Exhibit No. 19 - Blueprint - Roof plan of the heavy machine shop.

Exhibit No. 20 - Blueprint - Floor and roof plans of the pattern shop.

Exhibit No. 21 - Blueprint - Elevations of the pattern shop.

Exhibit No. 22 - Blueprint - Floor plan and elevations of the forge shop.

Exhibit No. 23 - Blueprint - Cross section, looking east, of the forge shop.

Exhibit No. 24 - Blueprint - Forge shop, cross-section, other half.

Exhibit No. 25 - Blueprint - Boiler house, details of building and lighting.

Exhibit No. 26 - IMPORTANT - This is an enlargement of an aerial photograph showing the various buildings of the Shibaura Engineering Works after completion of construction by H. K. Ferguson Company. The photograph also shows the surrounding area, including the Asano dockyards and shipbuilding plant, Asano foundry, Asano cement works, and other installations along the Tsurumi River and Yokohama Bay.

STEEL FOUNDRY
(SPACE RESERVED)

N

PLATE SHOP (18)

IRON FOUNDRY FOR LIGHT CASTINGS (13)

PUNCH PRESS SHOP (12)

PATTERN STORAGE (14)

PATTERN SHOP (11)

MEDIUM SIZE CASTINGS IRON FOUNDRY FOR HEAVY CASTINGS (10)

FORGE SHOP (16)

MEDIUM SIZE ROTARY MACHINES (9)

DISTRIBUTING TRANSFORMERS POWER TRANSFORMERS & HIGH TENSION OIL SWITCHES (8)

LARGE SIZE ROTARY MACHINES

LARGE SIZE ROTARY MACHINES AND STEAM TURBINES (7)

SUCTION WELL

(6)

WAREHOUSE (5)

SWITCH BOARDS OTHER SMALL SIZE PRODUCTS (4)

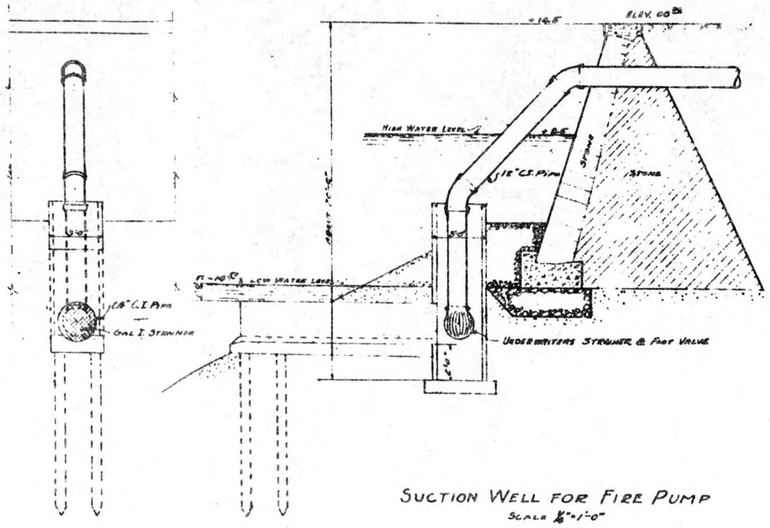
SMALL MOTORS & FAN MOTORS (3)

LIGHT MFG. SHOP (2)

OFFICE & LABORATORY (1)

P.I.V.

CANAL



SUCTION WELL FOR FIRE PUMP
SCALE 1/8"=1'-0"

NOTATION

FIRE LINE
FUTURE FIRE LINE
FIRE STREAM HYDRANT
P.I.V. POST INDICATOR VALVE

REDUCED to 66 per cent

NOTE: ALL HYDRANT CONNECTIONS TO BE 6"

The H. K. Ferguson Company
ENGINEERS AND BUILDERS
6523 EUCLID AVE. PHONE RANDOLPH 6284
CLEVELAND

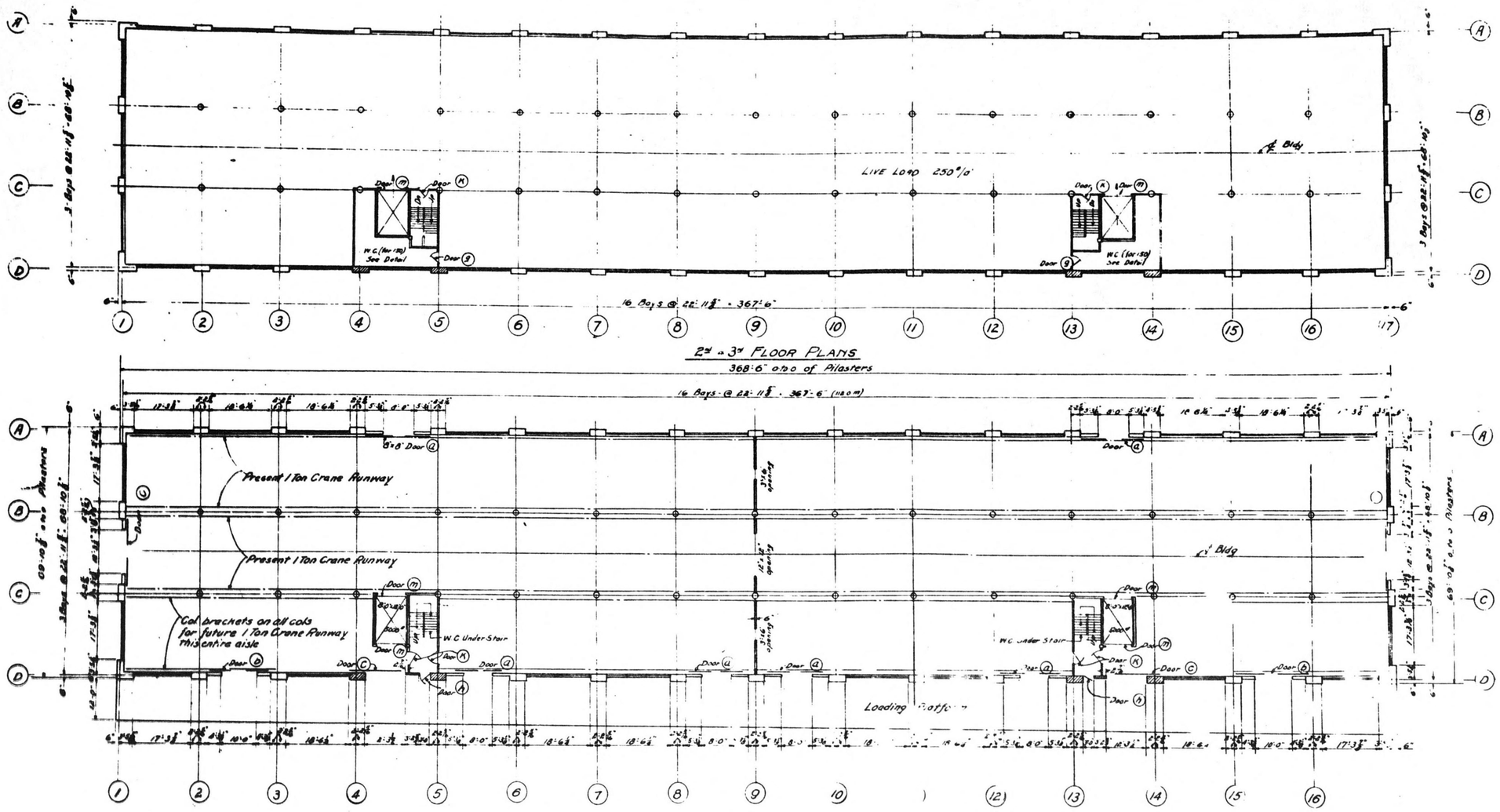
FERGUSON ORIGINATED STANDARD FACTORIES

SHIBAURA ENGINEERING WORKS
PLOT PLAN SHOWING
-LOCATION OF FIRE LINES

DRAWN BY	DATE	CONTRACT NUMBER	168
TRACED BY	DATE	SHEET NUMBER	M-FIRE LINES
CHECKED BY	DATE		
SCALE			

APPROVED CONSTRUCTION DATE

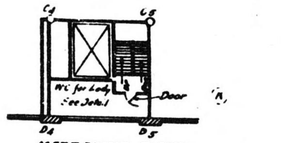
EXHIBIT NO. 1



2nd & 3rd FLOOR PLANS

1st FLOOR PLAN

ROOF PLAN



MEZZANINE FLOOR BETWEEN 2nd and 3rd FLOOR ONLY

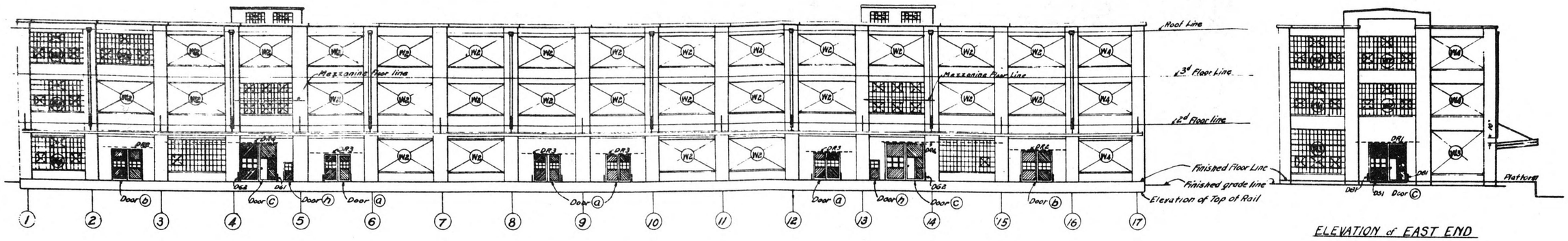
Note - Mezzanine floor between Cols D13 · D14 · C13 C14 similar

REDUCED to 66 per cent

				Approved by	Designed by	Drawn by	Checked by
				Date	Date	Date	Date 3-23-1953
Revised by	Date	Description	Order by	芝浦製作所		T-166241	

SHIBAURA ENGINEERING WORKS
TSURUMI PLANT
WAREHOUSE
BUILDING No 5
FLOOR PLANS · ROOF PLAN
Scale 1/16"-1'-0"

EXHIBIT NO. 11

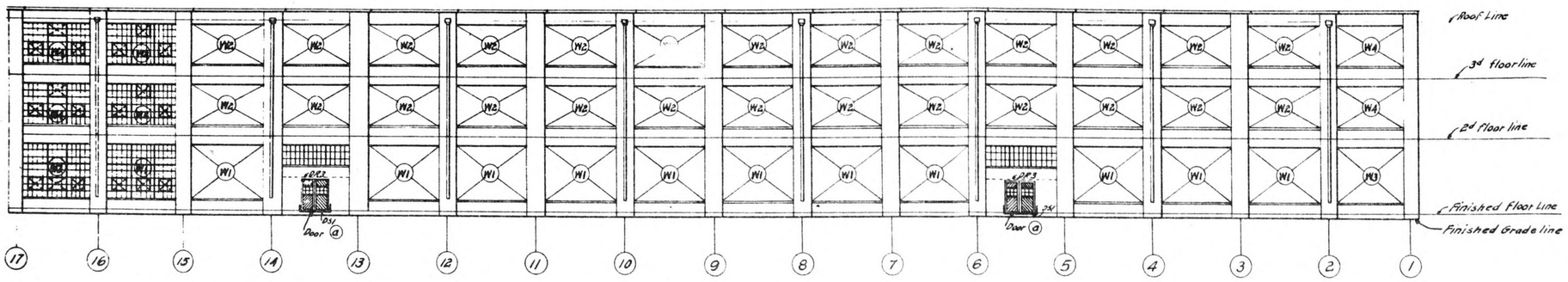


NORTH ELEVATION

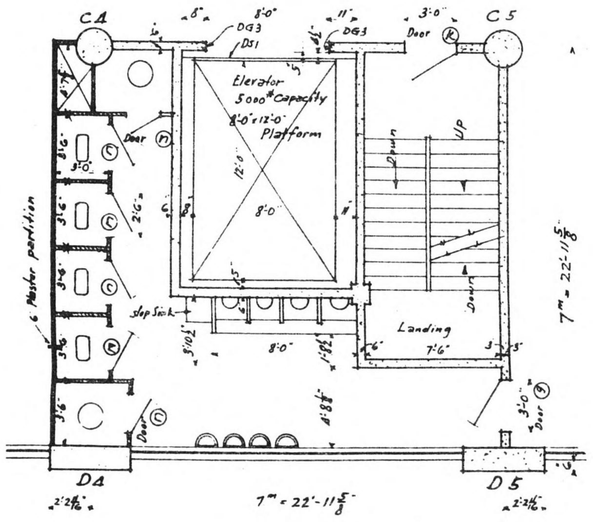
ELEVATION of EAST END

WEST END SIMILAR

Note DG3 - 1 - 6 L - 3.2# - 4'-0"
DR1 - 1 - L - 3" x 3" x $\frac{1}{2}$" x 25'-0"
DR2 - 1 - L - 3" x 3" x $\frac{1}{2}$" x 20'-6"
DR3 - 1 - L - 3" x 3" x $\frac{1}{2}$" x 16'-6"
DR4 - 1 - 10" C - 15.3# x 37'-6"
DG1 - 1 - 9" C - 13.4# - 4'-0" with wall anchors
DG2 - 2 - 18 - 2$\frac{1}{2}$" x 2$\frac{1}{2}$" x $\frac{1}{4}$" x 4'-0" with 6" x $\frac{1}{4}$" batten pls.
DS1 - 1 - L - 3" x 3" x $\frac{1}{2}$" x width of opening
All door guards are DG1 unless noted
All interior dividing walls to be of concrete unless noted reinforced with $\frac{3}{8}$" ϕ bars 12" centers both ways in center of walls
All plastered partitions to be 2" x 4" studs metal lath both sides 2 coats cement plaster finished with cove base at floor
All partitions between toilet stalls to be 1" slate supported on nickeled pipe standards 4" from floor line to bottom of partition 6'-0" to top.

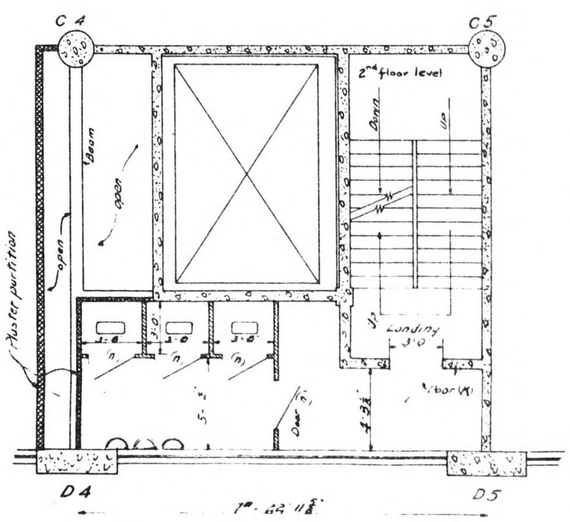


SOUTH ELEVATION



Men's Toilet 2nd Floor

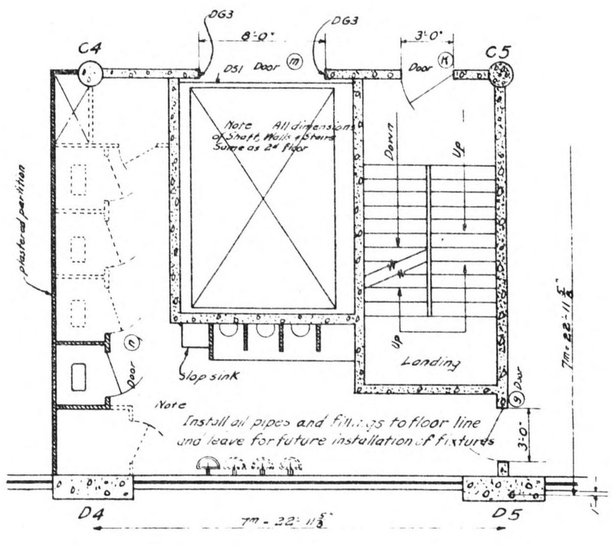
Toilet between cols D13 - D14 - 2nd floor similar



LADIES TOILET

Mezzanine 2nd Floor

Toilet between cols D13-D14 2nd Floor Similar



TOILET ROOM 3rd FLOOR

Toilet between cols D13-D14 2nd Floor Similar

REDUCED to 66 per cent

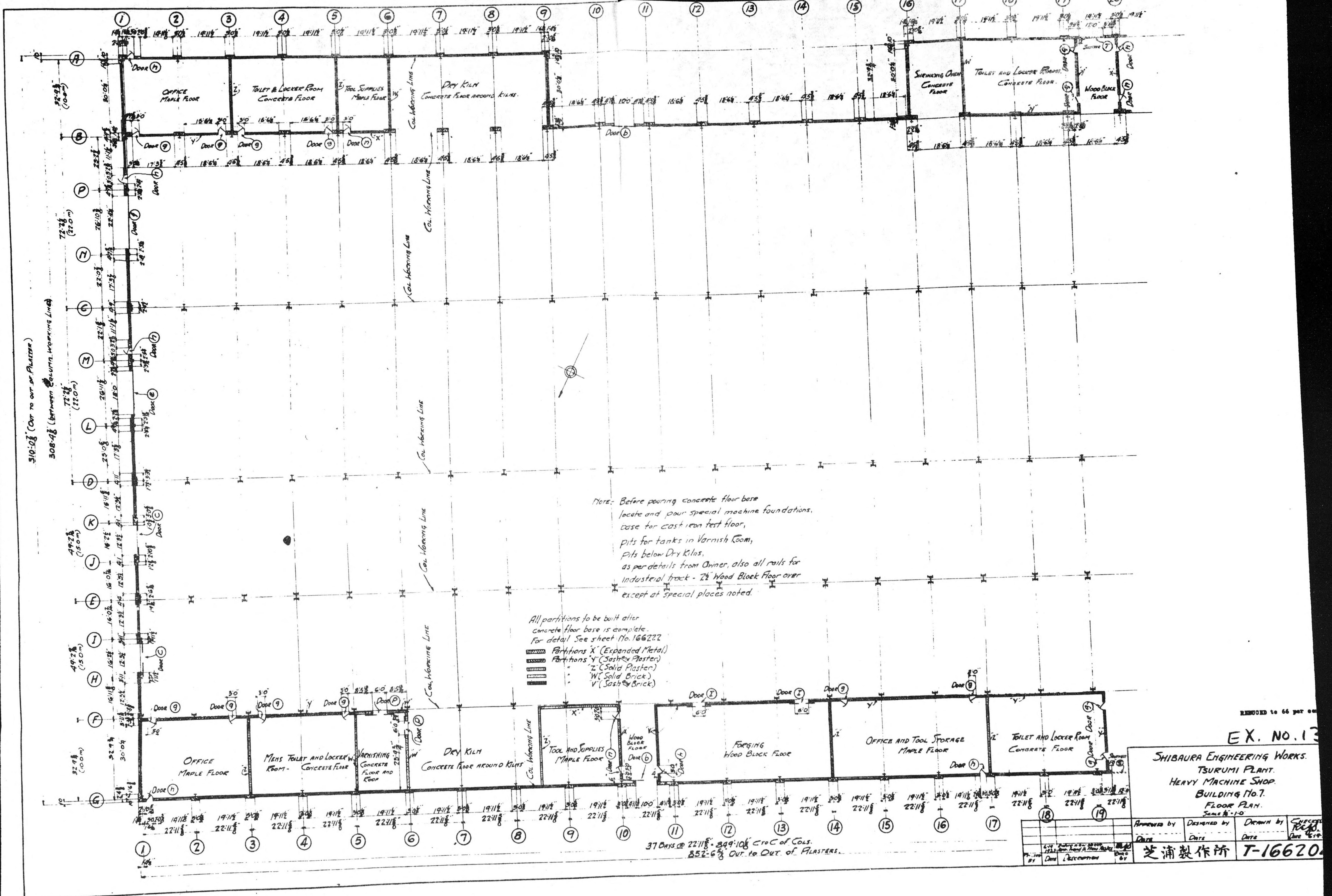
SHIBAURA ENGINEERING WORKS
TSURUMI PLANT
WAREHOUSE-
BUILDING No 5
ELEVATIONS - TOILET ROOM PLANS
Scale $\frac{1}{8}$"=1'-0" & $\frac{1}{4}$"=1'-0"

Revised by	Date	Description	Checked by

Approved by	Designed by	Drawn by	Checked by
Date	Date	Date	Date 12-28-1953

芝浦製作所 T-166242

EXHIBIT NO. 12


Office
Maple Floor
Toilet & Locker Room
Concrete Floor
Tool Supplies
Maple Floor
Dry Kiln
Concrete Floor around Kilns.
Col. Working Line
Shrinking Oven
Concrete Floor
Toilet and Locker Rooms.
Concrete Floor.
Wood Block Floor
310'-0⅜" (Out to out of Pilaster)
308'-4⅜" (between ℄ Column Working Lines)
Note:- Before pouring concrete floor base
locate and pour special machine foundations,
base for cast iron test floor,
pits for tanks in Varnish Room,
pits below Dry Kilns,
as per details from Owner, also all rails for
industrial track - 2½" Wood Block Floor over
except at special places noted.
All partitions to be built after
concrete floor base is complete.
For detail See sheet No. 166222
Partitions "X" (Expanded Metal)
Partitions "Y" (Sash and Plaster)
" "Z" (Solid Plaster)
" "W" (Solid Brick)
" "V" (Sash and Brick)
Office
Maple Floor
Mens Toilet and Locker Room - Concrete Floor
Varnishing Concrete Floor and Roof
Dry Kiln
Concrete Floor around Kilns
Tool and Supplies
Maple Floor
Wood Block Floor
Forging
Wood Block Floor
Office and Tool Storage
Maple Floor
Toilet and Locker Room
Concrete Floor
37 Bays @ 22'-11⅝" = 849'-10⅝" C to C of Cols.
852'-6⅝" Out to Out of Pilasters.
REDUCED to 66 per ce
EX. NO. 13
SHIBAURA ENGINEERING WORKS.
TSURUMI PLANT.
HEAVY MACHINE SHOP.
BUILDING No. 7.
FLOOR PLAN.
Scale ⅛" = 1'-0"
Approved by
Designed by
Drawn by
Checked by
Date
Description
芝浦製作所
T-16620

Wood Block Floor

Tool & Supplies Maple Floor

Office Maple Floor

Toilet Concrete Floor

Office Maple Floor

Gauge Working Line

Col. Working Line

Col. Working Line

Col. Working Line

Col. Working Line

Col. Working Line

Baking Wood Block Floor

Annealing Wood Block Floor

Office Maple Floor

Tool and Supplies Maple Floor.

Wood Block Floor

Men's Toilet & Locker Room Concrete Floor.

1 Ton Crane Runway

Sheet Iron Storage Concrete Floor

Note:- For Balance of Floor Plan See Sheet No T-166204

Notes:- Before Pouring Concrete Floor Base

Locate & Tour Special Machine Foundations & Base for Cast Iron

Test Floor for Details from Owner Also All Rails for Industrial Track.

1½" Wood Block Floor over Main Bldg except at Special Places Noted.

Note All partitions to be built after concrete floor base is complete

For details see Sheet No T-166222

Partition X - (Expanded Metal)
Y - (Sash & Plaster)
Z - (Solid Plaster)
W - (Solid Brick)
V - (Sash & Brick)

37 Bays @ 22'-11⅝" = 849'-10⅜" c to c of Columns

852'-6⅝" Out to Out of Plasters

REDUCED to 66 per cent

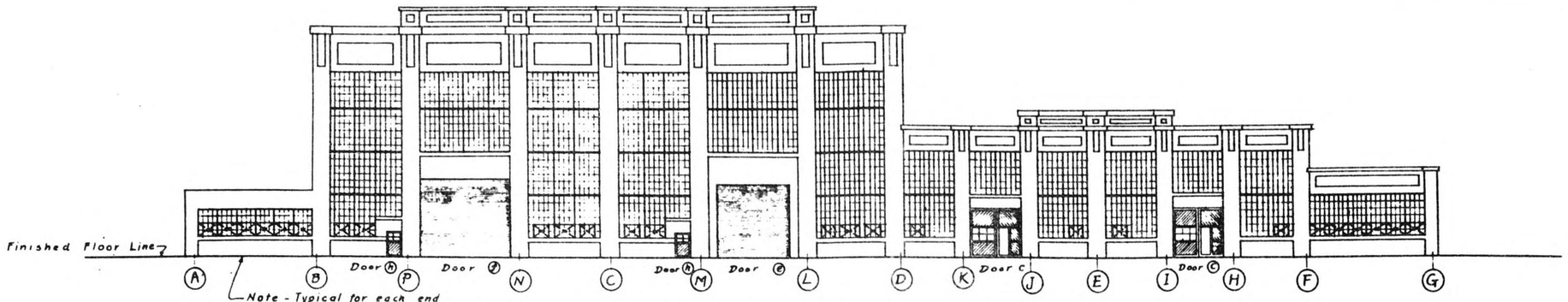
EX. NO. 14

SHIBAURA ENGINEERING WORKS
TSURUMI PLANT
HEAVY MACHINE SHOP.
BUILDING No 7.
FLOOR PLAN
SCALE 1/8"=1'-0"

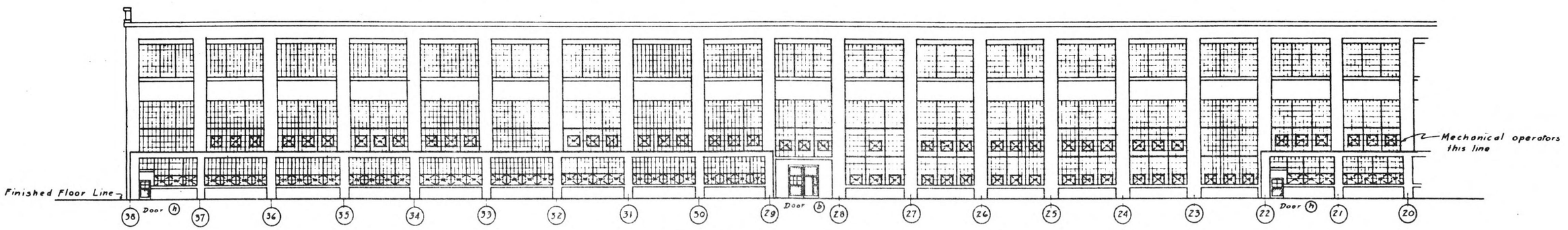
Approved By	Designed By	Drawn By	Checked By
Date -	Date -	Date -	Date - 6-15-1943

芝浦製作所

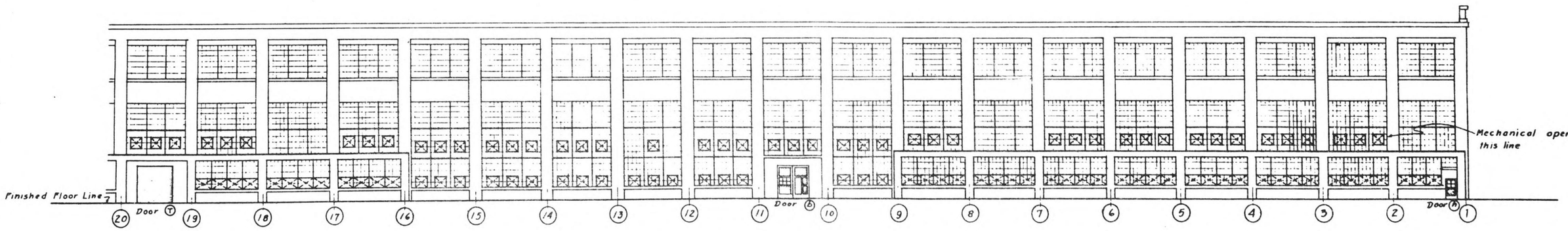
T-166205



- EAST ELEVATION -



- SOUTH ELEVATION -



SOUTH ELEVATION
Continued

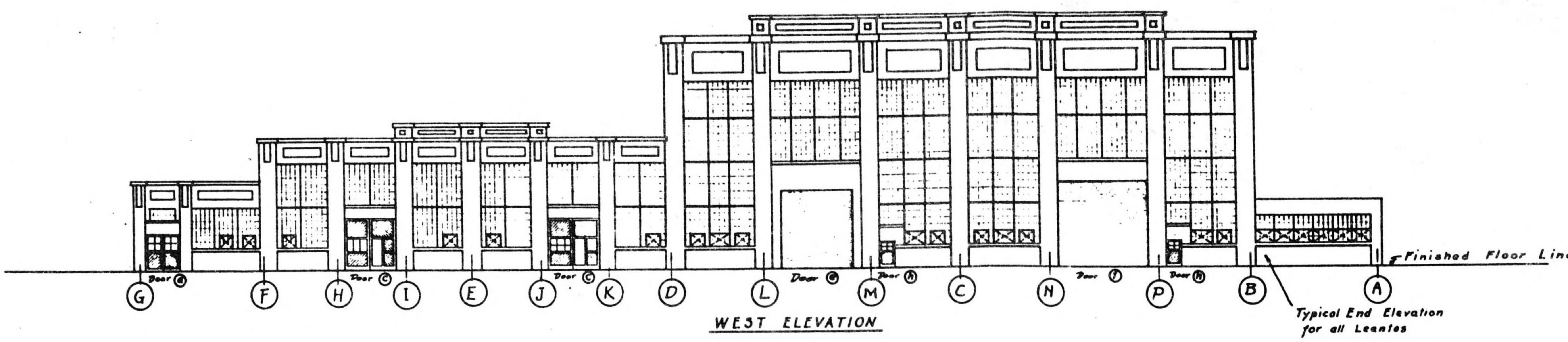
REDUCED to 66 per cent

Notes:- All glass in side wall sash ⅛" factory ribbed 14"x20"
" " skep hung sash ¼" ribbed wire glass.
All sash to be securely anchored to concrete walls in addition to usual grout
All vertical sash mullions to extend at least 2" into sills

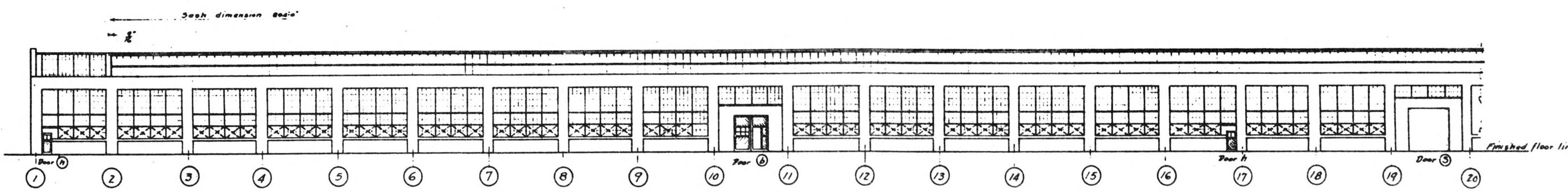
SHIBAURA ENGINEERING WORKS
TSURUMI PLANT
HEAVY MACHINE SHOP
BUILDING No. 7.
ELEVATIONS
Scale ⅛"-1'-0"

	Approved by	Designed by	Drawn by	Checked by RE.JS
	Date	Date	Date	Date 6-12-20
Traced by / Date	Description	Appd. by	芝浦製作所	T-166206

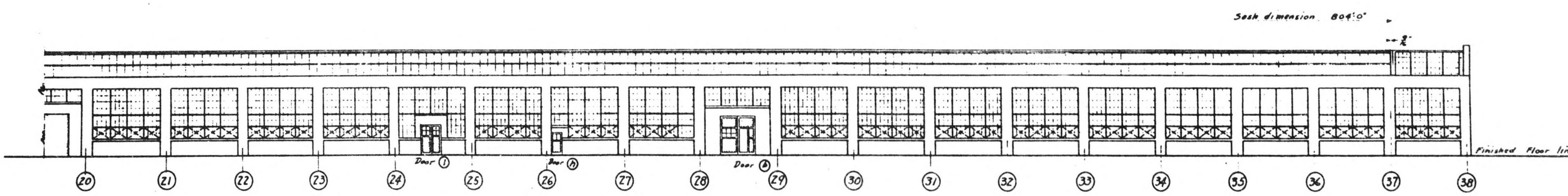
EX. NO 15



WEST ELEVATION



NORTH ELEVATION



NORTH ELEVATION

Notes :- All glass in side wall sash 1/8" factory ribbed 14"x20"
" " top hung sash 1/4" ribbed wire glass
All sash to be securely anchored to concrete walls in addition to usual grout
All vertical sash mullions to extend at least 2" into sills.

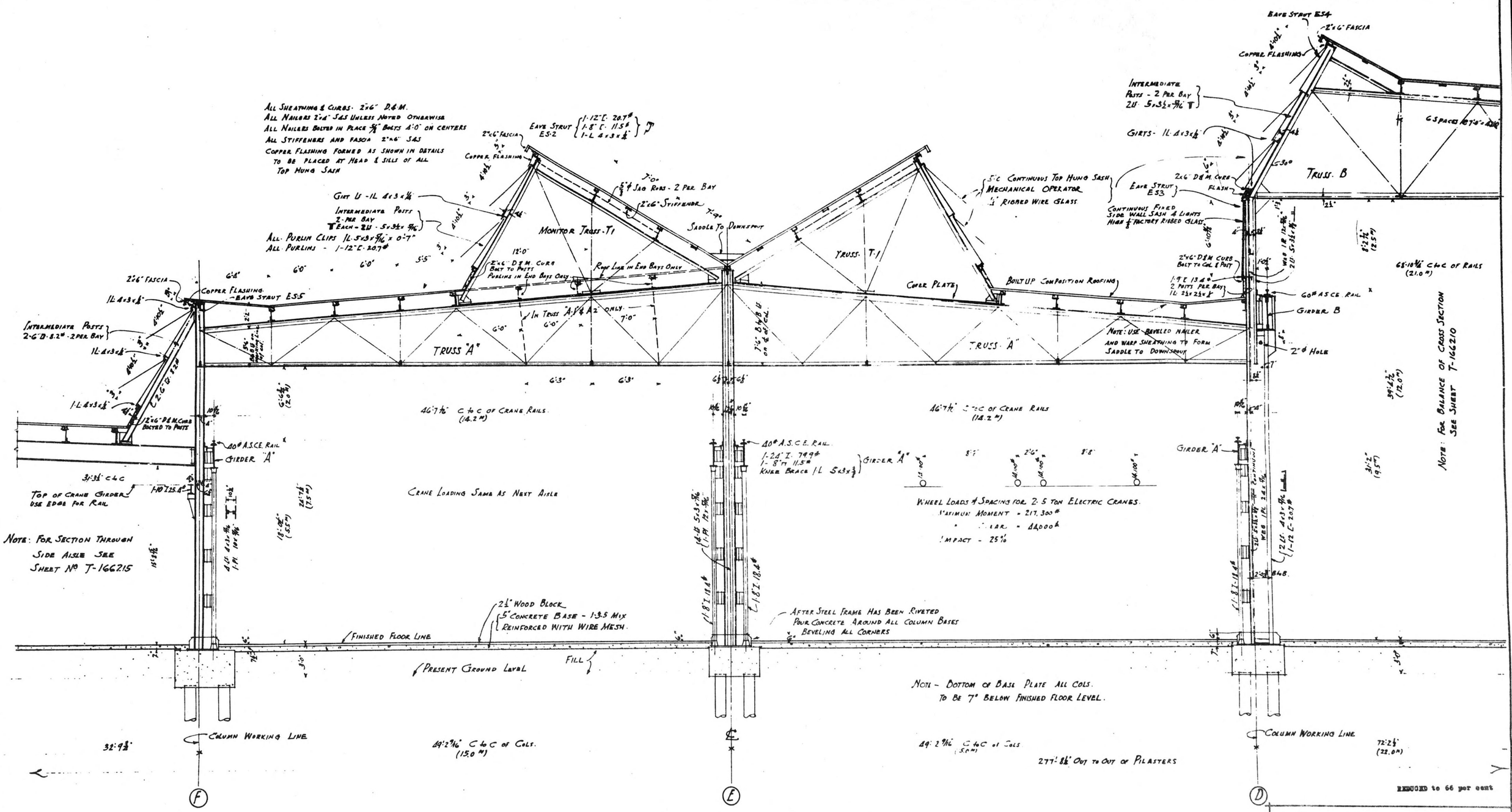
REDUCED to 66 per cent

SHIBAURA ENGINEERING WORKS
TSURUMI PLANT
HEAVY MACHINE SHOP
BUILDING No. 7.
ELEVATIONS
Scale 1/16" = 1'0"

Revised By	Date	Description	Chkd By	Approved by	Designed by	Drawn by	Checked by
		[illegible]		Date	Date	Date	Date [illegible]

芝浦製作所 T-166207

EX. NO. 16



· CROSS · SECTION · LOOKING · EAST ·

Scale ¼" = 1'-0"

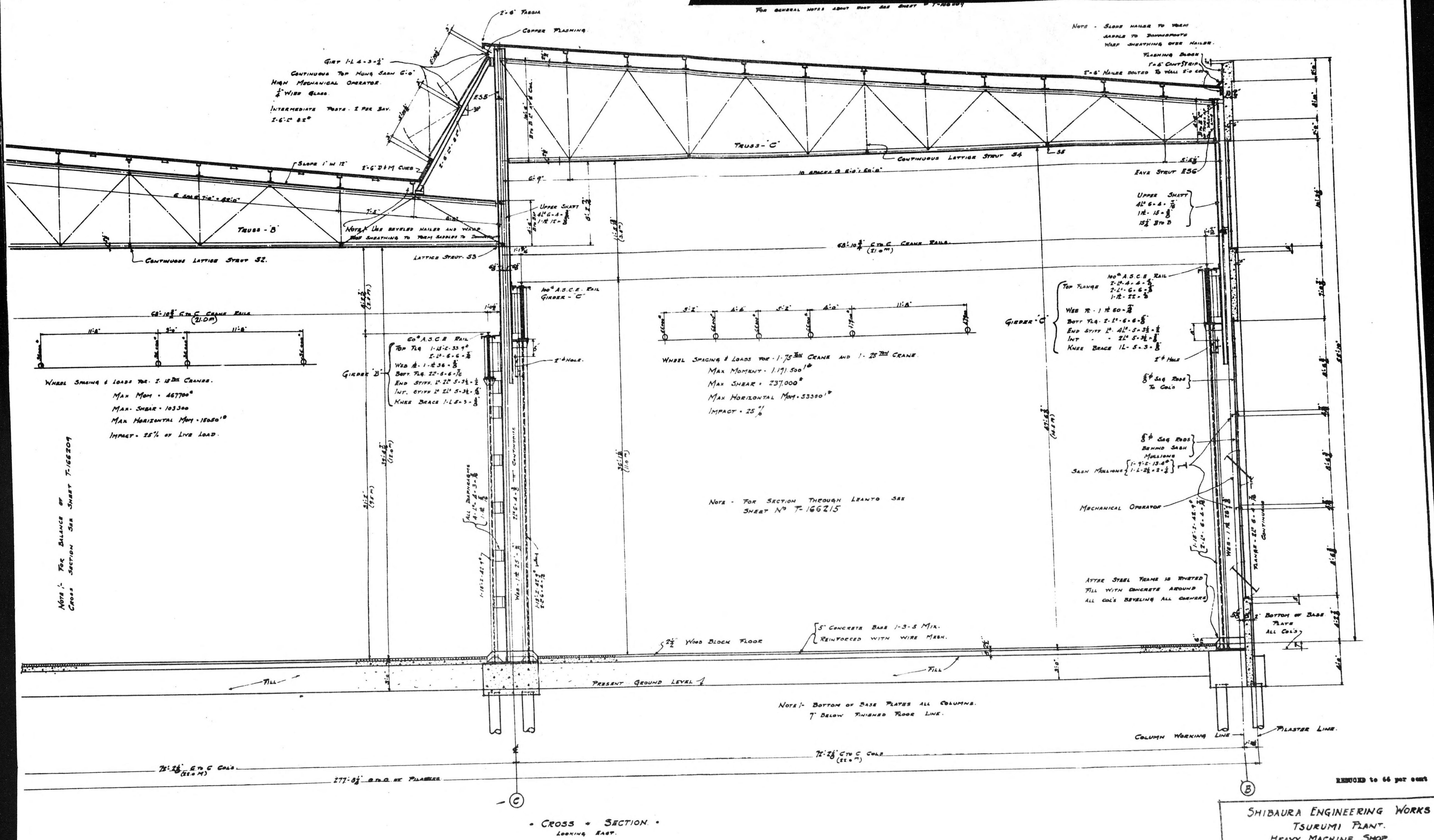
REDUCED to 66 per cent

SHIBAURA ENGINEERING WORKS
TSURUMI PLANT
HEAVY MACHINE SHOP
BUILDING No 7
CROSS SECTION
Scale ¼"=1'-0"

Approved By	Designed By	Drawn By	Checked By
Date	R.E.T.S. Date	R.E.T.S. Date	R.E.T.S. Date 5-4-38

芝浦製作所 T-166209

EX. NO. 17



· Cross · Section ·
Looking East.

REDUCED to 66 per cent

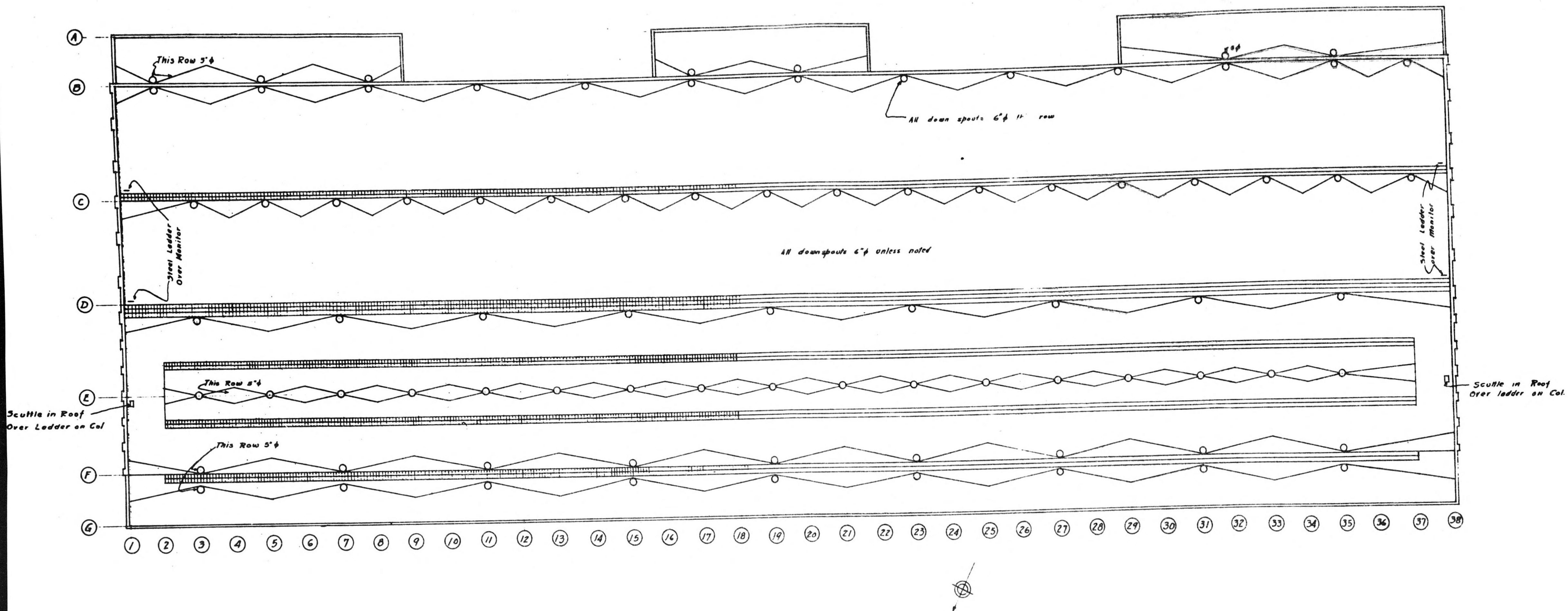
SHIBAURA ENGINEERING WORKS
TSURUMI PLANT.
HEAVY MACHINE SHOP.
BUILDING No 7.
CROSS SECTION
Scale ⅛" = 1'-0

Approved By	Designed By	Drawn By	Checked By
Date -	R. & J. Date -	R. E. & J. Date -	R. & J. Date

Revised By	Date	Description	Chk'd By

芝浦製作所 T-166210

EX. NO. 18



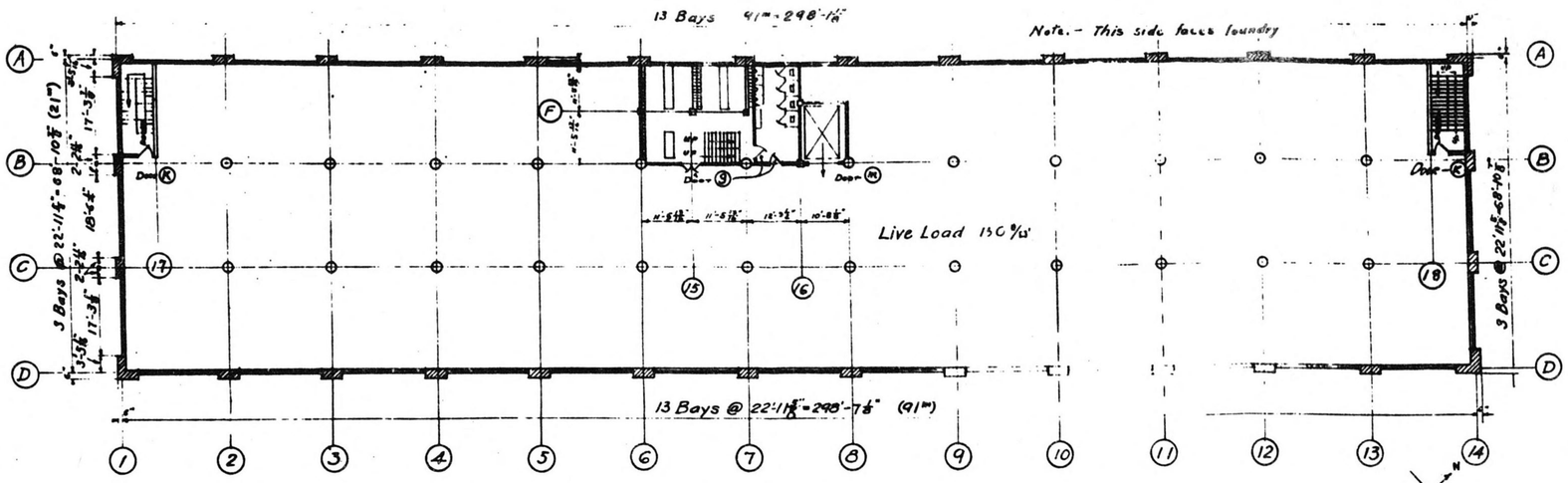
REDUCED to 66 per cent

SHIBAURA ENGINEERING WORKS
TSURUMI PLANT
HEAVY MACHINE SHOP
BUILDING NO. 7.
ROOF PLAN
Scale 1/16" = 1'-0"

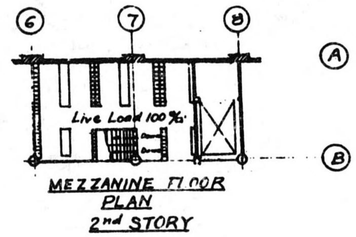
Revised by	Date	Description	Chkd by	Approved by	Designed by	Drawn by	Checked by
	9-11 1933	Added ladders & Scuttles ...	[illegible]	Date	Date	Date	[illegible] Date 6-19-33
	6-19 1933	...	[illegible]				

芝浦製作所 T-166211

EX. NO. 19

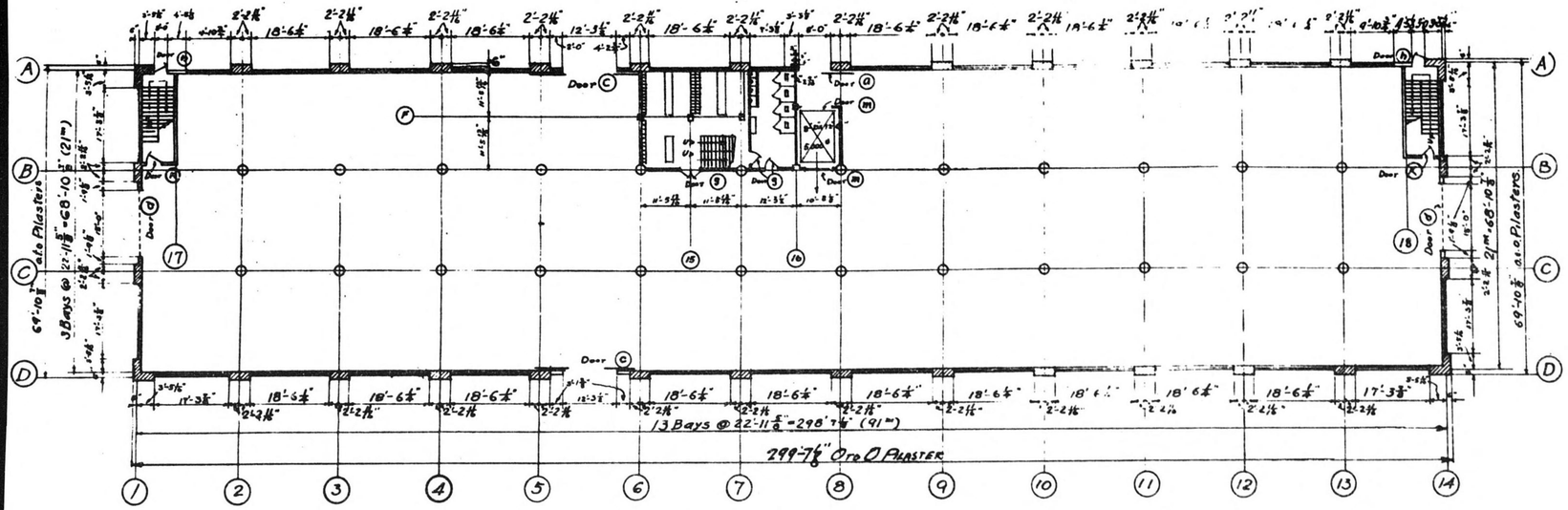


2nd. FLOOR PLAN

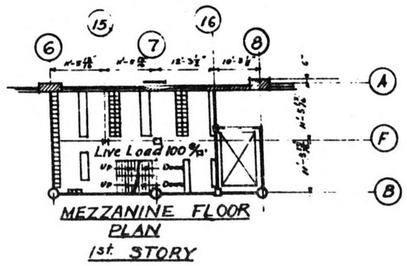


MEZZANINE FLOOR PLAN 2nd STORY

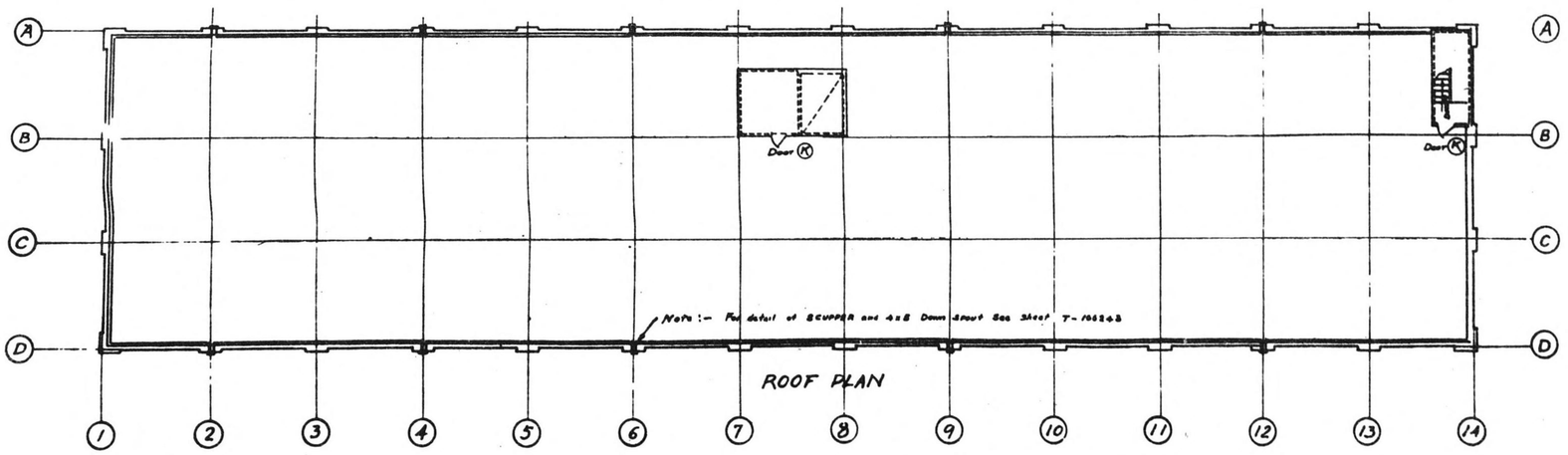
Note:- When locating bldg. note direction of compass



1st FLOOR PLAN



MEZZANINE FLOOR PLAN 1st STORY



ROOF PLAN

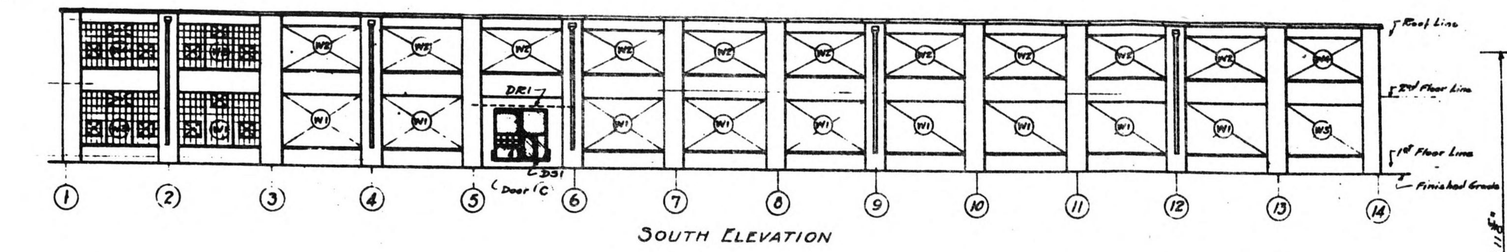
REDUCED to 66 per cent

SHIBAURA ENGINEERING WORKS
TSURUMI PLANT
PATTERN SHOP -
BUILDING No 11
FLOOR AND ROOF PLANS

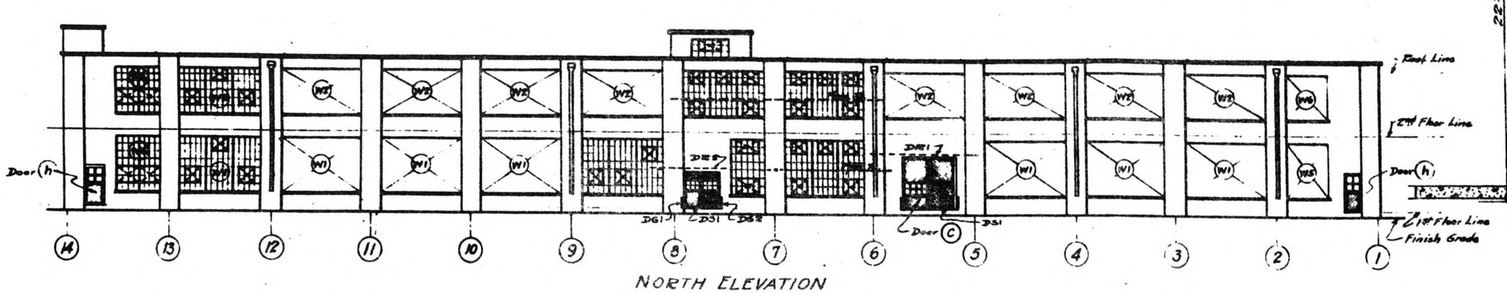
DESIGNED BY	DESIGNED BY	DRAWN BY	CHECKED BY
DATE	DATE	DATE	DATE 5-25-37

芝浦製作所 T-166261

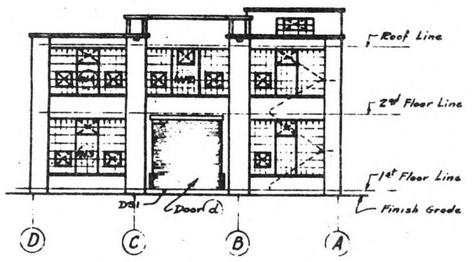
EX. NO. 20



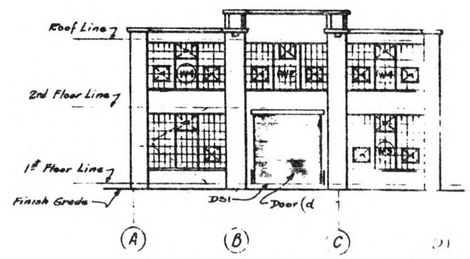
SOUTH ELEVATION



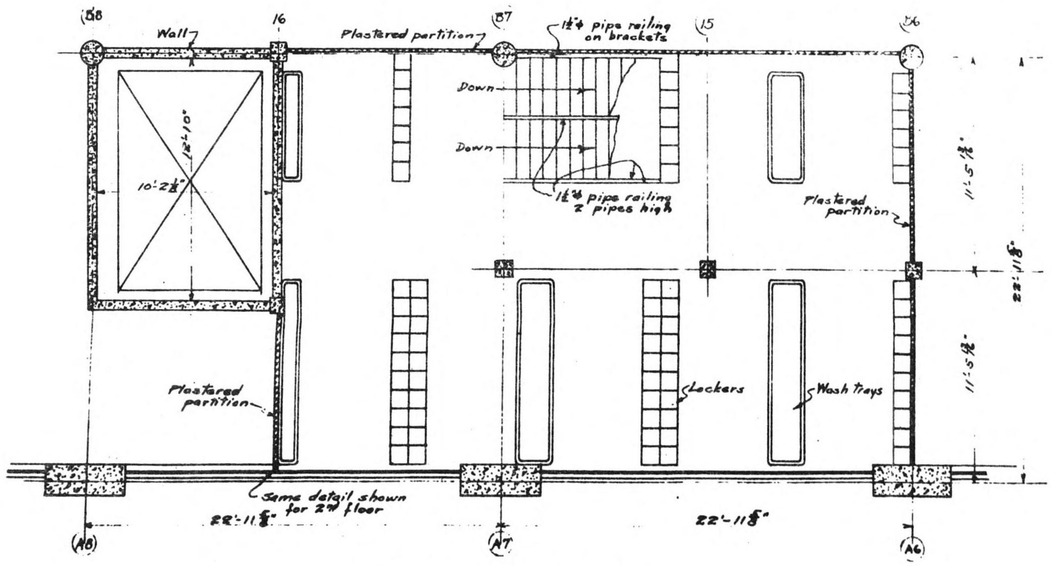
NORTH ELEVATION



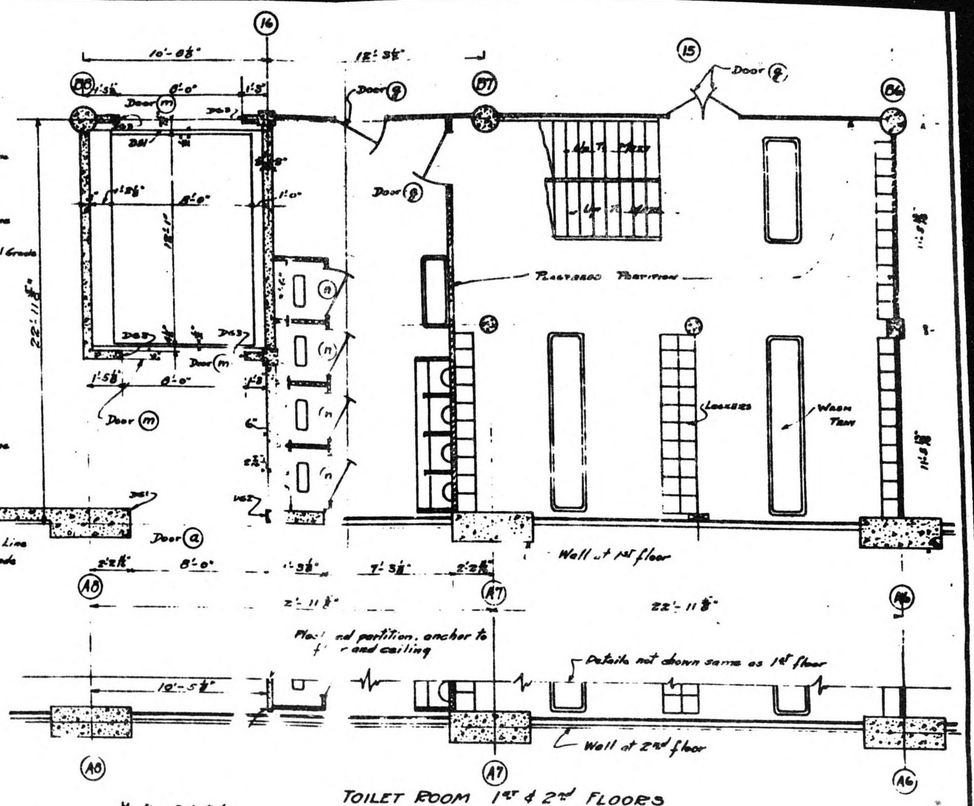
EAST ELEVATION



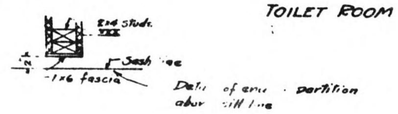
WEST ELEVATION



MEZZANINE FLOOR 1ST & 2ND STORY



TOILET ROOM 1ST & 2ND FLOORS



Detail of end partition abut sill line

Notes:

All glass to be ⅛" factory ribbed 14"x20"
Door Guards DG1 2 @ 2½"x2½"x¼"x4'-0" with wall anchors
Door Guards DG2 1-9"L-13.4"x4'-0" with wall anchors (at all exterior doors where indicated)
Door Guards DG3 1-6"L-8.2"x4'-0" with wall anchors (at all elevator doors)
Door Sills DS1 L 3"x3"x¼" Width of opening - anchors.
Door Runs DR1 1-L 3"x3"x¼"x25'-0" bolted to wall.
Door Runs DR2 1-8"L-11.5"x16'-6" bolted to wall.
All plastered partitions to be 2x4 studs - metal lath - cement plaster
All toilet partitions to be slate same as warehouse

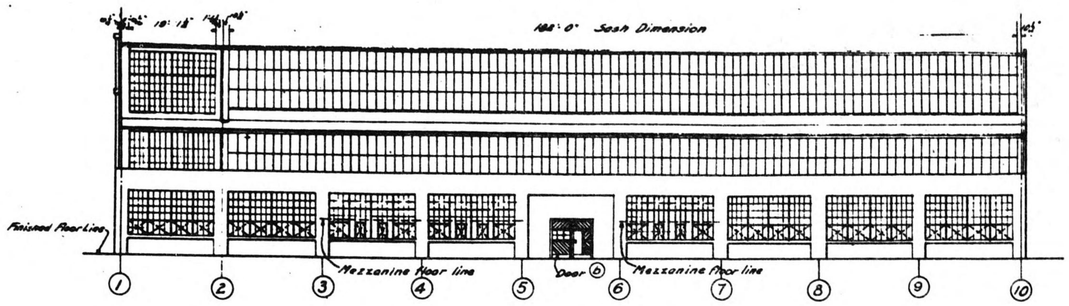
REDUCED to 66 per cent

SHIBAURA ENGINEERING WORKS
TSURUMI PLANT
PATTERN SHOP
BUILDING No 11
ELEVATIONS
Scale ¼"=1'-0" and ⅛"=1'-0"

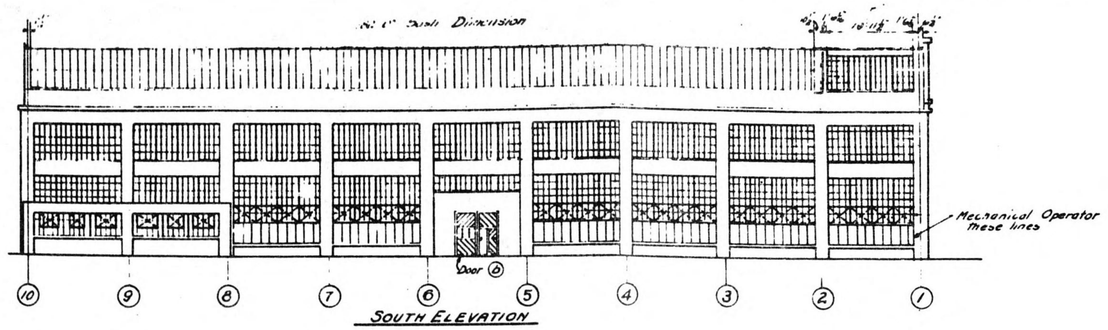
Approved by	Designed by	Drawn by	Checked by
			T.C.I.S.

芝浦製作所 T-166262

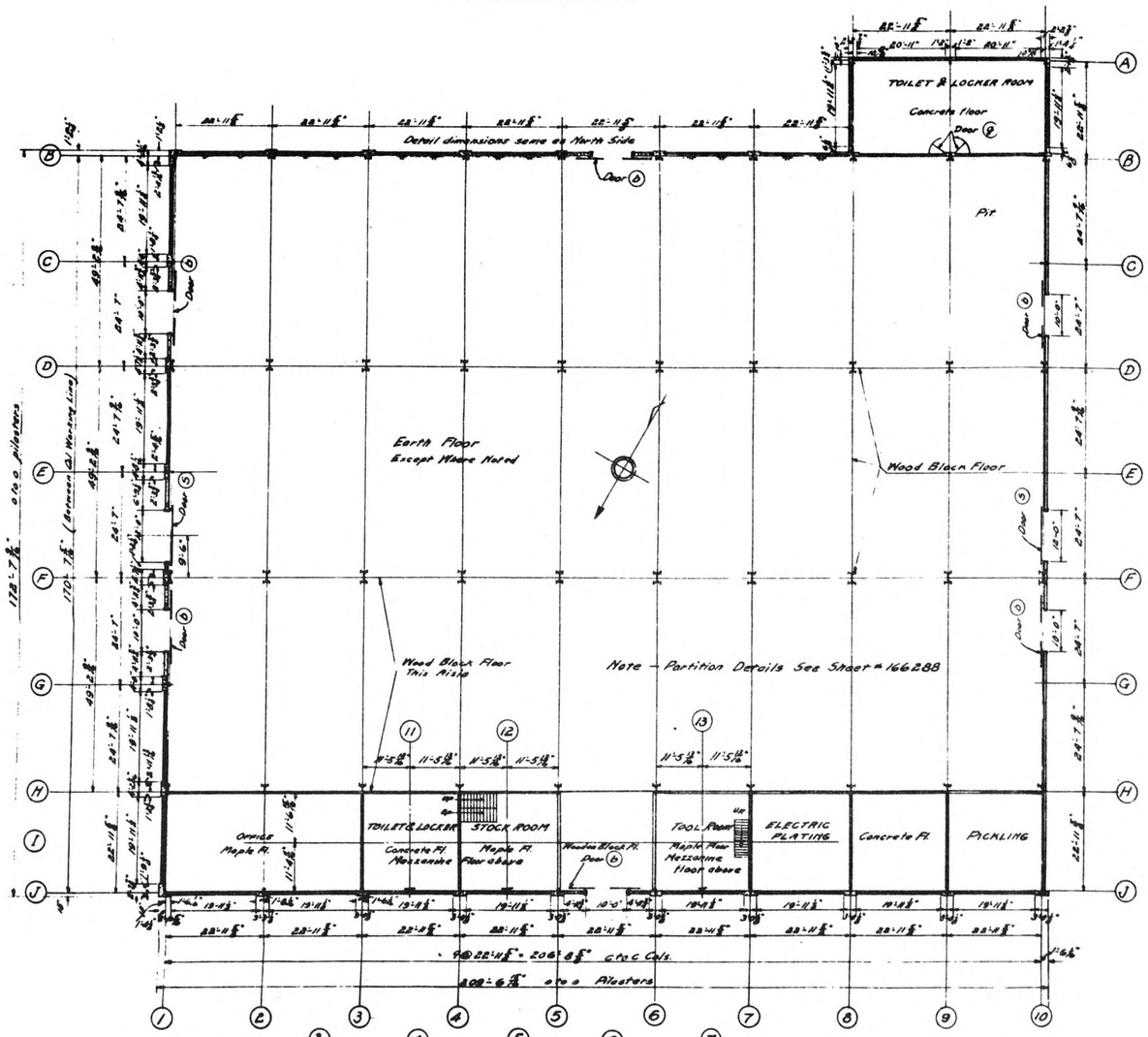
EY. NO. 21

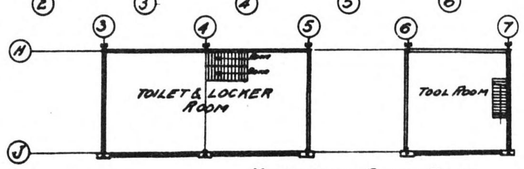


NORTH ELEVATION

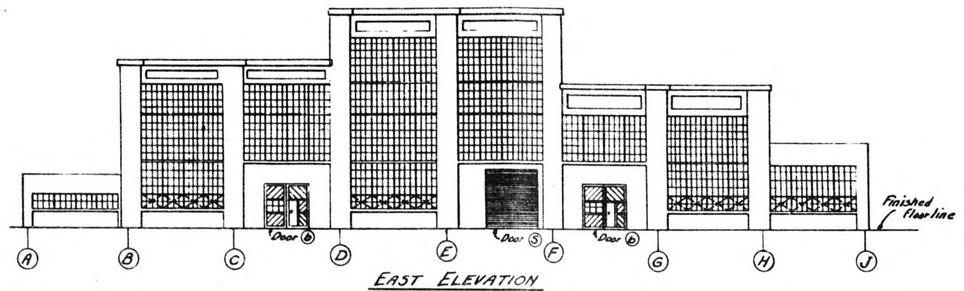


SOUTH ELEVATION

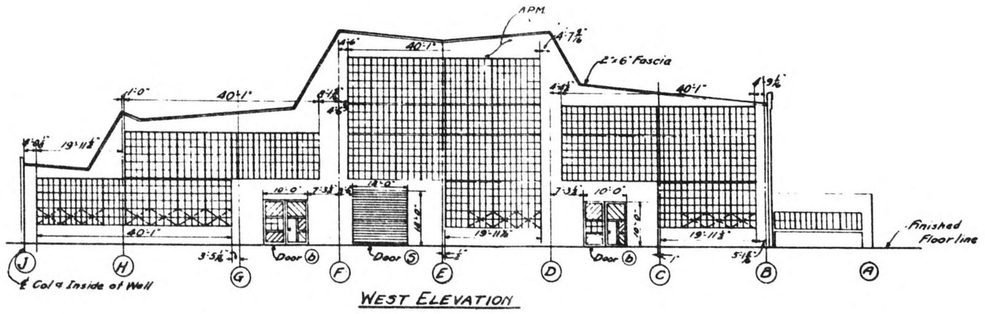




MEZZANINE FLOOR PLAN



EAST ELEVATION



WEST ELEVATION

Note All Glass in Sidewall Sash ⅛" Factory Ribbed
All Glass in Top Hung Sash ⅛" Ribbed Wire

REDUCED to 66 per cent

SHIBAURA ENGINEERING WORKS
TSURUMI PLANT
FORGE SHOP
BUILDING No. 16
FLOOR PLAN & ELEVATIONS
SCALE 1/8" = 1'-0"

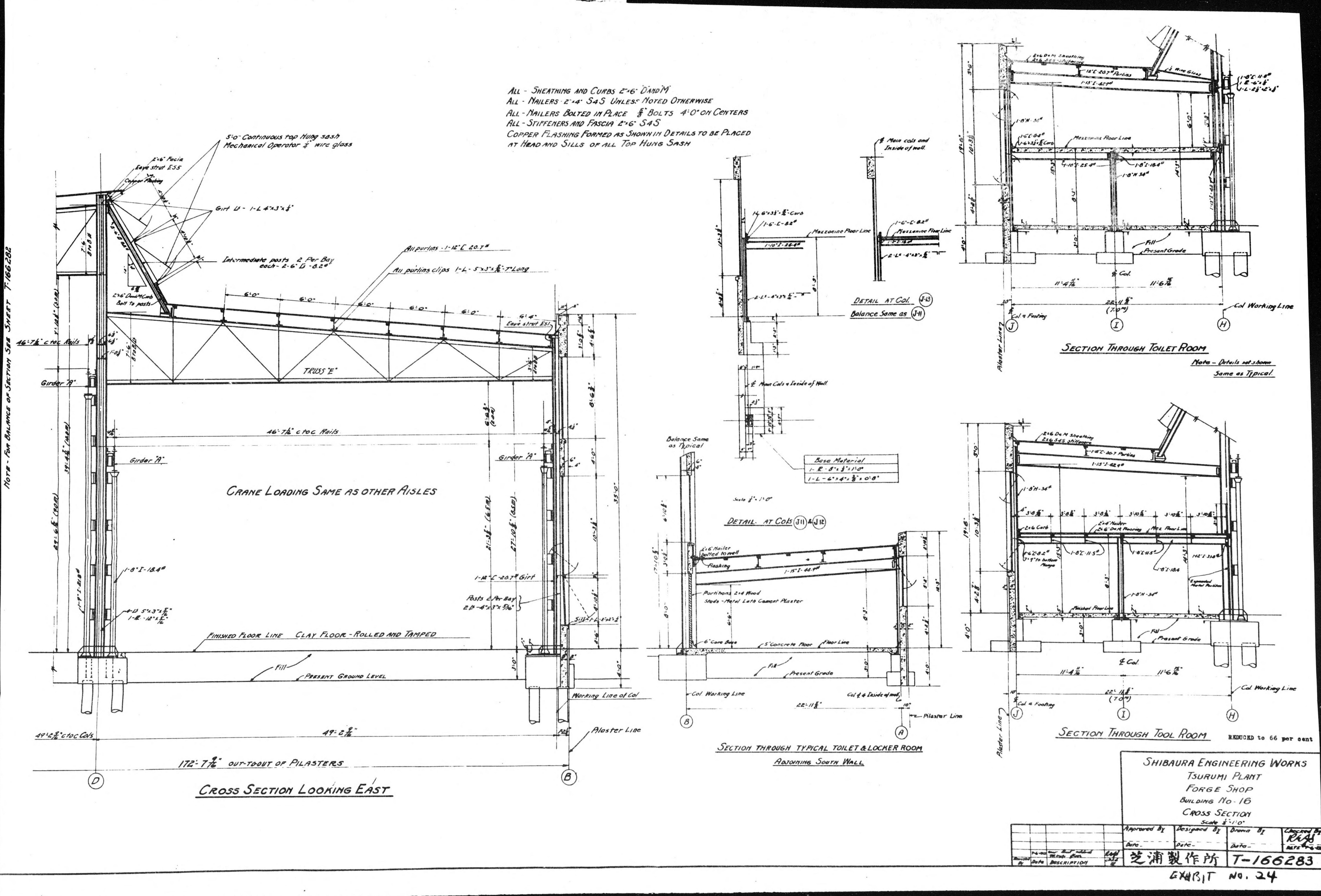
			Approved by	Designed by	Drawn by	Checked by
			Date	Date	Date	Date

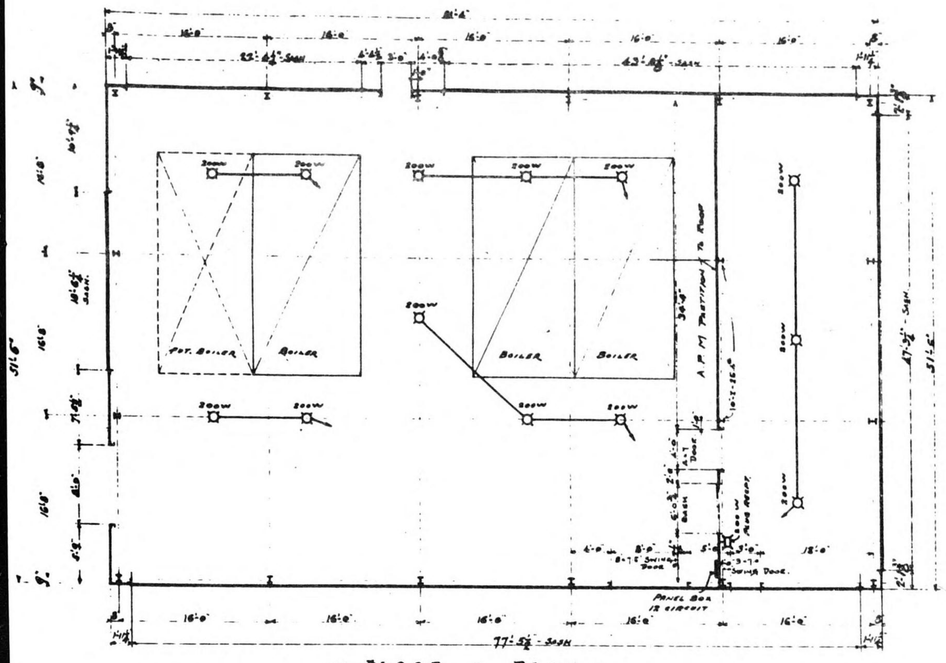
芝浦製作所

T-166281

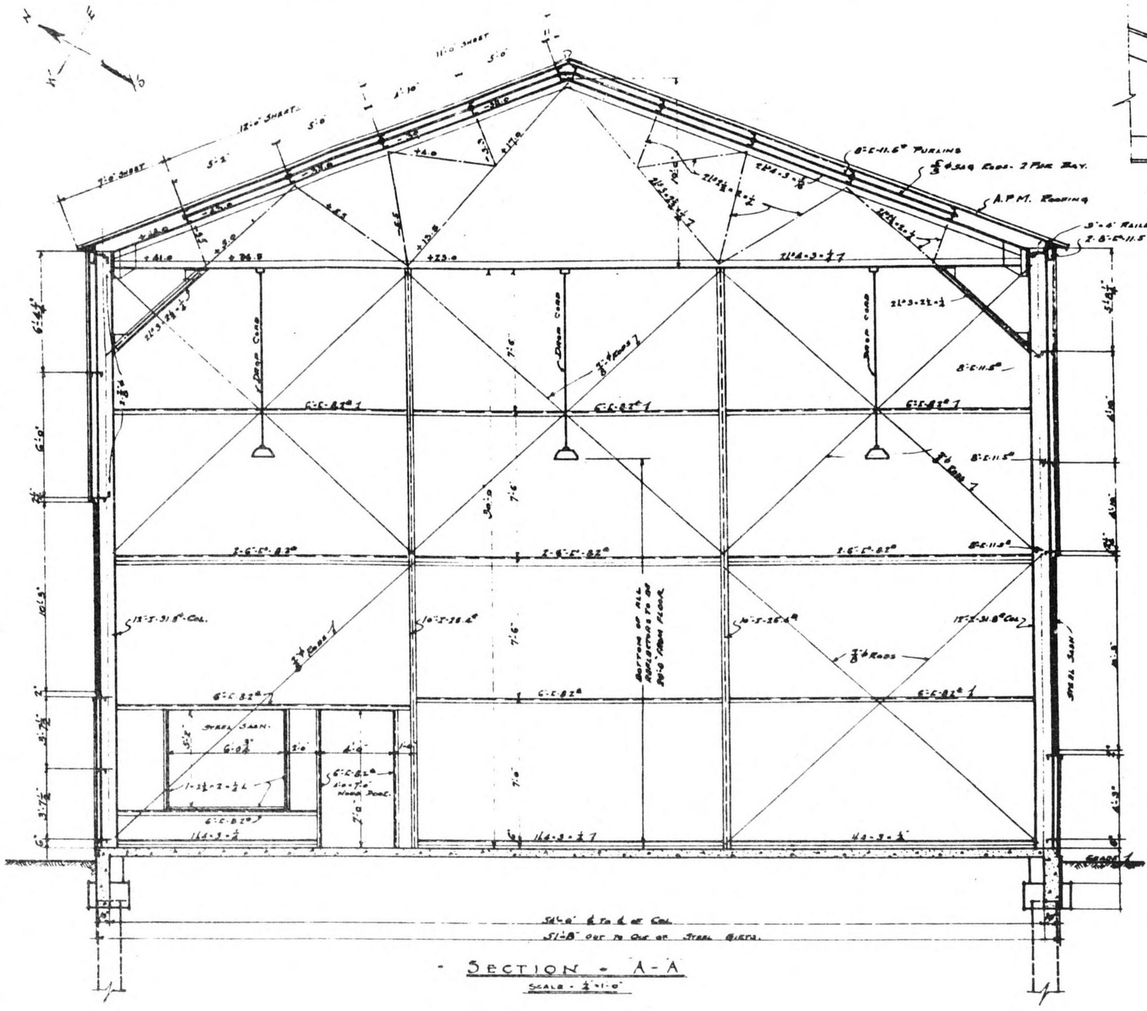
EX. NO. 22


ALL SHEATHING AND CURBS 2"x6" D&M
ALL NAILERS - 2"x4" S4S UNLESS NOTED OTHERWISE
ALL NAILERS BOLTED IN PLACE 5/8" BOLTS 4'-0" ON CENTERS
ALL STIFFNERS AND FASCIA 2"x6" S4S
COPPER FLASHING FORMED AS SHOWN IN DETAILS TO BE PLACED AT HEAD AND SILLS OF ALL TOP HUNG SASH
5'-0" CONTINUOUS TOP HUNG SASH
MECHANICAL OPERATOR 1/4" WIRE GLASS
BUILT UP COMPOSITION ROOFING
2x6" FASCIA
COPPER FLASHING
EAVE STRUT ES5
TRUSS "F"
TRUSS "E" EXCEPT AS NOTED
INTERMEDIATE POSTS 2 PER BAY
GUSSET PLATE
40# ASCE RAIL
GIRDER "A"
46'-7 1/2" (14.2m)
WHEEL LOADS AND SPACING FOR 2-5 TON ELECTRIC CRANES
MAXIMUM MOMENT - 217,300#
MAXIMUM SHEAR - 44000#
IMPACT 25%
CRANE LOADING SAME AS NEXT AISLE
NOTE - AFTER STEEL FRAME HAS BEEN RIVETED POUR CONCRETE FILL AROUND ALL COLUMN BASES BEVELING ALL CORNERS
FINISHED FLOOR LINE
2 1/2" WOOD BLOCK FLOOR
CLAY FLOOR ROLLED AND TAMPED
PRESENT GRADE
PRESENT GROUND LEVEL
NOTE FOR BALANCE OF SECTION SEE SHEET T-166283
49'-2 7/16" C TO C OF COL. (15.0m)
49'-2 7/16" C TO C OF COLS (15.0m)
22'-11 5/8" (7.0m)
172'-7 1/2" O TO O PILASTERS
J
H
F
D
REDUCED to 66 per cent
SHIBAURA ENGINEERING WORKS
TSURUMI PLANT
FORGE SHOP
BUILDING NO 16
CROSS SECTION LOOKING EAST
SCALE 1/4" = 1'-0"
Approved By
Designed By
Drawn By
Checked By
Description
芝浦製作所
T-166282
EX. NO. 23

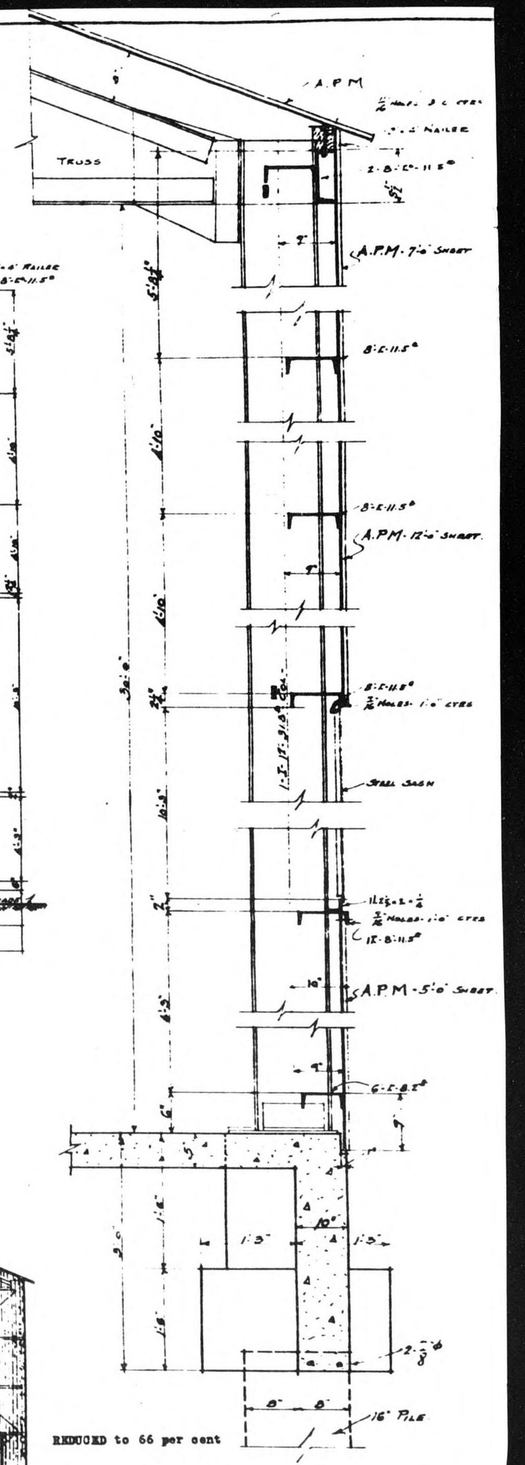

ALL - SHEATHING AND CURBS 2"x6" D AND M
ALL - NAILERS 2"x4" S4S UNLESS NOTED OTHERWISE
ALL - NAILERS BOLTED IN PLACE 5/8" BOLTS 4'-0" ON CENTERS
ALL - STIFFENERS AND FASCIA 2"x6" S4S
COPPER FLASHING FORMED AS SHOWN IN DETAILS TO BE PLACED AT HEAD AND SILLS OF ALL TOP HUNG SASH
NOTE - FOR BALANCE OF SECTION SEE SHEET T-166282
5'-0" Continuous top Hung sash Mechanical Operator 1/4" wire glass
All purlins 1-12" [20.7#
All purlins clips 1-L-5"x3"x5/16"-7" Long
Intermediate posts 2 Per Bay
TRUSS "E"
Girder "A"
46'-7 1/4" c to c Rails
CRANE LOADING SAME AS OTHER AISLES
FINISHED FLOOR LINE
CLAY FLOOR - ROLLED AND TAMPED
Fill
PRESENT GROUND LEVEL
Working Line of Col
Plaster Line
49'-2 9/16" c to c Cols
172'-7 9/16" OUT-TO-OUT OF PILASTERS
CROSS SECTION LOOKING EAST
DETAIL AT COL. J-13
Balance Same as J-11
Base Material
1-R-8"x1/2"x1'-0"
1-L-6"x4"x1/2"x0'-8"
DETAIL AT Cols J-11 & J-12
Balance Same as Typical
Partitions 2x4 Wood Studs - Metal Lath Cement Plaster
5" Concrete Floor
Floor Line
Present Grade
Col. Working Line
Plaster Line
SECTION THROUGH TYPICAL TOILET & LOCKER ROOM
ADJOINING SOUTH WALL
Mezzanine Floor Line
Col Working Line
SECTION THROUGH TOILET ROOM
Note - Details not shown Same as Typical
SECTION THROUGH TOOL ROOM
REDUCED to 66 per cent
SHIBAURA ENGINEERING WORKS
TSURUMI PLANT
FORGE SHOP
BUILDING NO. 16
CROSS SECTION
Approved By
Designed By
Drawn By
Checked By
Date
DESCRIPTION
芝浦製作所
T-166283
EXHIBIT NO. 24



FLOOR PLAN
SCALE: ¼"=1'-0"



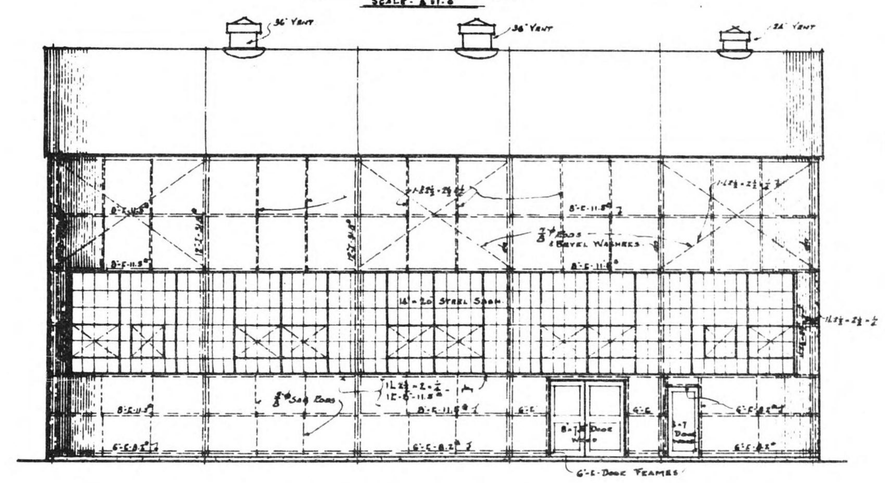
SECTION A-A
SCALE: ¼"=1'-0"



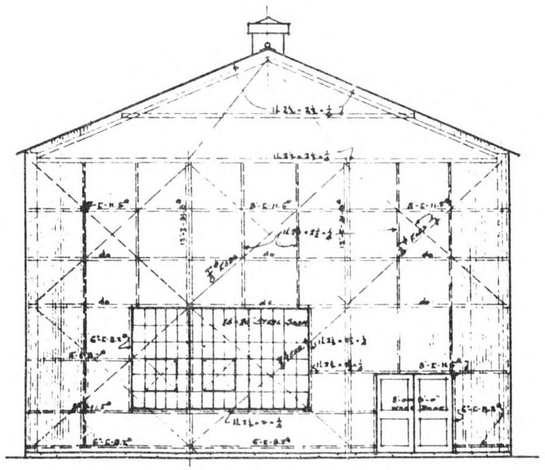
REDUCED to 66 per cent

1" SCALE SECTION THRU EAST WALL

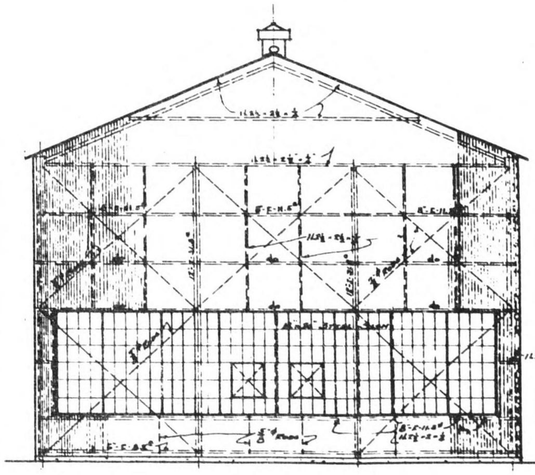
NOTE: FOR DETAILS OF BLDG. & BOILER FDTS. SEE SH. M-BH.-2



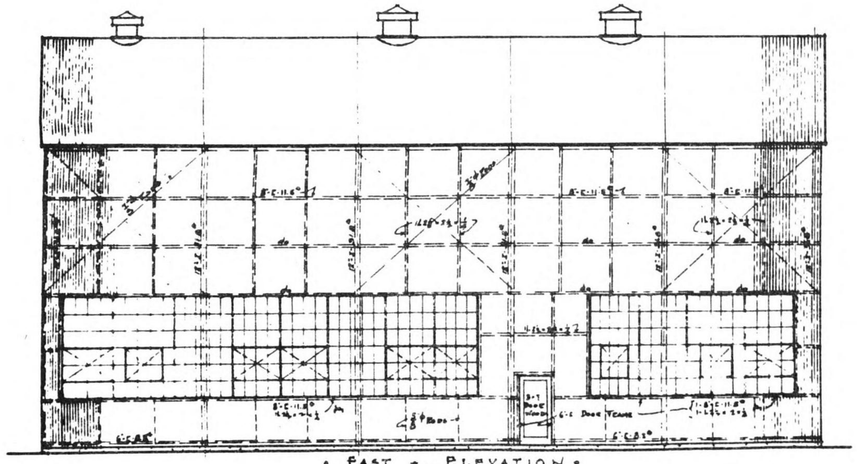
WEST ELEVATION
SCALE: ¼"=1'-0"



NORTH ELEVATION
SCALE: ¼"=1'-0"



SOUTH ELEVATION
SCALE: ¼"=1'-0"



EAST ELEVATION
SCALE: ¼"=1'-0"

The H. K. Ferguson Company
ENGINEERS AND BUILDERS
6523 EUCLID AVE. PHONE RANDOLPH 6854
CLEVELAND

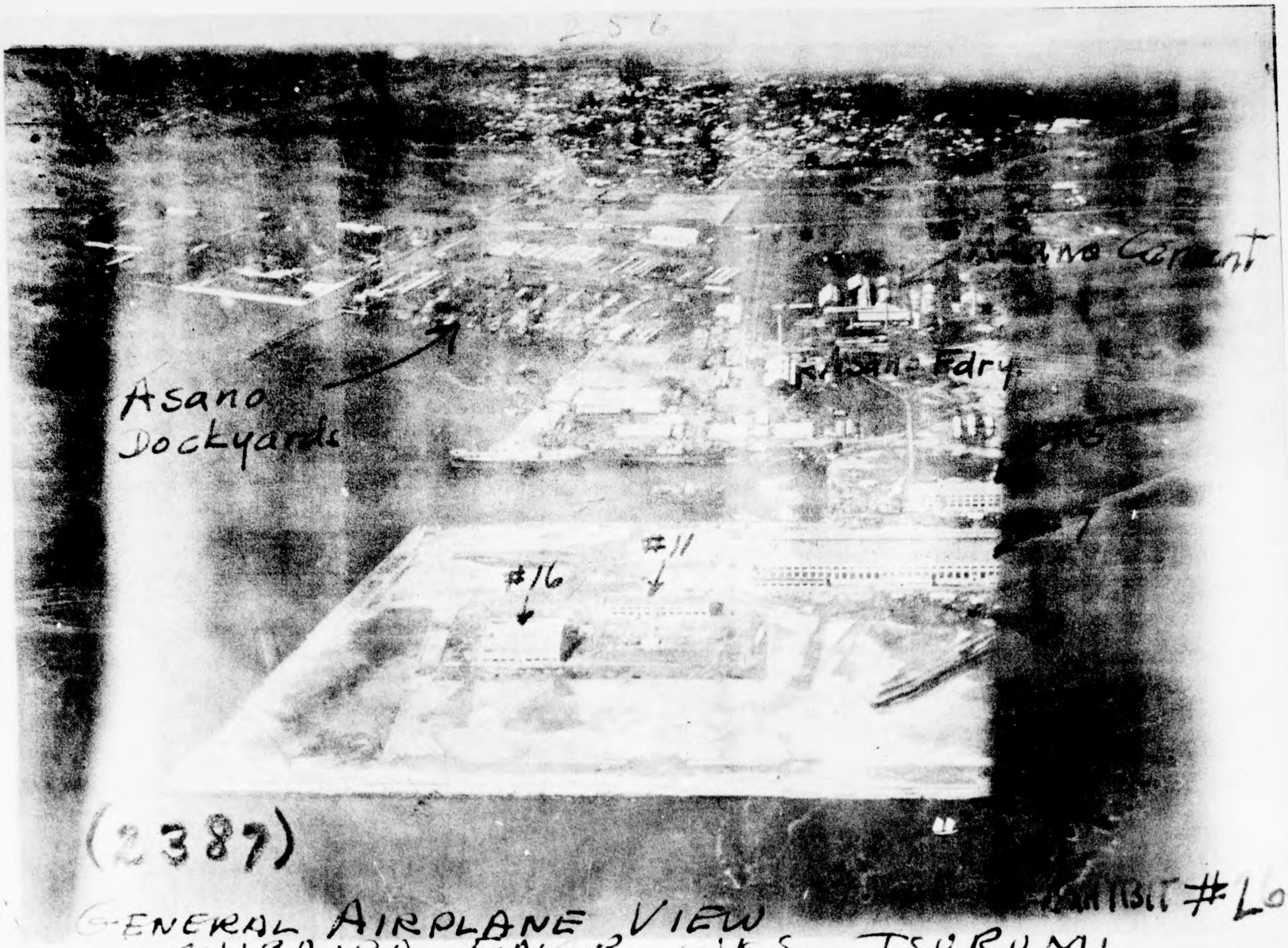
FERGUSON ORIGINATED STANDARD FACTORIES

SHIBAURA ENGINEERING WO
TSURUMI, JAPAN.
DETAILS OF BLDG & LIGHTING
BOILER HOUSE

DRAWN BY	DATE	CONTRACT NUMBER	168-A
TRACED BY	DATE	SHEET NUMBER	M-BH-1
CHECKED BY	DATE		
SCALE AS NOTED			

REVISED	BY	DESCRIPTION	DATE
APPROVED CONSTRUCTION		DATE	

EXHIBIT NO. 25



(2387)

EXHIBIT #10

GENERAL AIRPLANE VIEW
SHIBAURA ENGR. WKS. TSURUMI

(14)

2680

100 sets
Copy 1

Copy No. 12
Confidential

DEPARTMENT OF JUSTICE

WAR DIVISION

ECONOMIC WARFARE SECTION

REPORT ON

FORD MOTOR COMPANY - YOKOHAMA

March 2, 1943

Submitted by: Robert A. Nitschke
Economic Warfare Section
Department of Justice
Chicago, Illinois

TABLE OF CONTENTS

LIST OF EXHIBITS

1. Plot plan showing the layout of the plant, the assembly building, warehouse, office, loading dock and railway tracks, pyroxylin building, barge canal, water tank, boiler house and Tokyo Bay.

2. General view of the plant from the west, showing the north and west elevations of the main building.

3. General view of the main plant showing the south and west elevations from across the barge canal.

4. General view of the plant from the main entrance gate at the northeast corner.

5. Floor plan of main assembly building.

6. Roof plan of main assembly building.

7. Cross section of the assembly aisle in the main assembly building.

8. Cross section of the warehouse aisle in the main assembly building.

9. Cross section of the office portion of the building.

10. Elevations of the entire plant.

11. Elevations and details of the office portion of the building.

12. Plans, sections, elevations, and details of the pyroxylin building.

13. Plans, section and detail of the railway loading dock.

2680

Economic Warfare Section
War Division
Department of Justice
Washington, D.C.

Confidential Report
March 2, 1943
Re: Ford Motor Company - Yokohama
Submitted by: Robert A. Nitschke
Economic Warfare Section
Department of Justice
Chicago, Illinois

FORD MOTOR COMPANY - YOKOHAMA

I. INTRODUCTION

The Ford Motor Company's plant in Japan was constructed in 1927 by H. K. Ferguson Company, engineers and builders, Cleveland, Ohio. This report contains material relating to the construction and physical appearance of the Ford Motor Company plant, as obtained from the H. K. Ferguson Company. There has been no attempt to make a definitive analysis of the strategic military and economic significance of the Ford Motor Company plant and its production. This information will be secured from the Ford Motor Company and will be included in a supplemental report.

II. IMPORTANCE TO THE JAPANESE WAR EFFORT

The general importance of the Ford Motor Company's Yokohama plant is well known. It is a modern automobile plant with the finest modern equipment, originally built for the production of 200 cars per day, and is now engaged in the production of trucks and tanks for the Japanese Army.

The plant originally functioned as a branch assembly plant of the Ford Motor Company, parts shipped from this country being warehoused and assembled there.

III. DESCRIPTION OF THE PLANT

This plant consists of a main assembly building and warehouse together with auxiliary buildings. Construction was begun in 1927. It is located on the edge of Tokyo Bay near Yokohama in the suburban township of Koyasu. Exhibit No. 1 is the plot plan showing the layout of the plant, the assembly building, warehouse, office, loading dock and railway tracks, pyroxylin building, barge canal, water tank, boiler house, and Tokyo Bay.

Exhibit No. 2 is a general view of the plant from the west, showing the north and west elevations of the main building, with the barge canal in the foreground, Tokyo Bay off to the right, the covered loading dock and railroad tracks at the far left, also the elevated water tower, smokestack, and boiler house from above. The boiler house is easily located by the stack in the northwest corner of the main building.

(OVER)

Exhibit No. 3 is a general view of the main plant showing the south and west elevations from across the barge canal. The barge canal is in the foreground of the picture, with the warehouse, assembly building and office buildings toward the rear in that order. The boiler house stack and elevated water tower are in the background in the left side of the picture.

Exhibit No. 4 is a general view of the plant from the main entrance gate at the northeast corner, showing the main assembly building, the pyroxylin building in the right foreground, and the boiler house stack immediately behind it. The railway loading dock and the railway tracks are on the right side of the picture. Tokyo Bay is in the background on the far left.

Details of the main assembly building, the pyroxylin building, and the loading dock are shown in the architectural plans described below.

Exhibit No. 5 - Floor plan of main assembly building.

Exhibit No. 6 - Roof plan of main assembly building.

Exhibit No. 7 - Cross section of the assembly aisle in the main assembly building.

Exhibit No. 8 - Cross section of the warehouse aisle in the main assembly building.

Exhibit No. 9 - Cross section of the office portion of the building.

Exhibit No. 10 - Elevations of the entire plant.

Exhibit No. 11 - Elevations and details of the office portion of the building.

Exhibit No. 12 - Plans, sections, elevations, and details of the pyroxylin building.

Exhibit No. 13 - Plans, section and details of the railway loading dock.

IV. TRANSPORTATION

This plant is served by railway facilities on the Tokyo-Yokohama line, and has barge shipping facilities direct to Yokohama Harbor and Tokyo Bay.

V. POWER, WATER SUPPLIES AND COMMUNICATIONS

Power and water supplies were furnished principally from outside sources. The main control panels were located in the assembly portion of the building. The main telephone switchboard was in the office portion of the southeast corner of the building.

VI. ADJACENT INDUSTRIAL AREA

This plant is located in a highly industrial area in the Yokohama Harbor industrial zone. It is surrounded by industries of all character, including among others, the Yokohama dockyard, Uraga Dock Company, Asano Dockyard and Shipbuilding Works, Ishikawajima Dockyards, large storage tanks of the Rising Sun Oil Company, Standard Oil Company of New York, and Nippon Oil Company.

VII. SOURCES

1. W. M. Thompson, Manager, Japan branch office of H. K. Ferguson Co., from 1923 to 1931. His office was located in Tokyo.

2. T. H. Mitchell, General Superintendent of Construction, H. K. Ferguson Company in Japan. Mitchell was present during the construction of the Ford Motor Company plant at Yokohama and is particularly familiar with that plant, surrounding plants and locations.

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DEPARTMENT OF JUSTICE

WAR DIVISION

ECONOMIC WARFARE SECTION

PRELIMINARY REPORT

ON THE RAILWAYS OF INDO-CHINA

March 8, 1943

Submitted by: Charles Layng
Economic Warfare Section
Department of Justice
Chicago, Illinois

LIST OF ILLUSTRATIONS

2795

Economic Warfare Section
War Division
Department of Justice
Washington, D. C.

Preliminary Report
March 8, 1943
Re: Railways of Indo-China(1)
Submitted by: Charles Layng
Economic Warfare Section
Department of Justice
Chicago, Illinois

Preliminary Report on the Railways of Indo-China(1)

The railways of Indo-China are important not only in serving Indo-China, but also for the part they play in the proposed Japanese plan of linking Shanghai and Singapore by an all-rail route. They would also form an important land communication, in connection with the Siamese railways, if Japan should lose control of the sea off Indo-China. The main line, between Saigon and Hanoi is of particular interest in that for most of its length of 1,080 miles, it operates close to the coast and is vulnerable to attack from the sea.

Dates of Building

Most of the Indo-Chinese lines are of relatively new construction. The dates when the various lines were opened for traffic are given below:

Saigon - Mytho	1885
Hanoi - Vinh	1905
Dongha - Tourane	1906-1909
Haiphong - Yunnanfu (China)	1910
Nha Trang - Saigon	1913
Dongha - Vinh	1927
Phnompenh - Mongkolborey	1933
Tourane - Quang Ngai	1934
Quang Ngai - Quinhon	1935
Quinhon - Nha Trang	1936

Gauge and Organization

The lines consist entirely of meter gauge. The Indo-Chinese State Railways (Chemins de Fer de L'Indochine Colonie) comprise 2,524 kilometers, with steam power. A private company, the Haiphong - Yunnanfu Railway (Compagnie Francaise des Chemins de Fer de L'Indochine) operated an 859-kilometer line, with steam power, about half of this line being in China proper. The Hongay-Halam-Campha railway operates a 35-kilometer line, powered partly by steam and partly by electricity.

The organization of these three railways was as follows, immediately prior to the Japanese occupation in 1940.

The Indo-Chinese State Railways were under the charge of the Inspector General of Public Works, whose headquarters were at 82 Boulevard Gambetta,

(OVER)

in Hanoi. The divisional organization came under officers with the following titles and headquarters:

Chef de Conscription	Hanoi
Chef de Conscription	Nha Trang
Chef de Reseau Sud	Saigon
Chef de Reseau Phnompenh-Mongkolborey . .	Phnompenh

The head offices of the Haiphong - Yunnanfu railway were at 89 Rue de Miromesnil, in Paris, France, under Director General Antonin Bodin. The operating director, M. LeCorche and the general inspector, Auguste Hilaire both had headquarters in Hanoi. This company was capitalized for 39,500,000 French francs.

The head offices of the Hongay-Halam-Campha Railway were at 64 Rue de la Chaussee D'Antin in Paris. General Manager Marcheix had headquarters at Hongay, and Commercial Manager Bougon at Haiphong.

Rolling Stock in 1940

The State Railways owned the following equipment in 1940:

Tender locomotives	195
Saddle-tank locomotives	53
Diesel rail cars	6
Passenger cars	438
Freight cars	2,868

The passenger equipment includes first and second class steel dining and sleeping cars. Included among the freight cars were 647 gondola cars, 780 flat cars, and 191 tank cars. The locomotives and passenger cars are equipped with vacuum brakes, as are a small number of the freight cars.

The equipment on the Haiphong - Yunnanfu Railway consisted of the following:

Tender locomotives	51
Saddle-tank locomotives	31
Diesel rail cars	8
Gasoline rail cars	2
Passenger cars	217
Freight cars	950

Of the freight cars 750 were 4-wheel, 10-ton capacity, while the remaining 200 were of 20-ton capacity and equipped with trucks. When the Japanese troops occupied Tonking province and threatened the Chinese province of Yunnan, the Chinese destroyed the section of the railway lying within their frontier.(2) The amount of equipment thus marooned in China is unknown.

The full title of the second privately owned railway in Indo-China is the Hongay-Halna-Campha Mine and Campha Port Railway. It is operated for freight service only and the assumption would be, in view of the equipment it owns, that it serves a sizeable mine, the nature of which is not presently known. This line is described as running "between Hongay, a few kilometers north of Haiphong to Campha port." The equipment owned is listed as follows:

Steam locomotives	17
Electric locomotives	5
Freight cars	800

Such an amount of equipment for a railway only 35 kilometers long is indicative of a very heavy traffic in whatever type of ore the mine or mines produce.

Railway Distances

Following is a table of some of the railway distances in Indo-China:

		Miles
Saigon - Hanoi		1080
Hanoi - Vinh	199	
Vinh - Dongha	186	
Dongha - Tourane	108	
Tourane - Nha Trang	335	
Nha Trang - Saigon	252	
Haiphong - Lao Kai		245
Saigon - Mytho		50
Phnompenh - Mongkolborey		220
Tanap - Xomcuc		12
Phan Rang - Dalat(3)		40
Phnompenh - Battambang		180

Main Line Train Service

The main line of the State Railways between Saigon and Hanoi, is 1080 miles. Under the French regime, the fastest express trains made this distance in 40 hrs. 20 min. These trains had sleeping and dining car service. The speed limit on tangents (track without curves) was 90 k.m.p.h. (56 m.p.h.), but the overall average run of the express train mentioned above was only 27 m.p.h. The fastest train in Indo-China was formerly operated between the administrative center of Hanoi and its port of Haiphong, a distance of 63 miles. This train covered the distance in both directions in 1 hr. 51 min. or at an average speed of more than 33 m.p.h. This train operated over the privately-owned Haiphong - Yunnan Railway. Since the destruction of the Chinese section of this line, it is used for local service between Haiphong and Lao Kai, 245 miles, on the Chinese border.

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The Phnompenh Main Line

This section of the State Railways had no rail connection with the other sections. To go to the terminus of this railway from Saigon it was necessary either to use a highway or to go by rail to Mytho on the delta of the Mekong River and proceed from there to Phnompenh by boat. Since the Japanese occupation in 1940, two sections of former Indo-Chinese territory have been ceded to Thailand (Siam) as indicated on the appended map (Figure No. 1). This has cut the Phnompenh - Mongkolborey Railway, which now crosses the new frontier just southeast of Battambang, about 180 miles from Phnompenh. The former railhead of Mongkolborey is now, therefore, some 40 miles inside Siamese territory. Under French control, this railhead was about 30 miles from the nearest Siamese railhead at Aranya Phadhesa.

Track and Signal

The standard of rail in Indo-China was 60-lb., 12-meter, laid on steel or wood ties, laid 17 to the rail length, or about 2,275 to the mile, on stone ballast. There is still a considerable mileage of 40-lb. and 50-lb. rail, 8 meters long, which had not been replaced with heavier steel before the Japanese moved in.

Hugging the sea as it does, the main line crosses many coastal streams, involving numerous bridges. The only bridge, however, about which any details are available, is the Doumer bridge over the Red River at Hanoi, which is 1,850 meters (2,023 yards) in length and is said to be the longest bridge in the Far East.(4) (Figure No. 2.)

The minimum radius of curves on the main line is 300 meters, but there are few such curves. Most of them are over 500-meter radius.

On the main lines the trains are dispatched by means of the telegraphic block system.

Buildings are solidly constructed. (Figure No. 3.)

Operating Results

The operating results of the State Railways for the year 1940 were as follows:

Gross earnings	159,448,860 francs
Operating expenses	119,304,250 francs
Net earnings	40,114,610 francs
Operating ratio	74.8 per cent

New Lines

The present State Railway system in Indo-China is largely a monument to the interest in the subject of colonial railway construction displayed by former President Doumer of France. He had some rather grandiose schemes in

mind. In 1936, the State Railways announced that they proposed a line from Mytho south to Cu Mau, which would have involved an expensive bridge over the Mekong River, and another line was to be built from Saigon northwest to Tay Ninh. This line, presumably would have used the tracks of a privately-owned, meter-gauge interurban line that runs between Saigon and Thudamont, which already serves as a connection between the main line of the State Railways and an otherwise disconnected branch between Thudamont and Loc Ninh. As of 1940, however, both of these projects had not gotten beyond the paper stage.

An even more ambitious project was announced at the same time, and a small amount of work had actually been done before 1940. This was to build a line from Tanap, on the coast, to Thakek on the Siamese frontier, where it was to connect with a line which the Siamese were to build from their rail-head at M. Kumpu Kwapi to Thakek. This was also to have included a line branching off at Ban Naphao and proceeding south to Kampong Thom and presumbly eventually designed to continue to Phnompenh, thus avoiding the long, circuit-ous route now necessary between Phnompenh, the capital of Cambodia, and Hanoi, the capital of Tonking. All that was accomplished on either of these lines as of 1940 was the completion of 12 miles of line between Tanap and Xomcuc.

The Japanese have announced that they have closed the gap between the Indo-Chinese railhead of Mongkolborey and the Siamese railhead of Aranya Phadhesa.

They have also announced that they intend to close all gaps in railway lines between Shanghai and Singapore. Undoubtedly, they would utilize generally the plan of President Doumer. A railway line was built north from Hanoi to the Chinese frontier towns of Lang Son and Na Cham. This was in-tended to have been continued on into China and, via Lung Chow, Nanning, and Kweilin to connect with the Canton - Hankow Railway at Hengchow. This line had actually been completed between Hengchow and Liuchow and was under con-struction, via Nanning towards the Indo-Burman frontier when the Japanese drove through from the coast and occupied Nanning. This Chinese construction was of standard-gauge. However, following the fall of Nanning, rails already laid in that direction were torn up and used in building a new line north from Liuchow in the direction of Kweiyang.

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NOTES

(1) In view of the urgency of the request of this information, this report consists entirely of material immediately available. Further details will undoubtedly be forthcoming later.

(2) This line was constructed to tap the rich mineral resources of the Yunnan province of China. It crosses tremendous mountain ranges and the section of the line in China (which has now been destroyed) was one of the most costly per mile to construct of any railway ever built. Such a railway affords ample opportunity for sabotage and it will require tremendous labor and expense to rebuilt it.

(3) This line includes two rack-rail sections with gradients of 12.5 per cent.

(4) Another sizeable railway bridge is rather vaguely reported to cross the Song Ka river on the main line just south of Vinh.

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DEPARTMENT OF JUSTICE
WAR DIVISION
ECONOMIC WARFARE SECTION

REPORT ON ECONOMIC SITUATION IN JAPAN, 1936-1941, FROM THE VIEWPOINT OF THE JAPANESE CONSUMER

9 Wa 43

Submitted by:
Ernest B. Price
Economic Warfare Section
Department of Justice
Denver, Colorado

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Economic Warfare Section
War Division
Department of Justice
Washington 25, D. C.

Confidential Report
March 9, 1943
Re: The Economic Situation in Japan, 1936-1941, from the Viewpoint of the Japanese Consumer.
Submitted by: Ernest B. Price
Economic Warfare Section
Department of Justice
Denver, Colorado

REPORT ON ECONOMIC SITUATION IN JAPAN, 1936-1941, FROM THE VIEWPOINT OF THE JAPANESE CONSUMER

The year 1936 marked the peak of commodity supply, from the consumer viewpoint. All types of consumer's goods were available, including a wide variety of foreign luxury goods. While exchange had begun to go against the Japanese Yen, and retail commodity prices were beginning to rise, living costs were not unreasonable.

Beginning in 1937, prices of consumer's goods took a sharp upward turn. To conserve credits abroad and to bolster the Yen exchange, the Japanese Government started restricting imports of foreign luxury goods, which began to get scarce. There was no rationing in 1937.

In 1938, a shortage of coal began; but it was not actually rationed - - it was just difficult to buy. Gas for heating and cooking was rationed, in that its use was limited to certain hours of the day. Electricity was not rationed, but people were urged to economise. Gasoline was rationed, beginning in 1938, and restrictions on its use became increasingly severe. People were urged not to buy foreign luxury goods, and there was strong propaganda in favor of equivalent native goods. In 1938, all places of amusement were closed. The same year marked the beginning of propaganda urging the mixing-in of half-polished or unpolished with polished rice. The explanation given was lack of transportation from the country to the cities.

In early 1939, the shortage of rice began to be seriously felt. Propaganda in favor of the use of unpolished rice became more vigorous; the reason now given being to save both transportation and labor, though the better vitamin content of the unpolished article was also mentioned. In 1939 the coal shortage became more acute; for example, bath houses were forbidden to open in the forenoon, and hours even in the afternoon were progressively restricted. Gasoline was by now rationed to three gallons per month. Taxis would run until they had exhauted their allotment, then quit wherever they happened to be when they ran out of gas. By the end of 1939, both cotton and silk goods had become scarce; dealers could not replace stocks. Cosmetics were completely off the market.

During 1940, steam heat was limited to the hours of 6 to 9 in the morning and 5 to 11 in the evening. Shortage of gasoline was so severe that by the end of 1940 all busses had, by Government order, been converted to charcoal. Sweets

(OVER)

had entirely disappeared from the market. Imported liquors had disappeared, and even Sake and other native alcoholic beverages became scarce. Ceilings of two yen for luncheon, and five yen for dinner were placed on amounts of food which could be purchased in restaurants, and restaurants no longer served rice. Rice rationing started about April 1940. It was at first applied against the dealer, with the result that allotted stocks quickly became exhausted. Later, rice rationing was passed on to the "cho's" or wards; there was never enough even for permanent residents of the ward, and a newcomer was "just out of luck." In school dormitories, potatoes were substituted for rice. During 1940, the use of gas and electric heaters and cookers was stopped completely. Silk goods became unobtainable, and cotton goods were scarce; but rayon was still to be had. Bread, butter, eggs, and fresh vegetables had become scarce; they were not rationed, you just had difficulty in finding any. Sugar was, in effect, also rationed, in that it became increasingly difficult to obtain.

By April, 1941, commodity prices had at least doubled over 1936; and very many commodities - such as butter, eggs, and fresh vegetables - were practically unobtainable. Still, farmers complained that such commodities were rotting in the country - it just did not pay to ship. The Price Control Act functioned badly, in that it put ceilings on retail prices of certain commodities without putting corresponding ceilings on transportation charges.

Summarizing, it may be said that, up to April 1941, the latest date at which any of our informants were in Japan, the rationing system as we know it - with coupons, books, etc. - was not applied in Japan. For the most part, articles and commodities simply became progressively scarcer, or finally disappeared from the market entirely. In certain cases, limitation on consumption was effected by various types of negative prohibitions, such as that on the use of gas and electric heating or cooking appliances, the hours during which bath houses could be open, hours during which steam heat might be used, and so on. In some cases, Government regulation was positive, as in the conversion of busses from gasoline to charcoal. In a few instances, such as gasoline, there appeared to be a specific top allotment per month, but even here our informants did not believe that any ration books or coupons were issued. In the case of rice, the most important food commodity, at first it was a case of "first come first served" until the dealer's supply was exhausted; later, an allotment was made to each ward on the basis of the number of persons resident therein. This supply was distributed by some sort of ward organization, and when it was all distributed for the consumption period, there was no more to be had.

Another point on which informants were agreed was that there was no particular effort made on the part of the Government to explain shortages to the people. It was generally understood, after the beginning of the "China Incident" in June, 1937, that the polished rice was needed by the troops in China, that agricultural labor was scarce because of the demands of the Army, and that transport facilities were needed for transport of troops and military supplies; but the people were not especially informed on these points.

In Japan the people take for granted that what the Government does is right,

and there is no necessity for explanation. Complaining is considered unpatriotic and is rare. The common people are accustomed to hardship, and a little more makes little difference.

This report is based on interviews with the following sources:

DR. CHITOSHI YANAGA

Interviews were had with Dr. Yanaga on February 27 and 29, 1943. Dr. Yanaga, Hawaiian-born citizen of the Japanese race, is head translator for the Denver office of the Office of War Information. He holds a Ph.D. from the University of California (1935). He was in Japan from 1935 to June, 1937, residing at Edogawabashi, Ushigome Ku, Tokyo, doing graduate work in Political Science at Tokyo Imperial University.

MR. and MRS. ARIAKI INOUYE

Mr. Inouye, American-born citizen of the Japanese race, is an instructor at the Navy Language School, University of Colorado, Boulder, Colorado. Interviews were held with Mr. and Mrs. Inouye at Boulder from March 1 to 6, 1943, inclusive. They were in Japan from 1936 to 1938, residing at Edogawabashi, Ushigome Ku, Tokyo. Mr. Inouye was engaged in private study in landscape gardening.

MR. and MRS. FRANCIS HIGUCHI

Mr. and Mrs. Higuchi were interviewed from March 1 to 6, 1943, inclusive, at Boulder, Colorado. Mr. Higuchi, American-born citizen of the Japanese race, is an instructor at the Navy Language School, University of Colorado, Boulder, Colorado. He was in Japan, residing at Edogawabashi, Ushigome Ku, Tokyo, from October 1935 to April 1941. Part of this period he attended classes at Waseda University; for a period he was a junior clerk at the American Consulate in Yokohama; and for a period took courses in Economic History at Tokyo Imperial University. For the greater part of his stay in Japan, Mr. Higuchi had his wife with him.

MISS JUNE TOMITA

Miss Tomita was also interviewed at Boulder, Colorado, from March 1 to 6, 1943. Miss Tomita, third generation in the United States and second generation citizen, was in Japan from 1937 to March, 1941, studying the Japanese language at the Tokyo Women's College, where she lived in the dormitory. She is an instructor at the Navy Language School, Boulder, Colorado.

MR. NOBORU ARASE

Interviews were had from March 1 to 6, 1943, at Boulder, Colorado. Mr. Arase, born in Los Angeles, California, was, at the age of two, taken by his father to the village of Kosa, near Kumamoto, Kyushu, Japan, where he resided until 1935, when he returned to America. He is an instructor in the Navy Language School, Boulder, Colorado.

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DEPARTMENT OF JUSTICE

WAR DIVISION

ECONOMIC WARFARE SECTION

REPORT ON

KUNISHIMA WATERWORKS, OSAKA, JAPAN

March 9, 1943

Submitted by: Ernest B. Price
Economic Warfare Section
Department of Justice
Denver, Colorado

2745
D-72

Economic Warfare Section
War Division
Department of Justice
Washington, D. C.

Confidential Report
March 9, 1943
Re: Kunishima Waterworks,
Osaka, Japan
Submitted by: Ernest B. Price
Economic Warfare Section
Department of Justice
Denver, Colorado

KUNISHIMA WATERWORKS, OSAKA, JAPAN

An estimated 70% of the population of the city of Osaka, Japan, is dependent for filtered and pressure water upon the city's single waterworks situated at Kunishima-Machi, Higashi-Yodogawa-Ku. Destruction or serious injury to vital sections of these waterworks would produce the following results, for the period the plant were out of commission:

1. It would deprive 70% of the population of Japan's chief industrial city of filtered water. The importance of this may be judged from the fact that the sewerage of Japan's third largest city, Kyoto, empties into the Yodo River 20 miles upstream from the intake pumps of the Kunishima Waterworks.

2. It would render fire fighting much more difficult through reduction of pressure in the mains. The only gravity reservoir in the city, located on the grounds of Osaka Castle (see separate report No. D-71 of March 10, 1943, on "Osaka Castle Area") has a capacity of only 3,730,000 gals., with a head of but 130 ft. -- only enough to last the city two or three hours. (Per diem consumption of filtered water was 39.7 gals. per capita in 1930.)

3. It would reduce the productive capacity of industrial establishments in Osaka dependent upon city water supply.

GENERAL DESCRIPTION

The city of Osaka stands first in industry, second in population (estimated at 3,321,000, October 1, 1930), and third in area, of the cities of Japan. Its area being only one-third that of Tokyo, whose population was estimated on October 1, 1930, at 6,457,600, Osaka is probably the most highly congested area in all Japan. Osaka's Kunishima Waterworks are located on the right (north) bank of the Yodo River just below the point where the Old Yodo River joins the New Yodo. The entire plant, with the exception of its water mains and the small pressure-regulator reservoir on the grounds of the Osaka Castle, is concentrated on a single tract of land.

The Osaka Waterworks were first located on this tract when the first Kunishima plant was completed in March 1914. Previous thereto, the city had been supplied with pressure water from a plant located at Sakura-no-Miya, which plant was "abolished" in December 1920. This earlier plant sent water under pressure to the small reservoir located on the grounds of

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the Osaka Castle, from which it was distributed by gravity pressure through 200 miles of mains. Whether this earlier plant could be re-established, were the Kunishima Waterworks put out of commission, is not known, but it seems improbable that it could be used as an effective standby system. In any event, the capacity of the original Kunishima plant was only 53,595,000 gals. per diem, enough to last the 2,750,000 metered water users in 1930 about half a day at the per capita consumption rate of 39.7 gals. per day.

There were two subsequent extensions of the Kunishima Waterworks. The first, completed in March 1922, increased the capacity of the plant to 83,370,000 gals. per diem; the second extension (believed to have been the last), completed in August 1930, increased the capacity of the plant to 127,040,000 gals. per diem.

Since the population of Osaka has undoubtedly greatly increased since 1930, while there is no record of plant expansion since that date, consumption of metered water at present must be close to capacity. With reference to the possibility of a change in source of supply or an extension of the Kunishima Waterworks, the following is quoted from an article which appeared in the Journal, New England Waterworks Association, 1930:

> "The water-works engineer of Osaka told me of his hope to be able to build a new water-works plant at no distant date, taking water from a higher point where it would be free from such pollution. By going far enough a gravity supply could be secured, but that does not seem to be contemplated at present."

Dr. John A. Foote (see "Sources") states that he is quite certain no such plan had been put into effect by April 1, 1941, the date he left Osaka.

Equipment of the Kunishima Waterworks as of August 1930: The equipment of the Kunishima Waterworks as of August 1930 consisted of the following:

3 Intake Towers:

2 oval-shaped brick buildings 6.8 meters (22.10 ft.) by 4.5 meters (14.76 ft.) in diameter, and 15.2 meters (49.85 ft.) high.

2 round brick buildings, each 5.5 meters (18.04 ft.) in diameter and 15.2 meters (49.85 ft.) high.

4 grit chambers:

2 rectangular, reinforced concrete; dimensions: 45.5 meters (149.24 ft.) long by 10.9 meters (35.75 ft.) wide by 3 meters (9.84 ft.) high.

2 "lozenge" pattern, reinforced concrete; dimensions: 39.4 meters (139.23 ft.) long by 12 meters (39.36 ft.) wide, by 4.2 meters (13.77 ft.) high.

2 Intake Pump Stations, reinforced concrete:

1 covering an area of 4680 sq. ft. (dimensions unknown).

1 covering an area of 5350 sq. ft. (dimensions unknown).

13 Intake Pumps, connected directly with motors:

6 centrifugal, each of 100 h.p.; capacity 2100 cu. meters (7738.16 cu. ft.) per hr.; pumping to a height of 8.5 meters (27.88 ft.).

3 centrifugal, each of 150 h.p.; capacity 3000 cu. meters (10,600.7 cu. ft.) per hr.; pumping to a height of 8.5 meters (27.88 ft.).

2 centrifugal, each of 325 h.p.; capacity 4900 cu. meters (173,144+ cu. ft.); pumping to a height of 12.2 meters (40.016 ft.).

2 centrifugal, each of 250 h.p.; capacity 3750 cu. meters (132,508+ cu. ft.) pumping to a height of 12.2 meters (40.016 ft.).

6 Intake Mains:

1 cast iron, diameter 1140mm. (3.74 ft.).

1 reinforced concrete, diameter 1070mm. (3.51 ft.)

2 wooden, diameter 1070 mm. (3.51 ft.)

1 cast iron, diameter 1220 mm. (4.002 ft.)

3 Sulphuric Almina Solution Chambers:

1 wooden two-story building covering an area of 15 tsubo (59.30 sq. yds.).

2 wooden two-story buildings each covering an area of 12.5 tsubo (49.42 sq. yds.).

10 Settling Reservoirs:

7 stone-walled, concrete; dimensions of each: 102 meters (334.56 ft.) by 78 meters (255.84 ft.) by 3.2 meters (10.49 ft.), and each having a capacity of 23,160 cu. meters (814,491+ cu. ft.).

3 reinforced concrete reservoirs, similar measurements, but each having a capacity of 25,160 cu. meters (889,045+ cu. ft.).

24 Filter Beds:

14 tile-faced concrete, each 73 meters (239.44 ft.) by 73 meters (239.44 ft.), and each with a capacity of 25,440 cu. meters (898,939+ cu. ft.) per diem.

10 reinforced concrete, same measurements and capacity.

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6 Clean Water Reservoirs:

4 rectangular concrete; dimensions: 84 meters (275.52 ft.) by 71 meters (232.88 ft.) with a depth of 3 meters (9.84 ft.), and a capacity of 16,000 cu. meters (565,371 cu. ft.) each

2 reinforced concrete; dimensions: 73 by 71 meters (239.44 by 232,88 ft.) with a depth of 3 meters (9.84 ft.), and a capacity of 15,000 cu. meters (530,035+ cu. ft.).

2 Mixing Chambers for Rapid Filter System:

Reinforced concrete; dimensions: 58 meters (190.24 ft.) by 3.4 meters (11.152 ft.) by 5.2 meters (17.05 ft.).

3 Settling Reservoirs for Rapid Filter System:

3 reservoirs of reinforced concrete; dimensions: 80.2 meters by 16.2 meters (263.05 by 53.33 ft.) and having a depth of 5 meters (16.4 ft.) each.

12 rapid filter beds of reinforced concrete; dimensions: 11 meters by 8.5 meters (36.08 by 27.88 ft.), having a depth of 3 meters (9.84 ft.) each. At the filter speed fixed at 120 meters (393.6 ft.) per diem, the capacity of each bed is 9600 cu. meters (339,222+ cu. ft.) per diem.

One Rapid Filter System Shed:

One-story reinforced concrete building, the ground space occupying 183.9 tsubo (726.08 sq. yds.).

Rapid Filter System Main Building:

1 three-story, reinforced concrete building with a basement, the ground space extending to 80.5 tsubo (318.27 sq. yds.), the floor space extending to 356 tsubo (140.75 sq. yds.). The basement is for the storage of sulphuric almina and other things, ground floor for the office, second floor for apparatus of solving sulphuric almina, and the research office inspection of the quality of water, and the third floor for washing tank.

Three Chlorination Houses:

2 wooden buildings occupying the ground space of 3 tsubo (11.86 sq. yds.) each.

1 wooden building occupying the ground space of 4 tsubo (15.81 sq. yds.).

Seven chlorination apparatus:

No. 1 room equipped with two apparatus having a maximum capacity of chlorination amounting to 50 kilograms each a day, one of them being a reserve;

No. 2 room equipped with three aparatus, two of which having a maximum capacity of 72 kilograms each a day, and the remaining one having a maximum capacity of 32 kilograms a day;

No. 3 room equipped with two apparatus having a maximum capacity of 73 kilograms each a day.

Two Service Pump Stations:

1 brick building occupying a ground space of 604 tsubo (2388.03 sq. yds.).

1 reinforced concrete building extending to 267 tsubo (1055.63 sq. yds.).

21 Service Pumps (directly connected to electric motors):

3 centrifugal pumps directly connected with electric motors, the capacity of the motor being 280 h.p., revolution 1200 per min., pumping capacity 760 cu. meters (26,855+ cu. ft.) per hr., and capacity of pumping water to a height of 61 meters (200 ft.).

12 centrifugal pumps, the capacity of motor being 300 h.p., 1200 r.p.m., pumping capacity 1010 cu. meters (35,335 cu. ft.) per hr., with the capacity of pumping water to a height of 55 meters (180 ft.).

6 centrifugal pumps connected with steam turbines, the capacity of the turbine being 1390 h.p., 7500 r.p.m., pumping revolution 680 per minute, pumping capacity 5580 cu. meters (197,173+ cu. ft.) per hr., and with the capacity of pumping water to a height of 55 meters (180 ft.).

1 Electric Power Receiving and Transformation Station. A brick building occupying a ground space of 81.9 tsubo (323.79 sq. yds.).

Equipment for Receiving and Transformation:

Station No. 1: 4 500 k.v.a. single phase transformer, one of these being a reserve transformer; 6 25 k.v.a. single phase transformer; 4 100 k.v.a. single phase transformer.

Station No. 2: 3 2000 k.v.a. single phase transformer, one being a reserve; 4 750 k.v.a. single phase transformer, one being a reserve; 6 25 k.v.a. single phase transformer.

Power Generation Plant. A brick building occupying a ground space of 121.2 tsubo (479.19 sq. yds.).

Equipment of the power plant:

Main generator, 3 triple vertical closed type directly connected with steam engine, with a capacity of 180 k.w. per hr. each.

Auxiliary generator, 2 double vertical closed type directly connected with steam engines, with a capacity of 60 k.w. per hr. each.

Boiler station - a brick building occupying a ground floor of 521.7 tsubo (2060.63 sq. yds.) consisting of the boiler room, coal economizing room, blower rooms; 2 chimneys having a top diameter of 2.73 meters (8.95 ft.) and a height of 24.2 meters (79.4 ft.) each.

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Steam boilers and additional equipment:

12 super-heated steam boilers with heating area of 262 sq. meters (3343.12 sq. ft.) each, and heater's area of 81 sq. meters (1033.56 sq. ft.) each.

4 saturation steam boilers with heating area extending to 262 sq. meters (3343.12 sq. ft.) each.

1 unit of coal conveyer.

4 units of coal economizers.

4 blowers.

1 unit of aerial coal conveyer with a capacity of 20,000 k.g. per hr.

Distribution mains:

"No. 1 service pump station: western main, diameter 1070 mm., goes across the New Yodo River, reaches Honjamachi, goes across the Aji River, passes the Hanazono bridge, and arrive at the harbor; central main, diameter 990 mm., goes across the New Yodo River underneath the river bed, reaches Umeda, goes across the Dojima River, and the Tosabori River, and runs along the Nishi-Yokobori River to Saiwaicho; Horie main, diameter 1070 mm., goes across the New Yodo River underneath the river bed, reaches Nakatsu, runs along the Dojima-Ohashi (bridge), and arrives at Sakuragawa-machi; Tanatsukuri main, diameter 990 mm., goes across the New Yodo River underneath the river bed, reaches Toyosakicho, goes along the Miyakojima bridge, passes through Tanatsukuri, and ends at the western gate of the Tennoji temple; Castle clean water reservoir main, diameter 660 mm., goes across the New Yodo River underneath the river bed, runs along the Miyakojima bridge, and reaches the clean water reservoir within the Osaka castle site.

"No. 2 service station: eastern main, diameter 1070 mm., goes across the New Yodo River, reaches Nagaramachi, arrives at Tenjinbashi Rokuchome, runs to south along Temmabashi street, reaches the west gate of the Tennoji Temple, and then goes still further south to Abeno way; northern main, diameter 990 mm., reaches Tenjinbashi Rokuchome same as the eastern main, but from there it goes to Deiri bridge via Ukitamachi and the Osaka station, then it goes to Sakurajima-machi via the Asahi bridge, Kishima-machi and Shimaya-machi." (Far Eastern Review, August 1930 (v.26), article by Eisaburo Kusano.)

Additional Details of Equipment

Pumping Engines: An article in The Engineering Record of May 11, 1907 (v.25 no. 19) describes the pumping engines then in service at the plant as being "triple expansion pumping engines of the Worthington type" pumping "to the distributing reservoir at Osaka Castle against a total head of about 130 feet."

The Osaka Castle reservoir: While the above-mentioned article implies that in 1907 the reservoir at Osaka Castle served as an actual distributing reservoir and furnished by gravity the pressure in the mains, a later article in the Far Eastern Review of August 1930 (v. 26) by a

Mr. Eisaburo Kusano makes it clear that with the later equipment, added in 1930, pressure on the mains is maintained by the pumping station itself pumping against the Osaka Castle reservoir, which thus serves only as a pressure regulator reservoir and as a small reserve against emergencies. Mr. John Burgess, City Office Engineer for the Board of Water Commissioners, Denver, Colorado, agreed with this view pointing out that the indicated capacity of the Osaka Castle reservoir -- 3,750,000 gals. -- would last the city only about two or three hours, were it the only source of supply. In other words, were the Kunishima plant put out of commission, the city would have a reserve supply of filtered water under pressure of from only two to three hours.

The rapid sand filter plant: An article by Mr. Harold E. Babbitt, Professor of Sanitary Engineering, Unitversity of Illinois (present address: 204 Engineering Hall, Urbana, Illinois) on "Water Supply and Sewerage of Large Japanese Cities," in the Engineers News Record of May 1, 1930 (v. 104) refers to this rapid sand filter plant as having been constructed by the Pittsburgh Filter Company.

Locations and Identification

To serve as a guide to the location and identification of vital sections of the Kunishima Waterworks, three sketches and reproductions of two photographs are attached.

Exhibit A is a sketch made from a map dated 1931 in Japanese, showing the principal water mains as described in the preceding section of this report.

Exhibit B is an aerial photograph of the Kunishima Waterworks, taken presumably about 1930. This is reproduced from the Far Eastern Review of August 1930. It affords confirmation of the locations given on the Exhibit A map.

Exhibit C is based on United States War Department Map Collection, Map no. 4393 of Osaka City (G24 - 1941 - 20). The purpose of this exhibit is to give aerial distances and bearings of the two most vital points of the waterworks plant in relation to Osaka Castle, the highest point and principal landmark in Osaka, on the grounds of which is situated the pressure regulator reservoir.

Exhibits D and E are reproductions of photographs printed in the Far Eastern Review of August 1930.

In the opinion of Mr. John Burgess, City Office Engineer of the Board of Water Commissioners, Denver, Colorado, the most vital parts of the Kunishima plant, in order of importance, are (numbers correspond to those given on the exhibits):

1 and 3. The intake towers and intake pumping station. If all intake pipes and intake pumping stations could be knocked out, the entire plant would be out of commission in a few hours through lack of supply of raw water. The intakes and the intake pumping station which supply the sedimentation reservoirs and slow sand filter beds are shown in Exhibits A, B, and C. Mr. Burgess believes, however, that the rapid filter plant must have its own intake farther down the stream, although this can not be located on any map; hence, the next most vital point to hit would be:

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2. The rapid filter plant itself (see also Exhibit D).

Next in importance would be:

7. The central pumping station which services the mains, pumping against the pressure regulator reservoir in the Osaka Castle grounds (see also Exhibit B). Next in importance would be:

8. The exposed mains as they cross the Yodo, Tosobori, and other rivers. None of these is shown on any map, but they are positively identified and located by Dr. John A. Foote (see "Sources"). The one carried across the Tosobori River, by a bridge, is shown in the photograph (Exhibit E).

9. Pressure regulator reservoir on grounds of Osaka Castle.

The above constitute the indicated targets for precision bombing. Pattern bombing on the rest of the Kunishima plant would be likely to dislocate some of the sedimentation, slow filtration, and clear water reservoirs, and similar bombing along the direct air route from the Waterworks to Osaka Castle might well destroy important distributing mains.

(Note: Strategic objectives in the Osaka Castle area are covered by a separate report bearing that title.)

Sources

Dr. John A. Foote, 495 Downing Street, Denver, Colorado, now with the American Baptist Home Missionary Society, Baptist Headquarters, Colorado Building, Denver, Colorado, was a missionary in Japan from September 1912 to April 1, 1941, under the American Baptist Foreign Missionary Society. From April 1913 to April 1, 1941, the date of his final departure from Japan, his headquarters were in Osaka. His address at the time of his departure was 58 Moto Imasoto, Minsmidori, Itchome, Higashi-Yodogawa Ku, Osaka, which is not far from the Waterworks.

His missionary activities made him intimately familier with the city of Osaka.

Dr. Foote impresses one as being unusually alert and as having a retentive memory. He says that "traveling about" on foot, bicycle, or automobile was a hobby of his. He of course handles the Japanese language fluently, both spoken and written.

Dr. Foote was able to sketch from memory with remarkable accuracy, before seeing a map, locations and features subsequently identified by maps or photographs.

Mr. John Burgess, City Office Engineer of the Board of Water Commissioners, Denver, Colorado.

The Engineering Record, May 11, 1907 (v. 25, no. 19).

Far Eastern Review, August 1930 (v. 26), article by Eisaburo Kusano.*

*(Note: Pages 3 - 7 contain description of waterworks equipment. Figures in the metric system were taken from this source, and conversions into American measures are indicated in parentheses. These conversions were calculated roughly in this office and may not be exact.)

Engineers News Record, May 1, 1930 (v. 104), article entitled "Water Supply and Sewerage of Large Japanese Cities," by Harold E. Babbitt, Professor of Sanitary Engineering, University of Illinois.

Journal, New England Waterworks Association, 1930.

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DEPARTMENT OF JUSTICE

WAR DIVISION

ECONOMIC WARFARE SECTION

REPORT ON

OBJECTIVES IN AND ABOUT GIFU

ISLAND OF HONSHU, JAPAN

March 10, 1943

Submitted by: John A. Eble
Economic Warfare Section
Department of Justice
Denver, Colorado

2930
D-59

Economic Warfare Section
War Division
Department of Justice
Washington, D. C.

Confidential Report
March 10, 1943
Re: Objectives in and about Gifu, Island of Honshu, Japan
Submitted by: John A. Eble
Economic Warfare Section
Department of Justice
Denver, Colorado

REPORT ON OBJECTIVES IN AND ABOUT GIFU, ISLAND OF HONSHU, JAPAN

Informant stated that the following list, and description, includes all of the objectives of significance in or about the City of Gifu, Island of Honshu, Japan. All of the subsequent information is based upon informant's personal observations during the late Fall of 1940:

Gifu Junction

The City of Gifu is an important railway junction on the Tokaido Main Line. The Tokaido Main Line is double-tracked. Informant stated that 102 passenger trains passed through the Gifu Junction every 24 hours; 80 of these trains were on the Tokaido Main Line and 22 on the Ota-Seki branch line. Informant could not estimate the quantity of freight traffic passing through the junction. The junction is located on the attached map as Point 1.

Barracks Gate Airfield and Army Headquarters

Approximately two miles east of Gifu Junction on the electric streetcar line toward Siki is a station called Barracks Gate. Located here is a large airfield and the barracks, drill grounds, etc., for the 68th Regiment. Informant stated it was a large training center for inductees in the Japanese Army, and that over 15,000 soldiers were stationed there in 1938. Informant was unable to locate the Barracks Gate Airfield and Army Headquarters. Directional location of these installations and location of the streetcar line leading to them is indicated on the attached map as Point 3.

Mitsubishi Aircraft Factory

A large aircraft factory, owned and operated by the Mitsubishi Company, is located approximately five miles east of the City of Gifu and

adjoins the right-of-way on the main line railway from Gifu to Ota. The factory is on the south side of the railway and a fence about 12 feet high has been constructed along the right-of-way so that passengers are unable to see the landing field, factory, buildings, etc. Informant stated that some of his parishioners informed him they were building fighter planes and that a medium American Bomber had been secured and was being duplicated. The landing field at the factory was said to be small, but the plant itself was a low structure covering 160 acres. Informant was unable to locate the factory, but its general directional location form Gifu Junction is indicated on the attached map as Point 2.

Gifu Paper Products Industry

Gifu factories formerly specialized in the manufacture of fibre and paper products. In 1939 and 1940, due to the shortage of wool, these factories were manufacturing paper vests for the Japanese Army. The vests were supplied to the Army in Korea and Manchuria and, although informant did not see one, he understood they were about an inch thick and were made of oil-treated paper, and that some sort of fibre or grass was stitched between the two layers to give warmth. The vests were very tough and durable and were said to be satisfactory. This information also was secured by informant from one of his parishioners who worked in the factory. Informant was unable to locate any of the paper factories but did locate on the attached map several important cotton and wood pulp warehouses.

Informant located several outstanding landmarks in and about Gifu which may be valuable as air location points. These have been indicated on the attached map.

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Informant will be available for re-interview during the last week in March. If there are any specific suggestions as to questions which might be asked of him at that time, they will be welcomed.

Source

The informant, Mr. James McAlpine, was born in Nagoya, Japan. His father was a missionary and an instructor in the schools in Nagoya. Informant himself became a missionary and instructor and lived in Nagoya for a number of years. He was later given a mission at Gifu, Island of Honshu, Japan. He also had a mission at Ogaki. Informant stated that although he had spent considerable time in these cities, he

was particularly careful to avoid trouble with the Japanese Police by keeping to the approved routes established for him.

Informant returned to San Francisco, California, on January 10, 1941, and is now an instructor in the Navy Language School, University of Colorado, Boulder, Colorado.

Copy No. 34
Confidential

DEPARTMENT OF JUSTICE

WAR DIVISION

ECONOMIC WARFARE SECTION

REPORT ON

MILITARY OBJECTIVES IN OSAKA, JAPAN

March 10, 1943

Submitted by: John A. Eble
Economic Warfare Section
Department of Justice
Denver, Colorado

2528
D-52

Economic Warfare Section
War Division
Department of Justice
Washington, D. C.

Confidential Report
March 10, 1943
Re: Military Objectives in Osaka, Japan
Submitted by: John A. Eble
Economic Warfare Section
Department of Justice
Denver, Colorado

MILITARY OBJECTIVES IN OSAKA, JAPAN

On the basis of his personal observation in the fall of 1939, informant listed the following objectives in Osaka, Japan. Each installation is located upon the attached sketch:

1. Fujinagata Shipyards

The Fujinagata Shipyards are located on the Kizu Gawa River in Osaka. Informant stated that this company is building small boats for the Japanese Navy.

2. Osaka Iron Works

The Osaka Iron Works is situated on the Aji Kawa River. They are building mine sweepers but are specializing in the construction of submarines.

3. Sumitomo Steel Works and Kaisha Rolling Stock Factory

The Sumitomo Steel Works is building tanks for the Japanese Army and the Kiska Seizo Kaisha (Kaisha Rolling Stock Factory) is building ship parts for the Navy.

4. Sumitomo Electrical Wire Works

The Sumitomo Electrical Wire Works is located on the Shorenji Gawa River, This factory is building aluminum parts for planes. They also make copper wire and manufacture various alloys.

5. Osaka Castle

The Osaka Castle is headquarters for the 4th Army Division. See Confidential Report (D-71) dated March 10, 1943, submitted by Ernest B. Price, Expert.

6. Hira Maki Powder and Ammunition Factory

The Hira Maki Powder and Ammunition Factory is located on the main line between Osaka and Kyoto, between 20 and 30 miles from Osaka. Informant stated that the plant can be easily identified from the air and covers a large area.

(OVER)

7. Japan Air Transport Co. - Airfield

The shaded area across the Kizu Gawa River from the Fujinagata Shipyards is the airfield of the Japan Air Transport Company. It is now used by the Japanese Military.

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Informant will be available for re-interview during the last week in March. Any specific suggestions as to questions which he might be asked at that time will be welcomed.

SOURCE

The above information was obtained from Mr. Yoneo Sakai, who is an instructor in the Navy Language School, University of Colorado, Boulder, Colorado. Mr. Sakai's present address is 856 10th Street, Boulder, Colorado. Yoneo Sakai, an Issei, was born and educated in Japan, and for six years was a special writer for Kaizo, a monthly magazine published in Tokyo; from April 1931 to December 1941, he was staff correspondent for The Asahi Dailies. Mr. Sakai's work as staff correspondent for Asahi placed him in close contact with the Japanese Military. Mr. Sakai came to the United States just before the outbreak of the war.

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D-60

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Confidential

DEPARTMENT OF JUSTICE

WAR DIVISION

ECONOMIC WARFARE SECTION

REPORT ON

POISON GAS FACTORY AND MUNITIONS FACTORY

OGAKI, ISLAND OF HONSHU, JAPAN

March 10, 1943

Submitted by: John A. Eble
Economic Warfare Section
Department of Justice
Denver, Colorado

2972
D-60

Economic Warfare Section
War Division
Department of Justice
Washington, D.C.

Confidential Report
March 10, 1943
Re: Poison Gas Factory and Munitions Factory, Ogaki, Island of Honshu, Japan
Submitted by: John A. Eble
Economic Warfare Section
Department of Justice
Denver, Colorado

REPORT ON POISON GAS FACTORY AND MUNITIONS FACTORY OGAKI, ISLAND OF HONSHU, JAPAN

Informant stated that he had definitely learned, through members of his Gifu parish, that both a munitions plant and a poison gas factory had been built at Ogaki, Island of Honshu, Japan.

In the Fall of 1940, while in charge of a mission at Ogaki, informant noticed a new plant located about a quarter of a mile from the main railway station at Ogaki. The plant was connected with the main railway line by a spur. Informant was unable to observe the plant from a near distance and, in fact, was reprimanded by the Japanese Police for walking to the end of the railroad platform from which the plant was visible. He stated the building was quite large, but did not know the number of people employed there; nor did he know whether this plant was the poison gas factory or the munitions factory, although quite sure that it was one of the two.

Informant further stated that there is a small arsenal located in Ogaki, but could not give its location.

Ogaki is a town of about 35,000 and is 15 miles due west of Gifu. Near the main station of Ogaki are 6 or 8 rail tracks and freight yards; there are also warehouses. The railway line approaching Ogaki from Gifu snakes the range of hills, but would be of no benefit as a bombing objective as these are broad, rolling hills.

The Ogaki station is a terminal for the rail line to Akasaki, which is a small town of about 2,000 population of no military importance. Akasaki is entirely dependent upon farming and the marble works industry about 3 miles north and west of Ogaki.

The plant mentioned above is located on the attached map as point "A".

Source

The informant, Mr. James McAlpine, was born in Nagoya, Japan. His father was a missionary and an instructor in the schools in Nagoya. Informant himself became a missionary and instructor and lived in Nagoya for a number of years. He was later given a mission at Gifu, Island of

(OVER)

Honshu, Japan. He also had a mission at Ogaki. Informant stated that although he had spent considerable time in these cities, he was particularly careful to avoid trouble with the Japanese Police by keeping to the approved routes established for him.

Informant returned to San Francisco, California, on January 10, 1941, and is now an instructor in the Navy Language School, University of Colorado, Boulder, Colorado.

2529
D-57

Copy No. 34
Confidential

DEPARTMENT OF JUSTICE

WAR DIVISION

ECONOMIC WARFARE SECTION

REPORT ON

MILITARY OBJECTIVES AT OITA, ISLAND OF KYUSHU, JAPAN

March 11, 1943

Submitted by:
John A. Eble
Economic Warfare Section
Department of Justice
Denver, Colorado

2529
D-57

Economic Warfare Section
War Division
Department of Justice
Washington, D. C.

Confidential Report
March 11, 1943
Re: Military Objectives at Oita, Island of Kyushu, Japan
Submitted by: John A. Eble
Economic Warfare Section
Department of Justice
Denver, Colorado

MILITARY OBJECTIVES AT OITA, ISLAND OF KYUSHU, JAPAN

Informant listed and located upon an attached map the following objectives in the City of Oita, Japan. Informant personally observed these points in January, 1941:

Oita Airfield

The Oita Airfield is just outside the city and adjoins the Oita River. It is a large airfield with many buildings. It follows the shore line of the Bay. It is in some way connected with the 72nd Regiment. The Oita Airfield is located on the attached map as Point 6.

Barracks of the 72nd Regiment

Entrances on both the east and south sides, with hills west of the barracks. Here are also located the drill grounds and rifle range which are south of the barracks buildings. The barracks are located near the Oita-Beppu electric car-line. The barracks are located on the attached map as Point 22.

Tin Factory

Ore for this refinery comes from a mine in the mountain regions near Oita Prefecture. The exact location of the mine is unknown. The mine was established by British capital several years ago. The refinery is located on Oita Bay near the breakwater and harbor entrance. It is located on the attached map as Point 26.

Main Railway Station

This is a junction and terminal. The main line comes from Moji, 90 miles distant. It is also the junction for the Daite Line from Bungo-Mori, as well as for the Hohi Line which runs to Kumomoto. It is a junction point for the railroads on the east side of the Island of Kyushu. It is located on the attached map as Point 13.

Other Points

Informant also located in or about the City of Oita twenty-three other points of lesser importance. A complete legend for the attached map follows:

(OVER)

1. Residence of informant.
2. Night School.
3. Primary School.
4. Girls' School.
5. Artificial wool factory, which has high smoke stacks and extensive dormitory buildings for employees.
6. Airfield.
7. Post Office and telegraph and telephone offices.
8. City Hall - four stories, reinforced concrete building with high tower.
9. Educational Building - three-story reinforced concrete building.
10. Prefectural Building, which is on the old castle grounds (old wall still standing); building is made of frame stucco with large trees and enclosures. Moat surrounds the building.
11. Bank Building, of brick construction.
12. Tokiwa Department Store - five-story building of reinforced concrete.
13. Main Railway Station. There is a large open space in front of the station. The Oita-Beppu street-car line runs approximately 1/2 block from the station. The buildings are of wood frame.
14. Paper Mills - large buildings with smoke stack.
15. Electric Installations and Transformers. The electric power comes from the hydro plant in the mountains along the Kyuudai Sen and Hoohi Sen.
16. Large Iron Railway Bridge across the Oita River. The bridge is approximately 500 feet long. The river is very shallow.
17. Silk Reeling Mills. Some of the buildings run up on a hill. The mills are easily identified. Dormitories for employees surround the factory buildings.
18. City Water Supply Reservoir. Water is pumped from the Oita River. The reservoir is at the top of a small hill. The slope leading to the reservoir is planted with Azalea bushes. Stone steps lead to the top of the hill.
19. Ichimura Department Store - located on the main thorough-fare in the shopping district in the City of Oita. This building is four stories high. The main part of the building is frame with stucco. A newer addition is of reinforced concrete construction. The street passing in front of this store leads directly west to the Barracks.
20. Prefectural Hospital. Surrounded by quite large grounds.
21. Higher Primary School. A frame building which is quite near the barracks.
22. Barracks of the 72nd Regiment. Drill grounds and rifle range are to the south of the Barracks Building.
23. Large Cotton Spinning Mills. Large factory buildings, with extensive dormitories for employees surrounding the factory.
24. Oita Harbor Office and Warehouse Buildings - all of frame construction. Important port on the Inland Sea. Much freight is handled, particularly raw cotton and manufactured cotton goods.
25. Harbor. The Harbor is enclosed by breakwaters, as outlined on the attached map. Two lighthouses at the Harbor entrance - alternating lights of red and yellow.
26. Tin Refinery, handling ore from mining region near Oita.
27. Oita Commercial College. Large buildings with large exercise grounds, situated on a plateau quite a bit larger than the city. A prominent landmark.

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SOURCE

Dr. Hubert Kuyper resided in Oita for 22 years and was an instructor and missionary. He returned to the United States in March of 1941. Dr. Kuyper is now employed as an instructor at the Navy Language School, University of Colorado, Boulder, Colorado. His address is 816 14th Street, Boulder, Colorado.

2807

Copy No. 28
CONFIDENTIAL

DEPARTMENT OF JUSTICE
WAR DIVISION
ECONOMIC WARFARE SECTION

PRELIMINARY REPORT ON

MANCHURIAN HIGHWAY AND WATERWAY TRANSPORTATION

March 12, 1943

Submitted by: Charles Layng
Economic Warfare Section
Department of Justice
Chicago, Illinois

LIST OF EXHIBITS

1. Map of Manchurian Waterways.

2. Highway Construction Gang at work.

3. A bus operated by the Manchurian State Railways, showing also type of road.

4. The Harbin waterfront on the Sungari River.

5. Shipping on the Sungari River.

2807

Economic Warfare Section
War Division
Department of Justice
Washington, D.C.

Preliminary Report
March 12, 1943
Re: Manchurian Highway and Waterway Transportation
Submitted by: Charles Layng
Economic Warfare Section
Department of Justice
Chicago, Illinois

PRELIMINARY REPORT ON MANCHURIAN HIGHWAY AND WATERWAY TRANSPORTATION (1) & (2)

While an immense amount of money has been spent by the Japanese in the construction of highways in Manchuria, there are still no hard-surfaced roads in that country except for a few miles on the outskirts of the principal cities. The main objective in constructing the network of highways was to afford better access of troops to the outlying districts for the purpose of breaking up the gangs of bandits which were formerly prevalent in Manchuria. As is indicated later in the report, a rather extensive system of bus lines is operated, but in the rainy season the bus schedules become quite indefinite and not infrequently some of the runs have to be abandoned entirely.

Highway Improvement

According to an official Japanese source, the roads in Manchuria are stated to be "quite undeveloped and primitive." However, it is certain that every effort is being made to put such roads in condition so that military traffic, at least, can be handled. When the Japanese took over all of Manchuria in 1932, there were some 13,000 kilometers of primitive roads over which transportation of a sort was possible in certain seasons of the year, but there were only 150 kilometers of highways that were at all suitable for year-around motor transportation. However, when the puppet government took over Manchuria, the need of better roads caused a ten-year plan of highway construction to be adopted, which contemplated either building or improving 60,000 kilometers of motor roads in Manchuria by 1942. This program involved the construction of 12,500 kilometers of so-called first class roads (crowned, and with gravel surface) to connect the chief cities and ports, together with 12,500 kilometers of second class roads between the smaller cities, and 35,000 kilometers of third class roads serving the rural communities and intended largely for local transportation of agricultural products as well as through transportation of troops to outlying districts.

(over)

On March 3, 1933, a State highway bureau was established at Hsinking to carry out the program, while highway construction offices were established at Hsinking, Mukden, and Tsitsihar. The actual construction work began in March, 1933, and an appropriation of 15,000,000 yuan was made to be devoted entirely to highway construction and improvement. According to the latest authoritative statistics available, this program was lagging somewhat, and an average of only about 3,000 kilometers annually were constructed in the first five years of the program, which if continued at that rate, would mean that in 1942 only 30,000 kilometers of the planned 60,000 kilometers would have been completed.

Manchurian Bus Operations

The newly formed Manchoukuo Government entrusted to the General Direction of the State Railways all highway and river transportation and gave it the exclusive right of operating all bus lines coming under certain categories. These fell into three classes, as follows:

Bus lines competitive to the railways.

Bus lines substituting for railway passenger trains.

Military bus lines for the maintenance of peace and order, and for the development of the hinterland.

Independent bus lines are permitted to operate over other highways, but they are under rigid government control and no competition is permitted. Only one bus company is allowed to operate busses over any one highway.

The first bus line was established between Peipiao and Chengte in March, 1933, and since that time, a considerable mileage has been built up.

Because of economic conditions in Manchuria, and entirely apart from the government policy of not permitting competing passenger transportation services, the busses can never serve to replace railway transportation of any distance. The density of population is still too thin in most sections and the number of passengers too small to permit of this. The General Direction is thus operating its extensive bus lines at a loss.(3) As of June 1, 1936, the following bus lines were in operation in Manchuria:

		Km.
Antung-Chengtzutan Line		296
Antung-Chengtzutan	214	
Huangtukan-Fengwangcheng	82	
Shanchengchen-Tunghua	145	145
Mukden-Fushun	56	56
Haicheng-Muchang	25	25
Mukden-Chengchiatung		119
Mukden-Faku	89	
Faku-Kangpin	30	
Hsinmin-Changwahsien	62	62
Jehol		939
Peipiao-Chihfeng	230	
Chengte-Fengsing	100	
Chengte-Chihfeng	265	
Chihfeng-Linhsi	210	
Weicheng-Dolonnor	130	
Lingyuan-Lingyuanchan	4	
Hsinking-Kirin	126	126
Hsinking-Taonan		110
Lungchuan-Taonan	110	
Tunhua-Hailin		170
Tunhua-Kuanti	32	
Ningan-Hailin	30	
Tungmon-Maho	28	
Tunhua-Omu	50	
Kuanti-Omu	30	
Tungman		235
Tumen-Hunchun	73	
Hunchun-Tunghsingchen	100	
Tungning-Suifenho	62	
Noho-Heiho		392
Aihun-Heiho	33	
Aihun-Chikote	114	
Heiho-Hantachi	124	
Noho-Puhsi	30	
Noho-Wonchiang	91	
Hsingan		406
Chitaokow-Halunarshan	16	
Halunarshan-Hailar	285	
Taonan-Fuchuan	105	
Tsitsihar-Chaluntun		107
Tsitsihar-Kannon	107	
Harbin-Tungchiang		916
Harbin-Hulan	23	
Hulan-Mulan	122	
Mulan-Chiamussu	273	
Chiamussu-Tungchiang	218	
Chiamussu-Poli	160	
Fuchin-Paoching	120	
		4104

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At that time, more than 400 busses were being operated and 700 employees were engaged in operating and servicing busses. At that time, 25 lines, with the route mileage of 4,664 kilometers, were in operation. The passenger and freight statistics for the years 1933, 1934 and 1935 were appended.(4)

None of the above figures include highway transportation in the so-called Kwantung Leased Territory. In 1936, there were 182 kilometers of motor roads in the Kwantung Territory, which is a small district including Dairen and its environs, and 11 bus lines, with a total of 340 kilometers of routes which were being operated by the Dairen Urban and Interurban Transit Company.

Manchurian River Transportation

In most sections of Manchuria, the rivers are frozen over for five months of the year, but a considerable amount of river transporation is conducted at other times on Manchuria's three largest rivers. The most important of these is the Sungari River, which drains a huge area comprising almost all of North Manchuria, and empties into the Amur River at the extreme northeastern corner of Manchuria. Since there has been less railway development in this section than in any other part of Manchuria, the Sungari River still serves as the only means of transporting agricultural and other products from an extensive area to the nearest railways. The city of Harbin is the center of river traffic on the Sungari River. River transportation in Manchuria is another railway monopoly and under the control of the General Direction of the State Railways, which manages all operations through a subsidiary known as the Harbin Navigation Association which was established in 1933. Through this association, 48 river ships are operated mainly on the Sungari River, but also to a lesser extent on the Amur and the Ussuri Rivers. The regular service included twelve routes covering a total distance of 5,194 kilometers. These twelve routes are as follows:

Sungari River Lines

Lines	Kilometers
Harbin-Fuchin	614
Harbin-Fuchin-Heiho	1,418
Harbin-Fuchin-Hulin	1,286
Harbin-Fuyu	324
Harbin-Chiangchiao	503
Fuyu-Kirin	414
Chiangchiao-Tsitsihar	126
Fuchin-Heiho	804
Heiho-Moho	827
Moho-Kilarin	623
Hulin-Lungwangmiao	286
Hulin-Mishan	350
Total Operating Distance	7,575
Total Distance Covered	5,194

No recent statistics are available as to the amount of traffic handled by these lines, but in 1935 the steamers handled 755,045 tons of freight and 500,232 passengers.

Wharves are maintained at Harbin, Ilan (Sanhsing), Lienchiangkou, Chiamussu, Huachuan, Fuchin and Heiho. The total tonnage handled across these wharves in 1935 amounted to 1,043,000 tons of freight, of which 505,000 tons were handled at the Harbin wharf.

In addition to the lines on the Sungari River, the Liao River supplies an outlet for agricultural products from the southern section of Fengtien province, which are carried to the railhead at Yingkou. Navigation conditions on the Yalu River are somewhat difficult in view of its shallowness and the presence of sandbars. However, this river is used extensively in transporting lumber by raft and otherwise from the interior to the port of Antung.

NOTES

1. In the course of the study that is now being made on the Manchurian railways, it is possible that additional information on the highway and waterway system will be developed later.

2. Sources:

   Ralph Vaile, Open Hearth Combustion Company, Chicago, Illinois.
   Far Eastern Review.
   Manchurian Progress Report of the South Manchuria Railway.
   Railway Gazette.
   Robert Crockett, Alan Wood Iron & Steel Co., Pompton Lake, New Jersey.

3. For the year ending March 31, 1942, the Manchurian railways showed a net loss of 1,100,000 yuan in the operation of highway services.

4. Passenger and Freight Receipts

Years	Average Distance in Km.	Passengers	Receipts in Yuan	Freight in Kgs.	Receipts in Yuan	Total Receipts in Yuan
1933	699	92,924	446,498	1,512,789	139,633	586,131
1934	2,381	357,920	854,165	6,649,635	360,144	1,214,309
1935	3,186	514,572	974,253	5,102,955	344,611	1,318,864

Suite 820, 208 So. LaSalle Street
Chicago, Illinois

JCC: eej

60-0-28

March 13, 1943

SUPPLEMENTAL STATISTICAL REPORT ON MANCHOUKUO HIGHWAYS AND RAILWAYS

The following information has been found and decided to be sufficiently valuable to incorporate as a Supplemental Report to the attached report, #2807 by Mr. Charles Layng. This supplementary report is almost entirely statistical and in addition to that which is contained in the body of the main report.

HIGHWAYS

Table 1. Road and Bridge Construction

	National Roads (Ext.)	Local Roads	Bridges
1932	707.7 km.	----	----
1933	3000.9 "	5218.5	480 m.
1934	2632.3 "	2138.1	1595 "
1935	580.4 "	1468.7	2122 "
1936	2071.0 "	1485.7	3266 "
1937	2168.6 "	989.8	5700 "

Table 2. 5-Year Plan on Local Roads and Bridges (1938-1942)

Roads -- 14,580 km.
Bridges -- 32,389 "

Note: Standard width of road is 6-8 meters.

Table 3. Special Highway Bridges Newly Constructed (End of November 1936)

	Location
Fengtien Construction Bureau:	
Tayanho Bridge	Antung sheng
Tunghua "	Tunghua "
Fushun "	Fengtien "
Hsinking Construction Bureau:	
Kunju Bridge	Chosen
Kaiyuan "	Fengtien sheng
Tungliao "	Hsingan Nan sheng

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Hsinking Construction Bureau (Cont'd.):

Keihsing Bridge	Chosen
Nanling "	Kirin sheng
2nd Itung "	Kirin "
Kuohua	Chientao sheng

Harbin Construction Bureau:

West Tuchang Bridge	Pinkiang sheng
South Mutan "	" "
Tatung "	" "
Hsiawokeng "	Sankiang "
East Mutan "	Pinkiang "
Ningan "	" "
Nuanchuan "	" "

Tsitsihar Construction Bureau:

Nunkiang Bridge	Lungkiang sheng
Hailar "	Hsingan Peh "
Imin	" " "

PROJECTED BUS LINES (Dec. 1936)

Chentung-Nientsushan
Chikete-Erhchan
Chingkang-Chengsiangchen
Harbin-Acheng
Heiho-Chinshanchen
Ilan-Mishan
Kailu-Chihfeng
Kailu-Chingpeng
Kangping-Chengchiatun
Kannan-Palin
Kiamusze-Ilan
Lingnan-Suichung
Lingyuan-Lengkou
Muleng-Hulin
Mutankiang-Suifenho
Newchuwang-Kaiping
Noho-Hantachi
Pingtsuan-Hsifengkou
Shinlitun-Ihsien
Tsiensuo-Shihmensai
Tunghsingchen-Tungning
Tunghwa-Kanjen
Tunghwa-Linkiang
Tunghwa-Tsian
Tungning-Muleng
Tungning-Ningan
Wangtsing-Lotsukou

Total -- 4528 km.

RAILWAYS

Year Ending March 31	Length (Km.)	Passengers (1000)	Goods Hauled (1000 m. ton)
1938	9621.5	35,921	42,176

South Manchuria Railway

In 1932 there were 466 locomotives, 545 passenger cars, and 8172 freight cars in operation.

James C. Cramond,
Chicago, Illinois