National Park Service

Everglades National Park

HM-69 Nike Missile Site

Artwork Documentation and Finishes Analysis



June 2011

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

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MEMORANDUM

To: Melissa Memory – NPS Everglades and Dry Tortugas National Parks

From: Deborah Slaton
Jamie Clapper Morris

Date: June 8, 2011

Project: Nike N1 Artwork Documentation and Finish Analysis
WJE No. 2009.2797

Subject: Finishes Analysis and Documentation of Select Interior Elements and Artwork Areas

cc: Tracy Stakely, NPS Southeast Regional Office
Tommy Jones, NPS Southeast Regional Office

At the request of the National Park Service (NPS) and in coordination with work performed for the Historic Structures Report currently in progress, Wiss, Janney, Elstner Associates, Inc. (WJE) performed photographic documentation of interior and artwork areas and a limited finishes analysis and documentation of coatings samples taken from select interior elements and artwork areas at the HM-69 Nike Missile Site Launch Area in Everglades National Park near Homestead, Florida.

The purpose of the finishes analysis with documentation was to microscopically review the samples removed from the interiors and artwork areas in order to understand the general finishes history, identify the base finish layers, document exposed finish layers, and determine an approximate visual match for the observed base and exposed finish layers using the Munsell Color Notation System. In addition, color digital documentary photographs were taken of the exterior artwork and interior painted features to document the colors and arrangement of the extant decorative schemes. Stenciled signage and interior and exterior murals were also documented through these photographs. Detailed analysis and photomicrographs, as well as drawings showing the location of finishes sample removals, are provided in Appendix A. Contact sheets showing all photo views, and examples of completed documentary photographs, as well as drawings showing photo locations, are provided as Appendix B. A complete set of documentation photographs is also included.

In addition to the features documented through finishes analysis, record documentation is provided for one site feature at the Control Area of the HM-69 Nike Missile Site. This feature is the motif inscribed in the concrete sidewalk southwest of the administration and barracks building (now the Daniel Beard Center).

Background

A site visit and field review was performed by Jamie Clapper Morris and Timothy Penich of WJE on February 8 through 12, and August 17 through 19, 2010. Melissa Memory and Ryan Meyer of Everglades National Park, and Deborah Slaton of WJE, participated in the initial on-site review of artwork and painted features on building exterior and interior surfaces to be included in the photographic documentation and finishes analysis. Painted features on pavement at the site were located and

documented by Ms. Memory and Mr. Meyer following the project team site visit and data provided to WJE for incorporation in the attached site plan.

During the field review, interior painted building elements and exterior and interior artwork areas were surveyed to observe materials and finishes, and locations were identified for finishes sample collection. Sample collection areas were identified based on the condition of the existing coatings. When possible, samples were selected from sheltered areas where the coating history appeared most complete. Due to surface preparation from previous recoating campaigns and loss of coating layers due to environmental conditions, certain areas may not contain a full coating history.

Finish sample locations in the interiors and artwork study for the Launch Area of the missile site include the interiors of the missile assembly and test building; missile barns A, B, and C; the bunkers associated with the missile barns; and exterior mural and decorative painting areas on the missile assembly and test building (MAB). Specific sample areas are detailed in Table 1.

Methodology

Portions of each finishes analysis sample removed were mounted in clear epoxy resin and polished to reveal more clearly the existing coating layers in section. The mounted and unmounted samples were visually analyzed and compared photographs and notes taken during the on-site review. In addition, the samples were compared with patterns of color applications as identified in archival documents and in available historic photographs of the buildings.

Finishes analysis and photography of the finishes samples were conducted using a Nikon SM3800 stereomicroscope at magnifications up to 126X with a Schott ACE 1 light source with daylight filter. Photomicrographs were taken using a Zeiss AxioCam MRc camera. The base and exposed finish layers were observed and visually compared to a representative color from the *Munsell Book of Color, Glossy Collection.* The Munsell color samples are available in matte or glossy finish. Either matte or glossy samples may be used for reference in analysis; the finish of the Munsell color samples is unrelated to the finish of the existing coatings being analyzed. Refer to Appendix A for detailed analysis of samples and photomicrographs.

Environmental conditions such as atmospheric pollutants, biological growth, ultraviolet (UV) exposure, and general weathering may have altered the appearance of the base finish layers while they were in service. In addition, physical alterations such as previous cleanings and surface preparations may have altered the appearance of the underlying layer(s). It may not be possible from this analysis or from available photographic documentation to determine the appearance of the base finish layer prior to weathering, fading, or physical alteration. The color information provided is based on our site and microscopic observations and is the closest approximate color representation using the prepared colors of the *Munsell Book of Color*. Very light colors such as shades of white, and very dark colors such as shades of dark gray and black, are often visually indistinguishable from one another through microscopic analysis of cross sections. Therefore, no Munsell reference is given for these colors.

Launch Area

Seventy-five samples were removed from various interior and artwork locations at the Launch Area buildings, and based on initial visual review sixty-eight of these samples were selected for analysis. The specific sample locations are detailed in Table 1.

Refer to Appendix A for detailed analysis results for each sample. In summary, there is some consistency in the base interior finish layers observed among the samples taken from the walls in the Launch Area buildings. The consistency of the base interior finish layers may suggest that the buildings were initially intended to have identical or similar decorative finish schemes; however, through time, each building interior evolved to have a unique decorative finish scheme.

The base finish layers observed in the interiors of the Launch Area buildings include ranges of buff colors. The base layer observed at the missile assembly and test building main room is also buff, while the base layer observed in the entrance vestibule is slightly more yellow in tone than the base layer observed in the main room. The restroom in the missile assembly and test building has the same buff base layer at the lower half of the wall as in the main room, while the upper half of the wall has a slightly different buff color.

A similar buff color was identified as the base finish layer at the interiors of the missile barn A, B, and C, and the interiors of bunkers A, B, and C. In most building interiors an off-white layer was observed above the buff base layer. This off-white layer is likely a primer for subsequent decorative color schemes. After the application of the off-white layer, decorative schemes typically diverge and become specific to a building or building group. For instance, a similar color history was recorded in missile barn B and bunker B, and to a slightly lesser extent at missile barn A and bunker A, and at missile barn C and bunker C.

Most sliding, pedestrian, and overhead doors located in the missile assembly and test building, missile barns A, B, and C, and bunkers A, B, and C included a gray base layer that is likely a shop coat or a primer. Select doors included a metallic silver base layer, which was also likely a primer. Subsequent painting schemes on pedestrian, sliding, and overhead doors typically follow the painting schemes of the interior wall surfaces specific to the building. Based on visual observation and selected field microscopy, floor painting schemes also follow interior wall colors. Based on this finding and on discussion with Park personnel, sampling from floor painting areas was limited during this survey. A floor painting sample was removed from the interior floor of missile barn C; however, due to the surface texture of the substrate and the adhesion of the floor painting, it was impossible to obtain a sample that represents the entire painting history. Layers not available for sampling were noted. In missile barn B, the floor paintings also match the colors of the other interior surfaces, and in missile barn A, the floor paintings were red, similar to the red color used at fire extinguisher areas and in other locations with red documented exposed layers (with the exception of the red observed in the missile assembly and test building at the fire extinguisher area, which is a slightly different shade).

An interior artwork area analyzed at bunker C in the control room includes a depiction of a rocket with the work “Mothership” written across it. Samples were removed for analysis from selected locations on the mural painting, as well as from nearby upper and lower wall areas for comparison. The early stratigraphy history of the samples from all three locations is similar, including buff, off-white, and green colors. After the green layer, the decorative scheme of the upper and lower walls include contrasting colors such as red at the upper wall and blue at the lower wall. At the mural area, there is a green layer that is not present in the upper wall sample; this may indicate a previous decorative painting area. The upper wall sample includes a green exposed layer that was likely previously present over the “Mothership” stencil before the stencil was exposed due to preferential peeling of the over-painted layer(s).

Exterior artwork areas analyzed at the missile assembly and test building include a large mural depiction of a rocket and a rectangular decorative signage area with shadowing believed to be from applied decorative plaques. Three samples were removed from the rocket mural area; one from the rocket base, one from the rocket body, and one from the background field. The base layer observed among the three samples is either buff or green. The sample with the buff base layer includes a green layer covering the buff layer. This suggests that the building exterior may have originally been buff and subsequently painted green. The rocket mural was applied directly over the green layer. There are two layers above the green background at the base: a brown layer and the currently exposed tan layer. This suggests that the rocket base may have originally been darker. Off-white layers were observed above the green background at the rocket body. At the background field sample location, both a dark green and a blue layer were observed over the green layer. This suggests that the original field surrounding the rocket mural was dark green and was subsequently over-painted blue before receiving the off-white coating that is currently exposed.

At the decorative signage area located to the right of the roll-up door, samples were removed from the black outer border, the off-white inner border area, and the signage field outside of the rocket shaped outline. (Areas that appear to have originally been covered by the applied decorative plaques were not sampled for finishes analysis.) Each sample has a buff base layer covered by a green layer. The buff and green layers match those observed in the rocket mural samples. The samples removed from the signage field and the black border area have a similar stratigraphy with dark green covering the early green layer. At the border, the dark green is over-painted black, and in the signage field, the dark green is over-painted white. It is likely that the dark green and the black border color were contemporary and the off-white over-paint of the signage field was added later, similar to the off-white over-painting at the rocket mural. The sample removed from the off-white inner border area also contains a dark green layer over the buff and green base layers. There is a blue layer over the dark green, which suggests that the inner border may have been blue in contrast with the black outer border. The blue was eventually covered with the off-white over-painting.

Based on visual examination of the coatings on site and in the analysis, an eggshell finish (between flat and satin), as defined by Benjamin Moore in its finishes range, would be appropriate for all exterior artwork wall elements and earliest extant interior finishes. A semi-gloss finish, as defined by Benjamin Moore in its finishes range, would be appropriate for the currently exposed interior decorative schemes. The “Mothership” mural appears to have had a finish more similar to eggshell. As noted, if additional archival documentation of original finishes is discovered, this information may lead to adjustment of the selected finishes for future recoating programs.

Although the colors cited are the earliest remaining finish layers in the samples reviewed, coatings may have previously been removed from many areas of the exterior facade, likely due to peeling or as part of preparations for previous recoating campaigns. Thus, the observed colors may be remnants of an early and not necessarily an original finish campaign.

Closing

Sample sheets of the colors identified above can be ordered directly from the Munsell web site (www.munsellstore.com) for matching purposes. The sample sheets are available in matte or glossy finish; the glossy samples typically stay cleaner longer, with handling. (According to Munsell, the finish of the color sample sheets should not affect color readings by the paint supplier; however, it is important that the paint supplier and others using the sample sheets be aware that the use of the glossy samples does not mean that a gloss finish is intended for application to the overall building.) These sample sheets,

which are 8-1/2 by 11 inches in size and thus larger than the small samples available in the Munsell color books, can be used in the field for a preliminary assessment of color and then scanned by the paint supplier to obtain a color match. Any color samples obtained for repainting projects should be retained in the park archives for record purposes and future reference.

The purpose of this study was to identify the colors of the earliest existing finish coats on the exterior and interior building features sampled; therefore, the study did not include materials analysis of the coatings or substrates represented by the samples.

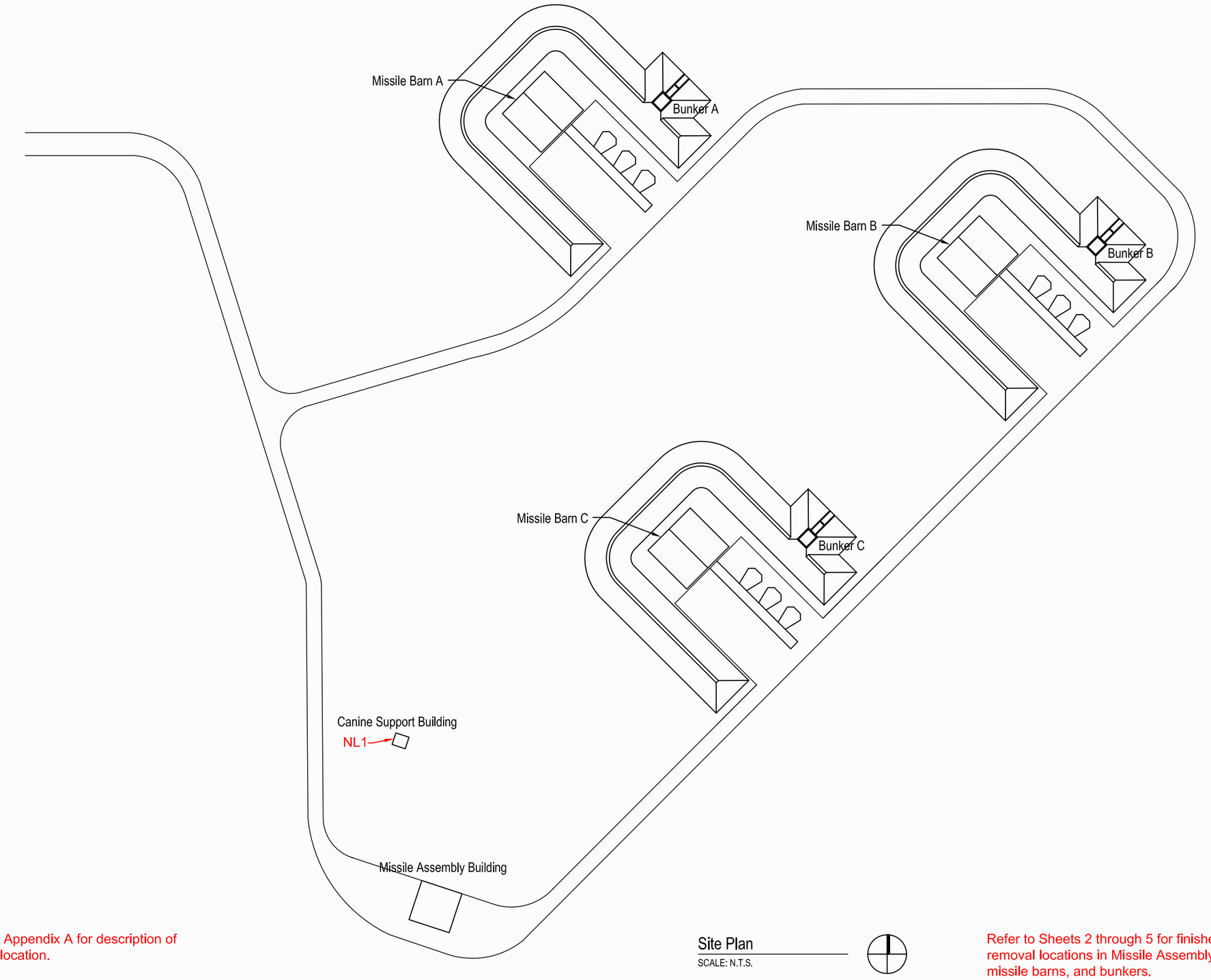
Table 1 - Sample Locations at Launch Area

Sample	Building	Location	Element
NL15	Barn A	interior	interior of sliding door at white paint
NL16	Barn A	interior	interior of sliding door at yellow paint
NL17	Barn A	interior	sliding door black horizontal element (sample not analyzed)
NL18	Barn A	interior	sliding door black vertical element (sample not analyzed)
NL19	Barn A	interior	interior of sliding door at peach paint
NL20			not used
NL21	Barn A	interior	scraping from upper portion of CMU wall (sample not analyzed)
NL22	Barn A	interior	CMU wall at blue band (sample not analyzed)
NL23	Barn A	interior	CMU wainscot color
NL24	Barn A	interior	below dark wainscot band
NL25	Barn A	interior	CMU at base
NL26	Barn A	interior	isolated area of red paint
NL27	Barn B	interior	interior of sliding doors
NL28			not used
NL29	Barn B	interior	upper portion of CMU wall (sample not analyzed)
NL30	Barn B	interior	CMU wall at dark band (sample not analyzed)
NL31	Barn B	interior	course under dark band
NL32	Barn B	interior	base at CMU wall
NL33	Barn C	interior	interior of sliding door
NL34	Barn C	interior	interior sliding door support accent
NL35	Barn C	interior	interior CMU possible band location
NL36	Barn C	interior	interior CMU lower wall field
NL37	Barn C	interior	CMU wall base
NL38	Barn C	interior	pedestrian door interior
NL101	MAB	interior	entrance lower wall
NL102	MAB	interior	entrance upper wall
NL103	MAB	interior	main room south lower wall area
NL104	MAB	interior	south wall upper
NL105	MAB	interior	south wall lower area sample 2
NL106	MAB	interior	lower south wall concrete fragment
NL107	MAB	interior	base at south wall
NL108	MAB	interior	red paint at fire area #2 west
NL109	MAB	interior	interior of west roll up door
NL110	MAB	interior	lower roll up door west
NL111	MAB	interior	bathroom lower wall
NL112	MAB	interior	bathroom upper wall
NL113	MAB	interior	bathroom pedestrian door interior
NL114	MAB	exterior artwork area	west elevation bottom of rocket at mural

NL115	MAB	exterior artwork area	west elevation top of rocket at mural
NL116	MAB	exterior artwork area	west exterior rocket background
NL117	MAB	exterior artwork area	exterior sign area at black border
NL118	MAB	exterior artwork area	exterior sign area field below rocket outline
NL119	MAB	exterior artwork area	exterior sign area at lower attached border
NL120	Barn C	interior	floor at SE marking
NL121	Barn C	interior	NW wall red and blue framed area (sample not analyzed)
NL122	Bunker C	interior	entrance area wall
NL123	Bunker C	interior	door from entrance to hatch room
NL124	Bunker C	interior	entrance area ceiling
NL125	Bunker C	interior	hatch room lower wall
NL126	Bunker C	interior	hatch room upper wall
NL127	Bunker C	interior	door into control room
NL128	Bunker C	interior	door frame into control room
NL129	Bunker C	interior	control room west lower wall
NL130	Bunker C	interior	control room west upper wall
NL131	Bunker C	interior	control room side of door
NL132	Bunker C	interior	control room “Mothership” body
NL133	Bunker B	interior	entry wall
NL134	Bunker B	interior	entry ceiling
NL135	Bunker B	interior	door from entrance to hatch room
NL136	Bunker B	interior	hatch room lower wall
NL137	Bunker B	interior	hatch room upper wall
NL138	Bunker B	interior	control room lower wall
NL139	Bunker B	interior	control room upper wall
NL140	Bunker B	interior	control room center band
NL141	Bunker B	interior	control room door
NL142	Bunker B	interior	control room door frame
NL143	Bunker B	interior	hatch room side of control door
NL144	Bunker A	interior	entry wall
NL145	Bunker A	interior	entry ceiling
NL146	Bunker A	interior	door to hatch area
NL147	Bunker A	interior	hatch room lower wall
NL148	Bunker A	interior	hatch room upper wall
NL149	Bunker A	interior	hatch side of door
NL150	Bunker A	interior	control room side of door
NL151	Bunker A	interior	control room lower wall
NL152	Bunker A	interior	control room upper wall

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APPENDIX A – FINISHES ANALYSIS DOCUMENTATION



Refer to Appendix A for description of sample location.

Site Plan
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Refer to Sheets 2 through 5 for finishes sample removal locations in Missile Assembly Building, missile barns, and bunkers.

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Project

HM-69 Nike Missile Site
Everglades National Park
Historic Structures Report

Client

National Park Service
Southeast Regional Office
Atlanta, Georgia

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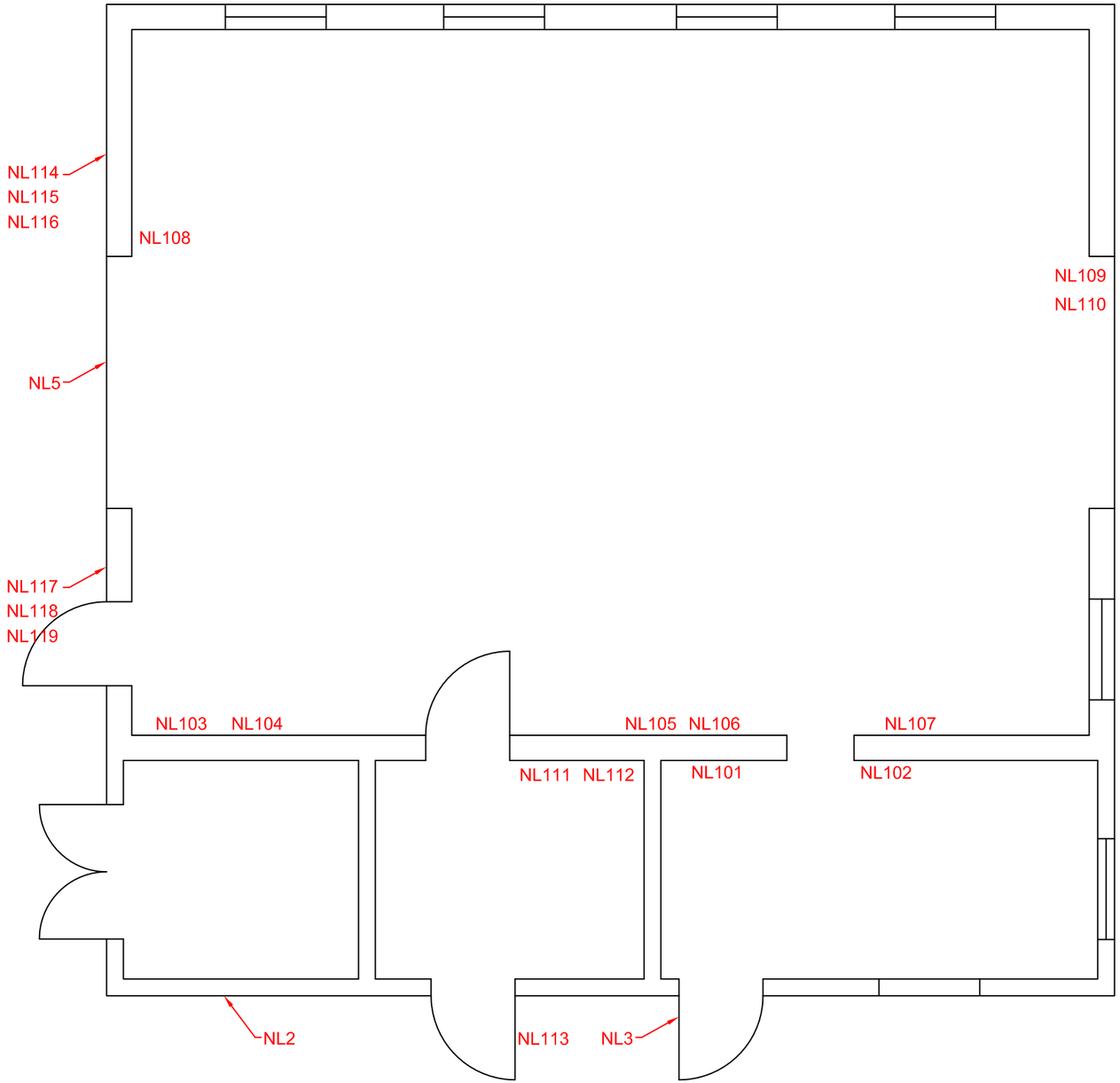
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HM-69 Launch Site Plan

Sheet Title

Sheet No. **Appendix A-1**

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Missile Assembly Building Floor Plan

SCALE: N.T.S.

Refer to Appendix A for description of sample location.

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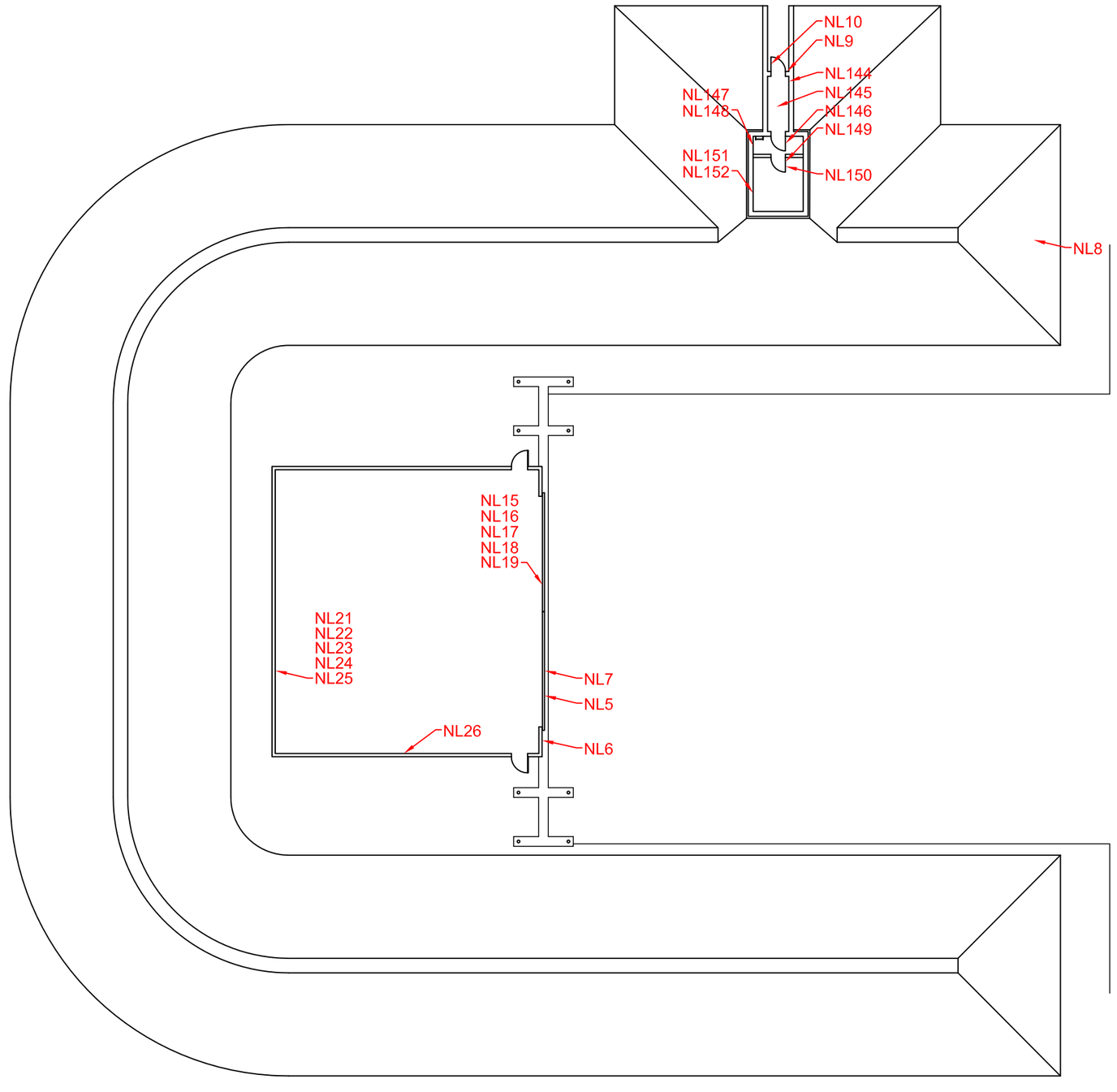
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Date	June 2011
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Finishes Sample Locations
Missile Assembly Building

Sheet Title

Sheet No. **Appendix A-2**

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Refer to Appendix A for description of sample location.

Missile Barn and Bunker A Floor Plan

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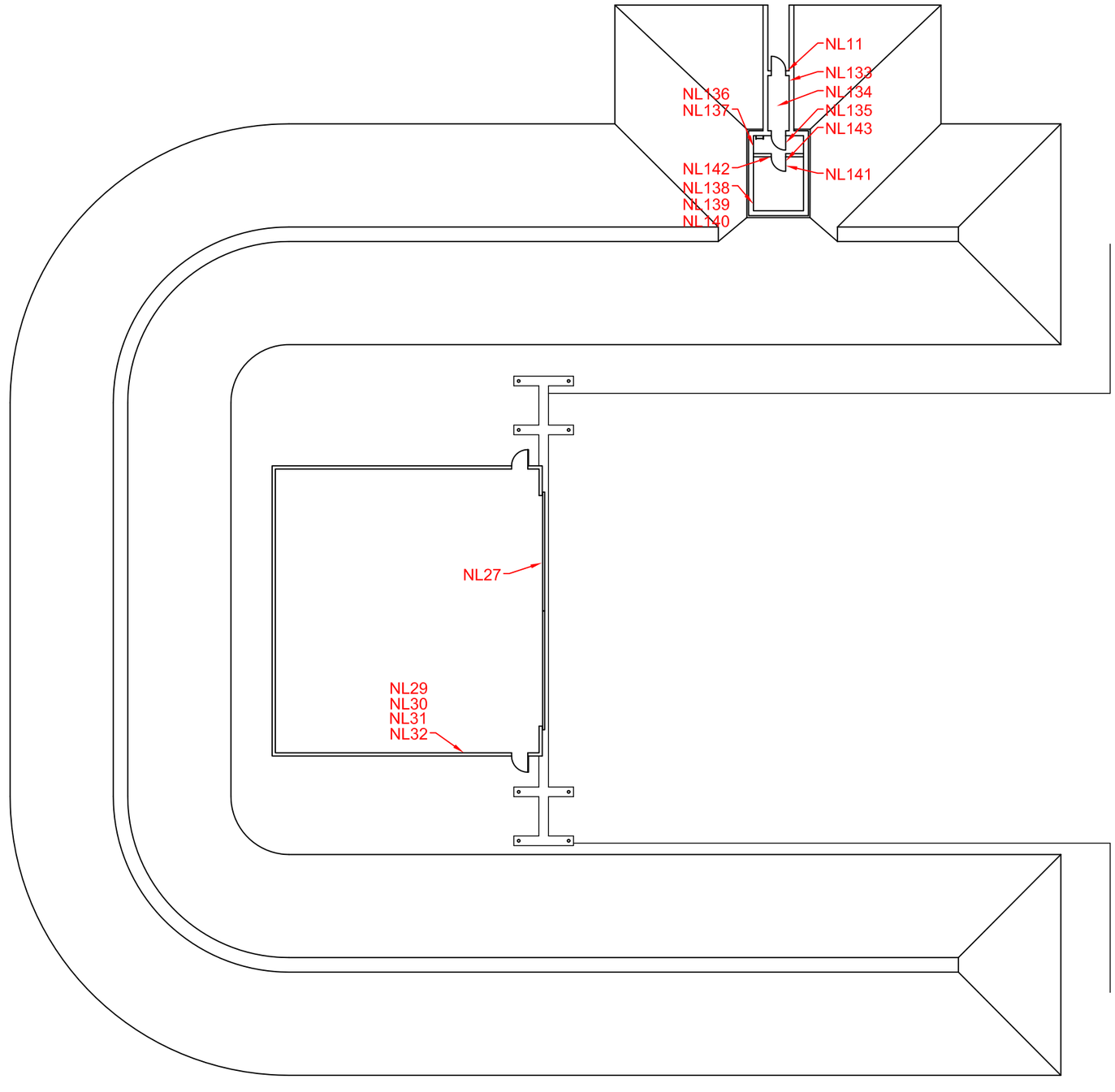
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Finishes Sample Locations
Missile Barn and Bunker A

Sheet Title

Sheet No. **Appendix A-3**

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Refer to Appendix A for description of sample location.

Missile Barn and Bunker B Floor Plan

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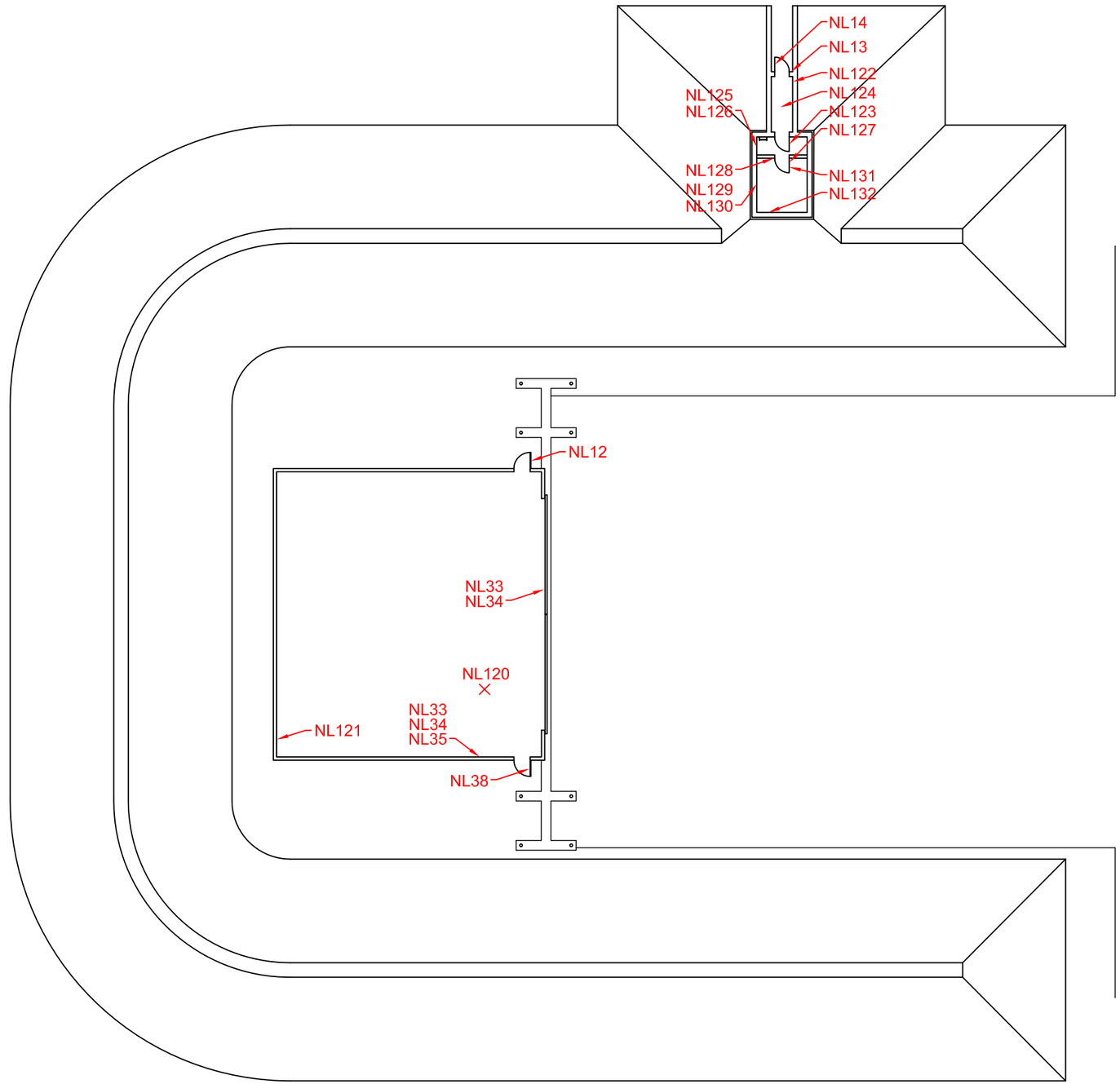
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Finishes Sample Locations
Missile Barn and Bunker B

Sheet Title

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Refer to Appendix A for description of sample location.

Missile Barn and Bunker C Floor Plan

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Finishes Sample Locations
Missile Barn and Bunker C

Sheet Title

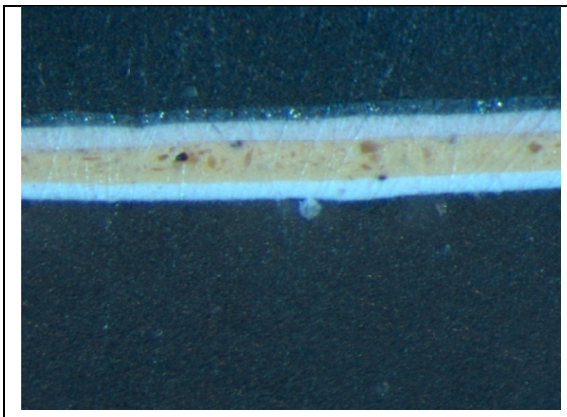
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Building Element: Missile Barn A, Interior **Sample No. NL15**
Sample Location: Sliding door at white area
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Galvanized steel	
1.	Silver metallic	No Munsell equivalent; this is likely an intermediate or primer coating
2.	Off-white	—
3.	Yellow buff	—
4.	Off-white	*
5.		
6.		
7.		
8.		

*Very light colors such as shades of white, and very dark colors such as shades of dark gray and black, are often visually indistinguishable from one another through microscopic analysis of cross sections. Therefore, no Munsell reference is given for these colors.

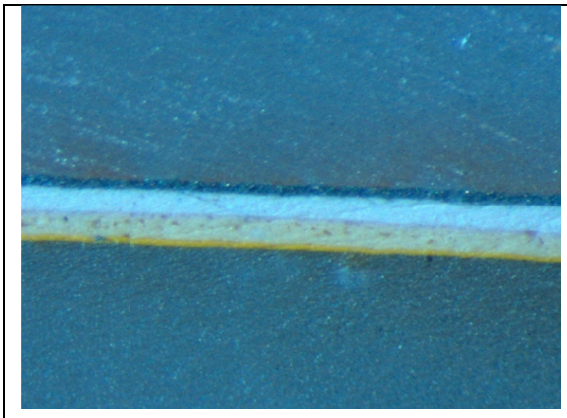


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

Photos are shown for informational purposes only. Lighting conditions with laboratory microscopy may not accurately depict the colors as they appear under ambient natural light conditions. Color determinations are made through actual observations with a daylight filter. Color determinations are not made by referencing photographs.

Building Element: Missile Barn A, Interior **Sample No. NL16**
Sample Location: Sliding door at yellow area
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Galvanized steel	
1.	Metallic silver	No Munsell equivalent; this is likely an intermediate or primer coating
2.	Off-white	—
3.	Yellow buff	—
4.	Yellow	10Y8/14
5.		
6.		
7.		
8.		

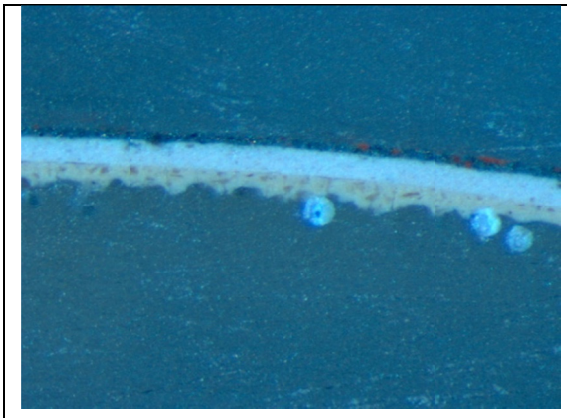


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Barn A, Interior **Sample No. NL19**
Sample Location: Sliding door at buff area
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Galvanized steel	
1.	Metallic silver	No Munsell equivalent; this is likely an intermediate or primer coating
2.	Off-white	—
3.	Buff	10YR9/4
4.		
5.		
6.		
7.		
8.		



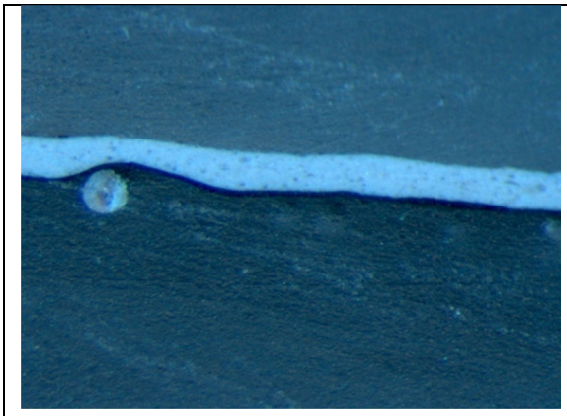
Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Barn A, Interior **Sample No. NL23**
Sample Location: Concrete block wainscot
Comments: Lowest extant layer not likely in sample

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Off-white	*
2.	Black	*
3.		
4.		
5.		
6.		
7.		
8.		

*Very light colors such as shades of white, and very dark colors such as shades of dark gray and black, are often visually indistinguishable from one another through microscopic analysis of cross sections. Therefore, no Munsell reference is given for these colors.



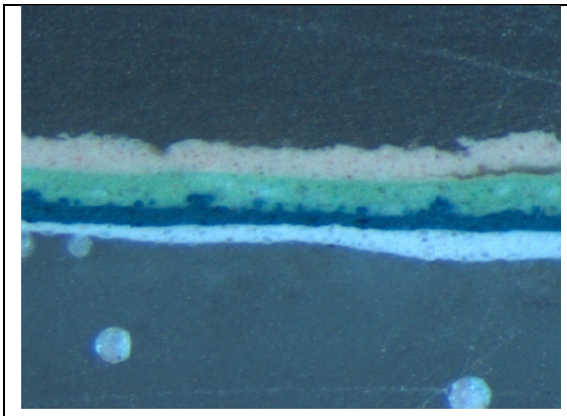
Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Barn A, Interior **Sample No. NL24**
Sample Location: Wall area below dark wainscot band
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Buff	7.5YR9/2
2.	Green	—
3.	Dark blue	—
4.	Off-white	*
5.		
6.		
7.		
8.		

*Very light colors such as shades of white, and very dark colors such as shades of dark gray and black, are often visually indistinguishable from one another through microscopic analysis of cross sections. Therefore, no Munsell reference is given for these colors.

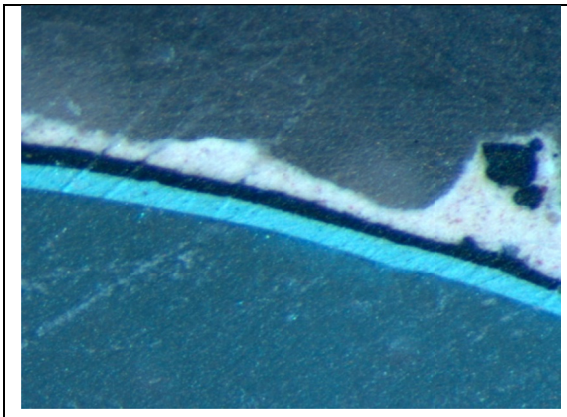


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Barn A, Interior **Sample No. NL25**
Sample Location: Wall base
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Buff	7.5YR9/2
2.	Black	—
3.	Green	7.5G7/4
4.		
5.		
6.		
7.		
8.		

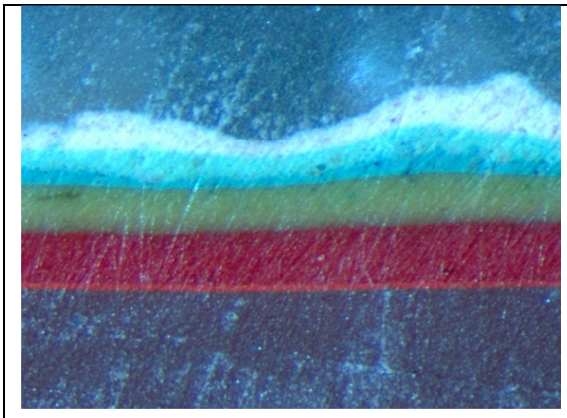


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Barn A, Interior **Sample No. NL26**
Sample Location: Red paint area at southwest wall
Comments:

Layer	Stratigraphy	Comments (Munsell reference provided for earliest finish layer)
Substrate	Concrete block	
1.	Buff	7.5YR9/2
2.	Green	—
3.	Green	—
4.	Yellow-green	—
5.	Red	—
6.	Orange-red	7.5R4/10
7.		
8.		

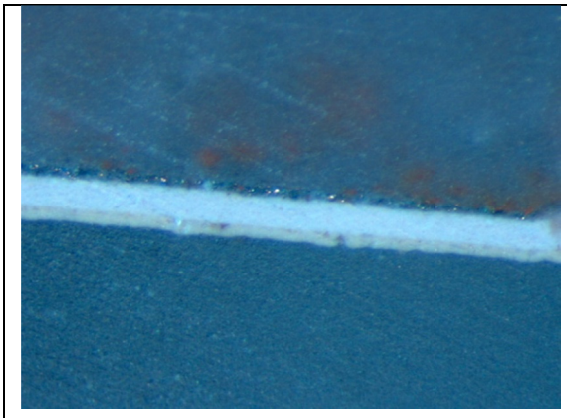


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Barn B, Interior **Sample No. NL27**
Sample Location: Sliding door
Comments: Some iron oxide in metallic silver layer

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Galvanized steel	
1.	Metallic silver	No Munsell equivalent; this is likely an intermediate or primer coating
2.	Buff	—
3.	Tan	10YR8/2
4.		
5.		
6.		
7.		
8.		

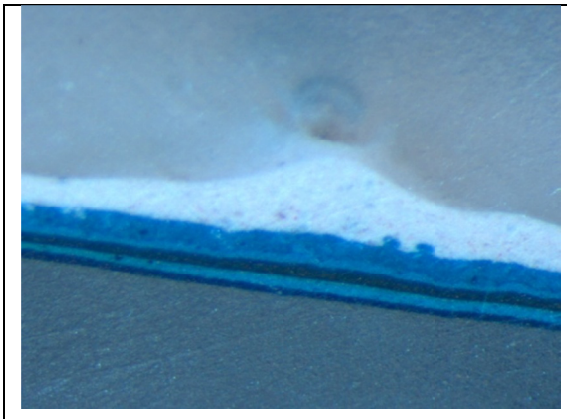


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Barn B, Interior **Sample No. NL31**
Sample Location: Course under dark wall band
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Buff	7.5YR9/2
2.	Blue	—
3.	Blue	—
4.	Dark Green	—
5.	Blue	—
6.	Dark Blue	2.5PB2/2
7.		
8.		

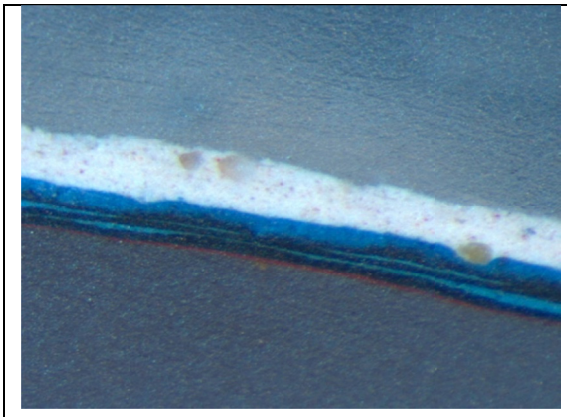


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Barn B, Interior **Sample No. NL32**
Sample Location: Wall base
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Buff	7.5YR9/2
2.	Blue	—
3.	Black	—
4.	Blue	—
5.	Black	—
6.	Blue	—
7.	Black	—
8.	Red	7.5R3/10

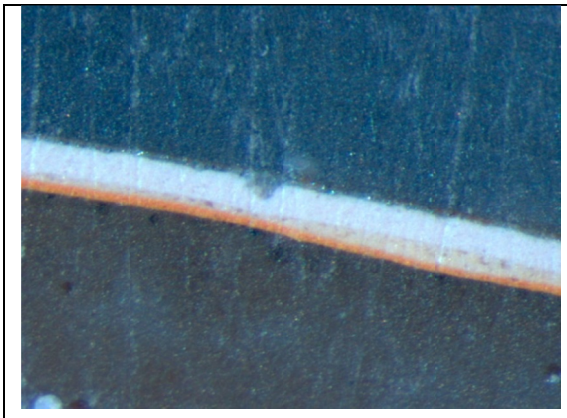


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Barn C, Interior **Sample No. NL33**
Sample Location: Sliding door
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Galvanized steel	
1.	Metallic silver	No Munsell equivalent; this is likely an intermediate or primer coating
2.	Buff	—
3.	Buff	—
4.	Orange	5YR6/10
5.		
6.		
7.		
8.		



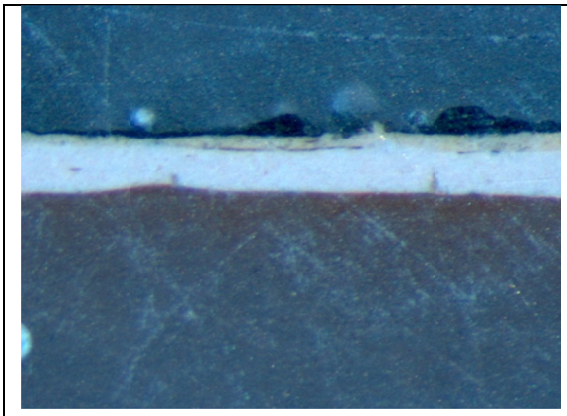
Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Barn C, Interior **Sample No. NL34**
Sample Location: Sliding door accent area
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Galvanized steel	
1.	Black	*
2.	Buff	—
3.	Buff	—
4.	Orange	5YR6/12
5.		
6.		
7.		
8.		

*Very light colors such as shades of white, and very dark colors such as shades of dark gray and black, are often visually indistinguishable from one another through microscopic analysis of cross sections. Therefore, no Munsell reference is given for these colors.

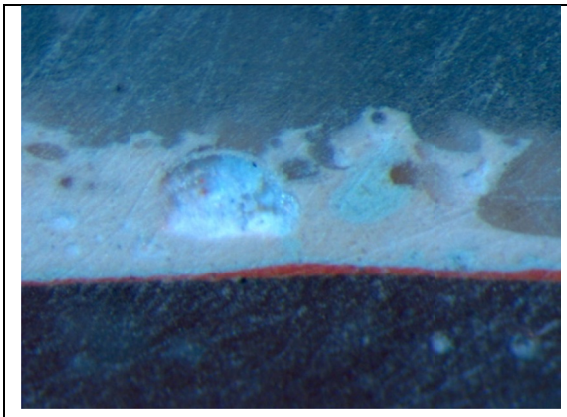


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Barn C, Interior **Sample No. NL35**
Sample Location: Concrete block wall area at possible wainscot band location
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Buff	7.5YR9/2
2.	Off-white	—
3.	Red-orange	10R4/12
4.		
5.		
6.		
7.		
8.		

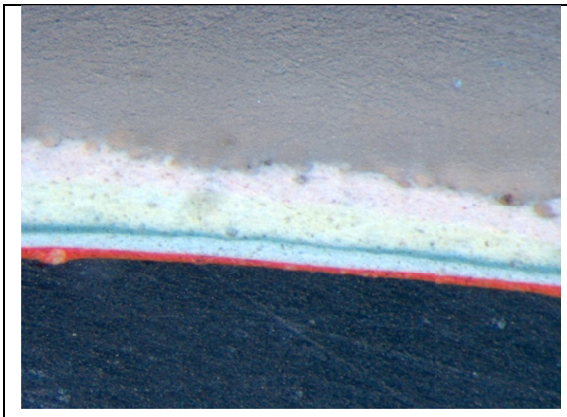


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Barn C, Interior **Sample No. NL36**
Sample Location: Lower concrete block wall field
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Buff	7.5YR9/2
2.	Buff	—
3.	Green	—
4.	Off-white	—
5.	Red-orange	10R4/12
6.		
7.		
8.		

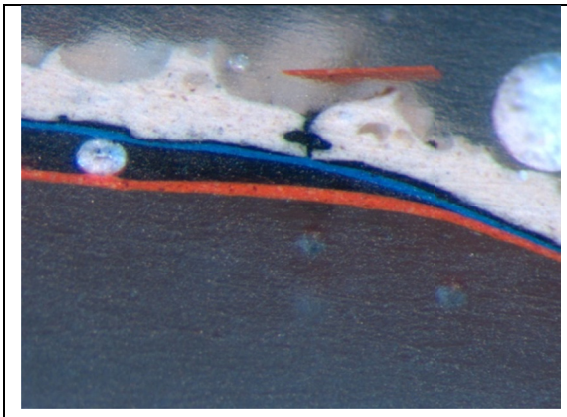


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Barn C, Interior **Sample No. NL37**
Sample Location: Wall base
Comments: Layer separation in sample between blue and orange layers

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Buff	7.5YR9/2
2.	Black	—
3.	Blue	—
4.	Red-orange	10R4/12
5.		
6.		
7.		
8.		



Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Barn C, Interior **Sample No. NL38**
Sample Location: Interior of pedestrian door
Comments: No or apparent substrate in sample

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Galvanized steel	
1.	Buff	10YR9/2
2.	Light green	—
3.	Dark green	—
4.	Orange	5YR6/10
5.		
6.		
7.		
8.		

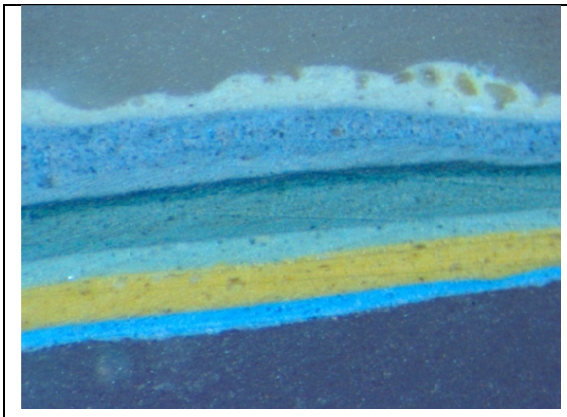


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Assembly Building, Interior **Sample No. NL101**
Sample Location: Entrance room, lower wall
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Buff	5Y9/2
2.	Gray	—
3.	Gray	—
4.	Dark gray	
5.	Dark green	
6.	Green	—
7.	Pastel green	—
8.	Yellow	—
9.	Blue	10B8/4

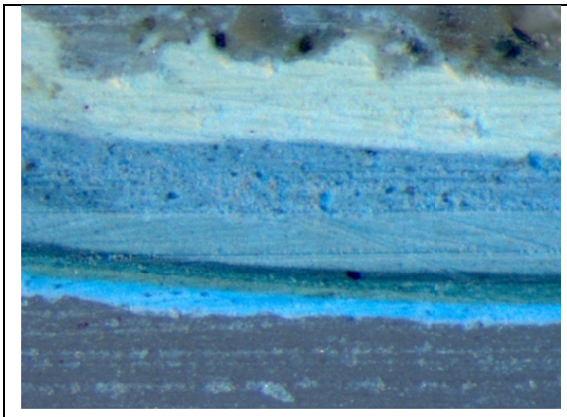


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Assembly Building, Interior **Sample No. NL102**
Sample Location: Entrance room upper wall area
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Buff	5Y9/2
2.	Gray	—
3.	Gray	—
4.	Dark gray	
5.	Dark green	—
6.	Green	—
7.	Blue	10B8/4
8.		

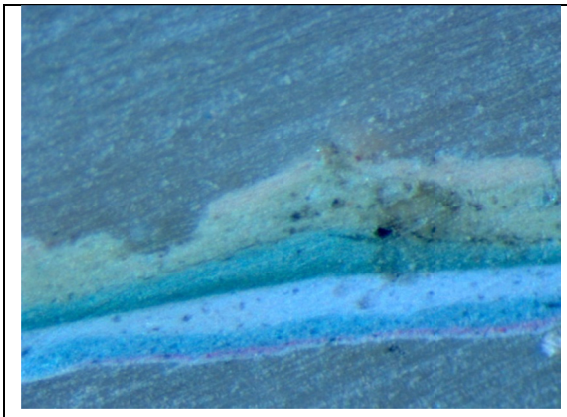


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Assembly Building, Interior **Sample No. NL103**
Sample Location: Main room, lower south wall
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Buff	7.5YR9/2
2.	Light green	—
3.	Dark green	—
4.	Off-white	—
5.	Blue	—
6.	Red	trace amounts
7.	Gray	N7.25
8.		



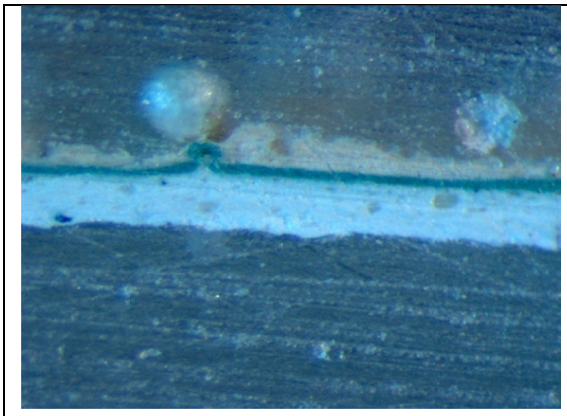
Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Assembly Building, Interior **Sample No. NL104**
Sample Location: Main room, south upper wall
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Buff	7.5YR9/2
2.	Dark green	—
3.	Off-white	*
4.		
5.		
6.		
7.		
8.		

*Very light colors such as shades of white, and very dark colors such as shades of dark gray and black, are often visually indistinguishable from one another through microscopic analysis of cross sections. Therefore, no Munsell reference is given for these colors.

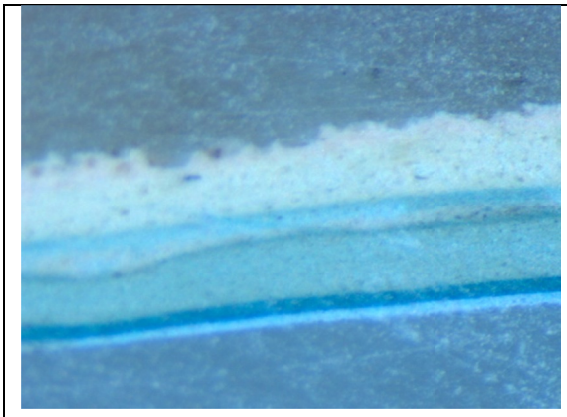


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Assembly Building, Interior **Sample No. NL105**
Sample Location: Main room, lower south wall
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Buff	7.5YR9/2
2.	Green	—
3.	Buff	—
4.	Dark green	—
5.	Green	—
6.	Dark green	—
7.	Blue	10B8/4
8.		

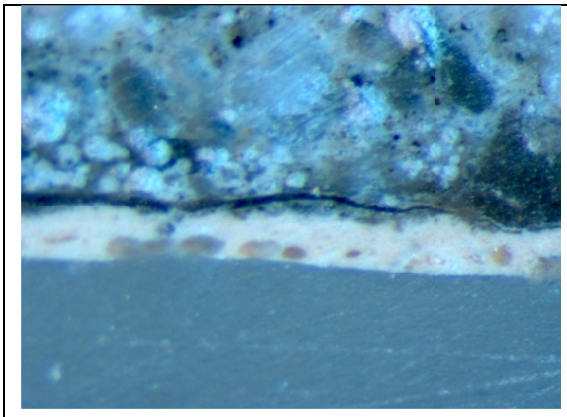


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Assembly Building, Interior **Sample No. NL106**
Sample Location: Main room, lower south wall, concrete fragment
Comments: Substrate in sample, sample only contains lowest extant layer

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Buff	7.5YR9/2
2.		
3.		
4.		
5.		
6.		
7.		
8.		



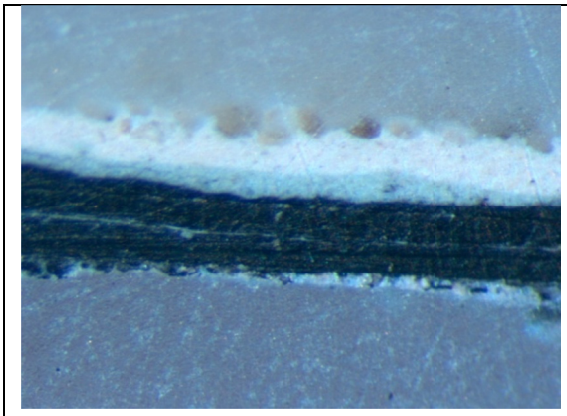
Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Assembly Building, Interior **Sample No. NL107**
Sample Location: Main room**, south wall base**
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Buff	7.5YR9/2
2.	Pastel green	—
3.	Black	*
4.		
5.		
6.		
7.		
8.		

*Very light colors such as shades of white, and very dark colors such as shades of dark gray and black, are often visually indistinguishable from one another through microscopic analysis of cross sections. Therefore, no Munsell reference is given for these colors.

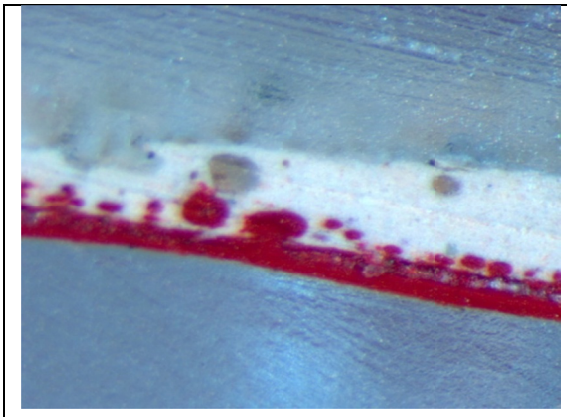


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Assembly Building, Interior **Sample No. NL108**
Sample Location: West wall at fire area #2
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Buff	7.5YR9/2
2.	Red	7.5R3/10
3.		
4.		
5.		
6.		
7.		
8.		

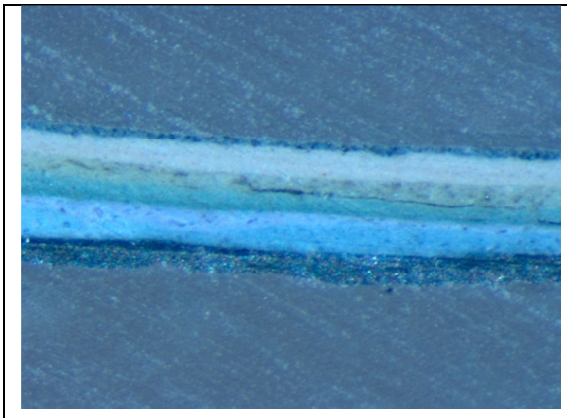


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Assembly Building, Interior **Sample No. NL109**
Sample Location: Interior of west roll-up door
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Galvanized steel	
1.	Gray	Likely a shop coat or primer
2.	Buff	7.5YR9/2
3.	Buff	—
4.	Green	—
5.	Dark green	—
6.	Blue	—
7.	Metallic silver	No Munsell equivalent; this is likely an intermediate or primer coating
8.		



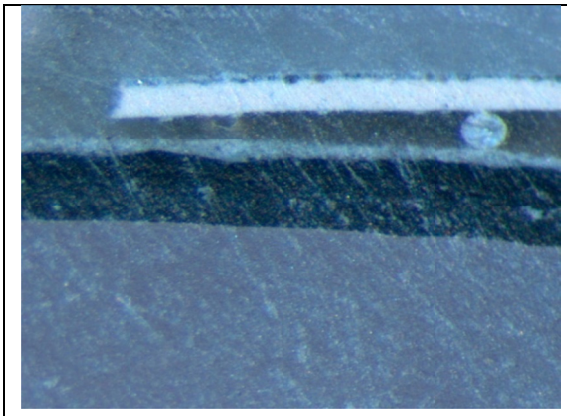
Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Assembly Building, Interior **Sample No. NL110**
Sample Location: Main room, lower west roll-up door
Comments: Separation in sample

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Galvanized steel	
1.	Gray	Likely a shop coat or primer
2.	Buff	7.5YR9/2
3.	Gray	—
4.	Black	*
5.		
6.		
7.		
8.		

*Very light colors such as shades of white, and very dark colors such as shades of dark gray and black, are often visually indistinguishable from one another through microscopic analysis of cross sections. Therefore, no Munsell reference is given for these colors.

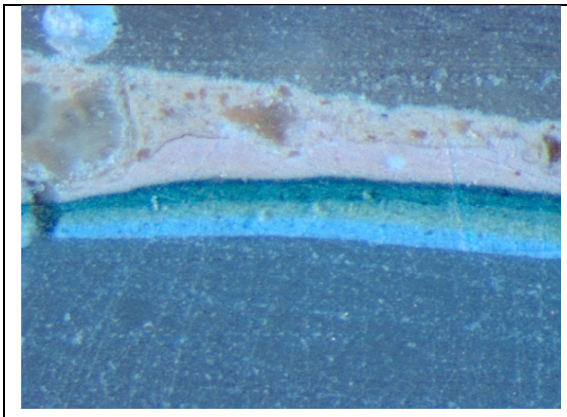


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Assembly Building, Interior **Sample No. NL111**
Sample Location: Bathroom area lower wall
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Buff	7.5YR9/2
2.	Buff	—
3.	Dark green	—
4.	Green	—
5.	Green	—
6.	Blue	10B8/4
7.		
8.		



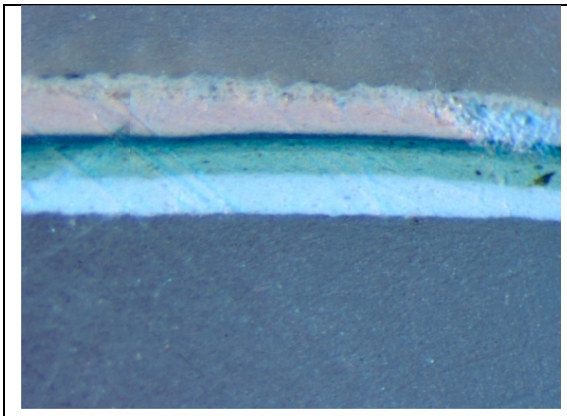
Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Assembly Building, Interior **Sample No. NL112**
Sample Location: Bathroom area upper wall
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Buff	7.5YR9/2
2.	Buff	—
3.	Dark green	—
4.	Green	—
5.	Green	—
6.	Off-white	*
7.		
8.		

*Very light colors such as shades of white, and very dark colors such as shades of dark gray and black, are often visually indistinguishable from one another through microscopic analysis of cross sections. Therefore, no Munsell reference is given for these colors.

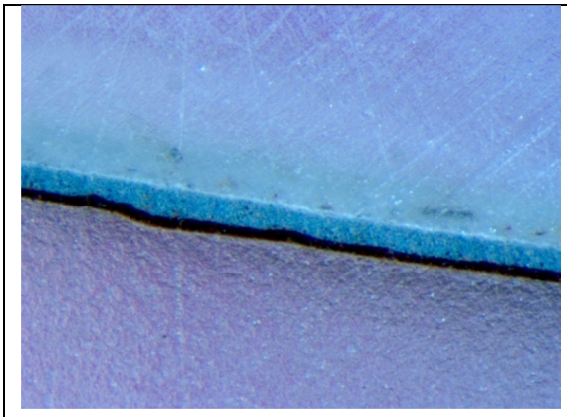


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Assembly Building, Interior **Sample No. NL113**
Sample Location: Bathroom area pedestrian door
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Galvanized steel	
1.	Gray	Likely a shop coat or primer
2.	Brown	5YR2/4
3.		
4.		
5.		
6.		
7.		
8.		

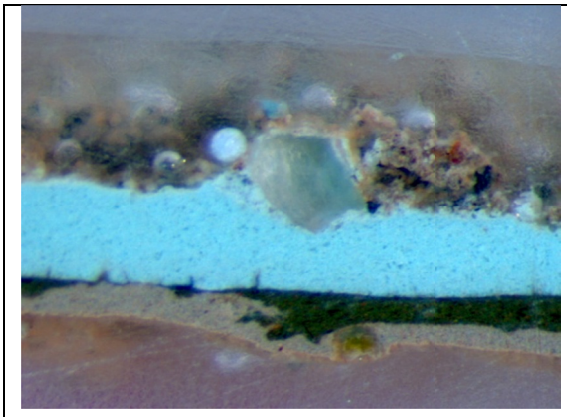


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Assembly Building, Exterior Art Work **Sample No. NL114**
Sample Location: Rocket base at rocket mural
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Green	5G8/2
2.	Brown	5Y3/2
3.	Tan	7.5YR6/4
4.		
5.		
6.		
7.		
8.		



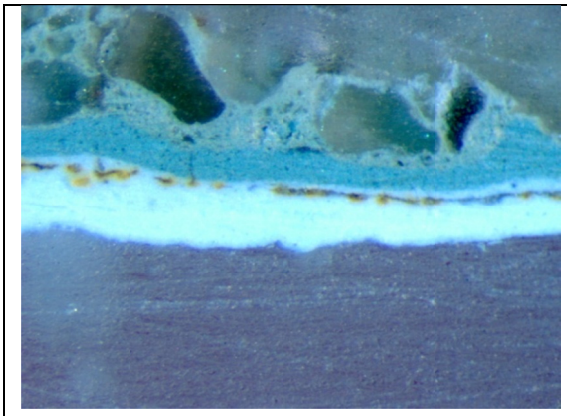
Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Assembly Building, Exterior Art Work **Sample No. NL115**
Sample Location: Top of rocket at mural (white body)
Comments: Yellow colored deposits between layers of white

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Green	5G8/2
2.	Off-white	Traces of yellow deposits between off-white layers
3.	Off-white	*
4.		
5.		
6.		
7.		
8.		

*Very light colors such as shades of white, and very dark colors such as shades of dark gray and black, are often visually indistinguishable from one another through microscopic analysis of cross sections. Therefore, no Munsell reference is given for these colors.



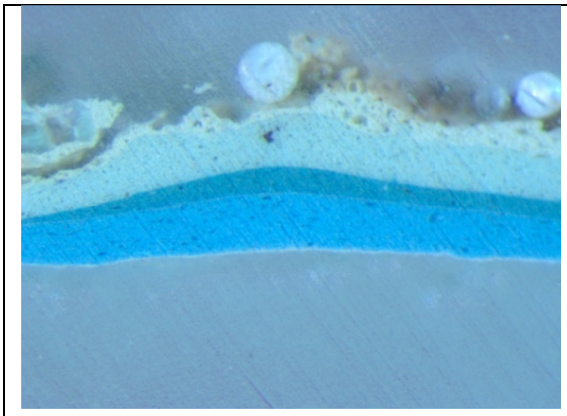
Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Assembly Building, Exterior Art Work **Sample No. NL116**
Sample Location: Rocket mural background
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Buff	5Y9/2
2.	Green	5G8/2
3.	Dark green	—
4.	Blue	7.5B7/8
5.	Off-white	*
6.		
7.		
8.		

*Very light colors such as shades of white, and very dark colors such as shades of dark gray and black, are often visually indistinguishable from one another through microscopic analysis of cross sections. Therefore, no Munsell reference is given for these colors.



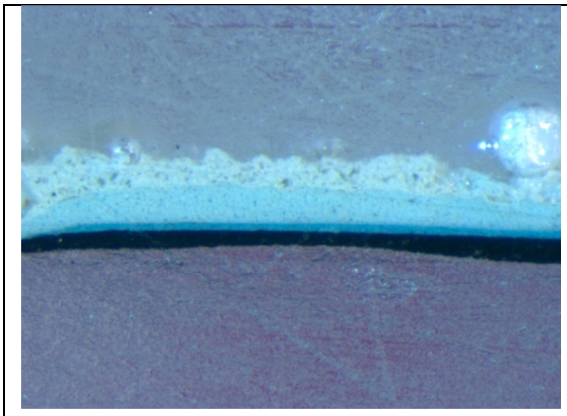
Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Assembly Building, Exterior Art Work **Sample No. NL117**
Sample Location: Signage area black boarder
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Buff	5Y9/2
2.	Green	5G8/2
3.	Dark green	—
4.	Black	*
5.		
6.		
7.		
8.		

*Very light colors such as shades of white, and very dark colors such as shades of dark gray and black, are often visually indistinguishable from one another through microscopic analysis of cross sections. Therefore, no Munsell reference is given for these colors.



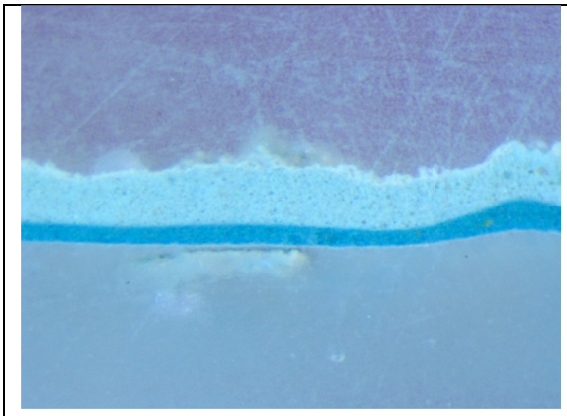
Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Assembly Building, Exterior Art Work **Sample No. NL118**
Sample Location: Signage are field below rocket outline
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Buff	5Y9/2
2.	Green	5G8/2
3.	Dark green	—
4.	Off-white	*
5.		
6.		
7.		
8.		

*Very light colors such as shades of white, and very dark colors such as shades of dark gray and black, are often visually indistinguishable from one another through microscopic analysis of cross sections. Therefore, no Munsell reference is given for these colors.



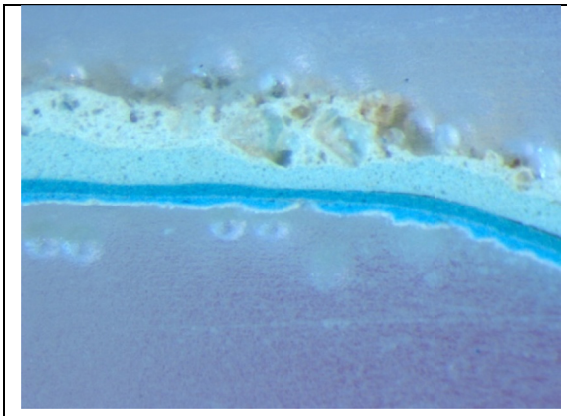
Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Assembly Building, Exterior Art Work **Sample No. NL119**
Sample Location: Signage area at inside border area (border area with anchor holes)
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Buff	5Y9/2
2.	Green	5G8/2
3.	Dark green	—
4.	Blue	7.5B7/8
5.	Off-white	*
6.		
7.		
8.		

*Very light colors such as shades of white, and very dark colors such as shades of dark gray and black, are often visually indistinguishable from one another through microscopic analysis of cross sections. Therefore, no Munsell reference is given for these colors.

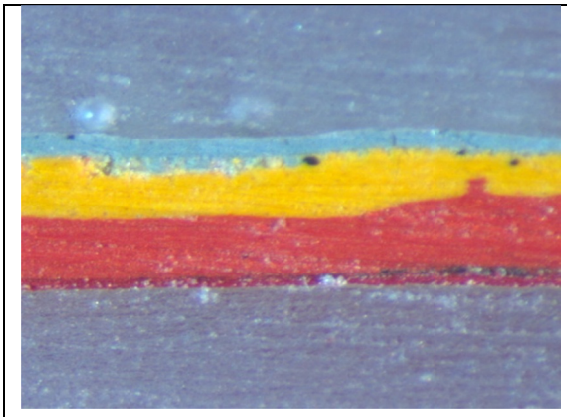


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Missile Barn C, Interior **Sample No. NL120**
Sample Location: Floor at southeast marking
Comments: Complete sample removal not possible, red and blue layers remained attached to the floor

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete	
1.	Gray	N6.25
2.	Yellow	—
3.	Orange-red	—
4.	Red	7.5R3/10
5.		
6.		
7.		
8.		

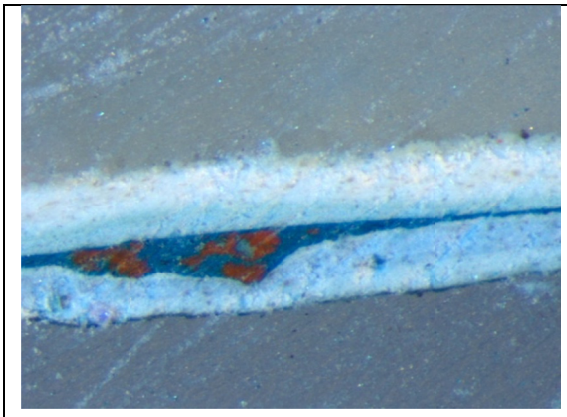


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Bunker C, Interior **Sample No. NL122**
Sample Location: Entrance area wall
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete	
1.	Buff	5Y9/2
2.	Dark blue	Red chips encapsulated in layer
3.	Off-white	—
4.	Off-white	—
5.	Dark gray	N2.75
6.		
7.		
8.		

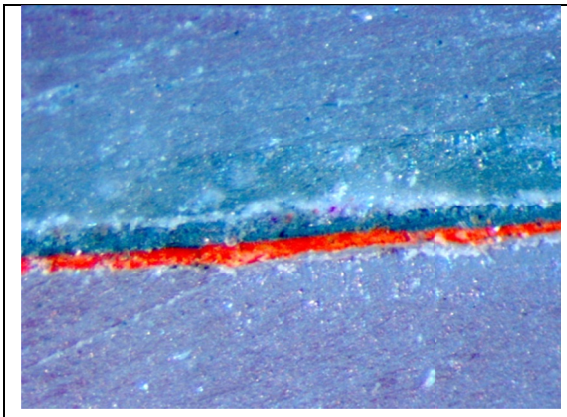


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Bunker C, Interior **Sample No. NL123**
Sample Location: Door from entrance to hatch room
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Galvanized steel	
1.	Gray	Likely shop coat or primer
2.	Red-orange	10R5/14
3.		
4.		
5.		
6.		
7.		
8.		

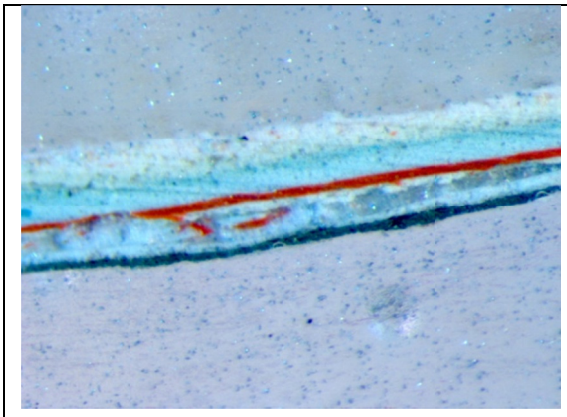


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Bunker C, Interior **Sample No. NL124**
Sample Location: Entrance area ceiling
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete	
1.	Buff	5Y9/2
2.	Light blue	—
3.	Orange	—
4.	Off-white	—
5.	Dark gray	N2.75
6.		
7.		
8.		



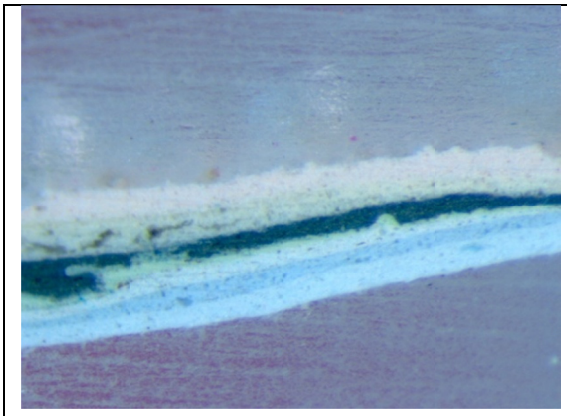
Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Bunker C, Interior **Sample No. NL125**
Sample Location: Hatch room lower wall
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Buff	7.5YR9/2
2.	Off-white	—
3.	Dark gray	—
4.	Off-white	—
5.	Blue	—
6.	Off-white	*
7.		
8.		

*Very light colors such as shades of white, and very dark colors such as shades of dark gray and black, are often visually indistinguishable from one another through microscopic analysis of cross sections. Therefore, no Munsell reference is given for these colors.



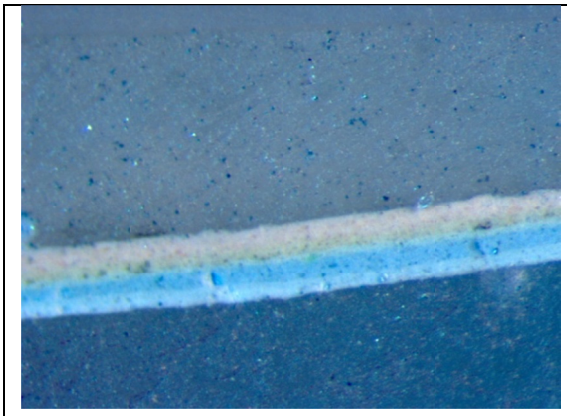
Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Bunker C, Interior **Sample No. NL126**
Sample Location: Hatch room upper wall
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete block	
1.	Buff	7.5YR9/2
2.	Off-white	—
3.	Blue	—
4.	Off-white	*
5.		
6.		
7.		
8.		

*Very light colors such as shades of white, and very dark colors such as shades of dark gray and black, are often visually indistinguishable from one another through microscopic analysis of cross sections. Therefore, no Munsell reference is given for these colors.

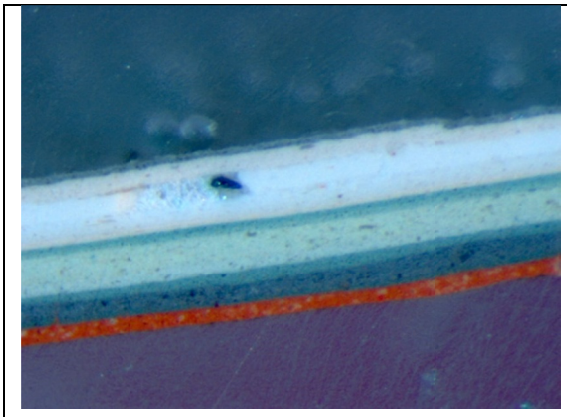


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Bunker C, Interior **Sample No. NL127**
Sample Location: Door from hatch to control room
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Galvanized steel	
1.	Gray	Likely shop coat or primer
2.	Buff	—
3.	Off-white	—
4.	Buff	—
5.	Green	—
6.	Green	—
7.	Green	—
8.	Gray	—
9.	Red-orange	10R5/14

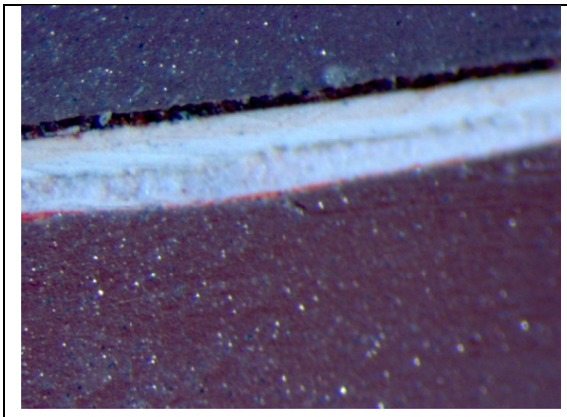


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Bunker C, Interior **Sample No. NL128**
Sample Location: Door frame into control room
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Galvanized steel	
1.	Brown	10R3/2
2.	Buff	—
3.	Off-white	—
4.	Red-orange	10R5/14
5.		
6.		
7.		
8.		

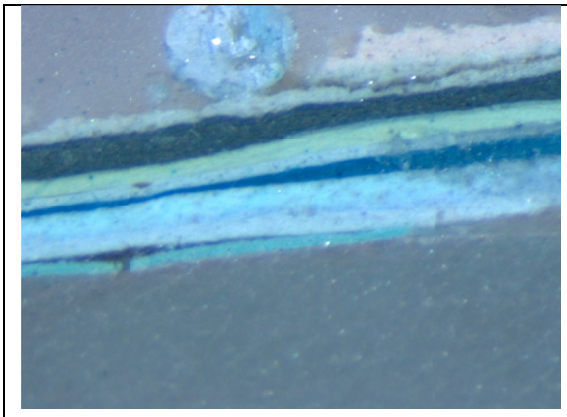


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Bunker C, Interior **Sample No. NL129**
Sample Location: Control room rear lower wall
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete	
1.	Buff	7.5YR9/2
2.	Off-white	—
3.	Dark gray	—
4.	Green	—
5.	Off-white	—
6.	Dark blue	—
7.	Off-white	—
8.	Buff	—
9.	Green	10G6/4

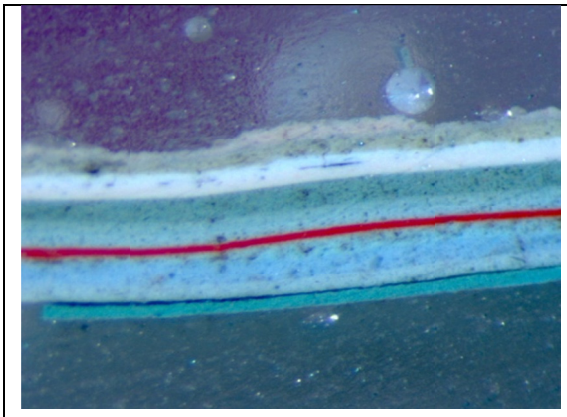


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Bunker C, Interior **Sample No. NL130**
Sample Location: Control room rear upper wall
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete	
1.	Buff	7.5YR9/2 Trace amounts adhered to sample
2.	Buff	—
3.	Off-white	—
4.	Green	—
5.	Green	—
6.	Red	—
7.	Blue	—
8.	Off-white	Layer separation
9.	Green	10G6/4

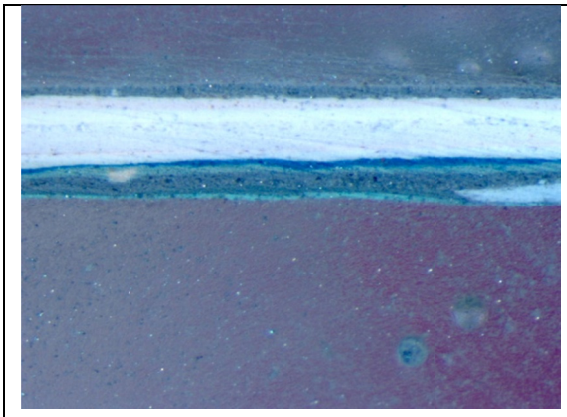


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Bunker C, Interior **Sample No. NL131**
Sample Location: Control room side of door
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Galvanized steel	
1.	Gray	Likely shop coat or primer
2.	Buff	7.5YR9/2
3.	Off-white	—
4.	Buff	—
5.	Off-white	—
6.	Blue	—
7.	Green	—
8.	Gray	—
9.	Green	10G6/4

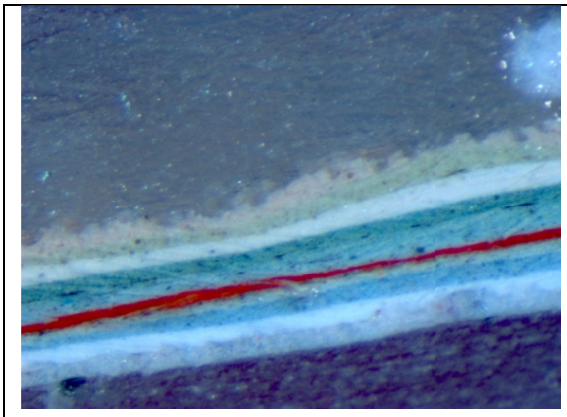


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Bunker C, Interior **Sample No. NL132**
Sample Location: Rear wall "Mothership" body
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete	
1.	Buff	7.5YR9/2 Traces adhered to sample
2.	Buff	—
3.	Off-white	—
4.	Green	—
5.	Green	—
6.	Red	—
7.	Green	—
8.	Blue	—
9.	Off-white	Off-white is surface of 'Mothership' mural

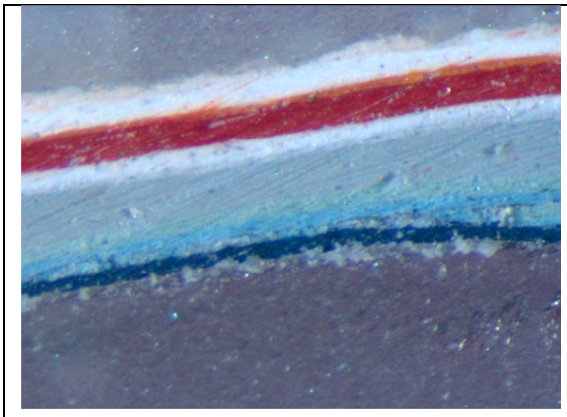


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Bunker B, Interior **Sample No. NL133**
Sample Location: Entrance area wall
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete	
1.	Buff	7.5YR9/2
2.	Off-white	—
3.	Orange	—
4.	Red	—
5.	Off-white	—
6.	Green	—
7.	Blue	—
8.	Dark blue	2.5PB2/2

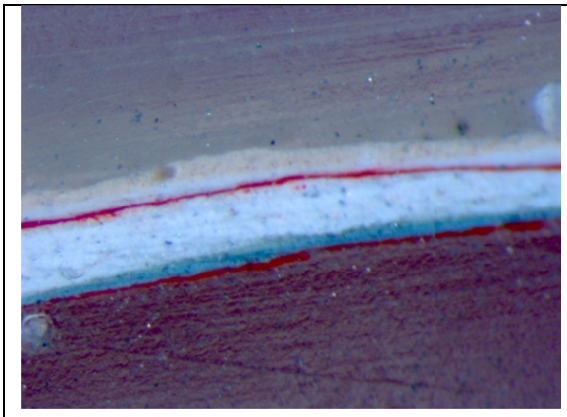


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Bunker B, Interior **Sample No. NL134**
Sample Location: Entry area ceiling
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete	
1.	Buff	7.5YR9/2
2.	Off-white	—
3.	Red	—
4.	Off-white	—
5.	Green	—
6.	Red	7.5R3/10
7.		
8.		

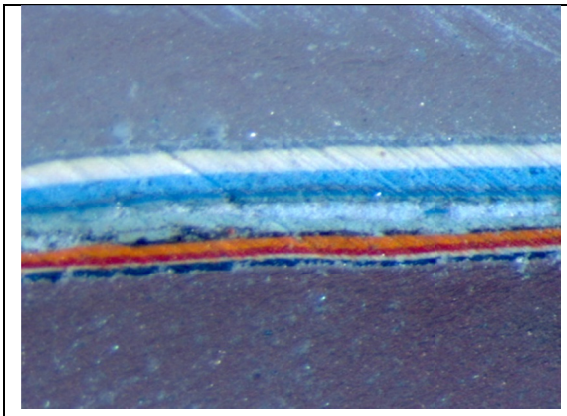


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

Photos are shown for informational purposes only. Lighting conditions with laboratory microscopy may not accurately depict the colors as they appear under ambient natural light conditions. Color determinations are made through actual observations with a daylight filter. Color determinations are not made by referencing photographs.

Building Element: Bunker B, Interior **Sample No. NL135**
Sample Location: Door from entrance to hatch room
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Galvanized steel	
1.	Gray	Likely shop coat or primer
2.	Off-white	—
3.	Blue	—
4.	Gray	—
5.	Blue	—
6.	Green	Separation in sample between layers
7.	Orange	—
8.	Red	—
9.	Off-white	—
10.	Dark blue	2.5PB2/2

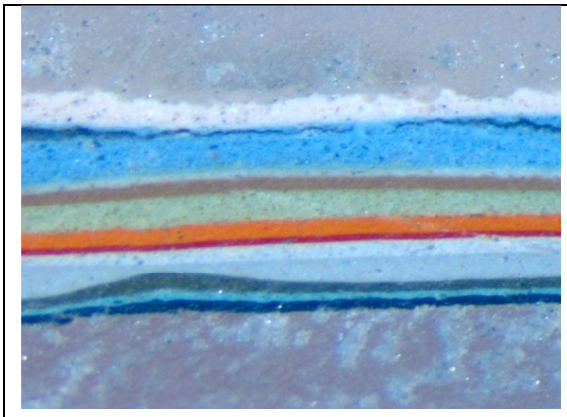


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

Photos are shown for informational purposes only. Lighting conditions with laboratory microscopy may not accurately depict the colors as they appear under ambient natural light conditions. Color determinations are made through actual observations with a daylight filter. Color determinations are not made by referencing photographs.

Building Element: Bunker B, Interior **Sample No. NL136**
Sample Location: Hatch room lower wall
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete	
1.	Buff	7.5YR9/2
2.	Blue	—
3.	Green	—
4.	Brown	—
5.	Green	—
6.	Orange	—
7.	Red	—
8.	Off-white	—
9.	Dark green	—
10.	Blue	—
11.	Dark blue	2.5PB2/2

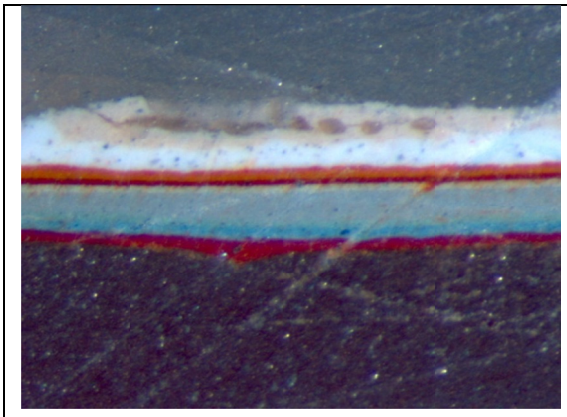


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

Photos are shown for informational purposes only. Lighting conditions with laboratory microscopy may not accurately depict the colors as they appear under ambient natural light conditions. Color determinations are made through actual observations with a daylight filter. Color determinations are not made by referencing photographs.

Building Element: Bunker B, Interior **Sample No. NL137**
Sample Location: Hatch room upper wall
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete	
1.	Buff	7.5YR9/2
2.	Off-white	—
3.	Orange	—
4.	Red	—
5.	Off-white	—
6.	Green	—
7.	Blue	—
8.	Red	7.5R3/10



Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

Photos are shown for informational purposes only. Lighting conditions with laboratory microscopy may not accurately depict the colors as they appear under ambient natural light conditions. Color determinations are made through actual observations with a daylight filter. Color determinations are not made by referencing photographs.

Building Element: Bunker B, Interior **Sample No. NL138**
Sample Location: Control room lower wall
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete	
1.	Off-white	—
2.	Blue	—
3.	Blue	—
4.	Green	—
5.	Off-white	—
6.	Green	—
7.	Orange	—
8.	Red	—
9.	Off-white	—
10.	Buff	—
11.	Dark green	—
12.	Red	Layer separation between red and dark blue
13.	Dark Blue	2.5PB2/2



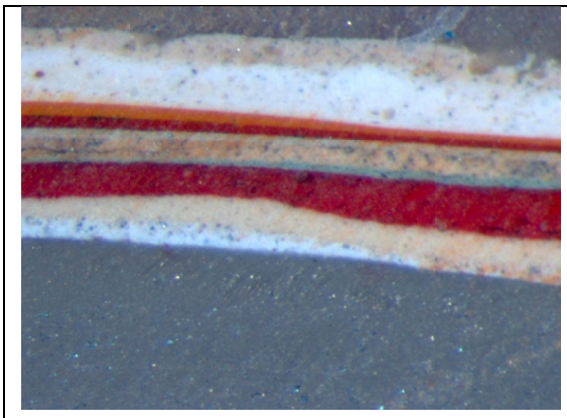
Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

Photos are shown for informational purposes only. Lighting conditions with laboratory microscopy may not accurately depict the colors as they appear under ambient natural light conditions. Color determinations are made through actual observations with a daylight filter. Color determinations are not made by referencing photographs.

Building Element: Bunker B, Interior **Sample No. NL139**
Sample Location: Control room upper wall
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete	
1.	Buff	7.5YR9/2
2.	Off-white	—
3.	Orange	—
4.	Red	—
5.	Off-white	—
6.	Buff	—
7.	Green	—
8.	Red	—
9.	Buff	—
10.	Off-white	*

*Very light colors such as shades of white, and very dark colors such as shades of dark gray and black, are often visually indistinguishable from one another through microscopic analysis of cross sections. Therefore, no Munsell reference is given for these colors.

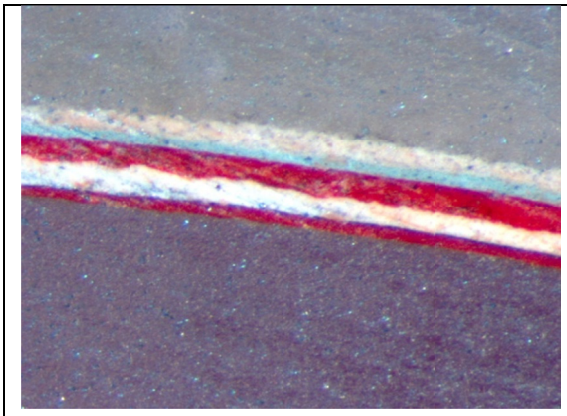


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Bunker B, Interior **Sample No. NL140**
Sample Location: Control room wainscot band
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete	
1.	Buff	7.5YR9/2
2.	Green	—
3.	Red	—
4.	Off-white	—
5.	Red	7.5R3/10
6.		
7.		
8.		

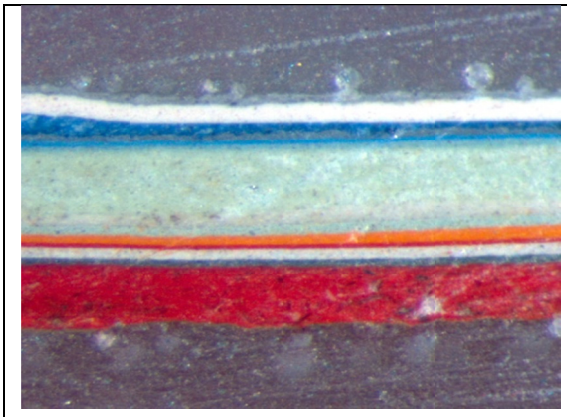


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

Photos are shown for informational purposes only. Lighting conditions with laboratory microscopy may not accurately depict the colors as they appear under ambient natural light conditions. Color determinations are made through actual observations with a daylight filter. Color determinations are not made by referencing photographs.

Building Element: Bunker B, Interior **Sample No. NL141**
Sample Location: Control room door
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Galvanized steel	
1.	Gray	Likely shop coat or primer
2.	Off-white	—
3.	Blue	—
4.	Gray	—
5.	Blue	—
6.	Green	—
7.	Off-white	—
8.	Green	—
9.	Orange	—
10.	Red	—
11.	Off-white	—
12.	Gray	—
13.	Red	7.5R3/10

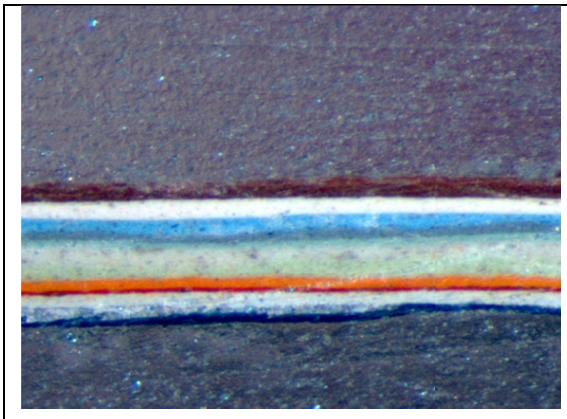


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

Photos are shown for informational purposes only. Lighting conditions with laboratory microscopy may not accurately depict the colors as they appear under ambient natural light conditions. Color determinations are made through actual observations with a daylight filter. Color determinations are not made by referencing photographs.

Building Element: Bunker B, Interior **Sample No. NL142**
Sample Location: Control room door frame
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Metal	
1.	Brown	5YR2/4
2.	Off-white	—
3.	Blue	—
4.	Gray	—
5.	Green	—
6.	Off-white	—
7.	Green	—
8.	Orange	—
9.	Red	—
10.	Off-white	—
11.	Dark blue	2.5PB2/2



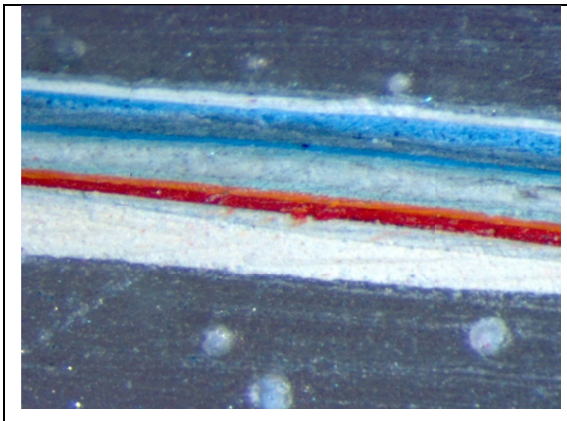
Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

Photos are shown for informational purposes only. Lighting conditions with laboratory microscopy may not accurately depict the colors as they appear under ambient natural light conditions. Color determinations are made through actual observations with a daylight filter. Color determinations are not made by referencing photographs.

Building Element: Bunker B, Interior **Sample No. NL143**
Sample Location: Hatch room side of control door
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Galvanized steel	
1.	Gray	Likely shop coat or primer
2.	Off-white	—
3.	Blue	—
4.	Gray	—
5.	Blue	—
6.	Green	—
7.	Off-white	—
8.	Green	—
9.	Orange	—
10.	Red	—
11.	Off-white	—
12.	Off-white	*

*Very light colors such as shades of white, and very dark colors such as shades of dark gray and black, are often visually indistinguishable from one another through microscopic analysis of cross sections. Therefore, no Munsell reference is given for these colors.



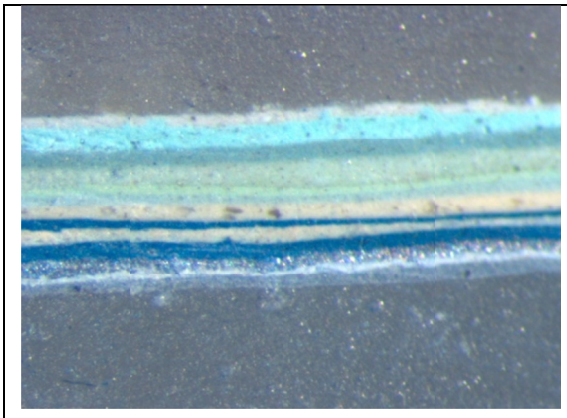
Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

Photos are shown for informational purposes only. Lighting conditions with laboratory microscopy may not accurately depict the colors as they appear under ambient natural light conditions. Color determinations are made through actual observations with a daylight filter. Color determinations are not made by referencing photographs.

Building Element: Bunker A, Interior **Sample No. NL144**
Sample Location: Entry wall
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete	
1.	Off-white	*
2.	Green	—
3.	Green	—
4.	Green	—
5.	Green	—
6.	Green	—
7.	Off-white	—
8.	Blue	—
9.	Off-white	—
10.	Blue	—
11.	Metallic silver	—
12.	Off-white	—
13.	Gray	N5

*Very light colors such as shades of white, and very dark colors such as shades of dark gray and black, are often visually indistinguishable from one another through microscopic analysis of cross sections. Therefore, no Munsell reference is given for these colors.



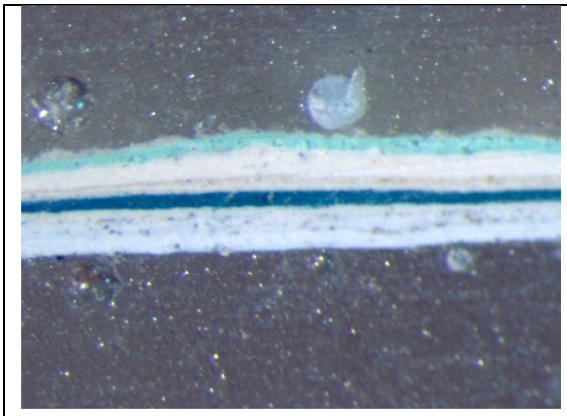
Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

Photos are shown for informational purposes only. Lighting conditions with laboratory microscopy may not accurately depict the colors as they appear under ambient natural light conditions. Color determinations are made through actual observations with a daylight filter. Color determinations are not made by referencing photographs.

Building Element: Bunker A, Interior **Sample No. NL145**
Sample Location: Entry ceiling
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete	
1.	Buff	7.5YR9/2 Traces adhered to sample
2.	Green	—
3.	Buff	—
4.	Buff	—
5.	Dark blue	—
6.	Off-white	—
7.	Off-white	*
8.		

*Very light colors such as shades of white, and very dark colors such as shades of dark gray and black, are often visually indistinguishable from one another through microscopic analysis of cross sections. Therefore, no Munsell reference is given for these colors.



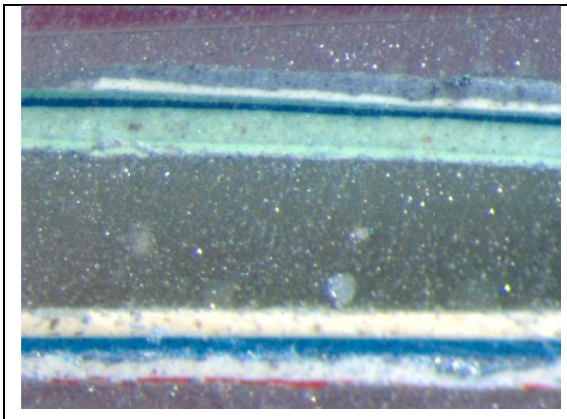
Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

Photos are shown for informational purposes only. Lighting conditions with laboratory microscopy may not accurately depict the colors as they appear under ambient natural light conditions. Color determinations are made through actual observations with a daylight filter. Color determinations are not made by referencing photographs.

Building Element: Bunker A, Interior
Sample Location: Door to hatch area
Comments:

Sample No. NL146

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Galvanized steel	
1.	Gary	Likely shop coat or primer
2.	Off-white	—
3.	Green	—
4.	Dark blue	—
5.	Green	—
6.	Green	Sample separation
7.	Buff	—
8.	Blue	—
9.	Metallic silver	—
10.	Off-white	—
11.	Red	5R3/8

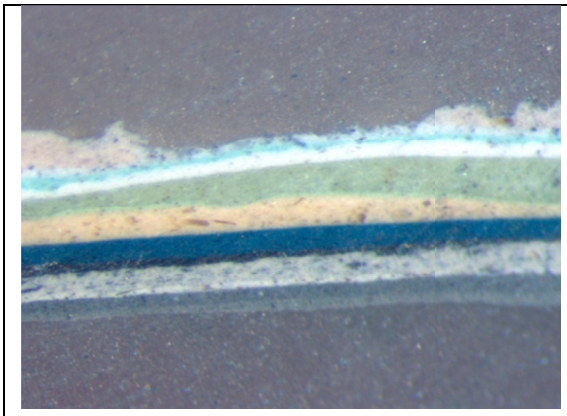


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

Photos are shown for informational purposes only. Lighting conditions with laboratory microscopy may not accurately depict the colors as they appear under ambient natural light conditions. Color determinations are made through actual observations with a daylight filter. Color determinations are not made by referencing photographs.

Building Element: Bunker A, Interior **Sample No. NL147**
Sample Location: Hatch room lower wall
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete	
1.	Buff	7.5YR9/2 Traces adhered to sample
2.	Green	—
3.	White	
4.	Green	—
5.	Buff	—
6.	Blue	—
7.	Metallic silver	
8.	Off-white	—
9.	Gray	—
10.	Gray	N5

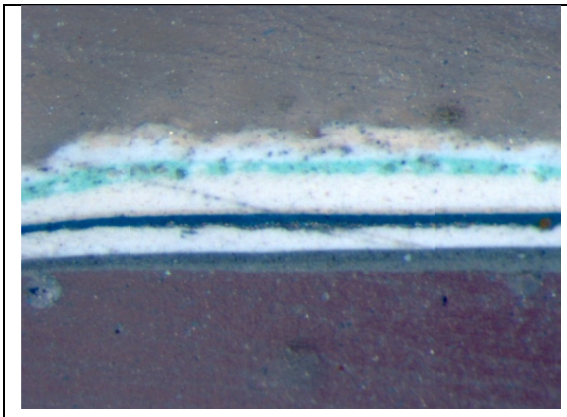


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

Photos are shown for informational purposes only. Lighting conditions with laboratory microscopy may not accurately depict the colors as they appear under ambient natural light conditions. Color determinations are made through actual observations with a daylight filter. Color determinations are not made by referencing photographs.

Building Element: Bunker A, Interior **Sample No. NL148**
Sample Location: Hatch room upper wall
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete	
1.	Buff	7.5YR9/2
2.	Off-white	—
3.	Green	—
4.	Buff	—
5.	Blue	—
6.	Metallic silver	—
7.	Off-white	—
8.	Gray	—
9.	Gray	N5

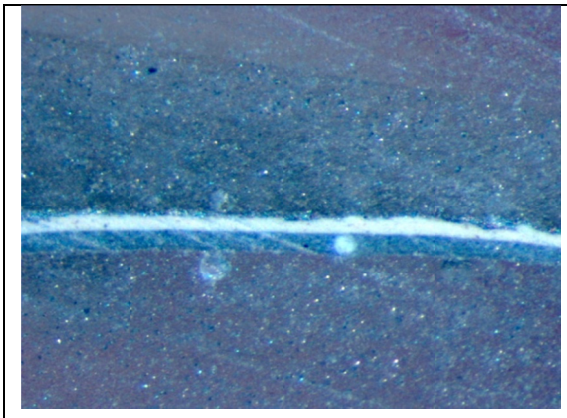


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

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Building Element: Bunker A, Interior **Sample No. NL149**
Sample Location: Hatch room side of door (to control room)
Comments: Sample likely incomplete

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Galvanized steel	
1.	Metallic silver	No Munsell equivalent; this is likely an intermediate or primer coating
2.	Off-white	—
3.	Gray	N4.25
4.		
5.		
6.		
7.		
8.		

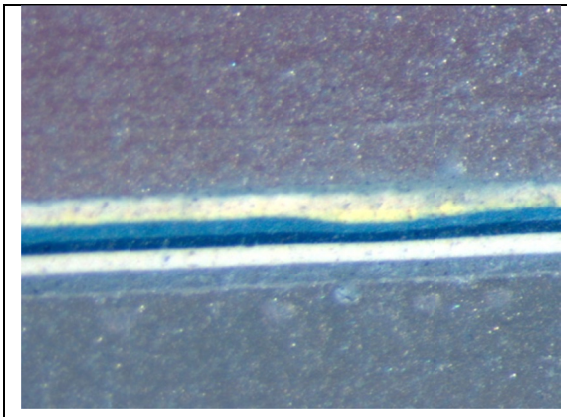


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

Photos are shown for informational purposes only. Lighting conditions with laboratory microscopy may not accurately depict the colors as they appear under ambient natural light conditions. Color determinations are made through actual observations with a daylight filter. Color determinations are not made by referencing photographs.

Building Element: Bunker A, Interior **Sample No. NL150**
Sample Location: Control room side of door
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Galvanized steel	
1.	Buff	7.5YR9/2
2.	Yellow	—
3.	Blue	—
4.	Blue	—
5.	Off-white	—
6.	Gray	N.25
7.		

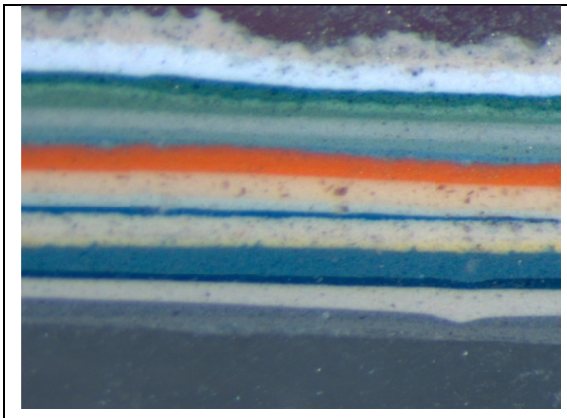


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

Photos are shown for informational purposes only. Lighting conditions with laboratory microscopy may not accurately depict the colors as they appear under ambient natural light conditions. Color determinations are made through actual observations with a daylight filter. Color determinations are not made by referencing photographs.

Building Element: Bunker A, Interior **Sample No. NL151**
Sample Location: Control room lower wall
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete	
1.	Buff	7.5YR9/2
2.	Off-white	—
3.	Green	—
4.	Green	—
5.	Green	—
6.	Green	—
7.	Green	—
8.	Orange	—
9.	Buff	—
10.	Off-white	—
11.	Blue	—
12.	Buff	—
13.	Yellow	—
14.	Blue	—
15.	Blue	—
16.	Off-white	—
17.	Gray	—
18.	Gray	N5

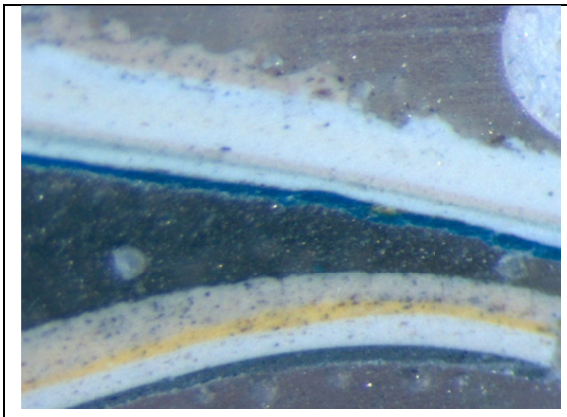


Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

Photos are shown for informational purposes only. Lighting conditions with laboratory microscopy may not accurately depict the colors as they appear under ambient natural light conditions. Color determinations are made through actual observations with a daylight filter. Color determinations are not made by referencing photographs.

Building Element: Bunker A, Interior **Sample No. NL152**
Sample Location: Control room upper wall
Comments:

Layer	Stratigraphy	Comments (Munsell references provided for earliest finish layer and exposed finish layer)
Substrate	Concrete	
1.	Buff	7.5YR9/2
2.	Off-white	—
3.	Off-white	—
4.	Buff	—
5.	Green	—
6.	Off-white	—
7.	Dark blue	Sample separation
8.	Buff	—
9.	Yellow	—
10.	Off-white	—
11.	Gray	N4.25



Polished section @ 63X; currently exposed layer is at the bottom of the photograph.

Photos are shown for informational purposes only. Lighting conditions with laboratory microscopy may not accurately depict the colors as they appear under ambient natural light conditions. Color determinations are made through actual observations with a daylight filter. Color determinations are not made by referencing photographs.

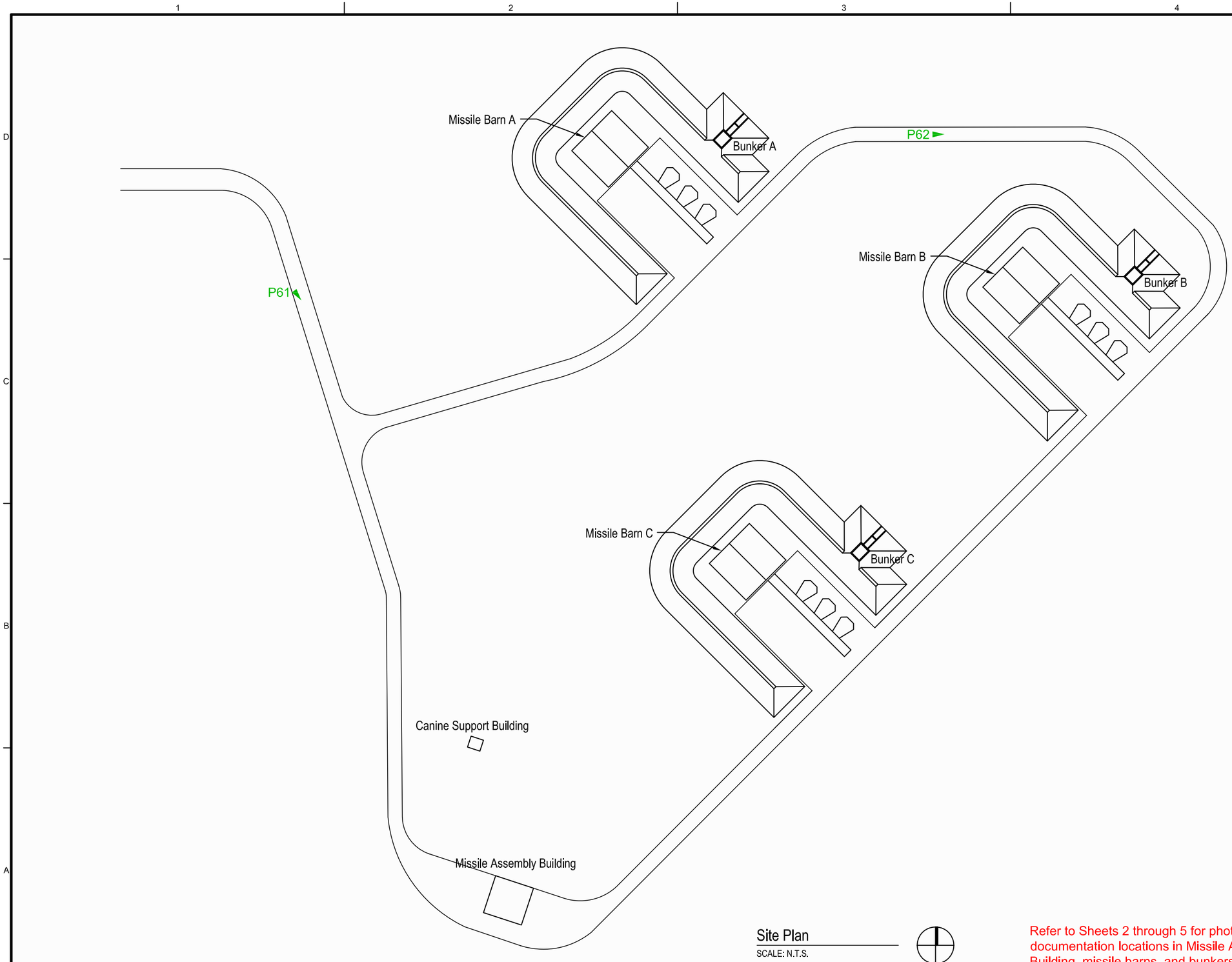
APPENDIX B – DOCUMENTARY PHOTOGRAPHS

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

Documentation Photo Locations at Launch Area

Photo Number	Building	Location/Element
P01	Missile Assembly Building	North elevation – wall
P02	Missile Assembly Building	East elevation
P03	Missile Assembly Building	East elevation – wall
P04	Missile Assembly Building	Entrance – east elevation
P05	Missile Assembly Building	Entrance – west elevation
P06	Missile Assembly Building	West elevation – detail
P07	Missile Assembly Building	West elevation
P08	Missile Assembly Building	West Mural
P09	Missile Assembly Building	West sign area
P10	Missile Assembly Building	West elevation – wall
P11	Missile Assembly Building	South elevation – wall
P12	Missile Assembly Building	South elevation – wall
P13	Missile Assembly Building	South elevation – wall
P14	Missile Assembly Building	Restroom Entrance
P15	Missile Assembly Building	Restroom – wall
P16	Missile Assembly Building	Ceiling
P17	Missile Assembly Building	Ceiling
P18	Missile Barn A	North elevation – wall
P19	Missile Barn A	North elevation – detail
P20	Missile Barn A	East elevation – wall
P21	Missile Barn A	South elevation – wall
P22	Missile Barn A	South elevation – detail
P23	Missile Barn A	South elevation – detail
P24	Missile Barn A	West elevation – wall
P25	Missile Barn A	West elevation – detail
P26	Missile Barn A	Floor
P27	Missile Barn A	Floor
P28	Bunker A	Entrance
P29	Bunker A	Concrete walk
P30	Bunker A	Main room and hatch room
P31	Bunker A	Main room
P32	Bunker A	Main room
P33	Missile Barn B	North elevation – wall
P34	Missile Barn B	North elevation – detail
P35	Missile Barn B	North elevation – detail
P36	Missile Barn B	East elevation – wall
P37	Missile Barn B	South elevation – wall
P38	Missile Barn B	South elevation – detail

P39	Missile Barn B	South elevation – detail
P40	Missile Barn B	South elevation – detail
P41	Missile Barn B	West elevation – detail
P42	Missile Barn B	Floor
P43	Missile Barn B	Floor
P44	Bunker B	Entrance
P45	Bunker B	Main room and hatch room
P46	Bunker B	Main room
P47	Bunker B	Main room
P48	Missile Barn C	North elevation – wall
P49	Missile Barn C	East elevation – wall
P50	Missile Barn C	South elevation – wall
P51	Missile Barn C	South elevation – detail
P52	Missile Barn C	West elevation – wall
P53	Missile Barn C	West elevation – detail
P54	Missile Barn C	West elevation – detail
P55	Missile Barn C	Floor
P56	Bunker C	Entrance
P57	Bunker C	Main room and hatch room
P58	Bunker C	Main room and hatch room
P59	Bunker C	Main room
P60	Bunker C	Main room
P61	Compass	Launch area road, southwest of entry gate
P62	Launch Area Road Paint	Launch area road, north of Barn B
P63	Administration Building	Southwest of Administration Building



Site Plan
SCALE: N.T.S.

Refer to Sheets 2 through 5 for photo documentation locations in Missile Assembly Building, missile barns, and bunkers.

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Plotted: 6/8/2011 3:59 PM by Clapper Morris, Jamie File Name: P:\2009\2701-2800\2009.2797 - DSlaton - Nike Site HSR\Drawings\Site Drawings for Finishes Analysis.dwg

WJE ENGINEERS ARCHITECTS MATERIALS SCIENTISTS

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Consultant

Project

HM-69 Nike Missile Site
Everglades National Park
Historic Structures Report

Client

National Park Service
Southeast Regional Office
Atlanta, Georgia

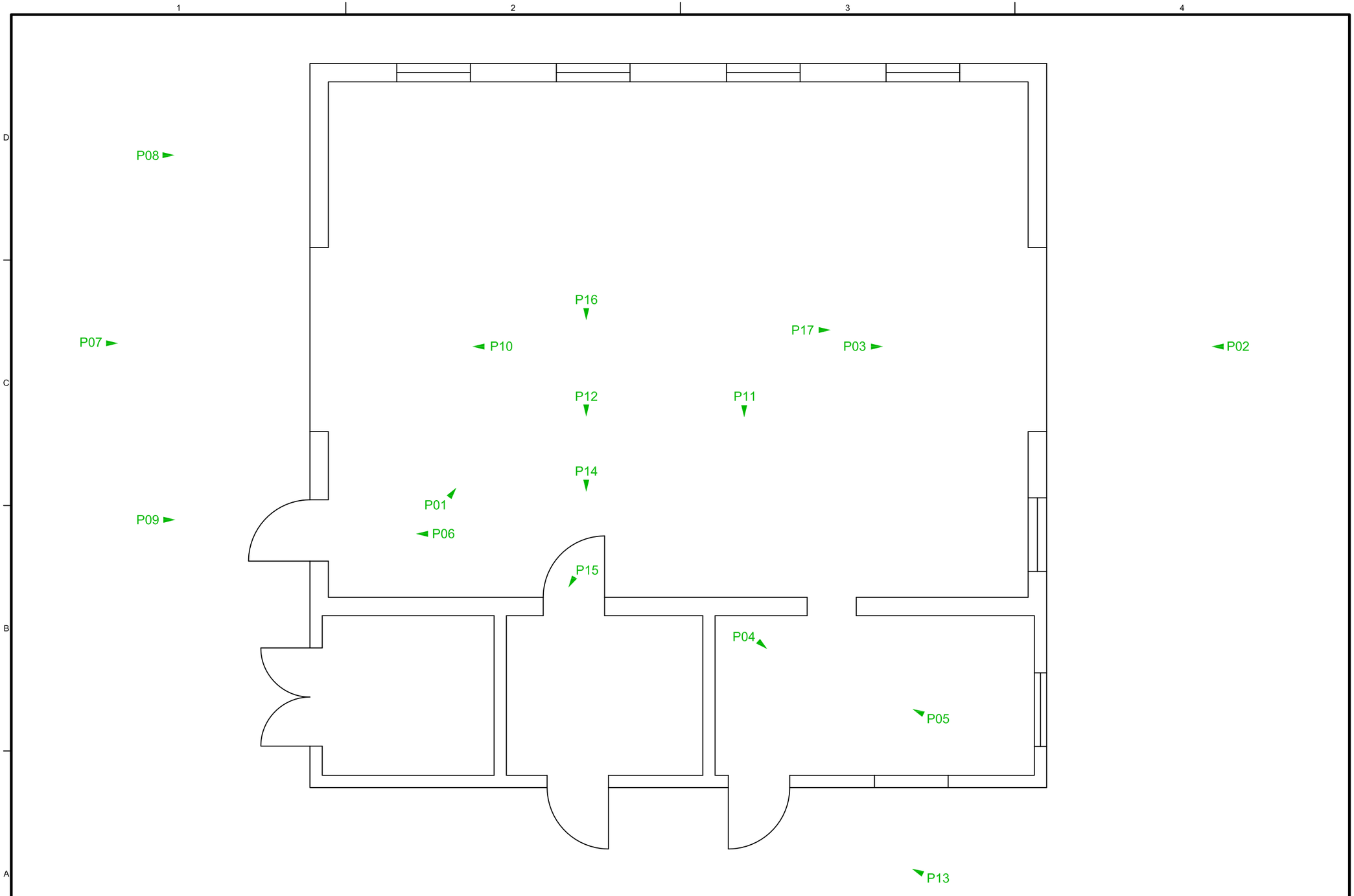
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Project No.	2009.2797
Date	June 2011
Drawn	TMP
Checked	DS
Scale	NTS

HM-69 Launch Site Plan

Sheet Title

Sheet No. **Appendix B-1**



Missile Assembly Building Floor Plan

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Project

HM-69 Nike Missile Site
Everglades National Park
Historic Structures Report

Client

National Park Service
Southeast Regional Office
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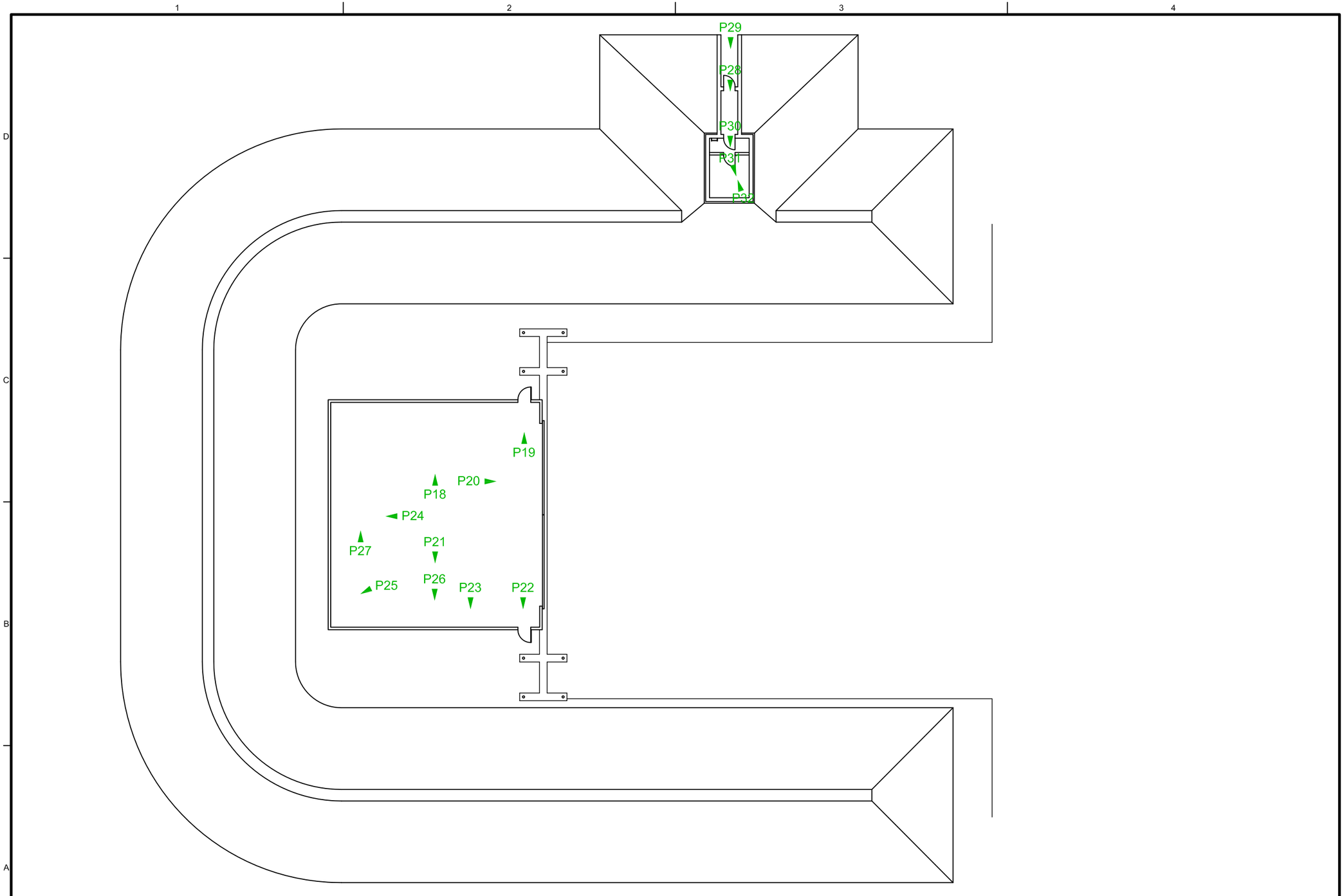
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Date	June 2011
Drawn	TMP
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Documentation Photo Locations
Missile Assembly Building

Sheet Title

Sheet No. **Appendix B-2**

Plotted: 6/8/2011 3:59 PM by Clapper Morris, Jamie File Name: P:\2009\2701-2800\2009.2797 - DSlaton - Nike Site HSR\Drawings\Site Drawings for Finishes Analysis.dwg



Missile Barn and Bunker A Floor Plan

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HM-69 Nike Missile Site
Everglades National Park
Historic Structures Report

Client

National Park Service
Southeast Regional Office
Atlanta, Georgia

Mark	Date	Description

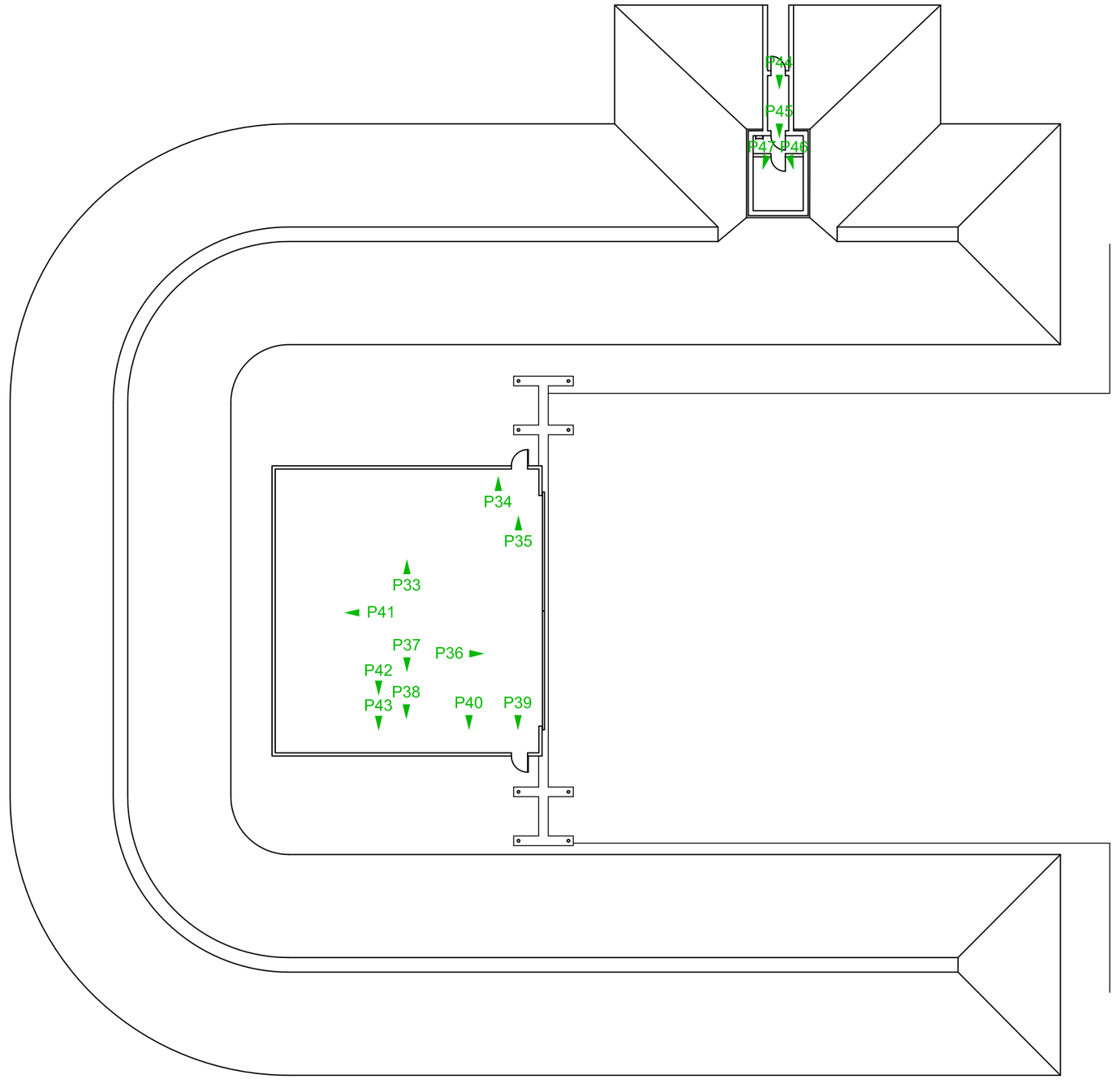
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Date	June 2011
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Documentation Photo Locations
Missile Barn and Bunker A

Sheet Title

Sheet No. **Appendix B-3**

Plotted: 6/8/2011 4:00 PM by Clapper Morris, Jamie File Name: P:\2009\2701-2800\2009.2797 - DSlaton - Nike Site HSR\Drawings\Site Drawings for Finishes Analysis.dwg



Missile Barn and Bunker B Floor Plan

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Southeast Regional Office
Atlanta, Georgia

Mark	Date	Description

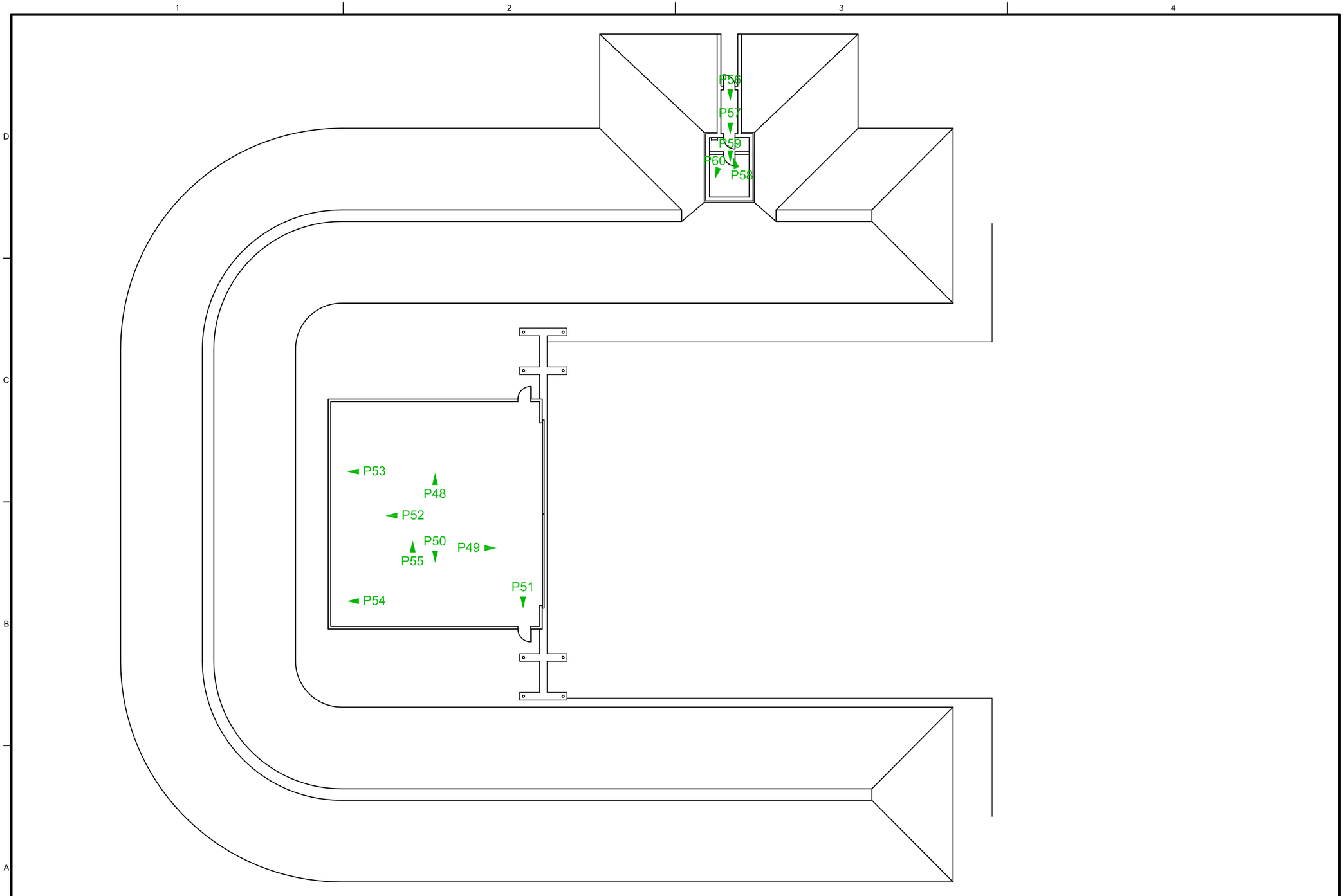
Project No.	2009.2797
Date	June 2011
Drawn	TMP
Checked	DS
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Documentation Photo Locations
Missile Barn and Bunker B

Sheet Title

Sheet No. **Appendix B-4**

Plotted: 6/8/2011 4:01 PM by Clapper Morris, Jamie File Name: P:\2009\2701-2800\2009.2797 - DSlaton - Nike Site HSR\Drawings\Site Drawings for Finishes Analysis.dwg



Missile Barn and Bunker C Floor Plan

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Mark	Date	Description

Project No.	2009.2797
Date	June 2011
Drawn	TMP
Checked	DS
Scale	NTS

Documentation Photo Locations
Missile Barn and Bunker C

Sheet Title

Sheet No. **Appendix B-5**

Plotted: 6/8/2011 4:01 PM by Clapper Morris, Jamie File Name: P:\2009\2701-2800\2009.2797 - DSlaton - Nike Site HSR\Drawings\Site Drawings for Finishes Analysis.dwg



P01 - MAB north.JPG



P02 - MAB east.JPG



P03 - MAB east interior.JPG



P04 - MAB entrance east.JPG



P05 - MAB entrance west.JPG



P06 - MAB west detail.JPG



P07 - MAB west exterior.JPG



P08 - MAB west mural.JPG



P09 - MAB west sign area.JPG



P10 - MAB main west.JPG



P11 - MAB south 1.JPG



P12 - MAB south 2.JPG



P13 - MAB south.JPG



P14 - MAB restroom entrance.JPG



P15 - MAB restroom.JPG



P16 - MAB ceiling.JPG



P17 - MAB ceiling 2.JPG



P18 - Barn A north.JPG



P19 - Barn A north detail 1.JPG



P20 - Barn A east.JPG



P21 - Barn A south.JPG



P22 - Barn A south detail 1.JPG



P23 - Barn A south detail 2.JPG



P24 - Barn A west.JPG



P25 - Barn A west detail.JPG



P26 - Barn A floor.JPG



P27 - Barn A floor 2.JPG



P28 - Bunker A entrance.JPG



P29 - Bunker A conc.JPG



P30 - Bunker A main and hatch room.JPG



P31 - Bunker A main room.JPG



P32 - Bunker A main room 2.JPG



P33 - Barn B north.JPG



P34 - Barn B north detail 1.JPG



P35 - Barn B north detail 2.JPG



P36 - Barn B east.JPG



P37 - Barn B south.JPG



P38 - Barn B south detail 1.JPG



P39 - Barn B south detail 2.JPG



P40 - Barn B south detail 3.JPG



P41 - Barn B west.JPG



P42 - Barn B floor.JPG



P43 - Barn B floor 2.JPG



P44 - Bunker B entrance.JPG



P45 - Bunker B hatch and main.JPG



P46 - Bunker B main room.JPG



P47 - Bunker B main room 2.JPG



P48 - Barn C north.JPG



P49 - Barn C east.JPG



P50 - Barn C south.JPG



P51 - Barn C south detail.JPG



P52 - Barn C west.JPG



P53 - Barn C west detail 1.JPG



P54 - Barn C west detail 2.JPG



P55 - Barn C floor paint.JPG



P56 - Bunker C entrance.JPG



P57 - Bunker C hatch and main room.JPG



P58 - Bunker C main and hatch room 2.JPG



P59 - Bunker C main room.JPG



P60 - Bunker C main 2.JPG



P61 - compass 1.JPG



P62 - site road paint.JPG



P63 - Nike admin conc.JPG