

SURVEY-INVENTORY FORM
 COMMUNITY CULTURAL RESOURCE SURVEY

1. NAME

Historic Irondale Historic District

and/or Common

2. LOCATION

Street & Number

UTM References: (See attached)

Zone _____ Easting _____
 Northing _____

- not for publication

City, Town

Port Townsend

X vicinity of

State

Washington

County

Jefferson

3. CLASSIFICATION

Ownership: public private both

Status: occupied unoccupied work in progress

Present Use: agriculture commercial educational entertainment government
 industrial military museum park private residence
 religious scientific transportation other: ruins

4. OWNER OF PROPERTY

Name

Multiple Ownership (See attached)

Street & Number

City, Town

- vicinity of

State

5. MAJOR BIBLIOGRAPHICAL REFERENCES

(See attached)

6. FORM PREPARED BY

Name/Title

David B. Stalheim

Organization

Office of Archaeology and Historic Preservation

Date

February 1983

Street & Number

111 West 21st Avenue, KL-11

Telephone

(206) 753-7442

City or Town

Olympia

State

Washington 98504

7. DESCRIPTION

Condition: excellent good fair deteriorated ruins unexposed
Circle one: unaltered altered
Circle one: original site moved date _____

Describe the present and original (if known) physical appearance
attach photo

The Irondale Historic District includes the site and ruins of an iron works and steel mill, and four houses built for officials. The district is bounded by Port Townsend Bay, an arm of saltwater opening on the north to Admiralty Inlet and the Strait of Juan de Fuca. The district occupies a strip of land along the bay where the steel and iron works were once located, and embraces the four company houses along Maple Street (originally Watkins Avenue). There are no intrusions in the historic district with the exception of a log dump on land that the steel company reclaimed along the bay. The district is located on top of a bluff overlooking Port Townsend Bay and the once thriving business community along Moore Street. There is nothing left today of Irondale's brick and wood-framed commercial section. The four company houses include two primary buildings, one secondary, and one altered historic. After removal of the steel and iron plant machinery, the site was abandoned. The site is now completely overgrown with blackberries, alder and fir trees, and other flora.

Acreage: Approx. 9½

Verbal boundary description: Sec. 35, Township 30 North,
Range 1 West, W.M. (Parcel #001353004, TL Tax I,F,H, and
Parcel #001353001, Tax No. 1)

8. SIGNIFICANCE

Specific dates	1902 - 1911	Builder/Architect	unknown
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The Irondale Historic District is significant because of the association and importance the iron and steel works at Irondale had in the development of the Pacific Coast iron and steel industry. Throughout the years of operation under various ownerships, the Irondale plant was a pivotal company in the industry. The second furnace on the Pacific Coast to produce pig iron was constructed at Irondale; the first being at Oswego, Oregon, in the late 1860's. When steel production was added in 1910, the company was the first complete plant west of Denver to produce both iron and steel. The works employed between 100 and 300 people and was responsible for the significant growth of the Irondale community. There is virtually no evidence left of the once prosperous community. A fire in 1914 claimed most of Irondale's commercial section. Although there is nothing left of the iron and steel works except ruins and foundations, they are complete enough to be able to interpret the construction and operating methods in the early stage of development of this significant industry.

The Irondale Historic District represents a period of activity between 1902 and 1911. The history of the iron works at Irondale, however, begins in 1879. There are conflicting reports as to the original incorporation of the Puget Sound Iron Company. A prospectus issued by the company in 1879 states that the company was formed in 1873. A check of official Jefferson County records show the incorporation date to be in July of 1879. It is known, however, that no substantial organized effort to produce pig iron occurred until 1879.

The decision to erect a blast furnace at Irondale to produce pig iron was based on the discovery of a hematite bog ore found at Chimacum. The bog ore was known to occur along Chimacum Creek and its tributaries and was principally located on the farm of William

Discription (continued)

The first smelting furnace at Irondale was built during 1880 and blown in on January 27, 1881. The Puget Sound Iron Company constructed an open-top stone stack, 38 feet by nine feet, using hot blast, and having a capacity of producing 4,000 tons of pig iron each year. After operating for a few short months, a decision was made to tear down the original furnace and erect a new one. The new furnace was erected in 1882 with an annual capacity of 10,000 net tons.

Due to the refractory nature of the ores used for smelting, the stack was remodeled in 1884 to a height of 50 feet, eight feet in diameter at the stock line, eleven feet at the bosh, and five feet at the crucible. The furnace was of steel construction. The stack originally had an open top, but was later closed by a patent bell and hopper. Hot blast was furnished by a Player stove containing 60 pipes. A wharf 200 yards long was built that could accommodate several large vessels. Elevators, storage sheds, power, engine and boiler houses, completed the plant. The first practice of obtaining charcoal by burning fir trees in large open pits at Chimacum was abandoned sometime after 1886. Twenty charcoal kilns were then constructed at the plant site along the bay. The kilns were 30 feet in diameter by 30 feet high. The Irondale plant was closed down after 1889.

The Pacific Steel Company was formed in 1901 to take over the Irondale plant. The company relined the furnace to give a stack height of 60 feet, a bosh 12 feet in diameter, and a six foot crucible. The company put in a sawmill, new dock facilities, new gridirons, a charcoal warehouse, an additional stove and boiler, repaired the 20 charcoal kilns, and constructed 20 new houses (including the four company houses considered in this district) for the employees. The furnace was operated until 1903.

After the plant lay idle for several years, James A. Moore, a Seattle developer, purchased the Irondale plant in September of 1906 for \$40,000. The furnace was increased to a capacity of 80 tons per day after certain alterations and renovations were made by the Wellman-Seaver-Morgan Company. The furnace was once again put in blast in 1907. The company was called the Irondale Furnace Company. It was Moore's intention that the Irondale plant would be auxillary to the works he was proposing at Kirkland. The Kirkland plant, however, was never put into operation. Moore ran the Irondale furnace in 1907 and 1908. No pig iron was produced in 1909.

While the plant was shut down, Moore found sufficient capital on the East Coast to organize the Irondale Steel Company. The new company enlarged the blast furnace to an increased capacity of 100 tons daily. The company also began constructing two 20-ton open-hearth furnaces with a capacity of producing 140 tons of steel ingots daily. Also under construction was one 22-inch rolling mill with continuous furnaces, one 14-inch rolling mill with heating furnaces and one nine-inch guide mill.

Moore secured additional capital for the completion of the steel plant. On October 2, 1909, the Western Steel Corporation was incorporated with a capital stock of \$20,000,000. When the Western Steel Corporation finished equipping the plant at Irondale, it included one 80-ton blast furnace with accessory equipment of blowing engines and hot stoves; two 25-ton basic open-hearth furnaces with a 15-ton electric crane, 25-ton ladles, molds, and 40-foot casting pit. Two oil-fired ingot heating furnaces with a capacity of 300 tons daily followed the open-hearth furnaces. They were the hand worked continuous type with sintered quartz hearth, five feet nine inches by 30 feet, and sides and roof of fire brick.

The 22-inch rolling mill was equipped with a 36 by 60 Corliss engine with a 40-ton fly wheel intended to help carry the mill over on peak loads. The 14-inch rolling mill was driven by a 30 by 60 Corliss engine with a rope drum serving as a fly wheel. Both the 14- and 22-inch mills were supplied with suitable lathes for dressing and shaping rolls.

Fuel oil was used for all initial heating about the plant--for generating steam, operating open-hearth furnaces and heating furnaces. The oil was stored in a concrete tank of 6,000 barrels capacity. The fuel tank was located where the charcoal ovens once stood. The Western Steel Corporation abandoned the use of charcoal; coke, purchased from Pierce County, was used exclusively for charging the furnace. A rail system hauled raw materials from the wharf to the plant site. Included in the rail system was a Davenport locomotive, eight dump cars, 15 all-steel cars, and three miles of trackage.

During the plant's operation, numerous repairs and equipment changes became necessary. Late in 1910 a third open-hearth furnace was under construction. The company also built a foundry to make moulds and castings for use in the steel plant. The Western Steel Corporation, however, went into bankruptcy at the end of 1911. By 1914 the plant had been sold to the Pacific Coast Steel Company of Seattle. The Seattle firm removed the machinery and building materials of the steel plant to a site in Seattle. The blast furnace was left principally intact and was put in operation as an emergency war measure between 1917 and 1919. After 1919, the blast furnace that produced the pig iron was also removed.

The principal physical remains of the industrial activities at Irondale is the foundation work of the open-hearth furnaces and rolling mills. In one isolated spot near where the blast furnace was located, foundation work with a series of large threaded bolts projecting upwards is found. This site may have been associated with the boiler or engine houses, as they were located behind the blast furnace. The site of the blast furnace is determined through an analysis of existing site characteristics and historic photographs.

The remains of the open-hearth furnaces and rolling mills are more complete. Twenty-foot retaining walls mark one end of the open-hearth furnaces. Clearly shown are the series of three open-hearths--their respective foundation work and the smokestack holes. Moving away from the retaining walls, the foundation work for the 25-ton ladle, which ran on rails, is clearly visible. The rolling mills were located in an adjacent building behind the open-hearths. Scattered throughout this site are deep troughs and more foundation work. Threaded posts protrude from foundations in many areas. The concrete fuel tank still stands down along the water. Bricks and concrete are scattered through the entire site.

Analysis of existing historical photographs indicate that the four company houses included in the Irondale Historic District were all built around 1902. Originally, there were six houses along Watkins Avenue (now Maple Street). There were two basic designs with three houses representing each design. One design was larger, more pretentious than the other modest saltbox structures. All three houses of the larger design are still standing, while only one of the other saltbox structures is standing. For the purposes of this nomination, the four company houses will be numbered one through four with number one occupying the site closest to the steel and iron plant.

Houses one through three were originally constructed on an identical plan. The houses were L-shaped in plan, two stories tall, with intersecting hipped roofs. A one story covered porch occupied the corner of the L, decorated with turned posts, lattice work, and a low balustraded railing. The first floor of the building was clad in milled rustic siding. The second floor, slightly bellcast, was clad in wood shingles. The roof was also clad in wood shingles. There were two chimneys to each house. The Western Steel Corporation refitted, enlarged, and furnished four of the company houses along Watkins Avenue in 1910.

House number one has undergone slight modifications: the porch has been temporarily enclosed; two windows on the first floor facing the second house have been boarded up although they retain their original framing; and shakes have been put on the roof. House number one is considered a secondary building in the Irondale Historic District. If changes were made to bring this house back to the original plan, the house could be reconsidered as a primary building.

House number two has undergone the most drastic alterations of the company houses. The front porch has been permanently enclosed with a large "picture" window facing the front. There has also been an addition constructed on the rear of the house. Wood shakes have been put on the roof and wood shingles were placed over the milled boards on the first floor exterior walls. The house, however, maintains a visual link with company houses one through three. House number two is considered an altered historic building within the Irondale Historic District.

House number three best represents the original plan. There have been very few changes in the house and it is in excellent condition. This house is considered a primary building in the Irondale Historic District.

The other three houses that had been located along Watkins Avenue were one and one-half story buildings with a saltbox roof and two gabled dormers facing the front. Only one of these buildings remains. House number four is clad in milled rustic siding, though slightly wider than the siding on houses one through three. The roof overhangs the front veranda, which is supported by two turned posts. The width of the house in the rear had been enclosed at a later date although the exact date is unknown. There are wood shakes on the roof. House number four is considered a primary building in the Irondale Historic District.

Significance (continued)

Bishop, Sr. The Puget Sound Iron Company secured a lease with Bishop in 1879 to extract all the ore found on his property. Bishop was to be paid twenty five cents per ton of crude ore. Certain agreements were included that insured Bishop a healthy profit. An unusual restriction was also placed on the Puget Sound Iron Company. The restriction required the company to erect a blast furnace in Jefferson County and did not allow the Chimacum ore to be transported out of the county except as a finished product--pig iron.

The principal organizers of the iron works were citizens of Jefferson County. Trustees were James Jones, E.L. Canby, and H.L. Blanchard. Samuel Hadlock was the superintendent and D.W. Moor was the general agent. By 1880, Californians became the principal members in the project. Cyrus Walker, manager of the Puget Mill Company properties on Puget Sound, is reported to have been the president of the iron works company. The first furnace was put in blast in January of 1881. That same year, the company transferred its organization and office to San Francisco. The new organization, retaining the same company name, was directly linked with the Union Iron Works in San Francisco. The original townsite of Irondale was platted and dedicated in 1881. The land was on the former donation land claim of John Harris.

The Chimacum bog ore proved to be unsatisfactory as the only ore used in the smelting process. A magnetite deposit was mined on the west coast of Texada Island, British Columbia, and made a superior product together with the Chimacum ore. The ores were mixed with charcoal obtained from partially burnt fir trees and lime rock from San Juan Island to produce charcoal iron. Between 1881 and 1889, 24,806 net tons of charcoal iron were produced at Irondale. Most of this iron was marketed in California, principally at the

Union Iron Works. The Union Iron Works had several large government contracts during this period. Some of the Irondale charcoal iron was used in the construction of parts of the cruisers "Charlston" and "San Francisco" and the battleship "Oregon."

The best year of production for the infant iron works was in 1889. In that year, 10,371 net tons of pig iron was produced--almost half of the total production between 1881 and 1889. In spite of the company's increasing success, the organization elected to close the plant. The Californian real estate market had suddenly declined in 1888 and the company's San Francisco owners chose to look after their interests in that state rather than operating the Irondale furnace. W.H. Loe was placed in charge of watching the plant while it lay idle and selling the accumulated stock of iron.

After examinations in 1900 into the possibilities of smelting iron on the Pacific Coast at Irondale, Homer H. Swaney came west from Pittsburg to take over the properties of the Puget Sound Iron Company. The Pacific Steel Company was formed in 1901. The Irondale plant was purchased for \$40,000 from the Puget Sound Iron Company with the condition that the large quantities of Texada ore be purchased; only a lease on the Texada ore was secured. A small percentage of ore from Hamilton, Washington, was mixed with the Texada ore to constitute the charge. The Chimacum ore was depleted by this time. The limestone used for flux came from Roche Harbor. The operation was considered experimental, an attempt to determine if the plant could be operated on a profitable basis. Even so, Swaney made numerous improvements during this period, including the construction of the four houses included in this district. Over 6,000 net tons of pig iron were produced between the end of 1901 and the beginning of 1903. The pig iron was rated a high quality charcoal iron and was used in the cylinders of the battleship "Nebraska" built at Moran Brothers Shipyard in Seattle.

The success of the operation led to the incorporation of the Seattle Iron and Steel Company in 1903. The authorized capital stock was \$6,000,000 with an additional \$2,000,000 to be raised by the sale of bonds. Homer H. Swaney headed the organization and the trustees were composed of leading Seattle businessmen. The new company planned to take over the properties and plant of the Pacific Steel Company, enlarge the blast furnace at Irondale, and, at a proposed site in Seattle, erect open-hearth furnaces, rolling mills, and a modern 250 ton blast furnace. During 1903, Swaney acquired title and leases to properties in Washington and British Columbia, including real estate and raw materials. He also sought facilities and equipment for the planned steel production. Swaney was in the middle of carrying out his plans when he lost his life in the wreck of the steamer "Clallam" in January of 1904.

His death resulted in the cessation of all activities of the Pacific Steel Company and its proposed successor, the Seattle Iron and Steel Company. One of the factors or causes which contributed to the failure was an over-ambitious attempt to acquire iron ore properties, real estate, rolling mills, and other facilities much in excess of the needs of the project. The time had not arrived for activity on so large a scale; the program was top-heavy, and collapse came with the prime mover in the enterprise. (Daniels, 1929: p. 33)

In order to keep the property together, M.J. Carrigan was appointed receiver.

A watchman cared for the Irondale plant until James A. Moore, a Seattle developer, bought the property in September of 1906 at a court sale. Moore paid \$40,000 for the property. It was Moore's intention to continue producing charcoal iron after certain alterations were completed on the plant. At Kirkland, Moore planned to erect a plant that would produce coke iron. The Kirkland plant fell through, partially due to the difficulty

completing construction of the canal on Lake Washington. After operating the Irondale plant for two years under the company name of the Irondale Furnace Company, Moore's attention focused on the production of steel at Irondale in addition to the pig iron. Moore found financial backing on the East Coast and at the end of 1908, the Irondale Steel Company was organized. Work was begun immediately on the excavation and construction of two open-hearth furnaces with a capacity of twenty tons at a heat, two rolling mills, and all the other necessary equipment for a full scale operation.

Moore was also heavily involved in real estate at Irondale. The Moore Investment Company and the Irondale Steel Company vacated the original Irondale plat on June 1, 1909, and replaced it with a new plat, including seven tracts or subdivisions. The seriousness of the company's proposition prompted a flurry of building activity at Irondale. Brick and wood frame buildings were constructed along Moore Street. Eventually Irondale had its own school, numerous saloons, mercantile stores, a hotel, a hospital, and a newspaper. Housing, however, was in short supply for the growing town.

Moore secured additional capital to complete the equipping of the steel plant. On October 2, 1909, the Western Steel Corporation was organized with a capital stock of \$20,000,000. The corporation took over all the previous properties of the Irondale Steel Company. Moore brought numerous people to Irondale who were familiar with the operation of a steel mill. The company houses included in this district nomination were reserved for the superintendents brought to Irondale. On May 28, 1910, the first steel ingots were cast at Irondale.

The Western Steel Corporation obtained its iron ore from the Quatsino mining district on Vancouver Island. In addition to the Quatsino hematite ore, the corporation secured a contract with the Han-Yeh-Ping Iron and Coal Company, Ltd. of Hankow, China. The Robert Dollar Steamship Company (Robert Dollar was a director in the steel corporation) delivered pig iron and iron ore to the Irondale site. The corporation no longer used charcoal as a charge in the furnace and drew upon coal mines at Ashford, Washington, for its coking coal. Limestone for flux was obtained from the central part of Skagit County.

The Irondale steel plant had the capacity to produce 125 tons of steel ingots per day. The open-hearth furnaces were operated continuously (except for repairs) and were tapped once every twelve hour shift. The steel ingots were subsequently rolled into billets, light structural shapes, bars, rounds, flats, and general merchant material. Three of the ingots cast the first night were used in the rotunda of the Arcade Building in Seattle. Irondale steel was used in the construction of the Bon Marche in Seattle. The Western Steel Corporation claimed the entire Pacific Coast as their market due to the non-existence of an expansive steel industry in that area. Very little information is available, however, regarding the actual steel production at Irondale and its market.

The Western Steel Corporation became financially troubled in 1911. Two million dollars were transferred to the corporation in exchange for a mortgage on all holdings of the Western Steel Corporation. Part of the mortgage became due early and the New York creditors asked that the corporation be declared bankrupt. Moore found British capital to save his corporation, and the steel plant temporarily resumed operations. At the end of 1911, the Western Steel Corporation went bankrupt once again. The corporation was placed in the hands of a receiver and sold to the major creditor--the Metropolitan Trust Company of New York.

Various explanations have been given for the failure of the Western Steel Corporation. Moore blamed it on a conspiracy by United States Steel. He charged that United States Steel was responsible for the poor financial arrangement because the Irondale plant was

working independently and not part of the big conglomerate. There were other explanations also: too many undeveloped iron and coal properties, the lack of a rail connection, the distance between raw materials and the plant and its subsequent market, venturing too far into real estate at Irondale, insufficient capital, and the remoteness of Irondale in relation to an experienced labor market.

The Metropolitan Trust Company sold the plant at Irondale to the Pacific Coast Steel Company of Seattle in December of 1913. The new company considered starting operations again at Irondale but chose instead to remove the open-hearth furnace and rolling mill equipment to Seattle. The blast furnace remained at Irondale and was allowed to fall into disrepair. The Pacific Coast Steel Company rehabilitated the blast furnace in 1917 as an emergency war measure. Ironically, during the next two years of operation, production excelled all previous pig iron production at the Irondale site. After the removal of the furnace in 1919, pig iron was no longer produced in Washington State.

PROPERTY OWNER LIST

Phillip Akridge
Route 1, Box 248
Port Townsend, WA 98368

Irondale Company House No. 2

Brecio B. Balderas
Route 1, Box 252
Port Townsend, WA 98368

Irondale Company House No. 4

Cotton Engineering & Shipbuilding Corp.
P.O. Box 111
Hadlock, WA 98339

Irondale Steel Mill Ruins

John L. Langley
4960 Challen
Riverside, CA 92503

Irondale Company House No. 1

Jesse R. Rice
Route 1, Box 250
Port Townsend, WA 98368

Irondale Company House No. 3

UTM REFERENCES:

- A) Zone 10, Easting 517590, Northing 5320680
- B) Zone 10, Easting 517230, Northing 5320840
- C) Zone 10, Easting 517370, Northing 5320970
- D) Zone 10, Easting 517550, Northing 5320915

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- "Flames Wipe Out City of Irondale." October 14, 1914.
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