RAMBOLL ENVIRON

MEMO

Date **August 11, 2015**

To **Sandra Lyon, SMMUSD Superintendent**

From **Ramboll Environ US Corporation**[1]

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UPDATE ON CAULK REMOVAL ACTIVITIES AT MALIBU HIGH SCHOOL AND JUAN CABRILLO ELEMENTARY SCHOOL

This update is submitted to the Santa Monica – Malibu Unified School District (SMMUSD or the District) to summarize caulk removal activities that have occurred at Malibu High School (MHS) and Juan Cabrillo Elementary School (JCES) during the 2015 summer break. All work was conducted in a manner consistent with the District's *Site-Specific PCB-Related Building Materials Management, Characterization and Remediation Plan for the Library and Building E Rooms 1, 5, and 8 at Malibu High School* (MHS Specific Plan) dated July 2014 as subsequently amended in the *Supplemental Removal Information for the Library, Building E – Rooms 1, 5, and 8 and Building G – Room 506 at Malibu High School* (Supplement) dated September 26, 2014 as approved by United States Environmental Protection Agency (USEPA) Region IX on October 31, 2014.

Caulk removal has been successfully completed in rooms containing building materials in which polychlorinated biphenyls (PCBs) have been identified and verified at concentrations above 50 parts per million (ppm). The specific locations of the caulk removal were identified in the MHS Specific Plan and in the March 2015 *Notification of Additional Locations at Malibu High School and Juan Cabrillo Elementary School to be Addressed in Accordance with October 2014 USEPA Approved Plan* (Notification of Additional Locations); these areas are also summarized in the attached figures. These areas included the following:

Interior window caulk only in contact with non-porous substrates

- Building E (000, Blue Shark) Rooms 1, 3, 5, 7, and 8

Interior window caulk also in contact with porous substrate

- MHS Building A (800, Great White Shark) Library
- JCES Building F Rooms 18, 19, 22, and 23
- MHS Building J (700, Old Gymnasium) Room 704 and 705[2]

[1] As of May 1, 2015, ENVIRON International Corporation's (ENVIRON's) name has been changed to Ramboll Environ US Corporation (Ramboll Environ).

[2] Although caulk with a PCB concentration above 50 ppm was not identified and verified in MHS Building J (700, Old Gymnasium) Room 705, this room was included in removal activities because the window from Room 704, which did contain caulk with a verified PCB concentration above 50 ppm, extended into this room.

Interior door caulk in contact with porous substrate

- MHS Building G (500, Angel Shark) Room 506 (woodshop)[3]
- MHS Building G (500, Angel Shark) Room 505 (art room)
- MHS Building J (700, Old Gymnasium) Room 704 Hallway

Interior window and door caulk in contact with porous substrate

- MHS Building I (400, Leopard Shark) Room 401[4]

The remainder of this letter summarizes the caulk removal and associated confirmatory air and wipe sampling activities in these rooms at MHS and JCES.

Objectives

As outlined in the Supplement and USEPA's October 31, 2014 approval letter, the objectives of the removal activities in the specified areas include:

- Physically remove caulking identified and verified with greater than or equal to (≥) 50 ppm PCBs.
- Decontaminate non-porous surface materials adjacent to ≥ 50 ppm PCB-impacted caulking and perform post-decontamination confirmation wipe sampling with a cleanup goal of less than (<) 1 micrograms per 100 square centimeters (µg/100 cm^2).
- Prepare surfaces and encapsulate porous substrate in contact with ≥ 50 ppm PCB-impacted caulking up to 1 foot away from the caulking/substrate contact.
- Conduct post-removal confirmatory air and wipe sampling with the goal of achieving USEPA's public health levels for PCBs in indoor school air[5] and a PCB surface wipe concentration of <1 µg/100 cm^2.

Remedy Implementation

Caulking Removal and Replacement

In accordance with Appendix F.1.4.1 of the MHS Specific Plan, the caulking in which ≥ 50 ppm PCBs was identified and verified was physically removed. Removal of window and door units was not required in order to remove the caulking. Although SMMUSD was only required to remove building materials with verified PCB concentrations ≥ 50 ppm, the District voluntarily removed caulk from neighboring windows. Locations of caulk removal are shown in orange in the attached figures.

Decontamination of Non-Porous Surfaces

In accordance with Appendices F.1.5 and F.1.9 of the MHS Specific Plan, non-porous surfaces adjacent to ≥ 50 ppm PCB-impacted caulking were decontaminated. Decontamination occurred in MHS Building E (000, Blue Shark) Rooms 1, 3, 5, 7, and 8, as well as JCES Rooms 18, 19, 22, and 23.[6] Following decontamination, confirmatory surface wipe samples were collected from the decontaminated surfaces in each room. Once post-decontamination surface

[3] Analytical results greater than (>) 10 micrograms per 100 square centimeters (10 µg/100cm^2) total PCBs were reported for surface wipe samples taken on caulking around interior doorframes in MHS Building G (500, Angel Shark) Room 506 (woodshop) even after repairs and additional cleaning, so SMMUSD volunteered to implement a similar remedy (i.e., caulk removal) for interior door caulking in this room.

[4] In MHS Building I (400, Leopard Shark) Room 401, the neighboring window unit (adjacent to the window unit with a verified PCB concentration of ≥ 50 ppm) was also connected to an adjacent door unit. As a result, the caulking was removed from both the neighboring window unit as well as the door unit.

[5] Revised values available online: http://www.epa.gov/pcbsincaulk/pdf/pcb_bdg_mat_qa.pdf

[6] JCES Rooms 18, 19, 22, and 23 had caulk removed that was in contact with non-porous and porous substrates, so both decontamination and encapsulation were required in these rooms.

wipe samples confirmed PCB concentrations below the cleanup goal of <1 µg/100 cm^2, the removed caulking was replaced with new, non-PCB containing caulking. Post-decontamination sampling results met the cleanup goal of <1 µg/100 cm^2 in all areas and the data will be presented in a summary report following completion of sampling activities at MHS and JCES this summer.

Encapsulation of Adjacent Porous Substrate

In accordance with Appendix F.1.6 of the MHS Specific Plan, porous substrate adjacent to ≥50 ppm PCB-impacted caulking had its surface prepared and encapsulated up to 1 foot away from the caulking/substrate contact. Encapsulation occurred in MHS Building A (800, Great White Shark) Library; MHS Building G (500, Angel Shark) Rooms 505 and 506; MHS Building I (400, Leopard Shark) Room 401; MHS Building J (700, Old Gymnasium) Rooms 704/704 Hallway and 705; and JCES Building F Rooms 18, 19, 22, and 23.[6]

As recommended by USEPA Region IX in their approval letter to SMMUSD dated October 31, 2014, a non-volatile organic compound (VOC) epoxy-based encapsulant (i.e., Sikagard® 62) was used. Following encapsulation, surface wipe samples were collected from the encapsulated surfaces in each room. Once post-encapsulation surface wipe samples confirmed PCB concentrations below the cleanup goal of <1 µg/100 cm^2, the removed caulking was replaced with new, non-PCB containing caulking. Post-encapsulation sampling results met the identified goal of <1 µg/100 cm^2 in all areas identified above and the data will be presented in a summary report following completion of sampling activities at MHS and JCES this summer.

In addition, encapsulation also occurred in MHS Building E (000, Blue Shark) Rooms 1 and 3 on the wall under the windows (up to 1 foot away from the windows). Although these walls were not observed to be in direct contact with building materials with verified PCB concentrations above 50 ppm, this encapsulation was performed, in consultation with USEPA[7], after determining that small portions of the porous wall likely absorbed residual materials from the removal action. Post-encapsulation results met the identified goal of <1 µg/100 cm^2 in these areas.

Post-Removal Confirmatory Air and Wipe Samples

In accordance with Appendix F.1.11 of the MHS Specific Plan, additional air and surface wipe samples were collected from the rooms after caulk removal, decontamination of non-porous surfaces, encapsulation of porous surfaces, and re-caulking. Once the post-removal air samples confirmed PCB concentrations below USEPA's public health levels for PCBs in indoor school air and post-removal surface wipe samples confirmed PCB concentrations below the USEPA benchmark of <1 µg/100 cm^2, the rooms were re-opened for occupancy. At the time of preparing this memorandum, the laboratory is still analyzing sampling results for a closet in MHS Building G (500, Angel Shark) Room 505 and JCES Building F Rooms 18 and 19, and only the closet and these two rooms currently remain closed pending laboratory results.

[7] Email from Douglas Daugherty, Ramboll Environ, to Tom Huetteman, USEPA, dated August 3, 2015.

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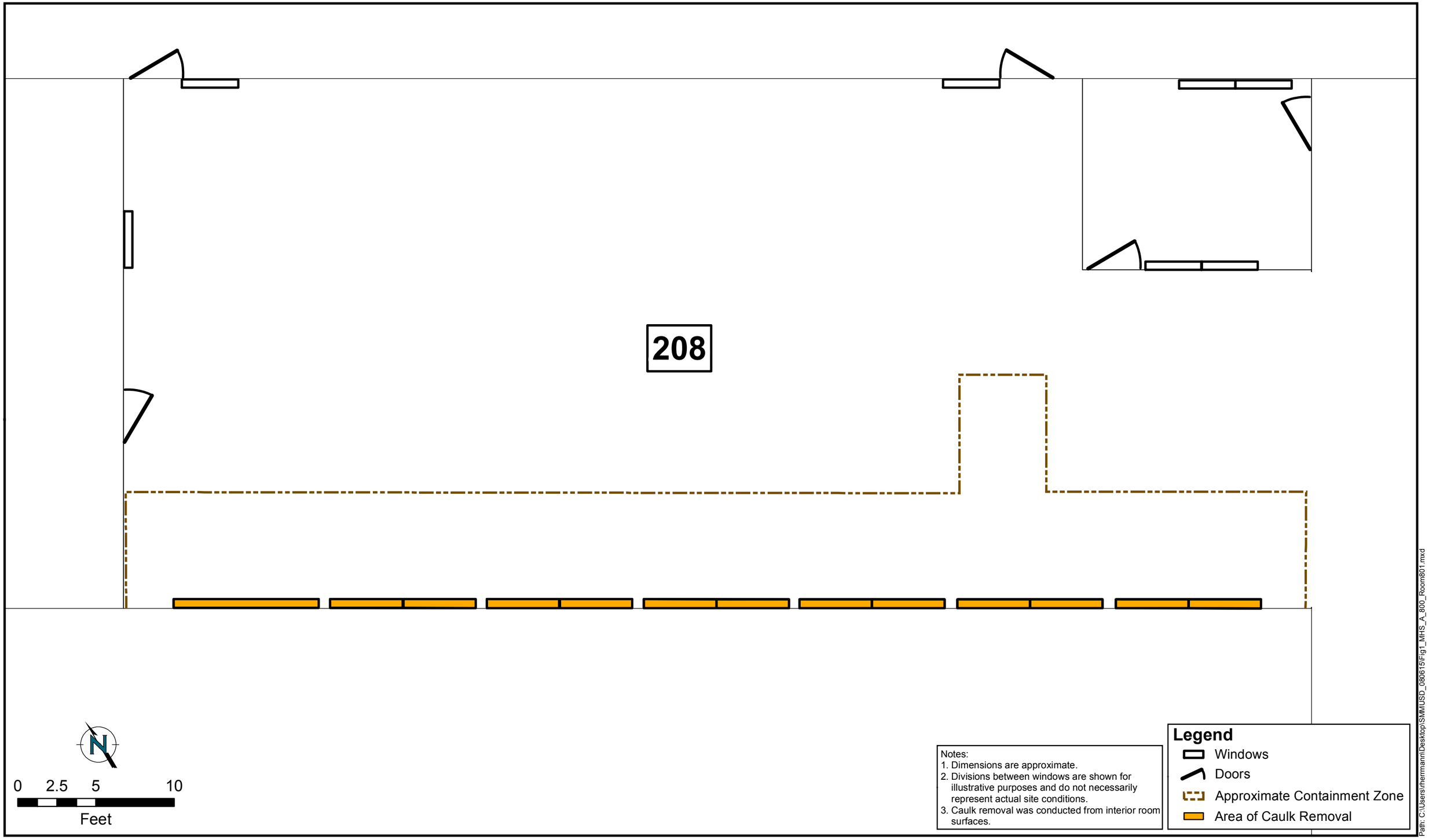
FIGURES



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DRAFTED BY: RRH | Date: 8/10/2015

Location of Interior Window Caulk Removal in Room 801 (Room ID 208)
Building A (800, Great White Shark) at MHS

Malibu High School
30215 Morning View Drive, Malibu, California

Figure
1

PROJECT: 0433980Q

Path: C:\Users\rherrmann\Desktop\SMMUSD_080615\Fig1_MHS_A_800_Room801.mxd

Notes:
1. Dimensions are approximate.
2. Divisions between windows are shown for illustrative purposes and do not necessarily represent actual site conditions.
3. Caulk removal was conducted from interior room surfaces.

Legend

- Windows
- Door
- Approximate Containment Zone
- Area of Caulk Removal

116

0 2 4 8

Feet

Path: C:\Users\rherrmann\Desktop\SMMUSD_080615\Fig2_MHS_E_000_Room1.mxd

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Location of Interior Window Caulk Removal in Room 1 (Room ID 116) Building E (000, Blue Shark) at MHS

Malibu High School
30215 Morning View Drive, Malibu, California

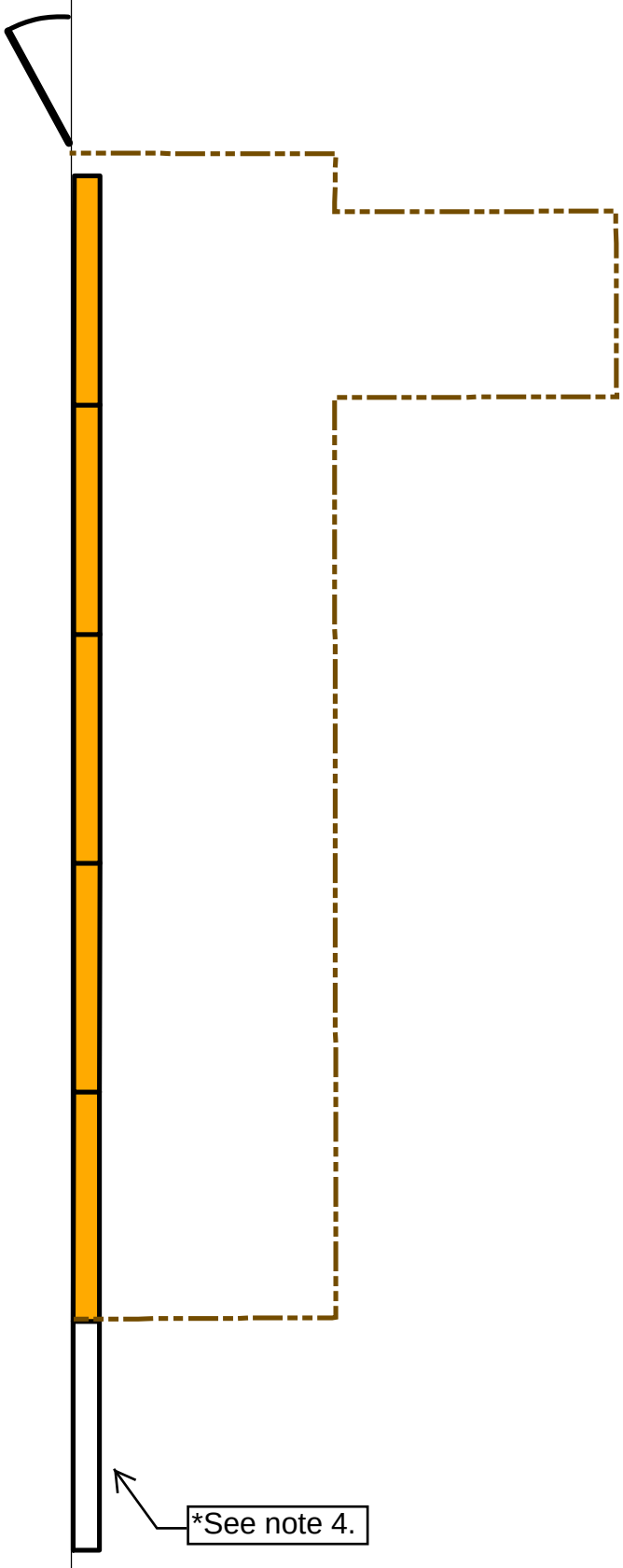
Figure 2

PROJECT: 0433980Q

Notes:
1. Dimensions are approximate.
2. Divisions between windows are shown for illustrative purposes and do not necessarily represent actual site conditions.
3. Caulk removal was conducted from interior room surfaces.
4. Caulking was not observed on the window at the south end of the room.

Legend

- Windows
- Door
- Approximate Containment Zone
- Area of Caulk Removal



0 2 4 8
Feet

Path: C:\Users\rhermann\Desktop\SMMUSD_0806151\Fig3_MHS_E_000_Room3.mxd

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Location of Interior Window Caulk Removal in Room 3 (Room ID 118) Building E (000, Blue Shark) at MHS

Malibu High School
30215 Morning View Drive, Malibu, California

Figure 3

PROJECT: 0433980Q

Notes:
1. Dimensions are approximate.
2. Divisions between windows are shown for illustrative purposes and do not necessarily represent actual site conditions.
3. Caulk removal was conducted from interior room surfaces.

Legend

- Windows
- Door
- Approximate Containment Zone
- Area of Caulk Removal

120

0 2 4 8

Feet

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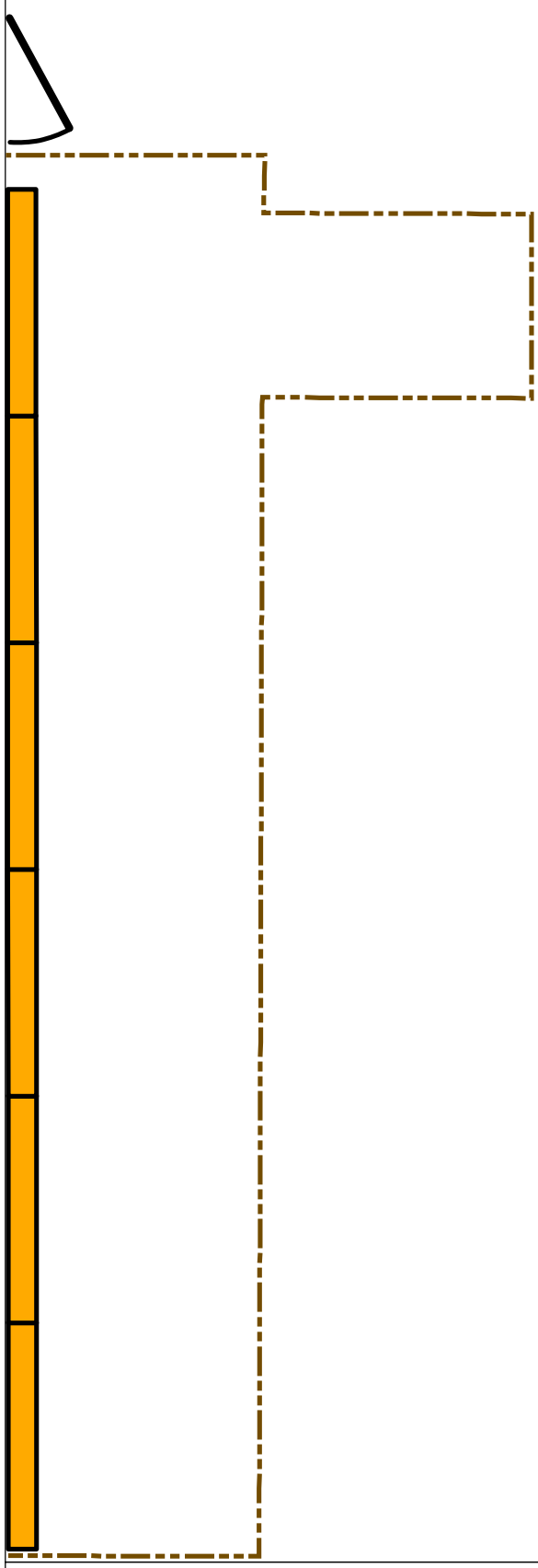
Location of Interior Window Caulk Removal in Room 5 (Room ID 120) Building E (000, Blue Shark) at MHS

Malibu High School
30215 Morning View Drive, Malibu, California

Figure 4

PROJECT: 0433980Q



Legend

- Windows
- Door
- Approximate Containment Zone
- Area of Caulk Removal

Notes:
1. Dimensions are approximate.
2. Divisions between windows are shown for illustrative purposes and do not necessarily represent actual site conditions.
3. Caulk removal was conducted from interior room surfaces.

0 2 4 8

Feet

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Location of Interior Window Caulk Removal in Room 7 (Room ID 122) Building E (000, Blue Shark) at MHS

Malibu High School
30215 Morning View Drive, Malibu, California

Figure 5

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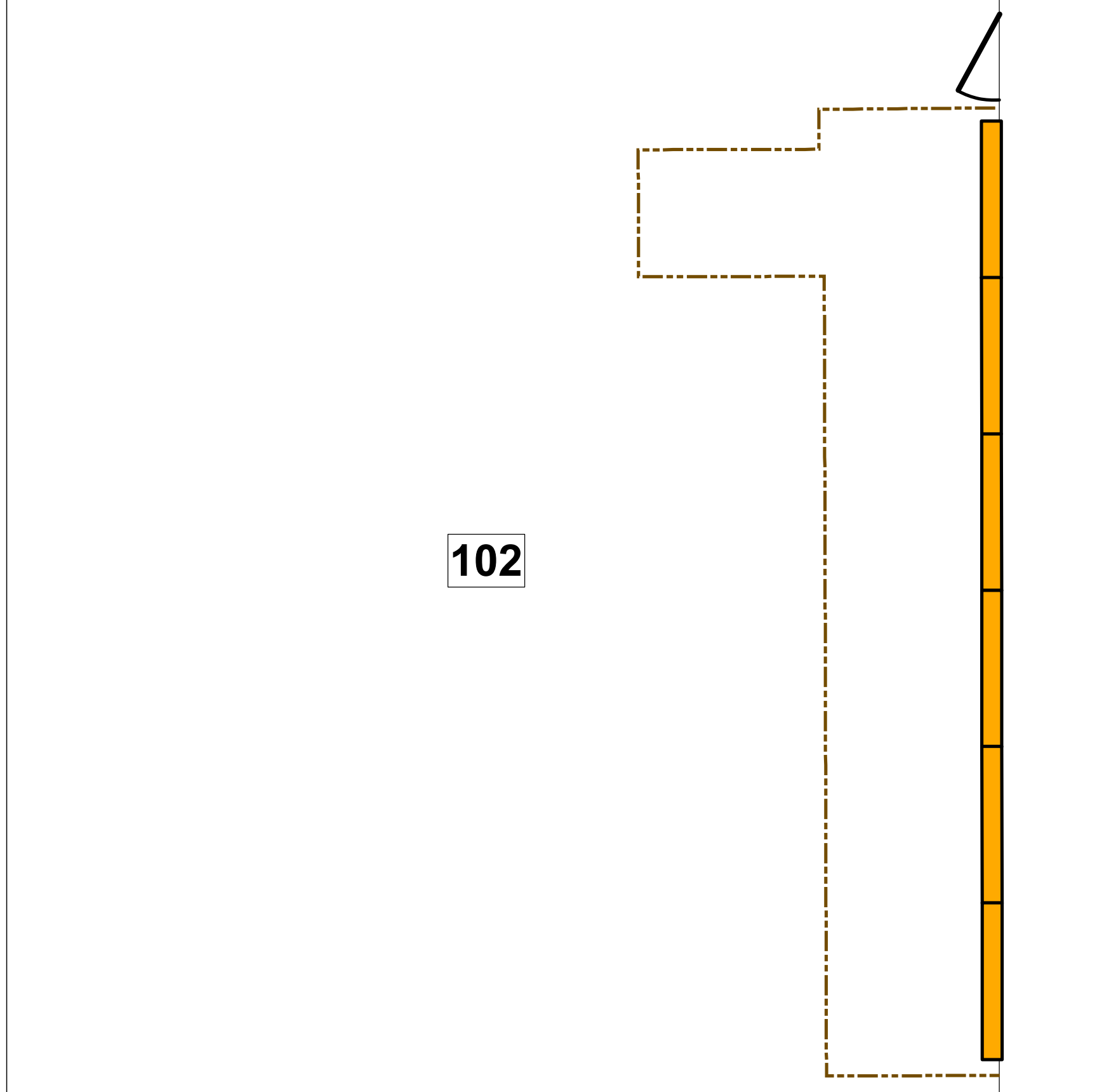

Legend

- Windows
- Door
- Approximate Containment Zone
- Area of Caulk Removal

Notes:
1. Dimensions are approximate.
2. Divisions between windows are shown for illustrative purposes and do not necessarily represent actual site conditions.
3. Caulk removal was conducted from interior room surfaces.

N

0 2 4 8

Feet

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Location of Interior Window Caulk Removal in Room 8 (Room ID 102) Building E (000, Blue Shark) at MHS

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Figure 6

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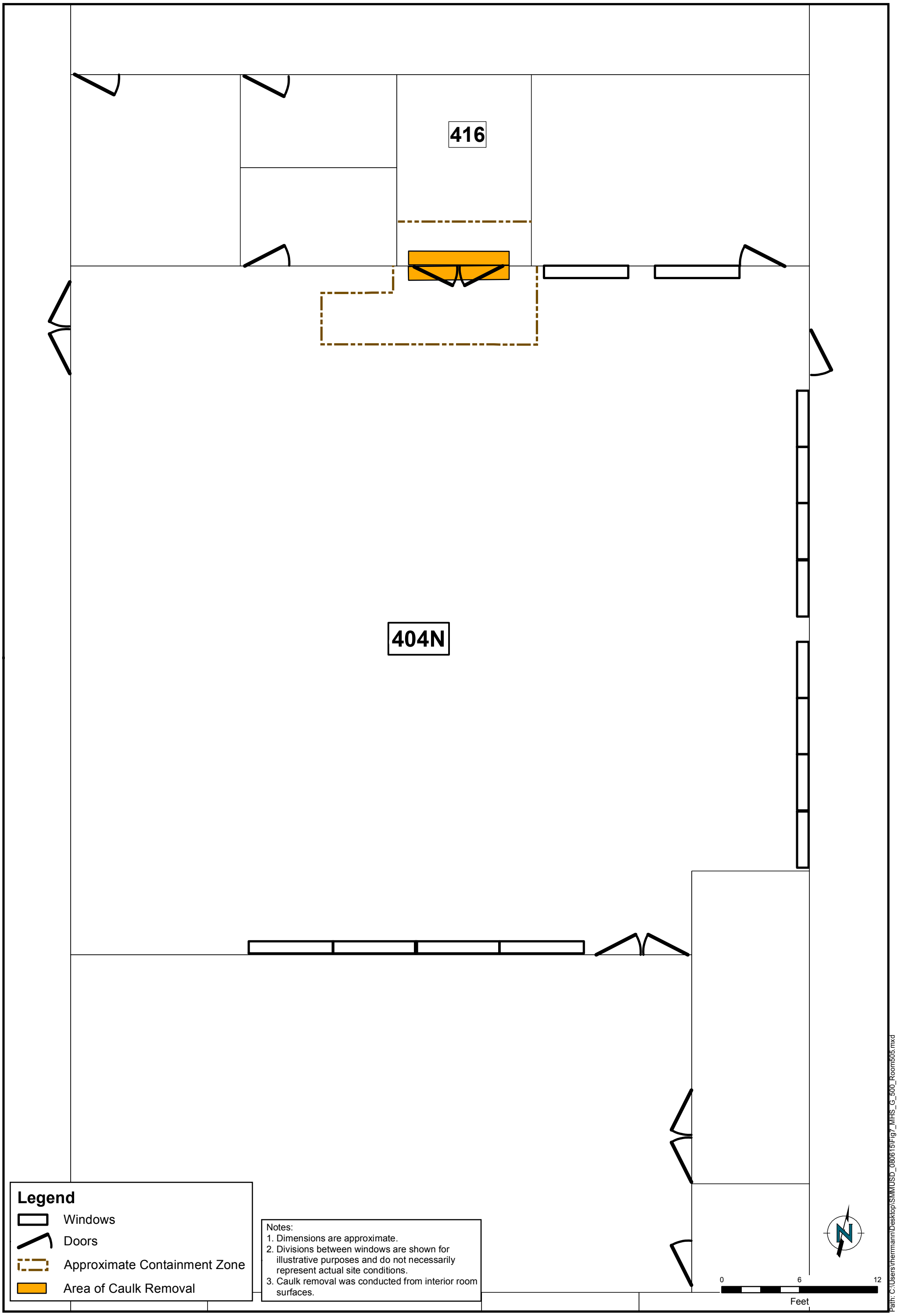

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Location of Interior Door Caulk Removal in Room 505 (Room ID 404N) Building G (500, Angel Shark) at MHS

Malibu High School
30215 Morning View Drive, Malibu, California

Figure
7

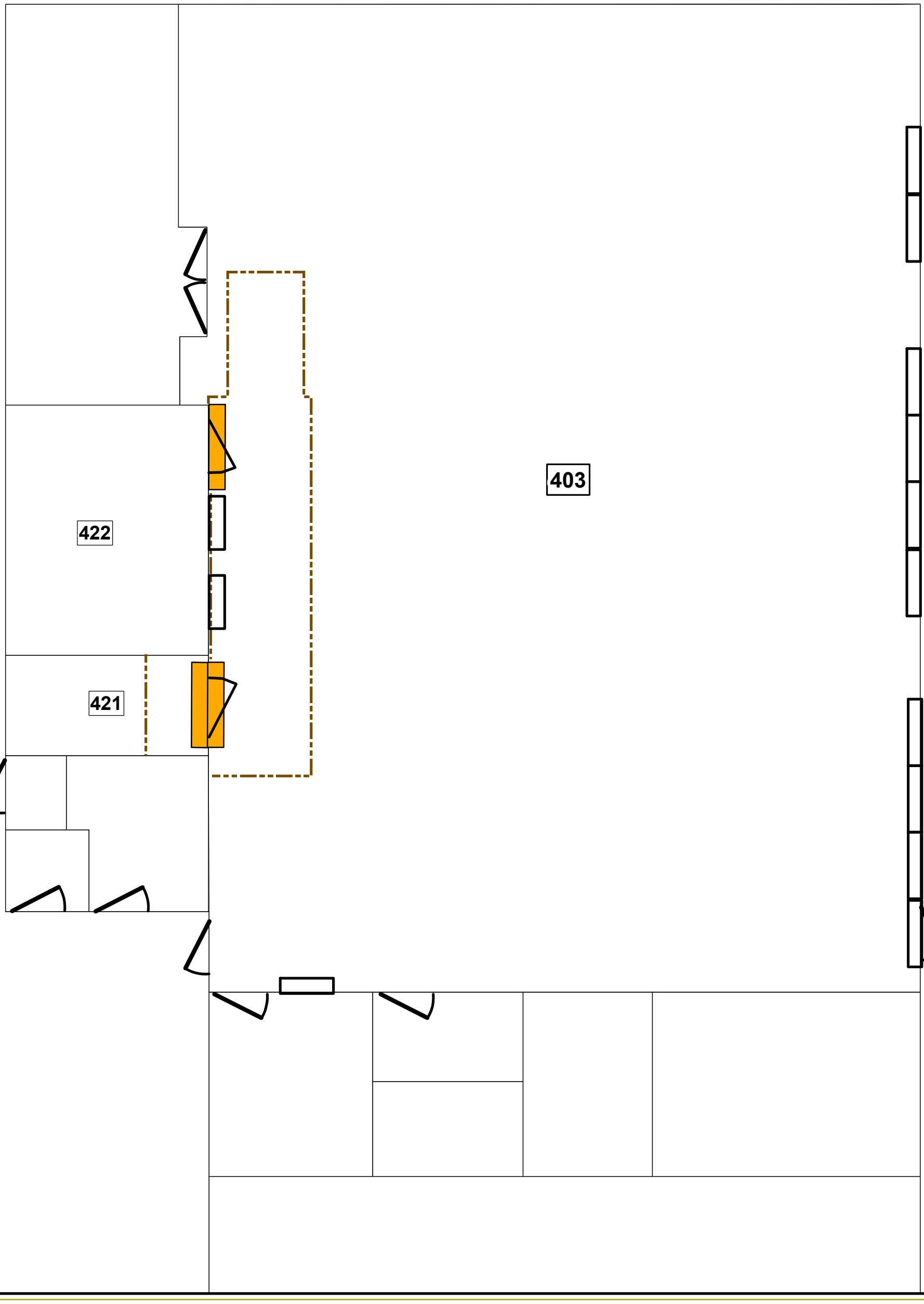
PROJECT: 0433980Q

Legend

- Windows
- Doors
- Approximate Containment Zone
- Area of Caulk Removal

Notes:
1. Dimensions are approximate.
2. No caulking was observed on the interior door frame of Room 506D (Room ID 422).
3. Caulk removal was conducted from interior room surfaces.

0 7.5 15
Feet



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Location of Interior Door Caulk Removal in Room 506 (Room ID 403) Building G (500, Angel Shark) at MHS

Malibu High School
30215 Morning View Drive, Malibu, California

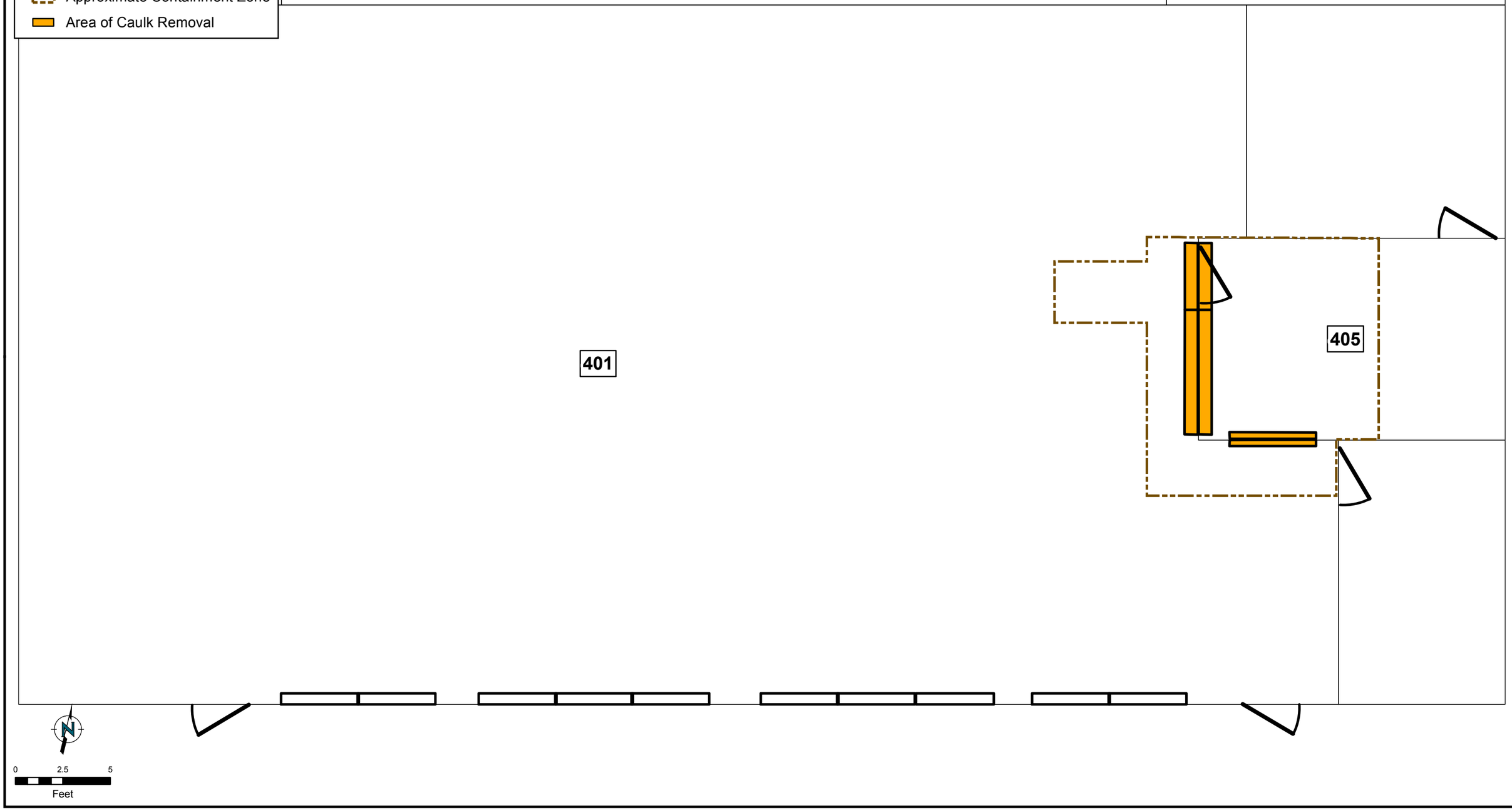
Figure
8

PROJECT: 0433980Q

Legend

- Windows
- Doors
- Approximate Containment Zone
- Area of Caulk Removal

Notes:
1. Dimensions are approximate.
2. Caulk removal was conducted from interior room surfaces.



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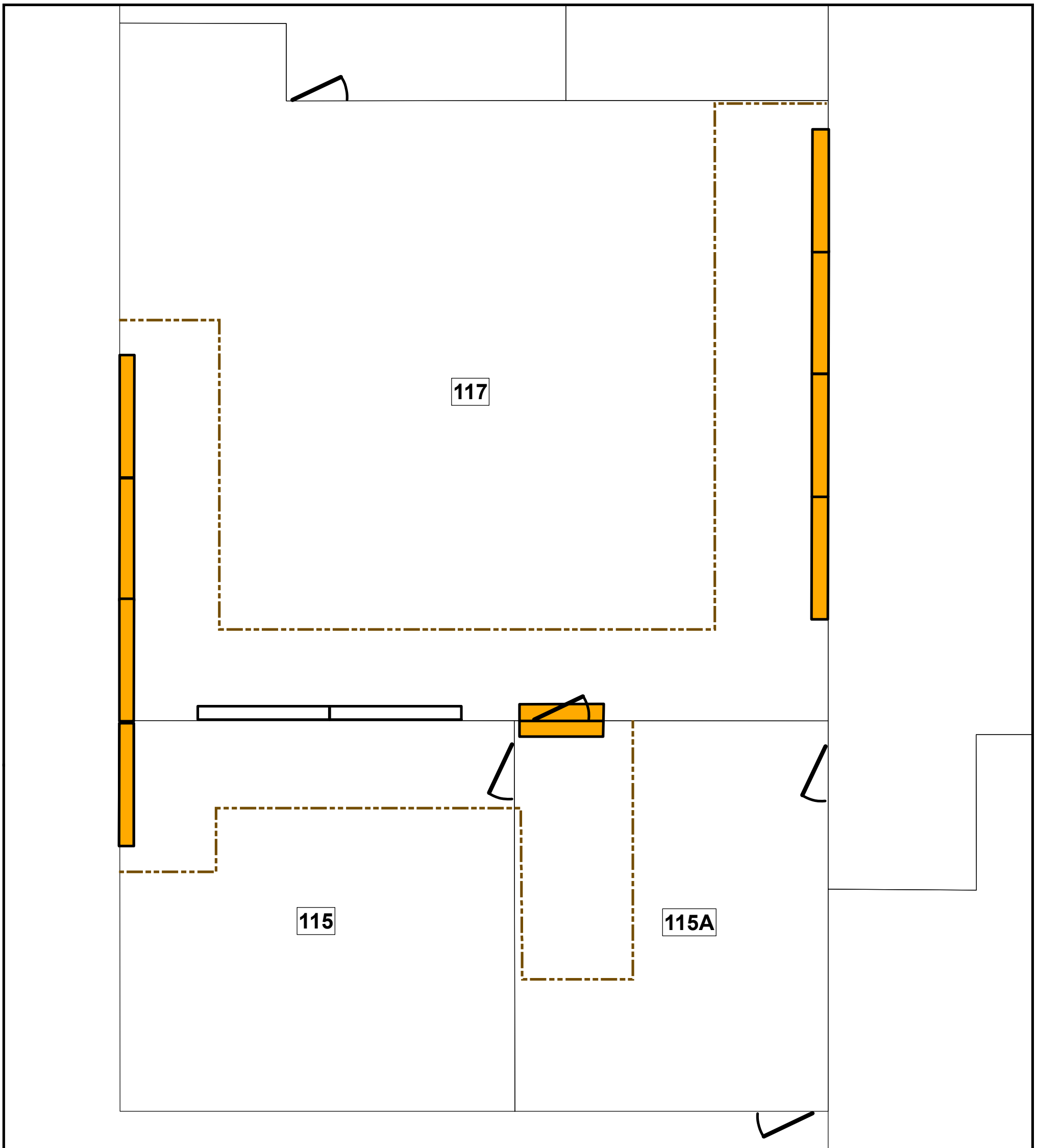
Location of Interior Door and Window Caulk Removal in Room 401
Building I (400, Leopard Shark) at MHS
Malibu High School
30215 Morning View Drive, Malibu, California

Figure
9

PROJECT: 0433980Q



Legend

- Windows
- Doors
- Approximate Containment Zone
- Area of Caulk Removal

Notes:
1. Dimensions are approximate.
2. Divisions between windows are shown for illustrative purposes and do not necessarily represent actual site conditions.
3. Caulk removal was conducted from interior room surfaces.

0 1.5 3 6

Feet

Path: C:\Users\rhermann\Desktop\SMMUSD_080615\Fig10_MHS_J_000_Room704_705.mxd

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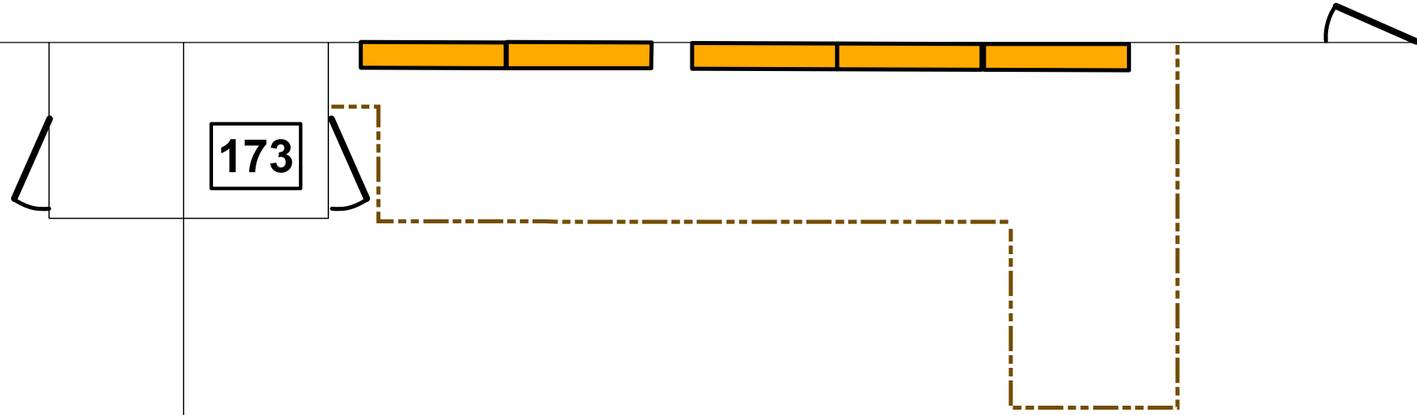
Location of Interior Door and Window Caulk Removal in Room 704 (Room ID 117), 705 (Room ID 115), and 704 Hallway (Room ID 115A)
Building J (700, Old Gymnasium) at MHS

Malibu High School
30215 Morning View Drive, Malibu, California

Figure 10

PROJECT: 0433980Q



Legend

- Windows
- Doors
- Approximate Containment Zone
- Area of Caulk Removal

Notes:
1. Dimensions are approximate.
2. Divisions between windows are shown for illustrative purposes and do not necessarily represent actual site conditions.
3. Caulk removal was conducted from interior room surfaces.

0 3.5 7

Feet

N

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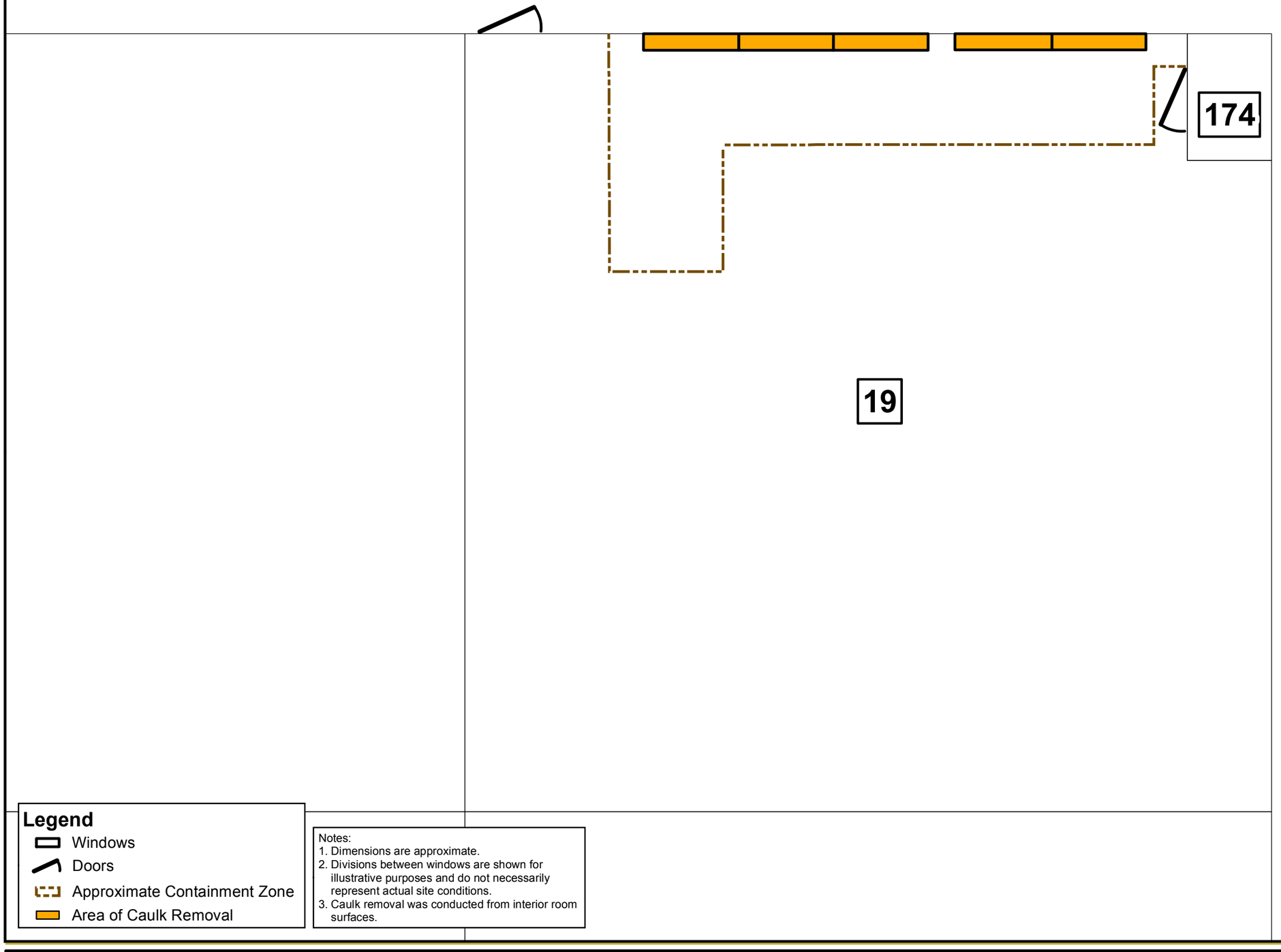
Location of Interior Window Caulk Removal in Room 18
Building F at JCES

Juan Cabrillo Elementary School
30237 Morning View Drive, Malibu, California

Figure
11

PROJECT: 0433980Q



Legend

- Windows
- Doors
- Approximate Containment Zone
- Area of Caulk Removal

Notes:
1. Dimensions are approximate.
2. Divisions between windows are shown for illustrative purposes and do not necessarily represent actual site conditions.
3. Caulk removal was conducted from interior room surfaces.

0 3.5 7

Feet

N

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Location of Interior Window Caulk Removal in Room 19
Building F at JCES

Juan Cabrillo Elementary School
30237 Morning View Drive, Malibu, California

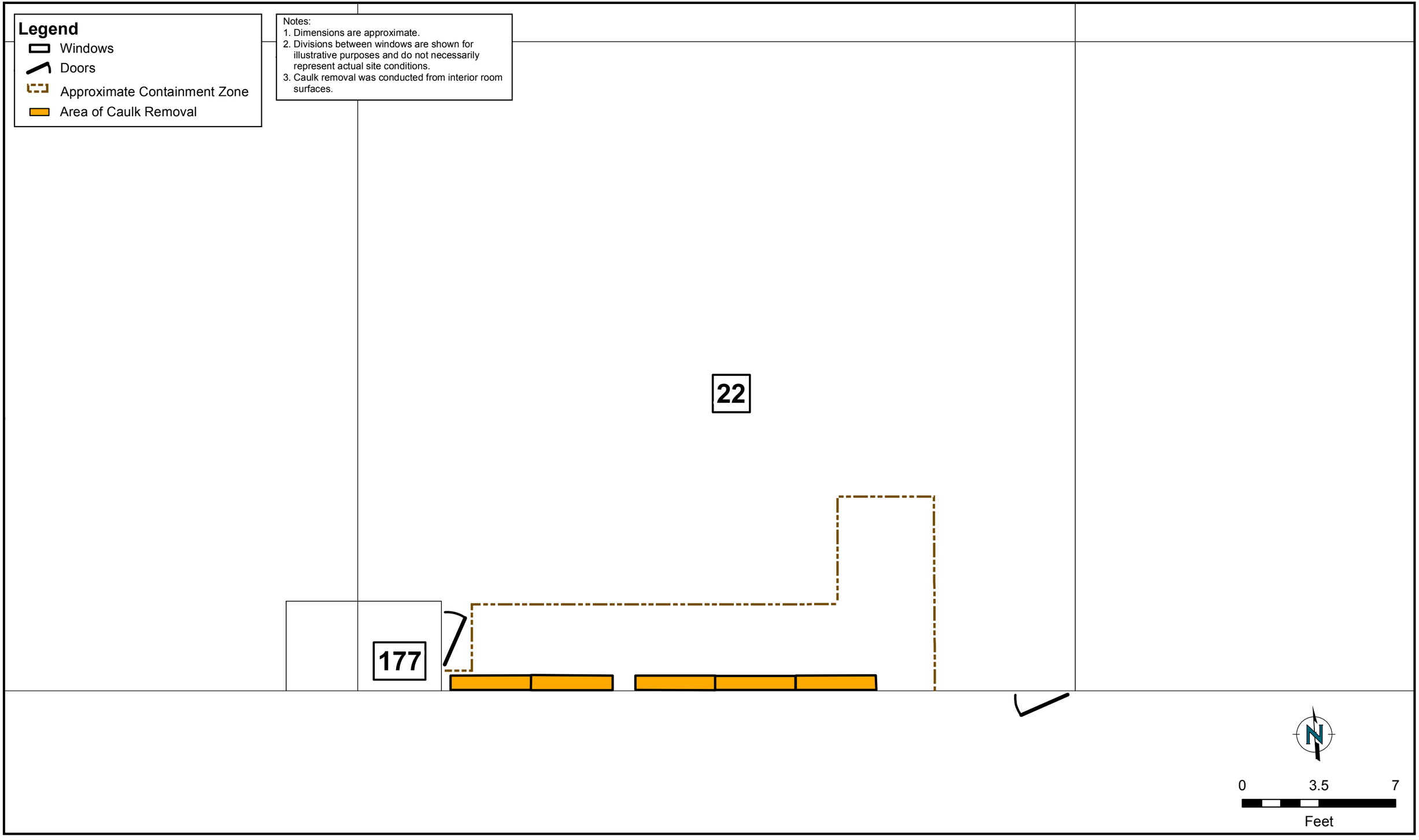
Figure
12

PROJECT: 0433980Q

Legend

- Windows
- Doors
- Approximate Containment Zone
- Area of Caulk Removal

Notes:
1. Dimensions are approximate.
2. Divisions between windows are shown for illustrative purposes and do not necessarily represent actual site conditions.
3. Caulk removal was conducted from interior room surfaces.



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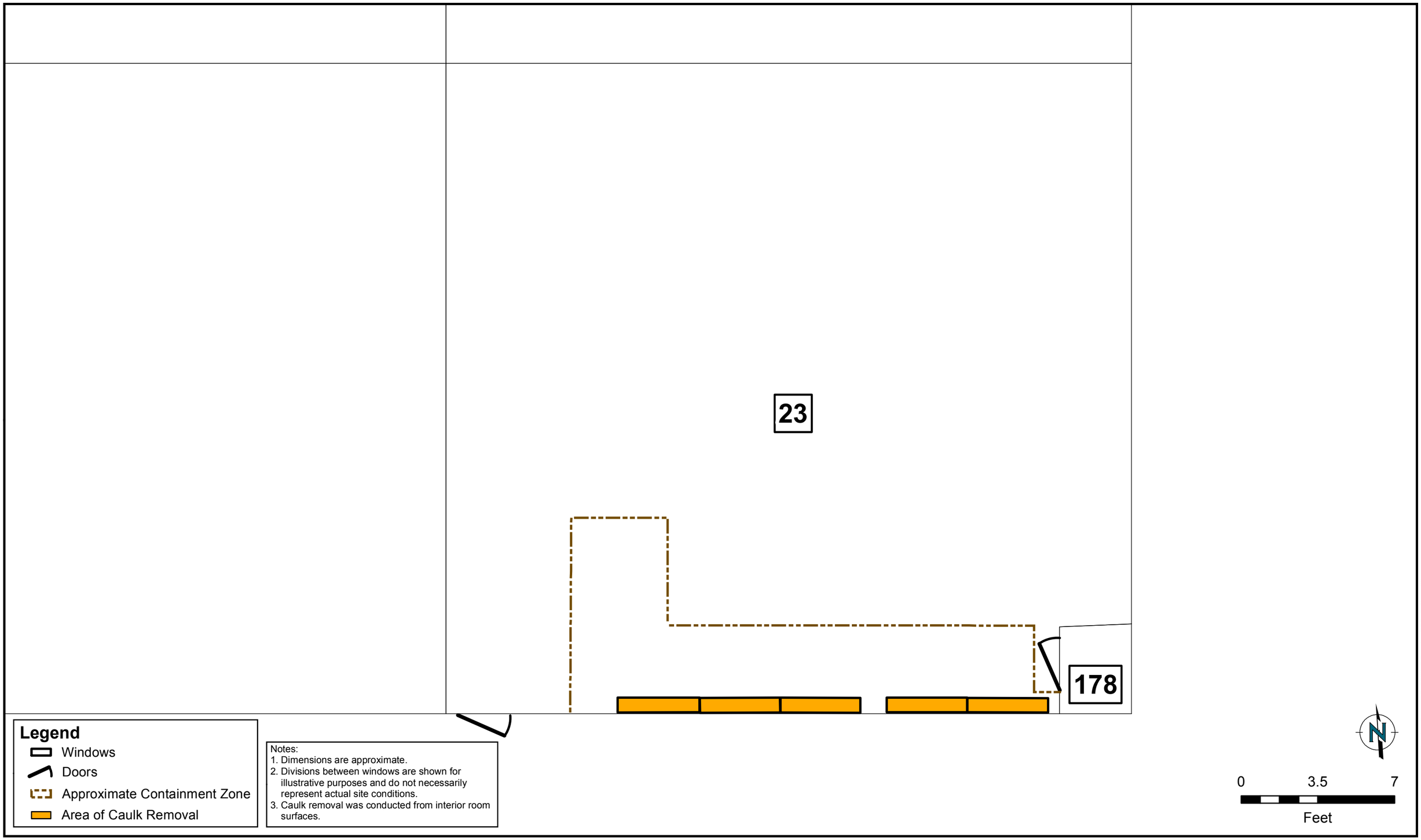
Location of Interior Window Caulk Removal in Room 22
Building F at JCES

Juan Cabrillo Elementary School
30237 Morning View Drive, Malibu, California

Figure
13

PROJECT: 0433980Q



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Location of Interior Window Caulk Removal in Room 23
Building F at JCES

Juan Cabrillo Elementary School
30237 Morning View Drive, Malibu, California

Figure
14

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