

Construction Analytics

...the application of logical analysis

PORTFOLIO OF SELECTED PROJECTS

Four projects have been selected from our completed work of the last several years to demonstrate the different types of projects we have addressed for our clients.

1.) LARGE REGIONAL LIBRARY IN MISSISSIPPI

This municipal building was damaged by hurricane Katrina in 2005. The finished area of the building is approximately 53,000 SF. Repair cost was determined to be approximately \$400 K. The initial repair cost requested by the local contractor was approximately \$1.2 M.

The major issues included:

- A.) The extent of wind damage to the clay tile roof.
- B.) The extent of water damage to the interior.

Complicating factors for this evaluation:

- A.) The roofs of this building had been leaking prior to the incidence of the hurricane. Accordingly, evaluation of the interior water damage required delineation of pre-existing water damage from water damage resultant from the hurricane.
- B.) The clay tile roofing may not have been installed in accordance with specifications, thus predisposing the roofing to damage which would not otherwise have occurred. This posed a subrogation issue.

Library East Elevation



Interior Of Rotunda With 360° Mural



Interior Millwork Details



Millwork Water Damage Precedent to Hurricane



Roof Tile Attached With Non-specification Fasteners



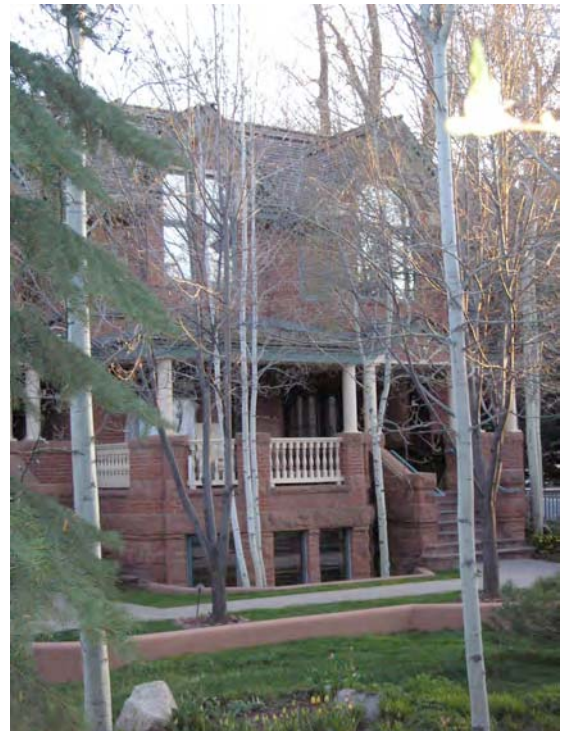
2.) TOWNHOUSE IN ASPEN, COLORADO

This townhouse was damaged by freezing of a fire protection line which caused a sprinkler head on the 4th (top) level to fail and allowed water to flow through all 4 levels before it was turned off. The freezing was due to a construction defect which placed the fire protection line adjacent to a duct vented to the exterior without adequate protective thermal insulation. The total floor area on 4 levels was 6,400 SF. This residence was finished throughout with very expensive, custom finishes, and had an estimated market value of \$16,000,000. Repairs determined to be approximately \$ 180 K versus \$ 450 K submitted by contractor.

Complicating factors for this evaluation included:

- A.) Separation of damages between the building shell and the interior finishes, as these two parts of the work were covered by different carriers.
- B.) Pricing replacement of custom components not commonly encountered (e.g. - Leather laced and wrapped handrail details; Upholstered, padded walls covered with fabric)
- C.) We were not involved in the project prior to completion of the interior demolition, thus not affording us the opportunity to view the original damage.
- D.) The owner commenced a complete interior remodel, rather than to simply repair the damages. The contractor had commenced work prior to our consultant's involvement with the project. The contractor was uncooperative in reasonably separating and pricing the components of the work related to repairs, as opposed to new construction work.
- E.) A local contractor was retained to verify the pricing of the repair work. It was difficult to find a qualified, local contractor who would do this pricing work, because it was not nearly as lucrative as doing construction work in that market.

Exterior Of Townhouse



Newell Post & Handrail Detail - Appears To Be Wood, But Is Leather Wrapped



Marble Wall & Floor Details In Level 2 Bath Room



Second Commercial Serving Kitchen For Caterers On Level 1 (family kitchen is on Level 4)



3.) LIGHT COMMERCIAL BUILDING IN WASHINGTON STATE

This structure was originally built as a Masonic Temple in 1905. The 2-1/2 story structure is heavy timber frame with 20" thick exterior sandstone walls. The original, period interiors included extensive, custom wood ceiling trim details, custom wood door and interior trim details, and plaster walls over wood lath. The area was hit with a Pacific storm which subjected the area to sustained winds over 100 MPH for approximately 20 hours, causing hurricane type damage. This building lost approximately half of its roof, which allowed substantial water to enter the building, penetrating to the first floor. Repair cost was determined to be approximately \$1 M (policy limits for the repair portion were approximately \$ 1.4 M). Code upgrade costs were determined to be approximately \$105 K.

The major issues included:

- A.) The extent of water damage to the interior.
- B.) The extent of code upgrade construction necessary.
- C.) Disagreement as to whether the damage constituted a total loss or was economically repairable.

Complicating factors for this evaluation:

- A.) Insured brought in a local contractor who initially represented for several months that the building was a total loss, in spite of not having compiled a scope of repairs.
- B.) Insured did not seek out other contractors to effect temporary weather sealing of the roof after several attempts by the local contractor failed to stop water infiltration. Insured was advised of other contractors who could perform this work, but they were not retained.
- C.) Insured did not initiate an aggressive, interior drying program, despite being advised that this was critical to prevent biological contamination of the interiors. This situation was aggravated by persistent, high levels of ambient humidity.
- D.) Washington State regulations pertaining to the definition of demolition materials as hazardous due to the presence of lead paint are more stringent than applicable U. S. Government regulations.

Building Exterior



Second Temporary Roof In Place



Level 1 Mezzanine Stairs & Interior Ceiling Beam Detail



Custom Interior Plaster Detail (Period Work)



Custom Interior Wood Trim Details In Ballroom



Custom Ceiling Beam Wood Trim Details (Aprx. 20 Piece Built-up Trim Detail)



Existing Old & New Electrical Wiring Necessitated Electrical Code Upgrades



4.) RESIDENCE IN RURAL TEXAS

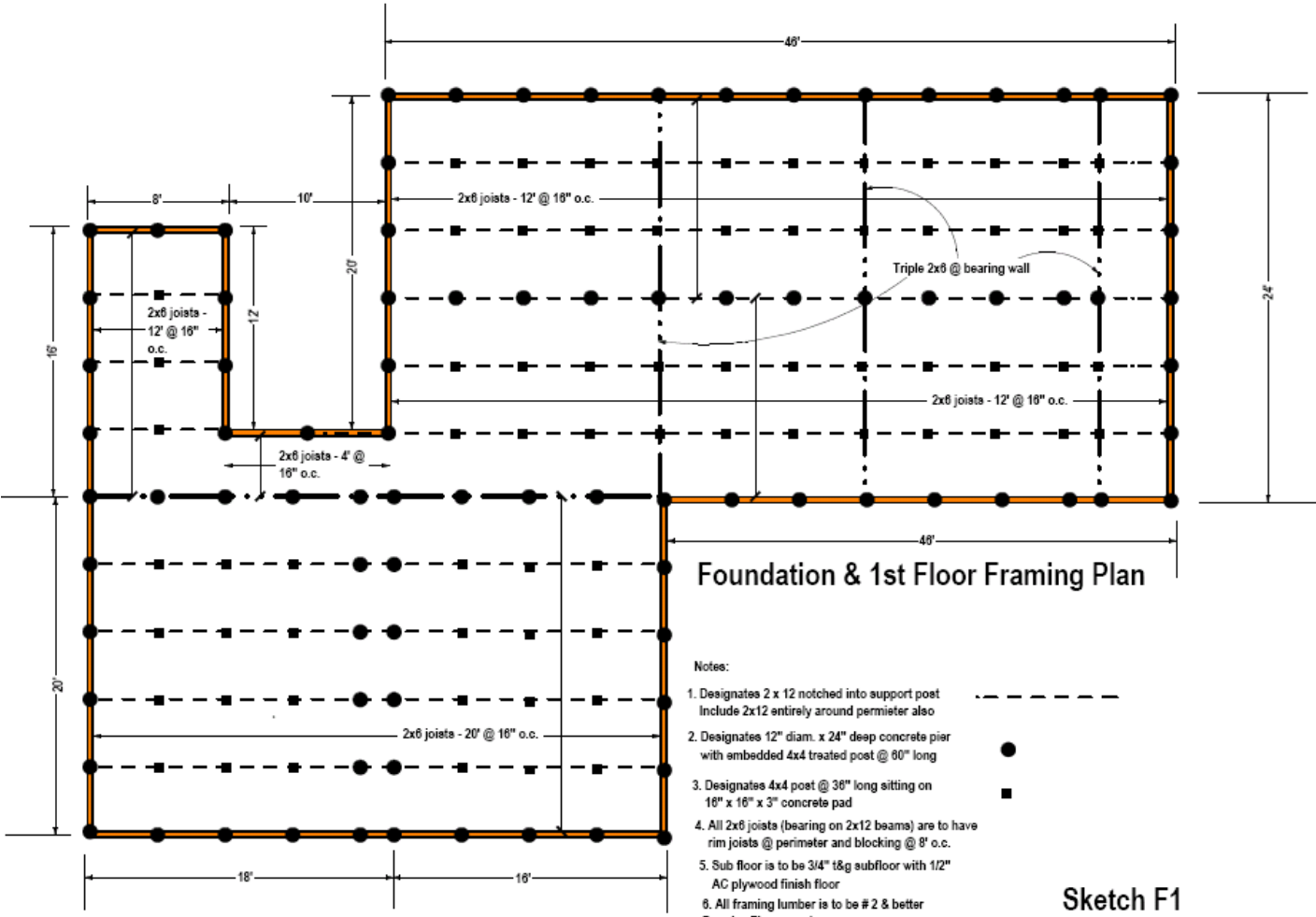
This project was smaller than the usual work assigned to us, but it presented unique problems for which the insurance carrier needed to find solutions. The loss was a 2 story wood frame residence which was under construction by the owner at the time of the loss. Coverage was afforded by a builder's risk insurance policy. A fire occurred, and the house burned completely to the ground. The debris was hauled away prior to the project being assigned to us, so we were unable to photograph any damage. The foundation was of wood pier construction, so no footprint of the building remained. At the time of our site visit we observed freshly scraped earth with a small remaining pile of debris.

In order for us to determine the value of the repairs, we first had to secure a set of plans for the structure. The only sets of plans the owner had were on site, as were all receipts and paperwork pertaining to the construction, and all were consumed in the fire. We then suggested that we could obtain a set of plans from the local building department. It turned out, however, that in that area of rural Texas, no building permit is required to build a residence, and the local building department had no plans on file. At this point we determined that our only way forward was to determine necessary information through an interview process with the owner.

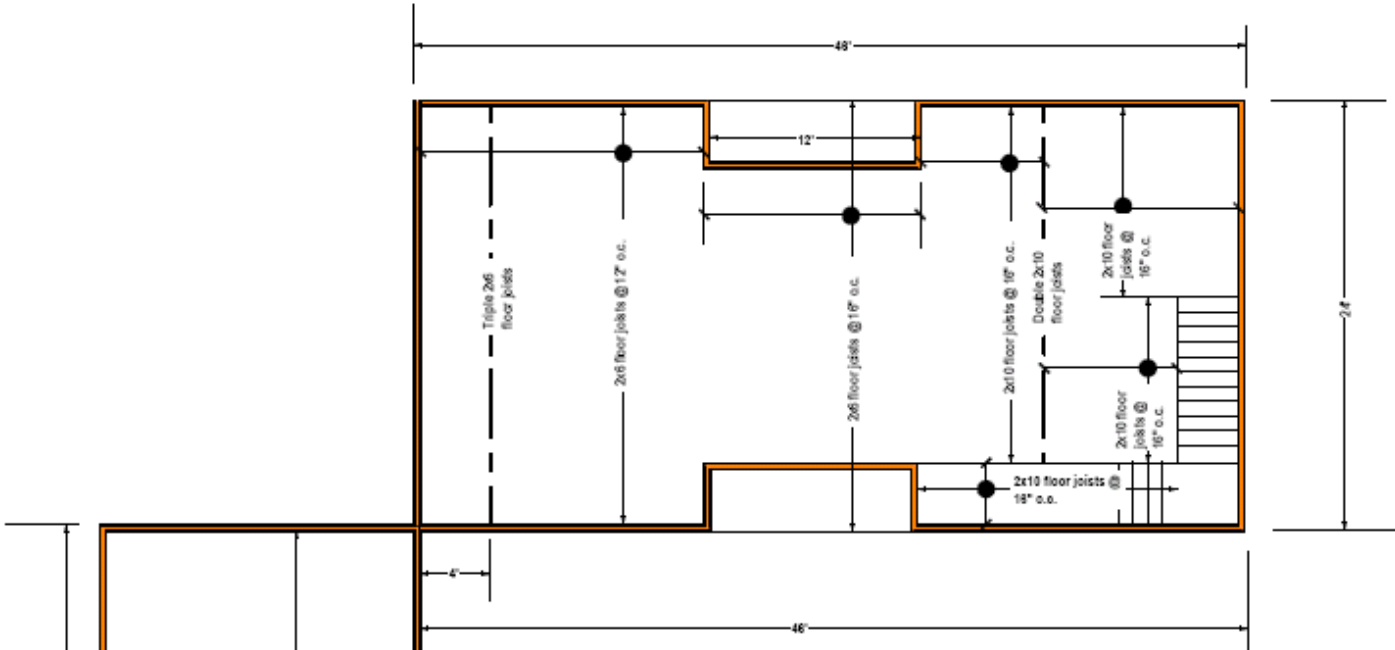
In a cooperative process with the owner, we first developed: 1.) A Foundation and First Floor Plan, 2.) A Second Floor Plan, & 3.) A Roof Plan. Plan takeoff determined that the residence was 3,824 SF on two levels. Through continuing interviews we developed an outline of Construction Specifications, Interior and Exterior Finishes, a schedule of work completed on the various building systems and finishes, and a schedule of stored materials lost in the fire. With this information we developed a scope of repairs and an estimate for the cost to replace the improvements. The replacement cost of the structure as it was at the time of the fire was determined to be approximately \$126 K.

Copies of the three plans developed are on the following three pages.

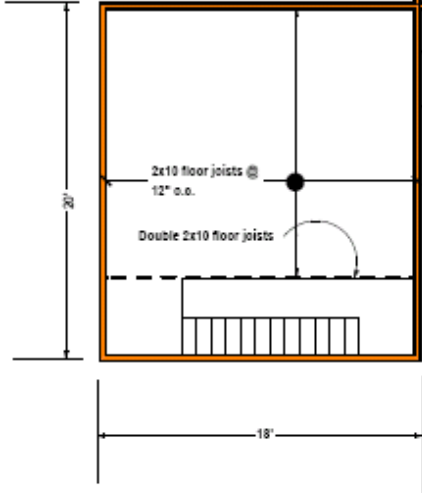
Foundation & First Floor Plan



Second Floor Plan

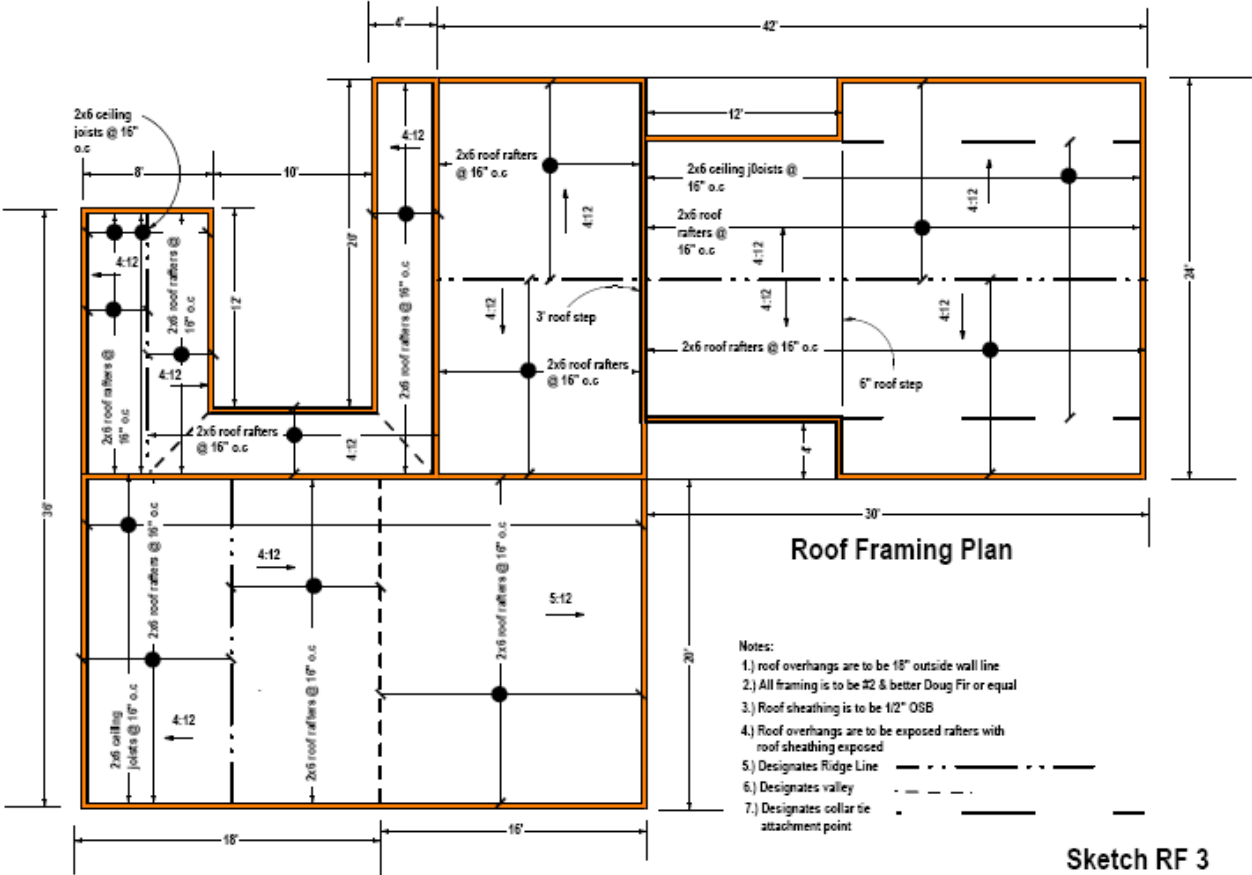


2nd Floor Framing Plan



Sketch 2F 2

Roof Framing Plan



Sketch RF 3