Phase 1 Historic Resource Study for 1600 E. Butler Avenue in Flagstaff, Coconino County, Arizona

Prepared for

Reich Brothers

Prepared by

Cornerstone Environmental Consulting, LLC

October 2020

PHASE 1 HISTORIC RESOURCE STUDY FOR 1600 E. BUTLER AVENUE IN FLAGSTAFF, COCONINO COUNTY, ARIZONA

Subject Property

SCA Tissue
1600 E. Butler Avenue
Flagstaff, Arizona 86001
APNs 104-07-001C and 104-07-005M

Prepared for

Michael Reich

Reich Brothers
172 S. Broadway
White Plains, New York 10506

Prepared by

Joshua S. Edwards
Jack W. Treichler
Terry W. Greene
Kevin Dickinson
and Sarah K. Vanier

Cornerstone Environmental Consulting, LLC
320 N. Leroux Street, Suite A
Flagstaff, Arizona 86001
(928) 522-4148
www.SWArchaeology.com

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SUMMARY OF FINDINGS

Cornerstone Environmental Consulting, LLC, was commissioned by Gammage & Burnham, on behalf of Reich Brothers, to conduct a Phase 1 Historic Resource Study (HRS) for the proposed Butler Commons project pursuant to City of Flagstaff Zoning Code, Section 10-30.30.050.A. The project proponent plans to demolish all existing buildings, structures, and associated infrastructure on the parcel. The proposed project entails redevelopment of the 12.71 acres located at 1600 East Butler Avenue in the City of Flagstaff, Arizona. Development on the southernmost approximately 7 acres is planned to include a commercial/retail building, capable of supporting an anchor tenant, and a multi-tenant building capable of supporting commercial/retail, employment, restaurant, and/or service uses. The remaining approximately 5 acres in the northern portion of the parcel are planned for a future light industrial and/or business/commerce park uses.

As a result of this study, Cornerstone recommends that several buildings on the property be considered significant but that they no longer retain integrity due to extensive remodeling and repair since the beginning of the period of significance in 1954 and continuing through 2017. Cornerstone recommends that proposed work on the subject parcel be allowed to proceed with no further cultural resources or historical work.

APNs: 104-07-001C (12.22 acres) and 104-07-005M (0.49 acres)
Street Address: 1600 E. Butler Avenue
Legal Description: NE ¼ of Section 22, Township 21 North, Range 7 East
USGS 7.5' quadrangle: Flagstaff West, AZ (1983)

Construction Date: 1940s–2010s
Period of Significance: 1954–1970
Major Alterations: 1957, 1958, 1961–1965, 1976, 1991, 1999, 2001, 2003
Area of Significance:

- Engineering (NPS 2002)
  - City of Flagstaff Criterion B (NRHP Criterion A)
  - Theme: Paper Product Manufacturing
- Conservation (NPS 2002)
  - City of Flagstaff Criterion B (NRHP Criterion A)
  - Theme: Recycling
- Architecture
  - City of Flagstaff Criterion D (NRHP Criterion C)
  - Theme: Industrial Architecture

Property Type: Paper Manufacturing Facility

ACKNOWLEDGEMENTS

The authors would like to graciously thank the several individuals who were interviewed during the course of this research, including Jim Babbitt, John Girvin, Bruce Jacks, and Chris Remington. Jim provided initial information about the period of use of the Babbitt Brothers Trading Company slaughterhouse and neighboring stockyard. John and Bruce, who started working at the paper mill in 1969 and 1977, respectively, were also incredibly generous with their time and patiently explained the complexities of paper mill operations during multiple enjoyable discussions. Spending time wandering around the expanses of the empty buildings with John and Bruce was a wonderful experience and their stories breathed life into this report. The paper mill, and all the companies that were involved with it through the years, would be nothing without the people that poured their time and effort into their jobs.

Bruce Jacks (left) and John Girvin (right) in Building 3, September 3, 2020

1.0 PROJECT LOCATION AND DESCRIPTION

The subject property is a large industrial paper product manufacturing complex that was last owned and operated by SCA Tissue (SCA). The parcel is not within any established historic district but contains resources whose origins are more than 50 years old. The facility consists of an amalgamation of multiple buildings on two parcels (APN 104-07-001C [12.22 acres] and 104-07-005M [0.49 acres]) in the City of Flagstaff in Coconino County, Arizona (Figures 1–6). Cornerstone Environmental Consulting, LLC (Cornerstone) was commissioned by Gammage & Burnham, on behalf of Reich Brothers, to conduct a Phase 1 Historic Resource Study (HRS) for the proposed project (PZ-20-00071-01 and PZ-20-00071-02) pursuant to Flagstaff Zoning Code, Section 10-30.30.050.A. The project area is in the NE ¼ of Section 21, Township 21 North, Range 7 East, on the Flagstaff West, AZ (2014), United States Geological Survey (USGS) 7.5-minute quadrangle.

The proposed project entails redevelopment of the 12.71 acres located at 1600 East Butler Avenue. Development on the southernmost approximately 7 acres is planned to include a commercial/retail building, capable of supporting an anchor tenant, and a multi-tenant building capable of supporting commercial/retail, employment, restaurant, and/or service uses. The remaining approximately 5 acres in the northern portion of the parcel are planned for a future light industrial and/or business/commerce park uses.

As a result of this study, Cornerstone recommends that several buildings on the property be considered significant but that they no longer retain integrity due to extensive remodeling and repair since the beginning of the period of significance in 1954 and continuing through 2017. This includes reuse of scavenged building components, including bow trusses from buildings at Camp Navajo. Cornerstone recommends that proposed work on the subject parcel be allowed to proceed with no further cultural resources or historical work.

2.0 REGULATORY CONTEXT

The purpose and content of a Phase 1 HRS is outlined in the Heritage Preservation Division of the City of Flagstaff Zoning Code. As stated in the Zoning Code (30.30-10), a Phase 1 Historic Resource Study shall evaluate the significance of identified and potential historical resources, assess identified and potential impacts, provide measures to mitigate major impacts on said resources, and advise whether Phase 2 or Phase 3 Historic Resource Studies should be required.

All buildings 50 years of age or older were identified as potential historical resources and were evaluated for significance and integrity to determine if they constituted significant historical resources per the Flagstaff Zoning Code. Buildings less than 50 years of age, which did not display exceptional significance, were recorded with minimal evaluation. The determination of significance for cultural resources is defined in Flagstaff Zoning Code (30.30-13) as the following:

The criteria for determining the significance of a historic resource is based on the potential of the historic resource to contribute to our understanding of the past.

1. A resource is significant if:
    a. It is eligible as a National Historic Landmark, or for the National Register of Historic Places, or the Arizona Register of Historic Places; or
    b. It is associated with events or persons in the architectural, engineering, archeological, scientific, technological, economic, agricultural, educational, social, political, military, or cultural annals of the City, the State of Arizona, or the United States of America; or
    c. It represents the work of, or for, an important individual; or
    d. It embodies distinctive characteristics of type, period, region, artistic values or methods of construction, including being the oldest of its type or the best example of its type; or
    e. It has yielded, or may be likely to yield, information needed for scientific research, such as important archaeological resources.
2. A resource is generally not significant if:
    a. It is less than 50 years old at the time of application; or
    b. The features, materials, patterns and relationships that contributed to its significance are no longer present or no longer have integrity.
3. Requirement to Meet the Criteria, Regardless of Age: Properties that are 50 years old are not automatically significant. To be considered significant, all resources, regardless of age, must be demonstrated to meet the criteria for determining the significance of a cultural or historical resource.

Evaluation of significance and integrity and application of the National Register of Historic Places (NRHP) Criteria was conducted in accordance with the guidelines established by the U.S. Department of the Interior and National Park Service in U.S. Secretary of the Interior Standards and Guidelines for Archaeology and Historic Preservation (NPS 1983), National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation (NPS 2002).

3.0 METHODOLOGY

The Phase 1 HRS for the Svenska Cellulosa AB Tissue (SCA) plant entailed archival research, fieldwork, significance and integrity evaluation, and report preparation by Cornerstone Principal Investigator Josh Edwards. Cornerstone personnel conducted the research by searching historical records and visiting the

subject property on September 9, 24, 29, and 30, and October 6, 2020. Fieldwork on September 9 was completed by Josh Edwards and Jack Treichler, Josh Edwards and architect Terry Greene visited the facility together on September 24 and 29, and Mr. Greene visited the property again on September 30 and October 6 and 13. The subject buildings were visited to identify and document potential historical resources and to attempt to reconstruct the continuous and complex history of repairs, remodels, and alterations to buildings originally constructed during the period of significance. Digital photographs were taken with a number of instruments, including a Sony A7R IV 61MP full-frame mirrorless camera, to document each significant building present in the project area. A photograph log was created to describe the subject, facing, and location of each photograph.

Archival and secondary research was conducted with the goal of establishing a building construction and modification timeline and site history. Research methodology was based on the National Park Service guidance outlined in *National Register Bulletin 39: Researching a Historic Property* (NPS 1998). Locations of research materials included Northern Arizona University (NAU) Cline Library's Special Collections and Archives and Colorado Plateau Archives; public records at the Coconino County Recorder's Office and Assessor's Office; public records from the City of Flagstaff; the Arizona Memory Project collection; and various online newspaper databases.

Email and telephone interviews were conducted with James E. Babbitt of Babbitt Backcountry Outfitters by Josh Edwards on September 1, 2, and 9, 2020. Additional extensive interviews were also conducted with John Girvin and Bruce Jacks, who worked for SCA Tissue (and predecessor companies) for 46 and 43 years, respectively. These communications were numerous, occurred on site during the field visits, and in person during a two-hour formal audio-recorded interview with Bruce Jacks and John Girvin by Josh Edwards on September 9, 2020. Another lengthy telephone interview with Bruce Jacks, about individual building functions, was conducted by Josh Edwards on October 6, 2020. Plant Engineer Chris Remington was interviewed by Terry Greene and Kevin Dickinson via email and telephone on September 29 and October 8 and 13, 2020.

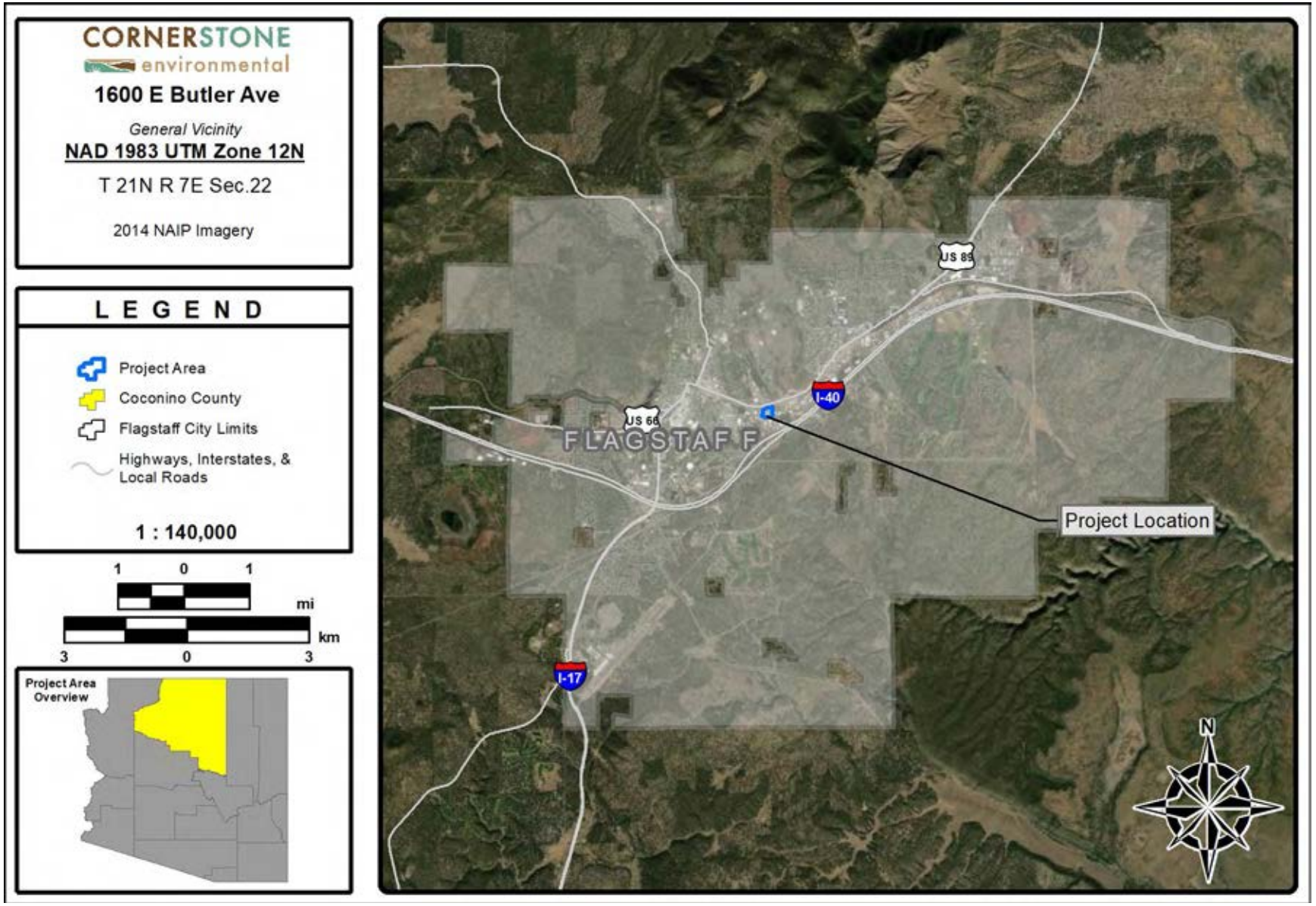


Figure 1. General project area location.

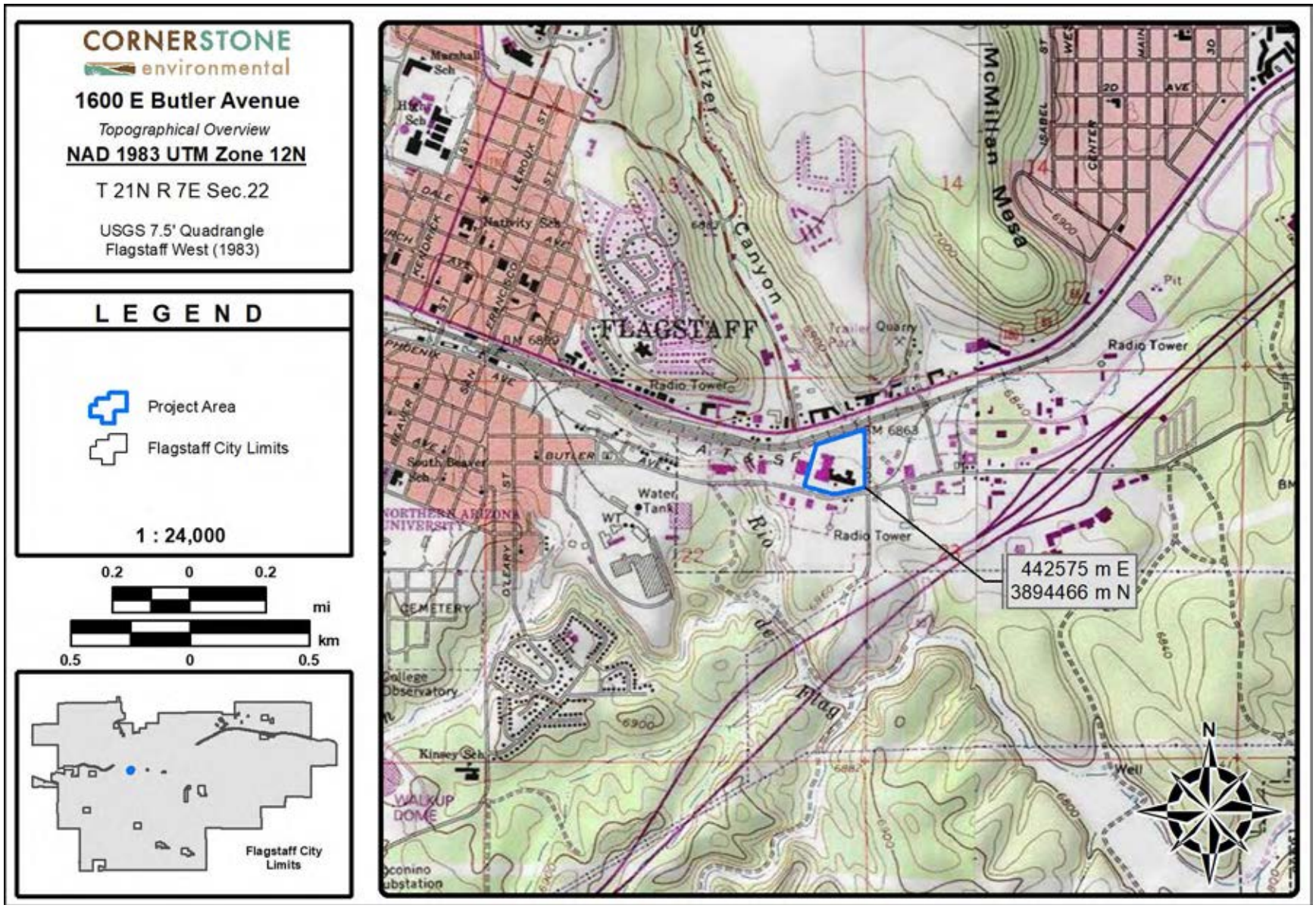


Figure 2. Project area location shown on topographic map.

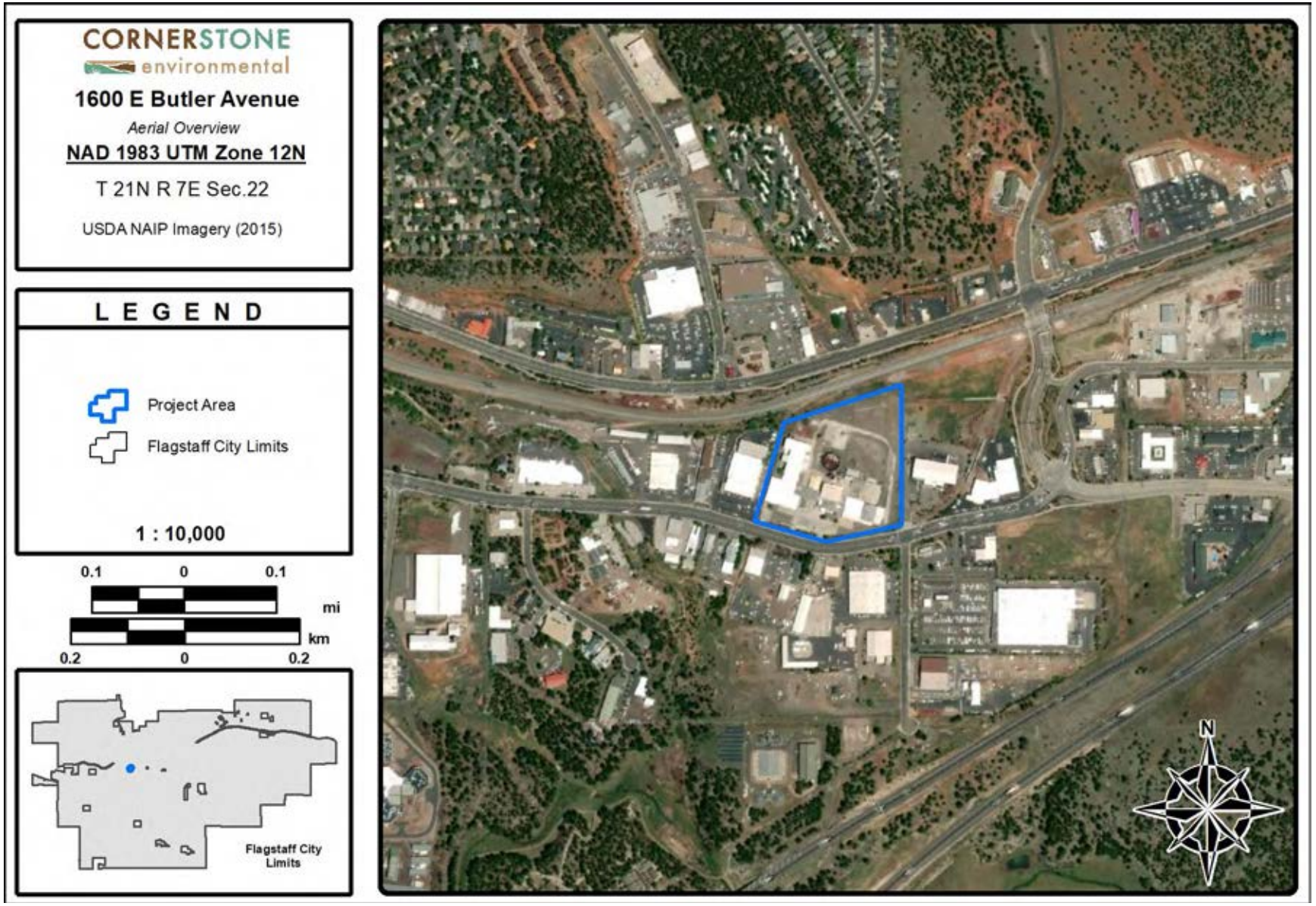


Figure 3. Study area location shown on aerial photo.

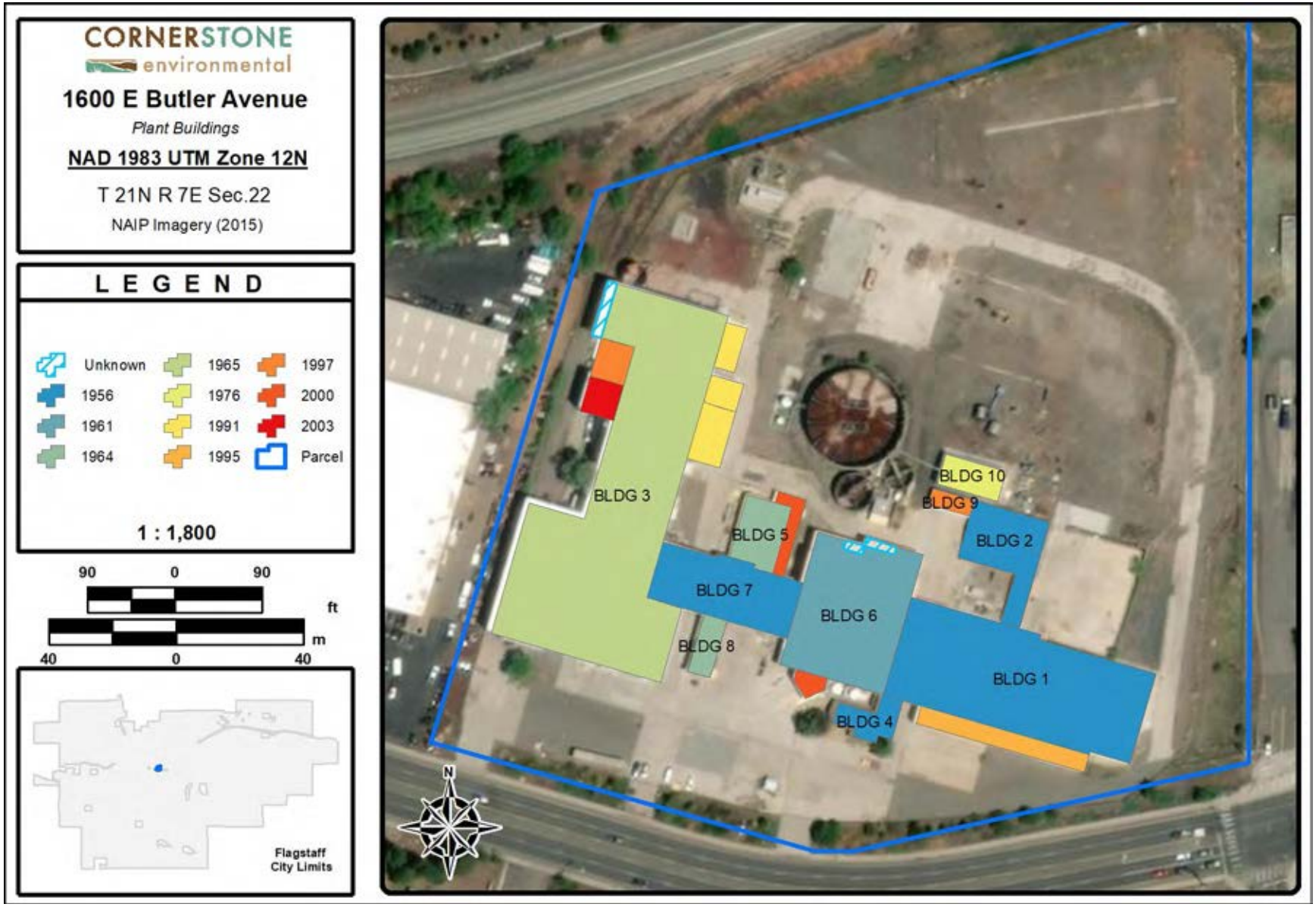


Figure 4. Aerial photo showing building numbers and initial construction dates.

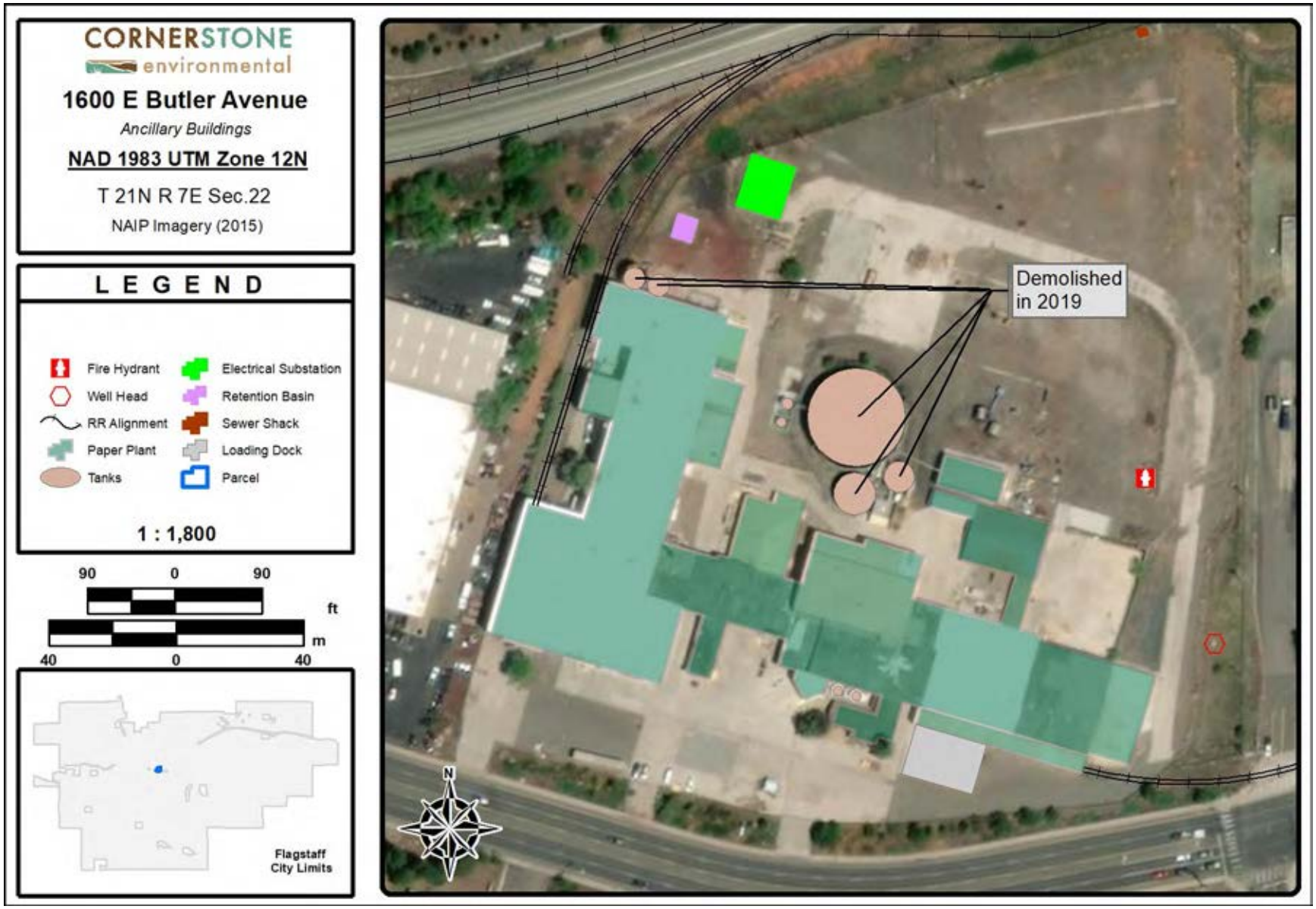


Figure 5. Aerial photo showing ancillary structures.

Figure 6. 2017 oblique aerial photo of the SCA Tissue Plant.

During all phases of research, Cornerstone personnel focused on the following questions:

- What is the early history of the property?
- How did the use of the plant transition through time?
- What products were made in the plant?
- What processes occurred at the different buildings?
- How did the ethnicity of the workforce change through time?
- What was the role of women at the plant?
- In what neighborhoods did most of the workers live?
- How was recycled water used at the plant?
- How was recycled pulp used?
- How did the delivery systems in the plant for water, pulp, and finished product function?
- What products went to the Bellemont facility for completion?
- Where did the recycled paper come from?
- How were the finished products packaged?
- How much of the finished products were sold locally in Flagstaff, Arizona, and nationally?
- How did the paper-manufacturing industry, and the SCA plant, fit into the economy of Flagstaff?

The following list details the types of documents and sources that were consulted during this study:

- Aerial photographs (1944 to the present)

    - March 7, 1954
    - 1959
    - August 31, 1964
    - August 23, 1974
- The Arizona State Museum's AZSITE database
- City of Flagstaff/Coconino County plat maps (1878, 1889, 1909, 1919/1925, and 1939)
- Coconino County deed, tax assessment, and property records
- Existing cultural/historical resource studies and historic contexts
- Flagstaff Building Timeline Collection, 1890-2000 (Hooper n.d.)
- Flagstaff City Directories (1929–1989 [some years missing from record])
- Flagstaff Telephone Directories (1930–1989 [some years missing from record])
- Bureau of Land Management General Land Office (GLO) map: 1878 GLO Survey
- Historical topographic maps:
    - San Francisco Mtns 1:250,000 (1886, 1891, 1894, 1899)
    - Flagstaff 1:125,000 (1908, 1912)
    - Flagstaff 1:250,000 (1947, 1954, 1960, 1962) area
    - Flagstaff West 1:24,000 (1962)
- Historical postcards
- Sanborn Fire Insurance Co. maps (1910, 1916, 1943, 1948, and 1956)
- National Register of Historic Places Focus database
- Newspaper archives
    - Arizona Daily Sun
    - The Coconino Sun
- Cline Library Special Collections, including oral history interviews

3.1 METHODOLOGY FOR THE ANALYSIS OF SIGNIFICANCE AND INTEGRITY

For a resource to be considered a significant cultural/historical resource for the City of Flagstaff or to be considered eligible for listing in the National Register of Historic Places (NRHP) or the Arizona Register of Historic Places (ARHP) the resource must possess both significance and integrity. Definitions of significance and integrity are found in the Flagstaff Zoning Code (30.30-13) and the NRHP Criteria for Evaluation (36 CFR § 60.4). Evaluation of significance and integrity and application of the NRHP Criteria for Evaluation was conducted in accordance with the guidelines established by the U.S. Department of the Interior and National Park Service in *U.S. Secretary of the Interior Standards and Guidelines for Archaeology and Historic Preservation* (NPS 1983), *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation* (NPS 2002), and *National Register Bulletin 32: Guidelines for Evaluating and Documenting Properties Associated with Significant Persons* (NPS 1989).

3.1.1 SIGNIFICANCE

For a resource to be considered significant it must meet City of Flagstaff Criterion A (be at least 50 years old) and at least one other Criterion for Evaluation (B, C, D, or E; NRHP Criteria A, B, C, and D,

respectively) by being associated with an important historical context, retain historic integrity of those features necessary to convey its significance, and have been built and used within the appropriate period of significance for the identified theme (NPS 2002). The period of significance is the time period in which properties eligible for the National Register must be demonstrated to have been associated with the appropriate theme. The ARHP utilizes the same criteria and process for determining significance. For means of ease of communication, NRHP Criteria will be used throughout this report. The NRHP Criteria for Evaluation (36 CFR § 60.4) are as follows:

> *The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:*
>
> *A. That are associated with events that have made a significant contribution to the broad patterns of our history; or*
> *B. That are associated with the lives of significant persons in our past; or*
> *C. That embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguished entity whose components may lack individual distinction; or*
> *D. That have yielded, or may be likely to yield, information important in prehistory or history.*

The City of Flagstaff's criteria for determining significance of cultural/historical resources are similar to that of the NRHP but are not an exact replication. The criteria are defined in Flagstaff Zoning Code (30.30-13) as the following:

> *The criteria for determining the significance of a cultural resource is based on the potential of the cultural resource to contribute to our understanding of the past.*
>
> *1. A cultural resource is significant if:*
> *a. It is eligible as a National Historic Landmark, or for the National Register of Historic Places, or the Arizona Register of Historic Places; or*
> *b. It is associated with events or persons in the architectural, engineering, archeological, scientific, technological, economic, agricultural, educational, social, political, military, or cultural annals of the City, the State of Arizona, or the United States of America; or*
> *c. It represents the work of, or for, an important individual; or*
> *d. It embodies distinctive characteristics of type, period, region, artistic values or methods of construction, including being the oldest of its type or the best example of its type; or*
> *e. It has yielded, or may be likely to yield, information needed for scientific research, such as important archaeological resources.*
> *2. A resource is generally not significant if:*
> *a. It is less than 50 years old at the time of application; or*

b. *The features, materials, patterns and relationships that contributed to its significance are no longer present or no longer have integrity.*

3. *Requirement to Meet the Criteria, Regardless of Age: Properties that are 50 years old are not automatically significant. In order to be significant, all resources, regardless of age, must be demonstrated to meet the criteria for determining the significance of a cultural resource.*

3.1.2 INTEGRITY

Integrity is defined as the ability of a property to convey its significance. The seven aspects of integrity are location, design, setting, materials, workmanship, feeling, and association. *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation* (NPS 2002) includes the following definitions of the seven aspects of integrity:

- ***Location*** *is the place where the historic property was constructed or the place where the historic event occurred.*
- ***Design*** *is the combination of elements that create the form, plan, space, structure, and style of a property.*
- ***Setting*** *is the physical environment of a historic property.*
- ***Materials*** *are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.*
- ***Workmanship*** *is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.*
- ***Feeling*** *is a property's expression of the aesthetic or historic sense of a particular period of time.*
- ***Association*** *is the direct link between an important historic event or person and a historic property.*

Several steps are utilized to assess integrity. The first steps are to identify the character defining features, or essential physical features, that are required to demonstrate a resource's significance and to determine if these features are present and sufficiently visible to convey the resource's significance. The next step is to determine whether the resource should be compared with similar properties. This process may reveal which character defining features are necessary and is particularly important in cases where the resource is a rare surviving example (NPS 2002).

The last step is to determine which aspects of integrity are particularly relevant to the resource. A resource that retains historic integrity will likely retain most or all of the seven aspects of integrity. However, which aspects are most important to a certain resource will depend on the type of resource and under which NRHP Criteria the resource is significant. A building significant under NRHP Criteria A or B (association with significant events or persons, respectively), for example, may not need to retain as

high a degree of design, workmanship, and materials as would be required for eligibility under NRHP Criterion C (architectural value). Likewise, for a building significant under Criterion D, the retention of location, setting, feeling, and association is less important than for a building eligible under Criteria A or B (NPS 2002).

4.0 HISTORICAL OVERVIEW

This historical overview was created from multiple sources and attempts to paint a background upon which the research results can be viewed (NPS 1986). If the subject property demonstrated no association with a particular theme, that theme is not represented in this historical overview.

4.1 SETTLEMENT AND EARLY DEVELOPMENT OF FLAGSTAFF

The first attempt by immigrants to settle the Flagstaff area began when two groups of pioneers from Boston, organized as the Arizona Colonization Company, surveyed an area near Leroux Spring in 1876. Lots and blocks for a townsite were laid out but, discouraged with the poor prospects for farming or mining, those first pioneers abandoned the site within a few months.

In the summer of 1880, Atlantic & Pacific Railroad surveyors, followed by the grading subcontractors for the new line, established a camp at Antelope Spring near the base of Mars Hill (Stein 2006). The railroad line was established along the southern boundary of Section 16, just south of Antelope Spring. Although the surveyors had located their construction terminus at the spring, which was also near the crossroads of the Overland Route (Beale Road) and Fort Valley Road, they did not plan a town at that location, since a division town had been laid out at Winslow and another planned for Seligman. Nevertheless, a construction terminus boom town began to grow in 1881 when Peter J. Brannen, a merchant from Prescott, located a branch store near the spring just north of the railroad's right-of-way. Other merchants and businessmen, operating saloons, restaurants, and dry good stores, began to erect log and tent structures along the railroad line west of Brannen's store. This early commercial focal point for Flagstaff would be known in the future as "Old Town." Archaeological excavations conducted in 1976 revealed the presence of some of those initial business sites, but no standing structures remain today.

In 1881 Edward E. Ayer, a lumberman with operations in Michigan and Wisconsin, contracted with the Atlantic & Pacific Railroad to supply all the ties for the roadbed construction and the lumber for bridges. Ayer erected a sawmill, which was in operation by the summer of 1882. Noted as the largest and most modern in the Southwest, the sawmill was producing 150,000 board feet of lumber per day, two weeks before the arrival of the first train to Flagstaff in August of 1882.

The steep railroad grade up to the settlement at Antelope Spring forced the trains to stop on the flatter ground one half mile to the east, so a depot was erected at that location. Businesses began to relocate at this "New Town" in 1883. P.J. Brannen was the first to construct a stone store building on the corner of San Francisco Street and Railroad Avenue, also known as Front Street. Soon a large number of frame buildings sprang up along Railroad Avenue.

When most of Old Town burned down in a fire in 1884, the commercial center was recognized to be at the New Town location. A fire in that area in 1886 destroyed almost the entire new district, but it was largely rebuilt by early 1887 with the new buildings being built of brick or stone. Residential areas were also developing in the late 1880s north of the commercial area to about Cherry Street, and along Leroux Street, then known as Gold Avenue.

The 1890s were important in Flagstaff's economic and political history. Two banks were established by 1890, the Arizona Bank and the Bank of Flagstaff. A private electric light plant was built in 1890 and that same year the beginning of a telephone system was installed. A fire department was also organized in the 1890s. In 1891 the Territorial Legislative Assembly passed an act that created Coconino County out of a portion of Yavapai County. Flagstaff was designated as the county seat by special election.

The Town of Flagstaff was incorporated on May 26, 1894, by an order of the Coconino County Board of Supervisors. The Supervisors appointed Gohram A. Bray as mayor and J.A. Vail, J.F. Daggs, P.J. Brannen and David Babbitt as members of the Common Council. The first town elections were held in May 1895. During Julius Aubeneau's term as mayor in 1898, the town of Flagstaff held its first bond election. Voters approved the measure, which authorized $95,000 to build a town-owned water line and reservoir.

The establishment of Flagstaff as the seat of Coconino County, the town's incorporation, and the initiation of its utility systems, helped provide the impetus for Flagstaff's first major building boom. By 1900 Flagstaff had a population of slightly under 2,000 people supported by a prosperous economy founded on the lumber, sheep, and freighting industries.

4.2 THE BABBITT BROTHERS

The Babbitt brothers came to Flagstaff from Cincinnati, Ohio in 1886 and established the CO Bar cattle ranch on lands between Flagstaff and Grand Canyon (Smith 1989). The CO Bar is one of the largest cattle ranches ever to operate in the Southwest and is active to this day (Trimble 1982). Before the family's interest in cattle ranching, Catherine Spellmire, a German immigrant, and David Babbitt, a native of

Massachusetts, were simple farmers raising their family of six children on the outskirts of Cincinnati, Ohio. Everything changed in 1868 when Catherine was widowed and left alone to raise her daughter and five sons: Elizabeth ("Lizzie," 15 years old), David ("Dave," 10 years old), George (eight years old), William ("Billy," six years old), Charles ("C.J.," three years old), and Edward (one year old; Figure 7; Smith 1989). After the father David's untimely death, Catherine packed up her family and moved them into Cincinnati where she managed the family matters until her death in 1883 (Akbarzadeh 1992).

Following the death of his sister Lizzie the same year, Dave became the head of the Babbitt household at age 10 (Smith 1989). Although he was forced into this position by unfortunate circumstances, Dave proved to be a natural leader and savvy businessman from an early age. In 1882, Dave and George at the ages of 24 and 22, respectively, opened a grocery business in Cincinnati, which would prove to be the first in a long string of business endeavors for the Babbitt family. The grocery was located across the street from the household of the Verkamp family, which included four daughters, three of whom would marry Babbitt brothers.

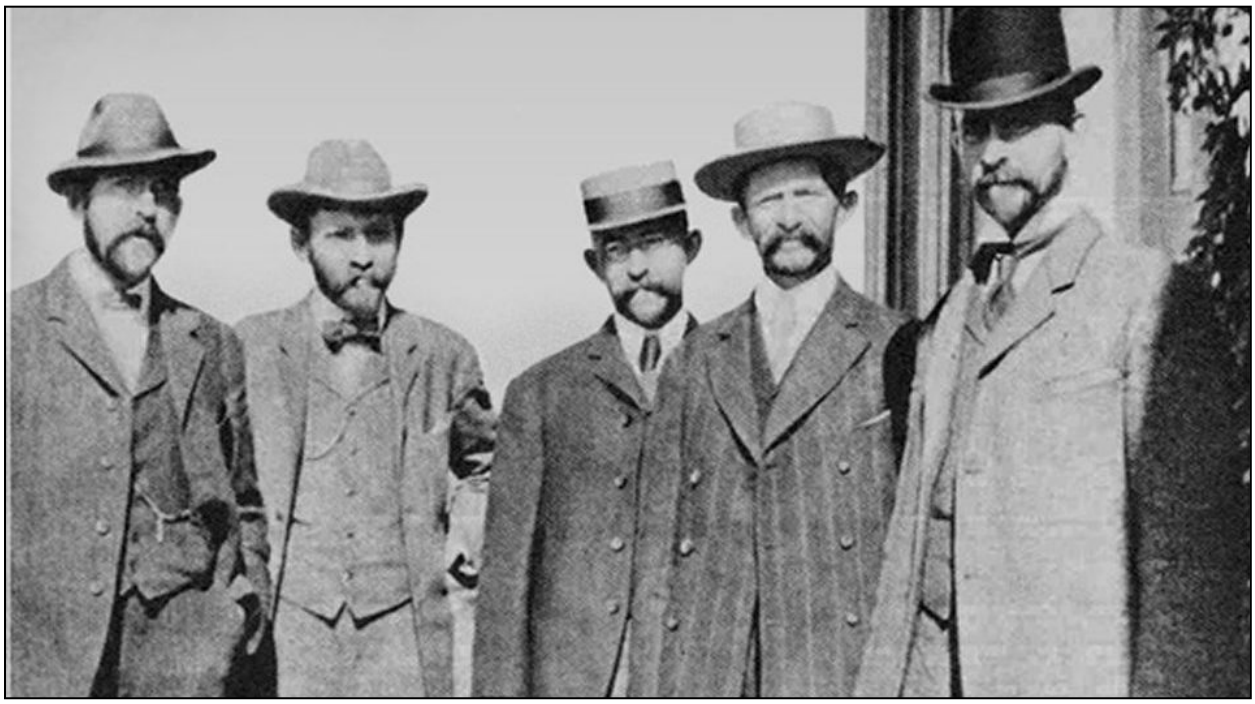


Figure 7. Photo of George, Charles, Edward, William, and David Babbitt (left to right), around 1908.

As the three younger Babbitt brothers matured, they became involved in the family business and soon began looking west. News of wide-open spaces and successes in the ranching industry in the west had made its way to Cincinnati, and in 1884 Dave took a trip to scout out new opportunities for the family. Unable to locate a suitable and affordable site in Wyoming nor in Montana, he returned to Ohio and the young Babbitts pushed hard to save up as much money as possible. Characteristically resilient, Dave and

William embarked on a second westward voyage in 1886 with a savings of $20,000 and a focus on the Southwest.

Before Dave and Billy stepped off the train in Flagstaff on April 7, 1886 they had both researched and seen firsthand much of the American West. While passing through New Mexico, the brothers found that land and stock prices were too high for their liking. Following a tip from a railroad clerk about a booming but raw little town in the Arizona Territory where the "…range is good and the scenery is wonderful" (Smith 1989:33), they departed Albuquerque and headed toward the booming town of Flagstaff. There they met many of the town's influential citizens through their acquaintance with Dr. D.J. Brannen, the physician for the Ayer Lumber Mill, the Atlantic & Pacific Railroad (A&P), and the cousin of early settler and merchant Peter J. Brannen from Prescott (Woodward 1993; Wilson-Kelly 2009).

Upon stepping off the train in the predawn alongside the A&P's hastily converted boxcar that served as the train depot, the brothers were greeted by a lifeless town in the early morning gloom. Undaunted by the discovery that a disastrous fire had devastated downtown Flagstaff just months earlier, Dave and Billy wired C.J. who arrived in Flagstaff just a couple weeks later. George stayed in Ohio just long enough to tie up the family affairs while Edward remained at school. George and Edward arrived in 1887. While the four older brothers would stay in Flagstaff for the rest of their lives, Edward returned to Ohio to study law, occasionally visiting Arizona, as Cincinnati remained his true home.

Within their first two weeks in town, Dave and Billy spent almost their entire $20,000 in savings to procure around 1,200 head of cattle, calling their new outfit the CO Bar Ranch in honor of their hometown of Cincinnati, Ohio. At this point, the Verkamp family, including George Verkamp and his daughters, once again enter the story.

The four older Babbitt brothers came west to pursue cattle ranching, which was a good and profitable industry at the time, but entrepreneurial diversification sustained the family in the long term. C.J. and Billy continued to run the ranch, while Dave and George sought other opportunities. George took a position as the bookkeeper for P.J. Brannen's general store and purchased a small confectionery and restaurant on Front Street (now Historic Route 66), eventually installing the very first soda fountain in town (Cline 1976). The Babbitt brothers who married Verkamp women received $10,000 dowries and George Verkamp contributed up to $100,000 to the endeavors of his daughters and their Babbitt husbands.

4.2.1 BABBITT BROTHERS TRADING COMPANY

As a response to a slump in cattle prices that limited the Babbitt's stock operation, Dave Babbitt opened a building materials business in a frame building on the northwest corner of San Francisco and Aspen streets (Cline 1976; Turley 1939). This site would later become the center of Babbitt operations for many years. As part of the push to diversify the family's business interests, Dave bought Ralph Cameron and John Lind's general store (Babbitt 1967). The frame building in downtown Flagstaff was then replaced by a beautiful stone building in 1888.

In 1889, George dissolved his business and the brothers created Babbitt Brothers Trading Company as a partnership (Cline 1976). The company was incorporated in 1918 and included branches in Williams, Winslow, Page, Holbrook, and Grand Canyon. The company's main interests included Indian goods trading, cattle and sheep ranching, real estate, loans, general mercantile, and freighting. The company's articles of incorporation indicate that a charter of incorporation was granted for 25 years and the various trading posts were incorporated separately. All assets and liabilities of the Babbitt Brothers Mercantile Company in Winslow were transferred to the Babbitt Brothers Trading Company in exchange for 1,245 shares of stock on October 7, 1918.

Babbitt Brothers Trading Company was a success in the lumber and tool supply business because they purchased large amounts of product at wholesale prices and resold them for lower rates than their competitors (Turley 1939). The business model worked well, and the family forged their way into the world of merchandise. By December 31, 1888, all four eldest brothers had invested in Babbitt Brothers Trading Company. Each brother had a specific role in the company, with each role aligned to their business strength, while William continued to oversee the ranch. Over the years, the company had dealings in everything from selling merchandise – from wagons to sewing machines to groceries – with their business mainstay being livestock. Over the years, the Babbitts continued to add business lines including a bank, ice making, a funeral parlor, a drug store, and automobiles. In the 1930s, when Platt Cline arrived in Flagstaff, prevalent sayings in Flagstaff were that "…the Babbitts would provide everything you needed, 'from the basket to the casket'" and that "In northern Arizona, even the sheep say, Baa-bbitts" (Cline 1976:248).

Babbitt Brothers Trading Company continued to diversify and invest during World War II and were quick to modernize when the post-war boom hit. The company adapted its business strategy, focusing almost entirely on ranching and department stores until the 1980s, when they were forced to cut back their endeavors or continue to be in debt. In 1987, the company had to close its downtown Flagstaff department

store and those in six other northern Arizona communities. The company officially closed its doors in 2002.

While the Babbitt building in downtown Flagstaff remains as an architectural fixture of the community, it was once slated for demolition. The building's purchase by the Babbitt Foundation saved the structure, which has served as an example of adaptive reuse and successful historic preservation in the City of Flagstaff. Babbitt Brothers Trading Company had immense influence on northern Arizona. The Babbitts continue their ranching tradition, while Babbitt's Wholesale Company now operates out of the downtown building. Babbitt's Wholesale Company currently specializes in sporting goods and wholesale distribution of Pendleton blankets.

While Babbitt Brothers Trading Company found prosperity in the late nineteenth and early twentieth century, and the auto industry blossomed in the early 20th century, ranching would eventually become the family's most profitable, widespread, and enduring endeavor. At its peak, the Babbitt Ranches spanned over a million acres – from Kansas to California – and included enduring partnerships with many smaller ranches in and around Flagstaff, such as the Arizona Cattle Company with its A-1 brand, as well as the Hashknife outfit. While last of the five original Babbitt brothers died in 1956, the Babbitt Ranch tradition continues with some of the finest operations in northern Arizona, including a colt sale under the historic Hashknife brand.

The Babbitt Ranches currently raise calves with approximately 8,000 head of grass-fed, open range, Hereford cattle grazing on 700,000 acres of private, federal, and state land that include the CO Bar, Espee, and Cataract ranches. The family continues to contribute to the Flagstaff community through their emphasis on conservation and a relationship with the land that has developed out of their more than 125 years of working on, and with, the natural world. Their character, community, and what they call "Cowboy Essence" has been a significant factor in shaping Flagstaff and northern Arizona into the cultural landscape that influences residents' world views and local values.

4.3 Lumbering in the Flagstaff Area

The logging and lumber industry in the forests of northern Arizona started incrementally with small and often portable mills scattered across the area. The first known mill in the area was set up by Mormons in 1876 at Sawmill Springs (Stein 2006:5). It was the coming of the railroad in the 1880s, however, that turned the nascent trade into a regional industry. As the Atlantic & Pacific Railroad made its way across northern Arizona it became clear that the immense ponderosa pine forest surrounding the San Francisco Peaks would be a key provider of lumber resources, vital for railroad ties and bridge timber (Matheny

1975; Schuppert 1993). Flagstaff emerged as the logical epicenter of this industry, due to its central location and the presence of water at Antelope Springs. The United States granted land to the A&P along the route of the railroad and the company contracted out timber rights to lumber companies (Matheny 1975).

In 1881 the first significant company emerged to take advantage of this situation. A Chicago businessman, Edward Everett Ayer, formed the Ayer Lumber Company and hired J.A. Wakefield as mill manager, and in 1882 they built the first permanent mill in Flagstaff about a mile southwest of the new train station (Schuppert 1993:17–19). In 1884 Ayer became dissatisfied with Wakefield and replaced him with Denis M. Riordan as manager (Schuppert 1993:24–25). Denis brought on his two younger brothers Michael J. Riordan and Timothy A. Riordan. By 1887 Ayer was looking to get out of the lumber business in Flagstaff, and an arrangement was made for the Riordans to buy out the company; the Riordans reorganized it as the Arizona Lumber Company (Schuppert 1993:26).

These and future developments would occur on lands considered ancestral to indigenous groups including the Apache, Diné (Navajo), Havasupai, Hopi, and Yavapai. The White Mountain Apache were particularly instrumental in defending their land against incursion. Just weeks prior to Ayer establishing his lumber mill, an Apache leader, called Nok-e-da-klinne by historians, was captured and killed by U.S. forces. Fear of reprisal somewhat impaired Ayer's efforts. Apache resistance in the area was effectively ended at the Battle of Big Dry Wash in 1882, where 350 troops of the U.S. Army's 3rd and 6th Cavalry Regiments, under command of Captain Adna R. Chaffee, defeated about 60 White Mountain Apache warriors led by Na-tio-tish (or Non-tia-tish; Matheny 1975:59–60). The logging and lumber industry would continue in the area with no significant resistance from its original inhabitants.

Meanwhile, Colonel James W. Eddy had been struggling with acquiring financing for his ongoing construction of the Arizona Mineral Belt Railroad. By 1888 his situation was finally untenable, and Denis Riordan and other investors joined to buy up the failed railroad's locomotive engine, rolling stock, the railroad line itself, and other associated properties and assets. It was reorganized as the Central Arizona Railroad (CAR), in direct support of the Arizona Lumber Company. By fully integrating the harvest and transport of logs with their milling operations, the Riordans struck on an effective business model (Schuppert 1993:29; Stein 2006:6). Logging, railroads, and lumber mills would remain entwined in the Flagstaff area through the 1960s.

The original sawmill site established by Ayers was still the primary mill site and was now known colloquially as Milltown (later shortened to Milton), due to the various company establishments

surrounding it. The Flagstaff sawmill was also supported by various smaller branch mills. Operational redundancy was important, as sawmills were prone to fire. The CAR maintained a steady stream of logs to feed the mills, and by the end of the 1880s the Arizona Lumber Company had a near monopoly on timber rights in the San Francisco Peaks area. The Riordans renamed their business the Arizona Lumber & Timber Company (AL&T) in 1890 to reflect their growing emphasis on logging (Schuppert 1993:29–30).

In 1897 the two younger Riordan brothers took over operation of the AL&T from Denis. By this point, production at the mills had increased and the original alignment of the CAR was no longer producing enough raw timber. The brothers disassembled the track, and over the next few decades would lay and then pull a series of main and spur lines throughout the area to harvest timber and keep the mills fed (Schuppert 1993). The original alignment ran through Clark Valley, and subsequent alignments included the Rogers Lake South and North Lines, the Greenlaw North and South Lines, the Woody Ridge Line, and the Munds Park and Howard Spring Line (Stein 2006). This system proved efficient and effective and would be emulated by other companies.

The Riordans were influential not just in the logging and lumber industry but in the development of the City of Flagstaff and the greater Flagstaff area. In 1903 the Riordans provided funding for a dam across Clark Valley to form a lake to provide water for their company and the town of Flagstaff. It was named Lake Mary for Timothy Riordan's daughter, Mary Riordan (Schuppert 1993:66–67). The house Michael and Timothy built in 1904 has been preserved as the Riordan Mansion State Historic Park and is a Flagstaff tourist attraction. The Riordans' supremacy in the Flagstaff logging and lumber business would be challenged by a number of players, however, including the Greenlaw brothers, the Flagstaff Lumber Company, and the Saginaw & Manistee Lumber Company.

Beginning in 1887 and continuing through the mid-1920s, the brothers Ed and Charles Greenlaw mounted successive endeavors that challenged the AL&T. First as the Enterprise Lumber Company, then as the Coconino Lumber Company, and finally as the Greenlaw Lumber Company, the brothers would carve out a niche for themselves in the industry before being subcontracted, bought-out, or otherwise brought back in to the Riordans' corporate fold (Schuppert 1993:31–33). The Greenlaws' sawmill was just east of Flagstaff, at the current location of the Flagstaff Mall (Stein 2006:15). The CAR's Greenlaw lines were specifically built to support the Riordans' interest in this mill.

Edward T. McGonigle, a former AL&T employee, formed the Flagstaff Lumber Manufacturing Company (later shortened to Flagstaff Lumber Company) in 1909. For a time, they equaled the production of the

Riordans' operation. The company was bought by the W.M. Cady Lumber Company of McNary, Louisiana in 1924 and ceased operations around 1927 (Schuppert 1993:64–69). The company's railroad was officially named the Flagstaff and Southern but was unofficially known as the "Flim-Flam." They built several alignments including the Clark Valley to Howard Mountain Line, the Anderson Mesa Line, and the Mormon Mountain Line (Stein 2006).

The most substantial competition came from the Saginaw & Manistee Lumber Company. The Saginaw Lumber Company, out of Michigan, started operating in the area in 1893 and merged with the Manistee Lumber Company in 1899. Saginaw & Manistee operated lumber mills in Williams, Chalender, and, later, Flagstaff, and constructed several logging railroad lines including the Chalender Line, the Bellemont Line, the Garland Prairie and Hull Spring Line, and the Tusayan Line (Stein 2006). Rather than rely fully on their own railroad network (as the Riordans did with the CAR) Saginaw & Manistee tended to build lines that tied into the Santa Fe Railway (formerly the A&P; Schuppert 1993); an exception was a short primary line of their own named the Saginaw Southern Railroad (Stein 2006:27).

The industry employed a diverse workforce. From the late nineteenth century through the 1920s, much of the railroad construction crews for the AL&T and Saginaw & Manistee were Mexican or Mexican American. When the W.M. Cady Lumber Company purchased the Flagstaff Lumber Company they relocated much of their workforce from Louisiana, including many Black Americans (Montgomery et al. 2019); the company also employed many Apache and Navajo tribe members (Stein 2006:9). Predictably for the time, it was not uncommon for logging camps to be racially segregated (Stein 2019:13). The work was demanding, companies made it difficult for workers to form unions, and severe injuries were quite common (Stein 2006:12). One bright spot: keen to keep their workers fueled, most companies made sure their loggers were provided a full, hearty, and varied diet (Stein 2006:10).

Due to several factors, the early twentieth century saw the industry begin to slow down. To start with, many of the most accessible and profitable stands of timber had already been harvested. Then, following the formation of the Coconino and Kaibab National Forests around the turn of the century, the United States Department of Agriculture (USDA) began to take a larger role in forest management. From 1910 on, efforts to improve sustainability and decrease clearcutting contributed to the lowering of profitability of logging in the area (Stein 2006:11).

The early 1930s saw further turbulence. The Wall Street Crash of 1929 took several months to be felt, but broad declines in national industries resulted in most logging and milling operations ceasing in 1930. Michael Riordan died in 1930, and Timothy Riordan decided to retire in 1933. Joe Dolan, a crate and box

manufacturer out of Phoenix, bought controlling stock of the AL&T and CAR the same year and operations resumed. Dolan dissolved the CAR as a separate company, incorporating railroad operations into the AL&T, and modernized and improved the company's logging operations (Schuppert 1993:72). By 1941 Dolan wanted to get out of the logging and lumber business and Saginaw & Manistee wanted to expand; as a result, Dolan leased the AL&T to the latter company. The AL&T name was dropped, though its operations continued (Schuppert 1993:73).

The engagement of the U.S. in World War II (1941–1945) and the resulting demand for lumber resources reinvigorated the industry and had lasting effects. One of these was the rise of Southwest Lumber Mills (Southwest). In 1948 Southwest resurrected the old Flagstaff Lumber Company sawmill site. Southwest was largely built off the old holdings of the W.M. Cady Lumber Company, including a separate mill in McNary, Arizona, and had been building its capacity in the region for some time. Southwest was ambitious, acquiring Saginaw & Manistee in 1953 or 1954 (Schuppert 1933:75–76). The 1950s saw Southwest become a fully integrated forest products company as they expanded into paper products. Construction of a papermill near Snowflake, Arizona, began in 1956 (completed in 1961) and the company changed its name to Southwest Forest Industries in 1959, which reflected its purchase of corrugated container plants and a wholesale paper distributor (Arizona Daily Sun [ADS] March 27, 1976). Much of the pulpwood and wood chips for the paper mill were supplied through the logging and sawmill operations of Southwest and other operators in the Flagstaff area.

This period saw other changes in the logistics of the industry, notably the transition from railroads to trucks for transporting logs to mills. This is exemplified by the story of the Allan Lake Line (Treichler and Edwards 2020). Construction of this line was started in 1934 by the AL&T as an extension of their Munds Park and Howard Spring Line, but work stalled out. Nascent Southwest Lumber Mills acquired rights to the line in 1936. After Saginaw & Manistee gained operational control of AL&T in 1941, they shared management of the line with Southwest. Work on the Allan Lake Line resumed in 1942 (prompted largely by World War II) and the line was completed in 1946 when it reached Allan Lake Landing. Timber harvested along the line played a key role in the war effort. Few spurs were built along the line, and it was not extended past Allan Lake. This was because trucks proved more efficient in transporting logs to the railroad as logging operations pushed out. These operations were supported by the large logging camp at Happy Jack, about six miles south of Allan Lake Landing. This system continued until the last log train ran in 1966. At this point the cost of repairing and maintaining the deteriorating railroad system simply outweighed the benefit. Southwest pulled the Allan Lake Line's rails in 1967 (Stein 2006, 2019; Treichler and Edwards 2020).

Southwest successfully continued truck-based logging operations from here on out (Figure 8). During the 1970s, Southwest's sawmill could process more than 2,000 logs during its normal 16-hour day. The mill's annual capacity was more than 70 million board feet of lumber in the 1970s (ADS March 27, 1976:C10). By 1976 the company had 105 plants and facilities in 33 states and approximately 8,500 employees (ADS March 27, 1976). In 1976 alone, they dispersed more than $5 million in payroll to over 500 people directly dependent on their Flagstaff operations (ADS March 27, 1976). This included their sawmill in the city, the Happy Jack logging camp, and the headquarters for Southwest's Timber Resources Division, which was responsible for supplying sawlogs to Southwest's Arizona and New Mexico sawmills and pulpwood and wood chips to the company's paper mill in Snowflake, Arizona.

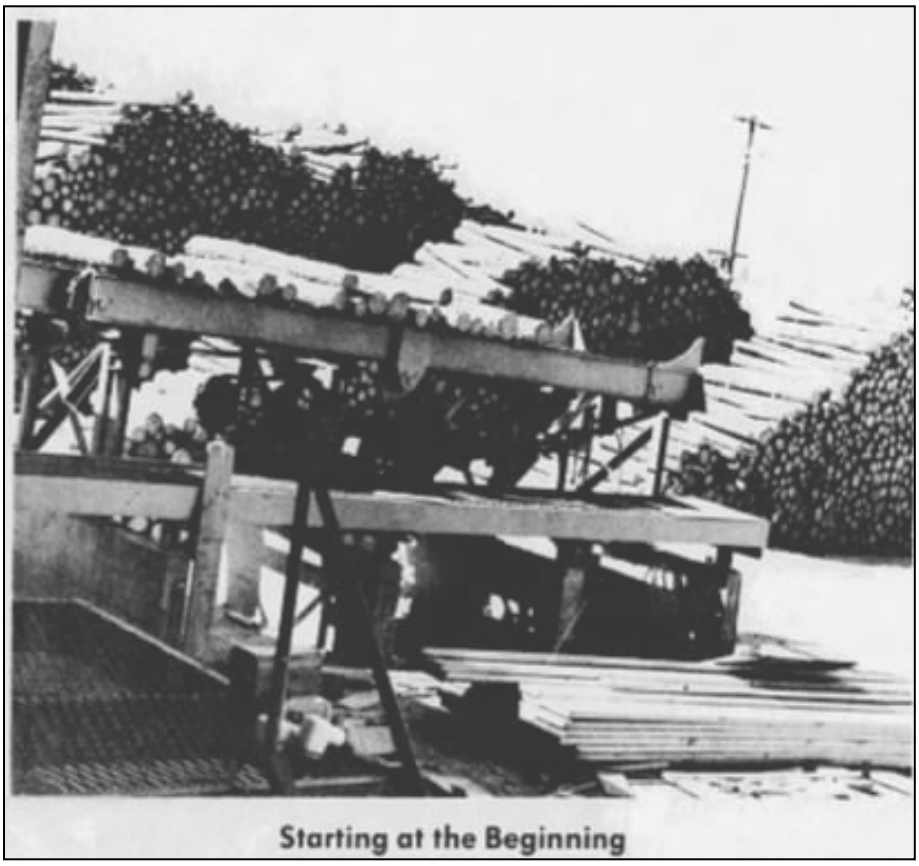


Figure 8. Photo of logs prepared for the Ponderosa Paper Mill, around 1966 (ADS June 29, 1966).

Henry Weaver was manager of Southwest's Northern Arizona Division, which included the Flagstaff sawmill and a wood treating plant in Prescott. He is quoted as saying that he expected to see "the sawmill producing close to capacity in 1976, compared to production levels of only 83 percent of capacity in 1974 and 1975" (ADS March 27, 1976:C10). Southwest closed their particleboard plant in Flagstaff in 1976,

but Weaver remained confident that the closure did not "signal a decline in the long-standing Flagstaff operations" (ADS March 27, 1976:C10).

Southwest's commitment to the area continued into the late twentieth century, as exemplified by their 1976 construction of a $1.7 million logging camp at the site of the Last Chance Mine (which produced manganese during World War II), 10 miles south of the existing Happy Jack facility. Bob Blaser, the vice president and manager of Southwest's Timber Resources Division, has said they planned to call the new camp Happy Jack Too and planned for it to consist of a maintenance shop for logging trucks and equipment, office space for sawlog and pulpwood logging supervisors, and modern mobile home sites (Edwards 2018). Southwest also paid employees of Jeld-Wen, Inc., who leased property at 825 and 829 E. Butler Avenue next to the Southwest sawmill (ADS March 27, 1976). According to the obituary of former Jeld-Wen employee Daniel Contreras (December 30, 1937-January 28, 2017), Jeld-Wen discontinued operations in 1996 along with Southwest's Flagstaff sawmill (Norvel Owens Mortuary 2018).

5.0 ARCHIVAL RESEARCH

Multiple resources were utilized during the course of archival research for this project (*see* Section 3.0 Methodology). Results of searching the multiple company names associated with the property using online newspaper databases resulted in over 1,500 results of varying relevance. These findings were combined with interview data and personal clippings and documents provided by John Girvin and Bruce Jacks.

5.1 RESEARCH RESULTS

Multiple sources were searched to find changes to the study area through time (*see* Section 3.0-Methodology). Newspapers, aerial photography from USGS and private collections, historical topographical maps, General Land Office (GLO; 1878) maps, and historical plat maps of Flagstaff of the property and the surrounding areas were also reviewed. Following the use of the property as a slaughterhouse by Babbitt Brothers Trading Company, seven pulp and/or paper companies were involved with the property over time (Table 1). This section focusses on the period of significance from 1953 to 1970 and has only cursory information about the mill after 1970, except for information that would help address research questions stated in Section 3 of this report.

Table 1. Companies Through Time

Entity Name	Tenure
Babbitt Brothers Trading Company	1880s–1950s
Coconino Pulp & Paper	1953–1956
Arizona Pulp & Paper	1956–1964
Ponderosa Paper Products	1964–ca. 1989
Orchids Paper Products	1974–1995
Wisconsin Tissue	1995–1999
Georgia Pacific	1999–2001
SCA Tissue	2001–2017

Topographical maps, GLOs, and historical plat maps of Flagstaff do not show anything of interest in the parcel except for the railroad spur seen in the 1908 and 1912 1:125,000 scale maps, and the footprint of the main building in the 1962 1:24,000 scale topographical map. Figure 10 is a USGS single frame aerial photograph from March 7, 1954 that shows the beginning of the development of the Coconino Pulp & Paper plant, when it was making egg cartons from wood. Railroad tracks are seen to the north, to the east is a commercial development, to the south is a roadway, and to the west is undeveloped land.

Figure 11 is an NAU Cline Library aerial photograph from 1959 produced for the architectural firm, Blanton & Cole of Tucson, Arizona. This photo shows the increase in development of the site by Arizona Pulp & Paper, with further construction of buildings on the site and the parcel to the east. The railroad spur that is identified in the Flagstaff 1:125,000 topographical maps from 1908 (Figure 9) and 1912 can be seen extending onto the property in the southeastern corner. Further development is identified south of the roadway, with no change to the west or north. Figure 12 is a USGS single frame aerial photograph from August 31, 1964 that shows a further increase in development of the site following the tenure of Arizona Pulp & Paper, with the possible beginnings of the construction of Building 3 by Ponderosa Paper Products. The areas around the property appear unchanged from the 1954 aerial photo.

Figure 13 is a USGS single frame aerial photograph from August 23, 1974, during ownership by Orchids Paper Products, that shows the nearly full development of the property with a potential lagoon/settling pond in the northeastern portion of the property. A stormwater drainage channel can be identified to the north between the property and the railroad alignment, a large commercial/industrial facility can be seen to the east, further development and improvements are to the south, and a fully developed commercial warehouse-style building (Building 3- Paper Mill) can be seen to the west. The 1991 drawing of the study area by the Coconino County Assessor's Office was also integral to the initial development of construction dates for various plant buildings (Figure 14). Notations on the drawing indicate updates made after 1991.

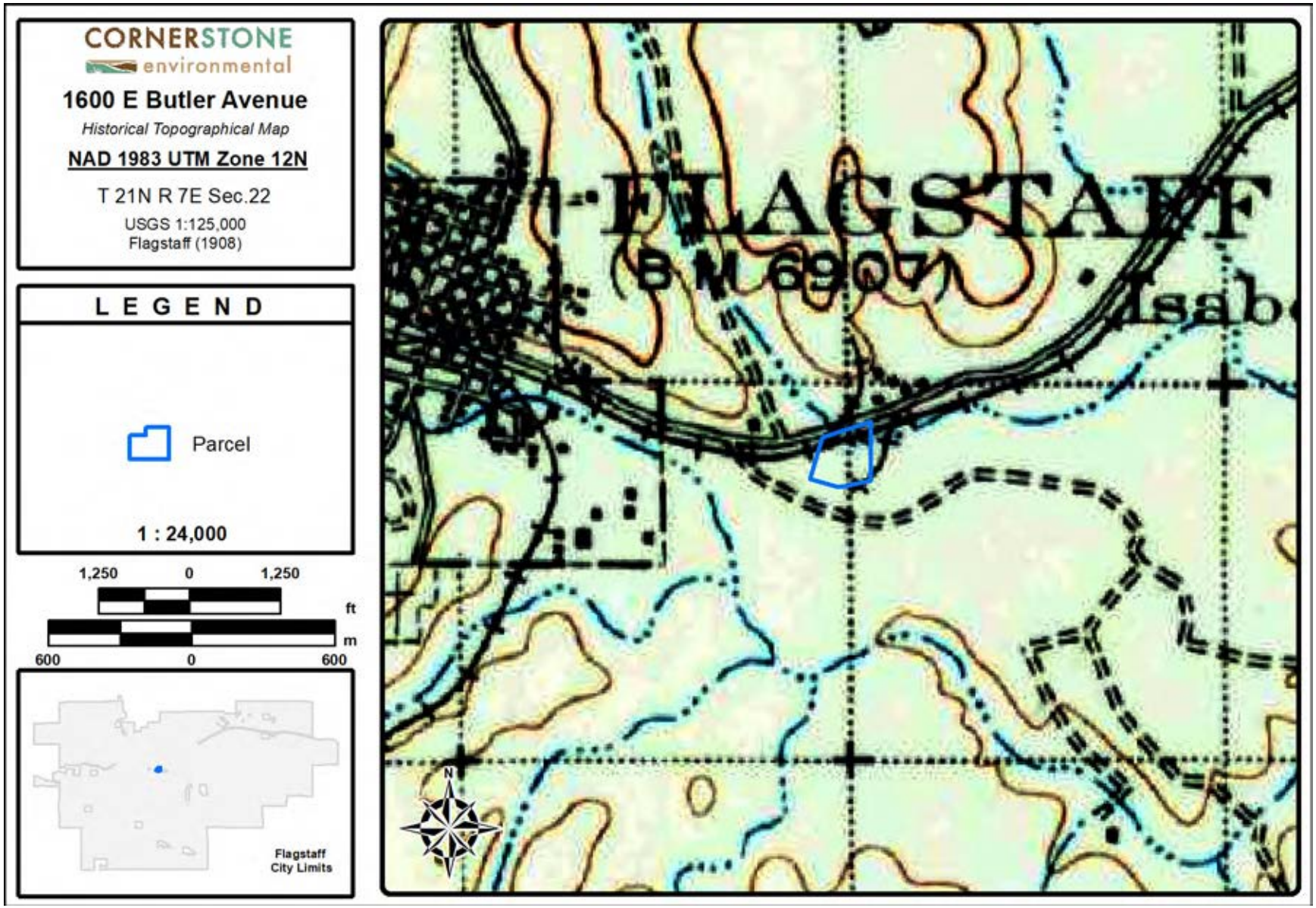


Figure 9. 1908 1:125,000 San Francisco Mountains topographic map.

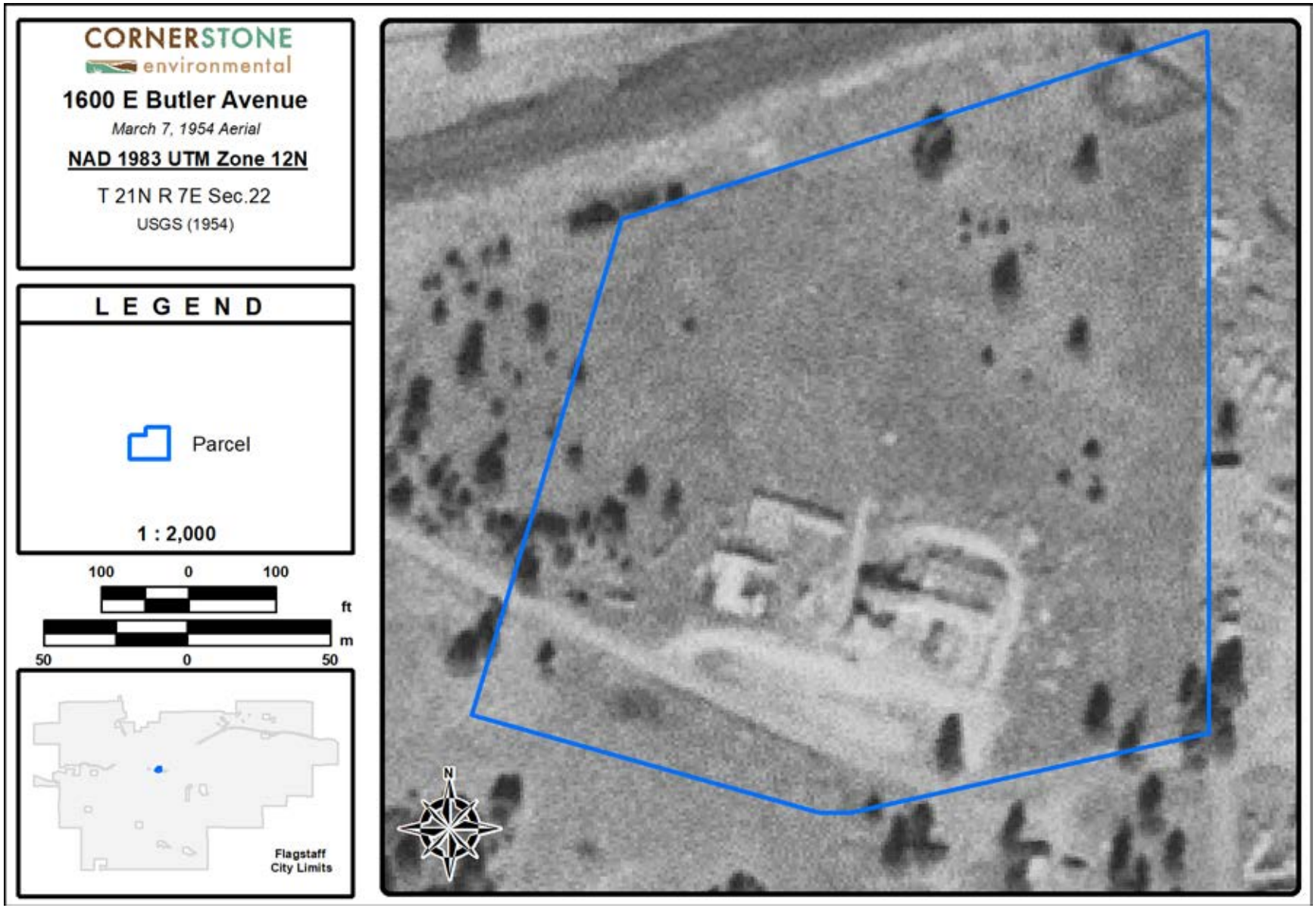


Figure 10. 1954 aerial photo.

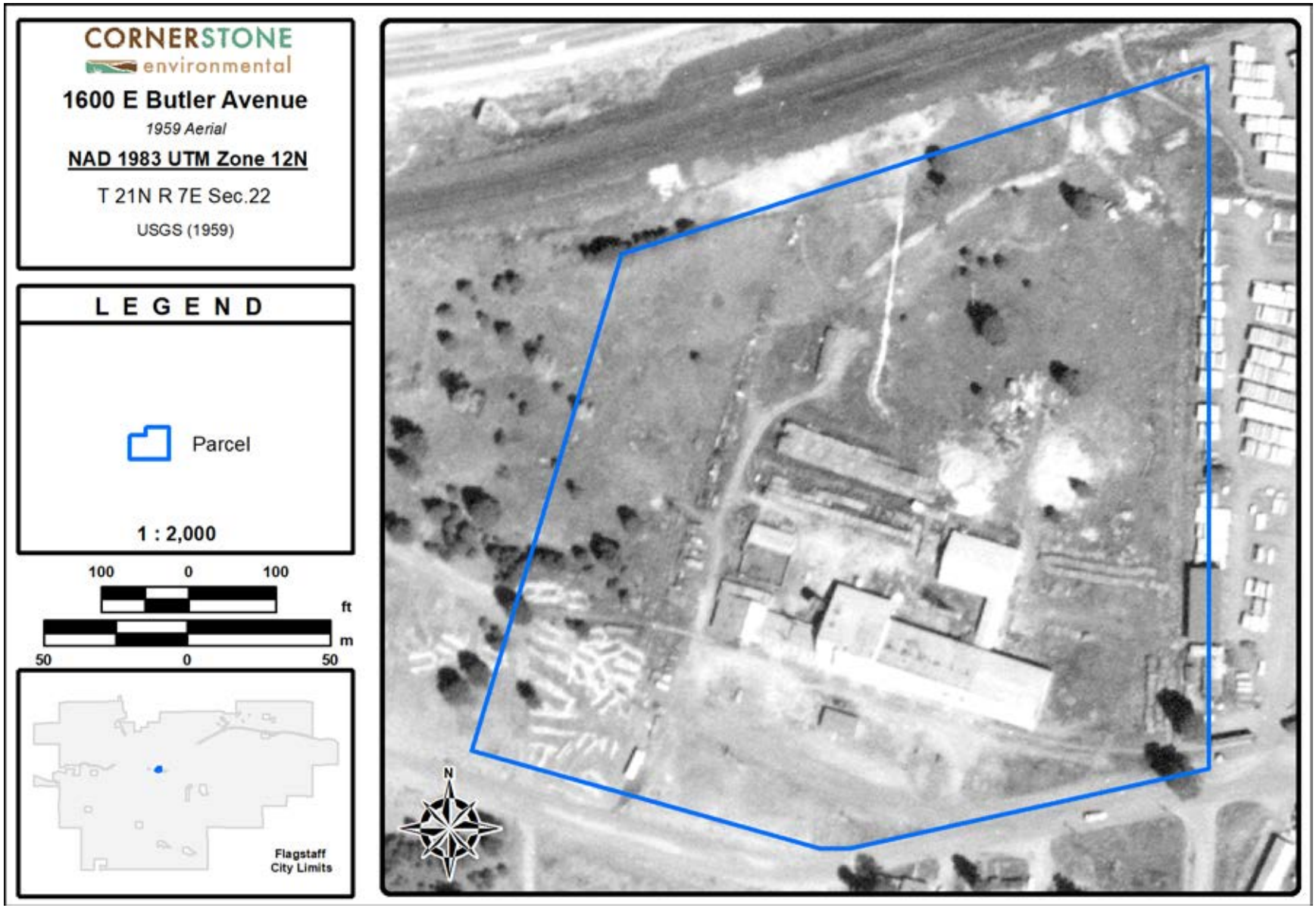


Figure 11. 1959 aerial photo.

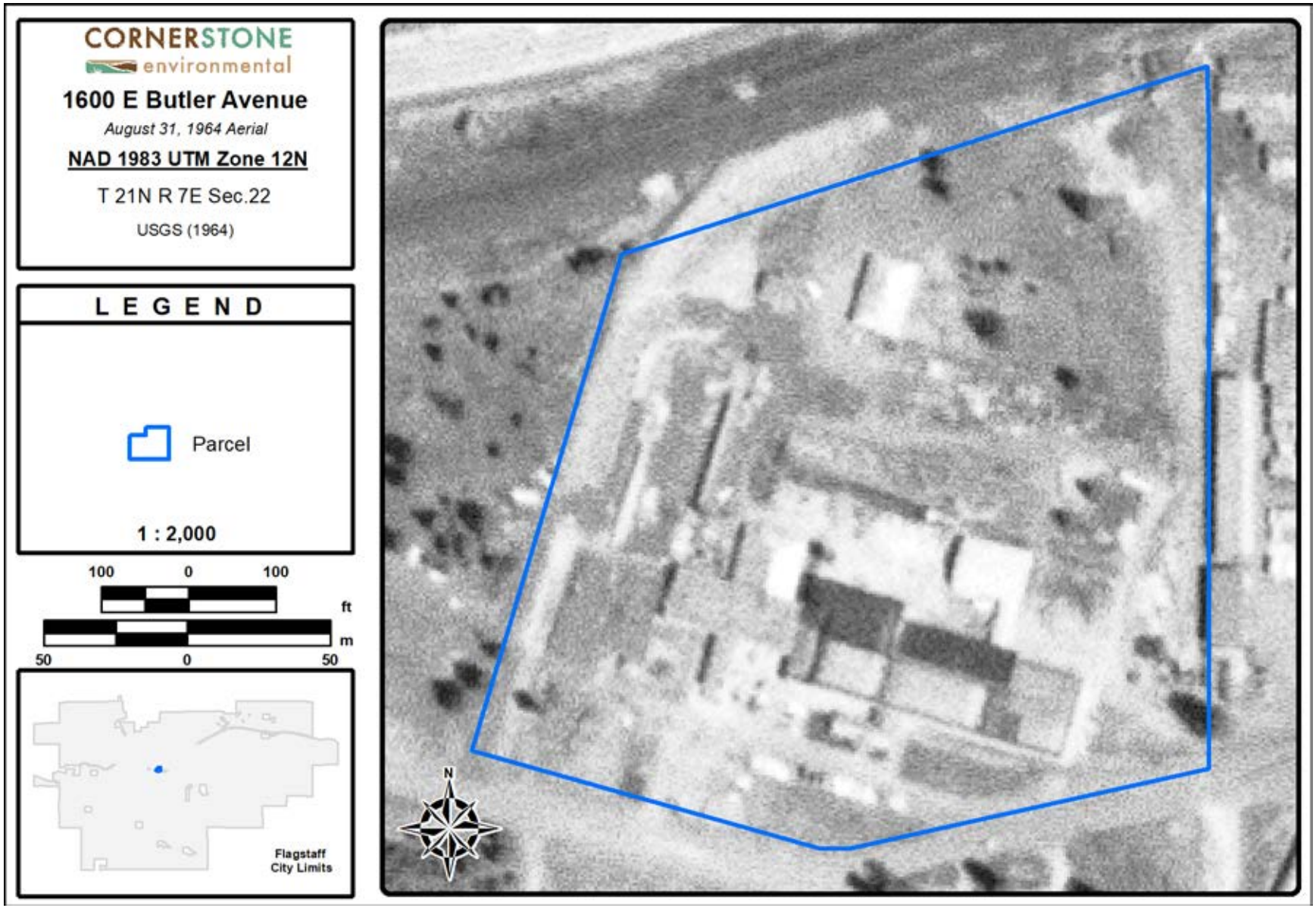


Figure 12. 1964 aerial photo.

Figure 13. 1974 aerial photo.

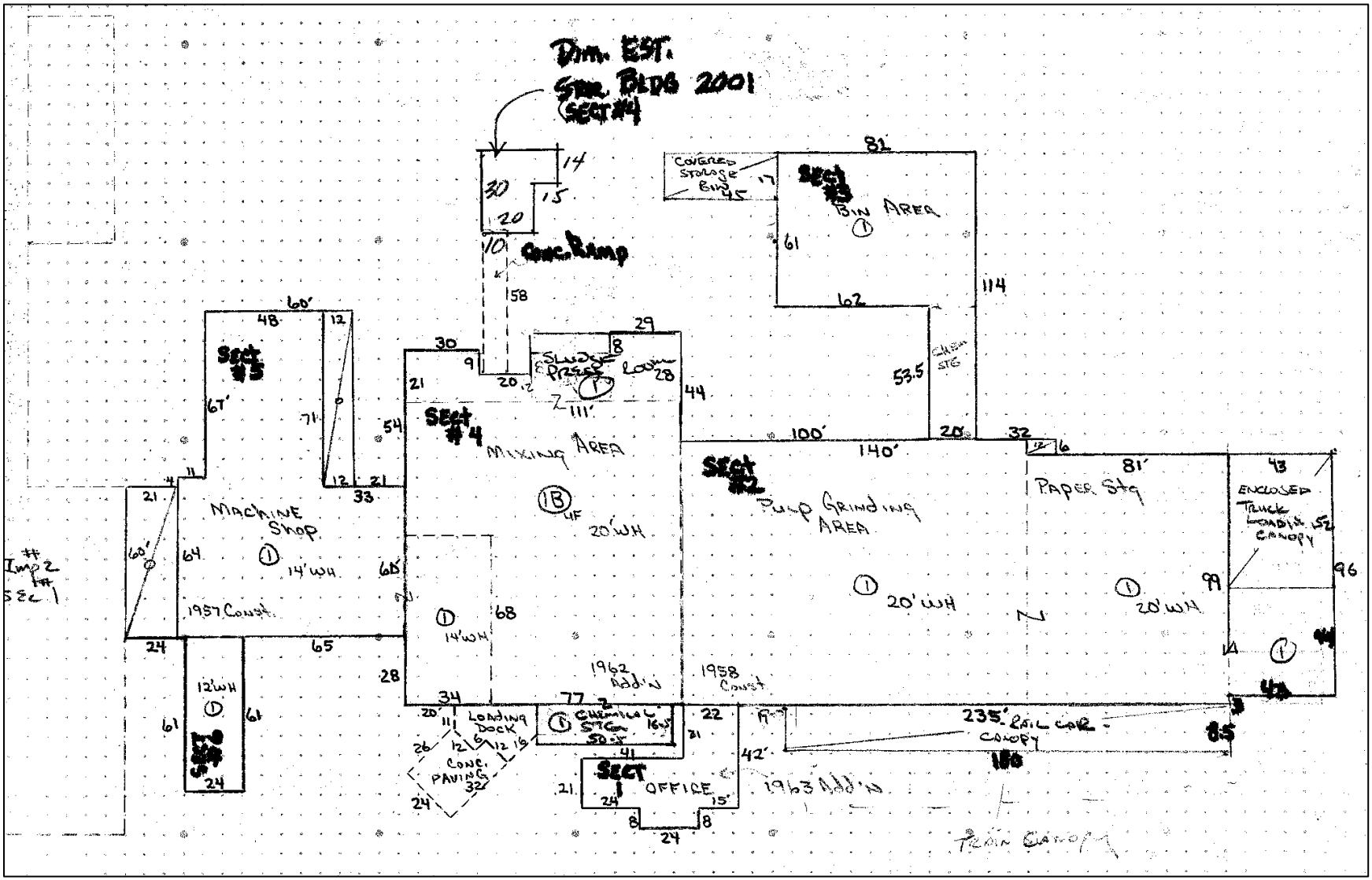


Figure 14. 1991 Coconino County Assessor's Office drawing of the study area.

5.1.1 BABBITT BROTHERS SLAUGHTERHOUSE

This research revealed a distinct paucity of archival information about the property during the time it was the location of the Babbitt Brothers Trading Company (Babbitt) slaughterhouse. James E. "Jim" Babbitt informed the authors that the property had been a slaughterhouse, with a stockyard to the east, since the late 1800s (pers. comm. to Josh Edwards, September 1, 2020). It is Mr. Babbitt's understanding that all the slaughterhouse buildings were destroyed, except for possibly a portion of one building that may be incorporated into the paper mill complex. Mr. Babbitt has searched for descendants of slaughterhouse workers to no avail, and he was unable to find any photos of the slaughterhouse. However, he did state that most of the workers were Hispanic. Current research suggests that no buildings or structures built during the time of the slaughterhouse remain.

Cattle from CO Bar Ranch were driven to the stockyard by cowboys on horseback and then kept in shipping pens prior to loading them on to railcars for transportation (Jim Babbitt, pers. comm. to Josh Edwards, September 1, 2020). Most of the cattle went to Kansas, and some went to Nebraska and Texas. It is Mr. Babbitt's understanding that the meat processed at the slaughterhouse was mostly sold locally at the Babbitt packing house on the southeast corner of Leroux and Birch Streets in downtown Flagstaff.

Early archival evidence of the stockyard is the presence of a railroad spur that is shown entering the stockyard from the east and extending to the eastern slaughterhouse property line on the 1908 USGS topographic map (*see* Figure 9). On December 28, 1911, the Babbitts asked H.G. Phillips, chief engineer of the Atchison Topeka & Santa Fe Railway Company (A.T.&S.F.), for a 550-foot extension of the line into the slaughterhouse property (Figures 15 and 16). This agreement was then finalized on February 21, 1913 by E.J. Gibson, A.T.&S.F. superintendent in Winslow. The notation on the engineering drawing of "Extension to spur to serve Babbitt Bro. Slaughter House" suggests that some meat products were also produced at the slaughterhouse and shipped out of Flagstaff via railroad.

The Babbitts expanded their land and holdings greatly after the turn of the century, and it is likely that the railroad spur extension was necessary to serve the needs of their many businesses (NPS 1983; Figures 17 and 18). A significant blow to the family occurred when George Babbitt, president of Babbitt Brothers Trading Company, died in 1920 and his seat was filled by P.J. Moran, who had been associated with the company for some time. Moran helped the company to secure loans to finance its cattle, land, and merchandising businesses. The business prospered during the seven months between January and August of 1920; the company purchased a hotel, a store, and a building and garage in Kingman, Arizona. In the early part of 1921, however, the company required an additional loan to remain liquid. A regional

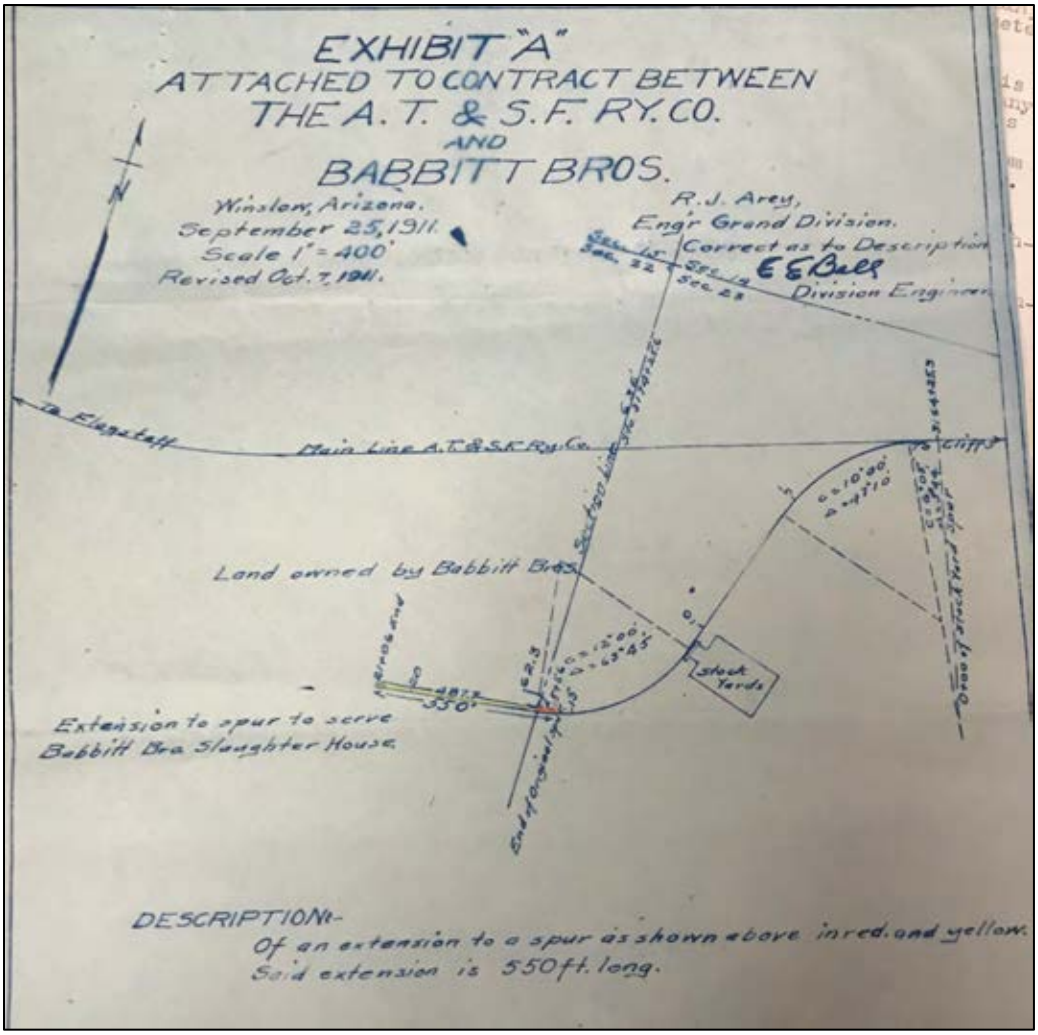


Figure 15. 1911 engineering drawing of proposed 550-foot railroad spur extension.

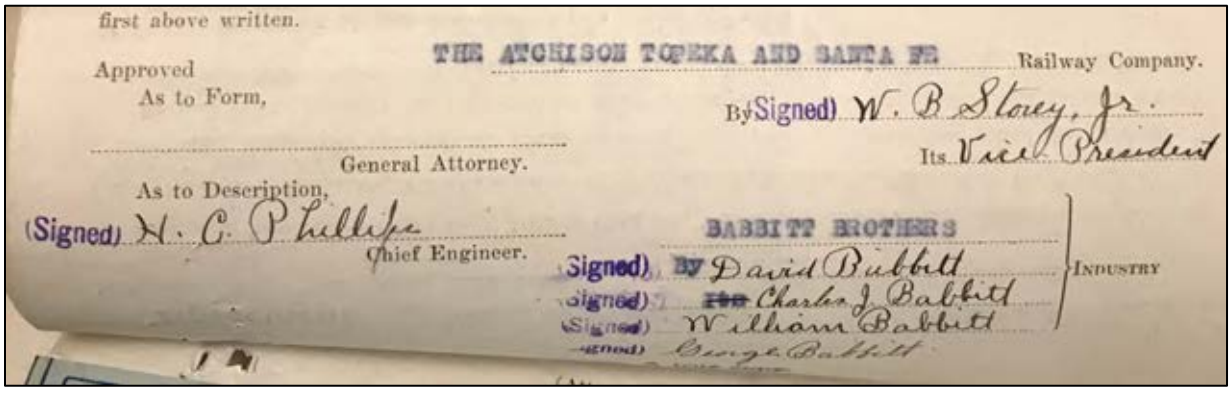


Figure 16. 1911 Babbitt Brothers Trading Company and A.T.&S.F. signatures.

business depression caused the Babbitt Brothers Trading Company financial difficulties requiring more outside capital from Hunter Dulin and Company of Los Angeles, California and from the War Finance Corporation.

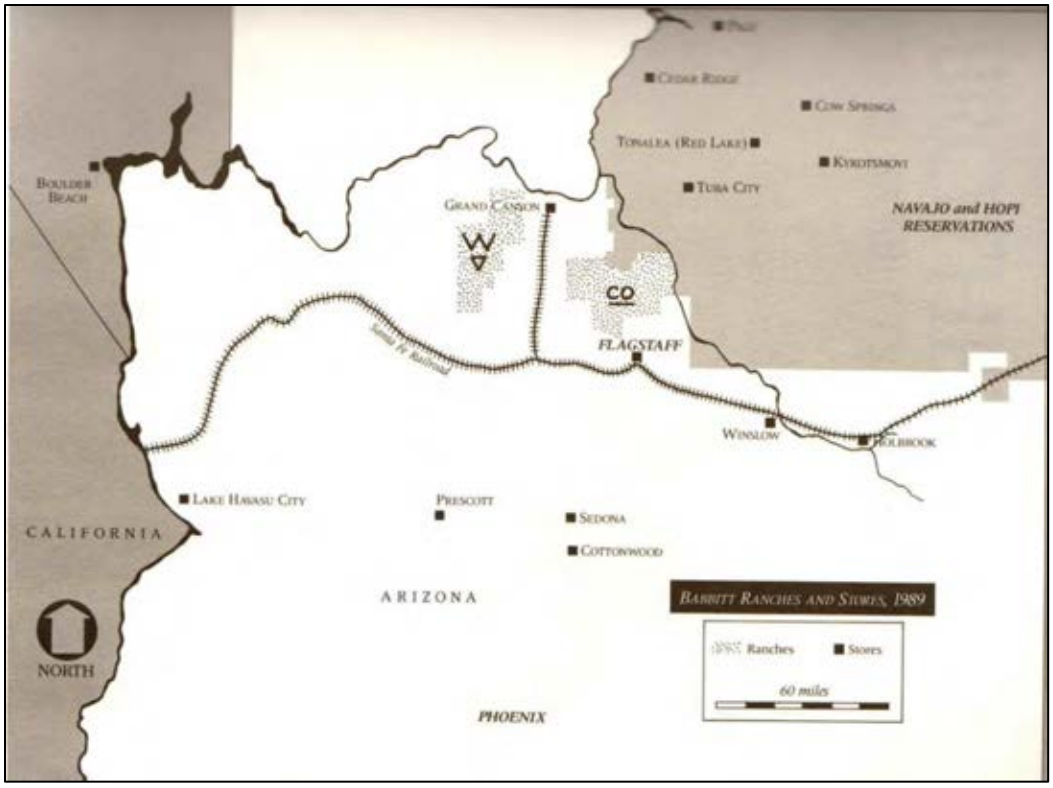


Figure 17. Extent of Babbitt Brothers Trading Company lands in 1893.

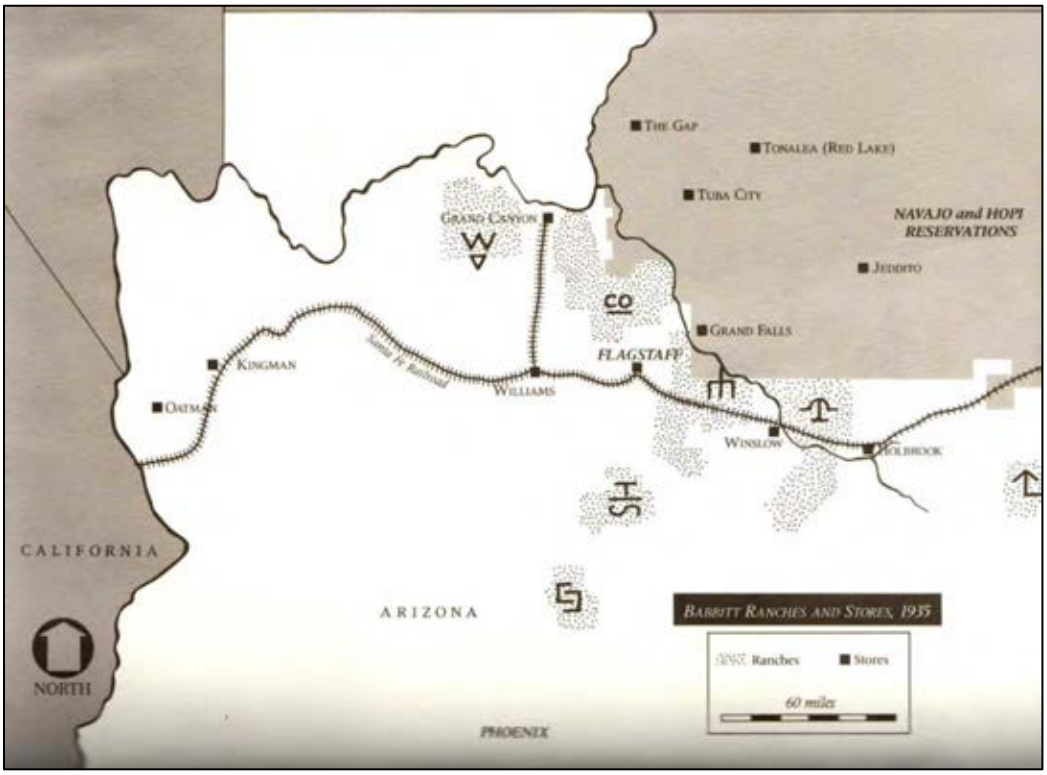


Figure 18. Extent of Babbitt Brothers Trading Company lands in 1935.

Borrowing and taking in partners with little or no capital caused debts nearly destroying the company during the post-war recession of 1922. Fortunately, their creditors were forgiving, and the company was saved by selling various family investments. The situation resulted in a creditor-elected manager, DeWitt Knox, controlling the company until 1926, all the while selling investments and property of the Babbitt Brothers Trading Company. Mr. Knox was replaced by H.V. "Vic" Watson, with support of the Babbitt brothers, as they felt Watson would not have such a hard-handed approach. Unfortunately, the selling of assets continued under Watson and many of the sheep outfits were liquidated, including the Apache Maid and Hashknife holdings. Although it is difficult to imagine today, the CO Bar and Cataract outfits were put up for sale but never sold. Hoping to free themselves from creditors during the depths of the depression era, the Babbitts applied for a loan from the Reconstruction Finance Corporation. Jimmy Babbitt's knowledge of legal proceedings helped them secure the loan in 1935 and by 1940 most of the debt had been paid off.

The crushing impact of the post-war depression was felt by Americans and the Babbitts alike. The Babbitt empire had been expanding for decades, earning them the nickname of “The Rockefellers of Arizona” (Smith 1989:171). But Dave and C.J. Babbitt were forced to take defensive measures in 1921 including ceasing expansion, closing of losing operations, and further effort to build up cash reserves. In April of 1921, the Babbitt Brothers Trading Company and their financial advisors decided on a bold new business maneuver, a mammoth bond indenture secured by all the unmortgaged Babbitt lands. This entailed pledging virtually all their ranch and urban real estate to raise the cash demanded by the crisis, including some that were jointly owned. The bond extended through 1940 and included 375,575 acres of well-watered grazing land, 4,826 acres of agricultural land, and various properties in Arizona and California.

At that time, the business ranged as far as the Imperial Valley (Laguna Ranch, Los Angeles, California) and Mexico and made $5 million annually. The resulting holding company was called Babbitt Brothers Lands, Inc. and was the “greatest single concern of its type in the Southwest” (Coconino Sun, June 24, 1921). Babbitt Brothers Land, Inc. issued $1.5 million in bonds on indentured lands believed to be worth $2,566,154, including the Flagstaff slaughterhouse.

Archival records from Cline Library indicate that on August 10, 1943 the Babbitts sold a portion of “Old Parcel No. 6 (Slaughter House)” land to A.H. and Alma Souris. Then on September 4, 1946, Paul J. Babbitt, vice president, wrote to the A.T.&S.F. that the spur track near the slaughterhouse was “badly in need of repairs due to the fact that many of the spikes are lost or loose.”

Newspaper references to the slaughterhouse are few and far between, but the railroad crossing just east of the property was referred to as "slaughterhouse crossing east of town" through the 1950s (ADS May 5, 1947 and January 19, 1953). There is also one newspaper reference to a water line break at Babbitt slaughterhouse in 1950. The article states that Flagstaff City Council "…rejected a request from the Babbitt slaughterhouse to cancel a bill covering between 500,000 and 600,000 gallons lost because of a break in a high-pressure pipe" that went undiscovered for two to three months (ADS August 15, 1950). In October of 1950 W.H. Hudgens, foreman of the Babbitt slaughterhouse, made the newspaper for being named Retail Meat Manager; Hudgens had been with the Babbitt firm for 33 years at the time (ADS October 5, 1950).

Oral interviews with SCA Resident Engineer Chris Remington suggest that the facility shipped meat to U.S. troops during World War I (pers. comm. to Terry Greene, October 9, 2020). Although this is not verified, it does seem plausible given the scale of the Babbitt's operations and the presence of the rail line into the slaughterhouse property. Mr. Remington also indicated that all slaughterhouse buildings were torn down to make way for the paper mill buildings seen in the 1956 aerial photograph in Section 7.0 of this report.

One other bit of lore that was encountered during these investigations is reference to a "blood pit" in what is now the northwest corner of the center third of Building 7 (John Girvin pers. comm. to Josh Edwards, September 9, 2020). While there was no drain in the foundation of the building in the specified location, the immediate area does show evidence of significant subsidence (the concrete slab has pulled away from support posts by as much as six inches), suggesting that there may be a sizable cavity beneath.

5.1.2 COCONINO PULP & PAPER

Coconino Pulp and Paper Co. (CPP) started building Arizona's first ground-wood pulp mill at the study area in 1953. The idea was the brainchild of James M. Potter, the company's president and mill superintendent (Figure 19; Appendix A- Arizona's First Pulp Mill). Obviously an ambitious person, Mr. Potter was chairman of the industrial development committee of the Flagstaff Chamber of Commerce, on its subcommittee of Indian relations, and involved in the development of Buffalo Park into a tourist attraction (ADS February 10, 1956; John Girvin pers. comm. to Josh Edwards September 24, 2020).

Mr. Potter initially worked alongside Al Stovall, Phoenix industrialist and manganese mine developer, who was chairman of the board of directors for the company (ADS February 10, 1956). Charles Bannister, assistant superintendent, was also influential throughout the early history of the plant. Mr. Bannister's tenure and influence at the plant was significant, with multiple mentions in newspaper

Figure 19. James M. Potter (ADS December 12, 1962).

articles. He was the father of five children and married to an immigrant named Mlle. Jeanine Maria from near Paris (Figure 20; ADS September 28, 1956). The couple met in 1944 when Charles was a paratrooper during World War II and Jeanine was a student at the College Moderne de Jeune Filles at Joigny. The couple were married in Kelso, Washington, where they lived for two years before moving to Flagstaff in 1954 (ADS February 20, 1956).

Flagstaff had a population of 12,500 residents and two major sawmills (and several smaller independent operations) running in 1953, both part of Southwest Lumber Mills, Inc. CPP did not impact the sustained yield of lumber from the Coconino National Forest because they used thinning of pine, spruce, and aspen trees as their raw material (ADS August 15, 1956). By early June of 1953, CPP pulping machinery started arriving with hopes to be running year-round operations by mid-August (ADS June 3, 1953), although production did not begin until early 1954 (ADS November 30, 1953). The ADS article notes that CPP had leased the old Babbitt slaughterhouse building east of the City on a Santa Fe siding. Workers were renovating an existing building that would house the plant (possibly part of Building 1) and were planning a small addition (possibly Building 2).

The mill was expected to have a capacity of 25 tons of “wet lamp” mats (the initial preformed paper product) per day. Although the plant required 30,000 to 40,000 gallons of water per day, the use of filters would allow them to reuse approximately half of the water (ADS June 3, 1953). Upwards of 30 workers

Figure 20. Charles Bannister and his family (ADS February 20, 1956).

were expected to be employed at the mill, with additional crews in the woods. In addition to using green jack pines and small-stem wood that was unusable as saw timber, CPP used trimmings from local sawmills. Use of jack pines was said to be an aid to the production of saw timber as it will "bring about the thinning of large plots in the forest. Under selective cutting, stunted, twisted, or otherwise unsuitable prospects for saw-timber trees will be removed and only the best will remain" (ADS June 3, 1953). Cuttings were to take place in the Fort Valley experiment station area.

Two four-pocket Pascol grinders equipped with Carborundum pulpstone were in the grinding room (Appendix A- Arizona's First Pulp Mill). The pulp would then fall into a stock canal and flow to the bull screen, after which it was pumped to double Apmew pulp screens. The pulp would then go to Sandy Hill Packer flat screens. Pieces that were rejected from this process would be put into a Dilts Hydrafiner and would rejoin the rest of the stock at the Jones deckers following further screening. The pulp would then

be “lapped” on a wet machine. This entailed a pulp slurry being evenly distributed across the working width of a headbox and dewatered without any vacuum between the two moving, endless wires in three parts of the machine, ending with the press zone where water was pressed out. Following dewatering (which would generally take the water content down to 50 percent in a wet lap process) an electro-mechanical cutter would trim the lap to the desired width prior to rolling it.

In the early- to mid-1950s, logs were cut, trimmed, and debarked in the forest so that the wood was nearly ready for use when it arrived (ADS November 30, 1953). It was then cut into two-foot lengths required by the mill’s two large grinders (*see* Appendix A). A water conveyor then carried the logs to the grinders, the ground material was taken through various tanks screens and a refiner prior to being put into the “wet machine,” which formed the 32 square inch laps. The wet machine was specially designed to deal with the limited amount of water in the area, and the article states that “…every means possible is taken to conserve and re-use water wherever possible” (ADS November 30, 1953:2). The laps would be 50 percent dry when initially produced; they would then be loaded on to train cars for shipment.

Despite their best efforts, installation of equipment was still underway in April of 1954 (ADS April 7, 1954). Figure 21 shows one of two 600-horsepower electric motors being unloaded on April 5, 1954. The motors, which weighed more than 27,000 pounds each, turned the two grinders for the plant, and were purported to be the biggest electric motors yet installed in the area. The resulting “wet laps” were then shipped to customers on the west coast, including wallboard factories, where the pulp would be integrated into the final product as a paper backing (ADS April 7, 1954).

Arizona Public Service Company ran electric lines into the CPP plant in June of 1954 and by July, after several weeks of experimental operation, the pulp mill was finally running on a regular production basis (Figures 22 and 23). James Potter reported that pine stock grinding was going faster than expected and he planned to increase production of 25 tons per day by 50 percent. As of August of 1954, mill capacity was about one ton per hour of wet laps (bundled rolls of about five feet wide by one-eighth of an inch thick), which were often returned to pulp state at other paper mills, before creating the final paper product. The mill initially ran on two shifts of seven men each plus a wood crew of about 30 workers. They would stockpile pine “thinnings” (up to about six inches in diameter) onsite to be able to work through the winter. The second grinder had been installed and the second electric motor was planned for installation (ADS April 7, 1954).

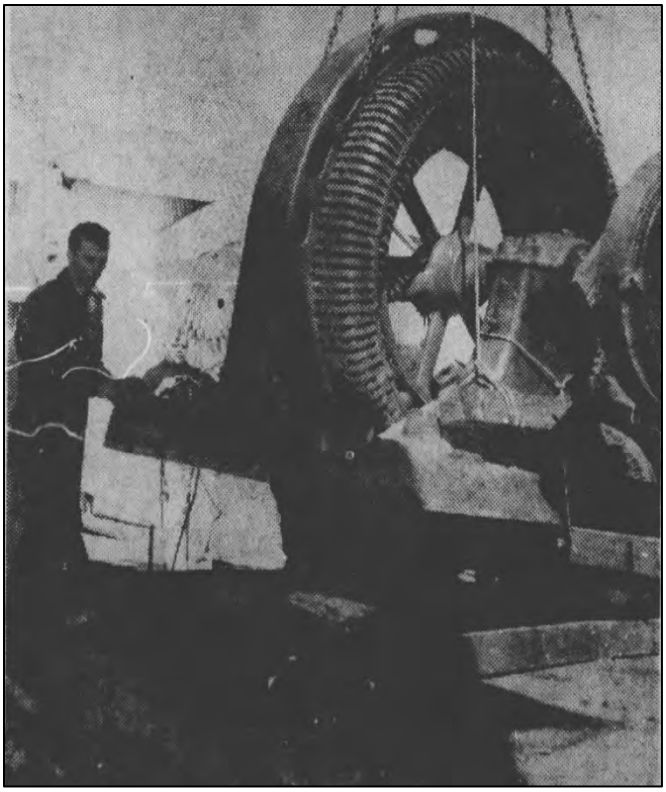


Figure 21. Electric motor being installed (ADS April 7, 1954).

By the end of 1955, the plant had indeed significantly increased output to 50 tons per day, as Mr. Potter had promised, and had big plans for another expansion to 100 tons per day in two to three years (ADS November 3, 1955 and January 20, 1956). The plan included the planned use of reclaimed sewage after installation of a planned City treatment plant. Water was used to keep grindstones clean and cool, to transport processed logs within the plant, and to slurry paper stock. Two-thousand gallons of water per ton of pulp were being used in 1955, and unlike most other paper plants in the U.S. at the time, which use chemicals to break down the wood, water at CPP was unpolluted and could be recycled in the mill or for irrigation (January 20, 1956). CPP's grinding mill also had the conservation advantage that other mills did not because chemical processing resulted in a 40–60 percent loss of pulp, whereas one ton of wood ground resulted in one ton of pulp. One ton of pulp would sell for about $85 at the time.

Staff included 80 workers, which includes the 50-person wood harvesting crew. Most of the wood was coming from the Mexican Pocket area south of Flagstaff on Highway 89A. CPP also installed additional equipment that made it possible to ship dry groundwood pulp instead of just wet laps, which saves on shipping costs due to the decreased weight (Figure 24). Products like newsprint, which at the time were composed of 85–90 percent ground wood pulp, were not created in Flagstaff due to the lack of available water (ADS November 3, 1955 and February 1, 1956). CPP's success at paper pulp manufacturing in the

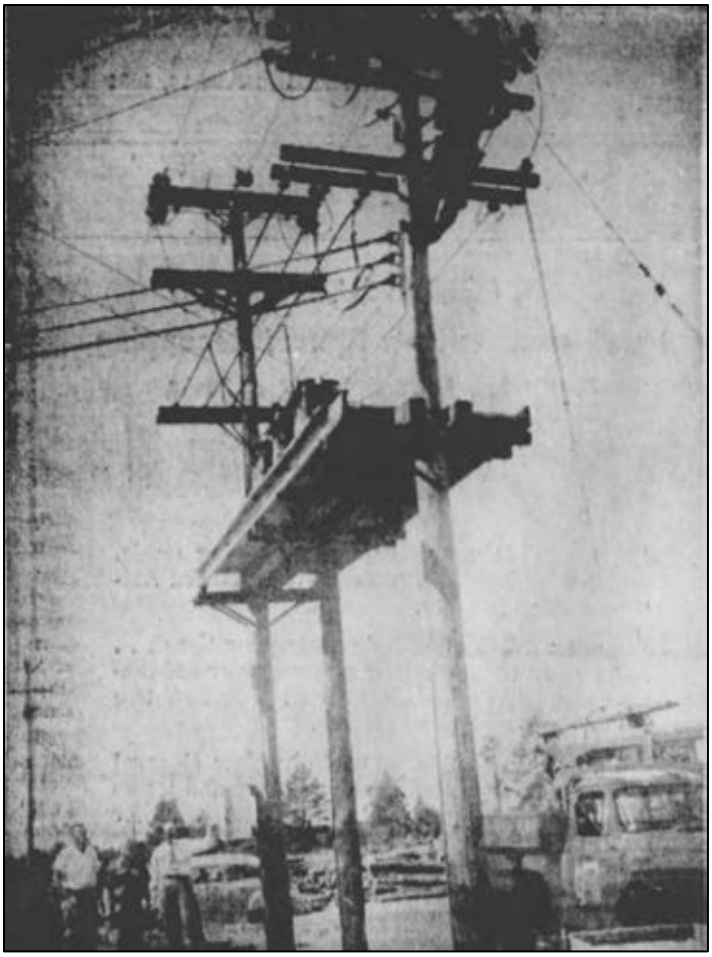


Figure 22. James M. Potter and Charles Bannister inspect newly installed APS lines running to the paper plant (ADS June 10, 1954).

American Southwest was unique and even Southwest Lumber Company was impressed by the favorable results and water conservation. Southwest considered drilling a well and investing $30 million into their own pulping mill (ADS May 18, 1956; Edwards 2018).

5.1.3 ARIZONA PULP & PAPER

The transition between Coconino Pulp & Paper (CPP) and Arizona Pulp & Paper (AZPP) is not exactly clear, but AZPP starts appearing in the newspaper in 1956 (ADS August 15, 1956). James M. Potter was president of CPP and was vice president and general manager of AZPP (ADS January 7, 1960). While the restructuring of the company may have brought some changes, water continued to be a constant theme for the plant. As the City's new $288,000 sewage treatment plant neared completion in the final week in November of 1956, AZPP planned to use the treated water to supplement their supply of fresh water (Figure 25; ADS November 15, 1956).

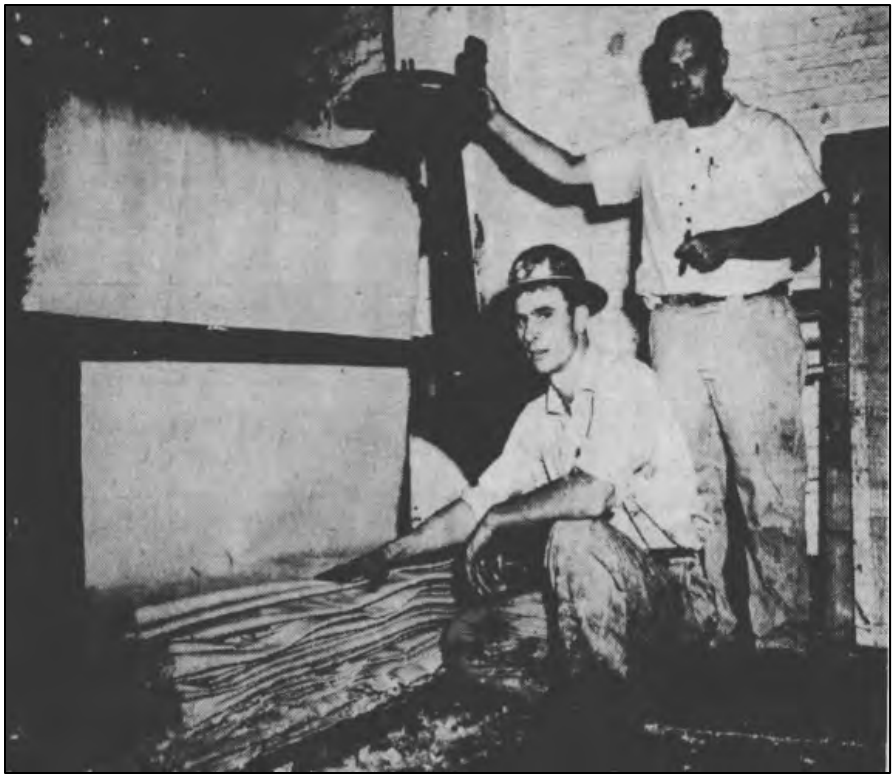
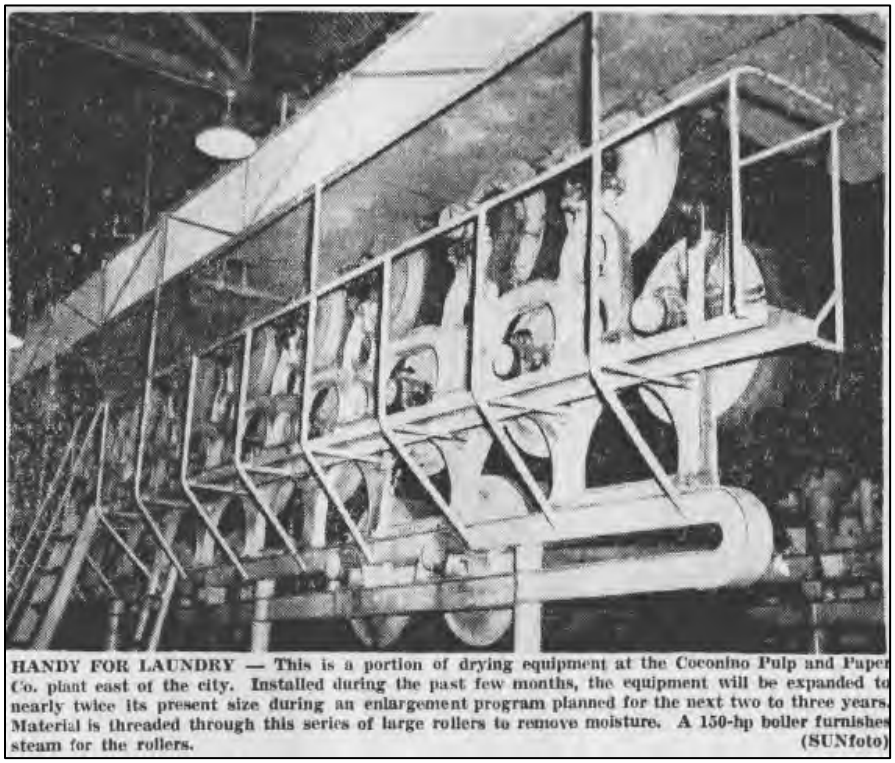


Figure 23. James M. Potter (standing) and Charles Bannister next to "wet laps" and the "wet machine" (ADS August 6, 1954).



HANDY FOR LAUNDRY — This is a portion of drying equipment at the Coconino Pulp and Paper Co. plant east of the city. Installed during the past few months, the equipment will be expanded to nearly twice its present size during an enlargement program planned for the next two to three years. Material is threaded through this series of large rollers to remove moisture. A 150-hp boiler furnishes steam for the rollers. (SUNfoto)

Figure 24. Drying equipment at the plant (ADS November 3, 1955).

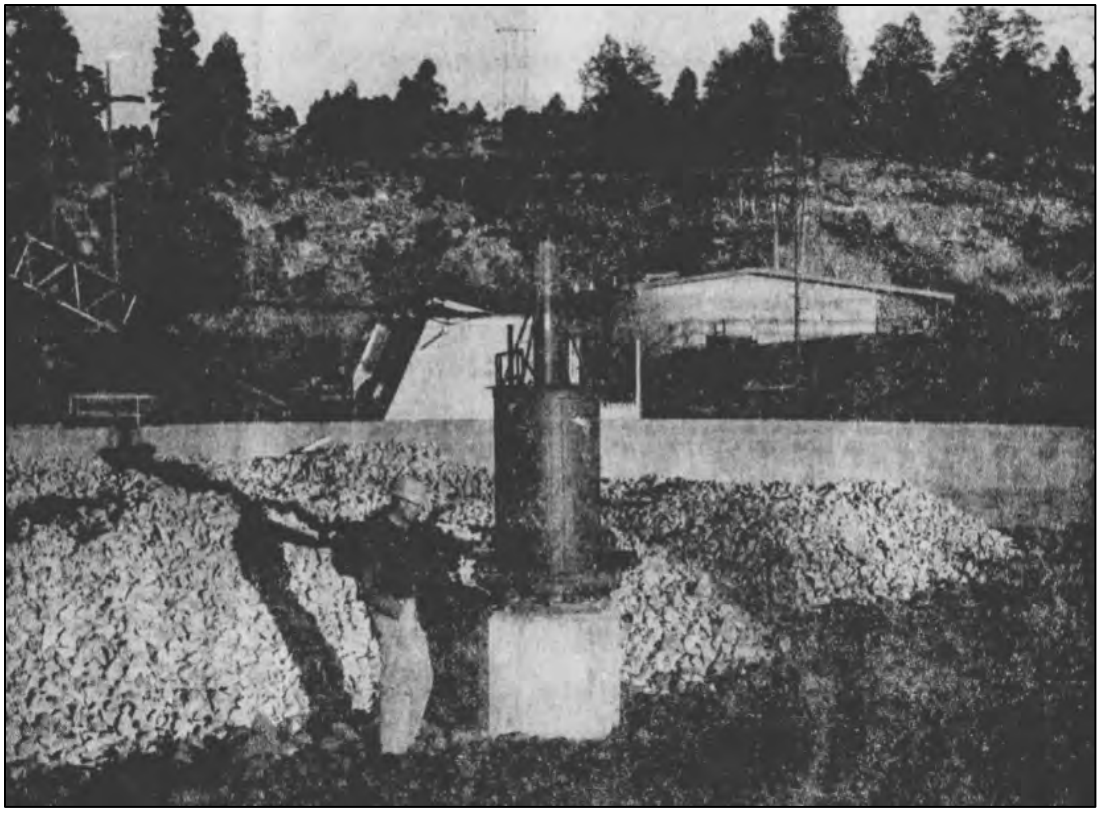


Figure 25. City treated wastewater usage filter tank (ADS November 15, 1956).

AZPP used the treated wastewater that was delivered via a buried pipe to the City, and the AZPP plant was only about 1.5 miles from the new treatment facility (ADS November 15, 1956). Treated water currently enters the facility in the basement of Building 3 (Figure 26).

Aside from being an industry leader in conservation in the mid- to late-1950s by recycling water, reusing clippings from lumber mills, and utilizing treated wastewater, AZPP was also involved with on-the-job training of Navajo workers. The program was part of a relocation program through the Bureau of Indian Affairs (BIA) that began in 1952 (ADS January 22, 1957). With wood trimmings and pulp piles around the facility, the threat of fire was a constant concern. While small fires were regularly extinguished, a larger, although not serious fire, occurred on September 29, 1957 (Figure 27; ADS September 30, 1957).

Although AZPP had many successes running a pulp mill in an arid climate, AZPP was foreclosed on by its creditors on May 19, 1959 (ADS May 23, 1959). The notice in the Arizona Daily Sun lists Bankers Life and Casualty Company as the plaintiff and Arizona Pulp & Paper Co. Inc. as the defendant, along with U.S. Pipe & Supply Co., Submersible Pump Company, and Gordon Steel Manufacturing Co. The total sum of the settlement was $964,380.22 plus six percent interest. The notice also references the 50-year lease from Babbitt Brothers Trading Company to CPP recorded on April 26, 1956 and then assigned

Figure 26. Treated wastewater inlet to the paper mill.

Figure 27. Fire at the plant (ADS September 30, 1957).

to AZPP on June 23, 1956 (ADS May 23, 1959). The property is listed as including buildings, fences, spur tracks, electrical substation, tanks, water rights, and other improvements.

AZPP used wood pulp to make egg cartons (pers. comm to Josh Edwards, September 9, 2020; Appendix C). The wood was chopped into fine particles, slurried, formed into a large sheet, and chopped into smaller pieces that were then formed into egg cartons. Mr. Girvin indicated that the machine was used to produce egg cartons until at least 1966 and was in Building 3 when he started at the plant in 1969. The egg carton machine was not seen running again after that but remained on premises until it was chopped into pieces and removed around 1978.

5.1.4 PONDEROSA PAPER PRODUCTS AND LATER COMPANIES

By November of 1964 a new company, Ponderosa Paper Products, Inc. (Ponderosa) had taken over the site and was constructing a new mill. Ponderosa was a subsidiary of Bankers Life and Casualty Company out of Chicago. The new operation incorporated the old pulp processing and molding facilities, managed by James Potter (Figure 28), and would use "raw timber brought in from the forest." The new paper tissue and towel mill was managed by Donald T. Keller. The new paper mill (Building 3) under construction was designed by Guirey, Srnka and Arnold of Flagstaff and Phoenix and was to measure 62,000 square feet (Figures 29 and 30). "Using the newly developed water recovery system, the mill, which will be one of the most modern in the nation, is completely odorless and smoke free" according to Keller (ADS November 9, 1964:1, 8).

Figure 28. James Potter (left) with Harry Andrews, in Flagstaff to consult on the new mill (ADS January 25, 1963).

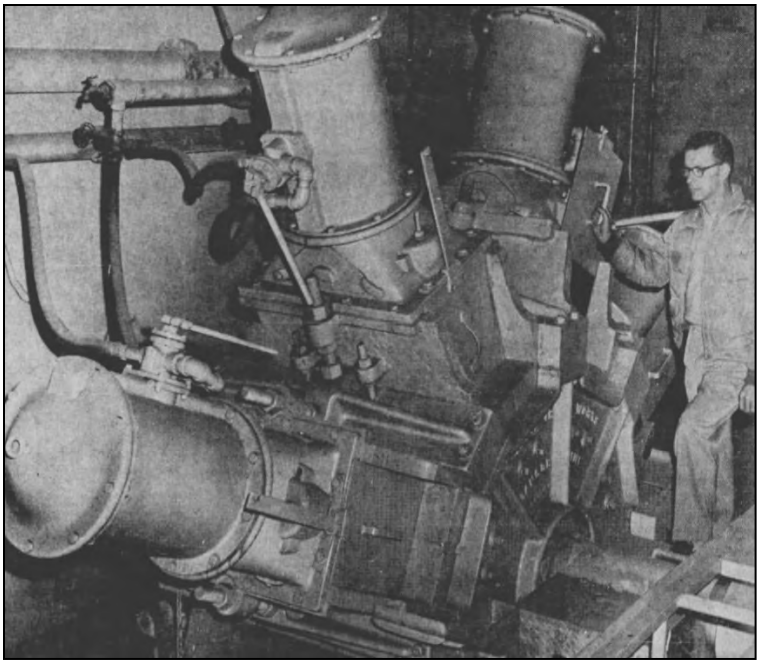


Figure 29. Wilber Bounds, in charge of quality control, with a crusher for grinding timber into wood pulp (ADS November 9, 1964).

PROGRESS REPORT — Edwin H. Weig, president of Ponderosa Paper Products and vice president of Bankers Life and Casualty, and Don T. Keller, general manager of the Flagstaff plant, look over the sign being installed in front of the main building. The new plant, currently under construction along U.S. 66, will manufacture tissue-toweling from the raw timber, and is expected to be in operation by the end of August. (SUNfoto)

Figure 30. Edwin H. Weig, president of Ponderosa, and Donald Keller, in front of new signage for the plant under construction (ADS July 31, 1965).

The new facility was anticipated to employ 250 people. It was originally expected to open in January 1965 (ADS November 9, 1964), but this was later pushed back to August (ADS July 31, 1964). In August, the Northern Arizona Board of Realtors welcomed new employees in an advertisement, noting a housing shortage in town (ADS August 4, 1965). By September, the mill was nearly complete and described as nearly set to open (Figures 31 and 32; ADS September 14, 1965).

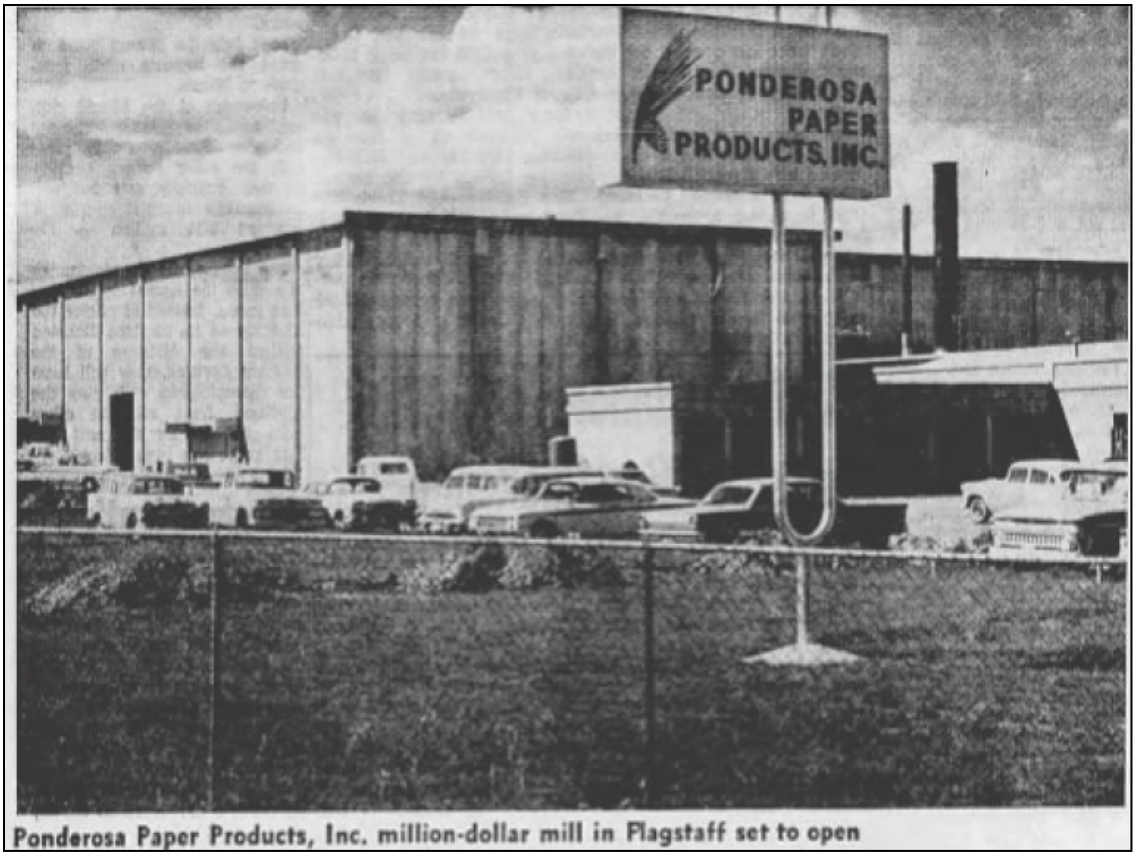


Figure 31. Ponderosa's new paper mill, Building 3, facing west-northwest (ADS September 14, 1965).

In the 1960s, Kaibab Lumber had a lumberyard facility with a "tee-pee burner" smokestack on the parcel to the east of Ponderosa where the Babbitt stockyard used to be. The lumberyard also had a small store that sold screws, nails, and building materials (John Girvin and Bruce Jacks pers. comm. to Josh Edwards, September 9, 2020). The parcel to the west of Ponderosa was once used by Babbitt's Wholesale, which operated there until the mid-1980s, and also had its own railroad spur.

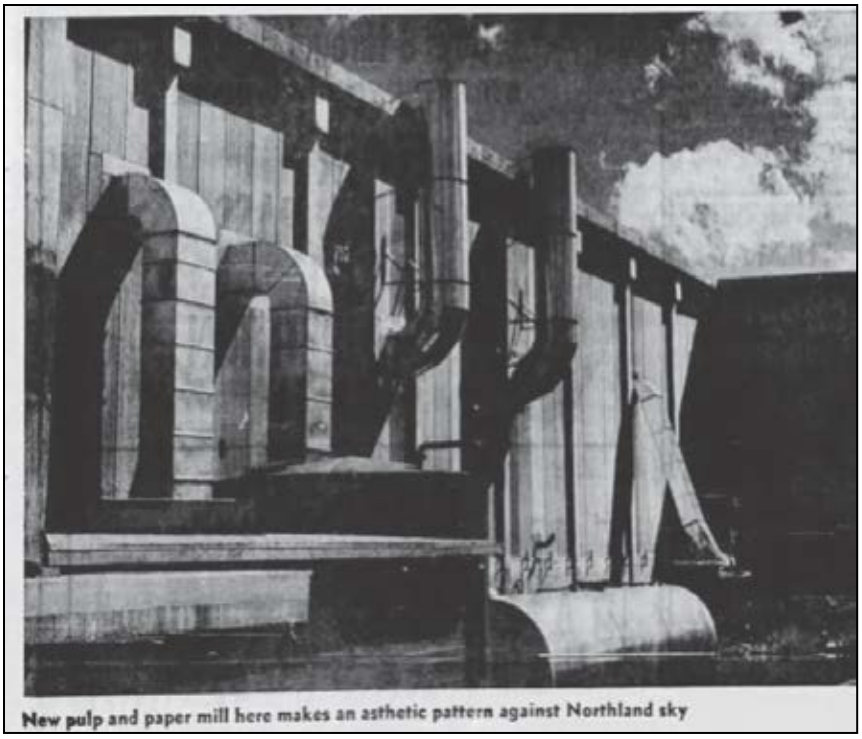


Figure 32. Ponderosa's new facilities set to open (ADS September 14, 1965).

On November 19, 1965, the Arizona Daily Sun ran a 24-page special supplement welcoming Ponderosa titled "A Salute To Flagstaff's Newest Industry: Ponderosa Paper Products / The Story of Paper: From The Forest To The Kitchen" (ADS November 19, 1965). The front page featured an aerial photograph of the property, though the headlines were dominated by news from the Battle of Ia Drang in the rapidly escalating Vietnam War (Figure 33). The supplement included numerous articles about the company and its logistics, the construction of the facility, and the pulp and papermaking process; photographs of the facility and its machinery; cartoon illustrations of the pulp and papermaking process; and advertisements from Ponderosa and other companies congratulating the company. The supplement is included in this report as Appendix B.

When Ponderosa first opened, the facility was designed to produce pulp from raw timber. Ponderosa negotiated for timber rights with the Coconino National Forest, and subsequently contracted Neill and Breslau, Inc. to harvest and deliver the logs. Sustainable harvesting practices were key to the agreement. The company promoted the paper industry's role and responsibility in improving forests. The first step in the pulp process was debarking the logs. The logs were then cut into two-foot "cants," or lengths, then ground to a pulp, and then screened and refined. The pulp was then bleached and refined to the correct consistency. The pulp would then flow onto screens, be formed into sheets, and go through a drying

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TODAY'S WEATHER

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Bed Burner Jailed

JFK Memorials Set

USGS Fact Awarded

SUN Editor Wins AFBF News Award

CONG ENGAGE VIETNAMESE

Pickets Block McDonnell, Cape Kennedy

Relief Force In Stiff Fight Near Cambodia

FLAGSTAFF'S NEWEST INDUSTRY

Figure 33. Aerial photo of the property (ADS November 19, 1965).

process including several rollers, before finally being wound up into a "jumbo roll." Jumbo rolls would be sold to converters to be turned into the final tissue or towel consumable, of which some would wind up on Arizona grocery shelves (ADS November 19, 1965). Later some of this converting would be done in-house.

Two railroad spurs led to the plant. The western spur going inside Building 3 was originally anticipated to be used for loading finished product as well as unloading raw materials, and the eastern spur outside Building 1 was to be used for unloading papermaking chemicals from tank cars (ADS November 19, 1965).

By 1966, both Ponderosa brand and Ponderosa-manufactured store brand paper towels were on shelves in Arizona stores (Figure 34). Jumbo rolls of toweling were also being distributed nation-wide. About 150 people were employed at this point. Excess pulp was designated to be exported to Japan and Korea and Ponderosa products would continue to be available in Arizona in the following years (ADS February 24, 1966). In addition, Ponderosa supplied paper products to the U.S. military during the Vietnam War via a

U.S. General Services Administration contract (John Girvin and Bruce Jacks, pers. comm. to Josh Edwards, September 9, 2020).

Figure 34. Advertisement for Ponderosa Paper Towels (ADS June 4, 1968).

In 1966 workers at Ponderosa went on strike to reach an agreement between the company and their union, the United Papermakers and Paperworkers Local 909, AFL-CIO. General Manager Donald Keller resigned after talks broke down (ADS April 2, 1966). Ponderosa went out of business for around a year at this time but resumed operations in 1967 (ADS April 20, 1974). At this point they only employed about 40 people, though this would fluctuate over time. There would be a few instances over the history of the plant where workers would unionize and later withdraw (John Girvin and Bruce Jacks, pers. comm. to Josh Edwards, September 9, 2020).

James Potter appears to have run a separate business out of 1600 E. Butler Ave. in the late 1960s. Potter Machine & Equipment Co. ran several advertisements in the Daily Sun (Figure 35), including for snowmobiles and surplus equipment (ADS June 24, 1967 and January 13, 1968).

Figure 35. Potter Machine & Equipment Co. advertisement (ADS June 24, 1967).

In 1967, after Ponderosa reopened, they began using less virgin fiber (raw trees) and more secondary fiber (recycled high-grade wastepaper, not newspaper). The company purchased bales of wastepaper from various suppliers. Superintendent Dave Gibson said, "Our men feel it is an important contribution, although there is not much difference in the processes using virgin and secondary fibers. Most of the time, we don't think about how we are contributing to ecology; mostly we think about doing a good job and putting out a good product" (ADS April 23, 1973:18). By early 1971 they had become "the only manufacturer of soft good paper products in the United States which produces goods from 100 per cent recycled materials" (ADS January 5, 1972:1).

Around 1974 Ponderosa began recycling newspaper by de-inking it, reprocessing it, and either using it as packing material or selling it to different clients (Figures 36 and 37). "At present about 50 to 60 per cent of our production is geared to using newspaper," Gibson said (ADS April 20, 1974:17). Much of Ponderosa's motivation toward paper recycling was likely economic, as the virgin fiber pulping process was more costly than using secondary fiber for the products they were making (John Girvin and Bruce Jacks, pers. comm. to Josh Edwards, September 9, 2020).

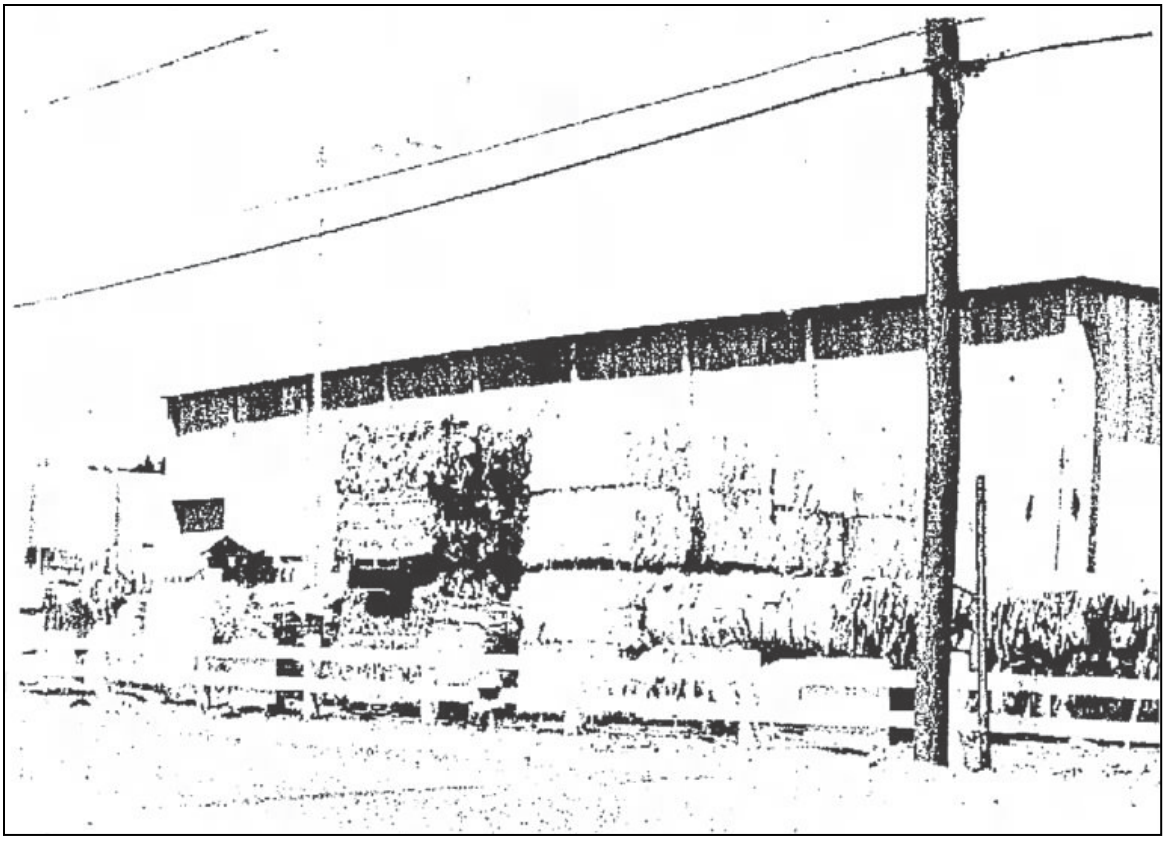
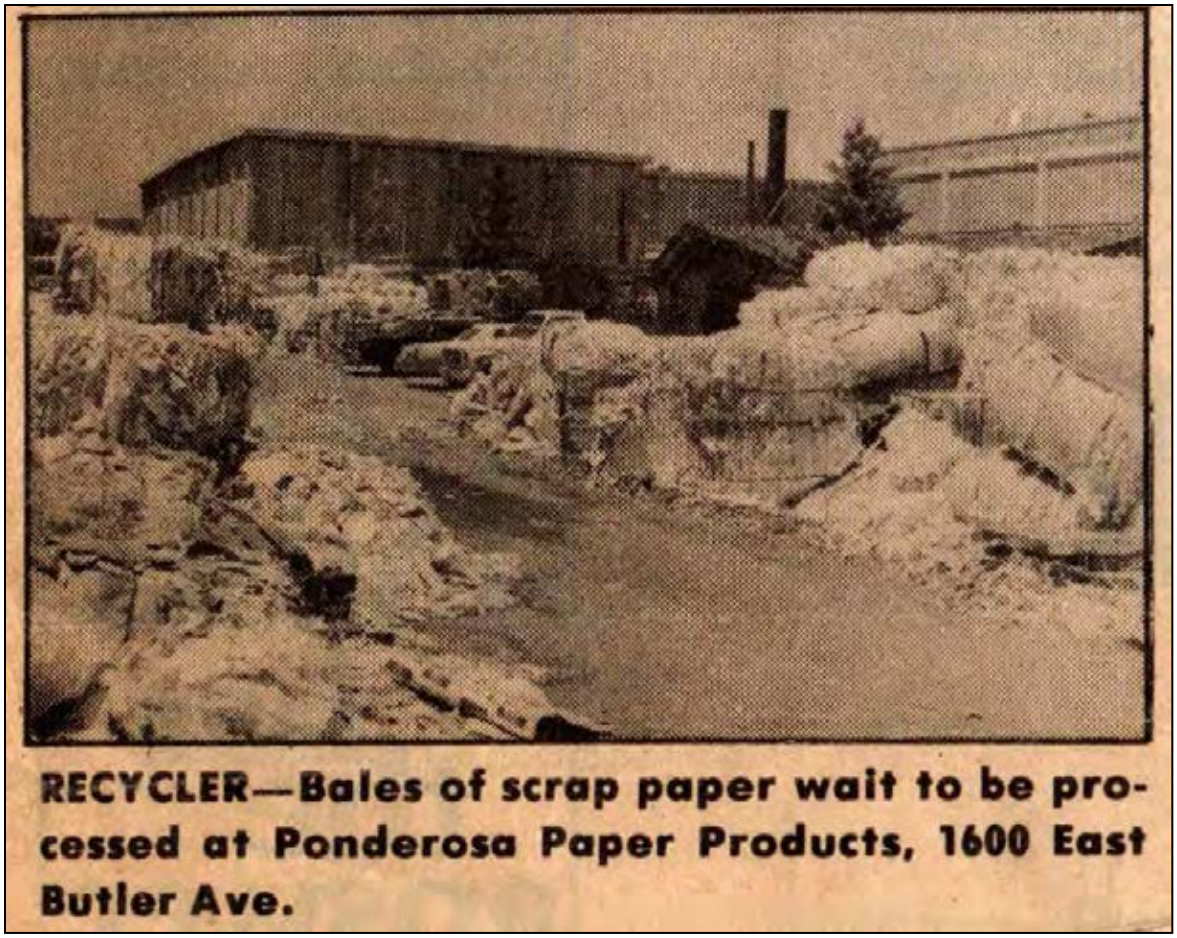


Figure 36. Bales of old newspaper ready for reuse (ADS April 20, 1974).

When Ponderosa first opened, they sought to counter concerns about pollution. Company officials noted that "the only odor associated with the local operation will be a slight smell of fresh pine wood being cut… There will be no smoke, nor other objectionable gasses emitting from the mill… Any water effluent from the mill is entirely harmless, and the Ponderosa mill expects to utilize a portion of this effluent for irrigation of its yard lawns" (ADS November 19, 1965:B9).

Ponderosa also knew that their water consumption would be high. They used a closed water system and recirculated much of their water but still required about 500,000 gallons of water per day. Before they began operations, they drilled two test wells on-premises, both of which were unsuccessful. They came to an agreement with the City of Flagstaff (City) to purchase water from the City, with a commitment to drill a well for the City near Lake Mary. They subsequently agreed to drill a second well for the City, at a location of the City's choice (ADS November 19, 1965).



RECYCLER—Bales of scrap paper wait to be processed at Ponderosa Paper Products, 1600 East Butler Ave.

Figure 37. Bales of scrap paper ready for processing (ADS June 25, 1981).

Canyon Country Club filed suit against Ponderosa and the City in 1970. They alleged that Ponderosa was dumping chemicals, industrial waste, and other pollutants into the Rio de Flag on numerous occasions and that the City was diverting sewage into the Rio de Flag. They sought a stop order and $1,250,000 in damages (ADS August 12, 1970). In 1971 the Arizona State Health Department (Health Department) followed up on this, ordering Ponderosa to stop draining effluent into the Rio de Flag (Figure 38) and ordering the City to stop diverting sewage into the Rio de Flag. The Health Department said Ponderosa had been under agreement to stop the effluent overflow since late 1968 but had not yet taken steps toward this (ADS January 14, 1971).

Figure 38. Photo showing effluent overflow into the Rio de Flag (ADS January 14, 1971).

Later in 1971, Ponderosa awarded a $1,200 grant to John Viktora, a Northern Arizona University graduate student in chemistry, to help research and develop a water recycling program for the plant (ADS November 10, 1971). A county judge issued an injunction stopping the company from discharging effluent into the Rio de Flag in 1972 (ADS July 13, 1983). The same year, their water recycling system went online (Figure 39). The system, designed by Envirotech, Inc., was designed to end effluent discharge into the Rio de Flag as well as reduce Ponderosa's water consumption from the City from 500,000 gallons per day to about 80,000 gallons per day (ADS January 5, 1972).

Figure 39. An aerator in the City's new water recycling lagoon (ADS January 5, 1972).

Bill Misslin, a columnist for the Daily Sun, commended Ponderosa's water recycling efforts (though noting that they were under threat of being shut down), and further noted efforts to improve the plant's appearance and the company's donations to local charities as evidence of it being a "good neighbor" in the community (ADS January 6, 1972:1). The Sierra Club also lauded this, along with their paper recycling efforts (ADS January 26, 1972). Goodwill Industries thanked Ponderosa for their charitable contributions by giving them an award in 1978 (Figure 40; ADS April 28, 1978).

By 1976 about 75 people were employed at the plant (ADS March 27, 1976). Bruce Jacks and John Girvin recall that in the early days the workforce was mostly white men, with some Black Americans (pers. comm. to Josh Edwards, September 9, 2020). There were probably never more than three Black Americans working at the plant at any one time. Some of the Black Americans working at the paper mill may have started working at the sawmill in town, then come over to Ponderosa. One notable individual, Howard Williams, was a Tuskegee Airman and John Girvin testified for him so he could be recognized as such.

Figure 40. Goodwill thanking Ponderosa for their charitable contributions by giving them an award. Left: Mike Midley, Goodwill; center: Bob Russel, Ponderosa; right: Mel Tucker, Goodwill (ADS April 28, 1978).

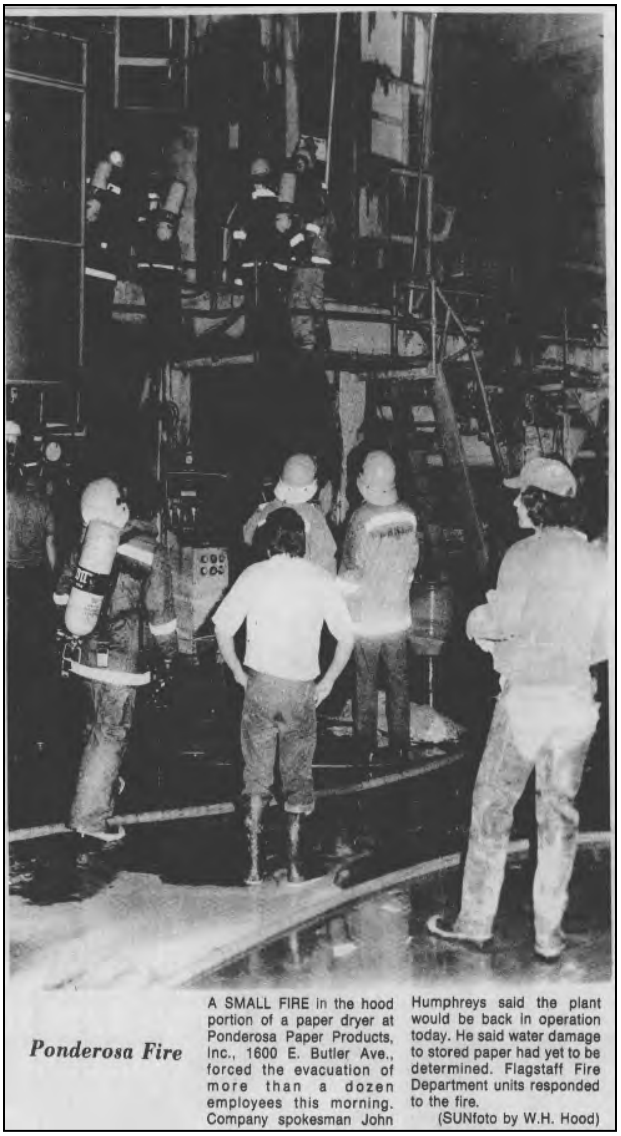
Many people who worked at the plant were not originally from Flagstaff. There were relatively more women employees as time went on, mostly working in administrative positions. James Potter's secretary, Kay Richey (Figure 41), was vice president of Flagstaff's Business and Professional Women's Club (ADS October 10, 1964). Early on, each person had two jobs in the mill. They would spend two weeks making paper then two weeks converting paper (Bruce Jacks pers. comm. to Josh Edwards, October 6, 2020). Employees included preparation and conversion workers, electricians, mechanics, engineers, shipping and receiving, purchasers, administrative, and management staff. Both John and Bruce acted as plant superintendent at different times, John in the 1980s and Bruce in the 1990s.

The work was hot, humid, and rigorous. Bruce Jacks recalls that there was not much "ass time" for the employees and everyone pitched in to get the job done (pers. comm. to Josh Edwards, September 9, 2020). "It was hard, sweaty work," said Bruce. "There could be two to three feet of snow outside and you would be wishing you were wearing short pants inside." The heat increased as productivity increased. Some days people would think that the plant was on fire due to the amount of steam coming out of the top of the building. The large fans on the top sides of the buildings (especially Building 3) would work around the clock to evacuate the humidity created during the paper drying process (John Girvin pers. comm. to Josh Edwards, September 1, 2020).

Figure 41. Kay Richey (ADS October 10, 1964).

It was dangerous work (Figure 42), with numerous injuries including loss of fingers, hands, life, and limbs. In 1975 an employee (Cecil Fowler, aged 23) suffered burns when he fell into a pulper. He was rescued by a fellow worker (Trini Logan) and was taken to the hospital in fair condition (ADS August 28, 1975). Karl Kurt Kirsch (aged 20), a Vietnam War veteran and Ponderosa employee, died in an industrial accident the same year (ADS September 13, 1975). Clifford Wright broke his left arm in a paper machine in 1977 (ADS January 17, 1977). The same year Bobby Sholtz (aged 19) caught his shirt in machinery and injured his face (ADS June 21, 1977).

John Girvin recalls that when he first started at the plant in 1969 he made $2.82 per hour, which was better than the $1.00 per hour he made at the gas station (Ron's Shell) where he worked before that, now a used car dealership on Route 66 near the Babbitt dealership (pers. comm. to Josh Edwards, September 9, 2020).



Ponderosa Fire

A SMALL FIRE in the hood portion of a paper dryer at Ponderosa Paper Products, Inc., 1600 E. Butler Ave., forced the evacuation of more than a dozen employees this morning. Company spokesman John Humphreys said the plant would be back in operation today. He said water damage to stored paper had yet to be determined. Flagstaff Fire Department units responded to the fire. (SUNfoto by W.H. Hood)

Figure 42. A fire in a paper dryer caused the plant to be evacuated (ADS April 10, 1978).

There were perks to working for the company. When they first opened, Ponderosa employees formed their own credit union (ADS November 19, 1965). They also formed several sports teams. In 1974 Ponderosa's women's volleyball team went undefeated in the Parks and Recreation Department Summer Volleyball League (Figure 43; ADS August 9, 1974). They also had women's and men's softball teams (Figures 44–46; ADS June 8, 1974). John Girvin started the men's softball team around 1973, and he and Bruce Jacks were both pitchers. Their families would come to games. At one point, Ponderosa decided not to provide uniforms, so the team tie-dyed their own. There was also a bowling team in the 1970s (John Girvin and Bruce Jacks pers. comm. to Josh Edwards, September 1, 2020).

Figure 43. Ponderosa's women's volleyball team (ADS August 9, 1974).

Figure 44. Bruce Jacks (right) of the men's softball team, late 1970s (ADS, undated photo).

Figure 45. The men's softball team, late 1970s (Bruce Jacks, personal collection).

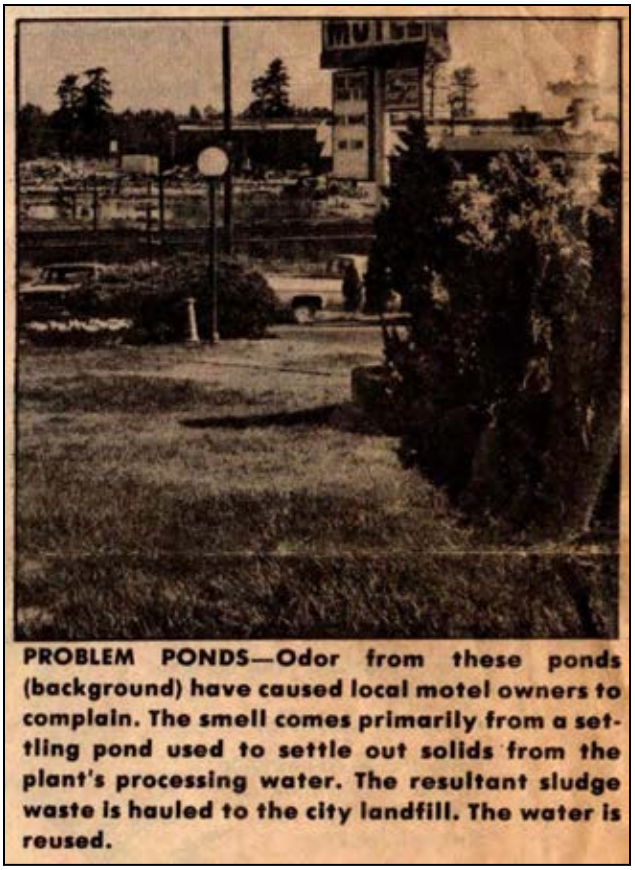
Figure 46. Bruce Jacks (center) and the men's softball team, late 1970s (Bruce Jacks, personal collection).

The Museum Club was a popular watering hole for Ponderosa employees, as it was next to the bowling alley. Gomez's Place on San Francisco and Rancho Grande (predominantly Black American) would open early at 6:00 a.m. to serve workers as they ended their shifts. Some employees used Building 1 as an archery range with failed rolls as targets. There was a strong sense of camaraderie among the workforce, with many lifelong friendships that lasted multiple generations. Bruce Jacks considered the plant employees "a band of brothers" (Bruce Jacks pers. comm. to Josh Edwards, September 1, 2020).

In 1974 Ponderosa Paper Products, Inc. formally changed its name to JJS Products, Inc. (ADS February 8, 1975), though it continued doing business under the Ponderosa name (Figure 47). It may have also come under ownership of Orchids Paper Products at this time as well, but this is not completely clear. By 1976 most of Ponderosa's product was either being sold through Orchid Paper or through a U.S. government contract (ADS March 27, 1976). In 1979 Ponderosa Paper Products, Inc. merged with Concel, Inc. (ADS January 4, 1980). By 1982 Ponderosa was owned by parent company APL Corporation (APL) out of New York. APL also owned Orchid Paper Co. in California. In 1982 Ponderosa discontinued some of its operations (the paper mill remained in operation) and transferred them to Orchid in La Palma, California (ADS July 16, 1982).

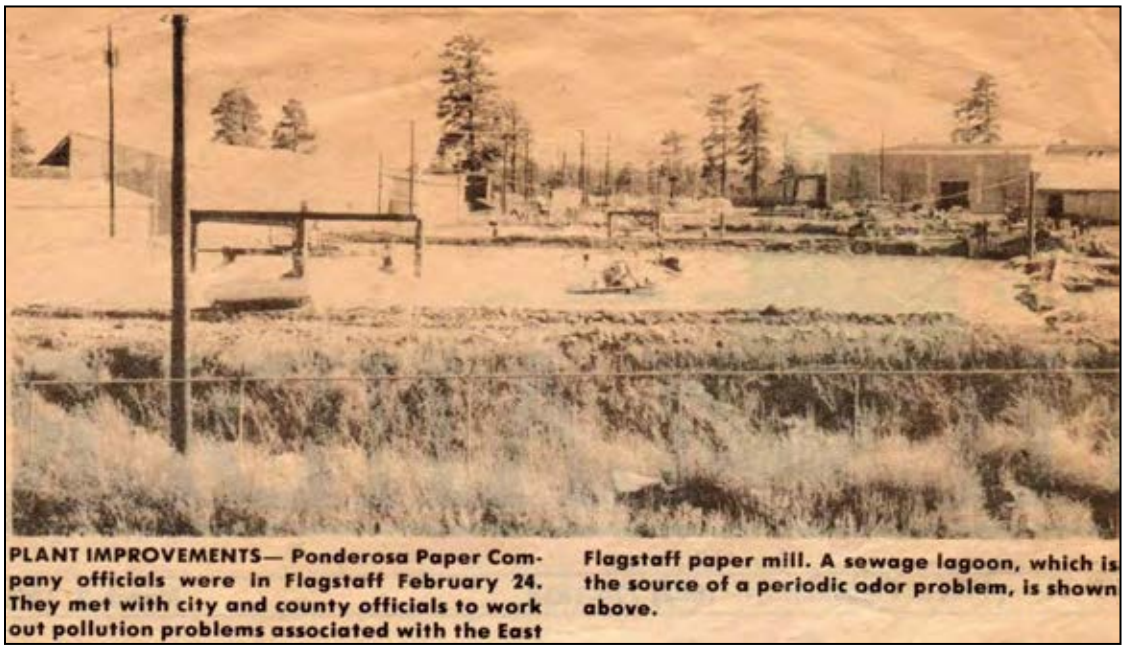
Figure 47. Advertisement for Ponderosa Paper Products (ADS February 20, 1975).

In 1980 Ponderosa ran into problems disposing of both its liquid and solid waste, and there were false rumors of the plant closing (ADS November 11, 1980). Problems with effluent, waste disposal, and odors would continue creating legal and public relations difficulties for the plant (Figures 48–50; ADS June 25, 1981; February 3, 1982; March 3, 1982; July 14, 1982; September 21,1982). APL closed Ponderosa in 1983, to mixed reactions. While the closure put 65 employees out of work, Flagstaff Mayor Paul J. Babbitt Jr. noted that people had been protesting to City Council about the plant's environmental issues since 1981, and described Ponderosa as "Flagstaff's No. 1 polluter" (ADS July 13, 1983:1).



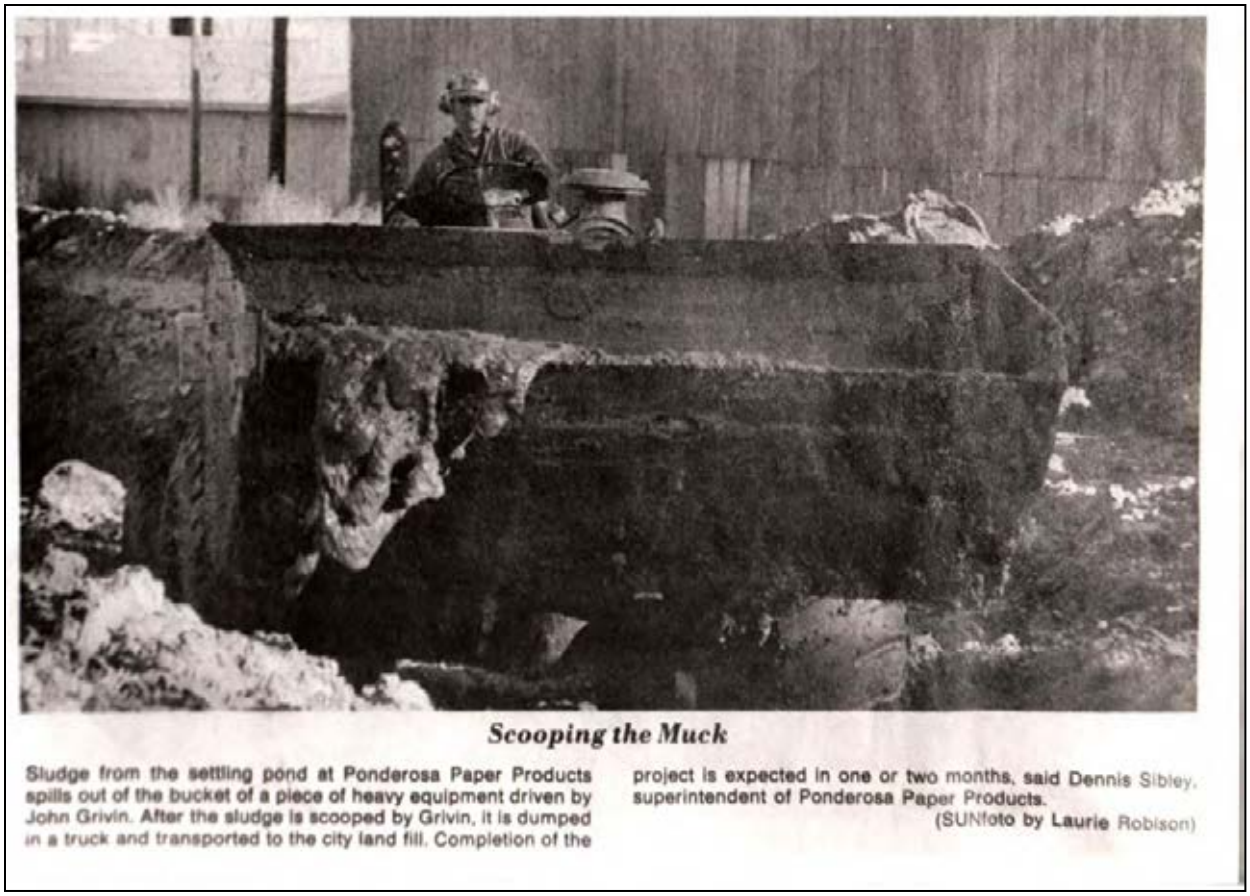
PROBLEM PONDS—Odor from these ponds (background) have caused local motel owners to complain. The smell comes primarily from a settling pond used to settle out solids from the plant's processing water. The resultant sludge waste is hauled to the city landfill. The water is reused.

Figure 48. Settling ponds caused odor complaints (ADS June 25, 1981).



PLANT IMPROVEMENTS— Ponderosa Paper Company officials were in Flagstaff February 24. They met with city and county officials to work out pollution problems associated with the East Flagstaff paper mill. A sewage lagoon, which is the source of a periodic odor problem, is shown above.

Figure 49. Sewage lagoons also caused odor complaints (ADS February 3, 1982).



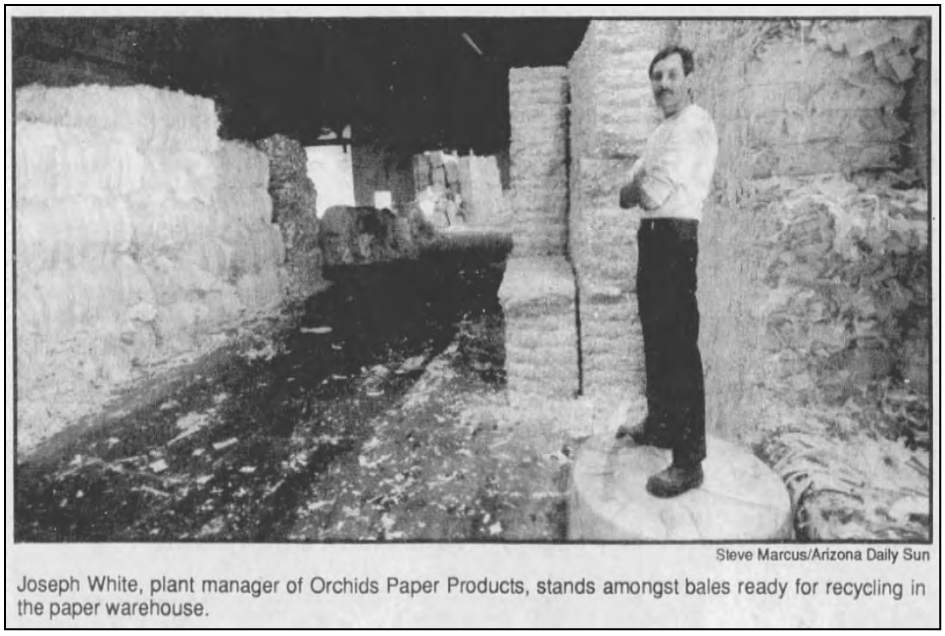
Scooping the Muck

Sludge from the settling pond at Ponderosa Paper Products spills out of the bucket of a piece of heavy equipment driven by John Grivin. After the sludge is scooped by Grivin, it is dumped in a truck and transported to the city land fill. Completion of the project is expected in one or two months, said Dennis Sibley, superintendent of Ponderosa Paper Products.

(SUNfoto by Laurie Robison)

Figure 50. John Girvin scoops sludge from a settling pond (ADS, undated photo).

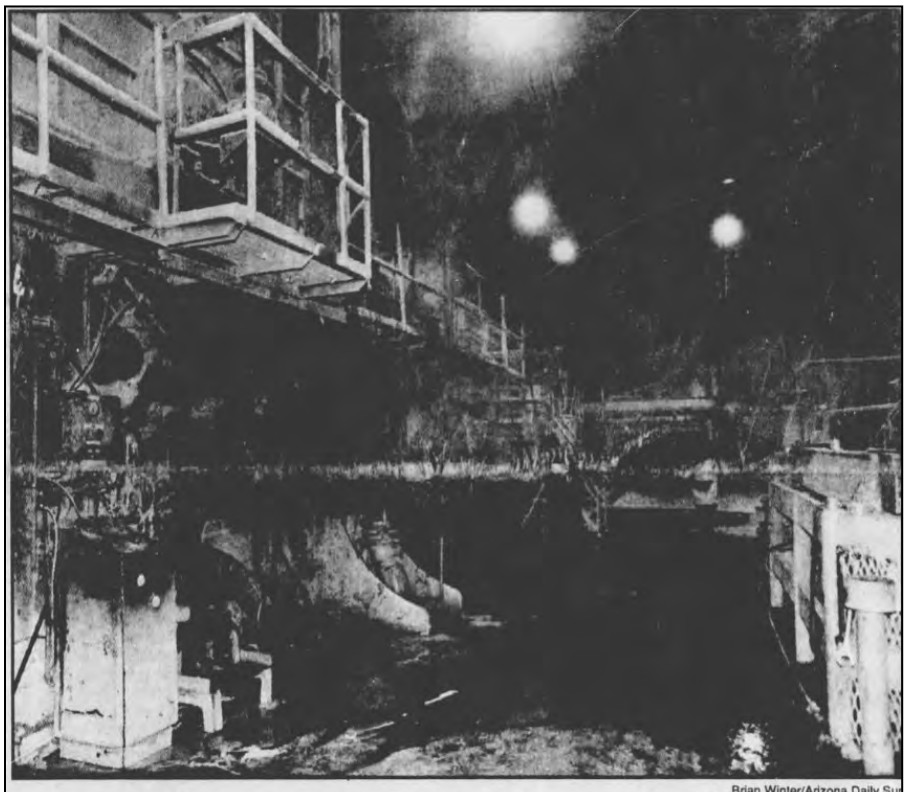
Following negotiations, and with some opposition, Ponderosa reopened a year later in 1984. Some former employees were offered their old jobs back at reduced salaries (ADS May 14, 1984). By 1989 the plant was one of six operated by Orchids Paper Products Co. (Orchids), though it still may have been known as Ponderosa; APL Corporation sold Orchids to a separate management group headed by Orville Simms Jr. in 1989 (ADS May 14, 1989; April 18, 1991). Orchids expanded/renovated the plant in 1990 and 1991 (Figures 51 and 52); the company filed for Chapter 11 bankruptcy in 1992 but continued operations and filed again in 1995 and laid off employees (ADS September 17, 1992; January 25, 1994; January 11, 1995). Part of Orchids' expansion included the purchase and installation of a second papermaking machine from Finland in 1991; prior to this there had been only one paper machine in Building 3. 1991 was also when the plant started making toilet paper for the first time (John Girvin and Bruce Jacks, pers. comm. to Josh Edwards, September 9, 2020).



Steve Marcus/Arizona Daily Sun

Joseph White, plant manager of Orchids Paper Products, stands amongst bales ready for recycling in the paper warehouse.

Figure 51. Joseph White, manager at Orchids, with paper bales for recycling (ADS December 23, 1990).



Brian Winter/Arizona Daily Sun

Workers from Orchid Paper wash down the floor and take hourly readings recently at the Flagstaff mill.

Figure 52. The paper mill under Orchids' operation (ADS January 25, 1994).

In the late 1980s a large piece of equipment called the Yankee dryer was uninstalled but kept on site as an artifact of the plant's history. The accompanying sign read, "This massive 70,000 lb. dryer was used from

1967 thru 1987 in making tissue paper, it was filled with 150 lbs of steam pressure for the purpose of drying paper. During the life of this dryer, approximately 750,000 tons of paper was made. This paper is equivalent to _5 rolls of paper towels for every person in the United States." Thereafter it was often labeled with the current operator of the plant (Figure 53).

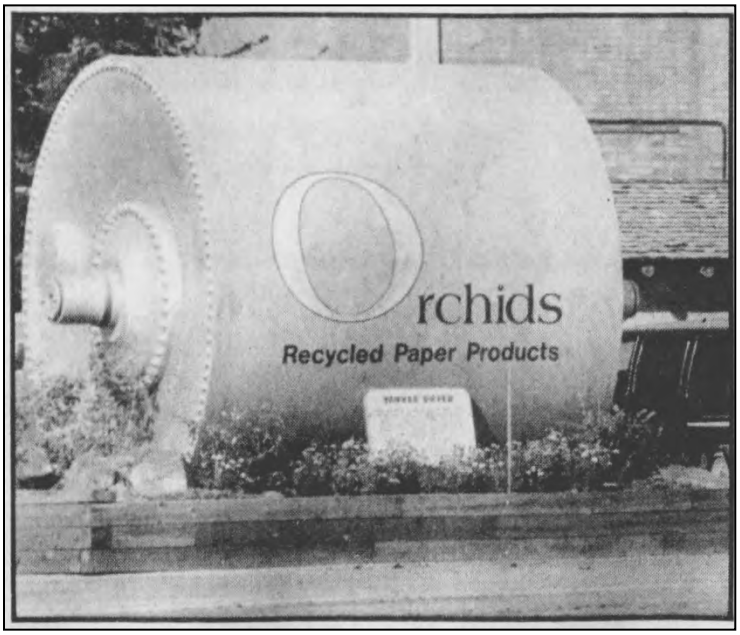


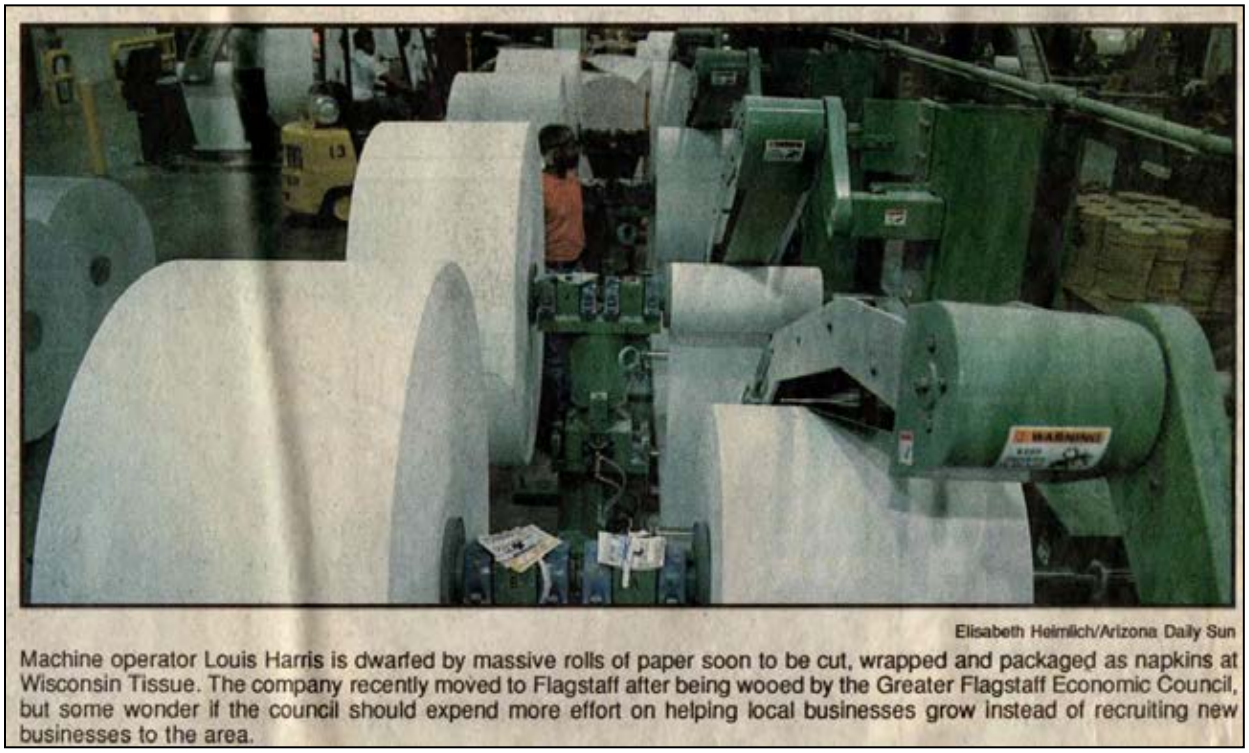
Figure 53. The Yankee dryer with Orchids' logo (ADS September 17, 1992).

The workforce diversified over time. John Girvin and Bruce Jacks recall that by the 1990s the employee composition became more Hispanic. In fact, there was a language barrier and Orchids hired English teachers for the employees. White workers were a minority at the plant from then on and Native American workers became more common after the mid-1990s, especially Navajos. While the employees lived all over town, there were many who lived in the Greenlaw and Sunnyside neighborhoods, regardless of ethnicity (John Girvin and Bruce Jacks pers. comm. to Josh Edwards, September 9, 2020).

The 1990s also saw a new emphasis on environmental conservation. This resulted in Orchids making multiple attempts to paint the paper mill in Flagstaff in a favorable light. Appendix C contains an internal document from ca. 1991 called "Saving Trees Is Our Business" by Mary Foley; a 1992 industry profile that details their recycling efforts, company history, and Flagstaff mill along with details of equipment and products produced; and a 1996 article in BioCycle: Journal of Composting & Recycling called "Good Paper Mills Make Good Neighbors."

After Orchids went bankrupt in 1995, Wisconsin Tissue bought the Flagstaff plant and rehired some employees (ADS May 3, 1995). Wisconsin Tissue made plans to renovate the Flagstaff plant and build a

new plant in Bellemont, which was completed in 1996 (Figure 54; ADS August 9, 1995; September 22, 1996). John Girvin and Bruce Jacks recall that during their considerable tenure at the plant, Wisconsin Tissue made the biggest changes and improvements to the daily lives of employees compared with any other company. When Wisconsin took over, they gave all employees a $1 per hour raise, while other companies that had been looking at purchasing the facility were considering reducing pay. Employees voted to de-unionize. The Bellemont facility employed over 200 people at one time for converting paper stock to consumer-ready products. Prior to that paper was shipped to Wisconsin or La Palma, California for conversion. There was a converting plant in one end of Building 3 prior to that (John Girvin pers. comm. to Josh Edwards, September 9, 2020).



Elisabeth Heimlich/Arizona Daily Sun

Machine operator Louis Harris is dwarfed by massive rolls of paper soon to be cut, wrapped and packaged as napkins at Wisconsin Tissue. The company recently moved to Flagstaff after being wooed by the Greater Flagstaff Economic Council, but some wonder if the council should expend more effort on helping local businesses grow instead of recruiting new businesses to the area.

Figure 54. The paper mill under Wisconsin Tissue's operation (ADS September 22, 1996).

Georgia-Pacific Corporation merged with Wisconsin Tissue in 1999 to do business as Georgia-Pacific Tissue (Figure 55). No personnel changes were expected at the Flagstaff or Bellemont plants, which at this point employed about 250 people combined (ADS October 7, 1999).

Figure 55. The Yankee dryer with Georgia-Pacific's logo (ADS October 7, 1999).

In 2000 Georgia-Pacific made plans to sell the Flagstaff and Bellemont plants to Svenska Cellulosa AB (SCA) Tissue out of Sweden (ADS November 23, 2000). This was possibly due to federal efforts to break up a Georgia-Pacific monopoly in the industry (John Girvin and Bruce Jacks pers. comm. to Josh Edwards, September 9, 2020). SCA would continue to run the two plants until 2017 (Figures 56 and 57). The Flagstaff plant was used for making rolls of paper and the Bellemont plant was used for making finished paper products. In 2017 SCA closed and mothballed the Flagstaff plant, having acquired other papermaking facilities. The Bellemont facility remained open (ADS June 8, 2017). The 78 employees of the Flagstaff facility were notified on Wednesday, June 8, 2017 that their positions were being eliminated, and their jobs ended the next day. The employees received 60 days of severance pay (John Girvin and Bruce Jacks pers. comm. to Josh Edwards, September 9, 2020).

Figure 56. The Yankee dryer with SCA's logo (ADS June 8, 2017).

Figure 57. John Girvin worked at the mill for 46 years before retiring in 2015 (ADS July 20, 2017).

6.0 BUILDING FUNCTIONS

Building functions presented in this section generally pertain to operations after 1969, when John Girvin started working at the mill (Figures 58–61; Table 2). Resident Plant Engineer Chris Remington was especially helpful with this aspect of research. The assignment of building numbers was challenging, and the authors attempted to use contiguous foundations and roof structures to make these assignments. Given the continuous remodeling and repair of the facility, the dates generally represent the initial construction completion date of a portion of an earlier building that is incorporated into what is now present. Although there is some archival information presented above about previous building functions, most of the information in this section was gleaned from interviews with John Girvin and Bruce Jacks.

Table 2. Structure Number, Type, and Significance

Building Number	Building Name	Building Date
1	Furnish Warehouse	1956
2	Wood Barn/Storage Barn	1956
3	Paper Mill	1965
4	Main Office	1956
5	Maintenance Shop Parts Room	1964
6	Fiber Preparation and Water Clarification	1956
7	Maintenance Shop, Breezeway, and Boiler Room	1956
8	Maintenance Shop Parts Room	1997
9	Sludge Pad	1964
10	Yankee Barn	1976

Figure 58. Building numbers and initial construction dates.

CORNERSTONE environmental

1600 E Butler Avenue

Plant Buildings

NAD 1983 UTM Zone 12N

T 21N R 7E Sec.22

NAIP Imagery (2015)

L E G E N D

- Fire Hydrant
- Well Head
- RR Alignment
- Loading Dock
- Paper Plant
- Electrical Substation
- Retention Basin
- Sewer Shack
- Tanks
- Parcel

1 : 1,400

75 0 75 ft

30 0 30 m

Flagstaff City Limits

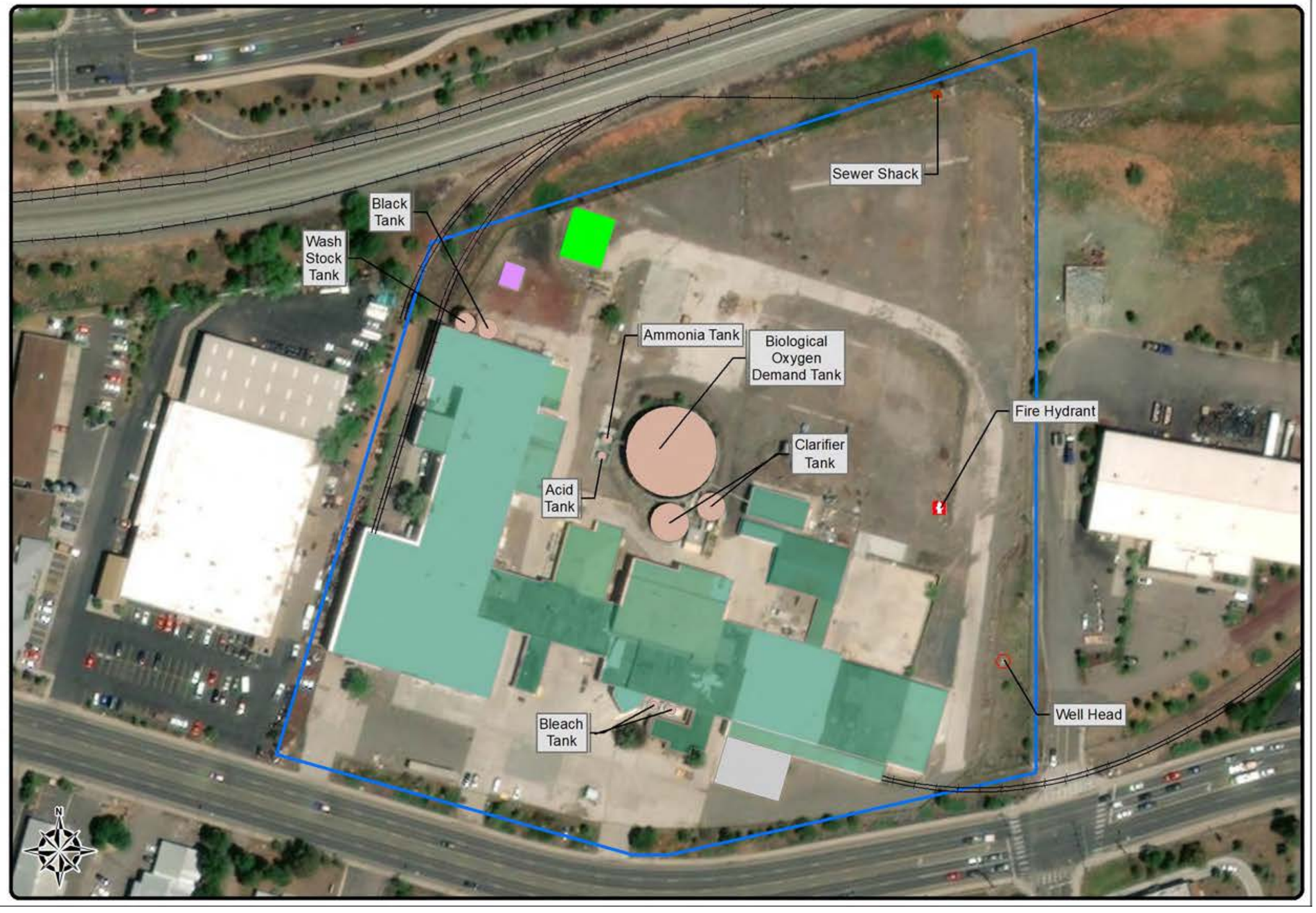


Figure 59. Ancillary structures and buildings.

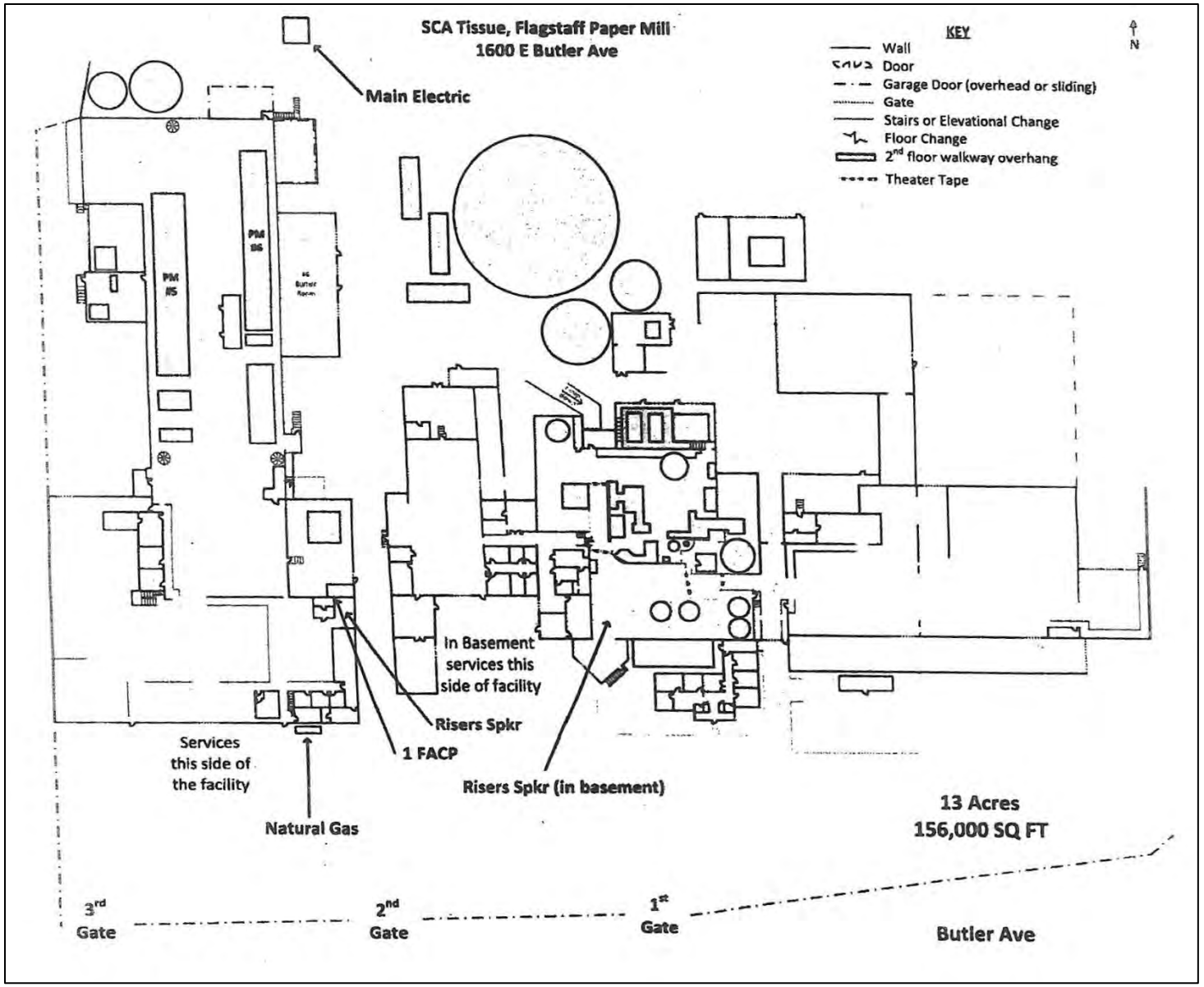


Figure 60. SCA Tissue Plant Layout.

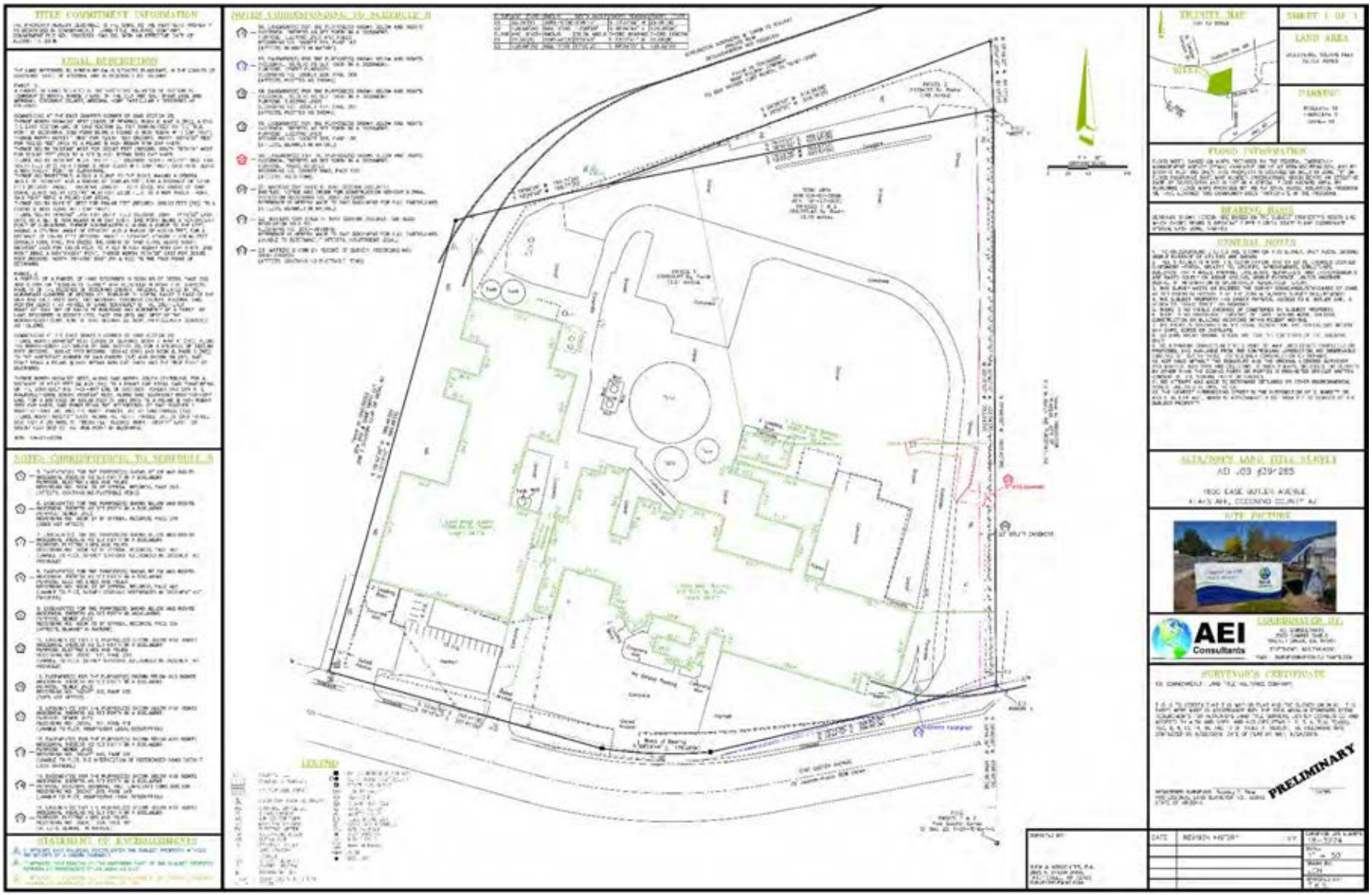


Figure 61. 2018 Preliminary property survey (PK Associates 2018).

6.1 BUILDING 1- FURNISH WAREHOUSE

The Furnish Warehouse held bailed waste/solid paper that was going to be recycled at the mill (Figure 62). These bails of paper were called furnish and mainly arrived on trucks into the loading dock on the northeast part of the building, but also came in on the railroad spur on the southeast part of the building, mostly when the furnish was from far away (Figure 63). One railcar could hold about three truckloads of furnish and it arrived by train from across the U.S., mostly the Southwest, in the form of clippings from other manufacturing facilities like Dixie Cup, envelope manufacturers, and greeting card manufacturers (Figure 64). A small amount of newspaper was also included in the mix, but the content of this type of poor-quality paper had to be limited to maintain integrity of the resulting paper. Post-consumer waste (mostly from offices) was used to make white paper like tissues and towels. Boxes were made into brown paper, a.k.a., craft paper and brown napkins that are commonly used in restaurants.

Figure 62. Photo of Building 1, facing east-northeast.

Figure 63. Photo of covered railcar loading dock, Building 1, facing west-northwest.

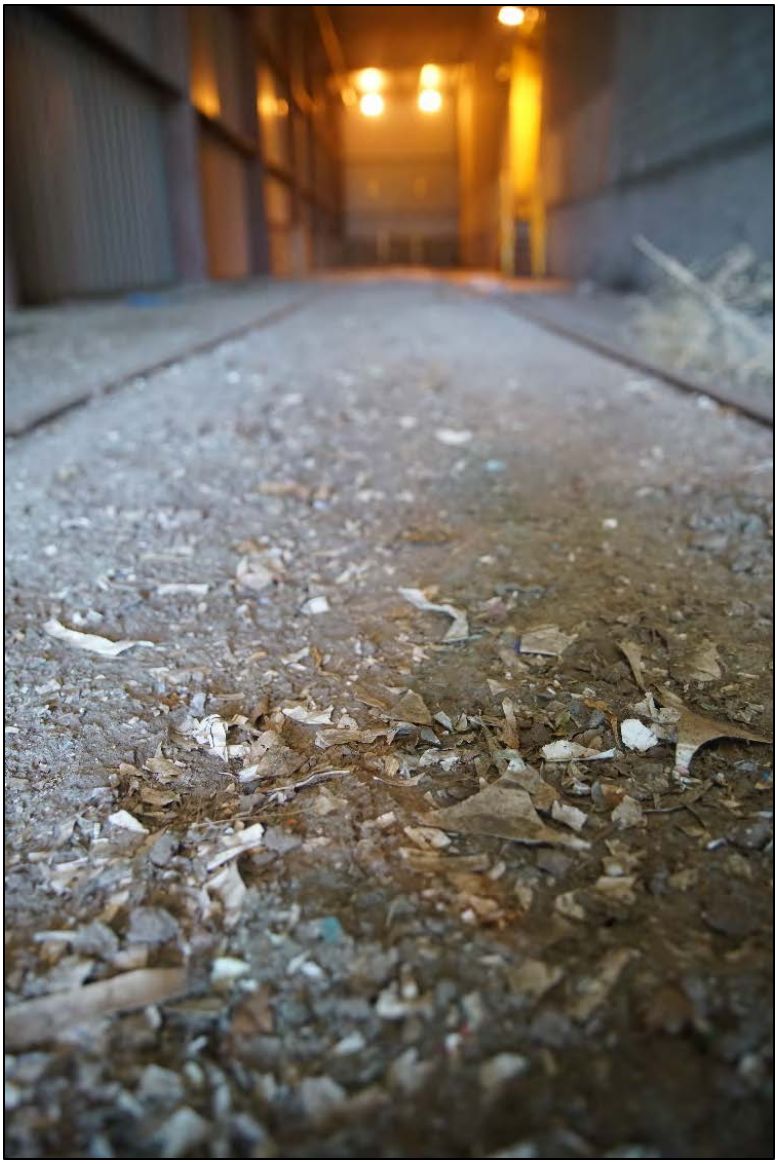


Figure 64. Photo of fragments of furnish in covered railcar loading dock, Building 1, facing west-northwest.

6.2 BUILDING 2- WOOD BARN/STORAGE BARN

In the early 1970s this building held extra motors and was used for general storage of large items (Figures 65–67). Prior to the 1970s this building may have been the location of log processing after they were debarked.

Figure 65. Photo of Building 2, facing west-northwest.

Figure 66. Photo of Building 2, facing east-northeast.

Figure 67. Building 2 interior, facing west-northwest.

6.3 BUILDING 3- PAPER MILL

The stock slurry was piped into the Wash Stock Tank on the north side of Building 3, which held paper stock pumped underground from Building 6. The slurry was then combined with clarified water from the Black Tank and sent to the head box and then to a paper machine. Essentially, the paper pulp was formed, dried, and made into a bulk roll form in Building 3 (Figures 68–72). It was then cut to the appropriate size for use and then shipped to the Bellemont facility, or across the country for processing into a consumer-ready product, such as paper towels and/or napkins.

Figure 68. Photo of Building 3, facing northwest.

Figure 69. Photo of Building 3, facing southwest.

Figure 70. Photo of Building 3 interior, facing north-northeast.

Figure 71. 2014 photo of Building 3 interior, facing south-southwest (photo credit Bruce Jacks).

Figure 72. 2017 photo of Bruce Jacks with the last roll of paper made in the SCA paper mill.

6.4 BUILDING 4- MAIN OFFICE

Managers, human resource staff, receptionist, and executives were in this building (Figure 73). When visitors arrived at the facility, they would sign in at the Main Office, go through safety protocol, and receive appropriate personal protective equipment. Paperwork, including forms, manuals, and drawings were also stored here.

Figure 73. Photo of Building 4, facing north-northeast.

6.5 Buildings 5 and 8- Maintenance Shop Parts Room

Building 5 held spare parts like bearings and electronic parts, belts for drives, packing material for pumps, and specialty parts (Figure 74). Building 8 used to be a blade grinding room and a core cutting room but evolved into a parts room that held spare parts like bolts and plumbing supplies (Figure 75).

Figure 74. Photo of Building 5, facing south-southwest.

Figure 75. Photo of Buildings 7 and 8, facing north-northeast.

6.6 Building 6- Fiber Preparation and Water Clarification

Building 6 was commonly referred to as the Fiber Prep Building (Figures 76–78). Here, plastic, staples, and extracts like clays and inks would be removed from the furnish. Here it would be washed, screened, and thickened into paper stock, and sludge, the waste material from this process would be taken to the City landfill and used to cover the trash or to line the trash pit. The resulting paper stock was then was diluted into a slurry that was then piped over to the Paper Mill (Building 3).

Figure 76. Photo of Building 6, facing south-southwest.

Figure 77. Photo of Building 6, facing west-northwest.

Figure 78. Photo of Building 6 interior showing fiber preparation equipment, facing southeast.

6.7 Building 7- Maintenance Shop, Breezeway, and Boiler Room

This is a complex building with several distinct sections including the Maintenance Shop, Breezeway, and Boiler Room (east to west). The maintenance shop is where the mechanics would fabricate parts, weld safety guards and parts for the machines, and repair and build equipment (*see* Figure 75). This building was also part of the Electrical and Instrumentation Department, where technical specialty electrical items were repaired like rebuilding motors. The breezeway is a drive-through area between the Maintenance Shop and Boiler Room, but under the same roof structure (Figure 79). The Boiler Room housed two boilers, one of which powered the original turbine-driven paper machine and the other smaller boiler provided hot water to the remainder of the facility.

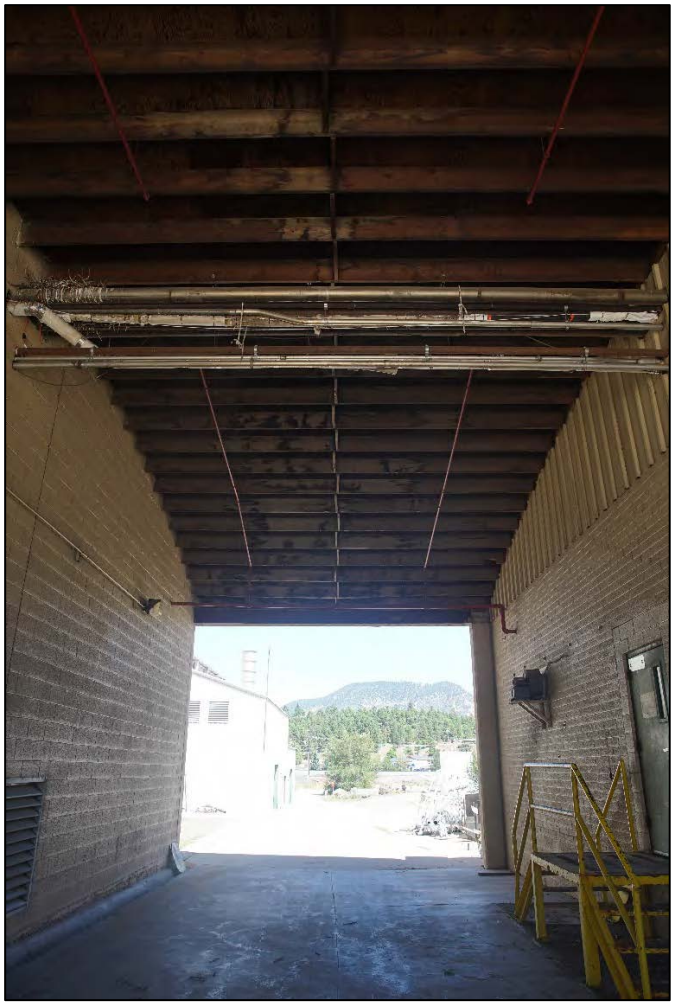


Figure 79. Building 7, Breezeway, facing north-northwest.

6.8 Buildings 9 and 10- Sludge Pad and Yankee Barn

Buildings 9 and 10 are not of historic age. Sludge was extracted from furnish in the Fiber Prep Building (Building 6) and then the sludge was kept dry in this three-sided building called the Sludge Pad (Building 10) because the heavier the sludge was the more it cost to put into the landfill. There was previously a building in this location that may have been a log debarking facility (John Girvin pers. comm to Josh Edwards, September 24, 2020; Figure 80).

Figure 80. Photo of Building 9, facing north.

An old, presumably wooden, barn used to be at the current location of the Yankee Barn (Building 10) prior to 1976 (John Girvin pers. comm to Josh Edwards, September 24, 2020). The current building held the spare Yankee Dryers that were not in use and they could be brought out in a pinch when other machines were not functioning.

6.9 Ancillary Structures and Buildings

This section describes the ancillary structures on the SCA Tissue property (*see* Figure 59). Many of the structures described herein are tanks that were demolished in 2019. Structures that have functions that are obvious due to their names receive only brief descriptions. The Acid, Ammonia, and Bleach Tanks simply contained large amounts of those fluids, which were used in the fiber preparation and paper manufacturing process. The Electrical Substation was the main point of electrical conduction and regulation for the facility. There is a Fire Hydrant on the east central portion of the property that is

embossed “Waterous” and “1989.” The Well Head, northeast of Building 1, was a critical part of the facility, as abundant water was more important to the paper-making process than nearby wood (Bruce Jack, pers. comm. to Josh Edwards October 6, 2020). This feature is the inlet for water from a well drilled near Lake Mary specifically for the paper mill. The Sewer Shack is the only building located on the smaller parcel along the railroad tracks in the north central part of the Study Area. The amount of effluent water discharged into the City’s sewer system was monitored in this building (Figure 81).

Figure 81. Photo of the Sewer Shack, facing north.

The Black Tank (on the north side of Building 3; simply named for its color) held water that was cleaned and clarified in Building 6 and then pumped underground to the tank and then used in the paper-making process in the Paper Mill (Building 3). The stock slurry from Building 6 was piped into the Wash Stock Tank on the north side of Building 3, which held paper stock pumped underground from Building 6. These two tanks were demolished in 2019 and now only circular concrete pads remain.

Once the water was extensively cleaned it would go from the bottom of the Black Tank to the Biological Oxygen Demand (BOD) Tank, which was the largest tank on the property (demolished in 2019). There, the water was treated through aeration, and by microorganisms that would digest solids in the water. The water would then go to the two small Clarifier Tanks next to the BOD Tank. The one on the east was the old clarifier tank and the one on the west was a little larger and newer. Once the water went through this process it was monitored and sampled for quality before it went to the Sewer Shack and then to the City wastewater treatment facility. Discharge was limited to 200 gallons per minute maximum, but the employees did their best to keep discharge at 175 gallons per minute or less.

7.0 BUILDING ARCHITECTURE AND CONSTRUCTION SEQUENCE

This section describes distinct architectural elements of each extant property and attempts to provide a reconstruction of building events (*see* Figure 58). Building dates were assigned from multiple sources, including aerial photographs, topographic maps, Coconino County Assessor's Office archival data, on-site observations, and interviews. The following architectural and structural descriptions mostly pertain to operations after 1969, when John Girvin started working at the mill, and generally follow the guidelines for Historic American Building Survey/Historic American Engineering Record/Historic American Landscapes Survey documentation established by the National Park Service (Burns 2004).

Interviews with Chris Remington, the former Resident Plant Engineer between 1975 and 2004, were extremely informative to the information presented in this section. Mr. Remington was educated in England as a mechanical engineer and immigrated to the United States in 1967. His early introduction to complex paper making equipment with Rice Barton of Worcester, Massachusetts, prepared him for his long-term employment in Flagstaff, where he also demonstrated an unusual and creative capacity for developing structural engineering solutions to significant building problems. Mr. Remington's intimate observations of the facility were critical to help reconstruct the complex repair and renovation of the plant during the years of his employment.

The property was first known as the Babbitt Brothers Trading Company slaughterhouse and meat packing facility starting in the late 1800s and transitioned to pulp and paper production in 1953. Only one historical photo thought to be of the original meat packing facilities was taken in the winter of 1954 (Figure 82). It is likely that the buildings were already being used by the Coconino Pulp & Paper Company though, as logs are shown that are ready to be turned into pulp that will then be used to make egg cartons.

Figure 82. 1954 photo of Coconino Pulp & Paper buildings, facing north (Shirley 1954).

Archival research, construction/architectural analysis, and oral interviews reveal that no structural remains from the slaughterhouse and meat packing facilities exists today, except for the eastern railroad spur, which was extended onto the property via an agreement between Atchison Topeka & Santa Fe and the Babbitt Brothers in December of 1911 (NPS 1983). This conclusion is illustrated by comparing a 1954 aerial photo of the site with the outline of the current SCA site (Figure 83). 1956 aerial photos also strongly suggest that the Babbitt Brothers Trading Company slaughterhouse and meat packing facilities were completely torn down and replaced with new buildings for the paper making process (Chris Remington pers. comm. to Terry Greene, October 8, 2020; Figures 84 and 85).

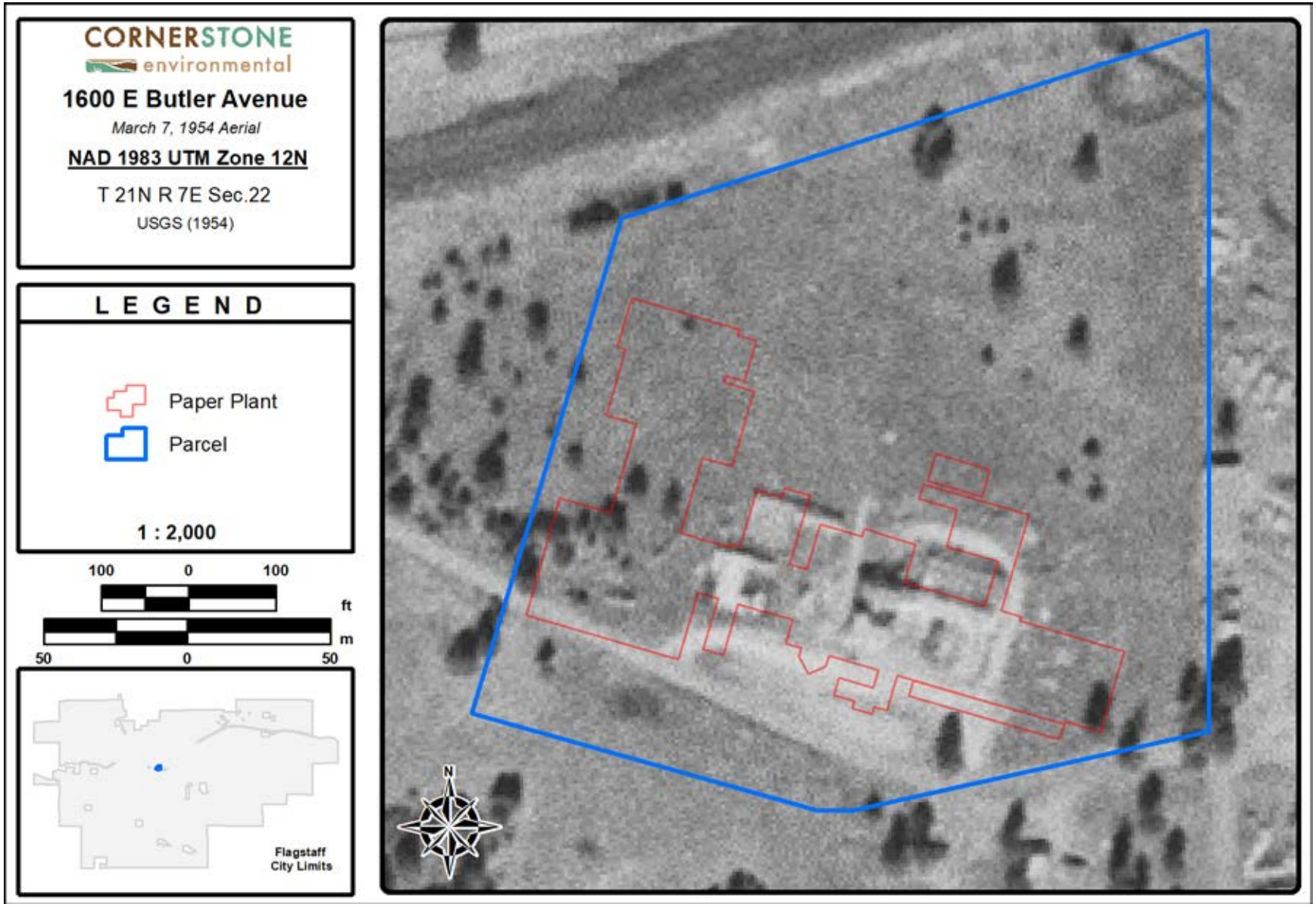


Figure 83. 1954 aerial photo with current building outlines.

Figures 84 and 85 are two oblique aerial photographs from 1956 that show new buildings on the site nearing completion. It appears that construction of the paper plant is still underway at the time of the photos as evidenced by a crane near the building and open trenches in the foreground. Two buildings in the layout shown in Figure 84 correspond to the final layout identified in Figure 58, with the taller building near the center of the image corresponding with Building 6 and the eastern (right side of photo) building corresponding to Building 1. Both buildings are noteworthy due to their distinct gabled roofs. These buildings are the oldest continual use buildings under consideration in this report and were built between 1954 and 1956.

In 1959, the plant had been more fully built, with construction of Buildings 2, 4, 6, and 7 complete and the expansion to the east of Building 1 with the addition of another warehouse (Figure 86). The rail spur is visible along the south side of the facility, with railcars seen just to the east of the property.

By 1964, the facility expanded even more, with an increase in size of Building 6 and the construction Buildings 5, 7, and 8 (Figure 87). It is possible that Building 7 is an expansion of the construction seen in 1959, but nothing conclusive was identified. Building 4 was connected to the main plant through the addition to the rear of the building to connect this to Building 1. Likely site preparation is seen on the western edge of the parcel where Building 3 would be located, and while no building materials appear to be in place when this image was taken in August 1964, by November 1965, the building is completely finished and in use (Figure 88). This time period corresponds with Ponderosa's expansion of the facility.

The roof forms of the existing buildings appear to remain consistent from 1959 to 1964, although they appear darker in the later image, possibly due to new roofing material. It is also during this five-year period that we see an expansion of Building 1, with an increase of 20 feet to the south. This expansion triggered the reroute of the railroad spur, also moving the line 20 feet south to the current location, likely beginning at a point in the adjacent parcel to the east.

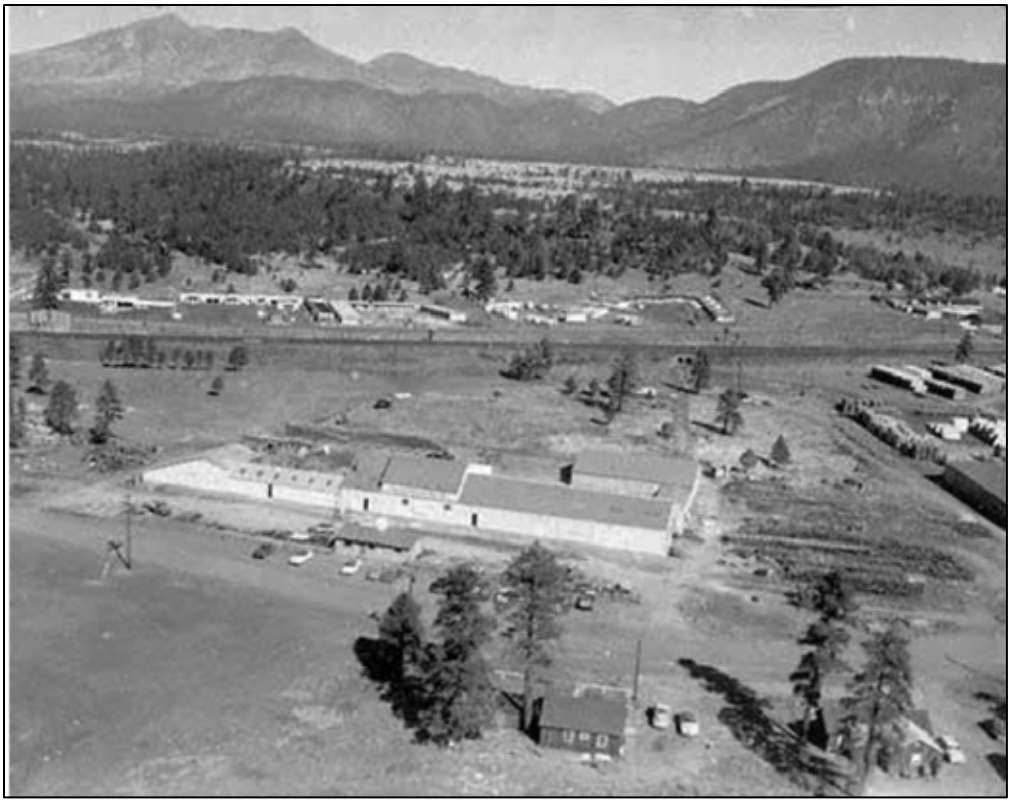


Figure 84. 1956 aerial photo of Arizona Pulp & Paper facility, facing north.

Figure 85. 1956 aerial photo of Arizona Pulp & Paper facility, facing south.

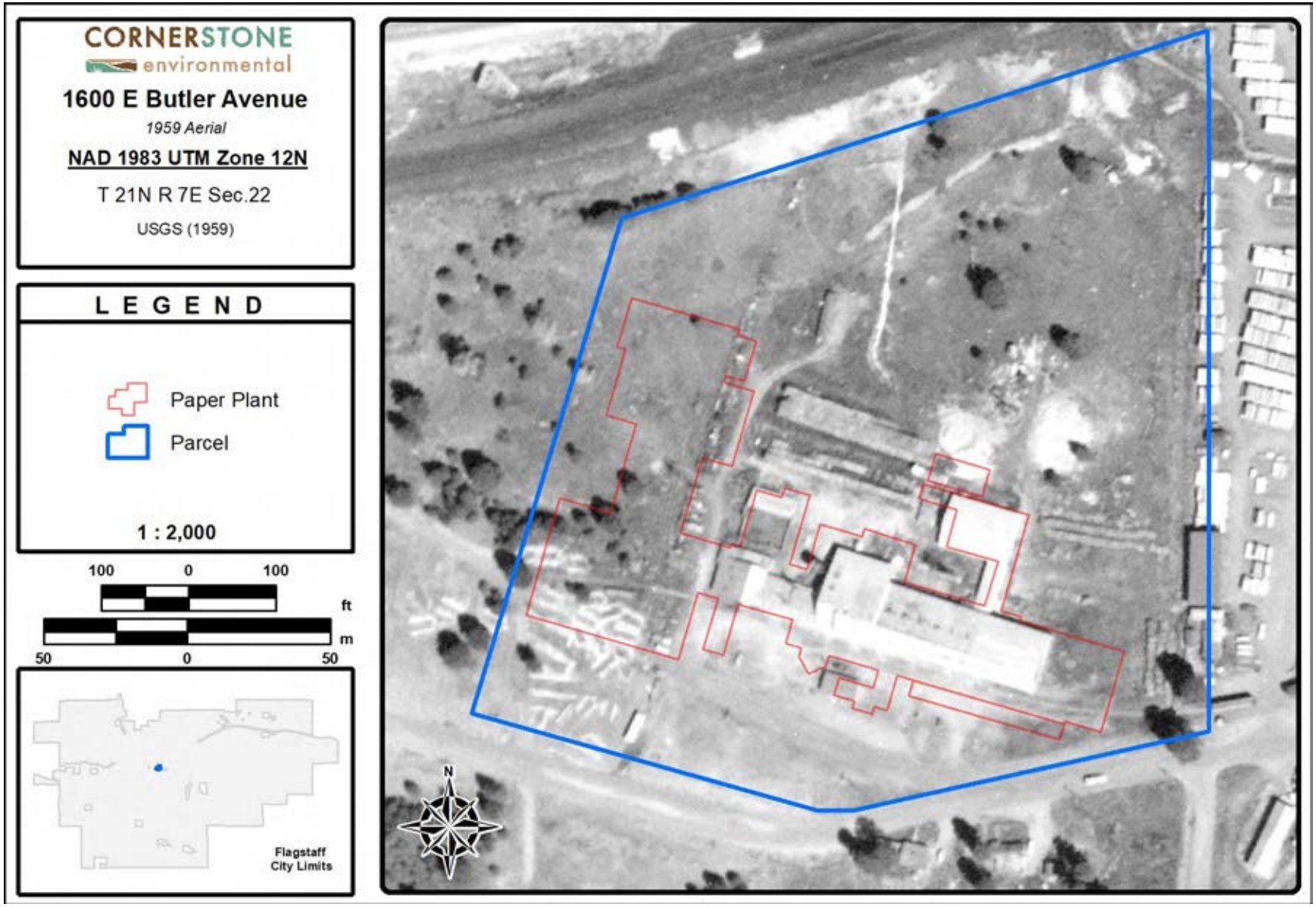


Figure 86. 1959 aerial photo aerial photo with current building outlines.

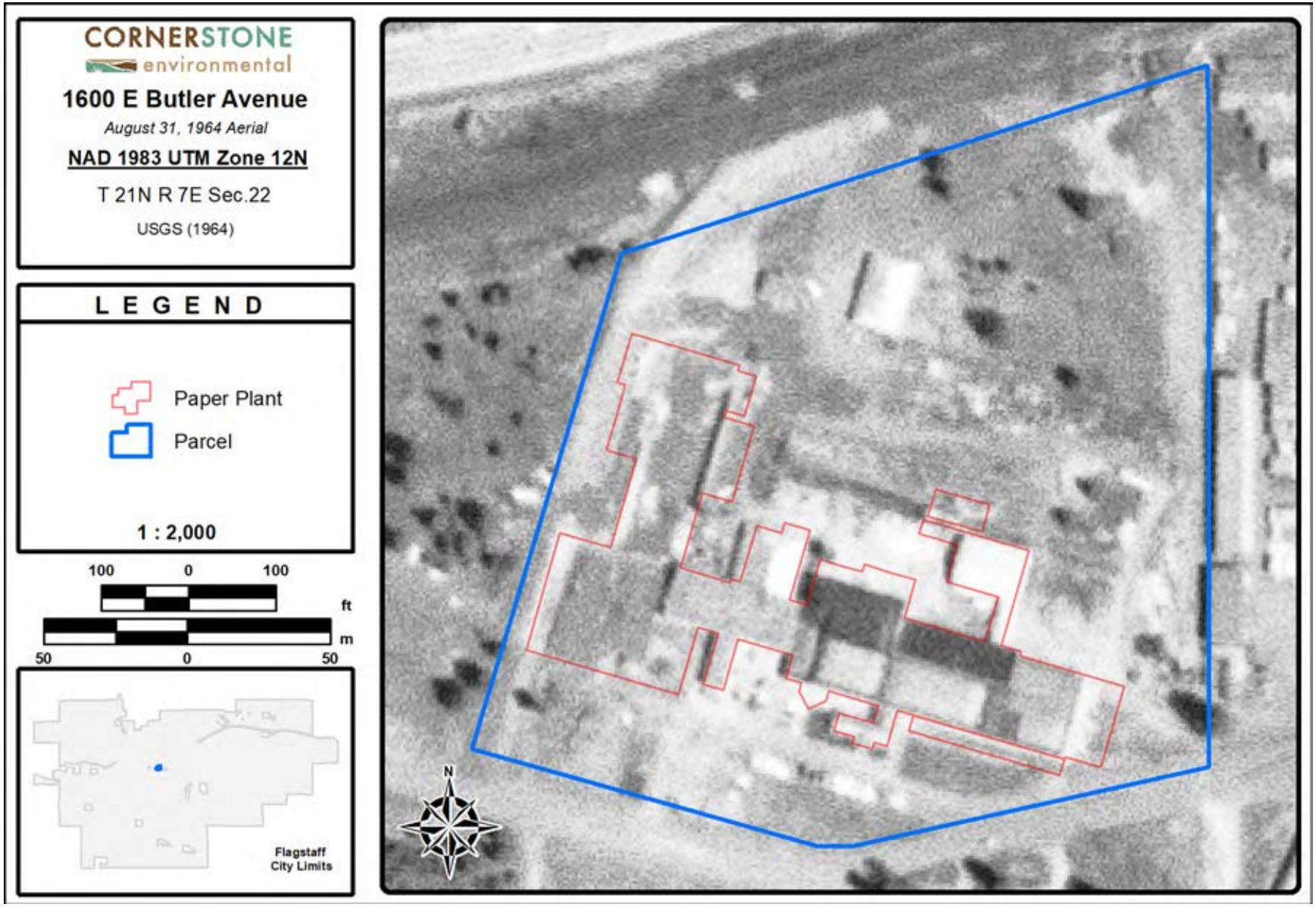
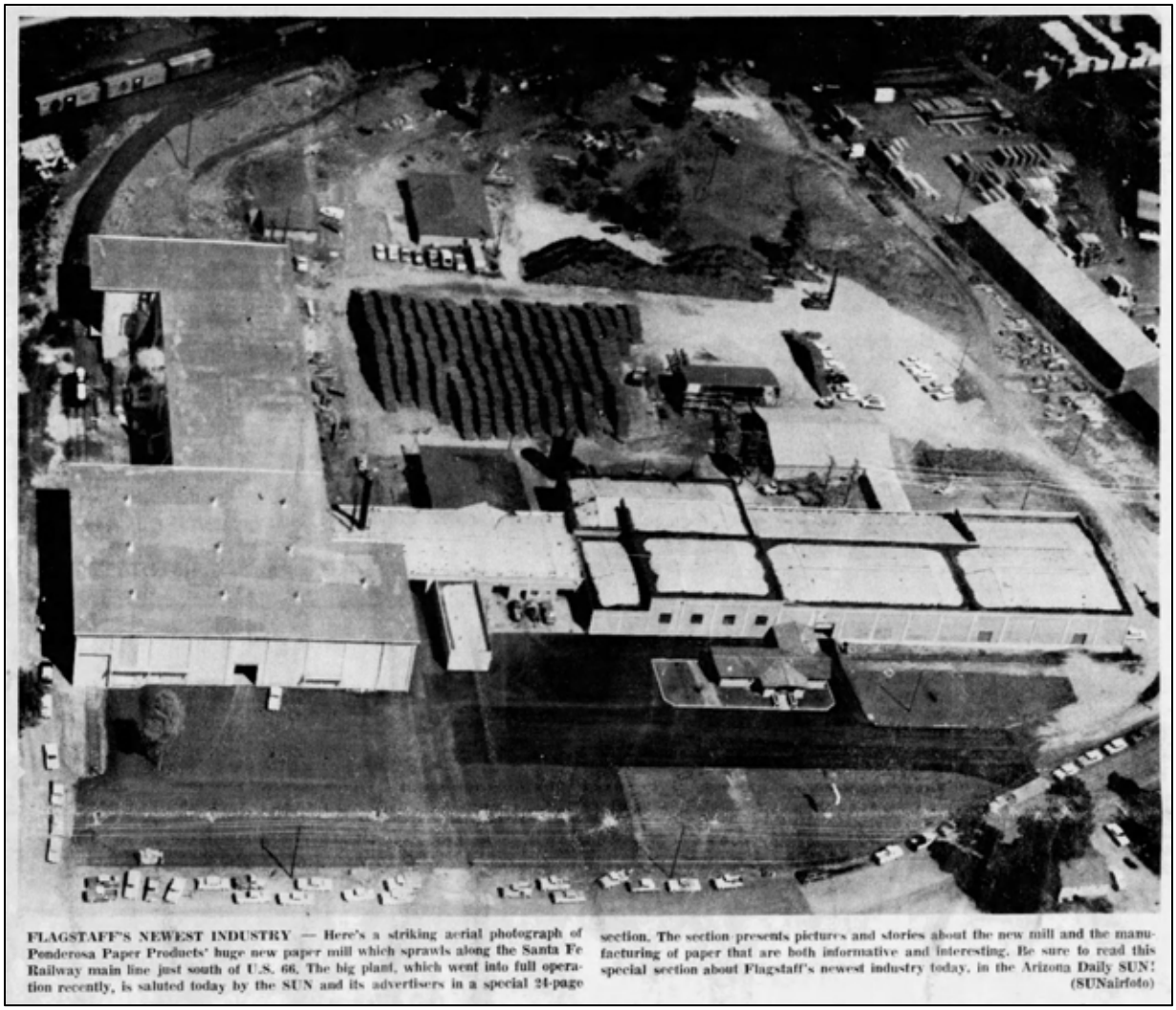


Figure 87. 1964 aerial photo aerial photo with current building outlines.



FLAGSTAFF'S NEWEST INDUSTRY — Here's a striking aerial photograph of Ponderosa Paper Products' huge new paper mill which sprawls along the Santa Fe Railway main line just south of U.S. 66. The big plant, which went into full operation recently, is saluted today by the SUN and its advertisers in a special 24-page section. The section presents pictures and stories about the new mill and the manufacturing of paper that are both informative and interesting. Be sure to read this special section about Flagstaff's newest industry today, in the Arizona Daily SUN! (SUNairfoto)

Figure 88. 1965 aerial photo of Ponderosa Paper Products new facility (ADS November 19, 1965).

When Ponderosa took over the facility, they built new roof forms over Building 1 and Building 6 (*see* Figure 88). The roof forms are barrel vaults that still exist in the warehouses of Building 1 and in part of Building 6. The barrel vaults do not appear to be in the 1964 photo, so they are presumed to have been installed between 1964 and 1965 (*see* Figures 87 and 88, respectively).

Resident Plant Engineer Chris Remington arrived on site in 1975, supervised all subsequent changes that occurred through 2004, and consulted to SCA on a part-time basis for several years after that. He indicated that the large piles of logs to the north of the plant in the 1965 aerial were cuttings from thinning operations aimed at reducing the threat of fire on the Coconino National Forest, on offer for free to whomever wanted them. Ponderosa acquired the logs and initially turned them into pulp, but due to the high demand for electricity to turn the grinding machines, the making of pulp from logs ended shortly thereafter (Chris Remington pers. comm. to Terry Greene, October 10, 2020). By 1971 they were using

all secondary (recycled) fiber. By 1974, all but two current buildings are in place (Figure 89). The exceptions are Buildings 9 and 10, the Sludge Shed and Yankee Barn.

In 2018, the Reich Brothers, the current SCA property owners, in hopes of retaining two of the buildings, hired the structural engineering consultant services of PK Associates of Scottsdale, Arizona. PK Associates provided a basic outline of the structural systems and the necessary repairs for continued use of what they called the East and West buildings (Building 1 and 3, respectively).

Figure 89. 1974 aerial photo aerial photo with current building outlines.

7.1 BUILDING 1

PK Associates described Building 1 as "…one story totaling approximately 30,000 sf. and is adjacent to a rail spur. The building consists of 3 separate buildings with 3 different/yet similar structural systems. This building appears to have been used for material storage" (PK Associates 2018:4). It is likely that they mistakenly lumped a part of Building 6 into their report because it is framed in a similar manner to the two warehouses of Building 1.

In general terms, Building 1 consists of two warehouses and a truck bay. The western warehouse was built prior to 1956 and the eastern warehouse was built between 1956 and 1959, (*see* Figures 84, 85, and 86). The truck bay was built sometime after 1974 and the rail spur to the south of Building 1 was covered with a pre-engineered structure in 1995. The western warehouse is approximately 120 feet long by 60 feet wide, with an additional 50-foot expansion to the north for its entire length (*see* Figures 84 and 85). It has 18-inch square perimeter concrete wall columns that appear to have been cast in place with several sections of concrete masonry unit (CMU) infill exterior walls (Ramsey and Sleeper 1970:162).

The eastern warehouse is approximately 100 feet long by 60 feet wide, with an additional 45-foot expansion to the north for its entire length. It also has 18-inch square perimeter concrete columns that appear to have been cast in place with CMU infill exterior walls (Figure 96). This warehouse has a covered truck bay that was added to its eastern end, constructed of pre-engineered materials like those provided by Butler Buildings or American Steel Buildings (Figures 90 and 91). The original east end CMU wall of the eastern warehouse has a heavily reinforced opening cut into it for access to the truck bay with red steel columns supporting the newer pre-engineered truck bay enclosure (Figure 91).

The eastern and western warehouses are connected end-to-end, with a structural shear wall between them that has a large opening to allow for the passage of pedestrians and vehicles. The structural wall provides lateral resistance and was probably built when the second warehouse was added to the first warehouse (*see* Figure 12; Merritt 1982:8–64).

Figure 90. Photo of Building 1 truck bay, facing south.

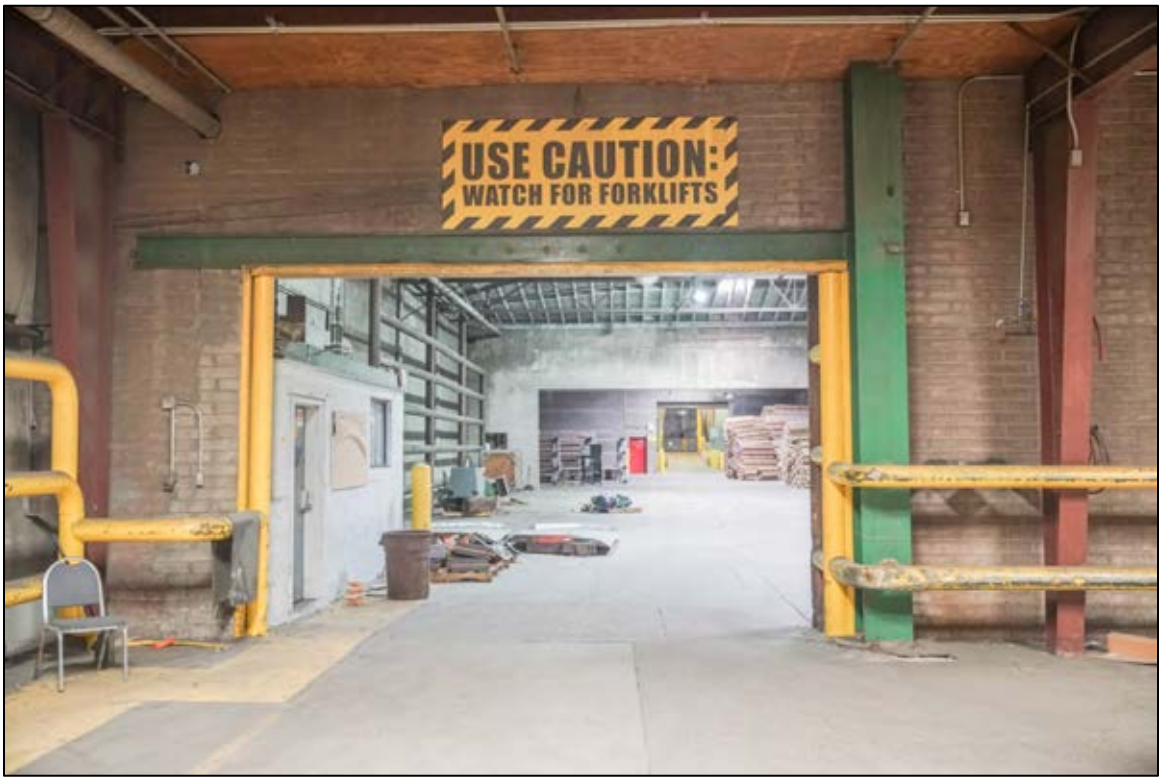


Figure 91. Photo of Building 1 interior, from truck bay, facing west-southwest.

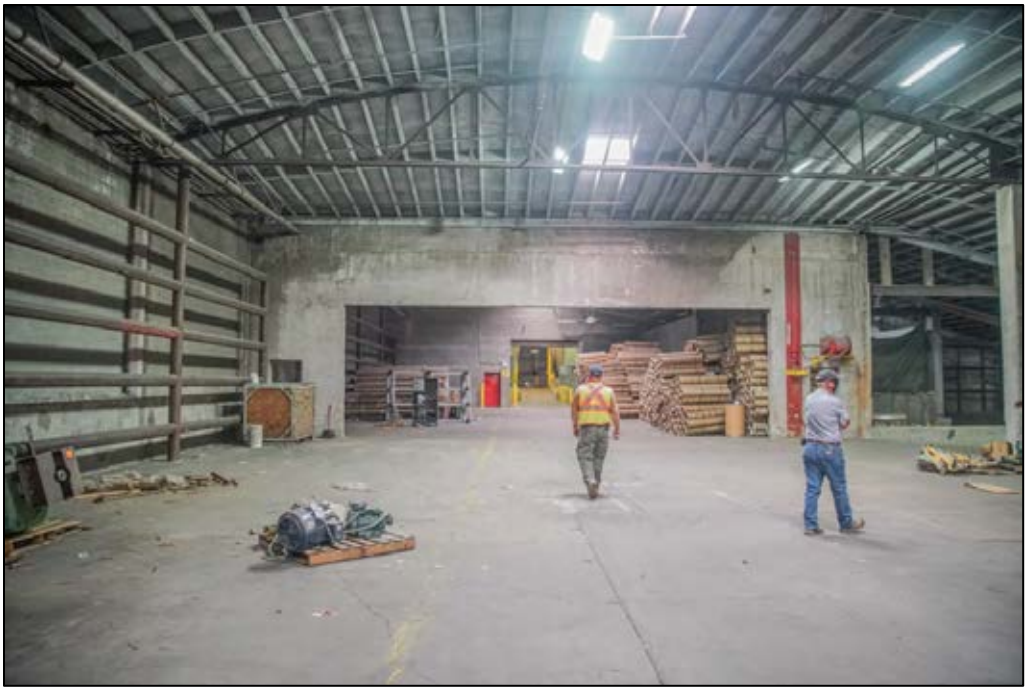


Figure 92. Photo of Building 1, eastern warehouse shear wall, facing west-northwest.

Both warehouses were originally framed with wooden trusses and had a pitched roof, but now the two warehouses are fully enclosed industrial light frame structures with open floor plans achieved by light weight steel trusses (Chris Remington pers. comm. to Terry Greene, October 8, 2020). Sometime prior to 1965, the wooden trusses were removed, and steel bow trusses were installed, creating a barrel-vaulted roof. The structural wall appears to have been cast in place but the top of the concrete portion of the wall stops short of the roof by several feet. The space between the top of the wall and the underside of the roof is filled in with CMU block (Figure 93).

Chris Remington indicated that the bow trusses were not part of the original building and that they were salvaged from aircraft hangers that were being demolished at Camp Navajo in Bellemont, west of Flagstaff. The north ends of the bow trusses appear to have been shortened and reinforced with a plate, as evidenced by the top chord and bottom chords not joining as they do on the opposite end. Since they were salvaged, they were unlikely to have been the exact length for this 60-foot span and were likely modified to ensure they terminated on the existing interior round columns, thereby allowing the Pratt truss to connect properly. A pitched shed like roof to the north of the barrel-vaulted roof was presumably built at the same time (Figure 94).

The interior reinforced round columns support the bow trusses as well as half of a Pratt truss in the eastern warehouse (Merritt 1982:5–46). The bottom chord of the bow trusses in the warehouses are about 25 or 30 feet above the floor. The top chord at the apex appears to be about six feet above the bottom

chord. All the members of the truss are constructed of steel angle and all joints appear to have been welded. The trusses span 60 feet between the columns on a north-south axis (Figure 94). The western warehouse has trusses that support the shed roof to the north, but they are crudely made of various pieces of wide flange steel and wooden timbers (Figure 95).

Figure 93. Building 1 CMU above concrete shear wall.

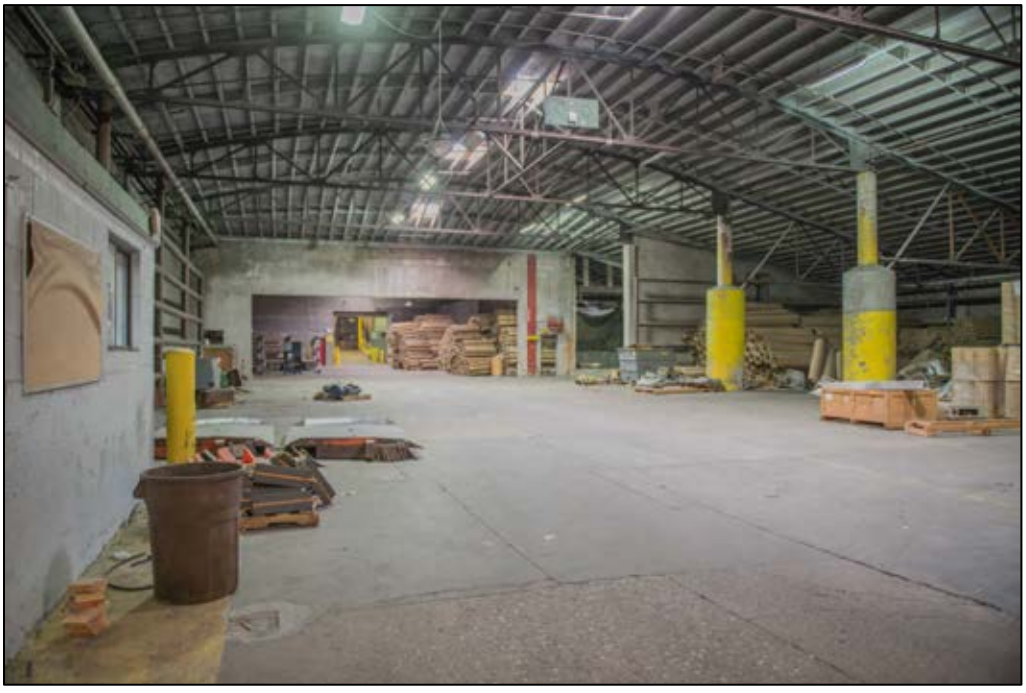


Figure 94. Building 1 warehouses, facing west-southwest.

Figure 95. Building 1 warehouse shed roof, facing north-northwest

The exterior infill walls of the two warehouses consist variously of red tinted and grey CMU blocks (Ramsey and Sleeper 1970:162). Most are of the dimensions of eight inches high by eight inches wide by 16 inches long, but several infill sections have red tinted CMU blocks that are four inches high by eight inches wide by 16 inches long (Figure 96). The red tint suggests they were made locally with a measured amount of red volcanic cinders, typical of those made in Flagstaff. The smaller dimensioned blocks are identical to those used in many of the houses on the east side of Flagstaff, constructed in the 1950s and 1960s, as well as those used in Building 4.

The warehouse structures of Building 1 appear to have plywood decking on both a single and occasionally double two-inch by 12-inch joist system at about 24 inches on center sitting on top of the bow trusses. The trusses are approximately 20-22 feet on center and are supported by concrete perimeter wall columns on the south side and round concrete free-standing columns on the north side. The plywood decking is covered by tar impregnated felt building paper with a tar and gravel protective coating.

Figure 96. Building 1 exterior, facing south-southeast.

The floors appear to be concrete slabs on grade with numerous patches, cracks, areas of differential settlement, and evidence of heavy use. Chris Remington, upon discovering one a spot in the warehouse floor that had begun to settle significantly, removed a 10-foot square to see what had caused the settlement. Beneath the slab, he discovered a void where the fill material had settled leaving the slab unsupported over a large area. The fill material he found consisted of old wooden pallets of concrete "dummy bombs" from Camp Navajo (Figures 97 and 98).

The "dummy bombs" were used for aerial bombing practice at Camp Navajo before and during World War II, but after the war, they had no use and were banded together and stacked on wooden pallets by the thousands. The owner of the paper plant, during the construction of the warehouses just before 1956, purchased a number of the pallets and dumped them with their banded dummy bombs directly into the foundations and poured the concrete slab over the top. Eventually, the wooden pallets rotted away and allowed the concrete dummy bombs to settle downwards, creating a void between them and the underside of the slab, causing slab failure (Chris Remington pers. comm. to Terry Greene, October 10, 2020). Some of the dummy bombs are still in place today, and partially set in concrete as a landscaping feature around the perimeter fence of a Flagstaff residence (Figure 97). Many still exhibit the loops used to suspend them from the wings of the bombers (Figure 98).

Figure 97. Concrete dummy bombs at a local Flagstaff residence.

Many construction elements indicate that Building 1 was rapidly and somewhat crudely built, including the use of mixed materials like larger sized CMU blocks with red tint. Figure 99 shows the typical exterior poured-in-place 18-inch square concrete column and concrete foundation wall. The south wall of Building 1 is made with square concrete columns, but some portions of the infill walls are constructed with eight-inch by eight-inch by 16-inch grey CMU blocks. The original exterior of this elevation is obscured from street view by a 1990s upgrade of ribbed sheet metal panels on girts creating a long pre-engineered shed that covers the southside rail spur (Figure 100). The rail spur is not readily seen in the 1954 aerial photo (*see* Figure 83) or in 1956 (*see* Figures 84 and 85) but it is evident in the 1959 image (*see* Figure 86).

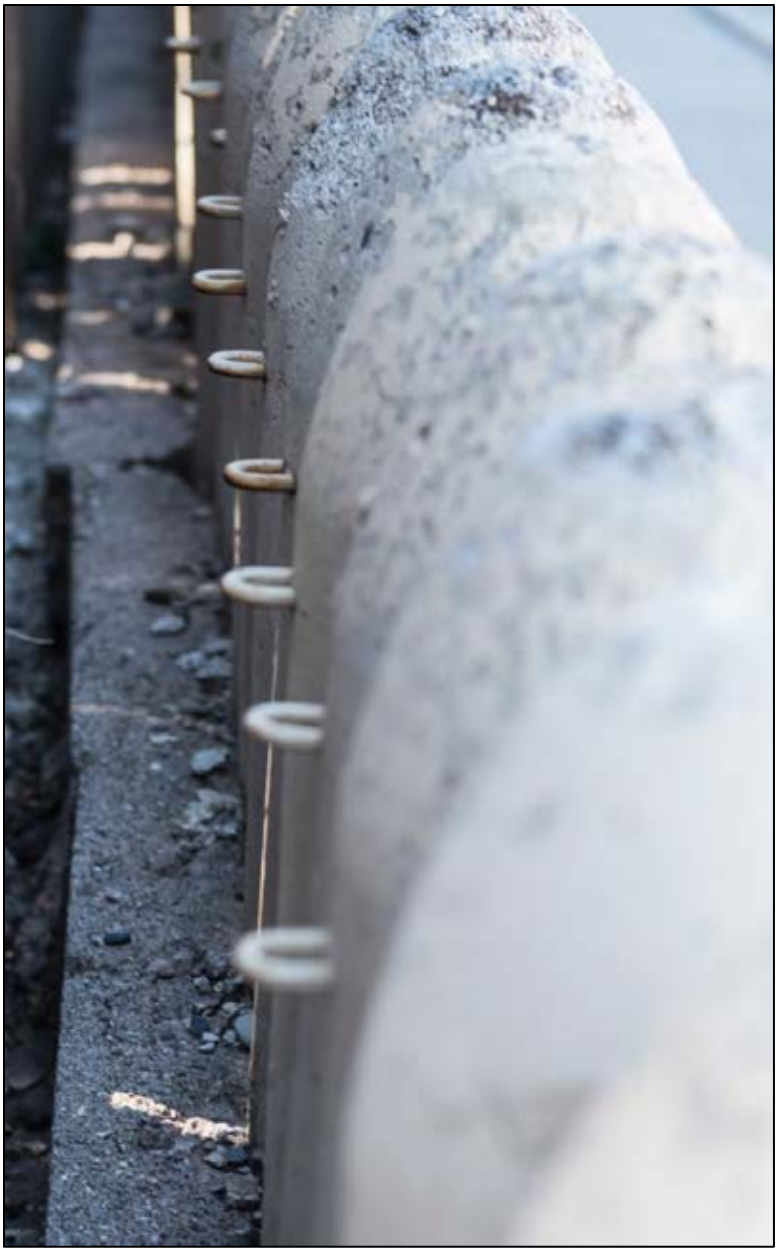


Figure 98. Concrete dummy bombs.

Figure 99. Building 1 exterior detail.

Figure 100. Building 1, southside rail spur and shed, facing east-northeast.

7.2 BUILDING 2

Building 2 is a relatively simple, tall, one-story building with a gable roof and concrete floor. It sits north of Building 1 and is connected to it by a long and narrow fully enclosed walkway. It was built prior to 1959 aerial (*see* Figure 86) and appears to have changed little since (*see* Figures 65 and 66). The floor plan is rectangular with the gable ridge running parallel to the length, on an east-west axis. The roof is supported by light timber trusses that span the width of the building, supported beneath by wooden beams and eight-inch by eight-inch wooden posts. The concrete floor has block outs with metal clips where piers and footings were poured to support the posts (Harris 1975:360).

There are two rows of posts that run from one end of the building to the other, spaced about 15 feet from each sidewall; those two rows are about 20 feet from the middle row of posts that run the length of the building just beneath the ridge beam. The spacing of the rows of posts with the beams above suggests that

the trusses, made up of short pieces of two-inch milled lumber, are too light weight for the long span and are unable to support the roof load without assistance (*see* Figure 67; Figure 101).

Figure 101. Building 2 interior, facing west-northwest.

The tops of the trusses appear to have milled two-inch lumber purlins, laid flat, about 4 feet on center that carry the corrugated metal (Figure 102). The roof is steep enough that it is unlikely that snow collects on the north facing surface. The posts are clipped and bolted to the foundation and to the beams above with short "L" angles: two bolts for each leg of the angle. The lower portions of the posts show evidence of having been hit and damaged many times by machinery moving about the space.

All four walls appear to be constructed with eight-inch by eight-inch by 16-inch red-tinted CMU. The gable end walls have CMU pilasters made from four-inch by eight-inch by 16-inch CMU blocks that appear to stop or top out at the "top plate" level (Harris 1975:361). The gable ends are constructed of two-inch milled lumber, thought to be of nominal size rather than conventional 1.5-inch-thick material (Figure 103). Additionally, the pilasters extend vertically to mid-way on either side of the roll-up door (*see* Figure 65).

Presumably, the CMU cells are filled with re-bar and concrete. No other form of lateral resistance was found. There were no openings in the walls except for a large roll up door at the gable end and one pair of standard doors that open onto the covered connecter to Building 1. The large roll up door may have been added later (*see* Figure 65).

Figure 102. Building 2 roof trusses above post and beam construction.

Figure 103. Building 2, gable end framing detail.

The connector to Building 1 has eight-inch by eight-inch by 16-inch CMU walls, but it also has a pre-engineered steel frame of columns and beams with girders, all bolted together supporting corrugated metal roof panels. The steel columns are quite short and sit on poured-in-place concrete walls that are about four feet high on each side. The connector, although about 15 feet wide, appears to be an enclosed

pedestrian walkway between the two buildings. It probably replaced an earlier wood frame enclosure (Figure 104).

Figure 104. Building 2 connector, facing south-southwest.

7.3 BUILDING 3

According to the engineering report, this building is a single-story structure with about 53,000 square feet of space, making it the largest on site, and many of the columns, beams, wall panels, and roof deck panels are hollow-core pre-cast and pre-stressed concrete (Blew 2018:2). John Girvin and Bruce Jacks pointed out a number of extra pre-cast and pre-stressed roof deck panels that are still stacked on the concrete slab where they were formed (Figure 105; *see* Salvadori 1963:50 for an explanation of pre-stressed concrete). Their edges appear to have been designed to fit flush.

The 1964 aerial photograph does not show Building 3 completed (*see* Figure 87), but it is possible that the photograph was made early in the year, before construction was finished. Some of the columns were cast in place as shown in 1964 newspaper photographs (Figures 106 and 107).

Figure 105. Building 3 pre-stressed roof replacement panels.

It is unclear what other pre-cast elements were cast on site, however the newspaper article states that the pre-cast four foot deep, 80 feet long, 30-ton beams were the largest ever cast by Arizona Sand and Rock at that time (ADS November 9, 1964; Figure 108). Arizona Sand and Rock was formed in 1961 in Phoenix as a subsidiary to the 1891 California Portland Cement Company based in Los Angeles. They specialized in pre-stressed concrete and it is likely that all the work necessary in Building 3 was one of their first contracts in Arizona. Construction of Building 3 might have been the main reason for the formation of the subsidiary.

Although Building 3's roof would technically be described as a flat roof, a slight slope on the top chord of the beams gives the roof a slight slope (Figure 108). This encouraged rainwater and snow melt to drain to the edge parapets and was initially directed to downspouts inside the building, where the valuable water was collected and used in the pulp preparation and paper manufacturing process when the plant relied on well water on site. After many years of neglect, and when the plant had reliable City water, the rain and snowmelt was diverted to the edges and allowed to sheet flow off the roof (Chris Remington pers. comm. to Terry Greene, October 10, 2020).

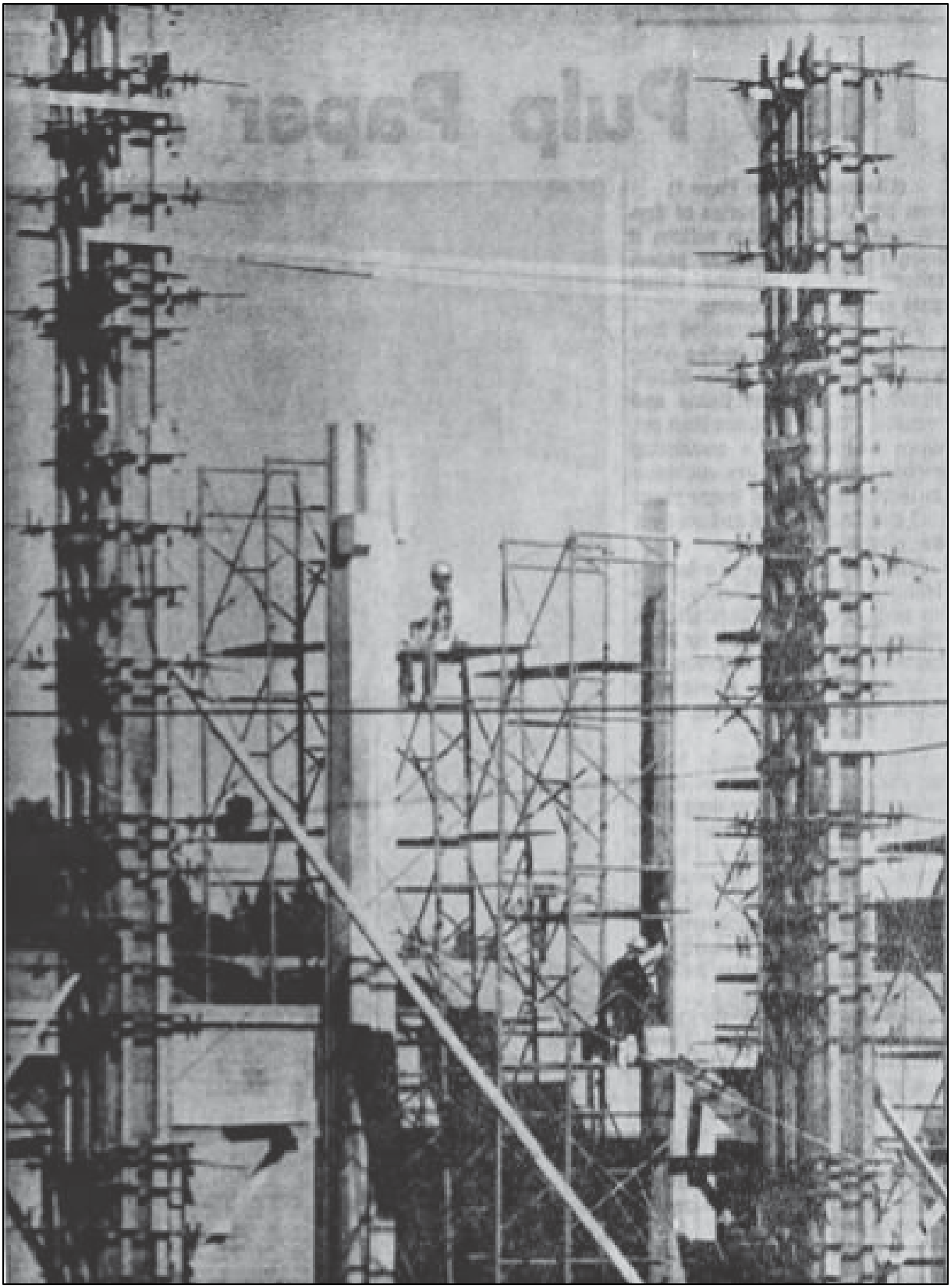


Figure 106. 1964 photo of Building 3 during construction showing south warehouse columns (ADS November 9, 1964).).

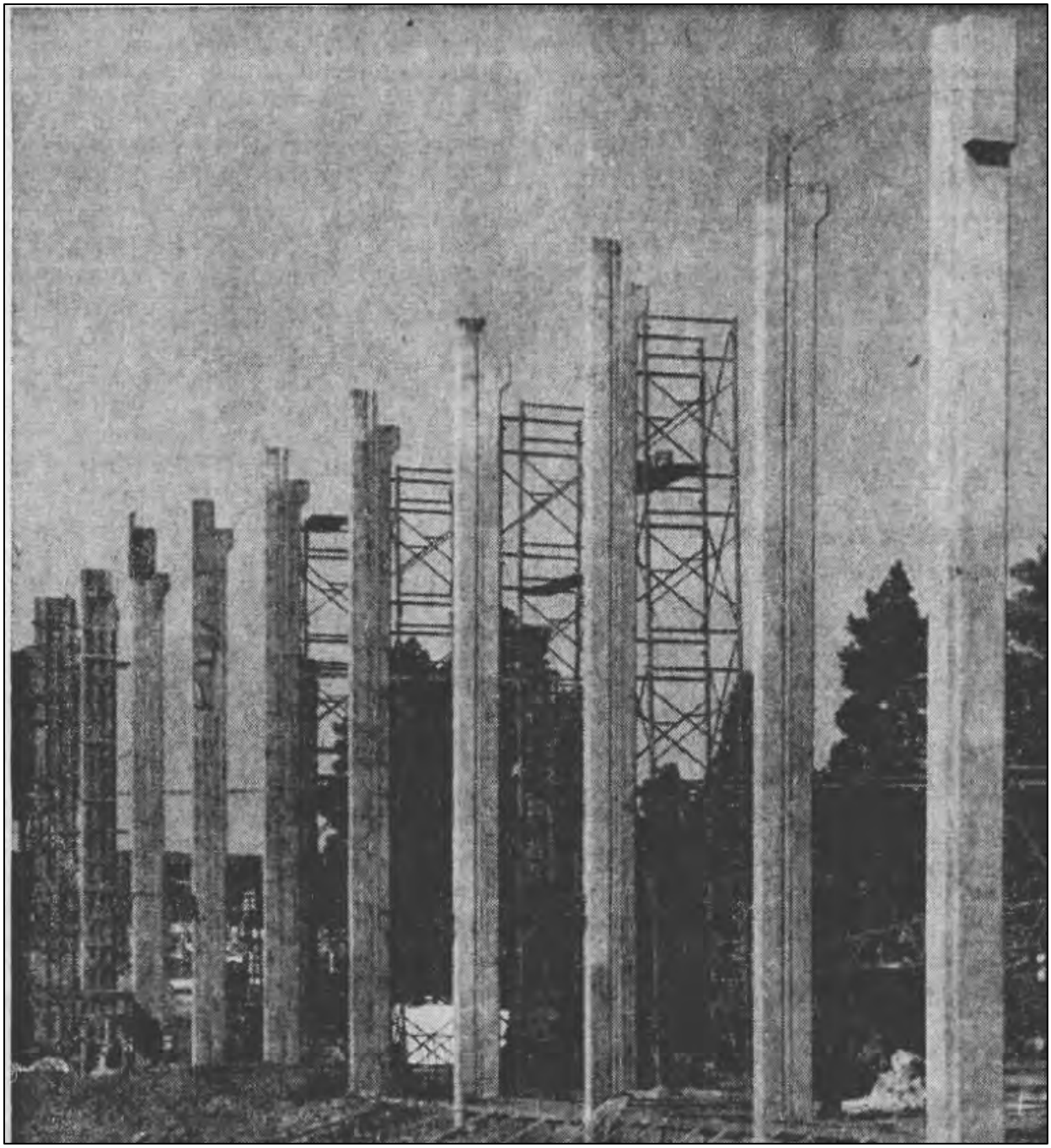


Figure 107. 1964 photo of Building 3 during construction showing south warehouse columns (ADS November 9, 1964).

UP, UP AND OVER — This huge 30-ton precast concrete girder appears suspended in mid air as it is raised into place at the Ponderosa Paper Products mill now under construction. The girder, which is 80 feet long and four feet deep, is the largest ever cast by Arizona Sand and Rock and required two special 60 and 100-ton cranes to lift it into place. The new mill, which will produce over 70 tons of finished tissue-toweling products per day, is expected to go into operation by the first of March. (SUNfoto)

Figure 108. 1964 photo of Building 3 during construction (ADS November 9, 1964).

The top of the roof was not inspected for this report, but the underside of the pre-cast roof panels revealed some water leakage, especially onto the pre-cast beams. Many of the roof panels failed within ten years of construction. The pre-stressed cables rusted through and the open cells were unable to maintain camber and then began to shed concrete from the underside onto the machinery below (Chris Remington pers. comm. to Terry Greene, October 10, 2020).

Figure 109 shows the steel wide-flange beam that was installed on the haunches of the tapered columns. The wide-flange member served not only as a lateral resistance connection for the columns, as evidenced by the square anchor plate visible in the bottom of the haunches, but also as a rail for a ten-ton bridge crane that spanned across the entire building and ran most of its length (Figure 110). The columns have a significant taper from a wide top to a narrow bottom (Figure 111). They are slender and elegant and reflect a thoughtful design effort.

Figure 109. Building 3 column haunch and crane rail.

Many years after construction, and outside of the period of significance, an employee who was on break noticed that the closest column on the far left of the photo in Figure 108 was leaning slightly to the left (John Girvin pers. comm. to Josh Edwards, September 29, 2020). Chris Remington then checked the column and several others adjacent to it, finding all to be out of plumb by as much as 10 inches as a result of frost heaving and differential settlement, suggesting that the entire structure might collapse if unattended (Salvadori 1963:26). An engineering consultant was employed to design two-story-high steel "braced frames" and they were fabricated and installed in 17 exterior locations around the building (Merritt 1982:8, 54–67). The braced frames added much needed lateral resistance and are today one of the more notable features of the building (Figures 112–114).

Figure 110. Building 3, north paper production room interior, facing north-northwest.

The braced frames were installed on Building 3 in 1995 and the engineering plans also show the existing tapered column layout at 18 feet eight inches with some variations. The overall length of Building 3 was annotated as 377 feet and its north width as 120 feet, and south width as 186 feet. The drawing also indicated that the 17 braced frames were designed in accordance with the 9th Edition of the American Institute of Steel Construction (AISC) and the 1997 Uniform Building Code, using a design wind load of 70 miles per hour. The design also complied with Seismic Zone 2B using V=0.034 x W and Z=0.075.

The wall panels were pre-cast and pre-stressed in Phoenix with about an inch of camber and grooves on their edges. They were stood on end and weather proofed with grout pumped into the grooves from the top once installed. They are held in place by a pre-cast beam at the top that spanned between the columns. (Figures 115 and 116). Within ten years of construction, several of the wall panels began to rupture on the outside surface when the interior steel tensioning cables rusted and no longer provided the necessary tension to compress the panels end-to-end. Many of the wall panels have been replaced for that reason, especially in the northern section of the building. (Chris Remington pers. comm. to Terry Greene, October 10, 2020).

Figure 111. Building 3, tapered column detail.

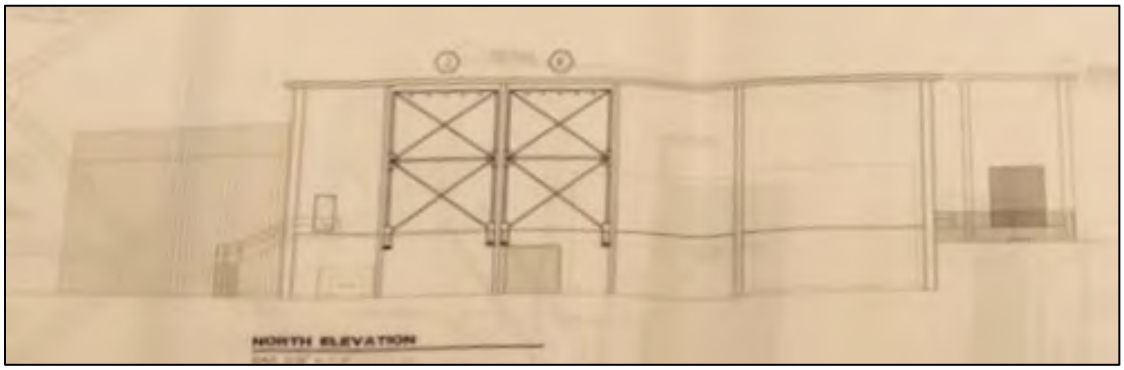


Figure 112. Building 3, 1995 engineering plans for braced frames.

Figure 113. Building 3 braced frames, facing northwest.

Building 3 has a basement under the northern portion of its concrete slab. The basement has several original and additional columns that support the slab above. There are large openings in the main floor slab for the two paper processing machines. There are only three narrow circular steel stairs to access the basement from the main level, but access to the basement can also be made through a large roll-up door at the north end because the site slopes downward from the south to the north (Figures 117 and 118).

Figure 114. Building 3, braced frames, facing north-northwest.

Figure 115. Building 3, exterior wall panels.

Figure 116. Building 3, wall panel joint detail.

Figure 117. Building 3, circular stairs to basement.

Figure 118. Building 3, north end door to basement.

7.4 BUILDING 4

This residential style building first appears in the 1956 aerial photo (*see* Figure 84). It is a single-story building primarily constructed with four-inch by eight-inch by 16-inch CMU blocks. The plan of the building evolves into an "L" shape with the existing long leg facing south and a possibly more recent short leg connecting to Building 1 in the 1964 aerial photo (*see* Figure 87).

The main entry lobby, also new in the 1964 aerial photo, is an enclosed space formed using traditional bricks laid in running bond with tooled grout joints. The roof framing system appears to be identical to the traditional residential style found in Flagstaff, except for a portion over two large offices that displays an open beam ceiling. It is unclear if the beams are functional or decorative, but they are lower than a standard eight-foot ceiling height. The main double entry doors are framed in dark anodized aluminum with fixed glass panels on either side, exhibiting a much newer commercial look (*see* Figure 73). It is probable that the entire structure had an open beam ceiling when it was first built (Figure 119).

The outside of the building's roof system is decorated with round log sections to suggest that the entire roof is held up by logs. The logs do penetrate the exterior wall but terminate within a foot or two and do not support any weight – in fact, it is the very thin roof that is holding them in place (Figure 120).

Figure 119. Building 4 interior showing open beam ceiling.

Figure 120. Building 4 roof detail.

7.5 BUILDING 5

Building 5 is north of Building 7 and physically attached to it. In fact, Buildings 5, 7 and 8 comprised the machine shop functions for SCA and several of the preceding paper making businesses from 1964 onward. Some portion of these three buildings may be in place as early as 1959, but their current configuration shows up clearly in the 1964 aerial photo (*see* Figure 87). Building 5 is a single-story structure that is almost square. It is around 56 feet long by 54 feet wide. The floor level is several feet lower than Building 7 and one must descend a steep stair to gain access.

The roof structural system consists of a complex array of wooden trusses, three of which radiate outward from a single point and each one is technically half of a Pratt truss (Merritt 1982:5–46). Two main trusses cross over the space diagonally towards the corners; one landing on the corner and one landing short of the corner in the east wall. A third truss, attached at the common point of the first two, and bisecting them, crosses the space to the north wall. Intermediate trusses bisect all three of the main trusses at 45- and 90-degree angles, creating a "forest" of vertical and diagonal two-inch lumber. This elaborate array allowed the roof to have a hip on the north end. The ridge runs south and extends well into the barrel vault of Building 7. The roof framing system is much more complex than the small, enclosed area seems to require. In addition, three walls of Building 5 appear to be constructed of eight-inch by eight-inch by 16-inch CMU blocks. The fourth wall, also CMU, is common with Building 7 (Figure 121).

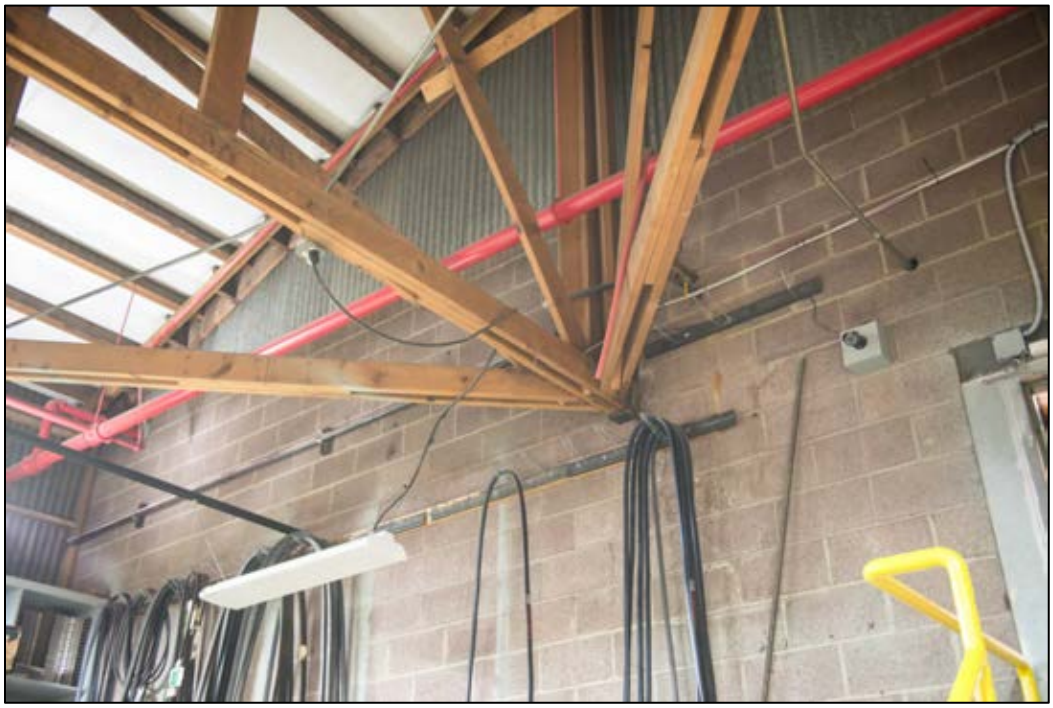


Figure 121. Building 5, interior trusses.

7.6 BUILDING 6

Building 6 first appears in the two 1956 aerial photos (*see* Figures 84 and 85). It was first constructed to hold the equipment to turn wood chips into pulp, a process that generated heavy moisture requiring the roof structure has a steep pitch. The roof structure of Building 6 was changed to the salvaged aircraft hangar steel bow trusses that one sees today, sometime before 1965 (*see* Figure 88). Building 6 originally had two large barrel-vaulted bays, side by side, as seen in the 1965 photo, but the high moisture laden air eventually caused the northern roof structure to fail.

Chris Remington indicated that a portion of the roof collapsed when work was not underway for a few days, and while no damage to equipment or injuries to people occurred, it was necessary to replace the roof without losing even “five minutes” of production. Mr. Remington set about designing the solution that is in place today, consisting of deep galvanized steel beams that cross the length of the space and rest on columns that straddle both sides of the building. The walls consist of translucent fiberglass panels that let in light and resist deterioration caused by the high moisture content of the air (Chris Remington pers. comm. to Terry Greene, October 8 and 10, 2020). Figure 122 shows one of the galvanized steel beams being hoisted into place and bolted together, over the on-going process below.

Figure 122. Building 6, roof repair.

Figure 123 shows the resulting roof system in place after many years of use, with all the paper and pulp processing equipment removed. The footprint of the northerly portion of Building 6 today is about 116 feet long by 62 feet wide. The four long span beams appear to be about four feet deep and the distance from the concrete slab to the underside of the beams appears to be about 45 feet. The new columns on the east side supporting the long span beams can be seen in Figure 124.

The southern portion of Building 6 still has four steel bow trusses with the wooden roof in place, installed sometime before 1965 (Figure 125; *see* Figure 88). These bow trusses are also thought to have been salvaged from aircraft hangars that were being torn down at Camp Navajo (Chris Remington pers. comm. to Terry Greene, October 10, 2020). These particular trusses are different in that they have riveted joints, (Figure 125), rather than welded joints found in the warehouses of Building 1 (*see* Figure 92). It would be difficult to determine the age of the trusses, but they were likely fabricated prior to World War II.

Building 6 exhibits some of the same type of column placement and infill wall materials in the exterior walls as the warehouses in Building 1. Building 6, like Building 3, has a basement that appears to be original. The basement is a maze of concrete columns, both from the original construction as well as additional columns that were installed in later years to better support the upper level equipment. The cramped space and the low ceiling height likely provided a somewhat claustrophobic feel to those who worked there (Figure 126). One of the few remaining pieces of equipment in Building 6, used for fiber preparation, is shown in Figure 78.

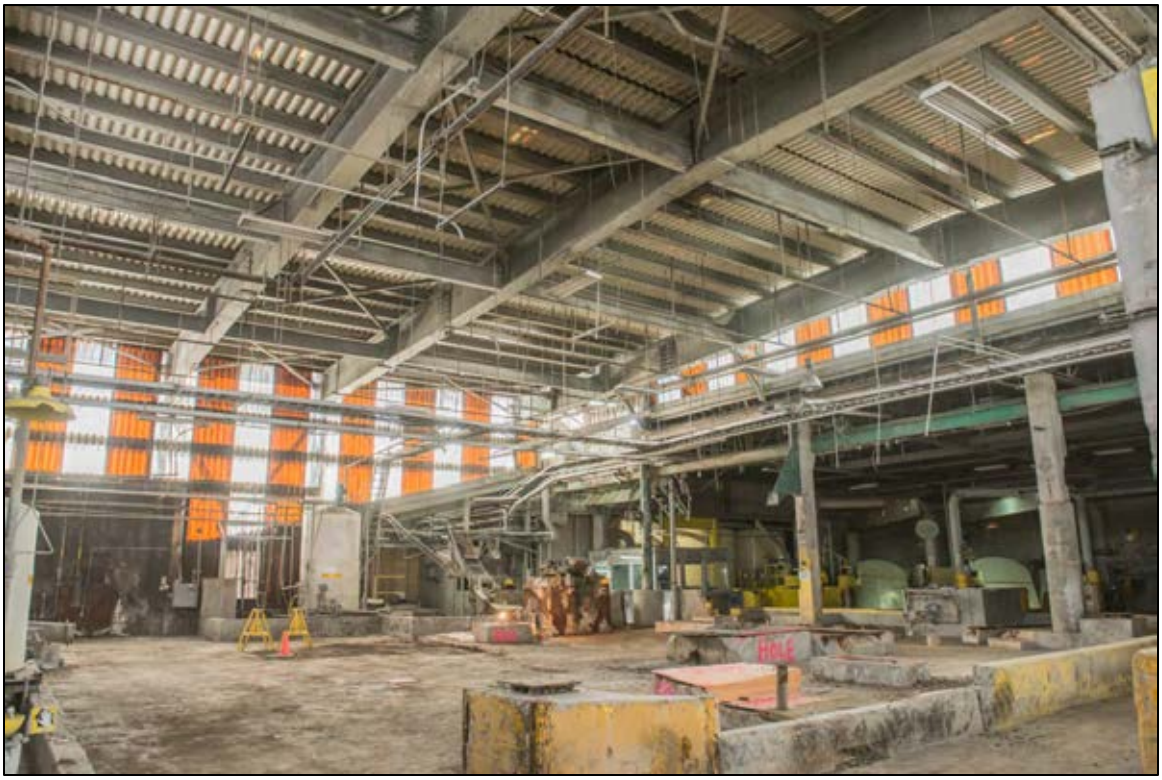


Figure 123. Building 6 interior, facing southeast.

Figure 124. Building 6, north elevation.

Figure 125. Building 6, bow truss detail.

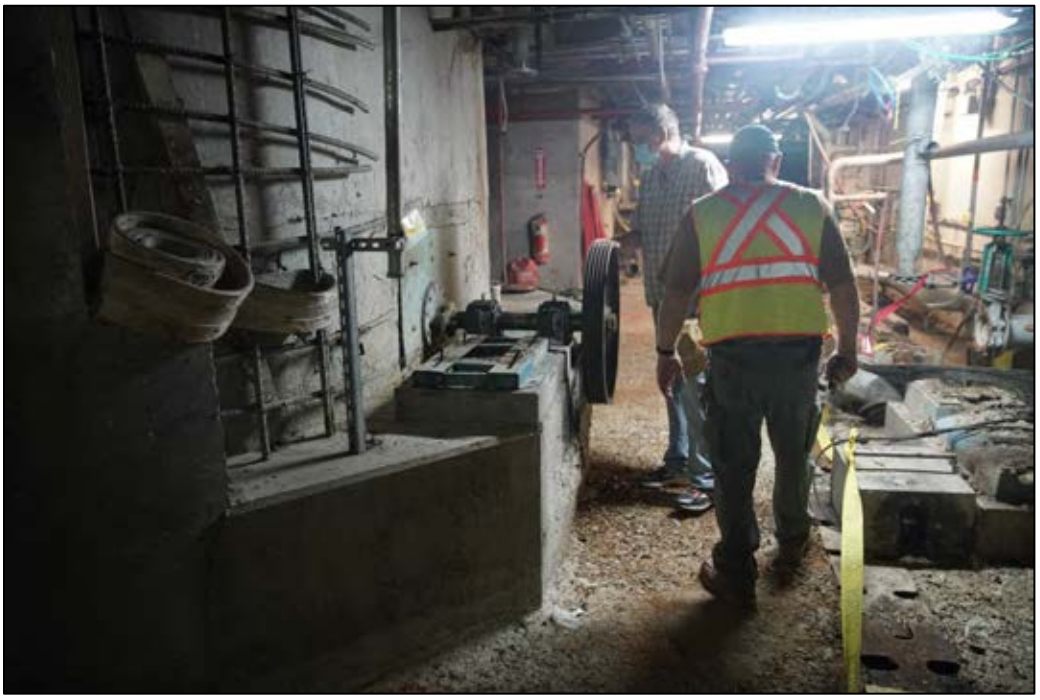


Figure 126. Building 6, basement, facing west.

7.7 BUILDING 7

Building 7 is to the west of and attached to Building 6. This long and narrow single story building also has a shallow barrel-vaulted roof with a combination of framing systems. A portion of the roof is made up

of light weight steel long-span bow trusses, thought to have been salvaged from Camp Navajo, which are hidden by wall panels in most places (Figure 127). The mid-section of the roof appears to also be supported by a series of steel wide-flange columns and beams that do double duty by providing a rail system for an electric cable hoist than can travel horizontally on the two rails (Figure 128).

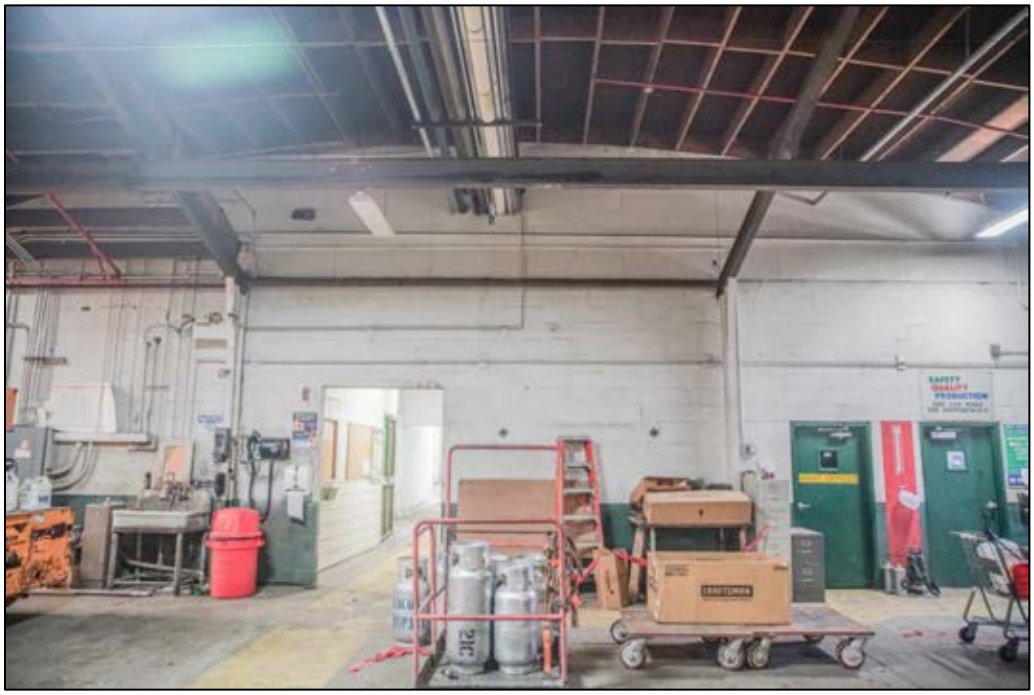


Figure 127. Building 7 interior, facing east.

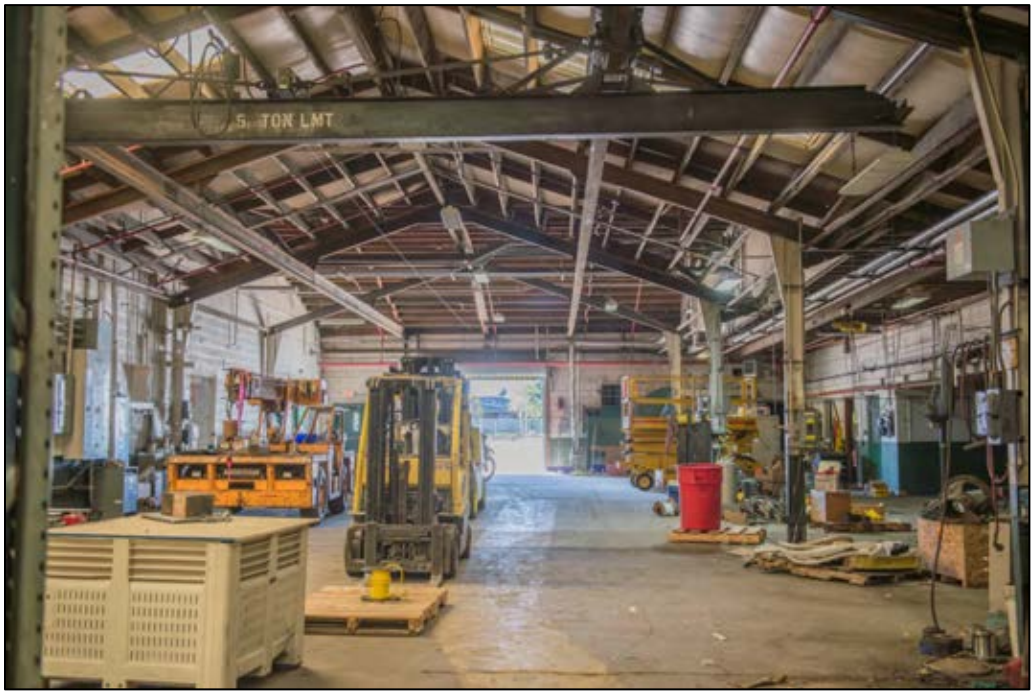


Figure 128. Building 7, facing south.

The dimensions of the roof structure are about 150 feet long by 60 feet wide. The roof covers the machine shop, a breeze way, and several functions that were part of the processes in Building 3. The walls appear to be eight-inch by eight-inch by 16-inch CMU block. Building 5 is attached to the north side of Building 7 and its gable roof ridge with rafters that extend well into the barrel-vaulted roof in such a way as to suggest they were built together (Figure 129). The image in the 1964 aerial photograph (*see* Figure 87), suggests this as well. Another good view of their interconnectedness can be seen in the Figure 88.

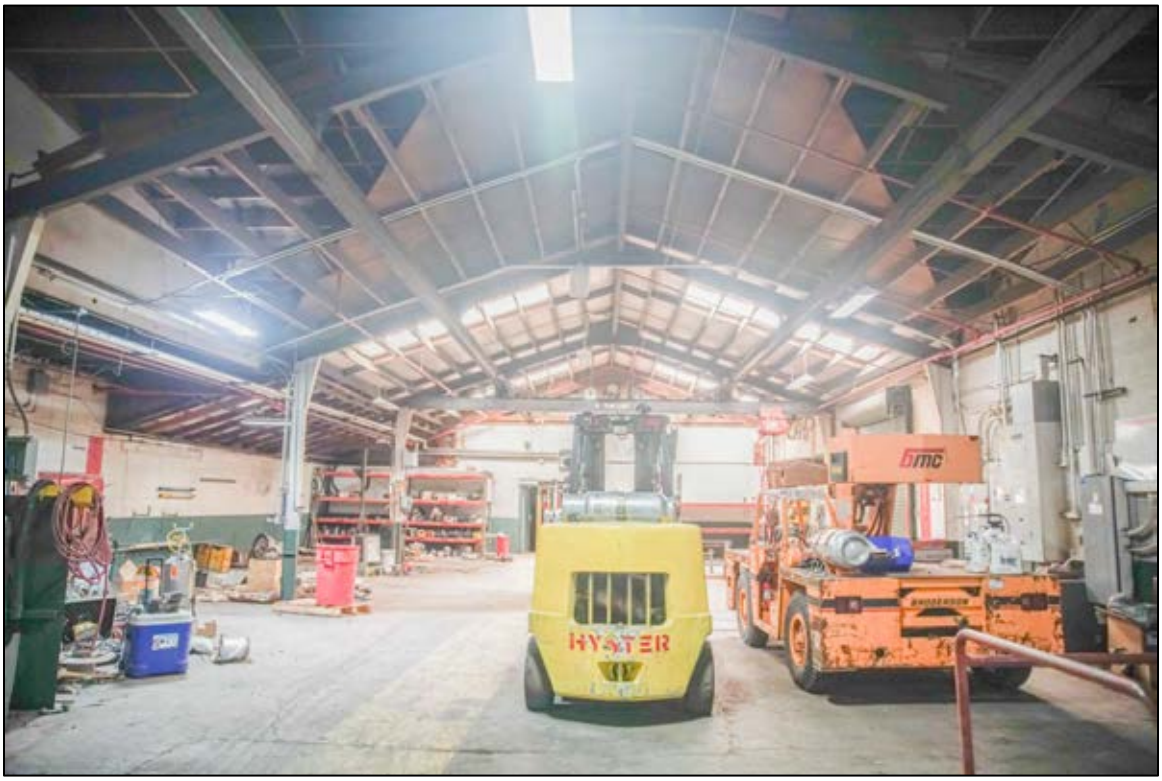


Figure 129. Building 7 interior, facing north toward Building 5.

7.8 BUILDING 8

Building 8 is single-story shed building extending south from Building 7. It has one enclosed bay that can be accessed from inside Building 7, and a second bay that can be accessed from both Building 7 and through a roll-up exterior garage-type door. A third bay has no door and is only open to the outside (Figures 130 and 131). The simple shed roof, hidden behind a level sheet metal parapet, is made up of two-inch by ten-inch lumber rafters that rest on a top plate attached to an eight-inch by eight-inch by 16-inch CMU wall (Figure 132). The corrugated sheet metal panels have been nailed directly to the rafters.

Figure 130. Building 8, facing south-southwest.

Figure 131. Building 8, facing west.

Figure 132. Building 8 interior bays.

7.9 BUILDING 9

This modern building is a narrow and long structure with three walls and a shed roof. It was constructed to allow discarded wet material from paper processing to be stored outside under cover until it had dried enough to be hauled away. The lower part of the three walls consist of concrete about two inches thick and six feet high. Attached to the top of the concrete walls are a series of steel columns that support girts for ribbed metal sheeting and a corrugated sheet metal roof. The concrete slab area protected by the shed roof is about 20 feet wide and about 45 feet long. The roof is about 15 feet high (*see* Figure 80).

7.10 BUILDING 10

Building 10 is a 1970s pre-engineered structure with a partial barrel-vaulted roof with ribbed sheet metal siding with three large vehicle bays and one small one. Building 10 is north of Building 9 and free standing (Figure 133).

Figure 133. Building 10, facing west.

8.0 EVALUATION OF SIGNIFICANCE AND INTEGRITY

The history of the study area begins in the late 1800s with its use as the Babbitt Brothers Trading Company slaughterhouse. This study suggests that no buildings or structures from that time still exist, and if they do their pieces and/or components are incorporated into the pulp and paper mills beginning in 1953. Therefore, the period of significance for the subject property starts with the construction of the Coconino Pulp & Paper mill in 1953 and continues until 50 years before the date of this report, which is 1970.

8.1 SIGNIFICANCE

A cultural resource can be significant at a local level under the City of Flagstaff Zoning Code, at a state level eligible for listing in the ARHP, and/or at the national level eligible for listing in the NRHP (*see* Section 3.1). To be considered significant, a resource must be associated with an important historical context. At a local level, the criteria for determining significance are established in the Flagstaff Zoning Code (30.30-13). The NRHP Criteria for Evaluation (36 CFR § 60.4) are used to evaluate resources for the ARHP and NRHP.

Three areas of significance were chosen to evaluate the subject property: Engineering (City of Flagstaff Criterion B; NRHP Criterion A); Conservation (City of Flagstaff Criterion B; NRHP Criterion A); and Architecture (City of Flagstaff Criterion D; NRHP Criterion C). The associated themes of paper product manufacturing, recycling, and industrial architecture, respectively, were chosen because of their direct

relevance of the pulp/paper mill to activities at and importance to the City of Flagstaff (NPS 2002). However, the paper manufacturing facility could also be evaluated in the areas of significance of Commerce, Community Planning and Development, Economics, and Industry, given the extent of influence of the facility on Flagstaff's economic and social development. Cornerstone recommends that all buildings at the subject property built during the period be considered significant per findings presented in Section 5.

8.2 INTEGRITY

Integrity is defined as the ability of a property to convey its significance. Seven aspects are used to evaluate integrity: location, setting, design, materials, workmanship, feeling and association. To retain historic integrity, a property will usually possess most, if not all, of the aspects of integrity (NPS 2002). In order to evaluate the integrity of a property, it must be determined which of these seven aspects are most important to a property's significance. Once these important aspects are identified for a property, integrity is evaluated based on the aspects cited above and how those aspects relate to the property's overall significance. NPS (2002) establishes four steps in assessing the overall integrity for a property:

- define the essential physical features that must be present for a property to represent its significance;
- determine whether those essential physical features are visible enough to convey significance;
- determine whether the property needs to be compared with similar properties; and
- determine, based on the significance and essential physical features, which aspects of integrity are particularly vital to the property being evaluated and if those aspects of integrity are present.

All properties change over time, and it is not necessary for a property to retain all of its historical physical characteristics in order to retain integrity and express its significance within an important historic context. However, the property must retain the essential features that enable it to convey its historic identity (NPS 2002). In order to be considered an essential physical feature, a physical characteristic must define *why* a property is significant, conveying a historic property's association with applicable NRHP/City of Flagstaff Criteria and Areas of Significance (NPS 2002). Secondly, an essential physical feature must define *when* a property is significant, expressing a historic property's association with its Period of Significance. Without these historic character-defining features, a property cannot be identified within its historic context.

Buildings can be considered significant and eligible for listing in the NRHP under Criterion A (City Criterion B; association with events that have made a significant contribution to the broad patterns of our

history) in the areas of Engineering and Conservation, or under NRHP Criterion C (City Criterion D; architectural or engineering design significance) if they are a good example of an architectural type or style in its design, materials, and workmanship as it appeared during the period of significance. Based on the guidelines for assessing integrity for historic properties provided in *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation* (NPS 2002:45), most aspects of integrity are weak or lost for all of the buildings at the subject property due to exterior changes and renovations.

For purposes of this historical assessment, each aspect of integrity will be described in four levels of retention: strong, diminished, weak, and lost (Table 3):

Table 3. Aspects of Integrity

Aspect of Integrity	Level of Retention
Location	Strong
Design	Weak
Setting	Lost
Materials	Lost
Workmanship	Lost
Feeling	Weak
Association	Lost

Location. The first aspect of integrity is *location.* Location is the place where a property was constructed. In order to retain this aspect, a historic property must be in the same place in which it was built; the relationship between a property and its historic associations is typically destroyed if a property is moved (NPS 2002).

The subject property, originally constructed as a commercial pulp and paper mill, is in its original location of construction. As the relationship between the property and its historic location is maintained, the property retains a ***strong*** degree of location.

Design. Another aspect of integrity is that of *design*, which refers to the physical elements of a historic property "that create its form, plan, space, structure, and style" (NPS 2002:44). Design captures the historical functions and aesthetics of a property that were the result of human decisions and choices when the property was first conceptualized. The organization of interior spaces, the proportion and scale of the exterior, the shape and form of a property, ornamentation (i.e., textures, colors, type, style, and arrangement), and materials are all related to design (NPS 2002).

The subject property retains ***weak*** integrity of design due to changes to the layout of interior spaces; changes to transportation infrastructure including the location and existence of rail spurs and truck bays;

replacement of windows and doors; addition of siding, roofing, and exterior structural elements (outside of the period of significance) to the exterior of most buildings constructed during the period of significance; and the addition of buildings, covered areas, major roof framing elements, and entire parts of buildings outside of the period of significance (*see* Section 7 for details). However, the general layout of the buildings, massing, and scale are similar to the end of the period of significance from 1965–1970.

Setting. The location of a property is complemented by its *setting*, which is another aspect of integrity. Setting is the actual physical environment of a historic property, and it includes many characteristics of a particular property's surroundings. Setting refers to the character of a property within its environment. Although it is much more abstract than location (a property's specific place), setting is important in demonstrating how, not just where, a property fits within a larger landscape (NPS 2002).

The setting surrounding the subject property has changed substantially over the decades and the aspect of integrity of setting has since been ***lost***. The surrounding area is now developed with commercial buildings, instead of industrial. Butler Avenue has been widened and significantly improved outside of the period of significance, the neighboring parcel to the west has been developed into a motorsports dealership, a beverage distribution facility is where Kaibab Lumber was to the east, and a Taco Bell and Sam's Club can be seen from the property.

Materials and Workmanship. *Materials* is an aspect of integrity that addresses the physical elements that were used during a particular period of time and in a particular way to create a historic property. The materials used to construct a property reveal availability, style preferences, technologies, and traditions. A property must retain the key exterior materials dating from the period of significance for that property in order to have integrity in this aspect (NPS 2002).

Closely related to materials is *workmanship*, which may be applied to a property as a whole or its individual components. Workmanship can be expressed in vernacular methods of construction, not just elaborate ornamental detailing or finishes, and is the "physical evidence of the crafts of a particular culture or people during any given period in history or prehistory" (NPS 2002:45).

The subject property has ***lost*** aspects of materials and workmanship largely due to major renovations and alterations completed outside of the period of significance. This includes adding prefabricated metal siding to Buildings 1 and 3, a large loading bay to the east end of Building 1, a large addition to the north side of Building 6 (and a covered area to its south side), new roofing materials on nearly all buildings, demolition of all settling ponds in the center of the property, covered work/loading areas to Buildings 1

and 6, multiple exterior additions to Building 3, and exterior structural elements to Building 3 (*see* Section 7).

Feeling. Another aspect of integrity is *feeling*, which is defined as a historic property's expression of a particular time. As a whole, integrity of feeling is a property's ability through its physical features to convey its historic character (NPS 2002). Often, feeling is the result of several aspects of integrity that, when taken together, relate a property's place within a historical framework and period of significance. One measure of feeling is if someone working at the mill during its period of significance would recognize the property if they were there today.

Changes to the setting, as discussed above, have greatly impacted the feeling of a mid-1950s and 1960s pulp/paper mill in an industrial area of town. However, the property still looks industrial and retains some "personality" of a paper mill, it just looks very different from how it did during the period of significance. Those having worked at the mill would likely recognize the property, in spite of modifications to its exterior and surroundings. Therefore, the property still conveys some sense of an industrial paper mill and retains a ***weak*** aspect of feeling.

Association. The last aspect of integrity is *association*. Association is the direct connection between a historic property and an important historic event or person. A property retains integrity of association if it is in the place where the event occurred and is "sufficiently intact to convey that relationship to an observer" (NPS 2002:45). Much like integrity of feeling, integrity of association is the ability to convey historic character through physical features.

While documented in the archival record, association also requires the presence of physical features to convey that relationship to an observer (NPS 2002). Association is the direct connection between either an important historic event or person and a historic property. As the discussion above illustrates, most aspects of integrity are weak or lost. Therefore, the subject property's association with its use as a pulp/paper mill during the period of significance has been ***lost*** due mostly to the addition of siding, major additions to buildings, and exterior structural elements outside of the period of significance (*see* Section 7 for details).

9.0 SUMMARY AND RECOMMENDATIONS

This study is like no other that the authors have undertaken. The SCA Tissue facility looks like simple, modern, commercial warehouses when driving down Butler Avenue. But the expanses within the multiple buildings in the complex, with their rusty beams from the constant humidity of a paper mill, spoke to an

ingenuity and personal work ethic from days passed. Because of the complex, massive, and pieced together nature of the facility, this study entailed multiple field visits to the subject property. In addition, the importance of the paper mill to Flagstaff's economy and community resulted in a plethora of newspaper articles and a massive amount of archival data of varying relevance. These data were supplemented by several oral interviews that breathed life back into the now stagnant and empty buildings. The authors attempted to compile the data in a way that not only assesses the significance and integrity of the pulp/paper mill, but also tells the story of a very important property and industry that affected Flagstaff and its residents in both economic and personal ways.

The property evolved over time, from its origin as the Babbitt Brothers Trading Company slaughterhouse in the late 1800s, with a completely new use as the Coconino Pulp & Paper pulping mill starting in 1953, eventually being a paper recycling and production facility under Ponderosa Paper Products. The ability of the mill and its employees to adapt to the changing needs of the community, and societal views toward conservation of resources, necessitated constant changes to equipment and buildings that resulted in major effects to the facility that continued beyond the period of significance.

Although the vast majority of machines were removed and sold prior to the beginning of this study, the adaptive use of industrial architecture through time can still be seen in the remaining buildings. And while additions and renovations by several companies have resulted in an industrial facility that does not retain sufficient integrity to express its significance with a historic context, this does not detract from the history and memories of the mill and its employees. As a result of this study, Cornerstone recommends that proposed work on the subject property (APN 104-07-001C [12.22 acres] and 104-07-005M [0.49 acres]) be allowed to proceed with no further cultural resources work.

10.0 PREPARERS' QUALIFICATIONS

Joshua S. Edwards, M.S., RPA (Preparer)

Mr. Edwards is an archaeologist and historic preservation specialist who meets the Secretary of the Interior's Professional Qualification Standards in History and Archaeology. He has a Bachelor of Arts degree in Anthropology from the University of Arizona and a Master of Science degree in Quaternary Sciences from Northern Arizona University. He obtained specialized interdisciplinary academic training in soil geomorphology, fluvial systems studies, arid lands processes, paleoenvironmental reconstruction, and faunal analysis, and has over two decades of experience with archaeology and history of the American Southwest. This includes archaeological survey, testing, and data recovery at prehistoric and historic sites throughout Arizona and western New Mexico, and projects in California, Nevada, Colorado,

Wyoming, and Texas. This experience is augmented by international experience in Mexico, Germany, and Peru.

Mr. Edwards has worked in the field of Cultural Resource Management for twenty-eight years and as a historic preservation professional for the past seven years. He served as a Heritage Preservation Commissioner for the City of Flagstaff for two years and has exhaustive experience conducting National Register of Historic Places significance and eligibility studies for historical resources throughout the American Southwest.

Terry W. Greene, M.A. (Architect)

Mr. Greene is a retired California licensed architect (C-14061) and a practicing architectural photographer, specializing in historic preservation projects primarily in Arizona and Montana. He has both a bachelor's and a master's degree in Architecture from Montana State University, and over 35 years of architectural design and construction management experience in both private and public sector work.

Mr. Greene, as City Architect in San Jose California and Cupertino California oversaw the construction of the San Jose Convention Center, the design of the San Jose Arena, the San Jose Airport Master Plan, the design and construction of libraries, fire stations, community buildings, bike trails, historic structure preservation, historic district formation, creek and habitat restoration, as well as the award-winning Mary Avenue Pedestrian Bridge. Mr. Greene was also a project manager with Bechtel International and worked on projects in Hong Kong, the Philippines, Dubai, and Wales. As a volunteer with the Columbia University chapter of Engineers without Borders, Mr. Greene supervised the construction of a pedestrian bridge designed to accommodate a fully loaded camel in a remote region of Morocco.

Mr. Greene has been a traditional black and white photographer for more than fifty years, using formats from 35mm to 8x10 and creates HABS-compliant photographs. He is currently using black and white film and digital color images to update historic sites for the Kaibab National Forest and the Montana State Historic Preservation Office.

Jack W. Treichler, B.A. (Researcher)

Mr. Treichler is an archaeologist and historian with over six years of experience in the Southwest and Great Basin regions. He has worked with numerous historical properties related to aviation, homesteading, mining, timber extraction, ranching, the Civilian Conservation Corps (CCC), railroad construction, and other infrastructure development. This has involved field documentation of historical properties, archival research into these properties and the themes surrounding them, and analysis of their significance and integrity for purposes of inclusion in the National Register of Historic Places. Mr.

Treichler received a Bachelor of Arts degree in Archaeology from Dickinson College, with a minor in Classical Studies. Academically he has a broad background in anthropology, geology, and art history, with a focus on classical archaeology and languages—specifically ancient Greek and its written precursor Linear B and progressing to its modern spoken form. His training includes laboratory processing of artifacts, geographic information systems (GIS), and field experience at the citadel and lower town of bronze-age Mycenae.

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