Manzanar National Historic Site

Historic Preservation Report – Volume III

Record of Treatment – Manzanar
Concrete Feature Conservation
Manzanar Historic Structures Rehabilitation Project

FY 2001
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California

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National Park Service

U.S. Department of the Interior
Washington, DC
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Executive Summary

For more than three years during World War II, thousands of Japanese residents and Japanese Americans were interned at the Manzanar War Relocation Center in the Owens Valley of California, south of Independence, California. When the site reverted to the City of Los Angeles after the war most of the structures built for the internment were removed. Today the site is administered by the National Park Service (NPS) as Manzanar National Historic Site (NHS).

Two structures that remained were the Military Police Post and the Internal Police Post at the historic entrance to the relocation center. These masonry structures were built by Ryozo Kado, a mason interned at Manzanar. Mr. Kado was skilled at constructing features of concrete, sculpted and painted to resemble wooden timbers, stumps, and planks. Examples of these features at Manzanar NHS include the window and door lintels and sills in the Military Police Post and the Internal Police Post, concrete tree stump stanchions flanking the Military Police Post and surrounding the obelisk memorial in the camp cemetery, an unidentified feature near the administration complex, a bench near the Hospital Wards, a large tree stump sculpture constructed around a brick masonry sewer access riser, and a stove/incinerator at the Chicken Ranch complex. The stove/incinerator is of doubtful Kado construction, but it was certainly influenced by his techniques. The sewer riser was moved from its original location prior to the National Park Service acquisition of the site, and it was not assessed nor treated during this conservation project. Mr. Kado’s son Louis, who lives in Los Angeles, met with NPS representatives in early July, 2001, and toured the site, examining his father’s craftsmanship, and sharing memories of his father’s techniques. Louis Kado is a graduate of Manzanar High School.

While in generally good condition, Mr. Kado’s constructions have suffered from more than 50 years of environmental exposure and lack of maintenance. They exhibit cracking and loss of surface veneer and substrate. The cemetery stanchions had been over painted with a modern oil- or alkyd-based paint which had begun to crack and fail. As part of a Manzanar Historic Structures Rehabilitation Project, NPS-IMSF-CAC Exhibit Specialist (Conservator) Robert Hartzler, Architectural Conservation Projects Program, Santa Fe, spent 12 days at Manzanar in August, 2001, assessing and treating many of Mr. Kado’s concrete architectural features.
The following decorated concrete features were treated during the August, 2001, preservation campaign:

- **Military Police Post**
  - all exterior window and door lintels, and the east interior window lintels
- **Internal Police Post**
  - north, east, and west exterior window and door lintels
- **Hospital Ward Bench**
- **Sign Holder, Administration Area**
- **Chicken Ranch Stove/Incinerator**
- **Cemetery Monument Stanchions**
South elevation door lintel, Military Police Post

Bench, Hospital Wards
Sign Holder, Administration Area

South Stanchion, Military Police Post
Stove/Incinerator, Chicken Ranch

Cemetery Monument
Stanchions
Concrete Feature Assessment

NPS-IMSF-CAC Exhibit Specialist (Conservator) Anne Oliver, Architectural Conservation Projects Program, Santa Fe, traveled to Manzanar NHS on March 30, 2001, and performed a preliminary condition assessment of the Kado concrete features. (Her report is attached as an appendix to this report.) The summary table below was assembled from her assessment report, both to guide this later pre-treatment assessment, and to highlight major deterioration conditions. Her assessment revealed that separation of the decorative concrete surface layer, erosion or abrasion of the surface layer, and non-structural cracking were the major deterioration conditions threatening the Kado concrete features.

<table>
<thead>
<tr>
<th>Loss</th>
<th>Leaning/Bulging</th>
<th>Erosion/Abrasion</th>
<th>Structural Cracking</th>
<th>Non-Structural Cracking</th>
<th>Detachment/Displacement</th>
<th>Granular Disintegration</th>
<th>Flaking</th>
<th>Salt Efflorescence</th>
<th>Wet/Damp</th>
<th>Biological Growth</th>
<th>Vandalism/Graffiti</th>
<th>Historic Graffiti</th>
<th>Inappropriate/Failed Repair</th>
<th>Other</th>
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<td>N. Door Sill</td>
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<td><strong>Nine Cemetery Stanchions</strong></td>
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<td>3</td>
<td>1</td>
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</tr>
</tbody>
</table>

An entry in a box indicates presence of the deterioration condition; the numbers 1-3 indicate increasing severity (from Oliver, 3/30/01).
The concrete features were constructed by applying a concrete veneer, possibly pigmented, over a concrete core. The lintels are cast concrete with an applied veneer, approximately 1/16" - 1/4" thick, and were apparently applied after the lintels were installed in the Police Posts. The stanchions appear to be made with a concrete/rock rubble core, with a scratch coat applied over chicken wire, then veneered. The Sign Holder in the Administration Area also has a thin concrete veneer applied over a concrete substrate; the Hospital Ward bench has a thicker veneer, approximately 1". The construction of the Chicken Ranch stove/incinerator is slightly different. The firebox lintel appears to be a veneer over a concrete substrate, but the broken edges of the veneer are red with white inclusions, as if the veneer was a clay material that had vitrified. (No material analysis of the lintel was conducted.) The stovetop veneer is much thicker (1/4" - 3/4"), tinted pink, and more crudely applied. It is scored to resemble a flagstone construction (certainly more appropriate for a stove top than faux wood), finished with a reddish-brown paint or stain. The flagstone scoring resembles the scoring in the untinted, unpainted concrete apron in front of the Cemetery obelisk. The stove/incinerator chimney has a very curious construction appearance. It is a precast concrete tube covered with chicken wire and coated with a concrete layer both textured to resemble bark and scored to resemble flagstone, an improbable construction technique.

Digital photographs were first taken of all the concrete features, then a condition assessment was performed prior to treatment for all of the exterior door and window lintels of the Military Police Post and the Internal Police Post, for one interior lintel of the Military Police Post, for all stanchions at the Military Police Post and the Cemetery memorial, for the feature in the administration complex, for the stove/incinerator at the Chicken Ranch, and for the bench at the Hospital Wards. The sewer/utility riser was not assessed or treated because its status has yet to be determined by the site managers.

The condition assessment consisted of two parts: a written Assessment Report, and graphic notation of the deterioration conditions made with colored markers on a clear overlay over a digital photograph of the feature. An example of the condition Assessment Report form is included in this section, as is the key for the graphic condition assessment. (The original Assessment Report and Treatment Report forms, the graphic notations of condition and treatment, as well as the original before and after photographs, are included in a copy of this report at Manzanar NHS.)

**Assessment Report**
The Assessment Report completed on-site prior to treatment contains the following information (an example of the form is included on page 11 of this section):
**Feature Condition:** A written description of the feature's deterioration condition, including cracking (structural and non-structural), detachment, and loss.

**Feature Surface Finishes:** In most cases, a Munsell color was assigned to the feature, taken from the darkest section of the feature's surface. In the case of lintels, the Munsell number describes a color on the lintel face, the undersides of the lintels have more intact finishes. The colors on all the concrete features are highly variable. The condition of the surface finish was noted in this section.

**Other:** graffiti, stains, etc.

**Previous Treatments** (if known)

**Graphic Condition Assessment**

A digital black and white laser print inside a clear sheet protector provided a slate for the graphic condition assessment. Significant conditions were noted on the photo using red, green, blue, or black permanent markers. The deterioration conditions noted on the overlays were: loss, partial loss, structural cracking, non-structural cracking, map cracking, detachment, salt efflorescence, vandalism/graffiti, inappropriate or failed repair, and deteriorating paint on the cemetery stanchions. The Key to Graphical Condition Documentation is included in this section (page 10) and contains both definitions of the deterioration conditions noted graphically and the graphic symbols used. The original graphic condition assessments are included as an appendix to the copy of this report on file in the Manzanar NHS library.
Date: August ____, 2001  Conservator: Robert Hartzler, Architectural Conservation Projects Program, IMSF  
Structure: ___________________  Feature: ___________  
Feature Dimensions: ________________________________________________________  

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
</table>

Feature Description:

Condition:

Surface Finishes:

Other (graffiti, holes, bracing, etc.):

Previous Treatments:
## Key to Graphical Condition Documentation

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss</td>
<td>Complete loss of the decorative surface layer of concrete; may also include partial loss of the concrete substrate. (red)</td>
</tr>
<tr>
<td>Partial Loss</td>
<td>Partial loss, caused by erosion or abrasion, of the decorative surface layer of concrete. (red)</td>
</tr>
<tr>
<td>Structural Cracking</td>
<td>Cracks through the concrete substrate of the cast or molded concrete features. (black)</td>
</tr>
<tr>
<td>Non-Structural Cracking</td>
<td>Cracks through the decorative surface layer of concrete. (black)</td>
</tr>
<tr>
<td>Map Cracking</td>
<td>Pattern of interlocking non-structural cracking in the decorative surface layer, with an appearance resembling a road map; cracks are approximately 1½&quot;, or less, apart. (black)</td>
</tr>
<tr>
<td>Detachment</td>
<td>Detachment of the decorative surface layer of concrete from the concrete substrate. Detachment was detected by tapping on the decorative surface layer of concrete and listening for a hollow sound, indicating a void. (red)</td>
</tr>
<tr>
<td>Salt Efflorescence</td>
<td>The accretion of salts on the concrete surface, caused by the evaporation on the surface of water-borne salts from within the concrete substrate. (blue)</td>
</tr>
<tr>
<td>Vandalism/Graffiti</td>
<td>Painted, drawn, or inscribed inscriptions, applied after the acquisition of the site by the National Park Service; or other willful vandalism. (black)</td>
</tr>
<tr>
<td>Inappropriate or</td>
<td>A repair that is visually obtrusive, or is physically damaging to the original concrete feature. (blue)</td>
</tr>
<tr>
<td>Failed Repair</td>
<td></td>
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<tr>
<td>Deteriorating Paint</td>
<td>Failure (cracking, peeling, flaking, and loss) of the brown modern painted surface of the cemetery stanchions.</td>
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</tbody>
</table>
Painted Surfaces

Two techniques in particular are hallmarks of Mr. Kado’s skill at creating his faux wooden features: his skill at modeling or incising wood or tree features, such as bark, annular rings, branch and root stubs; and his use of mineral pigments to simulate wood grain and colors. Louis Kado remembered that his father applied raw pigments to fresh concrete. Modern microscopic and chemical analysis revealed that Ryozo Kado did apply paints to the fresh concrete, creating a kind of fresco surface, where the pigments are bound into the surface of the curing concrete. This technique probably explains the remarkable durability of the concrete finishes.

Susan Buck, a finishes conservator in private practice, analyzed five samples of painted finishes on substrate, looking for binder and pigments, and also analyzing the modern painted finishes on the cemetery stanchions. Her report is included as an appendix to this report.

Paint is an opaque coating composed, at least, of pigment, which provides opacity and color, and binder, which serves as a film-forming vehicle to carry the pigment and adheres the pigment to the substrate. Many paints contain more than one pigment, and most also contain fillers and other additives which can affect gloss, opacity, drying rate, adhesion, etc.

Ms. Buck analyzed two samples of painted finishes from the lintels of the Military Police Post. Both finishes were weakly bound in oil. One had a reddish-brown base, with a thinner dark brown coat, probably a graining coat, applied on top while the base coat was still wet. The other was a thin dark brown layer with a clear coat of (probably) shellac applied later. Both of the base coats were well “wet into” the cementicious substrate, meaning they were applied fresco-style, while the concrete surface was still uncured. This technique results in the surface finish being incorporated into the surface of the cementicious substrate, resulting in a durable finish.

A pigment analysis of the first Police Post sample revealed that the thicker reddish-brown base layer was tinted with red ochre, white lead, charcoal black and an iron oxide pigment, probably burnt sienna. The graining layer contained red ochre, raw umber, charcoal black, and calcium carbonate. Analysis of a Cemetery stanchion sample revealed four layers, two early layers of brown and orange, and two layers of modern oil- or alkyd-based paint on top. The orange layer had penetrated the first...
brown layer, as if it had been applied over a weathered surface. The brown base layer had also been "wet into" the cementicious substrate. Both the brown and orange layers were bound with carbohydrates and proteins, rather than oil.

The analyses revealed that Louis Kado was correct about his father’s technique of applying pigments to the fresh concrete surfaces, but Ryozo Kado was applying paints, not just pigments. The lintel paints had an oil binder, probably linseed, while the cemetery stanchion paints were bound with proteins and carbohydrates, such as hide glue, starch, sugar, milk, or some other related binder. These binders are not as durable as a cross-linking binder such as linseed oil, and their chalky texture is probably the reason they were overpainted with modern paint. Mr. Kado might have used a ready-mixed brown oil paint for the lintels, but probably made his own paints for the cemetery stanchions from ingredients at hand.

The two layers of carbohydrate- and protein-bound paint on the cemetery stanchions are a small mystery. Manzanar was occupied for three years, not much time for the first brown paint layer to fail. But perhaps it did begin to fail, and was repainted while the camp was occupied. Or perhaps the coating began to fail after the camp was closed, and Mr. Kado or other former internees who tended the Cemetery repainted the Cemetery stanchions with a paint made with the same binders as the original paint, only with different pigment(s). The similarity of the two bottom layers strongly suggests the involvement of the original craftsmen in the application of the second layer. Sometime after abandonment, the Cemetery stanchions were painted with modern ready-mixed paints, to protect or cover the failing original coatings.

None of the painted surfaces at Manzanar NHS tested positive for lead paint.
Concrete Feature Treatments

All the treatments performed on the concrete features at Manzanar NHS were recorded on a Treatment Report. (An example of the form is included in this section on page 19.)

Treatment Report
The Treatment Report contains the following information:

- Treatment Date
- Name of Conservator
- Structure Name
- Feature Name
- Feature Dimensions

Eight treatment options are listed on the form, with a place for a check mark if the treatment was performed, and a space for comments, if required for clarity:

- Edged decorative concrete surface layer around areas of loss
- Edged exposed concrete substrate around areas of loss
- Filled areas of loss/cracks
- Readhered decorative concrete surface layers to substrate
- Removed graffiti
- In-painted areas of loss
- Removed modern paint from cemetery posts
- Other (describe)

If the treatment(s) performed completed the treatments necessary to stabilize the feature, this was indicated on the form by circling "Yes" on the form. If more treatment was required, but not performed, "No" was circled, and the future treatments required were listed:

Treatment complete? (circle) Yes No
If "No", remaining treatment:

Graphic Treatment Report
The same digital black and white photocopy used for the condition assessment was flipped over inside the clear sheet protector and the treatments were recorded on the reverse of the sheet protector using red, green, blue, or black permanent markers. Seven treatments were noted on the overlays: concrete veneer edging, substrate edging, re-adhesion, in filled losses, in filled cracks, in-painted losses, and graffiti removal. The Key to Graphical Treatment Documentation is included in this section (page 20) and contains both definitions of the treatments noted graphically and the graphic symbols used. The original graphic treatment reports are included as an appendix to the copy of this report on file in the Manzanar NHS library.

Edging Treatment
The exposed raw edges of the broken decorative concrete veneer and the concrete substrate were edged with a cementicious mix to seal the edges against water, air-borne dirt and dust, and to readhere the edges to the substrate, providing structural support.
The broken edges of the concrete veneer were edged with a mixture of 2 parts 60 grit sand, 1 part white Portland cement (all parts by volume), and a 10% aqueous mixture of El Rey Superior 200 Cement Admixture, an acrylic dispersion manufactured for modifying Portland cement stuccos. El Rey 200 was added to the mixture to improve adhesion to the original materials. Harcros burnt umber masonry pigments #7052 (dark brown) or #5250 (reddish-brown) were added to the cement/sand mixture to more closely match the surface color of the veneer. Identification of the pigment used and proportions of the pigment to cement and sand are included in the treatment reports.

Edging of the concrete substrate was performed with a commercial masonry cement mix (Quikrete Mason Mix with sand), mixed with a 10% aqueous mixture of El Rey 200. No pigment was added to the substrate edging mix.

Because of the heat at Manzanar NHS during this preservation campaign (afternoon temperatures usually exceeded 100° F) all of the cementicious repairs were kept as moist and cool as possible to allow the repairs time to cure before they dried. This was accomplished by frequent misting with water, and where possible keeping the repairs covered with damp towels, often protected with plastic wrap overnight.

Infilling Loss and Cracks

Areas of loss and open cracks were filled with cementicious mixes the same or similar to the edging mixtures. Small areas of loss within the boundaries of the concrete veneer were filled with a mixture made of 2 parts 60 grit sand, 1 part white Portland cement, and a 10% aqueous mixture of El Rey Superior 200. These mixes were colored with cement pigments.

Losses in the concrete substrate were filled with the masonry cement mix, mixed with a 10% aqueous mixture of El Rey Superior 200. The mix was untinted.

The mix for filling open cracks was also 2:1 60 grit sand and white Portland, with pigment, but without El Rey 200. The mix was made wetter and worked into the cracks with a fingertip. The veneer was wiped with a damp sponge after it had begun to set. The next day the veneer was washed with vinegar to remove any remaining haze from the cementicious repairs, and then rinsed with water.

All areas to be repaired were pre-wet. The mortar repairs were made with small trowels, and worked with a damp sponge after the repair had begun to set.

Re-adhesion

In some areas the decorative concrete surface layer of the lintels had become detached from the concrete substrate. But the voids were paper thin, not open enough to be grouted. So 100% El Rey Superior (approximately the viscosity of milk) was introduced into the voids by capillary action through a syringe with a 16 gauge blunt needle. The acrylic dispersion was introduced at the broken edges and through open cracks. In a couple of areas, holes were drilled through the veneer to introduce the dispersion, but this proved to be no more effective than using existing cracks. The drilled holes were later filled with the cement/sand crack filling formula. Sounding
the areas after treatment indicated that some re-adhesion had taken place.

**Graffiti Removal**

Nearly all the graffiti on Mr. Kado’s concrete elements is confined to the lintels of the Military Police Post and the Internal Police Post, especially on the interior surfaces. No attempt was made to remove the graffiti inside these structures; they are not open to the public, and the graffiti is not normally visible. (These structures were open to the public for years since the site’s abandonment, until the door and window openings were covered with plywood and Plexiglas in the 1980’s.)

Graffiti on the exterior of the lintels was removed where possible. The most visible graffiti example was on the south door lintel of the Military Police Post, apparently applied with a "White Out"-like correction fluid. It was easily removed with acetone. Other graffiti, in pencil, proved impossible to remove without damaging the underlying painted finish, so removal efforts were discontinued. Fortunately, it is nearly invisible to a casual observer. Other graffiti, which appeared to be faded autographs applied with a permanent marker, also proved resistant to most common solvents, including acetone, isopropyl alcohol, mineral spirits, and a commercial methylene chloride paint remover, all applied with a cotton swab. White graffiti, chalk-like in appearance but not in behavior, was removed with acetone and light scrubbing with a cotton swab.

**In-painting Areas of Loss**

The largest area of loss on an exterior lintel, on the east side of the Military Police Post, approximately 127 sq. in., was in-painted with a wash of burnt umber acrylic paint and water, to mask its appearance. This lintel faces the entrance and all visitors drive toward this side when they enter the site from the highway.

Some of the repairs on the stanchions adjacent to the Military Police Post were tinted with a wash of cement pigment and water in order to better blend the repairs with the surrounding masonry.

**Paint Removal from Cemetery Stanchions**

One of the major goals of this preservation project was to improve the appearance of the cemetery stanchions, overpainted with two layers of modern paint which had begun to fail. The top paint layers were badly cracked, and had many small areas of loss. The cracked edges of the modern paint curled away from the stanchions, resulting in an appearance of neglect.

The decision was made to
attempt to remove the modern paints, leaving the original paint on the stanchions. Susan Buck suggested some paint removal compounds in her report, and a stripper containing citrus compounds, Citristrip®, was selected. Field tests demonstrated that the top, modern paint layers could be removed without removing the weathered original orange and brown paint layers. Before the paint removal was begun, three small areas of loss were repaired on stanchions number two and three.

![Cemetery memorial before stanchion paint and vegetation removal.](image1)

![Cemetery memorial after stanchion paint and vegetation removal.](image2)

Each stanchion was stripped in thirds, from the top down. The paint stripper was applied around the stanchion in a thick coat with a natural bristle brush, and the coated area was wrapped with plastic wrap. After 20 minutes the plastic wrap was removed and the emulsified paint layer was scraped off with a flexible plastic scraper. Two applications of paint remover were required to remove the paint layers. After the second coat was removed, the stanchion was wiped with mineral spirits to rinse off the remaining stripper and emulsified paint.

Over time, sand and soil had been deposited around the cemetery memorial, covering the truncated roots of the faux stumps. The sand was remove to expose the base of the stanchions for paint removal. These are important features of the stanchions, so they were left exposed, and more soil was removed by hand to further display these features. Additionally, vegetation that had begun to grow around the large stones surrounding the stanchions and marking the perimeter of the memorial and at the edge of the concrete apron in front of the memorial were removed by pulling it up.

**Consolidation Trial**

The surface finish of the east lintel on the south side of the Military Police Post was consolidated with one coat of a 5% solution of Acryloid B-72 in toluene (parts by volume) in an attempt to protect the remaining Kado original finish from erosion. However, the treatment left a slight gloss on the surface of the lintel. The surface was wiped with acetone, and no other painted finishes were treated. Acryloid B-72 is an acrylic co-polymer commonly used in conservation to protect and consolidate fragile surfaces. Its transparency and resistance to deterioration by ultraviolet light make it useful in exterior environments.
EXAMPLE
TREATMENT REPORT
Manzanar National Historic Site
August 2001

Date: August ____, 2001  Conservator: Robert Hartzler, Architectural Conservation Projects Program, IMSF
Structure: _________________________________   Feature: ___________
Feature Dimensions: _______________________________________________________

<table>
<thead>
<tr>
<th>Activities – Check if Performed (describe if necessary)</th>
</tr>
</thead>
<tbody>
<tr>
<td>_ Edged decorative concrete surface layer around areas of loss</td>
</tr>
<tr>
<td>_ Edged exposed concrete substrate around areas of loss</td>
</tr>
<tr>
<td>_ Filled areas of loss/cracks</td>
</tr>
<tr>
<td>_ Readhered decorative concrete surface layers to substrate</td>
</tr>
<tr>
<td>_ Removed graffiti</td>
</tr>
<tr>
<td>_ In-painted areas of loss</td>
</tr>
<tr>
<td>_ Removed modern paint from cemetery posts</td>
</tr>
<tr>
<td>_ Other (describe)</td>
</tr>
</tbody>
</table>

Treatment complete?  Yes  No

If "No", remaining treatment:
### Key to Graphical Treatment Documentation

<table>
<thead>
<tr>
<th>Graphic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><strong>Veneer Edging</strong> Raw edges of the decorative concrete surface layer were edged with a mixture composed of two parts 60 grit silica sand, one part white Portland cement (by volume), cement pigment, and a 10% aqueous mixture of El Rey Superior 200. (blue)</td>
</tr>
<tr>
<td><img src="image2.png" alt="Image" /></td>
<td><strong>Substrate Edging</strong> Raw edges of the exposed concrete substrate layer were edged with a mixture composed of a commercial masonry cement blend, and a 10% aqueous mixture of El Rey Superior 200. (blue)</td>
</tr>
<tr>
<td><img src="image3.png" alt="Image" /></td>
<td><strong>Re-adhesion</strong> Where possible, detached decorative surface layers were re-adhered with 100% acrylic emulsion, using capillary action to introduce the acrylic adhesive in the hairline space between the concrete veneer and the concrete substrate. (green)</td>
</tr>
<tr>
<td><img src="image4.png" alt="Image" /></td>
<td><strong>In filled Losses</strong> Losses of the concrete substrate were repaired with masonry cement and sand, mixed with a 10% aqueous mixture of El Rey Superior 200. Small losses within the decorative concrete surface layer were repaired by filling the areas of loss with a mixture of two parts 60 grit silica sand, one part white Portland cement (by volume), cement pigment, and a 10% aqueous mixture of El Rey Superior 200. (green)</td>
</tr>
<tr>
<td><img src="image5.png" alt="Image" /></td>
<td><strong>In filled Cracks</strong> Open cracks were filled with a slurry composed of two parts 60 grit silica sand, one part white Portland cement (by volume), and cement pigment. (green)</td>
</tr>
<tr>
<td><img src="image6.png" alt="Image" /></td>
<td><strong>In-painted Losses</strong> Some large areas of lintel veneer loss were in-painted with a color similar to the surrounding veneer color, to mask the loss. The substrate was painted with a wash of acrylic paint and water, or a mixture of cement pigment and water. (green)</td>
</tr>
<tr>
<td><img src="image7.png" alt="Image" /></td>
<td><strong>Graffiti Removal</strong> Where possible, graffiti on the exterior of door and window lintels on the Internal Police Post and Military Police Posts was removed.</td>
</tr>
</tbody>
</table>

**NOTES**

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Preservation Recommendations

The decorated concrete veneers on the lintels and sills of the Police Posts, and the other Ryozo Kado features at Manzanar NHS should be inspected approximately every five years by a conservator to check for further cracking, detachment, and loss, and treated if necessary. The 2001 repairs should be checked at the same time to see if those repair techniques are holding up. When the brick masonry sewer access riser is relocated, a conservator should inspect it, and the surface finishes stabilized and repaired. If the riser is not relocated, it should be treated in place.

Care should be taken at the cemetery to not allow soil to build up around the bases of the stanchions surrounding the obelisk memorial, obscuring the truncated roots of the faux stumps; vegetation should be cleared from the bases of the stanchions, the stones surrounding and between the stanchions, and at the perimeter of the concrete apron in front of the obelisk.

Some thought should be given to traffic control at the cemetery. It is possible to drive around the cemetery, outside the fence, and it was observed during the treatment of the cemetery stanchions that visitors would occasionally drive slowly around the perimeter. This action raises dust inside the cemetery, creates a visual and auditory disturbance for visitors walking inside the fence, and promotes erosion around the edge of this special site. Tire tracks observed early in the morning also revealed that visitors would occasionally drive inside the cemetery, entering through the east opening in the wood fence. Perhaps signage or barriers could reduce or eliminate both problems.

Finally, Ryozo Kado not only fabricated window and door lintels at the Police Posts, he also made faux wood doorsills. The sills are weathered and worn, and little painted finish remains. But they are still structurally sound and should be protected against further wear, if either structure is to be regularly used by Manzanar staff. Simply simply building a freestanding wooden step over the concrete sill could do this.
## Assessment and Treatment Reports

### ASSESSMENT REPORT

| Structure: Military Police Post lintel, exterior | Feature: North side, west window |
| Assessment Date: 18 August 2001 | Size: 32" W x 5.5" H x 10.5" deep, to window frame |

---

**Before Treatment**

| Description: | Concrete window lintel, with concrete veneer sculpted and painted to resemble wood. |
| Condition: | Some vertical non-structural cracking on front face. Partial loss on top east edge, and top west corner. |
| Surface Finishes: | Finished with brown paint (Munsell 2.5YR 3/2.5), badly weathered. |
| Other: | Some light staining under front edge, from water runoff. |
| Previous Treatments: | None noted. |
TREATMENT REPORT

Structure: Military Police Post
lintel, exterior
Feature: North side, west window
Assessment Date: 23 August 2001

________________________________________
No After Treatment Photo

________________________________________
_ Edged decorative concrete surface layer around areas of loss
_ Edged exposed concrete substrate around areas of loss
X Filled areas of loss/cracks
  Filled all open cracks.
    2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/2 t. #7052 pigment)
_ Readhered decorative concrete surface layers to substrate
_ Removed graffiti
_ In-painted areas of loss
_ Removed modern paint from cemetery posts
_ Other:

________________________________________
Is treatment complete?  Yes
If "No", remaining treatment:
ASSESSMENT REPORT

Structure: Military Police Post  Feature: North side, door lintel, exterior
Assessment Date: 18 August 2001  Size: 48” W x 5.5” H x 9” deep to door frame

Before Treatment

Description: Concrete door lintel, with concrete veneer sculpted and painted to resemble wood.
Condition: Non-structural vertical cracking on face.
Surface Finishes: Finished with brown paint (Munsell 2.5YR 3/2.5), badly weathered.
Other: Some light staining under front edge, from water runoff. Paint smears from a prior door frame painting campaign, on back edge.
Previous Treatments: None noticed.
TREATMENT REPORT

Structure: Military Police Post
Feature: North side, door lintel, exterior
Assessment Date: 23 August 2001

After Treatment

- Edged decorative concrete surface layer around areas of loss
- Edged exposed concrete substrate around areas of loss
- Filled areas of loss/cracks
  Filled 2 areas of loss on east end with El Rey Superior 200-amended mortar.
  2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/2 t. #7052 pigment)
  Filled all open cracks.
  2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/2 t. #7052 pigment)
- Readhered decorative concrete surface layers to substrate
- Removed graffiti
- In-painted areas of loss
- Removed modern paint from cemetery posts.
Other:

Is treatment complete? Yes

If "No", remaining treatment:
ASSESSMENT REPORT

Structure: Military Police Post lintel, exterior
Assessment Date: 18 August 2001

Feature: North side, east window
Size: 32" W x 6" H x 10.5" deep, to window frame

Before Treatment

Description: Concrete window lintel, with concrete veneer sculpted and painted to resemble wood.

Condition: Slight non-structural cracking on front face, and along bottom edge, parallel to the lintel's width.

Surface Finishes: Finished with brown paint (Munsell 2.5YR 3/3), badly weathered.

Other: Penciled graffiti: "SAM + T...(?)"
Paint smears from a prior window frame painting campaign, on back edge.

Previous Treatments: None noticed.
TREATMENT REPORT

Structure: Military Police Post
Feature: North side, east window lintel, exterior
Treatment Date: 23 August 2001

Edged decorative concrete surface layer around areas of loss

Edged exposed concrete substrate around areas of loss

Filled areas of loss/cracks
Filled all open cracks.
2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/2 t. #7052 pigment)

Readhered decorative concrete surface layers to substrate

Removed graffiti
The penciled graffiti proved very difficult to remove without also removing the original painted finish, so it was left in place.

In-painted areas of loss

Removed modern paint from cemetery posts

Other:
Is treatment complete? Yes

If "No", remaining treatment:
ASSESSMENT REPORT

Structure: Military Police Post exterior
Assessment Date: 17 August 2001

Feature: East side, window lintel, exterior
Size: 56” W x 5.5” H x 10.5” deep, to window frame

Before Treatment

Description: Concrete window lintel, with concrete veneer sculpted and painted to resemble wood.

Condition: Slight non-structural vertical cracking on front face. Slight non-structural north-south cracking on bottom face. Small area of loss on lower south corner. Large area of loss on north bottom face (approx. 15” x 8.5”). Small detached area adjacent to loss on bottom.

Surface Finishes: Finished with brown paint (Munsell 2.5YR 3/1.5), badly weathered.

Other: Some light staining under front edge, from water runoff.

Previous Treatments: None noticed.
TREATMENT REPORT

Structure: Military Police Post  Feature: East side, window lintel, exterior
Treatment Date: 23 August 2001

After Treatment

**X Edged decorative concrete surface layer around areas of loss**
Edged area of loss on bottom north surface with El Rey Superior 200-amended mortar.
2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/2 t. #7052 pigment)

**_Edged exposed concrete substrate around areas of loss**

**X Filled areas of loss/cracks**
Filled small area of loss on lower south corner with El Rey Superior 200-amended mortar.
2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/2 t. #7052 pigment)

Filled all open cracks.
2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/2 t. #7052 pigment)

**X Readhered decorative concrete surface layers to substrate**
Introduced 100% El Rey Superior 200 by capillary action at the edges of the large area of loss on the bottom north face.

**_Removed graffiti**

**X In-painted areas of loss**
In-painted area of loss with a wash of water and burnt umber acrylic paint.
Removed modern paint from cemetery posts

Other:

Is treatment complete? Yes

If "No", remaining treatment:
ASSESSMENT REPORT

Structure: Military Police Post lintel, exterior  
Assessment Date: 17 August 2001 window frame

Feature: South side, east window
Size: 32" W x 5.5" H x 11" deep, to window frame

Before Treatment

Description: Concrete window lintel, with concrete veneer sculpted and painted to resemble wood.

Condition: Non-structural cracking vertically on front face, and running north-south on bottom face. Some detachment on the bottom face.

Surface Finishes: Finished with reddish-brown paint (Munsell 2.5YR 4/4), and brown paint (Munsell 2.5YR 3/2), badly weathered.

Other:

Previous Treatments: None noticed.
TREATMENT REPORT

Structure: Military Police Post exterior
Feature: South side, east window lintel, exterior
Treatment Date: 23 August 2001

- Edged decorative concrete surface layer around areas of loss
- Edged exposed concrete substrate around areas of loss

X Filled areas of loss/cracks
  Filled open cracks.
  2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/2 t. #7052 pigment)

- Readhered decorative concrete surface layers to substrate
- Removed graffiti
- In-painted areas of loss
- Removed modern paint from cemetery posts

Other:
  Consolidated lintel face with a solution of 5% B-72 in toluene.
Is treatment complete? Yes

If "No", remaining treatment:
### ASSESSMENT REPORT

**Structure:** Military Police Post exterior  
**Feature:** South side, door lintel, exterior  
**Assessment Date:** 17 August 2001  
**Size:** 48" W x 5.5" H x 9" deep, to door frame

---

### Before Treatment

![Image of door lintel before treatment](image)

---

**Description:** Concrete door lintel, with concrete veneer sculpted and painted to resemble wood.

**Condition:** Small areas of loss along top and bottom edges. Non-structural cracks, mostly vertical, on front face. Non-structural cracks, mostly north-south, on bottom face.

**Surface Finishes:** Finished with brown paint (Munsell 5YR 4/1.5), badly weathered.

**Other:** White painted graffiti:  
"JAN 1, 86  
HAJI MATO  
BLK 26-6-3  1-1-86"

Some light staining under front edge, from water runoff.

**Previous Treatments:** None noticed.
TREATMENT REPORT

Structure: Military Police Post, exterior
Feature: South side, door lintel, exterior
Treatment Date: 23 August 2001

- Edged decorative concrete surface layer around areas of loss
- Edged exposed concrete substrate around areas of loss
- Filled areas of loss/cracks
  Filled open cracks.
  2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/2 t. #7052 pigment)
- Readhered decorative concrete surface layers to substrate
- Removed graffiti
  Removed graffiti with acetone.
- In-painted areas of loss
- Removed modern paint from cemetery posts
- Other:
Is treatment complete? Yes

If "No", remaining treatment:
ASSESSMENT REPORT

Structure: Military Police Post
Lintel, exterior
Assessment Date: 17 August 2001
Window frame

Feature: South side, west window

Size: 32" W x 5.5" H x 11" deep, to
window frame

Before Treatment

Description: Concrete window lintel, with concrete veneer sculpted and painted to resemble wood.

Condition: Non-structural cracking vertically on front face, along bottom and west edges, and some running north-south on bottom surface.
Detached areas on bottom surface.

Surface Finishes: Finished with reddish-brown paint (Munsell 2.5YR 4/4), badly weathered.

Other: Some indistinguishable penciled graffiti.
Some light staining under front edge, from water runoff.

Previous Treatments: None noticed.
TREATMENT REPORT

Structure: Military Police Post
Military Police Post lintel, exterior
Treatment Date: 23 August 2001

Feature: South side, west window

Edged decorative concrete surface layer around areas of loss
Edged exposed concrete substrate around areas of loss
Filled areas of loss/cracks
Filled open cracks.
2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/2 t. #7052 pigment)

Readhered decorative concrete surface layers to substrate
Introduced 100% El Rey Superior 200 into open cracks adjacent to areas of detachment.

Removed graffiti
Removed penciled graffiti with gum eraser.

In-painted areas of loss

Removed modern paint from cemetery posts

Other:
Is treatment complete? Yes

If "No", remaining treatment:
ASSESSMENT REPORT

Structure: Military Police Post exterior
Assessment Date: 18 August 2001

Feature: West side, window lintel, exterior
Size: 56.5” W x 5.5” H x 10.5” deep, to window frame

Description: Concrete window lintel, with concrete veneer sculpted and painted to resemble wood.

Condition: Some vertical non-structural cracking.

Surface Finishes: Finished with reddish-brown paint (Munsell 2.5YR 4/3), badly weathered.
The surface finish exhibits very fine map cracking.

Other: 3 graffiti examples on bottom face, left to right. All appeared to be written with black permanent markers.

"J&D AOYAMA (sp?) "S. W. H. '84"
"CHUCK 6-12-92"
+ CINDY"

Previous Treatments: None noticed.
TREATMENT REPORT

Structure: Military Police Post

Feature: West side, window lintel, exterior

Treatment Date: 23 August 2001

---

After Treatment

- Edged decorative concrete surface layer around areas of loss
- Edged exposed concrete substrate around areas of loss

**X** Filled areas of loss/cracks
  Filled all open cracks.
  2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/2 t. #7052 pigment)

- Readhered decorative concrete surface layers to substrate

**X** Removed graffiti
  Graffiti appeared to be faded permanent markers. It was not fazed with organic solvents or mineral spirits, and removal efforts were discontinued before the original surface finish was damaged.

- In-painted areas of loss

- Removed modern paint from cemetery posts

- Other:
Is treatment complete? Yes, unless additional graffiti removal products are tested.

If "No", remaining treatment:
ASSESSMENT REPORT

Structure: Military Police Post  Feature: East side, window lintel, interior
Assessment Date: 19 August 2001  Size: 56" W x 5.5" H

Description: Concrete window lintel, with concrete veneer sculpted and painted to resemble wood.

Condition: Two major areas of loss of concrete veneer on north end; one approx. 12 sq. in., and the other approx. 28 sq. in. Some other small areas of loss. Detachment near large areas of loss.

Surface Finishes: Finished with brown paint (Munsell 2.5YR 4/2.5), in good condition.

Other: Much graffiti. Stains of red paint on top edge and lower south corner. Bird excrement.

Previous Treatments: None noticed.
TREATMENT REPORT

Structure: Military Police Post  Feature: East side, window lintel, interior
Treatment Date: 19 August 2001

**After Treatment**

X Edged decorative concrete surface layer around areas of loss
   Edged areas of loss with El Rey Superior 200-amended mortar.
   2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/2 t. #7052 pigment)

_ Edged exposed concrete substrate around areas of loss

_ Filled areas of loss/cracks

X Readhered decorative concrete surface layers to substrate
   Introduced 100% El Rey Superior 200 by capillary actions into the detached areas on the north end.

_ Removed graffiti

X In-painted areas of loss
   Since this face of the lintel is not seen by visitors, the areas of loss were not in-painted.

_ Removed modern paint from cemetery posts

_ Other:
   Removed bird excrement.
Is treatment complete?  yes

If "No", remaining treatment:
ASSESSMENT REPORT

Structure: Military Police Post
Feature: South stanchion
Assessment Date: 23 August 2001
Size: 47" H x 20" dia. (top) 32" dia.

Northeast Side
South Side

Before Treatment

Description: A concrete tree stump, made of a concrete/rubble core, with a concrete veneer sculpted and painted to resemble wood. The stump has an iron ring on the south side, and a protruding "branch" stub on the east. Concrete bark was applied to part of the surface; the bark was painted reddish-brown.

Condition: Non-structural cracking and map cracking overall. Loss (approx. 30 sq. in.) on top south edge, and smaller areas of loss under ring, and on north side in bark.

Surface Finishes: Stump is finished with reddish-brown paint (Munsell 2.5YR 3/3), badly weathered. Bark is painted reddish-brown (Munsell 2.5 YR 3/2).

Other: Some graffiti scratched into the top concrete veneer.

Previous Treatments: None noticed.
TREATMENT REPORT

Structure: Military Police Post          Feature: South stanchion
Treatment Date: 23 August 2001

After Treatment

X Edged decorative concrete surface layer around areas of loss
   Edged the large area of loss on the south, top, edge with El Rey Superior 200-
   amended mortar.  
   2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/2 t. #5250
   pigment)
   _ Edged exposed concrete substrate around areas of loss

X Filled areas of loss/cracks
   Filled open cracks.  
   2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/2 t. #5250
   pigment)  
   Filled area of loss under ring, and on the north side, with El Rey Superior 200-
   amended mortar.  
   2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/2 t. #5250
   pigment)
   _ Readhered decorative concrete surface layers to substrate

_ Removed graffiti

_ In-painted areas of loss

_ Removed modern paint from cemetery posts
X Other:
Tinted loss on top with slurry of pigment (Harcros 5250) and water; also tinted mortar repairs with this pigment slurry.

Is treatment complete? Yes

If "No", remaining treatment:
ASSESSMENT REPORT

Structure: Military Police Post
Assessment Date: 23 August 2001

Feature: North stanchion
Size: 48” H x 20” dia. (top) 32” dia.

North Side

Before Treatment

Description: A concrete tree stump, made of a concrete/rubble core with a with concrete veneer sculpted and painted to resemble wood. The stump has an iron ring on the south side, and a protruding "branch" stub on the east. Concrete bark was applied to part of the surface; the bark was painted reddish-brown.

Condition: Non-structural cracking and map cracking overall. Loss under ring; some small loss in bark.

Surface Finishes: Stump is finished with reddish-brown paint (Munsell 2.5YR 3/3), badly weathered. Bark is painted reddish-brown (Munsell 2.5 YR 3/2).

Other:

Previous Treatments: None noticed.
TREATMENT REPORT

Structure: Military Police Post
Feature: North stanchion
Treatment Date: 23 August 2001

Edged decorative concrete surface layer around areas of loss
   Edged a small area of broken bark on east side with El Rey Superior 200-amended mortar.
   2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/2 t. #5250 pigment)
   Edged exposed concrete substrate around areas of loss

Filled areas of loss/cracks
   Filled loss under ring, and small area of missing bark, south of the branch stub with El Rey Superior 200-amended mortar.
   2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/2 t. #5250 pigment)
   Readhered decorative concrete surface layers to substrate

Removed graffiti

In-painted areas of loss

Removed modern paint from cemetery posts

Other:
   Tinted mortar repairs with a slurry of pigment (Harcros 5250) and water.
Is treatment complete?  Yes

If "No", remaining treatment:
ASSESSMENT REPORT

Structure: Internal Security Police Post exterior
Assessment Date: 18 August 2001

Feature: North side, window lintel, exterior
Size: 59" W x 6" H x 11.5" deep, to window frame

Before Treatment

Description: Concrete window lintel, with concrete veneer sculpted and painted to resemble wood.

Condition: Slight vertical non-structural cracking on front face.

Surface Finishes: Finished with brown paint (Munsell 2.5YR 2.5/1.5), badly weathered.

Other: White graffiti (unknown medium) on bottom face:

"CARRIE (sp?)
MACNAIR (date?)"

Previous Treatments: None noticed.

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TREATMENT REPORT

Structure: Internal Security Police Post exterior
Feature: North side, window lintel, exterior
Treatment Date: 23 August 2001

After Treatment

- Edged decorative concrete surface layer around areas of loss
- Edged exposed concrete substrate around areas of loss
- Filled areas of loss/cracks
- Readhered decorative concrete surface layers to substrate

X Removed graffiti
  Removed graffiti with acetone and nylon scrub pad.

- In-painted areas of loss
- Removed modern paint from cemetery posts
- Other:

Is treatment complete? Yes
If "No", remaining treatment:
ASSESSMENT REPORT

Structure: Internal Security Police Post exterior
Assessment Date: 18 August 2001

Feature: East side, door lintel, exterior
Size: 45" W x 5.5" H x 11.5" deep, to door frame

Before Treatment

Description: Concrete door lintel, with concrete veneer sculpted and painted to resemble wood.

Condition: Extensive vertical non-structural cracking and map cracking on the front face.

Surface Finishes: Finished with brown paint (Munsell 2.5YR 3/2.5), badly weathered.

Other: White streak or stain near top edge, north half.

Previous Treatments: None noticed.
TREATMENT REPORT

Structure: Internal Security Police Post

Feature: East side, door lintel, exterior

Treatment Date: 23 August 2001

- Edged decorative concrete surface layer around areas of loss
- Edged exposed concrete substrate around areas of loss

X Filled areas of loss/cracks
  Filled open cracks.
  2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1 t. #7052 pigment)

- Readhered decorative concrete surface layers to substrate
- Removed graffiti
- In-painted areas of loss
- Removed modern paint from cemetery posts

X Other:
  Removed white paint streak with mineral spirits.
Is treatment complete? Yes

If "No", remaining treatment:
## ASSESSMENT REPORT

**Structure:** Internal Security Police Post exterior  
**Assessment Date:** 18 August 2001  
**Feature:** South side, window lintel, exterior  
**Size:** 59" W x 5.5" H x 11.5" deep, to window frame

### Before Treatment

**Description:** Concrete window lintel, with concrete veneer sculpted and painted to resemble wood.

**Condition:** Slight vertical non-structural cracking.

**Surface Finishes:** Finished with brown paint (Munsell 2.5YR 3/3.5), badly weathered.

**Other:**

**Previous Treatments:** None noticed.
TREATMENT REPORT

Structure: Internal Security Police Post
Feature: South side, window lintel, exterior
Treatment Date: 18 August 2001

No treatment performed.
**ASSESSMENT REPORT**

Structure: Internal Security Police Post exterior  
Assessment Date: 18 August 2001

Feature: West side, window lintel, exterior  
Size: 52" W x 6" H x 10" deep, to window frame

---

### Before Treatment

*Concrete window lintel, with concrete veneer sculpted and painted to resemble wood.*

### Condition:

Extensive vertical non-structural cracking and map cracking on front face.

### Surface Finishes:

Finished with brown paint (Munsell 2.5YR 2.5/1.5), badly weathered.

### Other:

Bird excrement on top and front face.  
Graffiti (unknown medium) on bottom face:

"MONIQUE"

### Previous Treatments:

None noticed.
TREATMENT REPORT

Structure: Internal Security Police Post exterior
Feature: West side, window lintel, exterior
Treatment Date: 23 August 2001

- Edged decorative concrete surface layer around areas of loss
- Edged exposed concrete substrate around areas of loss
- Filled areas of loss/cracks
  Filled open cracks.
  2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1 t. #7052 pigment)
- Readhered decorative concrete surface layers to substrate
- Removed graffiti
  Removed graffiti with acetone and nylon scrub pad.
- In-painted areas of loss
- Removed modern paint from cemetery posts

Other:
Is treatment complete?  Yes

If "No", remaining treatment:
**ASSESSMENT REPORT**

**Structure:** Administration Complex  
**Feature:** Unknown

**Assessment Date:** 19 August 2001  
**Size:** 26.5” x 38” overall (horizontal dimensions)

---

**View of Administration feature, looking north**

**Top (west at top)**

---

**Before Treatment**

**Description:** This feature is variously described as a bench, alter, or sign. It is a stone masonry feature, and the west top surface and the center top surface have been finished with a brown/scratch coat of cement, and a top concrete veneer scribed and painted to resemble wood.

**Condition:** The top of the west end have two major areas of loss of veneer, and also some loss of the concrete substrate. The center portions has some small areas of loss and partial loss of veneer.

**Surface Finishes:** Finished with reddish-brown paint (Munsell 2.5YR 5/4).

**Other:**

**Previous Treatments:** The east top surface has been repaired with Portland cement; there is no evidence of original faux wood veneer.
TREATMENT REPORT

Structure: Administration Complex
Feature: Unknown
Treatment Date: 21 August 2001

Top (west at top)  West end top (north at top)

After Treatment

X Edged decorative concrete surface layer around areas of loss
   Edged the decorative veneer on the west top surface with El Rey Superior 200-amended mortar.
   2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/2 t. #5250 pigment)

X Edged exposed concrete substrate around areas of loss
   Edged concrete substrate with Type S masonry cement mix, amended with El Rey Superior 200.

X Filled areas of loss/cracks
   Filled 4 areas of loss in the center section with El Rey Superior 200-amended mortar.
   2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/2 t. #5250 pigment)

   Filled open north-south cracks, and cracks in the scored lines of the wood grain pattern.
   2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/2 t. #5250 pigment)

_ Readhered decorative concrete surface layers to substrate

Historic Preservation Report 64
_ Removed graffiti
_ In-painted areas of loss
_ Removed modern paint from cemetery posts
_ Other:

Is treatment complete? Yes

If "No", remaining treatment:
# ASSESSMENT REPORT

**Structure:** Hospital Wards  
**Feature:** Exterior Bench  
**Assessment Date:** 19 August 2001  
**Size:** Ave. 117” L x 22” W x 4” thick

---

**Bench, overall**  

**Close-up of damage**

---

## Before Treatment

**Description:** A concrete bench, with concrete veneer sculpted and painted to resemble wood.

**Condition:** The entire veneer layer (approx. 1” thick) on the bench top is detached. There is some non-structural cracking across the width of the bench, although these cracks probably extend all the way through the veneer layer. Approximately 24 sq. in. of the surface layer have been lost, on the northeast corner.

**Surface Finishes:** Finished with a reddish-brown paint (Munsell 2.5YR 4/4).

**Other:**

**Previous Treatments:** None noticed.
TREATMENT REPORT

Structure: Hospital Wards  
Feature: Exterior bench  
Treatment Date: 21 August 2001

- Edged decorative concrete surface layer around areas of loss
- Edged exposed concrete substrate around areas of loss

**X** Filled areas of loss/cracks
The large area of loss was filled in two layers. The first layer was Type S masonry mortar, amended with El Rey Superior 200, to a level approximately 1/4” below the surface.
The second layer was a mortar composed of white Portland, fine sand, and pigment, amended with El Rey Superior 200.
2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/2 t. #5250 pigment)

- Readhered decorative concrete surface layers to substrate
- Removed graffiti
- In-painted areas of loss
- Removed modern paint from cemetery posts

**X** Other:
The repair was painted with a soil wash to stain the repair and dim its brightness. (The "after" photo above was taken before the soil wash was applied.)
Is treatment complete?  Yes

If "No", remaining treatment:
**ASSESSMENT REPORT**

**Structure:** Chicken Ranch Complex

**Feature:** Stove/incinerator top

**Assessment Date:** 21 August 2001

**Size:** 72" W x 62" deep, overall

---

**Description:**

The stove/incinerator top is of concrete construction, covering and bridging the masonry walls. Iron pipes and a piece of small gauge railroad track were set into the masonry to support the top between the walls, but much of the concrete here has failed. The surface layer of concrete, ¼”-¾” thick, was scored to resemble flagstone and painted reddish-brown. The top originally had two large round holes cast in place (approximately the diameter of 55-gallon oil drums) and one rectangular hole. The top has structural and non-structural cracks, and loss of concrete veneer and substrate.

---

**Condition:**

**Surface Finishes:** Finished with reddish-brown paint, badly weathered.

**Other:**

**Previous Treatments:** None noticed.
TREATMENT REPORT

Structure: Chicken Ranch Complex
Treatment Date: 21 August 2001

Feature: Stove/incinerator top

Top, southwest corner
After Treatment
Top, northwest corner

X Edged decorative concrete surface layer around areas of loss
  Edged the decorative veneer with El Rey Superior 200-amended mortar.
  2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/2 t. #5250 pigment)

_ Edged exposed concrete substrate around areas of loss

X Filled areas of loss/cracks
  Filled open cracks.
  2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/2 t. #5250 pigment)

_ Readhered decorative concrete surface layers to substrate

_ Removed graffiti

_ In-painted areas of loss

_ Removed modern paint from cemetery posts

_ Other:
  Repointed some masonry joints with untinted acrylic-modified masonry cement
  – one on the north side and two on the east – to stabilize the top course of stones
  just under the applied concrete finish.

Is treatment complete? Yes

If "No", remaining treatment:
# ASSESSMENT REPORT

**Structure:** Chicken Ranch Complex  
**Assessment Date:** 21 August 2001  
**Feature:** Stove/incinerator chimney  
**Size:** 32" H x 19" dia., approx. 3" thick

---

**Description:**  
A concrete tube coated with a layer of concrete both scored to resemble flagstone, and decorated with concrete bark. A confused chimney.

**Condition:**  
One vertical structural crack, and circumferential non-structural cracking.  
Three areas of loss on the north side, possibly bullet scars.  
Non-structural cracking around the inside of the top.  
One area of loss on the west top; much reinforcing wire exposed.

**Surface Finishes:**  
Finished with brown paint.

**Other:**

**Previous Treatments:**  
None noticed.
TREATMENT REPORT

Structure: Chicken Ranch Complex
Feature: Stove/incinerator chimney
Treatment Date: 21 August 2001

Chimney, northwest side
After Treatment

Chimney, southeast side

- Edged decorative concrete surface layer around areas of loss
- Edged exposed concrete substrate around areas of loss

X Filled areas of loss/cracks
    Filled open cracks.
    2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:2 t. #7052 pigment)

- Readhered decorative concrete surface layers to substrate

- Removed graffiti

- In-painted areas of loss

- Removed modern paint from cemetery posts

- Other:
Is treatment complete? Yes

If "No", remaining treatment:
ASSESSMENT REPORT

Structure: Chicken Ranch Complex opening lintel
Assessment Date: 21 August 2001

Feature: Stove/incinerator firebox opening lintel
Size: 31" W x 5" H

Description: A concrete lintel over the rectangular firebox opening. The lintel has a veneer shaped and finished to resemble wood. The matrix is red with white flecks, more like a vitrified clay material than concrete.

Condition: Non-structural cracking.
Loss on the bottom edge.
Eroded surface.

Surface Finishes: Finished with dark brown paint (Munsell 2.5YR 3/1), but much of the lintel is fire blackened.

Other:

Previous Treatments: None noticed.
TREATMENT REPORT

Structure: Chicken Ranch Complex  
opening lintel  
Treatment Date: 21 August 2001

Feature: Stove/incinerator firebox

After Treatment

X Edged decorative concrete surface layer around areas of loss  
   Edged the decorative veneer with El Rey Superior 200-amended mortar.  
   2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1 t. #7052 pigment)

_ Edged exposed concrete substrate around areas of loss

X Filled areas of loss/cracks  
   Filled open cracks.  
   2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1 t. #7052 pigment)

_ Readhered decorative concrete surface layers to substrate

_ Removed graffiti

_ In-painted areas of loss

_ Removed modern paint from cemetery posts

_ Other:
Is treatment complete?  Yes

If "No", remaining treatment:
ASSESSMENT REPORT

Structure: Cemetery Memorial
Assessment Date: 19 August 2001

Feature: Stanchions 1, 4 – 9
Size: varying, approx. 40”-42” H x 8”-10” dia. (top), 20”-24” dia. (bottom)

Before Treatment

National Park Service
Before Treatment, continued
Description: Concrete substrate, wrapped with chicken wire reinforcement, with an applied concrete veneer, sculpted and painted to resemble an upright tree stump. The stumps are complete with annular rings, roots at the base, and beveled ax marks at the "cut off" top.

Condition: Some non-structural cracking; some map cracking.

Surface Finishes: Overpainted with failing modern brown oil- or alkyd-based paint (Munsell 2.5YR 5/3) Beneath the failing top coat are a matte orange paint (Munsell 5YR 5/6), and a brown paint (Munsell 2.5YR 4/4), similar to the finishes on the Military Police Post lintels. The orange and brown lower layers are badly weathered.

Other: All stanchions have a hole near the top, cast into the stanchion, to carry the boundary ropes. The two rear corner posts have two holes.

Previous Treatments: Overpaint.
TREATMENT REPORT

Structure: Cemetery Memorial
Treatment Date: 19 August 2001

Feature: Stanchions 1, 4 – 9

Stanchion 1, NE side
Stanchion 1, NW side
Stanchion 1, S side

Stanchion 4, NE side
Stanchion 4, NW side
Stanchion 4, S side

Stanchion 5, NE side
Stanchion 5, NW side
Stanchion 5, S side

After Treatment, continued
After Treatment, continued

National Park Service
After Treatment

- Edged decorative concrete surface layer around areas of loss
- Edged exposed concrete substrate around areas of loss
- Filled areas of loss/cracks
- Readhered decorative concrete surface layers to substrate
- Removed graffiti
- In-painted areas of loss

X Removed modern paint from cemetery posts

X Other:
   Removed excess soil from the bases of the stanchions, and vegetation that had taken root near the stanchions and the concrete apron around the obelisk.

Is treatment complete? Yes

If "No", remaining treatment:
<table>
<thead>
<tr>
<th><strong>Structure:</strong> Cemetery Memorial</th>
<th><strong>Feature:</strong> Stanchion 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assessment Date:</strong> 19 August 2001</td>
<td><strong>Size:</strong> varying, approx. 41” H x 10” dia. (top), 22” dia. (bottom)</td>
</tr>
</tbody>
</table>

**Description:** Concrete substrate, wrapped with chicken wire reinforcement, with an applied concrete veneer, sculpted and painted to resemble an upright tree stump. The stumps are complete with annular rings, roots at the base, and beveled ax marks at the "cut off" top.

**Condition:** Some non-structural cracking; some map cracking. Small (approx. 1 sq. in.) loss near the top on the south side. Small (<1 sq. in.) partial loss on the west side, one-third of the way up from the base.

**Surface Finishes:** Over painted with failing modern brown oil- or alkyd-based paint (Munsell 2.5YR 5/3). Beneath the failing topcoat are a matte orange paint (Munsell 5YR 5/6), and a brown paint (Munsell 2.5YR 4/4), similar to the finishes on the Military Police Post Lintels. The orange and brown lower layers are badly weathered.

**Other:**

**Previous Treatments:** Over paint.
TREATMENT REPORT

Structure: Cemetery Memorial
Feature: Stanchion 2
Treatment Date: 19 August 2001

After Treatment

- Edged decorative concrete surface layer around areas of loss
- Edged exposed concrete substrate around areas of loss
- Filled areas of loss/cracks
  - The loss on the south side of the stanchion was filled with an El Rey Superior 200-amended mortar. The hole was first prepped with a layer of 100% El Rey Superior 200, and the mortar was applied before the acrylic dispersion dried.
  - 2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/4 t. #5250 pigment)
- Readhered decorative concrete surface layers to substrate
- Removed graffiti
- In-painted areas of loss
- Removed modern paint from cemetery posts
  - The loss was repaired before the paint was removed from the stanchion.
- Other:
  - Removed excess soil from the bases of the stanchions, and vegetation that had taken root near the stanchions and the concrete apron around the obelisk.
Is treatment complete? Yes

If "No", remaining treatment:
ASSESSMENT REPORT

Structure: Cemetery Memorial
Assessment Date: 19 August 2001

Feature: Stanchion 3
Size: varying, approx. 43” H x 9” dia. (top), 22” dia. (bottom)

---

Description: Concrete substrate, wrapped with chicken wire reinforcement, with an applied concrete veneer, sculpted and painted to resemble an upright tree stump. The stumps are complete with annular rings, roots at the base, and beveled ax marks at the “cut off” top.

Condition: Some circumferential non-structural cracking, and map cracking.
Partial loss (approx. 5 sq. in.) loss near the top on the south side.
Loss to the substrate (approx. 4 sq. in.) on the north top of the stanchion.

Surface Finishes: Over painted with failing modern brown oil- or alkyd-based paint (Munsell 2.5YR 5/3)
Beneath the failing topcoat are a matte orange paint (Munsell 5YR 5/6), and a brown paint (Munsell 2.5YR 4/4), similar to the finishes on the Military Police Post Lintels.
The orange and brown lower layers are badly weathered.

Other:

Previous Treatments: Over paint.
TREATMENT REPORT

Structure: Cemetery Memorial
Feature: Stanchion 3
Treatment Date: 19 August 2001

**After Treatment**

- X Edged decorative concrete surface layer around areas of loss
  - The loss on the east top of the stanchion was edged with an El Rey Superior 200-amended mortar.
  - 2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/4 t. #5250 pigment)
- _ Edged exposed concrete substrate around areas of loss
- X Filled areas of loss/cracks
  - The loss on the north side of the stanchion was filled with an El Rey Superior 200-amended mortar. The hole was first prepped with a layer of 100% El Rey Superior 200, and the mortar was applied before the acrylic dispersion dried.
  - 2:1 60 grit sand:white Portland + pigment (1/2 c. sand:1/4 c. Portland:1/4 t. #5250 pigment)
- _ Readhered decorative concrete surface layers to substrate
- _ Removed graffiti
- _ In-painted areas of loss
- X Removed modern paint from cemetery posts
  - The losses were repaired before the paint was removed from the stanchion.
- X Other:
  - Removed excess soil from the bases of the stanchions, and vegetation that had
taken root near the stanchions and the concrete apron around the obelisk.

Is treatment complete? Yes

If "No", remaining treatment:
## Materials and Vendors Lists

<table>
<thead>
<tr>
<th>Product Description</th>
<th>Vendor</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citristrip Paint and Varnish Stripping Gel</td>
<td>W. M. Barr &amp; Co., Inc.</td>
<td><a href="http://www.kleanstrip.com">www.kleanstrip.com</a></td>
</tr>
<tr>
<td>El Rey Superior 200 Cement Admixture</td>
<td>El Rey Stucco</td>
<td>888-463-5739</td>
</tr>
<tr>
<td>Nalgene® bottles, cleaning supplies, conservation equipment</td>
<td>McMaster-Carr</td>
<td><a href="http://www.mcmaster.com">www.mcmaster.com</a></td>
</tr>
<tr>
<td>Safety equipment (gloves, goggles)</td>
<td>Forestry Suppliers Inc.</td>
<td><a href="http://www.forestry-suppliers.com">www.forestry-suppliers.com</a></td>
</tr>
<tr>
<td>Liquitex Concentrated Artist Color</td>
<td>Binney &amp; Smith, Inc.</td>
<td><a href="http://www.liquitex.com">www.liquitex.com</a></td>
</tr>
<tr>
<td>Harcros Pigments</td>
<td>Elementis Pigments</td>
<td><a href="http://www.elementispigments.com">www.elementispigments.com</a></td>
</tr>
<tr>
<td>-Quikrete Mason Mix with sand</td>
<td>local building supply stores</td>
<td></td>
</tr>
<tr>
<td>-Orange County Silica Sand #60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-White Portland cement, Type I/II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Solvents, mineral spirits</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix A – Anne Oliver’s Condition Assessment

MANZANAR NATIONAL HISTORIC SITE
CONCRETE CONDITION ASSESSMENT FORM

Assessed by Anne Oliver
outside specialist, NSOS/HSF-CAC
30 March 2001

General Information
- Structure Name: Military Police Sentry Post, north transept
- Structure No.: I
- Visible area of concrete element: 0.9 x 0.3 x 0.2 m
- Material color: “peeled log” – concrete is 10YR 6/2, then painted with colors, esp. 10R 3/2, “bark” = 10R 3/2
- Description of concrete element, including construction:
  Made to stimulate partially peeled log or stump with truncated branches and patches of bark
  1. Core of metamorphic stone bonded to concrete
  2. Wrapped in chicken wire
  3. Concrete base coat, @ 0.5 cm thick
  4. Concrete finish coat (pigmented?), @ 2-3 mm thick with wood grain and knots modeled
  5. Finish coat painted to simulate wood, darker paint worked into incised cracks (ample joint widening and discolored)
  6. Finish coat scored in several areas, concrete “bark” added and painted darker color
  7. Incised both and ring incised on south side or head gate or other barrier across entrance road

Condition Assessment
Severity and description of condition affecting concrete element
(0 = condition not present, 1 = low, 2 = moderate, 3 = severe):

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Loss</td>
<td>Damage or loss of boll on south side, unless drags elsewhere.</td>
</tr>
<tr>
<td>0. Leaking</td>
<td>Leaking.</td>
</tr>
<tr>
<td>1. Engraving</td>
<td>Engraving on peeled log.</td>
</tr>
<tr>
<td>0. Structural cracking</td>
<td>Structural cracks.</td>
</tr>
<tr>
<td>0. Non-structural cracking</td>
<td>Non-structural cracks.</td>
</tr>
<tr>
<td>0. Detachment/dispacement</td>
<td>Detachment/dispacement.</td>
</tr>
<tr>
<td>0. Granular disintegration</td>
<td>Granular disintegration.</td>
</tr>
<tr>
<td>0. Shaling</td>
<td>Shaling.</td>
</tr>
<tr>
<td>1. Salt efflorescence</td>
<td>Salt efflorescence.</td>
</tr>
<tr>
<td>0. Wet damage</td>
<td>Wet damage.</td>
</tr>
<tr>
<td>0. Biological growth</td>
<td>Biological growth.</td>
</tr>
<tr>
<td>0. Vandalism, graffiti</td>
<td>Vandalism, graffiti.</td>
</tr>
<tr>
<td>0. Historic graffiti</td>
<td>Historic graffiti.</td>
</tr>
<tr>
<td>0. Inappropriate repair</td>
<td>Inappropriate repair.</td>
</tr>
<tr>
<td>0. Other</td>
<td>Other.</td>
</tr>
</tbody>
</table>

Recommended Treatment

1. Add fill to raise grade and cover exposed edges of finish coat at base of log.

2. Add pigmented concrete to fill loss beneath bollard, deep drags on west face where chicken wire is exposed and on north face of “branch” located on east side of log.

APPENDICES

Historic Preservation Report 90
MANZANAR NATIONAL HISTORIC SITE
CONCRETE CONDITION ASSESSMENT FORM

Assessed by: Anne Oliver
Exhibits Specialist, NPS/IMPE-CAC
30 March 2001

General Information
- **Structure Name**: Military Police Sentry Post, south entrance.
- **Structure No.**: 1
- **Visibility of concrete elements (l, w, h, x,y,z):** 0.7 x 0.5 x 1.2 m
- **Material condition:** "poised log" = concrete is 10/10/5/2 but then painted with many colors, especially 10R 3/2; "back" = 10R 3/2
- **Description of concrete elements, including construction:**
  - Made-to-stocked partially poled log or stump with truncated branches and patches of bark
  - One of metasomatic stone bedded in concrete
  - Wrapped in chicken wire
  - Concrete base coat, @ 0.5 cm thick
  - Concrete finish coat (pigmented), @ 2.0 mm thick with wood grainings and knots exposed
  - Finish coat painted in imitation wood, darker paint worked into inner cracks (may be just weathering/discoloration)
  - Finish coat scored in several areas, concrete "bark" added and painted darker colors
  - Inbolts and ring inserted in north side to hold gate or other barrier across entrance road

Condition Assessment
Severity and description of conditions affecting concrete element
(0 = condition not present, 1 = low, 2 = moderate, 3 = severe)

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Loss from south side at base and at top corner, bark missing? Damage also where ring bolt rests on north side.</td>
</tr>
<tr>
<td>2</td>
<td>Erosion/ablation of painted finish on poled log, top on horizontal surfaces (top top).</td>
</tr>
<tr>
<td>3</td>
<td>Non-structural cracking</td>
</tr>
<tr>
<td>3</td>
<td>Detachment/displacement</td>
</tr>
<tr>
<td>3</td>
<td>Universal disintegration</td>
</tr>
<tr>
<td>3</td>
<td>Flaking</td>
</tr>
<tr>
<td>3</td>
<td>Salt efflorescence</td>
</tr>
<tr>
<td>3</td>
<td>Wet damage</td>
</tr>
<tr>
<td>3</td>
<td>Biological growth</td>
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<tr>
<td>3</td>
<td>Verdelia/verdigris</td>
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<tr>
<td>3</td>
<td>Historic graffiti</td>
</tr>
<tr>
<td>3</td>
<td>Inappropriate graffiti</td>
</tr>
<tr>
<td>3</td>
<td>Other</td>
</tr>
</tbody>
</table>

Recommended Treatment

Treatment: Ann

1. Minor addition of pigmented concrete to cover chicken wire, and to fill loss beneath iron ring. (10 cm X 1 cm)
MANZANAR NATIONAL HISTORIC SITE
CONCRETE CONDITION ASSESSMENT FORM

Assessed by Anne Oliver
Department Specialist, NPS/DWM-CAC
30 March 2001

General Information
- Structure Name: Military Police Sentry Post, north window and door lintels
- Structure No.: 1
- Visible area of concrete element (L x W x H): window lintel = 0.8 X 0.25 X 0.12 m; door lintel = 1.2 X 0.2 X 0.15 m
- Masonry color(s): variable, darkest brown paint is 100% S/1
- Description of concrete element, including construction:
  1. cast or molded rectangular concrete lintel
  2. pigmented concrete (finish coat, 0.5 cm thick; molded with knots, cracks in wood grain and in knots then masked
  3. brushed and dabbed with paint to simulate wood grain
   N.B. the tops of all of the lintels are unfinished, thus able to see cast concrete lintal and finish coat

Condition Assessment
Severity and description of conditions affecting concrete element
0 = condition not present, 1 = low, 2 = moderate, 3 = severe

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>0</td>
<td>Low</td>
</tr>
<tr>
<td>1</td>
<td>Leaking/bleeding</td>
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<td>0</td>
<td>Structural cracking</td>
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<tr>
<td>0</td>
<td>Non-structural cracking</td>
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<tr>
<td>0</td>
<td>Detachment/substitution</td>
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<tr>
<td>0</td>
<td>Baseline stabilization</td>
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<tr>
<td>0</td>
<td>Fading</td>
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<tr>
<td>0</td>
<td>Salt efflorescence</td>
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<tr>
<td>0</td>
<td>Wet/damp</td>
</tr>
<tr>
<td>0</td>
<td>Biological growth</td>
</tr>
<tr>
<td>1</td>
<td>Vandalism/graffiti</td>
</tr>
<tr>
<td>1</td>
<td>Horrible graffiti</td>
</tr>
<tr>
<td>1</td>
<td>Inappropriate/failed report</td>
</tr>
<tr>
<td>0</td>
<td>Other</td>
</tr>
</tbody>
</table>

Recommended Treatment

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Remove penciled graffiti (probably not historic) with eraser.</td>
<td>minor</td>
</tr>
</tbody>
</table>
MANZANAR NATIONAL HISTORIC SITE
CONCRETE CONDITION ASSESSMENT FORM

Assessed by Anne Oliver
Exhibit Specialist, NPS/IMMFI-CAC
30 March 2001

General Information
- Structure Name: Military Police Sentry Post, north door sill
- Structure No: 1
- Visible area of concrete element (L x W x H x th): 0.9 X 0.4 X 0.1 m
- Minor: color: uncertain, most of painted finish has been lost
- Description of concrete element, including construction:
  1. cast or molded multihued concretes sill
  2. pigmented concrete finish coat, 0.5 cm thick, cracks incised to simulate wood grain and knots
  3. brushed and chipped with paint to simulate wood grain

Condition Assessment
Severity and description of conditions affecting concrete element
(0 = condition not present, 1 = low, 2 = moderate, 3 = severe)

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>1</td>
<td>Leaking, bulging</td>
</tr>
<tr>
<td>2</td>
<td>Detachment/deterioration</td>
</tr>
<tr>
<td>3</td>
<td>Non-structural cracking</td>
</tr>
<tr>
<td>0</td>
<td>Detachment/displacement</td>
</tr>
<tr>
<td>0</td>
<td>Gravel disintegration</td>
</tr>
<tr>
<td>0</td>
<td>Erosion</td>
</tr>
<tr>
<td>0</td>
<td>Salt efflorescence</td>
</tr>
<tr>
<td>0</td>
<td>Wetting</td>
</tr>
<tr>
<td>0</td>
<td>Biological growth</td>
</tr>
<tr>
<td>0</td>
<td>Vandalism/graffiti</td>
</tr>
<tr>
<td>0</td>
<td>Historic graffiti</td>
</tr>
<tr>
<td>1</td>
<td>Inappropriate/fault repair</td>
</tr>
<tr>
<td>0</td>
<td>Other</td>
</tr>
</tbody>
</table>

Recommended Treatments
- Treatments Area
  1. Eliminate foot traffic: If building is to be open to public, install wooden sill or other protection.
MANZANAR NATIONAL HISTORIC SITE
CONCRETE CONDITION ASSESSMENT FORM

Assessed by: Anne Oliver
EODERS Specialist, NPS/LSRF/CAC
30 March 2001

General Information
- Structure Name: Military Police Scuttle Post, east window lintel
- Structure No.: 1
- Visible area of concrete element: 0.5 x 0.26 x 0.15 m
- Minimum column: variable, darkest brown patch in SOL 31
- Description of concrete element, including construction:
  1. Cast or molded multiple concrete lintel
  2. Pigmented/concrete finish coat, > 0.5 cm thick; molded with knots, crakle in wood grain and in knots then incised
  3. Brushed and dabbled with paint to simulate wood grain

N.B.: the top of the lintel is unfinished, thus able to see cast concrete and finish coat

Condition Assessment
Severity and description of conditions affecting concrete element
(0 = condition not present, 1 = low, 2 = moderate, 3 = severe)

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Loss</td>
<td>Loss of finish coat on underside of lintel, north end.</td>
</tr>
<tr>
<td>0. Loosening/bulging</td>
<td>Very little, if any, loss of paint.</td>
</tr>
<tr>
<td>1. Erosion/abrasion</td>
<td>Around area of loss.</td>
</tr>
<tr>
<td>0. Structural cracking</td>
<td>Around area of loss, small fragments may be lost if not stabilized.</td>
</tr>
<tr>
<td>1. Non-structural cracking</td>
<td></td>
</tr>
<tr>
<td>1. Detachment/displacement</td>
<td></td>
</tr>
<tr>
<td>0. Granular disintegration</td>
<td></td>
</tr>
<tr>
<td>0. Flaking</td>
<td></td>
</tr>
<tr>
<td>0. Salt efflorescence</td>
<td></td>
</tr>
<tr>
<td>0. Weed</td>
<td></td>
</tr>
<tr>
<td>0. Biological growth</td>
<td></td>
</tr>
<tr>
<td>0. Vandalism/graffiti</td>
<td></td>
</tr>
<tr>
<td>0. Historic graffiti</td>
<td></td>
</tr>
<tr>
<td>0. Inappropriate failure repair</td>
<td></td>
</tr>
<tr>
<td>0. Other</td>
<td></td>
</tr>
</tbody>
</table>

Recommended Treatment

Treatment | Area
--- | ---
1. Inject very thin grout, probably thinned acrylic, to secure detached fragments. | 20 cm X 10 cm
2. Apply pigmented mortar to broken edges to stabilize, OR patch entire area of loss. | 40 cm X 20 cm
MANZANAR NATIONAL HISTORIC SITE
CONCRETE CONDITION ASSESSMENT FORM

Assessed by: Name: Title:

30 March 2001

General Information
- Structure Name: Military Police Sentry Post, south window and door lintels
- Structure No.: 1
- Visible area of concrete element: L x W x H: window lintel = 0.8 x 0.25 x 0.12 m; door lintel = 1.2 x 0.2 x 0.15 m
- Munson color: dark brown paint on underside; 10R 3/4, but much eroded on vertical face exposing an undercoat of redder paint, 2.5YR 3/6. Alternately, this red paint may be a later repair.

Condition Assessment
Severity and description of conditions affecting concrete element
(0 = condition not present, 1 = low, 2 = moderate, 3 = severe)

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>1</td>
<td>Loss</td>
</tr>
<tr>
<td>2</td>
<td>Lossing/bulging</td>
</tr>
<tr>
<td>3</td>
<td>Tensional fracture</td>
</tr>
<tr>
<td>4</td>
<td>Structural cracking</td>
</tr>
<tr>
<td>5</td>
<td>Non-structural cracking</td>
</tr>
<tr>
<td>6</td>
<td>Detachment/displacement</td>
</tr>
<tr>
<td>7</td>
<td>Gravel disintegration</td>
</tr>
<tr>
<td>8</td>
<td>Pitting</td>
</tr>
<tr>
<td>9</td>
<td>Salt efflorescence</td>
</tr>
<tr>
<td>10</td>
<td>Waterstains</td>
</tr>
<tr>
<td>11</td>
<td>Biological growth</td>
</tr>
<tr>
<td>12</td>
<td>Vandalism/graffiti</td>
</tr>
<tr>
<td>13</td>
<td>Algae growth</td>
</tr>
<tr>
<td>14</td>
<td>Inappropriate plaque repair</td>
</tr>
<tr>
<td>15</td>
<td>Other</td>
</tr>
</tbody>
</table>

Recommended Treatment

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Remove penciled graffiti from west window lintel with eraser.</td>
<td>minor</td>
</tr>
<tr>
<td>2. Remove interest's name and dates. Consult manufacturer's correction fluid for method.</td>
<td>minor</td>
</tr>
</tbody>
</table>
MANZANAR NATIONAL HISTORIC SITE
CONCRETE CONDITION ASSESSMENT FORM

Assessed by: Ann Oliver
Deputy Specialist, NPS/HHSE-CAC
5/21/2001

General Information
- Structure Name: Military Police Sentry Post, south door sill
- Structure No.: 1
- Visible area of concrete element (L x W x D: 2.2 x 0.4 x 0.1 m)
- Material color(s): gray, most of painted finish has been lost
- Description of concrete element, including construction:
  1. cast or molded rectangular concrete sill
  2. pigmented concrete finish coat, 0.5 cm thick, cracked to simulate wood grain and mortar
  3. beveled and subdued with paint to simulate wood grain

Condition Assessment
Severity and description of conditions affecting concrete element
(0 = condition not present, 1 = low, 2 = moderate, 3 = severe)

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>Paint has been lost from top surface of sill, stained cracks and knots are</td>
</tr>
<tr>
<td>0.0</td>
<td>Disappearing. With no more foot traffic, the sill should be stable. It is</td>
</tr>
<tr>
<td>0.0</td>
<td>Protected from direct weathering by the eaves.</td>
</tr>
</tbody>
</table>

Recommended Treatment

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Eliminate foot traffic. If building is to be open to public, install wooden sill or other protection</td>
<td></td>
</tr>
<tr>
<td>2. Remove dark brown paint drips.</td>
<td></td>
</tr>
</tbody>
</table>

Minor
MANZANAR NATIONAL HISTORIC SITE
CONCRETE CONDITION ASSESSMENT FORM

Assessed by Anne Oliver
Archivist-Specialist, NPS/IMSH-CAC
10 March 2001

General Information
- Structure Name: Military Police Sentry Post, west window lintel
- Structure No.: 1
- Visible area of concrete element: 1.5 x 0.25 x 0.15 m
- Thickness of lintel: 2.5 cm
- Description of concrete element, including construction:
  1. Cast or molded rectangular concrete lintel
  2. Pigmented concrete finish coat, 3% cement; molded with knots, crude wood grain and knots then
     stained
  3. Brushed and dabbed with paint to simulate wood grain
- N.B.: the top of the lintel is unfinished, thus able to see cast concrete and finish coat

Condition Assessment
Severity and description of conditions affecting concrete element:
(0 = condition not present, 1 = low, 2 = moderate, 3 = severe):

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>1</td>
<td>Erosion/abrasion</td>
</tr>
<tr>
<td>2</td>
<td>Structural cracking</td>
</tr>
<tr>
<td>3</td>
<td>Non-structural cracking</td>
</tr>
<tr>
<td>4</td>
<td>Deformation/displacement</td>
</tr>
<tr>
<td>5</td>
<td>Granular disintegration</td>
</tr>
<tr>
<td>6</td>
<td>Flaking</td>
</tr>
<tr>
<td>7</td>
<td>Salt efflorescence</td>
</tr>
<tr>
<td>8</td>
<td>Wetting</td>
</tr>
<tr>
<td>9</td>
<td>Biological growth</td>
</tr>
<tr>
<td>10</td>
<td>Stain</td>
</tr>
<tr>
<td>11</td>
<td>Weathering</td>
</tr>
<tr>
<td>12</td>
<td>Historic graffiti</td>
</tr>
<tr>
<td>13</td>
<td>Inappropriate/based repair</td>
</tr>
<tr>
<td>14</td>
<td>Other</td>
</tr>
</tbody>
</table>

Recommended Treatment
Treatment
1. Remove or overpaint graffiti: minor
MANZANAR NATIONAL HISTORIC SITE
CONCRETE CONDITION ASSESSMENT FORM

Assessed by: [Name]
Exhibits Specialist, NPS/USF&G

30 March 2001

General Information
- Structure Name: [Name of Structure]
- Structure No.: [Number]
- Visible area of concrete element: [Dimensions]
- Material color(s): [Color]
- Description of concrete elements, including construction:
  1. [Construction Details]
  2. [Construction Details]
  3. [Construction Details]

Condition Assessment
Severity and description of conditions affecting concrete element:
(0 = condition not present, 1 = low, 2 = moderate, 3 = severe)

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>1</td>
<td>[Condition]</td>
</tr>
<tr>
<td>2</td>
<td>[Condition]</td>
</tr>
<tr>
<td>3</td>
<td>[Condition]</td>
</tr>
</tbody>
</table>

Recommended Treatment
Treatment
1. [Treatment] minor
2. [Treatment] minor
### MANZANAR NATIONAL HISTORIC SITE

#### CONCRETE CONDITION ASSESSMENT FORM

Assessed by Anne Oliver
Exhibits Specialist, NPS/MSH/CAC
80 March 2001

### General Information
- **Structure Name:** Internals Fence Post, east door lintel
- **Structure No.:** 1A
- **Visible area of concrete element:** (L x W x H): 1.15 x 0.25 x 0.14 m
- **Mastic color:** Light brown, 10R3/2
- **Description of concrete element, including construction:**
  1. Cast or molded multilinear concrete lintel
  2. Pigmented concrete finish coat. 8 x 8 cm block, molded with knots, cracks in wood grain and knots then incised
  3. Brushed and nabbed with paint to simulate wood grain
  
  **N.B.:** The top of the lintel is unfinished, thus able to see cast concrete and finish coat.

### Condition Assessment

**Severity and description of conditions affecting concrete element**

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Least</td>
</tr>
<tr>
<td>1</td>
<td>Leaking/bulging</td>
</tr>
<tr>
<td>2</td>
<td>Erosion/abrasion</td>
</tr>
<tr>
<td>3</td>
<td>Structural cracking</td>
</tr>
<tr>
<td>4</td>
<td>Non-structural cracking</td>
</tr>
<tr>
<td>5</td>
<td>Detachment/detachment</td>
</tr>
<tr>
<td>6</td>
<td>Granular disintegration</td>
</tr>
<tr>
<td>7</td>
<td>Fading</td>
</tr>
<tr>
<td>8</td>
<td>Salt efflorescence</td>
</tr>
<tr>
<td>9</td>
<td>Wet/damp</td>
</tr>
<tr>
<td>10</td>
<td>Biological growth</td>
</tr>
<tr>
<td>11</td>
<td>Vandalism-graffiti</td>
</tr>
<tr>
<td>12</td>
<td>Historic graffiti</td>
</tr>
<tr>
<td>13</td>
<td>Inappropriate/unauthorized repair</td>
</tr>
<tr>
<td>14</td>
<td>Other</td>
</tr>
</tbody>
</table>

### Recommended Treatment

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>
MANZANAR NATIONAL HISTORIC SITE
CONCRETE CONDITION ASSESSMENT FORM

Assessed by Anne Oliver
Architect Specialist, NPS/MTF-CAC
30 March 2001

General Information
• Structure Name: Intern Snow Post, east door sill
• Structure No: 1A
• Visible area of concrete element (L x W x D): 0.85 x 0.3 x 0.15 in
• Minnesota: dark brown, 10% C2
• Description of concrete element, including construction:
  1. cast or molded rectangular concrete sill
  2. pigmented concrete finish coat. 0.5 cm thick, cracks detailed to simulate wood grain and knots
  3. brushed and dabbed with paint to simulate wood grain

Condition Assessment
Severity and description of conditions affecting concrete element
(0 = condition not present, 1 = low, 2 = moderate, 3 = severe)

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Loss</td>
<td>Very minor chip from edge of sill</td>
</tr>
<tr>
<td>2. Discoloration</td>
<td>Much paint has been lost from top surface of sill, exposed concrete and chips are peeling away</td>
</tr>
<tr>
<td>3. Detachment/Displacement</td>
<td>Condition not as severe as in Section 1. With no significant traffic, the sill should remain intact and not weather</td>
</tr>
<tr>
<td>4. Disintegration</td>
<td>Resulting from frost action</td>
</tr>
<tr>
<td>5. Moisture</td>
<td>Condition not as severe as in Section 1. With no significant traffic, the sill should remain intact and not weather</td>
</tr>
<tr>
<td>6. Biological Growth</td>
<td>Condition not as severe as in Section 1. With no significant traffic, the sill should remain intact and not weather</td>
</tr>
<tr>
<td>7. Vandalism/Weathering</td>
<td>Condition not as severe as in Section 1. With no significant traffic, the sill should remain intact and not weather</td>
</tr>
<tr>
<td>8. Inappropriate/Failed Repair</td>
<td>Condition not as severe as in Section 1. With no significant traffic, the sill should remain intact and not weather</td>
</tr>
<tr>
<td>9. Other</td>
<td>Condition not as severe as in Section 1. With no significant traffic, the sill should remain intact and not weather</td>
</tr>
</tbody>
</table>

Recommended Treatment
Treatment | Area |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Alternator foot traffic. If building is to be open to public, install wooden sill or other protection</td>
<td></td>
</tr>
</tbody>
</table>
MANZANAR NATIONAL HISTORIC SITE
CONCRETE CONDITION ASSESSMENT FORM

Assessed by Anne Oliver
Talus Area Specialist, NPS/NSP-CAC
30 March 2001

General Information
- Structure Name: Internment Chapel, south window lintel
- Structure No.: 3A
- Visible area of concrete element (L x W x H): 1.5 X 0.28 X 0.14 in
- Minor color: dark brown, 100.3/2
- Description of concrete element, including construction:
  1. cast or molded rectangular concrete lintel
  2. painted concrete finish coat. @ 0.5 cm thick, milled with knife, engraved in wood grain and in knots then incised
  3. brushed and dabbed with paint to simulate wood grain

N.B.: the top of the lintel is unfinished, thus able to see cast concrete and finish coat.

Condition Assessment
Severity and description of conditions affecting concrete element
(0 = condition not present, 1 = low, 2 = moderate, 3 = severe):

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>1</td>
<td>Minor damage</td>
</tr>
<tr>
<td>2</td>
<td>Major damage</td>
</tr>
<tr>
<td>3</td>
<td>Severe damage</td>
</tr>
</tbody>
</table>

Recommended Treatment
Treatment:  None
MANZANAR NATIONAL HISTORIC SITE
CONCRETE CONDITION ASSESSMENT FORM

Assessed by Anne Oliver
Park Historian, NPS/IMSF-CAC
30 March 2001

General Information
- Structure Name: Internal Police Post, west window lintel
- Structure No.: IA
- Visible area of concrete element: (l x w x d): 1.55 x 0.25 x 0.14 m
- Multicolors: dark brown, [0R2/2]
- Description of concrete element, including construction:
  1. cast or molded multicolor concrete lintel
  2. pigmented concrete finish coat, 8-10 cm thick, molded with leaves, cracks in wood grain and in knots then
     incised
  3. brushed and dabbed with paint to simulate wood grain
   N.B.: the top of the lintel is unfinished, thus able to see cast concrete and finish coat.

Condition Assessment
Severity and description of conditions affecting concrete element
(0 = condition not present, 1 = low, 2 = moderate, 3 = severe)

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Loose</td>
</tr>
<tr>
<td>1</td>
<td>Leasing bulging</td>
</tr>
<tr>
<td>2</td>
<td>Erosion/erosion</td>
</tr>
<tr>
<td>3</td>
<td>Structural cracking</td>
</tr>
<tr>
<td>4</td>
<td>Non-structural cracking</td>
</tr>
<tr>
<td>5</td>
<td>Detachment/detachment</td>
</tr>
<tr>
<td>6</td>
<td>Granular disintegration</td>
</tr>
<tr>
<td>7</td>
<td>aking</td>
</tr>
<tr>
<td>8</td>
<td>Salt efflorescence</td>
</tr>
<tr>
<td>9</td>
<td>Wet stain</td>
</tr>
<tr>
<td>10</td>
<td>Biological growth</td>
</tr>
<tr>
<td>11</td>
<td>Vandalism-graffiti</td>
</tr>
<tr>
<td>12</td>
<td>Historic graffiti</td>
</tr>
<tr>
<td>13</td>
<td>Improperly filled repair</td>
</tr>
<tr>
<td>14</td>
<td>Other</td>
</tr>
</tbody>
</table>

Recommended Treatment
Treatment
1. Remove graffiti with water.

Area: minor
MANZANAR NATIONAL HISTORIC SITE
CONCRETE CONDITION ASSESSMENT FORM

Assessed by Anne Oliver
Exhibit Specialist, NPS IMSF-CAC
31 March 2001

General Information:
- Structure Name: Bench / altar
- Structure No.: 4A
- Area of concrete element (L x W x H): 1.55 x 0.7 x 0.06 m.
- Manual color: center of basin (paint applied): 7.5 YR 5/4; top of west end and sides of basin (more eroded): 10 YR 5/4
- Description of concrete element, including construction:
  1. Constructed of cast concrete, stone blocks in center.
  2. Top of east and west ends beveled within inch of top edge of concrete.
  3. Painted to simulate wood grain and color.

Condition Assessment:
Severity and description of conditions affecting concrete element:
(0 = condition not present, 1 = low, 2 = moderate, 3 = severe):

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Loss</td>
</tr>
<tr>
<td>2</td>
<td>Non-structural cracking</td>
</tr>
<tr>
<td>1</td>
<td>Disfigurement/displacement</td>
</tr>
<tr>
<td>0</td>
<td>Structural cracking</td>
</tr>
<tr>
<td>0</td>
<td>Flaking</td>
</tr>
<tr>
<td>0</td>
<td>Salt efflorescence</td>
</tr>
<tr>
<td>0</td>
<td>Water dumb</td>
</tr>
<tr>
<td>0</td>
<td>Biological growth</td>
</tr>
<tr>
<td>0</td>
<td>Vandalism/graffiti</td>
</tr>
<tr>
<td>0</td>
<td>Historic graffiti</td>
</tr>
<tr>
<td>0</td>
<td>Inappropriate finishing repair</td>
</tr>
<tr>
<td>0</td>
<td>Other:</td>
</tr>
</tbody>
</table>

Recommended Treatment:
1. Apply mortar edging around areas of loss, should be enough to hold loose sections of finish coat in place. If not, inject acrylic solution to secure loose fragments of finish coat.

Area: 80 cm (linear)
MANZANAR NATIONAL HISTORIC SITE
CONCRETE CONDITION ASSESSMENT FORM

Assessed by: Anna Officer
Exhibit Specialist, NPS/MSW AU
30 March 2004

General Information
- Structure Name: Vault - cistern cover
- Structure No.: 20A
- Area of concrete element (l x w x h): 1.9 x 1.7 x 1.5 m (of upright); opening at narrow (top) end @ 1.6 m dia.
- Material color: pigmented concrete = 10% W/7%, several colors of paint, dark brown, red and yellow ochre
- Description of concrete element, including construction:
  1. hollow truncated brick cone, constructed and bedded in concrete. Iron stops placed in horizontal joints. Lower course of brick on interior finished with thin layer of concrete.
  2. cobblestone and stones (bedded in concrete) added to base of exterior to make longshelves like the base of a tree
  3. all wrapped in chicken wire
  4. heavy base coat of concrete overall, also inset later set in concrete around top circular opening
  5. thin finish coat of pigmented concrete over all. @ 1 mm thick, incised with cracks, knots
  6. painted to simulate detailed tree stump

Condition Assessment
Severity and description of conditions affecting concrete element:
(0 = condition not present, 1 = low, 2 = moderate, 3 = severe):

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0 - Leak/Seepage</td>
<td>Heavy loss of finish coat, especially at top around narrow opening.</td>
</tr>
<tr>
<td>0.2 - Erosion/fading of paint.</td>
<td>Present but stable in finish coat, especially around narrow opening at top.</td>
</tr>
<tr>
<td>0.3 - Inappropriate removal of inorganic material.</td>
<td>One small area of flaking on south face.</td>
</tr>
<tr>
<td>0.4 - Salt efflorescence</td>
<td>Most common at top end.</td>
</tr>
<tr>
<td>0.5 - Wet/damp</td>
<td>Element is lying on its side and not in its original location, not certain what it came from or what its original use was.</td>
</tr>
<tr>
<td>0.6 - Biological growth</td>
<td></td>
</tr>
<tr>
<td>0.7 - Vandalism/graffiti</td>
<td></td>
</tr>
<tr>
<td>0.8 - Historic graffiti</td>
<td></td>
</tr>
<tr>
<td>0.9 - Inappropriate altered repair</td>
<td></td>
</tr>
<tr>
<td>3.0 - Other.</td>
<td></td>
</tr>
</tbody>
</table>

Recommended Treatment

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Set upright and return to original location.</td>
<td>1.0 m X 1.0 m</td>
</tr>
<tr>
<td>2. Patch exposed areas of orbilin at base of stump</td>
<td>0.5 m X 0.1 m</td>
</tr>
<tr>
<td>3. Reattach finish coat with thickened acrylic/latex, esp. at top end of stump.</td>
<td>@ 1.5 m (linear)</td>
</tr>
<tr>
<td>4. Repair broken edges of finish coat with pigmented mortar to match.</td>
<td></td>
</tr>
</tbody>
</table>
MANZANAR NATIONAL HISTORIC SITE
CONCRETE CONDITION ASSESSMENT FORM

Answered by Anne Oliver
Exhibit Specialist, NPS/DSIF-CAC
30 March 2001

General Information
- Structure Name: Chicken Ranch, BBQ, fist of firebox opening
- Structure No.: 24A
- Visible area of concrete element (L x W x D x H): 0.78 x 0.2 x 0.15 m
- Material: cast concrete
- Description of concrete element, including construction:
  1. Cast and molded rectangular concrete lintel
  2. Pigmented concrete finish coat, 0.3 cm thick, molded with grooves, cracked in wood grain and in knots then incised
  3. Brushed and dabbed with paint to simulate wood grain

Condition Assessment
Severity and description of conditions affecting concrete element
(0 = condition not present, 1 = low, 2 = moderate, 3 = severe):

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Loss</td>
<td>Full loss of finish coat on underside (if ever present) and along bottom edge</td>
</tr>
<tr>
<td>2. Leaking</td>
<td>Leaking/pushing</td>
</tr>
<tr>
<td>1. Failure</td>
<td>Failure at Areas</td>
</tr>
<tr>
<td>0. Structural cracking</td>
<td>Structural cracking</td>
</tr>
<tr>
<td>3. Non-structural cracking</td>
<td>Numerous cracks through finish coat</td>
</tr>
<tr>
<td>1. Detachment/displacement</td>
<td>Minor detachment of finish coat because of cracks</td>
</tr>
<tr>
<td>0. Chemical deterioration</td>
<td>Chemical deterioration</td>
</tr>
<tr>
<td>1. Flaking</td>
<td>In finish coat</td>
</tr>
<tr>
<td>2. Salt efflorescence</td>
<td>From the smoke and ash from efflorescence</td>
</tr>
<tr>
<td>0. Weakening</td>
<td>Weakening</td>
</tr>
<tr>
<td>0. Biological growth</td>
<td>Biological growth</td>
</tr>
<tr>
<td>0. Vandalism/graffiti</td>
<td>Vandalism/graffiti</td>
</tr>
<tr>
<td>0. Historic graffiti</td>
<td>Historic graffiti</td>
</tr>
<tr>
<td>0. Inappropriate failed repair</td>
<td>Inappropriate failed repair</td>
</tr>
<tr>
<td>3. Other</td>
<td>Permanent deterioration, esp. in finish coat (new brick red) from heat of fire</td>
</tr>
</tbody>
</table>

Salt may be an ongoing problem because overwintering masonry displays much efflorescence and salts would be difficult to remove. But damage is minimal and problem is mostly aesthetic. The cracking and detachment appear to be a result of heat rather than salts.

Recommended Treatment

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Brush off salts and any soot as able.</td>
<td>minimal</td>
</tr>
<tr>
<td>2. Rout out flaws in finish coat.</td>
<td>minimal</td>
</tr>
<tr>
<td>3. Repair broken edges of finish coat with mortar</td>
<td>minimal</td>
</tr>
</tbody>
</table>
MANZANAR NATIONAL HISTORIC SITE
CONCRETE CONDITION ASSESSMENT FORM

Assessed by: Annie Oliver
Architect Specialist, MPS-MSF-CAC
30 March 2001

General Information
- Structure Name: Chicken Ranch, BBQ top (grill area or decktop)
- Structure No.: 24A
- Visible area of concrete elements (L x W x H): 1.7 X 1.4 m, with circular openings down the center
- Material(s) of concrete: pigmented concrete = 108% 7/8, painted finish = 108% 3/4
- Description of concrete element, including construction:
  Forms top of BBQ grill and enclosure fencing; incised and painted to imitate flagstones. Three circular openings were constructed to hold pain grill racks.
  1. Incised, stone bedded in concrete
  2. Concrete base coat, edge very regular and built against forms
  3. Finish coat of pigmented concrete, incised to imitate flagstones
  4. Paint brushed and dabbed to imitate flagstones

Condition Assessment
Severity and description of conditions affecting concrete elements:
(0 = condition not present, 1 = low, 2 = moderate, 3 = severe)

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No cracks</td>
</tr>
<tr>
<td>1</td>
<td>Structural cracking</td>
</tr>
<tr>
<td>2</td>
<td>Non-structural cracking</td>
</tr>
<tr>
<td>3</td>
<td>Detachment/displacement</td>
</tr>
<tr>
<td></td>
<td>Structural distortion</td>
</tr>
<tr>
<td></td>
<td>Stair efflorescence</td>
</tr>
<tr>
<td>0</td>
<td>Change in color (e.g., discoloration)</td>
</tr>
<tr>
<td>1</td>
<td>Vegetation growth</td>
</tr>
<tr>
<td></td>
<td>Vandalism (graffiti)</td>
</tr>
<tr>
<td>2</td>
<td>Historic graffiti</td>
</tr>
<tr>
<td>3</td>
<td>Inappropriate/failed repair</td>
</tr>
<tr>
<td></td>
<td>Other</td>
</tr>
</tbody>
</table>

Recommended Treatment

Treatment | Area
-----------|--------
1. Repair loose/concrete in NE corner and southwest of chimney opening using pigmented mortar | 5.0 cm x 5.0 cm
2. Repair insufficient holding in place, inject acrylic to reattach loose fragments | 5.0 cm x 5.0 cm
MANZANAR NATIONAL HISTORIC SITE
CONCRETE CONDITION ASSESSMENT FORM

Assessed by Anne Oliver
Edificio Specialist, NPS/USF/CAC
30 March 2004

General Information
- Structure Name: Chicken Ranch, BBQ chimney
- Structure No.: 25A
- Visible area of concrete element (L x W x H): 0.8 x 0.35 x 0.46 m
- Volume: cubic meter, included volume = 0.34 m
- Description of concrete element, including construction:
  Chimney composed of concrete, sculpted and painted to look like a log with bark intact.
  1. concrete pipe
  2. heavy concrete base coat
  3. still wrapped in plastic
  4. finish coat of concrete (0.5 cm), scored to simulate a log
  5. thick, uniform coating of paint

Condition Assessment
Severity and description of conditions affecting concrete element
(0 = condition not present, 1 = low, 2 = moderate, 3 = severe):

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1</td>
<td>Loss</td>
</tr>
<tr>
<td>0</td>
<td>Leaking/bulging</td>
</tr>
<tr>
<td>0</td>
<td>Frosting/frosting</td>
</tr>
<tr>
<td>1</td>
<td>Structural cracking</td>
</tr>
<tr>
<td>0</td>
<td>Nonstructural cracking</td>
</tr>
<tr>
<td>0</td>
<td>Detachment/displacement</td>
</tr>
<tr>
<td>0</td>
<td>Granular disintegration</td>
</tr>
<tr>
<td>0</td>
<td>Pitting</td>
</tr>
<tr>
<td>0</td>
<td>Salt efflorescence</td>
</tr>
<tr>
<td>0</td>
<td>Wetting</td>
</tr>
<tr>
<td>0</td>
<td>Biological growth</td>
</tr>
<tr>
<td>0</td>
<td>Vandalism/graffiti</td>
</tr>
<tr>
<td>0</td>
<td>Historic graffiti</td>
</tr>
<tr>
<td>0</td>
<td>Inappropriate/failed repair</td>
</tr>
<tr>
<td>0</td>
<td>Other</td>
</tr>
</tbody>
</table>

Recommended Treatment

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Minor patches in concrete to cover chicken wire and repair structural crack.</td>
<td>20 cm X 30 cm</td>
</tr>
<tr>
<td>2. Paint patches to match original because paint is uniform coating, not mortared/stained like other elements.</td>
<td></td>
</tr>
</tbody>
</table>
MANZANAR NATIONAL HISTORIC SITE
CONCRETE CONDITION ASSESSMENT FORM

Assessed by Anne Oliver
Exhibits Specialist, NPES/BMF/Cal
March 2003

General Information
- Structure Name: Cemetery Monument, nine sections
- Structure No.: 22
- Visible area of concrete element (L x W x H): each log ø 0.3 (diameter) x 0.7 m
- Munsell color: original paint = dark brown, 2.5YR 3/4; second layer = orange: 5YR 5/7; top layer = 10R 4/3
- Description of concrete element, including construction:
  Nine concrete sections surrounding the monument, molded, incised, and painted to look like nine different
  painted logs. A rope passes through the logs on the north, east, and south sides.
  1. Concrete stone core?
  2. All wrapped in chicken wire
  3. Finish coat of concrete (0.5 - 2 cm), washed to simulate a log and incised with cracks, knots
  4. Paint, the original layer bracketed and tasked to simulate wood grain
  5. Paint the middle layer a much coiled orange which was probably applied as a uniform coating (no wood-
     graining)
  6. Paint, a heavy uniform coating. There may be additional paint layers.

Condition Assessment
- Severity and description of conditions affecting concrete element
(0 = condition not present, 1 = low, 2 = moderate, 3 = severe):

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No damage</td>
</tr>
<tr>
<td>1</td>
<td>Living-builing</td>
</tr>
<tr>
<td>2</td>
<td>Structural cracking</td>
</tr>
<tr>
<td>3</td>
<td>Non-structural cracking</td>
</tr>
<tr>
<td>4</td>
<td>Detachment/displacement</td>
</tr>
<tr>
<td>5</td>
<td>Cracking</td>
</tr>
<tr>
<td>6</td>
<td>Blister efflorescence</td>
</tr>
<tr>
<td>7</td>
<td>Abrasion</td>
</tr>
<tr>
<td>8</td>
<td>Chemical reaction</td>
</tr>
<tr>
<td>9</td>
<td>Fracture</td>
</tr>
<tr>
<td>10</td>
<td>Discoloration</td>
</tr>
<tr>
<td>11</td>
<td>Other</td>
</tr>
</tbody>
</table>

Recommended Treatment
- Treatment:
  1. Remove top paint layer if possible.
  2. Remove orange paint if not original, may be difficult to changing original paint.
  3. Add to cover and protect bases of logs.
Appendix B – Susan Buck’s Finishes Analysis Reports

National Park Service
Manzanar National Historic Site
California

Cross-Section Microscopy Report

For: Bob Hartzler
Exhibit Specialist
Architectural Conservation Projects Program
Intermountain Support Office
National Park Service
P. O. Box 728, Mail Stop CAC
Santa Fe, NM 87504-0728

Conservator: Susan L. Buck, Conservator
Historic Paint Services
A Division of West Communications Inc.
28 Summer Street
Newton Centre, MA 02459

Date: August 14, 2001

Signed: [Signature]

National Park Service
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<td>2</td>
</tr>
<tr>
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<td>6</td>
</tr>
<tr>
<td>Sample 3. Final cementitious layer with the intermediate brown layer.</td>
<td>9</td>
</tr>
<tr>
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<td>11</td>
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<td>16</td>
</tr>
<tr>
<td>Graffiti Removal</td>
<td></td>
</tr>
</tbody>
</table>
Cross-Section Microscopy Report

NATIONAL PARK SERVICE
Manzanar National Historic Site
California

For:  
Bob Hartzler  
Exhibit Specialist  
Architectural Conservation Projects Program  
Intermountain Support Office  
National Park Service  
P.O. Box 728 Mail Stop CAC  
Santa Fe, NM 87504-0728

Conservator:  
Susan L. Buck, Conservator  
Historic Paint Services  
A Division of West Communications, Inc.  
28 Sunner Street  
Newton Centre, Massachusetts 02459

Date:  
August 14, 2001

Purpose:
The purpose of this project was to use cross-section microscopy techniques to identify the sequence of paints remaining on the concrete faux log stanchions holding a rope barricade around a cemetery marker and on a concrete lintel that now has some graffiti on it.

Procedures:
Exhibit Specialist Bob Hartzler sent 4 samples from the Manzanar site for analysis. At the lab, portions of each of the samples were permanently cast into polyester resin cubes. The cubes were then ground and polished to expose the cross-sections for examination of the coating sequences and identification of the binding media components. The samples were photographed under reflected visible and ultraviolet light at 50X, 125X and 250X magnifications, and the best photomicrographs were mounted...
and labeled and are included with this report. Please note that the colors in the photomicrographs are not exact matches to the actual colors of the samples due to the variations and biases in color photographic film and its processing.

Project Background:

Bob Hartzler described the condition of the concrete elements and the information he hoped that paint analysis could provide:

Our goals are to remove the graffiti from the lintels, and to rehabilitate the log stanchions, removing the brown and orange overpaint, if possible. The worst graffiti appears to be a "white-out"-like correction fluid. We need to know whether or not the initial finish of the lintels and the logs employed a binder (Jake said you reported that the sample you analyzed, from a lintel, had an oil binder) or if some examples are a kind of cement fresco, and what the binders of the subsequent layers are, and whether any lead pigments are present.

Paint Analysis Results:

All of the samples were examined under a binocular microscope at 45X magnification before casting portions of each one for cross-section analysis. The location descriptions of the cast samples are the following:

Sample 1 – A piece of the final cementitious layer from the top of one of the log stanchions, which has the original brown finish layer on one end, and the orange intermediate layer above it on the other.
Sample 2 – Flakes of the top brown coat, with traces of the orange intermediate layer on the reverse.
Sample 3 – The final cementitious layer with the intermediate brown layer.
Sample 4 – A sample of the final cementitious layer of one of the lintels with its surface finish.

Sample 1 – A piece of the final cementitious layer from the top of one of the log stanchions, which has the original brown finish layer on one end, and the orange intermediate layer above it on the other. The evidence in the cross-section sample suggests the orange overpaint has partially penetrated the weathered, etched surface of the original brown paint layer applied to the coarse cementitious substrate. As a result, there is no boundary of dirt between the two layers, and it would be very difficult to selectively remove the orange layer to reveal an intact brown layer. Binding media analysis with biological fluorochrome stains indicates the first two paint layers are of similar composition, with protein and carbohydrate components in both layers. These organic materials may be minor additives, such as starch, sugar, milk, hide glue, added to make the paint more durable or change its working properties. The original brown layer is well "wet into" the substrate, suggesting it may have been applied in the manner of traditional fresco, before the substrate had dried.
Cross-section analysis and polarized light microscopy analysis suggest there are no lead-based pigments in these two layers.
Sample 1 – A piece of the final cementitious layer from the top of one of the log stanchions, which has the original brown finish layer on one end, and the orange intermediate layer above it on the other.

Visible Light 125X

Ultraviolet Light 125X
Sample 1 – A piece of the final cementitious layer from the top of one of the log stanchions, which has the original brown finish layer on one end, and the orange intermediate layer above it on the other.

Ultraviolet Light & TTC 125X

Ultraviolet Light & FITC 125X
Sample 2 – *Flakes of the top brown coat, with traces of the orange intermediate layer on the reverse*. This cross-section consists of two generations of modern, comparatively finely ground paints that are the most recent coatings applied to the stanchions. There is a trace of the second generation bright orange paint on the underside of the lower beige-colored layer in this sample.

Binding media analysis revealed there is a weak carbohydrate component, and very strong protein and oil components in both paint layers. The strength of the positive reaction for oils with the fluorochrome Rhodamine B suggests these are oil (or alkyd) based paints with modern additives such as cationic surfactants and cellulose thickeners that could mimic protein and carbohydrate reactions. Both layers also softened on exposure to the acetone carrier for the protein stain FITC, indicating that aromatic solvents may effectively soften and solubilize these two layers. There is no evidence of a lead component in either layer.
Sample 2 – Flakes of the top brown coat, with traces of the orange intermediate layer on the reverse.

Visible Light 125X

Ultraviolet Light 250X
Sample 4 — A sample of the final cementitious layer of one of the lintels with its surface finish. This sample is similar to a cross-section from a lintel examined earlier, binding media analysis suggests there is a weak oil component associated with the brown paint coating above the coarse substrate. However, this cross-section also has a thin, uneven clear coating above the paint layer. It is difficult to tell if this coating is part of the original construction of the paint surface as it is now quite weathered and uneven, however, in the reflected ultraviolet light photomicrograph there does appear to be a very faint dirt line or “edge” which defines the boundary between the brown paint and the clear coating, which suggests the coating may be a later application. Like the samples from the log stanchions, the brown paint layer has “wet into” and penetrated the substrate, suggesting it may have been applied before the substrate was completely cured. There is no evidence of a lead component in the brown paint layer.

The coating has a pale orange autofluorescence in reflected ultraviolet light, which is one clue that it may be shellac. It also does not contain any protein, oil, or carbohydrate components, which is also consistent with shellac.

If the graffiti on the lintels is in fact “White Out”, it should be readily soluble in aromatic solvents such as toluene and xylene which should have minimal impact on the clear coating, and no impact on the original weathered brown paint.
Sample 4 – A sample of the final cementitious layer of one of the lintels with its surface finish.

Visible Light 125X

Ultraviolet Light 250X

Ultraviolet Light & DCF 250X
Conclusion:

The cross-section microscopy analysis of four samples from two different exterior cementitious elements (the stanchions and the lintels) can help to answer the specific questions posed by Bob Hartzler. Binding media analysis of the original brownish paint coatings suggest there are weak organic additives in the paint on the stanchions and the lintels, but these paints were likely applied before the substrate had cured so they are well bound into the matrix of the cementitious substrate, much like traditional fresco. The orange overpaint applied directly on top of the brown paint on the stanchions is a similar composition, so it should be possible to remove the two uppermost strongly oilbound paints on the stanchions with traditional slow-acting, solvent-based paint removers without intruding into the earlier orange and brown paints.

Suggestions for commercial solvent-based paint removers and custom solvent-based gels are contained in the Appendix of this report.

The analysis of one sample from the lintel suggests there may be a shellac layer above the first brown paint applied to the lintel. This shellac layer may be a slightly later application. The white graffiti layer is not present in the cross-section, but if it is indeed "White-Out" it should be readily soluble in toluene or xylene, which should not affect the brown paint or the clear coating. These aromatic solvents could be applied as free solvents or in a gelled form. The gel allows more control in application as the solvent is contained in a viscous gel and cannot flow deeply into cracks or crevices in the paint surface.
APPENDIX
REFERENCES

Cross-section Preparation Procedures:

The samples were cast in mini-cubes of polyester resin (Excel Technologies, Inc., Enfield, CT). The resin was allowed to cure for 24 hours at room temperature and under ambient light. The cubes were then ground to expose the cross-sections, and dry polished with 400 and 600 grit wet-dry papers and Micro-Mesh polishing cloths, with grits from 1500 to 12,000.

The cross-section samples were examined under visible and ultraviolet light using an Olympus BHT Series 2 Ultraviolet light microscope at 125X and 250X magnifications. The samples were also stained with four fluorescent stains to characterize the binding media in the various layers and to provide a better comparison between the different materials present in the layers.

The following fluorescent stains were used for examination of the samples:

Fluorescein (FITC) 0.2% in anhydrous acetone to identify the presence of proteins. Positive reaction color is yellow-green.

Triphenyl tetrazolium chloride (TTC) 4.0% in ethanol to identify the presence of carbohydrates (starches, gums, sugars). Positive reaction color is dark red or brown.

2, 7 Dichlorofluorescein (DCF) 0.2% in ethanol to identify the presence of saturated and unsaturated lipids (oils). Positive reaction for saturated lipids is pink and unsaturated lipids is yellow.

Rhodamine B (RHOB) 0.06% in ethanol to identify the presence of oils. Positive reaction color is bright orange.

The cross-sections were photographed with Kodacolor Gold Plus ASA 200 color print film, and the resulting photographs were labeled and laid out in sequence to allow direct visual comparisons. The best cross-section photographs for each area were mounted and labeled and are included with this report. Photographs were taken at 125X and 250X, and all the UV photographs were taken with the UV filter in place (300 to 400 nanometers excitation with a 420 nm, barrier filter).

Information Provided by Ultraviolet Light Microscopy:

When viewed under visible light, cross-sections that contain ground, paint and varnish may often be difficult to interpret, particularly because clear finish layers look uniformly brown or tan. It may be impossible using only visible light to distinguish between multiple varnish layers. Illumination with ultraviolet light provides considerably more
information about the layers present in a sample because different organic, and some inorganic, materials auto-fluoresce (or glow) with characteristic colors.

There are certain fluorescence colors that indicate the presence of specific types of materials. For example, shellac fluoresces orange (or yellow-orange) when exposed to ultraviolet light, while plant resin varnishes (typically amber, copal, sanguine and mastic) fluoresce bright white. Wax does not usually fluoresce; in fact, in the ultraviolet it tends to appear almost the same color as the polyester casting resin. In visible light wax appears as a somewhat translucent white layer. Paints and glaze layers, which contain resins as part of the binding medium, will also fluoresce under ultraviolet light at high magnifications. Other materials such as lead white, titanium white and hide glue also have a whitish auto-fluorescence.

There are other indicators which show that a surface has aged, such as cracks which extend through finish layers, accumulations of dirt between layers, and sometimes a diminished fluorescence intensity, especially along the top edge of a surface which has been exposed to light and air for a long period of time.
Suggestions for Removal of Oil-based Overpaints and “White-Out” Graffiti Removal:

There are a variety of approaches that may be employed to remove the overpaints, but the ideal paint removers would be nontoxic, controllable, and would not leave residues on the cleaned surfaces. The various paint removal materials should be tested in small areas before embarking on full-scale paint removal. The paste and gel cleaners can be brushed on with chip brushes and removed with swabs and cotton wadding. The residues of all these materials should be cleared from the surface with water (for the aqueous systems), with odorless mineral spirits, ethanol or xylene (for the solvent-based systems, depending on the primary solvent in the cleaning system). Conservators should wear latex or nitrile gloves when using these materials, and will need respirators when working with the solvent-based materials.

For aqueous removal of bronze paints and lead-based white paints:

EDTA-Laponite Gel*
100 ml. water
approximately 10 g. Laponite (magnesium silicate)
approximately 6 g. EDTA (ethylene diamine tetraacetic acid)
1 ml. Triton X-80 LN
pH to 8.5 with 1N sodium hydroxide
* Wolbers recipe may be modified with addition of small amounts of polar solvents and other chelating agents.

For aqueous removal of overpaints

Safest Stripper, and other commercial strippers based on dibasic esters (fairly slow acting and easily controllable, will probably not work on bronze paints).

For solvent-based removal of oil-based overpaints

N-methyl pyrrolidine Gel*
300 ml. n-methyl pyrrolidinone
20 Ethomeen C-25
6 g. Carbopol 934
approx. 30 ml. water
* Wolbers recipe may be modified with addition of small amounts of polar and/or aromatic solvents. Other solvent gels based on toluene, xylene, and acetone may also be appropriate, depending on the results of cleaning tests.

Citrusstrip, and other commercial strippers based on n-methyl 2-pyrrolidinone (fairly slow acting and easily controllable)

515, and other commercial strippers based on methylene chloride (considerably more quick acting, less controllable and more toxic)
For removal of modern glazes and acrylic dispersions

**Ethanol Gel**

- 200 ml. ethanol
- 2 g. carbopol 934
- 15 ml. Ethomeen C-25
- approximately 10 ml. water dropwise

* Wolbers recipe may be modified to produce a benzyl alcohol or a propanol gel using comparable proportions.

For removal of “White-Out” and Permanent Markers

**Toluene or Xylene Gel**

- 200 ml. toluene or xylene
- 6 g. carbopol 934
- 20 ml. Ethomeen C-12
- approximately 5-10 ml. water dropwise

**NOTE:** To make the Ethomeen-Carbopol gels first make a paste of the Ethomeen and the carbopol. Slowly stir in the solvent, then add the water dropwise while stirring. When the gel begins to form the mixture will first thicken, then start to look like tapioca. After it is thickened and starts to become difficult to stir, let it sit for several hours and it should turn into a clear, thick gel.
CROSS-SECTION MICROSCOPY
ANALYSIS RESULTS

Client: John Barrow
National Park Service
Box 728
2968 Rodeo Park Drive West
Santa Fe, New Mexico 87505

Date: February 19, 2001
Conservator: Susan L. Buck
Historic Paint Services
Newton Centre, MA 02459

Object: Maxwell National Historic Site

Sample Location: 1940s Concrete lintel with painted finish

Equipment: Olympus BH-T Series II Fluorescence microscope with fiberoptic light source for visible light and polarizing light base for polarized light microscopy pigment analysis

UV Filter: Ultraviolet
Magnifications: 50X, 125X, 250X, 500X, 1250X

Biological Stains:
- Fluorescin isothiocyanate (FITC) 0.2% in anhydrous acetone for proteins. Positive reaction color is bright yellow-green
- Triphenyltetrazolium chloride (TTC) 4.0% in ethanol for carbohydrates. Positive reaction color is dark red to dark brown.
- 2, 7 Dichlorofluorescein (DCF) 0.2% in ethanol for saturated (pink reaction) and unsaturated (yellow reaction) oils.
- Rhodamine B (RHB) 0.03% in ethanol for oils. Positive reaction is bright orange

Binding Media Analysis Results:
- FITC: No reaction for the presence of proteins
- TTC: No reaction for the presence of carbohydrates
- RHB: Positive reaction for the presence of oils in the brown paint layers and on the surface of the paint layers

Comments: The cross-section evidence reveals there is one outer red-brown paint layer on the concrete which penetrated into the substrate. A thinner dark brown paint layer was irregularly brushed over this base coat to create the appearance of the directional grain of figured wood. There is no defined boundary between the base coat and the graining coat, which suggests the base coat was still wet when the graining layer was applied. There is also no varnish layer on the painted surface, however, binding media analysis suggests a thin film of oil (perhaps linseed oil) was applied to the painted surface, probably to enhance the gloss of the paint. Binding media analysis also indicates the two paint layers are closely bound in oil. Pigment analysis shows the red-brown base coat layer is composed of primarily of red ochre, with white lead, charcoal black and an iron oxide red-brown (perhaps burnt sienna). The dark brown graining layer is composed of red ochre, raw umber, charcoal black and sootian carbonite.

Visible Light 125X

Ultrasoot Light 125X
Appendix C – Original Assessment Reports and Treatment Reports with Graphic Condition Assessments and Treatment Reports (Original Assessment Reports and Treatment Reports are included in the original report at Manzanar National Historic Site)
Appendix D – Photographs, Negatives, Photography Logs (Negatives and photographs are included in the original report at Manzanar National Historic Site)
As the nation’s principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their
development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.