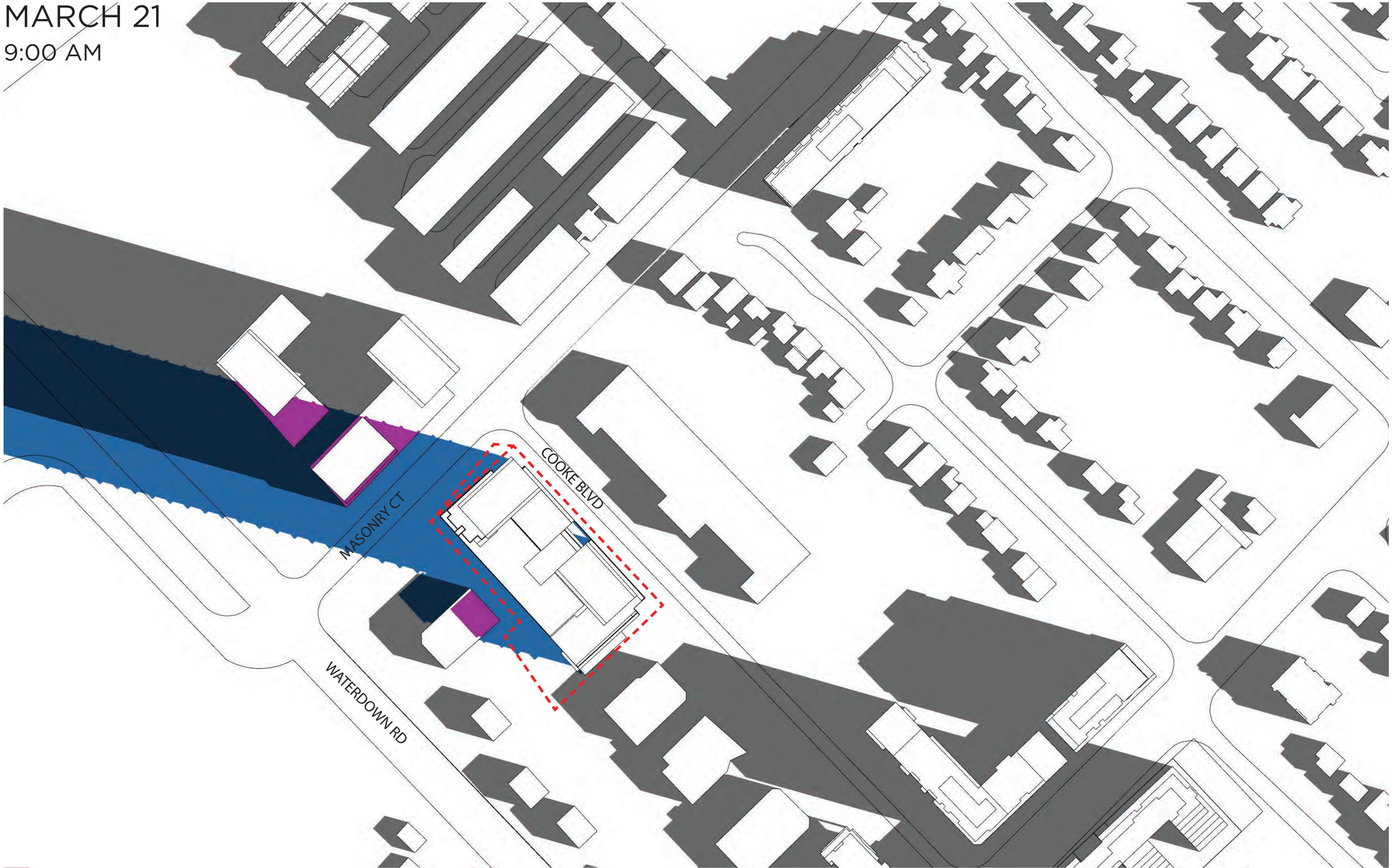
180072 - COOKE BOULEVARD

SHADOW STUDY
AUGUST 22 2022 | SCALE AS INDICATED

The proposed building at Cooke Boulevard, Burlington - and its resultant massing - fits all criteria with reference to the City's Shadow Impact Criteria. The specific points that relate to this site are as follows: Private Outdoor Amenity Spaces, and Public Realm and Sidewalks.

There are private rear yards and rooftop patios to the North and East of the subject site, a public sidewalk/boulevard adjacent to Masonry Ct to the North of the site, and a public sidewalk/boulevard adjacent to Cooke Blvd to the West of the site. The proposed masing results in a calculated SAF of 0.856 for Rear Yards and 0.6 for Private Outdoor Amenity Spaces and Rooftop Patios which are well above the minimum requirement of 0.22. The proposed masing also results in a calculated SAF of 0.5 for Public Realm and Sidewalks onto Masonry Ct, which satisfies the requirement of 0.5. The proposed masing also results in a calculated SAF of 0.5 for Public Realm and Sidewalks onto Cooke Boulevard, which satisfies the requirement of 0.5.

MARCH 21
9:00 AM



NET NEW SHADOWS CAST ON ROOF SURFACES

NET NEW SHADOWS CAST ON GROUND SURFACES

SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES

SITE BOUNDARY

OPEN SPACE

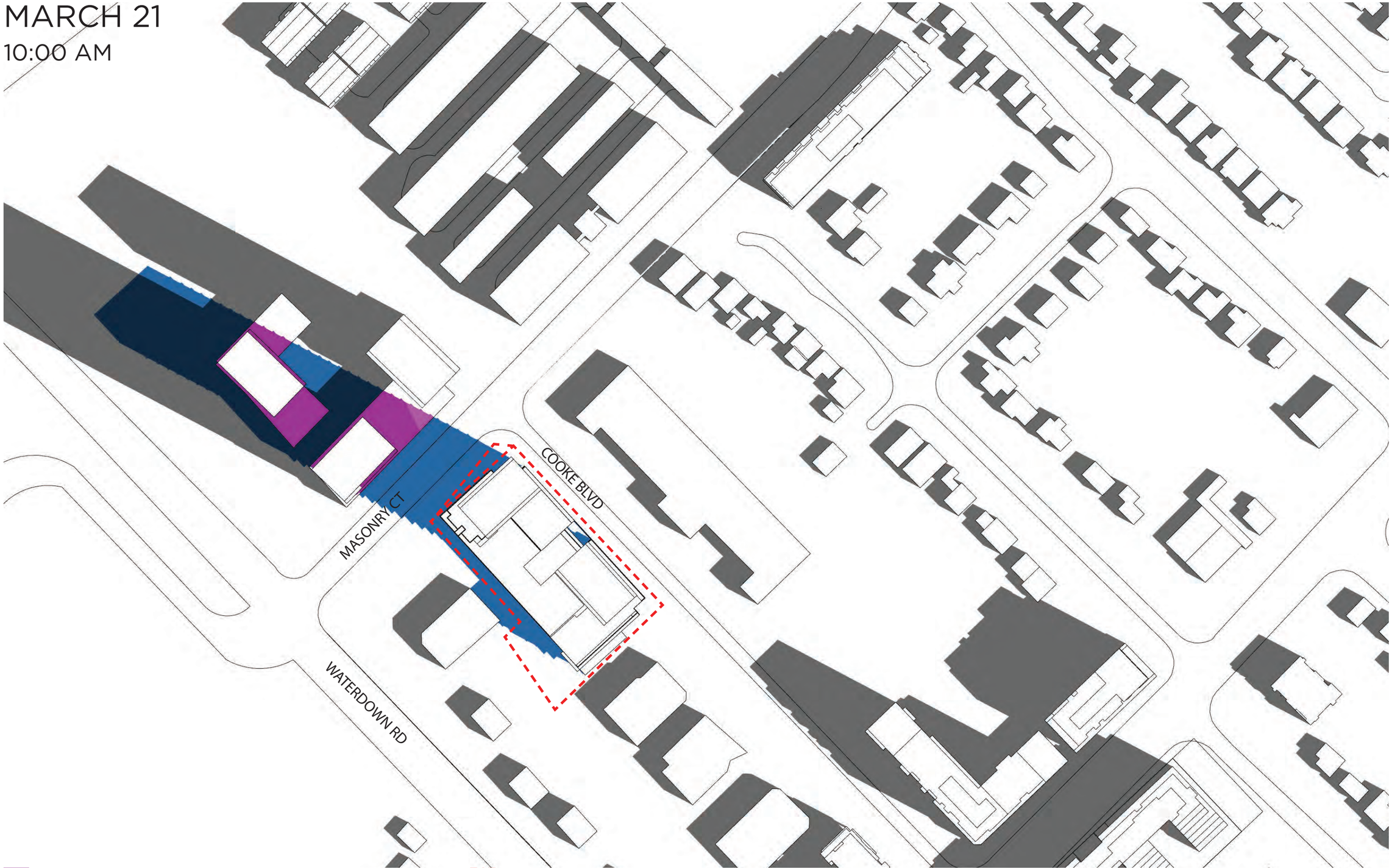
N

25 m 50 m 100 m

SCALE = 1:1650

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

MARCH 21
10:00 AM



NET NEW SHADOWS CAST ON ROOF SURFACES

NET NEW SHADOWS CAST ON GROUND SURFACES

SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES

SITE BOUNDARY

OPEN SPACE

N

25 m 50 m 100 m

SCALE = 1:1650

RAW

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

MARCH 21
11:00 AM



NET NEW SHADOWS CAST ON ROOF SURFACES

NET NEW SHADOWS CAST ON GROUND SURFACES

SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES

SITE BOUNDARY

OPEN SPACE

N

25 m 50 m 100 m

SCALE = 1:1650

RAW

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

MARCH 21
12:00 PM



NET NEW SHADOWS CAST ON ROOF SURFACES

NET NEW SHADOWS CAST ON GROUND SURFACES

SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES

SITE BOUNDARY

OPEN SPACE

N

25 m 50 m 100 m

SCALE = 1:1650

RAW

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

MARCH 21
01:00 PM



NET NEW SHADOWS CAST ON ROOF SURFACES

NET NEW SHADOWS CAST ON GROUND SURFACES

SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES

SITE BOUNDARY

OPEN SPACE

N

25 m 50 m 100 m

SCALE = 1:1650

RAW

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

MARCH 21
02:00 PM



NET NEW SHADOWS CAST ON ROOF SURFACES

NET NEW SHADOWS CAST ON GROUND SURFACES

SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES

SITE BOUNDARY

OPEN SPACE

N

25 m 50 m 100 m

SCALE = 1:1650

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

MARCH 21
03:00 PM



NET NEW SHADOWS CAST ON ROOF SURFACES

NET NEW SHADOWS CAST ON GROUND SURFACES

SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES

SITE BOUNDARY

OPEN SPACE

N

25 m 50 m 100 m

SCALE = 1:1650

RAW

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

MARCH 21
04:00 PM



NET NEW SHADOWS CAST ON ROOF SURFACES

NET NEW SHADOWS CAST ON GROUND SURFACES

SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES

SITE BOUNDARY

OPEN SPACE

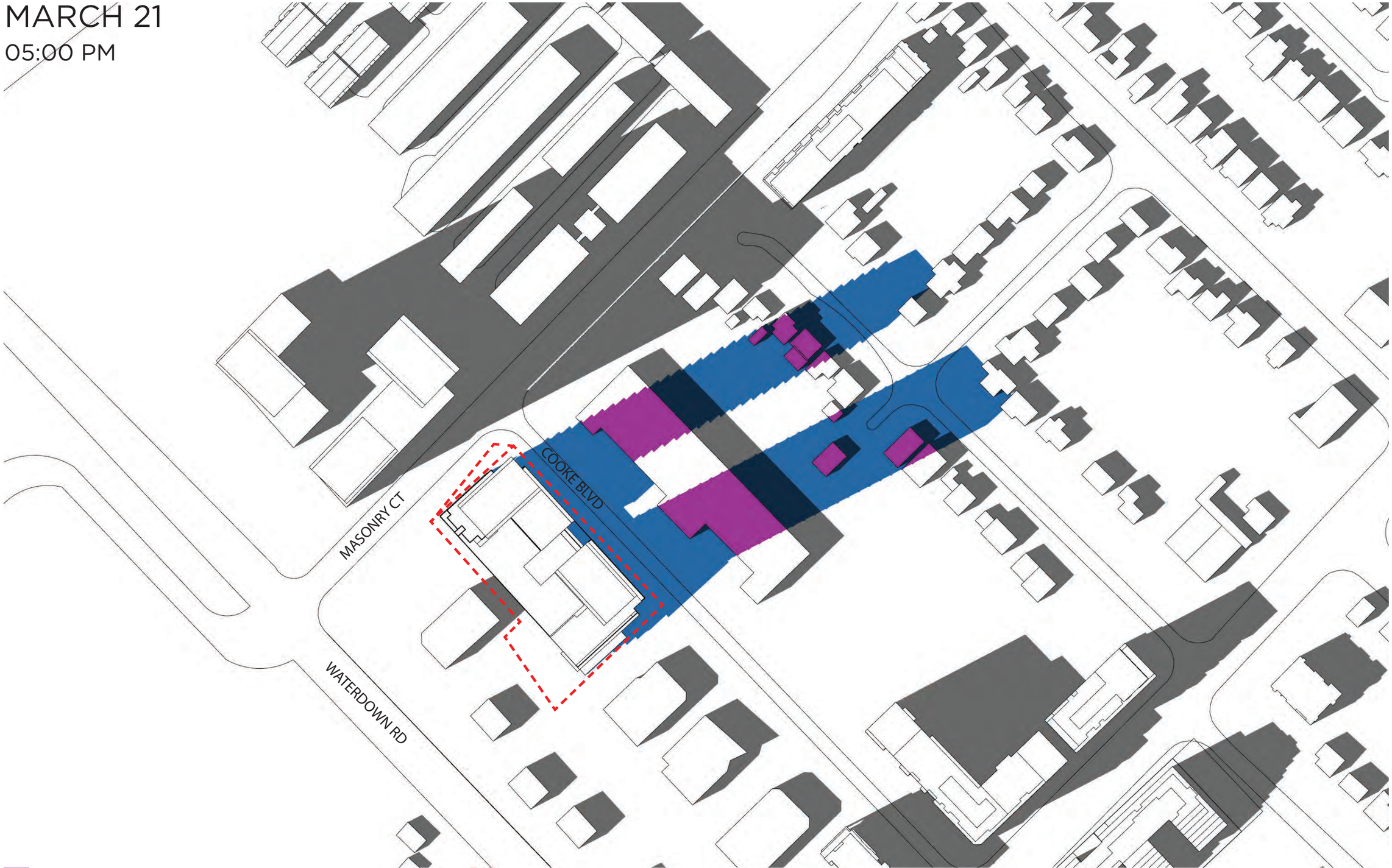
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SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

MARCH 21
05:00 PM



NET NEW SHADOWS CAST ON ROOF SURFACES

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SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES

SITE BOUNDARY

OPEN SPACE

N

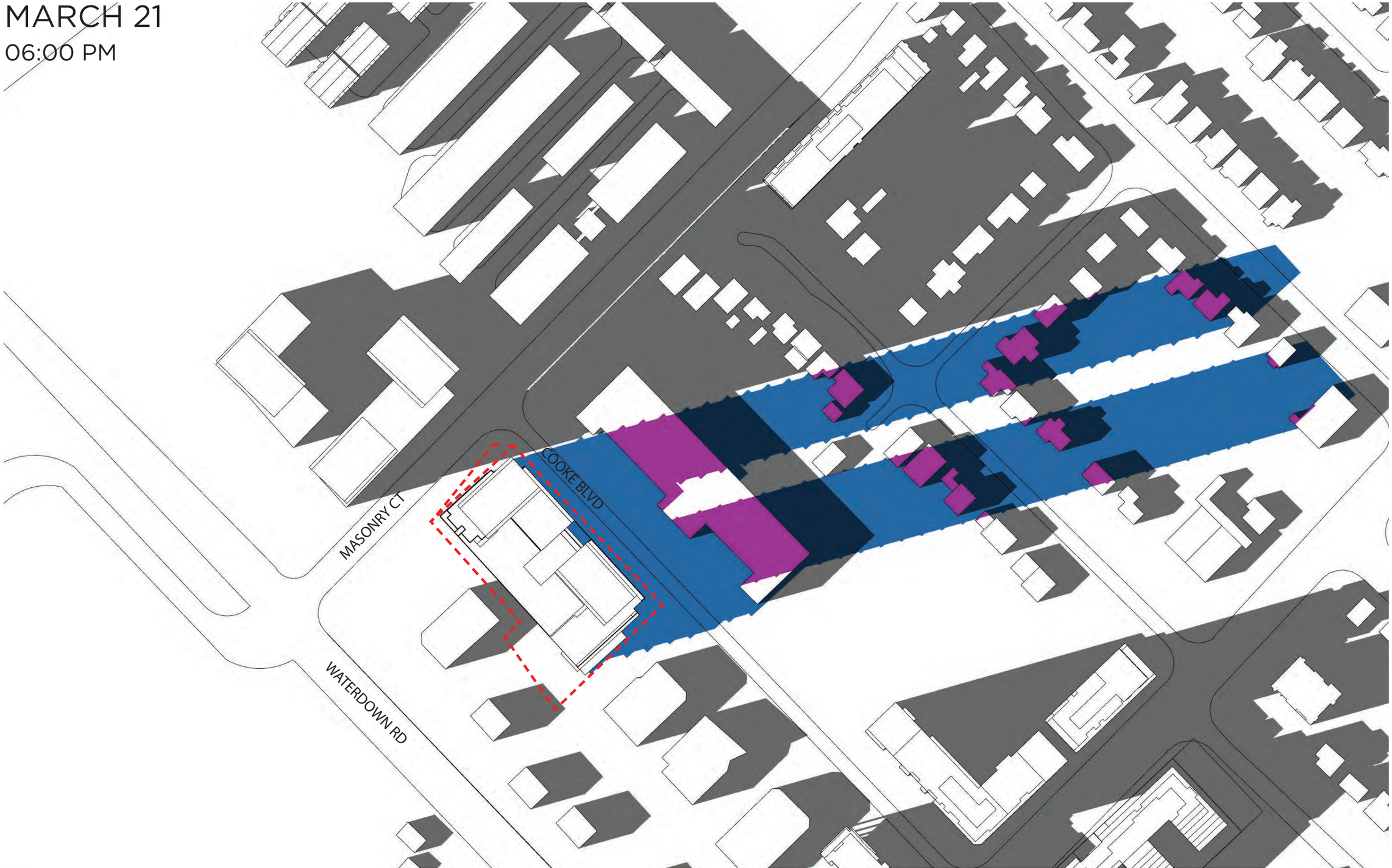
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RAW

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

MARCH 21
06:00 PM



NET NEW SHADOWS CAST ON ROOF SURFACES

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SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES

SITE BOUNDARY

OPEN SPACE

N

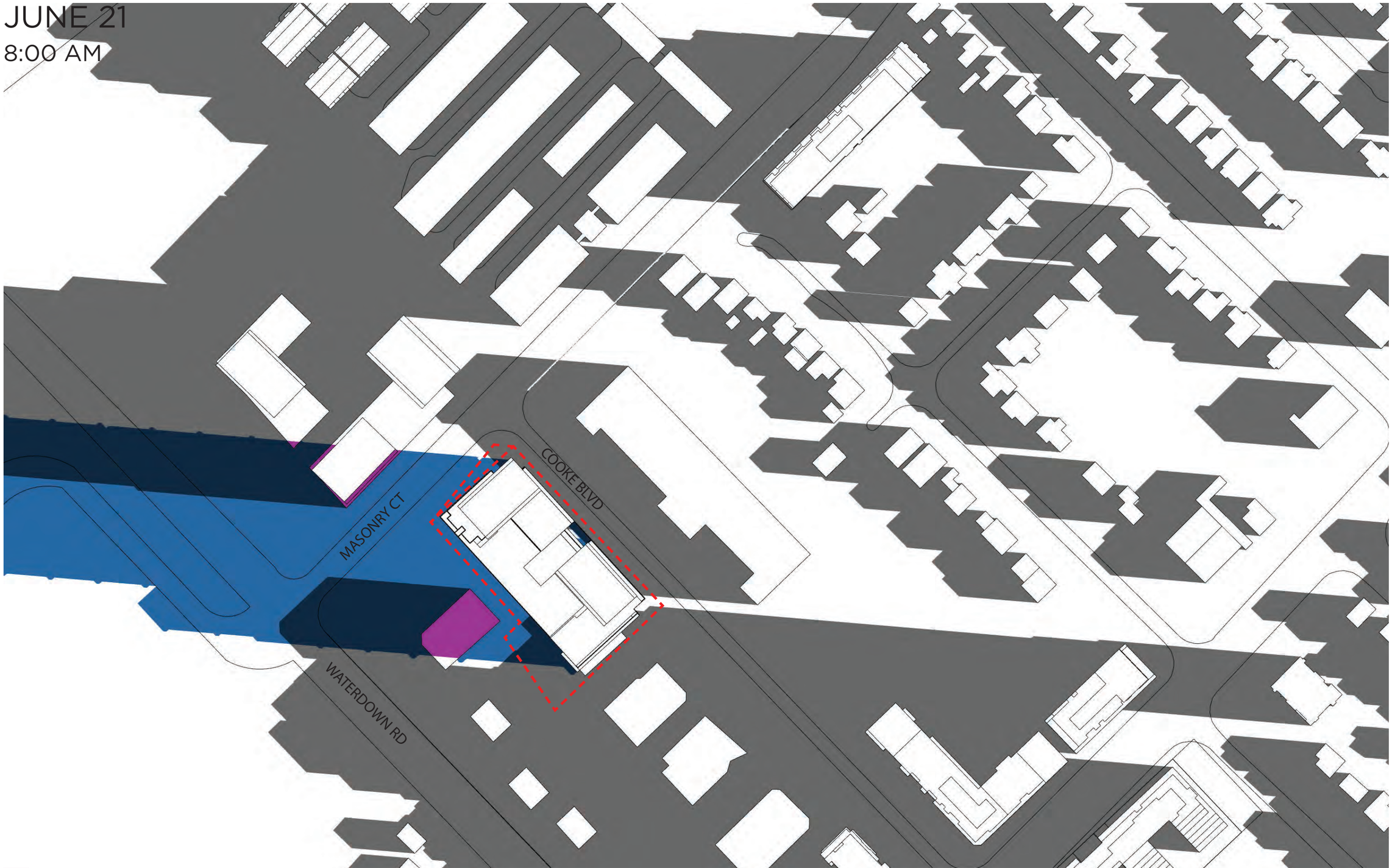
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SCALE = 1:1650

RAW

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

JUNE 21
8:00 AM



NET NEW SHADOWS CAST ON ROOF SURFACES

NET NEW SHADOWS CAST ON GROUND SURFACES

SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES

SITE BOUNDARY

OPEN SPACE

N

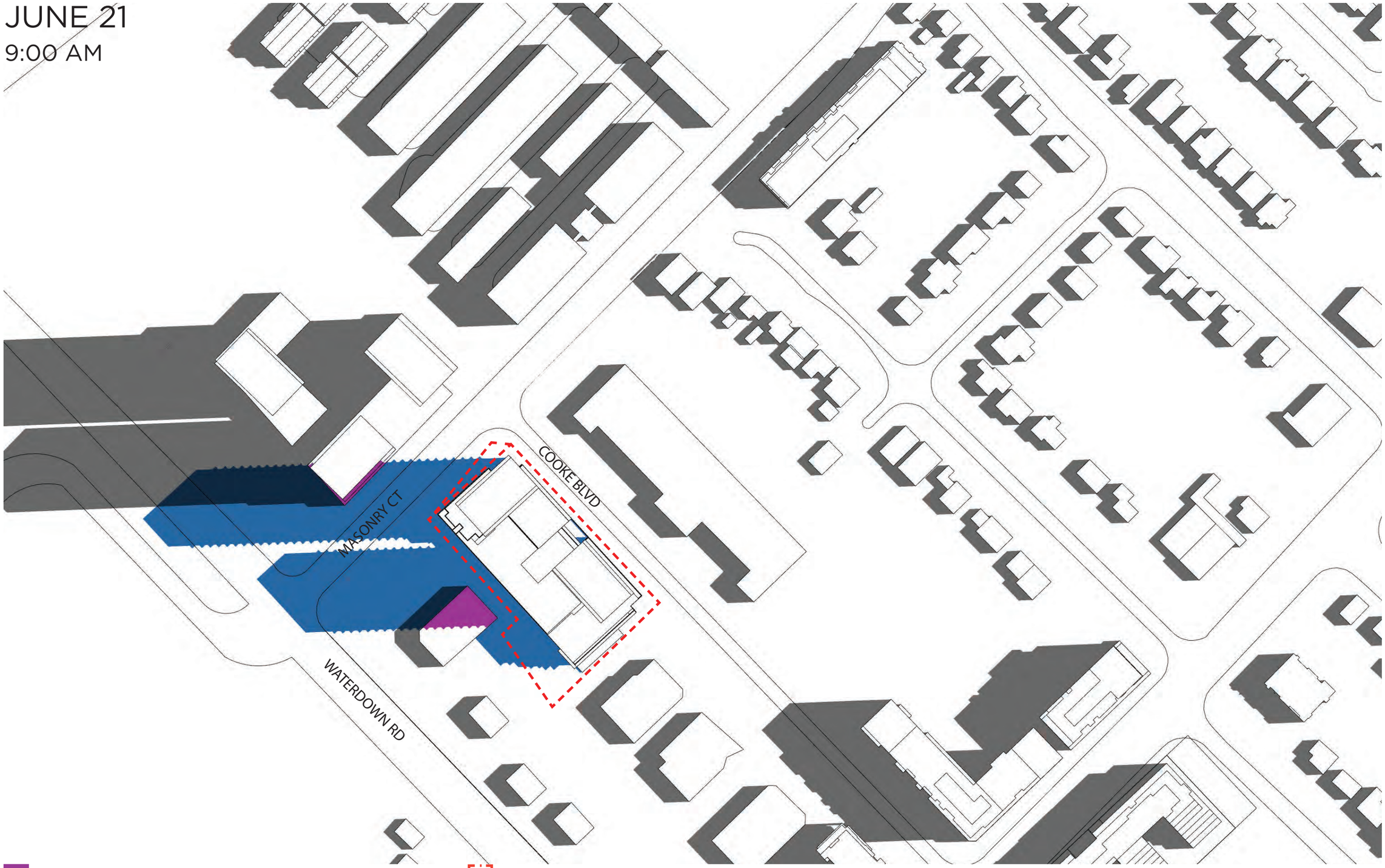
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RAW

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

JUNE 21
9:00 AM



NET NEW SHADOWS CAST ON ROOF SURFACES
NET NEW SHADOWS CAST ON GROUND SURFACES
SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES
SITE BOUNDARY
OPEN SPACE

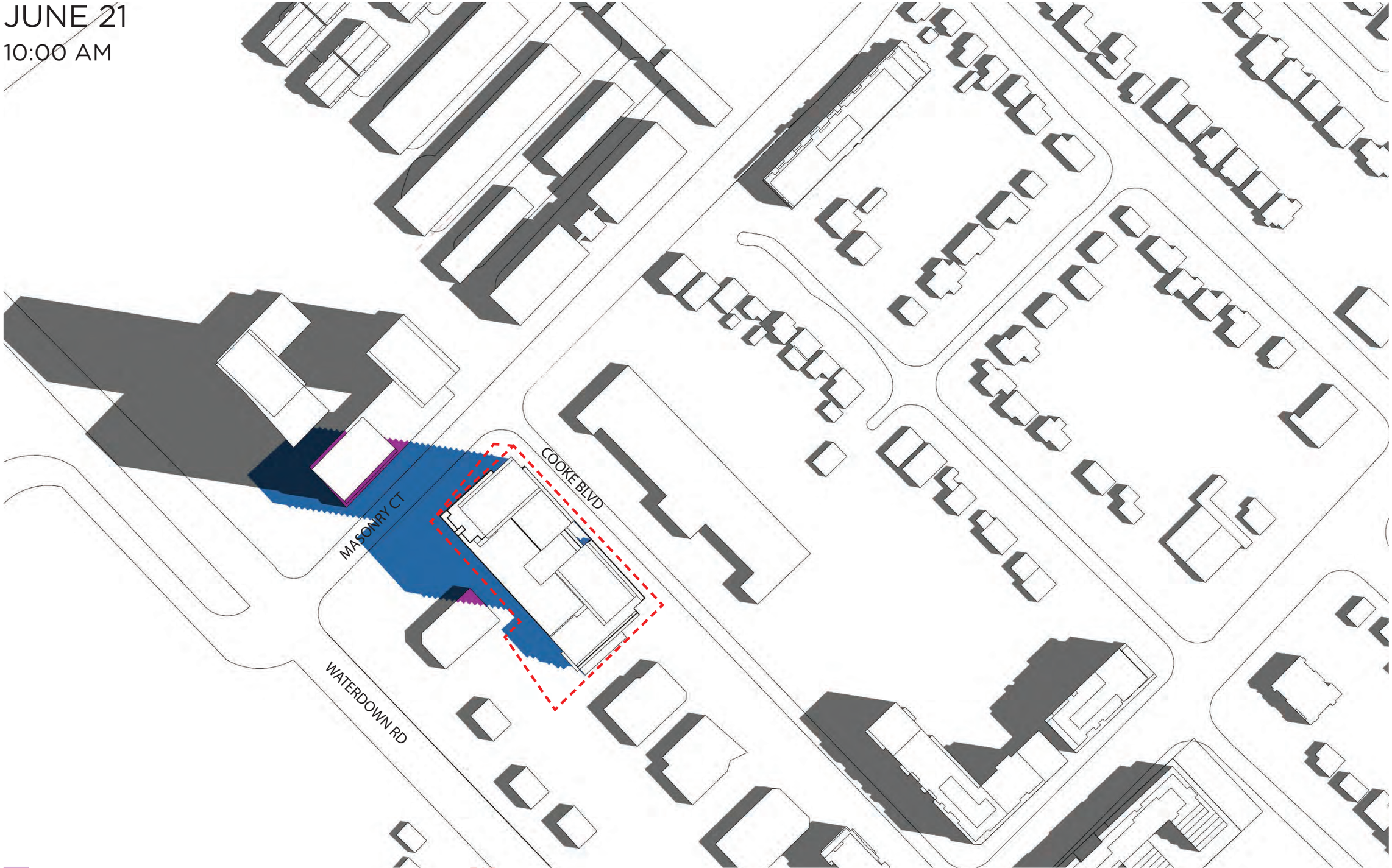
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SCALE = 1:1650

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

JUNE 21
10:00 AM



NET NEW SHADOWS CAST ON ROOF SURFACES

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SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES

SITE BOUNDARY

OPEN SPACE

N

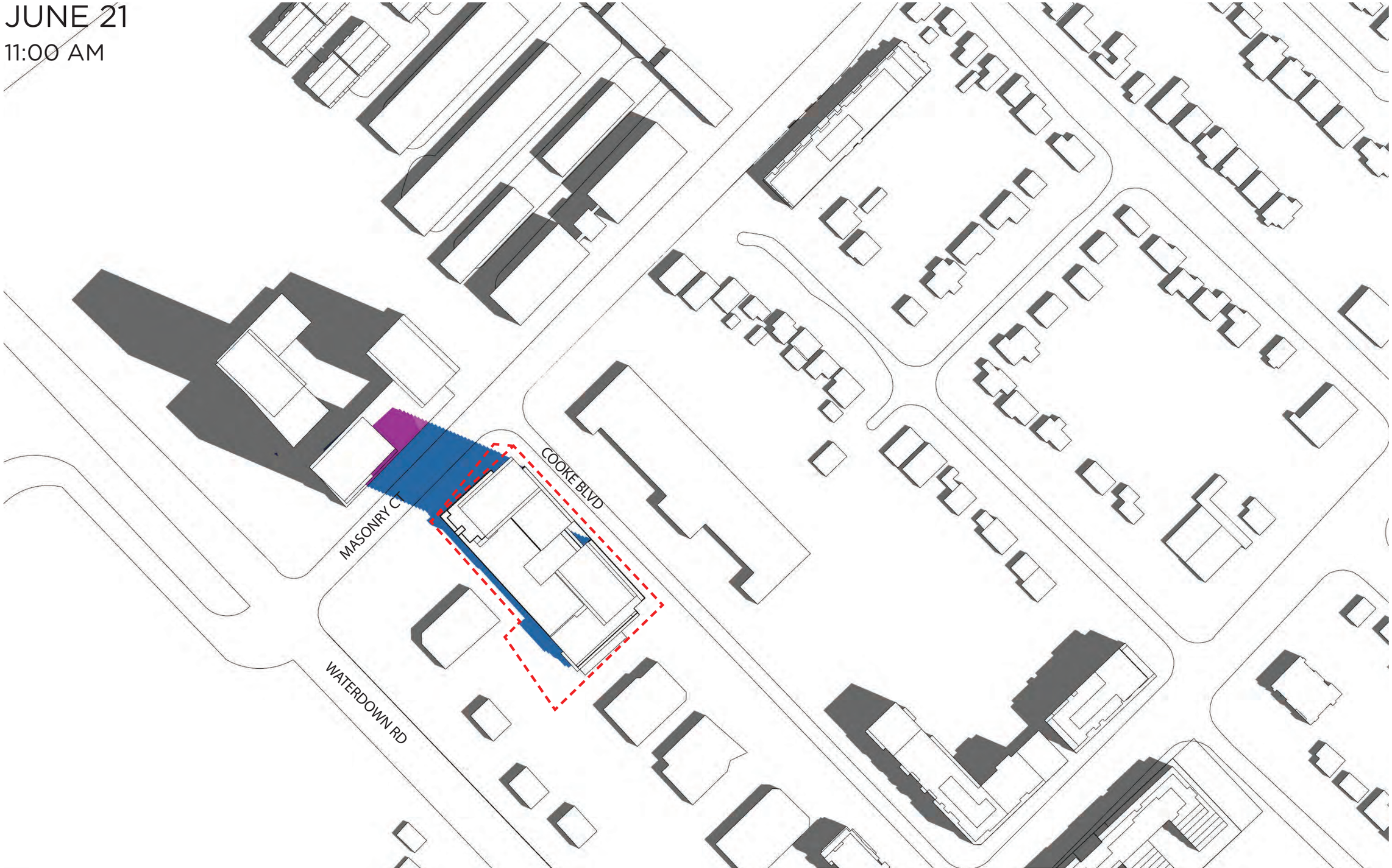
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RAW

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

JUNE 21
11:00 AM



NET NEW SHADOWS CAST ON ROOF SURFACES

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SITE BOUNDARY

OPEN SPACE

N

25 m 50 m 100 m

SCALE = 1:1650

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

JUNE 21
12:00 PM



NET NEW SHADOWS CAST ON ROOF SURFACES

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SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES

SITE BOUNDARY

OPEN SPACE

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25 m 50 m 100 m

SCALE = 1:1650

RAW

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

JUNE 21
01:00 PM



NET NEW SHADOWS CAST ON ROOF SURFACES

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SITE BOUNDARY

OPEN SPACE

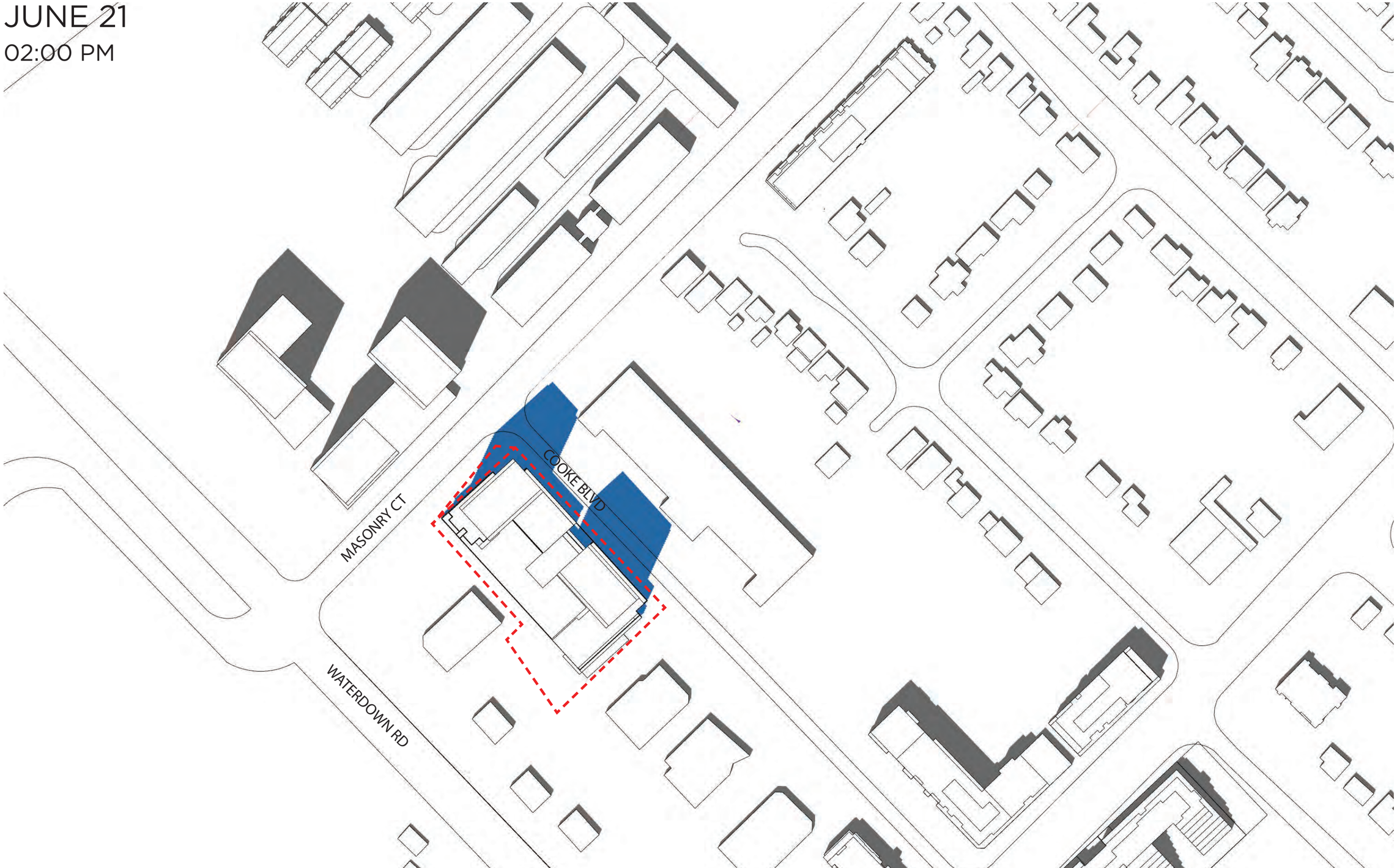
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SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

JUNE 21
02:00 PM



NET NEW SHADOWS CAST ON ROOF SURFACES

NET NEW SHADOWS CAST ON GROUND SURFACES

SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES

SITE BOUNDARY

OPEN SPACE

N

25 m 50 m 100 m

SCALE = 1:1650

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

JUNE 21
03:00 PM



NET NEW SHADOWS CAST ON ROOF SURFACES

NET NEW SHADOWS CAST ON GROUND SURFACES

SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES

SITE BOUNDARY

OPEN SPACE

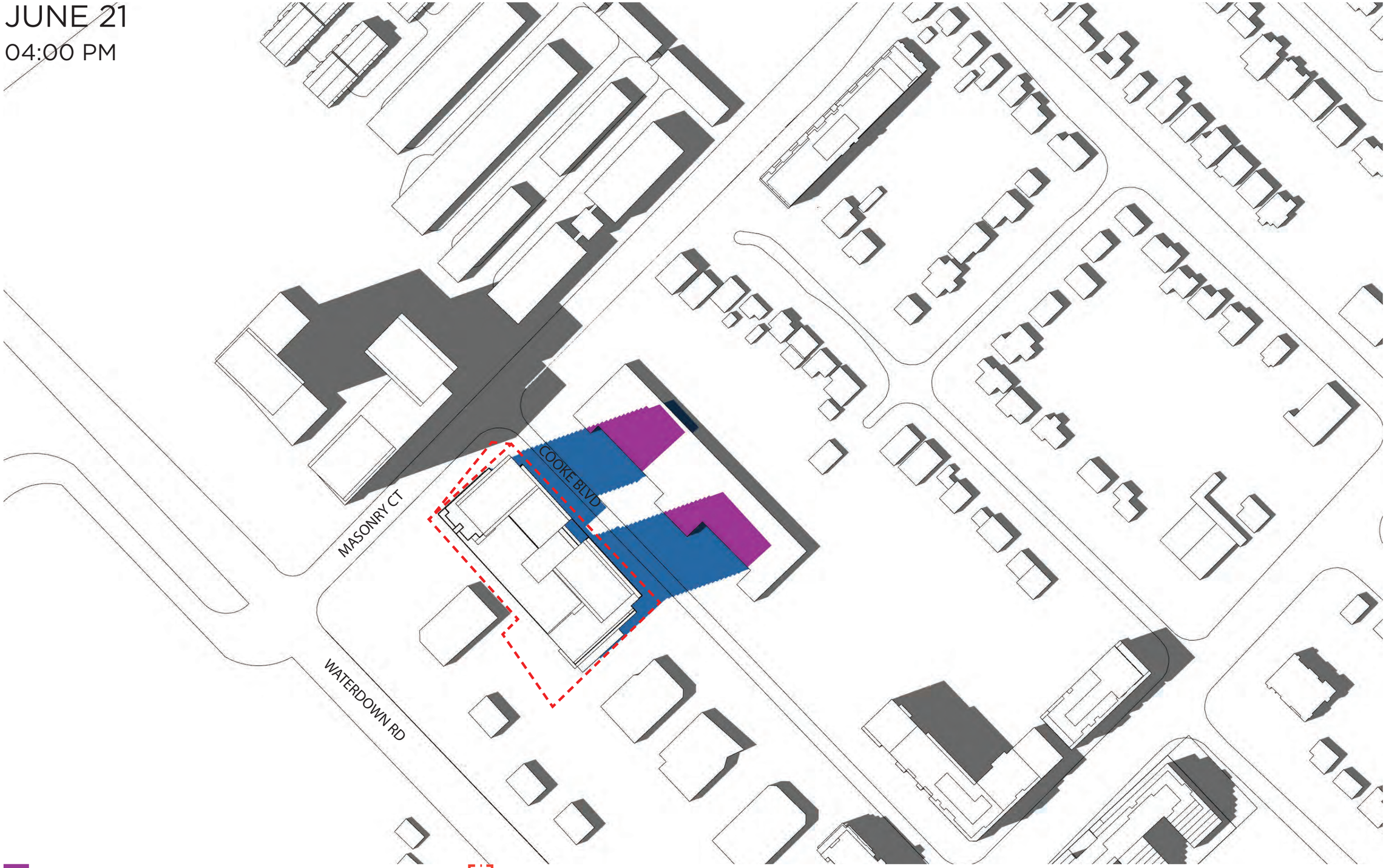
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SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

JUNE 21
04:00 PM



NET NEW SHADOWS CAST ON ROOF SURFACES
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SITE BOUNDARY
OPEN SPACE

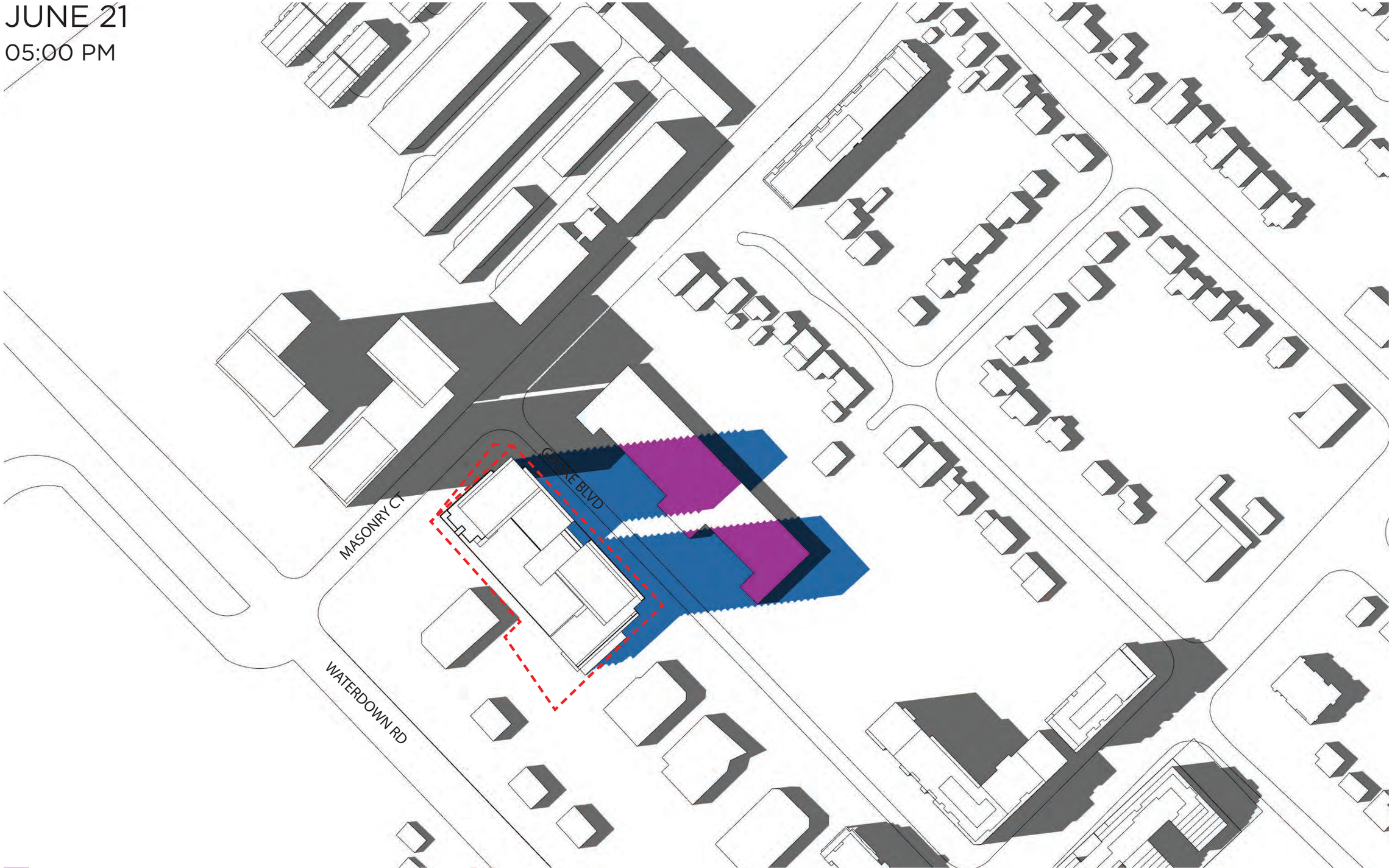
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SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

JUNE 21
05:00 PM



NET NEW SHADOWS CAST ON ROOF SURFACES
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SITE BOUNDARY
OPEN SPACE

N

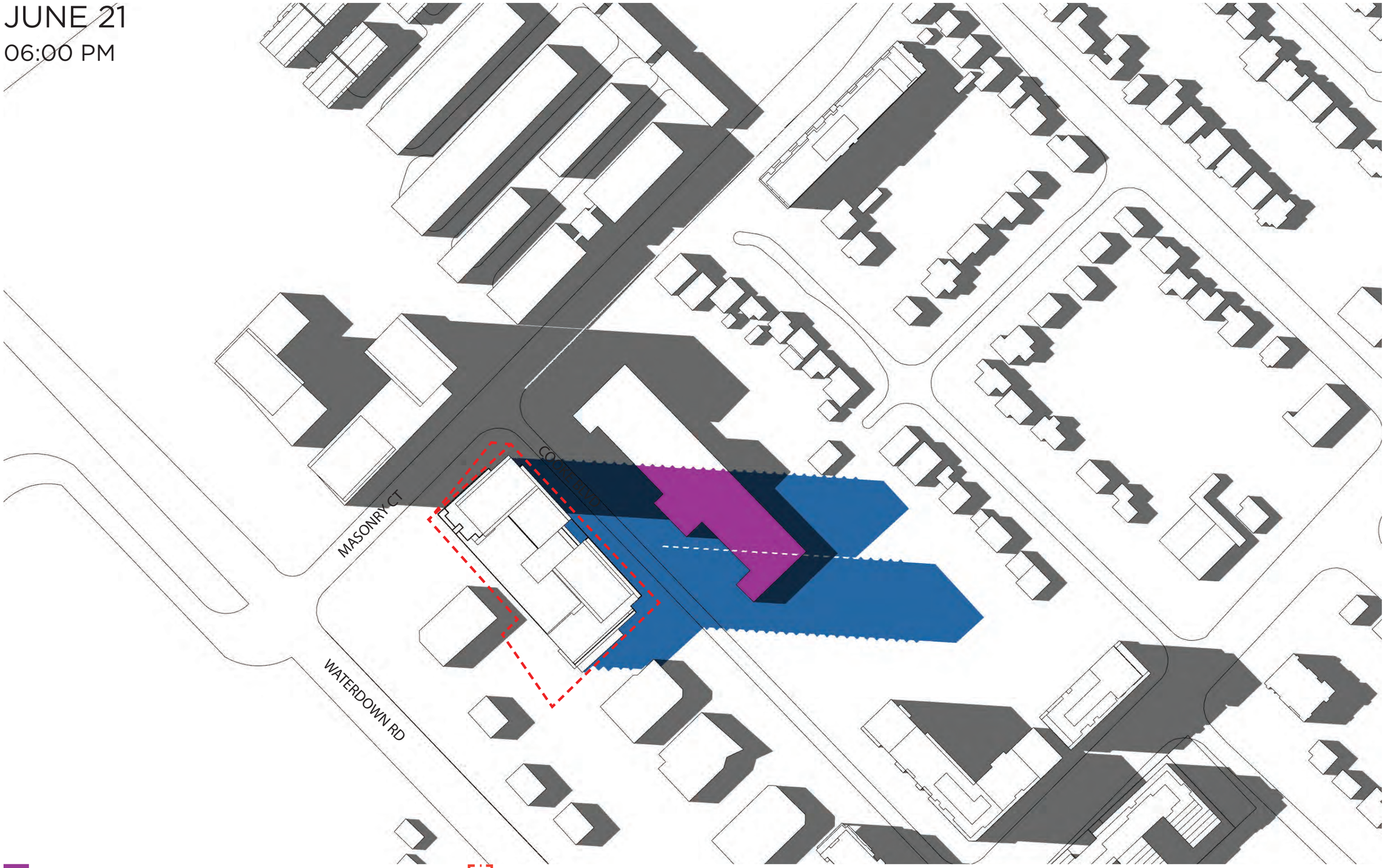
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SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

JUNE 21
06:00 PM



NET NEW SHADOWS CAST ON ROOF SURFACES

NET NEW SHADOWS CAST ON GROUND SURFACES

SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES

SITE BOUNDARY

OPEN SPACE

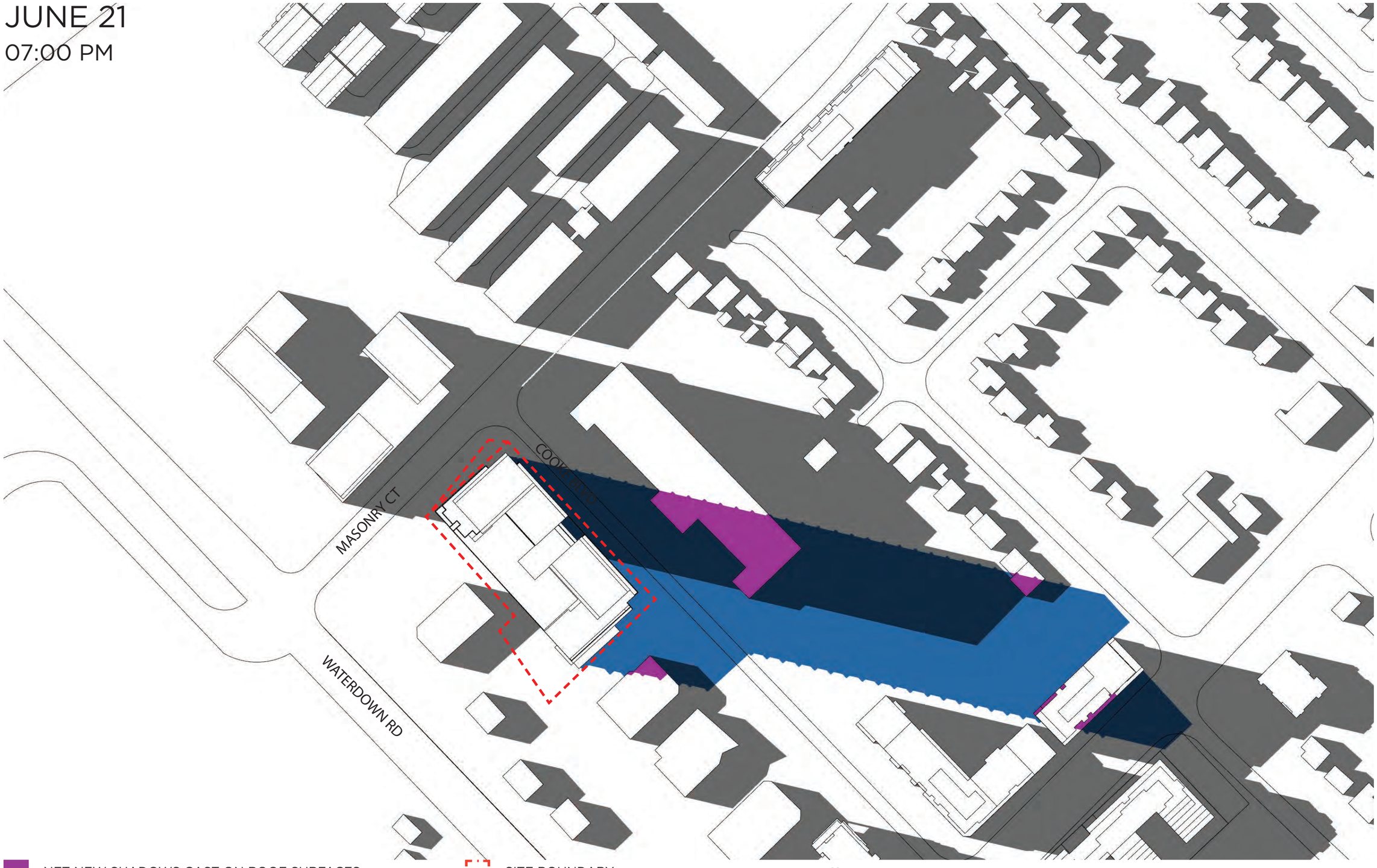
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SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

JUNE 21
07:00 PM



NET NEW SHADOWS CAST ON ROOF SURFACES

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SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES

SITE BOUNDARY

OPEN SPACE

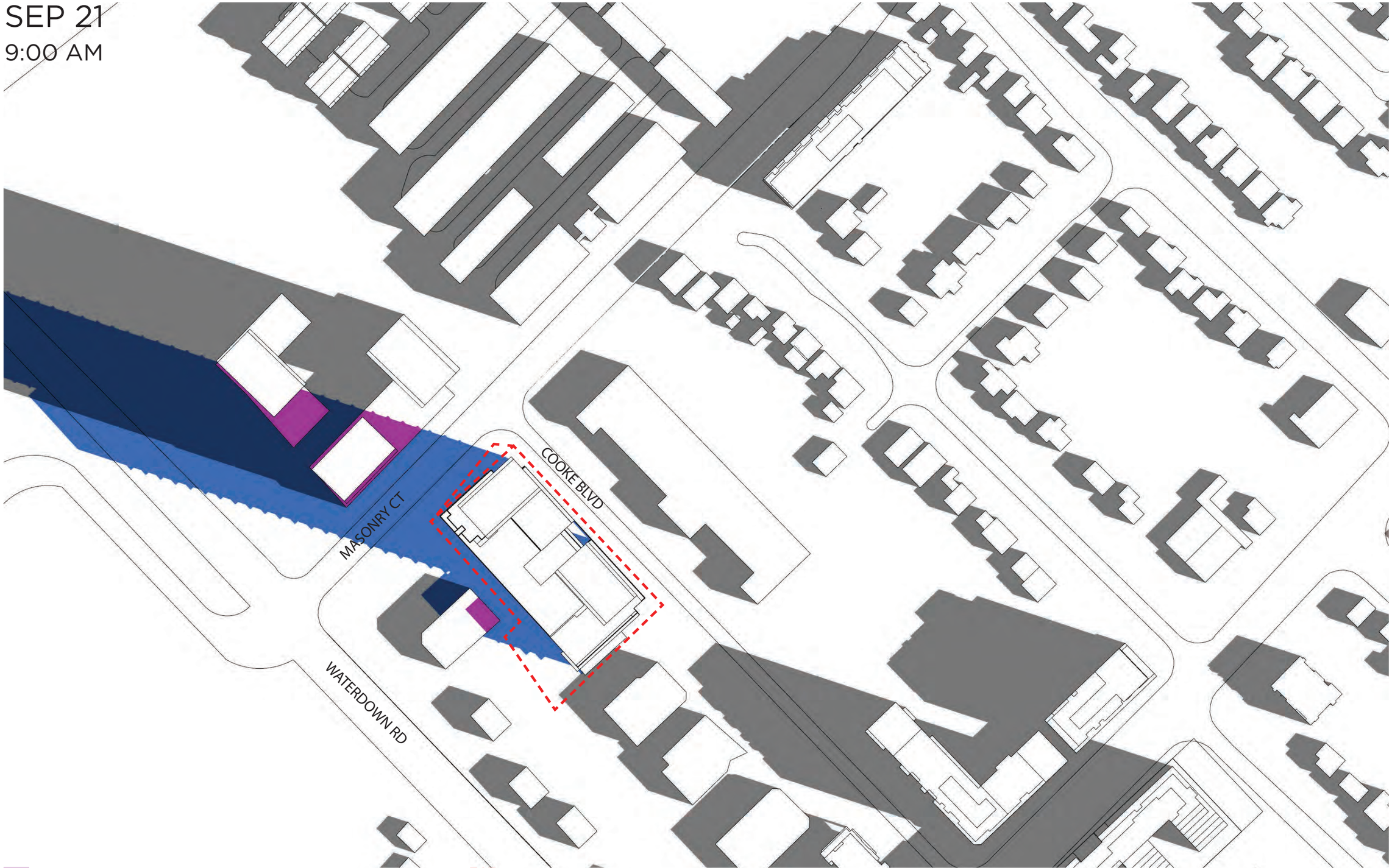
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SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

SEP 21
9:00 AM



NET NEW SHADOWS CAST ON ROOF SURFACES

NET NEW SHADOWS CAST ON GROUND SURFACES

SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES

SITE BOUNDARY

OPEN SPACE

N

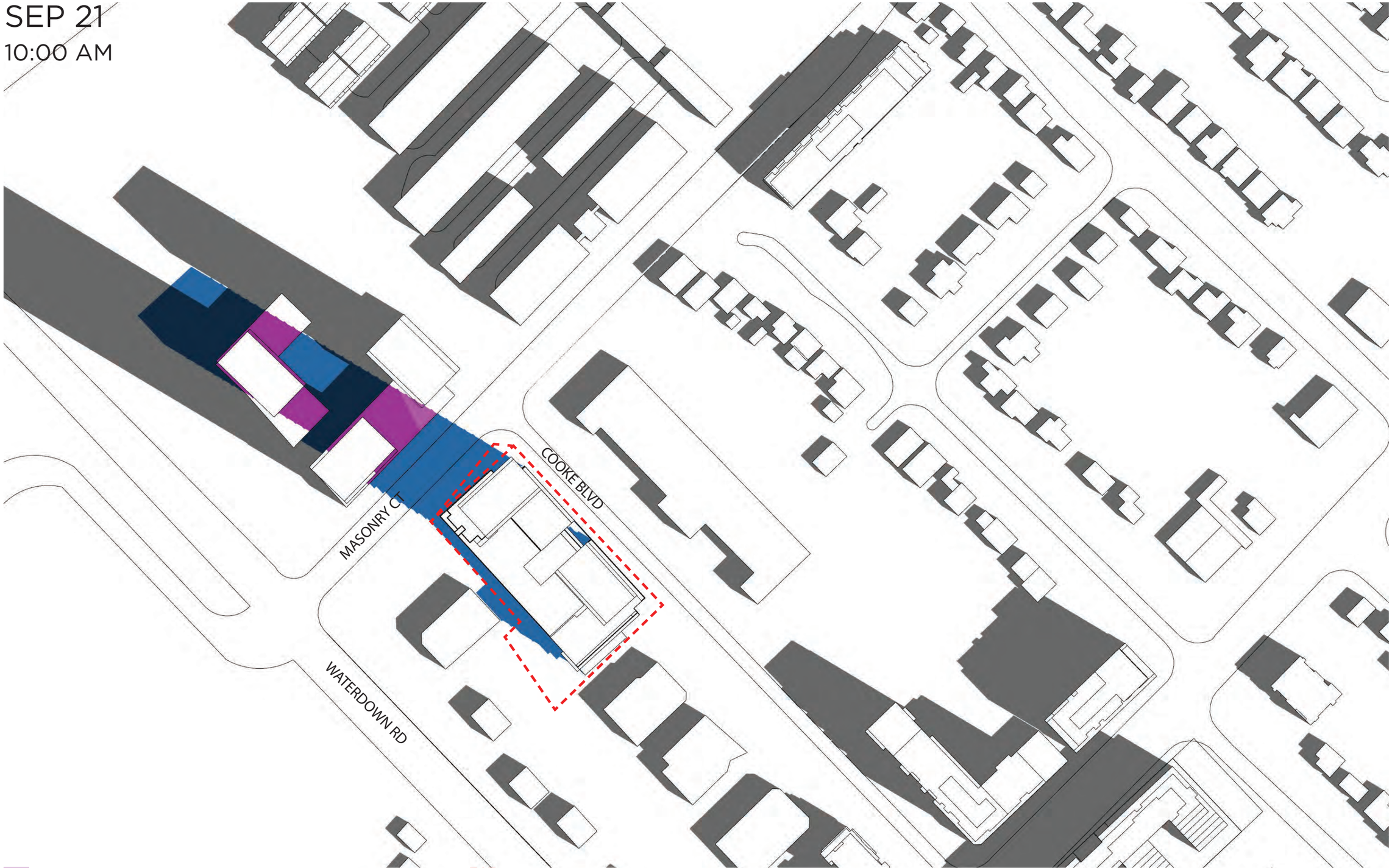
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RAW

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

SEP 21
10:00 AM



NET NEW SHADOWS CAST ON ROOF SURFACES

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SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES

SITE BOUNDARY

OPEN SPACE

N

25 m 50 m 100 m

SCALE = 1:1650

RAW

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

SEP 21
11:00 AM



NET NEW SHADOWS CAST ON ROOF SURFACES
NET NEW SHADOWS CAST ON GROUND SURFACES
SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES
SITE BOUNDARY
OPEN SPACE

N

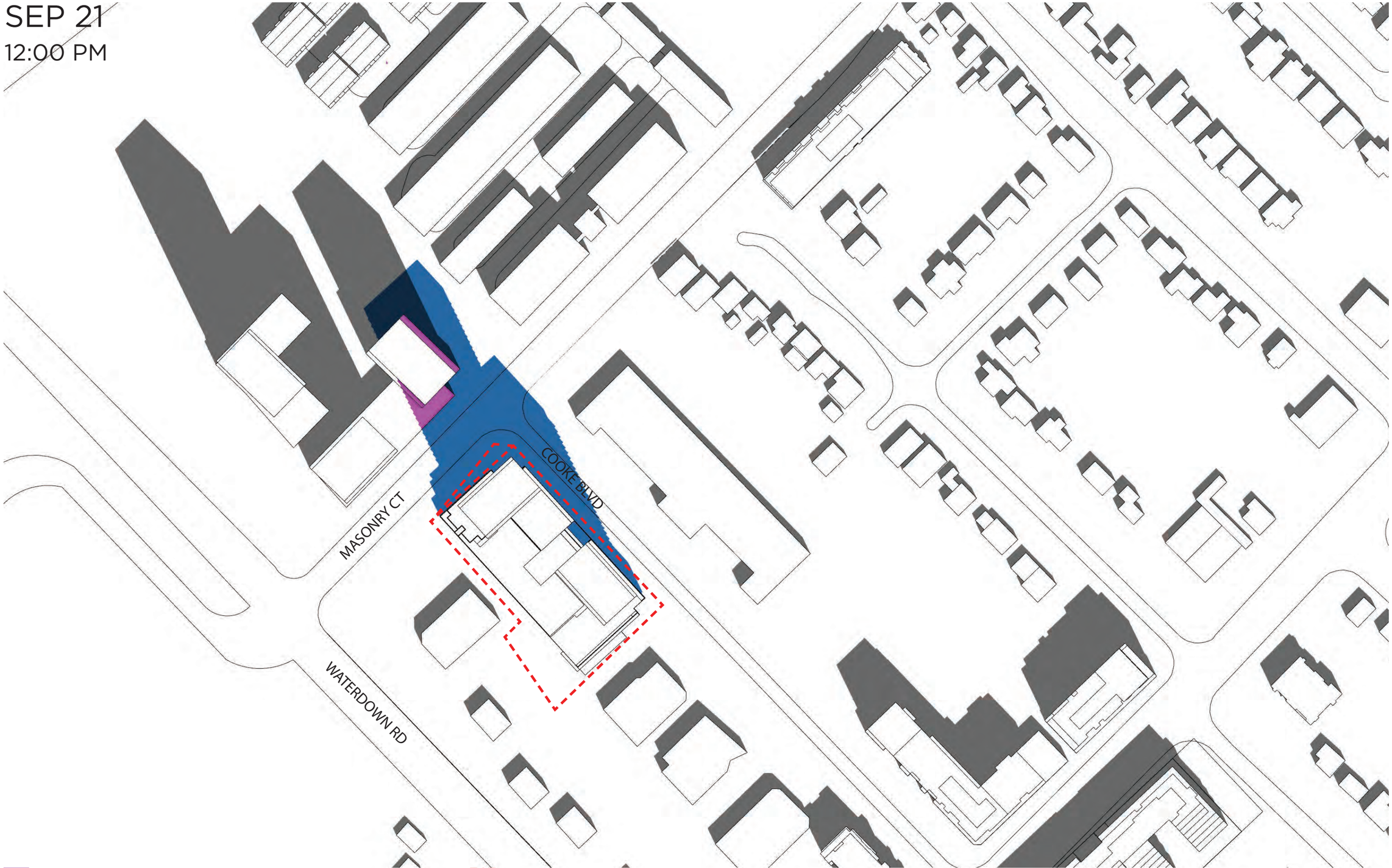
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RAW

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

SEP 21
12:00 PM



NET NEW SHADOWS CAST ON ROOF SURFACES
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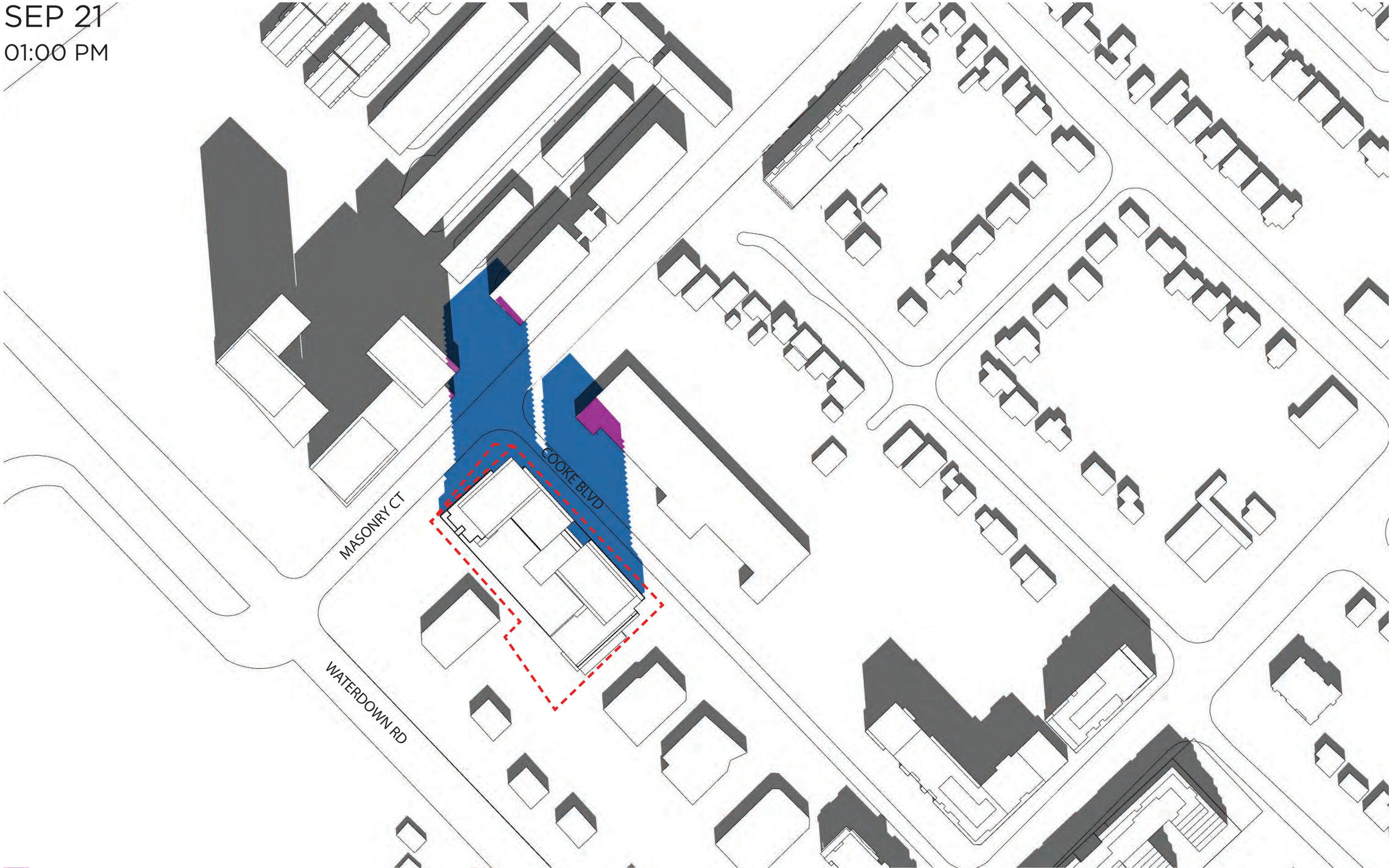
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SCALE = 1:1650

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

SEP 21
01:00 PM



NET NEW SHADOWS CAST ON ROOF SURFACES
NET NEW SHADOWS CAST ON GROUND SURFACES
SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES
SITE BOUNDARY
OPEN SPACE

N

25 m 50 m 100 m

SCALE = 1:1650

RAW

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

SEP 21
02:00 PM



NET NEW SHADOWS CAST ON ROOF SURFACES
NET NEW SHADOWS CAST ON GROUND SURFACES
SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES
SITE BOUNDARY
OPEN SPACE

N

25 m 50 m 100 m

SCALE = 1:1650

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

SEP 21
03:00 PM



NET NEW SHADOWS CAST ON ROOF SURFACES
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SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES

SITE BOUNDARY
OPEN SPACE

N

25 m 50 m 100 m

SCALE = 1:1650

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

SEP 21
04:00 PM



NET NEW SHADOWS CAST ON ROOF SURFACES
NET NEW SHADOWS CAST ON GROUND SURFACES
SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES

SITE BOUNDARY
OPEN SPACE

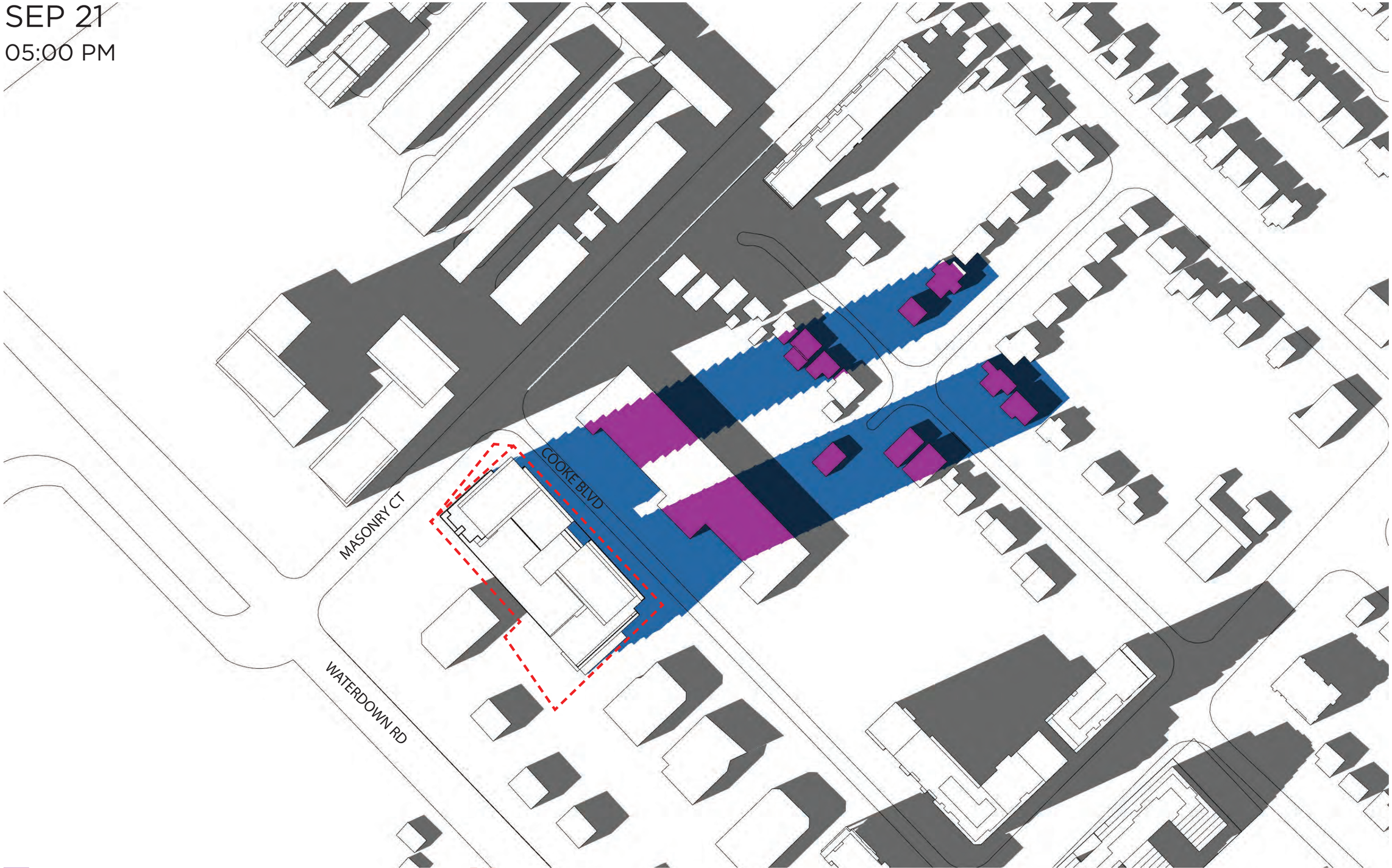
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SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

SEP 21
05:00 PM



NET NEW SHADOWS CAST ON ROOF SURFACES
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SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES
SITE BOUNDARY
OPEN SPACE

N

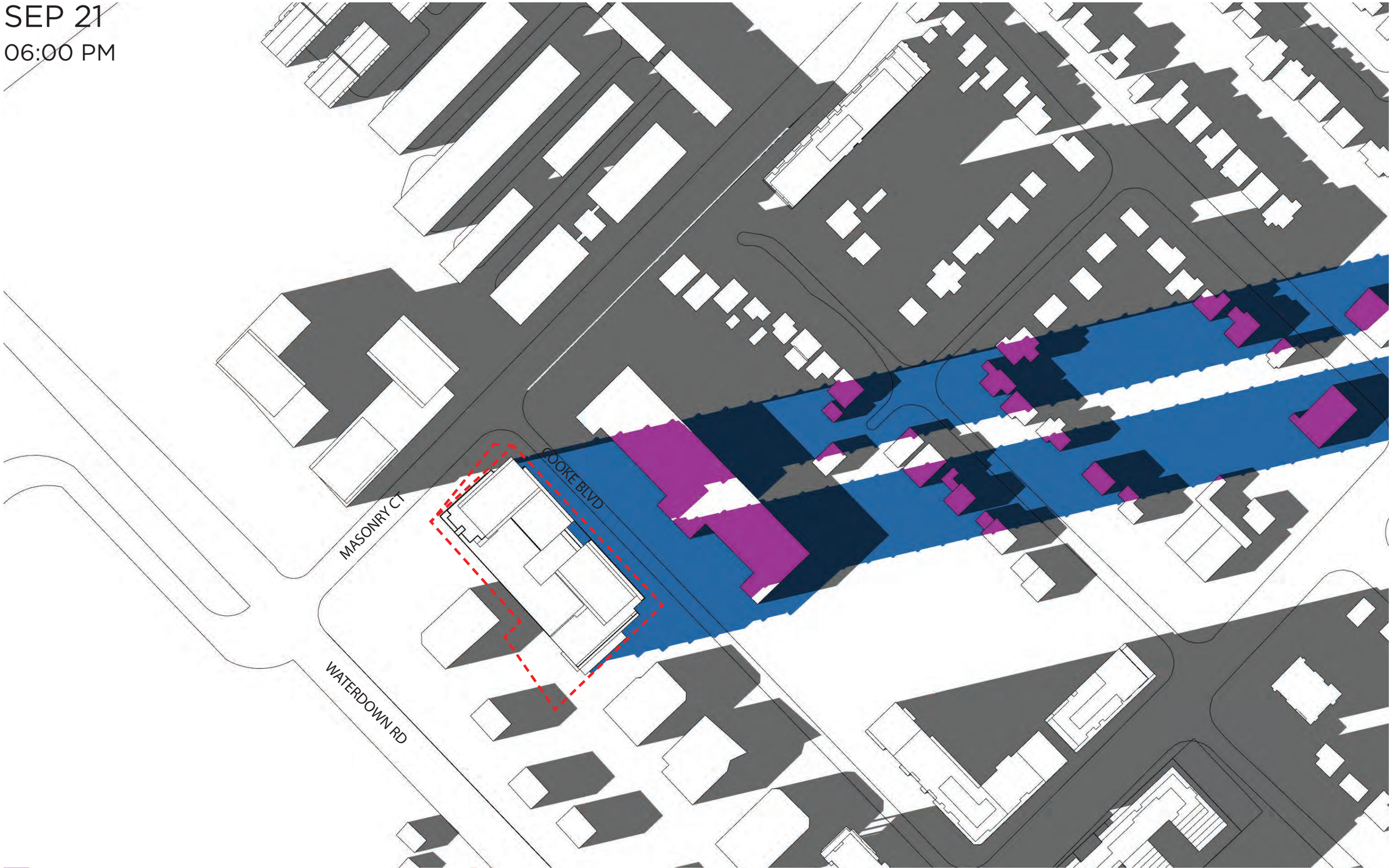
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RAW

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

SEP 21
06:00 PM



NET NEW SHADOWS CAST ON ROOF SURFACES
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OPEN SPACE

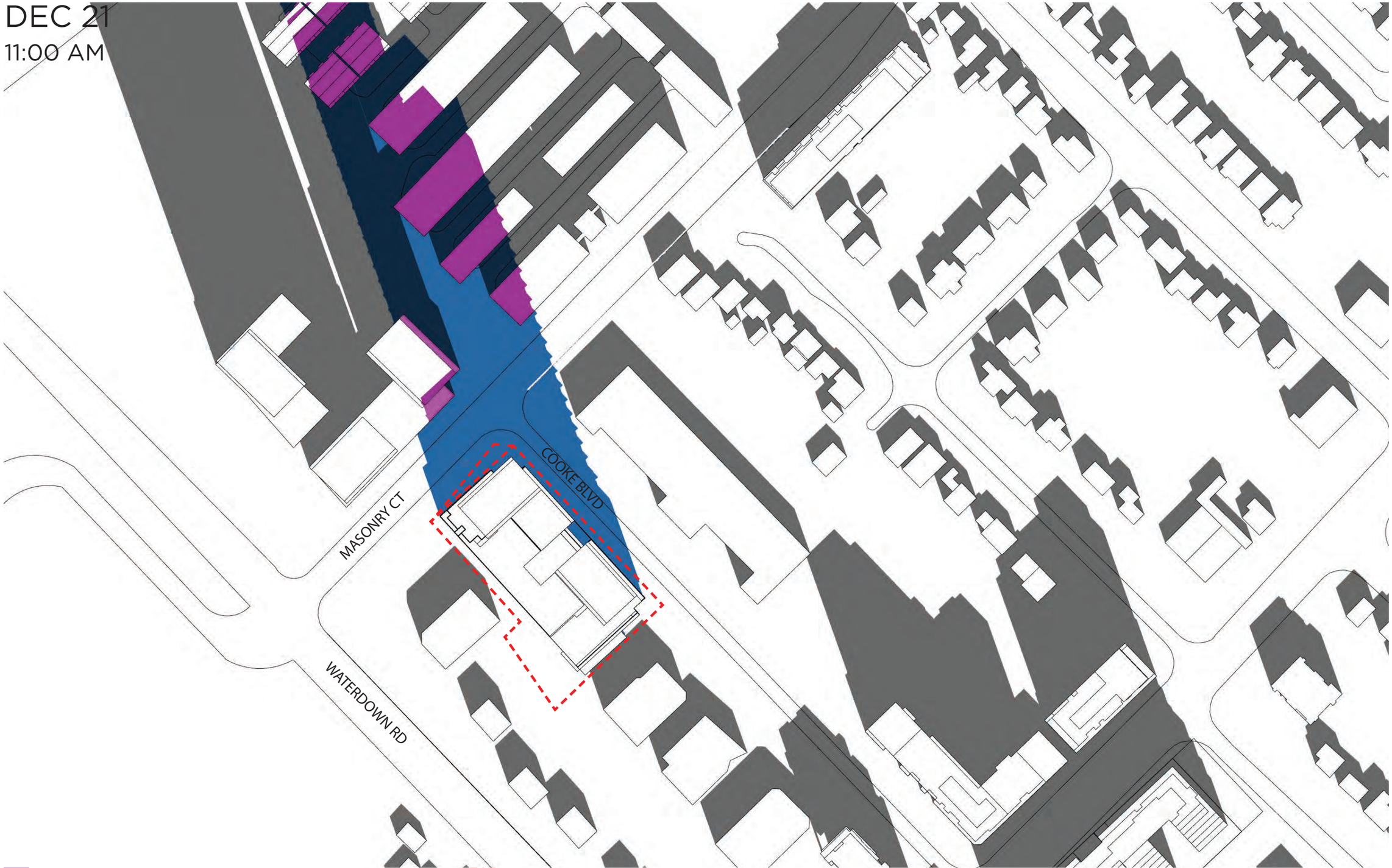
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25 m 50 m 100 m

SCALE = 1:1650

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

DEC 21
11:00 AM



NET NEW SHADOWS CAST ON ROOF SURFACES

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SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES

SITE BOUNDARY

OPEN SPACE

N

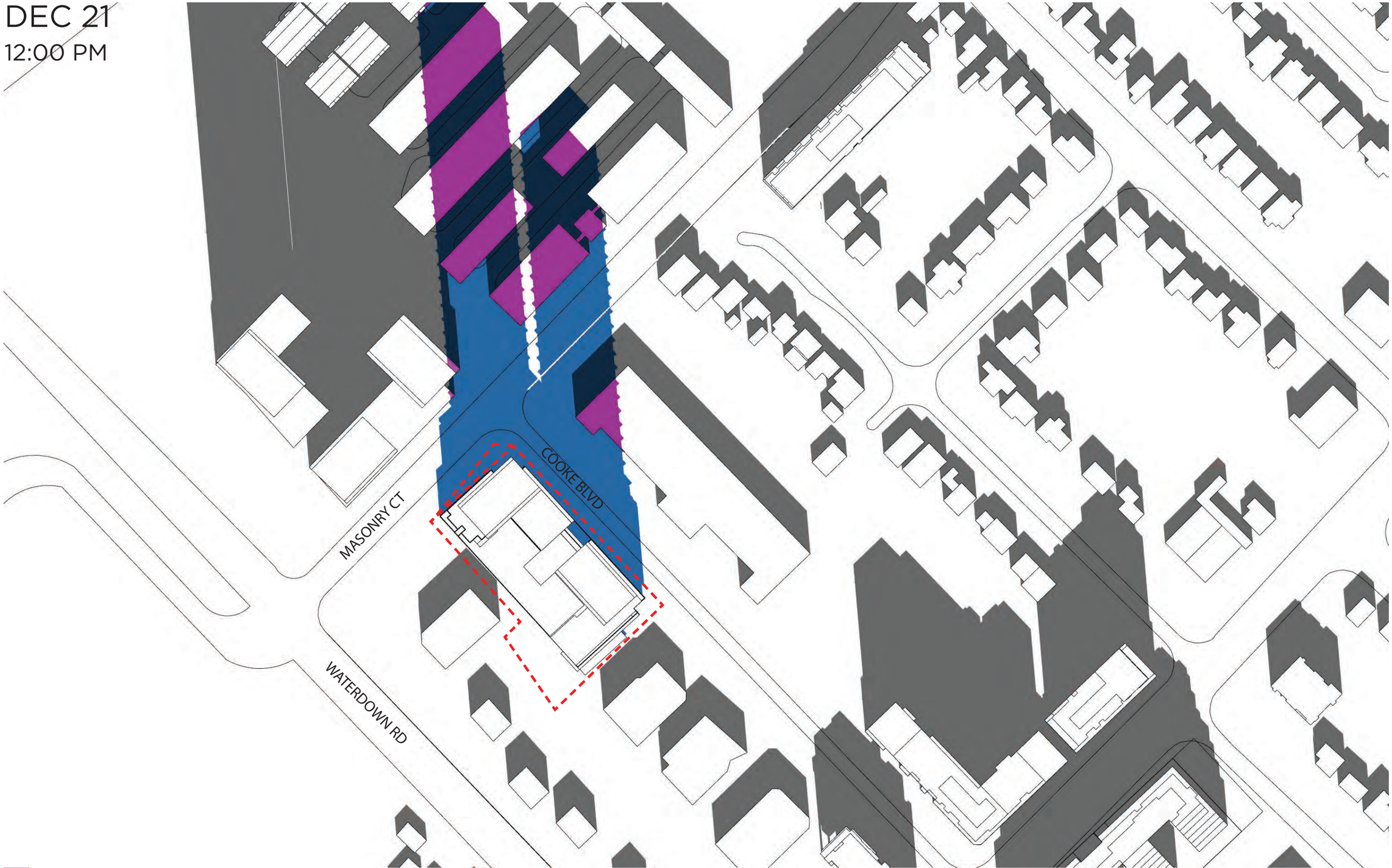
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RAW

SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

DEC 21
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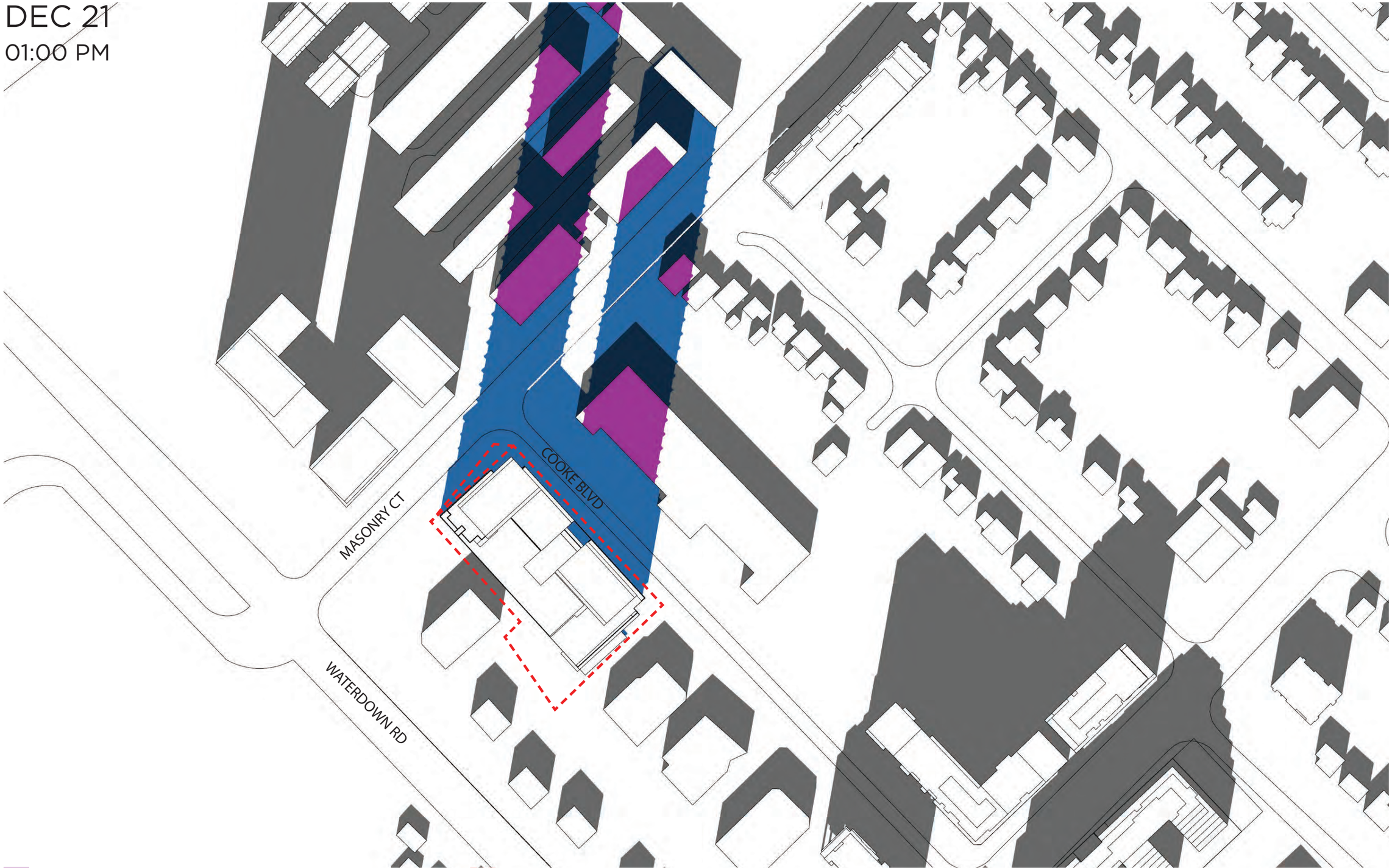
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SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

DEC 21
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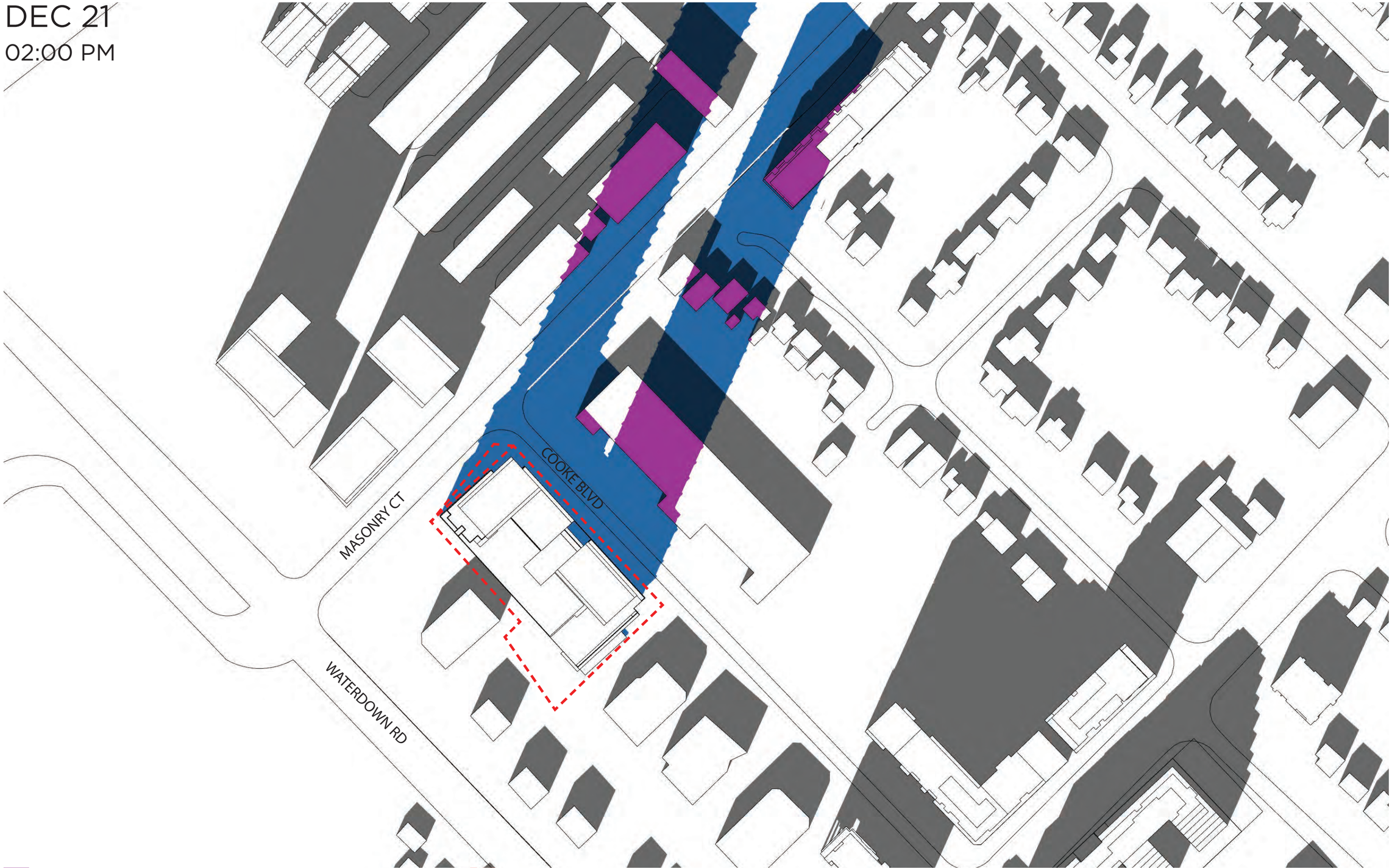
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18072 - COOKE BOULEVARD
AUGUST 22, 2022

DEC 21
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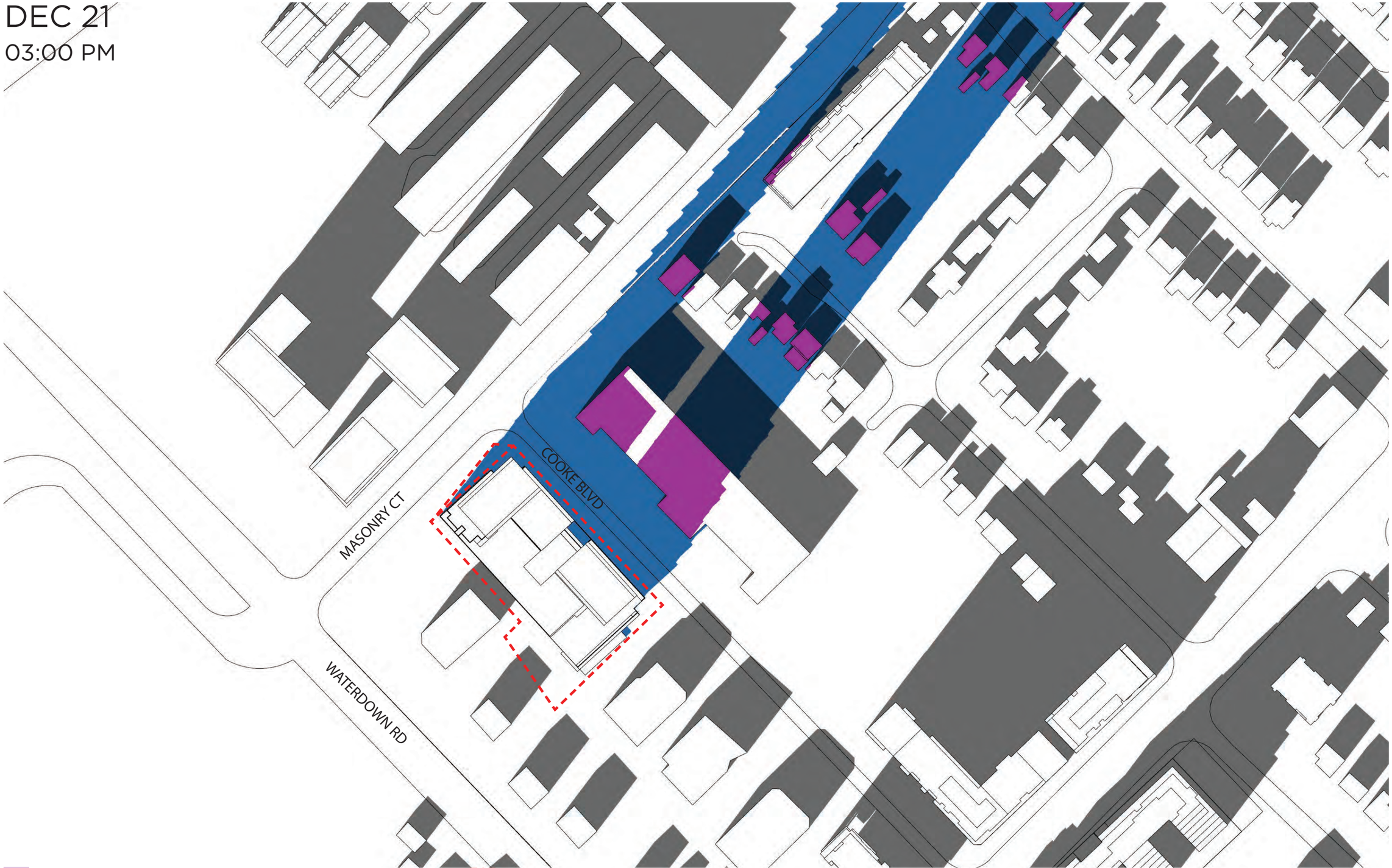
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25 m 50 m 100 m

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SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

DEC 21
03:00 PM



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SHADOW STUDY
18072 - COOKE BOULEVARD
AUGUST 22, 2022

SUN ACCESS FACTOR CALCULATIONS

PRIVATE OUTDOOR AMENITY AREA - RESIDENTIAL REAR YARD

1. Total area of adjacent residential amenity (A_T) = 1751 m^2
2. Areas exposed to sunshine at each hourly test time ($AS_{(test)}$).

09:00 ($AS_{(test\text{-}09:00)}$) = 1,303 m^2
10:00 ($AS_{(test\text{-}10:00)}$) = 1,482 m^2
11:00 ($AS_{(test\text{-}11:00)}$) = 1,607 m^2
12:00 ($AS_{(test\text{-}12:00)}$) = 1,648 m^2
13:00 ($AS_{(test\text{-}13:00)}$) = 1,667 m^2
14:00 ($AS_{(test\text{-}14:00)}$) = 1,668 m^2
15:00 ($AS_{(test\text{-}15:00)}$) = 1,597 m^2
16:00 ($AS_{(test\text{-}16:00)}$) = 1,489 m^2
17:00 ($AS_{(test\text{-}17:00)}$) = 1,330 m^2
18:00 ($AS_{(test\text{-}18:00)}$) = 373 m^2

Number of test times = 10

3. The averages for the nine one-hour intervals ($AS_{(interval)}$):

09:00-10:00 ($AS_{(interval\text{-}09:00\text{-}10:00)}$) = (1,303 m^2 + 1,482 m^2) ÷ 2 = 1,392.5 m^2
10:00-11:00 ($AS_{(interval\text{-}10:00\text{-}11:00)}$) = (1,482 m^2 + 1,607 m^2) ÷ 2 = 1,544.5 m^2
11:00-12:00 ($AS_{(interval\text{-}11:00\text{-}12:00)}$) = (1,607 m^2 + 1,648 m^2) ÷ 2 = 1,627.5 m^2
12:00-13:00 ($AS_{(interval\text{-}12:00\text{-}13:00)}$) = (1,648 m^2 + 1,667 m^2) ÷ 2 = 1,657.5 m^2
13:00-14:00 ($AS_{(interval\text{-}13:00\text{-}14:00)}$) = (1,667 m^2 + 1,668 m^2) ÷ 2 = 1,667.5 m^2
14:00-15:00 ($AS_{(interval\text{-}14:00\text{-}15:00)}$) = (1,668 m^2 + 1,597 m^2) ÷ 2 = 1,632.5 m^2
15:00-16:00 ($AS_{(interval\text{-}15:00\text{-}16:00)}$) = (1,597 m^2 + 1,489 m^2) ÷ 2 = 1,543 m^2
16:00-17:00 ($AS_{(interval\text{-}16:00\text{-}17:00)}$) = (1,489 m^2 + 1,330 m^2) ÷ 2 = 1,409.5 m^2
17:00-18:00 ($AS_{(interval\text{-}11:00\text{-}12:00)}$) = (1,330 m^2 + 373 m^2) ÷ 2 = 851.5 m^2

Number of test intervals = 9

Sum of ($AS_{(interval)}$) = 13326 m^2

4. The overall average area in sunshine ($AS_{(average)}$) = [sum of ($AS_{(interval)}$)] ÷ [# of intervals]

= 13326 m^2 ÷ 9

= 1480.7 m^2

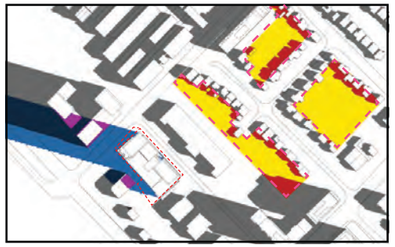
5. SAF = ($AS_{(average)}$) ÷ A_T

= 1480.7 m^2 ÷ 1751 m^2

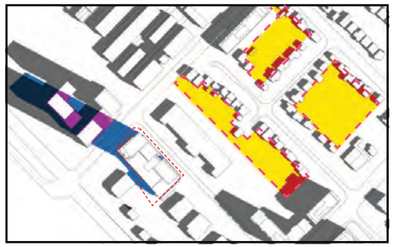
= 0.846 m^2

0.846 is greater than 0.22. Therefore, the SAF meets the criteria.

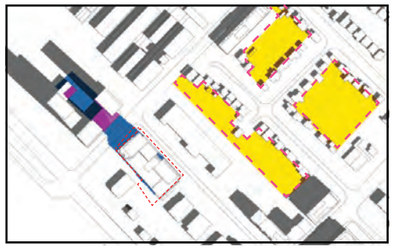
MARCH 21



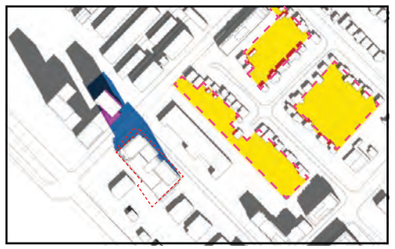
09:00 AM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 1,751 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 1,303 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 351 m^2



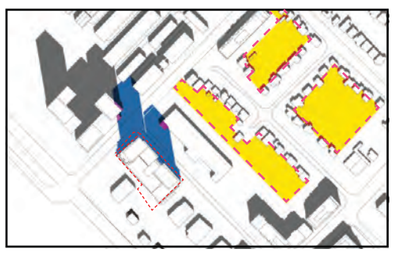
10:00 AM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 1,751 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 1,482m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 170 m^2



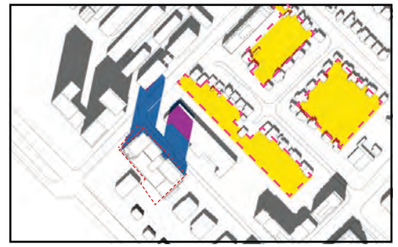
11:00 AM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 1,751 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 1,607 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 113 m^2



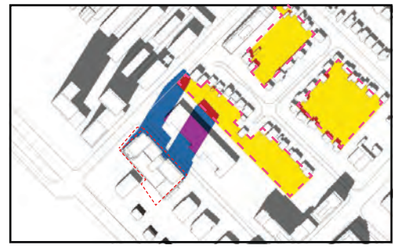
12:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 1,751 m^2
AREA EXPOSED TO SUNSHINE
TOTAL AREA: 1,648 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 286 m^2



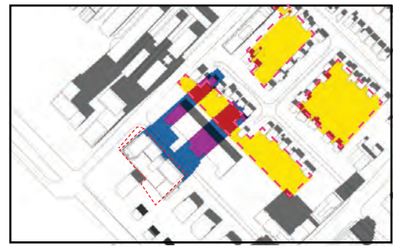
01:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 1,751 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 1,667 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 237 m^2



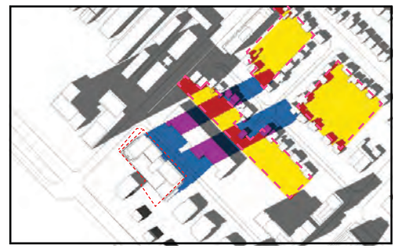
02:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 1,751 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 1,668 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 234 m^2



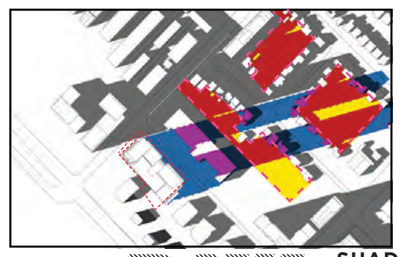
03:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 1,751 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 1,597 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 110 m^2



04:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 1,751 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 1,489 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 214 m^2



05:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 1,751 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 1,330 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 344 m^2



06:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 1,751 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 373 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 1,316 m^2

NET NEW SHADOWS CAST ON ROOF SURFACES
NET NEW SHADOWS CAST ON GROUND SURFACES
SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES

SITE BOUNDARY
PRIVATE OUTDOOR AMENITY AREA

RAW

SHADOW STUDY
180072 - Cooke Boulevard
BURLINGTON, ON
AUGUST 22, 2022

SUN ACCESS FACTOR CALCULATIONS

PRIVATE OUTDOOR AMENITY AREA - OUTDOOR AMENITY

1. Total area of adjacent residential amenity (A_T) = 645.8 m^2
2. Areas exposed to sunshine at each hourly test time ($AS_{(test)}$).

09:00 ($AS_{(test-09:00)}$) = 365 m^2
10:00 ($AS_{(test-10:00)}$) = 266 m^2
11:00 ($AS_{(test-11:00)}$) = 172 m^2
12:00 ($AS_{(test-12:00)}$) = 315 m^2
13:00 ($AS_{(test-13:00)}$) = 572 m^2
14:00 ($AS_{(test-14:00)}$) = 272 m^2
15:00 ($AS_{(test-15:00)}$) = 298 m^2
16:00 ($AS_{(test-16:00)}$) = 201 m^2
17:00 ($AS_{(test-17:00)}$) = 136 m^2
18:00 ($AS_{(test-18:00)}$) = 444 m^2

Number of test times = 10

3. The averages for the nine one-hour intervals ($AS_{(interval)}$):

09:00-10:00 ($AS_{(interval-09:00-10:00)}$) = (365 m^2 + 266 m^2) ÷ 2 = 315.5 m^2
10:00-11:00 ($AS_{(interval-10:00-11:00)}$) = (266 m^2 + 172 m^2) ÷ 2 = 219 m^2
11:00-12:00 ($AS_{(interval-11:00-12:00)}$) = (172 m^2 + 315 m^2) ÷ 2 = 243.5 m^2
12:00-13:00 ($AS_{(interval-12:00-13:00)}$) = (315 m^2 + 572 m^2) ÷ 2 = 887 m^2
13:00-14:00 ($AS_{(interval-13:00-14:00)}$) = (572 m^2 + 272 m^2) ÷ 2 = 844 m^2
14:00-15:00 ($AS_{(interval-14:00-15:00)}$) = (272 m^2 + 298 m^2) ÷ 2 = 285 m^2
15:00-16:00 ($AS_{(interval-15:00-16:00)}$) = (298 m^2 + 201 m^2) ÷ 2 = 249.5 m^2
16:00-17:00 ($AS_{(interval-16:00-17:00)}$) = (201 m^2 + 136 m^2) ÷ 2 = 168.5 m^2
17:00-18:00 ($AS_{(interval-11:00-12:00)}$) = (136 m^2 + 444 m^2) ÷ 2 = 290 m^2

Number of test intervals = 9

Sum of ($AS_{(interval)}$) = 3502 m^2

4. The overall average area in sunshine ($AS_{(average)}$) = [sum of ($AS_{(interval)}$)] ÷ [# of intervals]

= 3502 m^2 ÷ 9

= 389 m^2

5. SAF = ($AS_{(average)}$) ÷ A_T

= 389 m^2 ÷ 645.8 m^2

= 0.6 m^2

0.6 is greater than 0.22. Therefore, the SAF meets the criteria.

MARCH 21



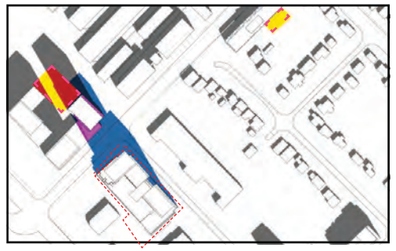
09:00 AM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 645.8 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 365 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 1078 m^2



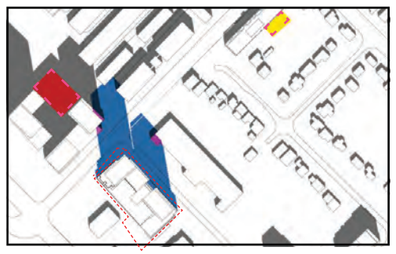
10:00 AM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 645.8 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 266 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 1428 m^2



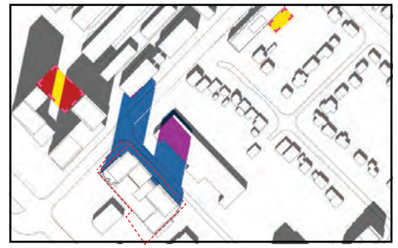
11:00 AM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 645.8 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 172 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 1810 m^2



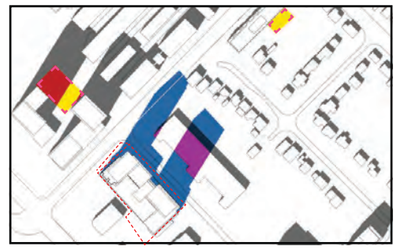
12:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 645.8 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 315 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 1334 m^2



01:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 645.8 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 572 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 1807 m^2



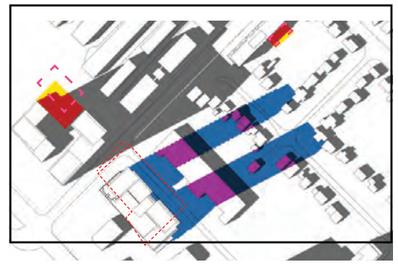
02:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 645.8 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 272 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 1399 m^2



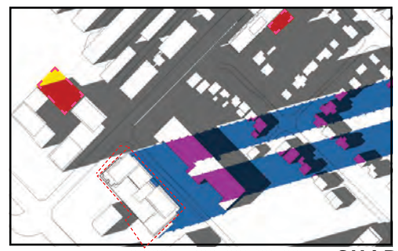
03:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 645.8 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 298 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 1296 m^2



04:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 645.8 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 201 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 1662 m^2



05:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 645.8 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 136 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 487 m^2



06:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 645.8 m^{22}
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 444 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 516 m^2

NET NEW SHADOWS CAST ON ROOF SURFACES
NET NEW SHADOWS CAST ON GROUND SURFACES
SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES
SITE BOUNDARY
PRIVATE OUTDOOR AMENITY AREA

RAW

SHADOW STUDY
180072 - Cooke Boulevard
BURLINGTON, ON
AUGUST 22, 2022

SUN ACCESS FACTOR CALCULATIONS

PUBLIC REALMS AND SIDEWALKS - Projected onto Cooke Blvd

1. Total area of adjacent residential amenity (A_T) = 3,805 m^2
2. Areas exposed to sunshine at each hourly test time ($AS_{(test)}$).

09:00 ($AS_{(test-09:00)}$) = 1,962 m^2
10:00 ($AS_{(test-10:00)}$) = 2,986 m^2
11:00 ($AS_{(test-11:00)}$) = 3,496 m^2
12:00 ($AS_{(test-12:00)}$) = 3,406 m^2
13:00 ($AS_{(test-13:00)}$) = 1,954 m^2
14:00 ($AS_{(test-14:00)}$) = 1,523 m^2
15:00 ($AS_{(test-15:00)}$) = 1,302 m^2
16:00 ($AS_{(test-16:00)}$) = 983 m^2
17:00 ($AS_{(test-17:00)}$) = 548 m^2
18:00 ($AS_{(test-18:00)}$) = 30 m^2

Number of test times = 10

3. The averages for the nine one-hour intervals ($AS_{(interval)}$):

09:00-10:00 ($AS_{(interval-09:00-10:00)}$) = (1,962 m^2 + 2,986 m^2) ÷ 2 = 2,474 m^2
10:00-11:00 ($AS_{(interval-10:00-11:00)}$) = (2,986 m^2 + 3,496 m^2) ÷ 2 = 3,241 m^2
11:00-12:00 ($AS_{(interval-11:00-12:00)}$) = (3,496 m^2 + 3,406 m^2) ÷ 2 = 3,451 m^2
12:00-13:00 ($AS_{(interval-12:00-13:00)}$) = (3,406 m^2 + 1,954 m^2) ÷ 2 = 2,680 m^2
13:00-14:00 ($AS_{(interval-13:00-14:00)}$) = (1,954 m^2 + 1,523 m^2) ÷ 2 = 1,738.5 m^2
14:00-15:00 ($AS_{(interval-14:00-15:00)}$) = (1,523 m^2 + 1,302 m^2) ÷ 2 = 1,412.5 m^2
15:00-16:00 ($AS_{(interval-15:00-16:00)}$) = (1,302 m^2 + 983 m^2) ÷ 2 = 1,142.5 m^2
16:00-17:00 ($AS_{(interval-16:00-17:00)}$) = (983 m^2 + 548 m^2) ÷ 2 = 765.5 m^2
17:00-18:00 ($AS_{(interval-11:00-12:00)}$) = (548 m^2 + 30 m^2) ÷ 2 = 289 m^2

Number of test intervals = 9

Sum of ($AS_{(interval)}$) = 17,194 m^2

4. The overall average area in sunshine ($AS_{(average)}$) = [sum of ($AS_{(interval)}$)] ÷ [# of intervals]

= 17,194 m^2 ÷ 9

= 1,910.4 m^2

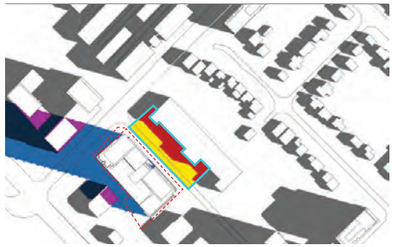
5. SAF = ($AS_{(average)}$) ÷ A_T

= 1,910.4 m^2 ÷ 3,805 m^2

=0.502 m^2

0.502 is greater than 0.5. Therefore, the SAF meets the criteria.

MARCH 21



09:00 AM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 3,805 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 1962 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 1822 m^2



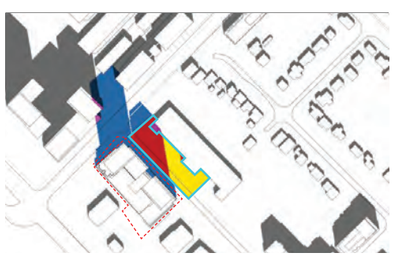
10:00 AM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 3,805 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 2986 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 683 m^2



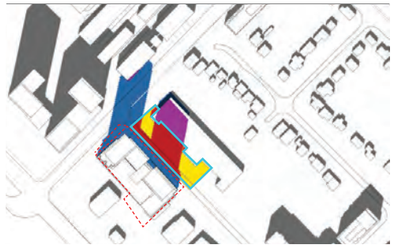
11:00 AM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 3,805 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 3486 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 266 m^2



12:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 3,805 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 3406 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 411 m^2



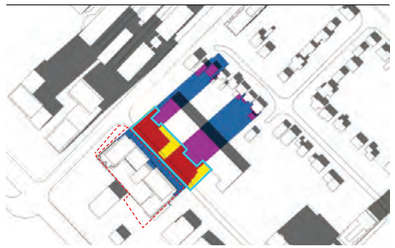
01:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 3,805 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 1954 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 1753 m^2



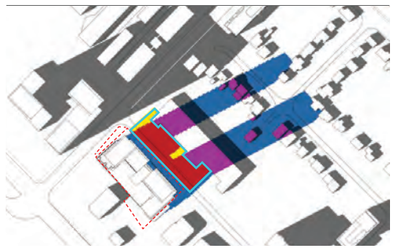
02:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 3,805 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 1523 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 2130 m^2



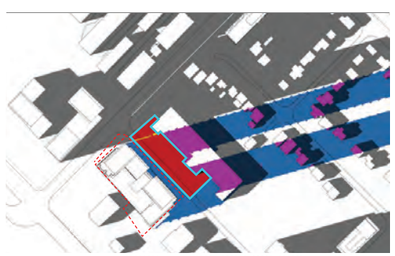
03:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 3,805 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 1302 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 2407 m^2



04:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 3,805 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 983 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 2737 m^2



05:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 3,805 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 548 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 3146 m^2



06:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 3,805 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 30 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 3620 m^2

NET NEW SHADOWS CAST ON ROOF SURFACES
NET NEW SHADOWS CAST ON GROUND SURFACES
SHADOWS CAST BY EXISTING BUILDINGS ON ALL SURFACES
SITE BOUNDARY
PUBLIC REALM AND SIDEWALK

RAW

SHADOW STUDY
180072 - Cooke Boulevard
BURLINGTON, ON
AUGUST 22, 2022

SUN ACCESS FACTOR CALCULATIONS

PUBLIC REALMS AND SIDEWALKS - Projected onto Masonry Ct

1. Total area of adjacent residential amenity (A_T) = 1,292 m^2
2. Areas exposed to sunshine at each hourly test time ($AS_{(test)}$).

09:00 ($AS_{(test\text{-}09:00)}$) = 507 m^2
10:00 ($AS_{(test\text{-}10:00)}$) = 295 m^2
11:00 ($AS_{(test\text{-}11:00)}$) = 157 m^2
12:00 ($AS_{(test\text{-}12:00)}$) = 379 m^2
13:00 ($AS_{(test\text{-}13:00)}$) = 748 m^2
14:00 ($AS_{(test\text{-}14:00)}$) = 1,178 m^2
15:00 ($AS_{(test\text{-}15:00)}$) = 1,241 m^2
16:00 ($AS_{(test\text{-}16:00)}$) = 1,111 m^2
17:00 ($AS_{(test\text{-}17:00)}$) = 403 m^2
18:00 ($AS_{(test\text{-}18:00)}$) = 35 m^2

Number of test times = 10

3. The averages for the nine one-hour intervals ($AS_{(interval)}$):

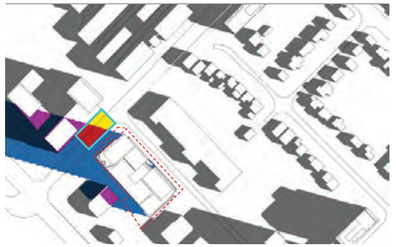
09:00-10:00 ($AS_{(interval\text{-}09:00\text{-}10:00)}$) = (507 m^2 + 295 m^2) ÷ 2 = 401 m^2
10:00-11:00 ($AS_{(interval\text{-}10:00\text{-}11:00)}$) = (295 m^2 + 157 m^2) ÷ 2 = 226 m^2
11:00-12:00 ($AS_{(interval\text{-}11:00\text{-}12:00)}$) = (157 m^2 + 379 m^2) ÷ 2 = 268 m^2
12:00-13:00 ($AS_{(interval\text{-}12:00\text{-}13:00)}$) = (379 m^2 + 748 m^2) ÷ 2 = 563.5 m^2
13:00-14:00 ($AS_{(interval\text{-}13:00\text{-}14:00)}$) = (748 m^2 + 1,178 m^2) ÷ 2 = 963 m^2
14:00-15:00 ($AS_{(interval\text{-}14:00\text{-}15:00)}$) = (1,178 m^2 + 1,241 m^2) ÷ 2 = 1,209.5 m^2
15:00-16:00 ($AS_{(interval\text{-}15:00\text{-}16:00)}$) = (1,241 m^2 + 1,111 m^2) ÷ 2 = 1,176 m^2
16:00-17:00 ($AS_{(interval\text{-}16:00\text{-}17:00)}$) = (1,111 m^2 + 403 m^2) ÷ 2 = 757 m^2
17:00-18:00 ($AS_{(interval\text{-}11:00\text{-}12:00)}$) = (403 m^2 + 35 m^2) ÷ 2 = 219 m^2
Number of test intervals = 9
Sum of ($AS_{(interval)}$) = 5,783 m^2

4. The overall average area in sunshine ($AS_{(average)}$) = [sum of ($AS_{(interval)}$)] ÷ [# of intervals]
= 5,783 m^2 ÷ 9
= 643 m^2

5. SAF = ($AS_{(average)}$) ÷ A_T
=643 m^2 ÷ 1,282 m^2
=0.5 m^2

0.5 is equal to 0.5. Therefore, the SAF meets the criteria.

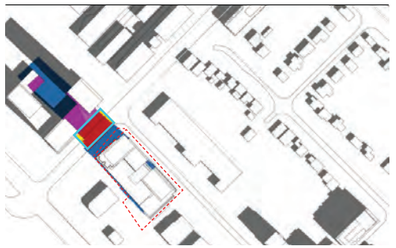
MARCH 21



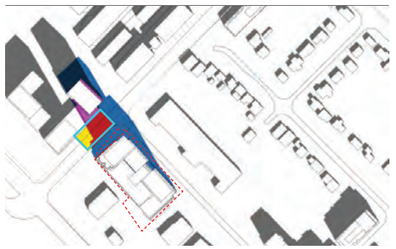
09:00 AM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 1,549 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 857 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 692 m^2



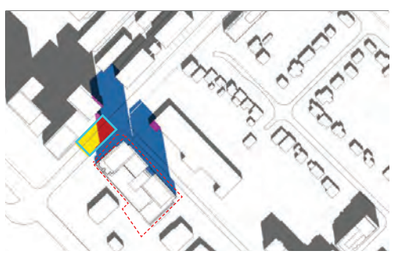
10:00 AM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 1,549 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 696 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 853 m^2



11:00 AM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 1,549 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 1,079 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 470 m^2



12:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 1,549 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 1,549 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 0 m^2



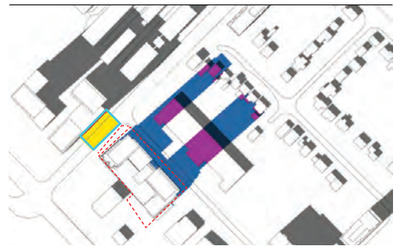
01:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 1,549 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 1,549 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 0 m^2



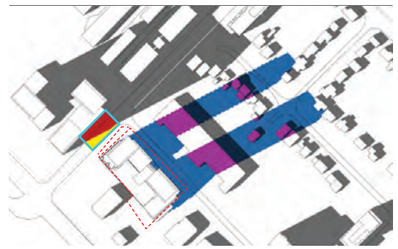
02:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 1,549 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 1,549 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 0 m^2



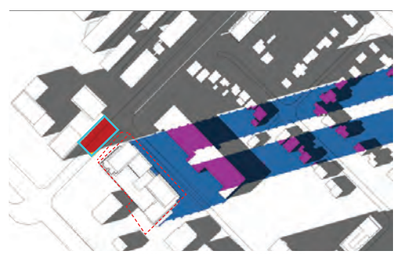
03:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 1,549 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 1,549 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 0 m^2



04:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 1,549 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 1,549 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 0 m^2



05:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 1,549 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 919m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 630 m^2



06:00 PM
ADJACENT RESIDENTIAL AMENITY SPACE
TOTAL AREA: 1,549 m^2
AREA EXPOSED TO SUNSHINE
($AS_{(test)}$): 413 m^2
AREA IN SHADOW (INCLUDING EXISTING AND PROPOSED SHADOWS): 1,136 m^2

NET NEW SHADOWS CAST ON ROOF SURFACES
NET NEW SHADOWS CAST ON GROUND SURFACES
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