

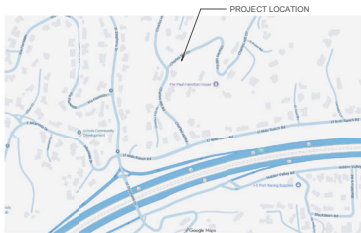
SB 1123 CHARLES HILL CIR SITE STUDY

2 CHARLES HILL CIR ORINDA, CA 94563

APPLICABLE CODES

- 2022 CALIFORNIA BUILDING CODE - TITLE 24 - PART 2 [CBC 2022]
- 2022 CALIFORNIA RESIDENTIAL CODE - TITLE 24 - PART 2.5 [CRC 2022]
- CRC 2022 - SECTION R327
- CRC 2022 - SECTION R337
- 2022 CALIFORNIA ELECTRICAL CODE - TITLE 24 - PART 3 [CEC 2022]
- 2022 CALIFORNIA MECHANICAL CODE - TITLE 24 - PART 4 [CMC 2022]
- 2022 CALIFORNIA PLUMBING CODE - TITLE 24 - PART 5 [CPC 2022]
- 2022 CALIFORNIA ENERGY CODE - TITLE 24 - PART 6 [CBC PART 6 2022]
- 2022 CALIFORNIA FIRE CODE - TITLE 24 - PART 9 [CFC 2022]
- 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE - TITLE 24 - PART 11 [CBC PART 11 2022]
- 2022 CALIFORNIA FACTORY BUILT HOUSING CODE - TITLE 25
- SB 1123
- ORINDA MUNICIPAL CODE

VICINITY MAP



SHEET INDEX	
SHEET NUMBER	SHEET NAME
General	
C010	COVER
C011	MUNICIPAL REQUIREMENTS
C012	MUNICIPAL REQUIREMENTS CONT.
C020	SITE PLAN
Architecture	
A010	FLIGHT PLAN
A020	SITE PLAN
A030	INDOOR SCENE
A040	SITE 3D VIEWS
A050	Architectural Schedules

PROJECT INFORMATION

GENERAL INFORMATION		
PROJECT NAME	2 CHARLES HILL CIR SB 1123 SITE STUDY	
PROJECT ADDRESS	2 CHARLES HILL CIR, ORINDA, CA 94563	
APPLICABLE CODES		SCOPE OF WORK
2022 CALIFORNIA BUILDING CODE (2022 CBC)	SUBDIVISION OF ONE LOT INTO FOUR LOTS, THREE OF THE LOTS ARE IDENTIFIED FOR DEVELOPMENT UNDER SB 1123 AND THEY INCLUDE ONE 1,780 SF SINGLE FAMILY RESIDENCE PER LOT. THE FOURTH LOT IS NOT IDENTIFIED FOR USE UNDER SB 1123 AND IS ALMOST COMPLETELY WITHIN THE REGULINE OVERLAY ZONE.	DEVELOPMENT TYPE
2022 CALIFORNIA ENERGY CODE		SB 1123 SINGLE FAMILY
2022 CALIFORNIA MECHANICAL CODE		
2022 CALIFORNIA PLUMBING CODE		
2022 CALIFORNIA ELECTRICAL CODE		
2022 CALIFORNIA FIRE CODE		
2022 CALIFORNIA GREEN BUILDING STANDARDS CODE		
ORINDA MUNICIPAL CODE		
SB 1123		
CONSTRUCTION TYPE / OCCUPANCY / OCC. LOAD		CODE REQUIREMENT
CONSTRUCTION TYPE	TABLE 601	PROPOSED
RESIDENTIAL OCCUPANCY TYPE	SECTION 710.3	TYPE VB
RESIDENTIAL OCCUPANT LOAD FACTOR	TABLE 1004.5	R4 3 OCCUPANTS PER HOUSE 200 SF/PERSON (PROCESS)
HEIGHT / STORY / AREA		CODE REQUIREMENT
MAXIMUM BUILDING HEIGHT	HEIGHT 27 - AGGREGATE HEIGHT 30'	PROPOSED
HEIGHT OF TOP OCCUPIED FLOOR	HIGH RISE + 70'	SEE A031
MAXIMUM NUMBER OF STORIES	TABLE 104.4 R4 40-2.5	2.5
MAXIMUM TOTAL AREA	TABLE 106.1.1A	1,750 SF PER HOUSE
FRONTAGE INCREASE *	NA	NA
DWELLING UNITS		CODE REQUIREMENT
TOTAL UNITS	NA	PROPOSED
UNIT MIX	NA	3
CBC 11A ADAPTABLE UNITS	NA	150
CBC 11B ACCESSIBLE UNITS	NA	NA
FIRE RESISTANCE		CODE REQUIREMENT - CONST TYPE VB
PRIMARY STRUCTURAL ELEMENTS	0 HR	PROPOSED - CONST TYPE VB
BEARING WALL - EXTERIOR	0 HR	0 HR
BEARING WALL - INTERIOR	0 HR	0 HR
NON-BEARING WALLS / PARTITIONS - INTERIOR	0 HR	0 HR
NON-BEARING WALLS / PARTITIONS - EXTERIOR	VARIABLES - TABLE 602	0 HR
FLOOR AND ITS SECONDARY MEMBERS	0 HR	0 HR
ROOF AND ITS SECONDARY MEMBERS	0 HR	0 HR
DWELLING UNIT DEMISING WALLS	1 HR	NA
CORNERS WALLS	1 HR	NA
SHAFT ENCLOSURE WALLS > 3 LEVELS	2 HR	NA
SHAFT ENCLOSURE WALLS < 3 LEVELS	1 HR	NA
UNIT ENTRY DOORS	20 MIN	NA
STAIR DOORS	90 MIN	NA



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CHARLES HILL SITE STUDY
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CONCEPTUAL SITE STUDY

ISSUE

#	DESCRIPTION	DATE

Sheet Title:
COVER

Drawn by: Author Checked by: Designer

Sheet No.:
G100

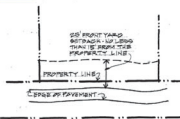
The purpose of residential development regulations are to regulate the location, height, appearance and use that may affect the character of quality of residential areas in the City. Use the Development Standards Handbook for commonly asked questions regarding property setbacks and building heights. To determine the development standards for any property, you must first determine the zoning district the property is located in. Follow the steps in the [Zoning District Handbook](#) to determine the property's zoning district.

DEVELOPMENT STANDARDS (§17.4.1)

Zoning District	RVL-E	RVL	RL-40	RL-20	RL-15	RL-12	RL-10	RL-6	RM
Minimum Yard Setbacks (feet)									
Front Yard*	25	25	25	25	20	20	20	20	15
Side Yard	10	10	15	15	10	10	10	5	10
Total (Combined) Side Yard*	100	100	40	35	25	25	20	15	20
Rear Yard	25	25	15	15	10	10	10	5	10
Side and Rear Yard with Street Frontage†	25	25	25	25	20	20	20	20	15
Maximum Height									
Building Height (feet)	27	27	27	27	27	27	27	27	27
Building Height (stories)	2 ½	2 ½	2 ½	2 ½	2 ½	2 ½	2 ½	2 ½	2 ½
Aggregate Building Height (feet)	35	35	35	35	35	35	35	35	35

* The front, side and rear yard setbacks shall, at the applicant's discretion, be measured from the edge of the existing ground surface rather than from the property line (i.e., the right of way boundary), provided the resulting setback measures no less than fifteen (15) feet from the property line with street frontage. (See Section 17.4.2 Graphics below.)
 † The total (Combined) Side Yard Setback is the combination of both Side Yard Setbacks. The total (Combined) Side Yard Setback requirement shall not apply to those portions of the property located more than 50 feet from the front property line.

Section 17.4.3 Graphics: Front, Side and Rear Yards with Street Frontage



SETBACKS FOR NONCONFORMING LOTS (§17.4.4)

The following alternative setback requirements shall apply to existing legal lots that do not meet the residential property standards contained in Schedule 17.4.3.

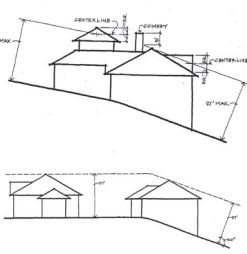
- A. **Legal Nonconforming Lot Less Than One Hundred Twenty Feet Deep.** On a legal lot that is less than one hundred twenty (120) feet deep, the minimum front yard setback shall be twenty (20) feet.
- B. **Legal Nonconforming Lot Less Than One Hundred Forty Feet Wide.** On a legal lot with a front lot width of less than one hundred forty (140) feet, the following Side Yard and Total (Combined) Side Yard Setbacks shall apply:

Front Lot Width	Single Side Yard Setback	Total (Combined) Side Setback	Side and Rear Yard with Street Frontage
Less than 140 feet	15 feet	35 feet	20 feet
Less than 120 feet	10 feet	25 feet	15 feet
Less than 100 feet	10 feet	20 feet	15 feet
Less than 80 feet	5 feet	15 feet	15 feet
Less than 60 feet	5 feet	10 feet	15 feet

HEIGHT MEASUREMENT (§17.4.19)

The height of a structure shall be measured perpendicular from the existing grade. A chimney may exceed the permitted height by five feet. The height of architectural projections such as towers and domers, shall be measured to the midpoint between the top plate and the roof ridge line.

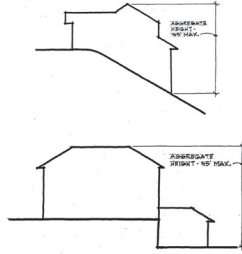
Section 17.4.19 Graphics



AGGREGATE HEIGHT MEASUREMENT (§17.4.20)

The aggregate height of a structure is a plumb line measurement to the highest roof ridge line taken from the top of the lowest foundation.

Section 17.4.20 Graphics



- C. **Rebuilding or Remodeling a Nonconforming Residence.** A structure on a lot which was legal when created may be improved or replaced and a new home may be built on that legally-created lot, subject to the requirements of the Orinda Municipal Code.

WATER CHANNEL (CRENS) SETBACKS (§17.4.6)

Water Channel Types:

- **Type I** - A major channel that receives water from several tributaries and includes, but is not limited to, San Pablo Creek, Moraga Creek, Brookside Creek, and Littlewater Creek.
- **Type II** - An ephemeral/intermittent or perennial tributary channel that has well-defined channel bed and banks.
- **Type III** - An ephemeral swale or other small channel that is distinguished from Type I and II channels because it does not have well-defined channel bed and banks.
- **Type IV** - A man-made channel, such as a road-side ditch, that occurs where no channel previously existed.

	Channel Type			
	Type I	Type II	Type III	Type IV
Perennial or Intermittent/Ephemeral	-	-	Perennial	Intermittent/Ephemeral
Side slopes*	Steeper than 2:1	Equal to or shallower than 2:1	-	-
Setbacks** (feet)	45	35	45	30

*Horizontal distance relative to vertical distance.
 **All setbacks are measured from the top of the bank or from the furthest extent of banks undercut by creos, whichever results in the greatest setback. Where opposing bank heights differ, the lower bank height applies to both sides of the channel for purposes of measuring the side slope and setback.

No structure may be built, except for second story additions that do not encroach into the required setback beyond the existing first floor structure, and no grading is permitted in the setback of a water channel, unless the project meets the following conditions:

1. The project proponent obtains approval from the City Engineer; and
 2. The project proponent is granted an exception under [Ordinance 12.12](#).
- If a project is proposed on the bank of a water channel or in an area of the site that is undeveloped and in a natural state, then the City may hire a biologist to perform a biotic assessment at the applicant's expense and the decision-maker shall consider the findings of this biotic assessment when reviewing the exception application.



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CHARLES HILL SITE STUDY
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 ORINDA, CA

CONCEPTUAL SITE STUDY

ISSUE		
#	DESCRIPTION	DATE

Sheet Title:
MUNICIPAL REQUIREMENTS

Drawn by: Author Checked by: Checker

Sheet No.: **G110**



Moraga-Orinda Fire District
FIRE PREVENTION DIVISION

FIRE PREVENTION DIVISION STANDARD

Subject:	Reference:	Approved by:
Fire Apparatus Access Requirements	CFC 2022, MOFD Ordinance 23-01	Fire Marshal Jeff Heavis, January 2023

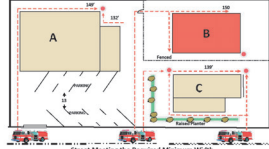
SCOPE
This standard describes the local application of California Fire Code, Section 503 and Appendix D, as amended by Moraga-Orinda Fire District Ordinance 20-01.

GENERAL
A fire apparatus access road is defined as a road that provides fire apparatus access from a fire station to a facility, building or portion thereof. This is a general term that includes, but is not limited to a fire lane, public street, private street, driveway, parking lot lane and access roadway.

Fire apparatus access roads shall be provided in accordance with the California Fire Code Section 503 and Appendix D as further amended by local ordinance for every facility, building or portion of a building constructed or moved into within jurisdiction.

DISTANCE FROM A FIRE APPARATUS ACCESS ROAD
A fire apparatus access road shall extend within 150 feet of the most remote first floor exterior walls of any facility, building or portion of a building. The 150-foot distance shall be measured along an approved accessible path of travel around the exterior of the building or facility as determined by the Fire District. See the examples below:

Measuring the Distance to the Exterior Walls from a Fire Apparatus Access Road



Subject: Fire Apparatus Access Requirements

Examples

- Assume that the parking lot is not accessible to fire apparatus due to the turning radius and roadway width more restrictive than the required minimums (red circle indicated the farthest distance to the exterior walls).
- All portions of building "A" are within 150' of the fire apparatus access road as measured along the path of firefighter travel.
- Building "B" is not accessible, the presence of a tenoned enclosure forces firefighters to backtrack once they pass through the gate, increasing their travel distance beyond 150'.
 - On site fire apparatus access roadways or a change in the location of the gate would be necessary to provide access to Building "B".
- Building "C" is also within 150' of the fire apparatus access road despite the obstruction posed by the raised planter.

LOAD

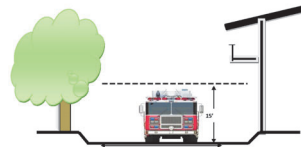
Fire apparatus access roads shall be designed and maintained to support a minimum load of 74,000 pounds (H-20-44 Cal Trans design standard) and shall be provided with an all-weather driving surface (asphalt, concrete or similar approved surface roadway).

TURNING

Fire apparatus access roads shall be installed and serviceable prior to the start of any combustible construction on a project or combustible storage on a site. A Fire District inspection and approval is required prior to the start of combustible construction or combustible storage on a site.

SPECIFICATIONS AND LIMITATIONS - See MOFD Fire Code Appendix D.

- Fire apparatus access roads, turnarounds, turnouts and outlets shall not be obstructed in any manner, including the parking of motor vehicles. These areas are designated as fire lanes and shall be readily visible with signs or red curbs with white letters indicating "No Stopping Fire Lane - CVC 22506.1".
- Fire apparatus access roads shall have an unobstructed minimum width of not less than 28 feet and an unobstructed vertical clearance of not less than 15 feet. Exception - A driveway with a minimum width of 18 feet is acceptable for access to no more than two dwelling units. Parking is not permitted on the roadway.



Fire apparatus access roads 150 feet or more in length shall be provided with a turnaround provision at its terminus or as approved by the Fire District. Standard fire apparatus turnarounds shall be designed as shown in Figure 4 below. Exception - Turnarounds for fire apparatus access roads serving 1 or 2 dwelling units shall comply with Figures A through C below.

LENGTH (feet)	MINIMUM WIDTH (feet)	TURNAROUNDS REQUIRED
0-150	28	None required
151 - 750	28	100-foot Hammerhead, 90-foot-diameter cut-de-sac, or 50-foot "Y" configuration in accordance with figure D100.1.
Over 750		Special approval required - See the note below.

Note: Any fire apparatus access roadway or driveway that is approved to be more than 750 feet in length and less than 28 feet wide shall have outlets or turnouts every 200 feet along the length of the road or driveway, or at locations approved by the fire code official. Each outlet or turnout shall be of the following dimensions: an 8-foot-wide turnout that extends at least 40 feet in length.



Page 2 of 6
Subject: Fire Apparatus Access Requirements

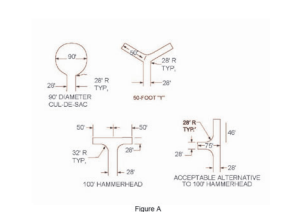
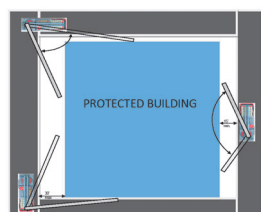


Figure A

- Fire apparatus access roads shall have a minimum turning radius of 28 feet inside and 48 foot outside diameter.
- The grade of fire apparatus access roads with an asphalt surface shall not exceed 15 percent. The maximum slope for a porous paving system (concrete, and interlocking concrete and bricks) is 3 percent. The maximum slope of a gravel or decomposed granite surface is 10 percent. For porous paving and gravel roads an engineer must certify the design will support 74,000-pound fire apparatus in all weather conditions. After the installation the engineer must certify the materials were inspected and in accordance with the plans.
- Fire apparatus access roads with a slope between 15 and 20 percent shall be grooved concrete. The design for grooved concrete shall be 1/8 inch wide by 1/4 inch deep and 1 1/2 inches on center with a 30-45 degree angle across the width of the roadway surface.
- Fire apparatus access roads with a slope exceeding 20 percent are not allowed.
- Cross slopes on fire apparatus access roads shall not exceed 8 percent.
- The angle of approach and departure for fire apparatus access roads shall not exceed 10 percent at 10 feet of the grade break.
- Aerial Fire Apparatus Access:** Fire apparatus roadways serving buildings over 30 feet in height (the height is defined in the California Fire Code Appendix D102), shall have a minimum unobstructed width of 36 feet. The aerial fire apparatus access road shall be positioned parallel to at least one side of the building. The location of the aerial fire apparatus access road shall be approved for the Fire District.

Page 4 of 6
Subject: Fire Apparatus Access Requirements



- The inside curb for the aerial fire apparatus access road shall be a minimum of 15 feet and a maximum of 50 feet from the building.
- There shall be no parking or obstructions such as parking, trees and power lines between the aerial fire apparatus access road and the building.

ACCESS

Fire District key boxes and key switches by Knox shall be provided in accordance with the MOFD Fire Code Section 506.1.3. The box locations shall be approved by the Fire District, typically at gates and main entry doors.

BRIDGES

- Bridges shall be constructed and maintained in accordance with AASHTO HB-17.
- The maximum vehicle load limits shall be clearly posted at both bridge entrances. Signs posted for maximum load capacity shall be a minimum of 18 inches high by 18 inches wide and made of a durable material approved by the District. Lettering to be black, a minimum of 8 inches in height with a 1/4 inch stroke on a white background. Reflective materials are recommended.

NUMBER OF FIRE APPARATUS ACCESS ROADS

The minimum number of fire apparatus access roads serving a residential development (single family and multiple family) shall be based upon the number of dwelling units served and shall be as follows:

- 1-20 units, one public or private access road.
- 21-100 units, two public or private fire apparatus access road as approved by the fire code official.

Page 5 of 6
Subject: Fire Apparatus Access Requirements

- code official.
- 91-100 units, three or more public or private fire apparatus access road as approved by the fire code official.
- 101+ units, a minimum of 3 public or private access roads and one fire apparatus access road as approved by the fire code official.

GATES

The design for all gates across a fire apparatus access road shall be approved by the Fire District. Plans and specifications shall be submitted to the District for review and approval prior to construction. Gate specifications are as follows:

- Width to be a minimum of 12 feet clear and unobstructed or as required by the fire code official.
- There shall be a minimum of 15 feet vertical clearance.
- Location of the gate shall have a minimum setback of 40 feet from the intersection to the driveway, which is deemed to be a fire access road and the roadway.

Exception:

Gates at the end of a roadway or on roads with light traffic may have a lesser setback. All locking devices shall provide for Fire District emergency access by means of a Knox gate key switch, Knox box or the established Fire District master key system.

All electronic gates crossing Fire District access ways shall comply with ASTM F2200. The electric gate operators shall comply with UL 225.

TEMPORARY FIRE APPARATUS ACCESS ROADS

The installation and use of a temporary fire apparatus access road in lieu of a permanent fire apparatus access road, when approved by the District, is limited by April 15th through October 15th.

Page 6 of 6
Subject: Fire Apparatus Access Requirements



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CONCEPTUAL SITE STUDY

ISSUE

#	DESCRIPTION	DATE

Sheet Title:
MUNICIPLE REQUIREMENTS CONT.

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Sheet No.: **G111**



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ISSUE

#	DESCRIPTION	DATE

Sheet Title:
SITE DIAGRAM

Drawn by: Author Checked by: Checker

Sheet No.: **G120**



SITE DIAGRAM
 1" = 20'-0"

SITE DIAGRAM LEGEND
 1" = 20'-0"

DATE PLOTTED: 04/14/2021 10:48 AM



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ISSUE		
#	DESCRIPTION	DATE

Sheet Title:
PLOT PLAN

Drawn by: Author Checked by: Checker

Sheet No.: **A101**



PLOT PLAN
 1" = 20'-0"



① SITE PLAN
1" = 30'-0"



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ISSUE

#	DESCRIPTION	DATE

Sheet Title:
SITE PLAN

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Sheet No.: **A102**

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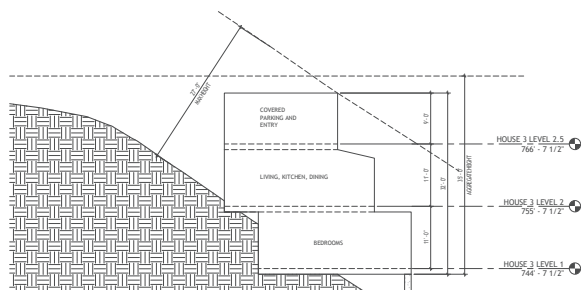
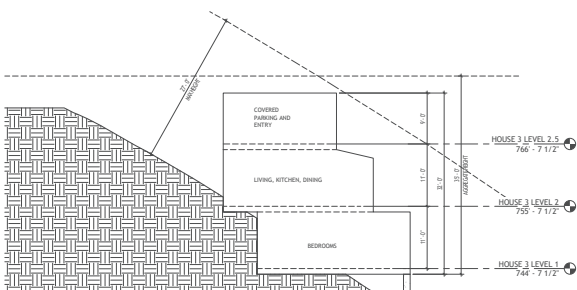
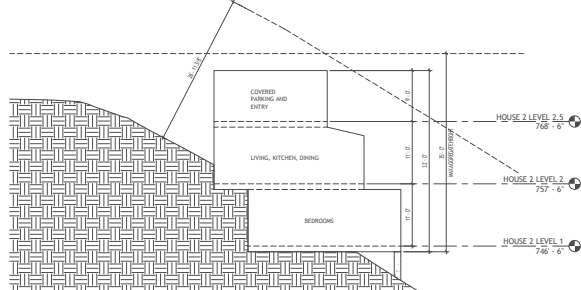
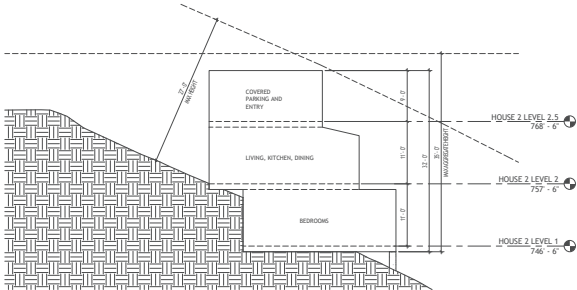
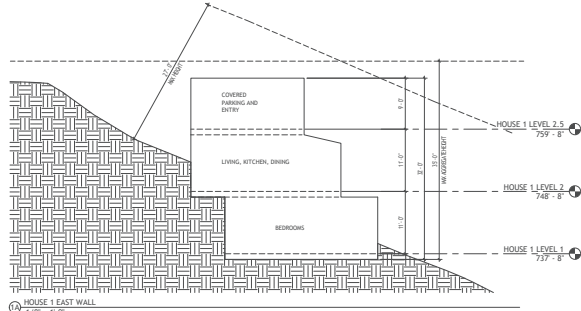
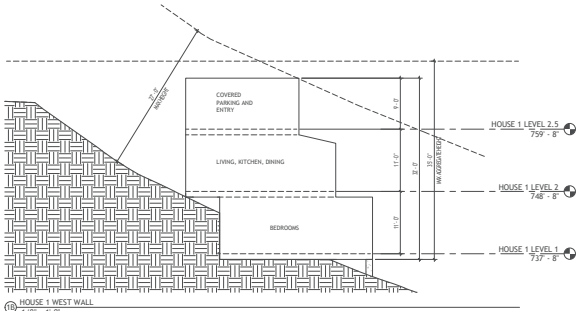
ISSUE

#	DESCRIPTION	DATE

Sheet Title:
MASSING SECTIONS

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Sheet No.: **A301**





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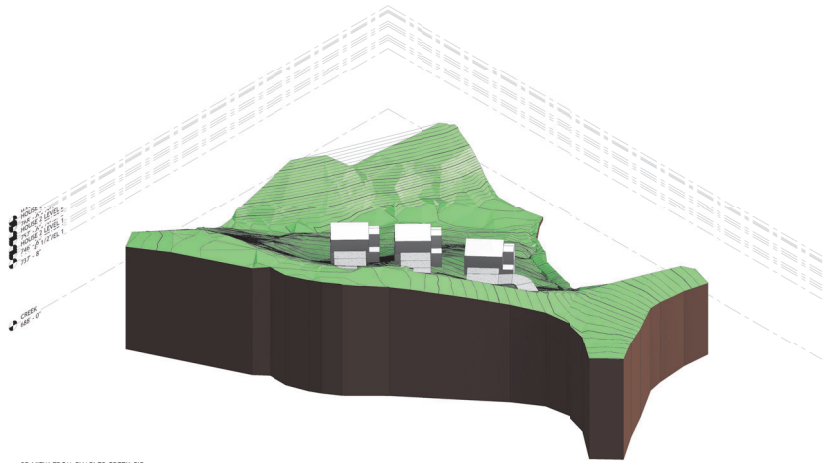
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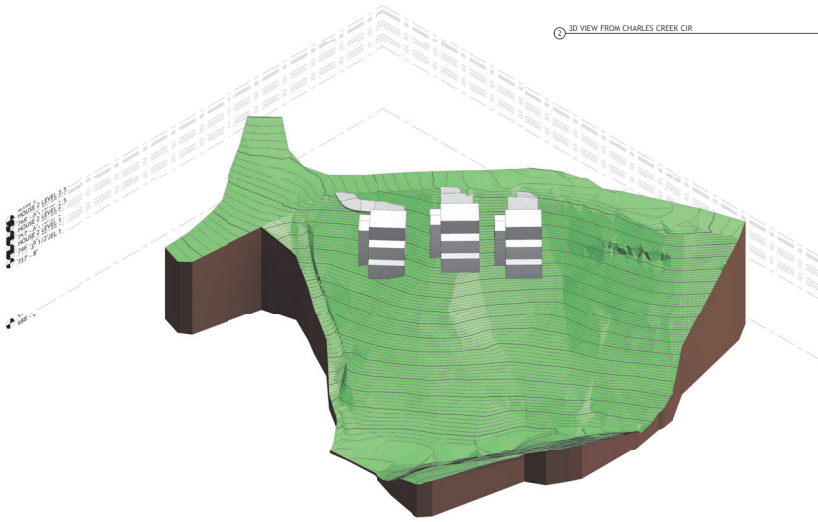
Sheet Title:
SITE 3D VIEWS

Drawn by: Author Checked by: Checker

Sheet No.: **A501**



3D VIEW FROM CHARLES CREEK CIR



3D VIEW FROM CREEK