## 859

## 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
His	toric name: Atchison, Topeka & Santa Fe Railway Locomotive Shops
Oth	er names/site number: Albuquerque Rail Yards
Na	me of related multiple property listing:
His	storic and Architectural Resources of Central Albuquerque, 1880-1970



#### 2. Location

Street & number: Roughly b	ounded by 1 <sup>st</sup> and 2 <sup>nd</sup> stre	ets and the BNSF rail line in southwest Albuquerque
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Not For Publication:	Vicinity:	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,

D

I hereby certify that this <u>X</u> 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 X\_ meets \_\_\_\_\_ does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:

\_\_\_\_\_national X\_statewide X\_local Applicable National Register Criteria:

<u>X</u>A <u>B</u>XC

4.011 8/13/14	field C	8/13/14
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Signature of certifying official/litle:

Dr. Jeff Pappas, New Mexico State Historic Preservation Officer

State or Federal agency/bureau or Tribal Government

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

United States Department of the Interior National Park Service / National Register of Historic Places Registration Form NPS Form 10-900 OMB No. 1024-0018

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

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#### 4. National Park Service Certification

- I hereby certify that this property is:
- ۲ 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:)

Seall Date of Action fignature of the Keeper

#### 5. Classification

#### **Ownership of Property**

(Check as many	boxes as apply.)
Private:	

Х

Public - Local

Public - State

Public - Federal

#### **Category of Property**

(Check only one be	ox.)	
Building(s)		
District		X
Site	16	
Structure		
Object		

#### Number of Resources within Property

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(Do not include previously listed resources in the count)		
Contributing	Noncontributing	
15	3	buildings
1		sites
-		
5	<u> </u>	structures
		ahiaata
		objects
21	4	Total
	<u>_</u>	Total

Number of contributing resources previously listed in the National Register <u>0</u>

6. Function or Use Historic Functions (Enter categories from instructions.)

**Current Functions** (Enter categories from instructions.)

Vacant

7. Description

#### **Architectural Classification**

(Enter categories from instructions.)

Late Victorian: Romanesque

Late 19th and 20th Century Revivals: Classical Revival, Romanesque Revival

Other: Early 20th-century factory building, Stripped Classicism

**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 & Santa Fe Railway Company's (AT&SF) former steam locomotive shops, constructed between 1914 and 1925, occupy a 27-acre parcel on 2<sup>nd</sup> 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. On the west side it is flanked 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 New Mexico. 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. Locomotives were moved across the site by a transfer table, which consisted of a depressed concrete structure, and two steel transfer decks located between the two major buildings. The machine shop retains a 250-ton-capacity overhead bridge crane and two smaller 15-ton bridge cranes. 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. Monumental-scale facades of reinforced concrete in the Classical Revivalstyle front the dominant buildings: the machine, boiler, and tender repair shops. The sides of these tall 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 also walled three smaller buildings. Reinforced concrete provides walls to seven buildings, including the storehouse and flue shop, and two structures, the water reservoir and fire runway. The fire

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station employs ashlar sandstone walls in a rustic version of the Mediterranean Revival style. The remaining buildings employ materials in a functional, unornamented manner. The sheetmetal house has a wood-timber frame with board-and-batten siding.

#### **Narrative Description**

The AT&SF Railway Locomotive Shop historic district in Albuquerque is situated at the eastern edge of the Rio Grande flood plain. It occupies a 27-acre parcel on 2<sup>nd</sup> 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 to west, and 1,900 feet north to south. The land 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 2<sup>nd</sup> Street and the Barelas residential neighborhood, and on the east by the original main line of the AT&SF Railroad and the South Broadway neighborhood. In the 1990s, this line became part of the BNSF Railroad, the successor to the AT&SF, 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), 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 buildings are centered on the machine shops, boiler, and boiler shops with two clusters of buildings to the north and south. 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 in which they face east toward the main tracks and to the west toward 2<sup>nd</sup> Street. The scale of these facades appear monumental in relationship to the small, one-story houses in the adjacent neighborhoods. Nearly all of the buildings in the shops complex are one story tall.

Architecturally, only the machine and boiler shop facades and the fire station employ ornament and distinctive architectural style. The two-story Romanesque Revival fire station was constructed of rough-faced, random ashlar, red sandstone with a crenelated parapet and tile accents (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 beyond, the South Broadway neighborhood on the east or the Barelas neighborhood to the west. The Stripped Classical facades feature plain concrete piers with

capitals capped with a plain bracketed cornice. The cornice is topped by a frieze with a pediment and an embossed AT&SF company emblem. These concrete facades are integrated into the steel frame of the building and are structurally redundant. The same design is repeated in the north end of the tender repair shop.

A third building, the blacksmith shop is 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 in the complex employ exposed structural and cladding materials, such as reinforced concrete, steel frame, wood framing and siding, brick walls, and steel sash windows.

The original shops complex, built in the 1880s, was redeveloped between 1914 and 1925, to handle greater numbers of larger locomotives. The new facilities, in addition to those described above, 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 larger buildings. There were five free-standing lavatory buildings and the fire station rose nearby.

All of the contributing buildings in the historic district were erected between 1914 and 1925, except one small building, the motor car garage, which was built between 1924 and 1931. Two buildings have been added since 1945. The electric power plant erected in 1914-1915, 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 also been demolished.

During its heyday in the 1920s, approximately one thousand people were employed at the shops. During the Second World War, the shops employed a temporary peak of 1,500 employees. 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 ash pan dumped and its fire cleaned, ridding it of

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clinkers, the irregular lumps of coal left after firing. 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 that coal burning locomotives necessitated. 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 removed. 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).

Locomotive were taken to a large shop, such as that at Albuquerque, for a major overhaul. In the nineteenth 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 each was 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 12 to 18 months. In the twentieth century, the Albuquerque shops serviced 40 locomotives in a normal month (Wilson 1986: 7).

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*Figure 1. Machine Shop where locomotives were dismantled and the parts sent for cleaning, inspection and repair. Note the locomotive suspended from the bridge crane.* 

Demolitions that have occurred since its construction include, on the north side, the general office building built in the 1880s, a washroom, gas plant, and the cab paint shop, which was drastically altered. On the south side, the roundhouse, powerhouse, and the 230-foot smokestack were all demolished in the 1980s.

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The machine and boiler shops were planned to maximize light and ventilation, and also the incorporation of machinery and equipment necessary for the efficient maintenance and repair of 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 allowed cross-axial transfer of the locomotives, parts, and materials through much of the site. Locomotives and tenders to be overhauled entered the shops on tracks that ran north to south. Once inside, the overhead traveling cranes that ran east to west lifted and moved the equipment (or the entire locomotive) between work bays, while the east-to-west running transfer table and an outside traveling crane facilitated movement across the north-to-south axis. The transfer table also allowed north-to-south movement between the machine and boiler shops and beyond to the roundhouse and tender repair shop. The efficient cross-axial plan of tracks, transfer table, and cranes made it possible to overhaul numerous locomotives within a small complex of buildings.

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 maintain and repair the 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 straight lines 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 to be replaced. These day-to-day activities were supported by the storehouse, which housed parts and supplies and kept wellstocked 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, E.A. Harrison, architect, CFW Felt, engineer, American Bridge Co., photos 1-9

Locomotives were delivered to the machine shop to be disassembled for repairs. With a 250-ton capacity overhead traveling crane, boilers were lifted and removed from their frames. The wheels were sent to the wheels shop. The most imposing of the buildings is the machine shop, which stands in the center of the complex, 71-feet, 7-inches above finish floor. It is 239-feet

wide by 604-feet long. The machine shop was the first Albuquerque building of this scale and among the first with long sides (north and south) of steel-and-glass curtain walls. The east- and west-end walls are poured concrete with large window areas.

The machine shop's long axis runs east to west, the orientation of its four interior work bays. When examined from north to south, the erecting bay is first, followed by the heavy machinery bay, the light machinery bay, and then the bench bay. The erecting bay is the tallest, the heavy machinery bay is next tallest, and the other two are matching at lower heights (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.



Figure 2. Machine shop where work was distributed between four 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. Paired concrete pier-cap brackets adorn the tops of both wide and narrow piers within the erecting bay. 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-sloped shed roof with 23-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-pitched gable roof over the highest interior space, the erecting bay, and a low-pitched shed roof over the remainder of the building.

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Both roofs have diagonal two-layers of lumber decking and five-ply composition roofing. Outside the north wall of the machine shop stand several urinals with running water and steel privacy screens with roofs.

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 nearly-rectangular floor plan measures 139,000 square feet. It is notched at the southeast corner, where locomotives entered the shop after inspection at an outdoor pit. Most of the ground floor is a six-inch concrete slab, originally primed with bituminous coating, and topped with three-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 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, 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.

## Erecting bay

The machine shop's erecting bay is the complex's largest covered space. It is roughly 600 feet by 90 feet in plan and 57 feet in height. It includes concrete engine repair pits side-by-side along the length of the bay. Originally the bay had 26 pits, one of which was 136 feet long. Twelve of the pits have been filled with concrete. The remaining 14 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.

The glass curtain wall admits light and allows ventilation. Steel sashes frame the wired glass that make up the curtain windows. 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. Two mechanical equipment penthouses were

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built 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 wholebuilding 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. Machine shop with locomotives in the erecting bay, looking southwest. Note concrete pits and 250-ton bridge crane in background.* 

## 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 illuminated by 23 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

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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. Machine shop with 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 open stairs lead to the balcony and mezzanine above the bench bay immediately to the south. The AT&SF's original floor plans show three stairs, which suggests that one has been removed.

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.

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### 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 steeland-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 blocks 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 runs the length of the machine shop along the exterior of the south wall. Its two crane rails are carried by braces on the machine shop wall and a row of steel columns (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 shopbuilt 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.

The machine shop retains a high level of historic integrity. Some repair pits have been filled, original doors were altered, a loading dock was added, and equipment was removed. Currently,

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the roof leaks and there is floor damage, water penetration, and a large numbers of brokenwindow panes in the windows and skylights.



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

## Boiler shop, built 1923, E.A. 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 long, east-to-west oriented boiler shop features reinforced-concrete walls on the east and west facades and glass-curtain walls on the north and south sides. It is located parallel and north of the machine shop. The building is adjoined on its north side by the tender repair shop and flue shop, where doors connect these buildings to its heavy equipment bay. The tender repair shop door has a through-track for access to the erecting bay. A tall steel canopy or firing shed (annex) of 6,400-square feet of floor area is attached at the west end of the boiler shop. Unlike the other

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buildings attached to it, the canopy was built as part of the boiler shop. On the roof are three linear skylights and 12 cast-iron "Dickinson ventilators," as labeled on the AT&SF working drawings. The roof of this "annex" is gabled and has a "cement tile" or "concrete roof slab," again according to the drawings. The canopy has four bays oriented north to south for rail access by locomotives ready for testing. The two western bays remain open-air, as they were 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-to-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 17 work stations served by a 30-ton-capacity bridge crane. It has one rooftop fan room and the erecting bay is taller than the heavy machinery bay. The latter has 13 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.

Similarly to the machine shop, a notch was cut out of the east end of the boiler shop's rectangular plan. The boiler shop's notch differs because it is filled by the south end of the flue shop, which had been built three years earlier.

Inside as well, the boiler shop is similar to 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-to-west track leading to the blacksmith shop via a small interior turntable (now missing). The turntable was used to pivot objects (presumably flues) being moved to and from the flue shop through the heavy equipment bay. The boiler shop floor is wood like the machine shop, but it has been scavenged to repair the machine shop floor.

The boiler shop has several minor alterations that diminish its historic integrity. 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 and the westernmost bi-fold door opening in the curtain wall has been filled in with concrete block, as has another near the

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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 building also suffered extensive failure of roofing and decking as well as vandalized glass windows and skylights.



Figure 6. Boiler shop with men working on the fire box of an engine.

## Blacksmith shop, built 1917, photos 13-16

The blacksmith shop provided for the heating and forging of metal, primarily iron and steel, and for machining of parts. The building is located on the east side of the complex, adjacent to the rail line. It is a tall, one-story rectangular-shaped building, constructed of red brick laid in common bond. Its shallow-pitched gable roof features stepped parapets and brick corbelling. The high parapets at the north and south ends are covered with a concrete coping. A roof monitor was removed before 1975. The south elevation includes central, bi-fold doors with a single set of rail tracks that enter the building. The door is flanked by two slightly taller windows. The north façade includes a metal overhead door, which replaced the original bi-fold

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doors. Large steel-framed windows rise from the floor level to the ceiling of the east and west walls.



Figure 7. Blacksmith shop with large presses. Steel trusses span the interior.

The blacksmith shop has the third largest in the complex with 13 structural bays. It measures 80 feet by 306 feet. The steel Warren roof trusses with crowned lower chords is supported by steel columns (See Figure 7). The trusses span the full width of the open interior. Overhead, the steel framing and wood decking, the engaged columns, and the bracing are exposed. Pipes, insulated steam lines, and the gas line to the forge enter the building overhead at the south end. The forge flue and a second flue near the west wall remain in place. The floor, which is now reinforced concrete, was earthen until at least 1957.

The historic integrity of the blacksmith shop is mostly intact. The few alterations include removal of the roof monitor and the window-glass replacement with synthetic, translucent materials. In 2013, the roof was patched along with other minor repairs.

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Figure 8. Blacksmith shop with men hammering a drawbar with a steam hammer.

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

The flue shop is located on the north side of the boiler shop. There, the flues removed from the engine's boilers were cleaned, inspected, and replacements were prepared and stored for installation. In locomotives, flues carried hot gases and smoke through the boiler to the smoke box. The building is constructed of reinforced concrete and covered with a shallow-pitch gable roof, which surmounted by nearly full-length monitor. It is ten bays long with pilasters between the steel-framed windows. The interior concrete piers are surmounted by poured-concrete beams that extend the width of the building to provide an open floor plan.

The south end of the flue shop opens into the boiler shop. It features an addition on the north side with concrete-masonry walls and a roof structure of pre-cast concrete tees. Two window openings on the north side provide access to the addition. The building measures 9,464-square feet. Although the flue shop includes several small additions, it retains sufficient historic integrity to contribute to the historic district.

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

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. It is located immediately north of the boiler shop and is the only large wood building in the complex. The concrete-paved easternmost bay is open on the east, north, and south sides, which serve as a runway for the overhead monorail and shop "mules" (motorized delivery vehicles). A second north-side opening provides access to a narrower runway through the building. The sheet metal house measures 13,950-square feet. The walls and roof are supported with a wood frame and wood trusses. Board-and-batten siding covers the north, west, and south sides. It has an asymmetrical gable roof. The building consists of 13 north-to-south bays and four east-to-west bays. Girders and hanger beams support a manually operated monorail system used to move sheet iron in and out of storage bays. The interior includes a wood two-story block of two rooms joined by a stair. The historic integrity of the sheet metal shed is very high. There have been no major alterations to this building except for failed roofing and the removal of the overhead framing that carried the monorail to the machine shop.

## Tender repair shop (tank shop), built 1925, E.A. Harrison, architect, A.F. Robinson, chief AT&SF bridge engineer, photos 22-23

The tender repair shop, attached to the north side of the boiler shop, is where shop workers disassembled and repaired tenders, including partial or complete replacement of side sheets, interior baffles, frame repair or replacement, pump, piping, and plumbing repairs. The smallest of the three monumental-scale concrete buildings in the complex, it is served by a rail siding. The tender repair shop's detailed concrete façade faces downtown Albuquerque. The construction is similar to the boiler shop, except for the roof monitor on the tender repair shop. The glass curtain walls are eight bays long above a concrete bulkhead. The interior is open, except for a small office along the east wall. The tender repair shop, despite filled openings and some vandalism, maintains a high level of historic integrity.

## Waste and paint rooms, built 1920, photo 24

The waste and paint rooms building is a low, one-story building constructed of poured concrete with steel-framed windows and shallow-pitched gable roof. It is located on the northwest corner of the complex along 1<sup>st</sup> Street. The building measures 1,584-square feet. The main (east) elevation includes a pair of doors, which lead to the paint room. The steel doors are partially glazed. The north and south elevations feature five openings. There have been no exterior alterations; the waste and paint room retains a high level of historic integrity.

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**Fire station, built 1920, E.A. Harrison, architect and C.F.W. Felt, engineer, photos 25-26** The fire station, which housed the AT&SF Fire Department, is the oldest surviving fire station in Albuquerque. Designed in the Romanesque Revival style, the fire station is located along 2<sup>nd</sup> Street on the northwest corner of the complex. The two-story building is constructed of randomlaid red sandstone blocks and includes a crenellated parapet and hose-drying tower. A one-story stone and wood-frame section with a crenellated parapet forms the west side. The south elevation includes two two-story segmental arches. The second story features three double-hung windows. The building measures 3,936-square feet.

The hose tower entrance includes a wood-and-tile gable-roofed hood with an art-glass ceiling lantern. Above the hood, the AT&SF emblem is carved in stone relief. The tower roof is covered with barrel tile, supported by rafters with exposed rafter tails. The hemispherical concrete caps at the corners rise above the roof. The interior plan and many historic features remain, including the (concealed) fireplace and the brass fireman's pole. The fire station has sustained minor alterations and is in poor condition, but it retains a high level of historic integrity.

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

The pattern house, the northernmost building in the complex, was used for storing patterns for the fabrication of machine parts. The one-story concrete building measures 40 feet by 70 feet and is covered with a shallow-pitched gabled roof. The north and south elevations include paneled metal doors flanked by two windows. The windows have been covered with corrugated sheet metal. The east and west elevations include four windows, which are covered with corrugated sheet metal. The pattern house is among the few shop buildings without large windows. The pattern house has sustained no exterior alterations and retains a high level of historic integrity.

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

The north washroom is a one-story, rectangular-shaped building constructed of brick laid in common bond and covered with a gabled roof. The roof features stepped parapets on the and south ends. The windows have segmental arches and brick sills. The remaining windows and doors are wood and in various states of deterioration. The 1,964-square-foot building is in poor condition, but retains significant character-defining features. It has a high level of historic integrity.

## Storehouse, built 1915, photos 29-31

The storehouse, located along 2<sup>nd</sup> Street on the west side of the complex, served as supply storage for the shops and was the primary storage facility for railroad operations on the

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AT&SF's New Mexico Division. The storehouse is a one-story, poured-concrete building on a raised concrete platform. The long-rectangular building is covered with a shallow-pitched gable roof and monitor. Its long east and west facades measure 16 bays and its short ends have two bays. In the northernmost bay are six pairs and one tripartite double-hung window, which provide light for interior offices. A personnel door in the north façade leads from a wood porch to offices inside. The storehouse has two overhead doors onto platforms on both east and west sides. The platforms are roughly ten feet wide and about 3 feet high. A long, 68-feet-wide concrete loading dock extends roughly 1,000 feet along 2<sup>nd</sup> Street from the south side of the storehouse. The northernmost 340 feet are within the historic district boundary. The oil cellar is walled by concrete. It is built into the south platform with an enclosed stair covered with iron hatches.



*Figure 9.* Storehouse with stock to support the shops and the railroad operations of the AT&SF's New Mexico Division. The storehouse carried over 35,000 different items.

The interior is divided into three unequal-sized spaces. The northern part is a suite of offices and restrooms. The larger center section serves as open storage (See Figure 9). The southern section

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is a room abutting the attached oil cellar, accessible only via two exterior doors. The storehouse retains a high level of historic integrity.

## Babbitt shop, built 1921, photos 32-33:

The babbitt shop served as a space for making and applying babbitt metal alloys as surface layers on complex metal surfaces. The babbitt shop was part of the cross-axial plan for moving equipment among work sites in the complex. The one-story, poured-concrete building is located adjacent to the storehouse on the south side of the complex. The shallow-pitched roof includes six cylindrical metal ventilators. Window and door bays number three per side, with a pair of swinging doors in the center bays of the north and south sides. The doors are steel and the windows are steel-framed. 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 building measures 36 feet by 50 feet. The interior structure system includes pilasters, beams, and paired purlins integral with its walls and roof deck. A shop-built system of steam radiators for space heating remains along the east and west walls. This building retains a high level of historic integrity.

## Welding shop, built 1922, photos 34-36

The welding shop, which housed the super-heater units during welding, adjoins the babbitt building on the south side of the complex. The single-story, rectangular-shaped shop is constructed of reinforced concrete and covered with a shallow-pitched gable roof and seven cylindrical metal ventilators. The building is well-fenestrated, with seven bays of windows on the south side. The north side has two sets of tall bi-fold doors. The welding shop's west end abuts a wooden shed, which adjoins the babbitt shop. The interior plan measures 27 feet by 90 feet. One jib crane, enamel lighting reflectors, and machine platforms, which are integral with the floor slab, survive. Stubs of gas and steam lines enter the building at the east end, through the filled window. The welding shop has a high level of historic integrity.

### 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 complex. It is a one-story, rectangular-shaped brick building, covered with a gabled roof. Stepped parapets with concrete coping are located at the gable ends. The washroom is 3,640 square feet. The south washroom is similar, but larger than the north washroom. Some doors have steel replacements. This building's board-and-batten ceilings are separating because of failed roofing.

The south washroom retains several handmade signs, which were once found throughout the complex. On the exterior, signs in paint, some of it applied with stencils, read: "NO PARKING," "NATURAL GAS," and "CARPENTER SHOP." Inside the west room is a

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stenciled image of an AT&SF shop man walking in profile. This is the best remaining example of three such stencils on the site. The washroom retains a high level of integrity.

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

The motor car garage, the southernmost building in the district, is a one-story brick building with a shallow-pitched roof and stepped parapets. The north and south elevations include large banks of steel-framed windows with both fixed and operable sashes. The east elevation includes three overhead doors. The motor car garage measures 1,514-square feet. The interior plan features two large rooms and two small, plastered partitions with concrete floors, and steel roof joists with steel decking. The white walls include a black-painted dado. In a typical alteration of shop buildings, the AT&SF replaced broken glass panes with translucent synthetic panes of plastic and fiberglass. The motor car garage retains a high level of historic integrity.

## Transfer table, built 1922, photos 41-42

The transfer table is a depressed concrete structure roughly 60 feet by 604 feet. Located between the machine shop and the boiler and blacksmith shops, it served as the main mover of equipment on the east-to-west axis in the center of the complex. Its three-foot-deep concrete pit has a floor slab, four east-to-west tracks of 6-inch concrete footings, and two steel north-to-south transfer decks. The larger of the two decks has an enclosed cab, electric motor, drive gears, and a mast that held power wires. The cab has a steel body and wood, multi-light windows. The deck of the cab has wheels that extend above the checker-plate steel surface and can push or pull locomotives. The transfer table retains a high level of historic integrity.

### Turntable, built 1915, photos 43-44

The turntable served the roundhouse, which was built in 1925 and demolished in 1986, by directing locomotives and cars into one of the 35 stalls in the roundhouse (See Figure 10). Located at the center of the south side of the complex, the steel-plate girder turntable with head frame is set in a concrete pit that measures four feet deep and 120 feet in diameter. The turntable, which was powered by an internal combustion engine, is operable and used occasionally by the BNSF Railway. The BNSF currently owns an easement from its adjacent property. The turntable retains a high level of historic integrity.

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Figure 10. Turntable with roundhouse. The roundhouse was demolished in 1986.

#### Fire runway, built c.1920, photo 45

The fire runway, constructed between 1920 and 1922, is a poured-concrete track built to ensure that a fire-fighting apparatus could reach all major buildings 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. The fire runway retains a high level of historic integrity.

#### Water reservoir, built c.1919, photo 46

The water reservoir is a large cistern, which is partly set below grade and measures 32 feet wide by 182 feet long. Located along Commercial Street at the south end of the complex, the reservoir is covered with a concrete, shallow-pitched gabled roof. Two sheds are located at the north and south ends of the roof. Sanborn maps indicate that the reservoir was six 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 after 1957 and the reservoir was filled with sand. The reservoir retains a high level of historic integrity.

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### Tracks, photo 47

Tracks are present throughout the complex and were used to move locomotives north and south through the site. The tracks enter the site at the north and south ends through spurs off of the main railroad tracks east of the complex. The tracks enter buildings, such as the blacksmith shop, tender repair shop, boiler shop, and machine shop. Tracks also run between shops, such as between the babbitt shop and the machine shop, and between buildings and structures, such as the machine shop and the turntable and between the transfer table and the boiler shop. Some tracks remain above grade and other sections have had fill added so that they remain at grade. Some sections of track have been removed. Most of these changes occurred in order to allow for easier movement of locomotives and cars around the site when its function changed from work on 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, which was razed in 1986, is survived by its massive concrete foundation and atgrade features, including portions of the foundation, brick paving, and track lines. Located at the center of the south sideof the complex, the turntable, described above, remains at the center of the site. The roundhouse foundation is a contributing site because it contributes to the historic district's sense of time and place and historic historical development. The roundhouse roof covered about 100,000-square feet and it had 35 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 is unknown for this small, one-story, square-shaped building located near the machine shop along 2<sup>nd</sup> Street on the west side of the complex. It has a flat roof that extends to the west to provide an overhang, where the entrance door is located. The exterior is covered in vertical pressed board. 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. This building is noncontributing because it 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 Centralized Work Equipment shops headquarters after the shops changed functions from repairing steam locomotives to serving as the CWE shops in the 1950s. It adjoins the north side of the boiler shop on the north side of the complex. It opens into the boiler shop near the west end of that building. Its stucco finish covers the original reinforced-concrete walls. Between its

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construction and the closing of AT&SF operations on-site, this building was altered more than any other building in the complex. That may be due to the demolition in 1961 of the AT&SF's general office building. The two-story adobe building was built by the Atlantic and Pacific Railway in 1881. Prior to demolition, it had provided much-needed office space in the shops complex.

The cab paint shop was a free-standing building, which measured 3,660 square feet. It was later connected to the boiler shop in 1923. A concrete masonry addition, built before 1957 on the north end of the cab paint shop, 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. Atop the building's northwest corner is a sign identifying the Centralized Work Equipment shops. None of the cab paint shop alterations have acquired significance. As such, the building is noncontributing to the historic district.

## Power house, built post-1957, photo 51

The power house created steam power to pump water from on-site wells, generate electricity, and compress air. It is located adjacently to the machine shop on the south side of the complex. The original coal-fired power house, which was razed in 1984, provided heat to both the shops and the Alvarado Hotel several blocks north. After the shops began purchasing electricity, the power house continued to produce steam to clean parts and tanks. The existing power plant was constructed west of the original plant after 1957. This metal building has a shallow-pitched gabled roof with 12 skylights and a monitor. The interior includes two gas-fired electrical generators and a boiler. The power house is noncontributing to the historic district because it was built after the period of significance.

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

The gas welding lines consist of pipes running on uprights of light railway track along the 2<sup>nd</sup> Street from which they branch into buildings, such as the machine and boiler shops. Although there were numerous steam lines running throughout the property to provide power (later replaced by electricity), the change to natural gas began in the 1920s. These gas lines primarily served welding operations. The lines originated at the "Acetylene Generator Plant," which was located northeast of the pattern house (and was demolished post-1957). These lines were essential to operations of the shops. However, they are only a fragment. Disconnected from a beginning plant, they do not connect with the welding building. As such, they are noncontributing to the significance of the historic district.

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## **Contributing and Noncontributing Resources**

	Name	Built	Classification	
		1001		
1	Machine shop	1921	Contributing Building.	
_	w/ crane runway, five traveling cranes, and lye-vat shed			
2	Boiler shop w/ canopy	1923	Contributing Building	
3	Blacksmith shop	1917	Contributing Building	
4	Flue shop	1920	Contributing Building	
5	Sheet metal house	pre-1919	Contributing Building	
6	Tender repair shop	1925	Contributing Building	
7	Waste and paint rooms	1920	Contributing Building	
8	Fire station	1920	Contributing Building	
9	Pattern house	1922	Contributing Building	
10	North washroom	1915	Contributing Building	
11	Storehouse w/platform	1915	Contributing Building	
12	Babbitt shop	1921	Contributing Building	
13	Welding shop w/ jib crane	1922	Contributing Building	
14	South washroom	1917	Contributing Building	
15	Motor car garage	pre 1931	Contributing Building	
16	Transfer table	1922	Contributing Structure	
17	Turntable	1915	Contributing Structure	
18	Fire runway	pre-1922	. Contributing Structure	
19	Water reservoir	pre- 1922	Contributing Structure	
20	Tracks	-	Contributing Structure	
21	Roundhouse foundation	1915	Contributing Site	
22	Entry station	post-1957	Noncontributing building	
23	Cab paint shop	1921	Noncontributing building	
24	Power house	post-1957	Noncontributing building	
25	Gas welding lines	pre-1922	Noncontributing Structure	

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#### **Statement of Significance**

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#### **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

United States Department of the Interior National Park Service / National Register of Historic Places Registration Form NPS Form 10-900 OMB No. 1024-0018

Atchison, Topeka & Santa Fe Railway Locomotive Shops Name of Property Bernalillo, New Mexico County and State

Period of Significance 1914 - 1956

#### **Period of Significance Justification**

The period of significance begins in 1914, when the original shop complex was expanded and rebuilt, and ends in 1956, when the last steam locomotive was officially "retired" by the AT&SF in favor of diesel locomotives. After this retirement of the steam locomotive, usage of the property changed.

#### Significant Dates

<u>1914 – AT&SF begins rebuilding locomotive shops in Albuquerque</u> <u>1921 – machine shop constructed</u> <u>1923 – boiler shop constructed</u> 1956 – last steam locomotive retired by the AT&SF

#### Significant Person

(Complete only if Criterion B is marked above.) N/A\_\_\_\_\_

**Cultural Affiliation** N/A

Architect/Builder Harrison, E. A. (AT&SF architect) Felt, C. F. W. and Harris, G. W. (AT&SF engineers) Robinson, A. F. (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 Atchison, Topeka & Santa Fe Railway Locomotive Shops in Albuquerque is the largest and best surviving railroad shop complex in the state of New Mexico. Constructed by the AT&SF Railway as a maintenance, repair, and overhaul facility for steam locomotives, the complex is one of only four such facilities built by the AT&SF for that purpose. It was outfitted with the latest engineering technology for locomotive repair and industrial efficiency. The shops were an

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integral part of the railway's and the nation's rail transportation system, providing support for freight and passenger service for more than six decades. The locomotive shops were crucial in the economic history of the city of Albuquerque as its largest employer and the largest historic industrial complex in the state. The district contributes to our understanding of early twentiethcentury industrial architecture and engineering. The variety of buildings and structures that comprise the shops demonstrate a range of industrial materials and building practices used during the first half of the twentieth century, such as steel framing, glass-curtain walls, reinforced concrete, brick, and wood-timber framing. The long-spans permitted by the steel frame represents significant changes in industrial building design and construction throughout the United States in the early twentieth century. The Atchison, Topeka & Santa Fe Railway Locomotive Shops is eligible for listing in the National Register of Historic Places under National Register Criterion A at the state level of significance in the areas of transportation and industry, and, at the local level, social history. The shops complex is eligible for listing in the National Register of Historic Places under National Register Criterion C at the state level of significance in the areas architecture and engineering. The shops complex is eligible for listing under the Multiple Property Documentation Form, "Historic and Architectural Resources of Central Albuquerque, 1880-1970" under the period "Growth" (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 Locomotive Shops is the largest historic industrial facility in New Mexico.<sup>1</sup> Located south of downtown Albuquerque in Bernalillo County, the complex repaired and serviced steam locomotives from 1914 to 1956. The shops, which were essential to the growth and development of Albuquerque in the early 20<sup>th</sup> century, are excellent examples of architecture and engineering, especially the glass-curtain wall construction. One of only four locomotive shops complexes built by the Atchison, Topeka & Santa Fe Railway, the complex retains a high a level of historic integrity and retains nearly all of its historically significant buildings.

The Atchison, Topeka & Santa Fe Railway Locomotive Shops are eligible for listing in the National Register of Historic Places under National Register Criterion A at the state level of

<sup>&</sup>lt;sup>1</sup> The preparers wish to acknowledge Chris Wilson, J. B. Jackson Professor of Cultural Landscape Studies, University of New Mexico, for his groundbreaking research on the AT&SF Locomotive Shops, which made possible this National Register nomination.

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significance in the area of <u>transportation</u> because they were critical to the maintenance of the rail system throughout New Mexico. 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 era of steam locomotives. The railway's decision to place the facility in Albuquerque was 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 major force 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, the shops were responsible for keeping AT&SF locomotives and rolling stock running efficiently along its southwestern routes.

The Atchison, Topeka & Santa Fe Railway Locomotive Shops is eligible for listing in the National Register of Historic Places under National Register Criterion C at the state level of significance in the area of architecture. Its buildings represent leading-edge industrial design in the early twentieth century. The machine shop in particular has been compared to the Glass Plant designed by Detroit architect Albert Kahn at the Ford Motor Company's River Rouge plant. Architectural historian Grant Hildebrand has called the Glass Plant "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 through 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 reach of natural light and ventilation towards the shop floors. These construction methods also allowed for the installation of equipment, especially the large overhead cranes, which were crucial 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 shop's buildings and structures were designed for functionality, the machine shop, boiler shop, and blacksmith's shop incorporated elements of Stripped Classicism, which cultural historian Chris Wilson has identified as "industrial monuments to the Santa Fe Railway" (Wilson 1986: 9).

The locomotive shops are also eligible for listing in the National Register of Historic Places under National Register Criterion C at the state level of significance in the area of <u>engineering</u>. The equipment in the shops, especially the structures associated with the moving of locomotives and their parts, ensured that the AT&SF Locomotive Shops was the most advanced industrial facility in New Mexico. The cross-axial plan of the machine shop, the boiler shop, and the transfer table between them, allowed transfer of the locomotives, parts, and materials through much of the site. In the machine shop traveling cranes lifted locomotives and tenders to be

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overhauled. The transfer table enabled locomotives and parts to move between the machine and boiler shops. Significant surviving equipment in the machine shop includes one 250-ton-capacity bridge crane on the upper rail, two 15-ton-capacity cranes on the lower rail, and 14 concrete engine repair pits side-by-side along the length of the erecting bay. The heavy machinery bay includes one 15-ton capacity bridge crane and the bench bay features one single jib crane. The shops also include the crane runway, which runs the length of the machine shop along its south wall. The complex includes a 15-ton-capacity bridge crane and the turntable on the south side of the complex. Built in 1915, the turntable is a plate-girder steel turntable with a head frame, powered by an internal combustion engine, and set in a 120-foot diameter pit with poured-concrete walls.

The locomotive shops are eligible for listing in the National Register of Historic Places under National Register Criterion A at the state level of significance in the area of <u>industry</u> because the shops represent industrial efficiency in both the buildings and structures and in the operations of the facility. The reinforced-concrete and steel-frame construction was a faster and cheaper method of construction, which provided greater flexibility in overall design. These design improvements reflected an effort by the AT&SF to improve manufacturing capacity and labor relations. The AT&SF implemented a state-of-the-art recording keeping system to ensure that production was operating as efficiently as possible. This system led to more efficient movement of parts and supplies throughout the shops complex. Labor productivity increased as the workforce was organized into work gangs with specific tasks. 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.

The locomotive shops are eligible for listing in the National Register of Historic Places under National Register Criterion A at the local level of significance in the area of <u>social history</u> because the AT&SF locomotive shops had a significant impact on the city of Albuquerque. AT&SF operations provided jobs for more than a quarter of the city's workforce throughout its period of operations. These jobs supported commercial, social, and governmental activities, as well as the housing market. The shops supported the development of large businesses, such as the Albuquerque Foundry and wholesale warehouses, and contributed to Albuquerque's rising position as the state's economic center. This economic impact lasted until the end of World War II, when AT&SF's decision to close the locomotive shops dramatically minimized the railroad's presence in the city.

The arrival of the railroad in Albuquerque affected immigration and settlement patterns. The South Broadway neighborhood, east of the shops, became a neighborhood of predominately rail workers, who in turn supported the development of neighborhood housing and commercial

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enterprises. Numerous Mexican immigrants and Native American workers from nearby Pueblos and reservations came to the city for employment, thus changing the local demographics. The Barelas community, situated west of the shops, was most directly affected by employment opportunities and economic development along 2<sup>nd</sup> and 4<sup>th</sup> streets. This development accelerated with the designation of 4<sup>th</sup> 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. Housing reflected the cultural changes brought to the community. Traditional adobe construction was often replaced by wood-frame Victorian cottages and bungalows. Steam heat, generated by the shop's power house, was piped into nearby houses. The AT&SF sponsored company picnics in the mountains; shop workers and their wives or girlfriends socialized on Saturday nights at local dances; railway employees enjoyed free travel on the line. As a child Bonifacio Anaya remembered watching lines of workers ("lots of different people") march in and out of the shops during lunch breaks, or at the end of the day. Sounding four times a day, the company's steam whistle regulated the rhythms of daily life and also came to symbolize prosperity.

The 1922 Railroad Shopmen's Strike had a lasting effect on families in the community. Some workers who did not support the strike kept their well-paying jobs. Others, who did strike, lost their chance of continuing employment with the AT&SF. Despite the limited benefits won in that strike, the idea of unions remained everpresent among Barelas workers into the 1950s and 1960s (Ghattas n.d.). In stories related by retired railroad workers, there is a consistent theme in which 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 shops could be very dangerous. Fatal accidents were not uncommon. Based on oral histories, the large, sophisticated mechanical equipment was often perilous to use. Even relatively mundane tasks, such as car painting, could put men in unsafe situations, as locomotives and rolling stock moved through the yard (Ghattas n.d.). Workers were exposed to toxic chemicals and asbestos as they cleaned boilers and other locomotive parts. Boiler work was prone to explosions. As a result, the AT&SF built a company hospital, the Santa Fe Hospital, the city's first, on South Broadway in 1881. This building was replaced in 1926 by a larger, more modern facility, later called Memorial Hospital, on Central Avenue at Elm Street.<sup>2</sup>

<sup>&</sup>lt;sup>2</sup> Remnants of the 1881 hospital are incorporated into the St. Frances Xavier Church and School at 316 Broadway SE. The hospital building on Central Avenue is now the Hotel Parq Central.

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# The AT&SF Locomotive Shops and the Multiple Property Submission: Historic and Architectural Resources of Central Albuquerque, 1880-1970

The AT&SF Railway Locomotive Shops is underscored in the in the Multiple Property Submission: "The AT&SF locomotive shops was arguably the largest single factor in the growth and development of Central Albuquerque in the first half of the twentieth century. However, it was the post-World War II expansion of smaller manufacturing and repair shops – as the locomotive lost their importance – that helped keep the city's economy growing. These small shops located in a variety of shapes and sizes and clustered in just north of the city's commercial core provided alternative employment opportunities to the large corporate entities being built outside the boundaries of Central Albuquerque. They also provided needed goods and services to the local community."

The Multiple Property Submission includes industrial buildings as an associated property type. The AT&SF Locomotive Shops are eligible for listing in the National Register under the MPS as industrial buildings as subtypes: (A) warehouses, (B) manufacturing or repair shop, and (C) railroad spur lines. The AT&SF Locomotive Shops meet the MPS registration requirements because they are located within the boundaries of Central Albuquerque, attained significance between 1880 and 1970, meet two National Register Criteria (A and C) for eligibility, and retain a high level of historic.

## Developmental history/additional historic context information (if appropriate)

## The Railroad Arrives in New Mexico

The establishment of the transcontinental railroad in the late nineteenth century resulted in the subsequent growth of the city of Albuquerque and the Territory of New Mexico. The arrival of the AT&SF Railway into northeast New Mexico in the winter of 1879 was a significant historical event for the entire region.<sup>3</sup> The laying of a north-south rail line through the territory progressed quickly. On April 10, 1880, the work train pulled into the temporary depot at "New Town" Albuquerque (Myrick 1990: 7). The depot and the hastily assembled wooden shanties

<sup>&</sup>lt;sup>3</sup> The Atchison, Topeka & Santa Fe Railway, which was formed in Topeka, Kansas in 1859, entered northeast New Mexico through Raton Pass in 1879. It was a partnership with the Western Division of the Atlantic & Pacific Railroad, which was critical in making a connection with southern California through central New Mexico. The Atlantic & Pacific Railroad 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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and structures that formed the "town" stood two miles east of the V*illa de Alburquerque*, the site of the Spanish colonial settlement founded in 1706.<sup>4</sup> 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 in hopes of minimizing flood damage. This decision set the stage for the founding the town that later became the city of Albuquerque. Local entrepreneurs and land speculators soon began building the town's commercial center and adjacent residential neighborhoods along Railroad Avenue, later renamed Central Avenue (Simmons 1982: 224; Wilson 1986).

In January 1880, AT&SF executives decided to make one of the depots in Albuquerque 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 was to have a significant effect on Albuquerque's economic and social history.<sup>5</sup> 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 2<sup>nd</sup> Street, one 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 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

<sup>&</sup>lt;sup>4</sup> See Simmons (1982) for a complete account of the history of Albuquerque.

<sup>&</sup>lt;sup>5</sup> The three other AT&SF locomotive shops were located in Topeka, Kansas, Cleburne, Texas, and San Bernardino, California.
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subsequent problems associated with such ventures. Congress created the Interstate Commerce Commission, 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, straighten 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.

## Modernization of the Locomotive Shops: 1914-1925

The AT&SF plans called for significantly enlarging the Albuquerque maintenance facilities, which in reality meant 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 additional land south of the original shops, adjacent to the old farming community of Barelas. Beginning in 1914, and continuing intermittently for the next ten years, the expansion program completed more than 25 buildings, structures, and other improvements across 27 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 shops 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), 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.

The latter were located at the south end of the historic district near the Bridge Street overpass. Following this initial 18-month 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 was completed.

The early 1920s saw the completion of 12 buildings and structures: 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 2<sup>nd</sup> Street, adjacent to the AT&SF general office building (demolished sometime after 1957). 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 were a complex of buildings and structures designed to efficiently maintain and repair steam locomotives, tasks that required significant 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. 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 as necessary.

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Figure 11. AT&SF shops with roundhouse, reservoir and tanks, power house and smokestack, and machine shop. View looking southwest.

The roundhouse, which was demolished in 1986, was where most daily maintenance functions were carried out. The footprint of this structure is evident today as a 113,000-square-foot, concrete, brick, and metal foundation, the center of which is occupied by a revolving turntable that once directed locomotives into 35 covered stalls. The Albuquerque roundhouse was 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. The Albuquerque facility, along with roundhouses in Las Vegas, San Marcial, and Gallup, served northern and central New Mexico.

North of the roundhouse foundation stands the massive machine shop, the center of overhaul work. Opposite the machine shop and north of the transfer table is the smaller boiler shop. These two buildings and the transfer table comprised the core of locomotive overhauling

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operations and the cross-axial functional scheme. This scheme required shop bays to be sized and located for the work performed in each, mechanical systems to heat and ventilate the interior and cranes of several types for moving locomotives and parts. The machine 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. 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 spring 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 14 months and took six more to equip with tools and become operational.

The machine shop consists of four long work bays and 26 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 locomotive bodies off their chassis, or even hoist an entire locomotive. The machine shop's counterpart, the boiler shop, has two long bays and seven stalls in its erecting bay, which features a 30-ton-capacity bridge crane.

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

The north and south washrooms are relatively small buildings that remain from a set of five washrooms scattered around the site. The washrooms were integral to maintaining the shops' health and safety standards. Most work undertaken at the shops was dirty and dangerous. 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."

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Figure 12. Washroom on mezzanine in machine shop with workmen washing up at the end of the day.

The threat of fire was ever-present, as indicated by the construction of the fire station in 1920. The station was connected to most buildings on site by a concrete fire runway, paved to avoid the bare ground surface that, when muddy, hampered emergency responses. The storehouse, built early in the construction sequence, 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. South of the building, these platforms join 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 was the AT&SF designers' attempt to use freight rail capability to full advantage, minimizing wasted time and effort.

The construction period, 1914 to 1925, was a time of sweeping innovation in industrial design and building technology (Wilson 1986: 5-6). Nineteenth-century locomotive shops had been

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constructed of stone and heavy timber. But 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: fireproofed, lowered maintenance costs, and muffled machine noise and vibration. Some of the buildings constructed before 1920, such as the brick washrooms and timber-and-lumber sheet metal house, were closer to 19th-century building 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 of 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 also spanned greater distances and allowed installation of large windows for light and ventilation (Hildebrand 1974: 53-54). The long-span, steel-frame buildings of the Albuquerque shops represent the larger trending adaptations across the United States in industrial building design of the first decades of the twentieth century. The Albuquerque shops' steel buildings were designed 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, built in 1921, and boiler shop, built in 1923 (Railway Age 1922: 238-39; Wilson 1986: 8).

# Labor Troubles at the Locomotive Shops: 1916-1922

The AT&SF saw record profits in 1916, however by 1917, with the United States' increasing involvement in World War I; 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; 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 Interstate Commission to institute rate reductions for railroad freight customers (Kaufman 2005: 57). Railroad employees demanded higher wages and an eight-hour workday, leading to a period of labor unrest. The nation's "public highway," the railroad, was overwhelmed by transcontinental shipping needs and the demands from rank-and-file employees.

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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 United States Railroad Administration (Godfrey 1974; Kaufman 2005: 57-64). Although the government takeover of the railroads only lasted 18 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, which had the power to oversee wages and working conditions for more than two million railway workers (Godfrey 1974: 156; Davis 1992: 437). However, once the owners reacquired 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 75 percent. In addition, 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 12 percent reduction in wages for railroad workers. Major concessions to the big unions (or brotherhoods) that represented engineers, firemen, brakemen, and conductors averted a nationwide strike (Earl and Rocha 1986: 45). The following year, the Labor Board ordered more than \$60 million in wage cuts, primarily targeting railway repair and maintenance workers. This resulted in a strike (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 was a critical bargaining point for the "shopmen."The worker's level of seniority in this skilled-laborer position was a source of security 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 kept to a few relatively minor incidents.<sup>6</sup> Members of non-striking families in the city, such as the family of the AT&SF 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. Reports spread across the region 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 and set up tents and mess halls within the locked gates of the shop complex to accommodate the non-striking employees and strikebreakers. These employees wanted to avoid confrontations with the strikers picketing outside the gates.

Newspaper reports of the day often slanted towards the railway company's perspective. As such, 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 percent 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 Barelas 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 settle the strike quickly proved futile. It lingered 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. 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. The Railroad Labor Board was dismantled, giving way to the creation of a more effective mediation process through the passage of the Railroad Labor Act of 1926. However,

<sup>&</sup>lt;sup>6</sup> Armed conflicts resulting in deaths at other strike locations included Cleveland, Buffalo, New York, Clinton, Illinois, Port Morris, New Jersey, and Needles, California (Davis 1997: 84). The incident in Needles on July 12, 1922, caused problems along the AT&SF line, including Albuquerque (*Albuquerque Morning Journal*).

the violence and tension during the strike left bitter memories and feelings of distrust between shop men and company management.

## Operations at the Locomotive Shops: 1914-1945

By World War I, the railroads were experiencing high volumes of traffic that necessitated upgrading their major repair and maintenance facilities. The Albuquerque locomotive shops were. In 1917, the AT&SF in Albuquerque employed 970 men, representing 25 percent of the city's workforce, a high percentage for even a "railroad town" at time in which railroad employment averaged 2.7 percent of total employment in 11 surrounding Western states (Wilson 1986: 2; Best 1959: 90-91). The labor force for the shops came from all parts of the city, including the Fourth Ward, Huning's Highland Addition, and other downtown neighborhoods, unincorporated areas west of the river, South Broadway, San Jose, and the Barelas neighborhood.

The coming of the railroad had a significant impact on the small farming community of Barelas, located along 2<sup>nd</sup> and 4<sup>th</sup> 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 300 (mostly Hispanic) farmers, whose irrigated fields stretched eastward towards the steep sand hills flanking the Rio Grande 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 imposed on the community's east side. Within 20 years, Barela's agrarian roots had virtually disappeared. 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. Railroad workers built modest homes and established a small commercial district between South Broadway Avenue and the tracks (Simmons 1982: 338; Holtby 2012: 140). Workers walked to the shops and entered through gates in the AT&SF fance.

Socio-political upheavals during the Mexican Revolution in the 1910s sent hundreds of Mexican families fleeing across the U.S. border to escape the violence and turmoil. Many found work with the railroads, particularly the AT&SF (Best 1959: 107).<sup>7</sup> In Albuquerque, several families from the small town of La Barca, in the Mexican 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. They named the neighborhood after their

<sup>&</sup>lt;sup>7</sup> In 1913, the AT&SF issued Spanish dictionaries to its track foremen (Best 1959: 107).

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hometown in Mexico, La Barcasita (Navarrete n.d.). It later became known as the San Jose neighborhood. 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 walking distance of the shops.

Employment at the Albuquerque shops fluctuated between 600 and 1000 jobs, employment figures in New Mexico surpassed only by the mining industry (Wilson 1986: 10). These AT&SF jobs included numerous opportunities for apprenticeships and training programs, which were provided in-house by the railroad. Many workers started their railroad careers in 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, most of the skilled positions in the early 1900s 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 and worked for the company for 40 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 percent of all rail traffic, including passengers and freight, which included mining output, timber, livestock, and manufactured goods (Best 1959: 195).

The newly specialized work spaces with improved working conditions, specialized tools, the warehousing of parts, and 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. Albuquerque shops were designed and constructed under this concept. Record-keeping became more precise, and standardized schedules were written for every aspect of locomotive repair. Employees and work crews who "beat" the scheduled time by half were awarded pay bonuses (*Railway Mechanical Engineer* 1924: 334-338). 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 in the new shops (Wilson n.d.: 4).

The trade journal, *Railway Mechanical Engineer*, published an article in 1924 (*Railway Mechanical Engineer* 1924: 333-334) 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. Employees were encouraged to attend and discuss ways to improve working conditions and efficiency. According to the article, there were also 15-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. In light of the national shopmen's strike, efforts by the AT&SF to improve employee relations may have been an attempt to smooth over the animosity developed during the strike.

The Depression 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 Interstate Commerce Commission to increase shipping rates, and partially because of a dramatic drop in passenger and freight revenue (Kaufman 2005: 69-73). Between 1929 and 1933, freight receipts were down 52 percent while passenger-related income dropped by 60 percent (Waters 1950: 425). As a result, branch lines discontinued, schedules changed frequently, and trains consolidated in order to make the runs more efficient, sometimes to the detriment of customer service. By the mid-1930s, half of the AT&SF locomotives were in storage. The problem was exacerbated because much of the AT&SF line served the Dust Bowl states, where agricultural productivity had severely declined. 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).

The rise of diesel locomotives and the use of trucks for cross-country freight handling had farreaching effects on the transportation industry during the 1930s (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 of travel time. It was soon found that freight service could be improved by using diesel technology. The fastest steam locomotive hauling a freight train between Chicago and Los Angeles took nine engines and 35 stops for fuel and water, whereas in 1938, a diesel-powered train made the trip using only one engine and five fuel stops, cutting four to six hours of travel time (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, the subsequent growth of the trucking industry, the transcontinental bus service, the family automobile, and the nascent airline industry (Kaufman 2005: 71-73). The improved highways, which resulted from the Good Roads Movement (which began in earnest in the 1910s) followed

many long-established railroad alignments. The railway companies supported the movement as they sought to expand their business beyond the railroad depot. The AT&SF, for example, 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 changed with the outbreak of World War II. 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 material throughout the country. During the war, the railroads carried 90 percent of all military freight and 98 percent of all troop movement.

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

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 stepped up; as many as 41 engines per month were overhauled. To match the increased workload, the shops employed more than 1,500 workers during the war years, the highest employment rate 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 because of the large number of men drafted into military service. Women were hired at the shops for first time. 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 boosted the economy of Albuquerque. The AT&SF was the largest single taxpayer in the city (*Albuquerque Progress*, June 1943).

## The Decline of the Locomotive Shops: 1946-1956

Diesel engines required far less support infrastructure and were 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, which was an early pioneer in the development of diesel locomotives in the mid- to late-1930s, began "dieselization" of its premier passenger trains before World War II. Government control of locomotive production during the war

interrupted the railroad's drive to adopt diesel technology. Even so, the War Production Board allocated to the AT&SF some 40 percent of all freight diesels.

At 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). The AT&SF led the industry in the conversion from steam to diesel and was one of the first railway companies to reap the benefits of diesel technology. 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 more powerful at lower speeds and 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. With less maintenance to perform, together with the standardization of diesel locomotive parts, which were often replaced rather than repaired, the multi-purpose shops for rebuilding locomotives were no longer needed. In the 1950s and 1960s, in Albuquerque and throughout the nation, the steam locomotive infrastructure and its associated jobs began to disappear.

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 (which was part of the Centralized Work Equipment shops). This negated the need for operating the machine shop, boiler shop, flue shop, and other specialized facilities in the complex. Employment in the Albuquerque shop was cut to less than 200 workers. The smaller buildings and structures at the complex were remodeled for the new work requirements. The larger maintenance shops that had once repaired up to 40 steam locomotives per month were relegated to storage of parts and material. Some buildings were demolished.

The Centralized Work Equipment shops were phased out by the late 1970s, but the railroad maintained a presence on the property until they closed their doors and the property was sold to a development group in the early 1990s (Wilson n.d.:17). Plans for the property were not realized and the city of Albuquerque purchased the property in 2007 with hopes of redeveloping the site while preserving its cultural significance (Solar 2013: 5). The BNSF Railway, which merged with the AT&SF in 1995, runs its trains along adjacent tracks. Currently, the entire shops complex is vacant, except the storehouse, which houses the WHEELS Museum offices and their collection of transportation-related artifacts. 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

Bernalillo, New Mexico County and State

event venue with a parking area of millings and new concrete curbing. Such events are considered interim uses until the entire complex is redeveloped for new uses.

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## 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 #\_\_\_\_\_
- <u>X</u>\_recorded by Historic American Engineering Record # <u>NM-12</u>
- \_\_\_\_\_ recorded by Historic American Landscape Survey # \_\_\_\_\_

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#### Primary location of additional data:

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 X
 State Historic Preservation Office

 Other State agency
 Federal agency

 X
 Local government

 University
 Yother

 Name of repository:
 Wheels Museum, Albuquerque, NM; and National Hispanic

 Cultural Center, Albuquerque, NM

Historic Resources Survey Number (if assigned): <u>N/A</u>

#### 8. Geographical Data

Acreage of Property <u>27.3 acres</u>

#### **UTM References**

Source: USGS Quadrangle: Albuquerque West, NM Datum (indicated on USGS map):

NAD 1927 or	× NAD 1983	
1. Zone: 13	Easting: 349643	Northing: 3882881
2. Zone: 13	Easting: 349680	Northing: 3882875
3. Zone: 13	Easting: 349601	Northing: 3882265
4. Zone: 13	Easting: 349407	Northing: 3882298
5. Zone: 13	Easting: 349491	Northing: 3882771

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

The historic district boundary is indicated by a thick red line on the sketch map, which drawn to scale.

**Boundary Justification** (Explain why the boundaries were selected.)

The AT&SF Railway Locomotive Shops boundary includes all the remaining property owned by the city of Albuquerque, which was historically associated with the operations of the shops from 1914 to 1956.

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## 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: <u>Albuquerque</u>	state: <u>NM</u>	zip code: <u>87108</u>
e-mail: wdodge12@comcast.net		
telephone: <u>505-259-2367</u>		
date: June 28, 2013		
name/title: Maryellen Hennessy, Edga	r Bolesn, and Petra M	orris/ Senior Planners
organization: City of Albuquerque Pla	nning Dept.	
street & number: <u>200 2<sup>nd</sup> St. NW</u>		
city or town: Albuquerque	state: NM	zip code: 87102

city or town: <u>Albuquerque</u>	state: <u>NM</u>	zip code: $8/102$
e-mail: <u>mhennessy@cabq.gov</u>	pmorris@cabq.gov	
telephone: 505-924-3891	505-924-3897	
date: February 10, 2014		

#### **State Historic Preservation Office Staff**

name/title: Steven Moffson / State and National Register Coordinator_
organization: New Mexico Historic Preservation Division
street & number: 407 Galisteo Street, Suite 236
city or town: Santa Fe state: NM zip code: 87501
e-mail: steven.moffson@state.nm.us
telephone: 505-476-044
date: July 5, 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.)

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## **Table of Figures**

- 1. Machine Shop where locomotives were dismantled and the parts sent for cleaning, inspection and repair. Note the locomotive suspended from the bridge crane.
- 2. Machine shop where work was distributed between four bays.
- 3. Machine shop with locomotives in the erecting bay, looking southwest. Note concrete pits and 250-ton bridge crane in background.
- 4. Machine shop with locomotive parts in the heavy machinery bay, looking east.
- 5. Crane runway with bridge cranes on the south side of the machine shop.
- 6. Boiler shop with men working on the fire box of an engine.
- 7. Blacksmith shop with large presses. Steel trusses span the interior.
- 8. Blacksmith shop with men hammering a drawbar with a steam hammer.
- 9. Storehouse with stock to support the shops and the railroad operations of the AT&SF's New Mexico Division. The storehouse carried over 35,000 different items.
- 10. Turntable with roundhouse. The roundhouse was demolished in 1986.
- 11. AT&SF shops with roundhouse, reservoir and tanks, power house and smokestack, and machine shop. View looking southwest.
- 12. Washroom on mezzanine in machine shop with workmen washing up at the end of the day.
- 13. West elevation drawing of machine shop. AT&SF Engineers, drawing, c.1920.
- 14. Floor Plan of machine shop. AT&SF Engineers, drawing, c.1920.
- 15. East and west elevations of boiler shop. AT&SF Engineers, drawing c.1922.

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- 16. North and South elevations of boiler shop; note original configuration of firing shed. AT&SF Engineers, drawing c.1922.
- 17. Plan and sections of sheet metal house. AT&SF Engineers, drawing c.1917.
- 18. North and west elevations of the tender shop with concrete details. AT&SF Engineers, drawing c.1925.
- 19. Construction drawing of fire station showing elevations. AT&SF Engineers, drawing c.1919.
- 20. Construction drawing showing plan, sections and tower details. AT&SF Engineers, drawing c.1919.
- 21. Turntable seen from roof of machine shop looking south. Photograph by Jet Lowe, April 8, 2009.

## 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
City or Vicinity:	Albuquerque
County:	Bernalillo State: New Mexico
Name of Resource:	Machine shop
Photographer:	Maryellen Hennessy
Date Photographed:	June 18, 2014
Description:	West and south elevations looking northeast.
Number:	0001 of 0052.
Name of Resources:	Machine shop
Photographer:	Scott Walker
Date Photographed:	November 3, 2012
Description:	North elevation, looking southwest across transfer table from
-	blacksmith shop.
Number:	0002 of 0052.

Name of Resource: Photographer: Date Photographed: Description:	Machine shop Petra Morris June 18, 2014 South crane yard with lye vat shelter and traveling crane, looking west.
Number:	0003 of 0052.
Name of Resource:	Machine shop
Photographer:	Petra Morris
Date Photographed:	June 18, 2014
Description:	Interior of erecting bay, looking east.
Number:	0004 of 0052.
Name of Resource:	Machine shop
Photographer:	Petra Morris
Date Photographed:	June 18, 2014
Description:	Interior of erecting bay looking north; showing repair pit.
Number:	0005 of 0052.
Name of Resource:	Machine shop
Photographer:	Petra Morris
Date Photographed:	June 18, 2014
Description:	Heavy machinery bay, looking southwest.
Number:	0006 of 0052.
Name of Resource:	Machine shop
Photographer:	Karen Van Citters
Date Photographed:	November 3, 2012
Description:	Light machinery bay, looking east.
Number:	0007 of 0052.
Name of Resource:	Machine shop
Photographer:	Karen Van Citters
Date Photographed:	November 3, 2012
Description:	Bench bay, looking east.
Number:	0008 of 0052.
Name of Resource:	Machine shop
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 Resource: Photographer: Date Photographed: Description: Number:	Boiler shop Petra Morris June 18, 2014 South elevation with firing shed (canopy) at left and transfer table in the foreground, looking northeast. 0010 of 0052.
Name of Resource: Photographer: Date Photographed: Description: Number:	Boiler shop Karen Van Citters November 3, 2012 North elevation with sheet metal shed to right and flue shop to left, looking south. 0011 of 0052.
Name of Resource:	Boiler shop
Photographer:	Scott Walker
Date Photographed:	November 3, 2012
Description:	Interior with traveling crane, looking west.
Number:	0012 of 0052.
Name of Resource: Photographer: Date Photographed: Description: Number:	Blacksmith shop Maryellen Hennessy February 11, 2014 East elevation with tracks and South Broadway neighborhood, looking northwest. 0013 of 0052.
Name of Resource:	Blacksmith shop
Photographer:	Petra Morris
Date Photographed:	June 18, 2014
Description:	North elevation.
Number:	0014 of 0052.
Name of Resource:	Blacksmith shop
Photographer:	Karen Van Citters
Date Photographed:	November 3, 2012
Description:	South elevation with transfer table in foreground.
Number:	0015 of 0052.
Name of Resource:	Blacksmith shop
Photographer:	Petra Morris
Date Photographed:	June 18, 2014
Description:	Interior looking north.
Number:	0016 of 0052.

Name of Resource: Photographer: Date Photographed: Description:	<ul><li>Flue shop</li><li>Karen Van Citters</li><li>November 3, 2012</li><li>East elevation with blacksmith shop on left and boiler shop at the end on the right, looking south toward machine shop.</li></ul>
Number:	0017 of 0052.
Name of Resource:	Flue shop
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 Resource:	Flue shop
Photographer:	Petra Morris
Date Photographed:	June 18, 2014
Description:	Interior with addition on north end, looking north.
Number:	0019 of 0052.
Name of Resource:	Sheet metal house
Photographer:	Petra Morris
Date Photographed:	June 18, 2014
Description:	Northeast corner with tender repair shop in the background.
Number:	0020 of 0052.
Name of Resource:	Sheet metal house
Photographer:	Petra Morris
Date Photographed:	June 18, 2014
Description:	Interior, looking south toward boiler shop.
Number:	0021 of 0052.
Name of Resource: Photographer: Date Photographed: Description: Number:	Tender repair shop Karen Van Citters November 3, 2012 Northeast corner with east glass wall and concrete detailing on north elevation, looking southwest. 0022 of 0052.
Name of Resource: Photographer: Date Photographed: Description:	Tender repair shop Karen Van Citters November 3, 2012 Interior at north end with boiler shop visible through locomotive door, looking south.

Number:	0023 of 0052.
Name of Resource:	Waste & paint rooms
Photographer:	Karen Van Citters
Date Photographed:	November 3, 2012
Description:	Southeast corner, looking northwest towards 2 <sup>nd</sup> Street.
Number:	0024 of 0052.
Name of Resource:	Fire station
Photographer:	Karen Van Citters
Date Photographed:	November 3, 2012
Description:	Southwest corner, looking northeast.
Number:	0025 of 0052.
Name of Resource:	Pattern house
Photographer:	Karen Van Citters
Date Photographed:	November 3, 2012
Description:	Northeast corner, looking southwest.
Number:	0026 of 0052.
Name of Resource:	North washroom
Photographer:	Karen Van Citters
Date Photographed:	November 3, 2012
Description:	Northwest corner of north washroom.
Number:	0027 of 0052.
Name of Resource:	North washroom
Photographer:	Karen Van Citters
Date Photographed:	November 3, 2012
Description:	Interior showing north washroom locker room, looking southeast.
Number:	0028 of 0052.
Name of Resource:	Storehouse
Photographer:	Petra Morris
Date Photographed:	June 18, 2014
Description:	West elevation, looking south.
Number:	0029 of 0052.
Name of Resource:	Storehouse
Photographer:	Karen Van Citters
Date Photographed:	November 3, 2012
Description:	Southeast corner with concrete platform and tracks.
Number:	0030 of 0052.

Name of Resource:	Storehouse
Photographer:	Karen Van Citters
Date Photographed:	November 3, 2012
Description:	Doors to oil cellar, looking northwest.
Number:	0031 of 0052.
Name of Resource: Photographer: Date Photographed: Description:	Babbitt shop Karen Van Citters November 3, 2012 Southwest corner, with welding shop to the east and the machine shop to the north.
Number: Name of Resource: Photographer: Date Photographed: Description: Number:	0032 of 0052. Babbitt shop Karen Van Citters November 3, 2012 North elevation, with welding shop to the east and the wood clapboard addition. 0033 of 0052.
Name of Resource:	Welding shop
Photographer:	Karen Van Citters
Date Photographed:	November 3, 2012
Description:	South elevation.
Number:	0034 of 0052.
Name of Resource:	Welding shop
Photographer:	Karen Van Citters
Date Photographed:	November 3, 2012
Description:	East elevation.
Number:	0035 of 0052.
Name of Resource:	Welding shop
Photographer:	Karen Van Citters
Date Photographed:	November 3, 2012
Description:	Interior, looking east.
Number:	0036 of 0052.
Name of Resource:	South washroom
Photographer:	Karen Van Citters
Date Photographed:	November 3, 2012
Description:	Northeast corner of south washroom.
Number:	0037 of 0052.

Name of Resource:	South washroom
Photographer:	Karen Van Citters
Date Photographed:	November 3, 2012
Description:	West elevation.
Number:	0038 of 0052.
Name of Resource:	South washroom
Photographer:	Petra Morris
Date Photographed:	January 16, 2014
Description:	Interior with stencil on wall.
Number:	0039 of 0052.
Name of Resource:	Motor car garage (battery shop)
Photographer:	Karen Van Citters
Date Photographed:	November 3, 2012
Description:	Northwest corner.
Number:	0040 of 0052.
Name of Resource: Photographer: Date Photographed: Description: Number:	Transfer table Karen Van Citters November 3, 2012 West end in front of machine shop with firing shed (canopy) in background, looking north. 0041 of 0052.
Name of Resource:	Transfer table
Photographer:	Karen Van Citters
Date Photographed:	November 3, 2012
Description:	East end looking west with boiler shop in background.
Number:	0042 of 0052.
Name of Resource:	Turntable
Photographer:	Maryellen Hennessy
Date Photographed:	February 11, 2014
Description:	Looking north toward machine shop.
Number:	0043 of 0052.
Name of Resource:	Turntable
Photographer:	Maryellen Hennessy
Date Photographed:	February 11, 2014
Description:	Turntable and engines.
Number:	0044 of 0052.

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Name of Resource:	Fire runway
Photographer:	Karen Van Citters
Date Photographed:	November 3, 2012
Description:	West side of machine shop, looking south.
Number:	0045 of 0052.
Name of Resource: Photographer: Date Photographed: Description: Number:	Water reservoir Karen Van Citters November 3, 2012 Pump house and top of water reservoir at south end, looking northwest. 0046 of 0052.
Name of Resource: Photographer: Date Photographed: Description: Number:	Tracks Petra Morris June 18, 2014 Tracks entering the tender repair shop from the north with sheet metal shed to the left of the tender repair shop, looking south. 0047 of 0052.
Name of Resource:	Roundhouse foundation
Photographer:	Karen Van Citters
Date Photographed:	November 3, 2012
Description:	Southern corner with brick floor, looking northeast.
Number:	0048 of 0052.
Name of Resource: Photographer: Date Photographed: Description: Number: Name of Resource: Photographer: Date Photographed: Description: Number:	Entry station Karen Van Citters November 3, 2012 Northwest corner at transfer table with machine shop in background. 0049 of 0052. Cab paint shop Karen Van Citters November 3, 2012 Cab paint shop between the boiler and tender shops, looking northeast 0050 of 0052.
Name of Resource:	Power house
Photographer:	Karen Van Citters
Date Photographed:	November 3, 2012
Description:	Metal power house building from southeast corner.
Number:	0051 of 0052.

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Atchison, Topeka & Santa Fe Railway Locomotive Shops Name of Property Bernalillo, New Mexico County and State

Name of Resource:	Gas welding lines
Photographer:	Karen Van Citters
Date Photographed:	November 3, 2012
Description:	Gas welding lines at west side of property with machine shop at
	left, looking south.
Number:	0052 of 0052.
Description:	Gas welding lines at west side of property with machine shop at left, looking south.

**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.

Bernalillo, New Mexico County and State



Atchison, Topeka & Santa Fe Railway Locomotive Shops Bernalillo, New Mexico USGS Quadrangle: Albuquerque, NM; NAD 83 Approximate Scale: 1 inch = 3,000 feet



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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 13. West elevation

drawing of machine shop.

AT&SF Engineers, drawing,

c.1920

United States Department of the Interior National Park Service

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

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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. East and west elevations of boiler shop. AT&SF Engineers, drawing c.1922



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Figure 16. North and South elevations of boiler shop; note original configuration of firing shed. AT&SF Engineers, drawing c.1922

Atchison, Topeka and Santa Fe

Historic and Architectural Resources of Central Albuquerque 1880-1970

Name of multiple listing (if applicable)

Railway Locomotive Shops

Bernalillo New Mexico

Name of Property

County and State

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United States Department of the Interior National Park Service

# National Register of Historic Places Continuation Sheet

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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)

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OMB No. 1024-0018

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



Figure 18. North and west elevations of the tender shop with concrete details. AT&SF Engineers, drawing c.1925

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Atchison, Topeka and Santa Fe

OMB No. 1024-0018



United States Department of the Interior National Park Service

## National Register of Historic Places Continuation Sheet

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Figure 20. Construction drawing showing plan, sections and tower details. AT&SF Engineers, drawing

Atchison, Topeka and Santa Fe

Historic and Architectural Resources of Central Albuquerque 1880-1970

Name of multiple listing (if applicable)

c.1919

Railway Locomotive Shops

Bernalillo New Mexico

Name of Property

County and State

OMB No. 1024-0018

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United States Department of the Interior National Park Service

## National Register of Historic Places Continuation Sheet

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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)



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## UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES EVALUATION/RETURN SHEET

REQUESTED ACTION: NOMINATION

PROPERTY Atchison, Topeka and Santa Fe Railway Locomotive Shops NAME:

MULTIPLE Central Albuquerque MPS NAME:

STATE & COUNTY: NEW MEXICO, Bernalillo

DATE RECEIVED: 8/29/14 DATE OF PENDING LIST: 9/29/14 DATE OF 16TH DAY: 10/14/14 DATE OF 45TH DAY: 10/15/14 DATE OF WEEKLY LIST:

REFERENCE NUMBER: 14000859

REASONS FOR REVIEW:

APPEAL: N DATA PROBLEM: N LANDSCAPE: N LESS THAN 50 YEARS: N OTHER: N PDIL: N PERIOD: N PROGRAM UNAPPROVED: N REQUEST: N SAMPLE: N SLR DRAFT: N NATIONAL: N COMMENT WAIVER: N

10.15 - 14 DATE ACCEPT REJECT RETURN

ABSTRACT/SUMMARY COMMENTS:

Entered in The National Register of Historic Places

RECOM./CRITERIA	
REVIEWER	DISCIPLINE
TELEPHONE	DATE
DOCUMENTATION see attached comm	ents Y/N see attached SLR Y/N

If a nomination is returned to the nominating authority, the nomination is no longer under consideration by the NPS.



Susana Martinez Governor

August 13, 2014

## STATE OF NEW MEXICO DEPARTMENT OF CULTURAL AFFAIRS HISTORIC PRESERVATION DIVISION

BATAAN MEMORIAL BUILDING 407 GALISTEO STREET, SUITE 236 SANTA FE, NEW MEXICO 87501 PHONE (505) 827-6320 FAX (505) 827-6338



J. Paul Loether National Park Service National Register of Historic Places 1201 "I" (Eye) Street, N.W. 8th floor Washington, D.C. 20005

Dear Mr. Loether:

The enclosed disk contains the true and correct copy of the nomination for the Atchison, Topeka & Santa Fe Railway Locomotive Shops in Albuquerque, Bernalillo County, New Mexico to the National Register of Historic Places. This nomination is submitted under the Multiple Property Submission "Historic and Architectural Resources of Central Albuquerque, 1880-1970," which was listed in December 2014.

- <u>X</u> Disk of National Register of Historic Places nomination form and maps as a pdf
- <u>X</u> Disk with digital photo images
- X\_\_\_\_ Physical signature page
- \_\_\_\_\_ Sketch map(s)/attachment(s)
- Correspondence
  - Other:

COMMENTS:

This property has been certified under 36 CFR 67

- \_\_\_\_\_ The enclosed owner objection(s) do \_\_\_\_\_ do not \_\_\_\_\_ constitute a majority of property owners.
  - Special considerations:

Sincerely,

Steven Moffson

State and National Register Coordinator

Enclosures