

Guidelines for Viga/Canal Repair & Maintenance

ADOPTED BY HISTORIC PRESERVATION COMMITTEE

OCTOBER 6, 2021



Introduction

The Adobe Conservation: A Preservation Handbook (prepared by Cornerstones Community Partnerships and University of New Mexico Professor and Historic Preservation Committee member, Francisco Uviña Contreras in 2006) has been used throughout the Southwest by historians to preserve historic adobe structures and their woodwork. With permission from the authors, UNM's Guidelines for Viga/Canal Repair & Maintenance (guidelines) reference the 2006 Handbook's detailed steps.

UNM's Facility Maintenance (FM) and contractors should follow the steps outlined in these guidelines to maintain and repair woodwork, as needed.

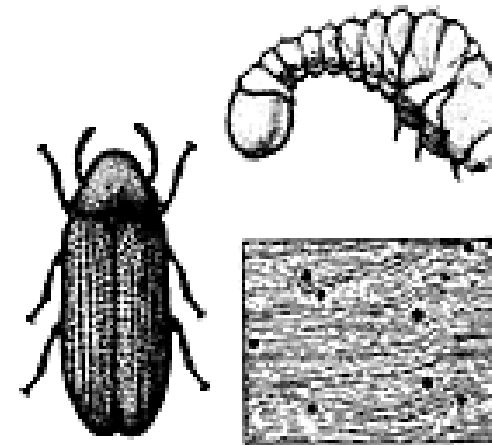
[NPS specs](#) are also available as a resource for architectural firms working on UNM's historic building renovations.

Purpose

- The guidelines outline a **consistent approach** for **maintaining and repairing** the vigas, canales, corbels, and other woodwork on all UNM's historic structures.
- The Historic Preservation Committee (HPC) adopted the guidelines to facilitate ongoing maintenance and repair.
- The approach takes into consideration a range of conditions, including:
 - Various states of deterioration
 - Viga designs
 - Wall conditions

STEP 1: INSPECT WOODWORK

- This first step must be taken to determine the extent of the wood's deterioration or damage and how to preserve, repair, or replace it.
- [Click here](#) for step by step guidelines on how to inspect and what to look for.



Inspect woodwork to determine deterioration and identify threats. The presence of moisture in wood for an extended period of time invariably leads to decay. Dampness encourages the growth of harmful mold and fungi spores that would, in dry conditions, remain dormant. Softened wood attracts burrowing insects.

STEP 2: REPAIR WOODWORK

- Once inspection is complete, there are **five methods** to maintain and/or repair the woodwork; each method is tailored to the degree of repair needed depending on the wood's condition.
- Refer to the step by step instructions for each method on following pages.
- After repair, apply a finish that matches the original and is moisture resistant, but vapor permeable so moisture can escape.



Five Methods

- Method A: Apply Bora-Care Treatment *for cases of superficial decay only*
- Method B: Apply a Dutchman *for cases with up to 40% decay*
- Method C: Apply Epoxy *for cases with up to 40% decay in irregular shaped areas*
- Method D: Splice Viga & Attach New *for cases with more than 40% decay*
- Method E: Alternate Splicing *for rectangular or square vigas*

Method A: Superficial Decay

- If determined that woodwork does not require repair, seal with Bora-Care® as described in Method A: see [page 167](#).



Method A describes the application of an insecticide/ herbicide. The recommended product, BORA-CARE® works by depositing an active ingredient in the wood which will not decompose or vaporize like many other pesticides. This product provides long-term protection (up to 40 years) against future infestations.

Method B: <40% of Decay in Regularly Shaped Area

- For woodwork that has less than 40% of decay in regularly shaped areas, remove all decayed wood and apply a dutchman, as described in Method B: see [page 167](#).

Method C: <40% of Decay in Irregularly Shaped Area

- Method C describes the process of applying an epoxy mix to irregularly shaped damaged woodwork: see [page 168](#).

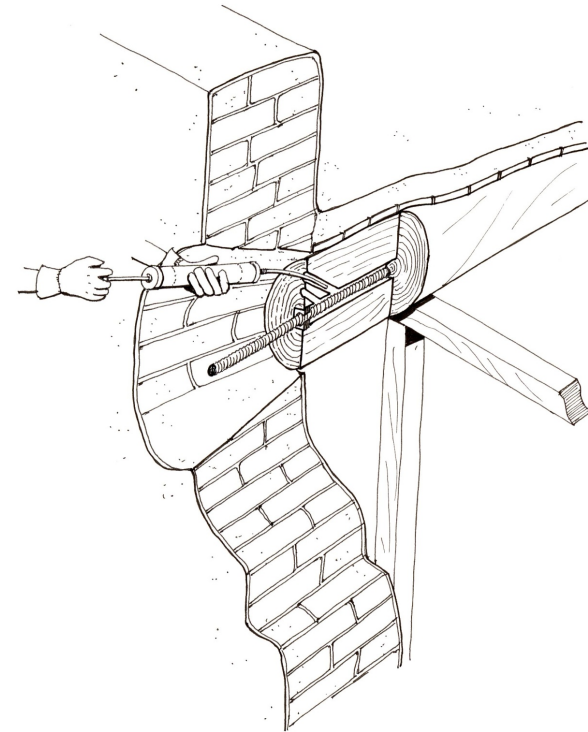


Method D: > 40% of Decay

- Method D describes the process of attaching a new end to a deteriorated viga: see [page 169](#).



This illustrates Method D after step 12 where the deteriorated viga end has been removed and a hole has been drilled. The new viga end will be connected to the existing with a fiberglass rod.



This drawing depicts the process of applying epoxy into the vent holes (step 20 of Method D).

Method E: An Alternate Splicing Method for Viga Tails

- Method E describes the process of splicing vigas in place: see [page 172](#).

STEP 3: DETERMINE IF COPPER CAPS ARE NEEDED

- When repair is complete and apply finish that matches the original and is moisture resistant, but vapor permeable so moisture can escape.
- If determined that the age or condition of viga/canal will not withstand further weathering without the use of caps, copper caps should be designed, fabricated, and installed.
- Work with a local copper cap fabricator to design, fabricate, and install them correctly.
- ***Fabricator should measure each viga/canal prior to fabrication as historic vigas tend to be irregular in diameter and end conditions. If determined feasible, FM staff can be trained to how to measure each viga and how to install each cap.***
- Typically, these caps should be made with 24-gauge copper sheets and hand-formed to fit around the upper half of each viga end or canal. Caps should not change the silhouette of the woodwork.
- The ends of each cap should turn up to create a lip that prevents moisture from seeping into the underside of the wood structure.

STEP 4 (Optional): INSTALL COPPER CAPS IF NEEDED

Cap design will differ depending on the conditions of your project.

- *Round Viga/Canal with Blunt/Flat End*
- *Round Viga with Uniquely Tapered End*
- *Round Viga with Chisel Point End*
- *Round Viga with Round End*
- *Rectangular/Square Viga/Canal*
- *Caps with Flanges (for buildings in need of new stucco)*
- *Caps with Extensions (for buildings with stucco in tact)*

Round Viga/Canal with Blunt/Flat End

These caps are the simplest caps to form because the blunt, flat ends (as pictured below) do not require a custom cap for each viga/canal, although each viga/canal should be measured to insure variations are taken into account.



Note: Images depict the type of viga/canal, not the cap design.

STEP 4 (Optional): INSTALL COPPER CAPS IF NEEDED

Round Viga with Uniquely Tapered End

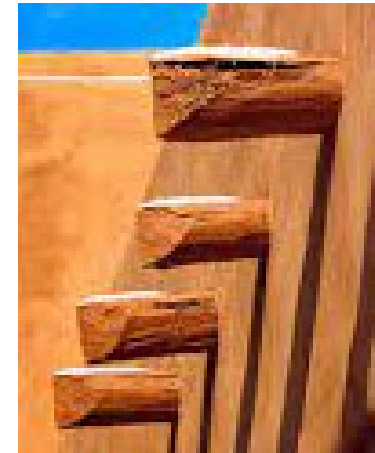
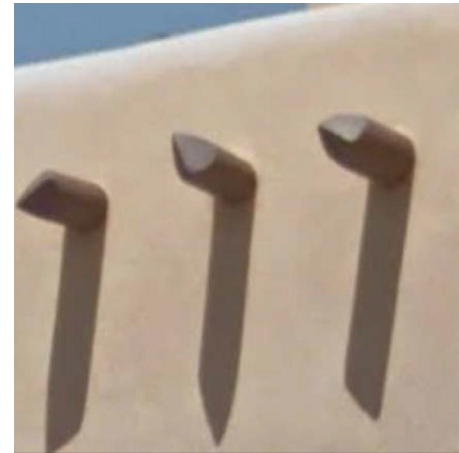
Many historic vigas have uniquely tapered ends (as pictured below); caps will need to be custom-designed and made to fit each viga perfectly.



Note: Images depict the type of viga, not the cap design.

Round Viga with Chisel Point End

Some vigas have ends that are chiseled into a point or a triangle (as pictured below); caps will need to be custom-designed and made to fit each viga perfectly.



STEP 4 (Optional): INSTALL COPPER CAPS IF NEEDED

Round Viga with Round End

Some historic vigas have rounded ends; cap should have copper “petals” that fold over to fit each viga perfectly.

Rectangular/Square Viga or Canal

Rectilinear vigas/canales are more regular in their design (as pictured below) so fabricator will likely be able to repeat the same cap design for multiple; fabricator will fit each viga perfectly.



STEP 4 (Optional): INSTALL COPPER CAPS IF NEEDED

Caps with Flanges (for buildings in need of new stucco)

If stucco is in poor condition, cap should include a flange to prevent water infiltration where cap meets wall. This flange will be covered when new stucco finish is applied.

Caps with Extensions (for buildings with stucco in tact)

If stucco is in good condition, cap should be fabricated with an extra inch to be inserted into wall so it does not damage existing stucco; then seal connection at wall.

EXCEPTIONS

If these details do not address your project's woodwork condition, or you have questions about proceeding, prepare a presentation to HPC to seek advice on how to move forward. The procedure to present to HPC is found here: [HistoricPropertyProcess.pdf](#)