

Wall Inspection Report

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Prepared for: Development Services
City of Goodyear
14455 W. Van Buren Street, Suite D101
Goodyear, Arizona, 85338

Prepared By:

Michael Baker

INTERNATIONAL
2929 N. Central Avenue, 8th Floor
Phoenix, AZ 85012



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Figure 1. Overall Site Map

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Introduction

An inspection of the privacy wall separating the 29 residential properties located on the east side of S 172nd Dr and the agricultural field to the east was completed on March 21, 2020. The inspection was conducted from the agricultural parcel for the entire stretch of the wall. Additionally, an inspection of the interior side of the wall was conducted for house No. 119, 223 and 271.

Purpose of The Inspection

The inspection was completed in order to evaluate the current conditions of the wall as requested by the City of Goodyear.

Scope of The Inspection

The evaluation is limited to visual inspection of the wall and documenting information related to wall conditions including deteriorations, cracks, excessive settlement and other visible damages to the wall.

Site Location

The residential privacy wall is located at S 172nd Dr in Goodyear, Arizona. The homes are shown below in **Figure 1** highlighted and outlined in red. A closer view of the segments and their lot number are shown in **Figures 2 through 5**.



Figure 2. First Segment of Houses



Figure 3. Second Segment of Houses



Figure 4. Third Segment of Houses



Figure 5. Fourth Segment of Houses

Definition of Terms

The following defines the terms used to describe the common observations reported.

- **Concrete Masonry Unit (CMU)** refers to the blocks used in the wall construction. Two types of CMU's were observed along the wall. A thicker split-face type blocks was used for construction of the wall for two properties on the north end and one property on the south end of the wall (House numbers: 119, 133, and 385) shown in **Figure 6**. And standard 8" x 16" blocks were used for the rest of the wall shown in **Figure 7**.



Figure 6. Split-face CMU



Figure 7. Standard CMU

- **Loss of Paint and Surface Degradation** refers to paint loss and some surface degradation at the lower two rows of blocks. This condition is likely attributed to the presence of excess moisture in the blocks from external sources. Examples are shown in **Figure 8**.



Figure 8. Examples of Loss of Paint and Surface Degradation

- **Slightly Loose Panels** describes panels that are slightly loose and would slightly wobble when pushed or shaken.
- **Loose CMU** describes blocks that are no longer bonded to the rest of the wall. This is due to the cracking or deterioration in the mortar between two rows of blocks. Example is in **Figure 9**



Figure 9. Example of Loose CMU

- **Cracking** refers to the pattern of cracks along the mortar lines of the wall shown in **Figure 10**. They are typically found in a diagonal pattern (step crack) at the ends of the wall segments. Cracking can arise due to plant roots growth under the wall, upheaval, and differential settlement along the wall.



Figure 10. Examples of Cracking

- **Bulging Bricks** refers to a point in the wall where the bricks have been pushed out of position shown in **Figure 11**. This occurred at locations in the wall which had thick trees or plants growing near the wall. The growth from the plant would push out the bricks over time.



Figure 11. Examples of Bulging Blocks

Inspection Summary

The common issues observed during the inspection of the wall are listed in **Table 1**.

It is important to note that over the entire length of the wall the ground immediately behind the wall as shown in **Figure 12**, is sloping towards the wall. This may lead to water collecting near the bottom of the wall.



Figure 12. Ground sloping towards wall - Wall at South End

Table 1. Inspection Summary

Sequence No.	House No.	No. of Exposed CMU Rows	Bottom row Paint Loss & Surface Degradation Yes / No	Number of Loose Panels	Loose CMU (top row) Yes / No	Cracking Yes / No	Other
1	119	9	No	0	No	No	Split-Face Block type
2	133	9	No	0	No	No	Split-Face Block type
3	147	9	Yes	3	Yes	No	—
4	159	9	Yes	4	Yes	No	—
5	173	8.5	Yes	0	Yes	No	—
6	187	8	No	0	Yes	Yes	Bulging Blocks
7	201	8	Yes	2	Yes	Yes	—
8	215	7.5	No	3	Yes	No	—
9	223	8	Yes	0	Yes	No	—
10	231	8	No	5	Yes	No	—
11	239	9	No	0	No	No	—
12	247	8	No	1	No	No	—
13	255	8.5	No	0	No	No	—
14	263	8.5	No	2	No	No	—
15	271	7.5	No	4	No	No	—
16	277	9	Yes	6	Yes	No	—
17	285	9	Yes	0	No	No	—
18	293	9	Yes	4	Yes	No	—
19	305	9	Yes	5	No	No	—

Sequence No.	House No.	No. of Exposed CMU Rows	Bottom row Paint Loss & Surface Degradation Yes / No	Number of Loose Panels	Loose CMU (top row) Yes / No	Cracking Yes / No	Other
20	313	9	Yes	3	Yes	No	—
21	321	11	Yes	0	No	No	—
22	329	9	Yes	1	No	No	—
23	337	9	Yes	0	No	No	—
24	345	9	No	0	Yes	No	Bulging Blocks
25	353	9	No	0	No	No	—
26	361	9.5	Yes	0	No	Yes	—
27	369	9	Yes	0	No	No	—
28	377	9.5	Yes	0	No	No	—
29	385	9	Yes	0	No	No	Split-Face Block type

Wall Inspection of Properties with Specific Concerns

In addition to the inspection of exterior side of the entire length of the privacy wall, an inspection of the inner side of the wall was conducted for house No.119, 223, and 271. The property owners of these three properties have expressed a concern about the integrity of the wall and requested to have the wall inspected from the inside of the property. The following describes the observations made for each house.

House No. 119. The property owner indicated that she would like the wall inspected to make sure it was in good condition. Upon inspection, no signs of damage, deterioration or defects were observed. **Figure 13** shows photographs of the interior side of wall.



Figure 13. House No. 119 Wall Inspection

House No. 223. The issues observed along the wall are: The lower two rows of blocks exhibit paint loss and some surface degradation to a depth of approximately 1/16" almost for the entire length of the wall. It was also observed that top row of CMU's is loose along the entire length of the wall. **Figure 14** shows photographs of the interior side of wall.



Figure 14. House No. 223 Wall Inspection

House No. 271. The lower two rows of blocks exhibit paint loss and surface degradation to a depth of approximately 1/16". There are also four wall panels that are slightly loose at one end and would wobble if pushed. **Figure 15** shows photographs of the interior side of wall.



Figure 15. House No. 271 Wall Inspection

Conclusion

The inspection of the privacy wall for 29 residential properties revealed that while the wall has a few minor issues such as surface degradation at the bottom of wall, slightly loose wall panels and CMU's, the wall is generally in good conditions. No severe cracking, settlement or tilting of the wall was observed. The predominant issue observed was the loss of paint and surface degradation of the bottom two rows of blocks for most of the wall. In order to prevent further degradation, it is advised to keep moisture from all external sources away from the wall and grade the ground behind and in front of wall to slope away from the wall.