

August 10, 2023

James Atkins, Senior Planner
Planning/Code Enforcement Division
610 Foster City Boulevard
Foster City, CA 94404

RE: Shading Study for 612 Bridgeport Ln

Dear Mr. Atkins,

We, the owners of Bridgeport performed a shading study to compare sunlight exposure impacts of the proposed second story addition at 612 Bridgeport Ln upon its adjacent neighbor properties.

Our methodology included creating three dimensional models of the two adjacent homes as well as the home of the proposed project. We then analyzed shading impacts both before and after the addition.

The pre-addition analysis reveals shading cast by our property onto the northern home (610 Bridgeport) only, and no shade cast upon the southern home (613 Plymouth).

The post-addition analysis shows impact on the northern home (610 Bridgeport). Specifically, some of its living room windows and its set of bay-style kitchen windows would have some morning and afternoon shading on March 21 and on September 21. For December 21, some of its Living Room windows will experience shading. It's important to note that its Living Room has a Sliding Glass door to its rear patio and that this opening is unaffected. There is no shade impact on June 21.

The southern home (613 Plymouth) experiences no impact, as it neither has any windows facing the subject property, nor does it experience additional shade cast upon it by the proposed addition.



Figure 1: Front view of 612 Bridgeport Ln



Figure 2: Birdseye view. North to South are 610 Bridgeport, 612 Bridgeport, 613 Plymouth

The following table summarizes the results and answers the requested questions of Foster City's adopted solar impact policy *in italics below*.

Scope of the Study: Shade and shadow studies are required for 9am, 12pm and 3pm on December 21 (the winter solstice) and June 21 (the summer solstice) and March

21/September 21 (during the Spring and Fall season) that identify the shadow effect the proposal may have on all adjacent properties.

Table 1 Shading study Summary	610 Bridgeport Ln
a. From which direction does the adjacent house receive direct sunlight?	South, East, West
b. When does the adjacent house currently receive direct sunlight? ¹	Sunrise to Sunset
c. Will the addition create any loss of sunlight to any window of an adjacent house?	Yes
d. If so, what rooms will be impacted (i.e., Kitchen, living room, bedroom, etc.)? ²	Living Room and Kitchen
e. During which season(s) of the year will there be an impact?	Spring, Fall, Winter
f. During each season with an impact, what hours of the day will the sunlight be lost? ³	<ul style="list-style-type: none"> • Living Room Spring: 10:15AM to 1:45PM • Kitchen Spring: 10:15AM to 3PM • Living Room Fall: 10AM to 1:15PM • Kitchen Fall: 9:45AM to 2:20PM • Living Room Winter: 2PM to 3PM • Kitchen Winter: none
g. How many hours of sunlight are lost at each season?	<ul style="list-style-type: none"> • Living Room Spring: < 3hr:30m for 2 of 3 windows • Kitchen Spring: < 4hr:45m • Living Room Fall: < 3hr:15m for 2 of 3 windows • Kitchen Fall: < 4hr:20m • Living Room Winter: < 1hr:00m for some living room • Kitchen Winter: none
h. How many hours of direct sunlight will be retained at each impacted season, and at what approximate time of the day is this? ⁴	<ul style="list-style-type: none"> • Living Room Spring: 11:15AM to sunset • Kitchen Spring: <9:00AM to 10:30AM and 1PM to >3PM • Summer: Direct sunlight retained at all times • Living Room, Fall: 10:30AM to sunset • Kitchen Fall: Sunrise to 10:15AM and 12:30PM to sunset • Winter: Direct sunlight retained at all times

¹ Home is oriented east/west. Home receives sunlight at the front of the home in the morning and at the rear of the home in the afternoons.

² Where an impact to the living room is described, two of the living rooms' three windows are impacted. While the Third and largest Sliding door window is East Facing and is not impacted.

³ "Loss" as interpreted as loss of any amount of sunlight.

⁴ Some ambiguity with definition of "direct sunlight retained". Rather than restating the inverse of answers to questions f and g here, we provide times when impacted rooms receive any direct rays of sunlight and including when rooms receive any direct rays of sunlight through another wall, specifically the westward facing patio door in the living room.

The Analysis images are included in the following pages. A folder containing calculation verifications, video animations, and the original CAD files are available via dropbox link here:
<https://www.dropbox.com/sh/cgyikcbrkfdjvi/AADY0D6V1G1Nx51tRZN2nn7La?dl=0>

Sincerely,

A handwritten signature in black ink, appearing to read "Benji Chiu", with a stylized flourish underneath.

Benjamin Chiu
Owner, 612 Bridgeport Ln

650.380.8333

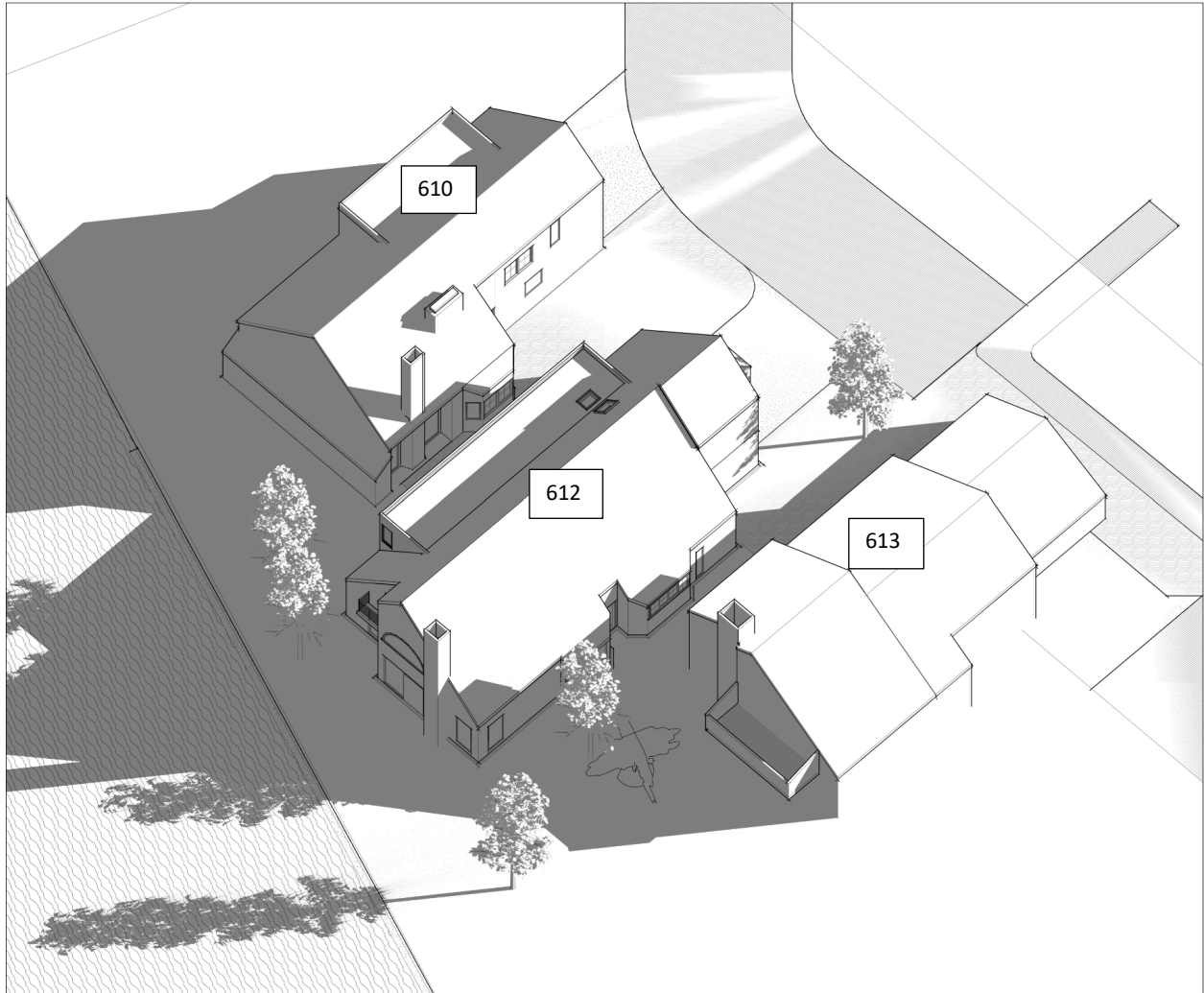


Figure 3 March 21 9:00AM



Figure 4 March 21 12:00PM



Figure 5 March 21 3:00PM



Figure 6 June 21 9:00AM



Figure 7 June 21 12:00PM

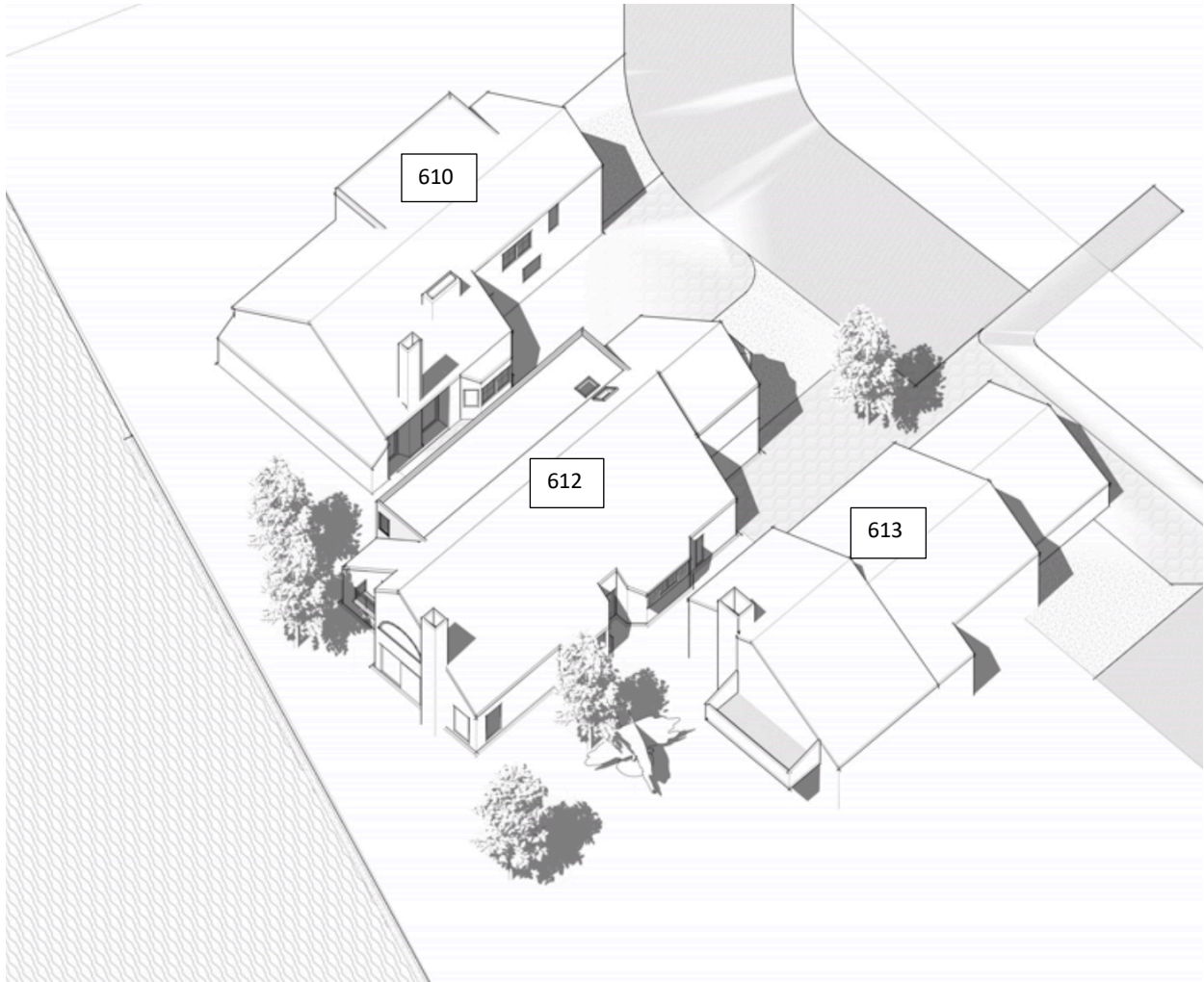


Figure 8 June 21 3:00PM



Figure 9 Sep 21 9:00AM



Figure 10 Sep 21 12:00PM

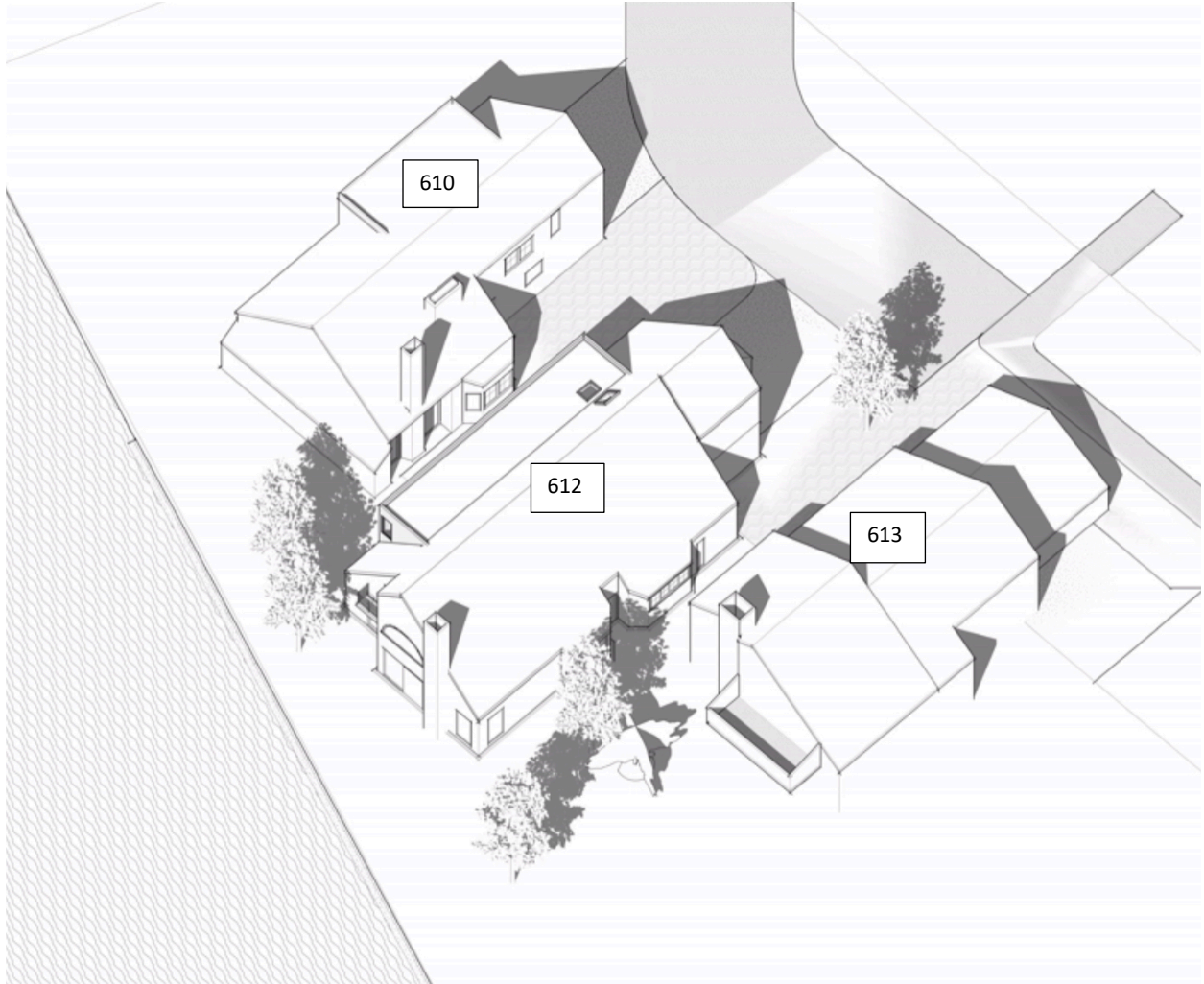


Figure 11 Sep 21 3:00PM

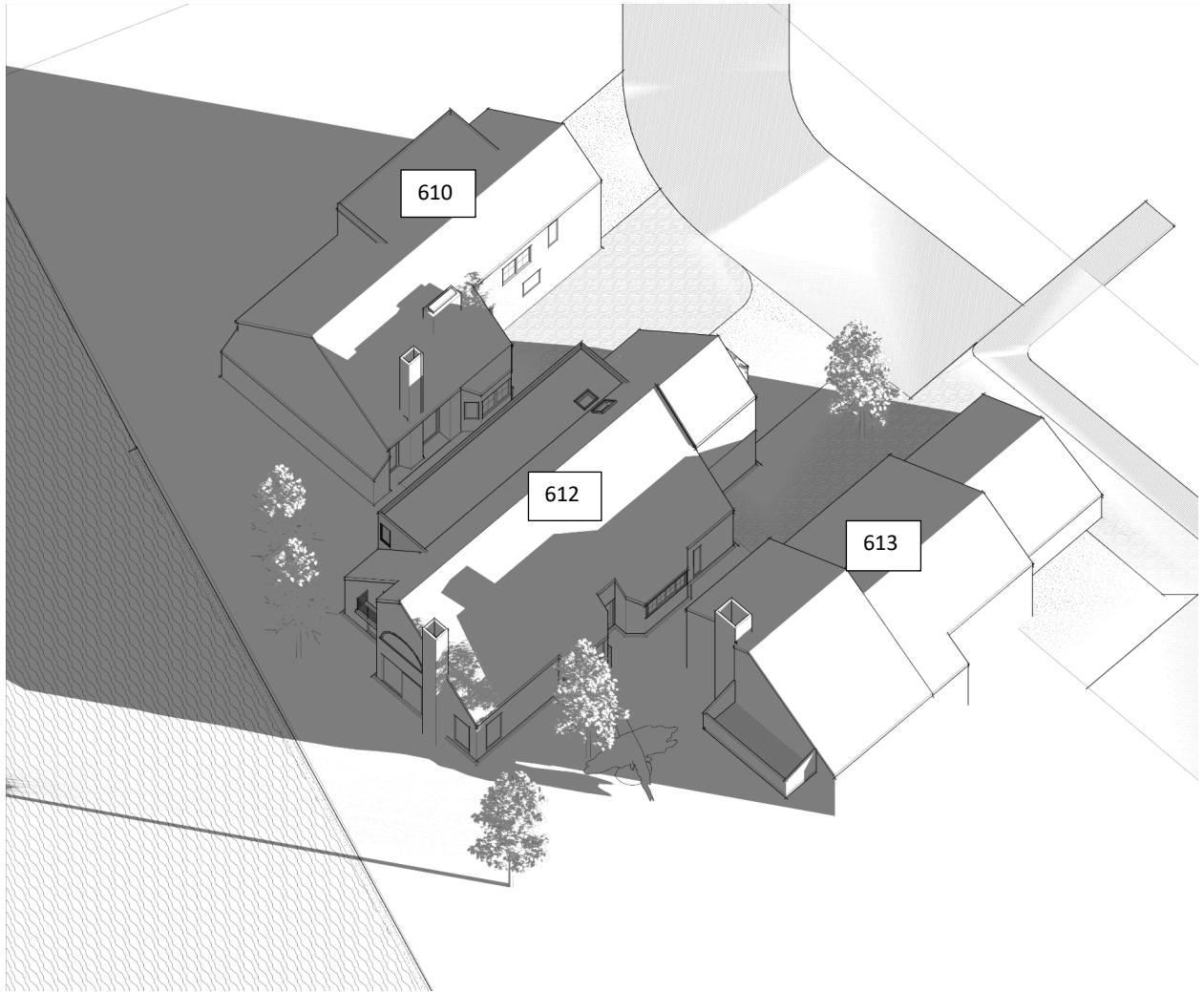


Figure 12 Dec 21 9:00AM



Figure 13 Dec 21 12:00PM

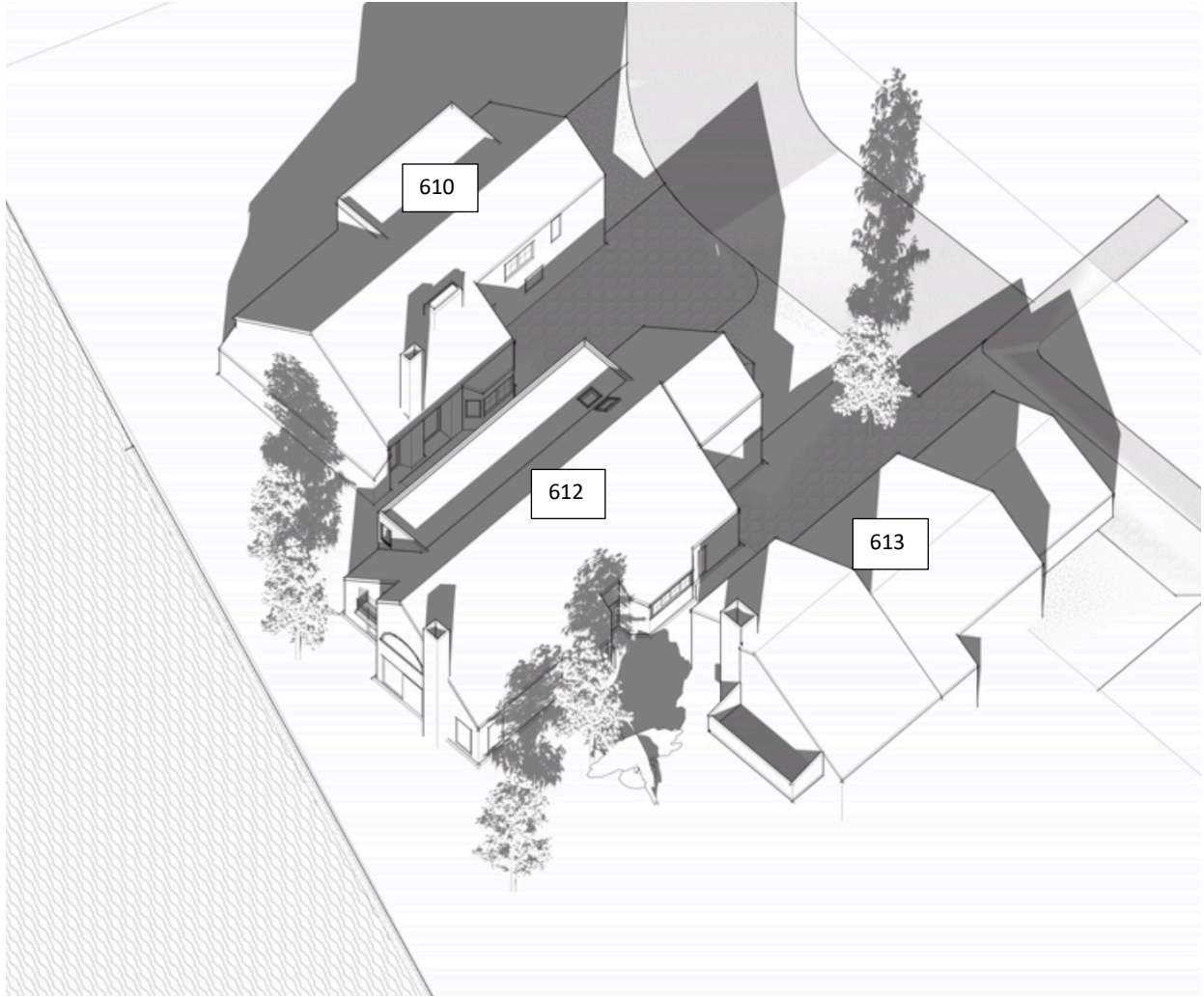
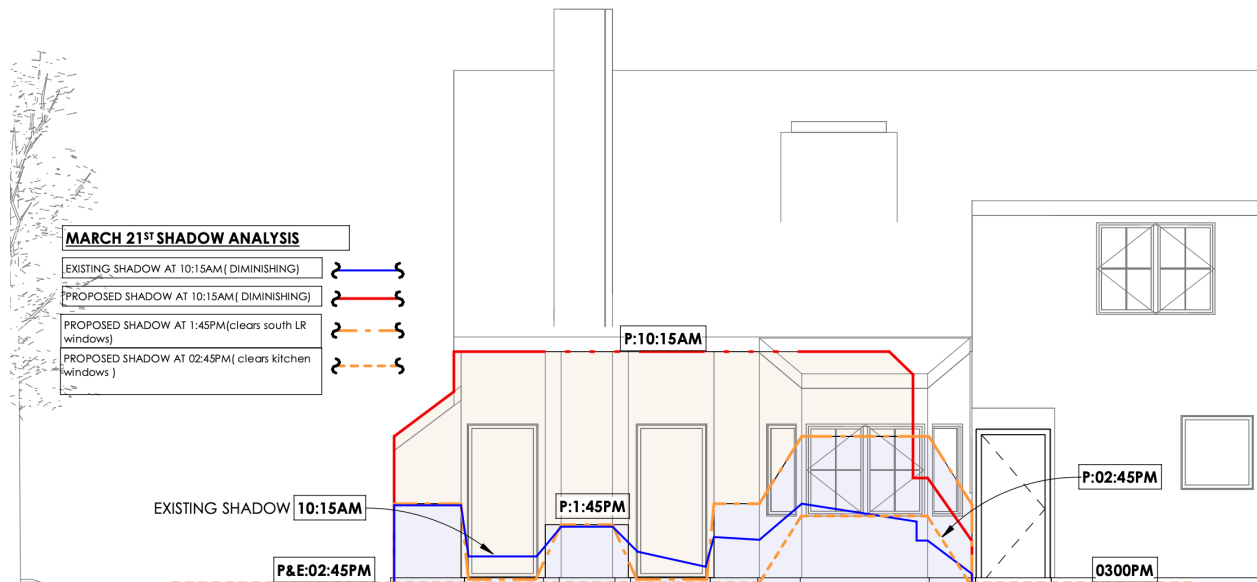
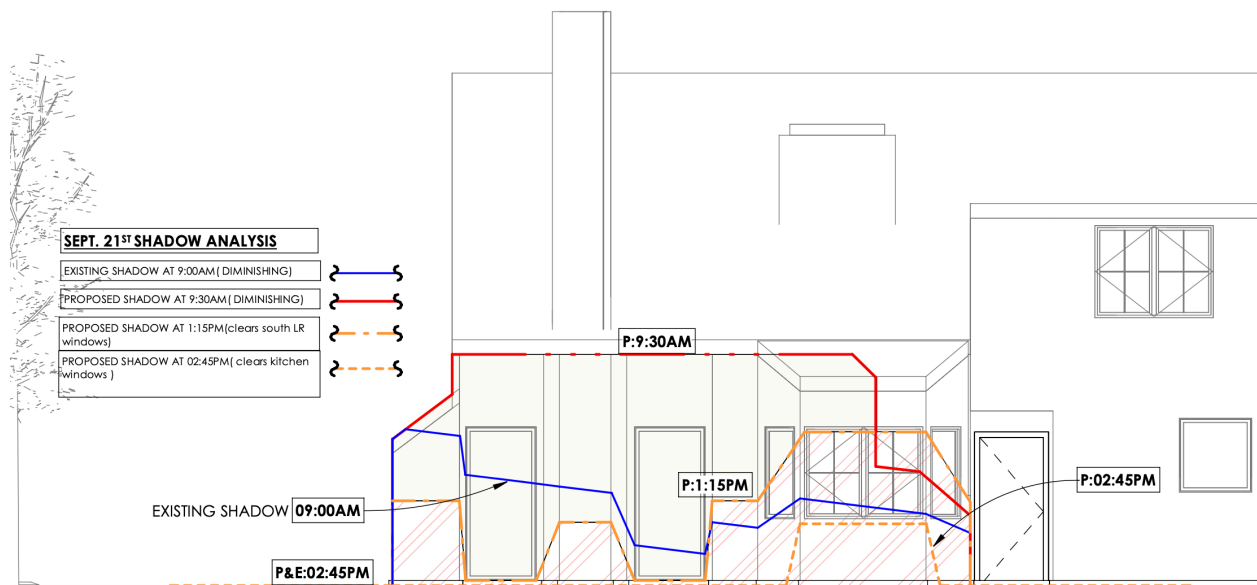


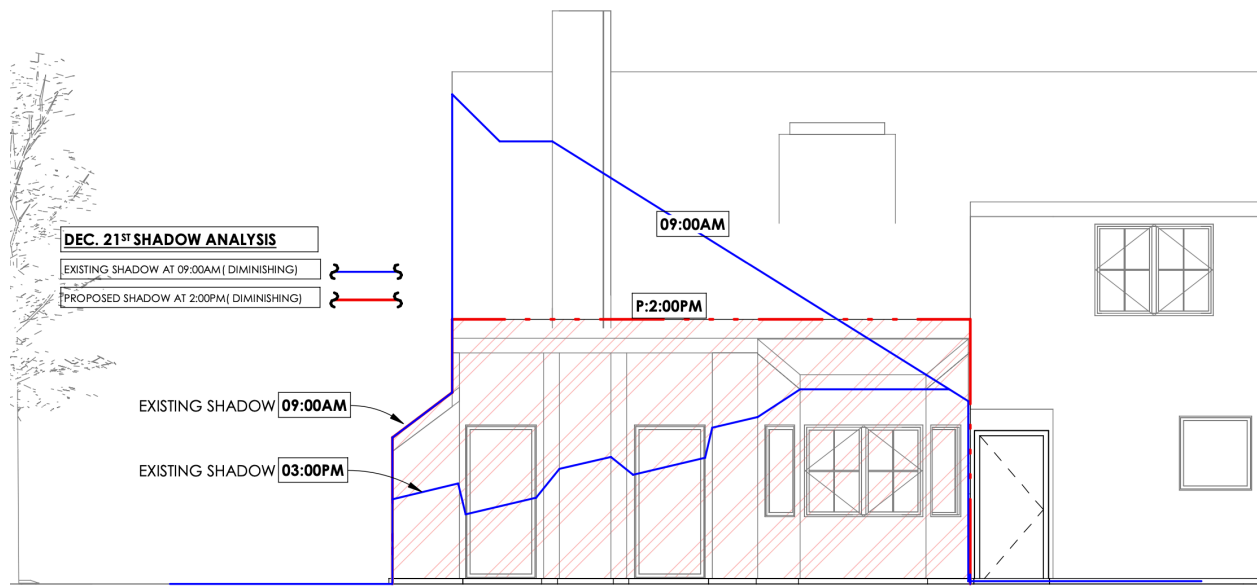
Figure 14 Dec 21 3:00PM



1 01_MAR. 21_SHADOW PROFILE
1/8" = 1'-0"



2 02_SEPT. 21_SHADOW PROFILE
1/8" = 1'-0"



③ 03 DEC. 21 SHADOW PROFILE
 1/8" = 1'-0"

Existing				
Date	Type	Address	Affect High Use Rooms / Spaces?	Affect Low Use Rooms / Spaces
21-Mar	Existing	610 Bridgeport Ln	Does not impact home	Does not impact home
21-Jun	Existing	610 Bridgeport Ln	Does not impact home	Does not impact home
21-Sep	Existing	610 Bridgeport Ln	Does not impact home	Does not impact home
21-Dec	Existing	610 Bridgeport Ln	Does not impact home	Does not impact home
21-Mar	Existing	611 Plymouth Ln	Does not impact home	Does not impact home
21-Jun	Existing	611 Plymouth Ln	Does not impact home	Does not impact home
21-Sep	Existing	611 Plymouth Ln	Does not impact home	Does not impact home
21-Dec	Existing	611 Plymouth Ln	Does not impact home	Does not impact home

Proposed				
Date	Type	Address	Affect High Use Rooms / Spaces?	Affect Low Use Rooms / Spaces
21-Mar	Proposed	610 Bridgeport Ln	Living Room = + 3:30 Hrs of shadow from 1015 to 1345 Kitchen = + 4:45 Hrs of shadow from 1015 to 1500	Does not Impact Home
21-Jun	Proposed	610 Bridgeport Ln	Does not Impact Home	Does not Impact Home
21-Sep	Proposed	610 Bridgeport Ln	Living Room = + 3:15 Hrs of shadow from 1000 to 1315 Kitchen = + 4:20 Hrs of shadow from 945 to 1420	Does not Impact Home
21-Dec	Proposed	610 Bridgeport Ln	Living room = Partial shadow +1:00 Hr from 1400 to 1500. Kitchen = no additional shadow impact	Does not Impact Home
21-Mar	Proposed	611 Plymouth Ln	Does not impact home	Does not impact home
21-Jun	Proposed	611 Plymouth Ln	Does not impact home	Does not impact home
21-Sep	Proposed	611 Plymouth Ln	Does not impact home	Does not impact home
21-Dec	Proposed	611 Plymouth Ln	Does not impact home	Does not impact home