MEMORANDUM

To: Brookline Development Committee/Boylston Street Task Force
From: David Spillane
Subject: Worst Case Shadow Analysis for a G-2.0 Development at Red Cab Site.
Date: August 10, 1993

The attached pages contain a review of the potential shadow impacts of a new development project on the Red Cab site, assuming zoning is changed to G-2.0.

This analysis demonstrates that a rezoning of the Red Cab site to G-2.0 would result in very limited additional shadow on the White Place area. However, a future building design should be carefully reviewed under Section 5.09 to ensure that all potential concerns are understood and addressed.

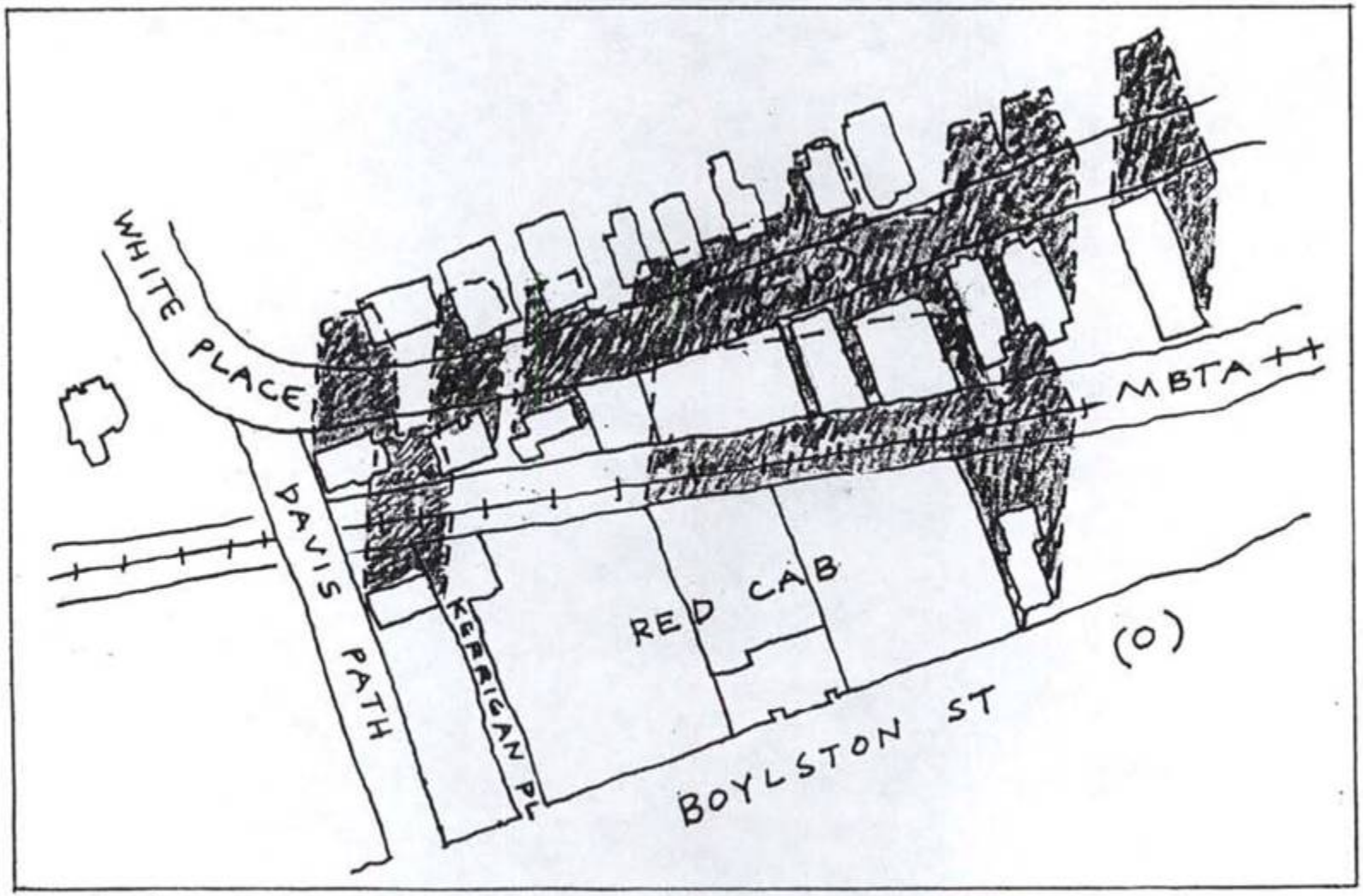
The analysis represents a "worst case scenario", as requested by the Task Force at a Development Committee meeting on June 22, 1993. The time of the year examined (December 21) is the worst day of the year for shadows as the sun is at its lowest in the sky and shadows are longest. The potential development on the site is also the "worst case" condition for shadows. It assumes that maximum allowable building heights occur on the entire area of the parcel (in reality this is seldom, if ever, achieved). No attempt has been made to modify the building design to reduce shadows. Therefore the case illustrated represents the worst shadow impact of any building that could potentially be accommodated on the parcel. In reality, as building heights would likely be lower in some parts of the parcel, any possible shadow impacts could be reduced through careful design and design review by the Planning Board under Section 5.09.

Despite these extreme assumptions, the diagrams indicate that very limited additional shadow will result from a building of the size examined. The areas where the shadows would fall are almost entirely already shadowed by existing buildings, mostly residential buildings on the south side of White Place.

The attached diagrams indicate the following:

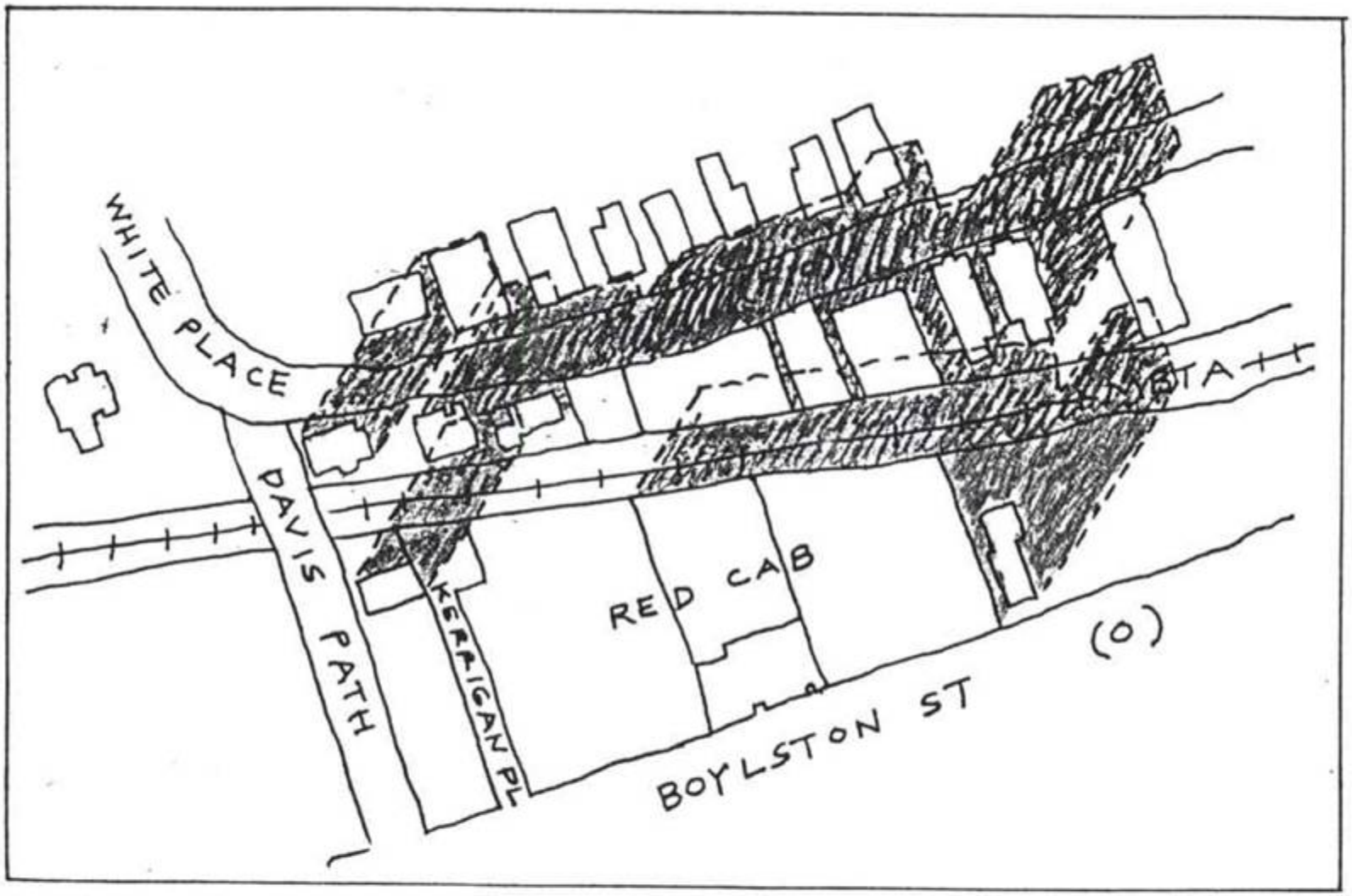
A-1	Existing Shadows	12:00 Noon	December 21
A-2	Existing Shadows	2:00 PM	December 21
B-1	Shadows cast by G-2.0 Development	12:00 Noon	December 21
B-2	Shadows cast by G-2.0 Development	2:00 PM	December 21
C-1	New shadows due to Development	12:00 Noon	December 21
C-2	New shadows due to Development	2:00 PM	December 21

Note 1: Diagrams are based on the following assumptions for December 21: 1) 12:00 noon: sun altitude, 27 degrees; azimuth, due south 2) 2:00pm: sun altitude, 21 degrees; azimuth, 30 degrees W of south.
Note 2: Times noted are solar time. In Brookline during December, solar noon (the time when the sun is at its highest) occurs approximately 17 minutes before noon local time (11:43AM).



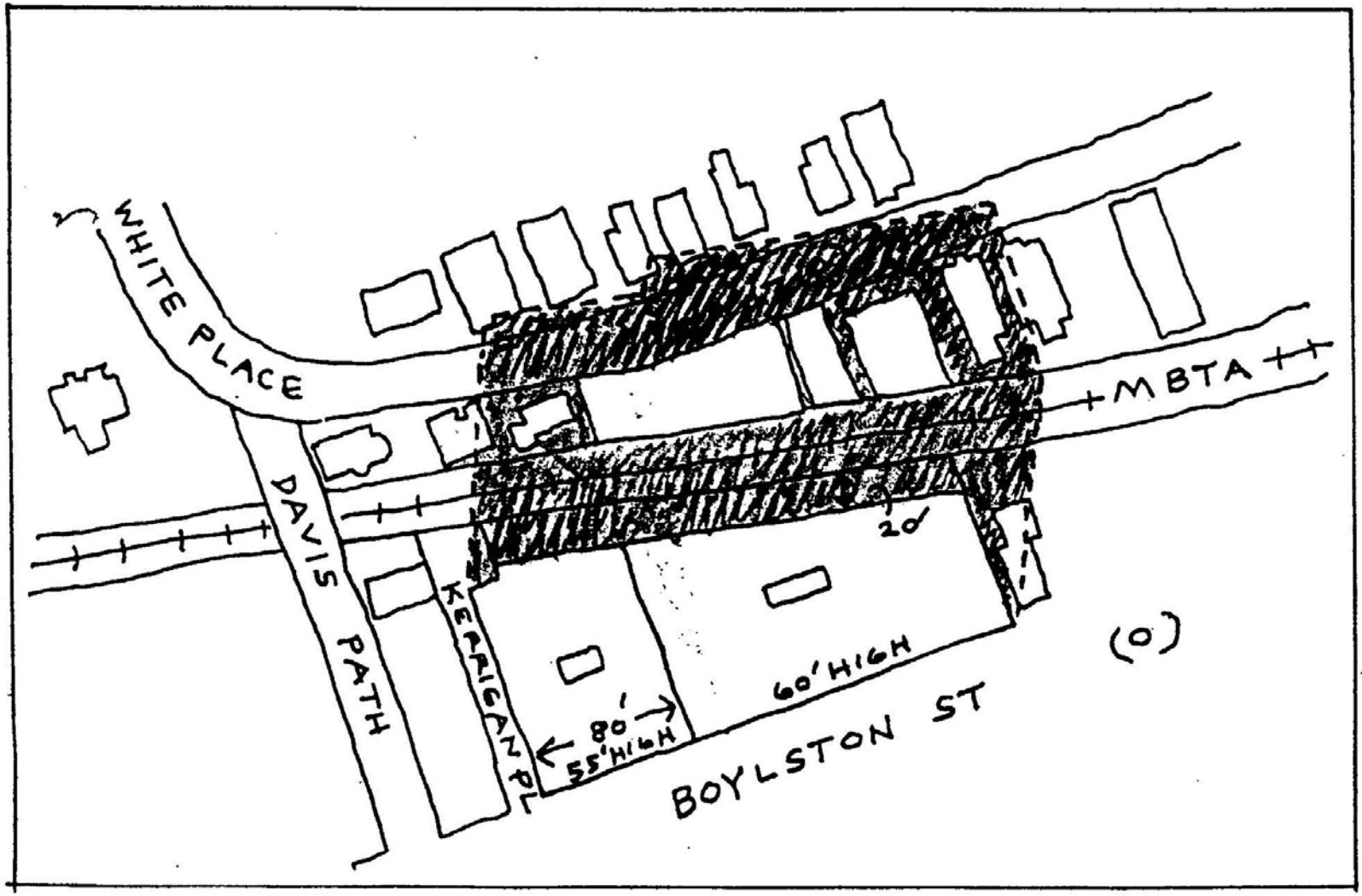
EXISTING SHADOWS 12:00 NOON, DECEMBER 21

A-1



EXISTING SHADOWS 2:00 P.M., DECEMBER 21

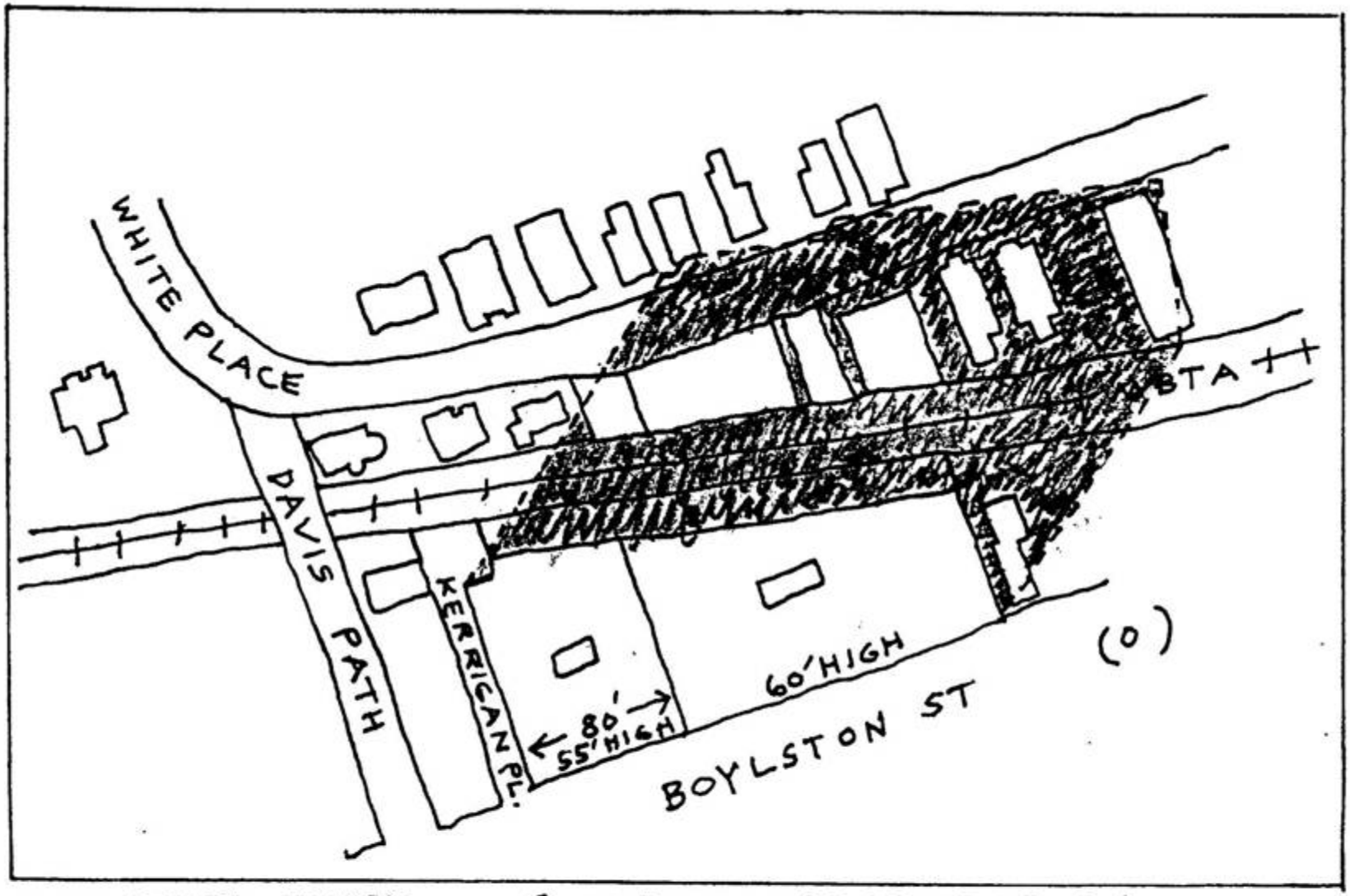
A-2



NEW DEVELOPMENT 12:00 NOON, DECEMBER 21
(WORST CASE)

THEORETICAL SHADOW (= SHADOW CAST IF NO OTHER BUILDINGS EXISTED)

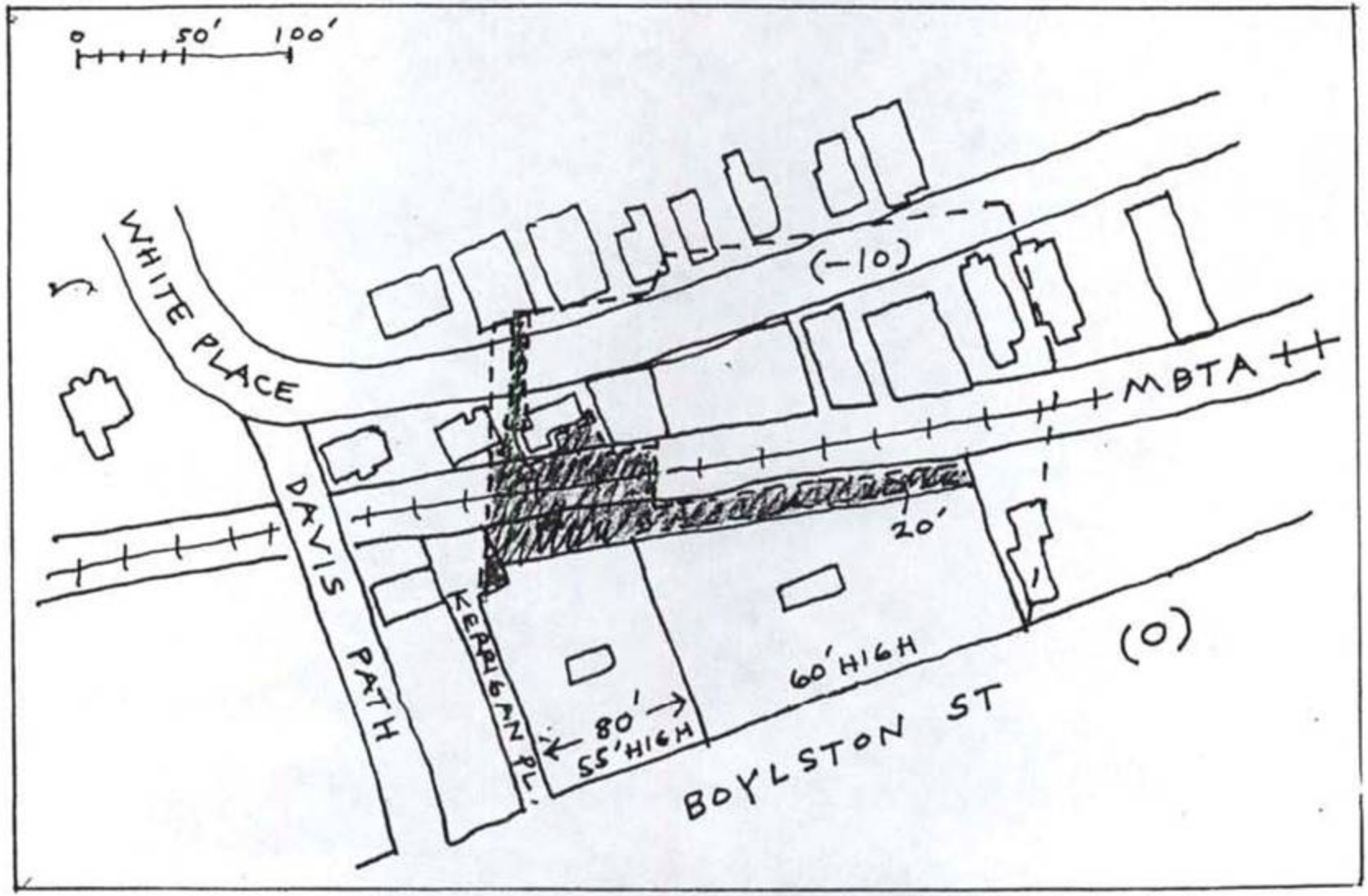
B-1



NEW DEVELOPMENT 2.00 P.M., DECEMBER 21
(WORST CASE)

THEORETICAL SHADOW (= SHADOW CAST IF NO OTHER BUILDINGS EXISTED)

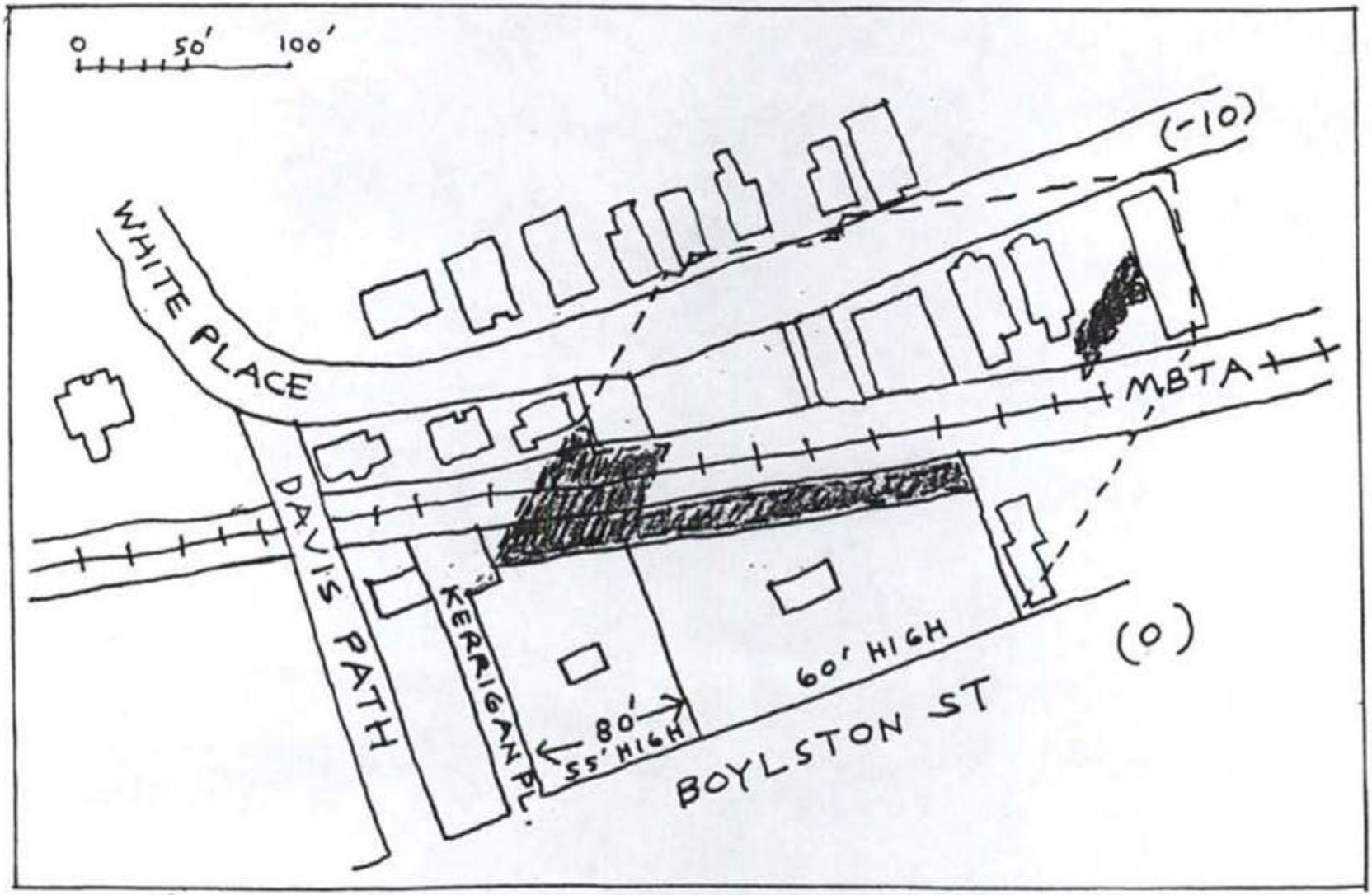
B-2



NEW SHADOW
(WORST CASE)

12:00 NOON, DECEMBER 21

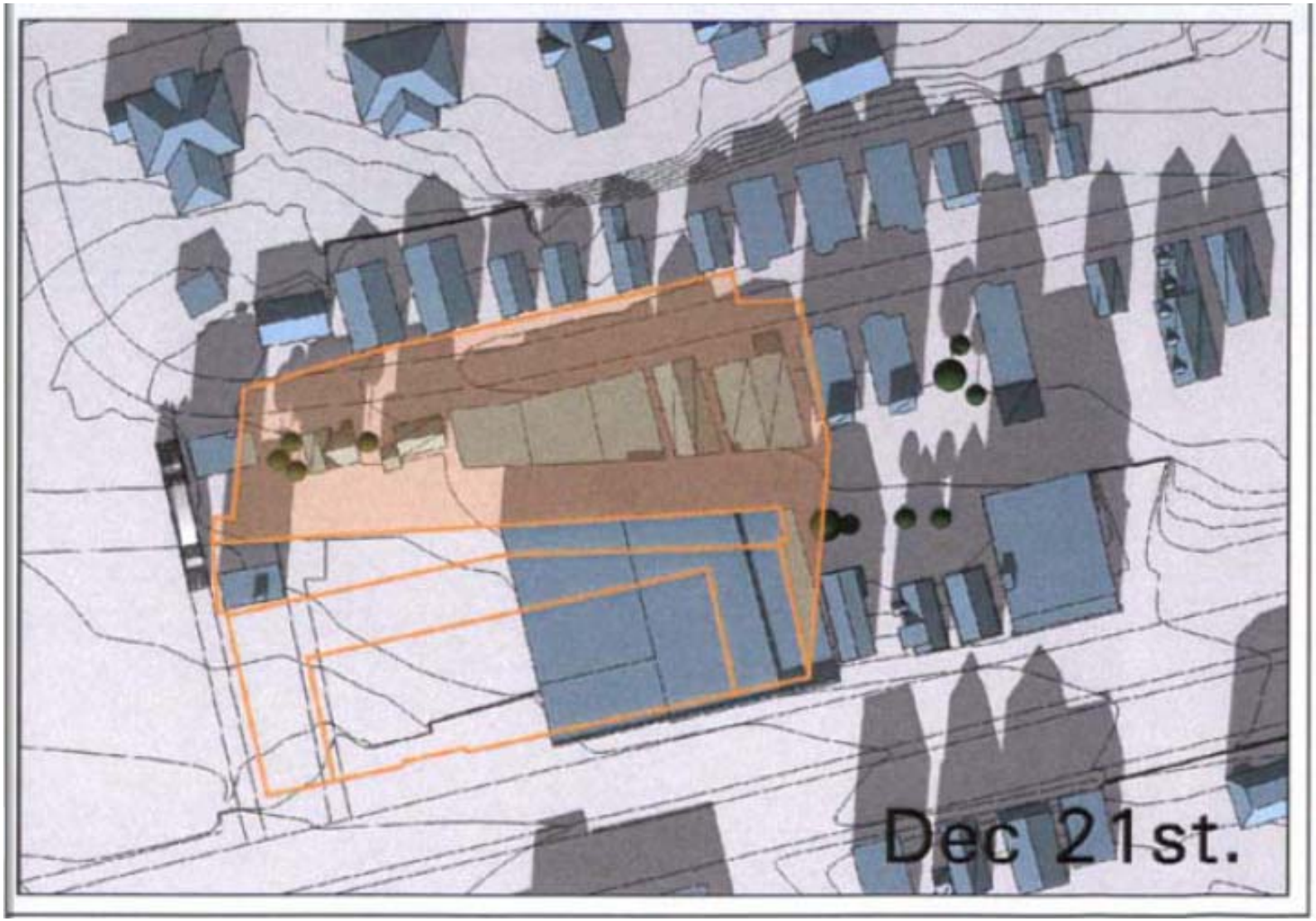
C-1

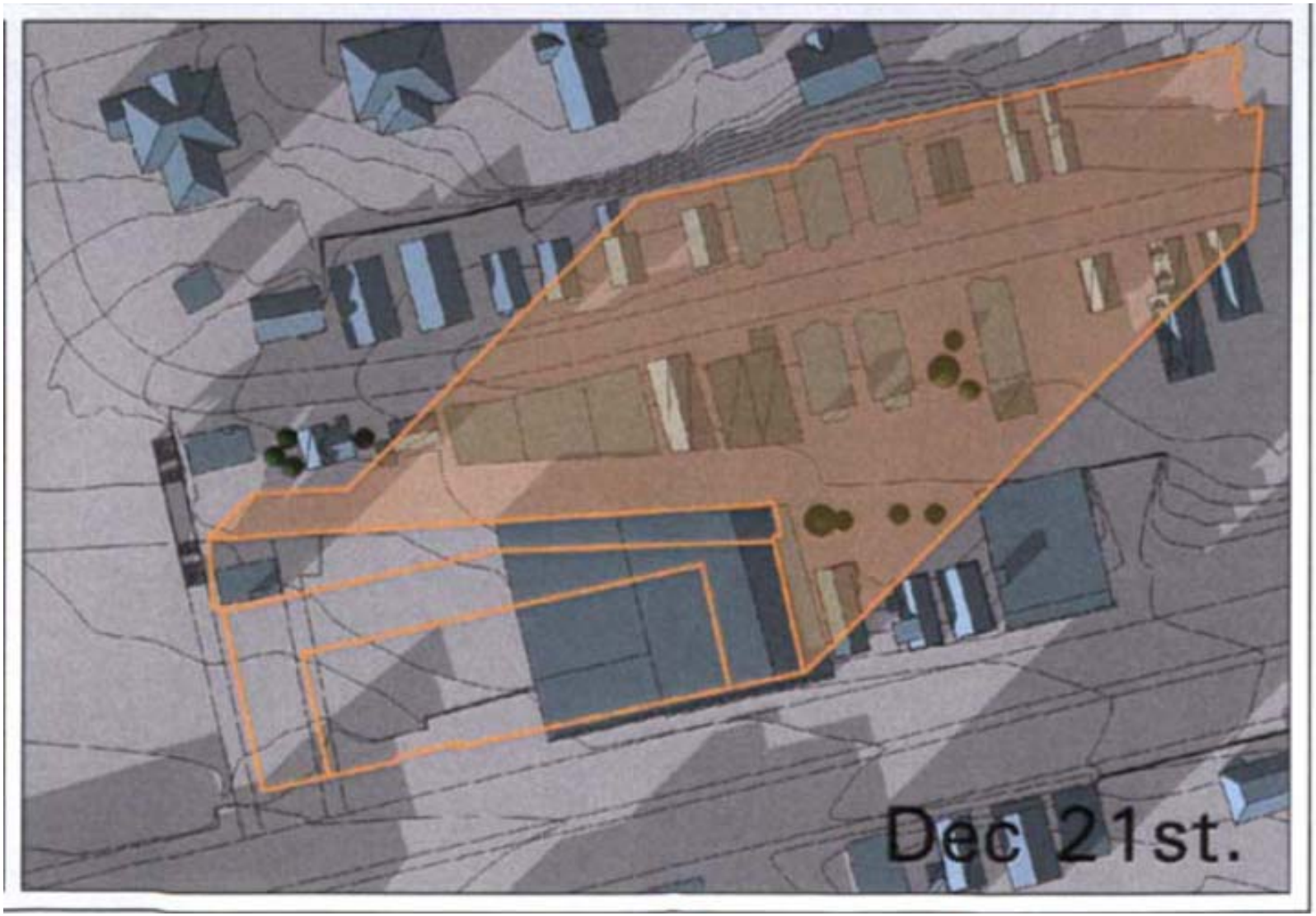


NEW SHADOW
(WORST CASE)

2·00 P.M., DECEMBER 21

C-2


Dec 21st.
12:00pm
existing
proposed


Dec 21st.
3:00pm
existing
proposed