

**Appendix A:
Shade and Shadow Analysis**

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SHADE & SHADOW REPORT

Project: Costa Mesa Luxury Apartments

Address: 2277 Harbor Blvd., Costa Mesa, CA

Owner: Miracle Mile Properties

SHEET NO	TITLE
DATE	APRIL 17, 2015



April 10, 2015
Project: Costa Mesa Luxury Apartments
Address: 2277 Harbor Blvd., Costa Mesa, CA
Owner: Miracle Mile Properties

SHADE & SHADOW REPORT

ENVIRONMENTAL SETTING

The proposed Costa Mesa Luxury Apartments project is a four story residential building and multilevel parking structure. It is located in the city of Costa Mesa California, at latitude 33.6650° North and longitude of 117.9122° West. The study analyses the gradual movement of shadow lines casted by the proposed project during Summer and Winter Solstice. It illustrates the amount of time adjacent areas outside the site stop receiving direct sunlight as a result of introducing the proposed building to the site.

SUMMER SOLSTICE AND WINTER SOLSTICE

This report uses a digital sun pattern simulation (sheets SR.01 through SR.09). It runs at every hour from 9:00 am to 6:00 pm PST during the daytime of Summer Solstice being the longest day of the year. It runs at every hour from 9:00 am to 3:00 pm PST during the daytime of Winter Solstice being the shortest day of the year.

SUMMER SOLSTICE REPORT

The analysis of the digital sun pattern movement simulation sheets SR.01 through SR.05 indicate direct sun light reaching most surrounding areas outside the site during summer solstice. The shade and shadow impacts to the east, west, north and south areas are not significant. The areas getting direct sunlight include the Costa Mesa Country Club and bike trail, residential and commercial buildings. The only exception is the adjacent commercial building to the north (Pals Vacuum Sewing Center). The shade and shadow impact to this area is negligible.

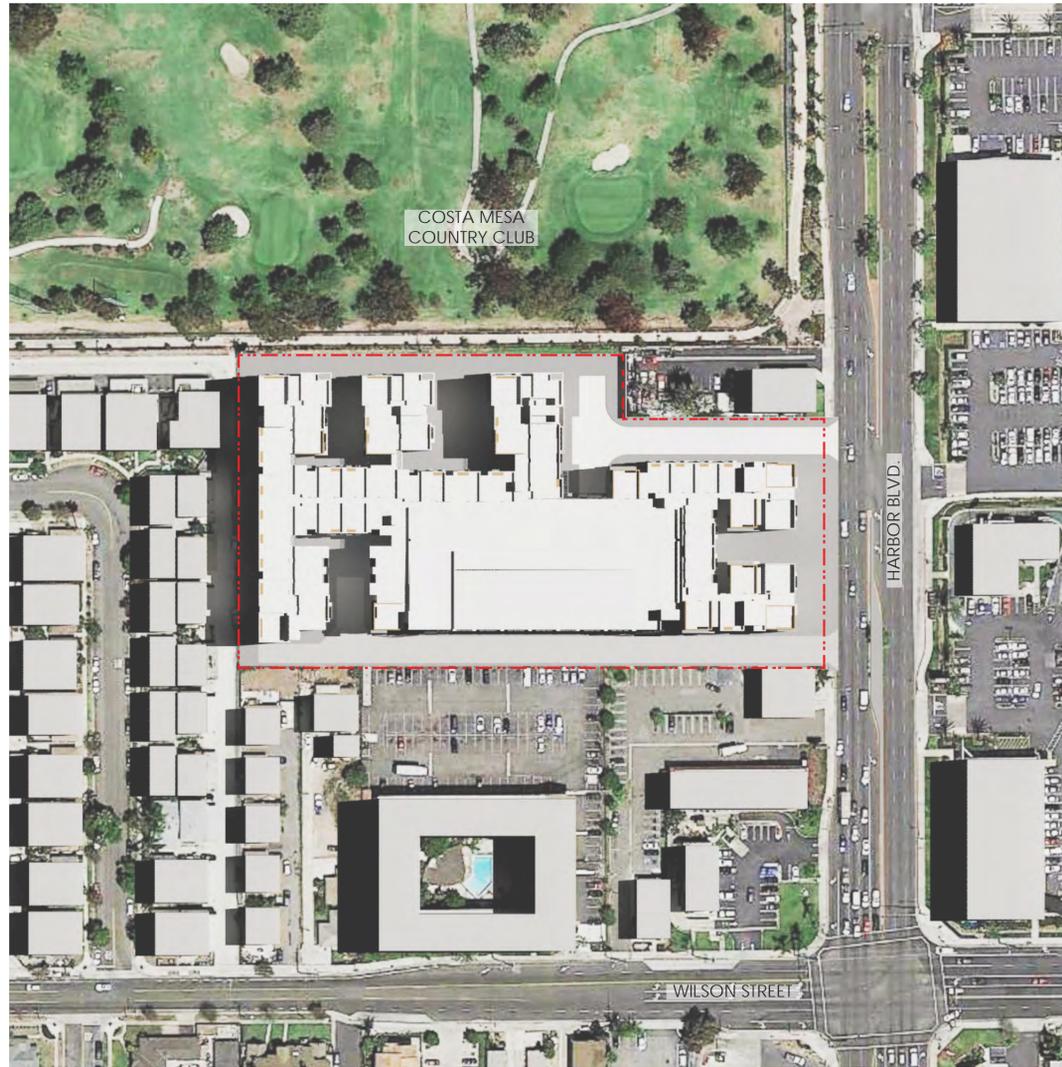
WINTER SOLSTICE REPORT

The analysis of the digital sun pattern movement simulation sheets SR.06 through SR.09 indicate direct sun light reaching most surrounding areas outside the site during winter solstice. The shade and shadow impacts to the east, west, and south areas are not significant. The adjacent areas to the north are projected to have segmented sunlight obstructions. The analysis shows shades and shadows casting on the adjacent Costa Mesa Country Club and bike trail for a period of 3 hours or longer, but their visual comfort and safety is largely maintained by the offset perimeter building line to the north. The building envelope pulls away from its property line creating large open pockets of light. As a consequence, the building provides perimeter courtyards to the north. The digital sun pattern simulation shows that the segmented shadow lines do not reduce the overall visual comfort and safety levels of this area as a result of offering large open to the sky perimeter courtyards. The shades and shadows general impact on these areas is marginal during winter time showing uninterrupted direct sunlight where the courtyards are located. In addition, the project proposes an open metal fence along the Costa Mesa Country Club and bike trail letting direct sun light reach these areas.

CONCLUSIONS

The exhibits illustrate the external perimeter areas receiving direct sunlight throughout most of the year. The proposed Costa Mesa Luxury Apartments is projected to have minor obstructions of direct sunlight during the winter months. It does not impact significantly the normal use of its adjacent residential, commercial, and public areas.

Sincerely,
Pablo Osorio
GMPA Architects, Inc



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SHADE & SHADOW REPORT - SUMMER SOLSTICE

COSTA MESA LUXURY APARTMENTS

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SHEET NO	SR.01
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SHADE & SHADOW REPORT - SUMMER SOLSTICE

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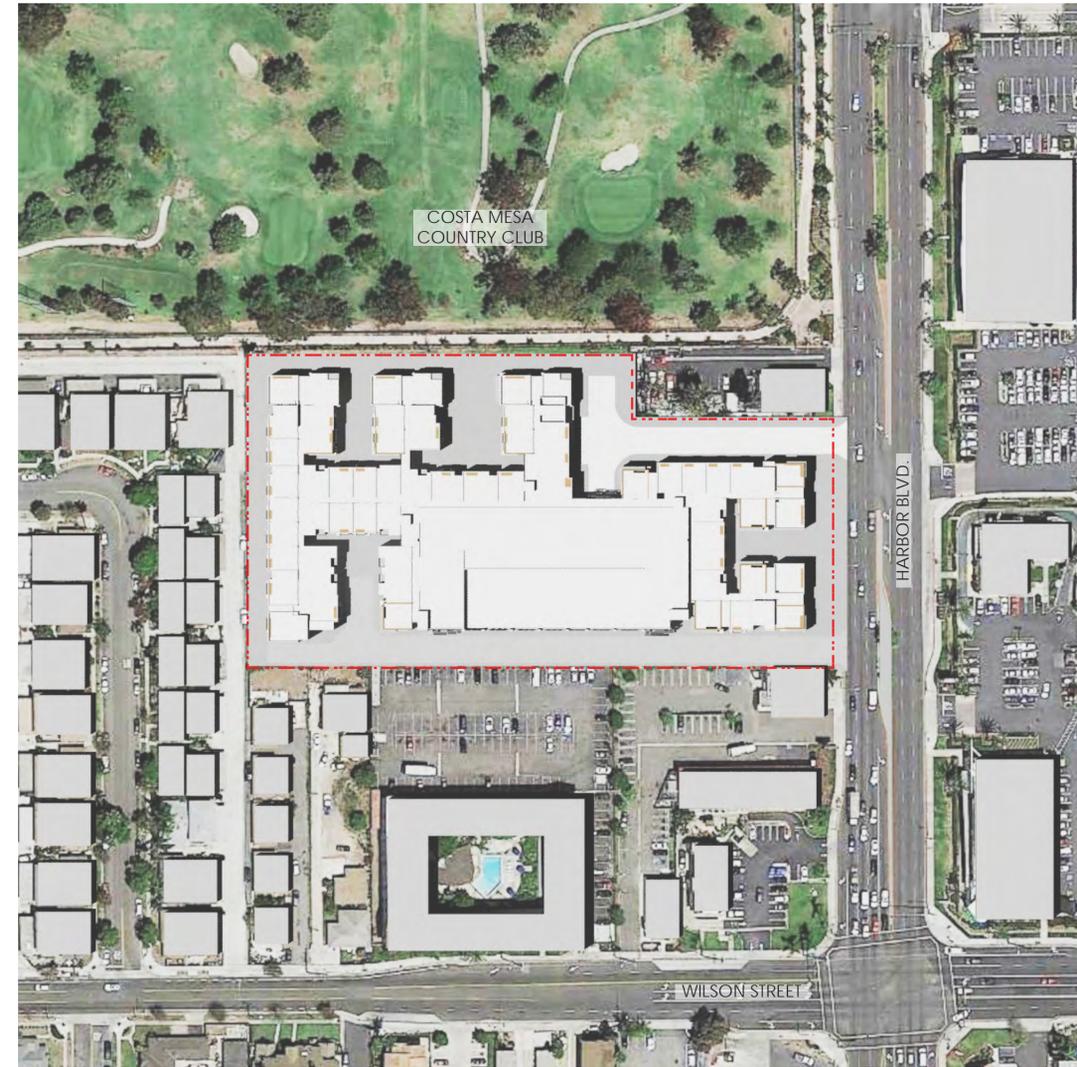
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SHADE & SHADOW REPORT - SUMMER SOLSTICE

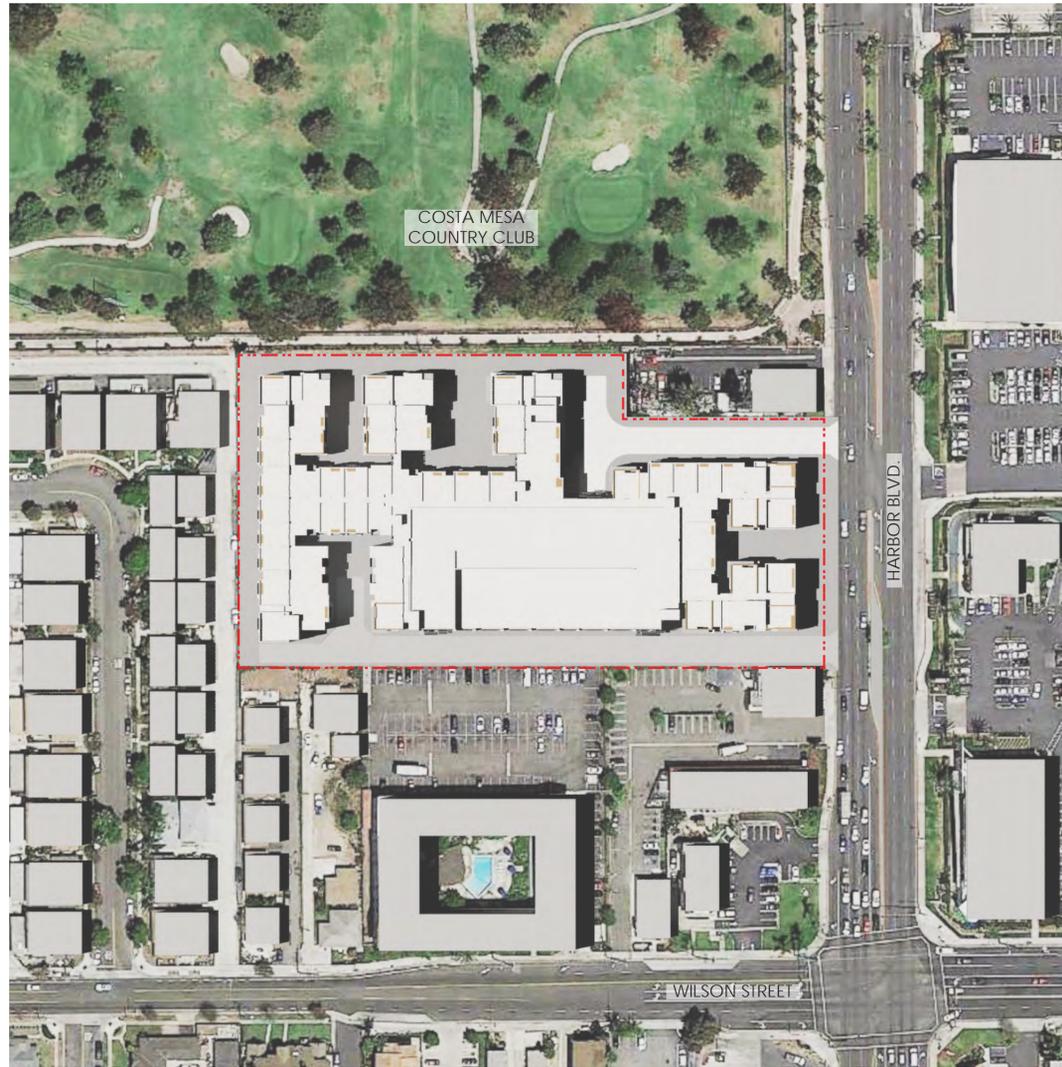
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SHADE & SHADOW REPORT - SUMMER SOLSTICE

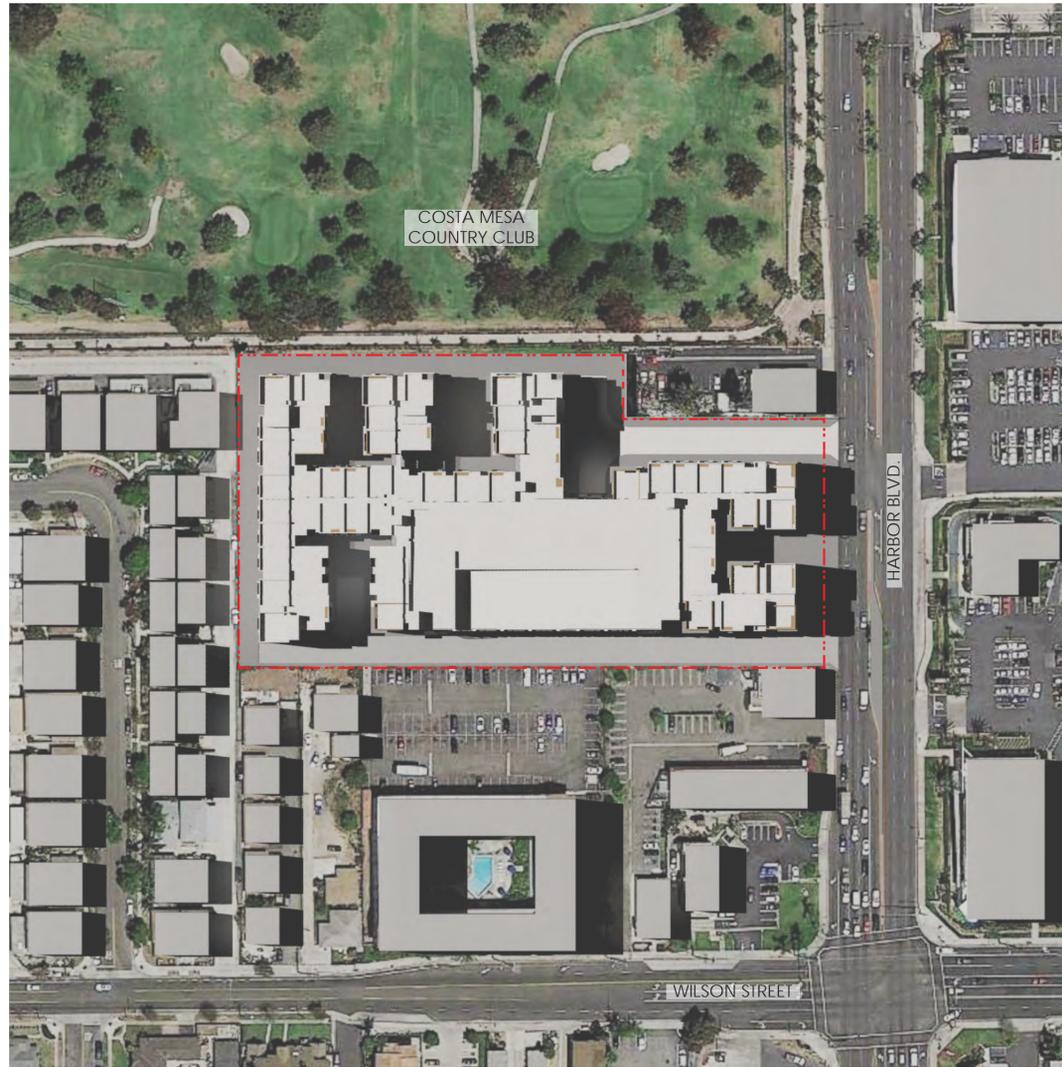
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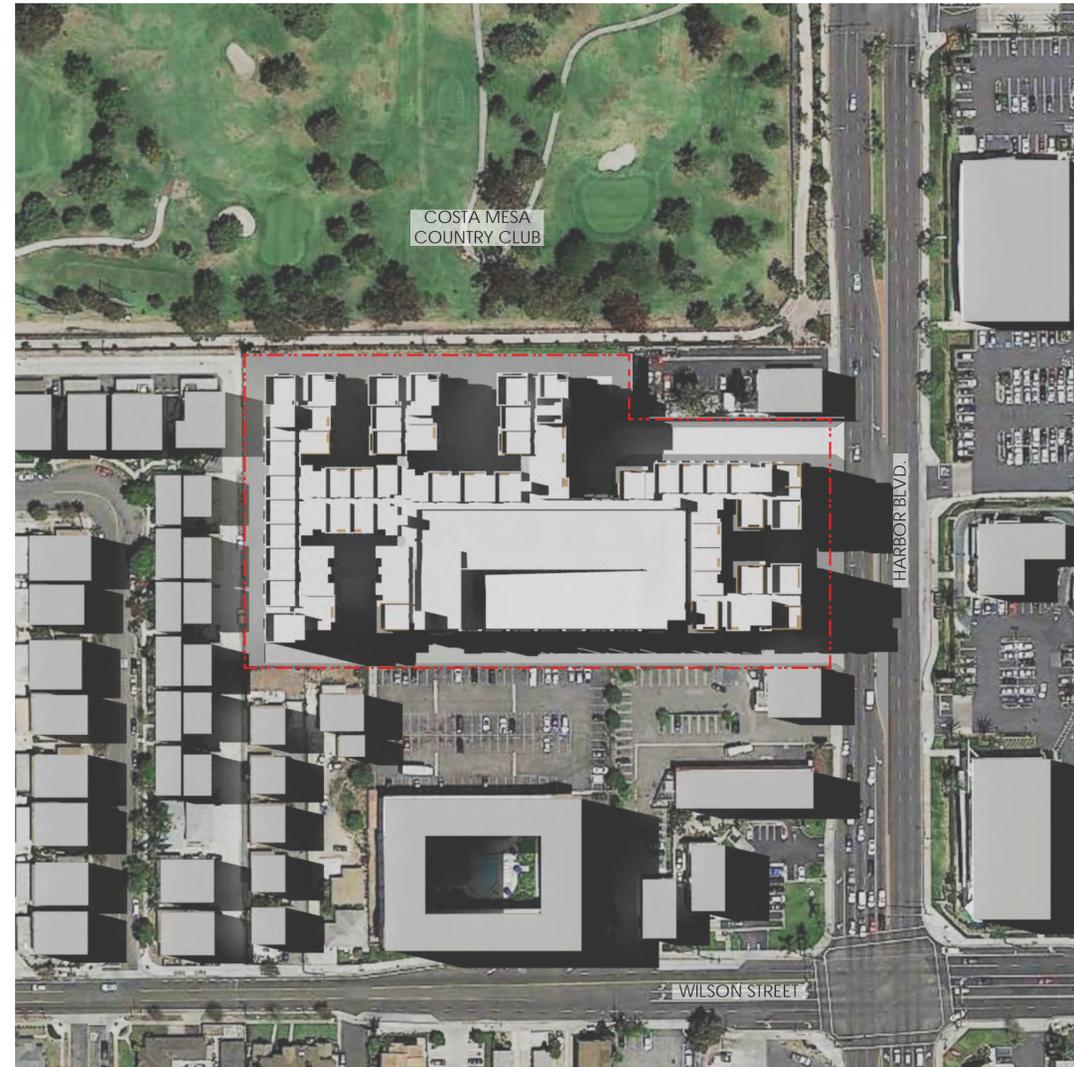
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SHADE & SHADOW REPORT - SUMMER SOLSTICE

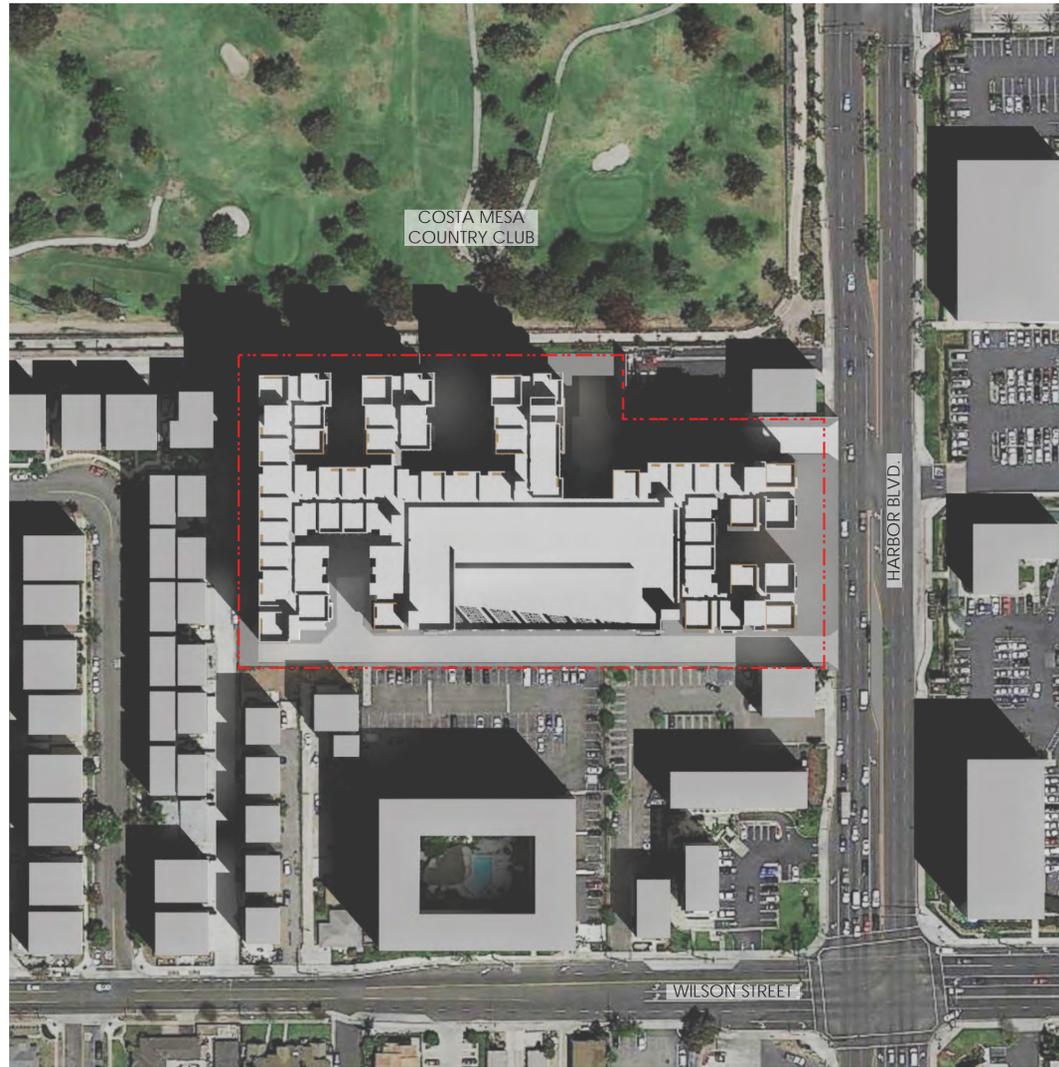
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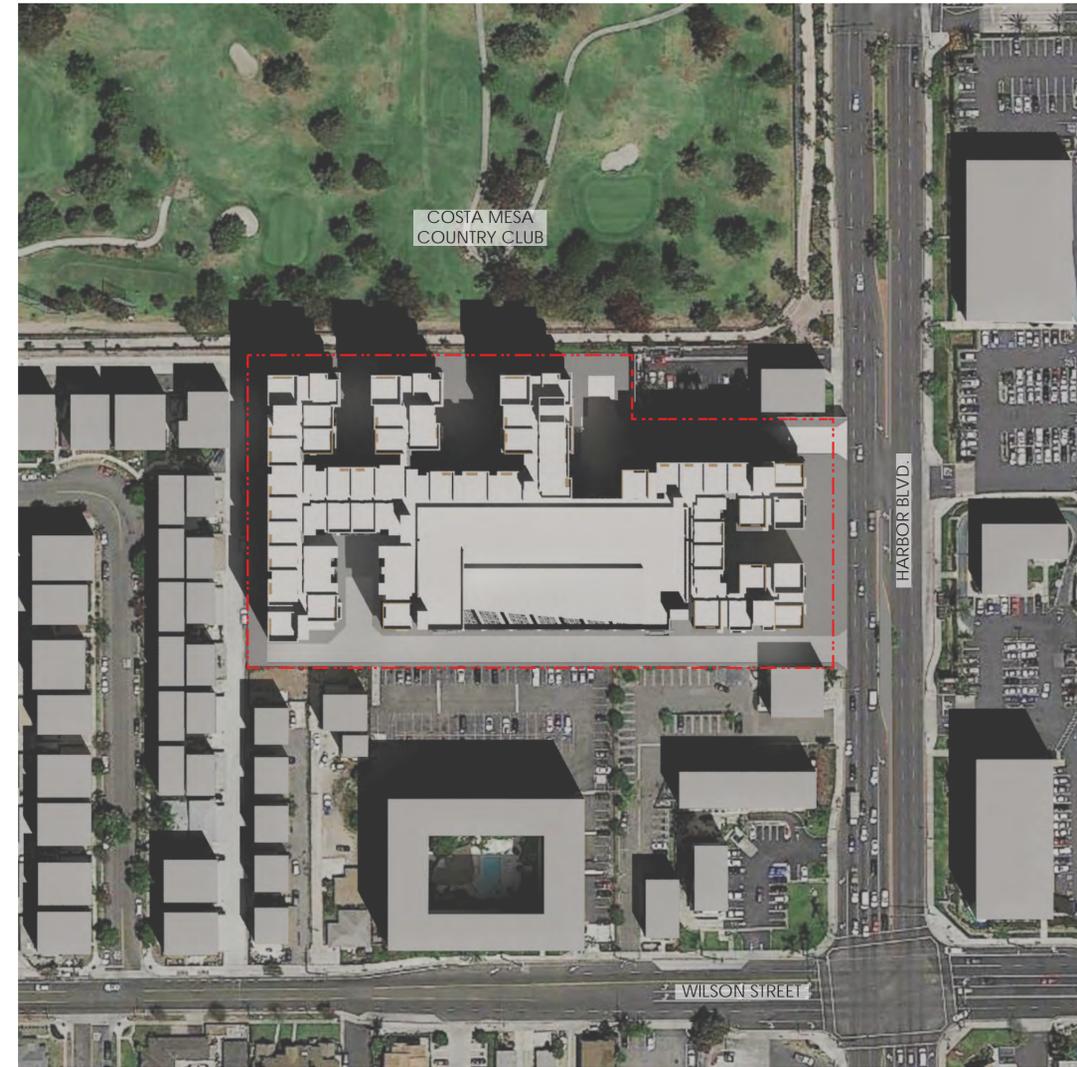
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SHADE & SHADOW REPORT - WINTER SOLSTICE

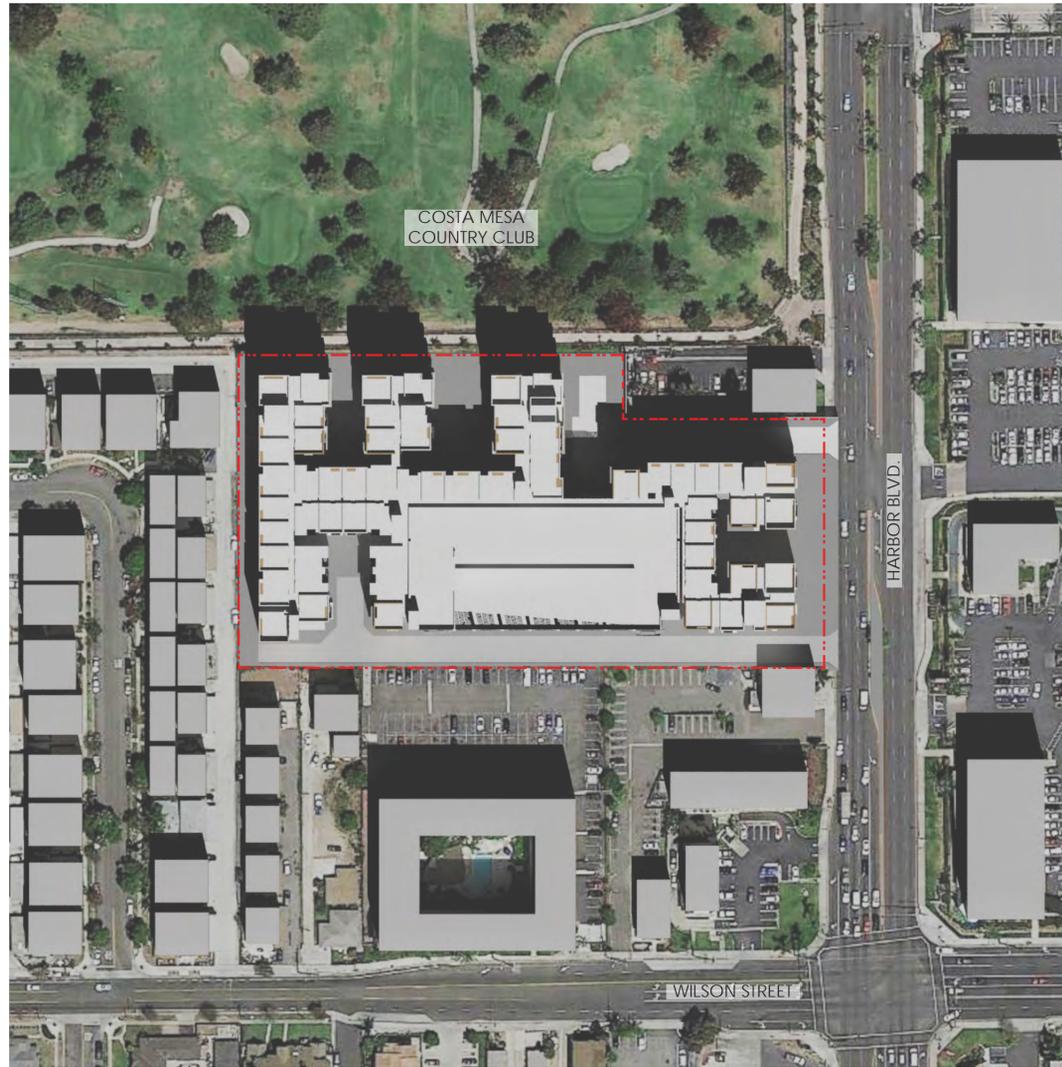
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SHADE & SHADOW REPORT - WINTER SOLSTICE

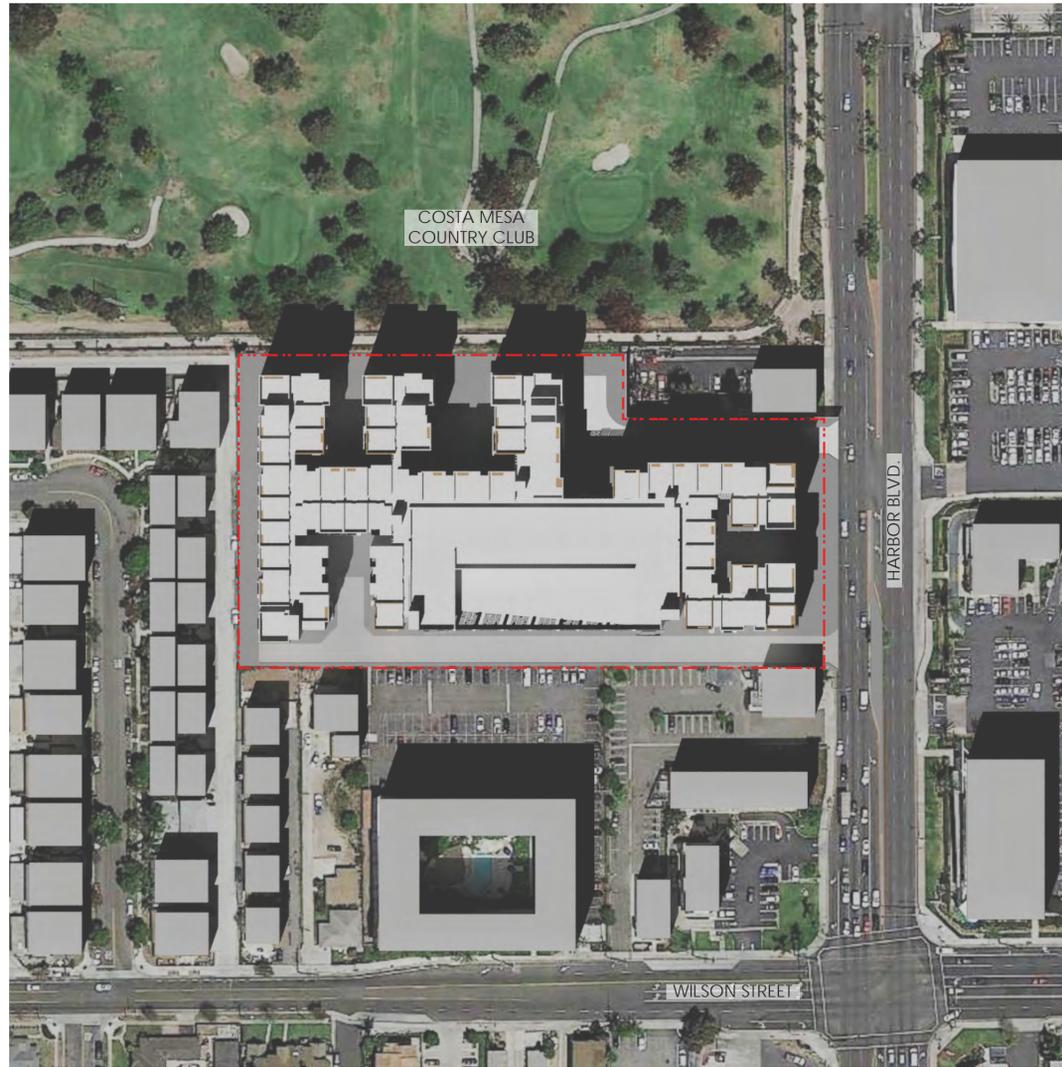
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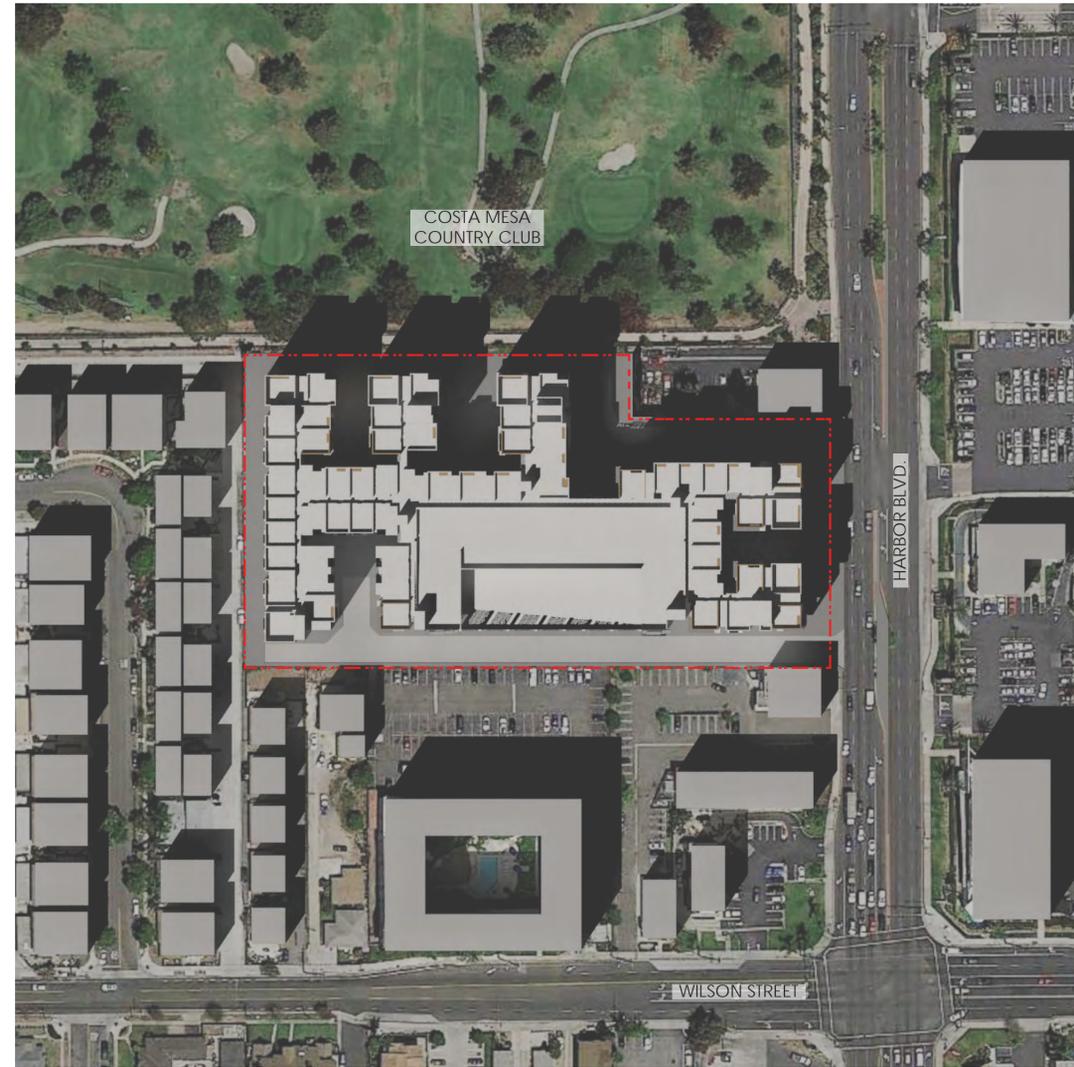
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SHADE & SHADOW REPORT - WINTER SOLSTICE

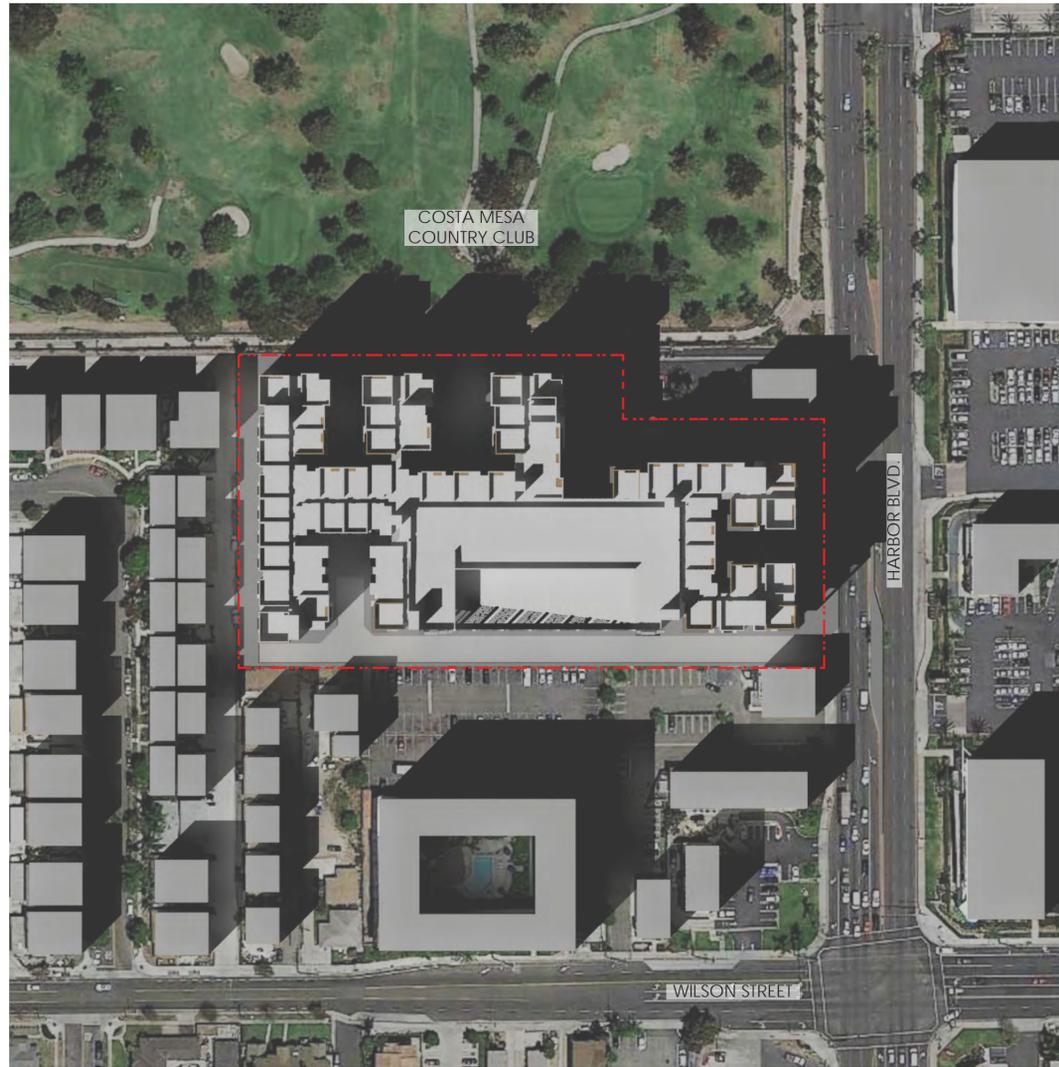
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SHADE & SHADOW REPORT - WINTER SOLSTICE

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