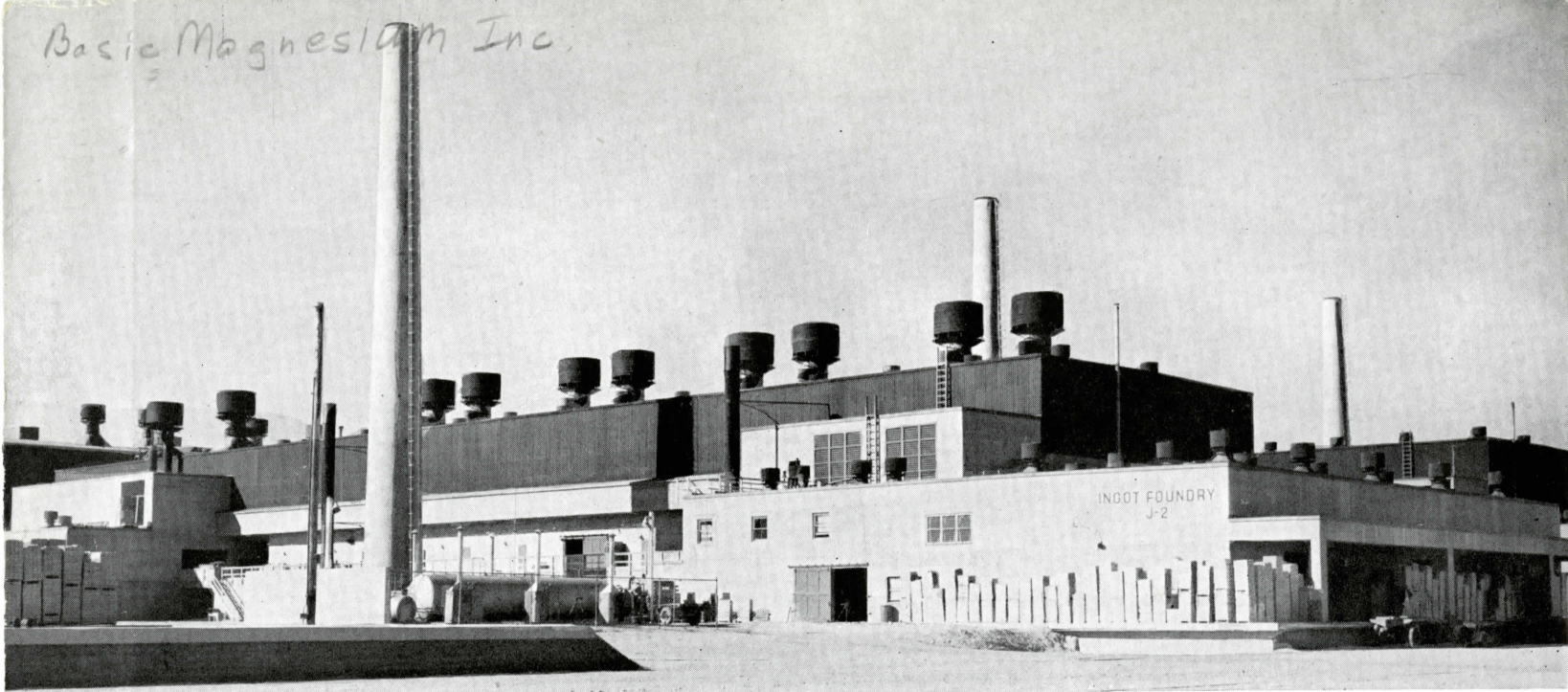


Basic Magnesium Inc.



SOUTHWEST VIEW OF INGOT FOUNDRY

# METALS PLANT—REFINERY—FLUX PLANT

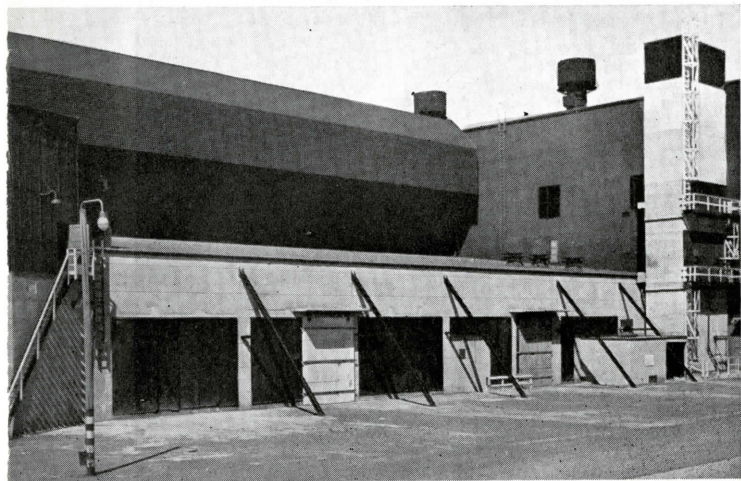
PLANCOR 201—BROCHURE "A"

## HENDERSON, NEVADA

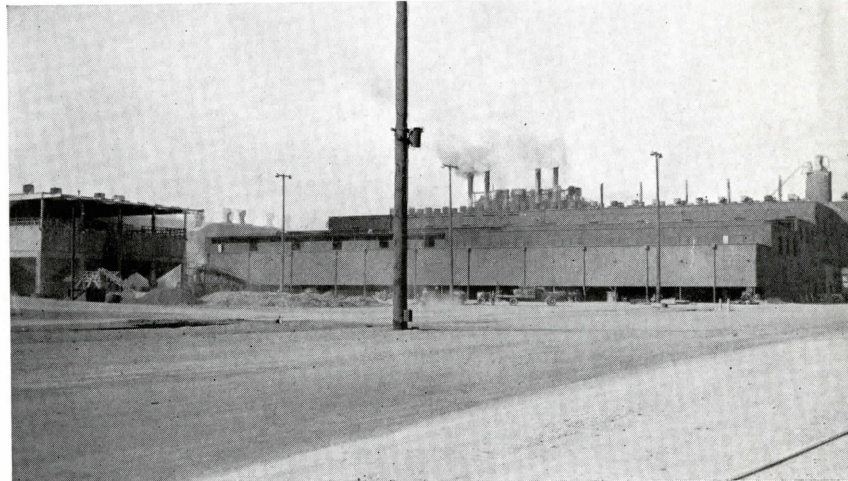
**REFERENCE**  
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IN CONNECTION WITH

# MAGNESIUM PLANT



ELECTROLYSIS BUILDING



TUNNEL KILN BUILDING

### PROPERTY OF DEFENSE PLANT CORPORATION

A SUBSIDIARY OF

RECONSTRUCTION FINANCE CORPORATION

PLANCOR 201  
BROCHURE "A"

# DEFENSE PLANT CORPORATION—811 Vermont Avenue, N. W., Washington 25, D. C.

## GENERAL DATA—Plancor 201—Brochure "A"

This Plancor covers an entire industry from mines to refined metals and is located at Gabbs, Nevada (Mines and Concentrates Mill), and at Henderson, Nevada (Metals and Refining Plant). Plancor is described in 3 Brochures as follows:

Brochure "A"—Metals Plant, Refinery and Flux Plant—Henderson      Brochure "C"—Ore Mine-Oxide Plant—Gabbs  
Housing—Henderson  
Power and Water—Henderson and Gabbs  
Brochure "B"—Chlorine Plant—Henderson

**LOCATION:** This Plancor was built on an area midway between Las Vegas and Boulder City, Nevada, approximately 15 miles from each, and 18 to 20 miles from an unlimited source of water (Lake Mead) and abundant power (Boulder Dam). Site is located on State Highway with divided four lane paved highway direct to Las Vegas. A complete townsite was developed adjacent to the plant and named Henderson, Nevada. Plant is located sufficient distance from established habitation so that industrial fumes and effluent were no problems. Townsite of Henderson was located on a slope slightly above and to the windward side of the plant for the same reason.

**LAND:**  
A. 4,080 acres of state and private land acquired by Basic Magnesium, Incorporated, and deed to DPC subject to several easements and rights-of-way in Township 22 South, Range 62 East, Mount Diablo Base and Meridian.

B. Government land withdrawn from entry by Executive Order No. 8927:  
1920 acres in Townsite 22 South, Range 62 East      40 acres in Township 22 South, Range 62 East  
6240 acres in Township 22 South, Range 63 East      1120 acres in Township 21 South, Range 63 East  
2280 acres in Township 21 South, Range 62 East      4640 acres in Township 22 South, Range 63 East  
8080 acres withdrawn from entry, subject to easements and rights-of-way.

**PLANT:**  
Plancor was authorized to meet the war emergency for gigantic production of metallic magnesium (magnesium elektron process) and to produce therefrom various magnesium alloys.

This sub-plancor includes not only the metal producing plant, but the flux plant, refinery, alloying plant, etc., together with storage facilities for raw and finished materials.

The large number of buildings and the wide diversification in their size and type offers almost unlimited opportunity to many smaller industries especially in the fields of electro-metallurgy, light metals and their alloys, chemical plants, assembly plants for items of machinery and equipment for distribution throughout the Western States and practically any type of manufacturing that does not require urban or metropolitan surroundings.

Also abundant supply of both cheap power and water, both of which are already available on the plancor.

### BUILDINGS

**1. Flux Plant Area:**  
Crushing Station Building; Proportioning Bin Building; Prefuse Building. Concrete, wood framing and stucco plaster; total floor area about 13,000 sq. ft. Sub-station No. 607—reinforced concrete construction throughout. Several small buildings of temporary construction.

**2. Preparation Plant:**  
Rotary Kiln Building—Five story. Concrete and P.M. on structural steel, roof steel trusses; floors concrete on steel plate. Area 72,300 sq. ft. Tunnel Kiln Building—same as above plus cab operated traveling crane 5-ton capacity. Area 107,400 sq. ft. Coal storage area 400' x 130'—concrete pad with concrete retaining walls. Concrete coal conveyor tunnel and control house. Coal track hopper pit—concrete.

Salt Storage Building—concrete and wood walls, roof pitched steel frame; concrete floor and columns. Area 13,250 sq. ft. Salt Crusher and Dryer Building—concrete throughout, together with concrete conveyor tunnel and concrete unloading hopper pit. Area 4,400 sq. ft.

Two Peat Storage Buildings—concrete walls 5'3" balance wood, roof wood trusses—concrete floors, concrete buttresses.

Secondary Peat Storage Building—wood frame and siding. Area 18,000 sq. ft.

Peat Shredder Building—three stories, wood framing and siding. Area 3,100 sq. ft. Three concrete coal and salt silos, covered and steel copper bottoms with concrete conveyor tunnels.

Pulverizer Building and Conveyor Housing—two stories, concrete throughout. Area 7,400 sq. ft.

Five magnesite silos—concrete 40' I.D. x 95' high, covered; bin bottoms.

Truck hopper pit—two stories, reinforced concrete, roof—structural steel and concrete. Mixer House Building—four stories, concrete.

Proportioning Bin Building—three floors and bins on top, concrete construction. Twelve brick wash towers.

Pellet Storage Bin Building—two floors, reinforced concrete. Area 9,000 sq. ft. Concrete raw magnesite silo.

Electrical Maintenance Shop—one floor, wood framing and siding.

### 3. Metal Plant Area:

Ten identical buildings—one story and basement, each 185' x 240' x 24' high, each with 79,800 sq. ft. floor area, reinforced concrete, roof-steel beams; reinforced concrete and quarry tile floors.

Twenty reinforced concrete, brick lined, wash towers. Twenty identical pump houses—one story, concrete.

Six identical rectifier buildings—one story, reinforced concrete, roofs—steel truss and gypsum plank; reinforced concrete floors. Floor area 23,300 sq. ft. each. Cab-operated 5-ton traveling cranes in four; and 7½-ton, in two.

Four identical motor generator buildings—one story and two basements, reinforced concrete, roofs—steel truss gyp plank, reinforced concrete floors. Floor area each 27,800 sq. ft. Each has cab-operated traveling crane 20-ton capacity.

### 4. Neutralization Plant:

Magnesite hopper pit and tunnel—three floors, concrete throughout. Floor area 1,800 sq. ft.

Two concrete magnesite storage silos, 95,000 cu. ft. each, hopper bottoms and connecting tunnel.

Neutralization Building—seven stories and one basement, structural steel with wood framing and siding; floors concrete; floor area 8,600 sq. ft. Eight 40,000 gal. cylindrical acid tanks on concrete saddles and wood catwalks. Two concrete clariflocculator tanks—100' diameter, 12' high. Two concrete thickener tanks—100' diameter, 12' high. Wood cooling tower.

Numerous transformer and reactor banks in open fenced areas.

### 5. Refinery Area:

Two ingot refinery buildings—three floors, reinforced concrete, PM on structural steel; floor area 77,500 sq. ft. each; 3—10-ton cab controlled traveling cranes, hoists and electric 2-ton elevators.

Billet refinery building—three floors, reinforced concrete, PM on structural steel. Floor area 68,000 sq. ft.; 1—10-ton cab-controlled traveling crane, 2—1-ton pendent controlled traveling cranes, hoists and 1½-ton electric elevator. One 220' x 22' clearance crane way with 1—10-ton cab-controlled traveling crane. Seven steel propane storage tanks, 18,300 gal. each on concrete cradles.

Numerous small buildings such as pump houses, tool houses, utilities tunnels, loading platforms, etc.

### 6. Administration Area:

Main Administration Building—one story, wood framing and siding, wood floor except in 9 fireproof vaults. Floor area 67,300 sq. ft.

West Administration Building—one story, same construction details as main Administration Building except floor area 24,500 sq. ft.

Seven clock houses—wood construction.

### 7. Laboratory Area:

C. & A. and Laboratory Stores Building—one story, wood framing and siding. Floor area 4,400 sq. ft.

Sample Preparation Building—one story, wood framing throughout. Floor area 1,050 sq. ft.

Communication Building—one story, reinforced construction throughout. Area 3,500 sq. ft.

Central Laboratory—one and two story, two units concrete masonry, one unit reinforced concrete. Floor area 34,400 sq. ft.

### 8. General:

First Aid and Safety Department Building—one story, wood framing and stucco exterior. Floor area 6,000 sq. ft.

Personnel Building—one story, wood framing and siding. Floor area 9,500 sq. ft.

Print Shop and Office—one story, frame construction. Floor area 2,700 sq. ft.

Field Office Building—one story, wood construction throughout. Floor area 1,200 sq. ft.

Locomotive House—one story, concrete. Floor area 3,500 sq. ft. Six Change Houses—one story, reinforced concrete. Floor area 6,500 sq. ft. each. Fire Station—one story, wood framing and siding. Floor area 4,100 sq. ft. Cafeteria—one story, reinforced concrete and brick. Floor area 19,800 sq. ft. Four Canteens—one story, concrete masonry. Floor area 2,100 sq. ft. each. Sewage Disposal Plant—concrete construction and tanks with treatment plant, thickener, clarifiers, etc. Hospital—one story and basement, concrete masonry, roof is steel trusses. Floor area 21,150 sq. ft. Hospital Clinic—one story, wood framing with stucco exterior. Floor area 4,600 sq. ft.

Garage and Transportation Offices—one story, concrete. Floor area 19,100 sq. ft. Building Maintenance Shops—one story, reinforced concrete. Floor area 24,500 sq. ft. Structural and Machine Shop—one story, reinforced concrete. Floor area 34,000 sq. ft. Miscellaneous Building. Stores Area—one story, part reinforced concrete, part wood. Floor area 47,000 sq. ft. General Stores Building—one story, reinforced concrete. Floor area 71,000 sq. ft. Transformer and Electric Repair Shop—two stories, reinforced concrete 10', remainder PM on structural steel frame. Floor area 6,300 sq. ft. C. & A. Stores Building No. 5—one story, wood frame and siding. Floor area 6,900 sq. ft. Sheet Metal Shop Building—one story, wood frame and siding. Floor area 26,000 sq. ft. Two Brick Storage and Grinding Buildings—wood construction, earth floor, except concrete one portion, total floor areas 56,000 sq. ft. and 68,700 sq. ft. Magnesite Truck Garage—one story, wood frame and sheathing. Floor area 25,800 sq. ft. C. & A. Stores Building No. 1—one story, wood framing and siding. Floor area 13,800 sq. ft. C. & A. Stores (motor pool No. 2)—one story, wood frame and sheathing. Floor area 19,000 sq. ft. C. & A. Stores (No. 3)—same construction as above; floor area 16,000 sq. ft. Storage Building T-35—same construction as above; floor area 5,200 sq. ft. Numerous smaller buildings and structures of various types of construction.

**MACHINERY and EQUIPMENT:** See Process Equipment.

Also included are—

250 items of Machine Tools of various types used in maintenance shops. 94 items of Miscellaneous Metal Forming and Sheet Metal Tools, 1,056 items of Laboratory and Testing Equipment plus 115 items in New York office and 14 items in Los Angeles office. 4,216 items of Furniture and Fixtures. 625 items of business machines. School equipment for four schools. 3,888 items Portable Tools.

**UTILITIES:** See Brochure C.

### HOUSING

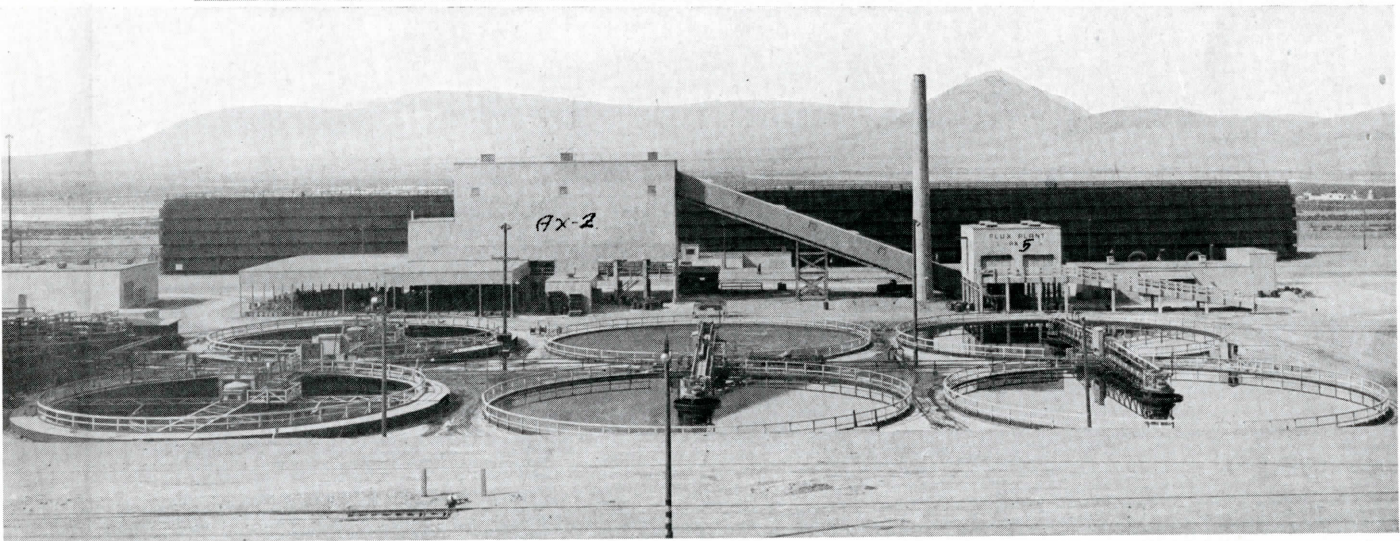
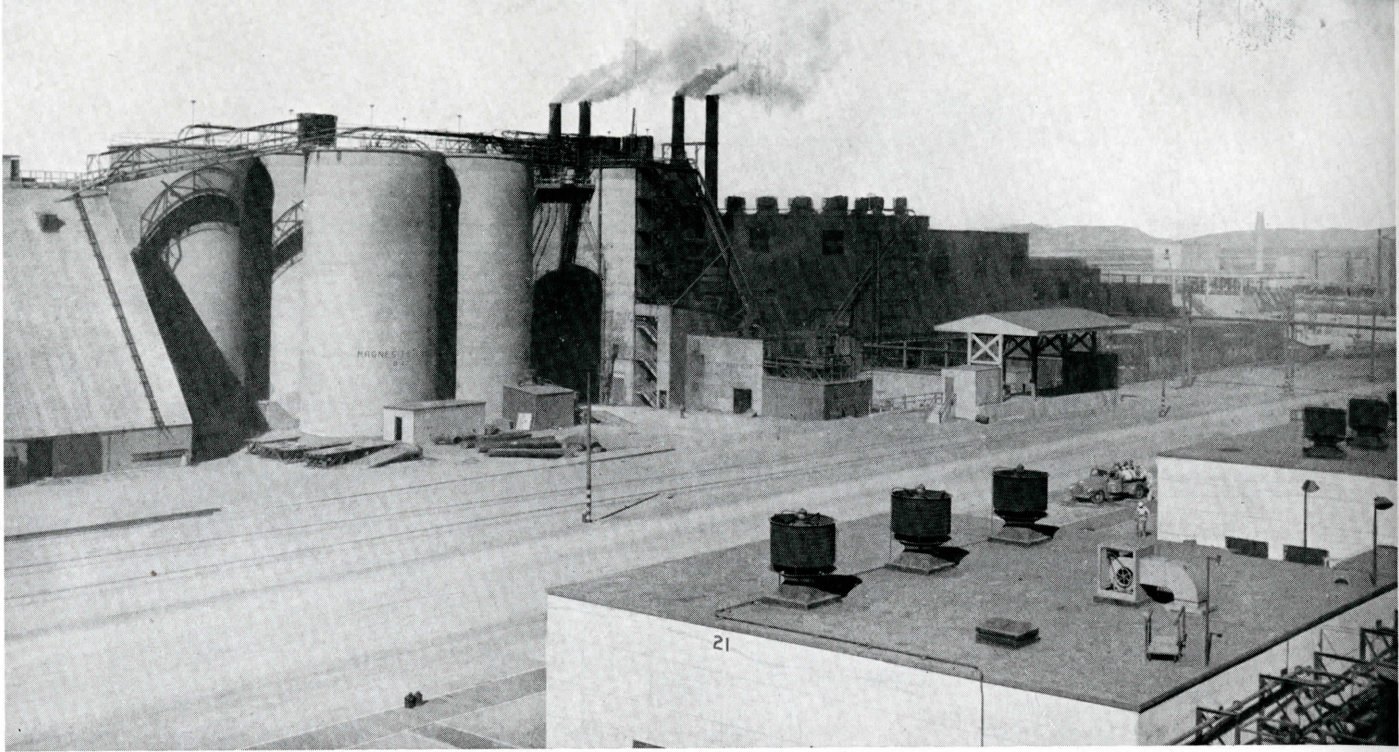
**LOCATION:** Located adjacent to metals plant at Henderson, Nevada. The project borders on U. S. Highway No. 95, and is situated about midway between Las Vegas, Nevada, and Boulder City, Nevada, approximately 15 miles from each.

**PLANT:** The plant was authorized to provide adequate and necessary housing and townsite facilities for the permanent employees of Basic Magnesium, Incorporated.

**BUILDINGS:** All buildings were newly constructed. 703—2 bedroom houses. 296—3 bedroom houses. All same construction; shiplap on wood frame, composition roof, T. & G. wood flooring, electric heating, evaporative cooling, full sanitary plumbing, hot and cold water. Also included are school building; women's apartment building; theater building; recreation building; store building; market building; nursery school building; post office building; maintenance shop; paint shop; fire station; small shops building; Protestant Church; Catholic Church; Red Cross Building; Boy Scout Building; library building; athletic field house; asphalt surfaced tennis courts.

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MAGNESITE SILOS



PROPORTIONING BIN BUILDING

**AX—Flux Plant**

- AX—1 Crushing Station
- AX—2 Proportioning Bins
- AX—3 Barrel Storage Building
- AX—4 Conveyor Ramp
- AX—5 Prefuse Building
- AX—6 Electric Sub-Station No. 607
- AX—7 M6CL2 Tappings Storage Bldg. (Floor Slab Only)

- AX—8 Flux Plant Office
- AX—9 Paper Bag Storage Bldg.
- AX—10 Flux Plant Stack

**B—Preparation Plant**

- B—1 Rotary Kiln Building
- B—2 Tunnel Kiln Bldg. (Sub-Station No. 408-409-410)
- B—3 Coal Storage Area and Coal Hopper Conveyor Tunnels & Control House
- B—4 Salt Storage, Crusher, Dryer Bldg. & Salt Unloading Hopper
- B—5 Salt Breaker Bldg. & Metal Storage Bldg. No. 1 (Peat Storage Bldg. No. 1)
- B—6 Metal Storage Bldg. No. 2 (Peat Storage Bldg. No. 2)
- B—7 Sub-Station No. 401
- B—8 Peat Shredder Bldg. & Misc. Storage Bldg. (Secondary Peat Storage Bldg.)
- B—9 Electric Sub-Station No. 402 & No. 403 and Compressor Room
- B—10 Coal and Salt Silos
- B—11 Pulverizer Building and Conveyor (Sub-Station No. 404)
- B—12 Preparation Plant Office Building
- B—13 Magnesite Silos
- B—14 Truck Hopper Pit & Tunnel
- B—15 Dry Mixer Building
- B—16 Proportioning Bins (Sub-Station No. 405)
- B—17 12 Wash Towers—6 For Tunnel Kilns and 6 For Rotary Kilns
- B—18 Magnesium Chloride Solution Pump & Heater House

- B—19 Magnesium Chloride Solution Tanks
- B—20 R. R. Car Unloading Platform & Shed
- B—21 Pellet Storage Bins
- B—22 Fuel Oil Storage and Pump House
- B—23 Baled Peat Storage Pits
- B—24 Raw Magnesite Silo
- B—25 Sub-Station No. 406-407
- B—26 Pellet Dust Reclaiming Hopper
- B—27 Compressor Building
- B—28 Electrical Maintenance Shop
- B—29 Preparation Plant Launder
- B—30 Peat Storage Platform
- B—31 Pellet Transfer Conveyor and Crushing Station

**JC—Sand Casting**

- JC—1 Proving Foundry

**M—Railway Sidings and Tracks**

- M—1 Track Scales, Weigh-House and Yard Office

**P—Transportation**

- P—1 Locomotive House
- P—2 Diesel Fuel Oil Tank (Underground)
- P—3 Truck Scales and Weigh-House
- P—4 15-Ton Truck Scales (Prep. Plant)

**R—Water Effluent and Service**

- R—3 Cooling Tower and Pump Station (Sub-Station No. 503)
- R—4 Trade Effluent Agitators and Launder

**S—Welfare**

- S—1—2—3—7—8—9 Change Houses
- S—4 Chlorine & Caustic Plant Office & Change House
- S—10 Fire Station
- S—11 Cafeteria
- S—12—13—14—15 Canteens
- S—17 Gate House
- S—18 Dog Kennels and Maintenance Bldg.
- S—19 Clubhouse at Base Ball Field
- S—20 Bleachers at Base Ball Field
- S—21 Base Ball Field
- S—22 Butane Tank
- S—30 Hospital

- S—31 Hospital Clinic

**Metal Plant and Reduction Works**

**C—Chlorination**

- C—1 to C—10 Chlorination Building
- C—1a to C—5a Chlorination Connecting Bridges
- C—12 Carbon Cleaning & Separation (Plant)
- C—13a to C—13J Waste Gas Disposal Scrubber Towers

**D—Electrolysis**

- D—1 to D—10 Electrolysis Buildings
- D—1a & b to D—10a & b Cathode Wash Towers

**E—Recovery & Neutralization Plant**

- E—1a & 1b to E—10a to 10b Recovery Coolers, Tanks & Pump Houses
- E—11 R. R. Car Unloading Platform & Shed (Not in Use)
- E—12 Truck Unloading Hopper & Tunnel (Pump Station)

- E—13 Magnesium-Oxide Silos
- E—14 Neutralization Building
- E—15 Electric Sub-Station No. 501-502
- E—16 Storage Tanks
- E—17 Sludge Pump Pit

- E—18 to E—19 Clariflocculators
- E—20 to E—23 Thickeners
- E—24 Cooling Tower

**F—Electrical Distribution**

- F—1—2—3—4—5—6 13.8 KV Rector Banks
- F—7 Electric Sub-Station No. 4—5
- F—8 Electric Sub-Station No. 6—7
- F—9 13.8 KV Distribution Tunnel
- F—10 Electric Sub-Station (Cafeteria)
- F—11 Electric Sub-Station (Admin. Bldg.)
- F—12 Electric Sub-Station (Personnel Bldg.)
- F—13 & F—14 Electric Sub-Station (West Admin. Bldg. Annex)

- F—15 Electric Sub-Station (Brick Grinding Plant)

**FF—Electrical Conversion**

- FF—1—2—4—6—8—10 Rectifier Buildings
- FF—3—5—7—9 Motor Generator Buildings

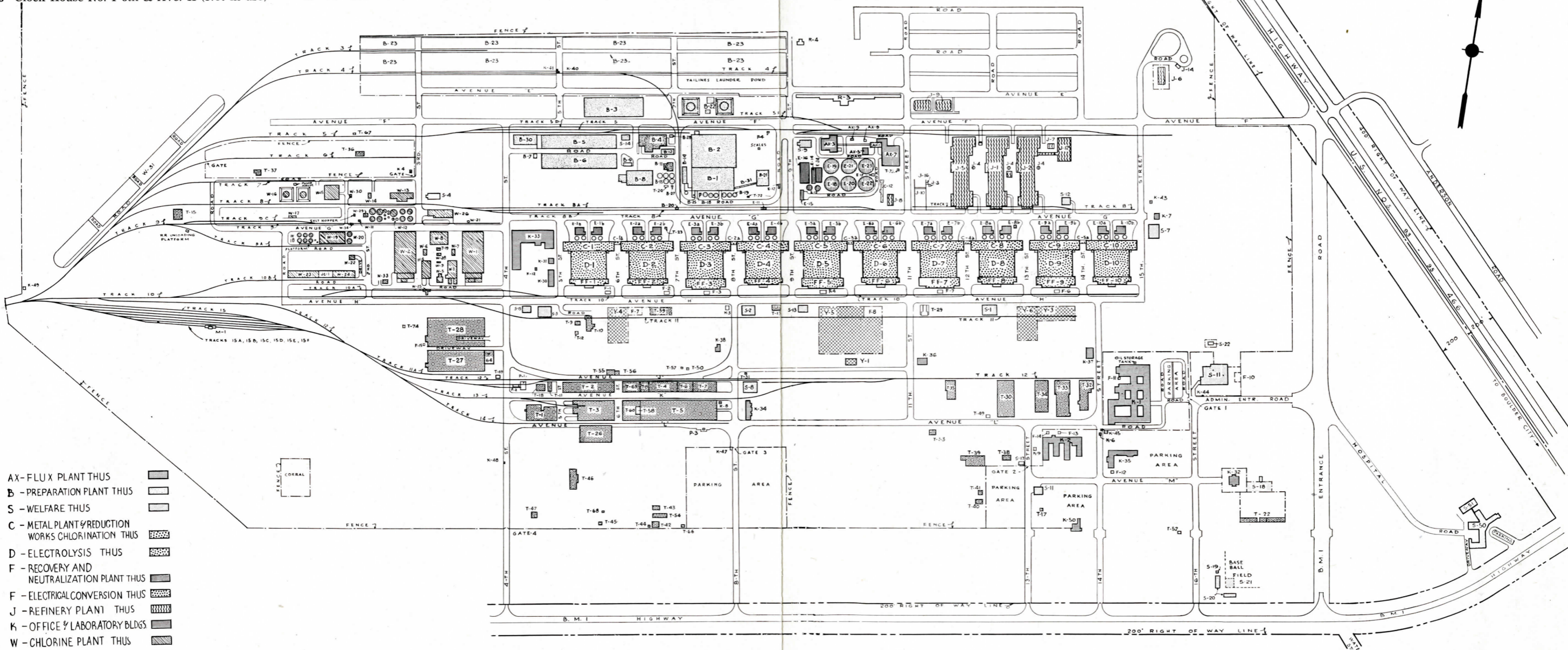
- J—Refinery Plant**  
 J-1 Ingot Foundry (Sub-Station No. 601 & No. 603)  
 J-2 Ingot Foundry (Sub-Station No. 602 & No. 604)  
 J-3 Crucible Sand Blast House  
 J-4 Foundry Stacks  
 J-5 Billet Foundry (Sub-Station No. 603 & No. 606)  
 J-6 Propane Tanks  
 J-7 Propane Vaporizing and Mixing Equipment  
 J-8 Metal Recovery Structure  
 J-9 Sludge Disposal Tanks & Ponds  
 J-10 Pot Storage Yard & Crane  
 J-11 Hardener Furnace Building  
 J-12 Metal Storage & R. R. Loading Platform  
 J-13 Oil Storage Tank  
 J-14 Propane Cylinder Loading Station  
 J-15 Utilities Tunnel  
 J-16 Tool House
- K—Office & Laboratory Bldgs.**  
 K-1 Main Administration Bldg.  
 K-2 West Administration Bldg. (Former McNeil Offices)  
 K-3 Clock House No. 1 8th & Ave. H (Not in use)

- K-4 Clock House No. 3 3rd Street  
 K-5 Clock House No. 4 Control House 7th St. & Ave. F  
 K-6 Clock House No. 6 Administration Office (14th St. & Ave. L)  
 K-7 Clock House No. 7 N.E. of Metal Unit No. 10  
 K-8 Clock House No. 8 E. of Gen'l. Stores Bldg. T. 5  
 K-9 Clock House No. 9 W. of Admin. Bldg. Annex  
 K-11 Chlorine Lines Tunnel  
 K-12 Experimental Chlorinator & Sub-Station  
 K-30 C & A and Laboratory Stores (Former Temp. Lab.)  
 K-31 Sample Preparation Building  
 K-32 Communications Building  
 K-33 Central Laboratory (Sub-Station No. 201 and No. 208)  
 K-34 First Aid and Safety Dept. Office  
 K-35 Personnel Dept. Office  
 K-36 Reduction Works and Metal Plant Office  
 K-37 Print Shop and Office  
 K-38 Gen'l. Service Dept. & Personnel Field Office

- K-40 Tool House (Peat Storage Area)  
 K-41 Peat Storage Guard Tower  
 K-43 to K-49 Inc. Guard Shelters (Portable)  
 K-50 Vocational School Building
- W—Chlorine Plant**  
 W-1 Cell Bldg. No. 1 (Sub-Station No. 110) (Rect. & Oil Circuit Breaker)  
 W-2 Cell Bldg. No. 2 (Sub-Station No. 120) (Rect. & Oil Circuit Breaker)  
 W-3 Cooling, Drying and Liquefaction Building No. 1  
 W-4 Cooling and Drying & Liquefaction Building No. 2  
 W-5 Electric Sub-Station No. 301  
 W-6 Hydrogen House No. 2  
 W-7 Hydrogen House No. 1  
 W-8 Cell Renewal and Repair Shop  
 W-9 Sulphuric Acid Pump & Tanks  
 W-11 Brine Office  
 W-12 Brine System (Tank Farm)  
 W-13 Cooling Tower  
 W-14 Electric Sub-Station No. 302

- W-15 Boiler House & Air Compressor Room  
 W-16 Fuel Oil Storage & Pump House  
 W-17 Salt Storage  
 W-18 Caustic Storage Tanks & Car Loading Platforms  
 W-19 Caustic Evaporation Building  
 W-20 Cell Liquor Storage Tanks  
 W-21 Sulphuric Acid Unloading Station  
 W-22 Electric Sub-Station No. 303 & No. 304  
 W-23-24 Warehouse and Stoneware Bldg. (Chl. & Caustic Storage)  
 W-25 Tank Car Conditioning Shed

- W-26 Concrete Parts Building  
 W-27 Tank Car and Cylinder Loading Shed & Track Scales  
 W-28 Electric Sub-Station No. 305  
 W-29 Brine Field Electric Control House  
 W-30 Distilled Water Building  
 W-31 Storage Area  
 W-32 Liquid Chlorine Unloading Platforms  
 W-33 Former Chlorine & Caustic Plant Office (Not in Use)  
 W-34 Salt Unloading Hopper, Conveyor & Weigh House



- AX—FLUX PLANT THUS  
 B—PREPARATION PLANT THUS  
 S—WELFARE THUS  
 C—METAL PLANT & REDUCTION WORKS CHLORINATION THUS  
 D—ELECTROLYSIS THUS  
 F—RECOVERY AND NEUTRALIZATION PLANT THUS  
 F—ELECTRICAL CONVERSION THUS  
 J—REFINERY PLANT THUS  
 K—OFFICE & LABORATORY BLDGS.  
 W—CHLORINE PLANT THUS  
 T—WORKSHOPS & STORES THUS  
 Y—POWER SUPPLY TO PLANT THUS

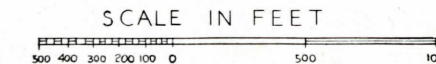
- T—Workshops & Stores**  
 T-1 Plant Transportation Office & Service Garage (Former Elec. Repair Shop)  
 T-2 Building Maintenance Shops (Former Small Stores Bldg.)  
 T-3 Structural and Machine Shop (Sub-Station Nos. 202-203)  
 T-4 Anode Shop  
 T-5 General Stores and Purchasing Dept. Office  
 T-6 Tygon Lining Shop  
 T-7 C & A Stores No. 4  
 T-8 Magnesium Chloride Storage  
 T-9 Transformer Oil Pump House & Elec. Repair Shop Office  
 T-10 Transformer Repair & Elec. Repair Shop (Sub-Station No. 204)  
 T-11 Inflammable Liquid Stores  
 T-12 Transformer Oil Storage Tanks  
 T-13 Tile Setting Maintenance Bldg.  
 T-15 C and A Stores (Former Salt Truck Garage)  
 T-16 Railroad Tool House  
 T-17 Fire Station Storage Building  
 T-18 Lubricating Oil Storage Building

- T-19 Oil Storage Building in Chlorine Plant Area  
 T-20 Oil Storage Building in Preparation Plant Area  
 T-21 Oil Storage Building in Neutralization Plant Area  
 T-22 C & A Stores No. 5  
 T-23 Oil Storage Building E. of Recovery Bldg. E-2b  
 T-24 Oil Storage Building W. of Recovery Bldg. E-6a  
 T-25 Oil Storage Building E. of Recovery Bldg. E-8b  
 T-26 Sheet Metal Shop (Former Bus Bar Shop)  
 T-27 Brick Grinding & Storage Bldg. (Unfinished Brick)  
 T-28 Brick Grinding & Storage Bldg. (Finished Brick)  
 T-29 Central Battery Charging Bldg.  
 T-30 Magnesite Truck Garage  
 T-31 Concrete Laboratory (Not in Use)  
 T-32 C & A Stores No. 1  
 T-33 C & A Stores Motor Pool No. 2  
 T-34 C & A Stores No. 3

- T-35 Electrical Maintenance and Construction Bldg.  
 T-36 Tygon Lining Shop  
 T-37 Former Surplus Stores No. 4 (Not in Use)  
 T-38 Automobile Service Station & Grease Rack  
 T-39 Automobile Steam Cleaning & Wash Rack & Cable Storage Shed  
 T-40 Water Cooler Building  
 T-41 Storage Shed for Drinking Cans  
 T-42 C and A Stores No. 6 (Cooler Pads)  
 T-43 Lumber Storage Building  
 T-44 Water Valve Storage Shed (Not in Use)  
 T-69 Oil Storage Bldg. (Brick Plant)  
 T-70 Repair Shed  
 T-71 Tool House (Neutralization Area)  
 T-72 Tool House (Not in Use)  
 T-73 Construction Field Office  
 T-74 Ice House  
 T-45 Ironworkers Tool House (Not in Use)  
 T-46 A P M Workshop & Plywood Storage Bldg.  
 T-47 Furnace Storage Building DPC  
 T-49 Magnesite Truck Garage Fuel Oil Pump House

- T-50 Sand Blast House  
 T-51a to J Brick Grinding Shops  
 T-52 Storage Vault (Proposed Street Lighting Sub-Station)  
 T-53 Cable Storage Building  
 T-54 Fluorspar Storage Shed  
 T-55 Lumber Shed  
 T-56 Lumber Mill  
 T-57 Tool House  
 T-58 Oxygen-Acetylene Storage Shed  
 T-59 Process Tool House  
 T-60 Structural Steel Storage Platform  
 T-61 Bus Bar Shop  
 T-62 Cathode Shop  
 T-63 General Stores Annex  
 T-64 Casting Shop (Plaster)  
 T-66 Tool House (Not in Use)  
 T-67 Flare Servicing Bldg.  
 T-68 Bar Bending & Cutting Sheds  
 Y—Power Supply to Plant  
 Y-1 Main Electric Control House  
 Y-1 Control Cable Tunnel  
 Y-3 Electric Sub-Station No. 9

# BUILDINGS AND STRUCTURES PLANT SITE AREA



- Y-4 Electric Sub-Station No. 1  
 Y-5 Electric Sub-Station No. 2  
 Y-6 Electric Sub-Station No. 3  
 Y-7 Spare Transformer

## PROCESS AND EQUIPMENT

The operations of this plant are carried out by the latest designed and most modern equipment for the various processes incorporated. The different units contain a vast amount of equipment—too great to attempt to more than briefly outline in this Brochure. The perspective drawings are intended to illustrate the type and quantity of equipment.

**1. Preparation:** Functions as follows—

(a) To receive and store raw materials used in the process. (b) To blend and pelletize the raw materials into a form suitable for chlorinator feed. (c) To deliver the pellets to the Chlorination Plant. (See Perspective Drawing No. 1)

**2. Chlorination:** Function of Chlorination Plant.

Production of anhydrous magnesium chloride ("cell feed") for the Electrolysis Plant. This is accomplished by the chlorination of the magnesium oxide contained in the pellet material processed in the Preparation Plant, with chlorine gas recovered in the Electrolysis Plant supplemented by fresh chlorine gas produced in the Chlorine Plant. The reaction occurs at high temperatures in specially designed, acid and heat resistant electric furnaces, the bottom 1/2 of which are packed with carbon resistor blocks. Each of 10 identical buildings contains basically 7 chlorinator furnaces, and an exhaust gas recovery system comprised of six primary wash towers, 2 secondary wash towers, three exhaust fans and one gas scrubber tower. (See Section through Chlorination Building.)

**3. Electrolysis.** Function of the Electrolysis Plant is the production of "cell metal" (unrefined Magnesium Metal). This is accomplished by electrolyzing the "tappings" (molten anhydrous magnesium chloride) produced in the chlorinators in specially designed electrolytic cells. Each cell produces approximately 390 lbs. of cell metal, 96 lbs. of waste cell melt, 70 lbs. of cell mud, and 1,000 lbs. of chlorine gas per operating day. There are 88 magnesium electrolytic cells in each of 10 buildings D1 to D10.

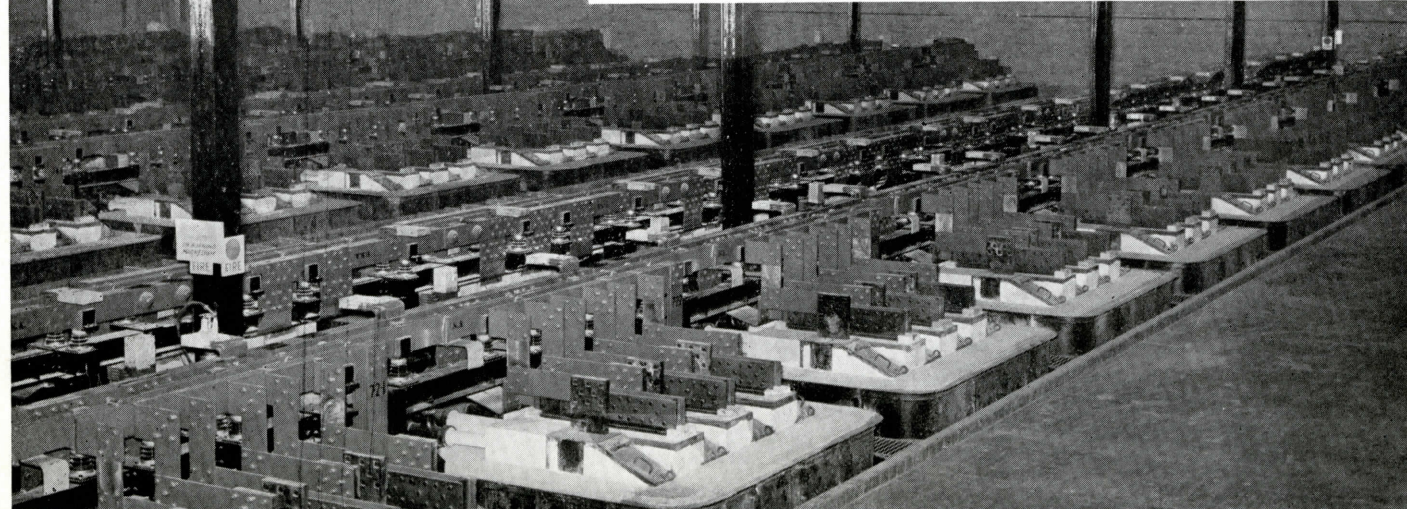
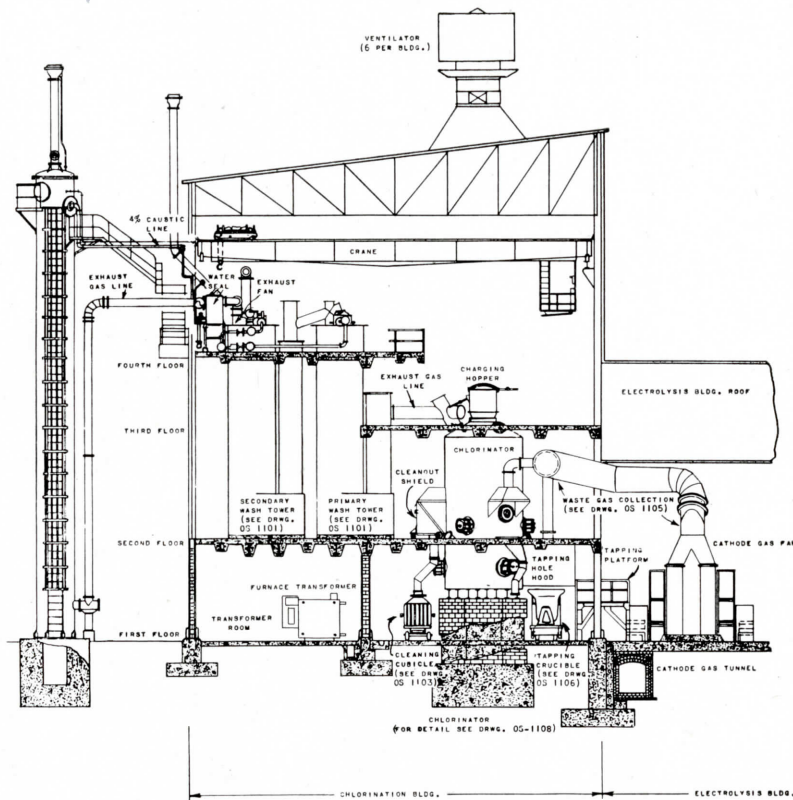
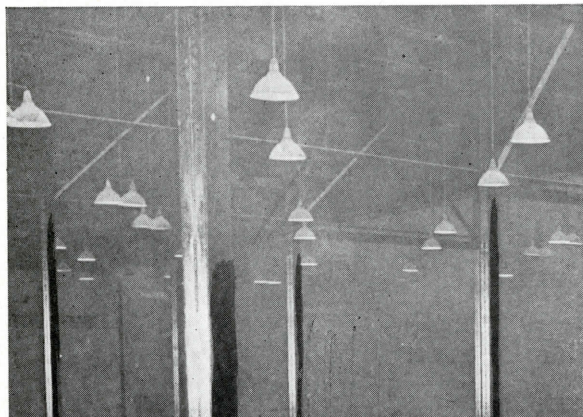
**4. Refinery:** Function of this unit is the purification of the molten metal received from the Electrolysis Plant and production of Magnesium Metal and Magnesium alloys in marketable form. Refining is affected primarily in propane fired crucible furnaces of 2-ton, 300-lb. and 600-lb. capacities. There are 29 gas-fired and 3 oil-fired 2-ton melting furnaces. Castings in the Billet and Slab Foundry are made in the form of billets for powder and extrusion and slabs for rolling. Equipment is semi-automatic.

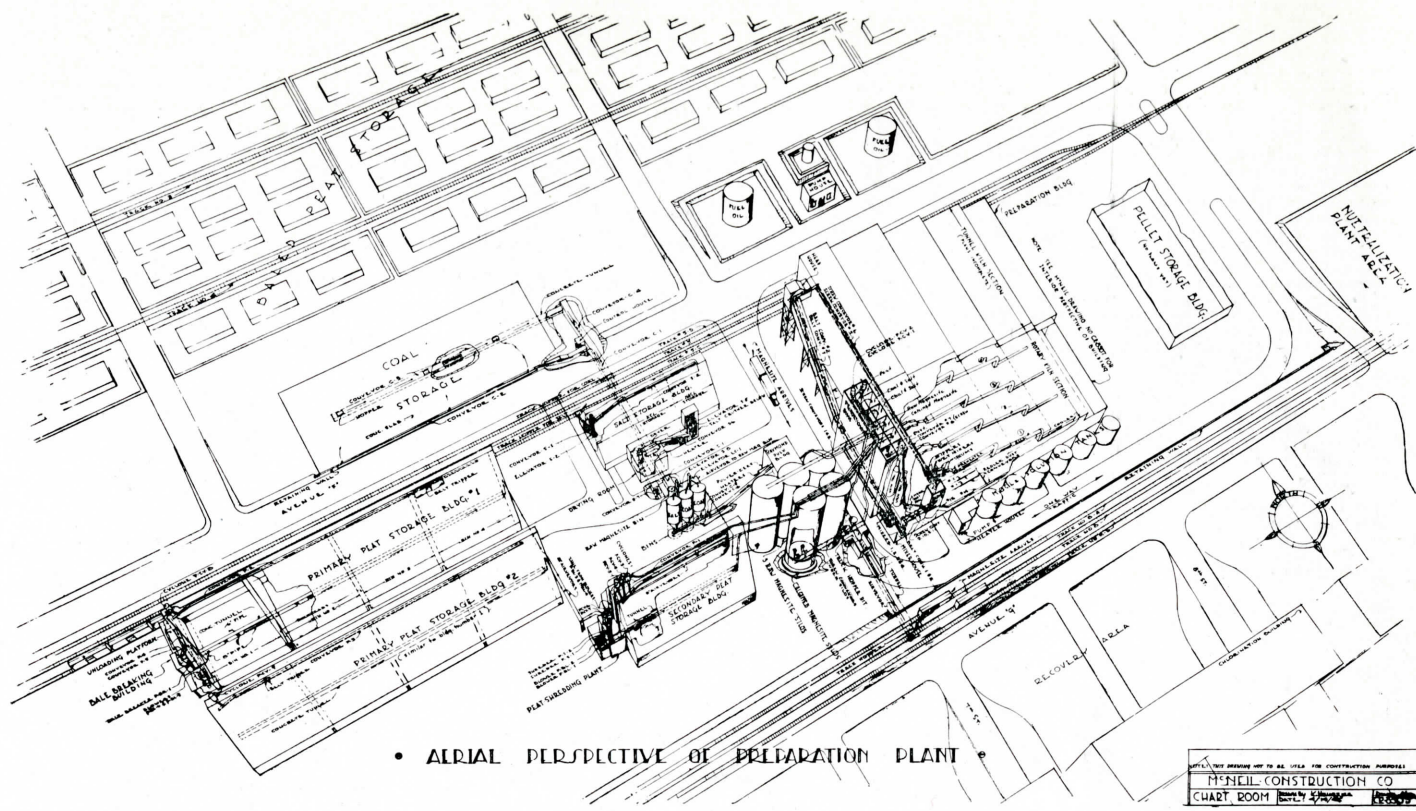
**5. Recovery and Neutralization Plants:** Function of this unit is to prevent escape of noxious fumes to the atmosphere, to recover the magnesium chloride and hydrochloric acid from the chlorinator exhaust gas and produce neutral magnesium chloride solution required in the Preparation Plants.

**6. Flux Plant:** Purpose is to produce fluxes suitable for the production of molten magnesium from oxidation and to produce fluxes suitable for refining molten magnesium.

The information contained herein is believed to be correct but no guarantee is made.

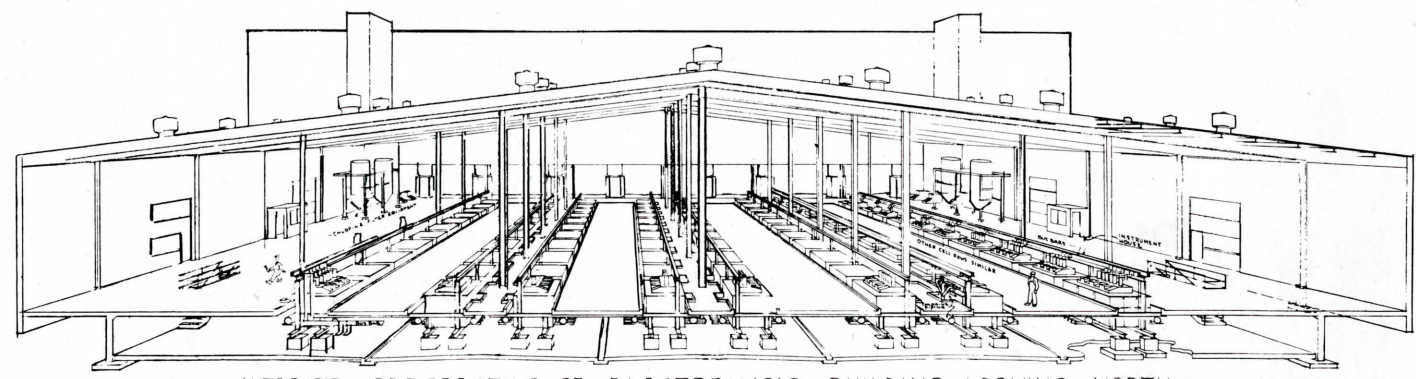
### ELECTROLYTIC CELLS



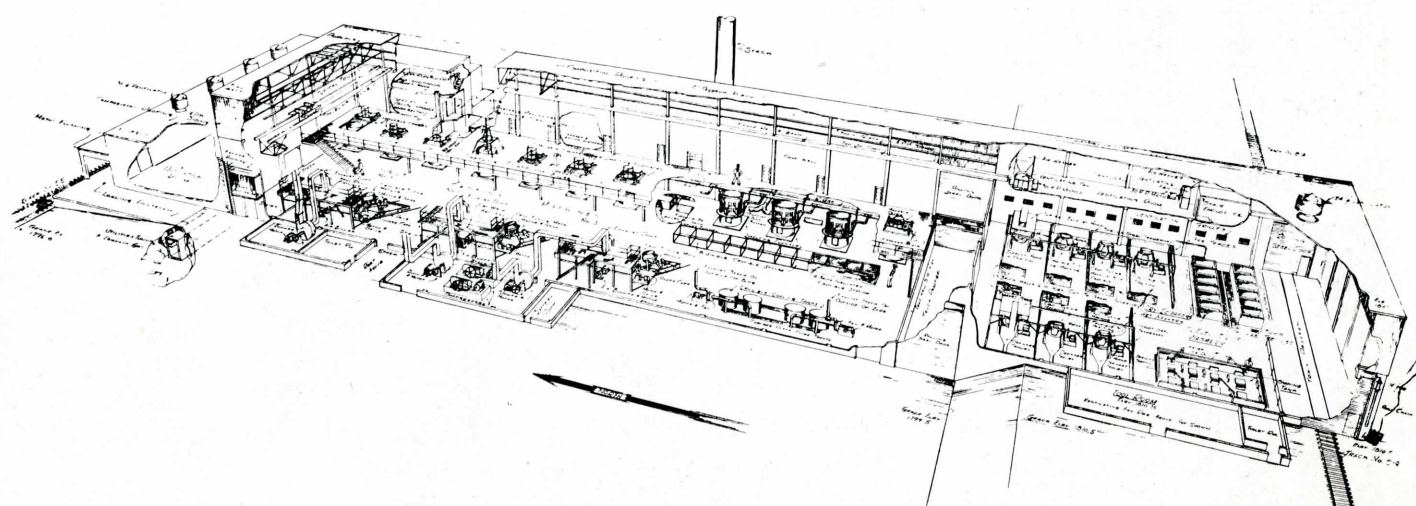


• AERIAL PERSPECTIVE OF PREPARATION PLANT •

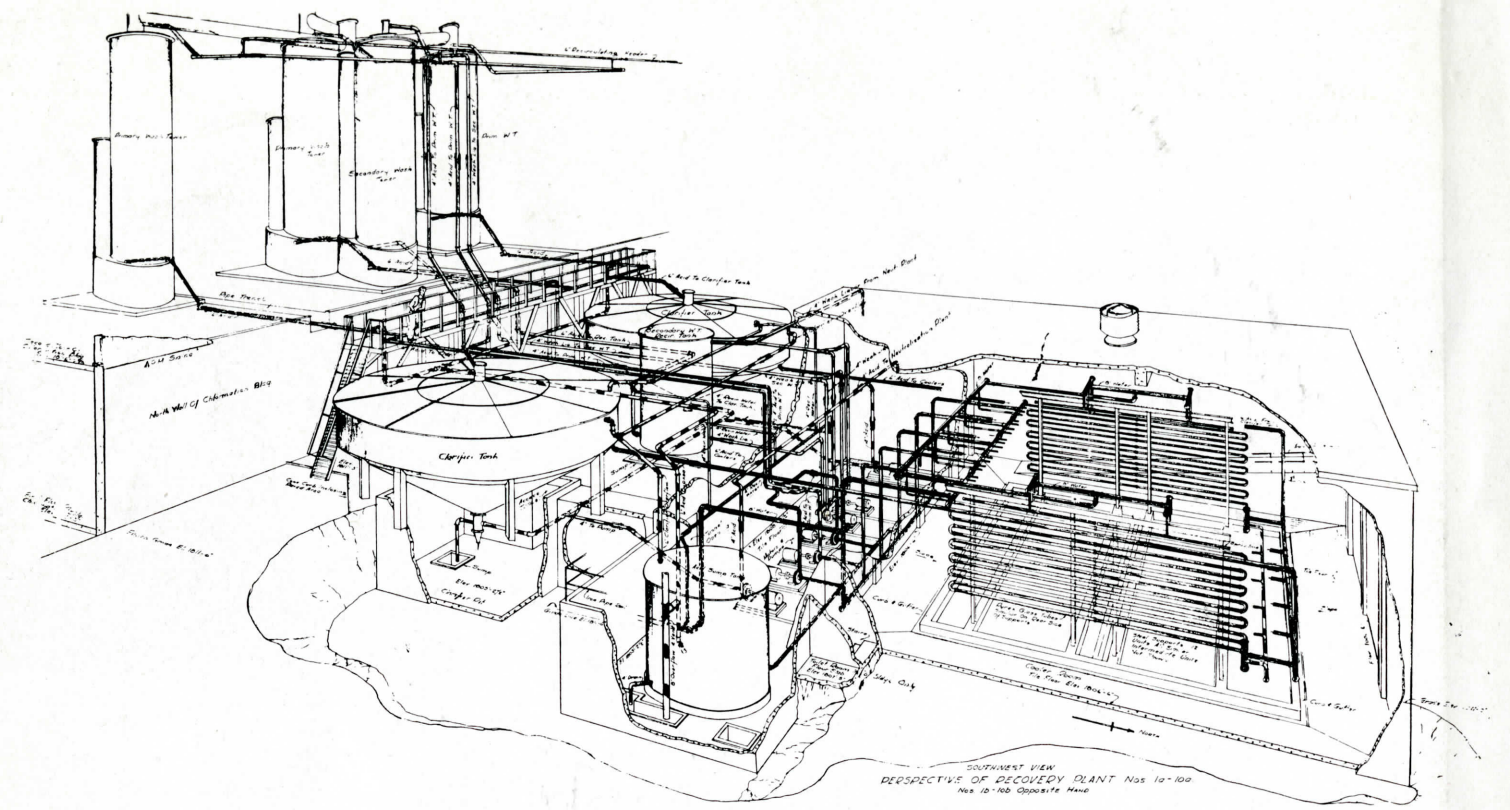
HENKEL CONSTRUCTION CO  
 CHART ROOM



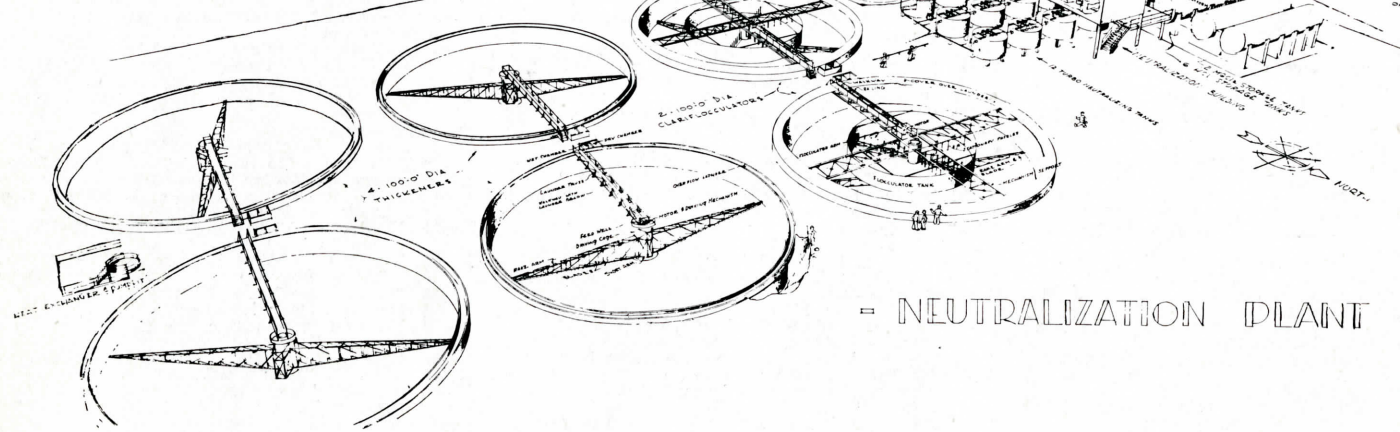
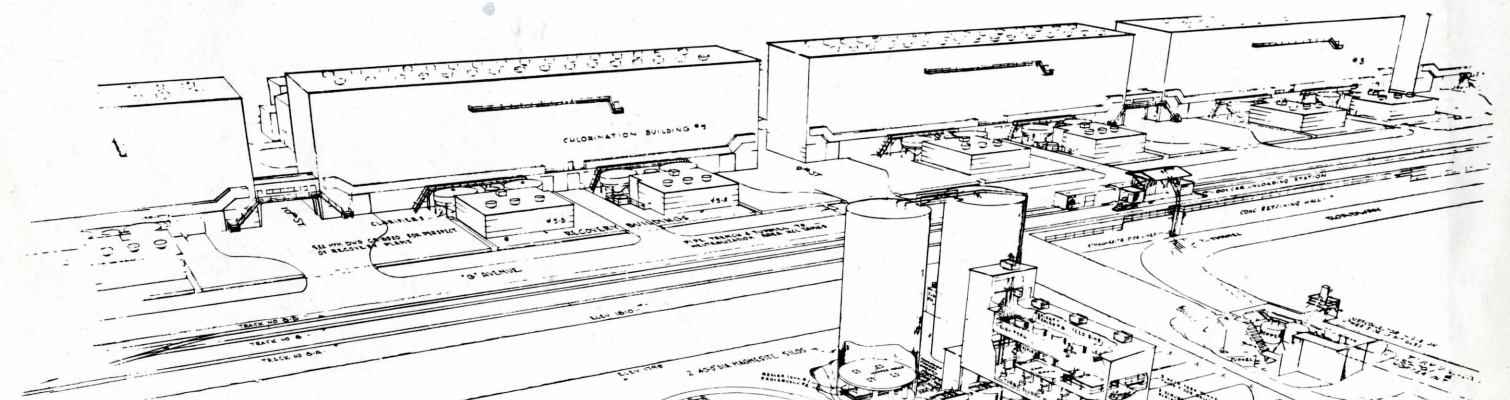
• INTERIOR PERSPECTIVE OF ELECTROLYSIS BUILDING LOOKING NORTH •



PERSPECTIVE VIEW OF REFINERY BLDG. J-1  
*Building J-2 Similar*



SOUTHWEST VIEW  
 PERSPECTIVE OF RECOVERY PLANT Nos. 10-100  
 Nos. 10-100 Opposite Hand



• NEUTRALIZATION PLANT

THIS BROCHURE TO BE USED IN CONJUNCTION WITH  
 BROCHURE B—CHLORINE PLANT  
 BROCHURE C—REDUCTION PLANT AT GABBS, ETC.