

Atchison Topeka & Santa Fe Railway Locomotive Shops

Bernalillo, New Mexico

Name of Property

County and State

United States Department of the Interior

National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form*. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions.

1. Name of Property

Historic name: Atchison, Topeka, & Santa Fe Railway Locomotive Shops

Other names/site number: Albuquerque Rail Yards

Name of related multiple property listing:

Historic and Architectural Resources of Central Albuquerque, 1880-1970

2. Location

Street & number: 2nd Street between Atlantic Ave. and Cromwell Ave. SW

City or town: Albuquerque

State: New Mexico

County: Bernalillo

Not For Publication: ☐

Vicinity: ☐

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended,

I hereby certify that this ___ nomination ___ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60.

In my opinion, the property ___ meets ___ does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:

___national ___statewide ___local

Applicable National Register Criteria:

___A ___B ___C ___D

Signature of certifying official/Title:

Date

State or Federal agency/bureau or Tribal Government

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In my opinion, the property ___ meets ___ does not meet the National Register criteria.

Signature of commenting official:

Date

Title :

State or Federal agency/bureau
or Tribal Government

4. National Park Service Certification

I hereby certify that this property is:

- ___ entered in the National Register
___ determined eligible for the National Register
___ determined not eligible for the National Register
___ removed from the National Register
___ other (explain:) _____

Signature of the Keeper

Date of Action

5. Classification

Ownership of Property

(Check as many boxes as apply.)

Private: ☐

Public – Local ☒

Public – State ☐

Public – Federal ☐

Category of Property

(Check only **one** box.)

Building(s) ☐

District ☒

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Site

☐

Structure

☐

Object

☐

Number of Resources within Property

(Do not include previously listed resources in the count)

Contributing

Noncontributing

15

3

buildings

1

sites

5

1

structures

objects

21

4

Total

Number of contributing resources previously listed in the National Register 0

6. Function or Use

Historic Functions

(Enter categories from instructions.)

Transportation

Industry

Current Functions

(Enter categories from instructions.)

Vacant

7. Description

Architectural Classification

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(Enter categories from instructions.)

Late 19th and 20th Century Revivals: *Chateausque*
Modern Movement: *Industrial*

Materials: (enter categories from instructions.)

Principal exterior materials of the property:

Foundations: Concrete

Walls: Concrete, Brick, Glass, Steel, Stone

Roof: Asphalt

Narrative Description

(Describe the historic and current physical appearance and condition of the property. Describe contributing and noncontributing resources if applicable. Begin with a **summary paragraph** that briefly describes the general characteristics of the property, such as its location, type, style, method of construction, setting, size, and significant features. Indicate whether the property has historic integrity.)

Summary Paragraph

The Atchison, Topeka and Santa Fe Railway Company's (AT & SF) former steam locomotive shops, constructed between 1914 and 1925, occupy a 27-acre parcel on 2nd Street between Atlantic Avenue and Cromwell Avenue SW in Albuquerque, New Mexico. The land is nearly level and surrounded on three sides by railroad tracks and yards, and on the west side by a residential neighborhood. The shops were designed for major overhauls of steam locomotives, while daily locomotive repair and maintenance were based in the roundhouse. The shops, which include 21 contributing resources, are the largest historic industrial facility in Albuquerque. Located on a long polygonal-shaped site, the shops are organized around two, large east-to-west oriented boiler and machine shop buildings with three additional shops joined to the boiler shop on the north side of the complex. A transfer table consisting of a depressed concrete structure with two steel transfer decks that was used to move locomotives across the site is located between the two major buildings. The machine shop retains a 250-ton-capacity overhead bridge crane and two smaller 15-ton bridge cranes, and the boiler shop retains another 250-ton capacity crane. On the exterior of the machine shop, a crane runway carries another 15-ton capacity bridge crane. The south side of the complex includes smaller buildings that supported the shops operations as well as the foundation of the former roundhouse with an operational turntable and associated tracks. Abstracted Neo-classical, monumental-scale facades of reinforced concrete front the dominant buildings, the machine, boiler, and tender repair shops. The sides of these tall

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single-story, steel frame buildings are full-length glass curtain walls. The blacksmith shop has a steel structural frame set inside brick walls with large banks of windows. Brick is also the wall material of three smaller buildings. Reinforced concrete is the structural material of seven buildings including the storehouse and flue shop and two structures, the water reservoir and fire runway. The fire station employs ashlar sandstone walls in a rustic version of the Mediterranean style. The remaining buildings employ materials in a functional, unornamented manner. The sheet metal house has a wood timber frame with board-and-batten siding.

Narrative Description

The AT & SF Railway Company Locomotive Shop Historic District in Albuquerque is situated at the eastern edge of the Rio Grande flood plain, occupying a 27 acre parcel on 2nd Street between Atlantic Avenue and Cromwell Avenue SW, ten blocks south of downtown Albuquerque, New Mexico. The site is nearly flat and measures approximately 675 feet east-west by 1,900 feet north-south. It slopes from 4,950 feet in elevation at the north end to 4,945 feet at the south. This complex of industrial buildings and structures is flanked on the north and south by open rail yards, on the west by 2nd Street and the Barelás residential neighborhood, and on the east by the original main line of the AT & SF Railroad. This historic line became part of the BNSF Railroad; the successor to the AT & SF in the 1990's and is now owned by the State of New Mexico.

The shops were designed for major overhauls of steam locomotives, while daily locomotive repair and maintenance were based in the roundhouse. The movement of locomotives, parts, and supplies within the shop complex was facilitated by a cross-axial grid of railroad tracks running north and south through the complex (and some of the buildings), and overhead moving cranes and a transfer table running east and west. The position and orientation of buildings was organized within this grid for efficiency. The few minor automobile service roads which penetrate the complex appear to have had little effect on building location. Only the end facades of the machine and boiler shops have a formal orientation—facing to the east toward the main tracks and to the west toward 2nd Street. The scale of these facades appear monumental in relationship to the small, one-story houses in the adjacent neighborhoods.

Architecturally, only the machine and boiler shop facades and the fire station employ ornament and self-conscious style. The two-story, square-towered fire station was constructed of rough-faced, random ashlar, brown sandstone with a crenelated parapet and tile accents. These distinctive materials and styling give it a rustic Mediterranean look (Wilson 1986: 9). The largest buildings in the complex, the machine shop and the boiler shop, exhibit reinforced concrete facades on their east and west ends that face the main line tracks and neighborhoods

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beyond (east) or the adjacent Barelás neighborhood (west). The facades imply a Neo-classical styling with plain concrete piers extending up to a simple bracketed cornice. The cornice is topped by a frieze with pediment and an embossed AT & SF company emblem.¹ These concrete facades are integrated into the steel frame of the building and as such, they are structurally redundant. The same design is repeated in the north end of the tender repair shop.

A third building, the blacksmith shop, combines construction materials that speak to two eras: a one-story steel frame building with stepped brick facades on the north and south ends. These facades are decorated with painted Santa Fe Railway emblems. The remaining buildings employ exposed structural and cladding materials in the most efficient manner, including: reinforced concrete, steel frames, wood framing and siding, brick walls and steel sash windows.

The original shops complex built in the 1880s was redeveloped early in the period of significance, between 1914 and 1925, to handle greater numbers of larger locomotives. In addition to the buildings noted above, the new facilities included a roundhouse, a power house with 230-foot smokestack, a set of “back shops” for locomotive overhauls, and a storehouse. South of the roundhouse stood car shops including a carpenter shop and planing mill. Numerous small buildings, tanks, cellars, and pits filled spaces between large ones. There were five free-standing lavatory buildings. Only the AT & SF general office building remained from the original, 19th-century shops complex as new shops and the fire station rose nearby.

All historic buildings in the district were erected between 1914 and 1925, except one minor building, the motor car garage, which appeared between 1924 and 1931. Two buildings have been added since 1945. The electric power plant erected in 1914-15, which stood between the roundhouse and the machine shop, was demolished in 1984. The roundhouse was demolished in 1986. South of the district, the original cinder pits have been filled-in, and the coal and sand towers and major car shop buildings have been demolished.

During its heyday in the 1920s, approximately one thousand people were employed at the shops and, during the Second World War, a temporary peak of one thousand five hundred employees was reached. The storehouse functioned as the supply depot for the line’s New Mexico Division. The fire station housed the private fire department for the complex. The remaining buildings were designed for making heavy repairs to steam locomotives, or, in the case of the smaller structures, for support activities such as storage, offices and locker rooms.

Locomotive maintenance procedures practiced about 1915 demonstrate the relationship of the roundhouse to the larger locomotive shop buildings. Steam locomotives, which provided the primary power for American railroads until the ascendance of diesel engines in the 1940s and 1950s, required substantial daily servicing and maintenance, as well as periodic major overhauls. At the end of a daily run, a steam engine had its fire cleaned, ridding it of clinkers—the irregular

¹ This motif was duplicated on the AT&SF buildings at the San Bernardino shops (Wilson 1986: 9).

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lumps left after coal firing—and had its ash pan dumped. Its appliances and running gear were inspected, and, if necessary, repaired. Tubes, flues and smoke boxes were cleaned. Boilers were washed out to remove mineral build-up approximately once per month, more frequently as necessary. Oil burning steam locomotive services here did not require the fire cleaning and ash removal, those services were needed for coal burning locomotives. Each morning, the locomotive would depart from its home roundhouse for a run of 100 to 150 miles to the next division point. From Albuquerque, the division points were Las Vegas to the north, Gallup to the west, and San Marcial to the south. There, in another roundhouse, inspections, lubrication and necessary repairs were made, and, in adjoining ash pits, clinkers and ashes were dropped. After the return trip, daily maintenance was performed and the engine housed in its home roundhouse. Roundhouses such as the one at Albuquerque were also equipped with drop pits and machinery to perform general “running” repairs. Unlike the other roundhouses in New Mexico which had to be self-sufficient for minor repairs, the Albuquerque roundhouse could shift work directly to the larger shops by way of a direct track that exited its north side and led into the machine shop (Wilson 1986: 7).

Periodically, every locomotive was taken to a large shop, such as those at Albuquerque, for a major overhaul. In the 19th century, this might be necessary after as few as 40,000 miles, but after 1900, with the introduction of more durable parts and features designed to reduce maintenance, some engines ran as much as 400,000 miles before receiving major repairs.

In the erecting bays of the machine and boiler shops, for instance, the engine was completely dismantled and the parts sent for cleaning, inspection and repair to various departments housed in the lower bays of the machine and boiler shops and in the blacksmith, flue, tender repair, welding and babbitt shops (see Figure 1). After being cleaned in a lye vat, working parts were reconditioned and necessary replacements fabricated. Lathes turned the large driving wheels so that all were exactly the same size. Breaks in the frame were repaired. The boiler and fire box were patched with steel plate or, if needed, replacements were fabricated. Each part was given a final inspection and tested to meet precise standards before the locomotive was reassembled. On average, a complete overhaul took about a month to perform. Over the fifteen year life of an average locomotive, it might be rebuilt or receive other major shop repairs once every twelve to eighteen months. In the twentieth century, the Albuquerque shops serviced forty locomotives in a normal month (Wilson 1986: 7).

Now all remaining buildings are vacant except the storehouse, which houses the WHEELS Museum offices and their collection of transportation-related objects. On occasion, the buildings and grounds are used by television and film productions. The blacksmith shop has been prepared for use as an open-air event venue with a parking area of millings and new concrete curbing. Such events are considered interim uses until redevelopment of the whole complex begins.

The district includes fifteen contributing buildings, five contributing structures, one contributing site, three non-contributing buildings and one non-contributing structure. The flue,

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boiler and tender shops are counted as three buildings, even though they are attached, because they were built at different times and are discrete structures.

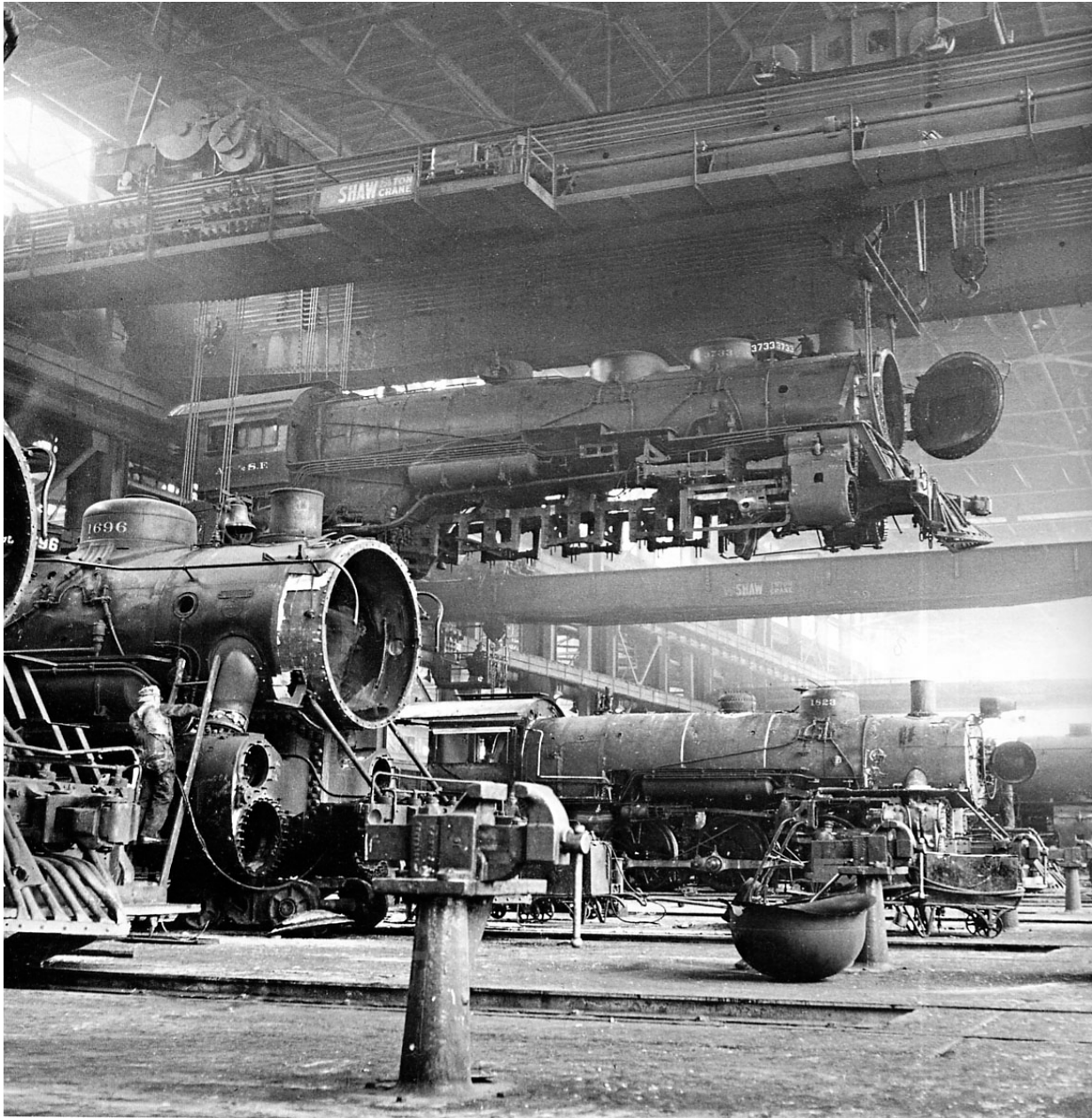


Figure 1. In the erecting bay of the machine shop the locomotive was dismantled and the parts sent for cleaning, inspection and repair to various shops in the complex. Note the locomotive on the bridge crane.

All buildings are one-story except the fire station, a two-story construction. The remaining shops and support buildings form two clusters, northern and southern, with the transfer table at

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the heart of the complex. The northern cluster of buildings has higher historic integrity than the southern, due to less consequential demolitions and alterations of buildings north of the transfer table than south of it. For instance, the general office building (a remnant of the 1880s shops), a related washroom, and gas plant were the main demolitions in the northern cluster, and the cab paint shop was remodeled drastically, amounting to the loss of four small potentially contributing buildings.

This contrasts with the southern cluster where the monumental scale roundhouse, the nearby powerhouse, and the 230 foot smokestack, were all demolished in the 1980s. Though other demolitions in the southern cluster numbered at least six, these three losses left the complex with an open expanse where landmark buildings and daily activity had reigned. Today that expanse is mainly an archaeological site—the roundhouse foundation with the operational turntable and associated tracks at its center.

Similarities between the machine and boiler shops with the revolutionary Ford River Rouge complex included not only light and ventilation, but also the incorporation of machinery and equipment necessary for the efficient maintenance and repair of the locomotives. This is illustrated by the provision of two levels (machine shop only) of overhead traveling cranes that greatly facilitated the movement of heavy locomotive parts to the various work stations for cleaning, repair, or replacement. Both shops and the transfer table between them embodied a cross-axial plan to allow transfer of the locomotives, parts, and materials through much of the site. As such, locomotives and tenders to be overhauled entered the shops on tracks that ran north-south. Once inside, the overhead traveling cranes that ran east-west lifted and moved the equipment (or the entire locomotive) between work bays while the east-west-running transfer table and an outside traveling crane facilitated movement across the north-south axis. The transfer table also allowed north-south movement between the machine and boiler shops and beyond to the roundhouse and tender repair shop. The cross-axial plan of tracks, transfer table, and cranes made it possible to move and overhaul many large machines on a remarkably small acreage.

The operation and layout of the Albuquerque locomotive shops combined the latest in industrial architecture with up-to-date industrial organizational principles to create a streamlined and efficient system to repair steam locomotives. As described in *Railway Mechanical Engineer* (1924: 340-42), the flue shop employed two work gangs to carry out the important job of maintaining and repairing the tubes and flues that carried hot combustion gas from the firebox of the boiler to the smoke box at the front of the engine. Welding and sanding was done on-site, and all movements were in a straight line as much as possible thus minimizing the amount of time wasted by excessive handling. The blacksmith shop had three steam hammers and heavy duty blowers to power the forges for annealing metal parts. Old driving wheels and other scrap metal were re-forged on-site. Work in the erecting bays of the machine shop was carried out by four specialized gangs of mechanics, helpers, and apprentices to work on the many locomotive parts

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to be replaced. These day-to-day activities were supported by the storehouse, which housed parts and supplies and kept well-stocked tool cabinets. Storehouse employees utilized a “shop mule” to move parts and equipment around the yards quickly and efficiently. The result of these innovative industrial designs and operations was a locomotive repair shop that was laid out, designed, and equipped for optimum efficiency.

Machine shop, built 1921, EA Harrison architect, CFW Felt engineer, American Bridge Co., photos 1-9:

Locomotives were delivered to the machine shop where they could be disassembled for repairs. With a 250-ton capacity overhead traveling crane, boilers could be lifted and removed from frames, both together could be removed from the wheels which could be sent to the wheels shop. The most imposing of the buildings on the site, and located at the center of the complex, the machine shop stands 71 feet 7 inches tall (above finish floor) at the highest point of the parapet and it is 239 feet wide by 604 feet long. The machine shop was the first Albuquerque building of this scale and of the distinctive and varied character of its facades. The long sides (north and south) are steel-and-glass curtain walls and the east and west end walls are board-formed, poured concrete with large window areas in bays.

The machine shop’s long axis runs east-west, the orientation of its four interior work bays. From north to south they are the erecting bay, heavy machinery bay, light machinery bay, and bench bay. The erecting bay is tallest, the heavy machinery bay next tallest, and the other two a matching lower height (See Figure 2). This hierarchy is evident in the west end wall of poured concrete piers alternating with twelve bays of steel windows. There are five window bays in the erecting bay, three in the heavy machinery bay, and two each in the light machinery and bench bays.

On the concrete end walls, piers are wide where the parapet height changes and at the ends of the facades. They are narrower at intermediate points. The piers support a level concrete frieze and cornice except where the cornice rises to an apex with the gabled roof at the erecting bay. Also at the erecting bay, paired concrete pier-cap brackets adorn the tops of both wide and narrow piers. An embossed AT & SF emblem marks the center of the erecting bay on the frieze. Behind their portion of the concrete façade, the other three bays have a continuous, low-slope shed roof with twenty-three linear, operable skylights. Rather than brackets, the piers of the other three bays feature concrete-relief straps, three at wide piers and one at each narrow pier.

The roof is supported on steel trusses and consists of a low-pitch gable roof over the highest interior space, the erecting bay, and a low-pitch shed roof over the remainder. Both roofs have diagonal two-layers of lumber decking and five-ply composition roofing.

Outside the north wall of the machine shop stand several remaining urinals with running water and steel privacy screens with roofs.

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The structural steel for the building was provided and assembled on-site by the American Bridge Company and the window and door systems and doors were provided by the Truscon Steel Company. The columns that line the erecting bay and carry its cranes bear on concrete, stepped spot footings over creosoted wood pilings. In the other bays, the columns support low-slope steel trusses and rest on concrete footings which in turn are supported by a thick stratum of "stiff adobe." The building's 139,316 square foot nearly rectangular floor plan is notched at the southeast corner, where locomotives entered the shop after inspection at an outdoor pit. Most of the ground floor has a 6 inch concrete slab originally primed with bituminous coating and topped with 3 inch-thick, treated wood pavers with end grain exposed. Joints between blocks were sealed with pitch. For the most part these pavers remain but many have been damaged. The wood flooring has been replaced by concrete topping in places, and there are a few concrete pits and platforms where machines were once located.

When the shop was newly outfitted it had fifteen engine lathes, a car-wheel lathe and a double-head car axle lathe, two vertical and one horizontal turret lathes, one 100-inch boring mill and four smaller mills, five radial drill presses, one double-head and five single-head shapers, three slotters, one piston rod, and one guide grinder, three double-head dry grinders and two single wet tool grinders, and other smaller machine tools.

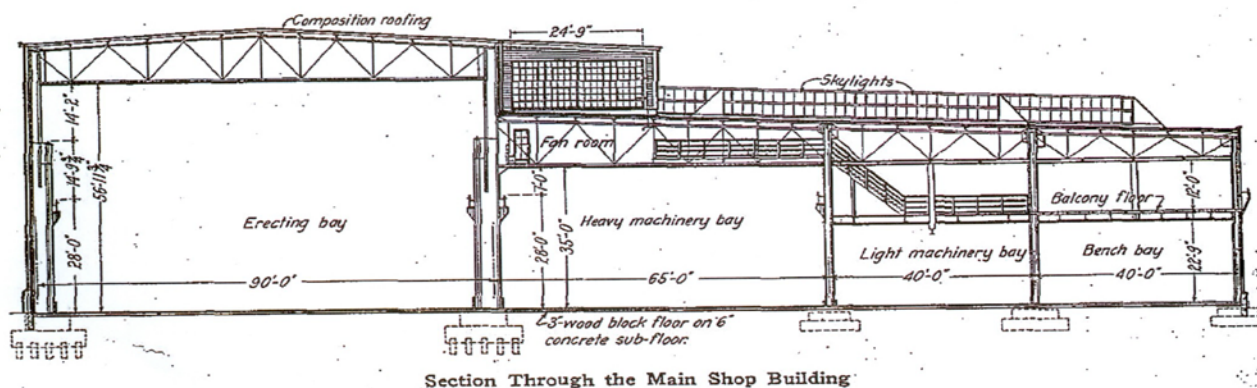


Figure 2. Work in the machine shop was distributed between four interior bays.

Erecting bay

The machine shop's erecting bay is the complex's largest open volume under roof. It is about 600 feet by 90 feet in plan and 57 feet in clear height. It includes concrete engine repair pits side-by-side along the length of the bay. Originally the bay had twenty-six pits, one of which was 136 feet long. Twelve of the pits have been filled with concrete and the remaining fourteen pits are 63 feet long and about 3 feet deep (See Figure 3). Each pit had connections for steam, gas, and electricity. The erecting bay has one 250-ton-capacity bridge crane on an upper rail and two 15-ton-capacity cranes on a lower rail.

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The glass curtain wall admits sunlight and allows ventilation. As noted above, the curtain walls consist of steel sash with wired glass. Parts of this glazing system were mechanically operable as horizontally pivoted sash in every window assembly. There are 8 foot-by-18 foot, bi-fold doors, two per opening, on overhead tracks on the north wall of the erecting bay. These doors open onto the transfer table. Some bi-fold doors have inset pilot doors that allowed shop men to move in and out while keeping the large doors closed. For heating and ventilating, two mechanical equipment penthouses on the roof of the heavy machine bay overlook the erecting bay. These "fan rooms," as labeled on AT & SF plans, have steam radiators and electric fans reportedly capable of a whole-building air change three times per hour. The forced-air system features ducts and registers at most columns. The power house generated coal-fueled electricity for general and task lighting as well as the machinery in several of the shops.



Figure 3. Locomotives in the erecting bay, looking southwest, note concrete pits and 250 ton bridge crane above.

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Heavy machinery bay

The heavy machinery bay is 65 feet wide, runs the full length of the machine shop, and has 35 feet of clear height. It is well illuminated in daylight by twenty-three skylights. Its crane rail matches heights with the lower crane rail of the neighboring erecting bay. As indicated by the name, this bay was where especially heavy locomotive parts such as driver wheel sets were repaired. It had two 15-ton capacity bridge cranes and many jib cranes mounted on the building's columns. One of this bay's bridge cranes remains but none of the jib cranes. The tool room for hand tools remains near the midpoint of the bay's north side, but part of its original steel panel-and-mesh partition has been removed.



Figure 4. Locomotive parts in the heavy machinery bay, looking east.

Light machinery bay

The light machinery bay is about 540 feet long and 40 feet wide with clear height of nearly 20 feet. From the light machinery bay floor, two L-plan open stairs lead to the balcony and mezzanine above the bench bay immediately to the south. The AT & SF's original floor plan shows three stairs, which suggests that one has been removed.

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The light machinery bay's original 5-ton-capacity monorail crane has been removed. The monorail crane ran along the centerline of the bay, supported from above by a balcony-level grid of I-sections riveted together and connected to the roof trusses above. Also missing are the many jib cranes that lined this bay (See Figure 4).

Bench bay

This is the southernmost bay in the machine shop and has personnel and equipment doors onto the crane runway outside to the south. It has steel-and-glass slider equipment doors at the east and west ends. The bench bay is as long and wide as the light machinery bay but contains a cluster of ground-floor and mezzanine rooms near its east-west midpoint. These include the general foreman's office suite, a phone room, a blueprint room, storage rooms, and one of the three elevators to the balcony above. The cluster fills the bench bay's full width in four structural bays and also contains two stairs, one leading only to the mezzanine and one that also reaches the balcony. The balcony-mezzanine includes 21,640 square feet.

The balcony is undivided space at its west end and partly divided into rooms elsewhere by steel-and-glass partitions. An open passage along the balcony's north edge leads to these rooms, the electric shop, wash and locker room for hundreds of shop men (See Figure 11), and a tool room. The open west end is labeled on AT & SF plans as the brass room and air room. From the balcony, two catwalks lead northward and up via stairs to the fan rooms. Near its east and west ends are elevators with abutting machinery rooms, all enclosed in steel panels and wire mesh. Flooring is end-grain wood block on a concrete deck, but these are thinner than the similar system at the main floor of the shop. A single jib crane remains near the west end of the balcony.

Crane runway

The crane runway on the exterior of the building is defined by the entire south wall of the machine shop, where haunches carry one crane rail and a row of steel columns 50 feet away carries the other (see Figure 5). A 15-ton-capacity bridge crane remains in place, minus the operator's cab. There were two cranes on this runway during the shops' operations. The crane rails extend beyond both ends of the south wall and are supported on steel columns with a head frame on the east and on built-up steel stanchions at the west. Paved with concrete, the runway contains embedded rails once used to store wheel sets. Locomotive parts were cleaned and readied for repair on this runway, which included lye vats, wells, and a pump house. The lye vat shed appears to be shop-built with salvaged freight car panels on structural steel framing. Nearby stands a remnant of an emergency eye-washing station. Much farther west, a concrete loading dock has been added at one of the equipment doors, blocking the rails that had connected the machine shop with the babbitt shop.

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The historic integrity of the machine shop is high despite the filling of some repair pits, alteration of some original doors, addition of a loading dock, and losses including equipment removals and theft. In fair condition, the building currently has roof leaks, floor damage from abuse and water penetration, and large numbers of broken panes in some windows and all skylights. The north-side curtain wall is relatively intact, surely due to its height and inaccessibility to vandals.



Figure 5. Crane runway with bridge cranes on the south side of the machine shop.

Boiler shop, built 1923, EA Harrison, architect, photos 10-12:

The boiler shop stands just north of the machine shop, joined by the transfer table. Repair and rebuilding of boilers and fireboxes took place in the boiler shop. This included installation of new braces, flue sheets, tubes and flues, entire new boiler courses, new fireboxes, replacement of broken stays, boiler and fire box side sheet patches, and similar work (See Figure 6).

The tender repair shop and flue shop are attached to the boiler shop's north side, where doors connect these buildings to its heavy equipment bay. The tender repair shop door has a

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through-track for access to the erecting bay. A tall steel canopy or firing shed (annex) of 6,400 square feet floor area stands attached at the west end of the boiler shop. Unlike the other buildings attached to it, the canopy was built as part of the boiler shop. On the roof are three linear skylights and twelve cast-iron "Dickinson ventilators," as labeled on the AT & SF working drawings. The roof of this "annex" is slightly gabled and has a "cement tile" or "concrete roof slab," again according to the drawings. The canopy has four bays oriented north-south for rail access by locomotives ready for testing. The two western bays remain open-air as built. The other two bays were enclosed and equipped as painting booths for rolling stock by the AT & SF after 1957.

The boiler shop's design and construction mirror those of the machine shop but it is far smaller and has two east-west-oriented structural bays rather than four. The boiler shop's full-length, steel-and-glass curtain wall faces the transfer table with similar bi-fold doors into seventeen work stations served by a 30-ton-capacity bridge crane which remains. It has one rooftop fan room and the erecting bay is taller than the heavy machinery bay. The latter has thirteen skylights similar to those in the machine shop. The bay-height difference is reflected in the east and west end walls, which closely resemble those of the machine shop except where the canopy obstructs part of the west façade of the boiler shop. Unlike the machine shop, the boiler shop's erecting bay has a different number of piers and alternating window walls in its east and west facades. There are five piers at the west and six at the east, and the lengths of those facades are the same. Both facades feature the AT & SF emblem at center, and pier-cap brackets like those of the machine shop.

As at the machine shop, there is a notch cut out of the east end of the boiler shop's otherwise rectangular plan. The boiler shop's notch differs, though, in being filled by the south end of the flue shop, which had been built three years earlier.

Inside as well, the boiler shop is very like the machine shop but smaller, 58,100 square feet in plan. Its interior has two bays, an erecting bay with seven work stations and a heavy equipment bay. It has doors into the flue shop, tender repair shop, and cab paint shop. It has exterior sliding doors in the east and west ends. The east-end door, to a passage between the boiler and blacksmith shops, has a short east-west track leading to the blacksmith shop via a small interior turntable (now missing). The turntable was used to pivot objects (flues, presumably) being moved to and from the flue shop through the heavy equipment bay. The boiler shop floor is wood-paved like the machine shop but has been scavenged to repair the machine shop floor.

The boiler shop has several non-significant alterations that diminish its historic integrity in small ways to minor cumulative effect. These include the enclosure of the two canopy bays and related removal and re-hanging of one of the boiler shop's bi-fold doors in the south end of a paint booth. A small, one-story concrete block addition was attached to the southwestern concrete pier after 1957. The nearest bi-fold door opening in the curtain wall has been filled in

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with concrete block, as has another near the east end. Original bi-fold doors on the south and north walls have been replaced with coiled overhead doors. On the north side, other sections of the steel-and-glass wall have been removed and the openings filled with concrete block.

The boiler shop is in poor condition due to extensive failure of roofing and decking, and the vandalizing of glass windows and skylights. Its historic integrity remains high.

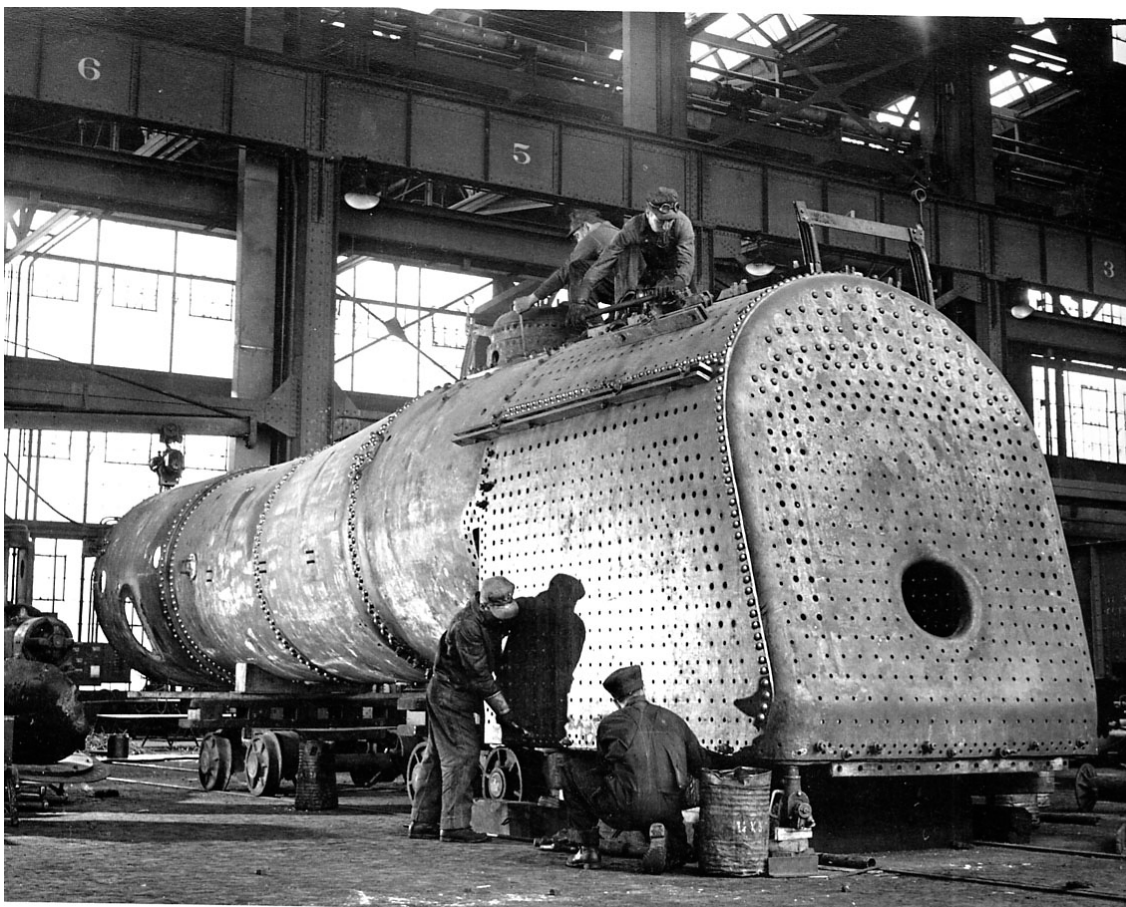


Figure 6. Working on the fire box of an engine, in the boiler shop.

Blacksmith shop, built 1917, photos 13-16:

The building stands parallel and next to the through rail line, just east of the boiler shop and north of the transfer table. Heating and forging of metal, primarily iron and steel, for later machining of parts took place in the blacksmith shop.

It is a tall one-story, rectangular building of red brick in American bond. Its slightly gabled roof has stepped parapets at the ends and brick corbelling where the scant eaves terminate. At the north and south facades the parapets step five levels with concrete copings at each stage. An original, longitudinal roof monitor was removed before 1975.

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Centered high on the south elevation is a steel-and-glass lunette of 16 fixed lights. Projecting concrete “keystones” interrupt its brick surround at quarter points. Its north-façade counterpart has been filled with brick, and the upper stage of the north façade parapet is missing. The south elevation includes central, bi-fold doors with a single set of rail tracks leading into the building on its long centerline. Each of the doors’ leaves has three sets of 4 panes in a stack divided by two horizontal mullions. The door is flanked by two slightly taller windows. These are in turn flanked by two outer windows of the same height as the door. Each window has a concrete sill at grade. The outer windows have steel, fixed-divided-light windows 8 panes wide and 10 panes high, with mullions at horizontal and vertical midpoints. The windows flanking the central door are the same construction, and the west window includes a retrofitted personnel door. At the north façade, original bi-fold doors have been replaced with a metal overhead door.

The east and west walls are also brick. Brick panels alternate with large windows. The windows are steel divided-light assemblies that extend nearly from the floor to the roof deck in three stacks and three tiers. Within each of the three stacks the lower tier is 5 panes wide and 4 panes high. The upper, 10-light sash of this tier operates on horizontal pivots. Large electric fans interrupt this pattern in the lower tier of windows in most of the window assemblies. The middle tier is 5 panes wide and 5 panes tall and the upper tier is 5 panes wide and 8 panes tall.



Figure 7. View of blacksmith shop interior with presses. Steel trusses span the full width of the blacksmith shop.

The blacksmith shop has the third largest floor area of the buildings in the district and measures 80 feet by 306 feet in plan. There are thirteen structural bays, and the built-up steel

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columns support steel roof trusses (Warren pattern) with crowned lower chords (See Figure 7). The trusses span the full width for an open interior interrupted only by a small foreman's office at the west wall's mid-point and a forge in the southeast corner. The floor is reinforced concrete but was earthen until at least 1957, according to the Sanborn Map of that year.

Overhead, the steel framing and wood decking is exposed, as are the engaged columns and x-bracing high in the east and west walls. Pipes and insulated steam lines enter the building overhead at the south end and extend to points inside, including the gas line to the forge. The forge flue remains in place, as does a second flue near the west wall.

The historic integrity of the blacksmith shop is largely intact despite alterations including roof monitor removal and window glass replacement with synthetic, translucent materials. In 2013 the roof was patched along with other repairs, raising the Blacksmith shop's condition from fair to good. Its historic integrity is substantial despite long-past and recent changes.



Figure 8. Hammering out a drawbar under the steam hammer in the blacksmith shop.

Flue shop (pipe shop), built 1920, photos 17-19:

The flue shop is located adjacent to the north side of the boiler shop and the west side of the blacksmith shop. Flues carried hot gases and smoke through the boiler to the smoke box. Flues that were removed from the engine's boilers were cleaned, and inspected, and replacements prepared and stored for installation here.

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The building is constructed of reinforced concrete from the foundation to the roof, which is a low-slope gable with a monitor of nearly full length. There are ten bays with pilasters that extend into roof beams below the monitor. Windows are tripartite; each unit has a central 4 pane wide section and outer 3 pane wide sections. This glazing has two vertical parts: the lower is 6 panes high and the upper is 3 panes. Each of the upper units includes an operable panel: the center is 4 panes and the flanking units are 6. The lower glazing includes a 2-by-6-pane operable panel. The piers are surmounted by large poured concrete beams that extend the width of the building to provide for a large open floor plan and support the clerestory above.

The flue shop's south end opens into the boiler shop, and it has an addition on the north-side with concrete masonry unit walls and roof structure of pre-cast concrete tees. Two ceiling-height openings, originally filled with windows similar to those in the side walls, provide access to the addition. A much smaller addition of concrete masonry units stands at the interior corner of the connection between the boiler shop and the flue shop; its flat roof born on steel bar joists. An even smaller, third concrete masonry unit addition connects to the west wall of the original flue shop and has one window in its west wall. The building is 9,464 square foot in plan.

Three additions notwithstanding, the historic integrity of the flue shop is sufficient to support contributing classification.

Sheet metal house (sheet iron shed), E.A. Harrison architect, C.F.W. Felt engineer, built c. 1918, photos 20-21:

Located immediately north of the boiler shop, the sheet metal shed was primarily used for storage of tin sheet metal sections used to wrap boilers and for storage of different sized steel sheets of varying thickness.

The sheet metal house is the only large wood building on site. Its concrete-paved eastern bay is open at the east, north, and south sides, serving as a runway for the building's overhead monorail and shop "mules" (motorized delivery vehicles). A second north-side opening gives access to a narrower runway through the building.

Structurally, this is a 13,950 square foot timber frame building with lumber roof trusses. Board-and-batten siding covers the north, west, and south sides. It has an asymmetrical gabled roof with little remaining roofing and severe damage to the lumber decking and roof framing. This building consists of thirteen north/south bays by four east/west bays of wood posts on concrete footings, with a series of three smaller posts running on the east/west column line. A system of girders and hanger beams supports a manually operated monorail system used to move sheet iron in and out of storage bays. Inside the southwest corner is a two-story block of two rooms joined by a stair, all built of wood. This building's working drawings are dated 1917, and it appears in a published site plan of 1922. There have been no major alterations to this building except the removal of overhead framing that first carried the monorail to the original machine

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shop and after the boiler shop's completion in 1923, to that building. Its' historic integrity is high but the condition is poor due to failed roofing and decking.

Tender repair shop (tank shop), built 1925, EA Harrison AT & SF architect. AF Robinson, chief AT & SF bridge engineer, photos 22-23:

The tender repair shop, attached to the boiler shop on the north, opens into that building with a through track that curves. Complete disassembly and repair of tenders took place here. This could include partial or complete replacement of side sheets, interior baffles, frame repair or replacement, pump, piping, plumbing repairs and the like.

It is the smallest of the three monumental-scale concrete buildings in the complex. Its siblings, the machine shop and boiler shop, aim their abstracted Neo-classical facades toward the rail line and adjacent neighborhoods. The tender repair shop's similarly detailed concrete façade aims at downtown Albuquerque, several blocks northward.

Below the frieze are one door opening (no door) and two other original openings now filled with concrete block masonry. Even before the block fills, the asymmetrically composed story featured two equal size openings flanking a larger one, the three separated by two piers, one narrow and one wide. Together the three openings once accommodated four tracks into the building. The AT & SF working drawings note "Future Door" in each of the openings, and it is not clear whether any doors were installed during the period of significance. One non-historic, coiling overhead door remains in an opening partially filled with concrete block.

The construction is similar to the boiler shop except for the central roof monitor on the tender repair shop and a single personnel door, rather than an array of equipment doors, in each of the curtain walls at the east and west sides. The latter is partly covered by the abutting cab paint shop; the former largely hidden by the nearby sheet metal house. The curtain walls are eight bays long and have a low concrete base. The interior is open in plan except for a small office space on the east wall.

Despite filled openings and the cab paint shop's obscuring part of its west side, the tender repair shop has substantial historic integrity. Its condition is fair, owing mainly to vandalism.

Waste & paint rooms, built 1920, photo 24:

The waste and paint rooms stand near the boundary of the district north of the tender repair shop on 1st St. It is a low, one-story building of poured concrete throughout with 3 by 6 pane fixed steel windows. The slightly gabled roof has brief eaves. The east elevation is the front and its pair of doors leads into the paint room. The doors are steel, partially glazed, and topped by a fixed-glass transom of 12 lights. The door-transom opening is flanked by 3 by 6 window units. There are five openings on both the north and south elevations. The opening at the west end of the south elevation is wider than the 3 by 6 window units and includes a pair of steel, glazed doors. There have been no exterior alterations; the integrity of this 1,584 square foot building is intact.

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Fire station, built 1920, EA Harrison arch. & CFW Felt eng, photos 25-26:

The fire station housed the AT & SF Fire Department. It is located near the western boundary of the district on 2nd Street, northwest of the tender repair shop. The rough, random ashlar, reddish sandstone used for the walls of this two story building was salvaged from the site's original shops. The building's primary mass has a crenellated parapet hose-drying tower on the south elevation. A one-story stone mass with crenellated parapet surmounted by a wood-frame second story forms the western section. The south elevation includes two 2-story segmental-arch reveals. At the second story, each reveal has three 9/9 double-hung windows with concrete sills.

At the first story, these reveals frame concrete-block-and-steel window fills of original apparatus door openings. The two apparatus doors were removed by the AT & SF after the steam shop operation ceased and the building was used as offices. The original apparatus doors were wood pairs with x-braced panels below 12light, fixed-glass windows in half-arched shapes that formed a discontinuous, segmental arch across the opening when both doors were closed.

The first story east elevation has three flat arch window openings separated by two stone buttresses. The southern opening includes a personnel door into the apparatus room. At the second story are four irregularly spaced 6/6 wood sash windows with concrete sills. Two of these windows are centered above their first-story counterparts at the southern and middle bays. The other two are centered above the northern first-story opening. The north elevation includes one first floor opening the same size and shape as the east elevation fenestration and the second floor includes three smaller and shorter 6/6 wood windows with concrete sills (in restroom and utility room) and a longer 6/6 wood window with concrete sill in the stairwell. The west elevation includes rectangular fenestration with concrete sills on the first floor—these openings have been boarded. The second story is wood construction with 10-pane tall windows (it was used as a sleeping porch).

The hose tower's south elevation includes an entry door with a wood-and-tile gabled hood still marked by an original ceiling lantern with art glass lenses. Above the hood, a vertical rectangular recess is surmounted by the AT & SF cruciform emblem in stone relief. The emblem is surmounted by triple stone corbels and a segmental-arched vent opening with a wood grille and a concrete sill, all of which repeat on the tower's other sides. Early photos show wood balconets on the corbels at each vent opening but no corbels remain. The tower roof is barrel tile with exposed rafter tails and hemispherical concrete caps at the corners, where the masonry corners extend above the roof surface. In total, the building includes 3,936 square feet on two-stories.

Inside, the room configuration and many features remain much as shown on the original working drawings. An original fireplace and related casework have been concealed at the first

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story. The original brass pole (with trap doors) from the second-floor dormitory down to the apparatus room is gone but the hatch opening remains.

This is the oldest remaining fire station in the city and one of the most accomplished picturesque revival buildings constructed in Albuquerque during the 1920s (Wilson 1986). Despite the alterations described above the fire station's historic integrity is substantial. Its condition is deteriorating but it stands plumb and sheds water except at the tile roof areas.

Pattern house (assembly hall), built 1920, photo 26:

The pattern house building was used for storing patterns for the fabrication of machine parts. It is all concrete, 40 feet by 70 feet in plan, one story, and has a slightly gabled roof with brief eaves. The exterior walls and two rows of interior columns support the roof. The pattern house's lack of large windows sets it apart from all other concrete buildings in the district. The north and south elevations include central pairs of paneled metal doors flanked by two windows set toward the outside corners. The windows have been covered with corrugated metal. The east and west elevations include four windows evenly spaced and the same size as the other units. These are also covered with corrugated metal. This building appears to have no exterior alterations; the historic integrity is high.

North washroom (locker and wash room/lavatory), built 1915, photos 27-28:

This is a one-story, rectangular building built of American bond brick. Its gabled roof has tri-level, stepped parapets with concrete coping at the ends, and its eaves extend beyond the parapet at the long sides. The windows have segmental-arch heads and brick sills. Remaining original windows and doors are wood in varying states of deterioration. The 1,964 square foot building is severely undermined at the south end with associated masonry cracking. The roofing is failing, making it more unstable. Its condition is poor, historic integrity high.

Storehouse, built 1915, photos 29-31:

The storehouse was used not only for storage of supplies used in the shops, but also was the primary storage facility supporting railroad operations on the AT & SF's New Mexico Division.

The storehouse is a one-story, poured concrete building on a raised concrete platform standing near and parallel to 2nd Street south of the machine shop. Its long facades, which are oriented north-south, have sixteen bays. Its short facades have two bays, all marked by pilasters. A nearly full length monitor tops the slightly gabled roof; both have brief eaves. It has a poured concrete roof and exterior walls with a double row of interior columns below the monitor. The columns support concrete beams running crosswise; these carry longitudinal beams, purlins, and the roof deck

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In the northernmost bay are six pairs and one triple grouping of wood, double-hung windows. All serve offices inside. Each window has a 4 light transom, some of them boarded. One pair of transom windows was removed at the west façade and mechanical equipment mounted on brackets. A personnel door in the north façade leads from a wood porch to offices inside. Four cruciform “Santa Fe” railway emblems appear in black-and-white paint just below the eaves at the corners of this bay, two per corner.

The storehouse’s standard windows are steel, 32-light units with 12-light horizontally pivoted operable sash. These are grouped three per bay, high in the wall. The monitor has similar windows with operable sash. All the steel windows have been covered externally with translucent polycarbonate sheets since 2008.

The storehouse has two overhead doors onto the platform on both east and west elevations. It has three personnel doors with transoms on the east and one on the west. The lone personnel door on the north-side faces one of the main entries to the complex from 2nd Street. Now reached by a stoop with stairs at both ends, the north-side door originally opened onto a small dock that connected to the west-side platform.



Figure 9. Storehouse interior with materials in stock, part of the store department, which carried over 35,000 different items.

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The oil cellar has concrete walls and roof and is built into the platform. Half-exposed above the platform surface, it has an enclosed stair and a set of hinged iron hatches on top. Two ramps lead from north-end grade onto east- and west-side segments of the platform along the respective elevations. The platform segments are 10 feet wide on the east, 8 feet on the west, and about 3 feet high. The segments extend into a 68 foot wide platform segment south of the storehouse. This wide segment extends southward about 340 feet to the district boundary and continues well beyond the boundary. It has facing twin ramps to grade at the east side and remnants of a storage shed on top.

Inside, the storehouse is divided into three unequal parts. The northern part is a suite of offices and restrooms. The central, far larger part, is open storage (See Figure 9). The southern part is a room abutting the attached oil cellar and accessible only via two exterior doors, an overhead door next to the oil cellar and a personnel door on the east. The storehouse's historic integrity is substantial and its condition is good.

Babbitt shop, built 1921, photos 32-33:

The babbitt shop is located south of the south washroom and adjacent to the welding shop. The name is derived from its specialized function of making and applying babbitt metal alloys as surface layers on complex metal surfaces such as bearing surfaces.

This is a one-story building of poured concrete from top to bottom, its long axis runs north-south. It has a slightly gabled, clear-span roof with brief eaves and six cylindrical metal ventilators on top. Window and door bays number three per side with a pair of out-swinging doors in the center bays of the north and south sides. Each door leaf has 12 lights above steel panels.

All windows and doors are steel and glass. The windows are typical of the complex, horizontally pivoted sash set in a surrounding group of fixed lights, all obscured glass. The west side has three window groups of 48 lights each, and the two north side windows are 18 lights each. The south side's two windows are like their north-side counterparts except that sheet iron covers over the lower two-thirds of each.

The north door connects to the machine shop via a track now obstructed by a loading dock on the machine shop's exterior crane runway. The babbitt shop was originally part of the cross-axial plan for moving equipment among work sites in the complex.

The building is 36 feet by 50 feet in plan. Inside, the babbitt shop has pilasters, beams, and paired purlins integral with its walls and roof deck. A shop-built system of steam radiators for space heating remains along both east and west walls below window height. Its east side is similar to the west except where a wood frame shed abuts and connects it to the welding shop. A window opening was enlarged for access to the shed, and babbitt shop windows and a door were salvaged in the shed's construction. This building's historic integrity is substantial, its condition fair.

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Welding shop, built 1922, photos 34-36:

The welding shop is located to the south of the south washroom adjacent to the babbitt shop. Most buildup of superheater units during which welding is necessary took place here. The building is a one-story, rectangular building on an east-west long axis. Poured concrete throughout, it has a slightly gabled, clear-span roof with seven cylindrical metal ventilators spaced regularly along its length and a large-diameter, metal flue near the west end.

Like the flue shop but smaller and lacking a roof monitor, the welding shop is well fenestrated. It has seven bays on the subtly proportioned south side, each with a compound window, one divided horizontally by a concrete header. The central three windows are 8 lights wide, and two of them include recessed bypass doors. The windows next nearest the building ends are 6 lights wide, and the ones nearest the ends are 5 lights wide. The eastern bay has two windows, one above the other, separated by a concrete header. The north side has two sets of tall bi-fold doors flanking a compound window opposite the three central windows on the south side. Five compound windows similar to those in the opposite wall complete the north-side fenestration. All have horizontal-pivot, operable sash among the fixed glazing.

The east end has two tiers of fenestration. Above a central personnel door sits a 15 light window that had 20 lights before an alteration. Flanking windows at upper and lower tiers have 12 lights each. The door, a hinged steel type surrounded by infill panels, is a replacement.

The welding shop's west end completely abuts a wooden shed. The shop's tall compound windows remain except one partly removed to make an opening to the shed. The central west-end door is a steel replacement with wood infill above, all unglazed. Clad with horizontal wood siding, the shed has a north-side compound window and a south-side window-over door combination salvaged from the abutting babbitt shop.

27 feet by 90 feet in plan inside, the building's long-side bays are delineated by pilasters and integral roof beams with haunches. One jib crane remains, as do enamel lighting reflectors and machine platforms integral with the floor slab. Stubs of gas and steam lines enter the building at the east end, through the window fills, and end above the machine pads. The welding shop has high historic integrity and is in fair condition

South washroom (wash room/lavatory), built 1917, photos 37-39:

The south washroom is located adjacent to the crane runway on the south side of the machine shop. Similar to, but larger than the north washroom, this building is a one story, rectangular, American-bond brick building with gabled roof and tri-level stepped parapets with concrete coping at the gable ends. Some doors have steel replacements. The west-end door opening is flat-topped, off-center, and filled with two steel doors. This is a change; an early photo shows a centered single wood door with a segmental arch brick lintel. This building's board and batten ceilings are falling due to failed roofing. Even so, the historic integrity of this building is substantial. Its condition is fair. The washroom is 3,640 square feet in plan.

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This building retains several examples of the handmade signs once employed throughout the complex. Outside, "NO PARKING," "NATURAL GAS," and "CARPENTER SHOP" remain in paint, some of it applied with stencils. Inside the western room, on the east wall remains a stencil-painted cartoon of an AT & SF shopman walking in profile. This is the best remaining example of three such stencils on the site.

Motor car garage (battery shop), built c. 1924-1931, photo 40:

The motor car garage is the southernmost building in the district. It and the pattern house are the only remaining buildings oriented obliquely to the predominant, crossing axes of the complex. Its roof is slightly gabled with stepped parapets capped by glazed terra cotta tiles. Built of red brick in American bond, it has soldier-course lintels and a concrete base from grade to window sill level.

The north and south elevations include large banks of steel windows with fixed glass and horizontally pivoted, operable sash of 6 lights each. On the south, a brick pilaster separates a 2-part and a 3-part group of windows, 18 lights per part. On the north is a group of three 30 light windows into the service bays inside. The west elevation includes two 3 window groups at the service bays, both with 30 light central units and 24 light flankers. At its south end the west elevation has paired 18 light windows. Two brick wall segments separate the window groups.

Of three overhead doors on the east elevation, the smallest is a segmented metal unit unlike the two larger doors which open and close as coils. The small door is flanked on the left by a steel personnel door with 9 lights. Altered since 1985, the small overhead door is larger than that shown in the same opening in earlier photographs. Prior to this the door unit was a metal coil similar to the taller, remaining overhead doors. Before this alteration of door type and size, the smaller overhead door had a nine-pane sidelight on the right above the concrete base. The sidelight has been replaced with a steel panel and the base removed. An original group of three 8 light windows runs above the lintel that spans this grouping.

The motor car garage is 1,514 square feet in plan. Inside are four rooms—two large and two small, with concrete floors, plastered partitions, and steel-channel roof joists with steel decking, all painted silver. Interior doors are steel with a group of 4 lights in the upper half. A black-painted dado lines the partitions, which are painted white above.

In a typical alteration of buildings in this complex, the AT & SF replaced broken glass panes with translucent synthetic panes of plastic or fiberglass. Although altered the building retains substantial historic integrity. Its condition is fair, owing to structural cracks in the concrete base.

Transfer table, built 1922, photos 41-42:

The transfer table is a depressed concrete structure about 60 feet by 604 feet in plan. Located just north of the machine shop and south of the boiler and blacksmith shops, it served as

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the main mover of equipment on the east-west axis at the heart of the complex. Its 3-foot deep concrete pit has a floor slab and four tracks running lengthwise on 6-inch concrete footings and two steel transfer decks running crosswise. The larger of the two decks has an enclosed cab, electric motor and drive gears, and a mast that held power wires connected to a fixed mast that stands at the west end of the table. The cab has a steel body and wood, multi-light windows on all sides. Its door faces east from the cab's south end, next to the motor housing and the drive gears. The powered deck can push or pull the other, and its wheels extend above the checker-plate steel surface. The transfer table's historic integrity is high; its condition fair.

Turntable, built 1915, photos 43-44:

The turntable is a remnant of the 1924 roundhouse (See Figure 10) located at the center of the southern portion of the district south of the machine shop. The plate girder steel turntable with head frame is set in a 120 foot – diameter, 4 foot deep cylindrical pit with poured concrete walls. Motorized by an internal combustion engine, the turntable is still operable and used occasionally by the BN & SF Railroad who currently owns an access easement from its adjacent property.



Figure 10. Turntable with roundhouse in background. Roundhouse was demolished in 1986.

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Fire runway, built c. 1920, photo 45:

The fire runway was constructed between 1920, when the fire station was constructed, and 1922 when it shows on a published map. Its poured concrete surface ensured that fire-fighting apparatus could reach all major buildings even when the ground was muddy. The runway extended from the fire station to most buildings north of the boiler shop and south of the machine shop, including the roundhouse. It also ran between the flue shop and blacksmith shop, extending south to the boiler shop and transfer table.

Water reservoir, built c. 1919, photo 46:

The water reservoir runs parallel to the through rail line near the southeast corner of the district. Depressed partly below grade, the reservoir is 32 feet wide by 182 feet long. It has a low-pitch gabled concrete roof with slight eaves. On top near the southwest corner stands a small shed with clapboard siding, corner boards, and a gabled roof with exposed rafter tails. A door opening on the east elevation has been boarded. A second shed, sided with hardboard, stands on top near the north end. No other alterations of this structure are evident; its historic integrity is substantial. Sanborn maps note that it was 6 feet deep and an AT & SF map shows three above-grade tanks, a well, and a small treatment plant north of the reservoir. The tanks were removed post-1957 and the reservoir has been filled with sand.

Tracks, photo 47:

Tracks are present throughout the district, entering the site at the north and south ends through spurs off of the main railroad tracks to the east of the district. The tracks were used to move locomotives north and south through the site while the transfer table moved the locomotives east and west. The tracks enter buildings such as the blacksmith shop, tender repair shop, boiler shop and machine shop. Other tracks run between shops such as between the babbitt shop and the machine shop or between buildings and structures, for example, between the machine shop and the turntable and between the transfer table and the boiler shop.

At present, some tracks remain above grade, while other section have had fill added so that they remain visible but are at grade. Some sections have been removed. Most of these changes occurred in order to allow for easier movement around the site when the site transferred in use from the work on the steam engines to the Centralized Work Equipment facility which focused on maintenance, storage and other related railway work.

Roundhouse foundation, built 1915, photo 48:

The roundhouse was razed in 1986 but its massive footprint is still apparent from remaining at-grade features including foundation stems, brick paving, and track lines. Located at the center of the southern portion of the district south of the machine shop, the turntable remains

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at the center of the site and is described above (See Figure 12). The roundhouse foundation is a contributing site due to its physical remains and integrity of location.

The roundhouse roof covered about 100,000 square feet and it had thirty five stalls. It followed a standardized stall plan of 1914 designed by the AT & SF engineering department in Chicago, and is likely the first roundhouse built according to that plan (Wilson 1986). The Chicago plan is dated May 1914 and the Albuquerque roundhouse plan is dated May 22, 1914.

Entry Station (Centralized Work Equipment Shops), photo 49:

The date of construction of this small one-story, square building located at the southwest corner of the machine shop's canopy adjacent to 2nd Street is unknown. It does not appear in site plans or aerial photographs from the period of significance and is not shown on the 1957 Sanborn Map of Albuquerque. It has a flat roof that extends to the west to provide an overhang, where the entrance door is located. The siding is vertical pressed board and there are boarded windows. This building was constructed after the period of significance.

Cab paint shop (Centralized Work Equipment shops office), 1921, photo 50:

The cab paint shop (its original name and function) contains a suite of offices that served as the CWE shops headquarters for a time following the period of significance. It abuts the boiler shop and tender repair shops at the west wall of the latter building. It opens into the boiler shop near the west end of that building. Its stucco finish covers the original reinforced concrete wall, the concrete masonry unit addition (north end), and window in-fills. Between its construction and the closing of AT & SF operations on site, this building was altered more than any other in the complex. That may be due to the demolition in 1961 of the AT & SF's general office building, which was a two-story adobe building built by the Atlantic and Pacific Railway in 1881 that stood nearby and provided office space otherwise in short supply at the shops complex.

The cab paint shop was built free-standing and covered 3,660 square feet. The boiler shop was built and connected to the cab paint shop in 1923. A concrete masonry unit addition was built before 1957 on the north end of the cab paint shop, which was labeled on the Sanborn Map of that year as the "Asbestos House". The tender repair shop, built in 1925, was connected to the cab paint shop later by filling a gap between the buildings.

The west wall retains original steel windows near the top of the wall, below which the original window openings have been filled and partly fenestrated with double-hung windows in sets of three. There are five such filled original openings. In the addition at the north end, three door openings remain, two partly filled and the third, taller one still open. Atop the building's northwest corner is a sign identifying the Centralized Work Equipment shops. None of the cab paint shop's alterations have acquired significance, leaving little historic integrity. Its condition is poor.

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Power house, built post-1957, photo 51:

The power house is located east of the south washroom and just south of the machine shop. The original, coal-fired power house was razed in 1984. The original power house created steam power to pump water from on-site wells, generate electricity and compress air. It provided heat to both the shops and the Alvarado Hotel located several blocks to the north. After the shops purchased electricity, the power house continued to produce steam to clean parts and tanks. The existing power plant was constructed west of the original at an undetermined date. This all-metal building has a slightly gabled roof with twelve skylights and a monitor. It has vertical wall siding, two overhead metal doors and a personnel door at the west end of the south elevation and three metal vents on the east and west elevations. The west elevation also includes a tall, narrow overhead door. Inside are several large machines including two gas-fired electrical generators and a boiler. The Power Plant is in good condition but has no bearing on the significance of the historic district due to its construction after 1957.

Gas welding lines, built c. 1922, photo 52:

This structure consists of pipes running on uprights of light railway track along the 2nd Street frontage and branching into buildings such as the machine and boiler shops. Although there were originally a number of steam lines running throughout the property to provide power (eventually replaced entirely by electricity—this change began during the 1920s), these gas lines appear to be primarily for welding. Their origin, the gas plant (“Acetylene Generator Plant” on 1957 Sanborn Map), stood just northeast of the pattern house and was demolished post-1957. While these lines were essential to operations during the period of significance, they lack a beginning, an end, and thus historic integrity.

Albuquerque Locomotive Shops Historic District Buildings, Structures, Sites

See accompanying aerial photo-map for resource locations and district boundary.

	<u>Name</u>	<u>Built</u>	<u>Classification</u>
1	Machine shop w/Crane Runway, Canopy & Lye Vat Shed	1921	Contributing Bldg.
2	Boiler shop	1923	Contributing Bldg.
3	Blacksmith shop	1917	Contributing Bldg.
4	Flue shop	1920	Contributing Bldg.
5	Sheet metal house	pre-1919	Contributing Bldg.
6	Tender repair shop	1925	Contributing Bldg.
7	Waste & paint rooms	1920	Contributing Bldg.
8	Fire station	1920	Contributing Bldg.
9	Pattern house	1922	Contributing Bldg.

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10	North washroom	1915	Contributing Bldg.
11	Storehouse w/Platform	1915	Contributing Bldg.
12	Babbitt shop	1921	Contributing Bldg.
13	Welding shop	1922	Contributing Bldg.
14	South washroom	1917	Contributing Bldg.
15	Motor car garage	pre 1931	Contributing Bldg.
16	Transfer table	1922	Contributing Structure
17	Turntable (roundhouse remnant)	1915	Contributing Structure
18	Fire runway	pre-1922	Contributing Structure
19	Water Reservoir	pre- 1922	Contributing Structure
20	Trackage		Contributing Structure
21	Roundhouse foundation	1915	Contributing Site
22	Entry Station	post-1957	Non-Cont. Bldg.
23	Cab paint shop	1921	Non-Cont. Bldg.
24	Power House	post-1957	Non-Cont. Bldg.
25	Gas Welding Lines	pre-1922	Non-Cont. Structure

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Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- ☒ A. Property is associated with events that have made a significant contribution to the broad patterns of our history.
- ☐ B. Property is associated with the lives of persons significant in our past.
- ☒ C. Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- ☐ D. Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations

(Mark "x" in all the boxes that apply.)

- ☐ A. Owned by a religious institution or used for religious purposes
- ☐ B. Removed from its original location
- ☐ C. A birthplace or grave
- ☐ D. A cemetery
- ☐ E. A reconstructed building, object, or structure
- ☐ F. A commemorative property
- ☐ G. Less than 50 years old or achieving significance within the past 50 years

Areas of Significance

(Enter categories from instructions.)

Transportation

Architecture

Industry

Engineering

Social History

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Period of Significance

1914 - 1956

Significant Dates

1914 - 1925

Significant Person

(Complete only if Criterion B is marked above.)

n/a

Cultural Affiliation

n/a

Architect/Builder

E. A. Harrison, AT & SF architect

C. F. W. Felt and G. W. Harris, AT & SF engineers

A. F. Robinson, bridge engineer

Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance, applicable criteria, justification for the period of significance, and any applicable criteria considerations.)

The buildings and structures that comprise the Atchison, Topeka & Santa Fe Railway (AT & SF) Locomotive Shops Historic District are considered eligible under Criterion A at the state and local levels. The district is the largest and best surviving railroad shops complex in the state of New Mexico. They were constructed by the railway company as a maintenance, repair, and overhaul facility for steam locomotives. One of only four such facilities built by the AT & SF for that purpose, the complex was outfitted with the latest engineering technology for locomotive repair and industrial efficiency. As such, the shops were an integral part of the AT & SF's and nation's rail transportation system, providing freight and passenger service for more than six decades. The locomotive shops were also crucial in the economic history of the city of Albuquerque as its largest employer and second largest industrial complex in the state. The

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district is also considered eligible under Criterion C for its contribution to our understanding of early twentieth century industrial architecture. The variety of buildings and structures that make up the shops complex demonstrate a range of industrial materials and building techniques used during the first half of the twentieth century, such as: steel framing, glass curtain walls, reinforced concrete, brick, and wood-timber framing. The construction period, 1914 to 1925, was a time of sweeping innovation in industrial design and building technology. The long-span, steel-frame major buildings represent the significant changes in industrial building design and construction occurring throughout the United States at this time. The period of significance is from 1914 to 1956. The beginning date represents the year that the original shop complex was expanded and rebuilt using modern methods and materials, while the end date is the year that the last steam locomotive was officially “retired” by the AT & SF in favor of diesel locomotives, which resulted in a major change in the company’s use of the property. The contributing properties that make up the Atchison, Topeka & Santa Fe Locomotive Shops Historic District follow the historical themes and associated property types developed in the National Register of Historic Places Multiple Property Documentation Form entitled, “Historic and Architectural Resources of Central Albuquerque, 1880-1970” (Dodge 2012). The shops are particularly germane to the Industrial theme identified in the City of Albuquerque’s “Growth” period (1917-1945), and its associated property type, “Industrial Buildings,” subtype (B) “Manufacturing or repair shop.”

Narrative Statement of Significance (Provide at least **one** paragraph for each area of significance.)

The AT & SF Steam Locomotive Railway Shops Historic District holds significance in several categories. Based on the historic context presented above, the following summarizes the district’s contributions to the associated areas of significance.

Transportation

The Historic District played an important role in the history of nation’s rail transportation system during the first half of the twentieth century. As one of only four AT & SF division points west of the Mississippi River, the railway shops in Albuquerque were an integral part of the national railway system during the age of steam locomotives. The decision to place the facility in Albuquerque was deliberately made by the AT & SF to accommodate the frequent maintenance required by the large locomotives used during this era. This decision not only played a major role in the AT & SF becoming a giant in the transcontinental railroad industry, but resulted in the rapid growth of Albuquerque as a “railroad town” (Alexandersson 1956: 92). As a major western division point for the AT & SF, and thus keeping AT & SF locomotives and rolling stock running efficiently along its southwestern routes, the Albuquerque shops played a

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significant role in not only developing the company's goals, but also participated in a number of historical events relating to industrial architecture and engineering, labor relations, and America's success in two world wars.

Architecture

The Historic District is representative of the glory years in early twentieth century industrial architecture. The machine shop in particular has been compared to the Ford Motor Company's Glass Plant at the Rouge River complex, a building that the architectural historian Grant Hildebrand has called "the single factory which carried industrial architecture forward more than any other" (Hildebrand 1974: 111). The use of cross-axial building plans produced a highly efficient method of moving the various parts of the steam locomotive in and out of the various repair shops, while the innovative use of reinforced concrete and steel frame construction permitted the extensive use of glass curtain walls and skylights that greatly increased the ability of natural light and ventilation to reach the shop floors. These construction methods also allowed for the installation of equipment, especially the large overhead cranes so important to the efficiency of the repair work. These new methods of industrial planning and construction allowed for larger buildings with a greater flexibility in designing interior spaces to meet the specific needs of locomotive repair.

Although most of the Historic District's buildings and structures were designed and laid out to achieve high functionality, several of the district's key buildings – machine shop, boiler shop, and blacksmith's shop – also incorporated Neo-classical styling with AT & SF emblems that cultural historian Chris Wilson has identified as "industrial monuments to the Santa Fe Railway" (Wilson 1986: 9).

Engineering

The construction period, 1914 to 1925, was a time of sweeping innovation in industrial design and building technology (Wilson 1986: 5-6). The earlier, nineteenth century locomotive shops had been constructed of stone and heavy timber; however, by the early twentieth century new industrial designs promoted buildings constructed of concrete reinforced with steel. The advantages of reinforced concrete construction for industrial buildings were numerous: fireproofing, lower maintenance costs, and better dampening of machine noise and vibration. Some of the buildings constructed before 1920, such as the brick washrooms and timber-and-lumber sheet metal house harkened back to 19th-century norms. Fire-prone and heavy-use buildings, however, such as the storehouse and roundhouse (both built 1915), used the "modern" method of steel-reinforced concrete, as did the flue shop (1920).

The second building innovation used at the AT & SF's Albuquerque shops was steel frame construction. This construction technique was more vulnerable to failure if exposed to fire and was not as conducive to noise dampening; however, steel frames were less expensive to

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build and construction time was far shorter than cast-in-place concrete. Steel's other favorable attribute was its ability to span greater distances and allow installation of large windows for light and ventilation (Hildebrand 1974: 53-54). Long-span, steel-frame buildings represent the significant changes in industrial building design and construction occurring throughout the United States at this time. A prime example was the Ford Motor Company's River Rouge complex and the industrial architecture of Albert Kahn, although the design for the Albuquerque shops' steel buildings was done by an in-house AT & SF design team led by C. F. W. Felt, Chief Engineer; E. A. Harrison, Chief Architect; and A. F. Robinson, the company's Bridge Engineer (Hildebrand 1974; Wilson n.d.: 5). The increased light and ventilation afforded by both reinforced concrete and steel frame construction was used to great advantage in two of the Albuquerque shops' most important buildings – the machine shop and boiler shop (1921 and 1923 respectively) (Railway Age 1922: 238-39; Wilson 1986: 8).

Industry

Going hand-in-hand with the architectural designs, was the effect that these designs had on industrial efficiency exemplified by the operations taking place inside the Historic District's buildings and structures. As already noted, the use of reinforced concrete and steel frame construction was a faster and less expensive method of construction that provided greater flexibility in design and ultimately more comfortable working conditions (vis-à-vis light and ventilation). These industrial design improvements reflected an effort on the part of the AT & SF to improve manufacturing capacity (as represented in the number of locomotives overhauled per month) and labor relations. As a result, the AT & SF implemented a state-of-the-art recording-keeping system to insure that production was operating as efficiently as possible. This system also had an effect on employee organization for carrying out the shop's workload, such as developing work gangs with specific tasks and expediting the movement of parts and supplies throughout the shops complex. This organization was informed by regular meetings between labor and management to avoid labor problems that had plagued the railway industry early in the twentieth century. All these industry innovations took place in the Historic District.

Social History

The industrial innovations and critical railroad operations taking place within the Historic District also had a significant effect upon the multi-faceted social history of the city of Albuquerque. AT & SF operations provided jobs for upwards of a quarter of the city's workforce at any given time. These jobs supported commercial establishments as well as the housing market. In addition, the shops supported the development of other large businesses, such as the Albuquerque Foundry (located just east of the shops) and wholesale warehouses. Such development resulted in Albuquerque becoming the state's economic center. This economic impact lasted until the end of World War II, when AT & SF's decision to close the

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locomotive shops dramatically altered the railroad's presence in the city. By this time, however, Albuquerque had become the home for other economic engines such as the Sandia National Laboratories, Kirtland Air Force Base, and other small manufacturing businesses to pick up where the railroad had left off as major employers.

While economic development was arguably the most important outcome of the AT & SF's presence in the city, the arrival of the railroad also affected immigration and settlement patterns. Numerous Mexican immigrants and Native American workers from nearby Indian Pueblos and other reservations came to the city for employment and thus changed the local demographics. The South Broadway area of the city became a neighborhood of predominately rail workers, who in turn supported the development of neighborhood housing and commercial enterprises.

The Railroad Shopmen's Strike of 1922 had a lasting effect on families in the community either by workers who did not support the strike and thus kept their relatively well-paying jobs or by those who did strike and forever lost their chance of continuing employment with the AT & SF. Despite the limited benefits won in that strike, unionism among Barelás workers remained strong into the 1950s and 60s as related in several oral histories (Ghattas n.d.). In stories related by retired railroad workers there is a consistent theme about how unions helped make the locomotive shops safer work places by demanding safety reforms (see Bonifacio Anaya interview June 1999; Henry Takahachi interview August 2001).

Work at the locomotive shops could be very dangerous and fatal accidents were not uncommon. Based on oral histories, the large, sophisticated mechanical equipment was often perilous to work with and even relatively mundane tasks such as car painting could put men in unsafe surroundings as locomotives and rolling stock moved through the yards between the various shops (Ghattas n.d.). Workers were exposed daily to toxic chemicals and asbestos as they cleaned boilers and other locomotive parts. In addition, boiler work was prone to explosions. Aware of these dangerous conditions, the AT & SF built a company hospital (the city's first) in the 300 block of South Broadway in 1881. This early structure was replaced in 1926 by a larger, more modern facility (Memorial Hospital) on Central Ave at Elm St.²

Barelás, situated adjacent to the Historic District, was undoubtedly the community most directly impacted by employment opportunities and economic development along 2nd and 4th Streets. This development accelerated with the designation of 4th Street as a segment of New Mexico Route 1 and U.S. Highway (Route) 66 through the city, which brought in even more commercial businesses. Although oriented to the increasing automobile traffic and newly developing tourist trade, the railroad's presence in the community was evoked by the iconic 4th Street/Route 66 restaurant named the Red Ball Café (converted from a residence to a commercial

² Both buildings are still standing. Remnants of the 1881 hospital are incorporated into the St. Frances Xavier Church and School at 316 Broadway SE, while the hospital building on Central is now the Hotel Parq Central.

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establishment in the early 1930s), which alluded to the area's railroad history – the term “red ball” meaning “express service” in railroad slang. Housing reflected the cultural changes brought to the community with traditional adobe construction often replaced by wood-frame Victorian cottages or bungalow styles. Steam heat, generated by the shop's power house, was piped into some of the nearby houses.

While employment and economic development were certainly the primary benefits of having the locomotive shops in the community, there was a much deeper connection between Bernalillo and its industrial neighbor. The AT & SF sponsored company picnics in the mountains, shop workers and their wives or girlfriends socialized on Saturday nights at local dances, and railway employees enjoyed free travel on the line. Again, oral histories provide insights into the depth of that relationship. As a child, Bonifacio Anaya remembered watching the line of workers (“lots of different people”) marching in and out of the shops during lunch breaks or at the end of the day. The company's steam whistle, blowing four times a day, was not only used by the city's residents to set their watches (“railroad time” was the most accurate measurement of the day), but also became a sound of prosperity, and a sound that regulated the rhythms of daily life.

Historical Overview

The Railroad Arrives in New Mexico

The impact of a transcontinental railroad on the economic development of the Territory of New Mexico, and the subsequent growth of the city of Albuquerque, cannot be understated. As was the case with other previous economic lifelines in the region, such as *El Camino Real de Tierra Adentro* in the sixteenth through early nineteenth centuries and the Santa Fe Trail in the early to mid-nineteenth century, the arrival of the AT & SF Railway into northeast New Mexico in the winter of 1879 was a significant historical event for not only New Mexico and Albuquerque but the entire region as well.³

The laying of a north-south rail line through the heart of the territory progressed quickly and on the tenth of April, 1880, the work train pulled into the temporary depot at “New Town” Albuquerque (Myrick 1990: 7). The depot and the hastily assembled wooden shanties and structures that formed the “town” stood two miles east of the *Villa de Alburquerque* – the site of

³ For the sake of simplicity, we have used the catchall term “AT&SF” to include its various corporate names, subsidiaries, and railroad partners (e.g., the Atlantic & Pacific Railroad and the Southern Pacific) which formed a part of the network of railway lines in New Mexico. Although the Atchison, Topeka and Santa Fe Railway, formed in Topeka, Kansas in 1859, was the railway company that entered northeast New Mexico through Raton Pass in 1879, it was a partnership (and joint ownership) with the Western Division of the Atlantic & Pacific Railroad that was critical to making a connection with southern California through central New Mexico. The Atlantic & Pacific was absorbed by the AT&SF in 1902 (Marshall 1945; Myrick 1990:1-20; Wilson 1986:2; Kaufman 2005: 30-42).

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the Spanish colonial settlement founded in 1706.⁴ Seasonal flooding by the Rio Grande was a well-documented concern for AT & SF engineers who decided to align the railway along the east side of the Rio Grande Valley floor in hopes of minimizing or avoiding flood damage. This decision set the stage for the founding of the Town, later City, of Albuquerque as local entrepreneurs and land speculators soon began building the town's commercial center and adjacent residential neighborhoods along Railroad Ave. (later renamed Central Ave.) (Simmons 1982: 224; Wilson 1986).

Even more important for the history of Albuquerque was the decision by AT & SF executives in January of 1880, three months prior to the railroad's arrival, to locate not only one of its main depots in Albuquerque, but to also make the town a "division point" between the Santa Fe Railway and the Atlantic & Pacific (A&P) Railway companies. This meant setting up executive offices and constructing maintenance and repair shops for steam locomotives and other rolling stock. The decision to build a large shops complex (one of only four built by the AT & SF) was to have a significant effect on Albuquerque's economic and social history, as well as play an important role in national and state railroad history.⁵ By 1885, the first complex of buildings, including a stone and timber roundhouse and a machine shop had been completed on land located just east of 2nd Street, a half -mile south of New Town's commercial center.

By the turn of the twentieth century, the AT & SF was a major player in the nation's passenger and freight rail system with more than 52,000 freight cars rumbling through the city annually, carrying more than 6.3 million ton-miles of goods and resources (Best 1959: Table 1). Financially, the AT & SF had invested more than \$3.5 million into the maintenance shops and passenger facilities located in Albuquerque (Simmons 1982: 329). The economic impact of the railroad depot and the shops soon directly or indirectly affected virtually every person and business in the city. Industrial and commercial development quickly appeared along both sides of the tracks, including foundries, lumber yards, wool-scouring mills, hardware and grocery warehouses (Wilson n.d.; Dodge 2012: E-1:4). However, as described by the historian Marc Simmons (1982: 275), "New Albuquerque remained above all else a railroad town, with all that the phrase implied. The coming and going of the trains, their management and repair, formed an industry unto itself."

In the early 1900s, the nation's railroad industry was growing steadily; however, it was still experiencing growing pains and struggling with costs. In 1887, the Federal government had recognized the importance of developing a national rail system and the effects it had on the national economy, but it also recognized the potential for monopolies to be created and the subsequent problems associated with such ventures. Congress created the Interstate Commerce

⁴ See Simmons (1982) for a complete account of the history of Albuquerque.

⁵ The other three being located in Topeka, Kansas, Cleburne, Texas, and San Bernardino, California (Wilson 1986: 5).

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Commission (ICC) whose goal was to protect shippers and consumers from railroad price-gouging and other unfair business practices. This action was followed in 1906 by the Hepburn Act that gave the government authority to control shipping rates. In subsequent years, these rates were kept artificially low to protect shippers, but also resulted in financial stress for many of the nation's large railway companies. So, while the railroad freight industry was increasing, profits for the railroads shrank and complaints arose about low wages and deteriorating equipment and track. These issues would soon have a major impact on railroad management (Kaufman 2005: 57).

Despite these industry-wide economic problems, in 1909 the AT & SF, under the direction of its president Edward Ripley, began a modernization program, which resulted in the purchase of new, larger, more powerful steam locomotives and new rolling stock, and the company laid heavier tracks to support the increased freight loads (Garratt and Wade-Mathews 1999; Waters 1950; Kaufman 2005). The company resurveyed much of their western route to reduce grades, straightened track sections, and add stretches of double-track. More importantly to Albuquerque, Ripley also called for major improvements to all four railway shop complexes. The objective was to provide modern industrial facilities that could improve efficiency in locomotive maintenance and cut operating costs.

Modernizing the Locomotive shops: 1914 – 1925

AT & SF plans called for significantly enlarging the Albuquerque maintenance facilities, in reality rebuilding them. To do this they needed more land. In 1912, the railway company received a \$65,000 grant from the City of Albuquerque to purchase this additional land south of the original shops, adjacent to the old farming community of Barelás. Beginning in 1914, and continuing intermittently for the next ten years, the expansion program completed more than twenty-five buildings, structures, and other improvements spread over twenty-seven acres. The resulting complex represented the latest in industrial construction techniques and equipment that embodied state-of-the-art engineering technology for locomotive repair. The surviving buildings, structures, and sites from this twentieth century modernization effort comprise the AT & SF Railway Locomotive Shops Historic District. The district is the largest and best surviving railroad shops complex in the state of New Mexico.

Construction on the new yards commenced in 1914 and the first group of buildings and structures were completed by mid-1915 (Railway Age 1922: 237-242). These include: the storehouse (with loading platform), the roundhouse (demolished in 1986 but represented in the historic district by its foundation), the turntable at the roundhouse center point, and the north washroom (Wilson 1986: 5). A power house (for steam, electricity, and compressed air production) and several buildings dedicated to freight car repair were also constructed at this time. The latter were located at the south end of the historic district near the Bridge Street overpass; however, they have since been demolished. Following this initial eighteen-month

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flurry of construction, the United States' involvement in the First World War slowed the construction but did not totally curtail it. The blacksmith shop and the south washroom were completed in 1917, and sometime prior to 1919 the sheet metal house (sheet iron shed) was built. Immediately following the war, the transfer table structure was completed.

In the early 1920s, construction again picked up with the completion of twelve buildings and structures, including: the flue shop, sheet metal house, waste and paint rooms, machine shop (with an exterior crane runway and lye vat shed), cab paint shop, babbitt shop, welding shop, pattern shop (assembly building), fire runway, water reservoir, boiler shop, and tender repair shop (tank shop). In 1920 the fire station was constructed north of the boiler shop near 2nd Street, adjacent to the AT & SF general office building (demolished sometime after 1957) – a remnant of the 19th-century shops complex. In the late 1920s, a motor car garage (battery shop) was built southwest of the roundhouse. In addition, rail lines within the yard were realigned to accommodate the new buildings and facilitate the movement of locomotives and rolling stock in and out of the shops for repair and maintenance.

Once completed, the modern shops presented a complex of buildings and structures designed to efficiently maintain and repair steam locomotives – tasks that required a great deal of daily maintenance as well as periodic major overhauls (Wilson 1986: 7). At the end of a daily run, or every 100 to 150 miles, it was necessary to remove ash clinkers (the residue of unfired or partially fired coal) from the locomotive's firebox and ash pan, clean the fire tubes, flues, and smoke boxes, wash out mineral residue from the boiler, and inspect all moving parts for general wear and tear.

Steam powered locomotives required regular extensive overhauls. Overhauls included a complete disassembly of the engine, cleaning and repairing all moving parts, trueing the wheels and installing new tires, and patching or replacing the boiler (and flues or superheater tubes) or firebox. All of this work, including the reconditioning and fabrication of replacement parts, was done in-house. Just south of the locomotive shops, in the AT & SF car shops, freight cars were repaired, or modified, as necessary.

The centerpiece of this complex was the now-demolished roundhouse (See Figure 11), where most daily maintenance functions were carried out. The footprint of this structure is evident today by a 113,135 square-foot, concrete/brick/metal foundation, the center of which is occupied by a revolving turntable that once pointed a locomotive into one of thirty-five identically designed stalls. The Albuquerque roundhouse was one of the first (if not the first) of its kind to be constructed from a newly designed, standard plan created by the AT & SF in 1914 (Wilson 1986: 6). Roundhouses were required every 100 to 150 miles along a rail line and the Albuquerque facility was one of several in north and central New Mexico including ones in Las Vegas, San Marcial, and Gallup.

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Figure 11. Aerial view looking southwest showing the 1915 roundhouse, reservoir and tanks, the power house with smokestack, and machine shop.

North of the roundhouse foundation stands the massive machine shop (also referred to as the locomotive repair shop), the center of overhaul work. Opposite the machine shop and north of the transfer table is the similarly impressive but smaller boiler shop. These two buildings and the transfer table comprised the core of locomotive overhauling operations and the cross-axial functional scheme. They included shop bays sized and located for the work performed in each, mechanical systems to heat and ventilate the interior and cranes of several types. The machine

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shop also had offices, locker-and-wash rooms, rooms for files, blue prints, tools, and a school room, all defined by interior partitions of steel and glass or wire mesh.

The machine and boiler shops' superstructures consisted of a few standard parts used repeatedly. This and the delivery of steel on the adjacent rail line allowed for rapid erection once the foundation of wood pilings and concrete footings was in place. Steel erection for the machine shop took less than three months in the spring of 1921. Construction of the two concrete end walls followed, probably requiring more time than the steel frame that covered the building's three and one-half acres. Standardization also applied to the door, window, and mechanical systems. Overall, the machine shop was built in about fourteen months and took six more to equip with tools and become operational.

The machine shop consists of four long work bays and twenty-six locomotive stalls in its erecting bay. The erecting bay is 600 feet long, 90 feet wide, and 57 feet high inside. It holds two 15-ton bridge cranes on the lower crane rail. The upper crane rail carries a 250-ton-capacity crane designed to lift a locomotive body off its chassis, or even an entire locomotive into the air. The machine shop's counterpart, the boiler shop, has two long bays and seven stalls in its erecting bay, which features a bridge crane with a 30-ton capacity.

In 1925, the tender repair shop was added to the north side of the boiler shop. It features similar glass curtain walls and reinforced concrete façade. Tucked in and around these buildings are the sheet metal house, flue shop, cab paint shop (later, CWE shops Office). The sheet metal house and flue shop directly supported the boiler shop operation, while the tender repair shop depended on the boiler shop's men and machines.

The north and south washrooms are relatively small buildings that remain from a set of five scattered around the site. All were integral to maintaining the shops' health and safety standards. Most work undertaken at the yards was dirty and dangerous and the multiple rows of "gang sinks" helped maintain proper sanitation. The washrooms allowed the men to clean up the best they could before returning home; although numerous oral histories collected about the shops attest that such efforts were not always successful. Tamara Coombs (2013: 13) relates the story of the son of a car shop worker who remembered that when his father arrived home from the day's work and took his cap off, "the hair under the cap was gray – the rest of him was black." (See Figure 11).

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Figure 12. Workmen washing up at the end of the day's work. Washroom on the mezzanine in the machine shop.

The threat of fire was ever-present as witnessed by the construction of the fire station in 1920. It was connected to most buildings on site by a concrete fire runway – paved to avoid the bare ground surface, which when muddy could have hampered emergency responses.

Built early in the construction sequence, the storehouse was completed in 1915. As the supply depot for the AT & SF's New Mexico Division, it served the locomotive shops and other company operations. Its east and west side platforms, both served by rail sidings, facilitated the delivery of materials and supplies. These platforms join south of the building in a broad platform on which additional supplies were stored in sheds, in the open, and in an oil cellar built into the platform. The shops' storage layout thus represented a conscious attempt by AT & SF designers to minimize wasted time and effort by using freight rail capability to full advantage.

The construction period, 1914 to 1925, was a time of sweeping innovation in industrial design and building technology (Wilson 1986: 5-6). The earlier, nineteenth century locomotive shops had been constructed of stone and heavy timber; however, by the early twentieth century

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new industrial designs promoted buildings constructed of concrete reinforced with steel. The advantages of reinforced concrete construction for industrial buildings were numerous: fireproofing, lower maintenance costs, and better dampening of machine noise and vibration. Some of the buildings constructed before 1920, such as the brick washrooms and timber-and-lumber sheet metal house harkened back to 19th-century norms. Fire-prone and heavy-use buildings, however, such as the storehouse and roundhouse (both built 1915), used the “modern” method of steel-reinforced concrete, as did the flue shop (1920).

The second building innovation used at the AT & SF’s Albuquerque shops was steel frame construction. This construction technique was more vulnerable to failure if exposed to fire and was not as conducive to noise dampening; however, steel frames were less expensive to build and construction time was far shorter than cast-in-place concrete. Steel’s other favorable attribute was its ability to span greater distances and allow installation of large windows for light and ventilation (Hildebrand 1974: 53-54). Long-span, steel-frame buildings represent the significant changes in industrial building design and construction occurring throughout the United States at this time. A prime example was the Ford Motor Company’s River Rouge complex and the industrial architecture of Albert Kahn, although the design for the Albuquerque shops’ steel buildings was done by an in-house AT & SF design team led by C. F. W. Felt, Chief Engineer; E. A. Harrison, Chief Architect; and A. F. Robinson, the company’s Bridge Engineer (Hildebrand 1974; Wilson n.d.: 5).

The increased light and ventilation afforded by both reinforced concrete and steel frame construction was used to great advantage in two of the Albuquerque shops’ most important buildings – the machine shop and boiler shop (1921 and 1923 respectively) (Railway Age 1922: 238-39; Wilson 1986: 8).

Labor Troubles Plague the Locomotive Shops: 1916 - 1922

The AT & SF saw record profits in 1916; however by 1917, with the United States’ increasing involvement in the war in Europe, many of the nation’s railroads were having trouble keeping up with the increased demand for freight and passenger service (Godfrey 1974: 17-27). Freight cars were in short supply and many were poorly maintained. There were car shortages in the Western states and congestion on the East Coast where supplies were being shipped overseas. Adding to the problem was an order by the ICC to institute rate reductions for railroad freight customers (Kaufman 2005: 57). There was also labor unrest as railroad employees demanded higher wages and an eight-hour workday. In essence, the railroad as the nation’s “public highway” was overwhelmed by transcontinental shipping needs and the demands from rank-and-file employees.

On January 1, 1918, President Woodrow Wilson, recognizing the importance of the railroad in transporting both troops and materiel across the country, used the powers afforded him in the Army Appropriation Act of 1916 to nationalize the nation’s railroads and establish the

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United States Railroad Administration (Godfrey 1974; Kaufman 2005: 57-64). Although the government takeover of the railroads only lasted eighteen months (operations were returned to the railroad owners on March 1, 1920), the effects of the action were widespread and included: (1) higher wages, (2) a common set of work rules, (3) the establishment of a seniority system for pay raises and promotion, (4) strict job classifications, and (5) recognition of the union (American Federation of Labor) with the right of collective bargaining. Much of these “wartime concessions” were codified in the Transportation Act of 1920, which established the Railroad Labor Board who had the power to oversee wages and working conditions for more than two million railway workers (Godfrey 1974: 156; Davis 1992: 437). On the downside, however, once the owners re-acquired their railroad companies, they realized that the government had done very little maintenance of the locomotives or rolling stock. Spending on these items had decreased by seventy-five percent and the call-up of men for war service had significantly decreased the available pool of skilled workers (Kaufman 2005: 65). As such, the federal government’s “renting” of the railroads had done little to solve the industry’s fundamental problems.

Following the war, the nation experienced a period of economic deflation as wartime production levels normalized and the labor force returned from military service. In 1921, the Railroad Labor Board approved a twelve percent reduction in wages for railroad workers; however, major concessions to the big unions (or brotherhoods) representing engineers, firemen, brakemen, and conductors averted a nationwide strike (Earl and Rocha 1986: 45). The following year, the Labor Board ordered a more than \$60 million in wage cuts, which targeted railway repair and maintenance workers and this time a strike could not be avoided (Davis 1992, 1997). On Saturday morning, July 1, 1922, over 400,000 railway workers nationwide walked off their jobs, including an estimated 1,000 machinists, boilermakers, blacksmiths, sheet metal and electrical workers employed at the Albuquerque shops (“Santa Fe Shop Men Here Will Quit Saturday,” *Albuquerque Morning Journal*, June 30, 1922). The railroads stripped strikers of their arbitration and seniority rights – seniority being a critical bargaining point for the “shopmen.” One’s level of seniority in this skilled laborer position was important during the periodic economic downturns that often beset the railroad industry.

Although pickets were present outside the gates of the Albuquerque shops, the degree of conflict between workers and management varied from site to site nationwide. However, according to several articles in the *Albuquerque Morning Journal* during the months of July and August 1922, street violence associated with the strikers was kept to a few relatively minor incidents.⁶ Members of non-striking families in the city, such as the family of AT & SF

⁶ There were armed conflicts resulting in deaths at other strike locations, such as Cleveland, Buffalo, New York, Clinton, Illinois, Port Morris, New Jersey, and Needles, California (Davis 1997: 84). The incident in Needles on July 12 caused major problems along the AT&SF line all the way back to Albuquerque (*Albuquerque Morning Journal*).

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machinist Fritz Lehman, were often subjected to name-calling and other minor threats (Brown n.d.: 9-10). The AT & SF hired private security guards to help maintain order at the shops and there were reports of trains arriving in the middle of the night with strikebreakers from Zacatecas, Mexico (Coombs 2013: 12). In addition, the AT & SF, brought in sleeping cars, set up tents and mess halls within the locked gates of the shop complex to accommodate non-striking employees and strikebreakers who wanted to avoid confrontations with the strikers picketing outside the gates.

Newspaper reports of the day were often slanted towards the railway company's point of view and it is difficult to ascertain just how many local workers joined in on the strike. For several days following the onset of the strike, the *Morning Journal* reported that only 175 men were at work. However, within a week, the paper stated that upwards of 400 men had reported to the jobsite – about 50% of its normal workforce (*Albuquerque Morning Journal*, July 7, 1922). In contrast, union activists were quoted in the paper as saying more workers joined the strike every day. The AT & SF took a hard line on the subject of striking workers. As reported in the *Morning Journal* (July 7, 1922), company officials stated that “Practically all men who quit work learned their trade with the Santa Fe and . . . we can train new [men] to fill their places . . . [it will] not be a difficult task.” A sample of oral histories on file at the National Hispanic Cultural Center indicate that many workers in the Barelás neighborhood went back to work within weeks of the strike being called because they were fearful of losing their jobs permanently. Of the others who stayed on strike, many never returned to railroad work because they were blacklisted by the company (Coombs 2013: 11).

Attempts by President Warren G. Harding to quickly settle the strike proved futile and it lingered on for several months. Finally, the unions representing the shopmen began to make settlement deals with railroad owners at the local level (Earl and Rocha 1986: 50). In Albuquerque, there was surprisingly little news about when the strike was settled in the city; however by October the topic had virtually disappeared from news reports. It is generally accepted that there were no big winners in the strike – wages were not increased, unions lost membership, and some seniority rights were maintained. One significant result was the dismantling of the Railroad Labor Board and the creation of a more effective mediation process through the passage of the Railroad Labor Act of 1926. However, the violence and tension felt during the strike left bitter memories and feelings of distrust between shopmen and company management.

Operations at the Locomotive Shops: 1914 - 1945

By the time of the World War I, railroads were experiencing high volumes of traffic that necessitated upgrading their major repair and maintenance facilities such as the Albuquerque locomotive shops. In 1917, the AT & SF in Albuquerque employed 970 men, representing 25% of the city's workforce – a very high percentage for even a “railroad town” given that railroad

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employment averaged 2.7% of total employment in eleven surrounding Western states (Wilson 1986: 2; Best 1959: 90-91). The labor force for the shops came from all parts of the city – the Fourth Ward, Huning's Highland Addition, other downtown neighborhoods, unincorporated areas west of the river, South Broadway and San Jose, and, of course, the Barelas neighborhood.

The coming of the railroad had a particularly significant impact on the small farming community of Barelas, located along 2nd and 4th Streets just south of the new downtown. The community was founded in 1662 by Pedro Varela (Barela) as an *estancia* or ranch situated along the *Camino Real*. By the mid-nineteenth century, the community was populated by approximately three hundred, mostly Hispanic, farmers whose irrigated fields stretched eastward towards the steep sand hills flanking the valley (Wilson 1996: 21). Upon the arrival of the railroad, their fields were cut off from the *acequia madre* (main irrigation ditch) by the railroad tracks and development of the shop complex. Practically overnight, the AT & SF facilities physically took over the community's east side, and within twenty years, its agrarian roots had virtually disappeared as it became a neighborhood in the fast-growing city of Albuquerque – its livelihood closely tied to railroad employment (Holtby 2012: 88). East of the tracks, the South Broadway/San Jose neighborhood also grew quickly as railroad workers built modest homes and established a small commercial district between South Broadway Ave. and the tracks (Simmons 1982: 338; Holtby 2012: 140). Workers walked to the shops through gates in the AT & SF fence.

Socio-political upheavals during the Mexican Revolution in the 1910s sent hundreds of Mexican families scurrying across the border to escape the violence and turmoil. Many of them found work with the railroads, particularly the AT & SF (Best 1959: 107).⁷ In Albuquerque, several families from the small town of La Barca, in the state of Jalisco, moved to the South Broadway area to work at the shops. They settled into a *barrio* on the east side of the tracks between Pacific and Trumbull Avenues, west of Broadway, and named their community La Barcasita (Navarrete n.d.). It later became known as the San Jose neighborhood. While the men worked in the shops, women in the community sold hot lunches from makeshift restaurants set up in their yards to the railway workers who enjoyed a home-cooked meal within easy walking distance of their workplace.

Employment at the Albuquerque shops remained high and fluctuated between 600 and 1000 jobs with numerous opportunities for apprenticeships and training programs provided in-house by the AT & SF.⁸ Many local workers started their railroad careers doing menial jobs and later were trained for apprentice positions and eventually held highly skilled jobs. Although there were opportunities for in-house training and job advancement, in the early 1900s most of

⁷ In 1913, the AT&SF issued Spanish dictionaries to all its track foremen (Best 1959: 107).

⁸ In the State of New Mexico, these employment numbers were only surpassed by the mining industry (Wilson 1986: 10).

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the skilled positions, e.g., machinists, were held by white men who had been trained elsewhere in the United States or in Europe. For example, Fritz Lehman, a skilled machinist originally from Switzerland, was working on a section gang for the AT & SF in Arizona when he was recruited to work in the Albuquerque shops in 1905 (Brown n.d.: 3). Lehman rose to the rank of foreman, working for the company for forty years.

The completion of Albuquerque's modernized shops in the mid-1920s coincided with a peak in rail traffic across the United States (Best 1959: 109; Wilson 1986: 10; Kaufman 2005: 72). During this decade, the AT & SF moved 91% of all rail traffic including passengers and freight such as mining output, timber, and livestock as well as manufactured goods (Best 1959: 195).

The new specialized work spaces with improved working conditions, specialized tools, and the warehousing of parts, as well as advanced training, soon translated into increased efficiency and thus increased profits for the company. The relatively new concept of "industrial time-management studies" became a fixture in the industry and the Albuquerque shops were designed and constructed under this concept. Record-keeping became more exact and standardized schedules were written for every aspect of locomotive repair. Employees and work crews who "beat" the allotted time by one-and-one-half times were awarded pay bonuses (Railway Mechanical Engineer 1924: 334-338). It was believed that a principal factor in improving the productivity rates between the early 1900s and the late 1920s was the installation of moving cranes and the improved lighting found in the new shops (Wilson n.d.: 4).

The trade journal, *Railway Mechanical Engineer*, published an article in 1924 (pp. 333-34) noting that increased production was not only improved by the new locomotive shops and the more efficient methods of scheduling repairs and record-keeping, but also because of improvements made in cooperation between labor and management. The article, entitled "Improved Shop Operation at Albuquerque, N.M.," explains that the AT & SF had instituted a monthly "council meeting" to discuss matters of shop welfare. All employees were encouraged to attend and talk about how to improve working conditions and efficiency. According to the article, there were also fifteen-minute "noon meetings" held three times a week to discuss specific topics, such as safety, wage rates, and methods of eliminating waste in the workplace. It is interesting to contextualize the issues presented in this trade journal in light of the national shopmen's strike, which had taken place less than two years earlier. It might be asked if such a labor friendly article wasn't part of a public relations campaign by AT & SF officials to smooth over the animosity developed during the strike or whether these employee-management sessions were truly productive. Nevertheless, based on this article, the Albuquerque shops seem to have been a place to try and mend fences between the two sides.

The Depression, however, had a debilitating effect on railroad industry just as it did on the entire country. Profits were down, in part due to high labor costs and the refusal of the ICC to increase shipping rates, but also because of a dramatic drop in passenger and freight revenue

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(Kaufman 2005: 69-73). Between 1929 and 1933, freight receipts were down 52% while passenger-related income dropped by 60% (Waters 1950: 425). As a result, branch lines were discontinued, schedules were changed frequently, and trains were consolidated in order to make the runs more efficient, albeit to the detriment of customer service. By the mid-1930s, half of the AT & SF locomotives were in storage. Exacerbating the problem was the fact that much of the AT & SF line served the Dust Bowl states where agricultural productivity had dropped severely. As a result, maintenance and shop crews were laid off. In 1933, a mere 300 men worked a three-day work week at the Albuquerque shops (*Albuquerque Progress*, vol. XV, no. 2, Feb. 1948).

Two other events in the transportation industry would have far-reaching effects during the 1930s: (1) the dieselization of railroad locomotives, and (2) the rise of alternate methods of transportation, particularly the use of trucks for cross-country freight handling (Waters 1950: 420; Myrick 1990: 33-34; Kaufman 2005: 72-73). Advancements in the electric-diesel locomotive were first felt in railroad passenger service. In 1936, the AT & SF's Super Chief debuted with a weekly run from Chicago to Los Angeles that immediately cut five hours off the time it took to previously make this run. It was soon found that freight service could be improved as well using diesel technology. The fastest steam locomotive hauling a freight train between Chicago and Los Angeles took nine engines and thirty-five stops for fuel and water; whereas in 1938, a diesel-powered train made the trip using only one engine and making only five fuel stops, thus cutting anywhere from four to six hours off the trip (Marshall 1945: 302-07). Although the late 1930s foretold the future of transcontinental railroading, it was temporarily put on hold in the 1940s by the War Production Board's refusal to allow delivery of new diesel engines during World War II (Waters 1950: 435).

The railroad industry was also affected by the improvement in the national highway system, and the subsequent growth of the trucking industry as well as transcontinental bus service, the rise of the family automobile, and the nascent airline industry (Kaufman 2005: 71-73). Ironically, the improved highways that were spurred on by the Good Roads Movement (started in earnest some thirty years earlier) followed many of the railroad industry's alignments and the railway companies actually supported the movement as they sought to expand their business beyond the railroad depot (the AT & SF implemented a "rails to road" system in the late 1930s).

Although the country, and the railroad industry, began a slow climb out of the Depression in the late 1930s, everything was suddenly thrust into fast forward with the outbreak of World War II in Europe. Manufacturing increased dramatically and rail transportation again became an issue of national security (Kaufman 2005: 84-90). Once the United States entered the war in 1941, railroads became indispensable for carrying men and materiel across the country to both coasts. During the war, the railroad carried 90% of all military freight and 98% of all troop movement.

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The locomotive shops in Albuquerque and the rest of the nation played a vital role in keeping the steam locomotives and rolling stock well maintained and on the rails. Many businesses in Albuquerque were awarded military contracts and the AT & SF was in the forefront of moving these manufactured goods out of the city (see Dodge 2012). Albuquerque was also the home of two major military bases – Kirtland Army Air Field and Sandia Army Base – which were dependent upon reliable rail service to deliver men, supplies, and materials.

During the war, the Albuquerque shops ran double and triple shifts in order to keep up with the demand for maintenance and repairs. Production efforts were stepped up and as many as forty-one engines per month were overhauled. The increased workload was reflected by the fact that the Albuquerque locomotive shops employed more than 1,500 workers during the war years – the highest employment total in company history (*Albuquerque Progress*, vol. X, no. 5, June 1943; Wilson 1986: 10). The increase in workload could not be handled through local hiring due to the large number of men drafted into service. Women were hired for first time, while servicemen who were experienced machinists in civilian life were “assigned” to the shops and lived in special barracks near the fire station (Ghattas n.d.: Antonio Montoya interview, July 1999). It was estimated that the shops generated an annual payroll of more than \$3 million, which of course, filtered throughout the city. In addition, the AT & SF was the largest single taxpayer in the city (*Albuquerque Progress*, June 1943).

Changes and the Decline of the Locomotive Shops: Post 1946

Diesel engines required far less support infrastructure and were far less labor intensive to operate and maintain. These two factors promised to reduce labor and infrastructure costs for railroads once steam power was eliminated. The AT & SF was an early pioneer in the development of diesel locomotives in the mid-late 1930’s and began “dieselization” of its premier passenger trains before World War II. The war and government control of locomotive production interrupted the railroad’s drive to dieselize. Even so, the War Production Board allocated to AT & SF some forty percent of all freight diesels.

With the end of the war, dieselization of the AT & SF began in earnest. Steam technology had always been problematic in the arid West where supplies of coal and water were sometimes difficult to obtain (Wilson n.d.: 13). As such, the AT & SF became an industry leader in the conversion from steam to diesel and was one of the first railway companies to reap the benefits of diesel technology. It was a dramatic changeover. In 1946, the AT & SF had 1,567 steam locomotives and 103 diesel locomotives. Within four years, the number of steam locomotives dropped to 1,199 and the number of diesel engines increased to 444 (Waters 1950: 435). The life cycle costs of owning and operating diesels was far less than steam. Diesel locomotives were also more powerful at lower speeds and thus could pull longer and heavier trains over the steeper grades found in the West. In 1952, the AT & SF Railway purchased an additional 1,261 new diesel engines. On August 27, 1957, the last, in service steam runs were

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made. With less maintenance to perform, together with the fact diesel locomotive parts were standardized and generally replaced rather than repaired, the multi-purpose shops for completely rebuilding locomotives were no longer needed. In the 1950's and 1960's all the steam locomotive infrastructure began to disappear, along with the associated jobs, all across the country.

To accommodate the new diesel engines, the AT & SF decided to retool the maintenance shops at San Bernardino, California and Cleburne, Texas, which became the primary repair shops for the company's diesel locomotives. In turn, the Albuquerque facilities were relegated to the maintenance and repair of the railway's track system (officially, the Centralized Work Equipment shops), thus negating the need for operating the machine shop, boiler shop, flue shop, and other specialized facilities in the complex. Employment in Albuquerque was cut to less than 200 workers. The smaller buildings and structures at the complex were remodeled for the new work requirements, while the larger maintenance shops that had once repaired up to forty steam locomotives a month were relegated to elegant storage sheds, while still others were demolished (See Figure 13).

The CWE activities were phased out by the late 1970's but the railroad maintained a presence on the property (Wilson n.d.:17) until they closed their doors and the property was sold to a development group in the early 1990's. Plans for the property were not realized and the City of Albuquerque purchased the property in 2007 with hopes of redeveloping the site while conserving its multiple levels of cultural significance (Solar 2013: 5).

Integrity of the Historic District

In addition to the contributions by the Albuquerque Locomotive Shops to events associated with history and architecture (Criterion A and C), the Historic District must also have "integrity" as defined by the guidelines for nominating properties or district to the National Register of Historic Places (National Park Service 1997: 44-49).

While the level of individual integrity varies for each property located within the Historic District (see Section 7), the overall integrity of the district is high. Its location remains unchanged and the setting substantially so. The BNSF Rail, which resulted from the 1995 merger of the AT & SF and the Burlington Northern continues to run its trains along the adjacent tracks giving the district a strong sense of an industrial railroad setting. Similarly, this undeniable sense of setting gives the property a convincing sense of feeling and association of the buildings and structures with its historical era (period of significance). The buildings and structures of the district have undergone few substantial modifications and thus convey the properties' original design, materials, and workmanship from the era of construction. The district's cultural landscape – the spaces between buildings, the railroad tracks, and some of the other outside equipment still in place – also evokes a sense of the activities that took place during the shops' operational years.

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The surrounding neighborhood adds to the integrity of setting since much of the housing stock was built in the early twentieth century by railroad workers. Even the railway company's original Superintendent's House (a Victorian style cottage built in 1881) still stands across the street from the Locomotive shops main entrance. It is listed in the National Register and built of sandstone similar to that used in the original shops.

As an historic district, the key architectural components of the AT & SF Railway Locomotive shops remain substantially intact from the shops' "heyday" operational period and the district's period of significance. The only glaring exception to this are loss of the roundhouse and power house through demolition; however, this is somewhat offset by remains of the former structure's concrete foundation and the existence of the turntable and associated tracks, which are still in their original location at the center of the foundation structure. The other primary components of the shop complex (e.g., the machine shop, boiler shop, blacksmith's shop, storehouse, etc.) convey a strong sense of integrity, with few visual intrusions or non-contributing buildings to distract from the historical significance of the district.

In summary, the historic properties located within the boundaries of the Atchison, Topeka and Santa Fe Railway Locomotive Shops Historic District express a persuasive sense of setting and association that still display the properties' architectural qualities and overall sense of industrial organization, which results in the Historic District strongly conveying its association with significant state and local historical events.



Figure 13. Motor car garage circa 1986, prior to the demolition of the roundhouse and other supporting buildings. The property was still in use and the buildings maintained by the railroad.

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Note: The preparers wish to acknowledge Chris Wilson, J. B. Jackson Professor of Cultural Landscape Studies, University of New Mexico, for his groundbreaking research conducted in the mid-1980s on the AT & SF Locomotive Shops. Although his work was never fully completed, the high quality of his research and analysis set the foundation for the successful completion of this registration form. His contributions cannot be overlooked nor underestimated.

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1986 "The Historic Railroad Buildings of Albuquerque: An Assessment of Significance." Manuscript on file, Redevelopment Division, Planning Department, City of Albuquerque.

1996 "Barelas – South Fourth Historic District." National Register of Historic Places Registration Form. On file, Planning Department, City of Albuquerque.

Atchison, Topeka & Santa Fe Railway Locomotive Shops
Name of Property

Bernalillo, New Mexico
County and State

Previous documentation on file (NPS):

- ☐ preliminary determination of individual listing (36 CFR 67) has been requested
☐ previously listed in the National Register
☐ previously determined eligible by the National Register
☐ designated a National Historic Landmark
☐ recorded by Historic American Buildings Survey # _____
☒ recorded by Historic American Engineering Record # NM-12
☐ recorded by Historic American Landscape Survey # _____

Primary location of additional data:

- ☐ State Historic Preservation Office
☐ Other State agency
☐ Federal agency
☒ Local government
☒ University
☒ Other

Name of repository: Wheels Museum, Albuquerque, NM; National Hispanic Cultural Center, Albuquerque, NM. Both contain oral histories pertinent to the district's history.

Historic Resources Survey Number (if assigned): _____

8. Geographical Data

Acreage of Property 27.3 acres

Use either the UTM system or latitude/longitude coordinates

Latitude/Longitude Coordinates

Datum if other than WGS84: _____

(enter coordinates to 6 decimal places)

- | | |
|--------------|------------|
| 1. Latitude: | Longitude: |
| 2. Latitude: | Longitude: |
| 3. Latitude: | Longitude: |
| 4. Latitude: | Longitude: |

Or

Atchison, Topeka & Santa Fe Railway Locomotive Shops
Name of Property

Bernalillo, New Mexico
County and State

UTM References

Source: City of Albuquerque AGIS 2012

Datum (indicated on USGS map):

☐ NAD 1927 or ☐ NAD 1983

1. Zone: 13S	Easting: 349643	Northing: 3882881
2. Zone: 13S	Easting: 349680	Northing: 3882875
3. Zone: 13S	Easting: 349680	Northing: 3882718
4. Zone: 13S	Easting : 349601	Northing: 3882265
5. Zone: 13S	Easting: 349407	Northing: 3882298
6. Zone: 13S	Easting: 349491	Northing: 3882771

Verbal Boundary Description (Describe the boundaries of the property.)

The historic district boundary forms a polygon with three rectangular edges at the east, south, and west sides, and a tapered, irregular north end of straight and curved segments. The eastern boundary is the west edge of the BNSF Railway right-of-way. The southern boundary is approximately 340 feet south of the storehouse. The western boundary is the 2nd Street right-of-way and that of 1st Street north of the intersection of the two streets at Atlantic Avenue.

Boundary Justification (Explain why the boundaries were selected.)

The boundary of the AT & SF Railway Locomotive Shops Historic District includes all remaining contributing resources (buildings, structures, sites) built and used during the period of significance, 1914-1956. During that period, the AT & SF's Albuquerque shops operation extended south of the district boundary and included locomotive fuel, sand, and water facilities as well as a complex of freight car shops. However, all these have been razed, leaving no historic integrity outside the district boundary.

9. Form Prepared By

name/title: William A. Dodge, Ph.D./ Cultural Historian
organization: Independent Consultant
street & number: 701 Alvarado Dr. NE
city or town: Albuquerque state: NM zip code: 87108
e-mail: wdodge12@comcast.net
telephone: 505-259-2367

Atchison, Topeka & Santa Fe Railway Locomotive Shops
Name of Property

Bernalillo, New Mexico
County and State

date: June 28, 2013

name/title: Maryellen Hennessy, Edgar Boles and Petra Morris/ Senior Planners

organization: City of Albuquerque Planning Dept.

street & number: 200 2nd St. NW

city or town: Albuquerque state: NM zip code: 87102

e-mail mhennessy@cabq.gov pmorris@cabq.gov

telephone: 505-924-3891 505-924-3897

date: February 10, 2014

Additional Documentation

Submit the following items with the completed form:

- **Maps:** A **USGS map** or equivalent (7.5 or 15 minute series) indicating the property's location.
- **Sketch map** for historic districts and properties having large acreage or numerous resources. Key all photographs to this map.
- **Additional items:** (Check with the SHPO, TPO, or FPO for any additional items.)

Table of Figures

1. Jack Delano, photographer, 1943. Library of Congress/ Albuquerque Museum.
2. *Railway Age, August 5, 1922.* Center for Southwest Research, University of New Mexico.
3. A.T. & S. F. photo, 1943. Albuquerque Museum.
4. A.T. & S. F. photo, 1943. Albuquerque Museum.
5. A.T. & S. F. photo, 1943. Albuquerque Museum.
6. Jack Delano, photographer, 1943. Library of Congress/ Albuquerque Museum.
7. A.T. & S. F. photo, 1943. Albuquerque Museum.
8. Jack Delano, photographer, 1943. Library of Congress/ Albuquerque Museum.
9. Jack Delano, photographer, 1943. Library of Congress/ Albuquerque Museum.
10. Chris Wilson, photographer, 1986. City of Albuquerque Planning Dept.

Atchison, Topeka & Santa Fe Railway Locomotive Shops
Name of Property

Bernalillo, New Mexico
County and State

11. Photographer unknown, c. 1924. Center for Southwest Research, University of New Mexico.
12. Jack Delano, photographer, 1943. Library of Congress/ Albuquerque Museum.
13. Chris Wilson, photographer, 1986. City of Albuquerque Planning Dept.
14. AT & SF Engineers, drawing, c.1920
15. AT & SF Engineers, drawing, c.1920
16. AT & SF Engineers, drawing, 1922
17. AT & SF Engineers, drawing, 1922
18. AT & SF Engineers, drawing, 1917
19. AT & SF Engineers, drawing, 1925
20. AT & SF Engineers, drawing, c.1919
21. AT & SF Engineers, drawing, c.1919
22. Jet Lowe, photographer , 2009, Library of Congress.

Photographs

Submit clear and descriptive photographs. The size of each image must be 1600x1200 pixels (minimum), 3000x2000 preferred, at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map. Each photograph must be numbered and that number must correspond to the photograph number on the photo log. For simplicity, the name of the photographer, photo date, etc. may be listed once on the photograph log and doesn't need to be labeled on every photograph.

Photo Log

Name of Property:	Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Machine shop
City or Vicinity:	Albuquerque
County:	Bernalillo State: New Mexico
Photographer:	Maryellen Hennessy
Date Photographed:	June 18, 2014
Description:	West and south elevations of machine shop looking northeast.
Number:	0001 of 0052.
Name of Property:	Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Machine shop
City or Vicinity:	Albuquerque
County:	Bernalillo State: New Mexico

Atchison, Topeka & Santa Fe Railway Locomotive Shops
Name of Property

Bernalillo, New Mexico
County and State

Photographer: Scott Walker
Date Photographed: November 3, 2012
Description: North elevation of machine shop; looking southwest across transfer table from blacksmith shop.
Number: 0002 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops:
Machine shop
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Petra Morris
Date Photographed: June 18, 2014
Description: South crane yard looking west; note lye vat shelter and traveling crane.
Number: 0003 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops:
Machine shop
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Petra Morris
Date Photographed: June 18, 2014
Description: Interior of erecting bay looking east.
Number: 0004 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops:
Machine shop
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Petra Morris
Date Photographed: June 18, 2014
Description: Interior of erecting bay looking north; showing repair pit.
Number: 0005 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops:
Machine shop
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Petra Morris
Date Photographed: June 18, 2014
Description: Heavy machinery bay looking southwest.
Number: 0006 of 0052.

Atchison, Topeka & Santa Fe Railway Locomotive Shops
Name of Property

Bernalillo, New Mexico
County and State

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops:
Machine shop
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: Light machinery bay looking east.
Number: 0007 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops:
Machine shop
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: Bench bay looking east.
Number: 0008 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops:
Machine shop
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: Offices in bench bay and under mezzanine; looking southwest.
Number: 0009 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Boiler
shop
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Petra Morris
Date Photographed: June 18, 2014
Description: South elevation of boiler shop looking northeast; note firing shed
(canopy) at left and transfer table in the foreground.
Number: 0010 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Boiler
shop
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012

Atchison, Topeka & Santa Fe Railway Locomotive Shops
Name of Property

Bernalillo, New Mexico
County and State

Description: North elevation of boiler shop looking south with sheet metal shed to right and flue shop to left.

Number: 0011 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Boiler shop

City or Vicinity: Albuquerque

County: Bernalillo State: New Mexico

Photographer: Scott Walker

Date Photographed: November 3, 2012

Description: Interior of boiler shop with traveling crane; looking west.

Number: 0012 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Blacksmith shop

City or Vicinity: Albuquerque

County: Bernalillo State: New Mexico

Photographer: Maryellen Hennessy

Date Photographed: February 11, 2014

Description: East elevation looking northwest across tracks from South Broadway neighborhood.

Number: 0013 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Blacksmith shop

City or Vicinity: Albuquerque

County: Bernalillo State: New Mexico

Photographer: Petra Morris

Date Photographed: June 18, 2014

Description: North elevation.

Number: 0014 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Blacksmith shop

City or Vicinity: Albuquerque

County: Bernalillo State: New Mexico

Photographer: Karen Van Citters

Date Photographed: November 3, 2012

Description: South elevation with transfer table in foreground.

Number: 0015 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Blacksmith shop

City or Vicinity: Albuquerque

Atchison, Topeka & Santa Fe Railway Locomotive Shops
Name of Property

Bernalillo, New Mexico
County and State

County: Bernalillo State: New Mexico
Photographer: Petra Morris
Date Photographed: June 18, 2014
Description: Shop interior looking north.
Number: 0016 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops:
Flue shop
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: East elevation looking south toward machine shop, with
blacksmith shop on left and boiler shop at the end on the right.
Note addition to flue shop at lower right corner of picture.
Number: 0017 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Flue
shop
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: West elevation looking southeast. Note addition at north end.
Number: 0018 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Flue
shop
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Petra Morris
Date Photographed: June 18, 2014
Description: Interior of flue shop, looking north, note addition on north end.
Number: 0019 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Sheet
metal house
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Petra Morris
Date Photographed: June 18, 2014
Description: Northeast corner of sheet metal shed with tender repair shop in the
background.
Number: 0020 of 0052.

Atchison, Topeka & Santa Fe Railway Locomotive Shops
Name of Property

Bernalillo, New Mexico
County and State

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Sheet metal house
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Petra Morris
Date Photographed: June 18, 2014
Description: Interior of sheet metal house from north end looking south toward boiler shop.
Number: 0021 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Tender repair shop
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: Northeast corner of tender repair shop showing east glass wall and concrete detailing on north elevation; looking southwest.
Number: 0022 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Tender repair shop
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: Interior of tender shop at north end looking south; note boiler shop through locomotive door at far end of tracks.
Number: 0023 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Waste & paint rooms
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: Southeast corner of the shop looking northwest towards 2nd St.
Number: 0024 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Fire station
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters

Atchison, Topeka & Santa Fe Railway Locomotive Shops
Name of Property

Bernalillo, New Mexico
County and State

Date Photographed: November 3, 2012
Description: Southwest corner of fire station looking northeast.
Number: 0025 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Pattern house
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: Northeast corner of pattern house looking southwest.
Number: 0026 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: North washroom
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: Northwest corner of north washroom.
Number: 0027 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: North washroom
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: Interior showing north washroom locker room; looking southeast.
Number: 0028 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Storehouse
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Petra Morris
Date Photographed: June 18, 2014
Description: Storehouse west elevation looking south.
Number: 0029 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Storehouse
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico

Atchison, Topeka & Santa Fe Railway Locomotive Shops
Name of Property

Bernalillo, New Mexico
County and State

Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: Storehouse southeast corner with concrete platform and tracks.
Number: 0030 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops:
Storehouse
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: Storehouse doors to oil cellar, looking northwest.
Number: 0031 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Babbitt
shop
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: Southwest corner of babbitt shop, with welding shop to the east and
the machine shop to the north.
Number: 0032 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Babbitt
shop
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: North elevation, with welding shop to the east and the wood
clapboard addition between the two.
Number: 0033 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops:
Welding shop
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: South elevation of welding shop.
Number: 0034 of 0052.

Atchison, Topeka & Santa Fe Railway Locomotive Shops
Name of Property

Bernalillo, New Mexico
County and State

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops:
Welding shop
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: East elevation of welding shop.
Number: 0035 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops:
Welding shop
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: Interior of welding shop looking east.
Number: 0036 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: South
washroom
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: Northeast corner of south washroom.
Number: 0037 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: South
washroom
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: West elevation of south washroom.
Number: 0038 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: South
washroom
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Petra Morris
Date Photographed: January 16, 2014
Description: Stencil on interior wall of washroom.
Number: 0039 of 0052.

Atchison, Topeka & Santa Fe Railway Locomotive Shops
Name of Property

Bernalillo, New Mexico
County and State

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Motor
car garage (battery shop)
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: Northwest corner.
Number: 0040 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops:
Transfer table
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: Transfer table at west end, standing in front of machine shop
looking north; firing shed (canopy) in background.
Number: 0041 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops:
Transfer table
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: Transfer table at east end looking west; boiler shop in background.
Number: 0042 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops:
Turntable
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Maryellen Hennessy
Date Photographed: February 11, 2014
Description: Turntable; looking north toward machine shop.
Number: 0043 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops:
Turntable
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Maryellen Hennessy
Date Photographed: February 11, 2014
Description: Turntable and engines.

Atchison, Topeka & Santa Fe Railway Locomotive Shops
Name of Property

Bernalillo, New Mexico
County and State

Number: 0044 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Fire runway

City or Vicinity: Albuquerque

County: Bernalillo State: New Mexico

Photographer: Karen Van Citters

Date Photographed: November 3, 2012

Description: Fire runway on west side of machine shop looking south.

Number: 0045 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Water reservoir

City or Vicinity: Albuquerque

County: Bernalillo State: New Mexico

Photographer: Karen Van Citters

Date Photographed: November 3, 2012

Description: Pump house and top of water reservoir at south end looking northwest.

Number: 0046 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Tracks

City or Vicinity: Albuquerque

County: Bernalillo State: New Mexico

Photographer: Petra Morris

Date Photographed: June 18, 2014

Description: Tracks entering the tender repair shop from the north, sheet metal shed to the left of the tender repair shop. View facing south.

Number: 0047 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Roundhouse foundation

City or Vicinity: Albuquerque

County: Bernalillo State: New Mexico

Photographer: Karen Van Citters

Date Photographed: November 3, 2012

Description: Southern corner of roundhouse concrete foundation and brick floor looking northeast.

Number: 0048 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Entry station

City or Vicinity: Albuquerque

County: Bernalillo State: New Mexico

Atchison, Topeka & Santa Fe Railway Locomotive Shops
Name of Property

Bernalillo, New Mexico
County and State

Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: Northwest corner of entry station at transfer table, west of boiler shop; note machine shop in background.
Number: 0049 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Cab paint shop
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: Looking northeast at one story cab paint shop building; tucked between the boiler shop and tender shop.
Number: 0050 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Power house
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: Metal power house building from southeast corner.
Number: 0051 of 0052.

Name of Property: Atchison, Topeka, & Santa Fe Railway Locomotive Shops: Gas welding lines
City or Vicinity: Albuquerque
County: Bernalillo State: New Mexico
Photographer: Karen Van Citters
Date Photographed: November 3, 2012
Description: Gas welding lines at west side of property looking south from west side of boiler house; note machine shop at left side of photograph.
Number: 0052 of 0052.

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 100 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Office of Planning and Performance Management, U.S. Dept. of the Interior, 1849 C. Street, N' 1W, Washington, DC.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number 9 Page 73

Atchison, Topeka and Santa Fe
Railway Locomotive Shops
Name of Property
Bernalillo New Mexico
County and State
Historic and Architectural Resources
of Central Albuquerque 1880-1970
Name of multiple listing (if applicable)

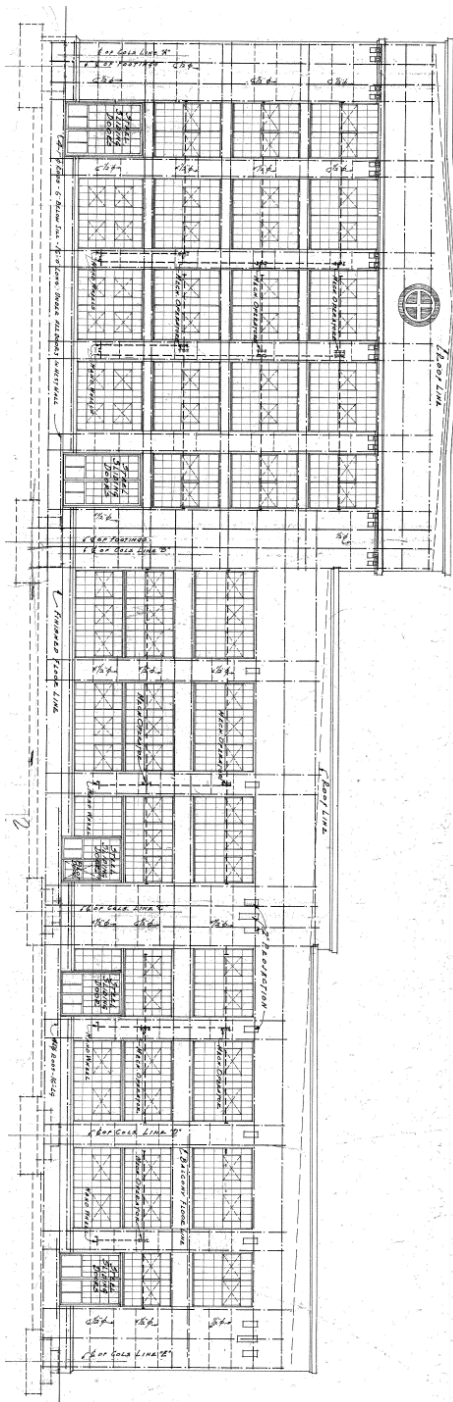


Figure 14. West elevation
drawing of machine shop. AT
& SF Engineers, drawing,
c.1920

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number 9 Page 74

Atchison, Topeka and Santa Fe
Railway Locomotive Shops
Name of Property
Bernalillo New Mexico
County and State
Historic and Architectural Resources
of Central Albuquerque 1880-1970
Name of multiple listing (if applicable)

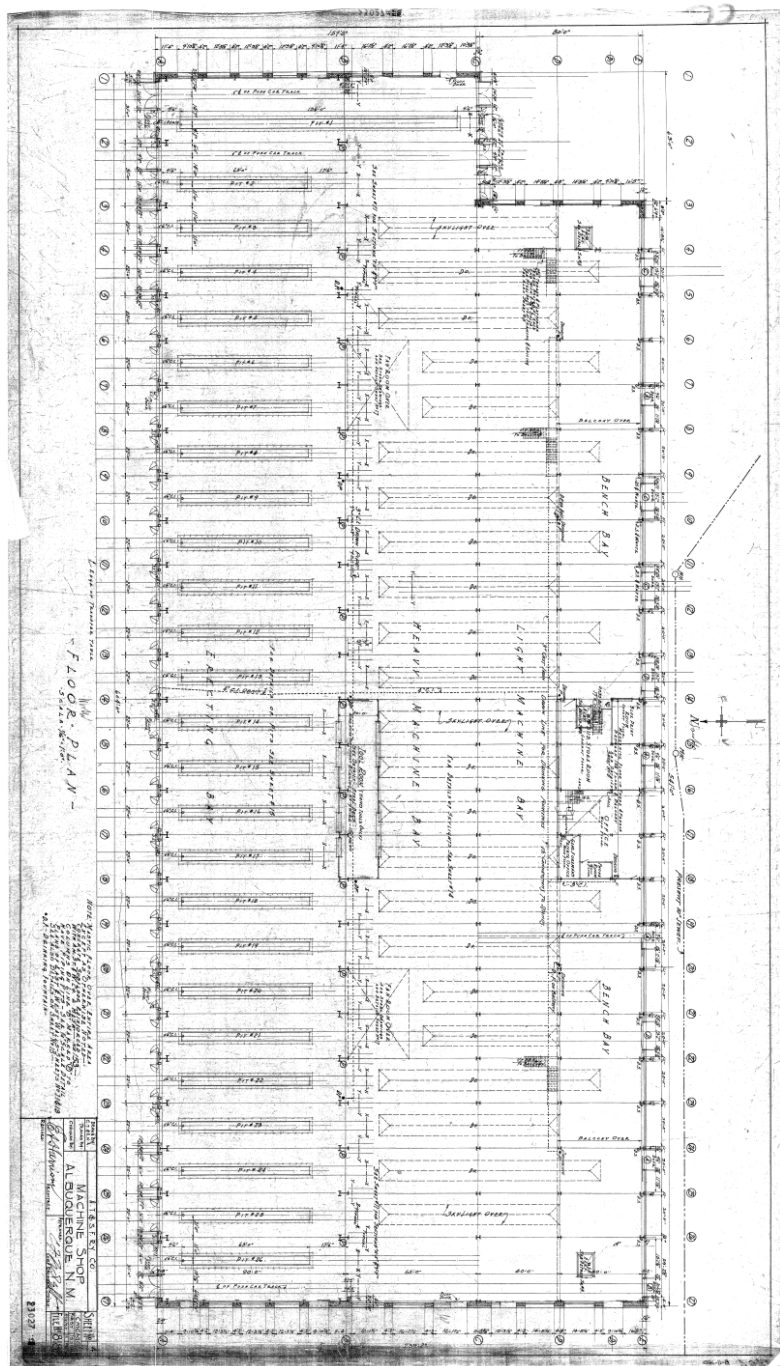


Figure 15. Floor Plan of machine shop. AT & SF Engineers, drawing, c.1920

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number 9 Page 75

Atchison, Topeka and Santa Fe
Railway Locomotive Shops
Name of Property
Bernalillo New Mexico
County and State
Historic and Architectural Resources
of Central Albuquerque 1880-1970
Name of multiple listing (if applicable)

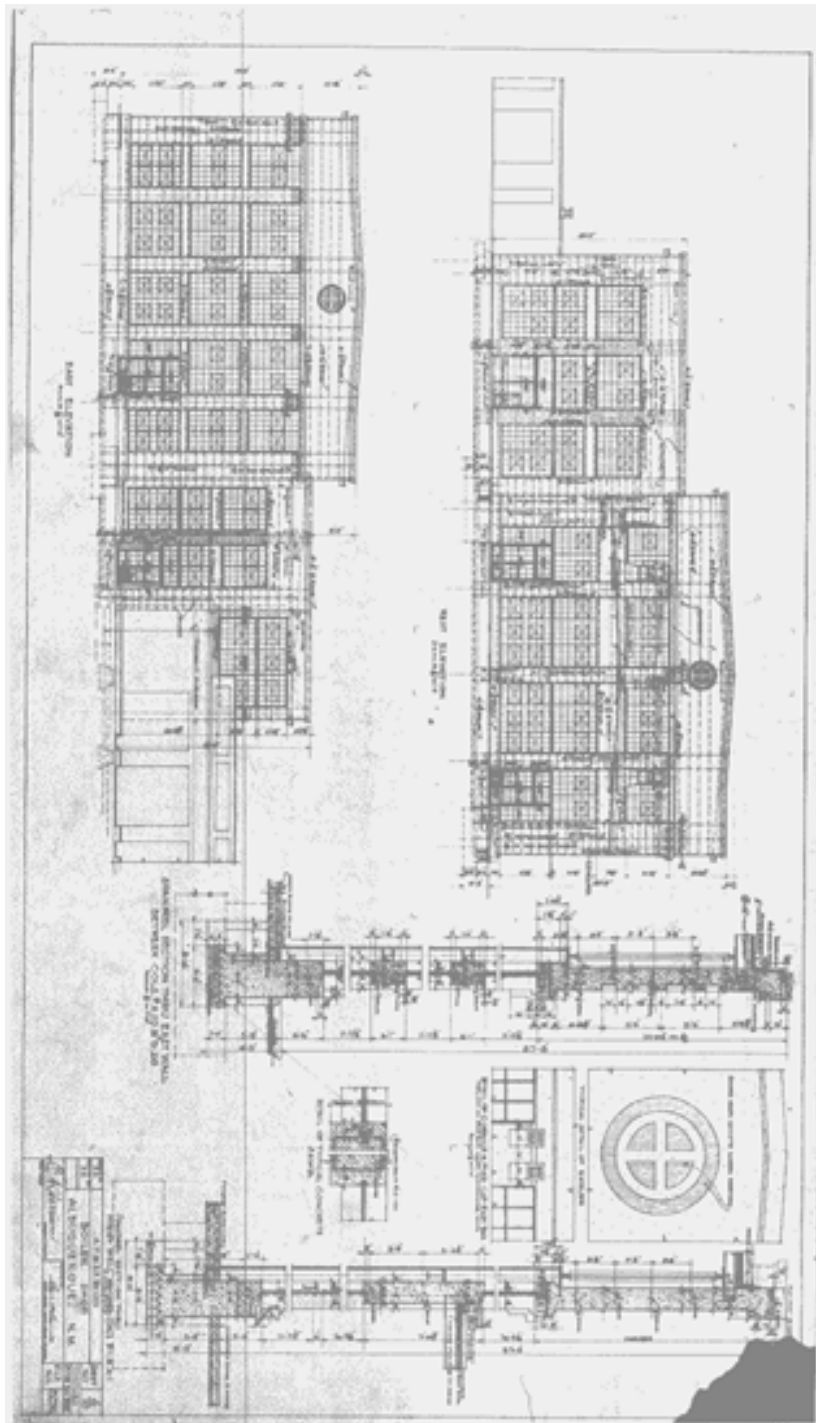


Figure 16. East and west elevations of boiler shop. Drawn by AT & SF engineers, drawing ca. 1922

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number 9 Page 76

Atchison, Topeka and Santa Fe

Railway Locomotive Shops

Name of Property

Bernalillo New Mexico

County and State

Historic and Architectural Resources
of Central Albuquerque 1880-1970

Name of multiple listing (if applicable)

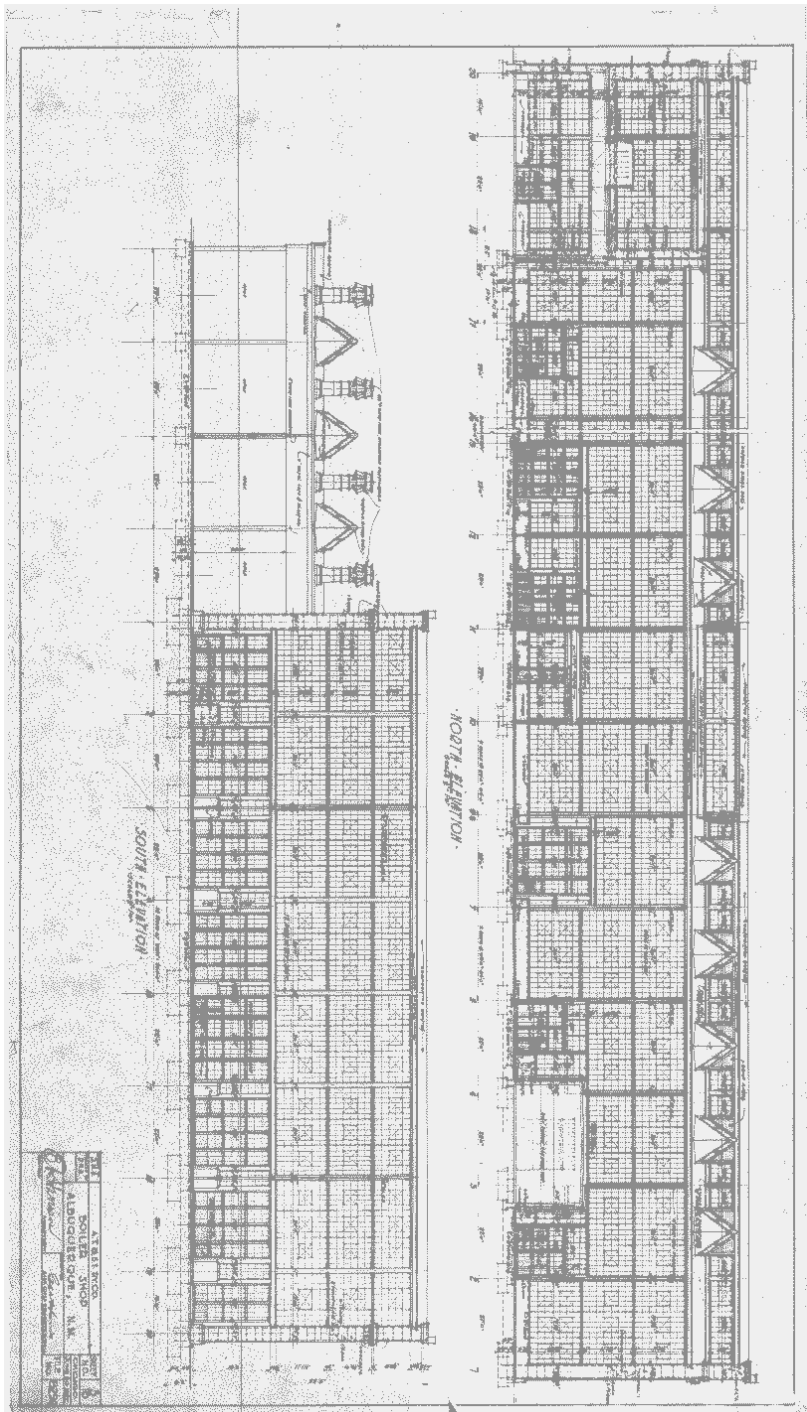


Figure 17. North and South elevations of boiler shop; note original configuration of firing shed. Drawn by AT & SF engineers, drawing ca. 1922

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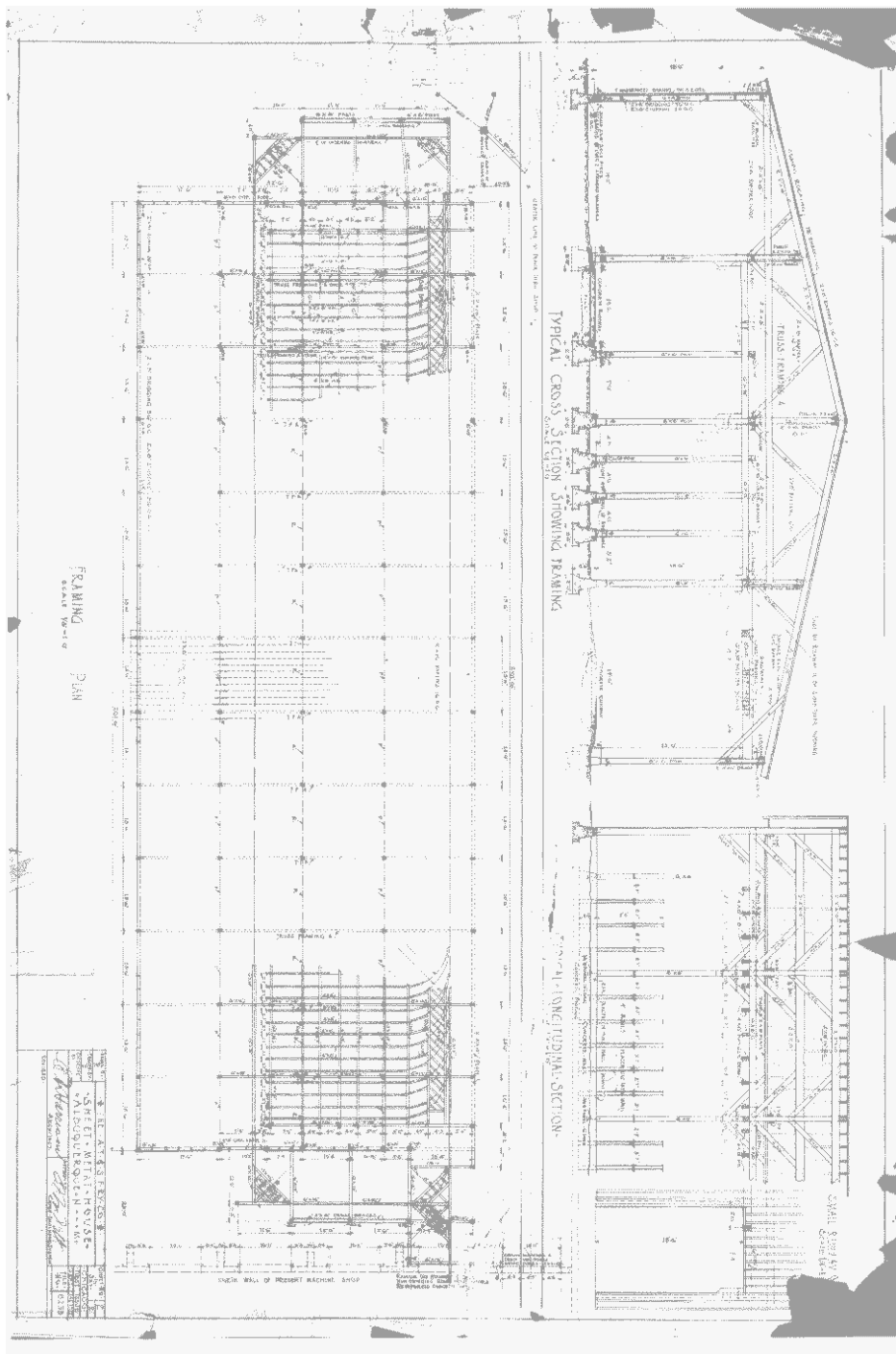


Figure 18. Plan and sections of sheet metal house. Drawn by AT & SF engineers, drawing ca. 1917

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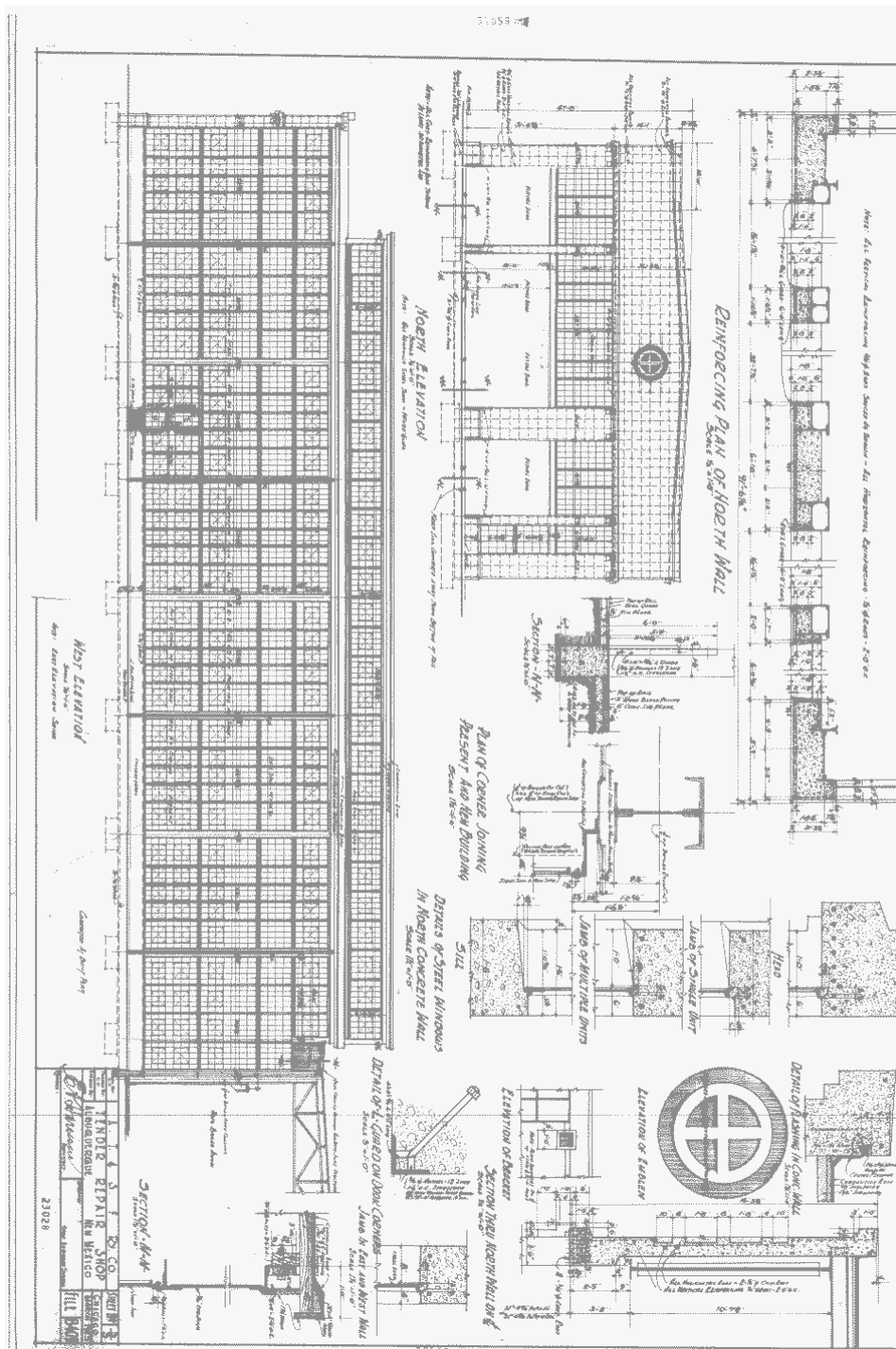


Figure 19. North and west elevations of the tender shop with concrete details. Drawn by AT & SF engineers, drawing ca. 1925

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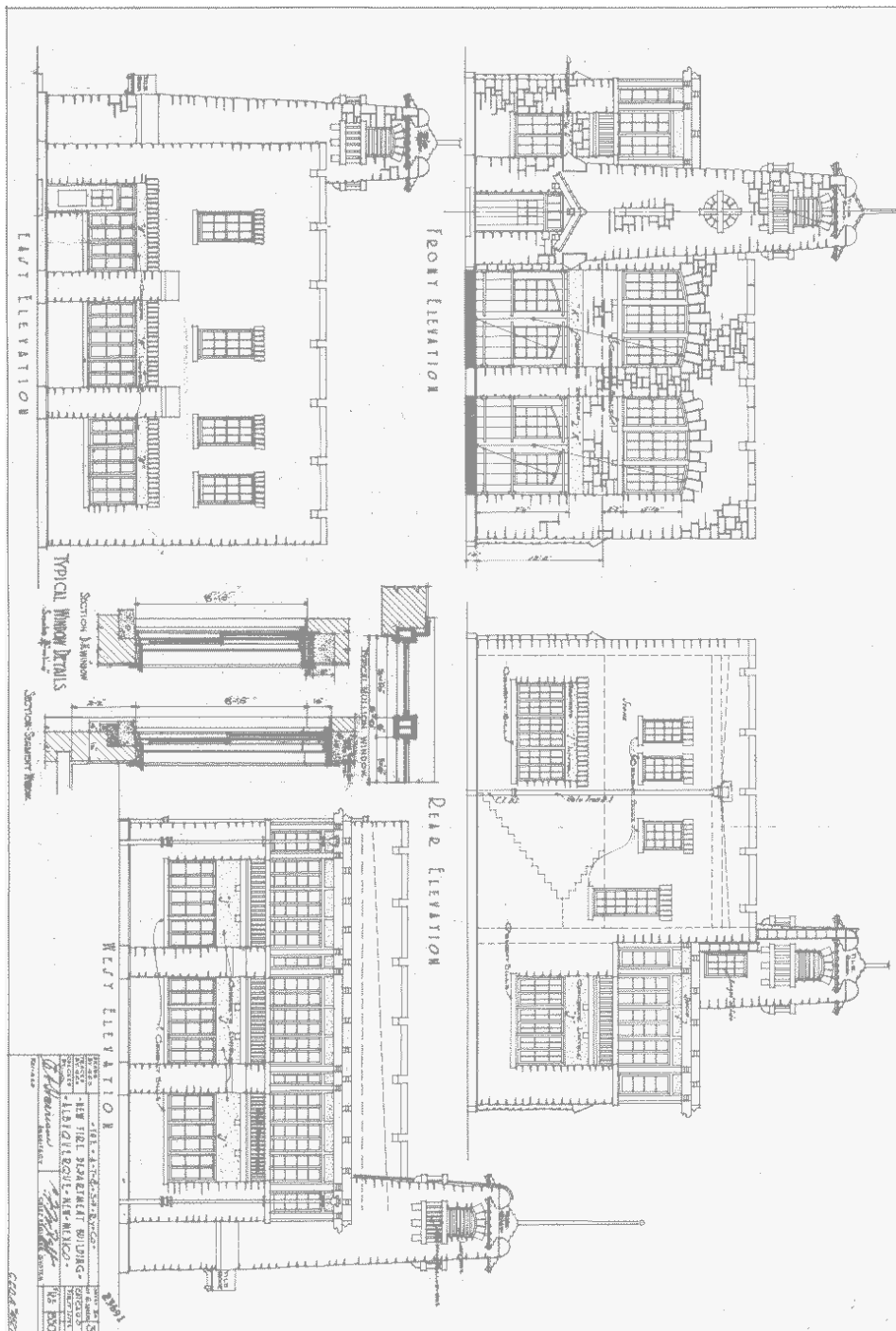


Figure 20. Construction drawing of fire station showing elevations. Drawn by AT & SF engineers, drawing ca. 1919

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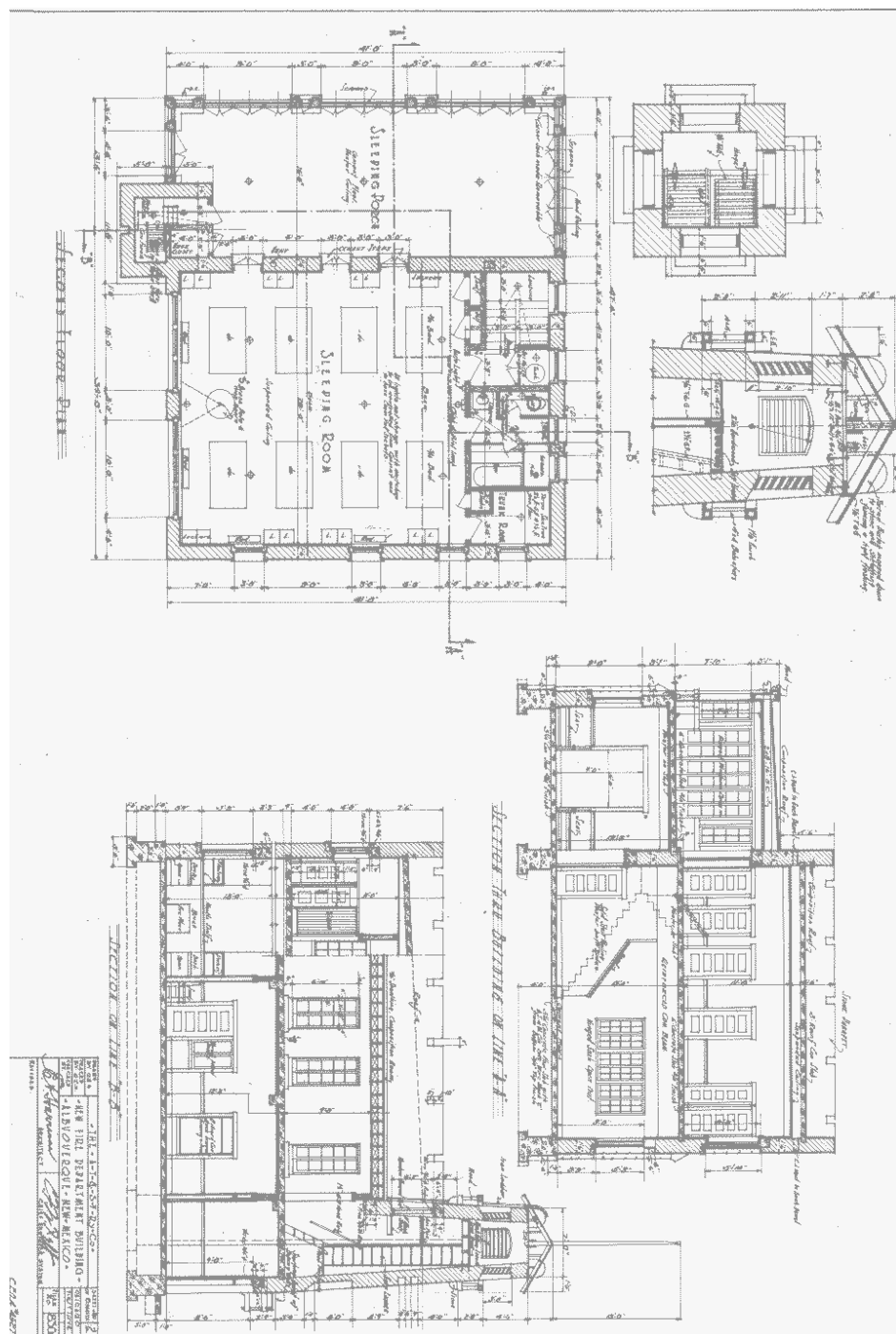


Figure 21. Construction drawing showing plan, sections and tower details. Drawn by AT & SF engineers, drawing ca. 1919

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Figure 22. Turntable
seen from roof of
machine shop
looking south.
Photograph by Jet
Lowe, April 8, 2009