Thomas Fire Rebuild: Lessons Learned and Challenges Encountered

Yolanda P. Bundy, M.S., P.E., CBO, CFCO Chief Building Official/City of Ventura



2019 TECHNICAL SUMMIT







Cause: Under investigation Date: December 4, 2017

Location: Ventura, Santa Barbara counties

Acres: 281,893

Structures: 1,063 destroyed

Fatalities: 2

100% contained on January 12, 2018















Many people fled with little or no warning when evacuation orders were issued, as the fire had traveled 12 miles (19 km) in just a few hours. Over 104,607 residents were evacuated



### BUILDING AND SAFETY ASSESSMENTS

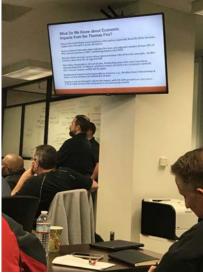


- Windshield Survey Dec. 5th thru Dec. 9th Approximately 20,000 Sites Surveyed
- Detailed Assessment Dec. 12th thru Dec. 22nd Approximately 1,800 Sites Surveyed

### STATE AGENCIES

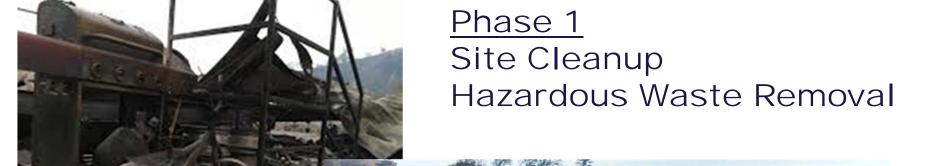
- Cal FIRE
- Cal OES (Office of Emergency Services)
- CalRecycle











2019 SEAOSC SAFER CITIES TECHNICAL SUMMIT

# Phase 1: Site Cleanup/Household Hazardous Waste Removal



During Phase 1, the US EPA and the California Department of Toxic Substances Control (DTSC), along with the Ventura County Environmental Health Division, inspected over 1000 properties and removed toxic household hazardous waste such as: lead acid and household batteries; compressed gas cylinders; fertilizers; pool chemicals; paints, thinners and aerosol cans; asbestos siding; pipe insulation and tiles; and cathode ray tubes (CRTs) from televisions, computers and other electronic devices. The contaminated debris was cleaned up and contained as quickly as possible to minimize exposure to emergency personnel, the public, and workers involved in rebuild efforts

The Phase 1 clearance did not include removal of fire debris and ash, which may contain hazardous substances like heavy metals and asbestos fibers. The remaining ash and debris was removed during Phase 2.



# Phase 2: Debris Removal and Property Clean-up

Option 1: CalRecycle Fire Damaged Debris

Clearance

Option 2: Local Fire Debris **Removal Program** 





2019 SEAOSC SAFER CITIES TECHNICAL SUMMIT

### Phase 2:Debris Removal and Property Clean-up



- Option 1: State Program
- During Phase 2, the State (CalRecycle) removed the remaining debris (including building foundations) from properties with destroyed structures. A Right-of-Entry (ROE) application and insurance information had to be completed before the work was begun. Work included removal of all structural debris, foundations, trees that present a safety hazard to CalRecycle's work crews, and some soil to ensure that the site is clean and safe for rebuilding. All of the work was undertaken by CalRecycle contractors and there is no cost to the property owner. However, any insurance proceeds for debris removal are dedicated to off-set costs.
- For Partially Burned or Damaged Structures: Local program was created

# CHALLENGES ENCOUNTERED DURING THE INITIAL REBUILD PROCESS



- Reuse of Foundations
- Reuse of Deep Foundation Systems (Caissons, etc.)
- Slope Stability
- Cut and Fill Issues
- Possible Re-Grading
- Retaining Walls



# ASSISTING THE COMMUNITY TO REBUILD



- Wildfire Victims WILL pick up pieces after a disaster- RESILIENCY
- Communities WILL rise from the ashes.
- Cities MUST be prepared to immediately assist families to rebuild, with the goal REPOPULATING as soon as possible.
- COMMUNICATE WITH HOMEOWNERS ABOUT SERVICES
- MAKE SURE THE RECONSTRUCTION GUIDELINES AND RULES ARE CLEAR
- PARTNER WITH DESIGN PROFESSIONALS
- BOLSTER CITY STAFF FOR INFLUX OF WORK AHEAD
- CHALLENGES FOR HOMEOWNER UNDERSTANDING THEIR INSURANCE POLICY





# COUNCIL MEETING





- Emergency Ordinance
- Development fees waived
- Expedited plan check process
- Contract services agreement



### THOMAS FIRE REBUILD OFFICE





Presubmittal appointments
Plan check expedited reviews
14 business days





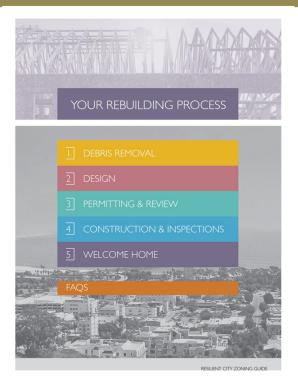


PERSONALIZED
MEETINGS WITH
FAMILIES AFFECTED
BY THE DEVASTING
FIRES



## REBUILD PROCESS





COMMUNITY DEVELOPMENT www.cityofventura.ca.gov		,	THOMAS FIRE REBUILD PLANNING DIVISION PRE-SUBMITTAL REVIEW		
lanning staff will meet with the homeowner's design team	n for	pre	or Residential Plan Check with the Building & Safety Divisi -submittal review to advise on zoning compliance and othe forming standards or variance. Please schedule an appoi	r re	-
Required Items for Zoning Clearance	PROVIDED	MISSING	Required Items for Zoning Clearance	9301/084	MISSAG
Site Plan (setbacks-including permissible encroachments, easements, lot coverage, location and height of retaining walls and fences)	0		Verification of Variance Documentation, if applicable— attach copy of approval resolution and exhibits		
Elevation Plan (indicate allowed and proposed zoning height requirement per hillside height survey)	0		Verification of compliance with Planned Development requirements (for RPD zones), if applicable		
Floor Plan/Roof Plan	0		Evidence for Pre–existing Height Determination (if exceeding permitted height per Hillside Height Survey)		
Property Line Survey	0	0	Evidence to support a Nonconforming Structure Determination (aerials/photographs/archive plans/Google imagery/Ventura County Assessor's information/building permits)		
Hillside Height Survey (refer to SBMC 24.405.050)			Demonstrate compliance with Accessory Structure Regulations (SBMC 24.210.100)		
Zoning Matrix (see Planning counter staff and handout)	0		CC&Rs, if applicable—Acknowledgment of HOA review		С
Rebuilding project will require Administrative Variance for (refer to application handouts)	_	_		_	-
or Office Use Only	_	_	Applicant:	_	
or Unitize Use Cetty  DATE: REVI Incomplete Comments:	EW	ED B	Y:		
DATE: REVI	REVIEWED BY:				

Final Planning Zone Clearance shown on stamped plan sheets

City of Ventura Community Development Department

BUILDING & SAFETY WWW.cflyof\entruraca.gov  THOMAS FIRE REBUILD RESIDENTIAL PLAN CHECK SUBMITTAL SCREENING CHECKLIST								
30	OJECT ADDRESS:					DATE:		
30	DJECT DESCRIPTION:(NEW OR REMODEL)					SQ. FTG.: STORIES:		
P	PLICANT:					PHONE #:	_	
The contract of	DOCUMENTS  Items not checked "required"  are not applicable	PROVIDED		REQUISED			PROVIDED	
	DRAWINGS REQUIRED  MINIMUM ITEMS TO BE SHOWN ON PRINTS AS APPLICABLE			Γ		DRAWINGS REQUIRED — continued  MINIMUM ITEMS TO BE SHOWN ON PRINTS AS APPLICABLE	П	
3	6 FULL SETS OF PRINTS  GENERAL DATAFLOOR AREAS: NEW EXISTING ADDED					FOUNDATION PLAN  - DIMENSIONED & TO SCALE.  - FOOTNOS, HOLDOWNS, PIERS, - FLOOR FRANING (F. APPLICABLE)	0	0
]	DIMENSIONED & TO SCALE	0				FLOOR FRAMING PLAN		
1	• ALL STRUCTURES, SETBACKS, EASEMENTS, ETC.  CITY OF VENTURA CALGreen CHECKLIST					ROOF FRAMING PLAN.  RAFTERS, HORS., BMS., STAIR OPENINGS, ETC.		1
1	NOOPORATED INTO OR ATTACHED TO THE SET OF PRINTS     MWELO / LANDSCAPE SHEETS	0				ARCH/STRUCT DETAILS  • DRAWN TO SCALE  • ROOF TO WALL, WALL TO FLOOR, AND		1
1	GRADING PLAN (See Land Development)					FLOOR TO FOUNDATION CONNECTIONS, ETC.  ELECTRICAL, MECHANICAL &  PLUMBING PLANS REQUIRED IF		
]						OVER 3000 SF AND/OR (3) STORIES SUPPORTING DOCUMENTATION		
ı	FLOOR PLAN FOR EACH BLDG/STORY					COMPLETED PERMIT APPLICATION		
	DIMENSIONED & TO SCALE • WALL LEGEND     ROOMS & USES LABELED     DOOR & WINDOW LOCATIONS & SIZE			2	2	STRUCTURAL CALCS.		ľ
	• FAU, WH, W & D, GAS & ELECT METER LOCATIONS		_		2	ENERGY FORMS		
	SWITCHES, OUTLETS & LIGHT FIXTURES     ELECTRICAL METER AND PANELS     OOMPLANCE TO TITLE 24 ENERGY		ш	Ľ	Г	DEBRIS REMOVAL CLEARANCE CERTIFICATES (X2) (FIRST PHASE & SECOND PHASE)		
	REFLECTED CEILING PLAN				1	SITE SURVEY (Permanent Marks)		
	PLANES, SMOKE DETECTORS, ETC.  BUILDING CROSS SECTION			Г	_	CONSTRUCTION/DEMO WASTE MANAGEMENT PLAN		
	MOST INFORMATIVE LOCATION - TO SCALE     RELATIONSHIP OF ALL STRUCTURAL ELEMENTS		_		1	PLANNING DIVISION PRE-SUBMITTAL APPROVED.		
		10	П		1	PLAN CHECK SUBMITTAL CHECKLIST TRUSS SHOP DRAWINGS		
	BUILDING HEIGHTS & TO SCALE     ALL OPENINGS AND FINISHES - ROOF SLOPES					OTHER:		
		_	_	_			-	L

City of Ventura Building & Safety Division



### STANDARD CODE SHEETS



VENTURA

Design 41 - PLANSING AND DESIGN	The service positional or subspend study pursuits capacity to con- tifuserpore encounts declared belonds about and specific are			
SECTION A SET	period, socializació d'a franch con un monument principie de			
8 Bit 3 Surge. The prevention of the direction cellules photology, danger and investigational authorities that started contentially suspensible after administrating danger. In this little galaxy, the billing editing and development in prevent statement of reference and reference flow sentencemental garding of this size and majorit the straights of objects programme.	A man A 3 A Mading A CY MAN CRI Ampaired Communities in the control of the contro			
SECTION AVEL				
I MO, I Definitions. The Silbering series are delived in Chapter S. HELPIGE SEAST. RATTERS.	of imposed DF MCNCOR of the full soled externage of the EVID, shall be found upon a 40 empero minutes to be considerable external compression that are placed on the mended yaillargoom transmitter or to consider any early external full for translation			
SECTION 4 NO.	original contraction.			
STREET, STORY	6.896.6.3 Elikerification, The service posed or subspeed at a six			
SECTION AND STREET OF STRE	dial shorts the manufact protective brits special course. SY charging perfection of SY CASASC In accordance with its discrete Cole.			
(Feed red)	Nation  1. The California Dispersions of Transportation all group			
SECTION 4.105 DECONSTRUCTION AND REUSE OF EXISTING STRUCTURES (Reserved)	publisher the Validation Manual on Lindons Stuff Decrease Stuffering MS 71 CB* to promote auctions			
BECTION 4.104 BITS DEVELOPMENT BINLI Granesii. Programme and one of produtts substant announce shall be	Zuri-fremiser füllich fügen sid Pareimet Nachlings- in die New Zuleine & Unschen Ramble int die Mittelse Interaktion/Pareimen aufmittellingstroken			
Part on the site, and adjained your, Preservation of Hopes transgement of most water fluorings and course controls shall comply with the section.	of many justing factions and harver it IV Changing.  It. The Conservation May of Planning and Instead CA. II.			
a 100 / Name water discount and intention during communities. Process				
which disturb has than one wise of will and an ext pain it a larger constant. That of detail remain which is total disturbs one wise, is more, shall manuar.	provide highly interruption for hind generations, or functioned. National Reproject agents and Physical Distance 1.7 - ENSERT 1995-20007			
tion was faming faving contracted, in other to manage more water famings during contracted, one or more of the following measure shall be respirated to present facilities of adjacent property, prevent access and more not record on the part.	SECTION ADDIT			
Solution beam of to forms are shall be extend to ensure more	6.386.2 Supply for the purposes of meditury county off-since in this reals, the California Storage Commons with continue to			
E. When don't have becomed to a softly dramage entert.	mendularly mendarits.			
collection prices, garbor or extrine disposed matters, maker that I'm Elevent I'm size of a hierarchiston, mattin on other	Queen was an and the Walk States of Wall-Committee (see			
	SECTION ASICI			
Compliant with a feetfully exacted room town transported ordinates.	4.NEJ hope. To present of the Jupter dult and his for covering time and entert, contain and in necessity on			
<ul> <li>MM.F. Grading and parting. Continuous place shall indicate him the ski printing or draining system will ensuing all nation water flows in large.</li> </ul>	SECTION 4.802			
water from extering haldings. Exemples of political to transage earliers water to/fode, hall you one foreign his disclosuring.	6.763 Defeation Source			
	SECTION AMIS			
Mose a clienter and deposit system.     Prooch drawn	ROOM WATER USE 6.70.1 Water-counting phosting Science and Militage			
Mose resource parking     Mose resource parking that have notified to meet from				
<ol> <li>Other water received which begreatles were stop from handling and and or physiologic reclaims.</li> </ol>	dependencies deal couply with the billowing.  A WELL Winter directs. The ofference fact to being of all teats.			
Exception. Additions and abundance and altering the framega path.	<ul> <li>Madilland second LDA gallines per Stoft, Tools represented to be complete to the professional orbital and the LDS STAR Missis</li> </ul>			
6.00.6 Derive relate (FF) Aurging for our country line. Not a postore that shell county with Section 6.01.6.1 and 6.01.6.1 in the films force condition and our GFY chapter. Electry which might countries of FFE) shall be consided as a condepant with the California.	Aparticulus for Fact oper Totals.  Note: The officine fluid solution of deal fluid solution in the common deal fluid solution in the common deal fluid solution of the reduced fluid solution.			
Shaling Cody, Artick KD.  Sauphine (In a decide by one horn, where the local anthrong agency has determined ET charging and otherwise have not handle head and one or more of the Stitleton confidence.	8. NO. 6.3 3 Shimada. The officeting float coloring of well-mo- deal to the most \$1.500 parties per float. The officeting float of other completelant are most \$1.50 parties per float.			
4. When then a necessarily over works	4.7014.1 Streethods			
Mines than a protoco submertating the conting the supplements will also the local acids; influencement design.	4 MALLEY Block shows band. The exclusion field from a fee			
requirements with other than control year section design requirements on the protein prob. of the detect on our discharge file onling rate until for the home centers of the dental part by more than both of one healthing with.	five tals of the execution (in gifting per entryle of Mijes, Mi whali he cettified in the performance offering of the U.S. 19%. Specification for Money House.			
\$ 100.4.1 New year and two family shollings and transference	4.361.4.1.3 Madigle democración certing our democ. Vil- to actual by state than our dissembled, the contract flow			
with attached private garages, For each drawling each locality from training to accommodure a deficient (INV) around trackly more. The training to accommodure a deficient (INV) around trackly more. The training staff and for local final reads day is the entire format bands (Invinity).	Money from the control of the section of the control of the contro			

tentines Streethook S Voterbroe

SECTION 4.405 FOLMOATION STISTERS SECTION 4-404 SPRICIENT PRANCING TECHNIQUES (Reserved)

BECTION 6.408 IN WASTE REDUCTION, DISPOSAL AND ASCHOLING

SECTION 4 MIT

2016 CALIFORNIA GREEN BUILDING STANDARDS CODE RESIDENTIAL

DEL MESONALIA COMUNICE GLICIA - WALANDE SÍ LINCOCALINE MANCHON AMOUNT, DOWNSON, PROMISE OF MARKET, AMOUNT, AMOUNT, AMOUNT, DOWNSON, PROMISE OF MARKET, AMOUNT, DOWNSON, PROMISE OF MARKET, AMOUNT, AM

MBELD SUBMITTAL CHECKLIST PAGE 2

PRODUCE SCHOOL FLAN COLD. EX. CONTENT. E.F. BARRETS THE AMOUNTS PLANE, AT A MARKAN SHIPL STREAM THE FOR

COMPANIES, NOT AND DEE OF AN INCOMPANIES OF THE MEMORY SPITTLE, MAD DEE OF AN INCOMPANIES OF THE MEMORY SPITTLE, MAD DESCRIPTION (AND ADDRESS OF THE MEMORY SPITTLESS OF THE MEMORY SPITTLESS OF THE MEMORY SPITTLESS OF THE MEMORY AND ADDRESS OF THE MEMORY ADDRESS OF THE MEMORY AND ADDRESS OF THE MEMORY ADDRESS OF THE MEMORY ADDRESS OF THE MEMORY AND ADDRESS OF THE MEMORY ADDRESS

AND MICE TO PLANE. TO HOS WARES OF MICH. HEAVES AND REQUIRED ON ALL SPRINGER HOAVE MICH. OF MICE AND SHOULD SHOULD

Let Law 24. o. the woods!

Let Law 24. o. the woods! C) AND MOST TO PLANE IN CONTROLLED AND SECULAR SHALL BE ALLES OUT AND CONTROL OF THE PRODUCED AND MOST TO AND CONTROL OF THE PRODUCED AND CONT USEN A LOSS OF STREET, M. St. ASSESSOR

PRESSURE RECORDED DAG, ME HERALD ON THE RESOURCE PUTES TO PROVE DWGGE PRESSURE OF THE BEST OF WHITE THE BEST ACCOUNTS SECTION TO PRODUCE BASIC.



### **HANDOUTS**





### HIGH FIRE REQUIREMENTS (2016 CRC & CBC)

(See CRC Section R337 and CBC Chapter 7A for complete requirements)

a) ignition resistant.

c) non-combustible

b) fire retardant treated wood,

d) any material that complies with SFM 12-7 A-4A Vents = 706A/R337.6 When required by Chapter 15, roof and aftic vents shall be covered by metal wire mesh, vents, other materials or devices that meet all of the following

b) The materials used shall be noncombustible. c) The materials must be comosion resistant.

not be used unless they resist the intrusion of flame and burning embers and meet one of the following:

a) The attic space is sprinklered.

7. Exterior Windows & Doors 708A/R337.8

requirements of SFM 12-7A-1.

The dimensions of the openings therein shall be minimum 1/16th inch and shall not exceed 1.6th inch.

Eave Vents - 706A.3/R337.6.3 Eave and comice vents shall

b) The exterior wall covering is ignition resistant and the vent is located more than 12' above the ground or

Doors shall be of approved non-combustible construction, 20 minute rated, 1 3/8" solid core rails/stiles or meet the

Exterior windows, window walls, glazed doors and glazed openings within doors shall be dual glazed with

NOTE: the use of paints, coatings, stains, or other surface treatments are not allowed to be used to satisfy the above

a minimum of one tempered pane dual glazing, or be

glass block units, or be 20 minute fire-rated or meet the irements of SFM 12-7A-2

Scope - 701A.1/R337.1 This chapter applies to building materials, systems and/or assemblies used in the exterio design and construction of new buildings located within a High Fire Hazard Area as defined by the Cit. of Ventura Fire Department

1. Roofing - 705A/R337.5 Roof coverings on new buildings shall be class A - noncombustible in accordance with adopted CBC Standards or as may be approved by the CBC Standards or as may be approved by the Chief Building Official Roof goverings shall be class A or noncombustible fire retardant materials

Exterior Covering - 707 A/R337.7 Exterior wall coverings shall be non-combustible or significant-resistant material and shall extend from the foundation to the roof. 2"x's are allowed for

### Exception

- a. One layer of 5'8" gypsum sheething underneath
- Open Roof Eaves 707 A.4 R337 J.4 Eaves and soffits shall be non-combustible, ignition-resistant or have a layer of 56° Type X gypsum sheathing behind exterior cover of underside of the roof deck (See Gypsum Assoc. Fire Resistance Design Manual).

### a. Solid wood rafter tails having a minimum nominal dimension of 2 inches

4. Floor/Underfloor Protection - 707 A.7/R337.7 The underside 

707 A.8 Buildings shall have all underfloor areas enclosed to TV AB suisings anii nave ali undemoor areas enciosed to grade in accordance with TVAA, 3, except, where the undessde of all exposed floors, exposed structural columns, beams and supporting walls are protected as required with ignition-resistant material construction or be heavy timber\*.

### "Heavy Timber – For the purpose of this chapter, heavy timber shall be sawn lumber or glue laminated wood with the smallest minimum nominal dimension of 4 inches. 702A/337.2

5. Decking - 709A/R337.9 When within 10 feet of the primary ructure, the construction of decking surfaces, stair treads and ripers and landings of decks, porches and balconies shall comply with one of the following:

CITY OF **BUILDING & SAFETY** 

City of Ventura **Building & Safety Division** 

### **TECHNICAL BULLETIN**

### When is a Geotechnical Investigation Required?

### INTRODUCTION

The purpose of this technical bulletin is to clarify when a geotechnical investigation is required as part of a building permit application. The requirements below are intended as general policy guidelines. Section 1803 of the 2016 California Building Code (CBC) outlines specific instances of when a geotechnical report is required based on soil conditions and construction methods. Where a geotechnical investigation is required, the content of the report shall conform to the requirements of Section 1803 and current City Ordinance.

The requirement for the geotechnical investigation is based on the City of Ventura Ordinance 2016 which requires a geotechnical investigation be conducted when the proposed structure area is one thousand square feet or more in total proposed area.

Due to City of Ventura being located in Seismic Design Category E, the geotechnical investigation shall also include all required testing and reporting as outlined in Section 1803.5.11 and 1803.5.12 which applies to all structures that are being proposed in Seismic Design Category E.

In all cases, if a geotechnical report has been previously performed for the parcel, this report must be included in the building permit application. If the existing report is more than a year old, a geotechnical report update letter from a qualified licensed professional must be included with the permit application. The update letter shall address whether the recommendations of the previous report are still valid for the proposed project and if additional soil analysis is required.



City of Ventura Building & Safety Division

**DESIGN STANDARDS** 

### Applicable Codes and Standards

2016 California Building Code (based on the 2015 International Building Code) 2016 California Residential Code (based on the 2015 International Residential Code)

2016 California Electrical Code (based on the 2014 National Electrical Code) 2016 California Plumbing Code (based on the 2015 Uniform Plumbing Code)

2016 California Mechanical Code (based on the 2015 Uniform Mechanical Code)

2016 California Fire Code (based on the 2015 International Fire Code)

2016 California Green Building Standards

2016 California Energy Efficiency Standards 2016 City of Ventura Ordinance

Seismic Design Categories, SDC, are based on specific site locations. Values for spectral response accelerations SI and SS, and damped spectral response accelerations, SDI and SDS, may be determined by entering longitude and latitude at the <u>USGS seismic design maps application</u>. These values, along with the risk category (most buildings in City of Ventura will be Risk Category I. II or III, with residences classified as Risk Category III, will determine the SDC. Most of City of Ventura will be SDC E or F. See CBC 2016, for complete Seismic Design

Vult is 110 mph for Risk Category II buildings (most buildings). Exposure categories B (urban and suburban areas), C (open terrain with scattered obstructions or areas that are not Exposure B or D) or D (unobstructed areas and ocean front areas). For structures required to have a structural analysis (non-conve entional), see CBC 2016, for complete Wind Design Criteria.

### Wildland-Urban Interface

Those areas shall comply with the Materials and Construction Methods for Exterior Wildfire Exposure in CBC, Chapter 7A and/or CRC R337 for one and two family dwellings and townhomes. See WUI Codes for CBC 7A requirements, which generally mirror CRC R337 requirements

For energy compliance, use Climate Zone 6. See the California Energy Commission's website





# Plan check becomes a priority





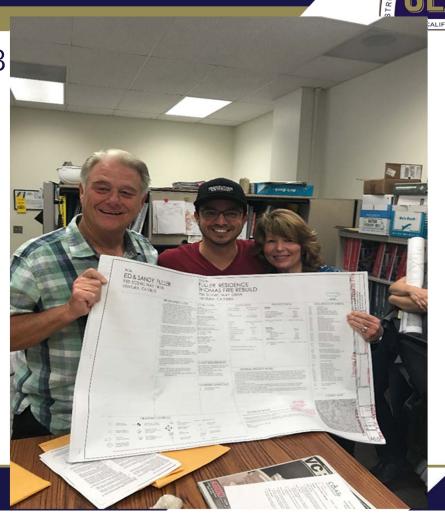




## First permit issued

- First Plan submitted 4-18-2018
- Approval May 18, 2018





## More permits issued







# CONSTRUCTION PROCESS



- Hours of Construction
- Inspections
- Staging of Construction Materials
- Construction Trailers
- Certificates of Occupancy
- Temporary Utilities



## Grading and Fine grading















SAFER CITIES TECHNICAL SUMMIT









### A YEAR LATER...





Thomas Fire Rebuild efforts:
417 repair permits issued
179 complete rebuild homes approved
106 complete rebuild homes under
review

Building and Safety has given occupancy for the administrative offices and assessment trailers for Aurora Vista Del Mar Hospital. Kalorama Harbor View apartments, under plan check review for the reconstruction of 32 apartment units. Hawaiian Apartment complex under design.

