 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). 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)</u> or <u>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).
- By adding the circled numbers in both the S1 and C1 columns, 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, SLI, as 2.7.</u> 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 of FEMA P-154 Data Collection	_	s for	Potent	ial Se	ismic	Haza	ards					HIGI	نمی د	Leve	
PEMA P-134 Data Collection	II FOIIII		_		_							11101	1 001	SIIIIC	Jity
	No.				Add				ony Dr	ive					
7710					1	_	Anyp	lace				Zip:	91011		
<b>- 調集器は高</b> 径						cel Num	_								
		*				ding Na									
					Use	: <u>R</u> e	esider	ntial	and co	mmerci	al				
					Lati	tude:				Longit	ude:				
					Ss:					S <sub>1</sub> :					
SECTION 1					Scr	eener(s)	: <u>D</u> .	Tayl	or/A∙ 、	Tones	Date/Tim	e: <u>2</u> /	/28/	14 1p	m
	No. of Lot				No.	Stories:	Abov	e Grade	: 22	Below Grad	le: 2	Yea	r Built:	2000	EST
THE PERSON NAMED IN COLUMN 2 IS NOT					Tota	l Floor			712.8			Code	Year:		
	100	***				itions:	X N		Yes, Yea			-			
THE PERSON NAMED IN					Occ	upancy	Ass	embly	Commercia	Emer.	Services	Пн	istoric	☐ Shelt	ter
A 4454 18 8		44			1			strial	Office	Schoo	I	G	overnmer	ıt	
THE RESERVE AND ADDRESS OF THE PERSON NAMED IN					1		Utili	ty	Warehouse	Reside	ential # Ur	nits: D	NK_		
	******	****			Soil	Type:	□A	□в	□с	<b> X</b> D	□E [	]F /0	NK		
		1	_		$\dashv$		Hard	Avg	Dense	Stiff	Soft P	oor 🗸	DNK, ass	ите Туре	D.)
		Щ			_		Rock	Rock	Soil	Soil	Soil 8	Soil			
and the same of	B # 15	10			Geo	logic Ha	azards:	None							
79	A	Les			Adja	cency:		□ F	ounding	☐ Falling	Hazards	from Talle	er Adjace	nt Buildin	g
		4			Irre	gularitie	s:		Vertical (type	s/severity)					
	+			+	1				Plan (type)	reent	rant d	ornei	rs		
5ymmetric	<b>∧</b>	-		-	Exte	rior Fal	lina		Inbraced Ch	imnevs	☐ He	avy Clade	ding or H	eavy Ven	пеег
	+		_			ards:	9		arapets			pendages		,	
	<b>V</b>	$\vdash$	T						Other:						
304			90'		CO	MMENT	S:								
304					$^{-}$ V	ear b	uilt	is aft	er ben	chmark	uear	for i	laddi	na	
30			$\neg$	_					efore,						
				-		azard		INCI	51016,	reavy c	iuuuiii	9 110	V 44 11	********	
<b>←</b> 90°	<del>&gt; </del> <  9(	y'->		_	_ "	#2-W/ U									
					٨	lot a	onare	nt w	hether	steel	or cor	crete	As	sume	
Partial Plan	View								are sco						
1 47 5/47 7 747	77.50				٦,		0, 0	oun .	W/ E 300	rea wit	JH 3111	mu i	Esuro	•	
					_										
SK	TCH					Additiona	al sketch	es or con	nments on s	eparate pag	е				
	BASI	sco	RE, MO	DIFIE	RS, A	ND FIN	IAL LE	EVEL	1 SCOR	E, S <sub>L1</sub>					
FEMA BUILDING TYPE Do Not Know	W1 W14	W2	S1 WRF)	\$2 (BR)	\$3 (UM)	S4 (RC	S5 (URM	C1 (MRF)	C2 (SW)	C3 PC1 JRM (TU)	PC2	RM1 (FD)	RM2 (RD)	URM	MH
		1	_	1	-	SW)	INF)	=		NF)	+				
Basic Score	3.6 3.2 -1.2 -1.2	-1.2	2.1	2.0 -1.0	2.6 -1.1	-1.0	1.7 -0.8	-0.9	2.0	1.2 1.6 0.7 -1.0	-0.9	1.7 -0.9	-0.9	1.0 -0.7	1.5 NA
Severe Vertical Irregularity, V <sub>L1</sub> Moderate Vertical Irregularity, V <sub>L1</sub>	-0.7 -0.7			-0.6	-0.7	-1.0	-0.8	-0.9		0.7 -1.0	-0.9	-0.9	-0.9	-0.7	NA NA
Plan Irregularity, PL1	-1.1 -1.0	-1.0	-	-0.7	-0.9	-0.7	-0.6	(iii)		0.5 -0.7	-0.6	-0.7	-0.7	-0.4	NA.
Pre-Code	-1.1 -1.0	-0.9	-0.6	-0.6	-0.8	-0.6	-0.2	-0.4		0.1 -0.5	-0.3	-0.5	-0.5	0.0	-0.1
Post-Benchmark	1.6 1.9	2.2		1.4	1.1	1.9	NA	(1.9)	2.1	NA 2.0	2.4	2.1	2.1	NA	1.2
Soil Type A or B	0.1 0.3	0.5		0.6	0.1	0.6	0.5	0.4	0.0	0.6	0.4	0.5	0.5	0.3	0.3
Soil Type E (1-3 stories)	0.2 0.2 -0.3 -0.6	-0.9		-0.4 -0.6	0.2 NA	-0.1 -0.6	-0.4	-0.5		0.2 -0.3 0.3 NA	-0.1 -0.4	-0.1 -0.5	-0.1 -0.6	-0.2 -0.2	-0.4 NA
Soil Type E (> 3 stories) Minimum Score, Serv	1.1 0.9	-0.5		0.5	0.6	0.5	0.5	0.3	411	0.3 NA 0.3 0.2	0.2	0.3	0.3	0.2	1.0
				0.5	0.0	0.5	0.5		0.3	V.3   V.2	0.2	0.3	0.3	U.2	7.0
FINAL LEVEL 1 SCORE, S <sub>L1</sub> ≥ S <sub>MW</sub> :		5 <sub>11</sub>		_				2.8							
EXTENT OF REVIEW			OTHER						ION REC						
Exterior: Partial X	All Sides 🔲 A Visible 🔲 E	erial	Are Then				١.		ed Structur						
Interior: None Drawings Reviewed: Yes		nterea	Detailed						es, unknown			r other b	uilding		
Soil Type Source:				ding pot ff, if knov		iless S <sub>L2</sub>	>		es, score les es, other ha						
Geologic Hazards Source:						aller adja	cent	i No	)	areo preser					
Contact Person:			buildi	ng				_	ed Nonstru	ctural Evalu	ation Red	commen	ded? (ch	eck onel	
LEVEL 2 SCREENING PERF	DMED2					oil Type			es, nonstruc						
		N.		licant da tructural		terioratio	m ID	☐ No	o, nonstructi	ıral hazards	exist that				
Yes, Final Level 2 Score, St2			2.00	. June 61					tailed evalu				7 DVC		
Nonstructural hazards? Yes		No					_		o, no nonstr				DNK		
Where information	cannot be veri	fied, scr	eener shal	note th	e follow	ing: ES	T = Esti	mated o	r unreliable	data OR	DNK = D	o Not Ki	90W		
Legend: MRF = Moment-re		_	Reinforced	_	_	_			nasonry infill		/lanufactur		_	Flexible di	

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 Collectio		dings m	101											HIGI	H Sei	Leve ismic	
						Add	ress:	169 P	arkwa	av Blv	d						
										Any			7	Zip: 9	0922		
						Out.					Elem	ontan			00322		
		The same of the sa					er Identi					entary	JUIL	JOI			
The same of the sa			II.	3.8			ding Na	me:	main	Bulla	ing						
STATE OF THE PARTY			м			Use	_	0.201	2206					-74.31	10460		
	7			30			tude: 4		2300			Longitu	de: 0.39	-/4.3	10469		
		-	ĸ.	July 1	7	Ss:	1.4		0.1			—		_	14.4.1		
	-	_		distant.	1	Scre	ener(s)	<u> P.</u>	Catz			<u> </u>	ate/Time	e: <u>8</u> /	/14/:	13 1	рт
			ю	200	_ 8	No.	Stories:	Abov	re Grade	: 2	Belov	w Grade	: 0	Yea	r Built:	1993	□ EST
				or other dist	WWI15	Tota	l Floor	Area (so	q. ft.):	842	3 sqft			Code	e Year:		
1 TO 10	E D			4-10	H	Add Add	itions:	ΧN	lone [	Yes, '	Year(s) B	uit:					
CONTRACT TO STATE OF THE PARTY				110	3.	₫ Occ	upancy:	Ass	embly	Comme	ercial	Emer, S	ervices	Пн	istoric	☐ Shelt	ter
					7	4			strial	Office	(	School			lovemmen	nt	
						-		Usili	ty	Wareho	ouse	Residen	tial, #Ur	nits:			
The second second		There .		1000	4	Soil	Type:	□A	□В		c 🗵	D [	]E [		NK		
						┥ .		Hard	Avg	Den					DNK, assi	ume Type	D.
struct	-	-	_	_	$\vdash$			Rock	Rock	So				Soil			_
	nstruc					Geo	logic Ha	zards:	Liquefac	ction:(Ye	No/DN	< Lands	ide: Yes	(No)DNK	Surf. Ru	upt.: Ye	NoDNI
/ par	rtition	١ .				Adja	cency:		_ F	Pounding	, 0	Falling H	Hazards f	from Talle	er Adjace	nt Buildin	g
/ / wa	lls		$\forall$			Irred	gularitie	s:	K	Vertical (	type/sev	erity)	Short	t Colu	ımns	/Seve	re
<del>                                      </del>	+	-	-	+	-	۳۰۰۰,	junui icio			Plan (typ					mmei		.,,
	$\rightarrow$	-	_	_	_	Evte	rior Fall	lina			Chimne				ding or H		neer
21'							ards:	iliy		Parapets		yo		pendages		eavy vei	1001
						7				Other:			·**	portougue			
8'	-+-	-	_	-+-	_	co	MMENT	S:									
* <del>                                    </del>	-		-	-+-	-	1՝՝			walls	ave	all in	nort	h-soi	uth d	lirecti	on.	
	$\neg \vdash \vdash$		_	-		4									terio		ls in
21'	$\perp \! \! \! \! \! \perp \! \! \! \! \! \! \! \! \! \! \! \! \!$						hoth	dire	ction	c Bu	it the	all +	he en	ct-w	est w	ialle a	is in
						1									herefo		
941/	6 bay	e v 1	40		-	1					ally i					,,,,	
1 1 1	- Jung	7 7 7	1	_		1			***								
= 1 1 21 1		1.01	-			-	Infil	l at f	irst f	loor i	cause	s sho	rt col	lumn	s.		
First floor pla	in (21	nd tip	or!	sim)	IN.	4											
						1_											
CVI	ETCH						Additiona	u sketch	es or cor	mments o	on separa						
SK	ETCH B	ASIC S	co	RE, MC	DIFIER	RS. AI				1 SCO	RE. S	L1					
FEMA BUILDING TYPE Do Not		ASIC S	W2	S1	\$2	\$3	ND FIN	S5	C1	C2	C3	PC1	PC2	RM1	(RM2)	URM	МН
	В						ND FIN	IAL LE	EVEL			_	PC2	<b>RM1</b> (FD)	(RD)	URM	МН
FEMA BUILDING TYPE Do Not Know Basic Score	W1 3.6	W1A 3.2	W2 2.9	\$1 (MRF)	\$2 (BR)	\$3 (LM)	S4 (RC SW) 2.0	S5 (URM INF) 1.7	C1 (MRF)	C2 (SW)	C3 (URM INF)	PC1 (TU)	1.4	(FD)	(RD)	1.0	1.5
FEMA BUILDING TYPE Do Not Know  Basic Score Severe Vertical Irregularity, V <sub>L1</sub>	B/ W1 3.6 -1.2	W1A 3.2 -1.2	W2 2.9 -1.2	\$1 (MRF) 2.1 -1.0	\$2 (BR) 2.0 -1.0	S3 (LM) 2.6 -1.1	84 (RC SW) 2.0 -1.0	S5 (URM (NF) 1.7 -0.8	C1 (MRF) 1.5 -0.9	C2 (SW) 2.0 -1.0	C3 (URM INF) 1.2 -0.7	PC1 (TU) 1.6 -1.0	1.4	(FD) 1.7 -0.9	179	1.0 -0.7	1.5 NA
FEMA BUILDING TYPE  Do Not Know  Basic Score Severe Vertical Irregularity, V <sub>L1</sub> Moderate Vertical Irregularity, V <sub>L2</sub>	3.6 -1.2 -0.7	3.2 -1.2 -0.7	2.9 -1.2 -0.7	\$1 (MRF) 2.1 -1.0 -0.6	\$2 (BR) 2.0 -1.0 -0.6	\$3 (LM) 2.6 -1.1 -0.7	\$4 (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 (URM INF) 1.2 -0.7 -0.4	PC1 (TU) 1.6 -1.0 -0.6	1.4 -0.9 -0.5	(FD) 1.7 -0.9 -0.5	(RD)	1.0 -0.7 -0.4	1.5 NA NA
FEMA BUILDING TYPE  Do Not Know  Basic Score  Sovere Vertical Irregularity, V <sub>L1</sub> Moderate Vertical Irregularity, V <sub>L7</sub> Plan Irregularity, P <sub>L1</sub>	3.6 -1.2 -0.7 -1.1	3.2 -1.2 -0.7 -1.0	2.9 -1.2 -0.7 -1.0	\$1 (MRF) 2.1 -1.0 -0.6 -0.8	\$2 (BR) 2.0 -1.0 -0.6 -0.7	\$3 (LM) 2.6 -1.1 -0.7 -0.9	S4 (RC SW) 2.0 -1.0 -0.6 -0.7	S5 (URM INF) 1.7 -0.8 -0.5 -0.6	C1 (MRF) 1.5 -0.9 -0.5 -0.6	C2 (SW) 2.0 -1.0 -0.6 -0.8	C3 (URM INF) 1.2 -0.7 -0.4 -0.5	PC1 (TU) 1.6 -1.0 -0.6 -0.7	1.4 -0.9 -0.5 -0.6	1.7 -0.9 -0.5 -0.7	(a) 5 (b) 5 (c) 6	1.0 -0.7 -0.4 -0.4	1.5 NA NA NA
FEMA BUILDING TYPE  Do Not Know  Basic Score Severe Vertical Irregularity, V <sub>L1</sub> Moderate Vertical Irregularity, V <sub>L7</sub> Plen Irregularity, P <sub>L1</sub> Pre-Code	3.6 -1.2 -0.7 -1.1 -1.1	3.2 -1.2 -0.7 -1.0 -1.0	2.9 -1.2 -0.7 -1.0 -0.9	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6	\$2 (BR) 2.0 -1.0 -0.6 -0.7 -0.6	\$3 (LM) 2.6 -1.1 -0.7 -0.9 -0.8	S4 (RC SW) 2.0 -1.0 -0.6 -0.7 -0.6	S5 (URM INF) 1.7 -0.8 -0.5 -0.6 -0.2	C1 (MRF) 1.5 -0.9 -0.5 -0.6 -0.4	2.0 -1.0 -0.6 -0.8 -0.7	C3 (URM INF) 1.2 -0.7 -0.4 -0.5 -0.1	PC1 (TU) 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	(E)	1.0 -0.7 -0.4 -0.4 0.0	1.5 NA NA NA -0.1
FEMA BUILDING TYPE  Do Not Know  Basic Score Severe Vertical Irregularity, V <sub>L1</sub> Moderate Vertical Irregularity, V <sub>L2</sub> Plan Irregularity, P <sub>L1</sub> Pre-Code Post-Benchmark	3.6 -1.2 -0.7 -1.1 -1.1 1.6	3.2 -1.2 -0.7 -1.0 -1.0 1.9	2.9 -1.2 -0.7 -1.0 -0.9 2.2	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4	\$2 (BR) 2.0 -1.0 -0.6 -0.7 -0.6 1.4	\$3 (LM) 2.6 -1.1 -0.7 -0.9 -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) 1.5 -0.9 -0.5 -0.6 -0.4 1.9	2.0 -1.0 -0.6 -0.8 -0.7 2.1	C3 (URM INF) 1.2 -0.7 -0.4 -0.5 -0.1 NA	PC1 (TU) 1.6 -1.0 -0.6 -0.7 -0.5 2.0	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	(RD) -0.5 -0.5 -0.5 2.1	1.0 -0.7 -0.4 -0.4 0.0 NA	1.5 NA NA NA -0.1 1.2
FEMA BUILDING TYPE  Do Not Know  Basic Score Severe Vertical Irregularity, V <sub>L1</sub> Moderate Vertical Irregularity, V <sub>L7</sub> Plen Irregularity, P <sub>L1</sub> Pre-Code	3.6 -1.2 -0.7 -1.1 -1.1	3.2 -1.2 -0.7 -1.0 -1.0	2.9 -1.2 -0.7 -1.0 -0.9	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6	\$2 (BR) 2.0 -1.0 -0.6 -0.7 -0.6	\$3 (LM) 2.6 -1.1 -0.7 -0.9 -0.8	S4 (RC SW) 2.0 -1.0 -0.6 -0.7 -0.6	S5 (URM INF) 1.7 -0.8 -0.5 -0.6 -0.2	C1 (MRF) 1.5 -0.9 -0.5 -0.6 -0.4	2.0 -1.0 -0.6 -0.8 -0.7	C3 (URM INF) 1.2 -0.7 -0.4 -0.5 -0.1	PC1 (TU) 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	(E)	1.0 -0.7 -0.4 -0.4 0.0	1.5 NA NA NA -0.1
FEMA BUILDING TYPE  Do Not Know  Basic Score Sovere Vertical Irregularity, V <sub>L1</sub> Plan Irregularity, V <sub>L2</sub> Plan Irregularity, P <sub>L1</sub> Pre-Code Prost-Benchmark Sol Type A or B	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1	3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 0.4 -0.2	\$2 (BR) 2.0 -1.0 -0.6 -0.7 -0.6 1.4 0.6	2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1	S4 (RC SW) 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6	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 (URM INF) 1.2 -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	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	-0.5 -0.5 2.1 0.5	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3	1.5 NA NA NA -0.1 1.2
FEMA BUILDING TYPE  Basic Score  Sovere Vertical Irregularity, V <sub>L1</sub> Moderate Vertical Irregularity, V <sub>L2</sub> Plan Irregularity, P <sub>L1</sub> Pre-Code  Post-Benchmark  Soi Type A or B  Soi Type E (1-3 stories)	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2	3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 0.4 -0.2	\$2 (BR) -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4	\$3 (LM) 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1	S4 (RC SW) 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 -0.1	S5 (URM INF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4	C1 (MRF) 1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0	C2 (SW) 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0	C3 (URM (NF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2	PC1 (TU) 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	(FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1	-0.5 -0.5 -0.5 -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
FEMA BUILDING TYPE  Basic Score Severe Vertical Irregularity, V <sub>L1</sub> Moderate Vertical Irregularity, V <sub>L7</sub> Plan Irregularity, P <sub>C1</sub> Pen-Code Post-Benchmark Sol Type A or B Sol Type E (1-3 stories) Sol Type E (2-3 stories)	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3	3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2 -0.6	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.4 -0.2 -0.6	\$2 (BR) -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.6	S3 (LM) 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA	S4 (RC SW) 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 -0.1 -0.6	S5 (URM INF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4	1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5	C2 (SW) 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7	C3 (URM INF) 1.2 -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	1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.4 -0.1 -0.4	(FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5	(RD) (9) -0.5 -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 NA -0.1 1.2 0.3 -0.4 NA
FEMA BUILDING TYPE  Basic Score  Severe Vertical Irregularity, V <sub>L1</sub> Moderate Vertical Irregularity, V <sub>L1</sub> Plan Irregularity, P <sub>L1</sub> Pre-Code  Post-Benchmark  Sol Type A or B  Sol Type E (1-3 stories)  Sol Type E (≥ 3 stories)  Minimum Score, Suev  FINAL LEVEL 1 SCORE, S <sub>L1</sub> ≥ Semx.	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3	3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2 -0.6	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.4 -0.2 -0.6 0.5	\$2 (BR) 2.0 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.6	S3 (LM) 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6	S4 (RC (SW) 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 -0.1 -0.6	S5 (URM INF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4	1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5 0.3	C2 (SW) 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3	C3 (URM (NF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3	PC1 (TU) 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	(FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5	(RD) -0.5 -0.5 -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 NA -0.1 1.2 0.3 -0.4 NA
FEMA BUILDING TYPE  Basic Score  Severe Vertical Irregularity, V <sub>L1</sub> Moderate Vertical Irregularity, V <sub>L2</sub> Plan Irregularity, P <sub>C1</sub> Pre-Code  Post-Benchmark  Soi Type E (1-3 stories)  Soi Type E (-3 stories)  Minimum Score, Saev  FINAL LEVEL 1 SCORE, S <sub>CT</sub> ≥ Swew:  EXTENT OF REVIEW	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3	3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2 -0.6	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5	\$2 (BR) 2.0 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.6 0.5	S3 (LM) 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6	S4 (RC SW) 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 -0.1 -0.6 0.5	S5 (URM) INF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 -0.5	1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5 0.3 1.7-	C2 (SW) 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3 -0.7	C3 (URM (NF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3	PC1 (TU) 1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2 -0.3	1.4 -0.9 -0.5 -0.6 -0.3 2.4 -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 S <sub>MIN</sub> =	(RD) -0.5 -0.5 -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 NA -0.1 1.2 0.3 -0.4 NA
FEMA BUILDING TYPE  Basic Score Severe Vertical Irregularity, V <sub>£1</sub> Moderate Vertical Irregularity, V <sub>£2</sub> Plan Irregularity, P <sub>£1</sub> Pre-Code Post-Benchmark Soil Type A or B Soil Type £ (3-3 stories) Soil Type £ (3-3 stories) Minimum Score, S <sub>ket</sub> FINAL LEVEL 1 SCORE, S <sub>£1</sub> ≥ Semt.  EXTENT OF REVIEW Exterior: Partial	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3 7.1	W1A  3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2 -0.6 0.9  Aeris	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5	\$2 (BR) 2.0 -1.0 -0.6 -0.7 -0.6 1.4 -0.6 -0.4 -0.5 0.5	S3 (LM)  2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6	S4 (RC SW) 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 -0.1 -0.6 0.5	S5 (URM) INF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 -0.5	C1 (MRF)  1.5 -0.9 -0.6 -0.4 1.9 0.4 0.0 -0.5 0.3  2.7  ACT Details	C2 (SW) 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3 -0.7 0.3	C3 (URM INF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 -0.7 =	PC1 (TU)  1.6 -1.0 -0.6 -0.7 -0.5 -0.0 0.6 -0.3 NA 0.2 -0.1; RED	1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.4 -0.1 -0.4 0.2 : USE	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 -0.3 S <sub>MW</sub> =	(RD) (Q3) -0.5 -0.5 -0.1 -0.6 (Q3) -0.3	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2	1.5 NA NA NA -0.1 1.2 0.3 -0.4 NA
FEMA BUILDING TYPE  Basic Score  Severe Vertical Irregularity, V <sub>L1</sub> Moderate Vertical Irregularity, V <sub>L1</sub> Plan Irregularity, P <sub>L1</sub> Pre-Code Post-Benchmark Sol Type A or B Sol Type (1-3 stories) Soil Type E (≥ 3 stories) Minimum Score, Suev  EXTENT OF REVIEW  Exterior:   Partial   Dilettrior:   Partial   Dilettrior:   Partial   Dilettrior:   None   1	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3 7.1	W1A  3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2 -0.6 0.9  Aeris	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5 OTHEI	\$2 (BR) 2.0 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.5 R HAZ	\$3 (LM) 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6 ARDS	S4 (RC SW) 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 -0.1 -0.5	S5 (URM INF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4	1.5 -0.9 -0.5 -0.4 1.9 0.4 0.0 -0.5 0.3 1.7 -	C2 (SW) 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3 -O.9 - TON R ed Struces, unknown	C3 (URM INF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 -0.7 =	PC1 (TU)  1.6 -1.0 -0.6 -0.7 -0.5 -0.0 0.6 -0.3 NA 0.2 -0.1;  RED aluation	1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.4 -0.1 -0.4 0.2 : USE	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 -0.3 S <sub>MW</sub> =	(RD) (Q3) -0.5 -0.5 -0.1 -0.6 (Q3) -0.3	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2	1.5 NA NA NA -0.1 1.2 0.3 -0.4 NA
FEMA BUILDING TYPE  Basic Score  Severe Vertical Irregularity, V <sub>L1</sub> Moderate Vertical Irregularity, V <sub>L2</sub> Plan Irregularity, P <sub>L1</sub> Pre-Code  Post-Benchmark  Soil Type E (1-3 stories)  Soil Type E (1-3 stories)  Minimum Score, Suev  FINAL LEVEL 1 SCORE, S <sub>L1</sub> ≥ Samot  EXTENT OF REVIEW  Exterior:	8. W1  3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3 7.1  All Sides Visible No	W1A  3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2 -0.6 0.9  Aeris	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7	\$1 (MRF)  2.1 -1.0 -0.6 -0.8 -0.6 -0.8 -0.6 -0.5  OTHE: Are Ther Detailed  Pour	\$2 (BR) 2.0 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.6 -0.5 R HAZ e Hazard Structura	\$3 (LM) 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6 ARDS	S4 (RC SW) 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 -0.1 -0.5	S5 (URM INF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4	1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5 0.3 2.7 -	C2 (SW) 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3 -0.7 0.3 -0.9 -	C3 (URM INF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.3 -0.3 0.3 -0.7 =	PC1 (Tu)  1.6 -1.0 -0.6 -0.7 -0.5 -0.0 0.6 -0.3 NA 0.2 -0.1; RED aluation	1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.4 -0.1 -0.4 0.2 : USE	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 -0.3 S <sub>MW</sub> =	(RD) (Q3) -0.5 -0.5 -0.1 -0.6 (Q3) -0.3	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2	1.5 NA NA NA -0.1 1.2 0.3 -0.4 NA
FEMA BUILDING TYPE  Basic Score Severe Vertical Irregularity, V <sub>£1</sub> Moderate Vertical Irregularity, V <sub>£2</sub> Plan Irregularity, P <sub>£1</sub> Pre-Code Post-Benchmark Soil Type A or B Soil Type E (1-3 stories) Soil Type E (≥ 3 stories) Minimum Score, S <sub>kat</sub> EXTENT OF REVIEW Exterior: Partial Interior: None Trawings Reviewed: Yes Soil Type Source: Vs30 Maps - T	8. W1  3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3 7.1  All Sides Visible No	W1A  3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2 -0.6 0.9	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6 -0.6 -0.5  OTHE  Are Ther Detailed  Pour cut-<	\$2 (BR) -1.0 -0.6 -0.7 -0.6 1.4 -0.6 -0.4 -0.5 8 HAZard Structura	\$3 (LM) 2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6 ARDS is That 1 al Evaluential (univi)	S4 (RC SW) 2.0 -1.0 -0.6 -0.7 -0.6 1.9 0.6 -0.1 -0.6 0.5	S5 (JRW INF) 1.7 -0.8 -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 2.7 -  ACT Detaili	C2 (SW) 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3 -0.7 0.3 -0.9 - TION R ed Structes, scorees, other	C3 (URM INF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 -0.7 =	PC1 (Tu)  1.6 -1.0 -0.6 -0.7 -0.5 -0.0 0.6 -0.3 NA 0.2 -0.1; RED aluation	1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.4 -0.1 -0.4 0.2 : USE	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 -0.3 S <sub>MW</sub> =	(RD) (Q3) -0.5 -0.5 -0.1 -0.6 (Q3) -0.3	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2	1.5 NA NA NA -0.1 1.2 0.3 -0.4 NA
FEMA BUILDING TYPE  Basic Score  Basic Score  Severe Vertical Irregularity, V <sub>L1</sub> Plan Irregularity, P <sub>L1</sub> Pinc-Dode  Post-Benchmark  Soil Type A or B  Soil Type E (1-3 stories)  Soil Type E (≥ 3 stories)  Minimum Score, S <sub>k07</sub> EXTENT OF REVIEW  Exterior:   Partial Interior:   None   Drawings Reviewed:   Yes Soil Tyee E (3 Soil Tyee Source: Vs30 Maps - T	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3 7.1 All Sides Visible No ype D	W1A  3.2 -1.2 -0.7 -1.0 -1.0 1.9 0.3 0.2 -0.6 0.9	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 0.4 -0.5  OTHEI  Pour cut-cut-cut-cut-cut-cut-cut-cut-cut-cut-	\$2 (BR) -1.0 -0.6 -0.7 -0.6 -0.4 -0.6 -0.4 -0.6 0.5 R HAZard Structurn ding pote	\$3 (LM)  2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6  ARDS is That 1 al Evaluaritial (ur ur) is from to	ND FIN  \$4 RC SW) 2.0 -0.6 -0.7 -0.6 -0.7 -0.6 -0.1 -0.6 0.5  Frigger A ation? sless \$c_2\$: slier adjantation.	S5 (URM 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 -0.5 -0.5 C.3 1.7 - ACT Details YY. YY. YY. N. YY. N. N.	C2 (SW) 2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3 -0.7 -0.9  TON R ed Structes, score es, score ess, other	C3 (URM (NF) 12 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 -0.7 =	PC1 (TU)  1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2 -0.1; RED aluation IA buildin present	1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1 -0.4 0.2 : USE	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 0.3 S <sub>MIN</sub> =	(RD) -0.5 -0.5 -0.5 -0.1 -0.6 -0.3 -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 1.2 0.3 -0.4 NA
FEMA BUILDING TYPE  Basic Score  Severe Vertical Irregularity, V <sub>L1</sub> Moderate Vertical Irregularity, V <sub>L2</sub> Plan Irregularity, P <sub>L1</sub> Pro-Code  Post-Benchmark  Sol Type 6 (1-3 stories)  Sol Type E (1-3 stories)  Sol Type E (2-3 stories)  Minimum Score, Saw  FINAL LEVEL 1 SCORE, S <sub>L1</sub> ≥ Sawa:  EXTENT OF REVIEW  Exterior: Partial Interior: Partial Interior: Partial Interior: Yes Sol Type Source: State Contact Person:	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3 7.1 All Sides Visible No ype D Seologis	3.2 -1.2 -0.7 -1.0 1.9 0.3 0.2 -0.6 0.9	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 0.4 -0.5  OTHEI  Pour cut-cut-cut-cut-cut-cut-cut-cut-cut-cut-	\$2 (BR) -1.0 -0.6 -0.7 -0.6 -0.4 -0.6 -0.4 -0.6 0.5 R HAZard Structurn ding pote	\$3 (LM)  2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6  ARDS is That 1 al Evaluaritial (ur ur) is from to	ND FIN  \$4 RC SW) 2.0 -0.6 -0.7 -0.6 -0.7 -0.6 -0.1 -0.6 0.5  Frigger A ation? sless \$c_2\$: slier adjantation.	S5 (URM INF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 0.5	1.5 -0.9 -0.5 -0.6 -0.4 -0.0 -0.5 -0.5 -0.4 -0.4 -0.0 -0.5 -0.5 -0.5 -0.4 -0.7 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	C2 (SW)  2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3  CO.9 -  ION R Structures, unknntess, scorees, other	C3 (URM (NF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 -0.7 = EQUIF ctural Evo own FEM less that hazards	PC1 (TU)  1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2 -0.1 -1 RED RED RELUATION OUT-OFF	1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.1 -0.4 -0.2 : USE	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 0.3 SMW =	(RD) -0.5 -0.5 -0.5 -0.1 -0.6 -0.3 -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 NA -0.1 1.2 0.3 -0.4 NA 1.0
FEMA BUILDING TYPE  Basic Score Severe Vertical Irregularity, V <sub>L1</sub> Moderate Vertical Irregularity, V <sub>L1</sub> Plan Irregularity, P <sub>L1</sub> Plan Irregularity, P <sub>L1</sub> Plan Irregularity, P <sub>L1</sub> Prev-Code Post-Benchmark Soil Type 6 (1-3 stories) Soil Type 6 (1-3 stories) Soil Type E (2-3 stories) Minimum Score, Suev  EXTENT OF REVIEW Exterior: Partial Interior: Partial Drawings Reviewed: Yes Soil Type Source: Soil Type Source: Soil Type Source: Sales Google Hazards Source:  Geologic Hazards Source: State Google Contact Person:  LEVEL 2 SCREENING PERFC	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3 7.1	W1A  3.2 -1.2 -0.7 -1.0 -1.0 -1.0 0.2 -0.6 0.9   ☑ Aeria ☑ Enter	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5  OTHE: Are There Detailed Pour cut- Cut- Fallie build Signed Si	\$2 (BR) 2.0 -1.0 -0.6 -0.7 -0.6 1.4 0.6 -0.4 -0.6 0.5 R HAZ e Hazard Structuri ding pote ff, if know g hazard ing	\$3 (LM)  2.6 -1.1 -0.7 -0.9 -0.8 -1.1 0.1 0.2 NA -0.6 Sis That 11 al Evaluation is from to strong the strong to strong the strong that 12 cm strong the strong that 12 cm strong the strong that 12 cm strong that	ND FIN  \$4 RC SW) 2.0 -0.6 -0.7 -0.6 -0.7 -0.6 -0.1 -0.6 0.5  Frigger A ation? sless \$c_2\$: slier adjantation.	S5 (URM INF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 0.5	1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 1.7 -0.5 0.3 2.7 -	C2 (SW)  2.0 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3 -0.9 -0.7 -0.3 -0.9 -0.9 -0.9 -0.9 -0.9 -0.9 -0.9 -0.9	C3 (URM NF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 -0.7 =	PC1 (TU)  1.6 -1.0 -0.6 -0.7 -0.5 20 0.6 -0.3 NA 0.2 -0.7 -1.1 EED aluation IA building or cut-off present	1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.4 -0.1 -0.4 0.2 : USE Require	(FD)  1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.	(RD) (17) (9) -0.5 (2.1) 0.5 -0.1 -0.6 (2.3) (2.3) (3.3) (4.4) (4.4) (5.4) (6.4) (6.4) (6.4) (7.4) (7.4) (8.4) (9.	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2 0.2	1.5 NA NA NA -0.1 1.2 0.3 -0.4 NA 1.0
FEMA BUILDING TYPE  Basic Score  Severe Vertical Irregularity, V <sub>1</sub> Moderate Vertical Irregularity, V <sub>1</sub> Moderate Vertical Irregularity, V <sub>1</sub> Plan Irregularity, P <sub>21</sub> Pre-Code Post-Benchmark Sol Type A or B Sol Type E (+3 stories) Sol Type E (+3 stories) Minimum Score, Stev  EXTENT OF REVIEW Exterior:   Partial   Interior:   None   1 Drawings Reviewed:   Yes   Interior:   Sol Type Source: Vs30 Maps - T Geologic Hazards Source:   State G Contact Person:   Level 2 Score, St.2   O.	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3 7.1	3.2 -1.2 -0.7 -1.0 -1.0 -1.0 0.3 0.2 -0.6 0.9	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5  OTHE: Are There Detailed Pour cut- Cut- Fallie build Signed Si	\$2 (BR)  2.0 -1.0 -0.6 -0.7 -0.6 1.4 -0.6 -0.4 -0.6 -0.5  R HAZZ Re Hazard Riff if known g hazard ing golic hazard	\$3 (LM)  2.6 -1.1 -0.7 -0.9 -0.8 -1.1 0.1 0.2 NA -0.6 Sis That 11 al Evaluation is from to strong the strong to strong the strong that the str	$ \begin{array}{c} \text{ND FIN} \\ \text{S4} \\ \text{(RC} \\ \text{SW)} \\ \text{2.0} \\ \text{-1.0} \\ \text{-0.6} \\ \text{-0.7} \\ \text{-0.6} \\ \text{-0.7} \\ \text{-0.6} \\ \text{-0.1} \\ \text{-0.1} \\ \text{-0.5} \\ \end{array} $	S5 (JRM INF) 1.7 1-0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 0.5	C1 (MRF)   1.5   -0.9   -0.5   -0.4   1.9   -0.5   -0.3   1 7   -0.5   -0.	2.0 (SW) 2.0 -1.0 -0.6 -0.8 -0.7 -0.7 -0.7 -0.7 -0.7 -0.7 -0.7 -0.7	C3 (URM NF) 12 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 -0.7 = EQUIF ttural Evown FEM hazards	PC1 (TU)  1.6 -1.0 -0.6 -0.7 -0.5 -2.0 0.6 -0.3 -0.3 -0.2  RED  RED  I Evalua  azards e is not ne is not ne is not ne	1.4 -0.9 -0.5 -0.6 -0.3 -0.4 -0.1 -0.4 -0.2 ; USE  Require  Require  Restation Rec	(FD) 1.7 -0.9 -0.5 -0.7 -0.5 -0.5 -0.1 -0.5 -0.1 -0.5 -0.1 -0.5 -0.1 -0.5 -0.1 -0.5 -0.1 -0.5 -0.5 -0.1 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	(RD) -0.5 -0.5 -0.5 -0.1 -0.6 -0.3 -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 NA -0.1 1.2 0.3 -0.4 NA
FEMA BUILDING TYPE  Basic Score Severe Vertical Irregularity, V <sub>L1</sub> Moderate Vertical Irregularity, V <sub>L1</sub> Plan Irregularity, P <sub>L1</sub> Plan Irregularity, P <sub>L1</sub> Plan Irregularity, P <sub>L1</sub> Prev-Code Post-Benchmark Soil Type 6 (1-3 stories) Soil Type 6 (1-3 stories) Soil Type E (2-3 stories) Minimum Score, Suev  EXTENT OF REVIEW Exterior: Partial Interior: Partial Drawings Reviewed: Yes Soil Type Source: Soil Type Source: Soil Type Source: Sales Google Hazards Source:  Geologic Hazards Source: State Google Contact Person:  LEVEL 2 SCREENING PERFC	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3 7.1	W1A  3.2 -1.2 -0.7 -1.0 -1.0 -1.0 0.2 -0.6 0.9   ☑ Aeria ☑ Enter	2.9 -1.2 -0.7 -1.0 -0.9 2.2 0.5 0.1 -0.9 0.7	\$1 (MRF) 2.1 -1.0 -0.6 -0.8 -0.6 1.4 -0.2 -0.6 0.5  OTHE: Are There Detailed Pour cut- Cut- Fallie build Signed Si	\$2 (BR)  2.0 -1.0 -0.6 -0.7 -0.6 1.4 -0.6 -0.4 -0.6 -0.5  R HAZZ Re Hazard Riff if known g hazard ing golic hazard	\$3 (LM)  2.6 -1.1 -0.7 -0.9 -0.8 -1.1 0.1 0.2 NA -0.6 Sis That 11 al Evaluation is from to strong the strong to strong the strong that the str	ND FIN  \$4 RC SW) 2.0 -0.6 -0.7 -0.6 -0.7 -0.6 -0.1 -0.6 0.5  Frigger A ation? sless \$c_2\$: slier adjantation.	S5 (JRM INF) 1.7 1-0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 0.5	C1 (MRF)   1.5   -0.9   -0.5   -0.4   1.9   -0.5   -0.3   1 7   -0.5   -0.	2.0 (SW) 2.0 -1.0 -0.6 -0.8 -0.7 -0.7 -0.7 -0.7 -0.7 -0.7 -0.7 -0.7	C3 (URM NF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 O.7 = EQUIF tural EV t	PC1 (TU)  1.6 -1.0 -0.6 -0.7 -0.5 -2.0 0.6 -0.3 -0.3 -0.2  RED  RED  I Evalua  azards e is not ne is not ne is not ne	1.4 -0.9 -0.5 -0.6 -0.3 -0.4 -0.1 -0.4 -0.2 ; USE  Require  Require  Restation Rec	(FD) 1.7 -0.9 -0.5 -0.7 -0.5 -0.5 -0.1 -0.5 -0.1 -0.5 -0.1 -0.5 -0.1 -0.5 -0.1 -0.5 -0.1 -0.5 -0.5 -0.1 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	(RD) (17) (9) -0.5 (2.1) 0.5 -0.1 -0.6 (2.3) (2.3) (3.3) (4.4) (4.4) (5.4) (6.4) (6.4) (6.4) (7.4) (7.4) (8.4) (9.	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2 0.2	1.5 NA NA NA -0.1 1.2 0.3 -0.4 NA 1.0
FEMA BUILDING TYPE  Basic Score  Severe Vertical Irregularity, V <sub>L1</sub> Moderate Vertical Irregularity, V <sub>L1</sub> Plan Irregularity, P <sub>L1</sub> Plan Irregularity, P <sub>L1</sub> Pre-Code Post-Benchmark 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, Suev  EXTENT OF REVIEW Exterior:   Partial   Value   Partial   Partial	B.J. 3.6 -1.2 -0.7 -1.1 1.6 0.1 0.2 -0.3 7.1 All Sides Visible No No Seologis  ORMET	W1A  3.2 -1.2 -0.7 -0.7 -1.0 -1.0 1.9 0.3 0.2 -0.6 0.9	2.9 -1.2 -0.7 -1.0 -0.9 -0.5 0.1 -0.9 0.7	S1 (MRF)	\$2 (BR)  2.0 -1.0 -0.6 -0.7 -0.6 1.4 -0.6 -0.4 -0.6 0.5  R HAZZ	\$3 (LM)  2.6 -1.1 -0.7 -0.9 -0.8 1.1 0.1 0.2 NA 0.6  ARDS is That is a train in i	S4   RC   SW   SW   SW   SW   SW   SW   SW   S	S5 (JRRM) I.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 0.5	C1 (MRF)   1.5   -0.9   -0.5   -0.4   1.9   -0.5   -0.3   1 7   -	C2 (SW)  2.0 -1.0 -0.6 -0.8 -0.7 -1.1 0.5 -0.0 -0.7 -0.3 -0.9 -0.7 -0.9 -0.7 -0.9 -0.7 -0.9 -0.9 -0.7 -0.9 -0.9 -0.9 -0.9 -0.9 -0.9 -0.9 -0.9	C3 (URM INF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.7 = EQUIF ctural Evown FEM Less that hazards structural in hazards	PC1 (TU)  1.6 -1.0 -0.5 -0.7 -0.5 -0.0 0.6 -0.3 NA 0.2 -0.1 IE valuation IE valua IE valua IE valua II Evalua II Evalua II Evalua	1.4 -0.9 -0.5 -0.6 -0.3 -0.4 -0.1 -0.4 -0.1 -0.2  Require g type o	(PD) 1.7 -0.9 -0.5 -0.7 -0.5 -0.1 -0.5 -0.5 -0.1 -0.5 -0.5 -0.1 -0.1 -0.5 -0.1 -0.1 -0.1 -0.1 -0.1 -0.1 -0.1 -0.1	(RD)  (17) (29) -0.5 2.1 0.5 2.1 0.5 2.1 0.6 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 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 NA -0.1 1.2 0.3 -0.4 NA

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

Rapid Visua FEMA P-154		-	-	oten	tial Seismic Haza	rds					Optional)
				ral engin	neering professional, architec	t, or graduate student with i	backgrour	nd in seisr			
Bldg Name: Roo		nentary - Mo	zin Bldg		Final Level 1 Score:	$S_{L1} = O.1$					consider S <sub>MIN</sub> )
Screener: P. Co Date/Time: 8/1					1 Irregularity Modifiers: ED BASELINE SCORE:	Vertical Irregularity, V S' = $(S_{L1} - V_{L1} - P_{L1})$			lan Irregu	ularity,	$P_{L1} = -0.7$
						0 - (021 - 121 - 721	<i>j</i> - <i>x</i>	. /			
Topic STRUCTURAL					SELINE SCORE lifier; otherwise cross out fi	he modifier )				Yes	Subtotals
Vertical	Sloping				ory grade change from one		other.			-1.2	000101010
Irregularity, V <sub>L2</sub>	Site				ull story grade change fron		o the oth	er.		-0.3	
	Weak and/or				d cripple wall is visible in the an occupied story, there is		a etaal m	oment fro	ma	-0.6	
	Soft Story				same line (for multiple oc					-1.2	
	(circle one maximum)		open front: The		penings at the ground stor				he	-1.2	
					stem at any story is less th	nan 50% of that at story ab	ove or he	eight of ar	1y	-0.	
					nt of the story above. stem at any story is betwe	en 50% and 75% of that a	t story at	nve or he	eight	-0.	
					mes the height of the story		n story tac	ore or me	ngin.	-0,5	
	Setback				n at an upper story are out	board of those at the story	below ca	using the	;	$\mathbf{L}$	
			antilever at the		n at upper stories are inboa	ard of those at lower storie	i P		$\rightarrow$	-005	
					al elements that is greater				$\overline{}$	4.3	
	Short	C1,C2,C3,PC1	,PC2,RM1,RM	2: At lea	ast 20% of columns (or pier	s) along a column line in t		system h	nave		
	Column/ Pier				he nominal height/depth ra column depth (or pier width		o donth	of the ene	indral	<b>-0</b> .5	
	1 101				ors that shorten the column		ie depui	or une spe	"" (	-0.5	
	Split Level				r levels or at the roof.					-0.5	0.5
	Other Irregularity				ertical irregularity that obvi e vertical irregularity that m					-1.0 -0.5	V <sub>L2</sub> = -O.5 (Cap at -1.2)
Plan					ar relatively well distributed					-46.0	(Cup at -1.2)
Irregularity, PL2	include the V	V1A open front in	regularity listed	above.	)				(	-0.7)	
					ertical elements of the late				her.	-0.4 -0.4	
					comer exceed 25% of the other others.					-0.0	
	C1, C2 buildi	ing out-of-plane	offset: The exte	erior bea	ams do not align with the o	olumns in plan.				-04	P <sub>1.2</sub> ≡ <u>−0.7</u>
Dadundanau					irregularity that obviously a		ic perforr	nance.	<del></del>	- <b>4</b> .7	(Cap at -1.1)
Redundancy Pounding		parated from an			s on each side of the build The floors do not align v		-:	(Cap total		-1.0	
	by less than	1% of the height	of the shorter of		One building is 2 or mon	e stories taller than the oth	ier.	pounding		-1.0	
00 D. J.F.		adjacent structur			The building is at the en	d of the block.	- :	modifiers	at -1.2)	-0.	
S2 Building C1 Building		eometry is visible rves as the beam		t frame.					$\overline{}$	-1.0 -0.4	
PC1/RM1 Bldg	There are roo	of-to-wall ties tha	t are visible or		from drawings that do not r	ely on cross-grain bending	. (Do not	combine	with	+0.3	
PC1/RM1 Bldg		ark or retrofit mo		-t-desc	wells (settless there are interior		h !			.1.	
URM Biog	Gable walls a		zea, tuli neight i	ntenor v	valls (rather than an interio	r space with rew walls suc	n as in a	warenou	50).	+0.3	
MH	There is a su	ipplemental seisi			vided between the carriage	and the ground.				1.2	M=_+0.3
Retrofit		ive seismic retro							_	1.4	
There is choosed					<ul> <li>1.7 - 0.5 - 0</li> <li>egatively affects the building</li> </ul>		□ Ye	s 🗷	_	ansfer t	o Level 1 form)
					the Level 1 form that deta					score.	
OBSERVABL										_	
Location Exterior		Check "Yes" or "		naranat	or unbraced unreinforced	maconny chimnay	Yes	No X		Comr	nent
Exterior		vy cladding or he		paraper	or unbraced differingroed	masonry criminey.		x			
					an walkways that appears			х			
					exit doors or pedestrian wa			X			
					hazardous materials are p d URM wall or unbraced U			X			
		ed exterior nons						X			
Interior					air or exit corridor.			X			
Estimated Nonst		ed interior nonst mic Performanc			box and transfer to Level 1	form conclusions)		^			
	Potential	l nonstructural ha	azards with sigr	nificant t	threat to occupant life safe	y -> Detailed Nonstructur					
					threat to occupant life safe				on required	d	
	M row or n	io rionstructural h	nazaro inreat to	occupa	ant life safety -> No Detaile	no monstructural Evaluation	n require	ı			
Comments:											

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.

	n Form	-	r Poter									HIGH	H Sei		el 1 city
		11.00			Address:	1515	North	weet F	rive						
A STATE OF THE STA		DISH E			riaaress.			Any S				Žip: 9	0007		
								ningtor		dla S		.ip. 3	1060		
	- 40	100			Other Iden Building N	titiers:	VVasi	ulding	1 + A	ddition	n				
				4 3	Building N	ame:	iaiii b	ununş	J + A	Julio					
	. 50				Use: Cla										
				The second	Latitude:	42.836	ŝ			Longitu		73.32	2		
			54 6	3	Ss: 1.2	21				S1: 0.	.54	- Contraction			
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			A. III		Screener(s	s): J. I	Howa	rd	160	D	ate/Time	e: 8/.	28/1	3 9a	m
1111 1111111111111111111111111111111111	STEPHAN	90	100	-	No. Storie		e Grade		Dolo	w Grade	. 0	Van	Duille.	1931	T EST
TO 1 THE R IS	H HI		250		Total Floo	Anna (as	e Grade		4 20	W Glade	2		Year:	19011	7 691
1101   1 1101 B 41 M 11				200	Additions:			Yes, Y			1994	- 0000	r rear.	_	
Marie Control of the				(1)					-			-			
The Real Property lies and the least of the			-		Occupano		embly	Commer Office	cial	Emer. S		_ H		☐ Shelt	er
	-	See all		200		Utili	strial	Warehou	(	School	) ntial, #Ur		overnmen	M,	
	-		-	- 1	1 2200000000	Uill				Resider	mai, # Or	-	_		
		100			Soil Type:	□A	□В	X					NK		
					-	Hard Rock	Avg Rock	Dens				oor M	DNK, assi	ите Туре	D.
1 story	-	12' [		-					-						_
addition, 1994, steel braced		12'		20	Geologic I	nazards:			$\sim$			$\overline{}$			_
steel braced frame		12	slopii	200	Adjacency	0	K	ounding	*	Falling	Hazards	from Talle	er Adjace	nt Buildin	9
			grad	e	Irregulariti	es:		Vertical (t	vpe/sev	erity)	none				
s-story original	-	Ea	st Elevat					Plan (type		none					
931 (pre-code),		Ea	SE EIEVA	Light	Exterior Fa	illina		Inbraced	-			avy Clado	ding or M	anini Mar	ner
valls	1 3	2'			Hazards:	aning		arapets	Chilling	ya		pendages		eavy vei	ioei
The second secon	*0/		braced	6 1 1	Trucin Co.			Other:			□ ~×	permages			
Cwalle !	32'	-1	frames	-	COMMEN	TC.		Julei	* v	nundi	ng btv	un ania	un al au	ad ada	ition
V 144		_	2000						1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1						10101
					Site slo	pes, out	ress t	nan a	rull SE	ory. N	ot a ve	ertical	irregu	iarity.	
8'	_				Level 1:	Additio	on has	differe	ences !	in floo	r heigh	ht and	differ	ences i	n
<b></b>	_			+	structur separati	al fran	ring. T	herefor	e, per	- Leve	12 ada	dition :	guide,	evalua	te as
<b>L</b> 7			setbac	k	_ separati	e buildii	ngs an	d check	k for p	pound	ing. Pe	r Leve	1 po	unding	
24/			4 20' SO		guide, p	ounding	g pote	ntial d	oes ex	ist bec	cause t	loors d	o not	align.	
4' setback	1	J "	eentran	t corner	Level 2:	See con	nmen	ts next	page	for Le	evel 2	treatm	ent of	addit	ons.
16		A		+	-1								100		
	for a large	_ A			-		$\rightarrow$	Level	1 resi	ult: S	$_{1} = 1.3$ $_{2} = 0.3$	and p	oundi	ng exis	ts
core walls Plan at 1st Fl	oor											(lor c	CALIDIA	en oun	the stay
	552.65				CT Addition	nal akatah	00 00 000								
	ETCH	SIC SC	ORF M	ODIFIE	Addition										
SKI FEMA BUILDING TYPE Do Not	ETCH		V2 S1	(S2)	RS, AND FI	NAL LE	C1	1 SCO	RE, S	L1 PC1	PC2	RM1	RM2	URM	МН
sk	ETCH BA			(S2)	RS, AND F	NAL LI	EVEL	1 SCO	RE, S	L1		RM1 (F0)	RM2 (RD)	URM	МН
SKI FEMA BUILDING TYPE Do Not Know	ETCH BA	W1A V	V2 S1	(S2)	S3 S4	S5 (URM	C1	1 SCO	C3	L1 PC1				URM 1.0	MH 1.5
SKI FEMA BUILDING TYPE Do Not Know Basic Score	BA W1	W1A V	V2 S1 (MRF	(S2 (BR)	S3 S4 (LM) (RC (SW)	S5 (URM (NF)	C1 (MRF)	C2 (SW)	C3 (URM (NF)	PC1 (TU)	PC2	(FD)	(R0)	S.	35
SKI  FEMA BUILDING TYPE Do Not Know  Basic Score  Severe Vertical Irrogularity, V <sub>L</sub>	BA W1 3.6	3.2 2 -1.2 -	V2 S1 (MRF	(BR) (BR) -1.0 -0.6	RS, AND FI 83 84 (LM) (RC SW) 2.6 2.0	S5 (URM (NF) 1.7	C1 (MRF)	C2 (SW)	C3 (URM INF)	PC1 (TU)	PC2	(FD)	(90)	1.0	1.5
FEMA BUILDING TYPE  Do Not Know  Basic Score  Severe Vertical Irregularity, Vi.1  Moderate Vertical Irregularity, Vi.7	BA w1 3.6	3.2 2 -1.2	V2 S1 (MRF 1.9 2.1 1.2 -1.0	(S2 (BR))	S3 S4 (RC SW) 2.6 2.0 -1.1 -1.0	S5 (URM (NF) 1.7 -0.8	C1 (MRF) 1.5 -0.9	C2 (SW) 2.9 -1.0 -0.6 -0.8	C3 (URM (NF) 1.2 -0.7	PC1 (TU) 1.6 -1.0	PC2	1.7 -0.9	(RD) 1.7 -0.9	1.0 -0.7	1.5 NA
SKI  FEMA BUILDING TYPE  Do Not Know  Basic Score  Severe Vertical Irregularity, V <sub>L7</sub> Plan Irregularity, V <sub>L7</sub> Plan Irregularity, P <sub>L1</sub>	BA W1 3.6 -1.2 -0.7	3.2 2 -1.2 -0.7 -(	V2 S1 (MRF 1.9 2.1 1.2 -1.0 0.7 -0.6	(BR) 2.0 -1.0 -0.6 -0.7 -0.6	S3 S4 (RM) (RC SW)  2.6 2.0  -1.1 -1.0  -0.7 -0.6	S5 (URM (NF) 1.7 -0.8 -0.5	C1 (MRF) 1.5 -0.9 -0.5	C2 (SW) 2.9 -1.0 -0.6	C3 (URM INF) 1.2 -0.7 -0.4	PC1 (TU) 1.6 -1.0 -0.6 -0.7 -0.5	PC2 1.4 -0.9 -0.5	1.7 -0.9 -0.5	1.7 -0.9 -0.5 -0.7 -0.5	1.0 -0.7 -0.4	1.5 NA NA
SKI  FEMA BUILDING TYPE  Do Not Know  Basic Score  Severe Vertical Irregularity, V <sub>LT</sub> Moderate Vertical Irregularity, V <sub>LT</sub> Plan Irregularity, P <sub>LT</sub> Pre-Code  Post-Benchmark	BA W1 3.6 -1.2 -0.7 -1.1 -1.1 1.6	3.2 2 -1.2 -0.7 -( -1.0 -1.0 -( 1.9 2	N2 S1 (MRF) 1.9 2.1 1.2 -1.0 1.7 -0.6 1.0 -0.8 1.0 -0.6 1.1 1.4	\$2 (BR) -1.0 -0.6 -0.7 -0.6 1.4	RS, AND FI S3 S4 (IM) (9C 2.6 2.0 -1.1 -1.0 -0.7 -0.6 -0.9 -0.7 -0.8 -0.6 1.1 1.9	S5 (URM INF) 1.7 -0.8 -0.5 -0.6 -0.2 NA	1.5 -0.9 -0.5 -0.6 -0.4 1.9	C2 (SW) -1.0 -0.6 -0.8 -0.8 -0.8	C3 (URM (NF) 1.2 -0.7 -0.4 -0.5 -0.1 NA	PC1 (TU) 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 NA -0.1 1.2
SKI  FEMA BUILDING TYPE  Do Not Know  Basic Score  Basic Score  Basic Store  Basic	8A W1 3.6 -1.2 -0.7 -1.1 -1.1	3.2 2 -1.2 -0.7 -( -1.0 -1.0 -( 1.9 2	N2 S1 (MRF 1.9 2.1 1.2 -1.0 0.7 -0.6 1.0 -0.8 0.9 -0.6	(BR) 2.0 -1.0 -0.6 -0.7 -0.6	S3 S4 (RC RC RC) (RC RC) (RC) (	S5 (URM INF) 1.7 -0.8 -0.5 -0.6 -0.2	C1 (MRF) 1.5 -0.9 -0.5 -0.6 -0.4	C2 (SW) -1.0 -0.6 -0.8	C3 (URM (NF) 1.2 -0.7 -0.4 -0.5 -0.1	PC1 (TU) 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
SKI  FEMA BUILDING TYPE  Do Not Know  Basic Score Severe Vertical Irregularity, V <sub>L7</sub> Moderate Vertical Irregularity, V <sub>L7</sub> Pinal irregularity, P <sub>L1</sub> Pre-Code  Post-Benchmark  Soil Type A or B  Soil Type E (1-3 stories)	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2	3.2 2 -1.21.0	N2 S1 (MRF 1.9 2.1 1.2 -1.0 1.7 -0.6 1.0 -0.8 0.9 -0.6 1.2 1.4 1.5 0.4 1.1 -0.2	2.0 -1.0 -0.6 -0.7 -0.6 -0.4	RS, AND FI S3 S4 (M) (RC SW) 2.6 2.0 -1.1 -1.0 -0.7 -0.6 -0.9 -0.7 -0.8 -0.6 1.1 1.9 0.1 0.6 0.2 -0.1	S5 (URM) NF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4	1.5 -0.9 -0.5 -0.4 1.9 0.4	C2 (SW) -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0	C3 (URM (NF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2	PC1 (TU) 1.6 -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	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, V <sub>LT</sub> Moderate Vertical Irregularity, V <sub>LT</sub> Plan Irregularity, P <sub>LT</sub> Pre-Code  Post-Benchmark  Soil Type A or B  Soil Type E (1-3 stories)  Soil Type E (> 3 stories)	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3	3.2 2 -1.22.0.72.0 -	N2 S1 (MRF 1.9 2.1 1.2 -1.0 1.7 -0.6 1.0 -0.8 0.9 -0.6 1.2 1.4 1.5 0.4 1.1 -0.2 1.9 -0.6	2.0 -1.0 -0.6 0.7 -0.6 1.4 0.6 -0.4 -0.6	RS, AND FI S3 S4 (M) (PC SW) 2.6 2.0 -1.1 -1.0 -0.7 -0.6 -0.9 -0.7 -0.8 -0.6 1.1 1.9 0.1 0.6 0.2 -0.1 NA -0.6	S5 (UFOM NY) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4	1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5	2.0 -1.0 -0.6 -0.8 -0.5 -0.0 -0.7	C3 (URM (NF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3	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	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5	090) 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
SKI  FEMA BUILDING TYPE  Do Not Know  Basic Score  Severe Vertical Irregularity, V <sub>L7</sub> Moderate Vertical Irregularity, V <sub>L7</sub> Plan Irregularity, P <sub>L1</sub> Pre-Code  Post-Benchmark  Soil Type A or B  Soil Type E (1-3 stories)  Soil Type E (> 3 stories)	8.4 W1 3.6 -1.2 -0.7 -1.1 1.6 0.1 0.2 -0.3 1.1	W1A V  3.2 2 -1.2	N2 S1 (MRF 1.9 2.1 1.2 -1.0 0.7 -0.6 1.0 -0.6 0.9 -0.6 2.2 1.4 0.5 0.4 0.1 -0.2 0.9 -0.6	2.0 -1.0 -0.6 -0.7 -0.6 -0.4	RS, AND FI S3 S4 (M) (RC SW) 2.6 2.0 -1.1 -1.0 -0.7 -0.6 -0.9 -0.7 -0.8 -0.6 1.1 1.9 0.1 0.6 0.2 -0.1	S5 (URM) NF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4	1.5 -0.9 -0.5 -0.4 1.9 0.4	C2 (SW) -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0	C3 (URM (NF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2	PC1 (TU) 1.6 -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	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, VL1  Moderate Vertical Irregularity, VL2  Plan Irregularity, PL1  Pre-Code  Post-Benchmark  Soil Type A or B  Soil Type E (1-3 stories)  Soil Type E (> 3 stories)  Minimum Score, Sany	BA W1 3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3	W1A V  3.2 2 -1.20.7 4 -1.01.0 4 1.9 2 0.3 0 0.2 0 0.60.60.6 0.9 0  races on	N2 S1 (MRF 1.9 2.1 1.2 -1.0 0.7 -0.6 1.0 -0.6 0.9 -0.6 2.2 1.4 0.5 0.4 0.1 -0.2 0.9 -0.6	(BR) 2.0 -1.0 -0.6 -0.7 -0.6 -0.4 -0.6 -0.4 -0.6 -0.5	RS, AND FI S3 S4 (M) (PC SW) 2.6 2.0 -1.1 -1.0 -0.7 -0.6 -0.9 -0.7 -0.8 -0.6 1.1 1.9 0.1 0.6 0.2 -0.1 NA -0.6	S5 (URM NE) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 -0.5	1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5	C2 (SW) -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7	C3 (JRM INF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.3	PC1 (TU)  1.6 -1.0 -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	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5	090) 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
SKI  FEMA BUILDING TYPE  Do Not Know  Basic Score  Severe Vertical Irregularity, V <sub>LT</sub> Moderate Vertical Irregularity, V <sub>LT</sub> Pian Irregularity, P <sub>LT</sub> Pre-Code  Post-Benchmark  Soil Type A or B  Soil Type E (1-3 stories)  Soil Type E (> 3 stories)  Minimum Score, Sure  FINAL LEVEL 1 SCORE, S <sub>LT</sub> ≥ Smm.	BA W1 3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3	W1A V  3.2 2 -1.2	V2 S1 (MRF 199 2.1 1.2 -1.0 1.7 -0.6 1.0 -0.8 1.9 -0.6 1.2 1.4 1.1 -0.2 1.4 1.1 -0.2 1.7 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3	2.0 -1.0 -0.6 -0.7 -0.6 -0.7 -0.6 -0.4 -0.4 -0.6 -0.5	RS, AND FI S3 S4 (M) (RC (RC 1-1.1 -1.0 -0.7 -0.6 -0.9 -0.7 -0.8 -0.6 1.1 1.9 0.1 0.6 0.2 -0.1 NA -0.6 0.6 0.5 (addition	S5 (URM NE) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 -0.5	1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5	C2 (SW) -1.0 -0.6 -0.8 -0.7 -0.7 -0.3 -0.7	RE, S (URM INF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3	PC1 (TU)  1.6 -1.0 -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	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5	090) 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
SKI  FEMA BUILDING TYPE  Basic Score  Severe Vertical Irregularity, V <sub>L7</sub> Moderate Vertical Irregularity, V <sub>L7</sub> Plan Irregularity, P <sub>L1</sub> Pre-Code  Pre-Code  Soil Type A or B  Soil Type E (1-3 stories)  Soil Type E > 3 stories)  Minimum Score, S <sub>L0</sub> ×  FINAL LEVEL 1 SCORE, S <sub>L1</sub> ≥ S <sub>MW</sub> .  EXTENT OF REVIEW	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3 1.1	3.2 2 -1.2 0.7 4 -1.0 1.0 4 1.9 2 0.3 0 0.2 0 0.2 0.6 6 0.9 0 caces on des only	V2 S1 (MRF 12 - 1.0 - 1.	(BR) 2.0 -1.0 -0.6 -0.7 -0.6 -0.4 -0.6 -0.4 -0.6 -0.5	RS, AND FI S3 S4 (M) (RC (RC 1-1.1 -1.0 -0.7 -0.6 -0.9 -0.7 -0.8 -0.6 1.1 1.9 0.1 0.6 0.2 -0.1 NA -0.6 0.6 0.5 (addition	S5 (URM NE) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 -0.5	1.5 -0.9 -0.5 -0.6 -0.4 1.9 0.4 0.0 -0.5	C2 (SW) -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7	RE, S (URM INF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3	PC1 (TU)  1.6 -1.0 -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	1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5	090) 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
SKI  FEMA BUILDING TYPE  Do Not Know  Basic Score  Severe Vertical Irregularity, V <sub>L7</sub> Moderate Vertical Irregularity, V <sub>L7</sub> Plan Irregularity, P <sub>L1</sub> Pre-Code  Post-Benchmark  Soil Type E (1-3 stories)  Soil Type E (1-3 stories)  Minimum Score, Surv  FINAL LEVEL 1 SCORE, S <sub>L1</sub> ≥ Smino  EXTENT OF REVIEW  Exterior:  Partial  \$2	3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3 1.1	3.2 2 -1.2 0.7 4 -1.0 1.0 4 1.9 2 0.3 0 0.2 0 0.2 0.6 6 0.9 0 caces on des only	V2 S1 (MRF 12 - 1.0 - 1.	\$2 (BR) -1.0 -0.6 -0.7 -0.6 -0.4 -0.6 -0.4 -0.5 1.3 (ER HAZZere Hazzard	S3	NAL LI S5 (URM) NF) 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 (SW) -1.0 -0.6 -0.8 -0.7 -0.7 -0.3 -0.7	C3 (URM INF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 origi	PC1 (TU)  1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2 Challe	1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.1 -0.4 -0.2	(FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5	090) 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
SKI  FEMA BUILDING TYPE  Do Not Know  Basic Score  Severe Vertical Irregularity, V <sub>LT</sub> Moderate Vertical Irregularity, V <sub>LT</sub> Plan Irregularity, P <sub>LT</sub> Pre-Code  Post-Benchmark  Soil Type A or B  Soil Type E [+3 stories)  Soil Type E [+3 stories)  Minimum Score, Sure  FINAL LEVEL 1 SCORE, S <sub>LT</sub> ≥ SMM:  EXTENT OF REVIEW  Exterior:   Partial	BA W1 3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3 7.7  All Sides  Visible	W1A V  3.2 2 -1.20.7 4 -1.01.0 4 1.9 2 0.3 0 0.2 0 0.60.60.6 0.9 0  races on	V2 S1 (MRF 12 - 1.0 O THE Are Th Detaile	\$2 (BRI) -1.0 -0.6 -0.7 -0.6 -0.4 -0.6 -0.5 -1.3 (CER HAZZ	S, AND FI  S3	S5 (URM NF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 0.5	1.5 -0.9 -0.5 -0.4 1.9 0.4 0.0 -0.5 -0.4	2.9 -1.0 -0.6 -0.8 -0.7 2.1 0.5 0.0 -0.7 0.3 1.3 (ION RI	C3 (URM INF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 Origi EQUIF tural Ev.	1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2 PED	PC2  1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1 -0.4 -0.1 0.2 pldg)	(FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 0.3	(90) 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 1.2 0.3 -0.4 NA
SKI  FEMA BUILDING TYPE  Do Not Know  Basic Score  Severe Vertical Irregularity, V <sub>L1</sub> Moderate Vertical Irregularity, V <sub>L2</sub> Pian Irregularity, P <sub>L1</sub> Pire-Code  Post-Benchmark  Soil Type A or B  Soil Type E (1-3 stories)  Minimum Score, S <sub>lank</sub> FINAL LEVEL 1 SCORE, S <sub>L1</sub> ≥ S <sub>MM</sub> .  EXTENT OF REVIEW  Exterior:  Partial  Anno Drawings Reviewed:  Yes  Yes	BA W1  3.6 -1.2 -0.7 -1.1 -1.1 1.6 0.1 0.2 -0.3 1.1 by Sir  All Sides J	3.2 2 -1.20.7 4 -1.01.0 4 -1.0 0.3 0.2 0.6 -0.6 -0.9 0.7 aces on (4) Aerial	V2 S1 (MRF 12 - 1.0 - 1.	\$2 (BR) -1.0 -0.6 -0.7 -0.6 -0.4 -0.6 -0.5 -1.3 (ER HAZ/	\$3 \$4 (M) \$6 \$2.6 \$2.0 \$4.11 \$1.1 \$1.9 \$1.1 \$1.9 \$1.1 \$1.9 \$1.1 \$1.9 \$1.1 \$1.9 \$1.0 \$1.0 \$1.0 \$1.0 \$1.0 \$1.0 \$1.0 \$1.0	S5 (URM NF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 0.5	1.5 -0.9 -0.5 -0.4 1.9 0.4 0.0 -0.5 0.3	1 SCO (SW) 2.9 -1.0 -0.6 -0.8 (2.7) 2.1 0.5 0.0 -0.7 0.3 1.3 (ION RI ION RI ION RI ION RI ION RI ION RI ION SOURCE SERVICE SER	C3 (URM INF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 Origi EQUIF tural Ev.	1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2 in al &	PC2  1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.1 -0.4 -0.2 pldg)  a Require	(FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 0.3	090) 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
SKI  FEMA BUILDING TYPE  Do Not Know  Basic Score  Severe Vertical Irregularity, V <sub>L1</sub> Moderate Vertical irregularity, V <sub>L2</sub> Plan Irregularity, P <sub>L1</sub> Pine-Code  Post-Benchmark  Soil Type A or B  Soil Type E [> 3 stories)  Minimum Score, Suev  FINAL LEVEL 1 SCORE, S <sub>L1</sub> ≥ Smix:  EXTENT OF REVIEW  Exterior:  Interior:  Drawings Reviewed:  Ves Soil Type Source:  Ves 30 Mapps - S	## Sides   All Sides   Visible   No oil Type	3.2 2 -1.2	V2 S1 (MRF L9 2.1 1.2 -1.0 0.7 -0.6 1.0 -0.8 0.9 -0.6 1.2 1.4 1.1 -0.2 0.9 -0.6 1.7 0.4 3 OTHE Are The Detaile	\$2 (BR) -1.0 -0.6 -0.7 -0.6 -0.4 -0.6 -0.5 -0.5 -0.5 -0.5 -0.6 -0.5 -0.6 -0.5 -0.6 -0.6 -0.6 -0.5 -0.6 -0.6 -0.6 -0.6 -0.6 -0.6 -0.6 -0.6	S3	S5 (UFOM PEF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 -0.5 )	1.5 -0.9 -0.5 -0.4 1.9 0.4 0.0 -0.5 0.3	1 SCO (SW) 2.9 -1.0 -0.6 -0.8 (2.7) 2.1 0.5 0.0 -0.7 0.3 1.3 (ION RI ION RI ION RI ION RI ION RI ION RI ION SOURCE SERVICE SER	C3 (URM INF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 Origi EQUIF tural Ev.	1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2 in al &	PC2  1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.1 -0.4 -0.2 pldg)  a Require	(FD) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 0.3	090) 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
SKI  FEMA BUILDING TYPE  Do Not Know  Basic Score  Severe Vertical Irregularity, V <sub>L1</sub> Moderate Vertical Irregularity, V <sub>L2</sub> Moderate Vertical Irregularity, V <sub>L2</sub> Pian Irregularity, P <sub>L1</sub> Pre-Code  Post-Benchmark  Soil Type A or B  Soil Type E [> 3 stories)  Minimum Score, Sure  FINAL LEVEL 1 SCORE, S <sub>L1</sub> ≥ SMM:  EXTENT OF REVIEW  Exterior:   Partial X   Interior:   None   Drawings Reviewed:   Yes X   Soil Type Source: Vs30 Maps - S  Geologic Hazards Source: State Gee  Geologic Hazards Source: State Gee	## Sides   All Sides   Visible   No oil Type	3.2 2 -1.2	V2 S1 (MRF L9 2.1 1.2 -1.0 1.0 -0.8 1.0 -0.8 1.0 -0.8 1.1 -0.2 1.4 1.1 -0.2 1.7 0.9 3  OTHI  Are The Detaile  Final	\$2 (BRI) -1.0 -0.6 -0.7 -0.6 -0.4 -0.6 -0.5 -0.5 -0.5 -0.5 -0.6 -0.5 -0.6 -0.5 -0.6 -0.6 -0.6 -0.6 -0.6 -0.6 -0.6 -0.6	\$3 \$4 (M) \$6 \$2.6 \$2.0 \$4.11 \$1.1 \$1.9 \$1.1 \$1.9 \$1.1 \$1.9 \$1.1 \$1.9 \$1.1 \$1.9 \$1.0 \$1.0 \$1.0 \$1.0 \$1.0 \$1.0 \$1.0 \$1.0	S5 (UFOM PEF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 -0.5 )	C1 (MRF) 1.5 -0.9 -0.5 -0.4 1.9 0.4 0.0 -0.5 0.3  ACT Detail	1 SCO (C2 (SW)) -1.0 -0.6 -0.8 -0.7 -0.7 -0.7 -0.3 1.3 (ION RI ed Struct es, unkno es, other	RE, S; (JRIM INF) 1.2 1.2 -0.7 -0.4 -0.5 -0.1 NA -0.2 -0.3 0.3 COYIGI	PC1 (PU)  1.6 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2 In all & Called The Control of t	PC2  1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.1 -0.1 -0.2 pldg)  a Require	(FD) 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	1.5 NA NA -0.1 1.2 0.3 -0.4 NA 7.0
SKI  FEMA BUILDING TYPE  Do Not Know  Basic Score  Severe Vertical Irregularity, V <sub>L1</sub> Moderate Vertical Irregularity, V <sub>L2</sub> Moderate Vertical Irregularity, V <sub>L2</sub> Pian Irregularity, P <sub>L1</sub> Pre-Code  Post-Benchmark  Soil Type A or B  Soil Type E [> 3 stories)  Minimum Score, Sure  FINAL LEVEL 1 SCORE, S <sub>L1</sub> ≥ SMM:  EXTENT OF REVIEW  Exterior:   Partial X   Interior:   None   Drawings Reviewed:   Yes X   Soil Type Source: Vs30 Maps - S  Geologic Hazards Source: State Gee  Geologic Hazards Source: State Gee	## Sides   All Sides   Visible   No oil Type	3.2 2 -1.2	V2 S1 (MSF 19 2.1 1.2 -1.0 0.7 -0.6 1.0 -0.8 1.0 -0.8 1.1 -0.2 1.4 1.1 -0.2 1.9 -0.6 1.7 7 0.9 1.7 0.9	\$2 (BRI)  2.0 -1.0 -0.6 -0.6 -0.4 -0.5 -0.5 1.3 (  ER HAZ/ere Hazard do Structura- anding pote- off, if known ling hazard dding	\$3 \$4 (M) FI (M) PR (M)	NAL LI  S5 (IRMIN NF)  1.7  -0.8  -0.5  -0.6  -0.2  NA  0.5  -0.4  -0.4  -0.5  )	C1 (MRF) 1.5 -0.9 -0.5 -0.4 1.9 0.4 0.0 -0.5 0.3  ACT Detail	1 SCO (SW) 2.9 -1.0 -0.6 -0.8 (2.7) 2.1 0.5 0.0 -0.7 0.3 1.3 (ION RI ION RI ION RI ION RI ION RI ION RI ION SOURCE SERVICE SER	RE, S; (JRIM INF) 1.2 1.2 -0.7 -0.4 -0.5 -0.1 NA -0.2 -0.3 0.3 COYIGI	PC1 (PU)  1.6 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2 In all & Called The Control of t	PC2  1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.1 -0.1 -0.2 pldg)  a Require	(FD) 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	1.5 NA NA -0.1 1.2 0.3 -0.4 NA 7.0
SKI  FEMA BUILDING TYPE  Do Not Know  Basic Score Severe Vertical Irregularity, V <sub>L7</sub> Moderate Vertical Irregularity, V <sub>L7</sub> Plan Irregularity, P <sub>L7</sub> Pre-Code Post-Benchmark  Soil Type E (1-3 stories)  Soil Type E (>3 stories)  Minimum Score, Sure  FINAL LEVEL 1 SCORE, S <sub>L1</sub> ≥ Seed:  EXTENT OF REVIEW  Exterior:  Partial  Interior:  Drawings Reviewed:  Soil Type Source:  Ves  Soil Type Source:  State Ge-Contact Person:	### Sides   Visible   No ologist -	3.2 2 -1.2	V2 S1 (MSF) 9 2.1 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	\$2 (BRI)  2.0 -1.0 -0.6 -0.7 -0.6 -0.7 -0.6 -0.4 -0.6 -0.5 -0.5 -0.5 -0.6 -0.6 -0.6 -0.6 -0.6 -0.6 -0.6 -0.6	\$\$ \$AND FI \$\$ \$3 \$4 \$4 \$60 \$60 \$1.0 \$1.0 \$1.0 \$1.0 \$1.0 \$1.0 \$1.0 \$1.	NAL LI  S5 ((RM) NF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 -0.4 0.5 )  A	C1 (MRF)  1.5 (-0.9 (-0.5 (-0.4 (-0.5 (-0.	1 SCO (52 (5W)) 2.9 -1.0 -0.6 -0.8 -0.7 -0.7 -0.7 -0.7 -0.7 -0.7 -0.7 -0.7	RE, S; C3 (URM INF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 0.3 Origi  COVIGIO  EQUIFICATION Less that hazards	1.6 -1.0 -0.6 -0.7 -0.5 -0.5 -0.3 NA 0.2 -0.2 MA Dildidin n cut-off present	1.4 -0.9 -0.5 -0.6 -0.3 2.4 0.4 -0.1 -0.4 0.2 oldg)  Require ng type o detion Require identified	(FD) 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 NA -0.1 1.2 0.3 -0.4 NA 7.0
SKI  FEMA BUILDING TYPE  Do Not Know  Basic Score  Severe Vertical Irregularity, V <sub>L1</sub> Moderate Vertical Irregularity, V <sub>L2</sub> Moderate Vertical Irregularity, V <sub>L2</sub> Pian Irregularity, P <sub>L1</sub> Prac-Code  Post-Benchmark  Soil Type A or B  Soil Type E (1-3 stories)  Soil Type E (1-3 stories)  Soil Type E (1-3 stories)  Minimum Score, Sure   FINAL LEVEL 1 SCORE, S <sub>L1</sub> ≥ Smm:  EXTENT OF REVIEW  Exterior:	## Sides   Visible   No cold Type cologist	3.2 2 -1.21.0	V2 S1 (MRF 99 2.1 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	2.0 (	\$\frac{\text{S}}{\text{(M)}} & \text{S} & \text{S4} & \text{(M)} & \te	NAL LI  S5 ((RM) NF) 1.7 -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 -0.4 0.5 )  A	C1 (MRF)  1.5 -0.9 -0.5 -0.6 1.9 0.4 1.9 0.5 0.3  ACT Detail Y.Y. Y. Y. Y. N. N. Detail W. N. N. N. N.	1 SCO (5W) 2.0 -1.0 -0.6 -0.8 -0.7 -0.7 -0.3 1.3 (ION RI ed Structure) ses, unknown od Nonstructure ses, nonstructure ses, nonstructure ses, nonstructure	RE, S; C3 (URM INF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 -0.3 -0.3 Origi  EQUIF EVEL TEVEL LEVEL TO LEVEL LEV	1.6 -1.0 -0.6 -0.7 -0.5 -0.7 -0.5 -0.3 -0.2 -0.4 EED aluation n cut-off present I Evalua hazards azards e azards e	PC2  1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.1 -0.4 -0.1 -0.4 0.2  Require ng type o	(FD) 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 NA -0.1 1.2 0.3 -0.4 NA 7.0
SKI  FEMA BUILDING TYPE  Do Not Know  Basic Score  Severe Vertical Irregularity, V <sub>L7</sub> Moderate Vertical Irregularity, V <sub>L7</sub> Moderate Vertical Irregularity, V <sub>L7</sub> Plan Irregularity, P <sub>L1</sub> Pre-Code  Post-Benchmark  Soil Type E (1-3 stories)  Soil Type E (1-3 stories)  Soil Type E (1-3 stories)  Minimum Score, S <sub>MRV</sub> FINAL LEVEL 1 SCORE, S <sub>L1</sub> ≥ S <sub>MRV</sub> EXTENT OF REVIEW  Exterior: Partial Directors  Drawings Reviewed: Yes Soil Type Source: Vs30 Maps - S  Geologic Hazards Source: State Ge  Contact Person:  LEVEL 2 SCREENING PERF  Yes, Final Level 2 Score, S <sub>L2</sub> O.:	## Sides   Visible   No cold Type cologist	W1A V  3.2 2 -1.2 -1.2 -1.2 -1.0 1.1 1.9 2 0.3 0 0.9 0 0.9 0  ✓ Aerial   ✓ Aerial   ✓ Aerial   ✓ None	VZ S1 (MMF) 1.2 -1.0, 0.7 -0.6 1.0 -0.8 1.0 -0.8 1.0 -0.8 1.1 -0.2 1.1 -0.	(\$2 (BR) (2.0) -1.0 -0.6 (0.7) -0.6 -0.4 -0.6 -0.5 -0.5 -1.3 (0.7) -0.6 -0.6 -0.5 -0.6 -0.5 -0.6 -0.5 -0.6 -0.5 -0.6 -0.6 -0.6 -0.6 -0.6 -0.6 -0.6 -0.6	\$3  \$4	NAL LI  SS (URM) NF)  1.7  -0.8 -0.5 -0.6 -0.2 NA 0.5 -0.4 -0.4 -0.4  0.5 )  A  A  A  A  A  A  A  A  A  A  A  A	C1 (MRF) 1.5 -0.9 -0.5 -0.4 1.9 0.4 0.0 0.5 0.3  ACT Details Y.Y.Y. N. Details X.Y.Y. N. ded.	1 SCO  (2) (9/W) 2.0 -1.0 -0.6 -0.8 (0.7) 2.1 0.5 0.0 -0.7 0.3 13 ( ION RI ed Structo ss, score ses, other ri ed Nonstas, score, other ri ed Nonstas, othe	RE, Sj. C3 (URM INF) 1.2 -0.7 -0.4 -0.5 -0.1 NA 0.3 -0.2 0.3 Origi  COUIFI  CO	PC1 (TU)  1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2 in al & RED aluation IA buildii	PC2  1.4 -0.9 -0.5 -0.6 -0.3 -0.4 -0.1 -0.4 -0.1 -0.4 -0.2 oldg)  Require ng type o dentified the second of the se	(FD)  1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 -0.1 -0.5 0.3  ed?  r other becommend if that sho may requ	90) 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 NA -0.1 1.2 0.3 -0.4 NA 7.0
SKI  FEMA BUILDING TYPE  Do Not Know  Basic Score Severe Vertical Irregularity, Viz  Moderate Vertical Irregularity, Viz  Moderate Vertical Irregularity, Viz  Plan Irregularity, Piz  Previous  Post-Benchmark  Soil Type E (1-3 stories)  Soil Type E (1-3 stories)  Soil Type E (9-) 3 stories)  Minimum Score, Sure  FINAL LEVEL 1 SCORE, Siz Semic  EXTENT OF REVIEW  EXTERNO FREVIEW  Caterior: Partial Torawings Reviewed: Yes  Soil Type Source: Vs30 Maps - S  Geologic Hazards Source: State Ge  Contact Person:  LEVEL 2 SCREENING PERFE	## Sides   Visible   No oil Type ologist -	W1A V  3.2 2 -1.21.0 -	V2 S1 (MMF) 2.9 2.1 1.2 -1.0 1.7 -0.6 1.0 -0.8 0.9 -0.6 2.2 1.4 1.5 0.4 1.1 -0.2 0.9 -0.6 2.7 0.3 3  OTHE Are Th Detaille  Fal build  Ge  Ge  Ge  Ge  Ge  Ge  Ge  Ge  Ge  G	S2 (IBRI)  2.0 -1.0 -0.6 -0.7 -0.6 -0.7 -0.6 -0.6 -0.5 -0.5 -0.5 -0.5 -0.6 -0.6 -0.6 -0.6 -0.6 -0.6 -0.6 -0.6	\$3 \$4 \$4 \$6 \$2.0 \$4.1 \$1.1 \$1.9 \$1.0 \$1.0 \$1.0 \$1.0 \$1.0 \$1.0 \$1.0 \$1.0	NAL LI   State   Sta	C1 (MPF)  1.5 -0.9 -0.5 -0.6 -0.4 1.9 -0.4 0.0 -0.5 -0.3  ACT  Details	1 SCO  (SW)  -1.0  -0.6  -0.8  -0.7  0.7  0.3  1.3 (ION RI  ed Struct  ss, core es, other lo  ed Nonstalled ev, o, nonstruct  salled struct  oe Monst	RE, S, C3 (URM INF) 1.2 -0.7 1.2 -0.4 -0.5 -0.1 NA 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3	PC1 (TU)  1.6 -1.0 -0.6 -0.7 -0.5 2.0 0.6 -0.3 NA 0.2  RED  aluation  IA buildid  present  I Evaluation  to present	PC2  1.4 -0.9 -0.5 -0.6 -0.3 2.4 -0.1 -0.4 -0.1 -0.4 -0.2 pldg)  Require mg type o didentified exist that a coessary as identified to the coessary as identi	1.7 -0.9 -0.5 -0.7 -0.5 -0.1 -0.5 -0.1 -0.5 -0.3 -0.3 -0.3 -0.3 -0.3 -0.3 -0.3 -0.3	940) 1.7 -0.9 -0.5 -0.7 -0.5 2.1 0.5 2.1 0.5 0.3  ded? (ch	1.0 -0.7 -0.4 -0.4 0.0 NA 0.3 -0.2 -0.2 0.2	1.5 NA NA NA -0.1 1.2 0.3 -0.4 NA 7.0

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) FEMA P-154 Data Collection Form **HIGH Seismicity** 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 building Bldg Name: WMS - Main Building Final Level 1 Score: $S_{L_1} = 1.3$ (do not consider S<sub>t</sub> ner: J. Howard ADJUSTED BASELINE SCORE: $S' = (S_{i,t} - V_{i,t} - P_{i,t}) =$ Date/Time: 8/28/13 9am STRUCTURAL MODIFIERS TO ADD TO ADJUSTED BASELINE SCORE Subtotals Sloping W1 building: There is at least a full story grade change from one side of the building to the other Irregularity, VL2 -0.3 Non-W1 building: There is at least a full story grade change from one side of the building to the oth Weak W1 building cripple wall: An unbraced cripple wall is visible in the crawl space -0.6 and/or W1 house over garage: Underneath an occupied story, there is a garage opening without a steel moment frame. and there is less than 8' of wall on the same line (for multiple occupied floors above, use 16' of wall minimum). Soft Story (circle one W1A building open front: There are openings at the ground story (such as for parking) over at least 50% of the maximum) length of the building. Non-W1 building: Length of lateral system at any story is less than 50% of that at story above or height of any 0.9 story is more than 2.0 times the height of the story above. Non-W1 building: Length of lateral system at any story is between 50% and 75% of that at story above or height 0.5 of any story is between 1.3 and 2.0 times the height of the story above. Setback Vertical elements of the lateral system at an upper story are outboard of those at the story below causing the -1.0 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. C1,C2,C3,PC1,PC2,RM1,RM2: At least 20% of columns (or piers) along a column line in the lateral system have -0.3 Short height/depth ratios less than 50% of the nominal height/depth ratio at that level. C1,C2,C3,PC1,PC2,RM1,RM2: The column depth (or pier width) is less than one half of the depth of the spandrel, Pier or there are infill walls or adjacent floors that shorten the column. There is a split level at one of the floor levels or at the roof V12=-1.0 There is another observable severe vertical irregularity that obviously affects the building's seismic performance Irregularity There is another observable moderate vertical irregularity that may affect the building's seismic perfe (Cap at -1.2) Torsional irregularity: Lateral system does not appear relatively well distributed in plan in either or both directions. (Do not Irregularity, PL2 include the W1A open front irregularity listed above.) (0.7) Non-parallel system: There are one or more major vertical elements of the lateral system that are not orthogonal to each other Reentrant corner: Both projections from an interior corner exceed 25% of the overall plan dimension in that direction Diaphragm opening: There is an opening in the diaphragm with a width over 50% of the total diaphragm width at that level P(2= C1, C2 building out-of-plane offset: The exterior beams do not align with the columns in plan. -0.4 Other irregularity: There is another observable plan irregularity that obviously affects the building's seismic performance (Cap at -1.1) The building has at least two bays of lateral elements on each side of the building in each direction. €.3) Redundancy Building is separated from an adjacent structure by less than 1% of the height of the shorter of the building and adjacent structure and: The floors do not align vertically within 2 feet. One building is 2 or more stories taller than the other building is at the end of the block. -1.0 -0.5 -1.0 S2 Building "K" bracing geometry is visible. Flat plate serves as the beam in the moment frame. PC1/RM1 Blda There are roof-to-wall ties that are visible or known from drawings that do not rely on cross-grain bending. (Do not combine with +0.3 post-benchmark or retrofit modifier.) PC1/RM1 Bldg The building has closely spaced, full height interior walls (rather than an interior space with few walls such as in a warehouse) +0.3 Gable walls are present. -0.4There is a supplemental seismic bracing system provided between the carriage and the ground M = +0.3nsive seismic retrofit is visible or known from draw Retrofit Comprehensive seismic retrofit is visible or known from drawings. FINAL LEVEL 2 SCORE, $S_{L2} = \{S' + V_{L2} + P_{L2} + M\} \ge S_{MN}$ : 1.3 - 1.0 - 1.1 + 0.3 = -0.5; use $S_{MN} = 0.3$ +1.4 (Transfer to Level 1 for There is observable damage or deterioration or another condition that negatively affects the building's seismic performance: OBSERVABLE NONSTRUCTURAL HAZARDS Comment Statement (Check "Yes" or "No") Yes No There is an unbraced unreinforced masonry parapet or unbraced unreinforced masonry chimney x There is heavy cladding or heavy veneer. There is a heavy canopy over exit doors or pedestrian walkways that appears inadequately supported × forced masonry appendage over exit doors or pedestrian walkways × There is a sign posted on the building that indicates hazardous materials are present X There is a taller adjacent building with an unanchored URM wall or unbraced URM parapet or chimney Other observed exterior nonstructural falling hazard X corridor appears to be hollow clay tile There are hollow clay tile or brick partitions at any stair or exit corridor. Other observed interior nonstructural falling hazard: Estimated Nons uctural Seismic Performance (Check appropriate box and transfer to Level 1 form conclusions) Description process of the properties of the properties of the process of the Nonstructural hazards identified with significant threat to occupant life safety -> But no Detailed Nonstructural Evaluation required Low or no nonstructural hazard threat to occupant life safety -> No Detailed Nonstructural Evaluation required

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

\* Addition has differences in horizontal dimension, floor height, and structural framing. Therefore, per Level 2 addition guide, evaluate as single building and consider reentrant corner, setback and torsional irregularities.

### 9. APPENDIX A: DATA COLLECTION FORMS

Rapid Visual Screening	g of B	uildi	ngs	for I	Pote	ntial	Sei	smic	Haz	ards								ı	LEVE	EL 1
(Adopted from FEMA P-154 Data C	collection i	Form)													V	ERY	HIG	H Se	ismi	icity
PHOTOGRAPH							Ad	dress:							City:					
							ot	her ID:							Use:					
						Bu	illding	Name:												
							La	titude:							. S.:					
							Long	gitude:							S,:					
							Sci	eener:							Date	Time:				
						#Stori	les - Al	oove Gr	ound:		. Below	Groun	d:		Year E	Bullt: .		□ Est		
						Total i	Floor /	Area (si	rt):						Code	Year:				
						Add	Itions:		□ Non	e	☐ Yes	, Yean	Bullt:							
						Occup	pancy:		☐ Ass	embly	□ Con	nmerci	al		ergeno	y Servi	ces	☐ Hist	oric	
									□ Indu	ustrial				□ Sch				□ Gov	vemme	ent
									□ Utili	•	□ Wa	rehous				il,#Unit	5:	☐ She		
						Soll T	ype:		□ A: H	lard Ro	ck			Soft Ro					Soft Sol	
SKETCH									□ B: N						oll / DN			□ F: P	oor So	llc
						Geoha	azards	:			action:				), 🗆 DI					
		ļ							_		dslide:				), 🗆 DI					
		į									upture:			_	), 🗆 DI					
		i				Adjac	_		□ Pou		diam'r Inc			ing Ha				Jacent I	Building	9
		i				ırregu	larities	8.			rtical im /ertical	_	-		⊔ на	n Irregi	lianty			
		i				-					Chimne	_		uar Cla	dellan	or Heav	n: Mon			
							or Fall	Ing	□ Para		unimne	уь		endag	_	ur near	y veni	e		
						Hazar	da:		□ Oth				LI APP	renuay						
						COM	MENTS													
		·																		
		i																		
		i																		
		i																		
		!				ı														
	1					□ Add	iltional	sketche	es or co	mment	ts on se	parate	page							
					ORE, I		IERS,	AND FI	NAL LE	VEL 1										
BUILDING TYPE	DNK	W1	W1A	W2	S1	S2	S3	S4	S5	C1	C2	C3	PC1	PC2	RM1	RM2	URM	MH	BN1	BN2
Basic Score	<u> </u>	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	0.8
Severe Vertical Irregularity, V <sub>L</sub> ,	<u> </u>	-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	-0.6
Moderate Vertical Irregularity, V <sub>L1</sub>	<u> </u>	-0.6	-0.5	-0.5	-0.4	-0.4	-0.5	-0.4	-0.3	-0.4	-0.4	-0.3	-0.4	-0.4	-0.4	-0.4	-0.3	NA	-0.3	-0.3
Plan Irregularity, P <sub>1</sub> ,	<u> </u>	-0.7	-0.7	-0.6	-0.5	-0.5	-0.6	-0.4	-0.4	-0.4	-0.5	-0.3	-0.5	-0.4	-0.4	-0.4	-0.3	NA	-0.3	0.0
Pre-Code	<u> </u>	-0.3	-0.3	-0.3	-0.3	-0.2	-0.3	-0.2	-0.1	-0.1	-0.2	0.0	-0.2	-0.1	-0.2	-0.2	0.0	0.0	NA	NA
Post-Benchmark	<u> </u>	1.9	1.9	2.0	1.0	1.1	1.1	1.5	NA.	1.4	1.7	NA	1.5	1.7	1.6	1.6	NA	0.5	NA	NA
Soll Type A or B	-	0.5	0.5	0.4	0.3	0.3	0.4	0.3	0.2	0.2	0.3	0.1	-0.2	0.2	0.3	0.3	0.1	0.1	0.1	0.2
Soll Type E (1-3 stories)	$\vdash$	-0.4	-0.2	-0.4	-0.3	-0.2	-0.2 NA	-0.2	-0.1	-0.1	-0.2	-0.1	NA	-0.1	-0.2	-0.2	0.0	-0.1 NA	0.0 NA	0.0 NA
Soll Type E (>3 stories)	_	0.7	0.7	0.7	0.5	0.5	0.5	0.5	0.1	0.3	0.3	0.3	0.2	0.1	0.3	0.3	0.0	1.0	0.2	0.2
Minimum Score, S <sub>MN</sub> FINAL LEVEL 1 SCORE, S,,≥S,		0.7	0.7	0.7	0.5	0.5	0.5	0.0	0.5	0.3	0.0	0.0	0.2	0.2	0.5	0.5	0.2	1.0	0.2	0.2
EXTENT OF REVIEW	AN		_	ОТНЕ	R HAZ	ZARDS					ACTIO	N REC	MIRE	n .						
Exterior:	es	□ Ae	rtal					rloger A	A Detail	ed					ion Re	quired:	,			
Interior: None Visible		O En				valuatio					1					other b				
Drawing Reviewd: ☐ Yes		□ No						ess S.	, > Cut-	off. If	□ Yes			_						
Soll Type Source:				knowr	_						1	, other							□ No	
Geohazards Source:					,						1					Recor	nmend	ed?		
Contact Person:				□ Fal	ing ha	zards f	rom tal	ier adja	icent bu	iiding	□ Yes	, nons	ructura	al haza	rd Iden	tifled, s	hould	be eval	luated	
LEVEL 2 SCREENING PERFORM	ED?			□ Ge	ologic i	hazardı	s or So	II Type	F		1							ulre mi		n, but
☐ Yes, Final Level 2 Score, S <sub>12</sub> :	□ No				-				on to the	2					neces		- '		_	
Nonstructural Hazards?	□ Ye	5	□ No	structi	ural syr	stem										dentifie	d		□ DNF	K

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

LEVEL 2 (Optional) VERY HIGH Seismicity

Building Nan	ne :		Final	Level 1 Score: S., -				(Do	nat ca	nsider S <sub>ma</sub>
Screener	:		Level 1 Irregula	arity Modifiers: Vertica	al Irrequiarity , V, , =	Р	lan	Irregularity, P., -		
Date/ Time	-:			ED BASELINE S' = (S	S,, - V,, - P,,) =					
	L MODIFIER	S TO ADD TO ADJUS								
Topic			•		difier; otherwise cross out the mod	lifler)			Yes	Subtotals
Vertical	Sloping Site				one side of the building to the other.				-0.9	l
Irregularity,	Weak				om one side of the building to the othe	r.				
V <sub>12</sub>	and/or Soft			cripple wall is visible in					-0.5	
-13	Story	W1 House over Gara	ige : Underneath a	n occupied story, there	is a garage opening without a steel r	noment	fra	me, and there is		l
	(Circle one	less than 8 ft of wall o	on the same line (f	or multiple occupied flo	ors above, use 16 ft of wall minimum	)			-0.9	
l	maxlmum)	W1A Building Open F	Front: There are o	penings at the ground s	story (such as for parking) over at lea	st 50 %	of	the length of the		
		building.							-0.9	
		Non-W1 Building : Le	enoth of lateral syst	em at any story is less	than 50 % of that at story above or h	elaht of	an	v storv is more		ĺ
l		than 2.0 times the he	-		, , , , , , , , , , , , , , , , , , , ,			,,	-0.7	
					ween 50 % and 75 % of that at story a	hous or	he	lobt of any stony is		1
l		_			ween 30 % and 73 % or that at story a	DOVE O	III C	agrit of arry story is	-0.4	
	Sethack	between 1.3 and 2.0		•			_		-0.4	l
	Setback	Vertical elements of t	the lateral system a	at an upper story are ou	utboard of those at the story below ca	using th	e d	flaphragm to		l
		cantilever at the offse	et.						-0.7	
		Vertical elements of t	the lateral system a	at upper stories are inb	oard of those at lower stories.				-0.4	
l	Short	There is an in-plane (	offset of the lateral	elements that is greate	er than the length of the elements.		_		-0.2	
	Column/	C1,C2,C3,PC1,PC2,F	RM1,RM2 : At leas	t 20 % of columns (or p	plers) along a column line in the latera	al systen	n h	ave height/depth		l
l	Pler	ratios less than 50 %	of the nominal hel	ght/depth ratio at that i	evel.				-0.4	
I		C1,C2,C3,PC1,PC2,F	RM1,RM2: The co	lumn depth (or pler wid	th) is less than one half of the depth	of the sp	oan	drel, or there are		
I		Infili walls or adjacent	t floors that shorter	the column.					-0.4	
I	Split Level	There is a split level a	at one of the floor I	evels or at the roof.					-0.4	ĺ
I	Other				viously affects the building's seismic	performa	ano	e.	-0.7	V <sub>42</sub> =
	Irregularity				may affect the building's seismic perf				-0.4	(Cap at -0.9)
Plan	Torsional irre	gularity: Lateral syste	m does not appear	relatively well distribut	ted in plan in either or both directions.	(Do no	t In	clude the W1A	-0.5	
Irregularity,	open front Irr	egularity listed above)	1						-0.5	
P <sub>L2</sub>				ertical elements of the la	ateral system that are not orthogonal	to each	ott	her.	-0.2	ĺ
. 12					he overall plan dimensions in that dire				-0.2	ĺ
l					r 50 % of the total diaphragm width at		el.		-0.2	ĺ
l	C1, C2 Build	ings Out-of-plane Offs	et. The exterior be	ams do not align with t	he columns in plan.				-0.2	P <sub>1.2</sub> =
	Other Irregul	arity: There is another	observable plan ir	regularity that obvious	y affects the building's seismic perfor	mance.			-0.5	(Cap at -0.7)
Redundancy	The building	has at least two bays	of lateral elements	on each side of the bu	iliding in each direction.				0.2	
Pounding	Building is se	eparated from an adjace	cent structure by	The floors do not align	vertically within 2 feet.			(Cap total	-0.7	
l	less than 1.5	% of the height of the	shorter of the	One building is 2 or m	ore stories taller than the other.		╗	pounding modifiers	-0.7	1
l	building and	adiacent structure and	t·	The building is at the	end of the block.		╗	at -0.9)	-0.4	ĺ
S2 Building		eometry is visible.					_	u. 0.5)	-0.7	t
C1 Building	Flat plate ser	ves as the beam in th	e moment frame.						-0.3	t
PC1/ RM1	There are roo	of-to-wall ties that are	visible or known fro	om drawings that do no	ot rely on cross-grain bending. (Do no	t combin	ne i	with post-	$\overline{}$	İ
Building		r retrofit modifier)		-					0.2	
bulluling			di bolohi interiorus	alle (eathor than an Into	rior space with few walls such as in a	warobo		2)	0.2	l
URM	Gable walls a		all fleight interior wi	ano tranier marrari inte	ntor space with lew waits such as in a	wareno	use	=)	-0.3	t
МН	There is a su	pplemental selsmic b	racing system prov	ided between the carri	age and the ground.				0.5	İ
Retrofft	Comprehens	ive seismic retrofit is v	visible or known fro	m drawlngs.					1.2	м-
FINAL LEVE	2 SCORE, S	S <sub>12</sub> = (S' + V <sub>12</sub> + P <sub>12</sub>	+M)≥S <sub>MN</sub> :					(Transfer	to Le	vel 1 Form)
					e building's seismic performance: 🗆					
If yes, describ	e the condition	on In the comment box	below and Indicat	e on the Level 1 form t	hat detailed evaluation is required ind	epender	nt c	of the building's scor	e.	
OBSERVABL		CTURAL HAZARDS								
Location		Check "Yes" or "No"				Yes N	0	Comm	nents	
Exterior				or unbraced unreinforce	ed masonry chimney.	$\vdash$	4			
I		vy cladding or heavy v			rs Inadequately supported.	₩	4			
l				it doors or pedestrian i		$\vdash$	⊣			
l				azardous materials are		$\vdash$	⊣			
l					d URM parapet or chimney.	$\vdash$	Ⅎ			
l		ed exterior nonstructu			,	$\vdash$	┪			
Interior	There are ho	llow clay tile or brick p	artitions at any sta	ir or exit corridor.		$\vdash$	┪			
	Other observ	ed Interior nonstructur	ral falling hazard.				╗			
Estimated No	onstructural	Seismic Performance	e (Check appropri	ate box and transfer to	Level 1 form conslusions)		_			
		ctural hazards with sig			> Detailed Nonstructural Evaluat					
		ards identified with sig			> But no Detalled Nonstructural 8					
□ Low	or no nonstru	uctural hazard threat to	o occupant life safe	ety.	-> No Detailed Nonstructural Eval	uation re	equ	ulred.		
Comments:							_			
I										

Rapid Visual Screening	g of B	uild	ings	for	Pote	ential	Sei	smic	Haza	ards									LEV	EL 1		
(Adopted from FEMA P-154 Data Co	Nection i	Form)															HIG	H Se	ism	icity		
PHOTOGRAPH						П	Ad	ldress:			City:											
						l	ot	her ID:							Use:							
						Bu	illding	Name:														
							La	titude:							S,:							
							Long	gitude:							S,:							
						$ldsymbol{le}}}}}}$	Sci	eener:														
								oove Gr			. Below											
								Area (si														
							litions:		□ Non													
						Occu	pancy:				□ Cor							☐ Historic				
						l					☐ Office ☐ Schools							☐ Government				
						Soll Type:   A: Hard Roc				□ Warehouse □ Residential,#Units:							□ She		_			
SKETCH : :						Soll I	ype:									112		OE:S				
SKEICH						0	azarda		□ B: N					Hard S				□F:F	00r S	OII		
	· <del>-</del>				ļ.,	Geon	azards				faction: idslide:			s, □ No s, □ No								
					{·	1			Sur		upture:			s, ⊔ No s, □ No								
	·		\	\	}	Adjac	opour		□ Pou		upture.			ing Ha	•		ller Ad	Iacent	Bulldin	n		
				{	}	_	ency. Iaritle				rtical Irr	egulari		ing in	□ Pla			juociii	Dallal	9		
	+				(	lilogo	na muo				/ertical	-	•			illiegi	arearry					
	+										Chimne	_		avy Cla	ddina d	or Heav	w Vene	eer				
				or Fall	Ing	□ Para			,-		-	_		,								
			Hazards:																			
	· †					COM	MENTS															
	· †	i	i																			
	·†	i			;	1																
	· †				(	1																
	· †				(	1																
	1				1	1																
	1					□ Add	ittonal	sketch	es or co	mmen	ts on se	parate	page									
			BAS	SIC SC	ORE,		IERS,	AND FI	NAL LE	VEL 1	SCOR	E, S <sub>L1</sub>				_						
BUILDING TYPE	DNK		W1A		S1	S2	S3	S4	S5	C1	C2	C3	PC1	PC2	RM1	RM2	URM	МН	BN1	BN2		
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	1.7	1.0	1.5	1.0	1.4		
Severe Vertical Irregularity, V <sub>L1</sub>	_	-1.2	-1.2	-1.2	-1.0	-1.0	-1.1	-1.0	-0.8	-0.9	-1.0	-0.7	-1.0	-0.9	-0.9	-0.9	-0.7	NA	-0.7	-0.8		
Moderate Vertical Irregularity, V <sub>L1</sub>	_	-0.7	-0.7	-0.7	-0.6	-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.	-0.4	-0.5		
Plan Irregularity, P <sub>L1</sub>	<u> </u>	-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	-0.7	-0.4	NA	-0.4	-0.5		
Pre-Code	$\vdash$	-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	NA	NA		
Post-Benchmark Soll Type A or B	$\vdash$	0.1	0.3	0.5	0.4	0.6	0.1	0.6	NA 0.5	1.9	0.5	NA 0.3	0.6	0.4	0.5	0.5	NA 0.3	0.3	0.3	NA 0.9		
Soll Type E (1-3 stories)	$\vdash$	0.1	0.3	0.5	-0.2	-0.4	0.1	-0.1	-0.4	0.4	0.0	-0.2	-0.3	-0.1	-0.1	-0.1	-0.2	-0.4	-0.2	-0.6		
Soll Type E (1-3 stories)	$\vdash$	-0.3	-0.6	-0.9	-0.2	-0.4	NA	-0.1	-0.4	-0.5	-0.7	-0.2	NA	-0.1	-0.1	-0.1	-0.2	NA	NA	NA		
	+	1.1	0.0	0.7	0.5	0.5	0.6	0.5	0.4	0.3	0.7	0.3	0.2	0.4	0.3	0.3	0.2	1.0	0.2	0.2		
Minimum Score, $S_{MN}$ FINAL LEVEL 1 SCORE, $S_{L1} \ge S_{MN}$		1.1	0.5	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.2	1.0	0.2	0.2		
EXTENT OF REVIEW OTHER HAZARDS											АСТІС	N REC	OUIRE	n								
Exterior:				rlager /	A Detalk	ed				Evalua	ion Re	quired	?									
Interior:   None   Visible		□ Ae				valuatio		33			□ Yes	, unkn	own bu	iliding t	ype or	other b	uliding					
Drawing Reviewd: ☐ Yes		□ No						ess S ,	, > Cut-	off, If				han cư			-					
Soll Type Source:known)											□ Yes	, other	hazar	ds pres	ent				□ No			
Geohazards Source:							anne de l'	las est	anni b	lleller	Detailed Nonstructural Evaluation Recommended?											
Contact Person:				LI Fa	lling hazards from taller adjacent building						☐ Yes, nonstructural hazard identified, should be evaluated											
LEVEL 2 SCREENING PERFORME	D?			□ Ge	ologic	hazard	s or So	(I Type	F		□ No.	nonstr	uctural	hazan	ds exis	t that n	nay req	ulre mi	tigatio	n, but		
☐ Yes, Final Level 2 Score, S <sub>12</sub> :										•	a detailed evaluation is not necessary											
Nonstructural Hazards?														□ No, no nonstructural hazards identified □ DNK								
	uctural Hazards?										-											

Rapid Visual Screening	of B	uild	ings	for	Pote	entia	Sei	smic	Haza	ards									LEV	EL 1		
(Adopted from FEMA P-154 Data Co	Nection	Form)															HIG	H Se	ism	icity		
PHOTOGRAPH						П	Ad	idress:							City:							
						l	Ot	her ID:							Use:							
						В	ıliding	Name:														
							La	titude:														
							Long	gitude:							. s,:							
							Sci	eener:							Date	Time:						
						#Stor	1es - Al	oove Gr	ound:		Below Ground: Year Built: 🗆 Est											
						Total	Floor	Area (st	rt):						Code	Year:						
						Add	litions:		□ Non	e	☐ Yes, Years Bullt:											
						Occu	pancy:		☐ Asse	embly	□ Cor	nmerci	al	□ Em	ergeno	y Servi	ices	□ HIs	toric			
						l			□ Indu	strial	□ Off	ce		□ Sch	nools			□ Gơ	vemme	ent		
						l				y	□ Wa	rehous	e	□ Res	sidentia	i,#Unit	5:	☐ She	elter			
						Soll T	ype:		□ A: H	ard Ro	ock		□ C:	Soft Ro	ck			□ E: 8	Soft So	ı		
SKETCH	-					1			□ B: N	iormal	Rock		□ D: I	Hard S	oll / DN	IK		□F:F	oor S	Oll		
	7	7				Geoh	azards	:		Lique	faction:		☐ Yes	, 🗆 No	), 🗆 DI	ΝK						
	1	1				1				Lar	ndslide:		☐ Yes	, 🗆 No	), 🗆 DI	NK						
	7	1		1					Sur	face R	upture:		☐ Yes	, 🗆 No	o, 🗆 Di	NK						
	7	)		] [ ]	,,,,,,	Adjac	ency:		☐ Pour	nding			□ Fal	Ing Ha	zards f	rom Ta	ller Ad	Jacent	Bulldin	ıg		
						Irregu	ılaritle	30	☐ Sew	ere Ve	rtical im	egulari	ty		□ Pla	n Irregi	ularity					
	1								☐ Mod	erate 1	Vertical	Irregul	artty									
	1						=		□ Unb	raced	Chimne	ys .	☐ He	wy Cla	dding	or Heav	ry Ven	eer				
	1					Hazar	lor Fall da:	ing	□ Para	apets			□ Ар	endag	es							
	1								☐ Othe	er:												
						COM	MENTS															
	1	]			)	1																
	1	]		];	)::::	1																
	1	]		]	)	1																
	1				)	1																
	1					□ Add	ditional	sketche	es or co	mmen	ts on se	parate	page									
			_	_	_	_	_	_	NAL LE		_				_							
BUILDING TYPE	DNK	W1	W1A	W2	S1	S2	S3	S4	S5	C1	C2	C3	PC1	PC2	RM1	RM2	URM	МН	BN1			
Basic Score	<u></u>	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	1.7	1.0	1.5	1.0	1.4		
Severe Vertical Irregularity, V <sub>L1</sub>	_	-1.2	-1.2	-1.2	-1.0	-1.0	-1.1	-1.0	-0.8	-0.9	-1.0	-0.7	-1.0	-0.9	-0.9	-0.9	-0.7	NA	-0.7	-0.8		
Moderate Vertical Irregularity, V <sub>L1</sub>		-0.7	-0.7	-0.7	-0.6	-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	-0.4	-0.5		
Plan Irregularity, P <sub>L1</sub>	<u> </u>	-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	-0.7	-0.4	NA	-0.4	-0.5		
Pre-Code	<u> </u>	-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	NA	NA		
Post-Benchmark	$\vdash$	1.6	1.9	2.2	1.4	1.4	1.1	1.9	NA	1.9	2.1	NA	2.0	2.4	2.1	2.1	NA	1.2	NA	NA		
Soll Type A or B	<u> </u>	0.1	0.3	0.5	0.4	0.6	0.1	0.6	0.5	0.4	0.5	0.3	0.6	0.4	0.5	0.5	0.3	0.3	0.3	0.9		
Soll Type E (1-3 stories)	<u> </u>	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	-0.2	-0.6		
Soll Type E (>3 storles)	+	-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	NA	NA		
Minimum Score, S <sub>MW</sub>		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	0.2	0.2		
FINAL LEVEL 1 SCORE, S <sub>L1</sub> ≥ S <sub>M</sub>	v																					
EXTENT OF REVIEW						ZARDS						N REC										
Exterior:	5	□ Ae						rigger A	A Detalle	ed						quired						
Interior: None Visible		□ En				valuatio			- 0-1							other t	unding	1				
						potent	iai (UNI	ess 5',	, > Cut-	uli, II		, score										
Soll Type Source:				know	n)				☐ Yes, other hazards present ☐ No													
Geohazards Source:			-	□ Fa	ling ha	zards f	from tal	ler adja	cent bu	Detailed Nonstructural Evaluation Recommended?												
Contact Person:									_			☐ Yes, nonstructural hazard identified, should be evaluated ☐ No, nonstructural hazards exist that may require mitigation, but										
LEVEL 2 SCREENING PERFORME					_			(I Type									nay rec	ulre m	nigatio	n, but		
☐ Yes, Final Level 2 Score, S <sub>12</sub> : ☐ No ☐ Significa							ige/det	erioratio	n to the			lled ev					_					
Nonstructural Hazards?							the for	nude - 1	EOT - T	ett	I⊓ No.	no nor	netruct	ıraı ha	zards I	dentifie	O CO			ıK		

# Rapid Visual Screening of Buildings for Potential Seismic Hazards (Adopted from FEMA P-154 Data Collection Form) Optional Laws 2 Data Collection to be performed by a civil or shoutural engineering profusional, architect, or graduate shudent with be

LEVEL 2 (Optional) HIGH Seismicity

Building Nan	ne :		Final	Level 1 Score: SL, =					not co	nsider S <sub>uw</sub> )
Screener	ener : Level 1 Irregularity Modifiers: Vertical Irregularity , V <sub>i,1</sub> = Plan Irregularity, P <sub>i,1</sub> =									
Date/ Time					S,, - V,, - P,,) =					
	L MODIFIER	S TO ADD TO ADJUS								
Topic					difler; otherwise cross out the mo	odiffier)			Yes	Subtotals
Vertical	Sloping Site				one side of the building to the other.				-1.2	
Irregularity,	Weak				om one side of the building to the ot	ner.			-0.3	
V <sub>62</sub>	and/or Soft			cripple wall is visible i					-0.6	
	Story	W1 House over Gara	ige : Underneath a	n occupied story, there	e is a garage opening without a steel	mome	ent fra	ame, and there is		
	(Circle one	less than 8 ft of wall o	on the same line (f	or multiple occupied fix	oors above, use 16 ft of wall minimu	m)			-1.2	
I	maxlmum)	W1A Building Open F	Front : There are o	penings at the ground	story (such as for parking) over at le	ast 50	% of	the length of the		ĺ
		bullding.							-1.2	
I			anoth of lateral evel	tem at any etnry le less	s than 50 % of that at story above or	helnhi	of ar	ny story is more		l
I		-	-		s than 50 % or that at story above or	Height	OI a	ny atory to more	-0.9	
I		than 2.0 times the he	<u> </u>						-0.9	!
I		Non-W1 Building : Le	ength of lateral syst	tem at any story is bet	ween 50 % and 75 % of that at story	above	or h	eight of any story is		
I		between 1.3 and 2.0	times the height of	the story above.					-0.5	
I	Setback	Vertical elements of t	the lateral system a	at an upper story are o	utboard of those at the story below	causing	the	dlaphragm to		ĺ
I		cantilever at the offse	at .		-				-1.0	
I				at unner stories are let	oard of those at lower stories.				-0.5	
I					er than the length of the elements.				-0.3	i
I	Short				plers) along a column line in the late	ral svs	tem I	have helight/depth		i
I	Column/								-0.5	
I	Pler			ight/depth ratio at that						
I					dth) is less than one half of the depti	n of the	e spa	norei, or there are		
l		Infili walls or adjacent	t floors that shorter	n the column.					-0.5	
I	Split Level	There is a split level a	at one of the floor I	evels or at the roof.					-0.5	
I	Other	There is another obse	ervable severe ver	tical irregularity that ob	wlously affects the building's seismic	c perfo	man	ce.		V <sub>12</sub> -
	Irregularity				may affect the building's seismic pe				-0.5	(Cap at -1.2)
Plan	Torsional Irre	gularity: Lateral syste	m does not appear	r relatively well distribu	ted in plan in either or both direction	6. (Do	not I	nclude the W1A	-0.7	
Irregularity,	open front im	egularity listed above)	)						-0.7	
P <sub>L2</sub>	Non-parallel	System: There are on	e or more malor ve	ertical elements of the I	lateral system that are not orthogona	al to ea	ch of	ther.	-0.4	İ
-12					he overall plan dimensions in that di				-0.4	i
I					r 50 % of the total diaphragm width				-0.2	i
I				ams do not align with t					-0.4	P <sub>12</sub> =
I					ly affects the building's seismic perfo	ormano	æ.		-0.7	(Cap at -1.1)
Redundancy	The building	has at least two bays	of lateral elements	on each side of the b	uliding in each direction.				0.3	
Pounding		parated from an adiac			n vertically within 2 feet.			(Cap total	-1	İ
		% of the height of the		One building is 2 or n	nore stories taller than the other.			pounding modifiers	-1	i
I	ı	-		The building is at the				1 -	-0.5	
CO Bullelon		adjacent structure and	1:	The building to at the	end of the block.			at -0.9)	-0.0	
S2 Building C1 Building		eometry is visible.	o momont framo						-0.4	
	_	ves as the beam in th					_		-0.4	
PC1/ RM1	There are roo	of-to-wall ties that are	visible or known fr	om drawings that do n	ot rely on cross-grain bending. (Do n	ot com	ibline	with post-		
Building	benchmark o	r retrofft modifier)							0.3	
			ull height interior w	alls (rather than an Inte	erior space with few walls such as in	a ware	hous	se)	0.3	l
URM	Gable walls a								-0.4	ļ
MH				ided between the carri	lage and the ground.				1.2	w_
Retrofit		ive selsmic retrofit is v		m drawings.					1.4	M -
		S <sub>12</sub> = (S' + V <sub>12</sub> + P <sub>12</sub>							to Le	vel 1 Form)
					ne building's seismic performance: (					
_			below and indicat	e on the Level 1 form t	that detailed evaluation is required in	idepen	oent	or the building's sco	e.	
		CTURAL HAZARDS					_			
Location		Check "Yes" or "No"				Yes	No	Comn	nents	
Exterior				or unbraced unreinforc	ed masonry chimney.	_	▙			
I		vy cladding or heavy v				+	┡			
I					rs Inadequately supported.	+	⊢			
I				dt doors or pedestrian nazardous materials ar		+	⊢			
I			-			+	⊢			
I				URM Wall or unbrace	d URM parapet or chimney.	+	⊢			
late day		ed exterior nonstructu llow clay tile or brick p		ir or exit comider		+	⊢			
Interior		ed Interior nonstructur		ar or ext compan.		+	⊢			
Estimated No				ate hox and transfer to	Level 1 form conslusions)		_			
		ctural hazards with sig			> Detailed Nonstructural Evalua	atton re	com	mended		
		ards identified with sig			> But no Detailed Nonstructura					
		ctural hazard threat to			> No Detailed Nonstructural Ev					
Comments :				<del></del>						
Comments .										

#### Rapid Visual Screening of Buildings for Potential Seismic Hazards LEVEL 1 (Adopted from FEMA P-154 Data Collection Form) MODERATELY HIGH Seismicity HOTOGRAPH Address: Other ID: ....Use: .. Building Name: ..... Date/Time: ..... #Stories - Above Ground: ...... Below Ground: ........... Year Built: ... Total Floor Area (sft): Code Year: Additions: □ None □ Yes, Years Built: □ Assembly □ Commercial □ Emergency Services □ Historic ☐ Industrial ☐ Office ☐ Schools ☐ Residential,#Units: □ Utility □ Warehouse Soll Type: A: Hard Rock C: Soft Rock □ E: Soft Soll ☐ B: Normal Rock D: Hard Soll / DNK Geohazarda: Liquefaction: ☐ Yes, ☐ No, ☐ DNK ☐ Yes, ☐ No, ☐ DNK Surface Rupture: ☐ Yes, ☐ No, ☐ DNK ☐ Falling Hazards from Taller Adjacent Building Adjacency: □ Pounding irregularities: □ Severe Vertical Irregularity □ Plan Irregularity ☐ Moderate Vertical Irregularity ☐ Unbraced Chimneys ☐ Heavy Cladding or Heavy Veneer Exterior Failing □ Parapets □ Appendages Hazarda: ☐ Other: COMMENTS □ Additional sketches or comments on separate page BASIC SCORE, MODIFIERS, AND FINAL LEVEL 1 SCORE, S LT DNK W1 W1A W2 S1 S2 S3 S4 S5 C1 C2 C3 PC1 PC2 RM1 RM2 URM MH BN1 BN2 BUILDING TYPE 4.1 3.7 3.2 2.3 2.2 2.9 2.2 2.0 1.7 2.1 1.4 1.8 1.5 1.8 1.8 1.2 2.2 1.2 2.2 Basic Score Severe Vertical Irregularity, V<sub>L1</sub> -1.3 -1.3 -1.3 -1.1 -1.0 -1.2 -1.0 -0.9 -1.0 -1.1 -0.8 -1.0 -0.9 -1.0 -1.0 -0.8 NA -0.8 -0.9 Moderate Vertical Irregularity, V<sub>L1</sub> -0.8 -0.8 -0.8 -0.7 -0.6 -0.8 -0.6 -0.6 -0.6 -0.6 -0.5 -0.6 -0.6 -0.6 -0.6 -0.5 NA -1.3 -1.2 -1.1 -0.9 -0.8 -1.0 -0.8 -0.7 -0.7 -0.9 -0.6 -0.8 -0.7 -0.7 -0.7 -0.5 NA -0.5 -0.8 Plan Irregularity, P. . . -0.8 -0.9 -0.9 -0.5 -0.5 -0.7 -0.6 -0.2 -0.4 -0.7 -0.1 -0.4 -0.3 -0.5 -0.5 -0.1 -0.3 NA NA 1.5 1.9 2.3 1.4 1.4 1.0 1.9 NA 1.9 2.1 NA 2.1 2.4 2.1 2.1 NA 1.2 NA NA Post-Benchmark 0.3 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 Soll Type E (1-3 stories) 0.0 | -0.1 | -0.3 | -0.4 | -0.5 | 0.0 | -0.4 | -0.5 | -0.2 | -0.2 | -0.4 | -0.5 | -0.3 | -0.4 | -0.4 | -0.3 | -0.5 | -0.3 | -1.2 -0.5 -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 NA Soll Type E (>3 stories) Minimum Score, S<sub>MN</sub> 1.6 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 0.5 INAL LEVEL 1 SCORE, S<sub>L1</sub> ≥ S<sub>MN</sub> OTHER HAZARDS ACTION REQUIRED EXTENT OF REVIEW Are There Hazards That Trigger A Detailed Exterior: 🗆 Partial 🗆 Ali Sides 🔲 Aerial Detailed Structural Evaluation Required? ☐ None ☐ Visible ☐ Entered Structural Evaluation? ☐ Yes, unknown building type or other building Interior: ☐ Pounding potential (Unless S<sub>L</sub>, > Cut-off, If ☐ Yes, score less than cut-off Drawing Reviewd: □ No Soll Type Source:..... ☐ Yes, other hazards present Detailed Nonstructural Evaluation Recommended? ☐ 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 ☐ Yes, Final Level 2 Score, S<sub>12</sub>: ☐ No ☐ Significant damage/deterioration to the a detailed evaluation is not necessary Nonstructural Hazards? ☐ 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

## Rapid Visual Screening of Buildings for Potential Seismic Hazards (Adopted from FEMA P-154 Data Collection Form) Optional Land 2 Data Collection to be performed by a civil or physical properties professional, problems, or particular with his

LEVEL 2 (Optional)
MODERATELY HIGH Seismicity

Building Nan	ne :		Final	Level 1 Score: S., -				(Do	not co	nsider S	
Screener	ter : Level 1 Irregularity Modifiers: Vertical Irregularity , V., = Plan Irregularity, P., =										
Date/ Time	:		ADJUST	ED BASELINE S' = (	S V P ) =						
	L MODIFIER	S TO ADD TO ADJUS									
Topic			_		differ; otherwise cross out the mo	ilfler)			Yes	Subtotal	
Vertical	Sloping Site				one side of the building to the other.				-1.3		
Irregularity,	Weak				om one side of the building to the oth	er.			-0.3	e .	
V.,	and/or Soft			cripple wall is visible i			_		-0.6		
	Story	W1 House over Gara	ige : Underneath a	n occupied story, there	ls a garage opening without a steel	noment	frame, an	d there is	l	ı	
	(Circle one	less than 8 ft of wall o	on the same line (f	or multiple occupied flo	oors above, use 16 ft of wall minimum	1)			-1.3		
	maximum)	W1A Building Open F	Front: There are o	penings at the ground:	story (such as for parking) over at lea	st 50 %	of the len	gth of the		ı	
		building.							-1.3		
		Non-W1 Building : Le	ength of lateral sys	tem at any story is less	than 50 % of that at story above or i	nelaht of	any story	Is more		i	
		than 2.0 times the he			,		,,		-1	ı	
					ween 50 % and 75 % of that at story :	about or	holoht of	any stony is	_	1	
1		-	-		ween 50 % and 75 % of that at story i	above or	neight of	arry story is	-0.5		
	Sethack	between 1.3 and 2.0							-0.5	1	
	Setback	Vertical elements of t	the lateral system	at an upper story are o	utboard of those at the story below ca	ausing th	e dlaphra	igm to	l	ı	
		cantilever at the offse	et.						-1	J	
					oard of those at lower stories.				-0.5		
					er than the length of the elements.				-0.3		
	Short Column/	C1,C2,C3,PC1,PC2,F	RM1,RM2 : At leas	t 20 % of columns (or p	plers) along a column line in the later	al systen	n have he	lght/depth	l	ı	
	Pier	ratios less than 50 %	of the nominal hel	ight/depth ratio at that i	level.				-0.5		
		C1,C2,C3,PC1,PC2,F	RM1,RM2: The co	lumn depth (or pler wid	ith) is less than one half of the depth	of the sp	andrel, o	r there are		ı	
		Infili walls or adjacent	floors that shorter	the column.					-0.5		
	Split Level								-0.5	i	
	Other				viously affects the building's seismic	performa	ince.		-1	V <sub>12</sub> -	
	Irregularity				may affect the building's seismic per				-0.5	(Cap at -1.3)	
Plan	Torsional irre	egularity: Lateral syste	m does not appea	r relatively well distribu	ted in plan in either or both directions	. (Do not	Include t	he W1A	-0.8		
Irregularity,	open front irr	egularity listed above)							-0.8	ı	
P <sub>12</sub>				ertical elements of the I	lateral system that are not orthogonal	to each	other		-0.4	i	
PL2		•			he overall plan dimensions in that dire				-0.4	i	
					r 50 % of the total diaphragm width a		el.		-0.3	i	
1				ams do not align with t					-0.4	P <sub>12</sub> =	
	Other Irregul	arity: There is another	observable plan ir	regularity that obvious	ly affects the building's seismic perfor	mance.			-0.8	(Cap at -1.3)	
Redundancy	The building	has at least two bays	of lateral elements	on each side of the bu	uliding in each direction.				0.3		
Pounding	Building is se	parated from an adjac	cent structure by	The floors do not align	n vertically within 2 feet.		(Cap to	otal	-1	ĺ	
	less than 1.5	% of the height of the	shorter of the	One building is 2 or m	nore stories taller than the other.		pound	ing modifiers	-1	ĺ	
	ı	adjacent structure and		The building is at the	end of the block.		at -0.9	-	-0.5	i	
S2 Building		eometry is visible.					at -0.5		-1	t	
C1 Building		ves as the beam in th	e moment frame.						-0.5	t	
PC1/RM1	There are ro	of-to-wall ties that are	visible or known fr	om drawings that do no	ot rely on cross-grain bending. (Do no	f combin	e with no	st-	-	t	
Building	l	r retrofft modifier)	Training of Miles	om ordinings that so m	or around grain behaving. (20 ha		- IIII po	-	0.3		
building		,	di balahi labadan	-11- (1111	des acces with favorable and as to				0.3		
URM	Gable walls a		uli neight interior w	alls (rather than an inte	erior space with few walls such as in a	wareno	usej		-0.4		
MH	There is a su	pplemental selsmic b	racing system prov	ided between the carri	age and the ground.				1.2		
Retrofit		ive seismic retrofit is v			-				1.4	м-	
FINAL LEVE	L 2 SCORE, S	S <sub>12</sub> = (S' + V <sub>12</sub> + P <sub>12</sub>	+M)≥ S <sub>asv</sub> :					(Transfer	to Le	vel 1 Form	
					e building's seismic performance: 🗆						
If yes, describ	e the conditio	n In the comment box	below and Indicat	e on the Level 1 form t	hat detailed evaluation is required inc	lepender	nt of the b	uliding's sco	re.		
OBSERVABL	E NONSTRU	CTURAL HAZARDS									
Location		Check "Yes" or "No"				Yes N	0	Comn	nents		
Exterior				or unbraced unreinforc	ed masonry chimney.						
		vy cladding or heavy v				$\vdash$	-				
					rs Inadequately supported.	$\vdash$	-				
				dt doors or pedestrian nazardous materials an		$\vdash$	+				
					d URM parapet or chimney.	+	+				
		ed exterior nonstructu			o or on paraper or or anney.	+	+				
Interior		llow clay tile or brick p		ilr or exit comidor.		+	+				
	Other observ	ed Interior nonstructu	ral falling hazard.			$\vdash$	-				
Estimated No	onstructural	Seismic Performance	e (Check appropri	ate box and transfer to	Level 1 form conslusions)		-				
□ Pote	ential nonstru	ctural hazards with sig	nificant threat to o	ccupant life safety.	> Detailed Nonstructural Evaluat	ion reco	mmended	1.			
		ards identified with sig			> But no Detailed Nonstructural			d.			
	or no nonstr	uctural hazard threat to	o occupant life sale	ety.	> No Detailed Nonstructural Eva	luation re	egulred.				
Comments :											

#### Rapid Visual Screening of Buildings for Potential Seismic Hazards

LEVEL 1

(Adopted from FEMA P-154 D	ata Collection											M	ODE	RAT	E Se	ism	icity				
PHOTOGRAPH				П	Ad	dress:							City:								
					Other ID:																
						Bu	uliding	Name:													
							La	titude:							S,:						
							Long	gitude:							S,:						
								eener:													
						#Stor	108 - Al	oove Gr	ound:		. Below	Groun	d:		Year I	Bullt: .		□ Est			
							Floor A		rty:				ars Bullt								
						Add	iltions:		□ Non												
						Occu	pancy:		☐ Asse	embly	□ Cor	nmerd	al		ergeno	y Servi	ces	☐ HIS	toric		
						l			□ Indu	istrial		ce		□ Sch				☐ Government			
									□ Utilit			rehous				il,#Unit	8:	☐ She			
						Soll T	уре:		□ A: H					Soft Ro				DE:			
SKETCH		4	ļ.,			_			□ B: N					Hard S				□ F: F	oor S	oll	
	- i i	i	į	į	i	Geoh	azarda				faction:			i, □ No							
	-ii	i	į	į	į	l					idslide:			, □ No	-						
		. j	ļ.,,	ļ.,,	į	_					upture:			, 🗆 No	_						
		der.	ļ.,	į.,		_	ency:		□ Pou								ller Ad	Jacent	Bulldin	g	
	.ii		i	j.,,	i	Irregu	ularities	B:			rtical im	-	•		□ Pla	n Irreg	ularity				
			i	i	l	$\vdash$			□ Mod	erate \	Vertical	Irregul	_								
		4	ļ.,		i	Exteri	for Fall	Ina			Chimne	<b>y</b> 5	☐ Hea	avy Cla	dding (	or Heav	y Ven	eer			
		4	ļ.,			Hazar		g	□ Para	apets			□ App	endag	<b>e</b> 5						
		i	į	i	i	ᆫ			☐ Othe	er:											
	. i i	i	į	į	i	COM	MENTS														
	. i i	i	i	į	i	Į															
	. i i		i	į	į.,	Į															
	. i i		i	j	i	Į															
iiii	.ii	J	i	J	l	ļ															
			l	J	ļ.,	Į.															
	1 1								es or co			•	page								
			_	_	_	_	_		NAL LE		_					_			_	_	
BUILDING TYPE	DN		W1A	_	S1	S2	S3	S4	S5	C1	C2	C3	PC1	PC2	RM1	RM2	URM	МН	BN1	BN2	
Basic Score	<u> </u>	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		-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,	VL1	-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, PL1	_	-1.4		-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	<u> </u>	-0.3		-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	<u> </u>	1.4	-	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	
Soll Type A or B	<u> </u>	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	
Soll Type E (1-3 stories)	<u> </u>	-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	
Soll Type E (>3 stories)		-1.8		-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 <sub>MN</sub> FINAL LEVEL 1 SCORE, S <sub>L1</sub>		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	
	2 S MW			lozur							I a come										
EXTENT OF REVIEW  Exterior:   Partial   A	VII Sides	□ Ae	and and			ZARDS		dans /	Dotalle			ON REC			ion Po	outrad'	,				
	Asible		riai itered					ngger A	\ Detalle	eu							: ouliding				
Drawing Reviewd:		II No		1		valuatio						, urikni s, score				omer t	ullung	1			
Soll Type Source:			,			potent	uai (Uni	E00 O [	, > Cut-	OII, II		, acore , other							□ No		
Geohazards Source:				know	1)											Bass		lad?	LINO		
				□ Fal	ling ha	ig hazards from taller adjacent building Detalled Nonstructural Evaluation Recommended?  ☐ Yes, nonstructural hazard identified, should be evaluation.						unted									
Contact Person: LEVEL 2 SCREENING PERFO					ologic	hazard	ls or So	II Time	=								nould nay req			n but	
☐ Yes, Final Level 2 Score, S		lo.			_				r on to the		1 '						nay req	ure m	uyano	n, out	
Nonstructural Hazards?			geruen	enorauc	in to the	•		lled ev							EI DNI	IV.					
	O Y				ctural system   No, no nonstructural hazards identified   DNK ener shall note the following: EST = Estimated or unreliable data (OR) DNK = Do Not Know							in.									
wnere int	urmation can	not be V	enned,	aureer	ier S/la	ni note	me roll	owing: I	-31 = E	samai	ea ar u	rirevial	e uala	(UR) L	nwk =	DO MOI	MOUNT				

# Rapid Visual Screening of Buildings for Potential Seismic Hazards (Adopted from FEMA P-154 Data Collection Form) Optional Level 2 Data Collection to be performed by a did or structural engineering professional, architect, or graduate abudent with be

LEVEL 2 (Optional)
MODERATE Seismicity

Building Nan	ne :		Final	Level 1 Score: S., -				(Do	not co	nsider S()	
Screener											
Date IIII					S V P ) =						
	L MODIFIER	S TO ADD TO ADJUS							Yes	Subtotals	
Topic			_		difier; otherwise cross out the n		_			Subtotals	
Vertical	Sloping Site				one side of the building to the othe		_		-1.4 -0.4		
Irregularity,	Weak				m one side of the building to the o	ther.	_		-0.4		
V <sub>12</sub>	and/or Soft			cripple wall is visible in		-1			-0.7		
	Story		-		Is a garage opening without a ste		LIIId	ime, and there is	١		
1	(Circle one		1		ors above, use 16 ft of wall minim				-1.4		
1	maximum)	W1A Building Open F	Front: There are o	penings at the ground s	story (such as for parking) over at	least 50 %	of	the length of the			
1		bullding.							-1.4		
I		Non-W1 Building : Le	ength of lateral syst	em at any story is less	than 50 % of that at story above	or helght o	f ar	ny story is more			
1		than 2.0 times the he	light of the story ab	ove.					-1.1		
I		Non-W1 Building : Le	ength of lateral syst	em at any story is bety	veen 50 % and 75 % of that at sto	ry above o	r h	eight of any story is			
1		between 1.3 and 2.0	times the helaht of	the story above					-0.6		
I	Setback			<u> </u>	utboard of those at the story below	causing t	he	diaphrapm to			
I		cantilever at the offse	-	a an opper olony are of	and an induction and a second	· cassing .		onepin agin to	-12		
1					and of these of laws stades		_		-0.6		
					oard of those at lower stories. or than the length of the elements.				-0.4		
I	Short				olers) along a column line in the la	teral syste	m I	have helight/depth			
I	Column/			ght/depth ratio at that i		,			-0.5		
1	Pler				evel. Ith) is less than one half of the dep	th of the s	0.20	ndral or there are			
1					in the read than one than or the dep	All Of the e	pe	naret, or there are	-0.5		
I	Colff Louisi	Infili walls or adjacent									
I	Split Level Other	There is a split level a			developments the buildings and	de endem	_		-0.6	V., -	
I	Irregularity				viously affects the building's selsn may affect the building's selsmic :			oe.		(Cap at -1.4)	
Plan					ted in plan in either or both direction			clude the W1A		,,,	
Irregularity,	l	egularity listed above)		,					-1		
				riteal elements of the I	ateral system that are not orthogo	nal to each	h of	har	-0.5		
P <sub>1,2</sub>					ne overall plan dimensions in that		11 01	nei.	-0.5		
I					r 50 % of the total diaphragm widt		vel		-0.3		
I				ams do not align with t					-0.4	P <sub>12</sub> =	
					y affects the building's seismic pe	formance			-1	(Cap at -1.4)	
Redundancy	The building	has at least two bays	of lateral elements	on each side of the bu	ilding in each direction.				0.4		
Pounding	Building is se	parated from an adjac	cent structure by	The floors do not align	vertically within 2 feet.			(Cap total	-1.2		
I	less than 1.5	% of the height of the	shorter of the	One building is 2 or m	ore stories taller than the other.			pounding modifiers	-1.2		
I	building and	adjacent structure and	t:	The building is at the	end of the block.			at -0.9)	-0.6		
S2 Building		eometry is visible.							-1.2		
C1 Building	Flat plate ser	ves as the beam in th	e moment frame.						-0.5		
PC1/RM1	There are roo	of-to-wall ties that are	visible or known fro	om drawings that do no	t rely on cross-grain bending. (Do	not comb	ine	with post-			
Building	benchmark o	r retrofft modifier)							0.4		
_	The building	has closely spaced, fu	ull height interior w	alls (rather than an Inte	rior space with few walls such as	n a wareh	OUE	ie)	0.4		
URM	Gable walls a								-0.5		
MH Retrofit		pplemental selsmic br ive selsmic retrofit is v		ided between the carri	age and the ground.		_		1.2	м-	
		Ne seismic retroit is V		m urawngs.			_	Transfer		vel 1 Form)	
				at negatively affects th	e building's seismic performance:	□ Voc □	Me		IO LO	ver i ronny	
If yes, describ	e the condition	n in the comment box	below and Indicat	e on the Level 1 form t	e building's seismic performance. hat detailed evaluation is required	Independe	ent	, of the building's scor	e.		
_		CTURAL HAZARDS				_	_				
		Check "Yes" or "No"	1			Ves /	Mo	Comn	nents		
Exterior				or unbraced unreinforce	ed masonry chimney.	700,					
		vy cladding or heavy v									
1					rs Inadequately supported.						
I				dt doors or pedestrian		$\rightarrow$					
				azardous materials are	e present. I URM parapet or chimney.	+	_				
I		ed exterior nonstructu		ON WAIL OF UTION ACE.	oron parapet or criminey.	$\rightarrow$	_				
Interior		llow clay tile or brick p	-	ir or exit corridor.		$\overline{}$	_				
terror		ed Interior nonstructur									
	onstructural	Seismic Performance	e (Check appropri		Level 1 form consiusions)						
		ctural hazards with sig			> Detailed Nonstructural Eval						
				ccupant life safety.							
	or no nonstru	otural hazard threat to	o occupant life safe	ety.	> No Detailed Nonstructural E	valuation	req	ulred.			
Comments :											
1											

#### Rapid Visual Screening of Buildings for Potential Seismic Hazards

LEVEL 1

(Adopted from FEMA P-154 Data Coll	lection i	Form)															LO	N Se	eismi	icity
PHOTOGRAPH							Ad	ldress:							. City:					
						Other ID:														
						Bu	ıllding	Name:												
							La	titude:							S,:					
						l	Long	gitude:							S,:					
							Sci	reener:							Date	Time:				
						#Stori	les - Al	bove Gr	round:		. Below	Groun	d:		Year i	Bullt: .		□ Est		
						Total	Floor	Area (st	rt):						Code	Year:				
						Add	litions:		□ Non	e	☐ Yes	, Year	Bullt:.							
						Occu	pancy:		□ Ass	embly	□ Con					y Servi		□ HIs		
									□ Indu	ıstrlal	□ Offi	ce		□ Sch	nools			□ Go	vernme	ent
						l			□ Utili	ty	□Wa	rehous	e	□ Res	sidentia	al,#Unit	8:	□ She	elter	
						Soll T	ype:		□A:F	lard Ro	ck		□ C: S	oft Ro	ck			□ E: \$	Soft Sol	(1
SKETCH	1					t	-		□ B: N	lormal	Rock		□ D: H	lard So	oll / DN	ıĸ		OF: F	oor So	oll
	1					Geoh	azarda	:		Liquet	action:		□ Yes	, 🗆 No	), 🗆 DI	NK				
	i	i								Lan	dslide:		□ Yes	. 🗆 No	. 🗆 DI	NK				
1::::	i	i	i			i			Sur	face R	upture:		□ Yes							
	j	jan-				Adjac	encv:		□ Pou								iller Ad	acent	Building	a
1	1	(					ilaritle:	B:			rtical im			_		n Irregi				_
		ļ		·	(			-			/ertical	-	-							
	1										Chimne	_	_	vv Cla	ddina	or Heav	ry Vene	er		
				c — — —	c		lor Fall	ling	□ Par			•		•	_		,			
						Hazar	ds:		□ Oth	•										
	i					COM	MENTS		L 001	cı.										
	i	i				COM	MENTO	•												
	i					l														
	4					l														
						l														
		ļ				l														
	į	į				D Add	ditional	ckatab	05.05.00	mman	s on se	narato	0300							
	-	-	BAC	10.00	OPE I						SCOR		paye							
BUILDING TYPE	DNK	W1	W1A	W2	S1	S2	S3	S4	SS	C1	C2	C3	PC1	PC2	RM1	RM2	URM	МН	BN1	BN2
Basic Score	DINK	6.2	59	5.7	38	3.9	44	41	4.5	33	4.2	3.5	3.8	3.3	3.7	3.7	3.2	46	3.2	3.9
Severe Vertical Irregularity, V <sub>L1</sub>	$\vdash$	-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
Moderate Vertical Irregularity, V <sub>L1</sub>	$\vdash$	-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
Plan Irregularity, P <sub>L1</sub>	$\vdash$	-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	$\vdash$	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA.	NA
Post-Benchmark	$\vdash$	2.2	24	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.
Soll Type A or B	$\vdash$	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
Soli Type E (1-3 stories)	$\vdash$	-1.2	-1.7	-2.3	-1.2	-1.4	-1.0	-1.7	-2.0	-1.4	-2.0	-1.6	-1.7	-1.6	-1.7	-1.7	-1.5	-2.1	-1.5	-0.6
	$\vdash$					_		_		_							$\overline{}$			NA
Soll Type E (>3 stories)	+	-1.7 2.7	-2.0	1.5	-1.2	-1.4	1.2	-1.7 0.8	-1.9 0.9	-1.3 0.5	-1.9 0.6	-1.6 0.5	NA 0.6	-1.6 0.4	-1.6 0.6	-1.7 0.5	-1.4 0.4	NA 2.5	NA 0.2	0.9
Minimum Score, S <sub>MN</sub>		2.7	2.1	1.5	0.9	0.0	1.2	0.0	0.9	0.5	0.0	0.5	0.0	0.4	0.0	0.5	0.4	2.5	0.2	0.9
FINAL LEVEL 1 SCORE, $S_{L1} \ge S_{MN}$ EXTENT OF REVIEW				OTUE		ZARDS					I A OTHO	N DE	UIRE	_						
Exterior:   Partial   All Sides		□ Ae	4-1					dans /	Dotall				otural E		ton Do	oudend'	,			
Interior:   None   Visible		O En						ngger /	A Detail	eu						•				
						valuatio			-							omer t	uliding			
Drawing Reviewd:   Yes				ı	_	potent	iai (Uni	ess 31	, > Cut-	-OII, II	□ Yes									
Soil Type Source:				know	1)								hazard			Beer		nd?	□ No	
Geohazards Source:				□ Fal	ling ha	hazards from taller adjacent building. I						Detailed Nonstructural Evaluation Recommended?								
Contact Person:										-										
LEVEL 2 SCREENING PERFORMED					-			II Type									nay req	uire mi	nigation	n, but
☐ Yes, Final Level 2 Score, S <sub>12</sub> :	□ No						ige/det	erioratio	on to the	2			aluation			•				
Nonstructural Hazards?	□ Ye			struct							_		nstructu							K
Where Informatio	n canno	ot be w	erified,	screer	ner sha	III note	the foll	owing:	EST = E	Estimat	ed or u	nrellabl	e data	(OR) D	NK=	Do Not	Know			

# Rapid Visual Screening of Buildings for Potential Seismic Hazards (Adopted from FEMA P-154 Data Collection Form) Optional Level 2 Data Collection to be performed by a civil or structural engineering professional, architect, or graduate attackent with be

LEVEL 2 (Optional) LOW Seismicity

Building Nan	ne :		Final	Level 1 Score: S,, =					not co	nsider S		
Screener Date/ Time	. Yellular meguanty , v <sub>11</sub> - Fram meguanty , v <sub>11</sub> -											
	I Discollege	S TO ADD TO ADJUS			Sec - Vec - Per 1 =							
Topic	L MODIFIER				differ; otherwise cross out the mo	ilfleri	_		Yes	Subtotals		
Vertical					one side of the building to the other.				-1.5	Cubtotalo		
Irregularity,	Sloping Site				om one side of the building to the other	er.			-0.4			
	Weak			cripple wall is visible i					-0.7	ĺ		
V <sub>L2</sub>	and/or Soft Story				Is a garage opening without a steel i	nomer	nt fra	ime, and there is		l		
	(Circle one	less than 8 ft of wall o	on the same line (1	or multiple occupied flo	ors above, use 16 ft of wall minimum	0			-1.5			
	maxlmum)				story (such as for parking) over at lea		% of	the length of the				
		building.						-	-1.5			
			enoth of lateral syst	tem at any story is less	than 50 % of that at story above or h	eloht (	of an	v story is more				
		than 2.0 times the he			the second secon	- Lagran	01 01	ij darj io marc	-1.3			
					ween 50 % and 75 % of that at story a	hous	or be	alobt of any story is	-			
			-		ween oo wana 70 % or triat at olony i	above.	OI III	agic or any elony to	-0.6			
	Setback	between 1.3 and 2.0			utboard of those at the story below ca	uelee	the c	danheann in				
	OCIDOUN	ı	-	at an upper story are or	utboard or those at the story below ca	iusing	me	ulapriragini to	-1.3			
		cantilever at the offse							-0.6			
					oard of those at lower stories. er than the length of the elements.				-0.4			
	Short				plers) along a column line in the later	al syst	em I	nave helpht/depth				
	Column/			ight/depth ratio at that i				and the second	-0.6			
	Pler				evel. fth) is less than one half of the depth	of the	SD-74	ndrel or there are	<u> </u>			
					any is less than one hall of the depth	or the	apai	idei, di mere are	-0.6			
	Sollt Level	Infili walls or adjacent							-0.6			
	Other	There is a split level a			development the holidanic extension					V <sub>12</sub> =		
	Irregularity				viously affects the building's seismic may affect the building's seismic per			æ.	-0.6			
Plan					ted in plan in either or both directions			nclude the W1A				
Irregularity,		equiarity listed above)		•		•			-1.1			
				ertical elements of the I	ateral system that are not orthogonal	to ear	ch of	her	-0.6			
P <sub>L2</sub>					he overall plan dimensions in that dir			inci.	-0.6	i		
					r 50 % of the total diaphragm width a		evel.		-0.4			
				ams do not align with t					-0.5	P <sub>12</sub> =		
					y affects the building's seismic perfor	mance	е.		-1.1	(Cap at -1.6)		
Redundancy					uliding in each direction.		_		0.4	ļ.		
Pounding		eparated from an adjac			n vertically within 2 feet.			(Cap total	-1.3			
	less than 1.5	% of the height of the	shorter of the		nore stories taller than the other.			pounding modifiers	-1.3			
		adjacent structure and	i:	The building is at the	end of the block.			at -0.9)	-0.6			
S2 Building		eometry is visible.							-1.3	l		
C1 Building	_	rves as the beam in th							-0.6			
PC1/RM1	l		visible or known fr	om drawlings that do no	ot rely on cross-grain bending. (Do no	t comb	bine	with post-	١			
Building		r retrofit modifier)							0.4			
URM	The building Gable walls a	has closely spaced, fu	ull height Interior w	alls (rather than an Inte	rior space with few walls such as in a	ware	hous	e)	0.4 -0.6			
MH			radno system prov	ided between the carri	age and the ground.				1.8	ŀ		
Retrofft		ive selsmic retrofit is v			, , , , , , , , , , , , , , , , , , , ,				1.6	м-		
FINAL LEVE	2 SCORE, S	$S_{L2} = (S' + V_{L2} + P_{L2} + P_{L2} + P_{L3} + P_{L$	+ M) ≥ S <sub>MN</sub> :					(Transfer	to Le	vel 1 Form)		
					e building's selsmic performance: 🗆							
			below and Indicat	e on the Level 1 form t	hat detailed evaluation is required inc	lepend	dent (	of the building's scor	e.			
		CTURAL HAZARDS										
Location		Check "Yes" or "No"	)			Yes	No	Comn	nents			
Exterior		vy cladding or heavy v		or unbraced unreinforc	ed masonry chimney.	Н	_					
				n walkways that appear	rs Inadequately supported.	Н						
				dt doors or pedestrian		Н						
				nazardous materials are								
				URM wall or unbraced	d URM parapet or chimney.	ш						
		ed exterior nonstructu flow clay tile or brick p		ir or out comider		Н	-					
Interior		ed Interior nonstructur		ir or exit comoor.		Н	_					
Estimated No				ate box and transfer to	Level 1 form conslusions)	_	_					
		ctural hazards with sig			-> Detailed Nonstructural Evaluat	ion red	comr	mended.				
		ards identified with sig			-> But no Detailed Nonstructural							
		uctural hazard threat to			-> No Detailed Nonstructural Eva							
Comments:												
I												

#### **References**

- 1) FEMA P-154, Rapid visual screening of buildings for potential seismic hazards: a handbook. Washington DC: Federal Emergency Management Agency; 2015.
- 2) FEMA P-155 Report, Rapid Visual screening of Buildings for Potential Seismic Hazards: Supporting Documentation (FEMA, 2015), 3<sup>rd</sup> Edition", Washington DC: Federal Emergency Management Agency; 2015.
- 3) Sinha R, Goyal A. A National Policy for Seismic Vulnerability Assessment of Buildings and Procedure for Rapid Visual Screening of Buildings for Potential Seismic Vulnerability. 2004. https://www.civil.iitb.ac.in/~rsinha/Vulnerability\_ Assessment.pdf [Accessed 5 November 2020].
- 4) Ilki A, Comert M, Demir C, Orakcal K, Ulugtekin D, Tapan M, Kumbasar N. Performance Based Rapid Seismic Assessment Method (PERA) for Reinforced Concrete Frame Buildings. Adv Struct Eng 2014;17(3):439–59. https://doi.org/10.1260/1369-4332.17.3.439.