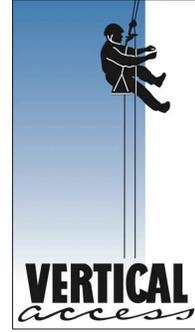


# Report Narrative

## Wyoming State Capitol Dome Investigation Cheyenne, WY

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Vertical Access (VA) was retained by HDR Architecture to assist with the investigation of the dome of the Wyoming State Capitol in Cheyenne, WY as part of the Level 1 Study for the restoration of the building. The project team for the investigation also included Preservation Design Partnership (PDP), Robert Silman Associates (RSA) and GB Geotechnics (GBG). VA's scope of work was to investigate and document existing conditions on the exterior of the drum, dome, and lantern; document conditions at the interior of the dome; perform adhesion testing at representative painted and gilded surfaces; remove samples of paint coatings from representative locations on the exterior of the dome; and perform live-feed video to review and discuss conditions with the project team.

VA technicians Keith Luscinski, Berta de Miguel Alcalá and Evan Kopelson were on-site May 13<sup>th</sup> to 16<sup>th</sup>, 2013 to investigate and document conditions of the exterior of the State Capitol Dome using industrial rope access techniques. Suzanne Norton, Project Coordinator with the State of Wyoming Office of Construction Management Department of Administration & Information, was on site for the duration of Vertical Access' investigation to assist with site access and for discussion of the investigation findings. George Skarmas, Lisa Soderberg and Pierson Booher of PDP were all on site May 13<sup>th</sup> to May 16<sup>th</sup> for discussion of Vertical Access' findings. George Skarmas and Lisa Soderberg participated in the live-feed video documentation performed May 15<sup>th</sup>. Tom Whetstone of HDR was on site May 14<sup>th</sup> to 15<sup>th</sup> for discussion of the findings.

The cladding materials at the exterior of the dome of the Wyoming State Capitol vary, and include a cast iron base, with galvanized sheet metal cladding at the drum and dome, gilded copper panels at the main dome and lantern and applied sheet lead ornament. Vertical Access documented existing conditions such as missing and dented sheet metal elements, tears, punctures and open seams in the sheet metal, surface corrosion and paint coating failures. The gilded copper panels at the dome and lantern, installed in 2009, are dented from hail impact but otherwise are sound with no perforations or failed seams. The sheet lead ornament exhibits tears and punctures, most likely a result of hail damage, as well as widespread paint coating failure. Much of the sheet lead ornament is dented, with some missing elements as well. The galvanized sheet steel, most likely original to the dome, is in good condition with some dents, open seams, discrete areas of surface corrosion and widespread failure of the paint coatings. The cast iron at the lowest section of the drum is also in good condition, with some surface corrosion and failed paint coating noted. The rivet fasteners at the cast iron appear to be in good condition.

The interior of the dome exhibits water staining at the wood decking. Some, but not all of the wood decking appears to be original to the dome, and other sections have clearly been replaced. No significant corrosion or deformation was noted at the steel framing composing the structure of the dome. At one level of the framing, there is a gap at the horizontal seam between the diagonal members that span between the structural columns and dome ribs. Square head and hex head carriage bolts are used to connect the members at this level, as opposed to riveted fasteners used at similar connections at other areas of the dome structure. There is no evidence of movement within the connections where these gaps are present, indicating that the existing gaps are most likely an “as-built” condition.

This *Report Narrative* with supporting photographs, annotated AutoCAD elevation drawings, and spreadsheet of extracted survey conditions constitute VA’s *Condition Survey Report* for the Wyoming State Capitol Dome. Vertical Access’ *Guide to TPAS™ Annotated Drawings* is included with the report. Appendix A to the report includes a table and drawings documenting the locations of paint samples removed from the exterior of the dome by Vertical Access on May 15<sup>th</sup> and 16<sup>th</sup>. Appendix B describes the access approach used by Vertical Access for the Dome Investigation and considerations for future access to the dome exterior. Digital copies of the *Report Narrative*, AutoCAD files, photographs, extracted condition quantities, *Guide to TPAS™ Annotated Drawings* and appendices are provided on a DVD. The recording made during the May 15<sup>th</sup> live-feed video documentation of the east side of the Wyoming State Capitol Dome is also included on the DVD.

## **Description of Deliverables**

This *Report Narrative* includes a description of the project deliverables, the scope of work and the findings of the investigation of the Wyoming State Capitol Dome. Conditions documented by Vertical Access and described in the *Report Narrative* are based on VA’s Conditions Glossary. Examples of materials and conditions contained in Vertical Access’ Visual Conditions Glossary are available on our web site at <http://www.vertical-access.com/glossary.html>. Photographs illustrating representative and notable conditions observed during the investigation are cited in the *Report Narrative*. The last section of the *Report Narrative* includes conclusions and preliminary interpretations of the survey findings.

The *Photographs* section of the report includes images of representative and notable conditions taken during the survey using digital still cameras. Each of the photographs included in the report is hyperlinked to a condition code within the AutoCAD drawing so that it can be viewed easily as a digital file. Each photograph has a three-part name. The first part is specific numeric nomenclature (x-y coordinates) that corresponds to the coordinates within the AutoCAD drawing where the conditions are located. The second part of the photograph name gives the type of material and description of the condition documented. The third part of the name is the year that the photograph was taken. The Cartesian grid used to name the photographs is shown on the elevation drawings. For reference, the table below lists the x-coordinates of the dome views:

<b>X-Coordinate</b>	<b>Elevation View</b>	<b>Sheet</b>
0 to 40	North	Sheet 1, Drawing 1A
70 to 120	Northwest	Sheet 1, Drawing 1B
150 to 200	Northeast	Sheet 1, Drawing 1C
225 to 270	East	Sheet 2, Drawing 2A
295 to 340	West	Sheet 2, Drawing 2B
370 to 410	South	Sheet 3, Drawing 3A
440 to 480	Southeast	Sheet 3, Drawing 3B
510 to 550	Southwest	Sheet 3, Drawing 3C
570 to 660	Dome interior	Sheet 4

Full-size 24” by 36” and reduced-scale 11” by 17” drawings are provided in the *Annotated Drawings* section, the third section of VA’s *Condition Survey Report*. The annotated drawings document the condition of the exterior materials of the drum, dome and lantern of the Wyoming State Capitol and observations on the interior structure and decking of the dome. For base drawings for the survey of the exterior, Vertical Access used AutoCAD drawings provided by GBG showing each of the eight sections of the dome. For the interior, Vertical Access used an orthophotograph of the dome interior unfolded into sixteen sections provided by GBG. VA placed the eight exterior dome views and the orthophotograph of the interior of the dome into a single AutoCAD drawing so that each view has a unique set of x-y coordinates.

Existing conditions were documented using VA’s Tablet PC Annotation System (TPAS)<sup>TM</sup>. TPAS allows direct input of survey information into an AutoCAD drawing so that there is no loss of information in the transfer of notes from paper to computer. The severity and amount of each condition was recorded in the field using AutoCAD, which streamlines the process of take-offs and the transformation of condition notes to construction documents. A spreadsheet of the survey quantities is included in printed form and as a digital file with this report.

TPAS utilizes a library of previously drawn fault code symbols to annotate digital survey drawings in the field. Each permutation of fault code is placed on a unique layer in the AutoCAD drawings to allow for easier manipulation and viewing of the survey data. The fault code symbols are part of an AutoCAD block library and are composed of a grouping of fault attributes:

- Material
- Condition
- Type
- Severity
- Amount

When all of the information collected in the survey is shown on an elevation drawing, the printed drawing may become difficult to interpret due to the density of data and resolution of the printed drawings. Therefore, TPAS is optimized for digital analysis of survey data. The following processes can be used to better understand and interpret the conditions and material data.

1. Any TPAS symbol can be queried directly in AutoCAD.
2. Because each combination of material and fault condition is on a separate layer in AutoCAD, the survey data can be viewed selectively within AutoCAD by switching layers on and off and by constructing different combined layer “views.”
3. The numerical survey data can be extracted or exported from AutoCAD into spreadsheets or databases.
4. Digital photographs are hyperlinked to asterisk symbols indicating photo links, so survey photographs can be opened and viewed directly from the AutoCAD drawing.

Following the *Annotated Drawings* is a *Spreadsheet of Survey Conditions*, containing quantities, notes and photograph references for each condition documented at the building. The conditions listed in the spreadsheet are extracted from the data blocks in the AutoCAD drawing of the survey and are sorted by condition type. The data can be extracted from the AutoCAD drawing or Excel file to other spreadsheet and database programs.

A *Guide to TPAS<sup>TM</sup> Annotated Drawings* is included in the *Condition Survey Report*. This document highlights features of the annotated drawings provided in paper, pdf and dwg formats. The guide describes in greater detail the properties included in the TPAS condition blocks, the process of creating views within AutoCAD to show information about specific conditions, the steps of extracting information contained in the AutoCAD drawing for export into a spreadsheet or database and how to set up the electronic drawing and the photograph files to create hyperlinks.

Appendix A to the *Condition Survey Report* includes information on the paint sampling performed by Vertical Access at the request of PDP. The Paint Sampling appendix contains a table listing the paint samples removed from the exterior of the lantern, dome and drum with initial observations on the coatings present at representative locations. The locations of the paint samples are shown in elevation drawings included with the appendix.

Appendix B describes the access approach used by Vertical Access to perform the hands-on investigation of the exterior of the Wyoming State Capitol Dome. It also includes considerations for future access to the exterior for inspection, maintenance or repair work.

All of the documents composing this *Condition Survey Report* are provided in digital format on a single DVD. Digital files include this *Report Narrative* in pdf format; jpg image files of all survey photographs; annotated drawings in AutoCAD dwg and pdf formats; the spreadsheet of extracted quantities in Microsoft Excel xls format; the *Guide to TPAS<sup>TM</sup> Annotated Drawings* in pdf format; and the appendices in pdf format.

The DVD with the project deliverables contains video and audio commentary describing representative and notable conditions observed during VA's live-feed video investigation on May 15<sup>th</sup>, 2013. The live-feed video was recorded on the east side of the dome from the lantern to the bottom of the drum.

## **Scope of Work**

Vertical Access utilized industrial rope access techniques to gain hands-on access for the investigation of the exterior materials of the Wyoming State Capitol Dome. In general terms, technicians are suspended on one rope termed the "work positioning line" with a redundant "fall protection line" used as backup. Hands-off descent control and fall protection devices are integrated into site-specific rigging systems, along with industry-specific climbing and suspension harnesses. Vertical Access technicians are third-party certified for industrial rope access work by SPRAT, the Society of Professional Rope Access Technicians. Vertical Access technicians also documented general conditions at the interior of the dome. To gain up-close access to the upper areas of the dome interior, Vertical Access used an extension ladder brought into the dome for rigging the rope access drops at the exterior. VA used 1000-watt theater lights to assist in viewing the conditions at the interior.

The primary focus of VA's investigation of the Wyoming State Capitol Dome was to document the condition of the exterior materials at the drum, dome and lantern. During the hands-on investigation of the exterior the location, severity and quantity of conditions such as punctures, tears, dents, failed seams, corrosion, paint coating failure and missing and loose elements were recorded on elevation drawings. VA also performed an up-close review of the interior of the dome and lantern. Photographs were taken of representative and notable conditions of deterioration at the exterior and interior. The condition photographs are hyperlinked to the annotated AutoCAD drawings.

Vertical Access also performed one live-feed video "drop" on the east side of the dome. The conditions at this side of the dome were documented using high definition video with audio commentary. Preservation Design Partnership participated in the live-feed video, which allowed for discussion of conditions during the recording of the video.

To assist with the assessment of the condition of the existing paint coatings and to gain a better understanding of the chronology of the coatings at the exterior of the dome, VA performed paint adhesion tests and paint sampling at representative areas. The locations of the paint adhesion tests and sampling were photographed and are shown in the annotated drawings.

## **Building Description**

The Wyoming State Capitol was designed by David W. Gibbs, an architect from Toledo, Ohio. The Renaissance revival design resembles many other state capitols, including the Colorado State Capitol designed by Elijah Myers, who lost the Wyoming commission to Gibbs under protest. Construction of the central portion of the Capitol, including the dome, commenced in 1886 when Wyoming was still a territory. The central portion with small east and west wings were completed in 1890. The House and Senate chambers,

designed by William Dubois, were added to the east and west wings between 1915 and 1917.<sup>1</sup>

The Capitol is oriented with the main entrance to the south, facing downtown Cheyenne and the Union Pacific railroad depot. The three-story base of the building is constructed of sandstone quarried near Rawlins, Wyoming. Above the stone base, the dome of the Capitol rises 146 feet above grade. The drum of the Wyoming State Capitol Dome has eight identical facets, with large openings at the colonnade level and smaller round windows at the drum attic. Above the drum attic, the dome has sixteen facets, each with ten rows of gilded copper panels. The lantern that surmounts the dome has eight facets and a sloped roof consisting of the gilded copper panels topped by a finial. The elevation below shows the parts of the dome referenced in this report.

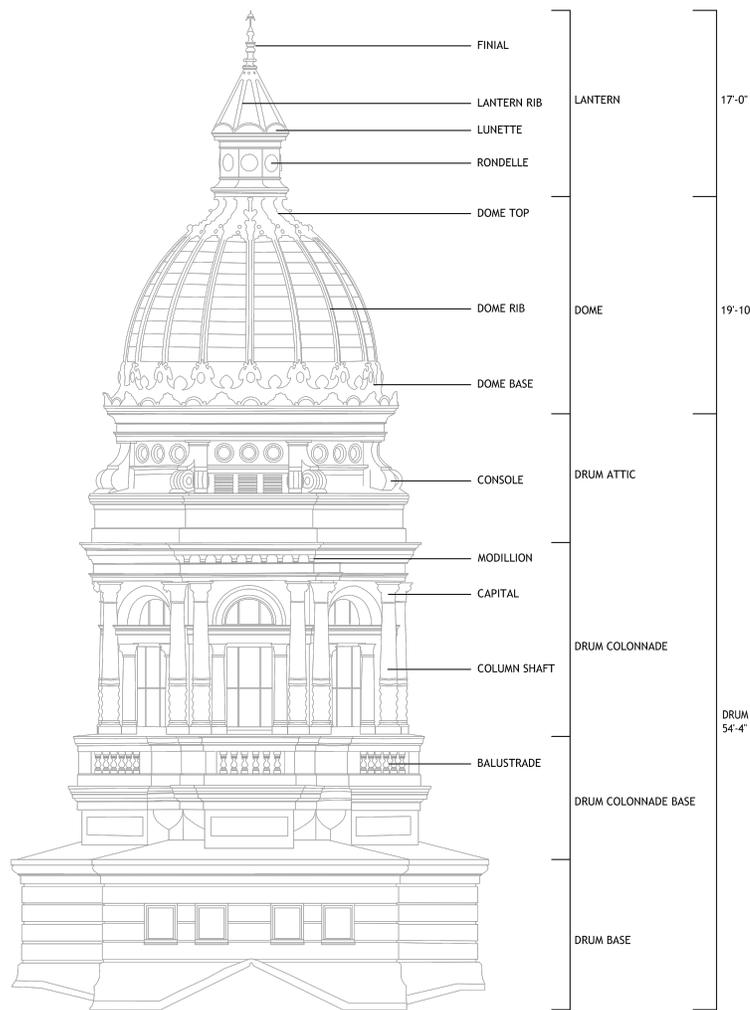


Figure 1: Wyoming State Capitol Dome Nomenclature

<sup>1</sup> Mark Junge and Dr. Page Putnam Miller, "Wyoming State Capitol Building and Grounds National Register of Historic Places Nomination Form," 1987.

The base of the drum, which meets the copper roof of the lower portion of the building, is clad in cast iron panels. Above the cast iron, the cladding of the drum and ornament are galvanized sheet metal, including the blind balustrades of the colonnade base and engaged columns of the drum colonnade. The dome itself is clad in gilded copper panels, as is the roof of the lantern. The ribs of the dome and lantern roof as well as most of the cladding of these areas of the dome are painted galvanized sheet metal. The sheet metal is hot dipped galvanized and for the most part is in good condition and appears to be original, based on the dates of graffiti found inside the dome. Zinc-coated sheet metal was in use in the United States by the end of the 1830s, with galvanized sheets up to 24 inches wide by 72 inches long available by the 1850s.<sup>2</sup> Sheet lead is used for the high relief ornament applied to the consoles at the drum attic, the base of the dome and the top of the dome. Since the copper dome was first gilded in 1900, it has been regilded several times, most recently in 2009 when the existing copper panels were removed by Sheet Metal Products, Inc. (SMP) and new copper panels were gilded by Glenn Otto & Son Painting and then installed by SMP. Similar installation of new gilded copper panels at the dome was reportedly carried out in 1986 and before that in 1979-80, also by SMP and Glenn Otto & Son Painting.<sup>3</sup>

## Exterior Conditions

Overall the galvanized sheet metal and gilded sheet copper of the Wyoming State Capitol Dome are in good condition with the paint coatings showing signs of failure but the gilding in excellent condition. There are dents in the gilded copper panels caused by hail impact, but no punctures or tears at the copper. On the other hand, dents, puncture and tears were noted in much of the sheet lead ornament at the top and base of the dome, likely due to hail impact. There are some open seams and loose fasteners at the sheet metal cladding.

Below is a summary of the conditions identified during VA's investigation of the exterior of the Wyoming State Capitol Dome, with representative photographs of each condition cited.

### *Drum*

- Overall, the cast iron base of the drum is in good condition. Minor paint coating failure and light surface corrosion were noted on all sides of the drum at the lower portion of the cast iron base, near the intersection with the roof of the wings of the Capitol. (See photographs 92-52, 238-56). At one location of the cast iron base, Vertical Access performed a paint adhesion test using the X-cut test method of ASTM D3359, *Standard Test Methods for Measuring Adhesion by Tape Test*. The paint coatings at the cast iron have poor paint adhesion to the substrate.

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<sup>2</sup> Margot Gayle and John G. Waite. *Metals in America's Historic Buildings: Uses and Preservation Treatments*. Washington, DC: United States Department of the Interior National Park Service, 1992.

<sup>3</sup> Preservation Design Partnership Notes from April 12, 2013 meeting with Jay Otto of Glenn Otto & Son Painting.

- The deck coatings at the wash surfaces of the drum above the base, at the colonnade and at the attic are in poor condition. Typically the deck coatings are in place but have bubbled and lifted from the sheet metal substrate. (See photographs 311-63, 325-63). At some areas of the wash surface above the drum base, there is loss of the deck coating at the inside corners adjacent to the vertical walls of the drum. (See photograph 384-62). Most of the wash surfaces slope away from the walls of the drum; the wash surfaces at the balustrade level and the drum attic do not adequately slope away allowing water to pond on the deck coatings at these levels. (See photograph 530-96).
- There are scuppers at some of the wash surfaces and downspouts on four sides of the drum. The scuppers, which are formed from sheet lead, are typically bent and deformed but do not appear to be blocked. (See photographs 462-73, 168-73). The square-section downspouts run from a galvanized box gutter that sits on the outer edge of the wash surface at the drum attic to the next wash surface below and empty above the colonnade level. The paint coatings at the downspouts and gutter are in poor condition and there is surface corrosion at the inside of the gutter. (See photograph 25-95).
- The paint coatings at the galvanized sheet metal cladding of the drum are in poor condition, with widespread paint loss and peeling. Failed paint coatings are most common at edges and inside corners of the drum elements. In some locations, especially at the cornice elements of the drum, the more recent paint coatings are separating from underlying coatings. In other areas the paint loss exposes the galvanized sheet metal substrate, below (See photographs 89-73, 321-74). Six paint adhesion tests performed at the galvanized sheet metal of the drum indicate there is good adhesion between the existing paint coatings and the galvanized sheet metal where there is not visible paint failure, although the outermost paint layer is chalking. (See photographs 172-73, 173-66).
- At some areas where paint loss was observed, minor surface corrosion of the galvanized sheet metal was also noted. Surface corrosion was noted at the console scrolls of the consoles at the drum attic. (See photographs 456-97, 91-97).
- There are many instances of nails at the sheet metal cladding that have popped out of place. The small round-head nails are used to attach the sheet metal cladding to wood blocking at the interior of the dome. Typically the popped nails are still in place and are not loose. (See photographs 248-93, 321-88).
- Dents in the sheet metal of the drum were noted at the bases of the engaged columns and the balusters. (See photographs 387-74, 456-73). No tears or perforations were noted at these elements or other areas of the galvanized sheet metal cladding at the drum level.
- The inoperable semicircular windows at the colonnade and the inoperable round windows at the drum attic have wood frames and sash. These windows are in fair condition, with minor weathering of the wood and failed paint coatings. (See photographs 318-85, 459-99).

## *Dome*

- There are sixteen facets of the main dome, each with ten rows of gilded copper panels with flat seams. The current gilded copper panels presently on the dome were installed in 2009. The copper panels are dented from hail impact, reportedly from a severe hailstorm that took place in 2011. The denting is most severe at the upper half of the dome. (See photographs 318-117, 243-112). No perforations or tears were noted in the copper panels and the seams between the panels are sound. Above the top row of the new copper panels is an older copper panel, one on each facet. This copper panel is currently painted, but was originally gilded. (See photographs 247-118, 390-118).
- The rib covers between the gilded facets of the dome are galvanized sheet metal. The sheet metal is in good condition, with some denting and open seams noted. (See photographs 531-113, 174-108). Some sections of the rib covers appear to be replacement pieces. The previous paint coatings at the ribs appear to have been completely removed prior to the last painting campaign.
- The base of the dome and top of the dome have galvanized sheet metal cladding with applied sheet lead ornament. The galvanized sheet metal is in fair condition, with some open seams, failed paint coatings and minor surface corrosion noted. There is more loss of paint coatings on the east side than the other areas of the dome. (See photographs 94-104, 322-108, 390-121).
- The lead ornament is in poor condition with dents, tears and punctures noted at many locations. The tears and punctures occur on all sides of the dome, but are most numerous on the east side. (See 393-122, 392-104, 248-121). Some of the perforations have been filled with clear silicone sealant, automotive metal patching compounds such as “Bondo” or other materials. (See photograph 175-122).
- The cornice at the base of the dome has a band of projecting foliated ornament. Many of the individual leaves of the ornament are missing. Some pieces of ornament have tears and are loose. (See photographs 529-103, 320-103).
- The most recent paint coatings at the dome date to 2010, when the new gilded copper panels were installed. The coating is darker and glossier than the current paint coating at the drum. Paint adhesion tests performed using the X-cut test method of ASTM D3359, *Standard Test Methods for Measuring Adhesion by Tape Test* at four locations found a strong adhesion to the sheet metal substrate where there are no visible signs of paint failure. (See photographs 171-107, 171-118).

### *Lantern and Finial*

- The lantern at the top of the Wyoming State Capitol Dome is in fair condition. Similar to the drum and dome, the galvanized sheet metal of the lantern exhibits paint failure. (See photographs 244-137, 459-125). The gilded copper panels of the lantern roof, installed in 2009 are in good condition, with dents from hail damage but no tears or punctures. (See photograph 529-131).
- The eight rondelles on the vertical walls of the lantern appear to be newer than the rest of the cladding at the lantern based on the crimped edges of the rondelles visible at the exterior and cleaner spangle finish of the hot dip galvanized coating visible at the interior. They may have been installed to cover windows or other openings at this level. (See photograph 655-125).
- The galvanized sheet metal finial at the top of the lantern is in good condition. There is a missing crocket on the north side of the finial. (See photograph 22-140). The paint coatings at the finial exhibit discrete areas of loss. Where the paint coatings are missing, traces of gilding as the earliest coatings on the sheet metal are visible. (See photographs 245-136, 244-137).

### **Interior Conditions**

At the interior of the dome, the steel frame of the dome and wood decking below the gilded sheet copper panels are visible. Overall, the steel frame appears to be in good condition, with no deformation of members or obvious corrosion noted. There is a gap at the horizontal seam between sections that make up the X-bracing of the frame at one level, but there are no signs of stress associated with the gap. Water staining was noted at the wood decking, but overall the decking materials appear to be sound. At the interior of the lantern, decay was noted at some of the wood blocking behind the lunettes.

Below is a summary of the conditions observed at the interior of the dome, with representative photographs of each condition cited.

- Overall, the steel frame visible at the interior of the dome is in good condition. There does not appear to be deformation or corrosion of the framing members. At one level of the X-bracing, there is a gap in the horizontal seam between members. The gap is as large as two inches but is typically between one and one and a half inches wide at most of the seams. On the west side of the dome, there is one seam that is closed. At most of the horizontal seams between members that make up the X-bracing, rivets are used, but at the level with the gap, hex-head and some square-head carriage bolts are used at the horizontal seam. Some of the bolts are missing. The bolts are loose, and do not appear to have ever been tight. There is also no cracking or other signs of stress indicating that the gap is due to movement in the structural frame. It is likely that it is an as-built condition. (See photographs 570-113, 586-114).).
- Inside the lantern, the frame consists of angles supporting the outer walls with 3/4" diameter tension rods running diagonally from the outer walls to two connection hubs at the center of the lantern. Another tension rod, two inches in diameter, runs vertically to connect these hubs. (See photograph 653-128). One

- of the diagonal tension rods on the southeast side of the lantern is loose, with the nut at the connection hub not fully threaded. (See photograph 653-126).
- The steel framing terminates near the top of the lantern's sloped roof, with wood members supporting the finial. A wood pole extends down from the finial's center and terminates without any connection approximately three feet above the two-inch diameter tension rod.
  - The wood decking at the interior of the dome exhibits water staining but is otherwise in good condition. A split was noted in one of the decking boards on the north side of the dome. (See photograph 630-113). Most of the wood decking appears to be original, with replacement boards evidence by the lack of water staining and dated by graffiti to previous reroofing campaigns. During a brief thunderstorm the afternoon of May 14<sup>th</sup>, water was observed running down the inside of the dome in line with a rib at the northwest side. Water was also noted coming in the dome at the north side above the round window of the drum attic. (See photographs 572-99, 630-105).
  - Decay was noted at wood blocking at the interior of the lantern at the level of the lantern cornice. The rot is most widespread on the south side of the lantern interior. (See photograph 655-128).

## Conclusions and Preliminary Interpretations

The dome of the Wyoming State Capitol comprises a cast iron base, with galvanized sheet metal cladding at the drum and dome, gilded copper panels at the main dome and lantern and applied sheet lead ornament. Vertical Access documented existing conditions such as missing and dented sheet metal elements, tears, punctures and open seams in the sheet metal, surface corrosion and paint coating failures. The gilded copper panels at the dome and lantern, installed in 2009, are dented from hail impact but otherwise sound with no perforations and failed seams observed. The sheet lead ornament exhibits tears and punctures, most likely a result of hail damage, as well as widespread paint coating failure. Much of the sheet lead ornament is dented, with some missing elements as well. The galvanized sheet steel, most likely original to the dome, is in good condition with some dents, open seams, discrete areas of surface corrosion and widespread failure of the paint coatings. The cast iron at the lowest section of the drum is also in good condition, with some surface corrosion and failed paint coatings noted.

The interior of the dome exhibits water staining at the wood decking, some of which appears to be original to the dome. No significant corrosion or deformation was noted at the steel framing comprising the structure of the dome. At one level of the framing, there is a gap between bracing members. Square head and hex head carriage bolts are used to connect the members at this level, as opposed to riveted fasteners used at similar connections at other areas of the dome structure. There is no evidence of movement at the connections where the gaps are present, indicating that it may be an “as-built” condition.

Vertical Access remains on call to assist with additional investigations or to elaborate on the work already completed.

Respectfully submitted for Vertical Access LLC by:



Evan Kopelson

May 23, 2013



**12-50 ArchMetal\_Corrosion Perforated 2013-1**



**13-51 ArchMetal\_Coating Coating Failed 2013-1**



**13-51 ArchMetal\_Coating Coating Failed 2013-2**



**14-56 SheetMetal\_Coating Coating Failed 2013-1**



**16-73 SheetMetal\_Note Misc condition 2013-1**



**16-95 SheetMetal\_Coating Coating Failed 2013-1**



**16-95 SheetMetal\_Coating Coating Failed 2013-2**



**17-52 ArchMetal\_Corrosion Surface 2013-1**



**17-97 SheetMetal\_Corrosion Surface 2013-1**



**17-98 SheetMetal\_Coating Coating Failed 2013-1**



**18-75 SheetMetal\_Damaged Dented 2013-1**



**18-104 SheetMetal\_Damaged Torn 2013-1**



**18-104 SheetMetal\_Damaged Torn 2013-2**



**19-56 Wood\_Coating Coating Failed 2013-1**



**19-103 SheetMetal\_Unsecured Missing 2013-1**



**19-103 SheetMetal\_Unsecured Missing 2013-2**



**20-74 SheetMetal\_Coating Coating Failed 2013-1**



**20-74 SheetMetal\_Coating Coating Failed 2013-2**



**20-120 SheetMetal\_Damaged Torn 2013-1**



**20-120 SheetMetal\_Damaged Torn 2013-2**



**21-103 SheetMetal\_Unsecured Loose 2013-1**



**21-103 SheetMetal\_Unsecured Loose 2013-2**



**21-104 SheetMetal\_Damaged Dented 2013-1**



**21-122 SheetMetal\_Damaged Punctured 2013-1**



**21-122 SheetMetal\_Unsecured Missing 2013-1**



**21-122 SheetMetal\_Unsecured Missing 2013-2**



**22-65 SheetMetal\_Coating Coating Failed 2013-1**



**22-65 SheetMetal\_Coating Coating Failed 2013-2**



**22-65 SheetMetal\_Coating Coating Failed 2013-3**



**22-70 SheetMetal\_Coating Coating Failed 2013-1**



**22-71 SheetMetal\_Damaged Dented 2013-1**



**22-74 SheetMetal\_Note Misc condition 2013-1**



**22-99 SheetMetal\_Coating Coating Failed 2013-1**



**22-99 SheetMetal\_Coating Coating Failed 2013-2**



**22-99 SheetMetal\_Coating Coating Failed 2013-3**



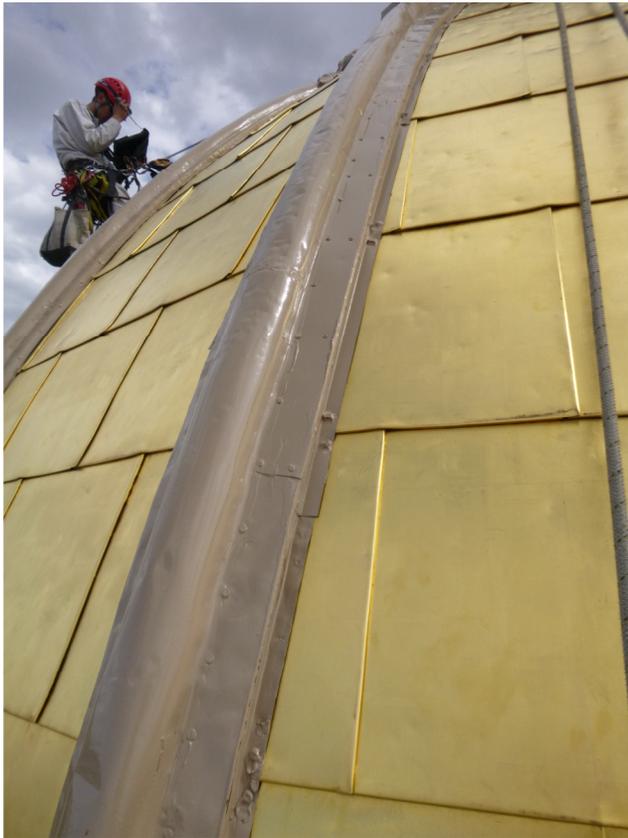
**22-99 SheetMetal\_Coating Coating Failed 2013-4**



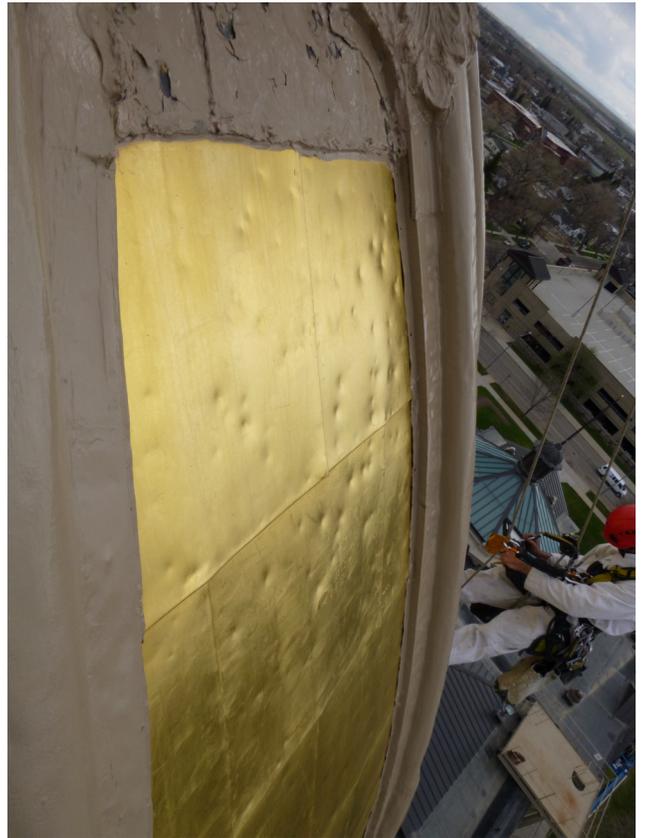
22-99 SheetMetal\_Coating Coating Failed 2013-5



22-106 SheetMetal\_Damaged Dented 2013-1



22-110 SheetMetal\_Damaged . 2013-1



22-116 SheetMetal\_Note Hail damage 2013-1



**22-124 SheetMetal\_Damaged Dented 2013-1**



**22-127 SheetMetal\_Note Photo-rigging hole cowl 2013-1**



**22-140 SheetMetal\_Note Photo-finial 2013-1**



**23-61 SheetMetal\_Coating Coating Failed 2013-1**



**23-61 SheetMetal\_Coating Coating Failed 2013-2**



**23-61 SheetMetal\_Coating Coating Failed 2013-3**



**23-61 SheetMetal\_Coating Coating Failed 2013-4**



**23-61 SheetMetal\_Coating Coating Failed 2013-5**



**23-92 SheetMetal\_Coating Coating Failed 2013-1**



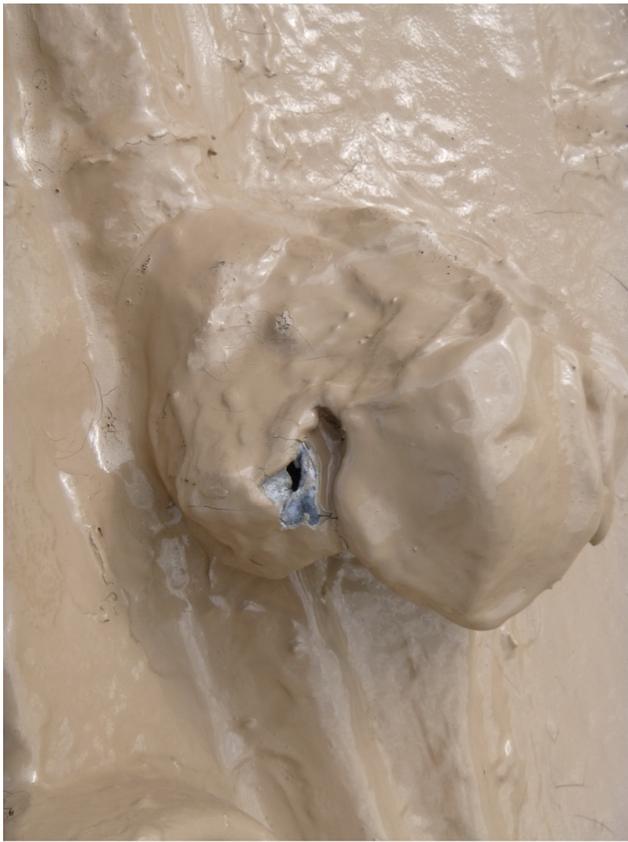
**23-92 SheetMetal\_Coating Coating Failed 2013-2**



**23-92 SheetMetal\_Coating Coating Failed 2013-3**



**23-105 SheetMetal\_Damaged Dented 2013-1**



**23-120 SheetMetal\_Damaged Punctured 2013-1**



**24-74 SheetMetal\_Coating Coating Failed 2013-1**



**24-84 SheetMetal\_Coating Coating Failed 2013-1**



**24-104 SheetMetal\_Damaged Dented 2013-1**



**24-107 SheetMetal\_Coating Coating Failed 2013-1**

**24-107 SheetMetal\_Coating Coating Failed 2013-2**



**24-108 SheetMetal\_Note Sealant (at all sections) 2013-1**

**24-108 SheetMetal\_Note Sealant (at all sections) 2013-2**



**25-56 Wood\_Coating Coating Failed 2013-1**



**25-95 SheetMetal\_Corrosion Surface 2013-1**



**25-95 SheetMetal\_Corrosion Surface 2013-2**



**26-75 SheetMetal\_Damaged Dented 2013-1**



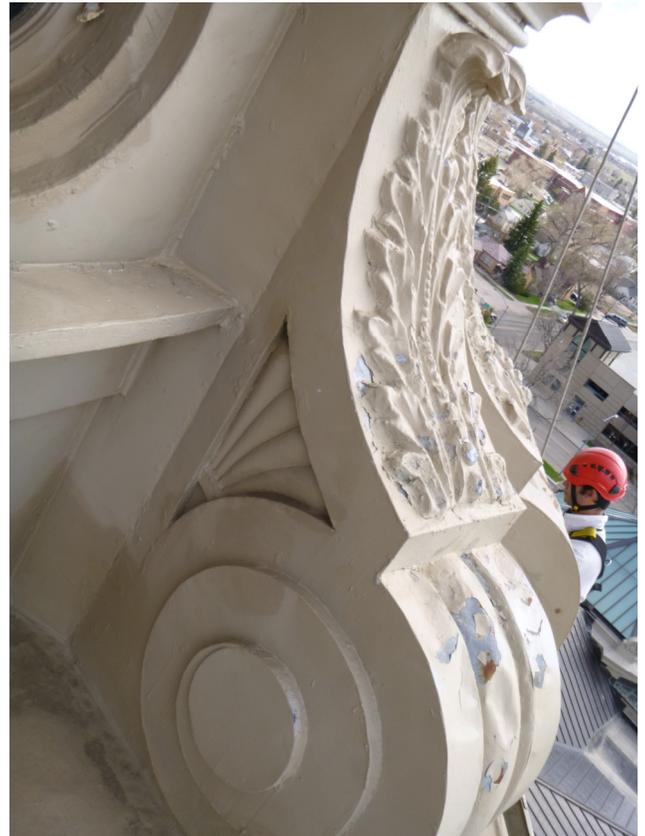
**26-105 SheetMetal\_Damaged Dented 2013-1**



**27-73 SheetMetal\_Coating Coating Failed 2013-1**



**27-73 SheetMetal\_Coating Coating Failed 2013-2**



**27-97 SheetMetal\_Coating Coating Failed 2013-1**



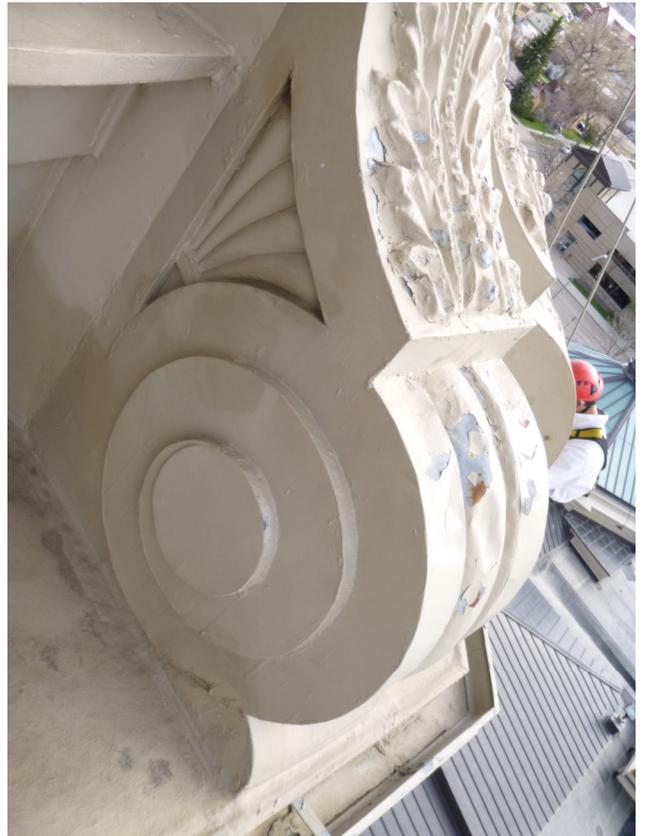
**27-104 SheetMetal\_Damaged Dented 2013-1**



**27-110 SheetMetal\_Damaged Dented 2013-1**



**28-51 ArchMetal\_Corrosion Surface 2013-1**



**28-96 SheetMetal\_Corrosion Surface 2013-1**



**30-56 Wood\_Coating Coating Failed 2013-1**



**33-50 ArchMetal\_Corrosion Surface 2013-1**



**33-51 ArchMetal\_Coating Coating Failed 2013-1**



**89-68 SheetMetal\_Coating Coating Failed 2013-1**



**89-70 SheetMetal\_Coating Coating Failed 2013-1**



**89-71 SheetMetal\_Coating Coating Failed 2013-1**



**89-73 SheetMetal\_Coating Coating Failed 2013-1**



**90-77 SheetMetal\_Coating Coating Failed 2013-1**



**90-99 SheetMetal\_Coating Coating Failed 2013-1**



**91-71 SheetMetal\_Seam Fastener Failed 2013-1**



**91-74 SheetMetal\_Damaged Dented 2013-1**



**91-97 SheetMetal\_Corrosion Surface 2013-1**



**91-99 SheetMetal\_Damaged Punctured 2013-1**



**92-52 ArchMetal\_Corrosion Surface 2013-1**



**92-52 ArchMetal\_Corrosion Surface 2013-2**



**92-75 SheetMetal\_Damaged Dented 2013-1**



**92-83 SheetMetal\_Coating Coating Failed 2013-1**



**92-83 SheetMetal\_Coating Coating Failed 2013-2**



**92-83 SheetMetal\_Coating Coating Failed 2013-3**



**92-98 Wood\_Coating Coating Failed 2013-1**



**92-105 SheetMetal\_Coating Coating Failed 2013-1**



**92-115 SheetMetal\_Coating Coating Failed 2013-1**



**93-58 ArchMetal\_Note Photo-joint 2013-1**



**93-86 SheetMetal\_Damaged Dented 2013-1**



93-91 SheetMetal\_Note Photo-sealant at fasteners 2013-1

93-91 SheetMetal\_Note Photo-sealant at fasteners 2013-2



93-95 SheetMetal\_Corrosion Surface 2013-1

93-119 SheetMetal\_Damaged Punctured 2013-1



**93-119 SheetMetal\_Damaged Punctured 2013-2**



**93-120 SheetMetal\_Damaged Dented 2013-1**



**94-59 ArchMetal\_Crack Crack 2013-1**



**94-61 SheetMetal\_Coating Coating Failed 2013-1**



**94-61 SheetMetal\_Coating Coating Failed 2013-2**



**94-61 SheetMetal\_Coating Coating Failed 2013-3**



**94-70 SheetMetal\_Damaged Dented 2013-1**



**94-73 SheetMetal\_Seam Fastener Failed 2013-1**



**94-74 SheetMetal\_Note Photo-scupper 2013-1**



**94-87 SheetMetal\_Coating Coating Failed 2013-1**



**94-93 SheetMetal\_Coating Coating Failed 2013-1**



**94-96 SheetMetal\_Coating Coating Failed 2013-1**



**94-96 SheetMetal\_Coating Coating Failed 2013-2**



**94-104 SheetMetal\_Corrosion Surface 2013-1**



**94-110 SheetMetal\_Seam Solder Failed 2013-2**



**94-120 SheetMetal\_Damaged Dented 2013-1**



**94-130 SheetMetal\_Coating Coating Failed 2013-1**



**95-55 ArchMetal\_Corrosion Surface 2013-1**



**95-55 ArchMetal\_Corrosion Surface 2013-2**



**95-59 ArchMetal\_Coating Coating Failed 2013-1**



**95-59 ArchMetal\_Coating Coating Failed 2013-2**



**95-59 ArchMetal\_Coating Coating Failed 2013-3**



**95-71 SheetMetal\_Damaged Dented 2013-1**



**95-73 SheetMetal\_Coating Coating Failed 2013-1**



**95-73 SheetMetal\_Coating Coating Failed 2013-2**



**95-73 SheetMetal\_Coating Coating Failed 2013-3**



**95-73 SheetMetal\_Coating Coating Failed 2013-4**



**95-82 SheetMetal\_Seam Fastener Failed 2013-1**



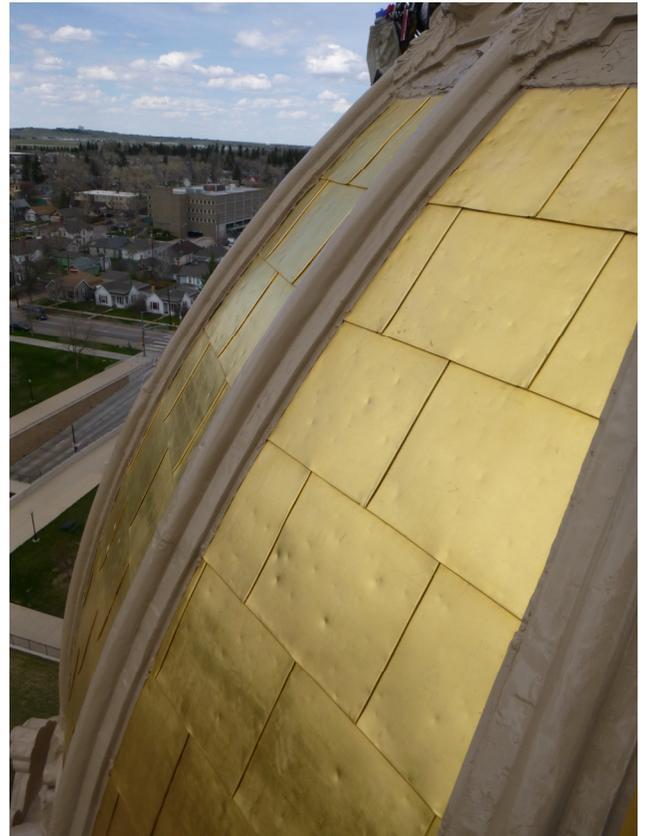
**95-84 Wood\_Deteriorated Weathered 2013-1**



**95-107 SheetMetal\_Coating Coating Failed 2013-1**



**95-107 SheetMetal\_Coating Coating Failed 2013-2**



**95-115 SheetMetal\_Damaged Dented 2013-1**



**95-115 SheetMetal\_Damaged Dented 2013-2**



**95-115 SheetMetal\_Damaged Dented 2013-3**



**95-115 SheetMetal\_Damaged Dented 2013-4**

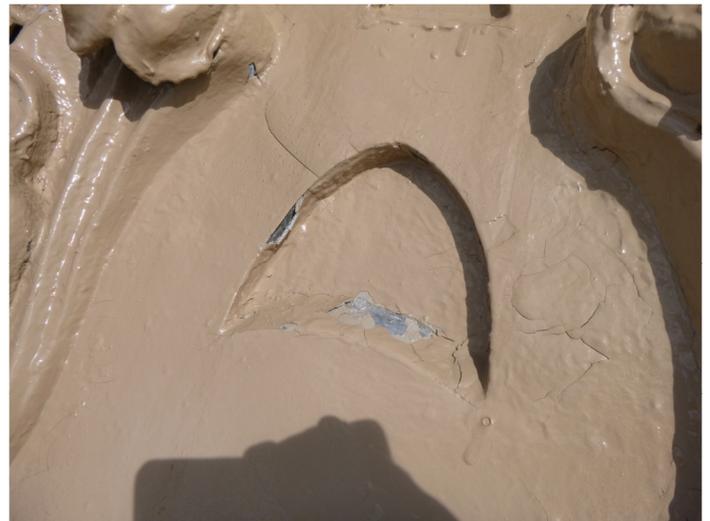


**95-116 SheetMetal\_Corrosion Surface 2013-2**



95-118 SheetMetal\_Note Photo-sealant joint 2013-6

95-118 SheetMetal\_Note Photo-sealant joint 2013-7



95-120 SheetMetal\_Coating Coating Failed 2013-1

95-120 SheetMetal\_Coating Coating Failed 2013-2



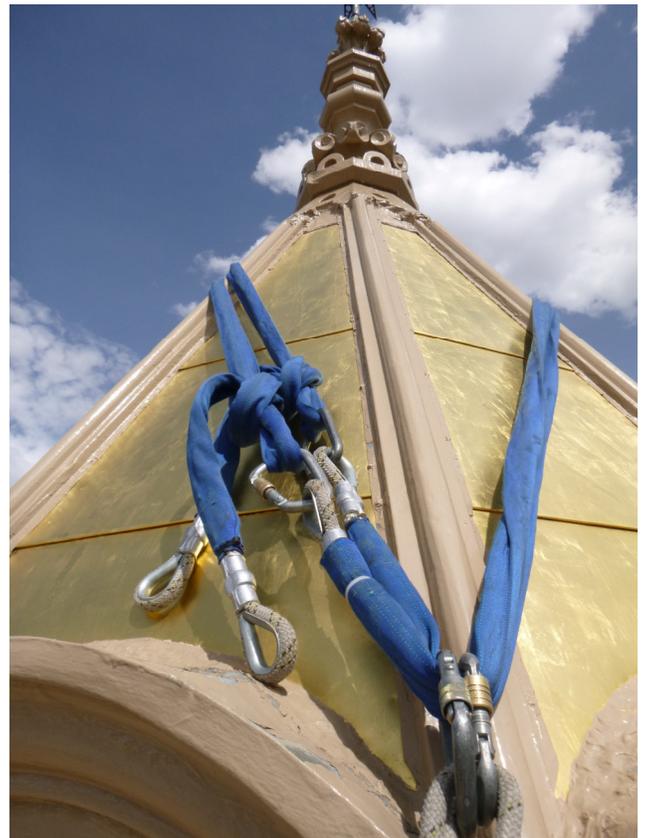
**95-120 SheetMetal\_Coating Coating Failed 2013-3**



**95-120 SheetMetal\_Unsecured Missing 2013-1**



**95-121 SheetMetal\_Damaged Punctured 2013-1**



**95-133 SheetMetal\_Note Photo-lantern roof and finial**



95-133 SheetMetal\_Note Photo-lantern roof and finial



95-133 SheetMetal\_Note Photo-lantern roof and finial



96-70 SheetMetal\_Damaged Dented 2013-1



96-74 SheetMetal\_Coating Coating Failed 2013-1



**96-91 SheetMetal\_Coating Coating Failed 2013-1**



**96-91 SheetMetal\_Coating Coating Failed 2013-2**



**96-102 SheetMetal\_Unsecured Missing 2013-1**



**96-104 SheetMetal\_Coating Coating Failed 2013-1**



**96-104 SheetMetal\_Coating Coating Failed 2013-2**



**96-104 SheetMetal\_Coating Coating Failed 2013-3**



**96-117 SheetMetal\_Coating Coating Failed 2013-1**



**96-127 SheetMetal\_Note Photo-lantern 2013-1**



**97-68 SheetMetal\_Note Photo-scupper 2013-1**



**97-75 SheetMetal\_Damaged Dented 2013-1**



**97-99 SheetMetal\_Damaged Torn 2013-1**



**97-99 Wood\_Deteriorated Weathered 2013-1**



**97-106 SheetMetal\_Coating Coating Failed 2013-1**



**98-67 SheetMetal\_Seam Fastener Failed 2013-1**



**98-71 SheetMetal\_Seam Fastener Failed 2013-1**



**98-82 SheetMetal\_Seam Fastener Failed 2013-1**



**98-87 SheetMetal\_Coating Coating Failed 2013-1**



**98-97 SheetMetal\_Corrosion Surface 2013-1**



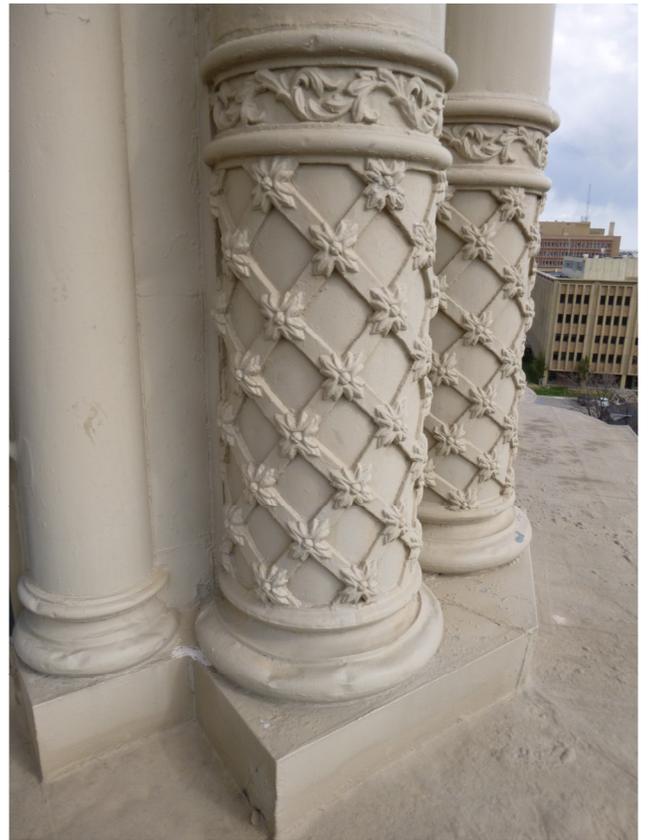
**98-98 SheetMetal\_Damaged Punctured 2013-1**



**99-66 SheetMetal\_Coating Coating Failed 2013-1**



**99-74 SheetMetal\_Damaged Dented 2013-1**



**99-77 SheetMetal\_Coating Coating Failed 2013-1**



**99-99 SheetMetal\_Coating Coating Failed 2013-1**



**99-102 SheetMetal\_Unsecured Missing 2013-1**



**99-105 SheetMetal\_Corrosion Surface 2013-1**



**100-71 SheetMetal\_Coating Coating Failed 2013-1**



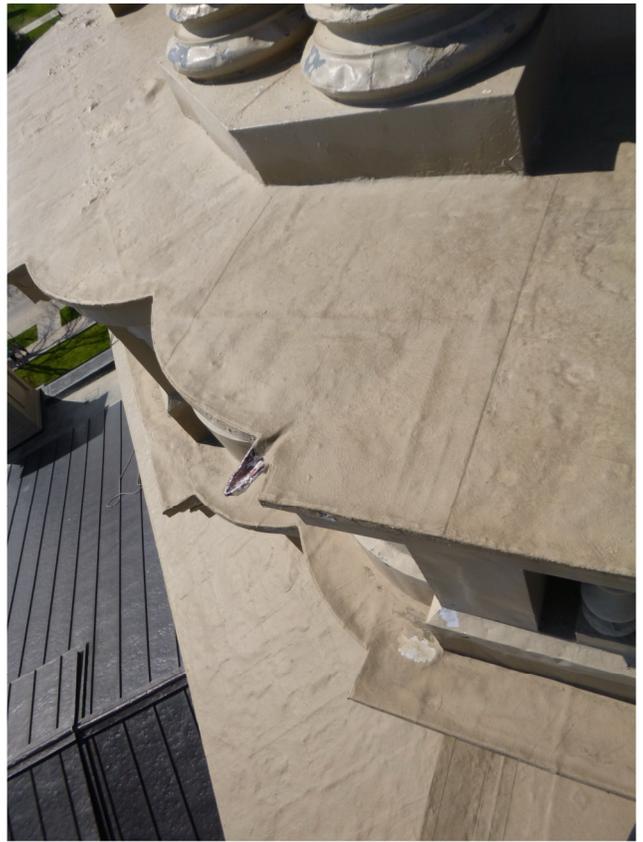
**100-99 SheetMetal\_Damaged Punctured 2013-1**



**167-106 SheetMetal\_Damaged Torn 2013-1**



168-65 SheetMetal\_Coating Coating Failed 2013-1



168-73 SheetMetal\_Note Photo-scupper 2013-1



169-52 ArchMetal\_Corrosion Surface 2013-1



169-71 SheetMetal\_Damaged Dented 2013-1



**169-74 SheetMetal\_Damaged Dented 2013-1**



**169-91 SheetMetal\_Coating Coating Failed 2013-1**



**169-98 SheetMetal\_Coating Coating Failed 2013-1**



**169-98 SheetMetal\_Coating Coating Failed 2013-2**



170-75 SheetMetal\_Coating Coating Failed 2013-1



170-96 SheetMetal\_Note Photo-adhesion test6 2013-1



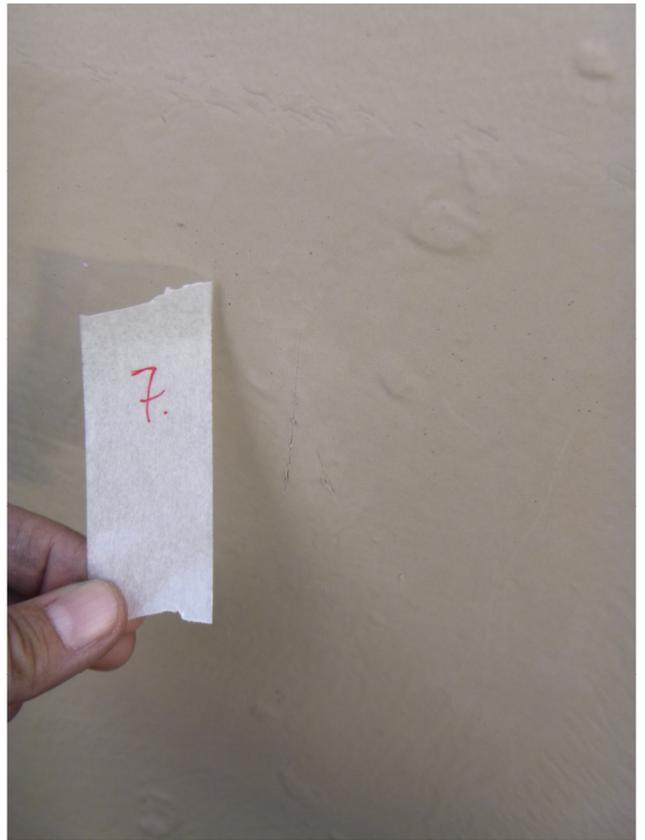
170-96 SheetMetal\_Note Photo-adhesion test6 2013-2



170-96 SheetMetal\_Note Photo-adhesion test7 2013-1



170-96 SheetMetal\_Note Photo-adhesion test7 2013-2



170-96 SheetMetal\_Note Photo-adhesion test7 2013-3



171-53 ArchMetal\_Corrosion Surface 2013-1



171-74 SheetMetal\_Note Photo-sealant 2013-1



**171-81 SheetMetal\_Note Photo-capital 2013-1**



**171-87 SheetMetal\_Note Photo-capital 2013-2**



**171-87 SheetMetal\_Note Photo-capital 2013-3**



**171-87 SheetMetal\_Note Photo-capital 2013-4**



171-102 SheetMetal\_Unsecured Missing 2013-1

171-102 SheetMetal\_Unsecured Missing 2013-2



171-107 SheetMetal\_Note Photo-adhesion test 5 2013-1

171-107 SheetMetal\_Note Photo-adhesion test 5 2013-2



171-118 SheetMetal\_Note Photo-adhesion test2 2013-1



171-118 SheetMetal\_Note Photo-adhesion test2 2013-2



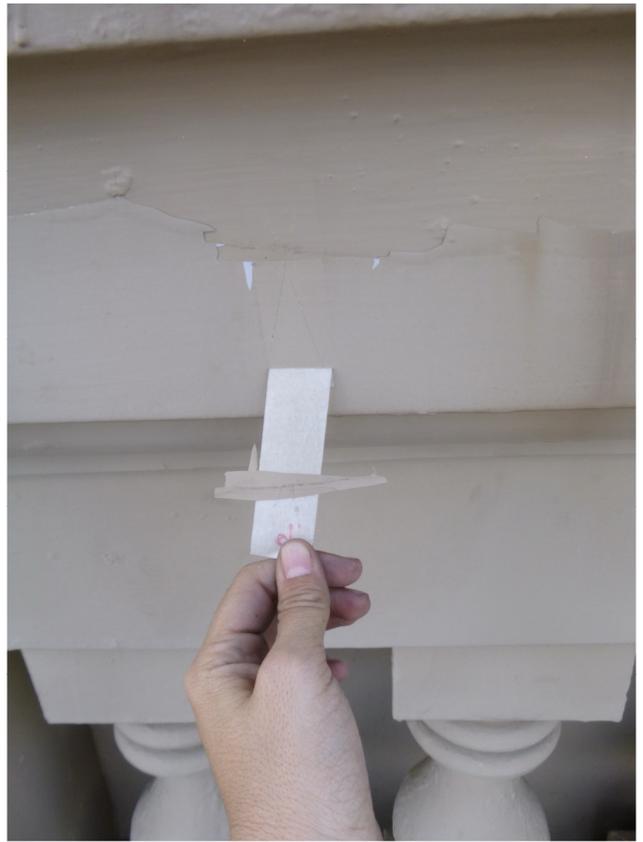
171-118 SheetMetal\_Note Photo-adhesion test2 2013-3



172-71 SheetMetal\_Damaged Dented 2013-1



172-73 SheetMetal\_Note Photo-adhesion test 9 2013-1



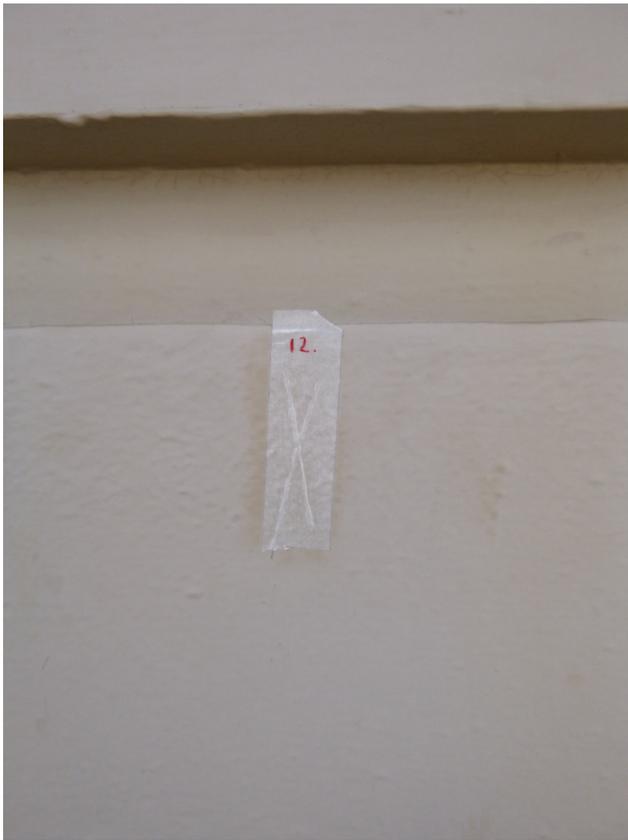
172-73 SheetMetal\_Note Photo-adhesion test 9 2013-2



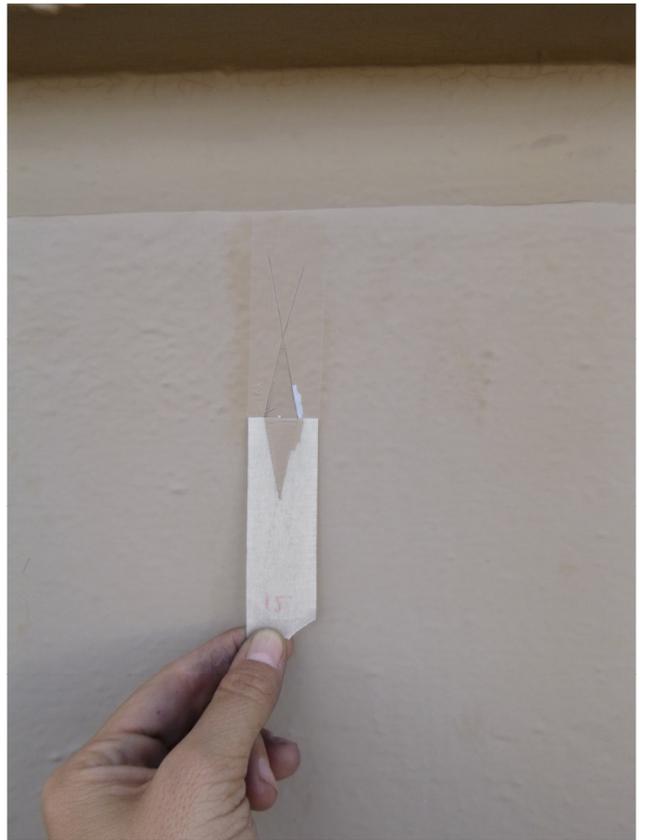
172-117 SheetMetal\_Note Photo-hail damage 2013-1



173-52 ArchMetal\_Coating Coating Failed 2013-1



173-57 SheetMetal\_Note Photo-adhesion test 12 2013-1



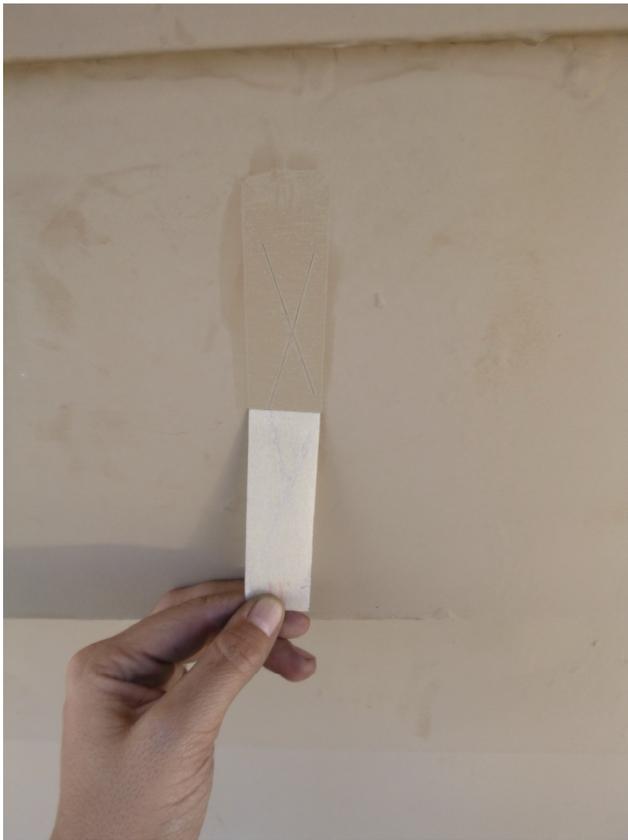
173-57 SheetMetal\_Note Photo-adhesion test 12 2013-2



173-57 SheetMetal\_Note Photo-adhesion test 12 2013-3



173-66 SheetMetal\_Note Photo-adhesion test 11 2013-1



**173-66 SheetMetal\_Note Photo-adhesion test 11 2013-2**



**173-84 Wood\_Coating Coating Failed 2013-1**



**173-84 Wood\_Coating Coating Failed 2013-2**



**173-96 SheetMetal\_Note Photo-gutter 2013-1**



**173-99 Wood\_Coating Coating Failed 2013-1**



**173-99 Wood\_Coating Coating Failed 2013-2**



**173-99 Wood\_Coating Coating Failed 2013-3**



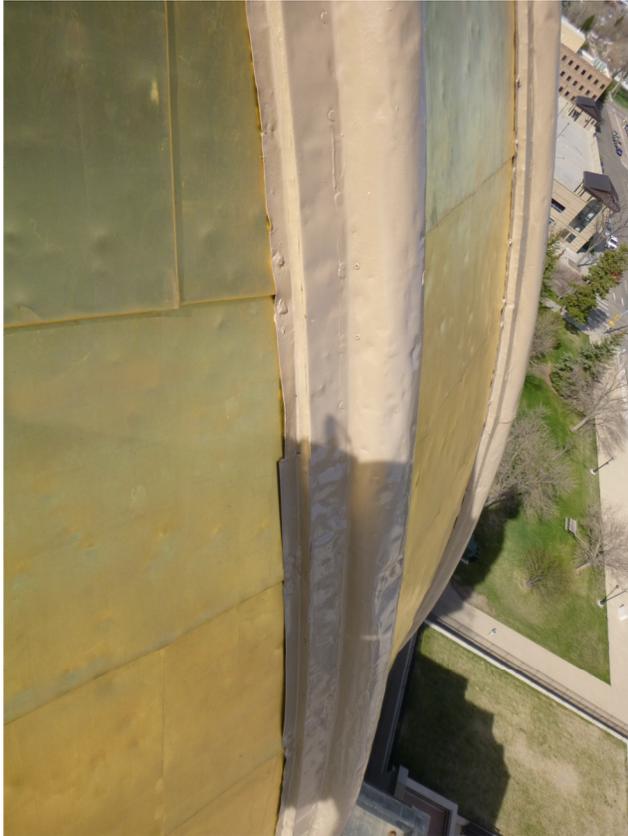
**173-106 SheetMetal\_Damaged Torn 2013-1**



**173-108 SheetMetal\_Seam Sealant Failed 2013-1**



**173-108 SheetMetal\_Seam Sealant Failed 2013-2**



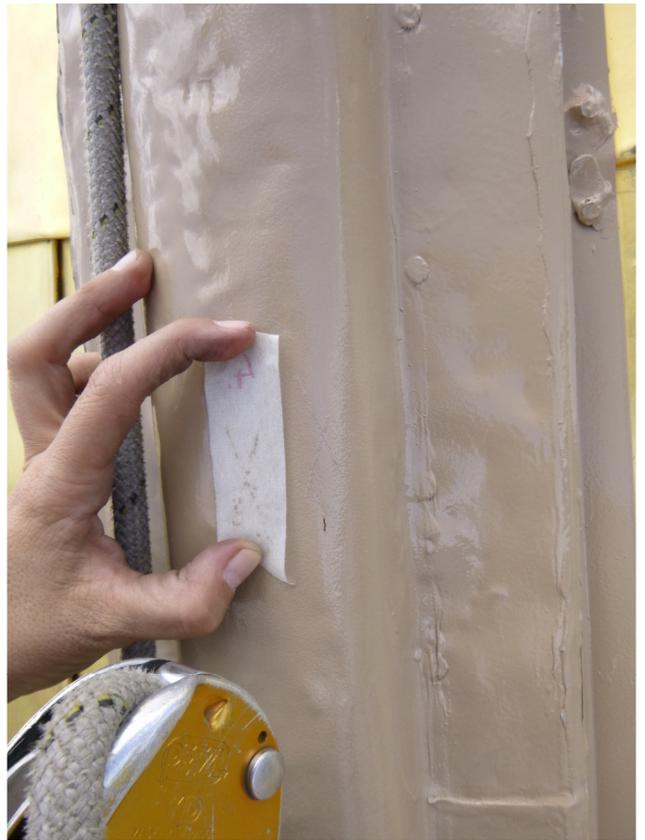
**173-111 SheetMetal\_Damaged Dented 2013-1**



**173-111 SheetMetal\_Damaged Dented 2013-2**



173-114 SheetMetal\_Note Photo-adhesion test 4 2013-1



173-114 SheetMetal\_Note Photo-adhesion test 4 2013-2



173-116 SheetMetal\_Damaged Dented 2013-1

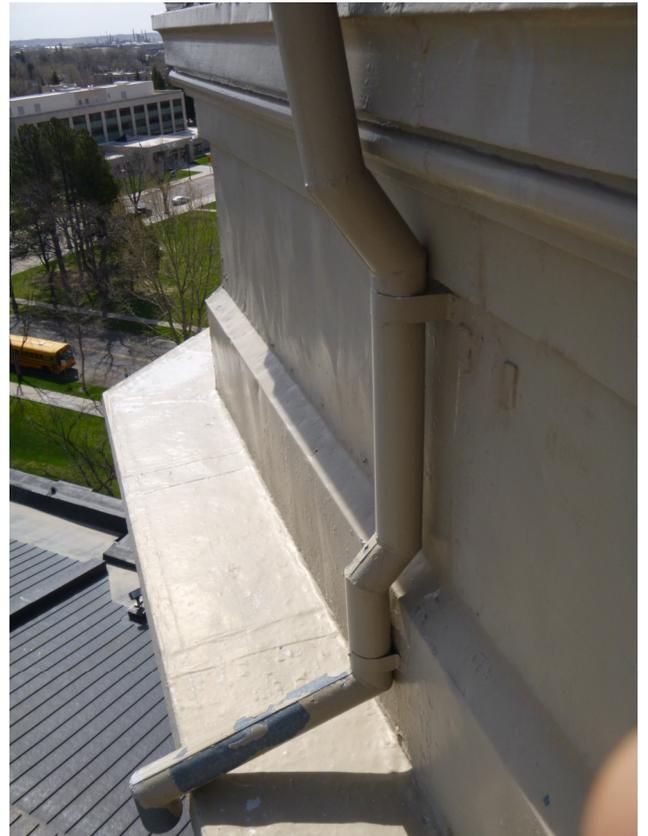


173-120 SheetMetal\_Damaged Punctured 2013-1



173-121 SheetMetal\_Coating Coating Failed 2013-1

173-121 SheetMetal\_Coating Coating Failed 2013-2



173-122 SheetMetal\_Damaged Dented 2013-1

174-92 SheetMetal\_Note Photo-downspout 2013-1



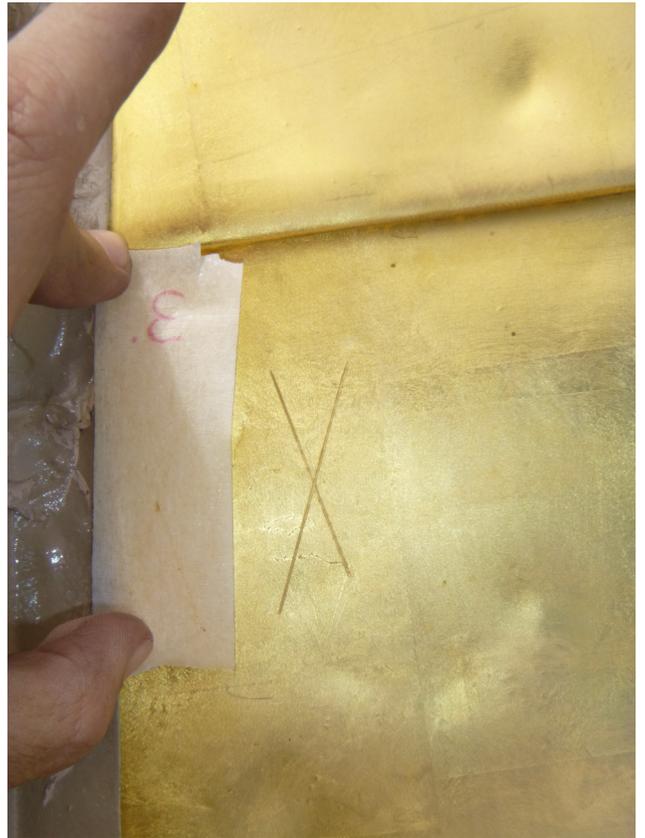
174-108 SheetMetal\_Seam Sealant Failed 2013-1



174-108 SheetMetal\_Seam Sealant Failed 2013-2



174-117 SheetMetal\_Note Photo-adhesion test 3 2013-1



174-117 SheetMetal\_Note Photo-adhesion test 3 2013-2



**175-63 SheetMetal\_Coating Coating Failed 2013-1**



**175-63 SheetMetal\_Coating Coating Failed 2013-2**



**175-63 SheetMetal\_Coating Coating Failed 2013-3**

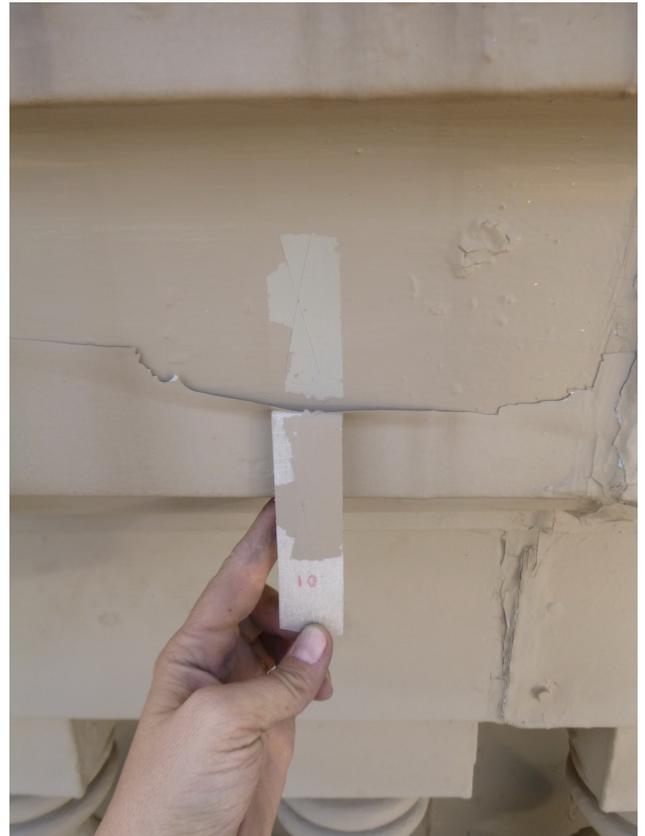


**175-69 SheetMetal\_Coating Coating Failed 2013-1**



175-69 SheetMetal\_Coating Coating Failed 2013-2

175-69 SheetMetal\_Coating Coating Failed 2013-3

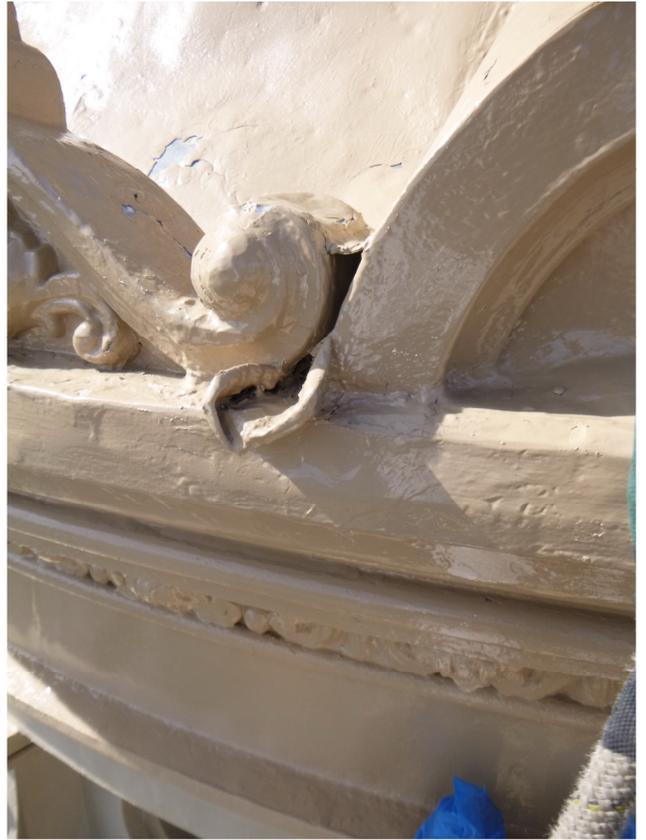


175-74 SheetMetal\_Note Photo-adhesion test 10 2013-1

175-74 SheetMetal\_Note Photo-adhesion test 10 2013-2



175-103 SheetMetal\_Note Photo-scupper both sides of



175-103 SheetMetal\_Note Photo-scupper both sides of



175-103 SheetMetal\_Note Photo-scupper both sides of



175-105 SheetMetal\_Note Photo-silicone 2013-1



175-105 SheetMetal\_Note Photo-silicone 2013-2



175-119 SheetMetal\_Note Photo-traces of gilding at



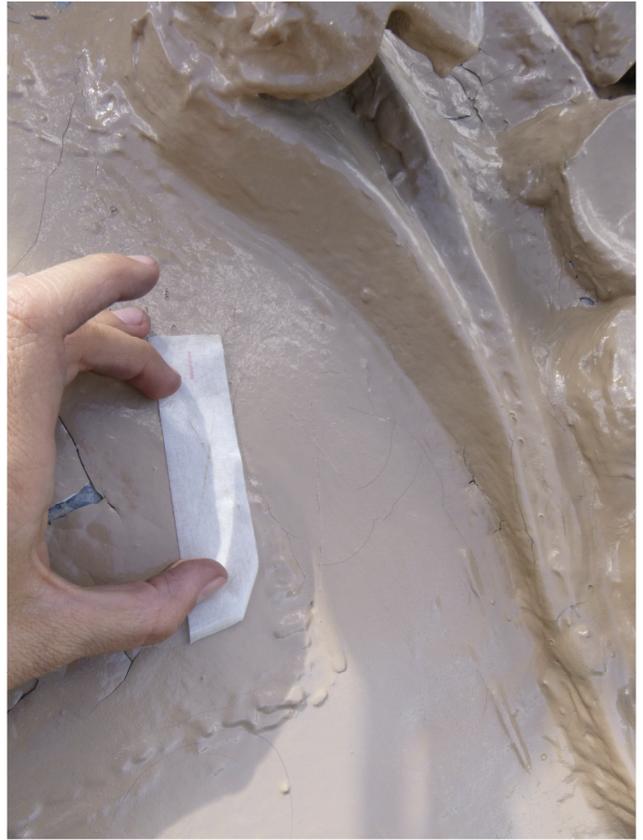
175-119 SheetMetal\_Note Photo-traces of gilding at



175-119 SheetMetal\_Note Photo-traces of gilding at



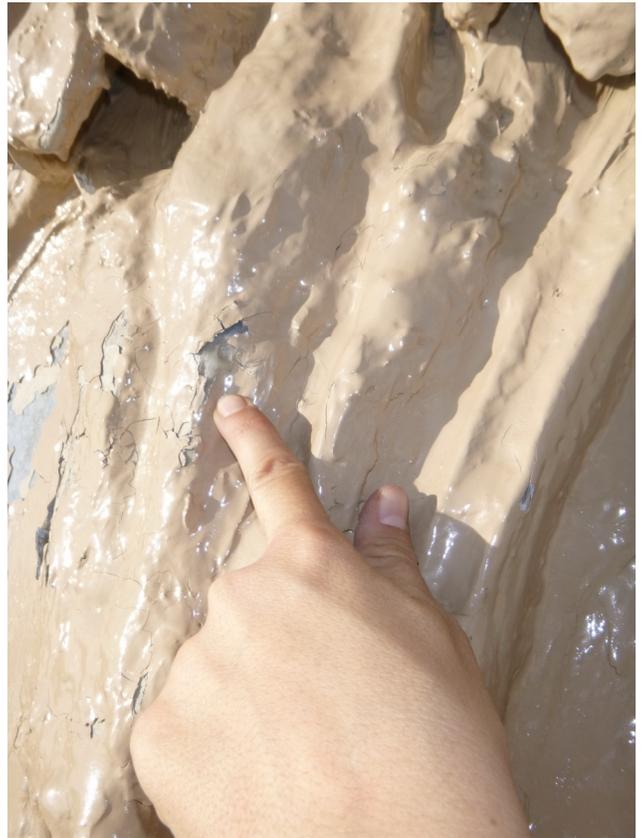
175-120 SheetMetal\_Note Photo-adhesion test1 2013-1



175-120 SheetMetal\_Note Photo-adhesion test1 2013-2



175-121 SheetMetal\_Note Photo-puncture repairs with



175-122 SheetMetal\_Note Photo-coating over damaged



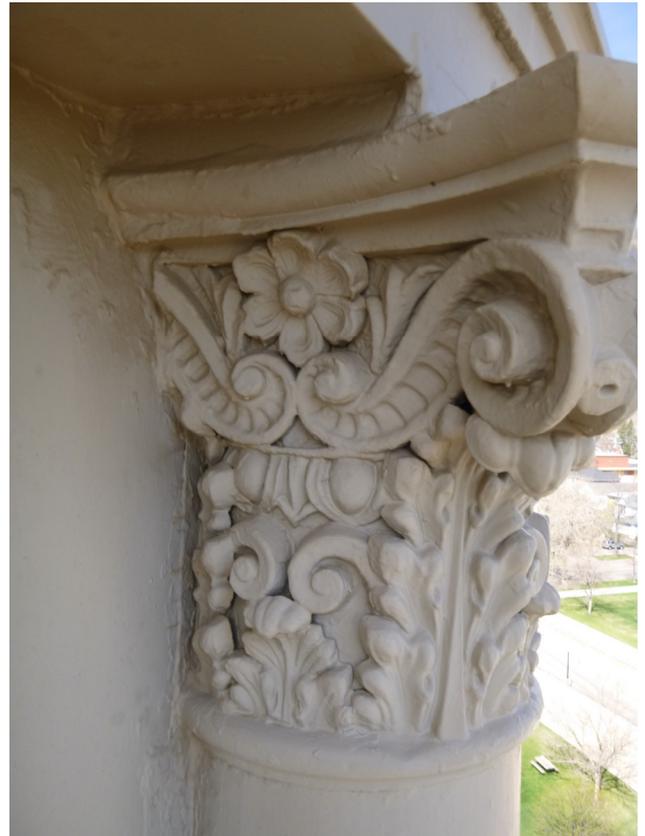
175-122 SheetMetal\_Note Photo-coating over damaged



175-122 SheetMetal\_Note Photo-coating over damaged



176-87 SheetMetal\_Note Photo-capital 2013-1



176-87 SheetMetal\_Note Photo-capital 2013-2



**176-87 SheetMetal\_Note Photo-capital 2013-3**



**176-87 SheetMetal\_Note Photo-capital 2013-4**



**176-106 SheetMetal\_Corrosion Surface 2013-1**



**176-106 SheetMetal\_Corrosion Surface 2013-2**



**176-107 SheetMetal\_Coating Coating Failed 2013-1**



**176-107 SheetMetal\_Coating Coating Failed 2013-2**



**176-107 SheetMetal\_Coating Coating Failed 2013-3**



**177-71 SheetMetal\_Damaged Dented 2013-1**



177-74 SheetMetal\_Coating Coating Failed 2013-1



177-75 SheetMetal\_Note Photo-adhesion test 8 2013-1



177-75 SheetMetal\_Note Photo-adhesion test 8 2013-2



177-77 SheetMetal\_Note Photo-detail ornament 2013-1



177-77 SheetMetal\_Note Photo-detail ornament 2013-2



177-77 SheetMetal\_Note Photo-detail ornament 2013-3



177-79 SheetMetal\_Corrosion Surface 2013-1



177-91 SheetMetal\_Seam Sealant Failed 2013-1



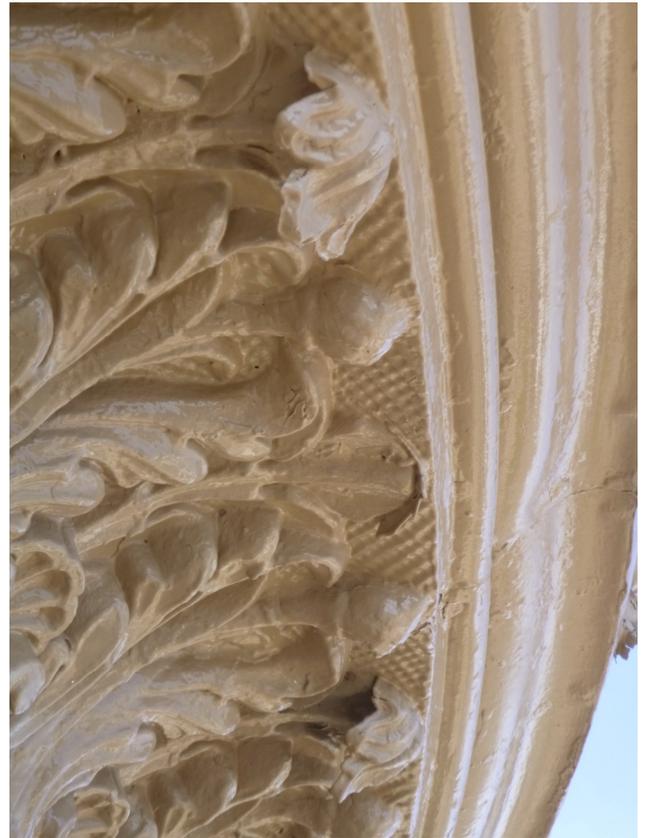
**177-91 SheetMetal\_Seam Sealant Failed 2013-2**



**177-97 SheetMetal\_Corrosion Surface 2013-1**



**178-98 SheetMetal\_Coating Coating Failed 2013-1**



**178-102 SheetMetal\_Unsecured Missing 2013-1**



**178-102 SheetMetal\_Unsecured Missing 2013-2**



**179-69 SheetMetal\_Note Photo-scupper 2013-1**



**185-100 SheetMetal\_Note Photo-matte coating 2013-1**



**185-102 SheetMetal\_Note Photo-glossy coating 2013-1**



**236-53 SheetMetal\_Seam Sealant Failed 2013-1**



**238-56 SheetMetal\_Corrosion Surface 2013-1**



**240-66 SheetMetal\_Coating Coating Failed 2013-1**



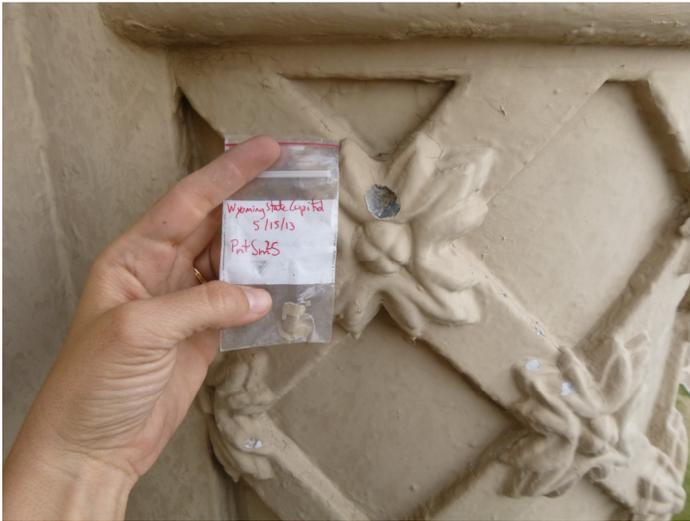
**240-73 SheetMetal\_Coating Coating Failed 2013-1**



241-76 SheetMetal\_Note PntSm 24 2013-1



241-76 SheetMetal\_Note PntSm 24 2013-2



241-77 SheetMetal\_Note PntSm 25 2013-1



242-60 ArchMetal\_Note PntSm 28 2013-1



**242-78 SheetMetal\_Repair Patch Failed 2013-1**

**242-80 SheetMetal\_Note PntSm 23 2013-1**



**242-80 SheetMetal\_Note PntSm 23 2013-2**

**242-88 SheetMetal\_Coating Coating Failed 2013-1**



**242-88 SheetMetal\_Coating Coating Failed 2013-2**



**242-92 SheetMetal\_Coating Coating Sound 2013-1**



**242-94 SheetMetal\_Corrosion Surface 2013-1**



**242-100 SheetMetal\_Coating Coating Failed 2013-1**



**242-100 SheetMetal\_Coating Coating Failed 2013-2**



**243-67 SheetMetal\_Seam Sealant Failed 2013-1**



**243-74 SheetMetal\_Repair Patch Failed 2013-1**



**243-96 SheetMetal\_Corrosion Surface 2013-1**



**243-98 SheetMetal\_Damaged Punctured 2013-1**



**243-112 SheetMetal\_Damaged Dented 2013-1**



**243-112 SheetMetal\_Damaged Dented 2013-2**



**243-118 SheetMetal\_Corrosion Surface 2013-1**



**243-120 SheetMetal\_Damaged Torn 2013-1**



**244-70 SheetMetal\_Damaged Torn 2013-1**



**244-70 SheetMetal\_Damaged Torn 2013-2**



**244-75 SheetMetal\_Coating Coating Failed 2013-1**



**244-75 SheetMetal\_Coating Coating Failed 2013-2**



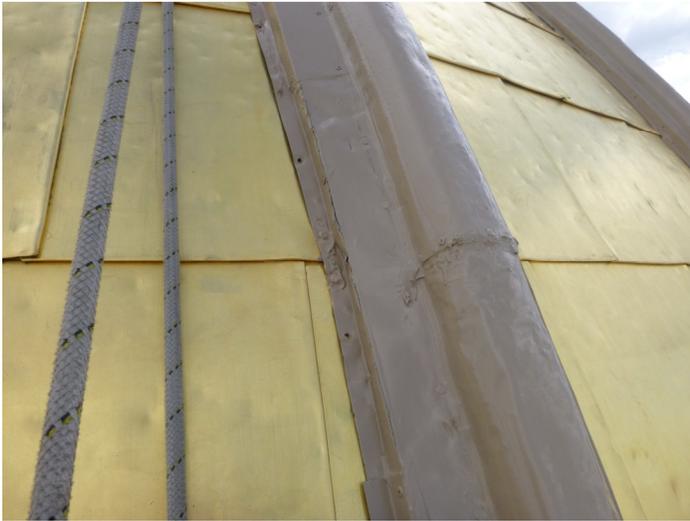
**244-75 SheetMetal\_Coating Coating Failed 2013-3**



**244-105 SheetMetal\_Damaged Torn 2013-1**



**244-108 SheetMetal\_Corrosion Surface 2013-1**



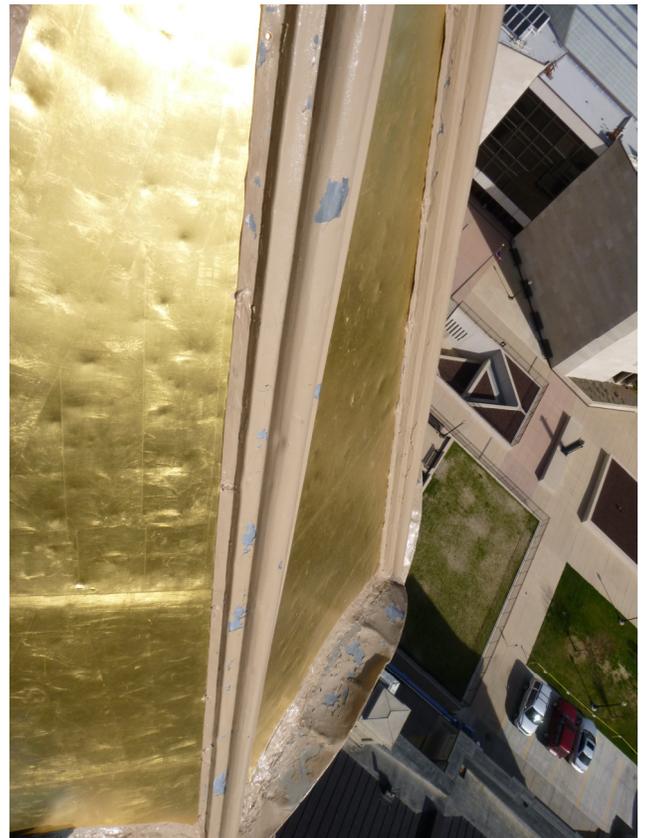
**244-115 SheetMetal\_Damaged Torn 2013-1**



**244-121 SheetMetal\_Damaged Punctured 2013-1**



**244-122 SheetMetal\_Damaged Punctured 2013-1**



**244-131 SheetMetal\_Coating Coating Failed 2013-1**



244-137 SheetMetal\_Coating Coating Failed 2013-1



244-137 SheetMetal\_Coating Coating Failed 2013-2



245-61 SheetMetal\_Coating Coating Failed 2013-1



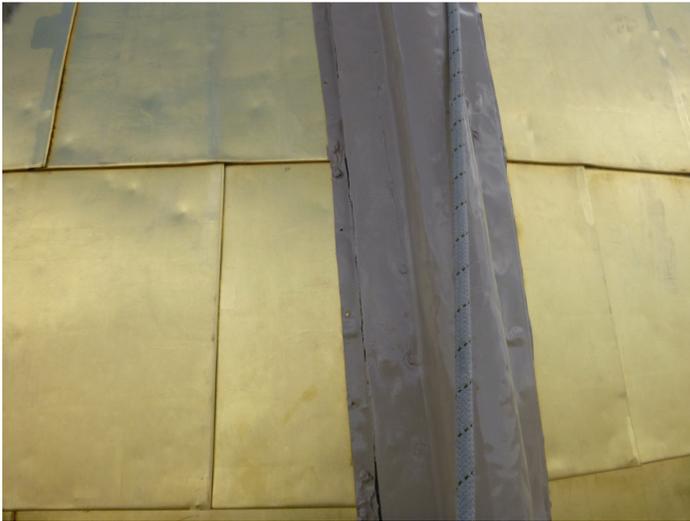
245-82 SheetMetal\_Seam Fastener Failed 2013-1



**245-82 SheetMetal\_Seam Fastener Failed 2013-2**



**245-90 SheetMetal\_Note PntSm 21 2013-1**



**245-111 SheetMetal\_Damaged Torn 2013-1**



**245-119 SheetMetal\_Damaged Punctured 2013-1**



**245-136 SheetMetal\_Seam Solder Failed 2013-1**



**246-65 SheetMetal\_Seam Fastener Failed 2013-1**



**246-65 SheetMetal\_Seam Fastener Failed 2013-2**



**246-80 SheetMetal\_Seam Sealant Failed 2013-1**



**246-80 SheetMetal\_Seam Sealant Failed 2013-2**



**246-83 Wood\_Crack Checking 2013-1**



**246-83 Wood\_Crack Checking 2013-2**



**246-93 SheetMetal\_Coating Coating Failed 2013-1**



**246-94 SheetMetal\_Note PntSm 20 2013-1**



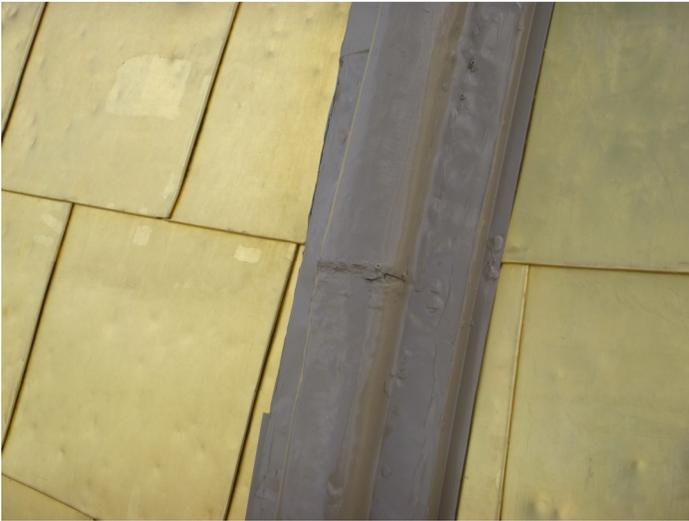
**246-94 SheetMetal\_Note PntSm 20 2013-2**



**246-105 SheetMetal\_Corrosion Surface 2013-1**



**246-107 SheetMetal\_Damaged Punctured 2013-1**



**246-114 SheetMetal\_Seam Fastener Failed 2013-1**



**246-117 SheetMetal\_Damaged Torn 2013-1**



**246-121 SheetMetal\_Damaged Torn 2013-1**



**246-124 SheetMetal\_Coating Coating Failed 2013-1**



246-124 SheetMetal\_Coating Coating Failed 2013-2



246-128 SheetMetal\_Coating Coating Failed 2013-1



246-135 SheetMetal\_Note Photo-traces of gilding 2013-1



246-135 SheetMetal\_Note Photo-traces of gilding 2013-2



246-135 SheetMetal\_Note Photo-traces of gilding 2013-3



247-71 SheetMetal\_Note PntSm 27 2013-1



247-101 SheetMetal\_Note PntSm 17 2013-1



247-101 SheetMetal\_Note PntSm 17 2013-2



247-103 SheetMetal\_Note Misc condition 2013-1



247-108 SheetMetal\_Coating Coating Failed 2013-1



247-108 SheetMetal\_Coating Coating Failed 2013-2



247-108 SheetMetal\_Coating Coating Failed 2013-3



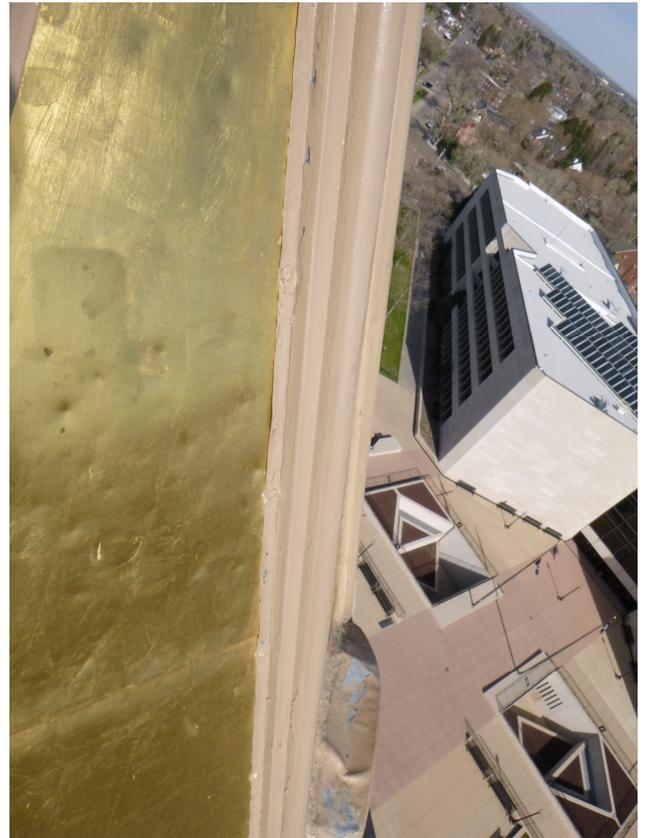
247-108 SheetMetal\_Coating Coating Failed 2013-4



247-118 SheetMetal\_Corrosion Surface 2013-1



247-122 SheetMetal\_Damaged Torn 2013-1



247-131 SheetMetal\_Coating Coating Failed 2013-1



**248-74 SheetMetal\_Repair Patch Failed 2013-1**



**248-93 SheetMetal\_Seam Fastener Failed 2013-1**



**248-104 SheetMetal\_Damaged Dented 2013-1**



**248-117 SheetMetal\_Damaged Torn 2013-1**



**248-121 SheetMetal\_Damaged Torn 2013-1**



**249-56 Wood\_Crack Checking 2013-1**



**249-79 SheetMetal\_Damaged Torn 2013-1**



**249-97 SheetMetal\_Corrosion Surface 2013-1**



249-107 SheetMetal\_Damaged Torn 2013-1



249-119 SheetMetal\_Coating Coating Failed 2013-1



249-119 SheetMetal\_Coating Coating Failed 2013-2



250-87 SheetMetal\_Note PntSm 22 2013-1



**250-87 SheetMetal\_Note PntSm 22 2013-2**



**251-66 SheetMetal\_Coating Coating Failed 2013-1**



**251-75 SheetMetal\_Damaged Punctured 2013-1**



**251-77 SheetMetal\_Repair Patch Failed 2013-1**



**251-93 SheetMetal\_Corrosion Surface 2013-1**



**251-99 SheetMetal\_Note PntSm 18 2013-1**



**252-105 SheetMetal\_Corrosion Surface 2013-1**



**254-55 SheetMetal\_Corrosion Surface 2013-1**



254-56 Wood\_Crack Checking 2013-1



254-67 SheetMetal\_Note PntSm 26 2013-1



254-67 SheetMetal\_Note PntSm 26 2013-2



309-54 ArchMetal\_Coating Coating Failed 2013-1



**309-54 ArchMetal\_Coating Coating Failed 2013-2**



**311-63 SheetMetal\_Coating Coating Failed 2013-1**



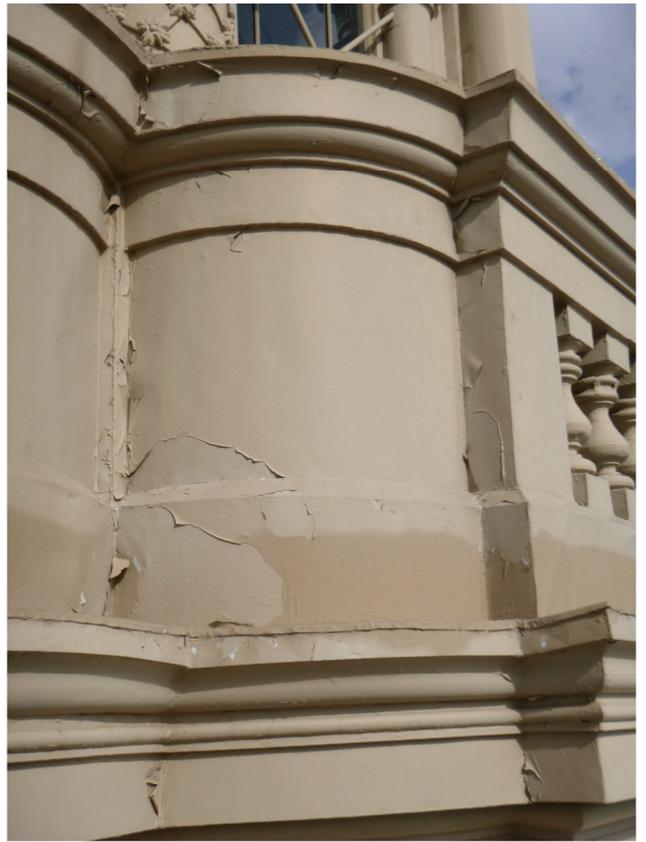
**312-68 SheetMetal\_Coating Coating Failed 2013-1**



**313-53 ArchMetal\_Crack Repair sound 2013-1**



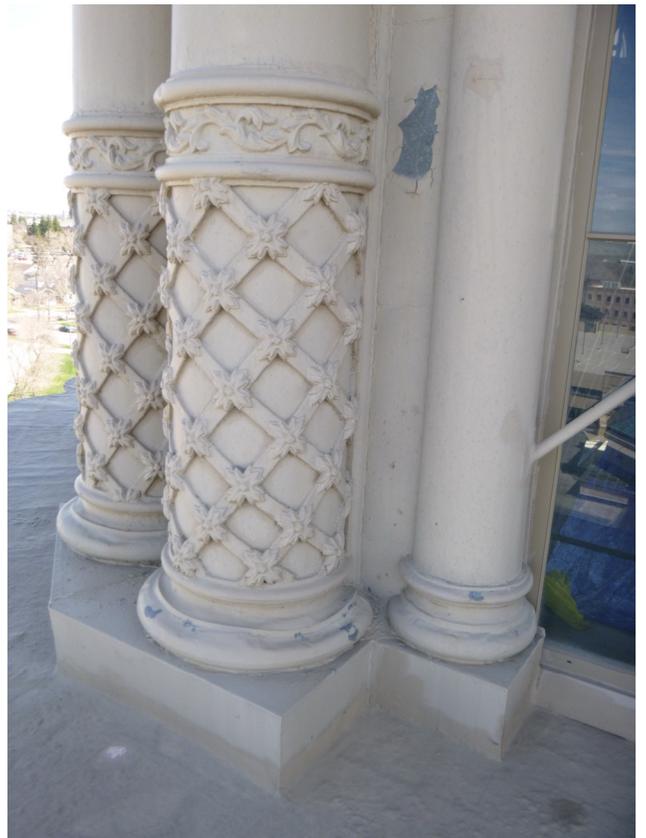
313-66 SheetMetal\_Coating Coating Failed 2013-1



313-71 SheetMetal\_Coating Coating Failed 2013-1



314-76 SheetMetal\_Damaged Dented 2013-1



314-77 SheetMetal\_Coating Coating Failed 2013-1



**314-98 SheetMetal\_Damaged Punctured 2013-1**



**314-99 SheetMetal\_Damaged Punctured 2013-1**



**315-56 SheetMetal\_Coating Coating Failed 2013-1**



**315-67 SheetMetal\_Seam Fastener Failed 2013-1**



**315-80 SheetMetal\_Coating Coating Failed 2013-1**



**315-97 SheetMetal\_Damaged Dented 2013-1**



**316-74 SheetMetal\_Coating Coating Failed 2013-1**



**316-99 Wood\_Unsecured Missing 2013-1**



**316-100 Wood\_Coating Coating Failed 2013-1**



**316-105 SheetMetal\_Damaged Torn 2013-1**



**316-106 SheetMetal\_Coating Coating Failed 2013-1**



**316-106 SheetMetal\_Coating Coating Failed 2013-2**



**316-120 SheetMetal\_Damaged Dented 2013-1**



**317-90 SheetMetal\_Coating Coating Failed 2013-1**



**317-90 SheetMetal\_Coating Coating Failed 2013-2**



**317-90 SheetMetal\_Coating Coating Failed 2013-3**



**317-96 SheetMetal\_Coating Coating Sound 2013-1**



**317-96 SheetMetal\_Coating Coating Sound 2013-2**



**317-96 SheetMetal\_Coating Coating Sound 2013-3**



**317-120 SheetMetal\_Damaged Punctured 2013-1**



**317-121 SheetMetal\_Repair Patch Sound 2013-1**



**318-54 SheetMetal\_Seam Sealant Failed 2013-1**



**318-54 SheetMetal\_Seam Sealant Failed 2013-2**



**318-54 SheetMetal\_Seam Sealant Failed 2013-3**



**318-61 SheetMetal\_Coating Coating Failed 2013-1**



**318-61 SheetMetal\_Coating Coating Failed 2013-2**



**318-61 SheetMetal\_Coating Coating Failed 2013-3**



**318-64 SheetMetal\_Coating Coating Failed 2013-1**



318-69 SheetMetal\_Note Photo-water ponding at ledge



318-69 SheetMetal\_Note Photo-water ponding at ledge



318-69 SheetMetal\_Note Photo-water ponding at ledge



318-71 SheetMetal\_Coating Coating Failed 2013-1



318-71 SheetMetal\_Coating Coating Failed 2013-2



318-71 SheetMetal\_Coating Coating Failed 2013-3



318-74 SheetMetal\_Coating Coating Failed 2013-1



318-74 SheetMetal\_Coating Coating Failed 2013-2



**318-83 SheetMetal\_Coating Coating Failed 2013-1**



**318-83 SheetMetal\_Coating Coating Failed 2013-2**



**318-85 Wood\_Coating Coating Failed 2013-1**



**318-88 SheetMetal\_Coating Coating Failed 2013-1**



**318-88 SheetMetal\_Coating Coating Failed 2013-2**



**318-91 SheetMetal\_Coating Coating Failed 2013-1**



**318-91 SheetMetal\_Coating Coating Failed 2013-2**



**318-91 SheetMetal\_Coating Coating Failed 2013-3**



**318-93 SheetMetal\_Coating Coating Failed 2013-1**



**318-93 SheetMetal\_Coating Coating Failed 2013-2**



**318-98 SheetMetal\_Coating Coating Failed 2013-1**



**318-98 SheetMetal\_Coating Coating Failed 2013-2**



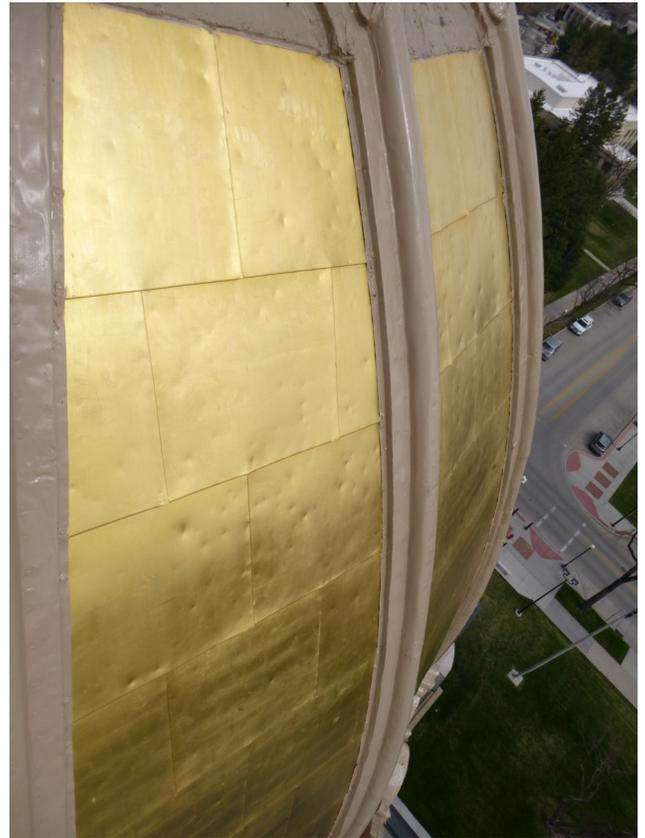
**318-98 Wood\_Deteriorated Weathered 2013-1**



**318-104 SheetMetal\_Corrosion Surface 2013-1**



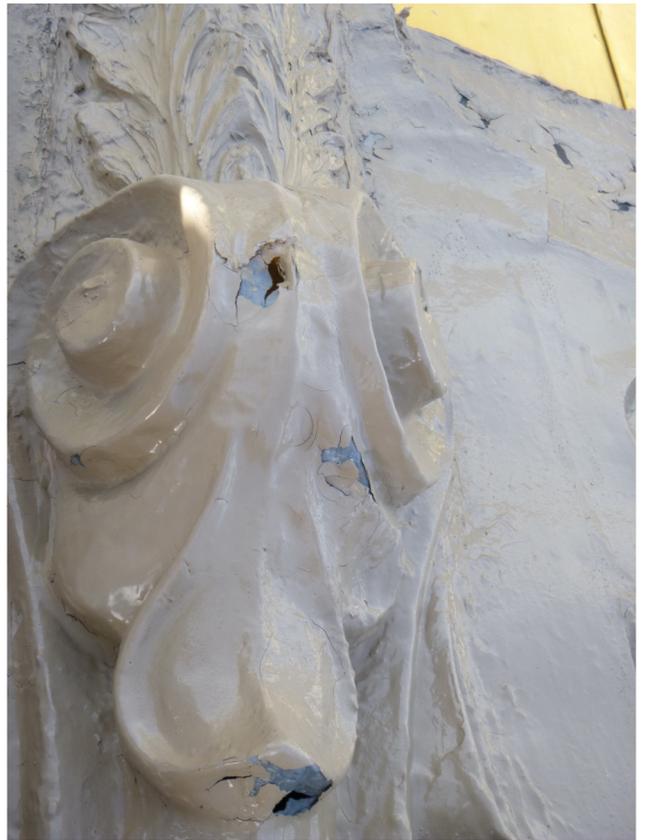
**318-107 SheetMetal\_Damaged Torn 2013-1**



**318-117 SheetMetal\_Damaged Dented 2013-1**



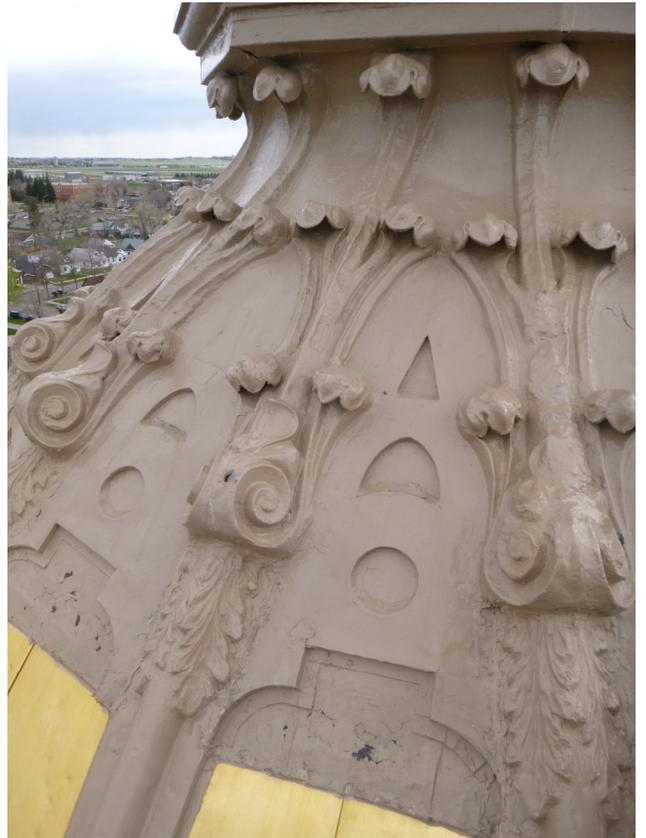
**318-118 SheetMetal\_Seam Solder Failed 2013-1**



**318-119 SheetMetal\_Damaged Punctured 2013-1**



**318-122 SheetMetal\_Coating Coating Failed 2013-1**



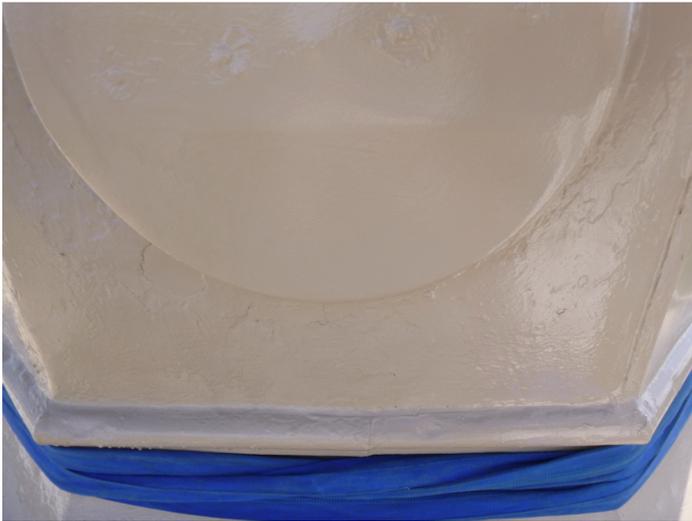
**318-122 SheetMetal\_Note Photo-ornament 2013-1**



318-122 SheetMetal\_Note Photo-ornament 2013-2



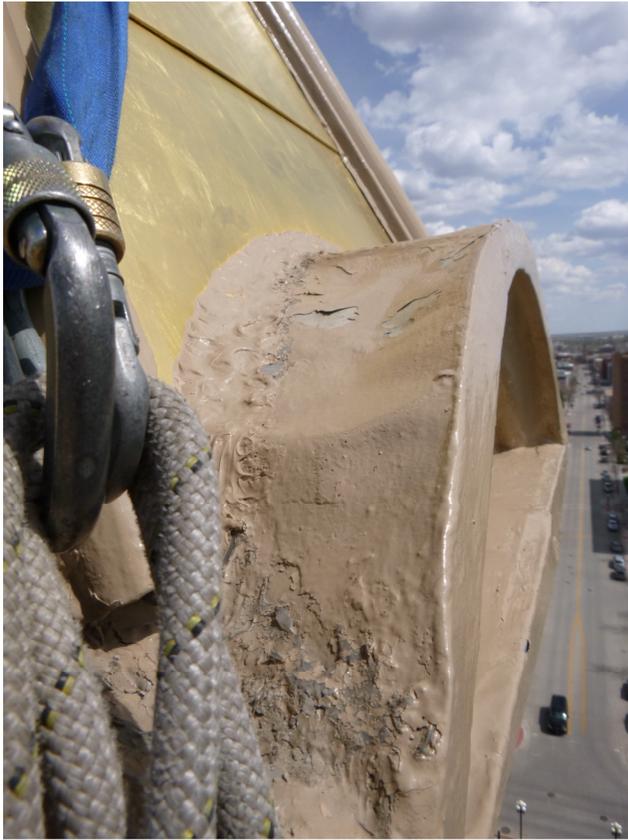
318-127 SheetMetal\_Coating Coating Failed 2013-1



318-127 SheetMetal\_Coating Coating Failed 2013-2



318-130 SheetMetal\_Coating Coating Failed 2013-1



**318-130 SheetMetal\_Coating Coating Failed 2013-2**



**319-58 ArchMetal\_Crack Repair failed 2013-1**



**319-58 ArchMetal\_Crack Repair failed 2013-2**



**319-104 SheetMetal\_Unsecured Loose 2013-1**



**319-104 SheetMetal\_Unsecured Loose 2013-2**



**319-105 SheetMetal\_Corrosion Surface 2013-1**



**319-108 SheetMetal\_Seam Solder Failed 2013-1**



**319-113 SheetMetal\_Seam Solder Failed 2013-1**



**319-121 SheetMetal\_Damaged Dented 2013-4**



**319-121 SheetMetal\_Damaged Dented 2013-5**



**319-125 SheetMetal\_Note PntSm 5 2013-1**



**319-125 SheetMetal\_Note PntSm 5 2013-2**



**320-103 SheetMetal\_Damaged Torn 2013-1**



**320-103 SheetMetal\_Damaged Torn 2013-2**



**320-103 SheetMetal\_Unsecured Missing 2013-1**



**320-104 SheetMetal\_Seam Solder Failed 2013-1**



**320-120 SheetMetal\_Damaged Dented 2013-1**



**321-57 Wood\_Coating Coating Failed 2013-1**



**321-57 Wood\_Coating Coating Failed 2013-2**



**321-74 SheetMetal\_Coating Coating Failed 2013-1**



**321-82 SheetMetal\_Seam Fastener Failed 2013-1**



**321-88 SheetMetal\_Seam Fastener Failed 2013-1**



**321-88 SheetMetal\_Seam Fastener Failed 2013-2**



**321-103 SheetMetal\_Damaged Torn 2013-1**



**321-103 SheetMetal\_Damaged Torn 2013-2**



**321-117 SheetMetal\_Note Photo-rib 2013-1**



**321-117 SheetMetal\_Note Photo-rib 2013-2**



**321-117 SheetMetal\_Note Photo-rib 2013-3**



322-73 SheetMetal\_Note Photo-scupper 2013-1



322-74 SheetMetal\_Repair Patch Sound 2013-1



322-77 SheetMetal\_Coating Coating Failed 2013-1



322-79 SheetMetal\_Coating Coating Failed 2013-1



**322-99 SheetMetal\_Damaged Torn 2013-1**



**322-105 SheetMetal\_Damaged Torn 2013-1**



**322-108 SheetMetal\_Seam Solder Failed 2013-1**



**322-112 SheetMetal\_Note PntSm 10 2013-1**



323-66 SheetMetal\_Coating Coating Failed 2013-1



323-72 SheetMetal\_Coating Coating Failed 2013-1



323-86 SheetMetal\_Unsecured Missing 2013-1



323-97 SheetMetal\_Corrosion Surface 2013-1



323-100 SheetMetal\_Coating Coating Failed 2013-1



323-105 SheetMetal\_Corrosion Surface 2013-1



325-63 SheetMetal\_Coating Coating Failed 2013-1



325-63 SheetMetal\_Coating Coating Failed 2013-2



**325-63 SheetMetal\_Coating Coating Failed 2013-3**



**328-54 ArchMetal\_Coating Coating Failed 2013-1**



**328-54 ArchMetal\_Coating Coating Failed 2013-2**



**384-62 SheetMetal\_Coating Coating Failed 2013-1**



**384-62 SheetMetal\_Coating Coating Failed 2013-2**



**385-107 SheetMetal\_Coating Coating Failed 2013-1**



**385-107 SheetMetal\_Coating Coating Failed 2013-2**



**386-73 SheetMetal\_Coating Coating Failed 2013-1**



**386-97 SheetMetal\_Corrosion Surface 2013-1**



**386-103 SheetMetal\_Note PntSm 16 2013-1**



**386-104 SheetMetal\_Note PntSm 15 2013-1**



**387-74 SheetMetal\_Damaged Dented 2013-1**



**387-78 SheetMetal\_Coating Coating Failed 2013-1**



**387-78 SheetMetal\_Coating Coating Failed 2013-2**



**387-90 SheetMetal\_Coating Coating Failed 2013-1**



**387-90 SheetMetal\_Coating Coating Failed 2013-2**



**387-105 SheetMetal\_Note PntSm 14 2013-1**



**387-109 SheetMetal\_Note PntSm 11 2013-1**



**388-101 SheetMetal\_Coating Coating Failed 2013-1**



**388-101 SheetMetal\_Coating Coating Failed 2013-2**



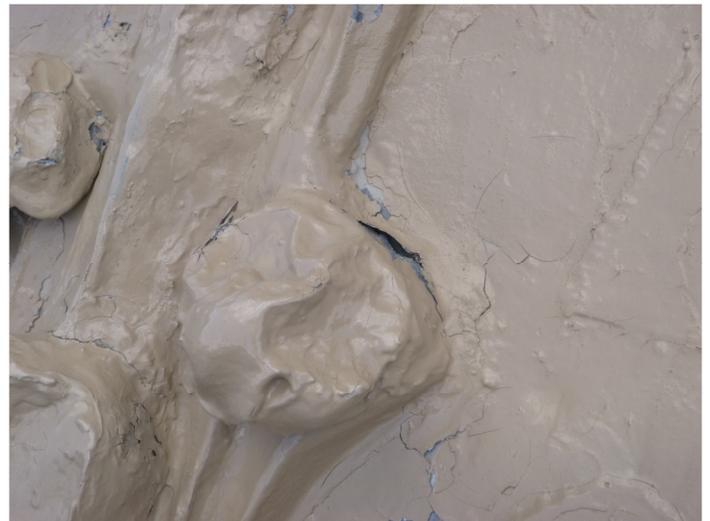
**389-99 SheetMetal\_Damaged Torn 2013-1**



**389-104 SheetMetal\_Damaged Dented 2013-1**



**389-107 SheetMetal\_Note PntSm 13 2013-1**



**389-121 SheetMetal\_Damaged Torn 2013-1**



**390-70 SheetMetal\_Damaged Torn 2013-1**



**390-118 SheetMetal\_Corrosion Surface 2013-1**



**390-121 SheetMetal\_Corrosion Surface 2013-1**



**390-130 SheetMetal\_Corrosion Surface 2013-1**



**391-74 SheetMetal\_Note Photo-scupper 2013-1**



**391-84 Wood\_Crack Checking 2013-1**



**391-106 SheetMetal\_Damaged Torn 2013-1**



**391-122 SheetMetal\_Damaged Punctured 2013-1**



**391-124 SheetMetal\_Damaged Dented 2013-1**

**391-128 SheetMetal\_Coating Coating Failed 2013-1**



**391-131 SheetMetal\_SoilStain Guano 2013-1**

**392-89 SheetMetal\_Seam Sealant Failed 2013-1**



**392-93 SheetMetal\_Seam Sealant Failed 2013-1**



**392-104 SheetMetal\_Damaged Punctured 2013-1**



**392-108 SheetMetal\_Note PntSm 12 2013-1**



**392-118 SheetMetal\_Damaged Torn 2013-1**



**392-121 SheetMetal\_Damaged Torn 2013-1**



**393-102 SheetMetal\_Note Misc condition 2013-1**



**393-103 SheetMetal\_Note Photo-scuppers 2013-1**



**393-107 SheetMetal\_Corrosion Surface 2013-1**



**393-118 SheetMetal\_Corrosion Surface 2013-1**



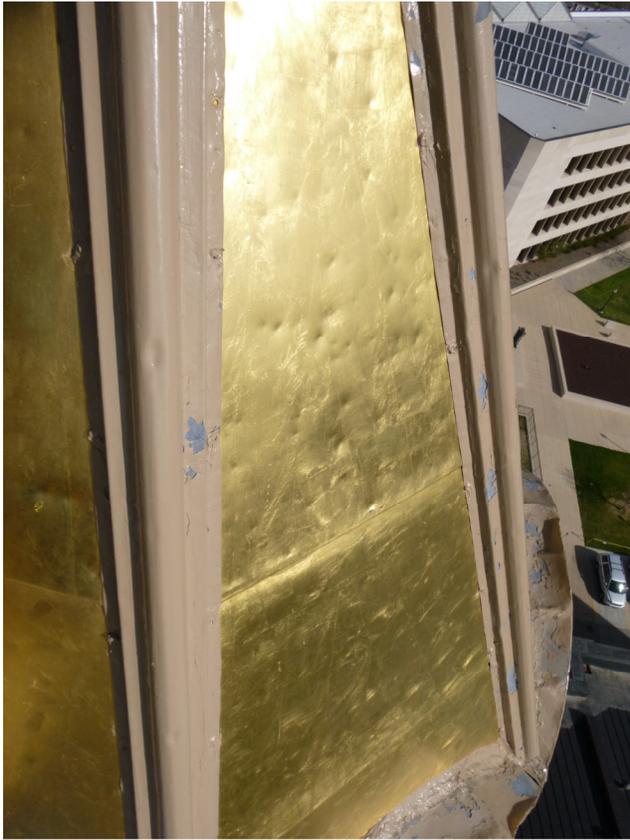
**393-119 SheetMetal\_Note PntSm 9 2013-1**



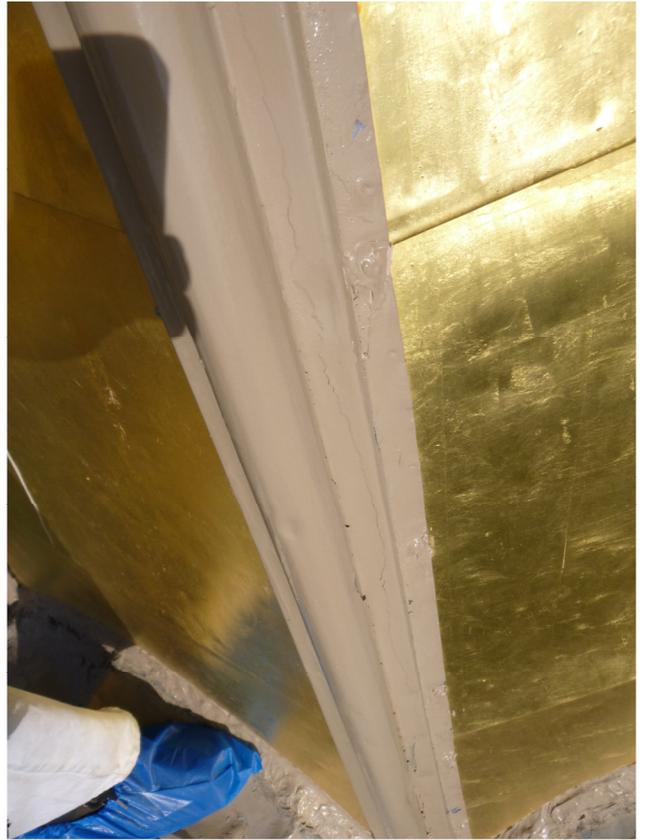
**393-120 SheetMetal\_Damaged Punctured 2013-1**



**393-122 SheetMetal\_Damaged Punctured 2013-1**



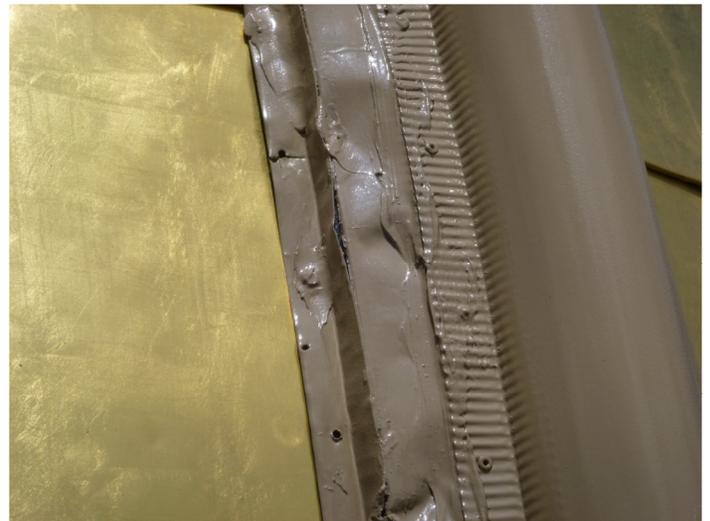
393-132 SheetMetal\_Coating Coating Failed 2013-1



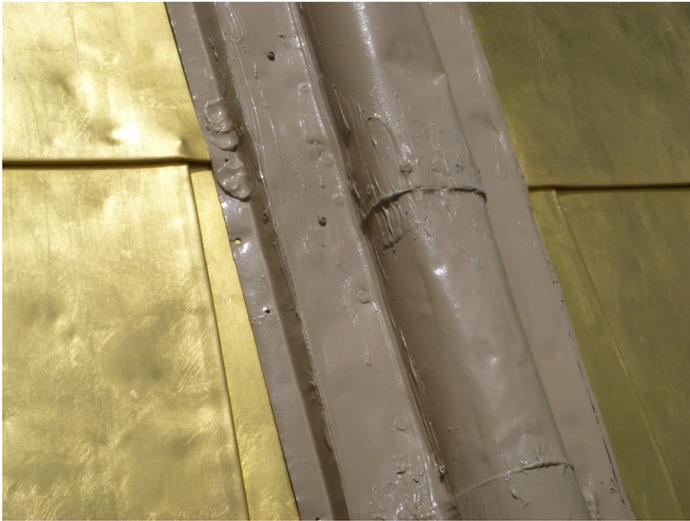
393-132 SheetMetal\_Coating Coating Failed 2013-2



393-132 SheetMetal\_Coating Coating Failed 2013-3



394-111 SheetMetal\_Damaged Torn 2013-1



**394-114 SheetMetal\_Damaged Torn 2013-1**



**394-120 SheetMetal\_Damaged Torn 2013-1**



**394-121 SheetMetal\_Note PntSm 7 2013-1**



**395-74 SheetMetal\_Damaged Dented 2013-1**



**395-84 SheetMetal\_Unsecured Loose 2013-1**



**395-86 SheetMetal\_Damaged Torn 2013-1**



**395-119 SheetMetal\_Damaged Torn 2013-1**



**395-123 SheetMetal\_Note PntSm 8 2013-1**



**396-105 SheetMetal\_Corrosion Surface 2013-1**



**397-97 SheetMetal\_Corrosion Surface 2013-1**



**397-99 SheetMetal\_Damaged Torn 2013-1**



**455-78 SheetMetal\_Coating Coating Failed 2013-1**



**455-78 SheetMetal\_Coating Coating Failed 2013-2**



**456-69 SheetMetal\_Coating Coating Failed 2013-1**



**456-69 SheetMetal\_Coating Coating Failed 2013-2**



**456-73 SheetMetal\_Damaged Dented 2013-1**



**456-73 SheetMetal\_Damaged Dented 2013-2**



**456-75 SheetMetal\_Repair Patch Failed 2013-1**



**456-85 SheetMetal\_Coating Coating Failed 2013-1**



**456-85 SheetMetal\_Coating Coating Failed 2013-2**



**456-93 SheetMetal\_Coating Coating Failed 2013-1**



**456-97 SheetMetal\_Corrosion Surface 2013-1**



**456-99 SheetMetal\_Damaged Torn 2013-1**



**456-100 SheetMetal\_Coating Coating Failed 2013-1**



**456-100 SheetMetal\_Coating Coating Failed 2013-2**



**456-120 SheetMetal\_Damaged Torn 2013-1**



**457-70 SheetMetal\_Damaged Torn 2013-1**



**457-75 SheetMetal\_Damaged Dented 2013-1**



**457-82 SheetMetal\_Seam Sealant Failed 2013-1**



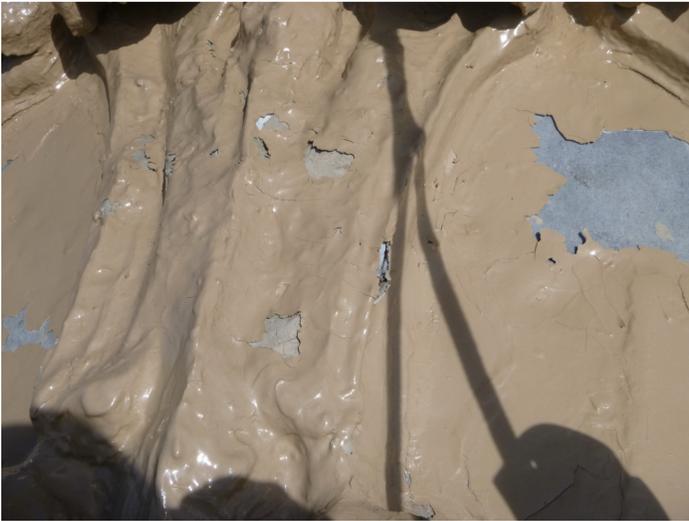
**457-103 SheetMetal\_Note Photo-scuppers 2013-1**



**457-107 SheetMetal\_Damaged Torn 2013-1**



**457-119 SheetMetal\_Damaged Torn 2013-1**



**457-121 SheetMetal\_Damaged Torn 2013-1**



**458-122 SheetMetal\_Damaged Punctured 2013-1**



**458-122 SheetMetal\_Damaged Punctured 2013-2**



**459-54 SheetMetal\_Seam Sealant Failed 2013-1**



**459-83 Wood\_Crack Checking 2013-1**



**459-83 Wood\_Crack Checking 2013-2**



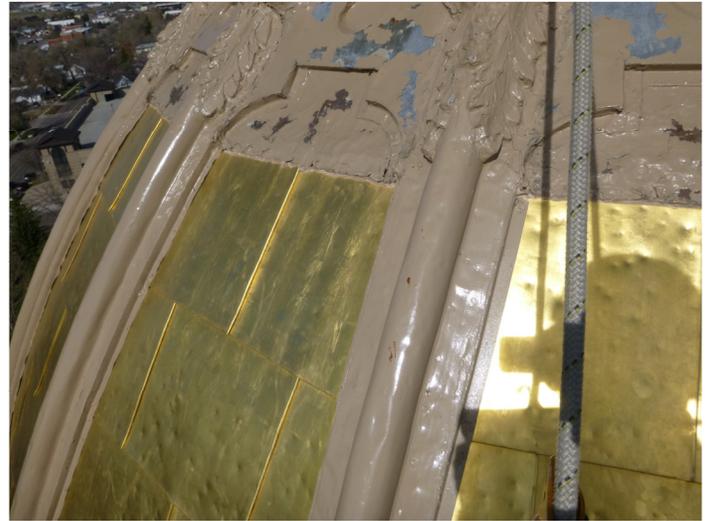
**459-99 Wood\_Crack Checking 2013-1**



**459-102 SheetMetal\_Note Misc condition 2013-1**



**459-106 SheetMetal\_Damaged Torn 2013-1**



**459-116 SheetMetal\_Corrosion Surface 2013-1**



**459-121 SheetMetal\_Damaged Torn 2013-1**



**459-123 SheetMetal\_Damaged Dented 2013-1**



**459-125 SheetMetal\_Coating Coating Failed 2013-1**

**459-125 SheetMetal\_Coating Coating Failed 2013-2**

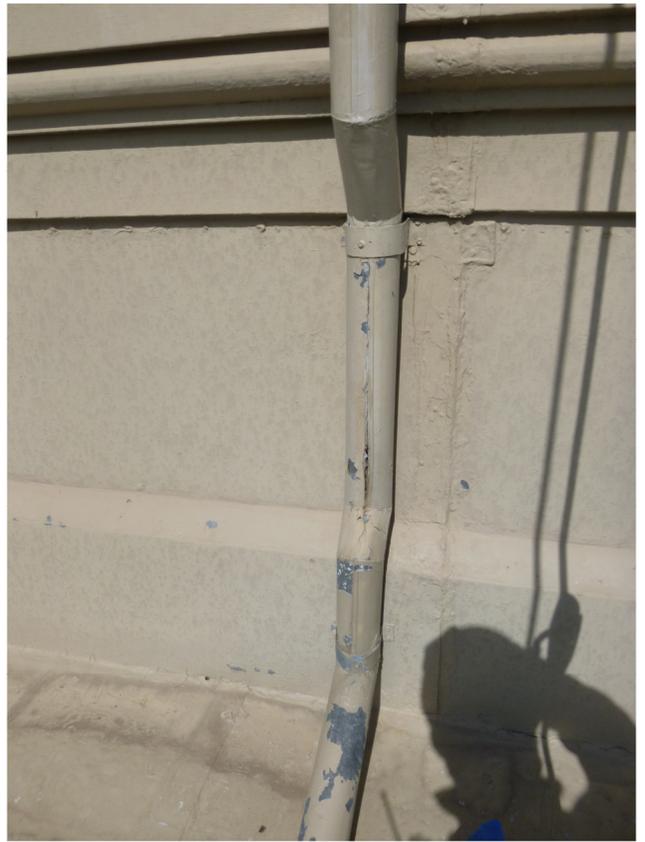


**459-125 SheetMetal\_Coating Coating Failed 2013-3**

**460-70 SheetMetal\_Damaged Torn 2013-1**



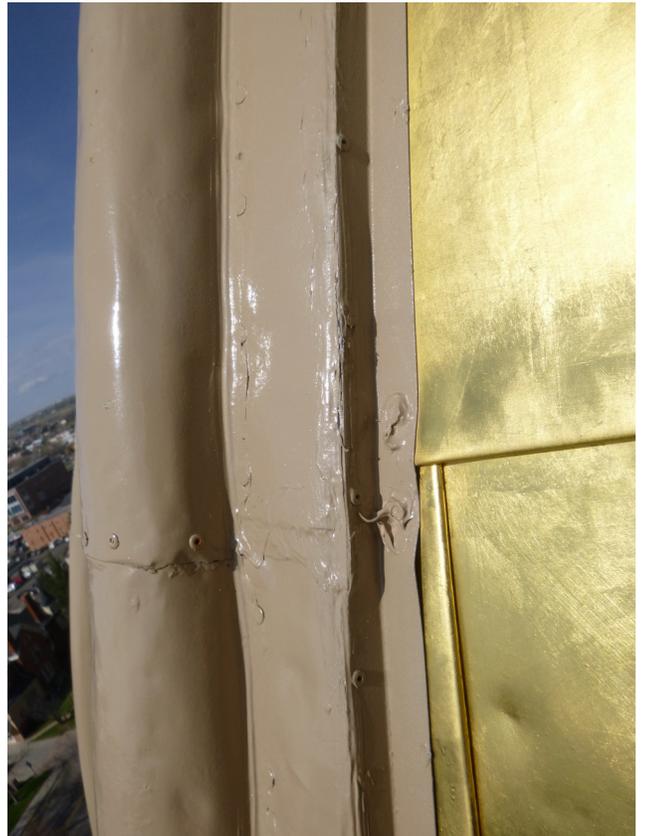
**460-92 SheetMetal\_Coating Coating Failed 2013-1**



**460-93 SheetMetal\_Seam Folded Failed 2013-1**



**460-105 SheetMetal\_Corrosion Surface 2013-1**



**460-114 SheetMetal\_Damaged Torn 2013-1**



**460-120 SheetMetal\_Damaged Torn 2013-1**



**461-108 SheetMetal\_Coating Coating Failed 2013-1**



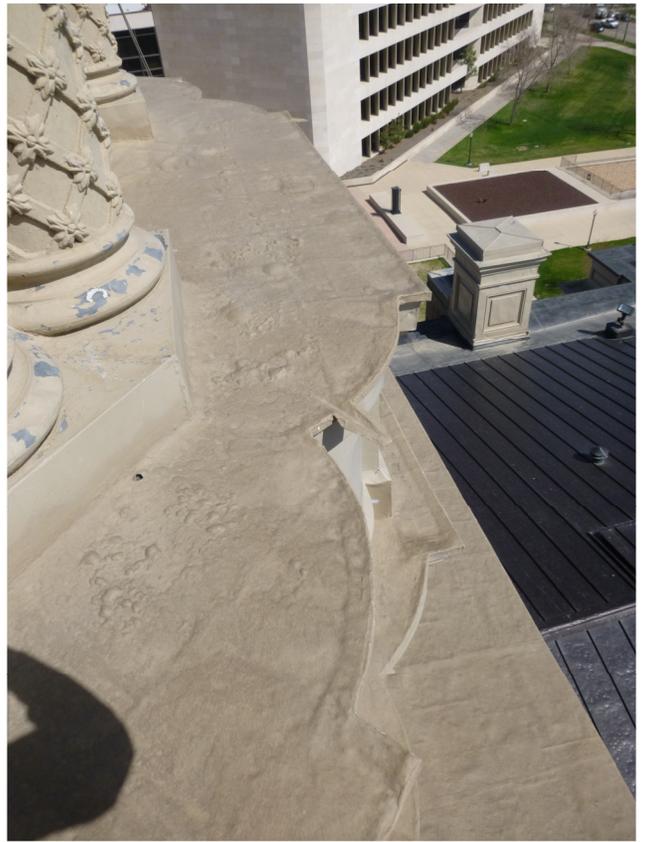
**461-108 SheetMetal\_Coating Coating Failed 2013-2**



**461-121 SheetMetal\_Corrosion Surface 2013-1**



461-122 SheetMetal\_Coating Coating Failed 2013-1



462-73 SheetMetal\_Note Photo-scupper 2013-1



462-97 SheetMetal\_Corrosion Surface 2013-1



462-99 Wood\_Crack Checking 2013-1



**462-104 SheetMetal\_Damaged Torn 2013-1**



**462-107 SheetMetal\_Corrosion Surface 2013-1**



**462-119 SheetMetal\_Corrosion Surface 2013-1**



**463-83 SheetMetal\_Seam Fastener Failed 2013-1**



**464-66 SheetMetal\_Coating Coating Failed 2013-1**



**464-74 SheetMetal\_Damaged Torn 2013-1**



**464-77 SheetMetal\_Repair Patch Failed 2013-1**



**464-102 SheetMetal\_Unsecured Missing 2013-1**



**464-105 SheetMetal\_Corrosion Surface 2013-1**



**465-98 SheetMetal\_Damaged Torn 2013-1**



**465-104 SheetMetal\_Damaged Torn 2013-1**



**465-108 SheetMetal\_Damaged Torn 2013-1**



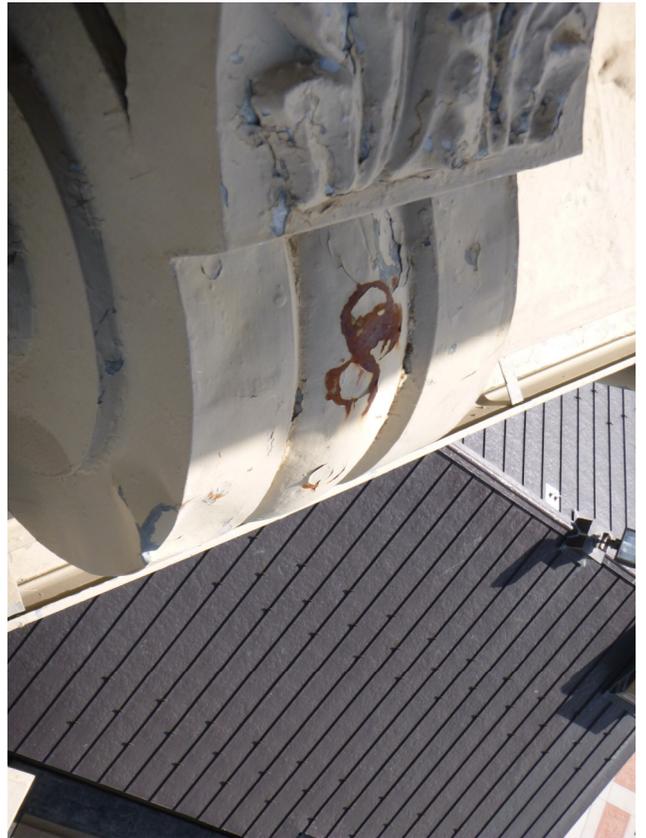
523-98 SheetMetal\_Damaged Torn 2013-1



524-66 SheetMetal\_Coating Coating Failed 2013-1



524-71 SheetMetal\_Coating Coating Failed 2013-1



525-96 SheetMetal\_Corrosion Surface 2013-1



**525-99 SheetMetal\_Coating Coating Failed 2013-1**



**526-82 SheetMetal\_Seam Fastener Failed 2013-1**



**526-87 SheetMetal\_Seam Fastener Failed 2013-1**



**526-91 SheetMetal\_Coating Coating Failed 2013-1**



**526-91 SheetMetal\_Coating Coating Failed 2013-2**



**526-91 SheetMetal\_Coating Coating Failed 2013-3**



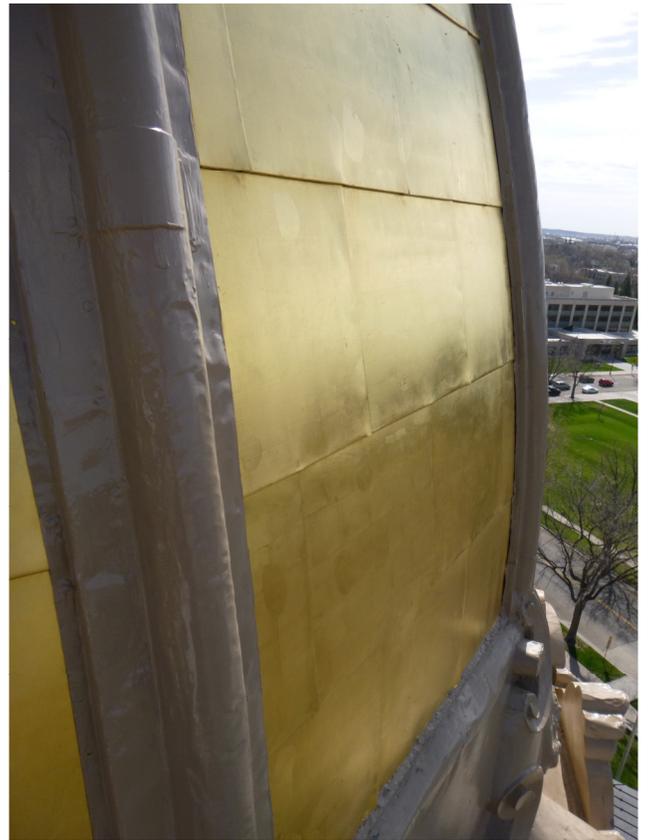
**526-98 SheetMetal\_Damaged Torn 2013-1**



**526-103 SheetMetal\_Unsecured Missing 2013-1**



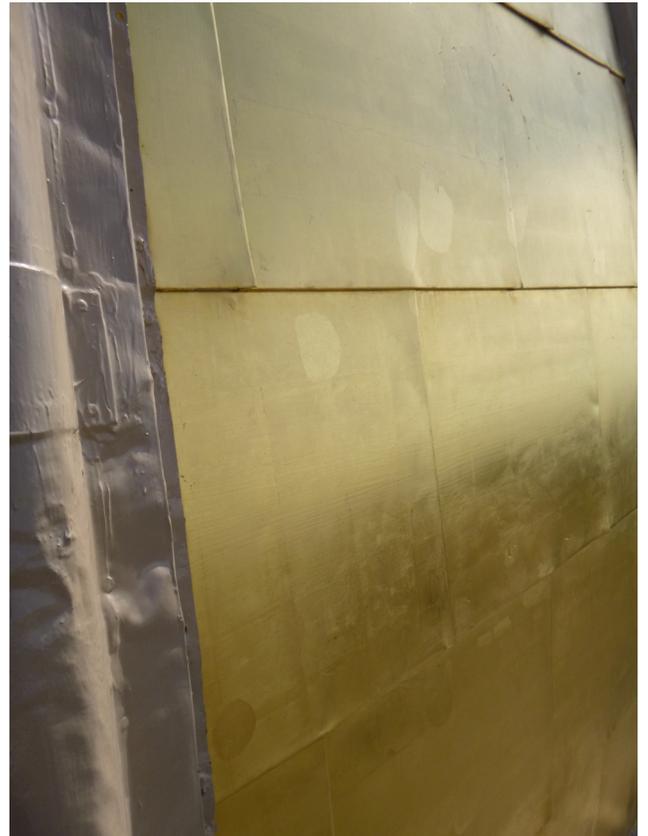
526-103 SheetMetal\_Unsecured Missing 2013-2



526-111 SheetMetal\_Note Photo-touch up gilding 2013-1



526-111 SheetMetal\_Note Photo-touch up gilding 2013-2



526-111 SheetMetal\_Note Photo-touch up gilding 2013-3



**526-111 SheetMetal\_Note Photo-touch up gilding 2013-4**



**527-93 SheetMetal\_Coating Coating Failed 2013-1**



**527-93 SheetMetal\_Coating Coating Failed 2013-2**



**527-99 Wood\_Coating Coating Failed 2013-1**



**527-119 SheetMetal\_Damaged Torn 2013-1**



**527-123 SheetMetal\_Coating Coating Failed 2013-1**



**527-129 SheetMetal\_Damaged Dented 2013-1**



**527-129 SheetMetal\_Damaged Dented 2013-2**



**528-104 SheetMetal\_Corrosion Surface 2013-1**



**528-121 SheetMetal\_Repair Patch Sound 2013-1**



**528-129 SheetMetal\_Note PntSm 3 2013-1**



**529-83 SheetMetal\_Coating Coating Failed 2013-1**



**529-83 SheetMetal\_Coating Coating Failed 2013-2**



**529-84 Wood\_Coating Coating Failed 2013-1**



**529-88 SheetMetal\_Coating Coating Failed 2013-1**



**529-95 SheetMetal\_Note Photo-downspout 2013-1**



**529-97 SheetMetal\_Coating Coating Failed 2013-1**



**529-97 SheetMetal\_Coating Coating Failed 2013-2**



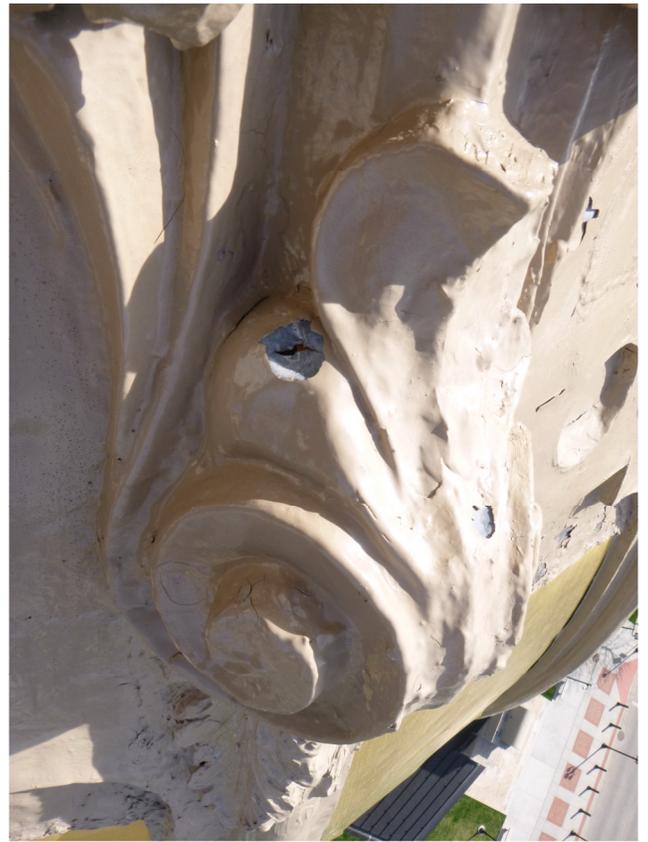
**529-103 SheetMetal\_Unsecured Missing 2013-1**



**529-105 SheetMetal\_Corrosion Surface 2013-1**



**529-108 SheetMetal\_Seam Solder Failed 2013-1**



**529-119 SheetMetal\_Damaged Torn 2013-1**



**529-120 SheetMetal\_Coating Coating Failed 2013-1**



**529-122 SheetMetal\_Damaged Torn 2013-1**



**529-123 SheetMetal\_Seam Folded Failed 2013-1**



**529-124 SheetMetal\_Damaged Dented 2013-1**



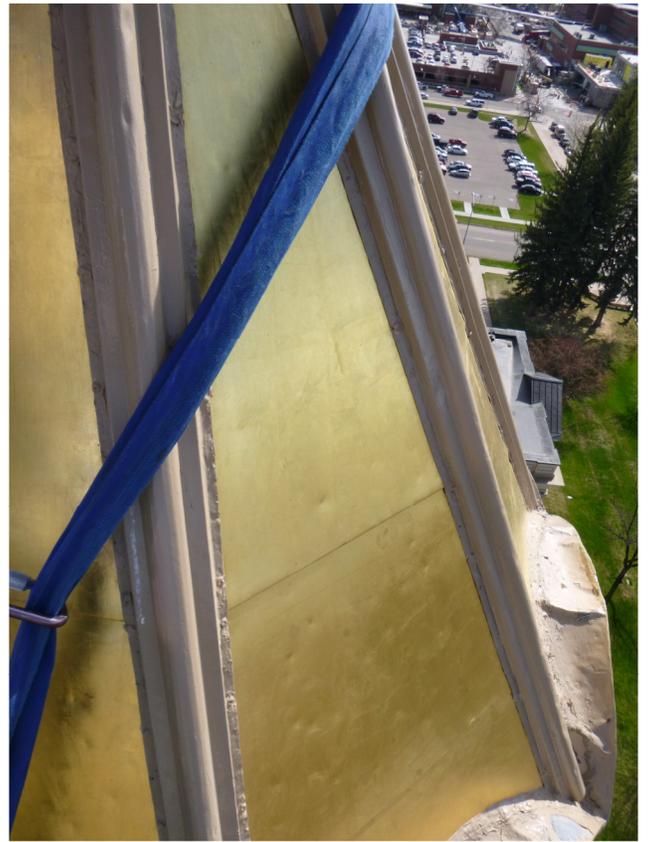
**529-129 SheetMetal\_Coating Coating Failed 2013-1**



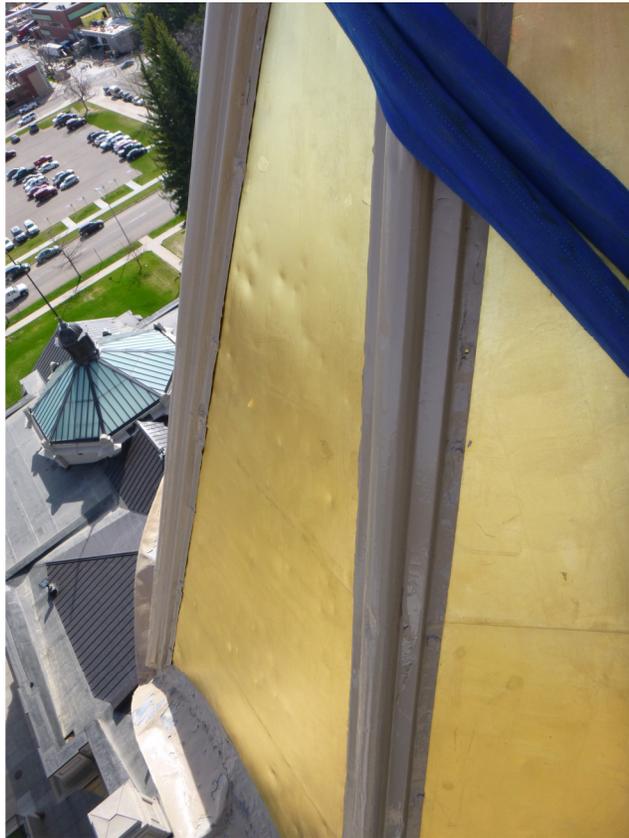
**529-129 SheetMetal\_Note PntSm 4 2013-1**



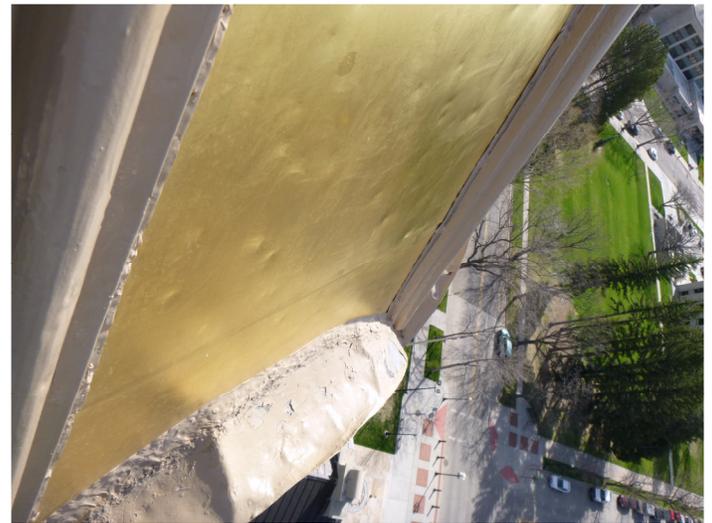
**529-129 SheetMetal\_Note PntSm 4 2013-2**



**529-131 SheetMetal\_Damaged Dented 2013-1**



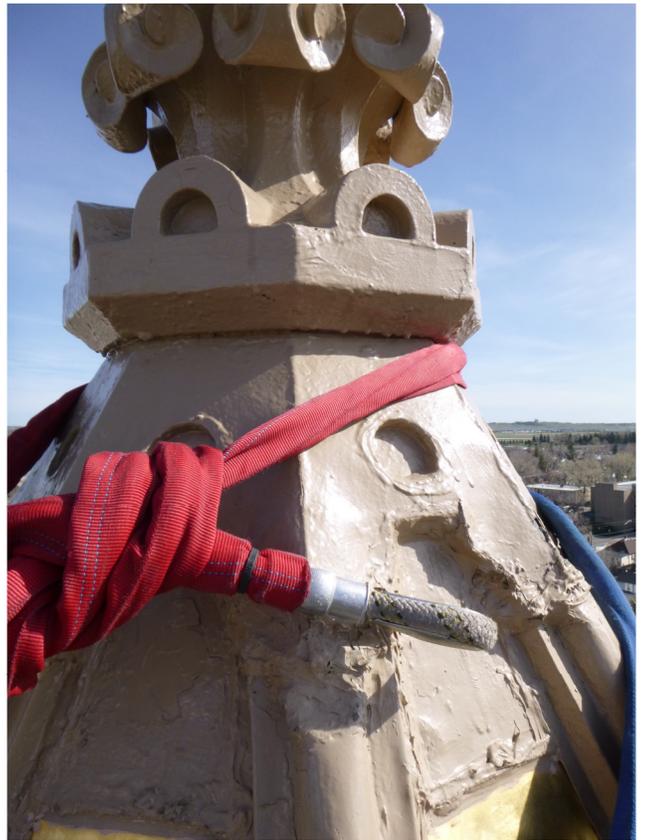
**529-131 SheetMetal\_Damaged Dented 2013-2**



**529-131 SheetMetal\_Damaged Dented 2013-3**



529-135 SheetMetal\_Coating Coating Failed 2013-1



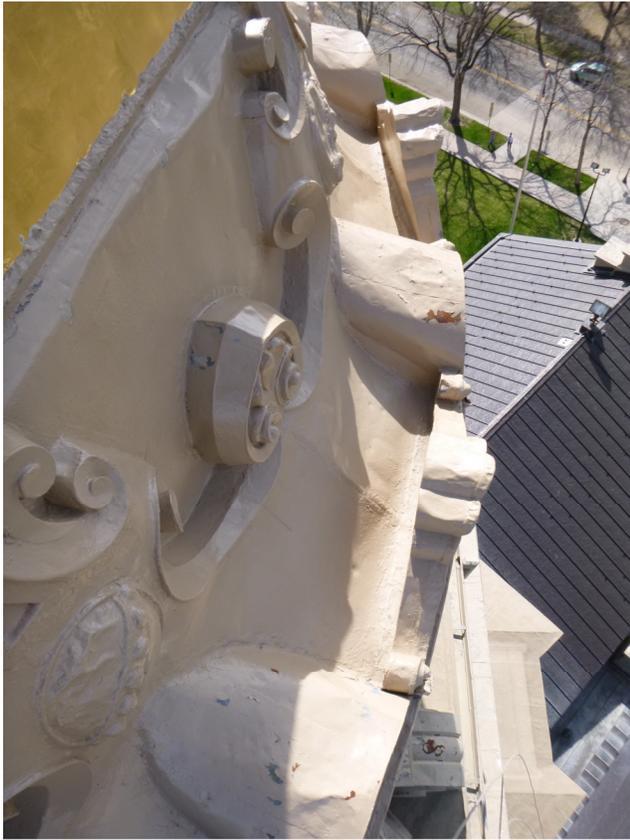
529-135 SheetMetal\_Coating Coating Failed 2013-2



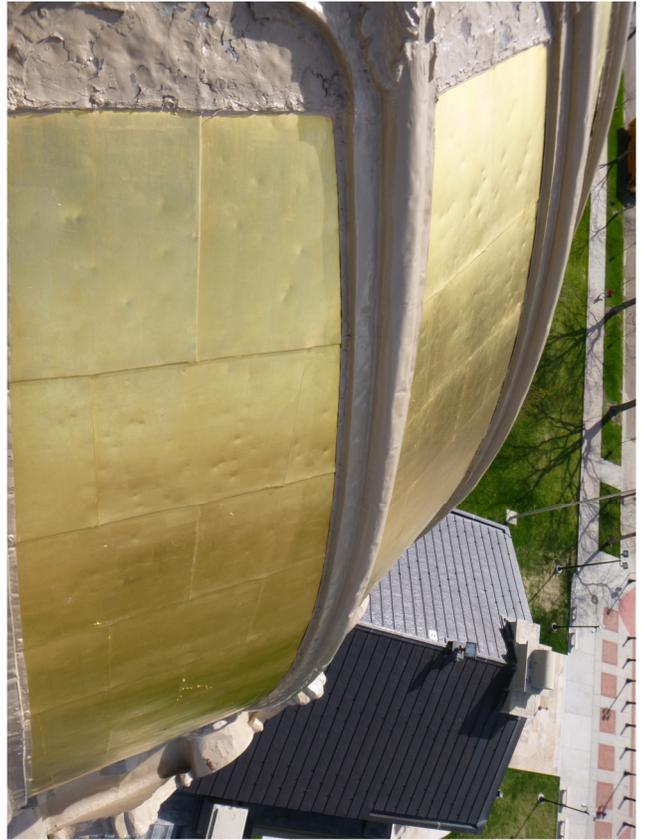
530-96 SheetMetal\_Note Photo-water ponding at ledge



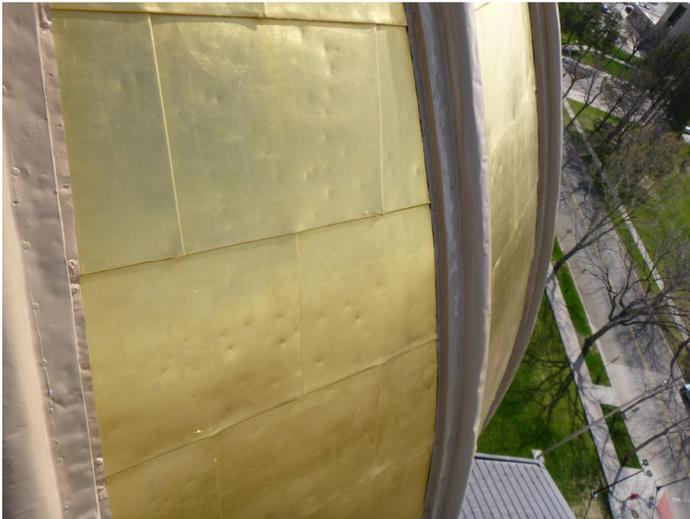
530-96 SheetMetal\_Note Photo-water ponding at ledge



**530-105 SheetMetal\_Coating Coating Failed 2013-1**



**530-116 SheetMetal\_Damaged Dented 2013-1**



**530-116 SheetMetal\_Damaged Dented 2013-2**



**530-120 SheetMetal\_Damaged Torn 2013-1**



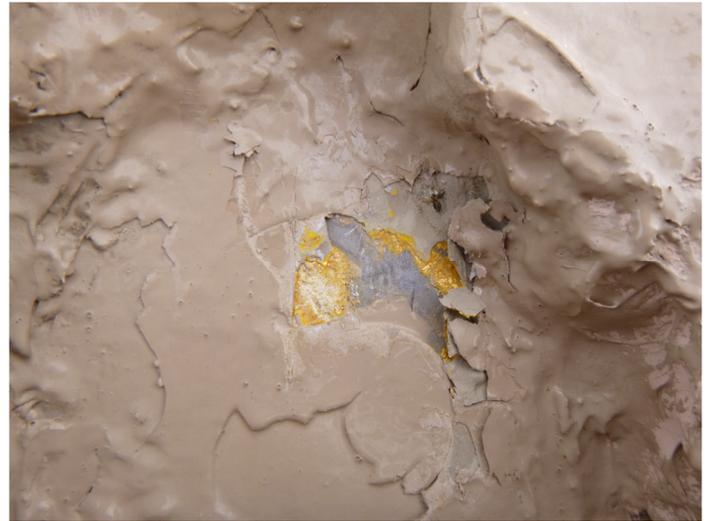
**530-127 SheetMetal\_Note PntSm 6 2013-1**



**530-134 SheetMetal\_Note PntSm 2 2013-1**



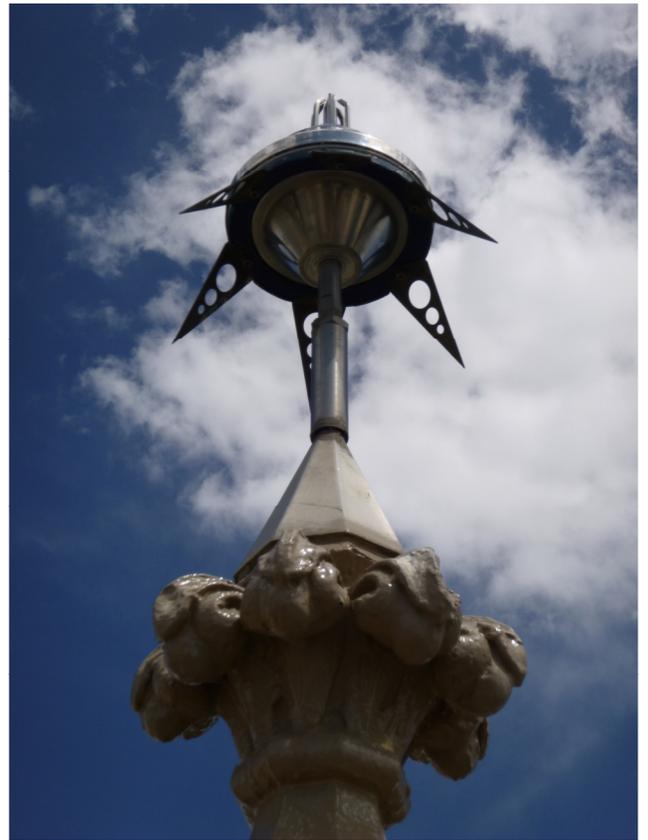
**530-134 SheetMetal\_Note PntSm 2 2013-2**



**530-134 SheetMetal\_Note PntSm 2 2013-3**



530-136 SheetMetal\_Coating Coating Failed 2013-1



530-138 SheetMetal\_Note Photo-lightning protection



530-140 SheetMetal\_Note Photo-finial 2013-1



531-105 SheetMetal\_Damaged Torn 2013-1



**531-106 SheetMetal\_Damaged Dented 2013-1**



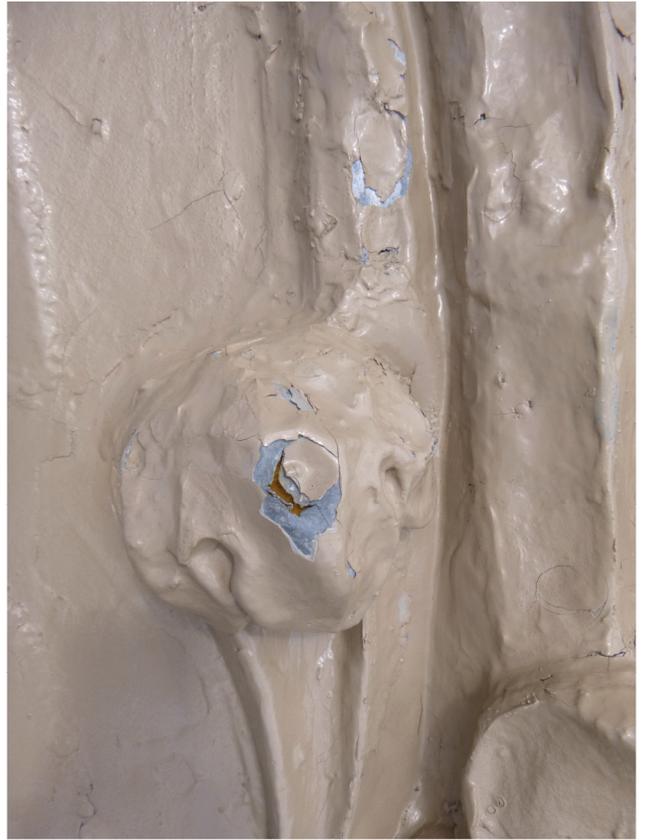
**531-113 SheetMetal\_Seam Solder Failed 2013-1**



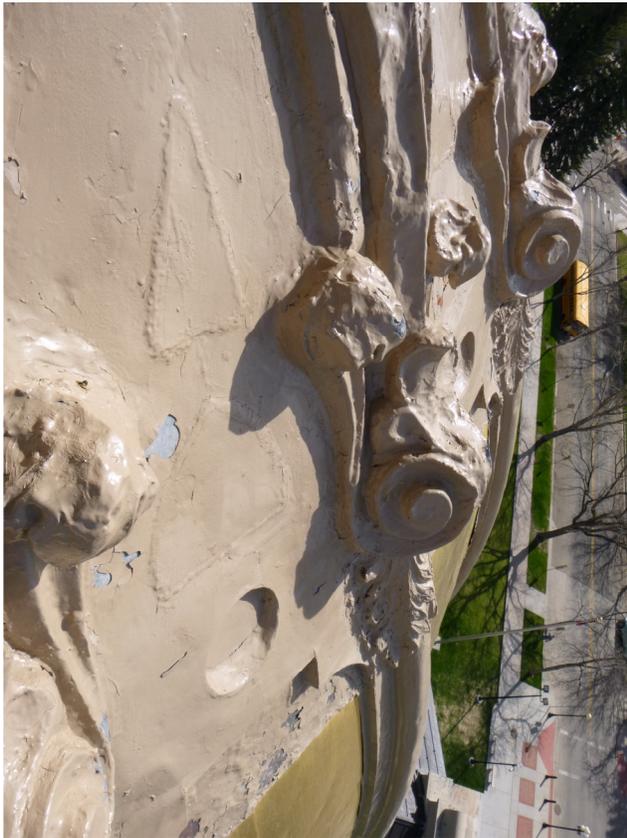
**531-118 SheetMetal\_Note Photo-sheet copper with screws 531-118 SheetMetal\_Note Photo-sheet copper with screws**



**531-119 SheetMetal\_Seam Solder Failed 2013-1**



**531-121 SheetMetal\_Damaged Punctured 2013-1**



**531-121 SheetMetal\_Repair Patch Sound 2013-1**



**532-82 SheetMetal\_Seam Fastener Failed 2013-1**



**532-98 SheetMetal\_Damaged Punctured 2013-1**



**532-98 SheetMetal\_Damaged Punctured 2013-2**



**532-103 SheetMetal\_Unsecured Missing 2013-1**



**532-105 SheetMetal\_Corrosion Surface 2013-1**



**532-107 SheetMetal\_Damaged Dented 2013-1**



**532-129 SheetMetal\_Coating Coating Failed 2013-1**



**532-129 SheetMetal\_Coating Coating Failed 2013-2**



**533-98 SheetMetal\_Damaged Dented 2013-1**



533-99 SheetMetal\_Damaged Punctured 2013-1



534-97 SheetMetal\_Corrosion Surface 2013-1



534-99 SheetMetal\_Coating Coating Failed 2013-1



535-105 SheetMetal\_Corrosion Surface 2013-1



570-113 ArchMetal\_Note Photo-missing bolt 2013-1



572-99 SheetMetal\_Note Photo-active leak 2013-1



573-118 ArchMetal\_Note Joint condition 2013-1



573-118 ArchMetal\_Note Joint condition 2013-2



574-116 ArchMetal\_Note Joint condition 2013-1



575-100 SheetMetal\_Note Photo-G1916 2013-1



575-101 SheetMetal\_Note Photo-G 1909 2013-1



576-111 ArchMetal\_Note Joint condition 2013-1



576-111 ArchMetal\_Note Joint condition 2013-2



578-98 SheetMetal\_Note Photo-sheet metal brand stamp



586-114 ArchMetal\_Note Joint condition 2013-1



588-119 ArchMetal\_Note Joint condition 2013-1



**588-119 ArchMetal\_Note Joint condition 2013-2**



**592-97 SheetMetal\_Note Photo-detail 2013-1**



**592-97 SheetMetal\_Note Photo-detail 2013-2**



**592-97 SheetMetal\_Note Photo-detail 2013-3**



592-97 SheetMetal\_Note Photo-detail 2013-4



592-100 SheetMetal\_Note Photo-G 1891 2013-1



596-115 ArchMetal\_Note Joint condition 2013-1



600-121 ArchMetal\_Note Joint condition 2013-1



601-98 SheetMetal\_Note Photo- G 1902 2013-1



601-98 SheetMetal\_Note Photo- G 1902 2013-2



601-112 Wood\_Note 1890 2013-1



602-101 SheetMetal\_Note Photo- G 1916 2013-1



602-101 SheetMetal\_Note Photo- G 1916 2013-2



604-99 SheetMetal\_Note Photo- G1917 2013-1



604-110 ArchMetal\_Note Joint condition 2013-1



607-112 ArchMetal\_Note Joint condition 2013-1



608-97 SheetMetal\_Note Photo- G 1901-1909 2013-1



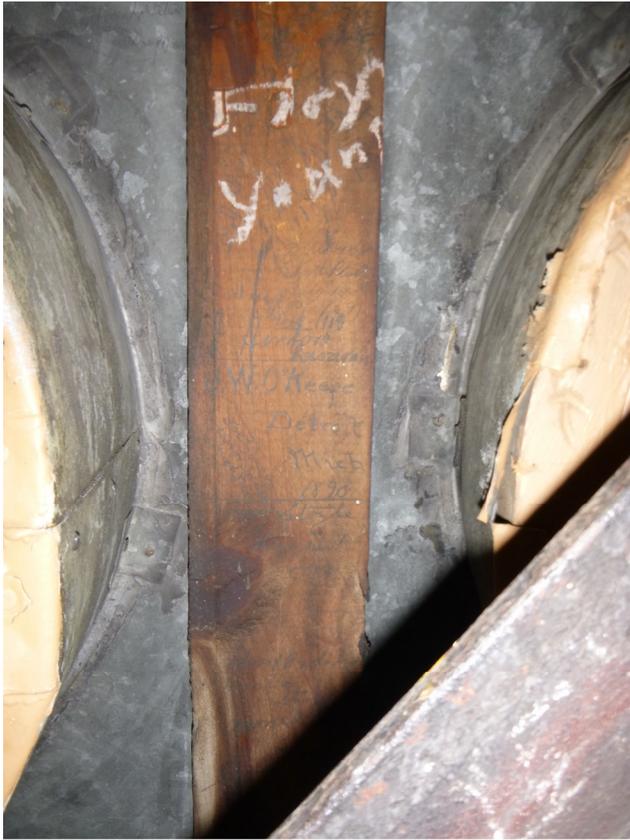
608-97 SheetMetal\_Note Photo- G 1901-1909 2013-2



611-113 ArchMetal\_Note Joint condition 2013-1



611-113 ArchMetal\_Note Joint condition 2013-2



612-100 SheetMetal\_Note Photo- G 1890 2013-1



613-116 ArchMetal\_Note Joint condition 2013-1



613-116 ArchMetal\_Note Joint condition 2013-2



615-104 SheetMetal\_Damaged Punctured 2013-1



618-116 ArchMetal\_Note Joint condition 2013-1



619-99 ArchMetal\_Note Photo-square-head bolts 2013-1



619-114 ArchMetal\_Note Joint condition 2013-1



619-114 ArchMetal\_Note Joint condition 2013-2



623-104 SheetMetal\_Damaged Punctured 2013-1



623-104 SheetMetal\_Damaged Punctured 2013-2



624-102 SheetMetal\_Note Photo- G 1899 2013-1



624-102 SheetMetal\_Note Photo- G 1899 2013-2



626-116 ArchMetal\_Note Joint condition 2013-1



630-105 SheetMetal\_Note Photo-active leaks 2013-1



630-105 SheetMetal\_Note Photo-active leaks 2013-2



630-105 SheetMetal\_Note Photo-active leaks 2013-3



630-105 SheetMetal\_Note Photo-active leaks 2013-4



630-105 SheetMetal\_Note Photo-active leaks 2013-5



630-113 Wood\_Crack Crack 2013-1



649-127 ArchMetal\_Note Photo-graffiti 2013-1



649-127 ArchMetal\_Note Photo-graffiti 2013-2



652-127 ArchMetal\_Note Photo-slack tension rod 2013-1



653-126 ArchMetal\_Note Photo-loose nut at hub 2013-1



653-128 ArchMetal\_Note Photo-tension rod hub 2013-1



655-125 ArchMetal\_Note Photo-rondelle 2013-1



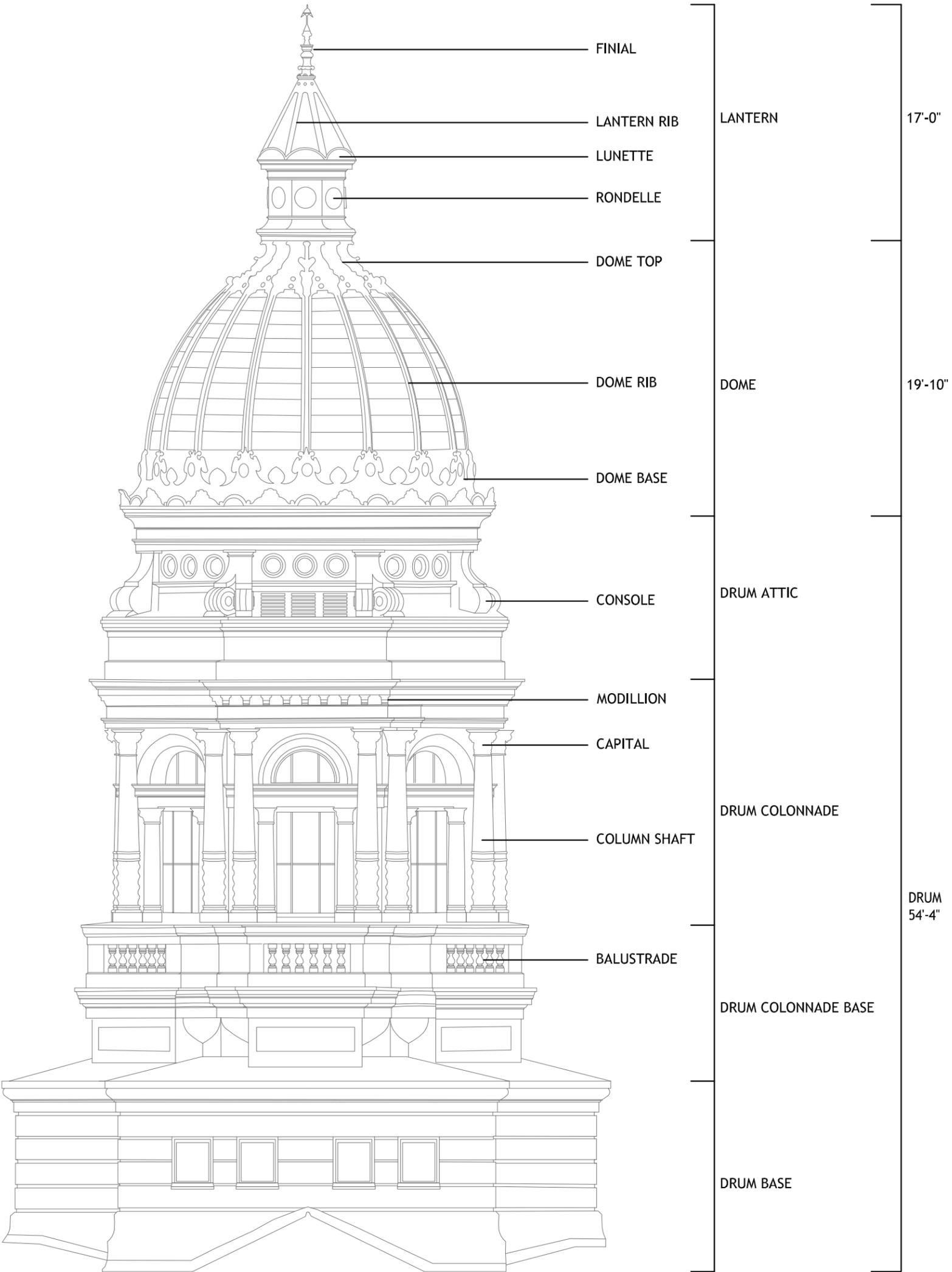
655-125 ArchMetal\_Note Photo-rondelle 2013-2

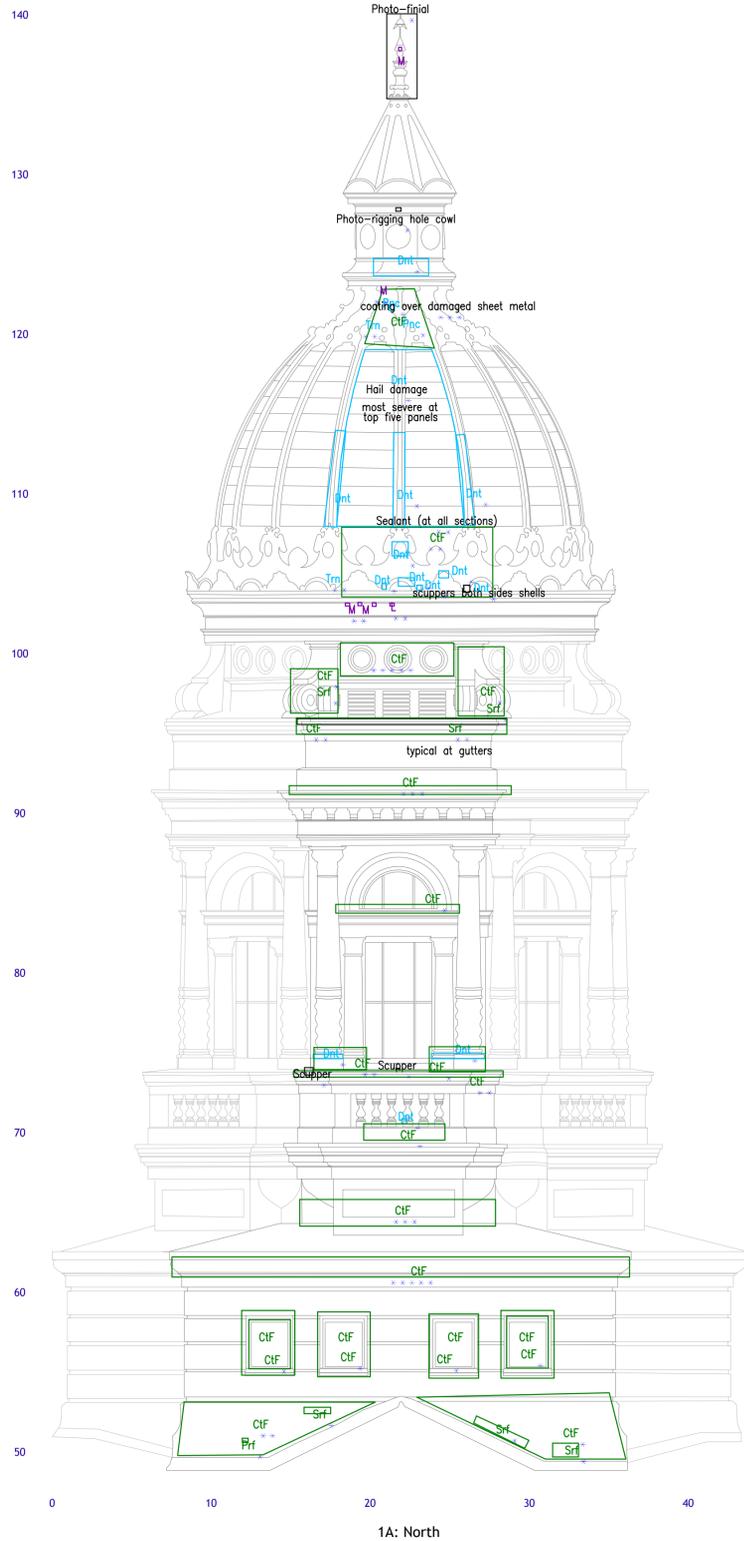


655-128 Wood\_Deteriorated Rotten 2013-1

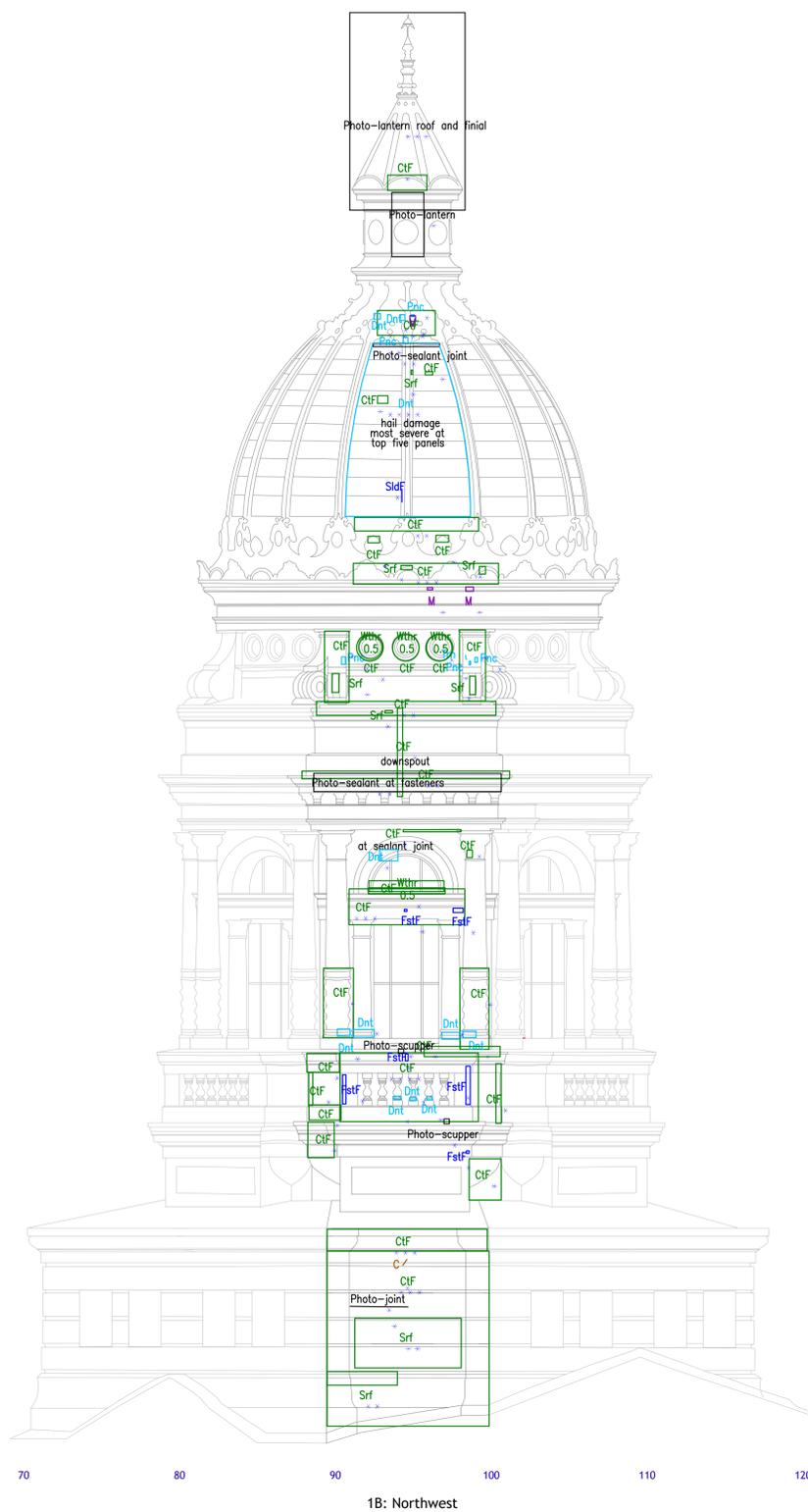


655-128 Wood\_Deteriorated Rotten 2013-2

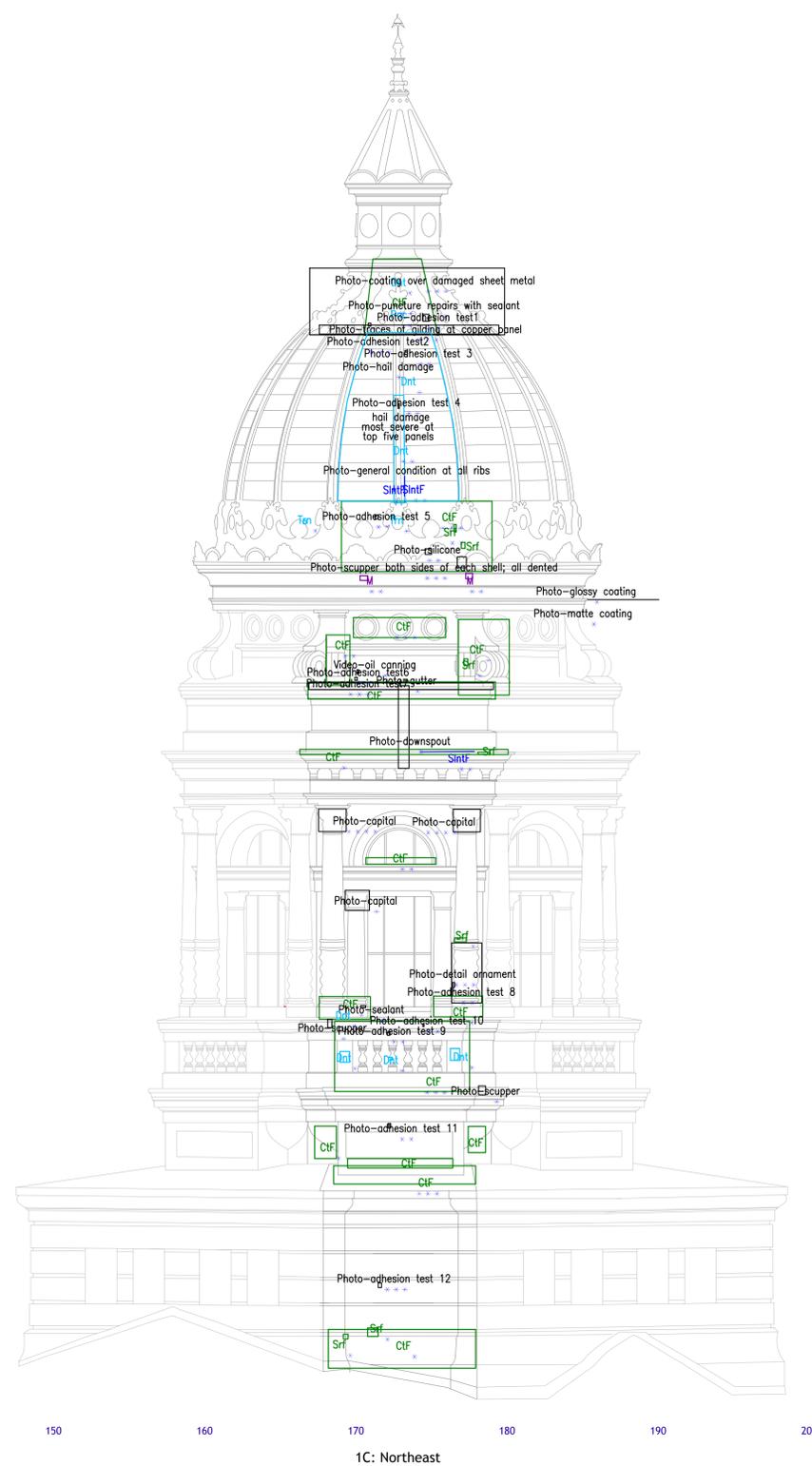




1A: North



1B: Northwest



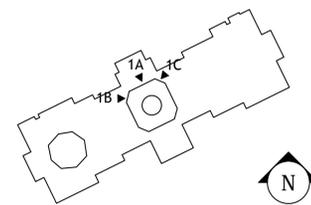
1C: Northeast

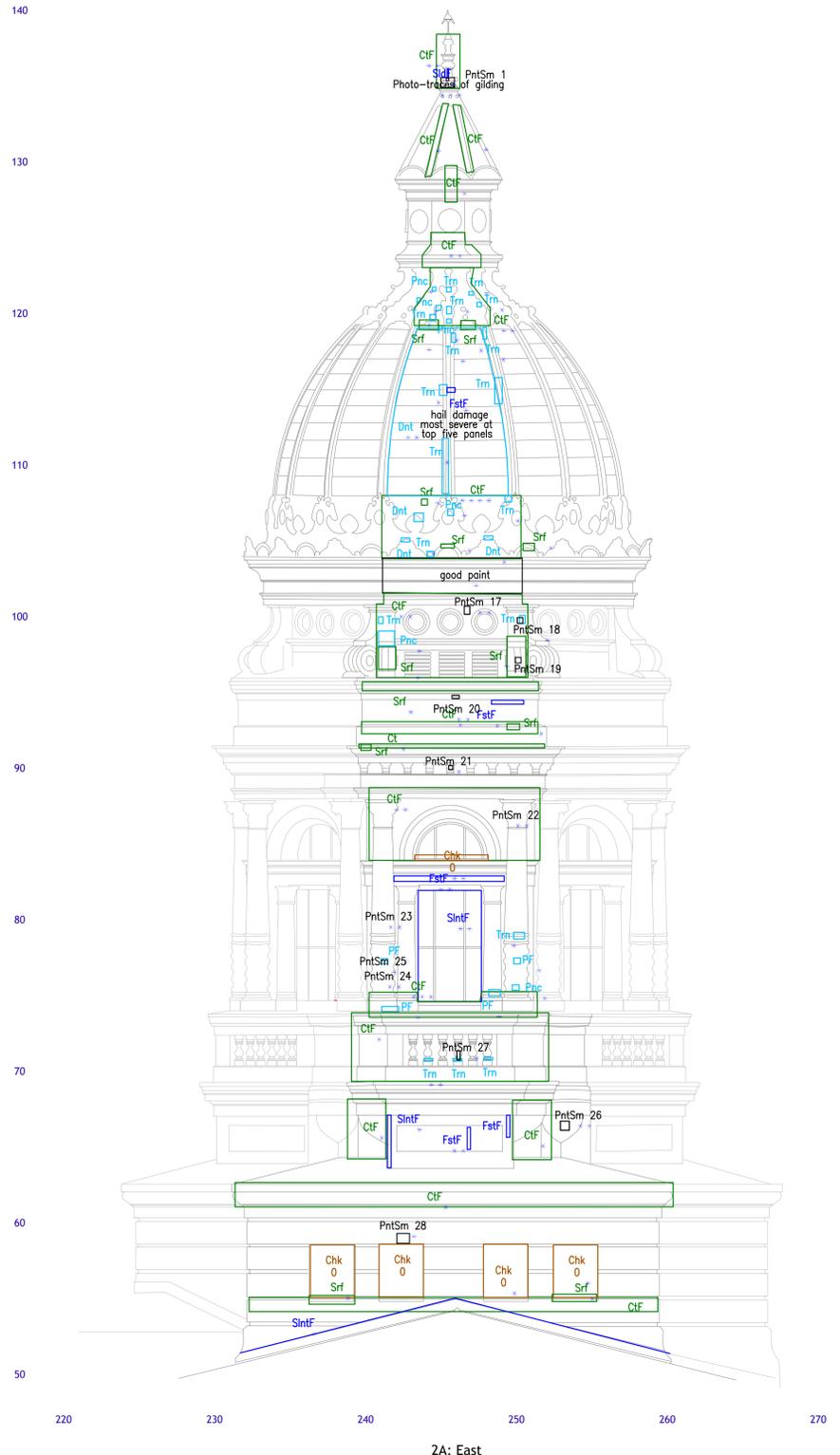
KEY TO SYMBOLS							
Each TPAS annotation is comprised of a graphical symbol and text label.							
Four types of graphical symbols are used:							
-Target symbols	depict faults having discrete locations, such as spalls or patch repairs.						
-Box symbols	are rectangular symbols delineating conditions that span an area too large to be effectively represented with target symbols.						
-Polyline symbols	depict cracks and specific joint conditions.						
-Picture Link symbols	indicate the location of survey photographs.						
Text labels include a code describing the type of condition, and if applicable, a severity code and Picture Link.							
This target symbol indicates a 20 square inch spall, which was removed during the survey and photographed:	<table border="0"> <tr> <td>Fault Code</td> <td>R</td> <td>Target Symbol</td> </tr> <tr> <td>Severity</td> <td>20</td> <td>Picture Link</td> </tr> </table>	Fault Code	R	Target Symbol	Severity	20	Picture Link
Fault Code	R	Target Symbol					
Severity	20	Picture Link					
This box symbol indicates an area of biological soiling, which was not photographed:	Bio						
This polyline indicates a crack system following a joint path, 3/16 inch wide, which was photographed:	CJ						

Abbreviations:  
G = Graffiti  
PntSm = Paint Sample

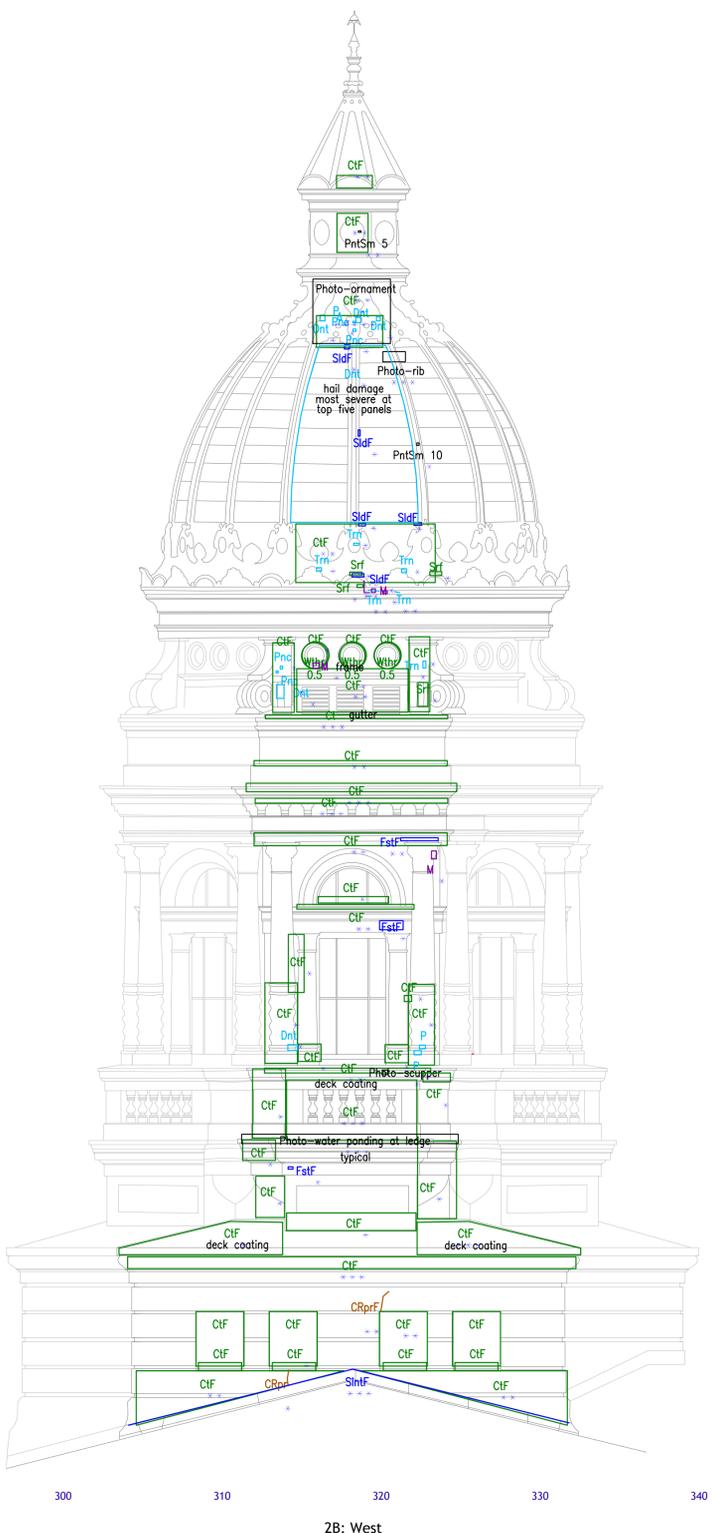
KEY TO SURVEY CODES				
Condition	Symbol	Fault Type	Severity	Amount
Coating	Ct	Coating	Not applicable	Area in sq. ft.
	CtF	Coating Failed	Not applicable	Area in sq. ft.
Corroded	Srf	Surface	Not applicable	Area in sq. ft.
	Prf	Perforated	Not applicable	Area in sq. ft.
Checked Crack	Chk	Checked Crack	Width in 1/16" increments	Length in lin. ft.
	C	Crack	Not applicable	Length in lin. in.
Damaged	Dnt	Dented	Not applicable	Area in sq. ft.
	Pnc	Punctured	Not applicable	Diameter in in.
	Trn	Torn	Not applicable	Length in lin. in.
Deteriorated	Rot	Rotted	Not applicable	Area in sq. in.
	Wthr	Weathered	Not applicable	Area in sq. in.
Prev. Repair	P	Patch sound	Not applicable	Area in sq. in.
	PF	Patch Failed	Not applicable	Area in sq. in.
Seams Failed	FstF	Fastener Failed	Not applicable	Count
	FldF	Folded Seam Failed	Not applicable	Length in lin. ft.
	SldF	Solder Failed	Not applicable	Length in lin. ft.
	SlnF	Sealant Failed	Not applicable	Length in lin. ft.
Soiled/Stained	Gua	Guano	Not applicable	Area in sq. ft.
Unsecured	L	Loose	Not applicable	Area in sq. ft.
	M	Missing	Not applicable	Area in sq. ft.

KEY PLAN





2A: East

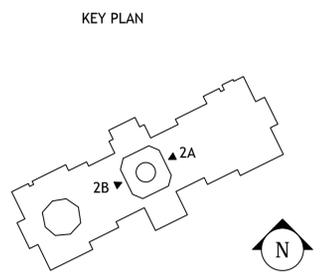


2B: West

KEY TO SYMBOLS	
Each TPAS annotation is comprised of a graphical symbol and text label.	
Four types of graphical symbols are used:	
-Target symbols	depict faults having discrete locations, such as spalls or patch repairs.
-Box symbols	are rectangular symbols delineating conditions that span an area too large to be effectively represented with target symbols.
-Polyline symbols	depict cracks and specific joint conditions.
-Picture Link symbols	indicate the location of survey photographs.
Text labels include a code describing the type of condition, and if applicable, a severity code and Picture Link.	
This target symbol indicates a 20 square inch spall, which was removed during the survey and photographed:	
This box symbol indicates an area of biological soiling, which was not photographed:	
This polyline indicates a crack system following a joint path, 3/16 inch wide, which was photographed:	

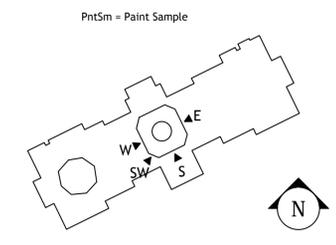
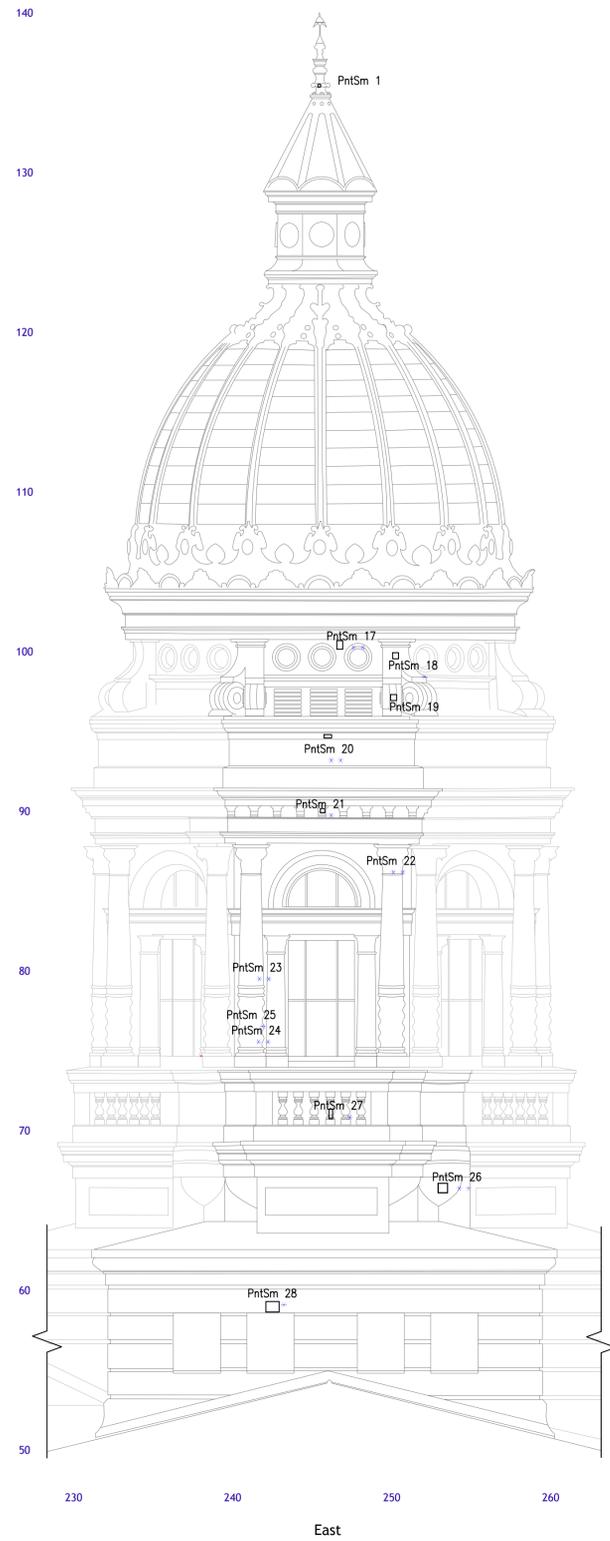
Abbreviations:  
G = Graftite  
PntSm = Paint Sample

KEY TO SURVEY CODES					
Condition	Symbol	Fault Type	Severity	Amount	
Coating		Ct	Coating	Not applicable	Area in sq. ft.
		CtF	Coating Failed	Not applicable	Area in sq. ft.
Corroded		Srf	Surface	Not applicable	Area in sq. ft.
		Prf	Perforated	Not applicable	Area in sq. ft.
Checked Crack		Chk	Checked Crack	Width in 1/16" increments	Length in lin. ft.
		C	Crack	Not applicable	Length in lin. in.
Damaged		Dnt	Dented	Not applicable	Area in sq. ft.
		Pnc	Punctured	Not applicable	Diameter in in.
		Trn	Torn	Not applicable	Length in lin. in.
Deteriorated		Rot	Rotted	Not applicable	Area in sq. in.
		Wthr	Weathered	Not applicable	Area in sq. in.
Prev. Repair		P	Patch sound	Not applicable	Area in sq. in.
		PF	Patch Failed	Not applicable	Area in sq. in.
Seams Failed		FstF	Fastener Failed	Not applicable	Count
		FlidF	Folded Seam Failed	Not applicable	Length in lin. ft.
		SidF	Solder Failed	Not applicable	Length in lin. ft.
		SintF	Sealant Failed	Not applicable	Length in lin. ft.
Soiled/Stained		Gua	Guano	Not applicable	Area in sq. ft.
		L	Loose	Not applicable	Area in sq. ft.
Unsecured		M	Missing	Not applicable	Area in sq. ft.









Paint Sample Log

Sample No.	Dome Facet	Element	Substrate Material	Observations	Photograph
PntSm 1	East	Finial: Ornament	Galv. sheet metal	Gilding followed by at least two paint campaigns	246-135
PntSm 2	Southwest	Lantern roof: Cap below finial	Galv. sheet metal	Gilding followed by at least two paint campaigns	530-134
PntSm 3	Southwest	Lantern cornice: Surround of lunette	Galv. sheet metal	Two or three paint campaigns	528-129
PntSm 4	Southwest	Lantern cornice: Recessed face of lunette	Galv. sheet metal	Two to four paint campaigns	529-129
PntSm 5	West	Lantern drum: Rondelle	Galv. sheet metal	One or two paint campaigns	319-125
PntSm 6	Southwest	Lantern drum: Flat panel	Galv. sheet metal	Two or three paint campaigns	530-127
PntSm 7	South	Top of dome: Flat panel	Galv. sheet metal	Two or three paint campaigns	394-121
PntSm 8	South	Top of dome: Applied foliated ornament	Sheet lead	Two or three paint campaigns	395-123
PntSm 9	South	Top of dome: Inset semi-circle in flat panel	Galv. sheet metal	Two or three paint campaigns	393-119
PntSm 10	West	Dome: Rib cover	Galv. sheet metal	One paint campaign	322-112
PntSm 11	South	Base of dome: Flat panel below gilded copper	Galv. sheet metal	Two to four paint campaigns	388-101
PntSm 12	South	Base of dome: Volute surrounding oval shield	Galv. sheet metal	Two to four paint campaigns	392-108
PntSm 13	South	Base of dome: Applied oval shield	Sheet lead	Two to four paint campaigns	389-107
PntSm 14	South	Base of dome: Fleur de lis ornament	Galv. sheet metal	Two to four paint campaigns	387-105
PntSm 15	South	Base of dome: Shell ornament	Galv. sheet metal	Two to four paint campaigns	386-104
PntSm 16	South	Drum attic: Leaf at cornice	Sheet lead	Two to four paint campaigns	386-103
PntSm 17	East	Drum attic: Flat panel between round windows	Galv. sheet metal	Two to four paint campaigns	247-101
PntSm 18	East	Drum attic: Applied foliated ornament at console	Sheet lead	Two to four paint campaigns	251-99
PntSm 19	East	Drum attic: Bottom scroll of console	Galv. sheet metal	Two to four paint campaigns	No photo
PntSm 20	East	Drum: Flat panel above entablature	Galv. sheet metal	Two to four paint campaigns	246-94
PntSm 21	East	Drum entablature: Modillion	Galv. sheet metal	Two to four paint campaigns	245-90
PntSm 22	East	Drum colonnade: Column capital	Galv. sheet metal	Two to four paint campaigns	250-87
PntSm 23	East	Drum colonnade: Column shaft	Galv. sheet metal	Two to four paint campaigns	242-80

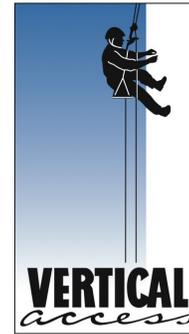
Paint Sample Log

<b>Sample No.</b>	<b>Dome Facet</b>	<b>Element</b>	<b>Substrate Material</b>	<b>Observations</b>	<b>Photograph</b>
PntSm 24	East	Drum colonnade: Flat panel at lower decoration of column shaft	Galv. sheet metal	Two to four paint campaigns	241-76
PntSm 25	East	Drum colonnade: Foliated ornament at lower decoration of column shaft	Galv. sheet metal	Two to four paint campaigns	241-77
PntSm 26	East	Drum balustrade: Corner ornament	Galv. sheet metal	Two to four paint campaigns	254-67
PntSm 27	East	Drum balustrade: Baluster	Galv. sheet metal	Two to four paint campaigns	247-71
PntSm 28	East	Drum base	Cast iron	Two to four paint campaigns	243-60

# Access Approach

Wyoming State Capitol  
Cheyenne, WY  
Dome Investigation

Vertical Access LLC  
PO Box 4135, Ithaca, NY 14852  
Tel: 607 257 4049 / Fax: 607 257 2129



The Wyoming State Capitol building is not equipped, on the exterior or interior, with any means to easily access locations above the drum attic. To reach the lantern interior from the drum attic floor, VA used a 40-foot extension ladder (see Figure 1). From the lantern interior, a 1-1/4 inch diameter rigging hole was drilled through the galvanized sheet metal above the rondelle on the lantern's north side. The rondelles were originally able to be opened, permitting access to the lantern exterior, but have since been painted and fastened shut. A pair of ropes was lowered through the rigging hole, down to the adjacent low-slope roof of the lower part of the Capitol building. Inside the lantern, the ropes were anchored to structural steel members in a location that minimized the ropes' loading on the sheet metal, to both protect the ropes from abrasion and prevent deformation of the sheet metal.

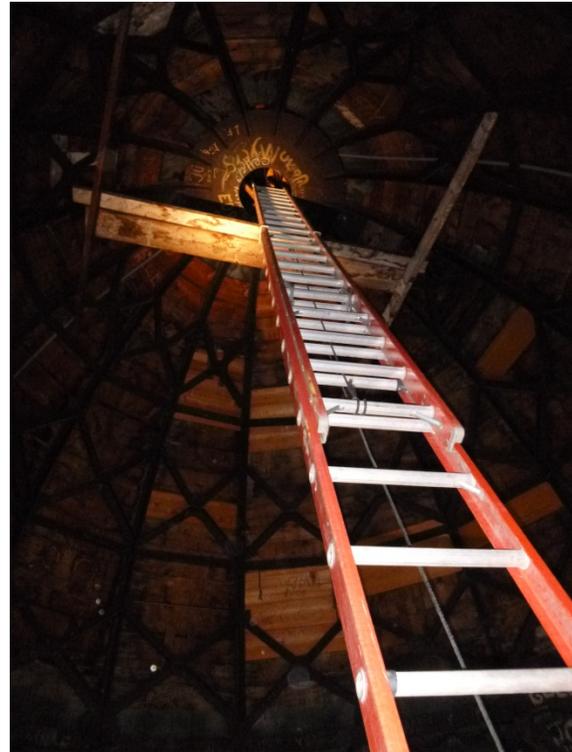


Figure 1. A 40-foot extension ladder was used to access the lantern interior.

From the exterior, one technician ascended the pair of ropes to the lantern, where he encircled the lantern base with temporary anchor slings. Additional pairs of ropes were connected to these anchor slings and used to perform all of the inspection drops. The ropes through the rigging hole were used solely for the installation and removal of the encirclement anchors.

At project completion, VA removed all rigging equipment from the building and installed a cowl over the rigging hole to prevent water infiltration. The copper cowl was painted to match the lantern exterior, with paint supplied by Suzanne Norton, then was screwed and caulked in place over the rigging hole (see Figure 2). The cowl permits future use of the rigging hole without need of removal. From the interior, VA installed an expandable rubber plug to prevent bats, debris and other material from going through the rigging hole (see Figure 3).



Figure 2. The painted copper cowl was screwed and caulked in place from the exterior.



Figure 3. An expandable rubber plug was installed from the interior of the rigging hole

## Future Access

Vertical Access recommends that future inspections of the Wyoming State Capitol lantern, dome and drum be performed using industrial rope access, in a similar manner to the current inspection. All technicians working on rope should be certified by the Society of Professional Rope Access Technicians (SPRAT) or the Industrial Rope Access Trade Association (IRATA). As part of future restoration work, a caged ladder or ladder with a fall protection system should be installed from the floor of the drum attic to the interior of the lantern.

Light maintenance and painting may also be performed by technicians using industrial rope access techniques. However, work requiring large or heavy tools and materials will need to be performed using a different access method. The work conducted in 2009 on the dome's gilded copper panels was performed from a mobile crane equipped with an aerial work platform. Such a system would accommodate larger tools and materials than industrial rope access, but is discouraged by OSHA 1926.1501(g)(2):

“The use of a crane or derrick to hoist employees on a personnel platform is prohibited, except when the erection, use, and dismantling of conventional means of reaching the worksite, such as personnel hoist, ladder, stairway, aerial lift, elevating work platform or scaffold, would be more hazardous, or is not possible because of structural design or worksite conditions.”

Larger scale repair and maintenance of the dome would require a pipe frame scaffold to be erected on the adjacent low-slope roofs.