1228

NPS Form 10-900
(Rev. Aug. 2002)

OMB No. 1024-0018
(Expires Jan. 2005)

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES REGISTRATION FORM

1. Name of Property

historic name: Parrot Mine Shops Complex

other names/site number: The Parrott Mine, Parrot Mine, Kelly Shops

2. Location

street and number: 244 Anaconda Road — not for publication: n/a

city or town: Butte — vicinity: n/a

State: Montana — code: MT — county: Silver Bow — code: 093 — zip code: 59701

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this X 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 __ nationally __ statewide X locally.

Mark F. Baumler / SHPO — 11/21/2006

Signature of certifying official/Title — Date

Montana State Historic Preservation Office

State or Federal agency or bureau — (__ See continuation sheet for additional comments.)

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

Signature of commenting or other official — Date

State or Federal agency and bureau

4. National Park Service Certification

I, hereby certify that this property is:

Signature of the Keeper — Date of Action

√ entered in the National Register — for Edson H. Beall — 1.9.07
__ see continuation sheet
__ determined eligible for the National Register
__ see continuation sheet
__ determined not eligible for the National Register
__ see continuation sheet
__ removed from the National Register
__ see continuation sheet
__ other (explain):

5. Classification

Ownership of Property: Private; Public-local
Category of Property: District
Number of contributing resources previously listed in the National Register: 4
Name of related multiple property listing: n/a

Number of Resources within Property		
Contributing	Noncontributing	
2	1	building(s)
0	0	sites
1	0	structures
0	0	objects
3	1	TOTAL

6. Function or Use

Historic Functions	Current Functions
INDUSTRY/PROCESSING/EXTRACTION	INDUSTRY/PROCESSING/EXTRACTION
processing site	processing site

7. Description

Architectural Classification
LATE 19TH AND EARLY 20TH CENTURY MOVEMENTS/Commercial
MODERN MOVEMENT/International Style
OTHER: Industrial

Materials
foundation: Concrete
roof: METAL; ASPHALT
walls: BRICK; CONCRETE; METAL
other: METAL

Narrative Description

Overview

The Parrot Mine Shops Complex is located in the nationally significant mining city of Butte, Montana, at the northeast corner of the original town site. The complex is situated south of Walkerville and east of Centerville, overlooking the central business district. It is clustered on a rocky artificial plateau on the south side of Anaconda Road. The buildings were constructed during two distinct phases during Butte's mining history: approximately 1910, and 1942-4. Four of the contributing buildings are also contributors to the Butte National Historic Landmark. The following section discusses the construction history and building descriptions in the context of these two phases.

The Parrot Mine Shops Complex is currently comprised of six buildings and two structures. One of the buildings post-dates the period of significance and is noncontributing. The complex resources range from large industrial buildings to small storage buildings. Included in the complex is a timber Parrot Mine head frame and associated concrete fan plenum. The mining head frame was utilized for accessing the underground through the Parrot Shaft and was later converted for ventilation.

Butte's industrial facilities were continually adapted and readapted to meet the needs of the quickly changing mining technology throughout Butte's period of historic mining significance. The Parrot Shops Mine Complex started out as a typical mine yard with a hoisting frame and support buildings that housed the hoisting equipment and generated power. The centrally located structures of PS-2 thru PS-5 represent this earliest time as a mine yard; the original use is evident in their architectural form. The needs of World War II led to adaptation and re-adaptation on the "Butte Hill" to increase efficiencies in manufacturing that directly supported the extraction of strategic war metals.

see continuation sheet

8. Statement of Significance

Applicable National Register Criteria: A, C	Areas of Significance	INDUSTRY; ARCHITECTURE
Criteria Considerations: n/a	Period of Significance	1910-1918
Significant Person: n/a		1942-1945
Cultural Affiliation: n/a	Significant Dates	1910, 1914, 1942
	Architect/Builder	

Narrative Statement of Significance

Overview

The Parrot Mine Shops Complex is eligible for listing on the National Register of Historic Places under Criteria A and C.

Criterion A. The Anaconda Copper Mining Company was America's largest producer of copper during the "second industrial revolution," and was America's major producer of strategic metals copper and zinc during World War II.

The Parrot Mine Site represents the centralized Anaconda Copper Mining Shops and is eligible for listing on the National Register of Historic Places (NRHP) under Criterion A (Industry) for two time frames that correspond to the dates of the buildings. The first coincides with the Butte Historic Landmark's period of significance from 1890-1918, during which PS-2, PS-3, PS-4, PS-5 and the fence were constructed. During this period, the site was strongly associated with the copper industry and unionism in a major American mining and labor town. The contribution of Butte copper to the "second industrialization" of American industry—the electrification of America—is well documented as a contribution to the American economy. These themes helped shape the political landscape and developed the American economy. [1]

The second time frame is during World War II, during which PS-1 and PS-6 were constructed and other buildings were adaptively reused. The complex is important nationally as an industrial complex that provided fabrication and machine work to enhance strategic metal mining during World War II and the Korean conflict. The Anaconda Copper Mining Company produced 8.3 billion pounds of copper during World War II, one-third of the total amount of new copper available in the United States for the prosecution of the war. It contributed over 51% of the total copper for the national emergency. [2]

Criterion C. The Parrot Mine Shops Complex is associated with technology and industrial architecture during World War II and the production of strategic metals.

The Parrot Mine Shops Complex is eligible for listing on the NRHP under Criterion C (Architecture/Engineering). The Parrot Mine was one of the first mines developed in Butte and the wooden headframe is still intact on-site.

The move of the Anaconda Copper Mining Company to consolidate and centralize all craft and machine work in one location that was central to the mines and accessible by rail and road was the key to efficient war production in the 1940s and 1950s. These centralized services also enabled the company to forge, machine, and manufacture any pieces of equipment necessary to produce strategic metal at a time when there were significant shortages in parts and machines. The consolidation of services to the mines also made work more efficient during this time of national emergency. The architecture of these buildings is indicative of their function and the period during which they were constructed and adaptively reused.

The shops complex has features that date from the earliest periods of Butte's mining history to the period of consolidation of the Anaconda Copper Mining Company and into the 1940s. The building names are defined by their use during the latter part of the period of significance, to emphasize their associations with World War II industrialization, and because they are indicative of the significant physical changes that took place in the development of centralized mining support services in response to the wartime industrial capacity expansion.

see continuation sheet

[1] Dale Martin and Brian Shovers, "Butte, Montana: An Architectural and Historical Inventory of the National Landmark District." Butte Historical Society, 1986, on file at the Montana State Historic Preservation Office, Helena, MT.
[2] Isaac F. Marcosson, *Anaconda,* (New York: Dodd, Mead & Co., 1957), pp. 229-230.

9. Major Bibliographical References

see continuation sheet

Previous documentation on file (NPS)
___ preliminary determination of individual listing (36 CFR 67) has been requested.
___ previously listed in the National Register
___ previously determined eligible by the National Register
___ designated a National Historic Landmark
___ recorded by Historic American Buildings Survey # _____
___ recorded by Historic American Engineering Record # _____

Primary Location of Additional Data
_X_ State Historic Preservation Office
___ Other State agency
___ Federal agency
___ Local government
___ University
_X_ Other
Name of repository: Butte-Silver Bow Archives

10. Geographical Data

Acreage of Property: 4.87 acres

UTM References Zone 12, NAD 27 (these points reference UTM points A, E, F, I, and L in the verbal boundary description and on the site map)

1 (NW):	Easting 381607.059	Northing 5096888.546
2 (NE):	Easting 381795.992	Northing 5096914.324
3 (SE):	Easting 381818.736	Northing 5096779.572
4 (SW):	Easting 381619.398	Northing 5096766.676
5 (turn @ fenceline)	Easting 381683.906	Northing 5096899.329

Legal Location: W½ NW¼ NW¼ sec. 18, T3N, R7W and E½ NE¼ NE¼ sec. 13, T3N, R8W. (Montana Prime Meridian)

Verbal Boundary Description

The Parrot Mines Complex National Register boundary is a polygon with UTM points A through N, as listed continuation page 22 as the vertices. See continuation sheet and site map.

Boundary Justification

The boundary is drawn to encompass significant historic resources intrinsic to the function of the Parrot Mine Shops complex during the period of significance defined in the nomination. It includes the core of five contributing buildings and two contributing structures, as well as one non-contributing building. The boundary is a generally rectangular shape, and extends at the northwest corner to include the northern section of the historic fence, a contributing structure.

11. Form Prepared By

name/title Ellen Crain/Archivist
organization Butte-Silver Bow Public Archives — date August 2005
street and number 17 Quartz Street — telephone (406) 782-3280
city or town Butte — state MT — zip code 59701

Edited by
name/title Earbara Behan, Historian
organization n/a — date November 2006
street and number 530 E. Beckwith
city or town Missoula — state MT — zip code 59801

Property Owners

see continuation sheet

Original Facilities (1910-1916): PS-2, PS-3, PS-4, PS-5 and Fence

The four oldest resources in the Parrot Mine Shops Complex are contributors to the Butte National Historic Landmark (Head Frame and Mine Yards Thematic Group), and therefore already listed in the National Register of Historic Places (10/15/1966). These mining-related buildings were originally constructed as primary industrial structures and support facilities for the Parrot Mine Hoisting Works, which was originally developed in the late nineteenth century. Through time, these buildings have been adaptively reused. They include the Drill Repair Shop (PS-2), the Electric Supply and Dry (PS-3), Parrot Mine Frame and Fan (PS-4) and Lineman's Warehouse and Storage (PS-5). Their original use can still be read in their exterior architecture and interior aspects.

The Parrott Silver and Copper Company[3] established the Parrot hoisting works and its primary double compartment shaft before 1900. An enclosed "boxed-in" iron head frame straddled the shaft compartments at the southeast; the hoisting engine to the north was a 600-horsepower hoist and was integrated into the enclosed frame as a brick-lined structure. An air compressor was west of the hoist. A bank of six coal-fired boilers was located south of the compressor and west of the frame. The 1900 Sanborn fire insurance map shows the Parrot with the boxed-in iron head frame; historic records indicate its erection in 1900 and its removal in 1910.

By the early 1910s a significant change had taken place, as the Anaconda Copper Mining Company (ACM) had acquired the Parrot Mine. All indications are that major new construction was undertaken in or after 1910 when ACM took ownership of the Parrot Mine and the three brick buildings (PS-2, PS-3 and PS-5) still on site were constructed. A historic photo taken in 1923 (see Photo #2) clearly shows an iron headframe in place where the original wooden headframe had been, with the hoist building (PS-3) obviously constructed for a larger iron headframe. The photo shows new buildings with fifteen boilers shoehorned between PS-2 and PS-4—boilers that provided power to the compressor and thus the larger hoist. The hoist building (PS-3) was constructed to accommodate a 1,600-horsepower hoisting engine. The scale of the building and the south façade cable slots (now bricked up, but visible) match up with the facility's use as a major hoisting operation with a riveted iron head frame.

By February of 1916 the Sanborn map notes the ACM Parrot site was not in operation as a mine. The 1916 map shows the squared-off timber head frame that is still in place (PS-5). Indications are that the primary hoisting operations by ACM were short-lived and only spanned 1910-1916. The 1916 Sanborn also shows the placement of a 100-horsepower auxiliary hoist, this hoist being more in keeping with the stout timber head frame than the 1,600-horsepower hoist most likely not used with the timber frame.

The substantial size and quality of clear-span construction of the three original brick buildings made them good candidates for adaptive reuse as shop facilities during World War II. This reuse is exemplified by the conversion of the compressor building into the Drill Repair Shop (PS-2) in 1942; the hoist building PS-3 into the Electric Supply and Dry[4] (PS-3) in 1942; and the old employment office of the Parrot mine into the Lineman's Warehouse and Storage (PS-5) by 1944. The quick conversion and the transitional changes that took place are documented on fire insurance maps that substantiate the fast-paced centralization effort of facility operations at the Anaconda Copper Mining Company, which operated the Parrot site for most of its functional life.

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[3] Although an early stock certificate from the company uses the "Parrott" spelling, during the period of significance most records use the "Parrot" spelling, which is used here except in reference to the original company and its namesake.

[4] A "dry" is a building in which the mine workers change their clothes and leave their garments to dry out after working in the damp mines.

In Butte, the 1910s was packed with industrial growth, corporate consolidation, labor and political strife, and a world war. Tracking specific building adaptations is a moving target during this era. The following discussion contains details of these structures and their adaptive reuse from the period of their construction into the World War II era.

Drill Repair Shop (PS-2) and Electric Supply and Dry (PS-3) *(two contributing buildings previously listed in the NR)*

The primary north buildings (PS-2 and PS-3) of the Parrot Mine Shops Complex were constructed in the early 1900s and adapted about 1942. Both are constructed with brick bearing walls with pilastered brick at sixteen-foot centers to support the riveted steel roof truss system. The west building (PS-2) was constructed to house air compressors, and the east building was constructed to house a large piston drive hoist rated at 1,600 horsepower. Three riveted-steel Pratt trusses supporting steel purlins span the interior of each of these buildings, with the north and south purlins set into the brick gable-end bearing walls. The engaged brick pilasters project from the exterior and read as architectural elements. The capping bricks are corbelled as cornice details and run the top wall perimeter and up the eaves. The cornice corbelling meets flush with the projecting engaged pilasters.

The enclosed spaces are tall single-story rooms that allowed for the servicing of equipment with overhead cranes. Both cranes are now missing, but the primary support beams are still in place. The crane beams are readable on the exterior with additional engaged pilasters on the north and south gable ends. The north facades of these adjacent buildings both align, while the south facade of the hoist building extends slightly longer to the south.

Though both north brick buildings (PS-2 and PS-3) are remarkably similar in their form and architectural detail, one primary difference is evident in roof pitch. The west building (PS-2) was originally constructed as the compressor house (PS-2) and has a roof of approximately a 6:12 slope. The east building (PS-3) was the hoist house; it is approximately three-quarters the width of the compressor building, and has a greater roof slope of 8:12. There seems to have been a conscious effort to match the height of the roof ridges of these adjacent buildings. Historic photos show both buildings with ridge-running clerestory light monitors that capped each gable roof and match its slope. The desire not to rob light from the adjacent clerestory seems the only reasonable explanation for matching ridge heights and the differences in roof slope, since no usable space was gained. The ridge light monitor of the hoist building (PS-3) was still in place at the time the building was adapted into a "dry" for the consolidated shop facility in 1942-44. The light monitor has interior evidence of being removed sometime in the 1950's (likely during the next building cycle at the shops that coincided with the Anaconda Company's foray into open-pit mining). The two buildings retain much of their original appearance, though some changes took place with their adaptation.

In July 1942 the Drill Repair Shop (PS-2) was independent of the Electric Supply and Dry building (PS-3), but by July of 1944 (and likely sooner) the two buildings were unified with a connecting "Z" plan ramp that accessed the upper floor's dry. The ramp's entry wrapped the northwest corner of the Drill Repair Shop.

The Drill Repair Shop (PS-2) is the largest brick-building footprint of the older group of brick buildings at the site. As noted, it was originally constructed as the air compressor building, to run the adjacent hoist and the underground drills, and is documented for this use up until the end of the 1910s. The first noted use as a drill repair facility is June 25, 1929, when the mine production aspects of the Parrot had shifted to the adaptive conversion of the buildings to shop facilities. Evidence of the building's original design is present in the basement, where large granite masonry piers of random ashlar pattern remain. The tight spacing and flared pier bases indicate the significant bearing capacity for the equipment the tiers were designed to support. The most interesting aspect of the basement piers, as they relate to the building as a drill shop, is that they were used as a testing site for reconditioned drills. Mine drills were set in the basement as they might have been in a mine, and holes were drilled into the granite masonry block. There was little structural concern since these piers were over-designed for the original equipment. The adaptive reuse of this building bears the physical scars of its functional use to repair drills.

The Drill Repair Shop (PS-2) appears to have retained almost all of its original window fenestration. Centered between each 4" x 16" engaged brick pilaster on the west, south and east are side-by-side, double-hung windows capped by flattened brick arches with wood-infill arched headers. Each window has a double-height upper sash with a 12/6 light configuration. Both the north and south gable-end brick walls have half-round arch windows with sixteen divided lights (two very small), with each vaulted window placed approximately halfway up within the truss space. The north facade varies with a double placement of the paired arched units symmetrically placed between the pilasters and centered on the ridge. Minor modification to the west facade took place with the two center units' windowsill heights raised. The same wall had its southern-most window bricked up and a door with metal-clad vestibule added.

The Drill Repair Shop's (PS-2) north facade also has the building's machine door opening at each flanking pilaster bay. Flattened arch openings were placed toward the eave wall side. The infill of these openings dates from the time of adaptation of this building from the compressor house to drill repair shop. The adaptation for drill repair in 1929 coincides with the millwork detailing of the north facade's west door. An angled loading platform exists on all maps until 1942. The 1942 date sees a platform that parallels the north facade and is now cut short on its east end. This modification coincides with detailing from around 1942 and is evident in the lowering of the flattened brick arch of the east equipment access door with a lowered matching brick infill arch. A sliding wood door closes the opening. The door provides drive-in access to a ramped-down floor modification, which further supports the 1942 date and the war construction boom with the greater reliance on truck transport. The shop's north facade retains its 1942 loading platform of timber construction, and also features a flagpole in its immediate north yard centered on the building's ridgeline.

The Drill Repair Shop (PS-2) retains interior equipment associated with the repair facility. These include boom cranes, air-drive mounted hammers, parts bins, and ACM-manufactured wall mount radiators. In addition, some ACM safety information and mining-related materials remain within the building. Heavy timber floors remain throughout the interior.

The Electric Supply and Dry (PS-3) experienced more drastic adaptations in its conversion from a hoist- containing building into a "dry" and electric supply shop. As a hoist building, the enclosed interior space was in essence a two-story open bay. The hoist engine room had more than sufficient vertical height to introduce a second-story floor for use as a "dry." A steel purlin system was introduced into the brick bearing walls, and arched corrugated pans were placed between the steel purlin grids. A concrete floor was poured over the arched pans that were left in place as a finished ceiling below. The concrete floor had a hard trowel finish that sloped into spaced floor drains within the locker room "dry". A portion of the new intermediate floor was omitted at the north end for continued access to the overhead crane system. The "dry's" north-south locker alignment was modified to wrap around a boxed-in area, and is part of the 1942 conversion. The crane rails are suspended from the primary paired beams that run north/south. The crane provided overhead transport of electrical equipment through the building's original machine door opening. A taller machine door opening appears to have been reduced in height and is now closed with paired hinged metal-clad doors with upper window lights as part of the 1942 conversion.

The electric supplies portion of the Electric Supply and Dry building (PS-3) was the adaptation of the hoist building ground-level floor. There is no evidence of the mechanical pits and machine mounts typical to such hoisting facilities. As part of the building's 1942 adaptation, all projecting mounts were removed and pits filled. The floor is a consistent concrete floor at ground level. Portioned woodbins line the wall of the north area of the ground level that is serviced by the overhead crane. The central and south area is divided into wood-framed storage units with wire fabric over openings. Historic exterior window openings in these storage areas have been bricked in. Windows remain at the north work area of the ground floor.

The original hoist room allowed for evenly spaced paired window units that matched the width and detailing of the adjacent west building's fenestration, but at double the height. The new floor bisected all window openings. New glazing

utilized the existing opening width but modified the header and sills of the openings. All flattened arch headers were replaced with horizontal headers and the remainder of the openings were bricked in flush. The windows of the Electric Supply and Dry building (PS-3) have a horizontal aspect. A marked change from the 1910 original construction, this reflects the changes initiated in 1942. Most windows on the ground floor were closed as aforementioned and openings on the upper "dry" floor were omitted along most of the west facade for the installation of toilets and showers.

The interiors of the two floors remain largely intact from their use during the critical years of World War II. The upper floor retains its plumbing fixtures and lockers, while the bottom floor retains its bins and secure electrical storage areas.

Parrot Mine Frame and Fan (PS-4) *(one contributing structure previously listed in the NR)*

The Parrot Mine's head frame first appears on the available maps in 1916 as the squared-off timber head frame now at the site. A small fan room in 1916 sat immediately to the southeast of the wood gallows frame. The timber frame is rigged for three sheave wheels (cable pulleys), but is set with only two sheaves that coincide with the Parrot's two-compartment shaft. All over the Butte Hill, head frames were assembled and reassembled as required to meet the ever-changing hoisting needs at the mines, as increasing depths and varying ore bodies were accessed. The Parrot's short-lived iron lattice frame, which appears in some historic photos, was apparently replaced at some time with the existing timber frame relocated from another mine that had a three-compartment shaft. The existing concrete fan plenum first is indicated in November of 1918 abutting the frame to the west. The concrete air duct provided baffled air control of the "squirrel cage" fan driven by a shaft-connected electric motor housed in an attached metal-clad shed. Underground air was then exhausted out a slot in the top of the concrete housing.

The Parrot Mine Frame and Fan (PS-4) consists of two heavy timber verticals tied together with a double cross beam that houses the sheave wheels. The vertical hoisting loads are braced with heavy timber outriggers to translate cable loading horizontally to the hoist drums. The frame's legs form a 30/60/90 triangular form that is intersected by only one perpendicular cross brace. The form that appears in this timber frame makes the term "gallows" frame obvious.

The timber frame has a non-typical feature: a small house that caps and encloses the shafts. The boxed- in area has two sets of doors that provided for a separated vestibule. This vestibule would appear to allow for access to the ventilating shaft for transport of repaired shop items to the underground without the shutdown of the ventilating fan. Most of Butte's active shafts were downdraft shafts, bringing air underground and usually being older shafts converted with exhaust fans. In the Parrot Shops the transport shaft was in the updraft mode.

The frame configuration demonstrates significant adaptation of a mineshaft as use and needs changed. A mine is actually just a shaft built into the ground, but head frames often changed on the Butte Hill. The timber frame of the Parrot is one of two surviving wood head frames on the Butte Hill in their original locations. The presence of a small-scale wood frame interprets the significant changes in mining technology that took place in less than a half century. The current configuration reflects the mine's use during World War II.

Lineman's Warehouse and Storage (PS-5) *(one contributing building previously listed in the NR)*

Of the early period buildings at the Parrot Mine Shops Complex, the Lineman's Warehouse and Storage (PS-5) was of a smaller, more conservative scale than PS-2 and PS-3. The Lineman's Warehouse and Storage was constructed in 1910 and originally called the Employment Office and Records Vaults. The office would have typically handled employment, timekeeping, and most likely mine engineering records.

The building was constructed of load-bearing brick and steel roof trusses industrial in nature, but did not require thickened wall pilasters, since loading requirements of an office were significantly less than those for heavier uses. The building appears to retain the majority of its originally constructed form. The asymmetrically placed ridge light monitor is only present at the south end of the building. This installation coincides with the original office use, but is not indicated on any

maps. The secure records vaults at the north likely had different lighting needs and were not equipped with a light monitor at the time of construction.

In the 1910s the ACM issued controversial "rustling cards" to miners as a means of controlling who the company hired in the midst of union unrest in Butte. The employment office at the Parrot Mine was the central location for issuing the cards. In 1914 the building suffered damage from a labor-related explosion. According to newspaper accounts, the dynamite blast did not destroy the structure but ruined its interior.

A July 1942 map shows the office building designated as adapted to the Lineman's Warehouse and Storage (PS-5). The specific duration for this use is unknown, but the building is noted as general storage in 1951 and 1957 in Sanborn fire insurance maps. After 1957 the building was converted to a second "dry" for the Parrot site. The building's brick bearing walls and riveted steel trusses remain as originally constructed.

The Lineman's Warehouse and Storage (PS-5) has the least roof slope of the grouping of the three 1910 buildings with a ratio of 4:12. The roof has a gable eyebrow over each of the original door openings on the west facade. The existing built-up roof is consistent with other early roofs. The building's fenestration is consistently placed around the perimeter's brick facades. The windows are double-hung single units with a 6/6 light configuration. Each double-hung window has a flattened arch wood header. The only additions are to the west facade with two small metal-clad gabled entry vestibules, likely attached for the "dry" conversion sometime after 1957.

Fence *(one contributing structure)*

Another important historical feature of the Parrot Mine Shops Complex was a timber fence that originally enclosed, or nearly enclosed, the entire mine site. The fence appears to have been constructed as a security measure to protect the mine and its properties during the 1910s when labor strife reached a peak in Butte. Photograph #6 shows the site in the 1940s with the fence enclosing the property.

Today there are two remnants of the original fence on the property. The north segment runs east/west in the northwest corner of the property and is 262' long; the southern segment runs east/west and southwest/northeast near the southeast corner and measures 227'. Though these segments are in a rather advanced stage of disrepair and have fallen over in some areas, the original design, construction and aspect of the fence are evident. They are constructed of vertical timber lathes approximately six feet high and painted green. Remaining on top are portions of electric wire connected to transformers, indicating that the fence was electrified at one time. On the south fence remnant, a heavy door with a substantial metal lock is blocked open and indicates that an entry gate must have existed here.

The history of the Parrot Mine fence is documented on Sanborn fire insurance maps. The 1900 map shows a six-foot board fence around most of the property, and the 1916 map shows an eight-foot fence. This increase in height suggests the electrified wire still in existence was added between 1900 and 1916—a period when labor tensions in Butte reached an all-time high. The Sanborn maps from this period note that the fence was but one of many efforts the Anaconda Copper Mining Company took to protect its properties from strikers and/or unionists.[5]

World War II Era Facilities (1942-4): PS-1, PS-6, and PS-7

The Parrot Mine Shops Complex saw amazing industrial growth during the national emergency of World War II. All the existing buildings were adapted for this growth, as described above. In addition, two buildings were newly constructed during the war: the Machine and Electric Shop (PS-1) and the Pipe Shop (PS-6), both of which are contributing elements to the complex.

[5] Sanborn Fire Insurance Company, "Butte 1900," sheet 53; and "Butte 1916," sheet 10.

In addition, a Shed (PS-7) currently exists within the boundaries of the site, but is noncontributing as it was constructed after the close of the period of significance.

Machine and Electric Shop (PS-1) *(one contributing building)*

The Machine and Electric Shop (PS-1) is a tall one-story industrial building utilized during the war effort by the ACM for the centralized machining of metal components and electrical equipment repair for all of the ACM's "Butte Mines," which by this time comprised nearly all the major mines in the city. The rapid construction of the Machine and Electric Shop (PS-1) represents most effectively the concerted effort to boost war production of strategic metals.

With a footprint that exceeds one acre in area, this building is the largest in the Parrot Mine Shops Complex. The erection of the steel frame and enclosure of the Machine and Electric Shop (PS-1) was well underway by July of 1942 and was completed that same year in December. The steel skeleton established a framework grid to support overhead cranes that would import, stage and export newly manufactured or repaired mining equipment, and provide for usable workspace. An enclosing skin of glass with horizontal bands of stucco wraps the exterior of the frame. The building is capped with a series of crenulated light monitors. Everything about the cladding of the building is aimed at maximizing day lighting for the machinists and electricians working within.

No single engineer is credited with the design of the Machine and Electric Shop (PS-1), but a clear vision is evident in the building's design. All published documentation indicates that the building was designed and brought to fruition by in-house ACM mining and structural engineers. A Bauhaus or international style influence is apparent in the design. The international style was originally influenced by industry, translated to housing, schools and office buildings, and returned in this case to industry in the form of the Machine and Electric Shop (PS-1) building. The defining design aspect of the building is the large expanse of unbroken runs of glazed metal sash that run as a continuous band around the building's skin. Thin horizontal bands of stucco fill the remainder of the non-glazed wall curtain of the exterior envelope, further emphasizing the strong horizontal line of the design. Rectangular in plan and elevation, the building presents itself with consistent interior column spacing and an honesty of architectural form. The saw-tooth repetitive light monitors are a design aspect that comes up in many Bauhaus designs. The full realization of the building as a "machine" took place when electric lights were in operation at night, where the machine shop would glow as a lantern and expose its structural guts and internal activities.

The Machine and Electric Shop (PS-1) has a rectangular footprint of 44,580 square feet formed with consistent steel column spacing. The plan is orientated longitudinally north/south. The plan runs five bays east/west and seven bays north/south. Interior columns are supported at floor line with reinforced concrete piers and footings. At the perimeter the structure sits on a reinforced concrete stub wall and piers. The enclosing glazed curtain wall is suspended from the face of the perimeter columns. The steel "I" columns are capped with larger horizontal steel "I" sections that form the interior structural grid. The framework allows for a tall one-story space, as well as an office space capped with a parts mezzanine at the southern west bays.

A modified riveted steel Pratt truss system provides an asymmetrical configuration for the roof's north-facing light monitors. Steel "I" purlins span between trusses and are sheathed with tongue and groove decking. The north-facing roof windows provide high-quality, diffused and glare-free light for the machinists below. The roof's clerestory monitors are linked with pivoting operators for ventilation. The exterior of the clerestory is faced with wood-framed screens in a 2/2 pattern. Symmetrical Pratt trusses provide a 7:12 ratio slope for the south-facing built-up roofing, and an asymmetrical top cord extension establishes a more vertical slope of 21:12 for the north-facing clerestories. A total of seven clerestory monitors project from the building's horizontal form, matching the seven internal bays of the structural grid. The light monitors that run the full width of the building from wall to wall establish the distinguishing saw-tooth pattern. The roof

drains low-slope (almost flat) crickets which carry water into internal roof drains and leaders mounted to the interior columns. Individual steel sashes of 4/4 lights are adjoined to form the continuous horizontal band of glazing.

PIPE SHOP (PS-6) *(one contributing building)*

The Pipe Shop (PS-6) is a small, yet substantially constructed timber frame building, which was established by the 1944 date as a facility of the shop complex.

The timber-framed building clad in corrugated metal is a small independent building that was utilized primarily for pipe threading. For safety reasons associated with handling lengths of pipe in proximity to workers, the shop was located separate from the primary adjacent Machine and Electric Shop (PS-1). The relatively small scale of the Pipe Shop (PS-6) suggests the possibility that it is an older mine building brought into the site; but detailing of the framework and storage bins tends to match closely with the work within the Electric Supply and Dry Building (PS-3), indicating it probably was constructed on this site for the purpose of being a pipe shop. The Pipe Shop (PS-6) is not indicated on insurance maps in July of 1942, but was present in July of 1944.

SHED (PS-7) *(one non-contributing building)*

A low-profile corrugated metal-roof shed with corrugated walls sits in the southwest corner of the Parrot Mine Shops Complex. This building was likely transported from another site and would appear to be approximately 25-30 years old and utilitarian in nature. This building, at first inspection, appears to be a locomotive storage building that was in the same approximate location in 1944; however, when past maps are overlaid with current mapped building locations, the current building is not in the same location as the historic locomotive storage building. Because it post-dates the World War II period of significance, the Shed (PS-7) is a non-contributing element in the complex. The structure sits over the south embankment of the site, and does not adversely impact the historic nature of the Parrot Mine Shops Complex.

Integrity

The Parrot Mine Shops Complex retain a very high degree of integrity. The buildings and structures within the property effectively convey their historic associations, and remain little changed since their construction. Though some of the historic fence is missing, enough is present to accurately convey its historic appearance and function.

Criterion A: Significance for Association with the Copper Industry

The following discussion addresses the Parrot Mine Shops Complex's significance under Criterion A (Industry), during the Butte NHL period of significance (1880-1918) and during World War II. The structures at the site correspond with these periods.

Information regarding the history of mining in Butte and the Parrot Mine was taken from a report prepared by the Montana Department of Environmental Quality, Abandoned Mines Project, available online at: http://www.deq.state.mt.us/abandonedmines/linkdocs/techdocs/183tech.asp.

Butte Mining District Location

Butte, which is positioned on the crest of the Continental Divide, holds a unique place in the history of not just local and regional mining, but in the history of mining on a global scale. Early gold seekers who followed Silver Bow Creek into the district in the 1860s discovered Butte. This area then became an above-average hard-rock silver camp. With the dawn of the electrical age, Butte eventually became the source of the world's new lodestone, copper. By the advent of the Great War, Butte was a thriving metropolis of 100,000 souls with political and economic clout that dominated the West. The "copper kings" of Butte spun webs of industrial development as they fought to control the area's mineral resources. There was a mining boom that drew thousands of men from around the world, and as they poured into the city, railroads raced to be the first to connect with the city. Ore, flux, and fuel poured into ever-larger smelters as the district produced staggering amounts of copper, silver, gold, zinc and manganese. [6]

Geology

What attracted the early gold seekers and truly drew the major investors to Butte's mining district was the complex geology. Butte is underlain by the granite rock of the Boulder Batholith. The Batholith extends from the Highland Mountains south of Butte north to Helena; it was originally an underground molten mass that solidified about seventy million years ago. As the cooling rock fractured, hot solutions seeped into the resulting cracks, depositing minerals to form deep veins. The ore minerals are arranged in zones, with the central zone being copper-rich. The intermediate area has decreasing copper and increasing quantities of lead and zinc. In the outer zone, silver and manganese predominate. Within twenty to thirty million years, erosion had exposed the Batholith, which was then covered by volcanic rocks. Subsequent erosion and faulting exposed the mineralized veins and left Butte ripe for mining development.[7]

The Parrot Mine

The Parrot Mine was one of Butte's top copper producers during the original Butte Historic Landmark's period of national significance 1880-1918. The mine is located on Butte's Southern Belt on the Gagnon-Parrott lode. Dennis Leary, George W. Newkirk, and the Porter Brothers discovered the mine in 1864. It was named after the Hon. R. R. Parrott, a local attorney. The complex ore removed from the mine was carried by wagon to Corrine, Utah, to be shipped by rail to eastern smelters. Locally, experiments began to try to smelt the Parrot ore. Butte pioneers Joseph Ramsdale and William J. Parks erected a small blast furnace in Town Gulch in 1866-67, but were unsuccessful. Parks continued to pour his own labor and limited money into the shaft. Because he capitalized his operation with paychecks from his own day labor, progress was slow. His efforts were justified when he reached the 155-foot level when he hit paying ore. He had discovered Butte's first copper mine. He was lucky; the Parrot turned out to be the only mine in Butte with copper ore above the 200-foot level.[8]

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[6] http://www.deq.state.mt.us/AbandonedMines/linkdocs/techdocs/183tech.asp
[7] Ibid.
[8] Ibid.

Patented in May 1879 by Dennis Leary, J. A. Talbott, and Thomas Irvine, production continued to grow, and by 1889 the Parrott Silver and Copper Company removed 260 tons of copper/silver ore per day. The 3-compartment shaft was reported to be the best ventilated shaft in Montana. By 1893, 101 underground miners had sunk the shaft to a depth of 900 feet using a Fraser and Chalmers hoisting engine. Four years later, the Parrot employed 195 men underground and 33 men on the surface. Below the 400-foot level, the Parrot boasted Montana's only 4-compartment shaft. In 1900, the shaft reached to 1,600 feet with 170 men underground and 118 on the surface. Hoisting was accomplished using a 2,500-horsepower Union Iron Works engine. By 1906, the work force increased again to 220 men, and the depth of the shaft reached 2,400 feet. The Parrot operated two compressor plants together capable of operating 100 drills.[9]

While the Parrott Silver and Copper Company continued to operate the mine, it became part of the holdings of the Amalgamated Copper Company in May 1899. The next year, Amalgamated boosted production quotas from 1.25 million pounds per month to 2 million pounds of ore per month. Later in the year, the surface buildings, especially the hoist house, were damaged by fire. By October, a fireproof temporary hoist of equal power and capacity was on-line. The damaged head frame was replaced with a 100-foot steel structure similar to the head frames at the Diamond and High Ore facilities elsewhere on the Butte Hill. Other structures and equipment were also upgraded. During this period of primary production, 1884-1910, miners extracted almost 300 million pounds of copper from the Parrot Mine.[10]

Consolidation of the Anaconda Copper Company

Between 1890-1910, two major copper companies emerged in Butte: the Anaconda Copper Mining Company, and the W. A. Clark Mining holdings. Between 1910 and 1927, the ACM successfully consolidated all the major Butte mines and linked the twenty-two Butte shafts through a series of underground and aboveground connections. Tunnels and drifts tied together the workings of mines at either end of the three mile-wide district, making for more efficient hoisting, ventilation and pumping. By 1927, ore was hoisted through a dozen shafts with the most efficient hoisting engines and tallest head frames. Some historic hoisting shafts became airshafts while connections between mines increased the efficiency of the mechanical ventilation system installed by the ACM after 1914.[11]

The Parrot Mine Frame and Fan (PS-4) structure is an excellent artifact of the extensive ventilation system that existed for the Butte Mines, ventilation being an absolutely essential aspect of deep underground mining.

The ACM acquired the Parrot Mine in 1910 during this most important period of consolidation. The 100-foot steel head frame was removed and the shaft was converted into a concrete-lined air intake. The wooden head frame that straddles the Parrot shaft today constitutes the only remaining head frame of its type on the Butte Hill, although it was not the original head frame and was built in approximately 1910. It was during this time, just after the acquisition of the mine by the ACM, that the three original brick buildings still existent were built.[12]

The ACM centralized individual systems with the construction of the High Ore Pumping Plant in 1902. By 1923, all of ACM's main shafts were connected at the 2,800-foot level to channel the mine water to the pumping stations located at

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[9] Ibid. This information is referenced on the website as follows: Joseph Hogan and Jacob Oliver, *Third Annual Report of Inspector of Mines, for the Fiscal Year 1891* (Helena, MT: Journal Publishing Company, 1891); John Byrne and John J. Barry, *Fourteenth Annual Report of the Inspector of Mines of the State of Montana* (Helena, MT: Independent Publishing Company, 1902).; Geological Survey, *Geology and Ore Deposits of the Butte District, Montana*, by Walter Harvey Weed, Professional Paper no. 74 (Washington, D.C.: GPO, 1912).

[10] Ibid. Referenced to *Western Mining World* (Butte, MT and Chicago, IL: Western Mining World Company) 1896-1902. This journal was published under various titles between 1894 and 1917, including: *Mining World; Western Mining World, a Journal Devoted to Mining, Financial & Commercial Interests; and The Western Mining and Engineering World.*

[11] Ibid.; Referenced to William B. Daly, et.al., "Mining Methods in the Butte District (including an account of the geology)", *Transactions of the American Institute of Mining and Metallurgical Engineers*, preprint, No. 1225, 1926.

[12] Ibid.

that level. These electric pumps operated day and night to remove water from the Butte mines and to lift it to a precipitation plant on the surface.[13]

Under the leadership of Cornelius (Con) Kelley between 1916-1940, the ACM expanded zinc production and manganese mining. The company also bought control of the American Brass Company in 1922, which enabled ACM to stabilize copper production and sales. These moves would be important to the American military during World War II and the company's central shops operations at the Parrot Mine.

By 1942, the ACM determined that all "crafts" for its Butte holdings should be consolidated in one area—the Parrot Mine. The company built new buildings and adaptively reused existing structures to create a central clearinghouse to machine tools, fix broken equipment and fabricate equipment to improve the overall mining activity of the Butte Hill. This development greatly enhanced the efficiency of the Anaconda Copper Mining Company by improving service to all its mine yards.[14]

The Parrot Mine and Labor[15]

By 1885 Butte was the greatest mining camp in the American West, and it quickly gained a reputation as a bastion for unions. Organized mining labor flourished under the relatively benevolent management of Marcus Daly, a self-made millionaire who started as a prospector and hard-rock miner. Daly created what would become Montana's most powerful political and economic force—the Anaconda Copper Mining Company. With Daly at the helm of the ACM, the Butte Miners' Union—the founding branch of the Western Federation of Miners—enjoyed relative harmony and peace with mine owners in the late nineteenth century.

Around the turn of the century the picture began to change for labor unions in Butte. In 1899 the Standard Oil-controlled Amalgamated Copper Company acquired management of the ACM, and East Coast directors replaced the mostly benign local leadership. In a short time, a very adversarial relationship between management and labor developed. The company's power grew as it bought out W. A. Clark and most of the other local holdings, so that by the time of World War I, Butte had become effectively a one-company town.

The Progressive movement brought demands for better conditions and wages nationwide, but the Butte Miners Union began to experience problems in its ranks. In 1914 the miners were making the same wage—$3.50 a day—that had been at issue when the union organized in the mid-1880s. At the same time, the Industrial Workers of the World (IWW) had become very visible in Butte and around the West, calling not only for better wages but also for deep social change. Eventually, in the 1910s, the Butte Miners Union broke into factions, one remaining loyal to the original union, and another favoring the more radical ideals of the IWW.

During this same period, the ACM was consolidating its holdings and increasing its production efficiency as described above. The expansion of the world copper industry meant there were plenty of jobs, but many of the company's actions alienated workers. A new drive for efficiency led to new safety hazards underground. Additionally, the company engaged in common practices of union busting such as hiring private detectives to infiltrate unions or instigate activities that would cause a strike. It also adopted a controversial system by which a worker had to obtain a "rustling card" from the company before he could work on the Hill. By refusing to give cards to radicals or troublemakers, the company could ignore the union. The Butte Miners Union bowed to the rustling card system, but many miners despised it.

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[13] Ibid.; Referenced to Dave Piper, personal interviews, May 1987 and September 1988, Butte, Montana.

[14] Ibid.; "Butte Machine Shop," *Copper Commando* 1, no. 22 (1943): 8-9. The *Copper Commando* was a war-time magazine that the Anaconda Company published to boost morale of its employees and encourage an attitude of support for the war effort.

[15] The general history of Butte's labor history is well documented in secondary sources. The sources used for this section are Michael P. Malone, Richard B. Roeder, and William L. Lang, *Montana: A History of Two Centuries*, rev. ed. (Seattle: University of Washington Press, 1991); and Professor Jerry Calvert, interview, *KUED Channel 7 Online* (Bozeman, MT), 20 June 2005.

The Parrot Mine Shops Complex was associated with these events in that rustling cards were distributed from the ACM's central employment office at the Parrot Mine. As union issues heated up, the company took measures to protect itself and its properties. A 1916 Sanborn fire insurance map shows that the Parrot Mine was not operational below-ground that year, but the site and all the company's mining facilities were heavily protected, presumably from labor interests. The map notes:

> "Forty special armed guards, 10 additional in reserve, on duty day and night, 3 8-hour shifts, at Mountain View Mine, High Ore Mine and Power Plants. Four guards on duty nights at Leonard Mine—these guards are available at all Anaconda Copper Mining Company's properties when required."[16]

At the Parrot Mine, as at other ACM properties, a high fence surrounded the property. The fence at the Parrot Mine appears as a six-foot structure on a 1900 fire insurance map, and by 1916 was noted as an eight-foot fence. The existing portions of this original fence consist of boards approximately six feet high with wire above strung between transformers. It is reasonable to conclude that between 1900-16 the wires account for the two feet difference in height between the two maps, and that the wire was added for security purposes in response to the high degree of labor unrest.[17]

The summer of 1914 was a remarkable one Butte's history, set in the context of the Progressive movement in Montana and the beginning of World War I. In May the Butte Miners Union held its regular election of new officers. The "radical" faction boycotted the election and threatened to form an entirely new union. On June 13, a Miner's Day parade ended in violence with the sacking of the Butte Miners Union Hall, and the radical elements organized a short-lived independent union called the Butte Mine Workers' Union with strong ties to the IWW.[18]

On June 23 there was more violence at the old Butte Miners Union Hall when a mob developed around a regular union meeting. From all appearances the conflict existed between the two factions of the union, but there were rumors that company-paid people were also involved. Two men were shot, and the union hall was dynamited and destroyed. As the summer progressed, neither the old union nor the nascent group garnered any real power, and the city of Butte "trembled on the brink of anarchy"[19] in the wake of the unresolved labor situation. Simultaneously, the Great War broke out in Europe.

Early in the morning of August 30, the rustling card house (or employment office) at the Parrot Mine Shops Complex was dynamited and partially destroyed. The perpetrators were not identified. The watchman on duty had disappeared (but was later found unharmed).[20] This event was a lead-up to Montana governor Sam Stewart declaring martial law in Butte two days later to quell labor discord. The declaration began the first of six military occupations of the city in as many years. A week after this occurred, the ACM announced that mine workers would be forced to work under the hated "open shop" system.

The year 1914 was a huge defeat for organized mine unions, but it was not the end of labor conflict in Butte. In June 1917 one of the worst metal mining disasters in history occurred when a fire broke out at the North Butte Mining Company's Speculator Mine. One hundred sixty four men died, sparking a strike that included 15,000 men by the end of June. The strike effectively shut down copper production until federal troops ended it that fall.[21]

For the next four years Montana's political life was characterized by an intense focus on rooting out anti-war sentiment in the state. Labor issues were involved in part because the IWW was an outspoken anti-war group. The Anaconda

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[16] Sanborn Fire Insurance Company, "Butte, Montana," (New York: Sanborn Map Co., 1916).
[17] Sanborn Fire Insurance Company, "Butte, Montana," (New York: Sanborn Map Co., 1900) sheet 53; and "Butte, Montana,"1916, sheet 10.
[18] Malone, Roeder, and Lang, p. 273.
[19] Ibid.
[20] "Explosion Shakes the Entire City," *Butte Miner,* 30 August 1914; "Day of Quiet in Butte Labor Situation," *Butte Miner*, 31 August 1914.
[21] Ibid., p. 274.

Company and the federal government helped stamp out the more radical labor interests. In 1920 a group of guards paid by ACM opened fire on picketers at the Neversweat Mine south of the Parrot. One person was killed and fifteen wounded. Within a few years, the mining labor movement in Butte was effectively over.[22]

Thus, the copper industry, World War I, and organized labor were intertwined in nationally significant ways in Butte during the end of its period of significance. At the center of this action was the Anaconda Copper Mining Company. The Parrot Mine site and its buildings and fence are significant for their association with these historic themes.

Contributions to World War II.

The Parrot Mine Shops Complex is significant under Criterion A for its association with industry during World War II. During the war the Anaconda Copper Mining Company was the nation's leading copper producer and assisted the federal government in meeting its needs for metals and implements. As described above, in 1942 the ACM consolidated all its "shop" work at the Parrot Mine site for the purpose of repair and maintenance of all mining equipment at the company's Butte mines. This occurred during the period in which the company in general was consolidating its processes to increase production for the war effort.

The ACM's production increased dramatically under the skillful management of Con Kelley, who continued to lead the company throughout World War II and to increase capacity of the facilities constructed by the company. With America's entry into World War II, facilities were again increased in conjunction with the U.S. military. Now began a period of output that recorded a massive achievement. By this time the Butte mines were only one part of the ACM's worldwide operations, but they were noted for their contributions to the war effort. According to Isaac F. Marcosson:

> A remarkable feature of Anaconda operations during the war period was the production of the Butte mines. In World War I (1916-1918) the Butte Hill mines produced a total of 721,139,610 pounds of copper for the war effort. By the time America entered World War II, the mines were 1,300 feet deeper; and producing 917,757,849 pounds of copper. This was accomplished in the face of a serious of labor shortage and with the necessity of overcoming numerous difficult engineering problems, which included hoisting ore from increased depth, higher temperature in the mines, pumping and ventilation.[23]

The ACM was asked by national defense authorities to increase ore production and the company responded by enlarging plant facilities, consolidating services and work, and providing miners with military deferment. The ACM published a propaganda magazine titled *The Copper Commando* in which military generals, national defense personnel, and company employees wrote about the importance of metals to the war effort. The magazine was intended to encourage miners to think of themselves as "soldiers" in the war effort and thus stay employed rather than join up. Marcosson wrote:

> Butte mines increased production to 274,000,000 pounds in 1943. A year later it reached 285,000,000 pounds. The mines had been placed on a seven-day basis with the men working six days a week. The mines of the Anaconda Company and its subsidiaries produced approximately one-third of the total amount of new copper available in the United States for the prosecution of the war. Putting it another way, Anaconda contributed 51.26 per cent of the total copper increase for the national emergency, or 3,744 tons more than all the other producers combined.[24]

In addition to copper, the ACM increased its zinc output by a hundredfold from before the war, producing over 1 million short tons of zinc between 1940-1945. The company also produced large quantities of other materials necessary to the

[22] Ibid., p. 278.
[23] Isaac F. Marcosson, *Anaconda* (New York: Dodd, Mead and Co., 1957), 234.
[24] Ibid., 227-8.

war effort, such as lead, vanadium, bismuth, cadmium, arsenic, super phosphate, sulphuric acid, white lead, zinc oxide and molybdenum.

The ACM also developed processes and devices that helped America win the war, including a method of acquiring and treating manganese ores. Even before the nation formally entered the war, government defense officials reported a need for large quantities of manganese, which is used to desulphurize and deoxidize steel. Before the war, nearly all the manganese ore in the country was imported, but now the German submarine campaign was cutting off most of this supply. The ACM developed a technique for producing ore of the needed specifications, and entered into a contract with the government to supply 240 long tons over the course of three years. In 1940 the company began constructing the necessary facilities at the Travona and Emma mines in Butte, and production began in June 1941. The ACM signed a second contract with the government at the completion of the first one. In the end, the company provided more than 98% of the total manganese produced in the U.S. during the war.

Anaconda staff and engineers also developed a device used with magnetic underwater ordnance, for which project the company received a Naval Ordnance Award. In all, the Anaconda Company and its subsidiaries received several awards for their contributions to wartime engineering.

During World War II, the Parrot Mine Shops were essential to ACM's operations. There, the extant buildings were adaptively reused and modern buildings were constructed for the maintenance and manufacture of mining equipment. These buildings are representative of a concentrated effort to boost war production of metals through the more efficient repair and manufacture of required mining equipment. They are also excellent representations of trends in industrial architecture.

Criterion C: Industrial Architecture

The Parrot Mine Shops Complex buildings are significant for their association with industrial architecture. Generally, industrial architecture has had a minor part in architectural history. Perhaps this is because it demands a certain type of analysis that includes the manufacturing process as well the building product. In her book *The Works: The Industrial Architecture of the United States,* Betsy Hunter Bradley recognizes that factories led the way in innovative building design and technology in the period 1840-1940, and that factories were very important in the development of modern architecture. Every aspect of the factory, from its form and structure to its loading platform, is related to the manufacturing process and the determination to discover these relationships. An understanding of industrial architecture is grounded not only in these functional factors but also in an appreciation for the aesthetic ideals of engineers and their emphasis on efficiency and processes.[25]

In the 1920s, the great pioneer of modern architecture, Le Corbusier, identified the first fruits of the *esprit nouveau* in factories and silos. In *Vers une Architecture* he recognized the *zeitgeist* of the machine age and the functional tradition so inherent in the design of factories, silos, liners, aeroplanes and cars. Indeed, in American industrial factories we find the genus of today's contemporary 'high-tech' style, a mode that is subject to the purification of the machine.[26]

American architect Albert Kahn embraced the challenge posed by the industrial expansion at the turn of the twentieth century. His work with the automobile industry, particularly Ford and Packard, reflects important design innovations during this time. Modernized incarnations of building materials such as steel and reinforced concrete allowed designers to open up interior spaces. A more flexible space made it possible to experiment with new ways to organize the production process, and demonstrated that henceforth the architect would be more concerned with the interior function of the space

[25] Betsy Hunter Bradley, *The Works: Industrial Architecture of the United States* (New York: Oxford University Press, 1999).
[26] Rob MacDonald, "The Works: the Industrial Architecture of the United States by Betsy Hunter Bradley. Oxford UP, 1999," book review as appears in *American Studies Today Online*: http://www.americansc.org.uk/Reviews/Works.htm.

than with a quest for an architectural style for the facades. The walls of such plants were characterized by enormous windows that occupied large openings determined by the grid of the concrete frame. Multi-paned, metal-framed windows were the dominant feature of the buildings' exteriors.[27]

Albert Kahn was in the habit of saying that architecture is ninety percent business and ten percent art. As for Ford, he was not looking for an architectural marvel to celebrate the entrepreneur in the form of a new industrial aesthetic, but rather a design able to provide practical solutions to the specific needs of mass production.[28]

These principles were the driving force in industrial architecture during the first decades of the twentieth century, and are well documented by the buildings present at the Parrot Mine Shops Complex. The early buildings at the complex, particularly the Drill Repair Shop (PS-2) and Electric Supply and Dry (PS-3), are representative of load-bearing masonry industrial buildings common in the U.S. during the last half of the nineteenth century. The pilasters and arched openings are typical of the age. Bradley explains:

> Brick bearing walls were made skeletal in form, as much like a framed system as possible, through the concentration of loads on thick piers, or pilasters. Brick walls of pilasters and thinner panel walls are articulated in various ways. Arcaded forms, in which two or more stories are linked visually by arched spandrels that joined soaring pilasters, exuded structural strength and had an inherent ornamental quality. When both vertical pilasters and horizontal spandrels and stringcourses were emphasized, facades appeared as articulated grids and often featured a lively interplay of elements...The gridded articulation of the facades of industrial loft buildings remained a dominant theme even as interior steel framing reduced the structural role of the brick exterior...Indeed, architects and engineers found it difficult to move away from facade schemes developed for the brick pilaster-articulated and gridded wall.[29]

Designers of late nineteenth and early twentieth century industrial buildings, then, took advantage of practical structural elements for ornamentations.

> Arched door and window openings in brick industrial buildings represented structural elements that added to aesthetic character. All window and door openings were capped by relieving arches that transferred the weight of the wall above the openings to the wall area between them. It was most expedient to extend those arches through the entire thickness of the wall and thereby avoid the use of wood lintel, a less durable and more flammable element.[30]

Early in the twentieth century, the industrial aesthetic shifted, and masonry bearing walls gave way to framed structural systems. Framed buildings, particularly those that employed concrete and steel systems, were more economical to build. They provided large, open, interior space, and allowed for curtain walls of steel framed windows to let in great amounts of natural light.

By 1942 this design shift was complete. In that year the ACM started construction on the Machine and Electric Shop (PS-1). This massive building, like others of its era, was used for the very practical purposes indicative in its name. Keeping with the "form follows function" mantra of industrial design, it features the wide-open bays, huge window openings and ventilation systems conducive to the work performed therein. Within a short time the Pipe Shop was also added to the Parrot Mine complex, where the specialized task of rethreading pipe took place.

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[27] Louis Bergeron and Maria Teresa Maiullari-Pontois, "The Factory Architecture of Albert Kahn," in *Industry, Architecture, and Engineering: American Ingenuity 1750-1950*, available at http://www.architectureweek.com/2000/1101/culture_1-1.html
[28] Ibid.
[29] Bradley, pp. 230-231.
[30] Ibid., p. 234.

The Machine and Electric Shop building was certainly influenced by the international style. Bauhaus founder Walter Gropius initiated a new German ethic uniting art and technology and resulting in a new concept of the building as a "machine." This forward-thinking, progressive movement did not sit well with the traditionalist Nazis who closed the Bauhaus School of Design in 1933. Many of the Bauhaus practitioners immigrated to the United States and imported and developed the school's ideals, which became synonymous with the international modern style.

The Drill Repair Shop (PS-2), Electric Supply and Dry (PS-3), and Lineman's Warehouse and Storage (PS-5) were all converted for new uses during this time. Originally designed to house massive mechanical equipment, the original hoist and compressor buildings, which became PS-2 and PS-3, featured open designs conducive to the refurbishment and fabrication of similar machines and their parts. By 1942, the buildings were used as the Electric Supply and Dry Shop, the Drill Repair Shop, respectively. Each played an essential function in the work conducted at the Mine Shop complex. The complex is an excellent example of the transition in mining technology and industrial architecture from the turn of the twentieth century through World War II.

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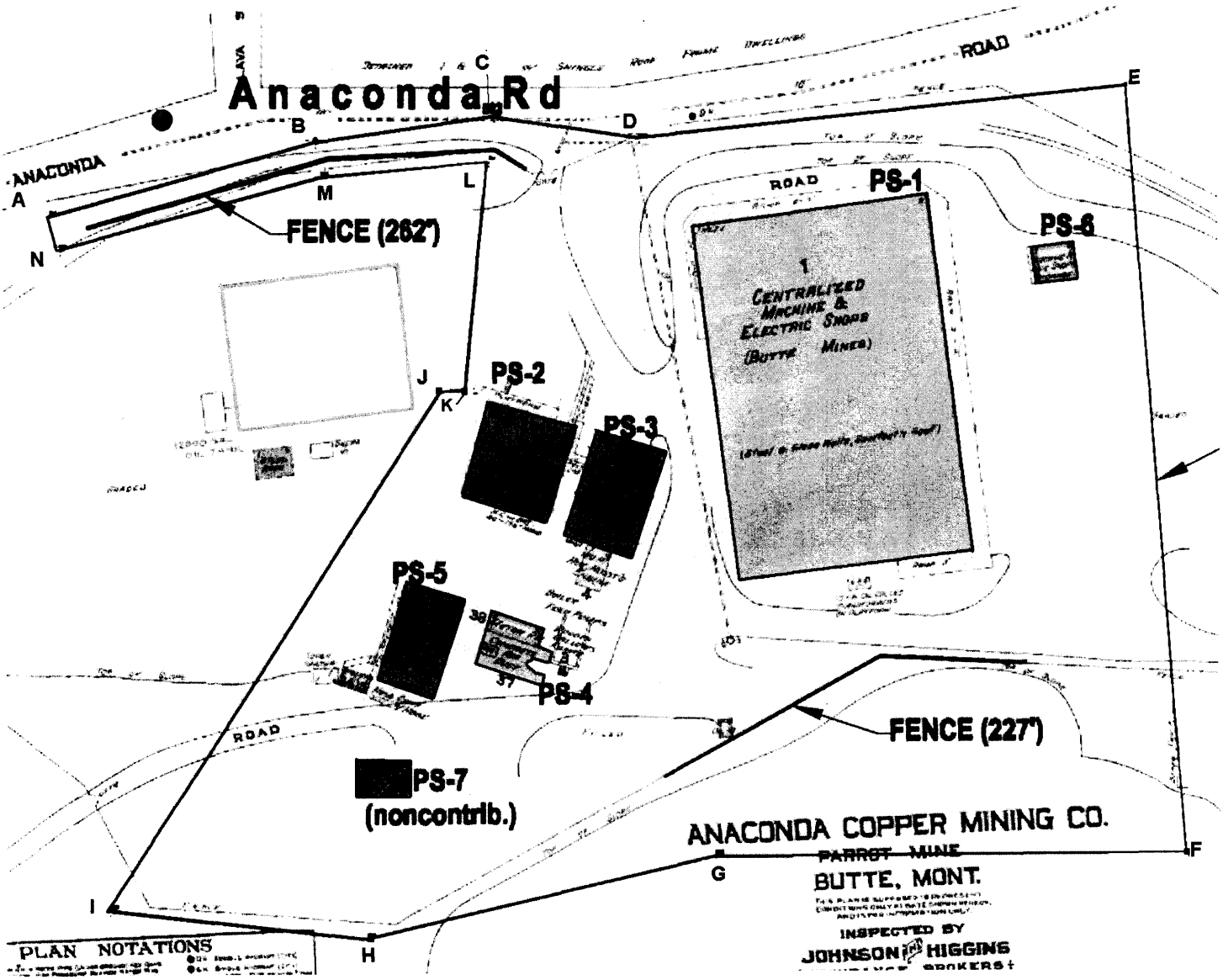
UTM References for Verbal Boundary Description
North American Datum 1927

Refer to points on Site Map.

	ZONE	EASTING	NORTHING
A	**12**	**381607.059**	**5096888.546**
B	12	381653.223	5096902.235
C	12	381684.555	5096907.28
D	12	381710.296	5096903.945
E	**12**	**381795.992**	**5096914.324**
F	**12**	**381818.736**	**5096779.572**
G	12	381725.715	5096777.644
H	12	381664.623	5096762.164
I	**12**	**381619.398**	**5096766.676**
J	12	381676.412	5096859.077
K	12	381680.773	5096859.169
L	**12**	**381683.906**	**5096899.329**
M	12	381654.367	5096896.218
N	12	381608.835	5096882.713

Points A, E, F, I, and L (in bold above) correspond to UTM Points 1-5 in Section 10 and drawn on the accompanying U.S.G.S. 7.5 Minute Quadrangle, "Butte North, MT."



Parrot Mine Shops Complex Historic District site map.

PROPERTY OWNERS:

Butte-Silver Bow Local Government
Courthouse, Room 106
155 W. Granite St.
Butte, MT 59701-9206

Parrot Mine Shops Complex LLC
63 1/2 W. Broadway St.
Butte, MT 59701-9279

PHOTOGRAPHS

In accordance with the March 2005 Photo Policy expansion, the photos that accompany this nomination are printed on HP Premium Plus Photo Paper, using a Hewlett Packard 100 gray photo cartridge. This combination of paper and inks is included on the NR's list of "Acceptable Ink and Paper Combinations for Digital Images." The images are also recorded on an archival CD-R with a resolution at least 1200x1800 pixels, 300 dpi in "true color" 24-bit format.

Modern exterior images were taken, using a high-resolution digital camera, by Barbara Behan on October 11, 2006. Modern interior images were taken, using a high-resolution digital camera, by John Mike Downey, Pioneer Technical Services, on January 5. 2005. The electronic images are on file at MTSHPO, Helena, MT.

The historic images are printed from high-resolution scans of historic photographs. All historic images are from the collection of Al Hooper, who retains the original prints at his home, 2730 Princeton, Butte, MT.