CITY OF LITCHFIELD PARK

DESIGN REVIEW BOARD

Regular Meeting
Thursday, March 4, 2021
Immediately Following the Board of Adjustment Meeting at Approximately 7:15 p.m.
On Line Meeting

IN-PERSON ATTENDANCE AT PUBLIC MEETINGS HAS BEEN SUSPENDED UNTIL FURTHER NOTICE.

NOTICE IS HEREBY GIVEN PURSUANT TO A.R.S. §38-431.02 THAT MEMBERS OF THE DESIGN REVIEW BOARD WILL ATTEND BY ZOOM or AUDIO/VIDEO CONFERENCE CALL.

I. Call to Order

Zoom Meeting

a. Computer: https://us02web.zoom.us/j/87020556312
b. Telephone: 1 669 900 6833, 1 253 215 8782 or 1 346 248 7799 Meeting ID: 870 2055 6312
c. YouTube link: https://youtu.be/W4_sU-JYR6U

II. Business

A. Design Plans for a Second Story Addition/Exterior Remodel Proposed for 268 Laguna Drive West — **Information Action**

Discussion and possible action on the design plans for a second story addition/remodel proposed for 268 Laguna Drive West.

B. Design Plans for an Addition/Exterior Remodel Proposed for 4792 N. Barranco Drive — **Information Action**

Discussion and possible action on the design plans for an addition/exterior remodel proposed for 4792 N. Barranco Drive.

C. Design Plans for an Addition/Exterior Remodel Proposed for 204 Campbell Avenue — **Information Action**

Discussion and possible action on the design plans for an addition/exterior remodel proposed for 204 Campbell Avenue.

D. Design Plans for a Roof Mounted Solar Panel Installation Proposed for 520 Cascada Drive — **Information Action**

Discussion and possible action on the design plans for a roof mounted solar panel installation proposed for 520 Cascada Drive.

E. Design Plans for a Roof Mounted Solar Panel Installation Proposed for 241 Laguna Drive East — **Information Action**

Discussion and possible action on the design plans for a roof mounted solar panel installation proposed for240 Laguna Drive East.

F. Proposed Policy Regarding Criteria for Design Review Board Approval of Solar Panel Installations on Flat Roofs — **Information Action**

Review, discussion, and possible adoption of proposed policy regarding criteria for Design Review Board approval of solar panel installations on flat roofs.

III.	**Staff Report on Current Events**	**Information**
IV.	**Boardmembers Reports on Current Events**	**Information**
	This is the time Boardmembers may present a brief summary on current events. The Commission may not propose, discuss, deliberate or take any legal action on the information presented, pursuant to A.R. S. § 38-431.02.	
V.	**Adjournment**	**Action**

Susan Charnetsky, Chairman

1. City of Litchfield Park Criteria For DRB Approval of Solar Panel Installation in Flat Roof Applications

Criteria:
Per Zoning Code, General Provisions 31.22 Solar Energy Collector Panels:

b. The design and installation of solar energy collector panels shall be in compliance with the following standards:
…
4. Flat roof solar energy collector panels shall be positioned within the field of the roof plane as far from the roof edge as possible and, if ten inches above roof surface, whether rack mounted or flat mounted, shall be subject to the following requirements:
A. Shall be screened from public view.
B. The height of such screening, at minimum, shall be the height of the solar energy collector panel.
C. The screening may be by a parapet or by a screening wall replicating the materials of the building.

However:
Per 31.22 a. "…The design review board is authorized to approve deviations from the design and installation standards set forth in this subsection if it determines that strict compliance with the standards is impractical or may approve an alternative proposal if the requirements listed under subsection b of this section cannot be met without significant loss of efficiency.

In the case that b.4.B cannot be met, the DRB may consider approving an application that can establish through calculation that the installation will be fully concealed for an observer standing on the street.

2. Method for Establishing through Calculation that Solar Panels on a Flat Roof Will Be Concealed

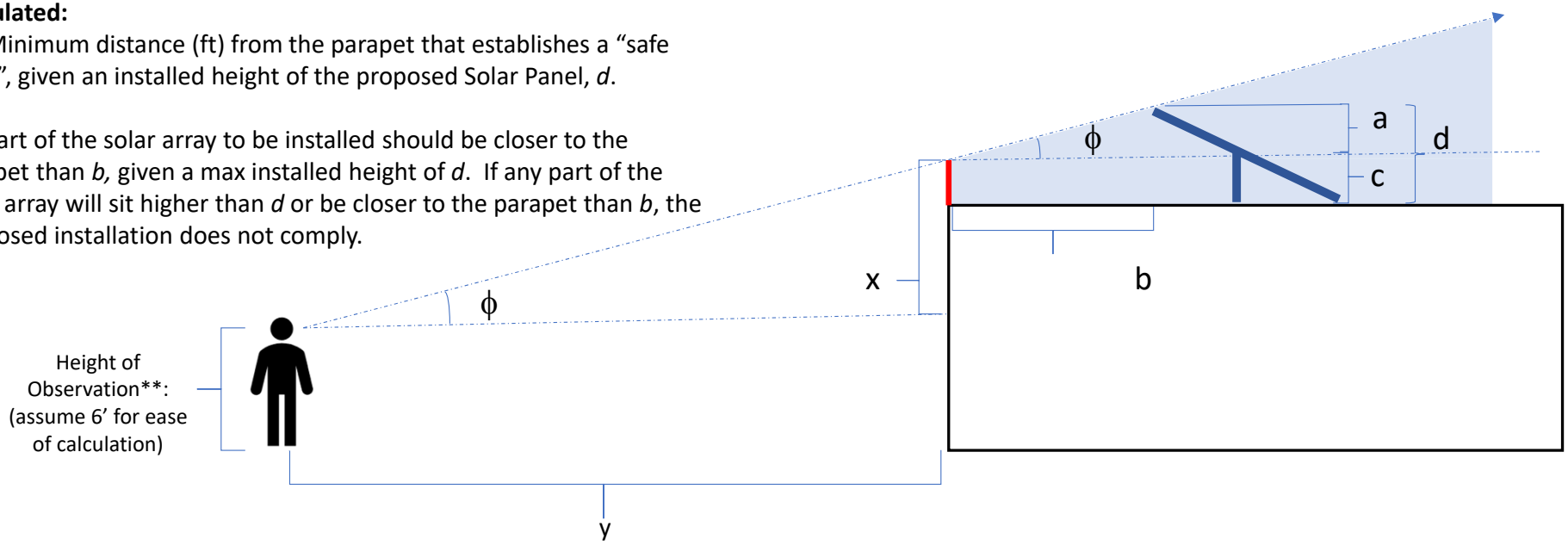
Known (Measured or Given):
x = Structure's Height to Ground (ft) – Height of Observation (ft)
y = Distance of Structure to Street (ft)
c = Height of Parapet at Shortest* (ft)
d = Maximum Installed Height of Solar Panel (ft)

Equations:

1. $a = d - c$
2. $b = a\left(\frac{y}{x}\right)$

Calculated:
b = Minimum distance (ft) from the parapet that establishes a "safe zone", given an installed height of the proposed Solar Panel, *d*.

No part of the solar array to be installed should be closer to the parapet than *b,* given a max installed height of *d*. If any part of the solar array will sit higher than *d* or be closer to the parapet than *b*, the proposed installation does not comply.



*Utilizing the shortest height of the parapet considers the worst-case scenario, and therefore allows us to ignore the slope of the roof to establish compliance. If compliance cannot be established under worst-case conditions, applicant can customize these calculations to more accurately reflect distance "c" based on actual site conditions.
**Assumes the relative elevation of the house is approximately the same as the elevation of the street. If the structure is significantly higher or lower than the street, the applicant should customize the calculations as necessary to establish compliance.

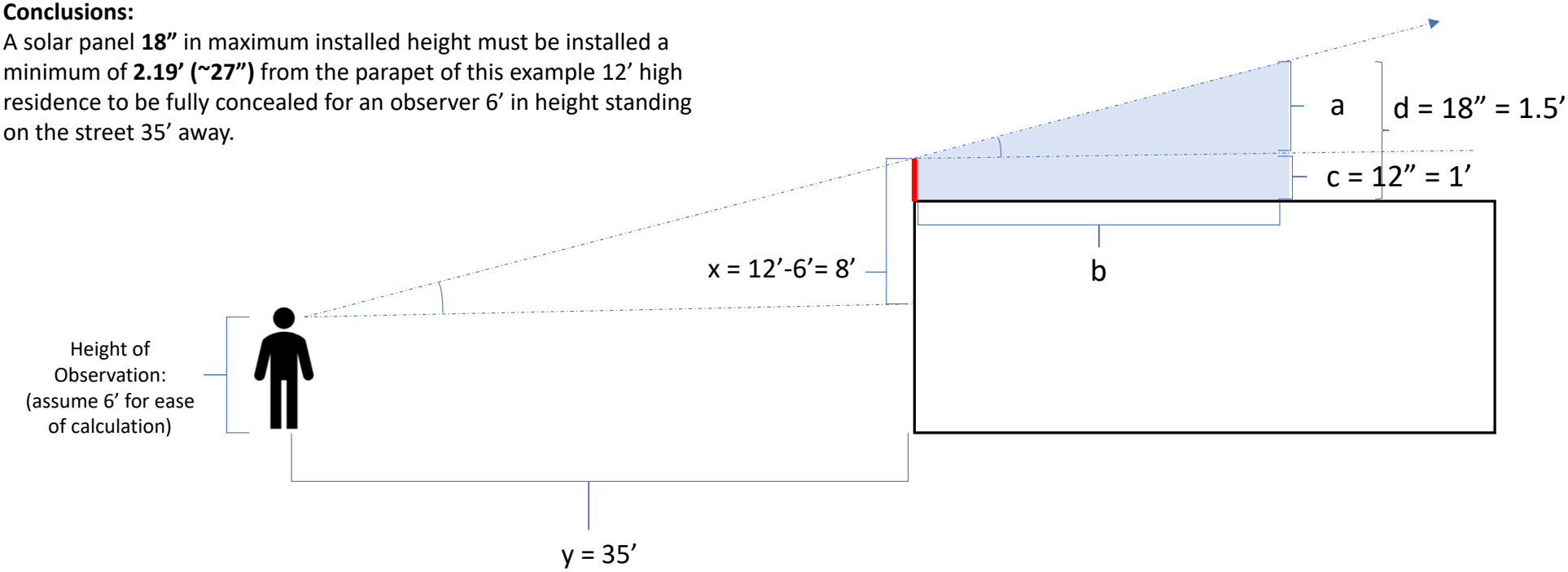
3. Example 1

Known (Measured or Given):
x = Structure's Height to Ground (ft) – Height of Observation (ft)
y = Distance of Structure to Street (ft)
c = Height of Parapet at Shortest* (ft)
d =Maximum Installed Height of Solar Panel (ft)

Equations:

1. $a = d - c$ $\quad a = 1.5 - 1 = 0.5$
2. $b = a\left(\frac{y}{x}\right)$ $\quad b = 0.5\left(\frac{35}{8}\right) = 2.187' = 26.25"$

Conclusions:
A solar panel **18"** in maximum installed height must be installed a minimum of **2.19' (~27")** from the parapet of this example 12' high residence to be fully concealed for an observer 6' in height standing on the street 35' away.



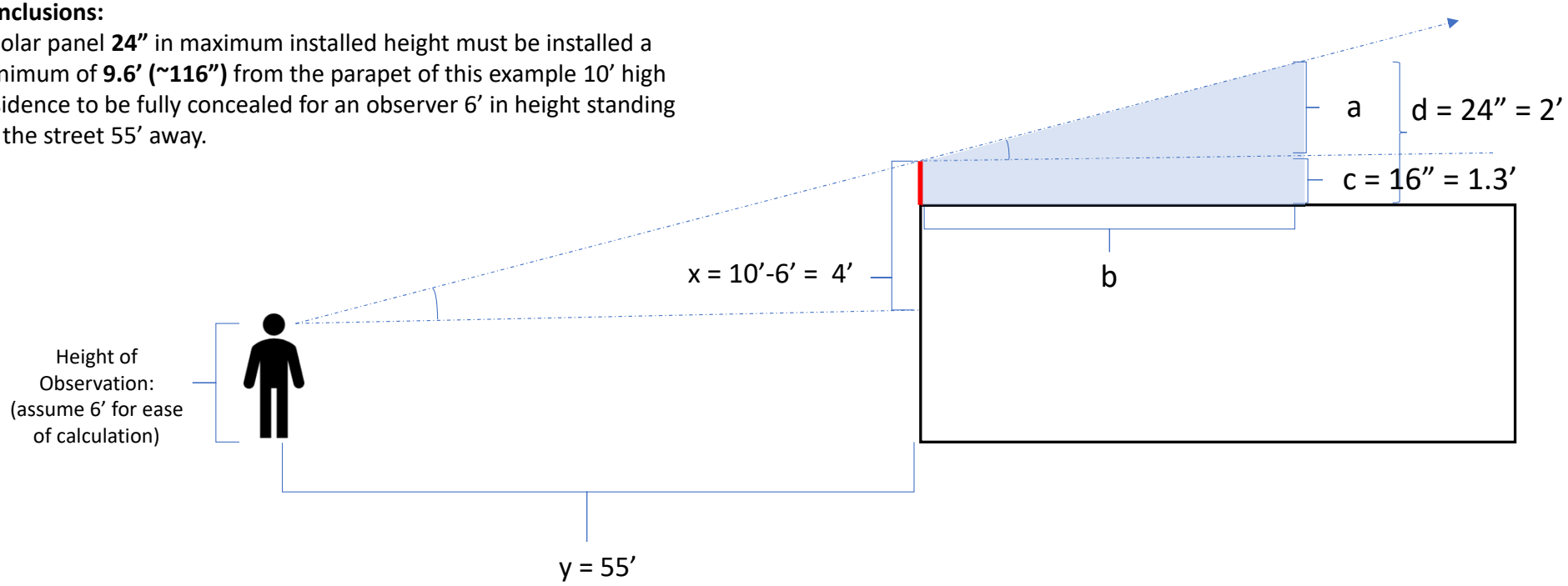
4. Example 2

Known (Measured or Given):
x = Structure's Height to Ground (ft) – Height of Observation (ft)
y = Distance of Structure to Street (ft)
c = Height of Parapet at Shortest* (ft)
d =Maximum Installed Height of Solar Panel (ft)

Conclusions:
A solar panel **24"** in maximum installed height must be installed a minimum of **9.6' (~116")** from the parapet of this example 10' high residence to be fully concealed for an observer 6' in height standing on the street 55' away.

Equations:

1. $a = d - c$ $\quad a = 2 - 1.3 = 0.7$
2. $b = a\left(\frac{y}{x}\right)$ $\quad b = 0.7\left(\frac{55}{4}\right) = 9.625' = 115.5"$



5. Calculation Worksheet for Applicant

Known (Measured or Given):
x = Structure's Height to Ground (ft) – Height of Observation (ft)
y = Distance of Structure to Street (ft)
c = Height of Parapet at Shortest* (ft)
d =Maximum Installed Height of PV Panel (ft)

Equations:

1. $a = d - c$ $\quad a =$ _____
2. $b = a\left(\frac{y}{x}\right)$ $\quad b =$ _____

Conclusions:
In this proposed installation, the solar panels will be installed at a

maximum height of _____ and a minimum distance of _____(ft)

(~_____(in)) from the parapet of this residence to ensure it is fully

concealed to an observer 6' in height standing on the street.