APPENDIX 6

Copy Archival Record and Statement of Heritage Impact, No 1 Bloom and Rail Mill Building

STATEMENT OF HERITAGE IMPACT

PROPOSED DEMOLITION OF THE No. 1 BLOOM & RAIL MILL BUILDING

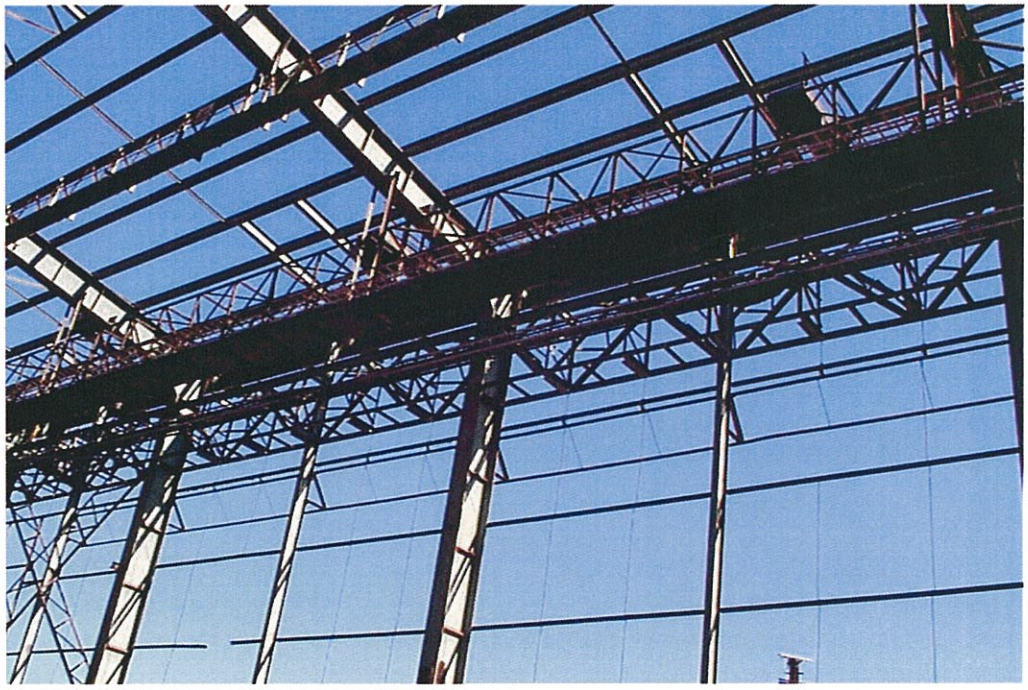

Figure 0.1 Skeletal remains of the No 1 Bloom and Rail Mill Building.
Source: Author Digital BM-RM 15 – 23/03/00

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CONTENTS

1.0 THE PROPOSAL

Major changes have occurred in Newcastle and the hunter Region over the past 20 years. The downsizing and eventual decision to close BHP steel making operations and the rationalisation of the coal industry are a reflection of these changes. The BHP steel making site is strategically placed, not only on a local and regional level, but on a State and National level. It has been proposed that the existing site be redeveloped as a major Multi Purpose Terminal servicing the east coast of Australia. The area to be developed as the Multi Purpose Terminal, would require the demolition of all above ground structures located within this area (see Appendices for location plan) to enable remediation of the land and redevelopment of the site. Development of the remainder of the site at a later stage for industrial/commercial purposes is also proposed. The buildings proposed for demolition are:

1. No. 1 Blast Furnace
2. No. 1 Blower House
3. Open Hearth Building
5. No. 1 Bloom & Rail Mill
6. Steel Foundry
10. DC Sub Station
11. Wharves
14. No. 3 Blast Furnace
15. AC Pump House
16. Power House
19. Open Hearth Change House
20. Mould Conditioning Building
21. BOS Plant
23. No. 4 Blast Furnace

2.0 CONTEXT OF THE PROPOSAL

2.1 Physical Context

The No. 1 Bloom and Rail Mill building is located at the North Eastern sector of BHP's Port Waratah works. It is at the central, southern area of the Proposed Multi-Purpose Terminal Precinct, immediately south of and associated with the bloom Caster building and north of the Steel Foundry.

2.2 Statutory Context

The No. 1 Bloom and Rail Mill is identified within the group identification forming Part B of Schedule 4 (Port Waratah – BHP Steelworks and Office) of "The Hunters Heritage" – Hunter Regional Environmental Plan 1989. It is identified individually within Schedule 4 of The Newcastle Local Environmental Plan 1987 as having an item of State – level heritage significance. (This ascribed level of significance is consistent with the level of significance determined in the Port Waratah Steelworks Conservation Plan prepared by EJE Architecture in 1991). The item does not fall within a Conservation Area and is not included on the State Heritage Register. Under the EP and A Act, if an item is of State level heritage significance, the local council is required to obtain the consent and concurrence of the Department of Urban Affairs and Planning to any major intervention into the item. Under the Integrated Approvals Amendment Act 1998, "Integrated development" is development (not being complying development) that, in order for it to be carried out, requires development consent and approval under other, listed environmental legislation (s 91 (1)). The "other listed environmental legislation" includes the Heritage Act 1977. Under the new legislation, (in Section 91a). Before granting development consent to an application for consent to carry out the development, the consent authority must, in accordance with the regulations, obtain from each relevant approval body the general terms of any approval proposed to be granted by the approval body in relation to the development. Nothing in this section requires the consent authority to obtain the general terms of any such approval if the consent authority determines to refuse to grant development consent. Under the new legislation, (in Section 91a):

(2) Before granting development consent to an application for consent to carry out the development, the

consent authority must, in accordance with the regulations, obtain from each relevant approval body the general terms of any approval proposed to be granted by the approval body in relation to the development. Nothing in this section requires the consent authority to obtain the general terms of any such approval if the consent authority determines to refuse to grant development consent. A Consent granted by the consent authority must be consistent with the general terms of any approval proposed to be granted by the approval body in relation to the development and of which the consent authority is informed. For the purposes of this Part, the consent authority is taken to have power under this Act to impose any condition that the approval body could impose as a condition of its approval.

(3) A consent granted by the consent authority must be consistent with the general terms of any approval proposed to be granted by the approval body in relation to the development and of which the consent authority is informed. For the purposes of this Part, the consent authority is taken to have power under this Act to impose any condition that the approval body could impose as a condition that the approval body could impose as a condition of its approval.

3.0 HISTORICAL REVIEW

This early building, like others on the Newcastle steelworks, was anonymous and universal. The size of machines and plant demanded large spaces with a minimum of obstruction. The building was constructed of rolled and riveted steel columns with light steel angle triangulated trusses, all covered with corrugated iron sheets. The roof trusses incorporated members of the ridge for large roof ventilators to dissipate heat and encourage air circulation. End elevations of the building remained open to provide light and ventilation. Separate columns and beams supported crane rails throughout.

The rolling mill was first opened and put into use on the 24th April 1915 when the first ingot was rolled into an 8" square bloom. In June of that year BHP entered into contracts with three Federal and State Governments to supply over 66,000 tons of rails to be used for the transcontinental railway and also for shipment to France for the War effort.

Components of the initial plant included one stripping crane, one charging crane, three rows of four of gas fired soaking pits, No 1 shear and a 35" mill stand with a working area of 80" in length.

Rolling in the Bloom Mill was the first rolling process for steel after it was cast into ingot or continuously cast in later years. All Open Hearth feed to the bloom Mill came as ingots which were transported hot, in their moulds, on the narrow gauge rail system. The charging crane grasped the ingot and lifted it vertically into the soaking pit where it was reheated until it reached the correct temperature for rolling. Each soaking pit could accommodate a number of ingots, standing upright. The soaking pits were initially fired with producer gas which was made at the mill.

The last soaking pits installed in 1971 were recuperative pits, in which the incoming gas and air were heated by the exhaust gas in stainless steel recuperators or heat exchangers. After soaking to the rolling temperature, the ingot was lifted from the pit by the charging crane and placed on the roller line feeding the mill.

The Bloom Mill was a two high mill, originally driven by a reversing steam engine. In the original mill, the ingot was rolled backwards and forwards, through the various passes in the mill, seventeen times. There was also a mechanism to tilt the bar so that different surfaces came into contact with the rolls.

The mill produced a bloom which was about 8" or 9" square, or a slab. After leaving the Bloom Mill, the bar travelled on a roller table to the No. 1 shear where the front of the bar was cropped to facilitate entry into the next mill.

Before the bloom was rolled through the 28" Mill it was brought up to rolling temperature again in one of the two reheating furnaces on the northern side. These furnaces were initially fired with gas from the gas producers at the soaking pits, and were later fired with Coke Ovens and Blast Furnace gas.

The 28" Rail and Structural Mill was a four stand mill in which the stands were side by side and were all driven by the one steam engine. The first three stands were three high (i.e. three rolls) and the last stand was two high. The tilt table was a long roller table on wheels which would lift and feed the bars through the correct pass in the roll and then, on the receiving side, another tilt table would collect the bar. It would then travel sideways to be fed through the next stand.

After leaving this mill, the bars went to a hot saw where they were sawn to length and then cooled on a cooling bed.

The 28" Mill produced rails, beams, channels, angles and flats in a wide range of sizes.

The mill was commissioned under the direction of Warren A. Saul, who had gained valuable experience at the Dominion Iron and Steel Company, where he had been the chief roller, and as Mill Superintendent at the American Tube and Stamping Company, Bridgeport. He brought with him a crew of skilled men who worked on contract for three years to ensure a successful start to the works and to train Australian workers to take place at the end of the contract period.

The housing of the 35" mill stand was a two high reversing screwdown mill with rolls having a working area of 80" in length, and was driven by a reversing steam engine capable of developing 12,000 horsepower at 140 rpm.

In 1917, due to difficulties in obtaining steel plates, the Bloom Mill was modified for the rolling of steel plates. These plates were used in the construction of No. 2 blast Furnace and for the shipbuilding industry.

In 1921 an additional tilt table was installed on the entry side of the 28" mill, and a fixed roller table was also installed on the delivery side of the mill to receive the bar from No. 3 tilt table.

The soaking pits building was extended in 1924 to accommodate an additional row of soaking pits, "D" row, together with a stripping crane and a charging crane.

A second shear, was installed in 1932. It was located on the southern side of No. 1 shear with roller tables running back towards the mill housing and was used to cut product for the secondary mills, 18" Mill and Bar Mill. A four bay extension was also made to the soaking pits building at this stage.

Also in 1932, an 18" Continuous Mill was built in the 28" Mill building, in line with the delivery from the 28" Mill roughing rolls from which it obtained its feed.

Excavations for this mill involved the removal of 9,000 cubic yards of earth, of which 700 yards was good clean sand and was used for concreting the foundations. Two hundred and fifty one piles, 25 to 30 feet long, were driven to carry the important units of the mill and cooling beds and 2,359 cubic yards of concrete were used in the foundations.

Installation of the 90" Plate Mill and 18" Bar Mill in 1933 meant that the Bloom Mill was no longer required to roll plates, but rolled slabs which fed the new mills. The cast steel mill stand installed in 1917, was replaced with the original cast iron mill standing. A 15 ton mill crane was also installed during the year. Modifications during the next year included increasing the ingot size and extending the ingot run roller tables by 120'. In the following year, "F" and "G" rows of soaking pits were installed and the building extended by three bays. During this period, all soaking pits were gradually changed to Coke Ovens gas firing.

Following decommissioning of the original steam engines in 1939, both Bloom and 28" Mills upgraded with the installation of 7,000 h.p. electric main drive. A new control pulpit was installed in connection with this upgrade. This pulpit was partially rebuilt in the following year to allow the installation of air conditioning. A further two-bay extension of the soaking pits, Row "H"/

Between 1939 and 1945 additional cranes were installed: a 15 ton open girder crane was installed in the loading yard in 1939, No's. 2 and 3 soaking pits charging cranes were scrapped in 1944 a new 6.5 ton open girder crane, built by the Fabricating and Machine Shops, was installed. In 1945 an 18 ton open girder crane was installed in the loading yard.

Further extensions were made to the soaking pits in 1954, when two bays were added and the height of the building increased in the new area to accommodate "I" row, the first of the electrically operated soaking pits. In 1958 "J" Row was built, and the building extended a further two bays.

In its 47 years of operation the Bloom Mill had rolled over 30 million ingot tons of steel. However, in the early 1960's it was a small mill by modern standards so between 1961 and 1965 a major rehabilitation of the mill was carried out. This work involved the complete replacement of existing 35" Bloom Mill, from the ingot receiving table, through to the shear delivery table, by a modern 44" Schloemann mill and ancillary equipment including a new flying shear.

This task required a high degree of co-ordination, as much of the preparatory work was carried out under operating conditions. Rather than digging out the original concrete foundations under the mill housing, a steel frame was constructed on the concrete, and the new main mill housing was rolled in on large beams and bolted to the newly built frame. The final changeover of the mill housings and ancillary equipment was carried out during a shutdown period of only thirteen days.

The new mill complex consisted of a 120mm bloom mill, a 710 mm breakdown mill and a 450mm continuous billet mill. The bloom Mill was a Scholoemann design, electrically driven two-high reversing mill with cast steel rolls. Schloemann were selected on the basis of cost and also because Company representatives had been impressed by the latest installation of a Schloemann Bloom Mill at Stewarts & Lloyds, Corby Works, which went into operation in 1959 and was very similar to the one offered to BHP. The mill was equipped with 35 soaking pit furnaces capable of holding a total of 212 ingots.

In 1969 the original Soaking Pit building from "A" Row to "H" Row was replaced. The new building was constructed over the old, which was then demolished. In the following year soaking pits "A", "B" and "C" Rows were demolished and work started on the installation of new recuperative soaking pits No.'s 19-23 pits and associated computer equipment. This work was completed by August 1971.

In 1971 the decision was made to build a new, very modern bloom mill. Construction began in 1973 and although the mill was cold commissioned in May 1975 it was mothballed due to lack of orders and did not commence production until 1979.

The last ingot from No. 1 Bloom Mill was rolled on, 18 October 1982 but the recuperative soaking pits remained in operation until 1988, to preheat ingots which were then delivered to No.2 Bloom Mill for final heating and rolling. All other soaking pits at No. 1 Bloom Mill were decommissioned.

Construction of the Bloomcaster in 1985 saw the eastern end of the No. 1 Bloom Mill building restored to become the tundish repair shop and mould segment workshop.

4.0 SUMMARY CONDITION ASSESSMENT

In combination, the No. 1 Bloom and Rail Mill buildings must be considered to be stable and in sound condition. The vast No. 1 bloom Mill building is a steel-framed, metal and alsinite panel, clad building with portal frames and riveted trusses at the western end and light metal truss roofing at the eastern end. In general, all structure and cladding is intact and has been well maintained. The Tundish Rail Car tracks remain in place in the floor and gantry cranes and crane rails remain in place, as does the remnant of the Tundish demolition booth. The Tundish drying area, repair area (incl. Concrete floor hob) and Tundish pre-heaters remain in place, as do the Bloom Caster Repair area, Switch Room and bloom Caster machinery (the latter free-standing). The roof cladding indicates different installation period; there are old light fittings still in place in the western bays corresponding with the riveted roof trusses. The Rail Mill building is of masonry construction and design similar to the eastern end of the AC. Saltwater Pumphouse, with intact, multi-panel windows at upper and lower levels in the south façade. One window has been infilled on the southern elevation. Internally the 80 ton gantry crane remains in place, as do the braced, steel roof trusses and relatively recent roof cladding, as well as the mezzanine switchboard equipment on the eastern wall.

The condition of each of the subject buildings is fully described in written and photographic form in the Archival Record document produced to accompany this Statement of Heritage Impact.

5.0 ASSESSMENT OF SIGNIFICANCE

The No. 1 Bloom and Rail Mill building has been assessed (1991 Port Waratah Steelworks Conservation Plan) as having STATE significance within the context of the development of the Steelworks.

The following detailed Assessment of Significance has been undertaken to reflect current NSW Heritage Act, Heritage Amendment Act and Burra Charter requirements.

Historic Significance

The No. 1 Bloom and Rail Mill represents a critical component in the development of the steel making process in New South Wales. From its opening in 1915, the mill provided finished product elements of a quality critical to the success of the Steelworks and was integral to the establishment and development of a manufacturing process of State Significance.

The No. 1 Bloom and Rail Mill's early production of railroad rails played a significant role in the construction of the Australian transcontinental railroad and as such represents a milestone in private sector manufacturing of highest-level historical significance.

The Bloom and Rail Mill, especially the former, housed the very first process in steel making after initial casting of the steel. In this context the Bloom Mill Building has demonstrated perhaps more than any other building on site, the changes in steel making in New South Wales from early in the 20th century, to the last decade of that century – a period of eighty years. As such probably as much as any other building on the site, demonstrates the foundation and continuity of a process of state significance and thus has the highest-level STATE HISTORIC Significance.

Aesthetic Significance

Although accommodating processes of technical sophistication for their respective times, the No. 1 Bloom Mill and Rail Mill buildings are not aesthetically distinctive. The sheer size of the Bloom Mill building – especially given its location adjacent the B.O.S. Plant, makes it a major identifier of the steel making site, but the Bloom Mill and Rail Mill buildings are representative of type. They contain elements which exemplify a particular purpose or function, but they do not show particular creative or technical innovation. As such, neither has Aesthetic Significance.

Social Significance

The No. 1 Bloom and Rail Mill have significance for its association with the development of iron and steel

making in Newcastle and for its important linkage with the creation of work, high technical skills and social fabric of Newcastle from that work. The establishment of the No. 1 Bloom and Rail Mill in the Steelworks, provided the impetus for the establishment of a greater range of secondary industries and skills in the region.

These buildings form part of the major steel works site, which is held in high esteem by the Newcastle and wider, regional, community as a whole. The total building group has educational value to the region and the state. These buildings must therefore be considered to have highest-level REGIONAL SOCIAL Significance.

Technical Significance

The establishment of the No 1 Bloom and Rail Mill provided product for the broader community of Australia. They provided the impetus for the establishment of a greater range of secondary industries, and as such are major benchmark buildings in defining the state – significant steel making site.

Since its establishment, the No. 1 Bloom and Rail Mill employed the latest technology to improve the output and quality of its product. They therefore have highest level potential to reveal historical/industrial archaeological information of significance to the Region and State. For these reasons the buildings must be considered to have highest-level REGIONAL and STATE TECHNICAL Significance.

6.0 OPTIONS FOR PHYSICAL INTERVENTION

The Conservation Plan BHP Port Waratah Site Addendum 1999 described the following options:

"After closure of steelmaking, the 27 items of heritage significance identified in the Newcastle LEP 1987 (as well as all other heritage items identified in this Conservation Plan), will remain in situ until:

a) the item becomes unsafe and/or uneconomic to maintain; or
b) the item is to be removed to facilitate remediation of the site; or
c) the item is sold; or
d) the item is to be removed to facilitate the proposed redevelopment

Where "Front End" items are to be demolished they should, where easily transportable and relocatable, be relocated, to a low impact, operating environment within the overall Steelworks site. Components/elements of existing structures/buildings should be similarly relocated or preferably, be relocated to either the proposed Interpretation Centre or, (if that is not appropriate), to the proposed State Industrial Archaeological Repository, both being within the existing Steelworks site. Items capable of continuing to provide service within a steel-making operation, should be relocated to Port Kembla Steelworks or other iron and steel making operation elsewhere in Australia or the world. Where buildings/structures of higher level significance are demolished and removed, interpretation of the building form at ground level is required (Burra Charter and NSW Heritage Act – As Amended).

This item is to be removed to facilitate this proposal. Therefore in accordance with Burra Charter and NSW Heritage Office requirements, recording and interpretation must be undertaken.

Items identified as having been removed or with potential for removal elsewhere is tabled as follows:

Items transferred / sold to other BHP Centres	Items sold Externally
• **Oxygen Lance equipment** • **Nozzles** • **Control equipment** • **Specialised Lifting equipment** • **Heat exchangers** • **Tundish gunning equipment** • **Alloy Wire feeding equipment** • **Caster Tundish Transfer Car**	• **Five complete bays of the Bloom Mill building** • **The complete Bloom Mill building** • **Main Mill Crane** • **Ex-soaking pits crane** • **The complete Bloom Casting Plant**

It would be preferable for the building to remain. However, this proposition is considered untenable given:

a) If the No. 1 Bloom & Rail Building remains, it cannot be re-used or regenerated into any other useful object, will require continuous expenditure for stabilisation and maintenance, or it will otherwise deteriorate and become a potential health and safety hazard.

Off-site (i.e. not in-situ) interpretation, will only be undertaken where on-site interpretation is not possible and will involve samples of highest-level fabric/fittings/equipment.

Possible re-use or interpretation items include: structural steel frame and cladding minor elements, light fittings, switch gear, etc.

As part of the overall interpretation of the heritage of iron and steel making at Newcastle, it is proposed to represent and interpret the No. 1 Bloom Mill and Rail Mill building by relocating some components to the northern most bridge over the sites major water feature. This will enable public access and allow a major heritage element to define and retain the heavy industrial character of the site and enable interpretation of this significant item.

7.0 THE HERITAGE IMPACT OF THE PROPOSAL

This item is substantiated as having STATE level significance, therefore demolition of the item to enable development of the Multi Purpose Terminal will impact on the high-level significance of the item. The closure of operations at the Newcastle Steelworks impacted on the interpretation of the processes of iron and steel making, demolition of the item changes the interpretation of the processes and the significance of the item.

This impact will be ameliorated by fully recording the item in accordance with the NSW Heritage Council Guidelines and interpretation and protection of the in-situ remains below the pavement of the proposed Multi-Purpose Terminal. The individual site will be interpreted using pavement treatment that can identify the extent of the item and accommodate the operation of the Terminal. The processes associated with the item will be further interpreted on the main site at Port Waratah via the Delprat Interpretive Centre and supplemented by selected items being deposited in the proposed State Archaeological Repository. However, the physical site will remain and its location will be identified through interpretive design within the pavement of the Multi Purpose Terminal.

8.0 APPENDICES:

Appendix 8.1 Site Development Masterplan – showing area of proposed Multi Purpose Terminal in yellow

Appendix 8.2: Three Precincts Concept Plan – Showing Identified Heritage Items to be demolished

Appendix 8.3: Conceptual Design for Heritage Interpretation of No. 1 Bloom and Rail Building

ARCHIVAL RECORD

WATERFRONT PRECINCT HERITAGE BUILDINGS, MAIN SITE BHP PORT WARATAH STEELWORKS, NEWCASTLE

NO.1 BLOOM & RAIL MILL

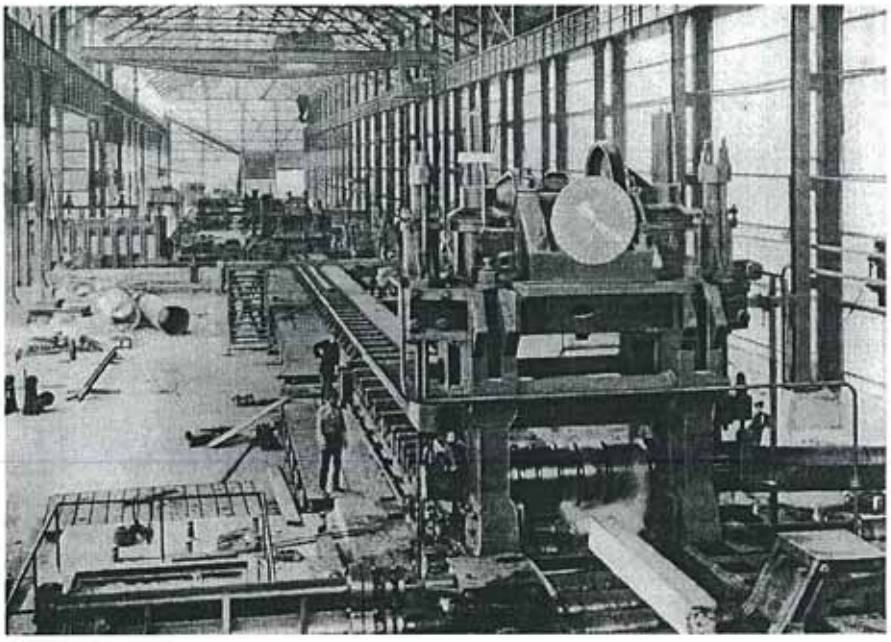

Figure 0.1 Heavy-duty rolls of the Bloom Mill at work, 1915
Source: BHPA, N726

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TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Background to the project

Major changes have occurred in Newcastle and the Hunter region over the past 20 years. The downsizing and eventual decision to close BHP steel making operations and the rationalisation of the coal industry are a reflection of these changes. The BHP steel making site is strategically placed, not only on a local and regional level, but also on a State and National level. It has been proposed that the existing site be redeveloped as a major Container Handling Terminal servicing the east coast of Australia. The area to be developed as the Container Handling Terminal would require the demolition of all above ground structures located within this area to enable remediation of the land and redevelopment of the site. Development of the remainder of the site at a later stage for industrial /commercial purposes is also proposed.

In light of the above, EJE Architecture has been commissioned to prepare detailed archival records of the buildings proposed to be demolished that are considered to have heritage value. These records involve documenting the relevant buildings and items they contain as well as the industrial processes that took place within them. Designed to help ascertain the heritage significance of the buildings and associated processes, these archival records also form a statement for the future interpretation of this now redundant part of Newcastle's industrial culture.

The following document constitutes the Archival Record of the No.1 Bloom & Rail Mill - an item classified as having a 'State level of heritage significance'[1].

1.2 Archival Recording Methodology

The approach taken in recording these heritage items and the document format is based on heritage consultant input and current NSW Heritage Office's guidelines including those relating to the preparation of archival records and their photographic recording.

A number of important aspects have been identified in the statement of heritage significance included in the report whose recording was necessary to reflect the item's character and value described. Hence it is this statement that drives the rationale for the report and determines the relevance of information collected. Derived from three main elements - buildings (structure and fabric), the individual items they housed and the processes that took place within them - these aspects are elaborated on in a number of different ways, which reflect their respective social, technical and aesthetic qualities.

As a way of dealing with the items various facets of heritage value, the report is broken into 3 main components:

-Written descriptions (history, process and heritage statement),
-Pictorial descriptions (photographs and working drawings)
-Inventories and other supporting information

Together these components create a comprehensive account of the chronological development of both the buildings and the industrial technologies held within them that have invariably changed throughout their lives. At times the components are incorporated into each other to provide a more coherent and illuminating description. All material is cross-referenced to each other and referenced to archival registers and source publications.

[1] Identified individually within Schedule 4 of The Newcastle Local Environmental Plan 1987 and the Port Waratah Steelworks Conservation Plan 1991.

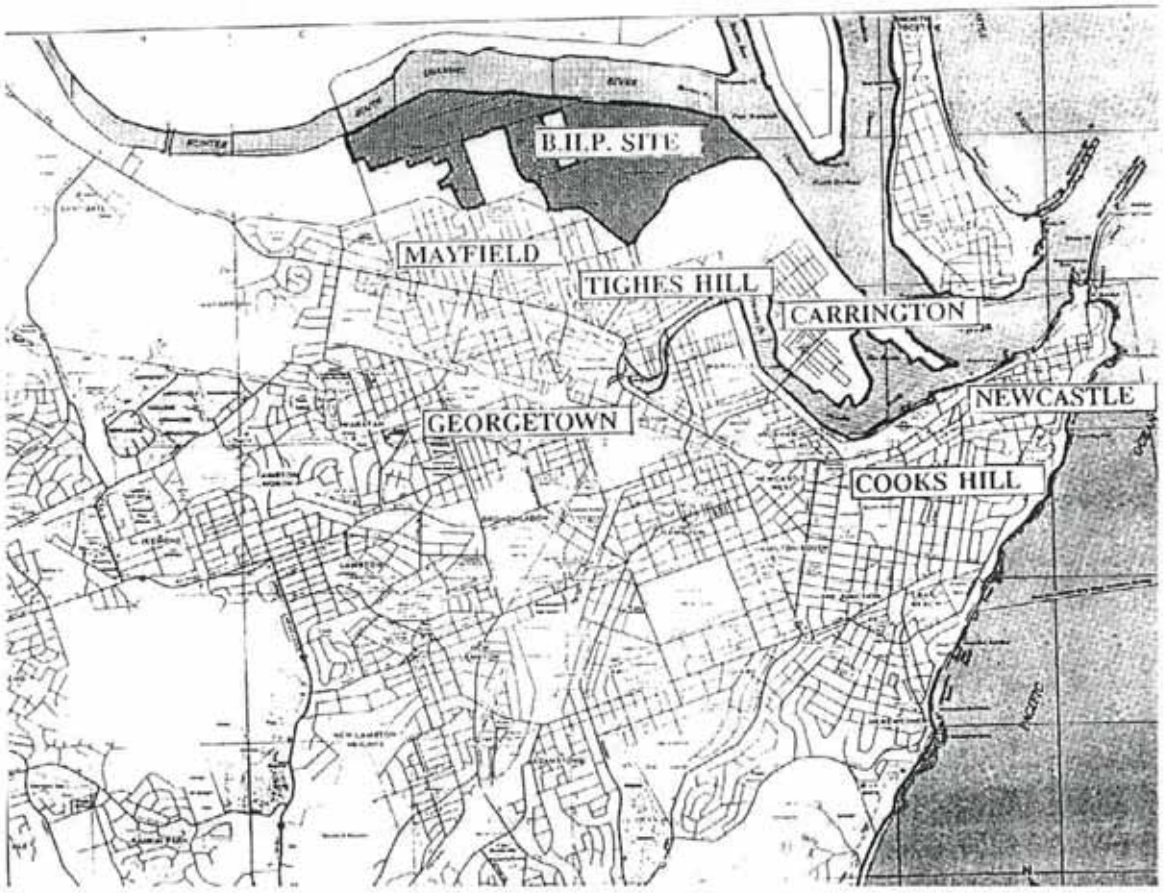
The written descriptions provide a background to the building and the functions that it housed and incorporate relevant photographs. As an essential part of the written component, a statement on the item's heritage significance details why the item is valued.

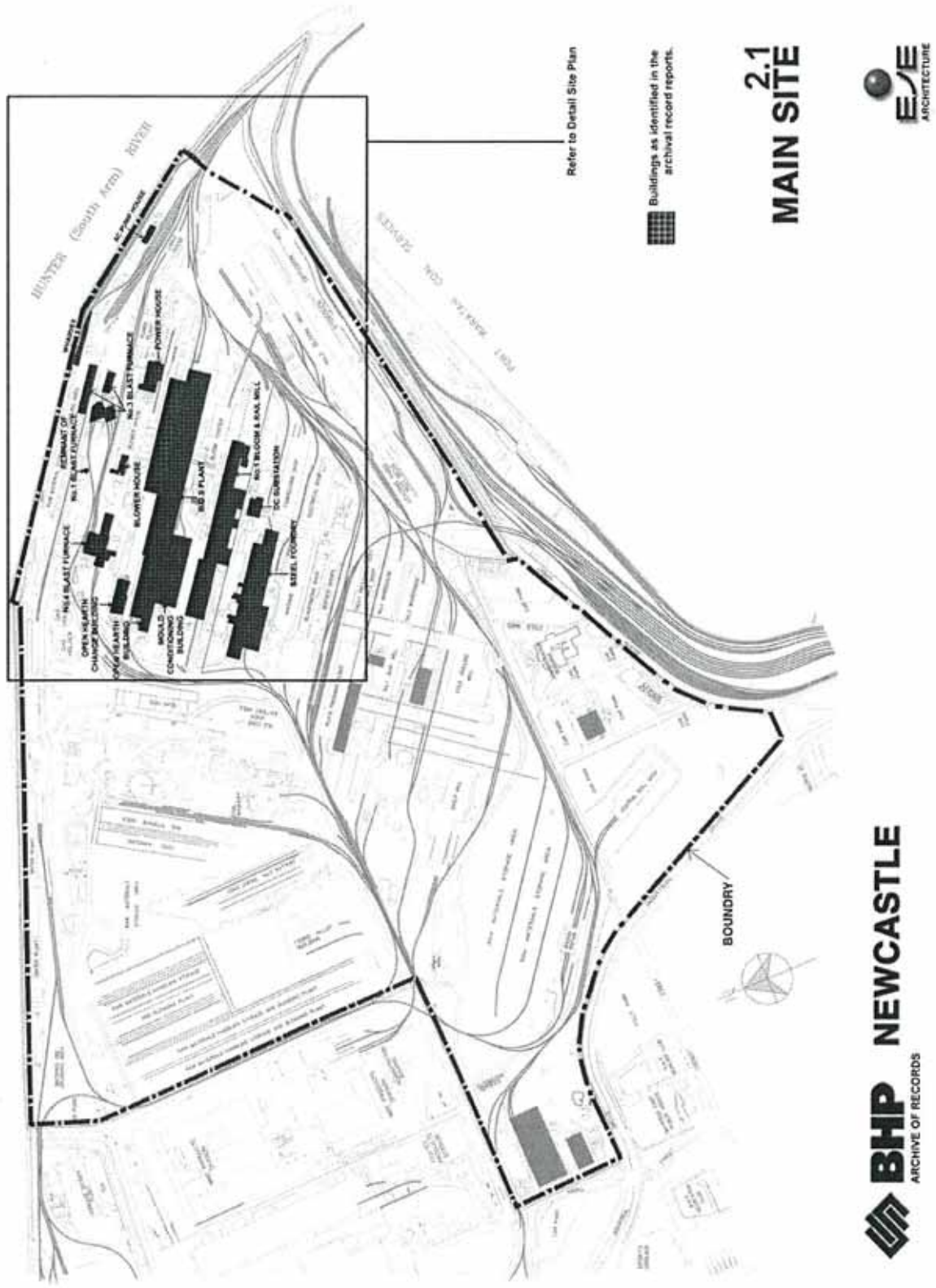
The bulk of the information in this report comes from the pictorial descriptions. Comprising of both historic and contemporary photographs, an account of the building fabric, the various industrial processes contained and the changes that have taken place through time is made. In addition, a selection of original working drawings provide a detailed picture of the construction techniques, structure and fabric details and offer substantial dimensions and measurements, making largely redundant any requirement for contemporary measured drawings or scaled photographs.

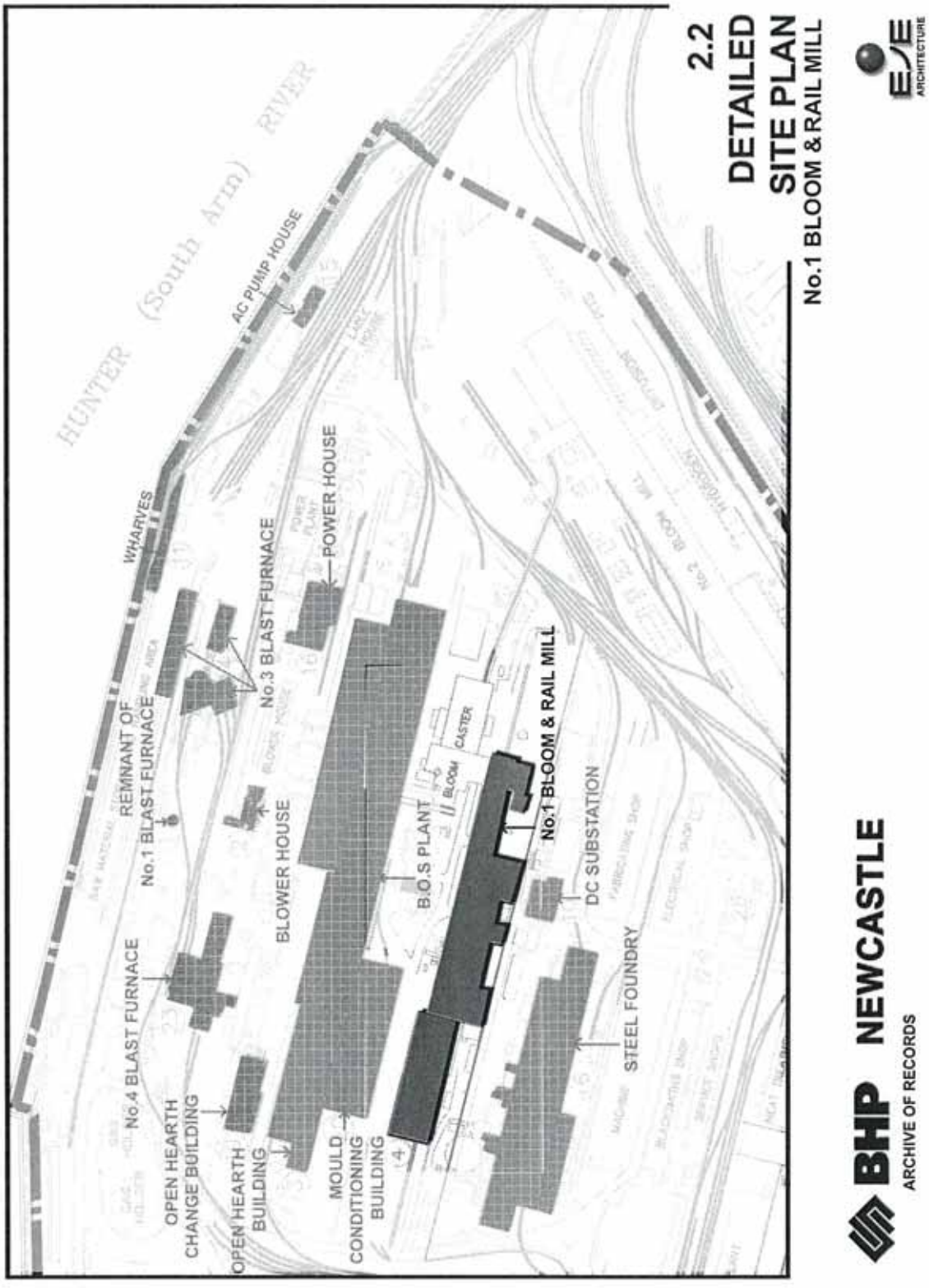
Supporting both the written and pictorial information is a series of inventories and tables which provide details of equipment contained within the building, cross-referenced descriptions of photographs and shot locations, and bibliographical information.

The process of documenting the heritage items involved a number of input teams, of which EJE was the coordinator.

2.0 LOCATION PLANS




2.1
MAIN SITE
Refer to Detail Site Plan
Buildings as identified in the archival record reports.
BOUNDRY
NEWCASTLE
BHP
ARCHIVE OF RECORDS
EJE
ARCHITECTURE



3.0 OUTLINE OF HISTORY, INDUSTRIAL PROCESS & DESCRIPTION

6.0 SELECTED PHOTOGRAPHS

Figure 6.1 View South/East of entrance to Bloom Mill – North Façade

Figure 6.2 View North of structure in area of previous rail mill preheater furnace

Figure 6.3 View South/West of western end of Soaking pits building and pipe connection to Coke Ovens.

Figure 6.4 View South of Soaking Pit area

Figure 6.5 View East of Soaking Pits Building and junction with Bloom Mill. Mould Conditioning Building at left.

Figure 6.6 View East of junction between soaking Pit building and Bloom Mill. Note difference between portal frame of Soaking Pits building (Top of picture) and older steel frame of Bloom Mill.

Figure 6.7 View South East towards Western elevation of Bloom Mill Motor Room (BMMR) (in brick) from within Soaking Pit area.

Figure 6.8 View South East of demolished building area adjacent to Western end of BMMR

Figure 6.9 and 6.10 Eastern elevation of No1 Bloom Mill and junction with Bloom Caster building

Figure 6.11 South and part East façade of Mill. Note Rail Mill Motor Room (RMMR) in brick.

Figure 6.12 North East view of Bloom mill dust extraction plant

Figure 6.13 View East of remnant concrete slab

Figure 6.14 West and South elevation of RMMR

Figure 6.15 Southern elevation of No1 Roll shop. RMMR behind

Figure 6.16 Southern elevation of BMMR. Note infill of window

Figure 6.17 View South East of Filled in penetration in wall between Bloom Mill and BMMR. Penetration for main mill roll.

Figure 6.18 View South East of wall between mill and Bloom Mill Motor Room. (BMMR) Note removal of crane rail

Figure 6.19: View East of Bloom mill. Munck crane at top of frame.

Figure 6.20 View South East of overhead doorway into BMMR

Figure 6.21 Interior view North showing Northern wall detail

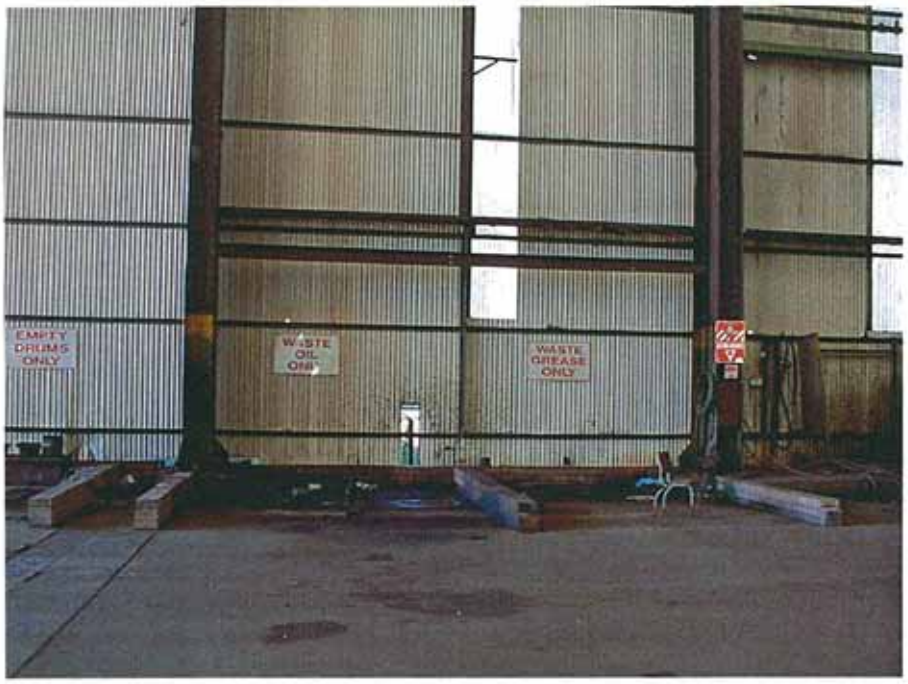


Figure 6.22 Interior South elevation of roll Shop wall and BMMR

Figure 6.23 Interior view West of riveted trusses at junction with newer extension.

Figure 6.24 Interior view East of main mill and No1 Rail Shop (on right) and crane rail.

Figure 6.25 Interior view South/East of No1 Roll Shop. Brick wall – West elevation of RMMR

Figure 6.26 Interior Southern elevation No1 Roll Shop. New brick upstand wall.

Figure 6.27 Interior view South of structural and crane beams between Mill and Roll Shop.

Figure 6.28 Interior view South of Northern façade of Rail Mill Motor Room. Note infill panels to original opening for motor.

Figure 6.29 Interior view South of Northern façade of Rail Mill Motor Room and bracing bays.

Figure 6.30 Interior View East of BMMR crane and mezzanine switch board.

Figure 6.31 Interior view West of BMMR crane and tonnage sign.

7.0 NEGATIVE REFERENCE LIST

The following information relates to the complete set of negatives taken for the recording of this building. Under each Roll Number is a table containing the negative numbers and a description of each frame taken of that roll. The roll and negative numbers, position and direction of frame taken are referenced in the plan in section 8.0 – photographic reference plan. The numbers in the column titled "Figure No." relate to the selected photographs in section 6.0 of this report. Items marked with a dash in this column have prints located in the appendix along with the complete set of negatives.

Manual camera photographs

ROLL 0001– 29/03/2000

Camera: Nikon FE. F 1:3.5
Film: Soulcolor coloured film ASA 100

Neg No.	Figure No.	Description
0A		Interior view South to tundish demolition booth with movable roof
1A		Interior view South/East of tundish repair area. Note newer 2 bay extension to mill.
2A		Interior trusses at Eastern end of mill. 2 Bay extension to provide link to Bloom Caster
3A		Interior concrete hob around tundish repair area
4A		Interior detail of tundish drying area.
5A		
6A		Interior View North/East of old column and structure detail
7A		Interior Tundish rail car between Bloom Caster building and Bloom mill
8A		Interior detail of tundish and preheaters.
9A	6.9	Eastern elevation of Bloom Mill
10A	6.10	North Eastern elevation of mill and Bloom Caster building.
11A		View North of remnant footing at Eastern end of Mill. Bloom caster fume collectors in background.
12A	6.11	South and part East façade of Mill. Note BMMR in brick.
13A		Remnants of stair and upstand with walkway on Southern side of mill.
14A		Cable sump and wall
15A	6.12	North East view of Bloom mill dust extraction plant
16A	6.13	View East of remnant concrete slab
17A		Interior view West of 80 ton Crane in Rail Mill Motor Room (RMMR)
18A		Interior detail of riveted roof trusses in RMMR
19A	6.14	West and South elevation of RMMR
20A	6.15	Southern elevation of No1 Roll shop. RMMR behind
21A	6.16	Southern elevation of BMMR. Note infill of window

ROLL 9857– 29/03/2000

Camera: Nikon FE. F 1:3.5
Film: Soulcolor coloured film ASA 100

Neg No.	Figure No.	Description
12A	6.22	Interior South elevation of Roll shop wall and BMMR
13A	6.23	Interior View West of riveted trusses at junction with newer extension. Note old lights.
14A	6.24	Interior view East of main mill and No1 Rail shop (on right). Note newer lights and various ages of roofing.
15A	6.25	Interior view South East of No1 Roll shop. Brick wall is West elevation of RMMR
16A	6.26	Interior Southern elevation of No1 Roll Shop. Newer brick upstand wall. Older vertical pivot panels and cladding.
17A		Interior view North West of new switch room at column line between Bloom mill and Roll shop
18A		Interior View South of Tundish repair area
19A	6.27	Interior view South of structural and crane beams between bloom mill and roll shop
20A		Interior view of Bloom caster machinery and North West corner of RMMR
21A	6.28	Interior Northern façade of RMMR. Note infill panels to original opening for motor.
22A		Interior. Northern wall of Mill. New cladding and repairs to column 14
23A	6.29	Interior view South of Northern Façade of RMMR and bracing bays of main mill
24A		Interior view South of tundish repair gantry.

ROLL 9878– 29/03/2000

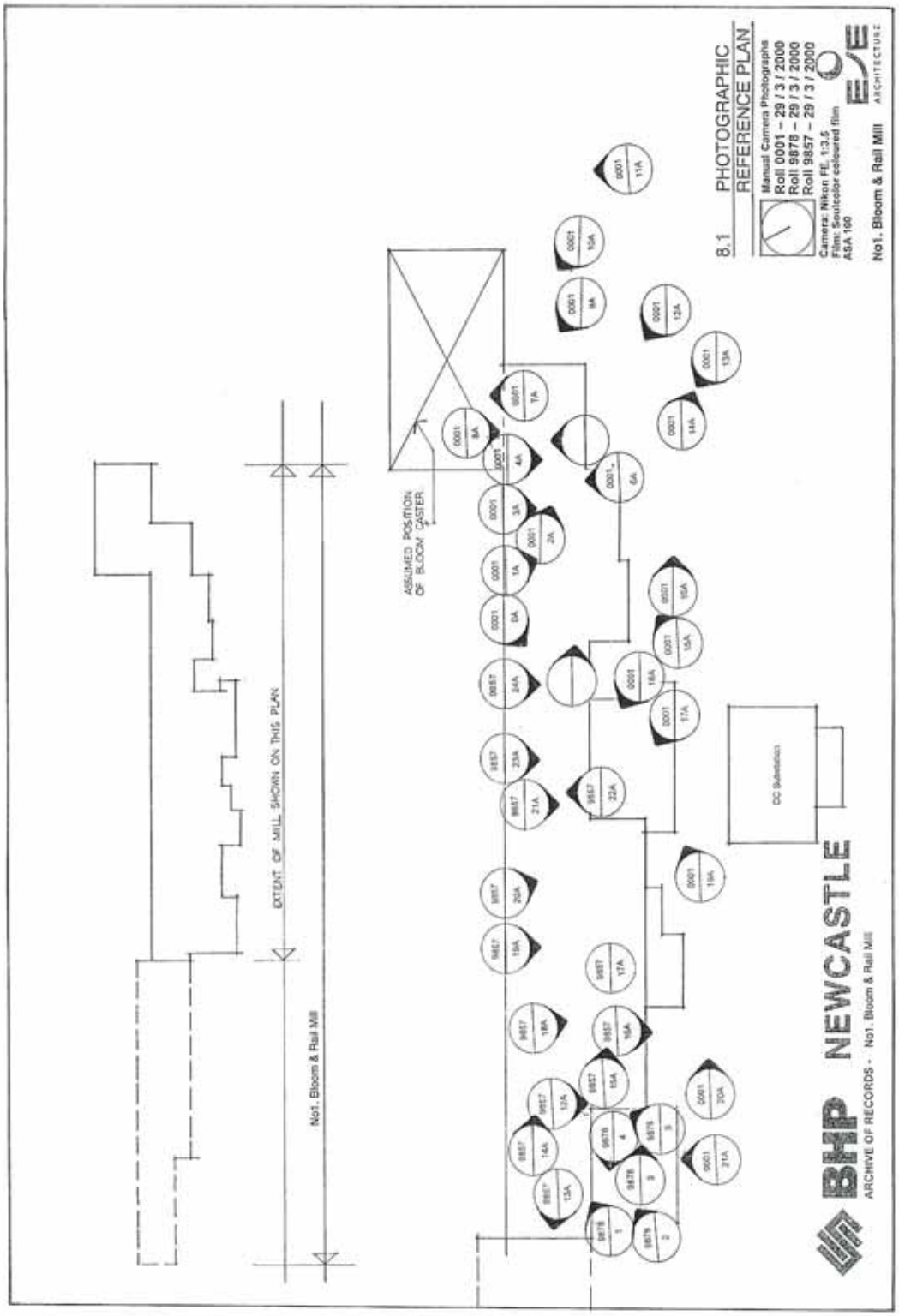
Camera: Nikon FE. F 1:3.5
Film: Soulcolor coloured film ASA 100

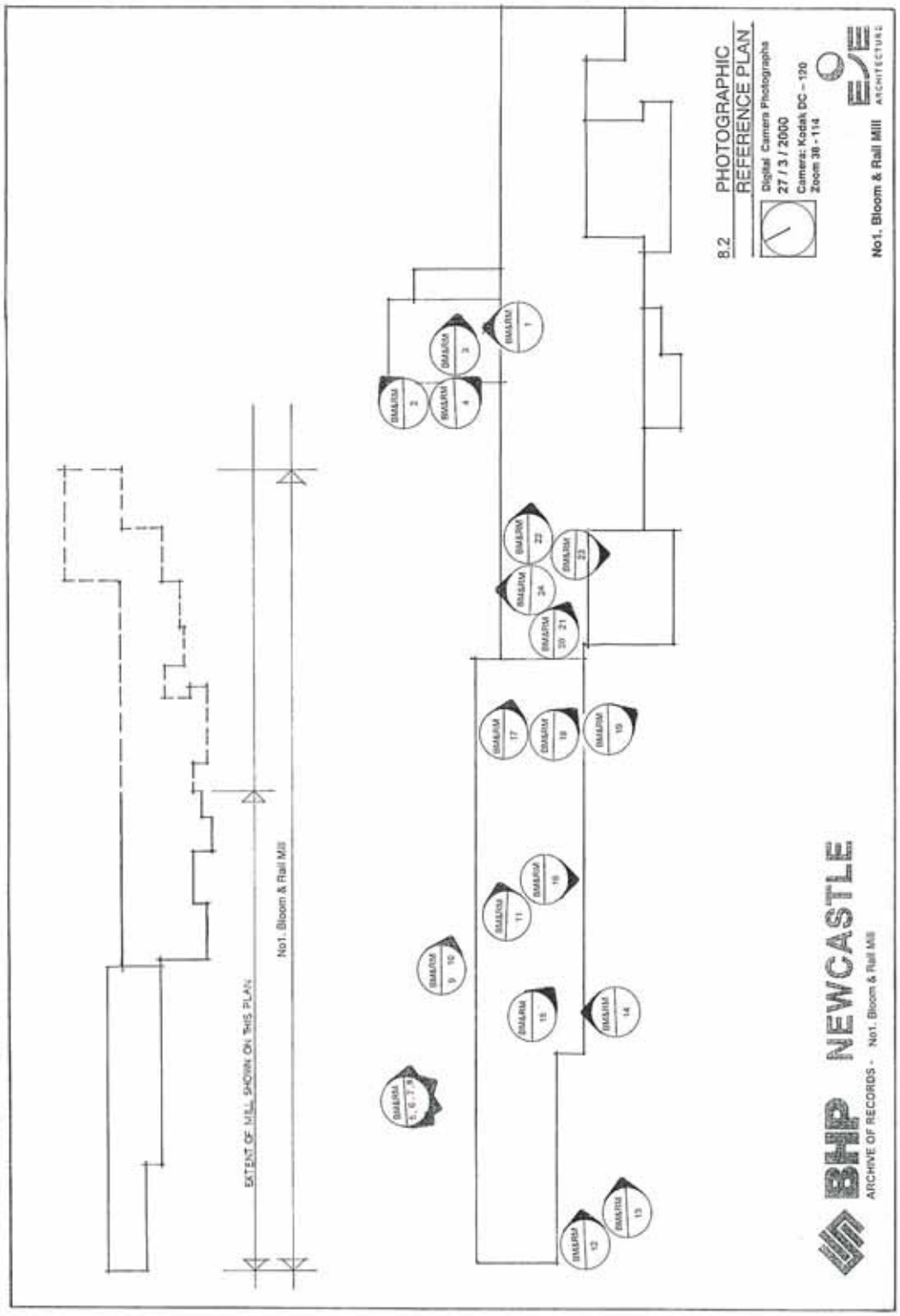
Neg No.	Figure No.	Description
1	6.30	Interior view East of BMMR crane and mezzanine switch board
2		Interior view North/East of wall between motor room and Bloom mill. Note light coloured infill panels to old penetration in wall.
3		Interior view East of mezzanine switch board in BMMR.
4	6.31	Interior view West of BMMR crane and tonnage sign
5		Interior view north of switch board detail in BMMR

Digital photographs
27/03/00
Camera: Kodak DC-120 Zoom 38 – 114

Photo No.	Figure No.	Description
BM &RM – 01		View North from Bloom Mill to remnant rail mill preheaters and furnace area – now planted out.
BM &RM – 02	6.2	View North of structure in area of previous rail mill preheater furnace
BM &RM – 03		View East along Bloom Mill towards Bloom Caster building.
BM &RM – 04	6.1	View South/East of entrance to Bloom Mill.
BM &RM – 05	6.3	View South/West of western end of Soaking pits building and pipe connection to Coke Ovens.
BM &RM – 06	6.4	View South of Soaking Pit area
BM &RM – 07		View South/East of Soaking Pits Building
BM &RM – 08	6.5	View East of Soaking Pits Building and junction with Bloom Mill. Mould Conditioning Building at left.
BM &RM – 09		View East of crane rail supports for Soaking Pits refuse handling crane on Northern side of Mill.
BM &RM – 10		View East of Soaking Pits and Bloom Mill beyond. Note slope of land indicating fill in soaking pits area.
BM &RM – 11		View North/East of Soaking Pit crane rail.
BM &RM – 12		View East of Coke Ovens gas supply pipe at Southern side of building.
BM &RM – 13		View East of South side of Mill showing remnants of a series of concrete and brick column bases and associated steps
BM &RM - 14		View North of Pedestrian walkway through Soaking Pits building to BOS building.
BM &RM – 15		View South/East of remaining structure over Soaking Pit area including cable trays and gangway
BM &RM – 16		View South at Bay E of remaining structure of Soaking Pits building.
BM &RM – 17	6.6	View East of junction between soaking Pit building and Bloom Mill. Note difference between portal frame of Soaking Pits building (Top of frame) and older steel frame of Bloom Mill.
BM &RM – 18	6.7	View South East towards Western elevation of Bloom Mill Motor Room (BMMR) (in brick) from within Soaking Pit area.
BM &RM – 19	6.8	View South East of demolished building area adjacent to Western end of BMMR
BM &RM – 20	6.17	View South East of Filled in penetration in wall between Bloom Mill and BMMR. Penetration for main mill roll.
BM &RM – 21	6.18	View South East of wall between mill and motor room. Note removal of crane rail.
BM &RM – 22	6.19	View East of Bloom mill. Munck crane at top of frame.
BM &RM – 23	6.20	View South East of overhead doorway into BMMR
BM &RM – 24	6.21	View North showing Northern wall detail

8.0 PHOTOGRAPHIC REFERENCE PLAN




8.2 PHOTOGRAPHIC REFERENCE PLAN
Digital Camera Photographs
27 / 3 / 2000
Camera: Kodak DC – 120
Zoom 38 - 114
No1. Bloom & Rail Mill
EJE ARCHITECTURE
EXTENT OF MILL SHOWN ON THIS PLAN
No1. Bloom & Rail Mill
BHP NEWCASTLE
ARCHIVE OF RECORDS - No1. Bloom & Rail Mill

9.0 DIAGRAMMATIC RECORD & DRAWINGS

Figure 9.1 Bloom, Rail, Billet and Sheet Bar Mills
General Arrangement Part 1of 2
Source: BHP Drawing ref – 2443C

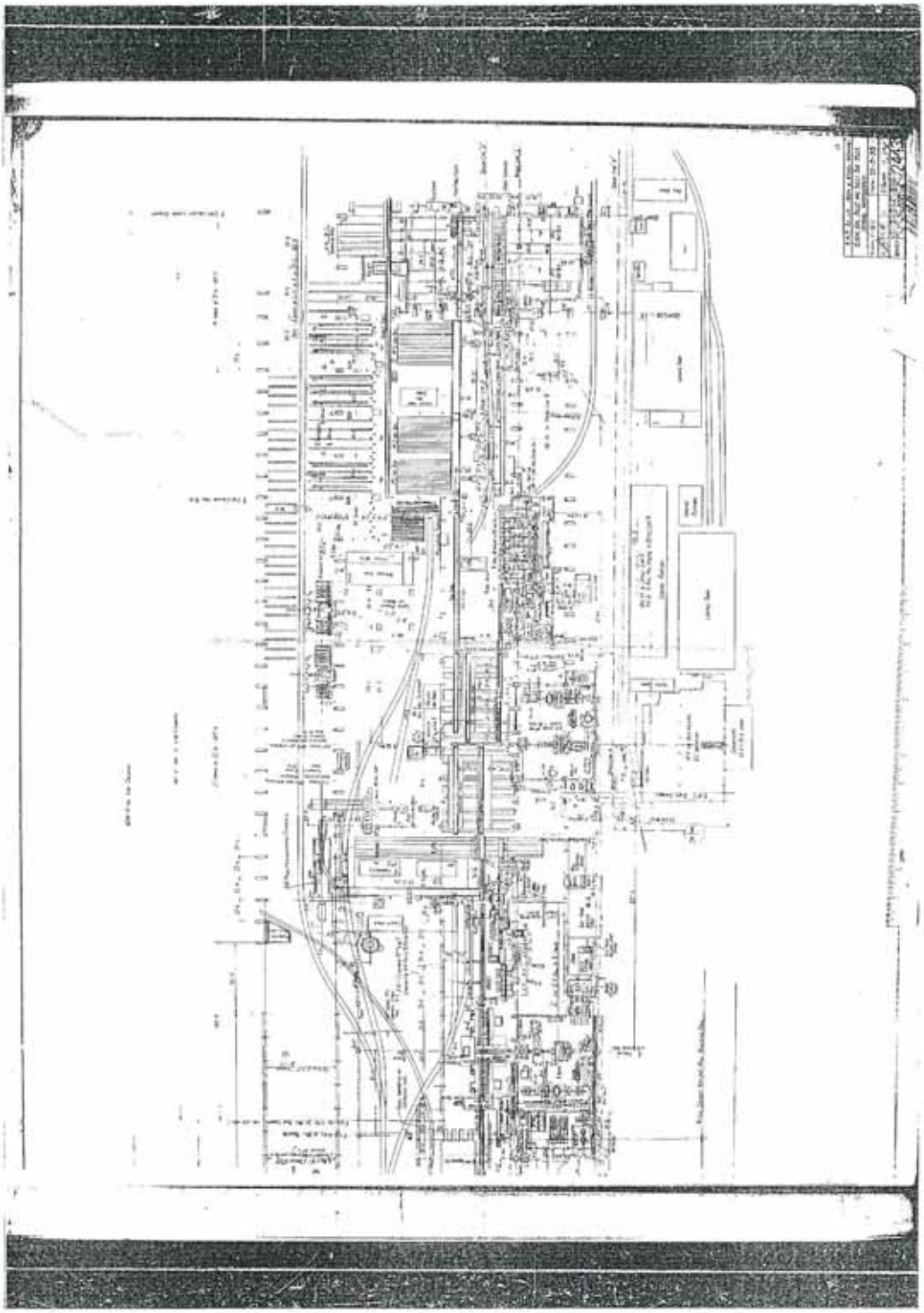


Figure 9.2 Bloom, Rail, Billet and Sheet Bar Mills
General Arrangement Part 2of 2
Source: BHP Drawing ref – 2443C

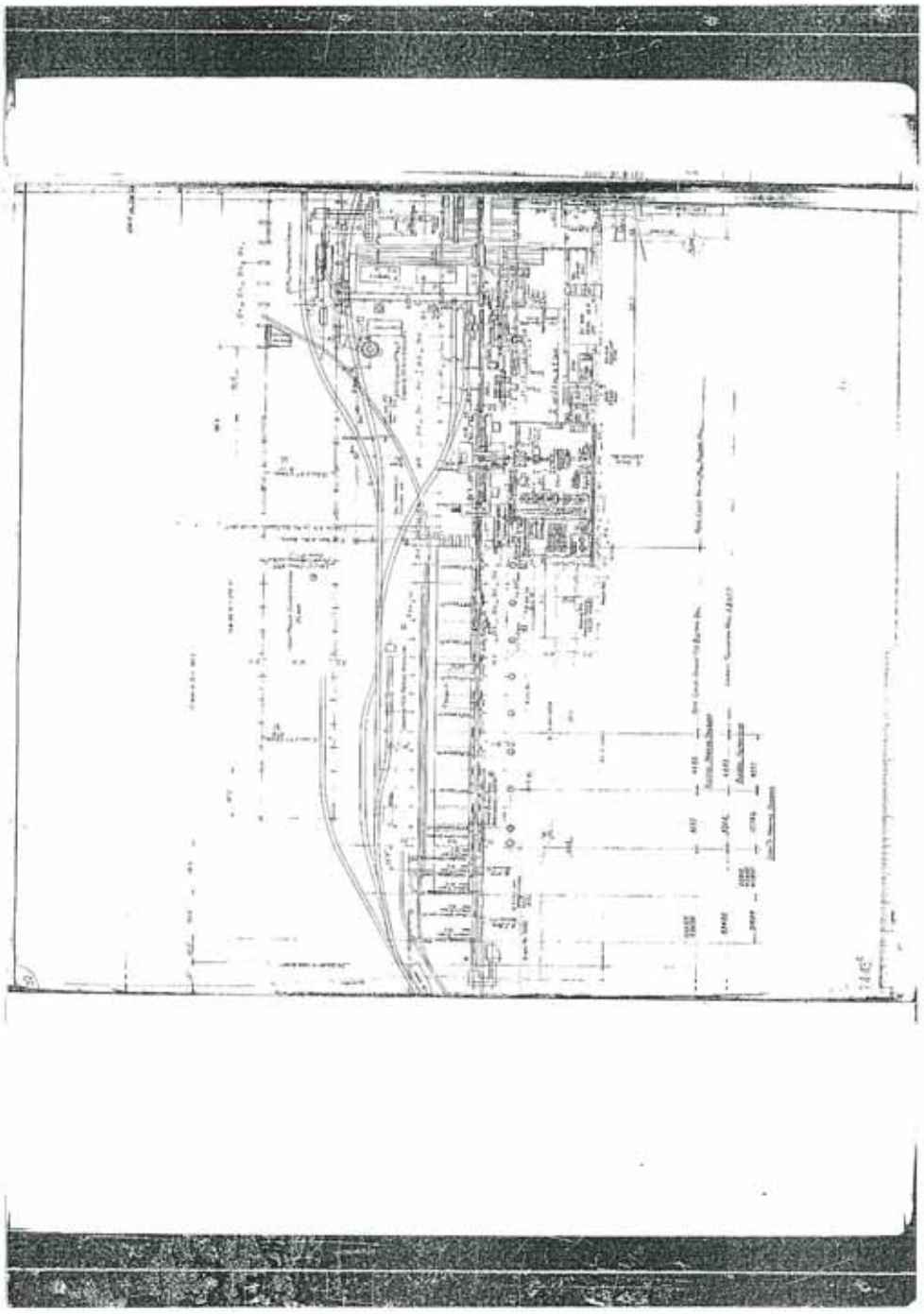


Figure 9.3 Excavations and pilings for 35"Bloom Mill and Tables
Source: BHP Drawing ref – R 85

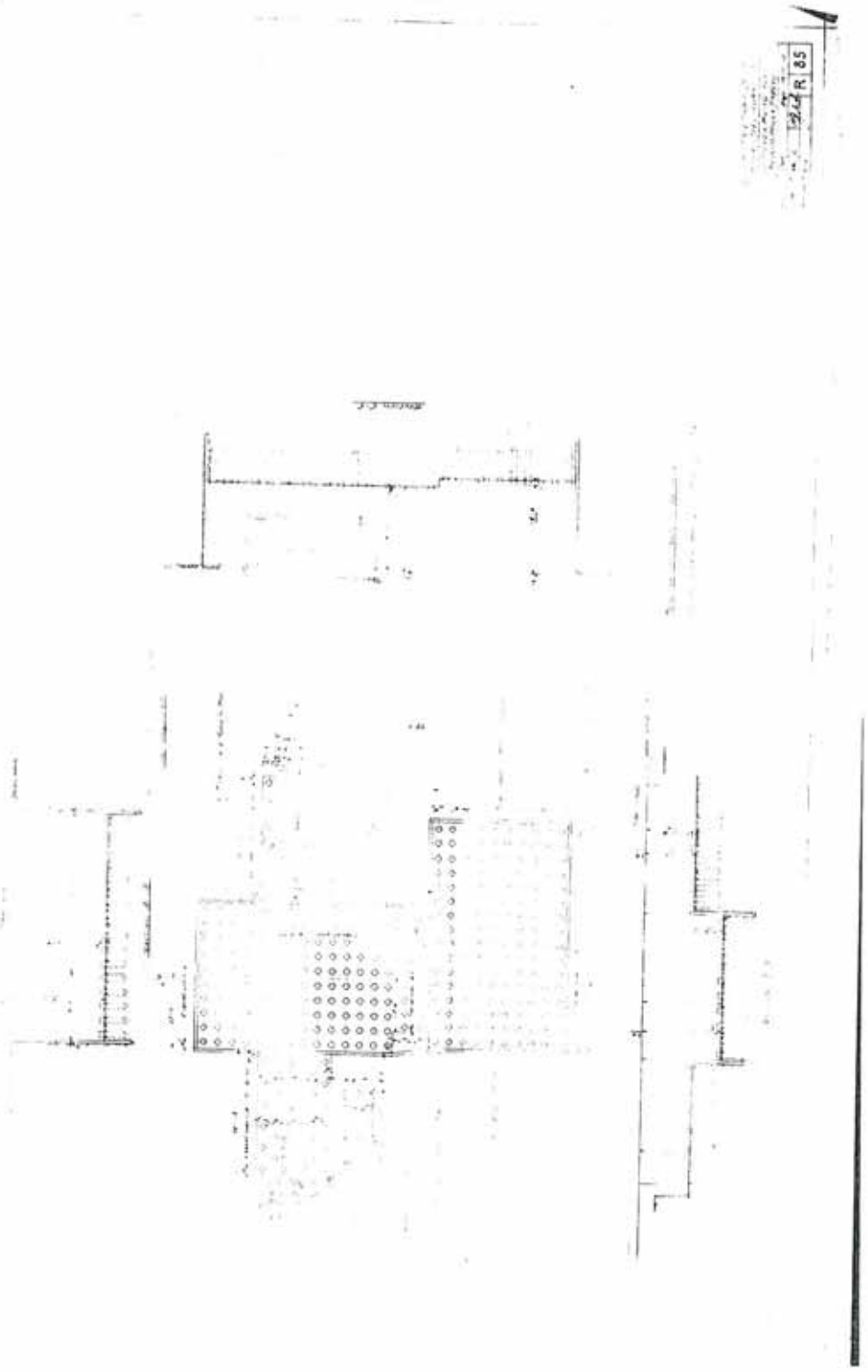


Figure 9.4 Proposed 18" Continuous Mill in Rail Mill Building
Source: BHP Drawing ref – R 96

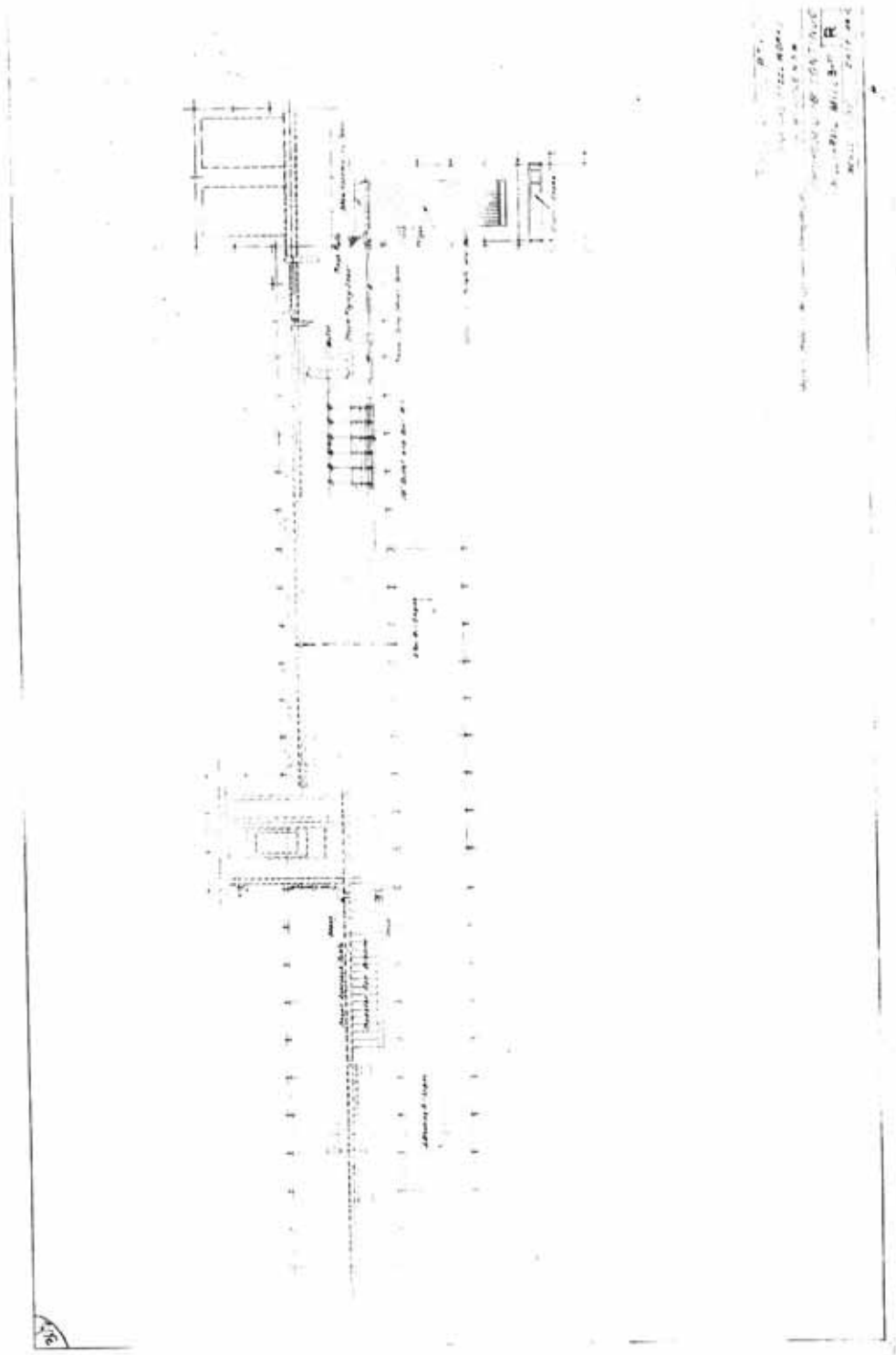


Figure 9.5 Bloom Mill 15 Ton EDT Crane
Cross section showing crane in building
Source: BHP Drawing ref – 11139

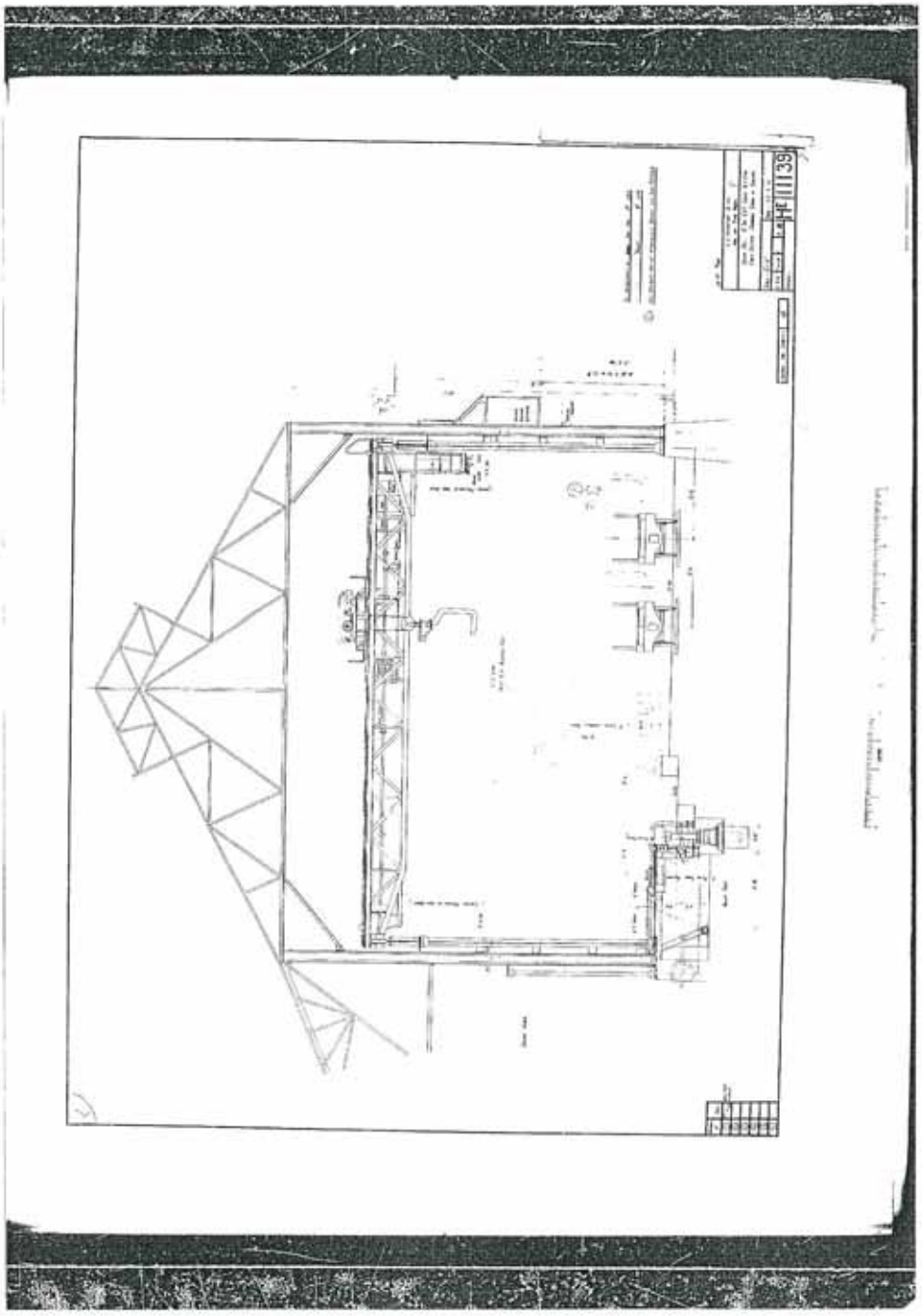
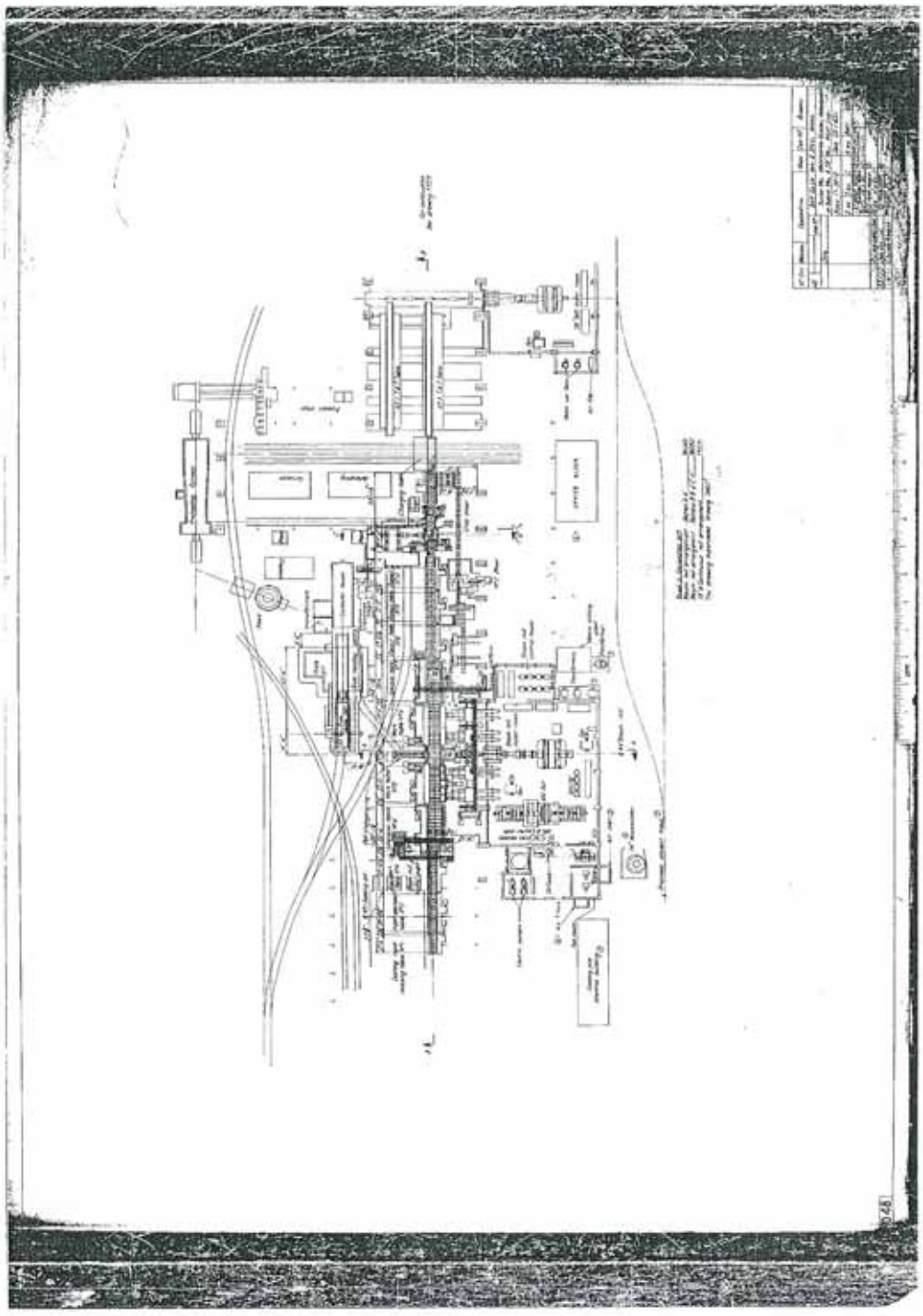


Figure 9.6 Bloom Mill Modification General arrangement
Source: BHP Drawing ref – 78048



10.0 HISTORIC PHOTOGRAPHIC RECORD

Figure 10.1: Bloom Mill under construction
Source: McEnerny (1999: 12)

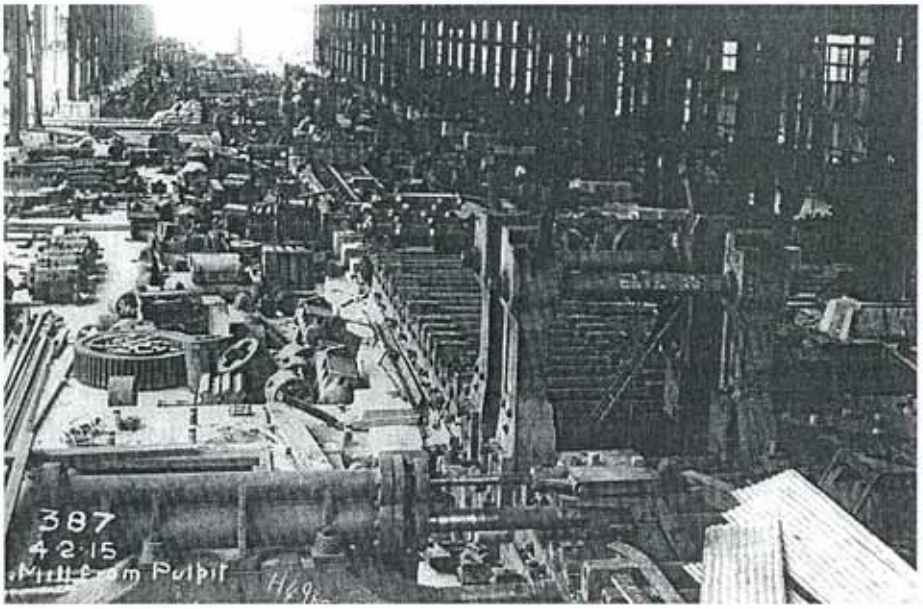


Figure 10.2: No1 Bloom Shear, 1915
Source: McEnerny (1999: 18)

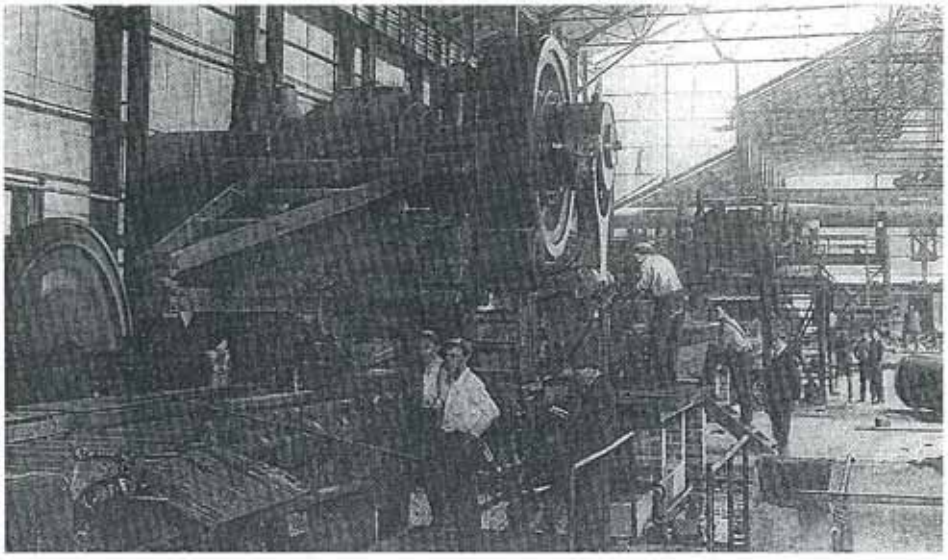


Figure 10.3: Bloom Mill Motor Room after electrification, 1939
Source: McEnerny (1999: 37)

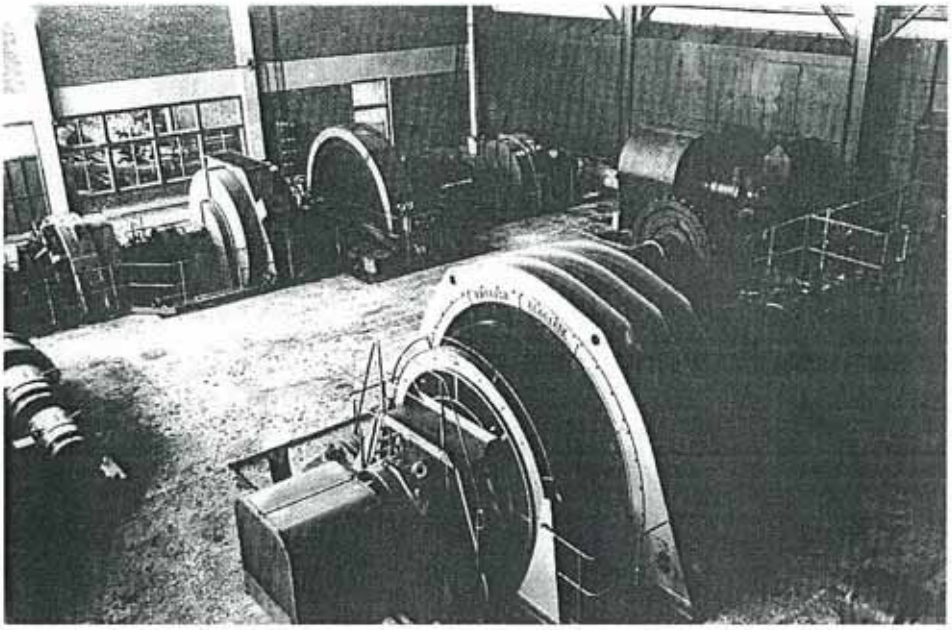


Figure 10.4:Extensions of Bloom Mill, 1961
Source: McEnerny (1999: 41)

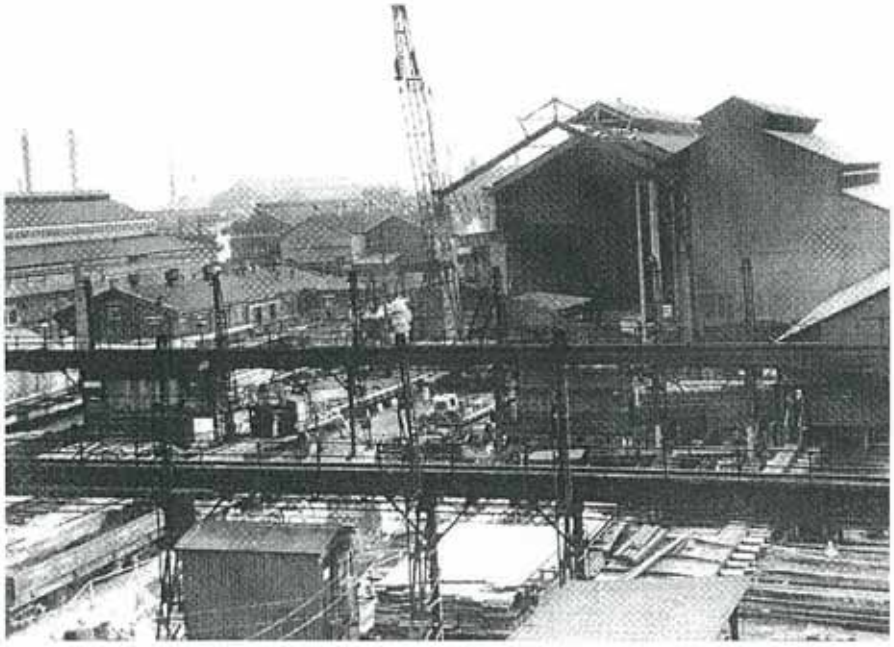


Figure 10.5: Bloom Mill main drive armature during shutdown 1965
Source: McEnerny (1999: 79)

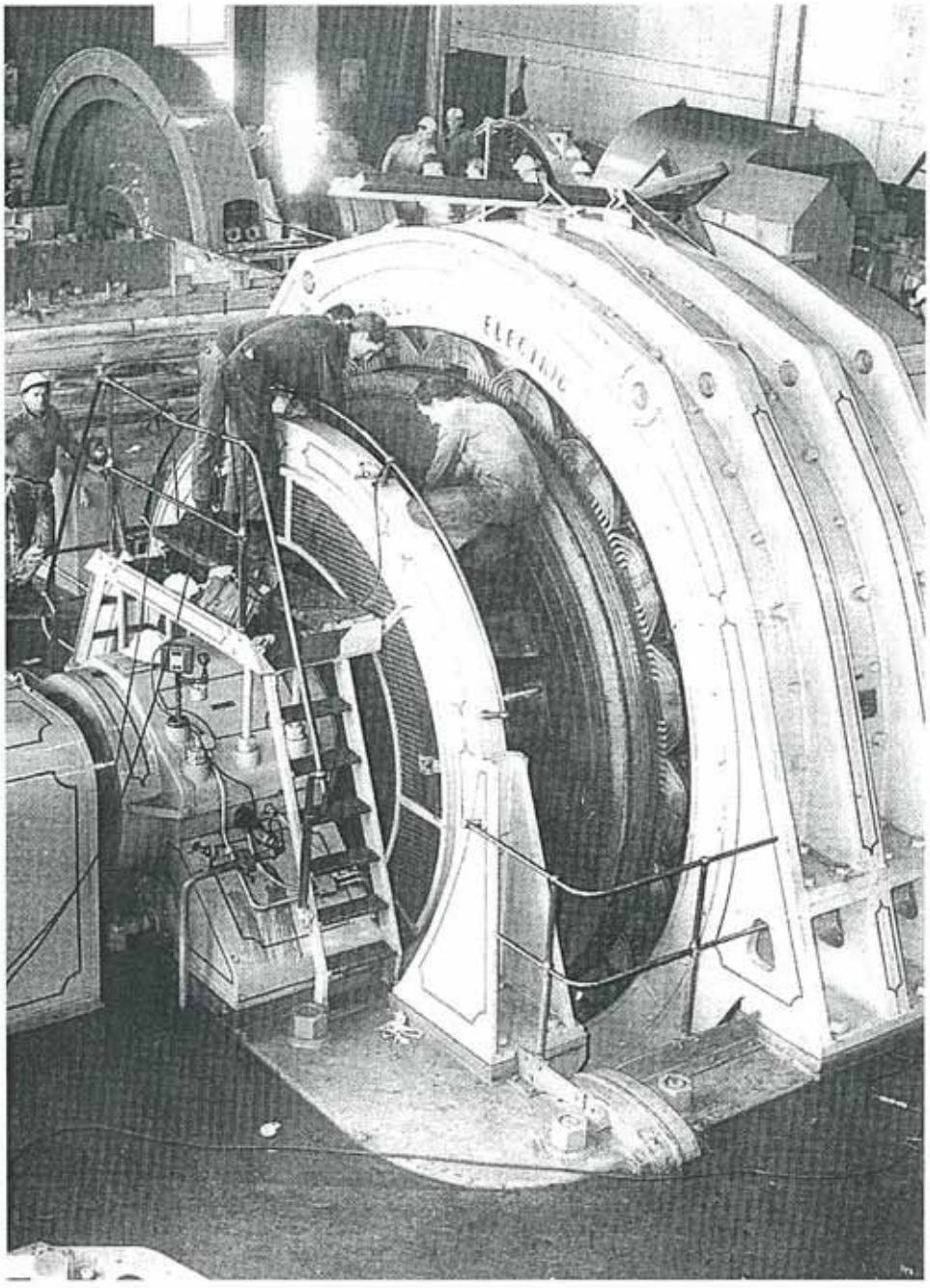


Figure 10.6: No 1 Bloom Mill main drive armature en route to Port Kembla, 1985
Source: Turner (1999: 96)

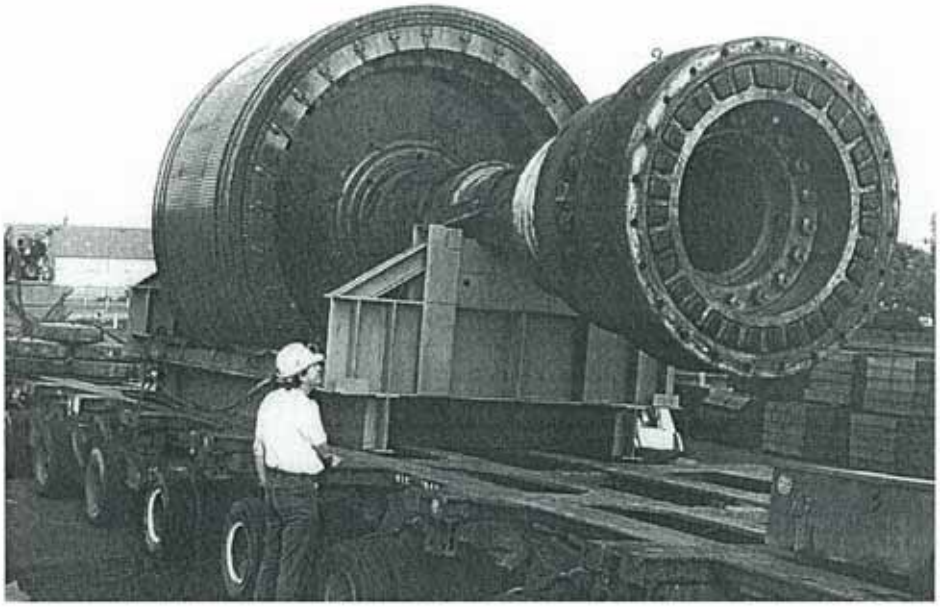


Figure 10.7: Rail Mill Motor Room
Source: Turner (1999: 97)

Figure 10.8: Bloom Mill rehabilitation, 1962
Source: Leonard et al (1999: 102)

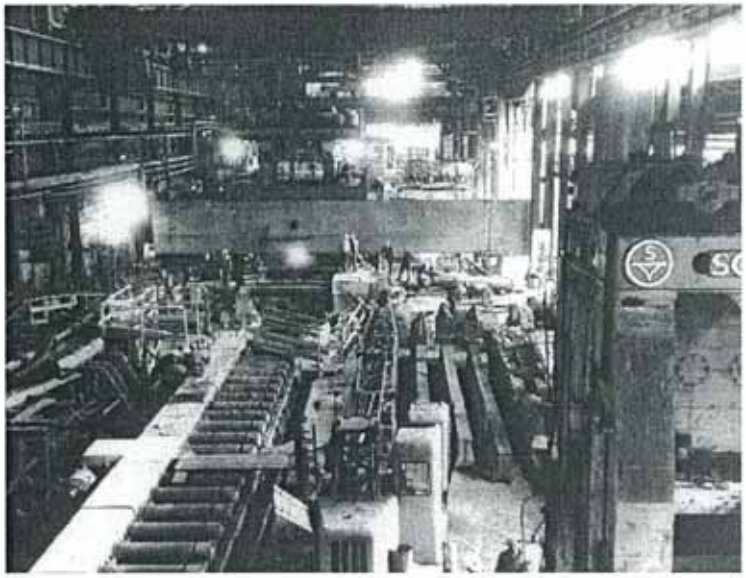
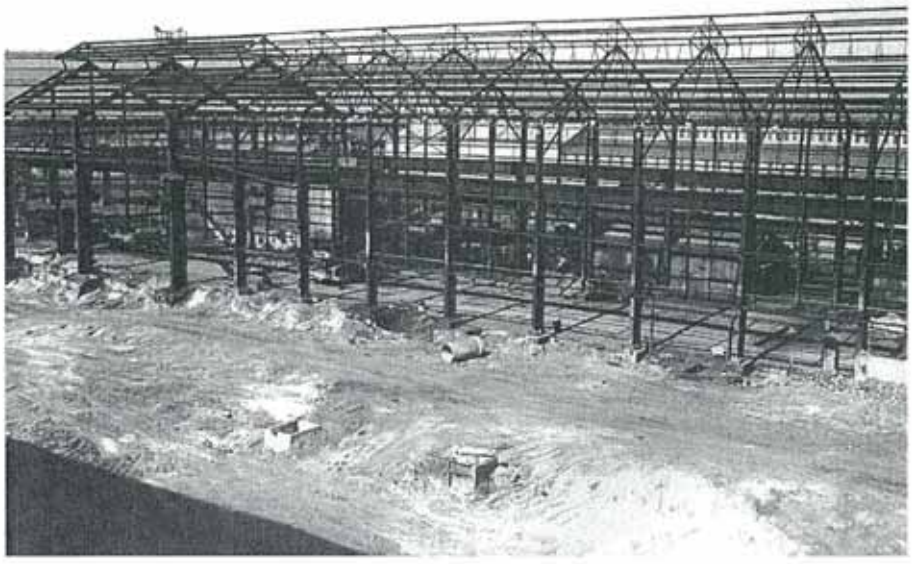


Figure 10.9: Bloom Mill undergoing restoration, 1985 (to be tundish repair area)
Source: Gallagher (1999: 13)



11.0 FULL FORMAT PHOTOGRAPHIC RECORD

There are no full format photographs for this item.

12.0 INVENTORY OF EQUIPMENT FITMENTS AND FINISHES

ITEM	DESCRIPTION
Bloom Mill Motor Room Crane	EDT Crane no 47 capacity 80 ton. In good condition. Origin 1915 to 1939
Rail Mill Motor Room Crane	EDT Crane no 48 capacity 80 ton. In good condition. Origin 1915 to 1939
Bloom Mill Crane	Replaced older crane. Origin after 1960. Perhaps part of Tundish repair area renovations.

The following items are located witnin the Bloom and Rail Mill but relate to the Bloom Caster operations. These items were installed at or around 1985 (with the exception of the Bloom Caster Machinery) when the Bloom and Rail Mill was gutted and renovated to become the Tundish repair area. (Tundish – a vessel with valves that directs steel to the 4 Bloom casters).

ITEM	DESCRIPTION
Tundish repair areas	Areas associated with the repair and maintenance of the tundishes. Series of steels frames and various equipment.
Tundish preheater station	Heating pipes to heat up tundish refractory linings to required temperature for casting.
Tundish demolition Booth	Area to remove steel coverings and refractory lining.
Tundish rail car and racks	Rail car carries tundish between Bloom Caster and Tundish repair area.
Bloom caster machinery	Various segments of the Bloom caster, free standing in Bloom and Rail Mill awaiting removal

13.0 APPENDICES

Appendix A: Manual camera negatives and photos

Appendix B: Digital images Proof Page and disk

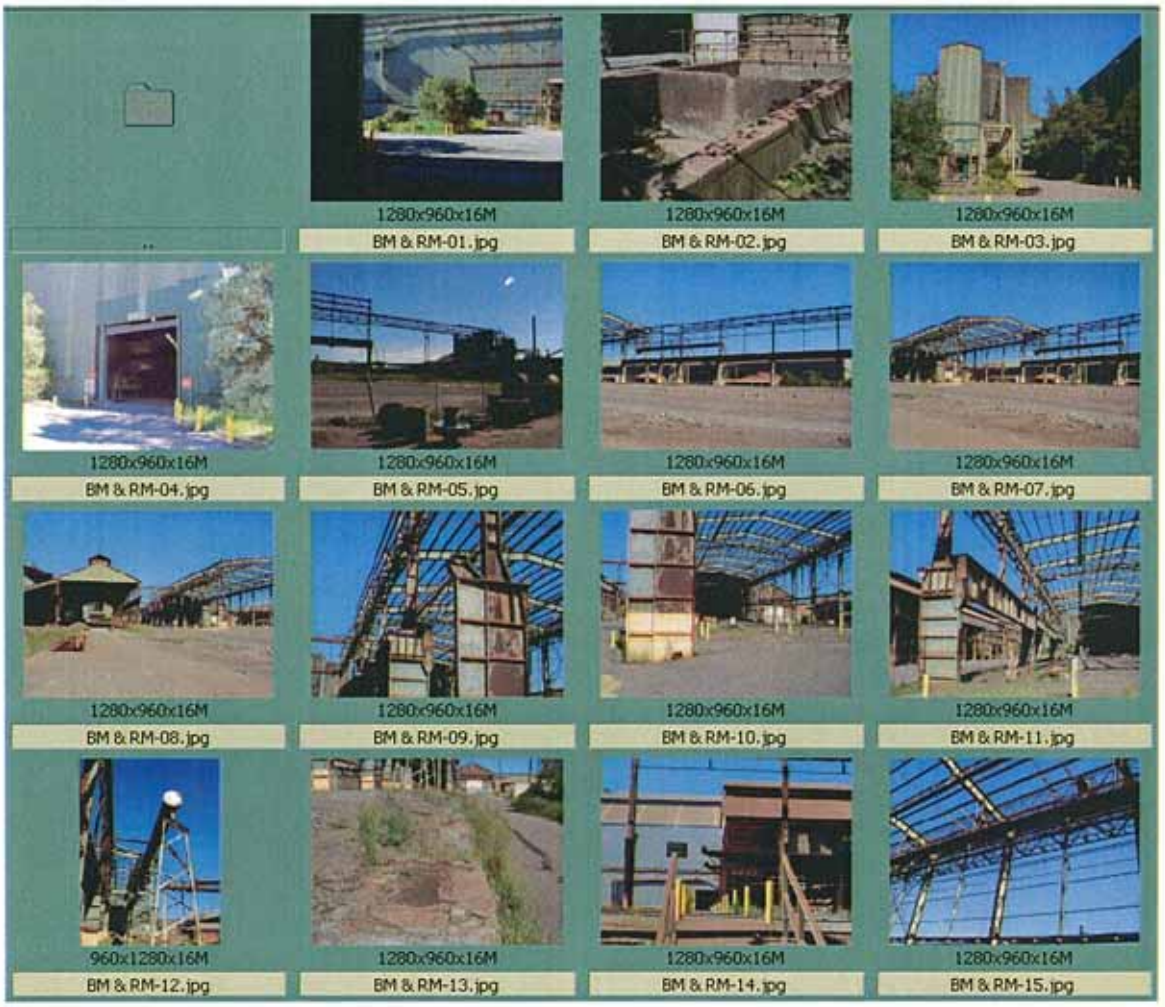
Appendix C: Archive Drawing Register disk

13.1 Appendix A: Manual camera negatives and photos

Refer to the final Archive Report master copy, to be submitted to the NSW Heritage Office, for negatives and additional mounted manual photographs.

13.2 Appendix B: Digital images Proof Page and disk

Refer to the final Archive Report master copy, to be submitted to the NSW Heritage Office, for the digital images disc.

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BM & RM-23.jpg
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BM & RM-24.jpg

13.3 Appendix C: Archive Drawing Register disk

Refer to the final Archive Report master copy, to be submitted to the NSW Heritage Office, for the drawing register disk. Also accompanying the master copy shall be full size prints of the drawings as included in Section 9.0 - "Diagrammatic Records & Drawings".