TARGET Nº 18 18

NAME OF PLANT _____

TARGET AREA IN ACRES _____

BOMB DENSITY PER ACRE

Nº BOMBS PER ACRE ____

TONS PER ACRE _____

BLDG. Nº	BOMB Nº	WEAPON TYPE & FUZING: BOMB TYPE	MODEL	NOSE & TAIL FUZING	TYPE OF STRUCTURE & OCCUPANCY	DAMAGE TO BLDGS.: STRUCTURAL SQ. FT.	BLAST	FRAG.	SHOCK	DET. FROM ELEM.	FIRE	MIXED	SUPERFICIAL SQ. FT.	BLAST	FRAG.	SHOCK	DET. FROM ELEM.	FIRE	MIXED	DAMAGE TO EQUIPMENT IN %: TOTAL DESTRUCTION	HEAVILY DAMAGED	SLIGHT DAMAGE	MAE STRUCTURAL DAMAGE IN SQ. FT.	REMARKS
1	1																							NW 35' SW of bldg. 5 from SE edge 180 ½ burned
1	2																							5' SW. of bldg. from SE edge 300 ½ burned near miss
1	3																							27' f. SW. edge 105' f. SE edge exp. contact with floor 10' hole in 1' reinf. conc.
1	4																							39' f. SW edge 103' f. SE edge exp. contact with floor 10' hole in 1' reinf. conc.
1	5																							104' from SW edge 70' " SE edge 10' hole in 1' reinf. conc. exp. on contact with floor
1	6																							
1	7																							75' from SE edge 168' " SW " contact floor 10' hole in 1' reinf. conc.
1	8																							133' f. SW. edge 60' f. SE. " contact floor 8' hole in 1' reinf. conc.
1	9																							60' from SE edge 245' " SW " 12' hole in 1' reinf. contact floor
1	10																							170' from SW edge at SE edge contact floor 10' hole in 1' reinf. conc.
1	11																							65' from NE edge 100' " SE " 14' from peak (exp)
1	12																							145' from SE edge, 70' from NE " exp. contact with peak
1	13																							139' from SE edge at NE edge contact w. floor 8' crater in 1' reinf. conc.
1	14																							242' from SE edge 100' from NE edge 8' below peak.
1	15																							195' from NW edge 5' from NE " 6' from peak

57
174
171
228

60
120
180
240

Confused 10 P

Bde (6) Dbcd

TARGET Nº 18

NAME OF PLANT

TARGET AREA IN ACRES

BOMB DENSITY PER ACRE

Nº BOMBS PER ACRE

TONS PER ACRE

BLDG. Nº	BOMB Nº	WEAPON TYPE & FUZING: BOMB TYPE	MODEL	NOSE & TAIL FUZING	TYPE OF STRUCTURE & OCCUPANCY	DAMAGE TO BLDGS. STRUCTURAL SQ. FT.	BLAST	FRAG.	SHOCK	DET. FROM ELEM.	FIRE	MIXED	SUPERFICIAL SQ. FT.	BLAST	FRAG.	SHOCK	DET. FROM ELEM.	FIRE	MIXED	DAMAGE TO EQUIPMENT IN % TOTAL DESTRUCTION	HEAVILY DAMAGED	SLIGHT DAMAGE	MAE STRUCTURAL DAMAGE IN SQ. FT.	REMARKS
1	16																							135' fr. NW. edge 45' " NE edge contact with floor 8' hole in 1' rein. conc.
1	17																							70' from NW. edge 5' outside NE edge contact with floor 12' hole in 6' rein. conc.
1	18																							85' from NW edge 5' " NE edge contact with floor 8' hole in 1' rein. conc.
1	19																							65' from NW edge 60' " NE edge contact with floor 10' hole in 1' rein. conc.
1	20																							50' from NW edge 100' " NE " contact with floor 8' hole in 1' rein. conc.
1	21																							contact with floor 8' hole in 1' rein. conc.
1	22																							90' from NW edge 200' " NE " Burst 8' below roof
1	23																							235' from SE edge 30' from SW edge 30' hole in 1' rein. conc. Burst exploded after many floors had
1	24																							280' from SE edge 80' from SW edge contact with floor 8' hole in 1' rein. conc.
1	25																							230' from NW edge 65' from SW edge 15' hole in 1' rein. conc. Burst below floor
1	26																							210' from NW edge 60' from SW edge 15' hole in 1' rein. conc. Burst below floor
1	27																							230' from NW edge 105' from SW edge 15' hole in 1' rein. conc. Burst below floor
1	28																							145' from NW edge 10' from SW edge on burst 12' below roof
1	29																							65' from NW edge 50' from SW edge on burst 12' below roof
2	30																							115' from SW edge 50' from SE edge on burst 10' below roof

SHEET 3 TARGET Nº 18

NAME OF PLANT

TARGET AREA IN ACRES

BOMB DENSITY PER ACRE — Nº BOMBS PER ACRE — TONS PER ACRE

BLDG. Nº	BOMB Nº	WEAPON TYPE & FUZING: BOMB TYPE	MODEL	NOSE & TAIL FUZING	TYPE OF STRUCTURE & OCCUPANCY	DAMAGE TO BLDGS.: STRUCTURAL SQ. FT.	BLAST	FRAG.	SHOCK	DET. FROM ELEM.	FIRE	MIXED	SUPERFICIAL SQ. FT.	BLAST	FIRE	SHOCK	DET. FROM ELEM.	FIRE	MIXED	DAMAGE TO EQUIPMENT IN %: TOTAL DESTRUCTION	HEAVILY DAMAGED	SLIGHT DAMAGE	MAE STRUCTURAL DAMAGE IN SQ. FT.	REMARKS
2	31																							210' from SW edge of SE edge on roof 12' above floor
2	32																							Near miss 25' from NE edge-10' from building contact with ground
2	33																							125' from NW edge 120' from SW edge on roof 10' below
between building 2 and 4 in Alley	34																							100' from SW edge 15' from building 2 contact with ground
Alley between 2 and 4	35																							25' from SW edge of building 2 contact with ground
2	36																							15' from NW edge contact with [illegible]
2	37																							30' from NE edge 30' from NW edge contact with [illegible]
3	38																							60' from NW edge 10' from SW edge on roof, [illegible] with roof
4	39																							NE corner, contact on roof
4	40																							30' from SE edge 55' from NE edge contact on roof
4	41																							8' from SW edge 80' from NW of [illegible] edge contact on roof
	42																							15' NNW of building center [illegible] contact on roof
	43																							12' NW edge 30' from [illegible] edge contact on roof
																								40' NE of N corner [illegible]

TARGET Nº 17

NAME OF PLANT

TARGET AREA IN ACRES

BOMB DENSITY PER ACRE — Nº BOMBS PER ACRE — TONS PER ACRE

BLDG. Nº	BOMB Nº	WEAPON TYPE & FUZING: BOMB TYPE	MODEL	NOSE & TAIL FUZING	TYPE OF STRUCTURE & OCCUPANCY	DAMAGE TO BLDGS.: STRUCTURAL SQ. FT.	BLAST	FRAG	SHOCK	DEF. FROM FIRE	FIRE	MIXED	DAMAGE TO EQUIPMENT IN % (DUPLICATING SQ. FT.): BLAST	FRAG	SHOCK	DEF. FROM FIRE	FIRE	MIXED	TOTAL DESTRUCTION	HEAVILY DAMAGED	SLIGHT DAMAGE	MAE STRUCTURAL DAMAGE IN SQ. FT.	REMARKS
5	46																						15' from NW edge 25' from SW edge contact on roof
5	47																						SW corner of bldg. 10' hole contact on roof
5	48																						10' from SW edge 25' from NE edge Center portion of 12' hole
73	49																						90' f. NW edge 16' f. NE " 6' above floor Prob. 500#
73	50																						205' f. NE edge 180' f. NW edge burst in lower roof 12' from floor
45	51																						18' in SW [illegible] near wall contact with ground
45	52																						near wall 20' S of E corr. of bldg contact with ground
45	53																						25' NE edge 10' f NW " burst 10' below roof peak
46	54																						35' f. NE edge 100' f. NW " 8' below roof line
46	55																						70' fr. NE edge 100' f. SE edge burst contact with floor 12' below [illegible]
	66																						45' fr. NE edge 5' fr. SE edge 35' [illegible] burst below floor
																							105' fr. NE edge near wall 10' fr. SE edge contact with [illegible]
																							[illegible]
																							[illegible]

TARGET Nº 18

NAME OF PLANT

TARGET AREA IN ACRES

BOMB DENSITY PER ACRE — Nº BOMBS PER ACRE — TONS PER ACRE

BLDG. Nº	BOMB Nº	WEAPON TYPE & FUZING: BOMB TYPE	MODEL	NOSE & TAIL FUZING	TYPE OF STRUCTURE & OCCUPANCY	DAMAGE TO BLDGS.: STRUCTURAL SQ. FT.	BLAST	FRAG.	SHOCK	DET. FROM ELEM.	FIRE	MIXED	SUPERFICIAL SQ. FT.	BLAST	FRAG.	SHOCK	DET. FROM ELEM.	FIRE	MIXED	DAMAGE TO EQUIPMENT IN %: TOTAL DESTRUCTION	HEAVILY DAMAGED	SLIGHT DAMAGE	MAE STRUCTURAL DAMAGE IN SQ. FT.	REMARKS
46	61																							150' fr. NW edge 45' fr. SW " " exp. 6' below peak.
46	62																							100' fr. NW edge 30' " SW edge exp. below floor 35' crater
46	63																							85' fr. SW. edge 70' from NW. " contact with roof. poss. 600#
78	64																							near miss 20' E of N. cor. 20' crater exp. in gr.
78	65																							72' from SE edge 55' from NE edge exp. contact with roof
78	66																							near miss 12' SW of SW. edge exp. in gr.
78	67																							near miss 55' from NE edge 10' " SE " exp. in ground 40' crater pic.
87	68																							50' fr. NE edge 20' " NW " exp. at floor. prob. 500#
87	69																							70' fr. SE edge 15' " NE. edge 6' below roof
87	70																							near miss 70' from SE edge 8' NE of NE edge exp. in ground prob. 500# 13 3 117
87	71																							36' from SW edge 115' " SE " exp. contact roof pic.
87	72																							near miss 40' S. of S. cor. 30' crater exp. in ground.
95	73																							120' fr. NE edge 10' fr. NW edge 8' below peak.
95	74																							85' from NE edge 25' " NW edge 12' above floor.
96	75?																							55' from NE edge 96' from NW edge exp. 15' below roof ?

6

TARGET Nº 18

NAME OF PLANT

TARGET AREA IN ACRES

BOMB DENSITY PER ACRE

Nº BOMBS PER ACRE

TONS PER ACRE

BLDG. Nº	BOMB Nº	WEAPON TYPE & FUZING: BOMB TYPE	MODEL	NOSE & TAIL FUZING	TYPE OF STRUCTURE & OCCUPANCY	DAMAGE TO BLDGS.: STRUCTURAL SQ. FT.	BLAST	FRAG.	SHOCK	DET. FROM ELEM.	FIRE	MIXED	SUPERFICIAL SQ. FT.	BLAST	FRAG.	SHOCK	DET. FROM ELEM.	FIRE	MIXED	DAMAGE TO EQUIPMENT IN %: TOTAL DESTRUCTION	HEAVILY DAMAGED	SLIGHT DAMAGE	MAE STRUCTURAL DAMAGE IN SQ. FT.	REMARKS
95	76																							130' from NE edge 105' " NW " 6' below roof
95	77																							140' from NE edge 80' " NW " 6' below roof
95	78																							150' from NW edge 155' from NE edge 10' below roof
95	79																							110' from SW edge 100' from NW edge exp. in roof
95	80																							100' from SW edge 50' from NW edge exp. under floor 15' crater
95	81																							near water 75' from SW edge
95	82																							30' from SW edge 30' " NW edge exp. on contact with roof prob. 500#
95	83																							25' from NW edge 65' from SE " exp. in roof
96	84																							135' from NW edge 20' " NE " exp. on floor
96	85																							60' from NW edge 85' " NE " exp. contact floor prob. 500# pic.
96	86																							175' from NE edge 50' " NW " 40' crater exp. below floor pic.
96	87																							185' from NE edge 155' " NW " exp. contact roof
96	88																							170' from NE edge 190' " NW " 25' crater exp. below floor. pic.
96	89																							230' from NE edge. 180' " NW " exp. below floor at col. base - 30' crater
100	90																							exp. in S. 1/4 of bldg on top of boiler

TARGET Nº 18

NAME OF PLANT

TARGET AREA IN ACRES

BOMB DENSITY PER ACRE

Nº BOMBS PER ACRE

TONS PER ACRE

BLDG. Nº	BOMB Nº	WEAPON TYPE & FUZING: BOMB TYPE	MODEL	NOSE & TAIL FUZING	TYPE OF STRUCTURE & OCCUPANCY	DAMAGE TO BLDGS.: STRUCTURAL SQ. FT.	BLAST	FRAG	SHOCK	DEF. FROM ALLIN	FIRE	MIXED	SUPERFICIAL SQ. FT.	BLAST	FRAG	SHOCK	DEF. FROM ALLIN	FIRE	MIXED	DAMAGE TO EQUIPMENT IN %: TOTAL DESTRUCTION	HEAVILY DAMAGED	SLIGHT DAMAGE	M.A.E. STRUCTURAL DAMAGE IN SQ. FT.	REMARKS
92	91																							80' from SE edge near miss 15' NE of NE edge exp. below gr. 35' crater
92	92																							220' from SE edge 10' NE of NE edge near miss exp. in gr. 20' crater
91	93																							250' from SE edge 10' from NE edge exp. under floor 30' crater
91	94																							230' from SE edge 45' from NE edge 5' below roof
93	95																							265' from SE edge 10' from SW edge 6' below roof
93	96																							40' crater exp. below floor
55	97																							20' from NE edge 25' " NW " in roof.
91	98																							280' from SE edge 20' from NE " exp. below floor 35' crater
91	99																							310' from SE edge 40' " NE " 10' below roof
96	100																							110' from NW edge 130' from SW edge air burst Roof line
96	101																							80' from NE edge 15' from NW edge air burst 10' above roof
85	102																							148' from wall corner at NE edge bldg. Bomb pierced floor & [illegible]
85	103																							148' from wall corner 40' from NE edge bldg air burst 10' [illegible]
85	104																							40' from NW [illegible] 20' from [illegible] [illegible]
85	105																							
95	106																							

鳴尾製作所内建物焼失破壊状況

昭和20年6月9日空襲ニ依ル

Diagram of Damage Plots of Naruo Plan

Airraid June 9th

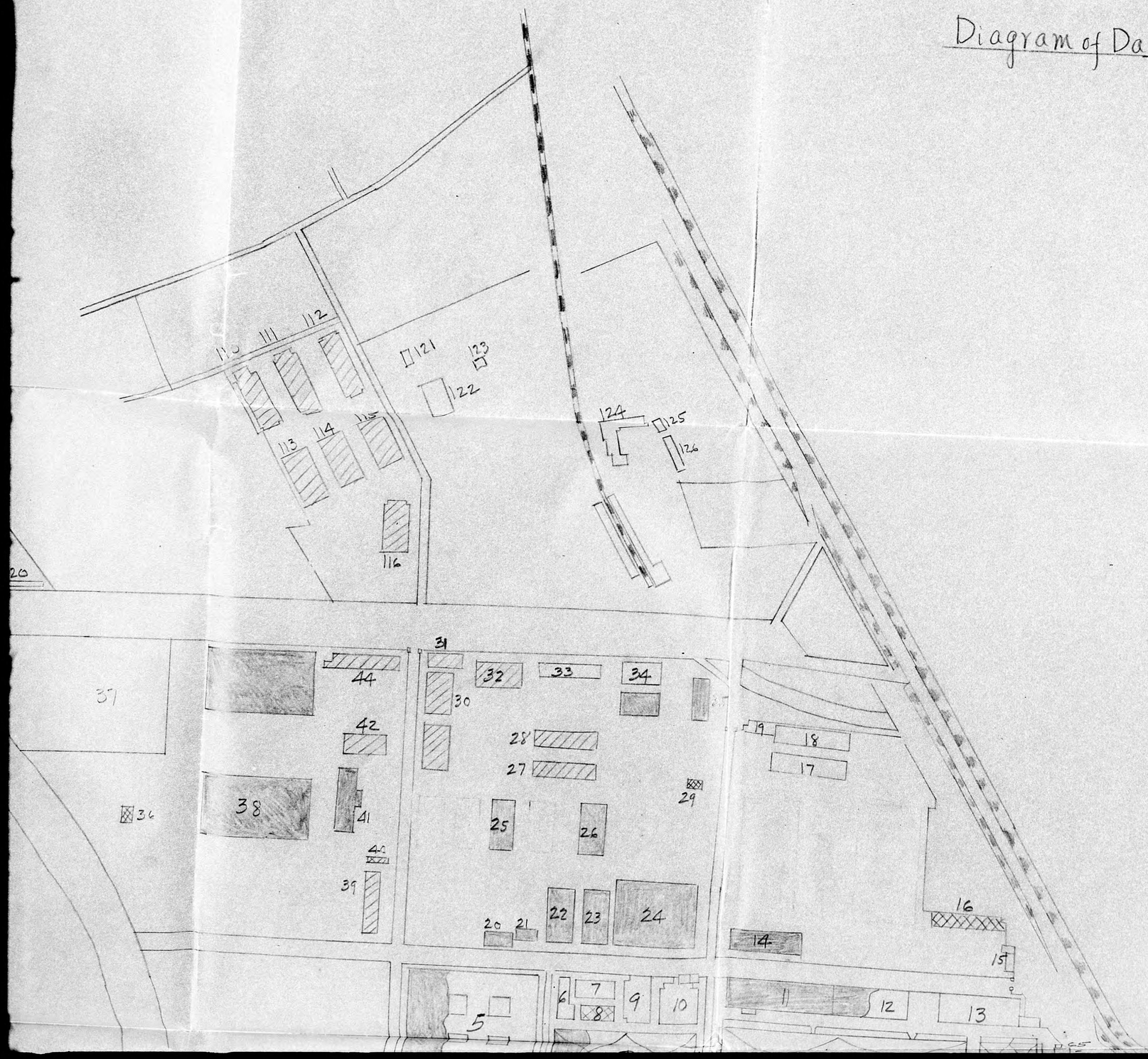
By HR-M NARA, Date 3/6/91

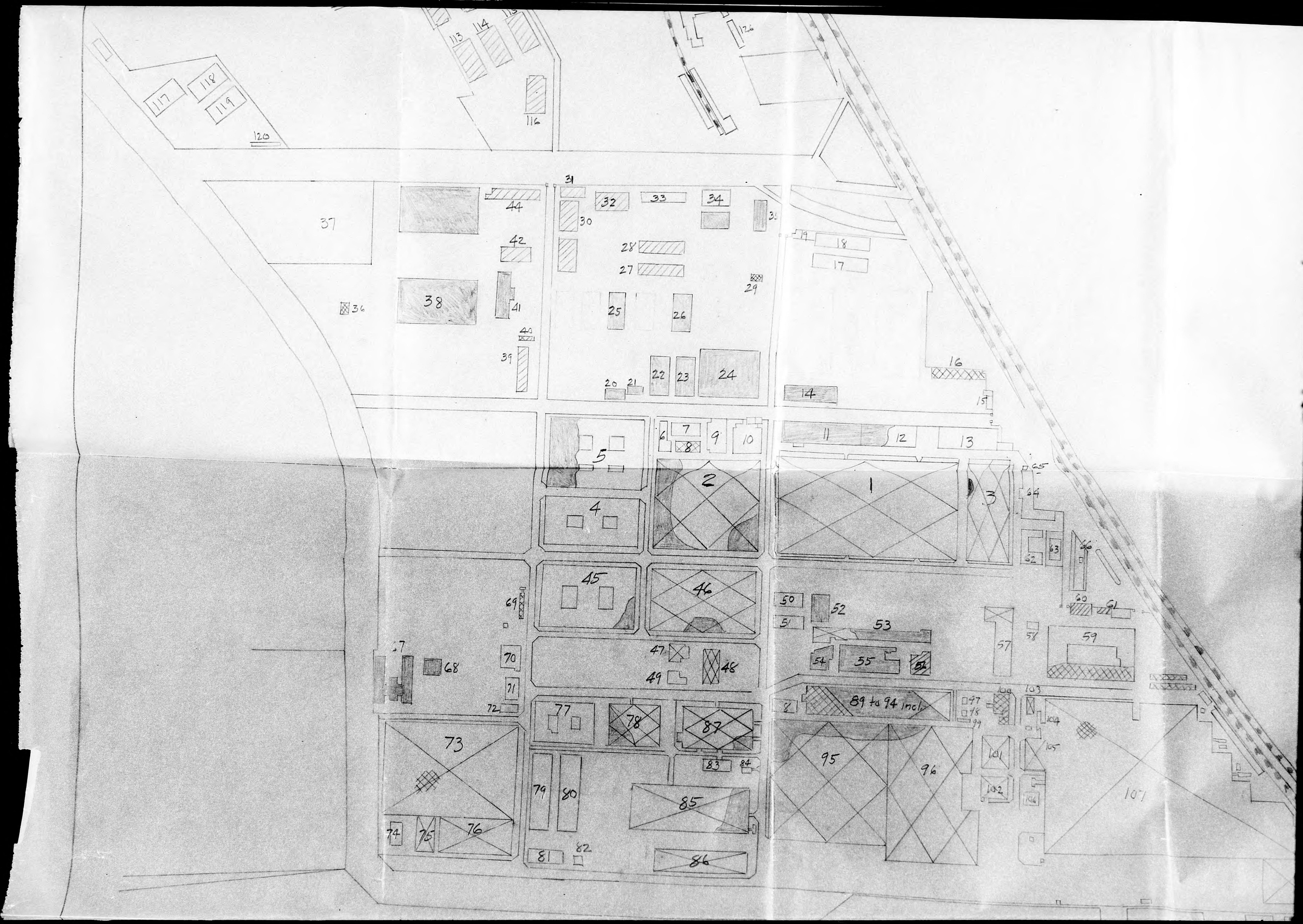
鳴尾製作所内建物焼失破壊状況

昭和20年6月9日空襲ニ依ル

Diagram of Damage Plot of Naruo Plant

Airraid June 9th 1945

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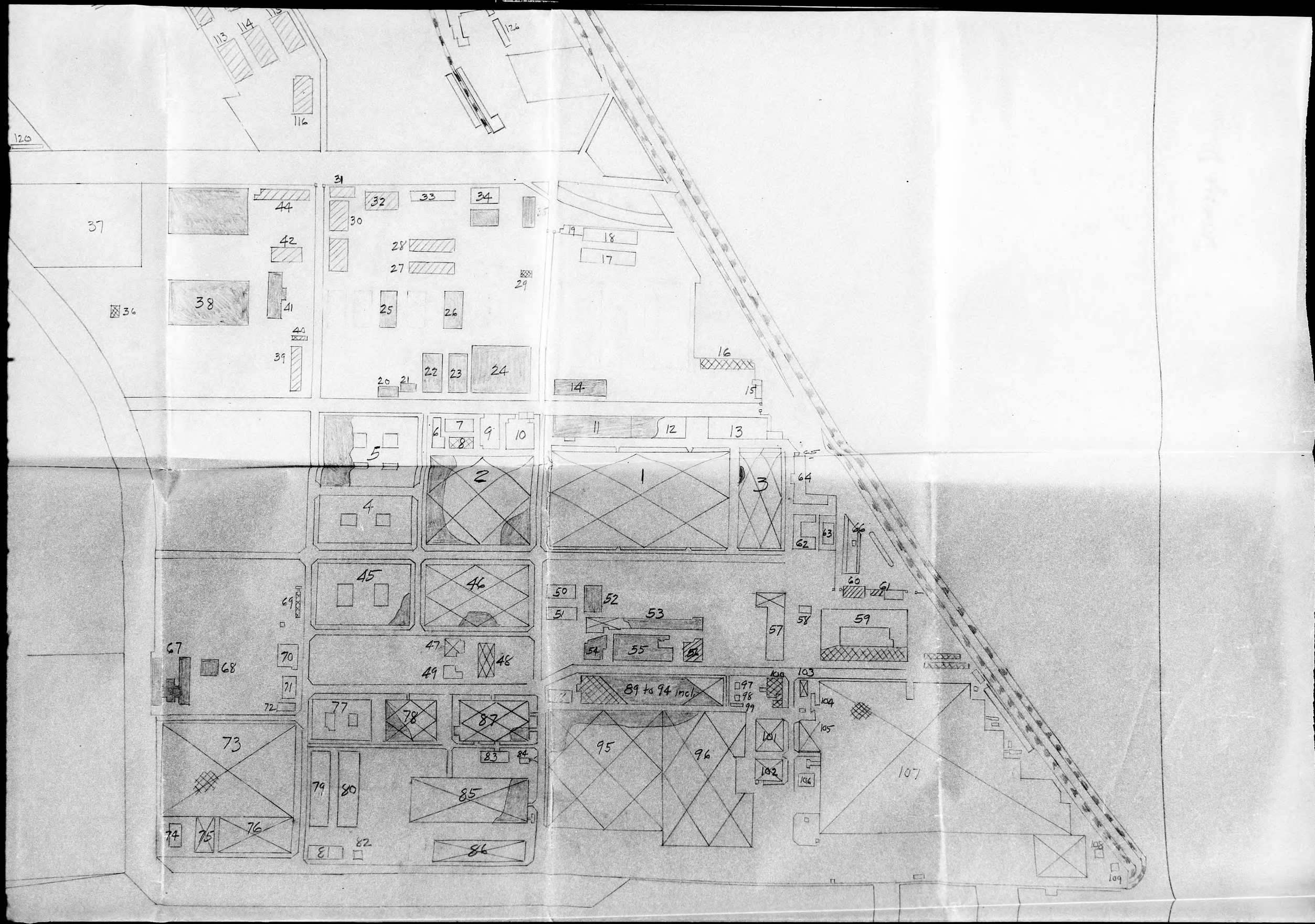
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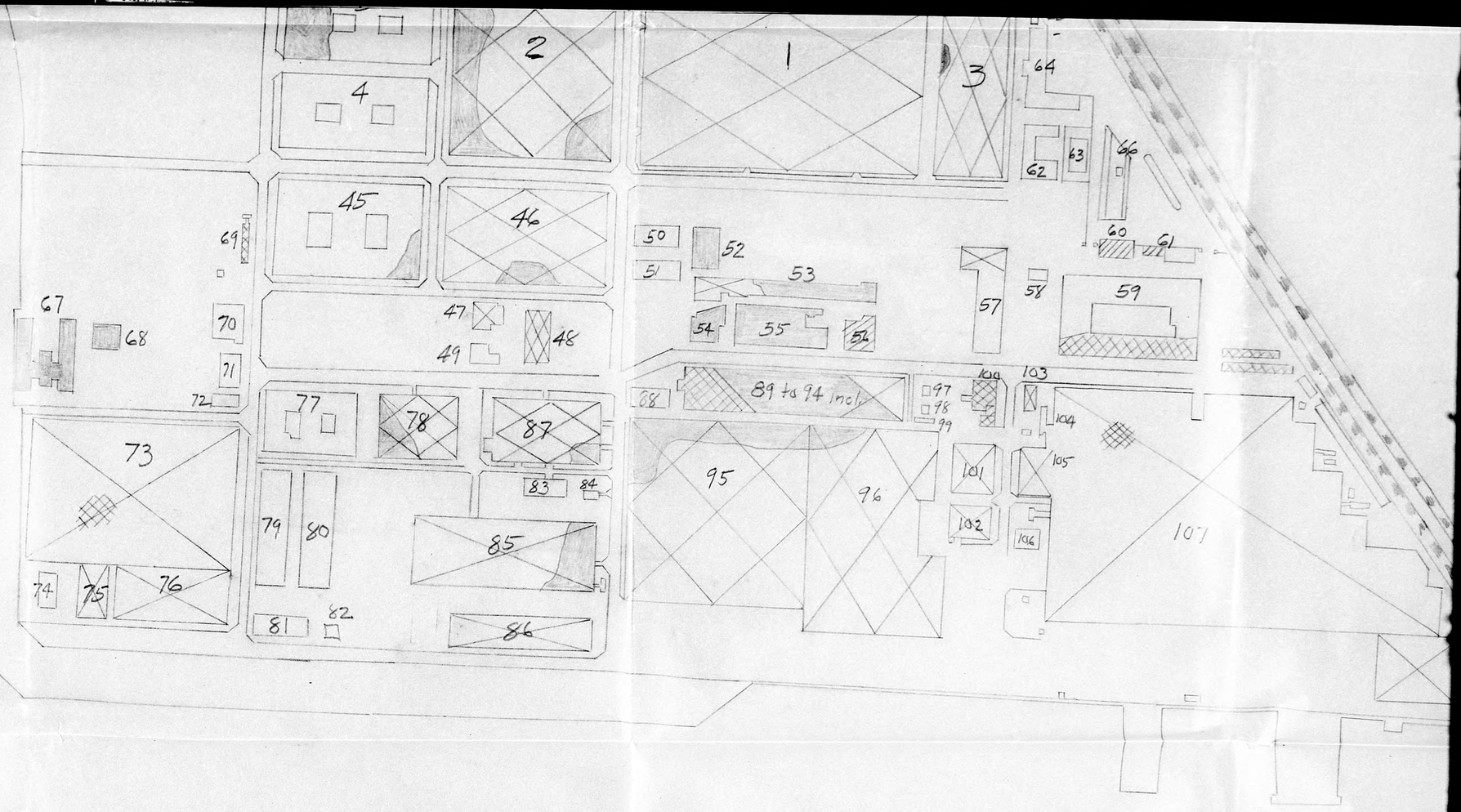
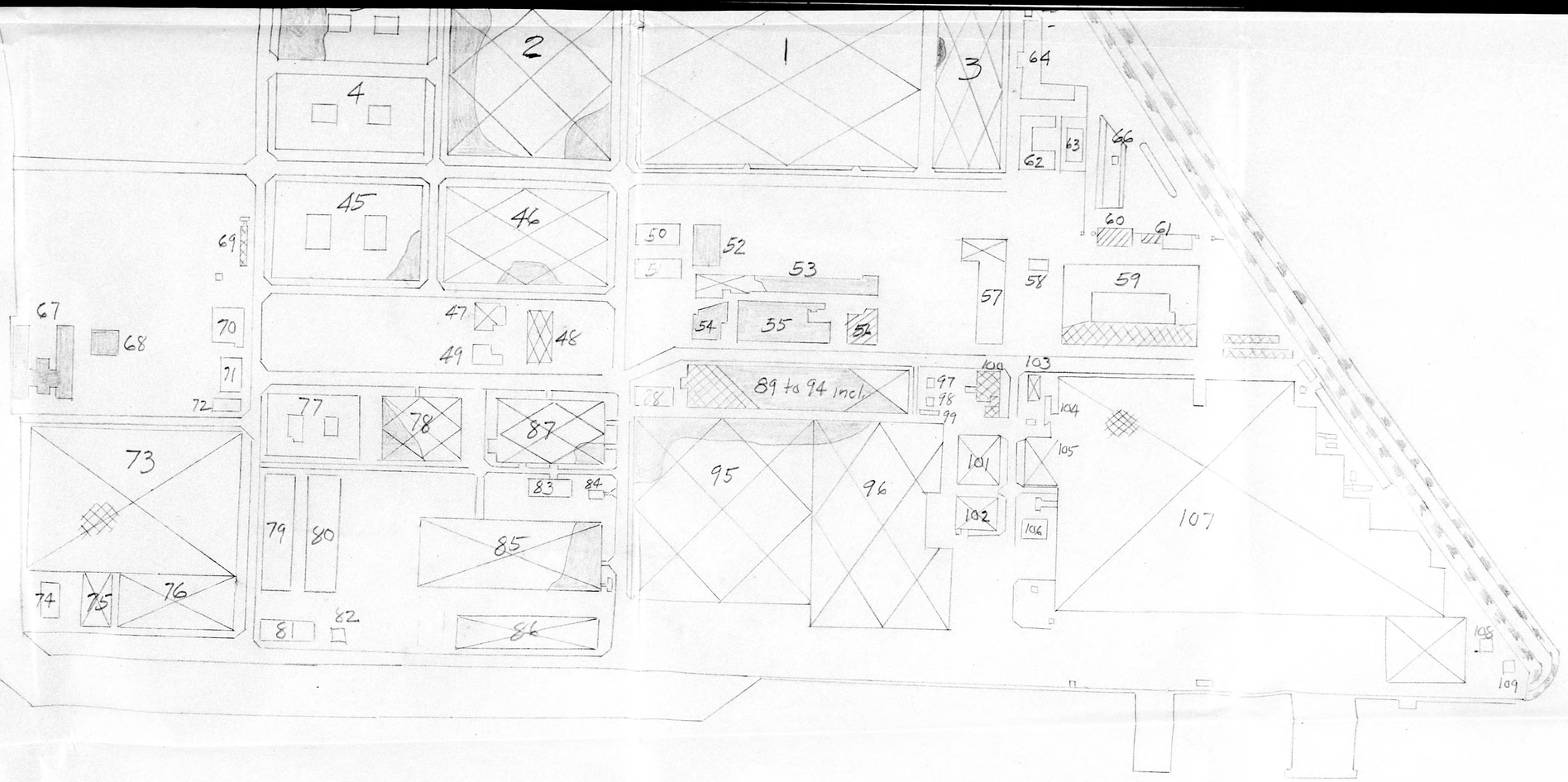


	屋根倒破損	Roof Damaged
	屋根倒破損及骨格破損	Roof and Structure Damaged.
	半壊	Partialy Damaged
	大破	Totaly Damaged
	焼失	Burnt.

Kawanishi Airc
Kobe
Target 9025-18



屋根側破損 Roof Damaged

屋根側破損及骨格破損 Roof and Structure Damaged.

半壊 Partialy Damaged

大破 Totaly Damaged

焼失 Burnt.

Kawanishi Aircraft.
Kobe
Target 9025-18

鳴尾製作所内建物焼失破壊状況

昭和20年6月9日空襲ニ依ル

Diagram of Damage Plate of Naruo Plant

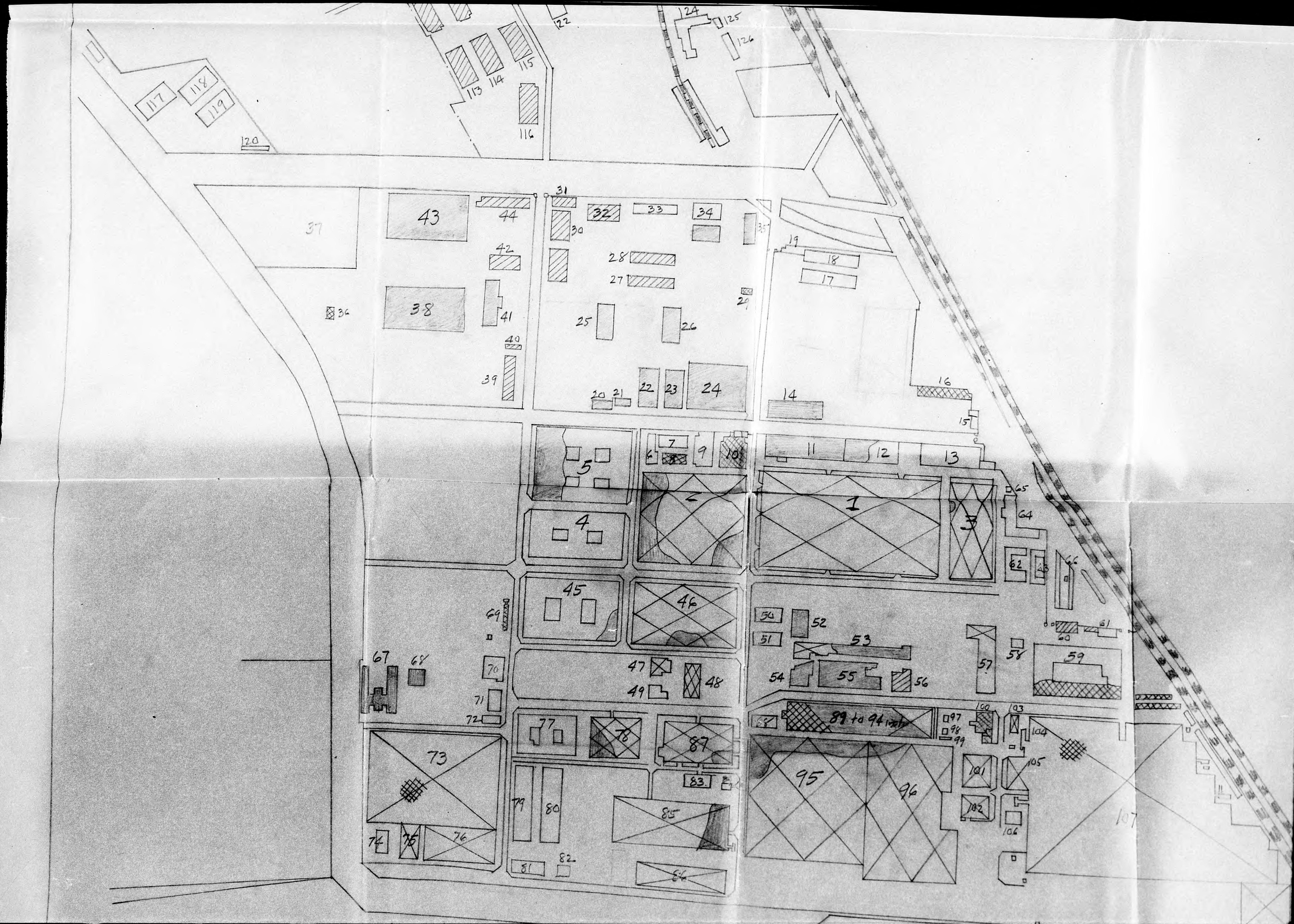
Air-raid June 9th

鳴尾製作所内建物焼失破壊状況

昭和20年6月9日空襲ニ依リ

Diagram of Damage Plate of Naruo Plant

Air-raid June, 9th 1945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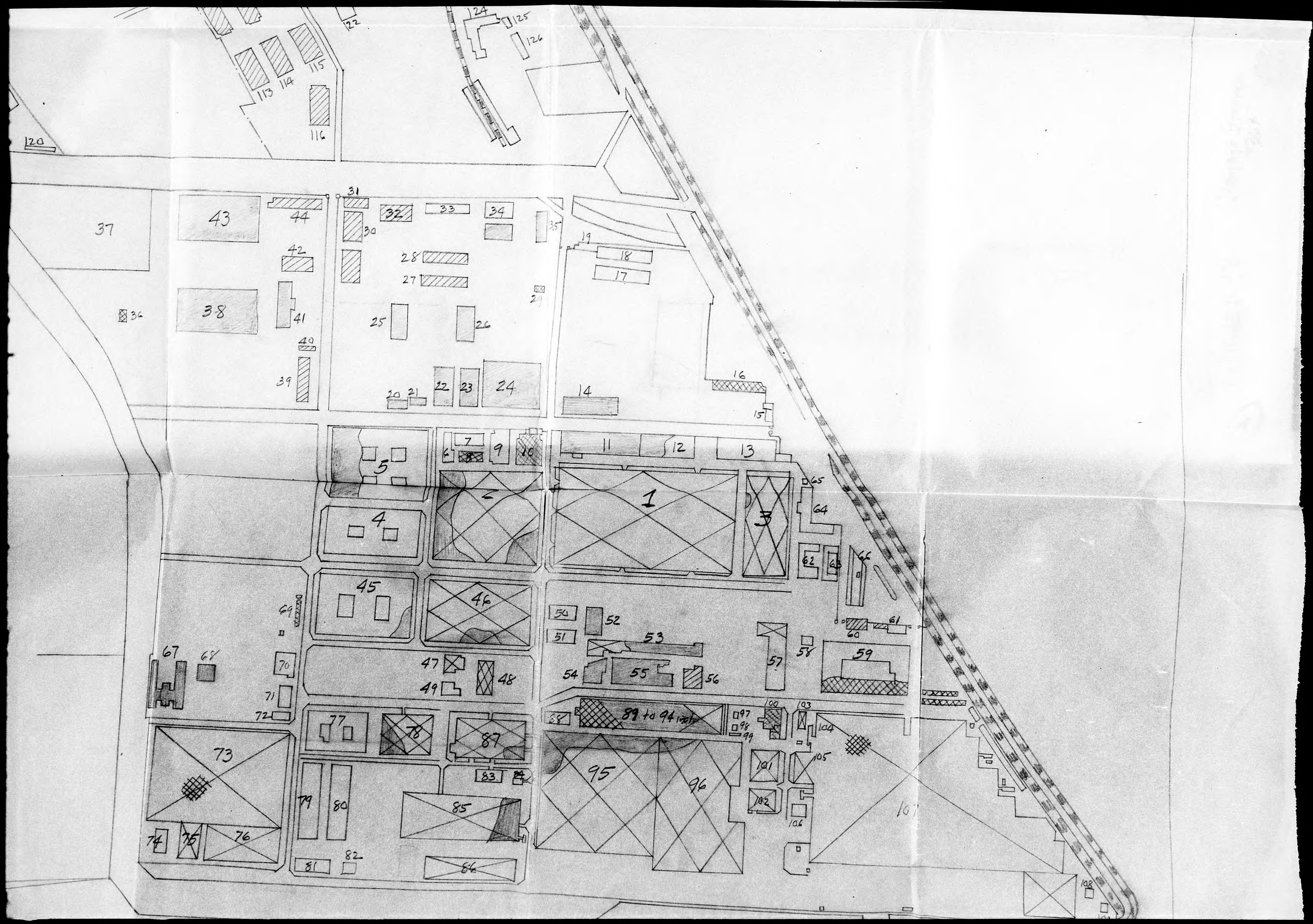
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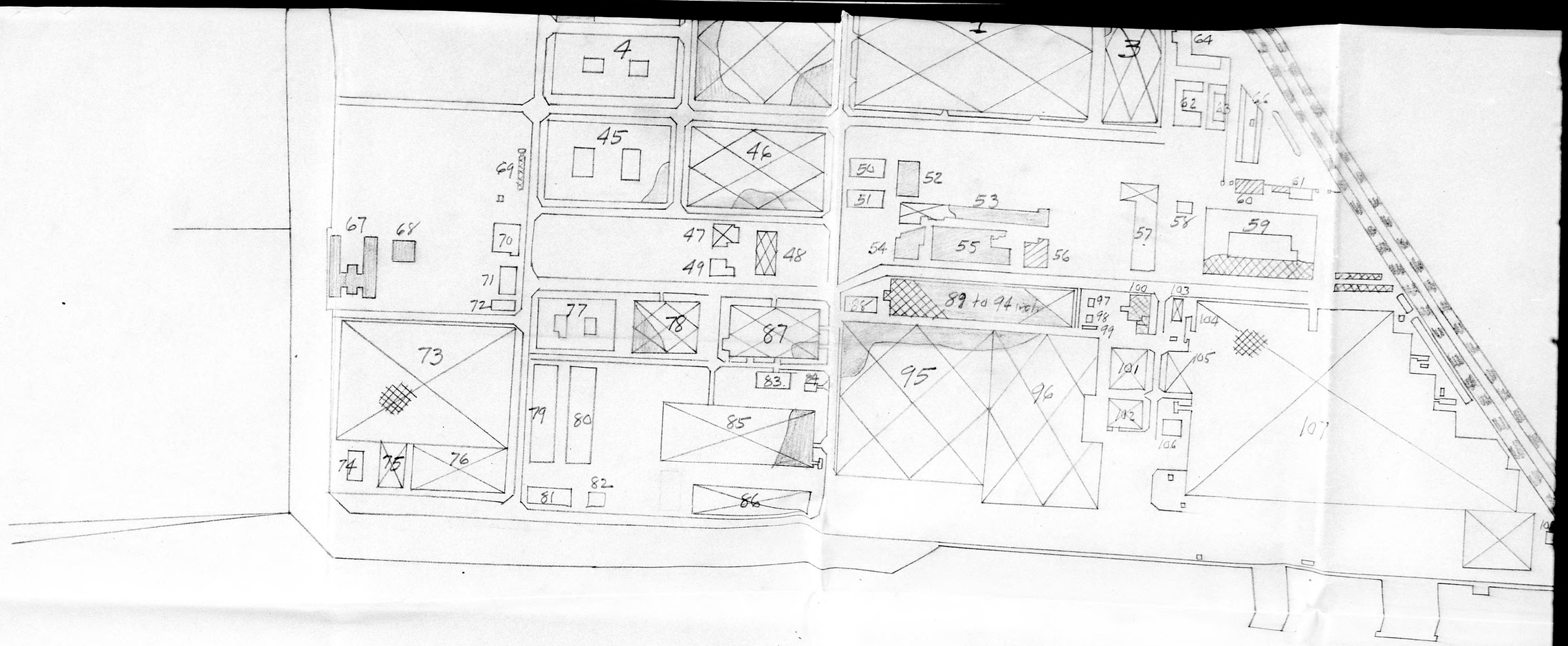


屋根側破損 Roof Damaged

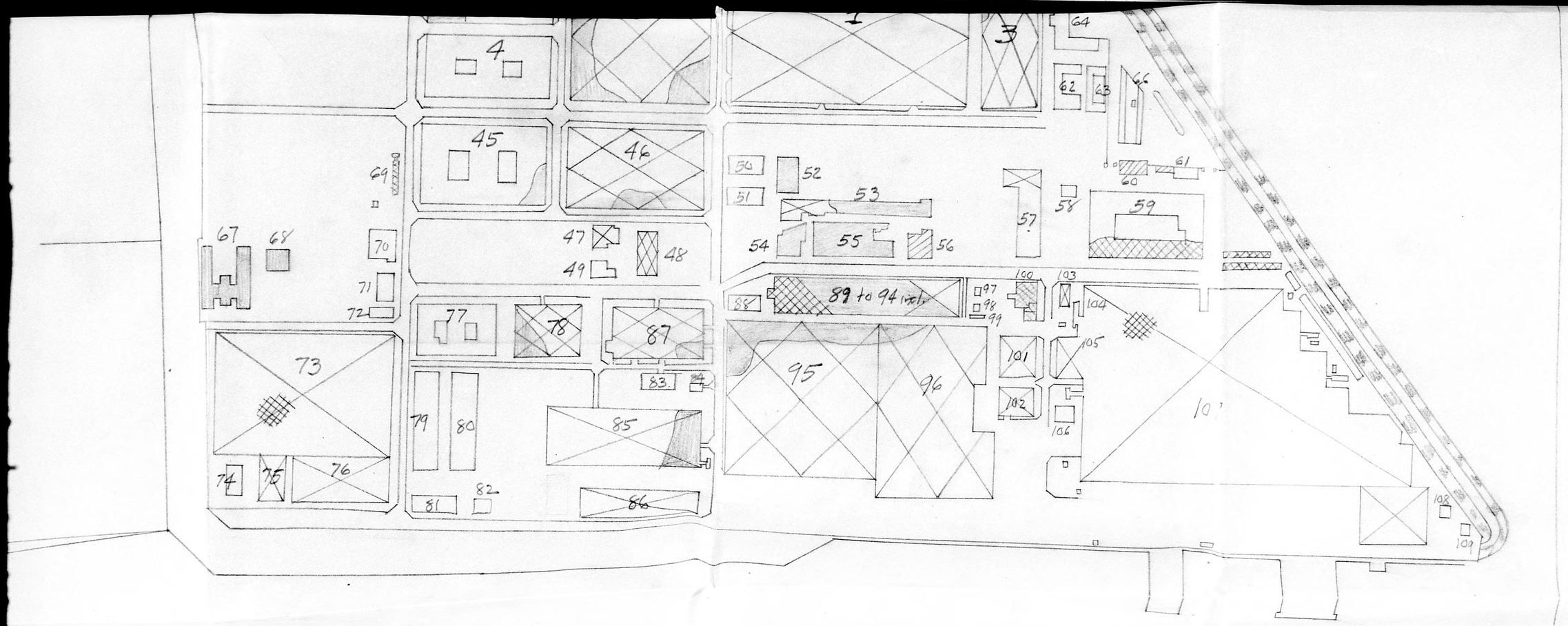
屋根側破損及骨骼破損 Roof and Structure Damaged

半壊 Partialy Damaged

大破 Totaly Damaged

焼失 Burnt

Kawanishi Aircra-
Kobe
Target 9025-18



屋根側破損 Roof Damaged

屋根側破損及骨骼破損 Roof and Structure Damaged

半壊 Partialy Damaged

大破 Totaly Damaged

焼失 Burnt

Kawanishi Aircraft
Kobe

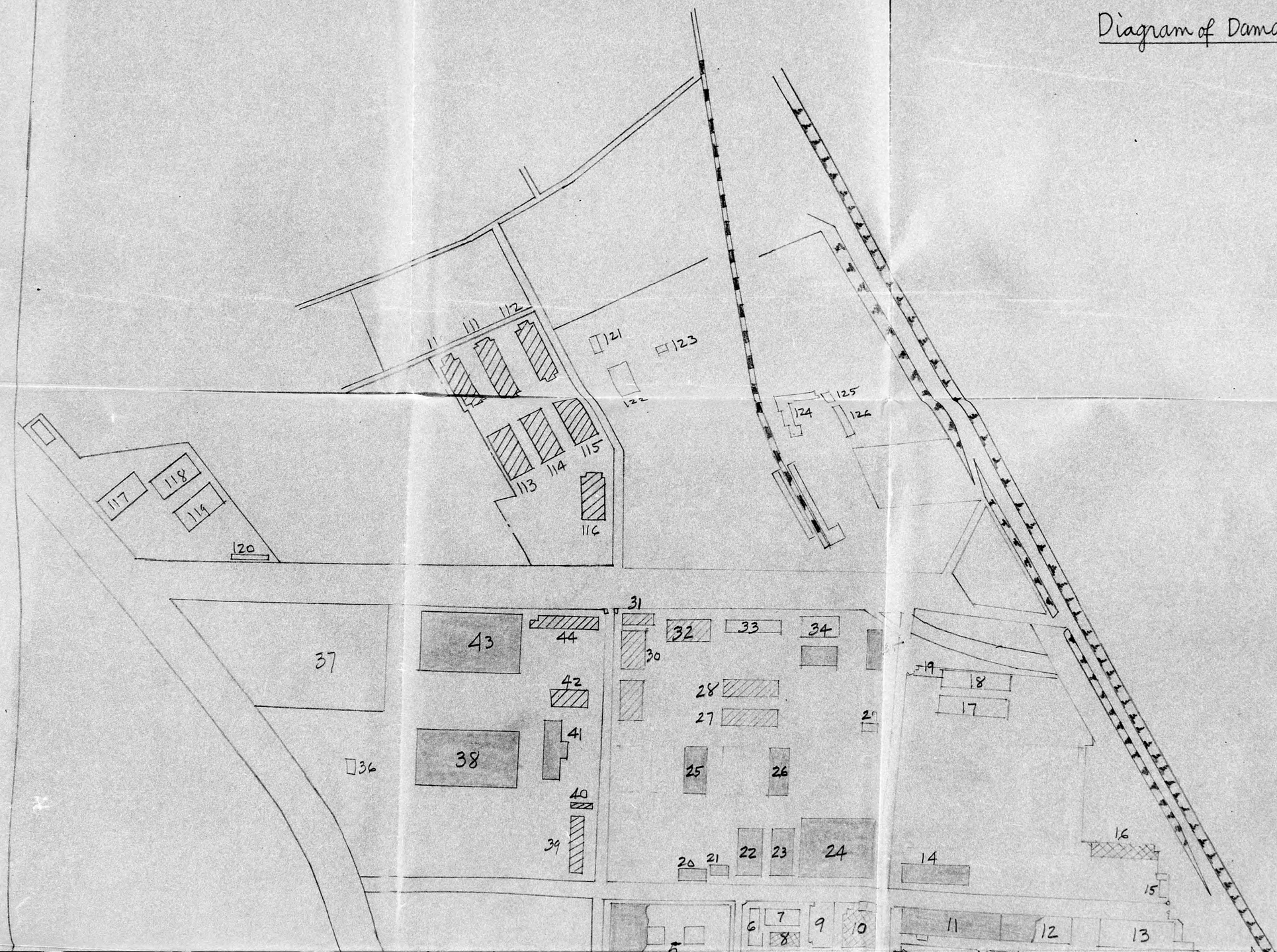
Target 9025-18

鳴尾製作所内建物焼失破壊状況

昭和20年6月9日被爆ニ依ル

Diagram of Damage Plots of Naruo Plant.

Air-raid, June 9



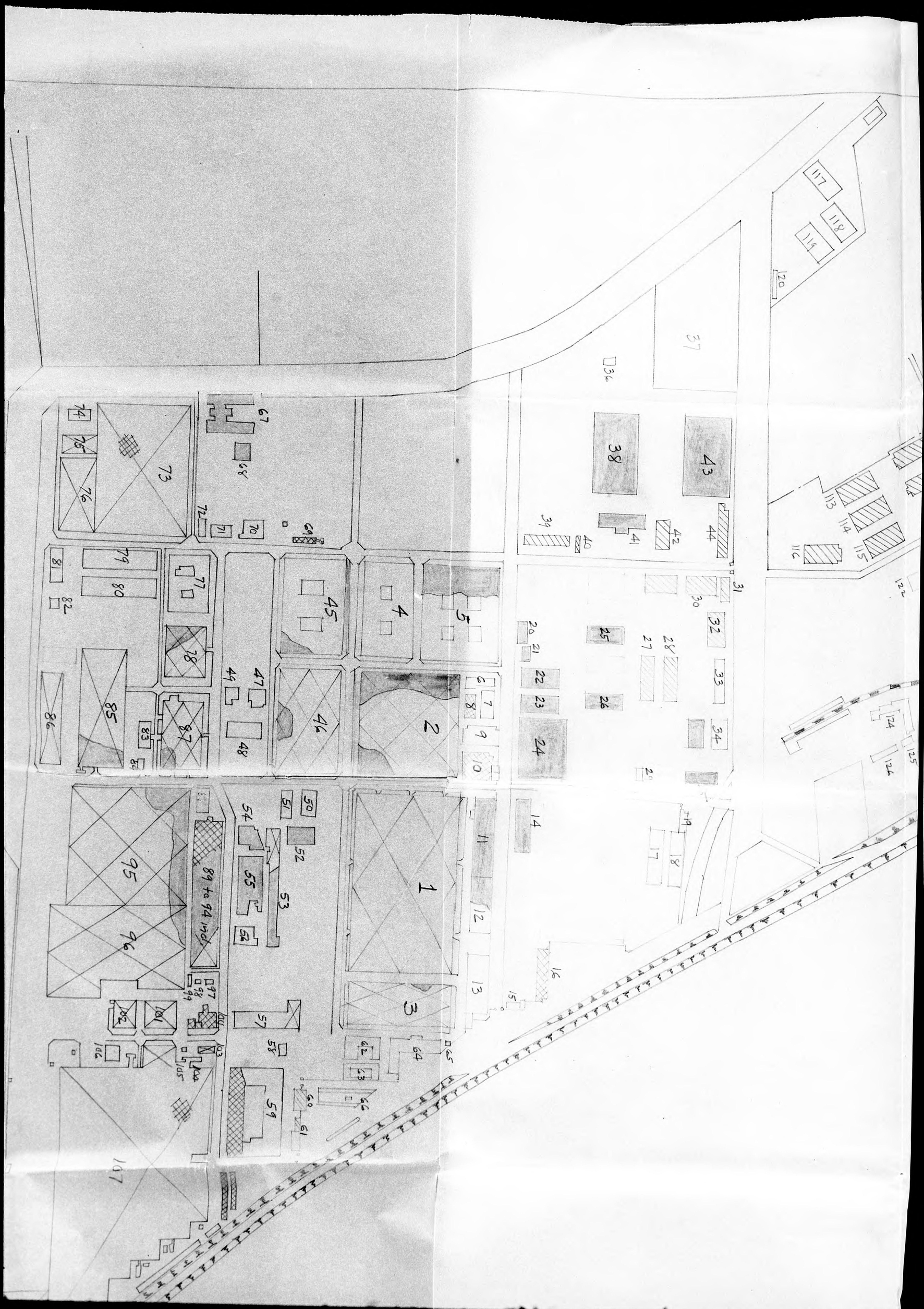
Authority NND 790021
By HR-M NARA, Date 3/6/91

鳴尾製作所内建物焼失破壊状況

昭和20年6月9日空襲ニ依リ

Diagram of Damage Plots of Naruo Plant.

Air-raid, June 9th 1945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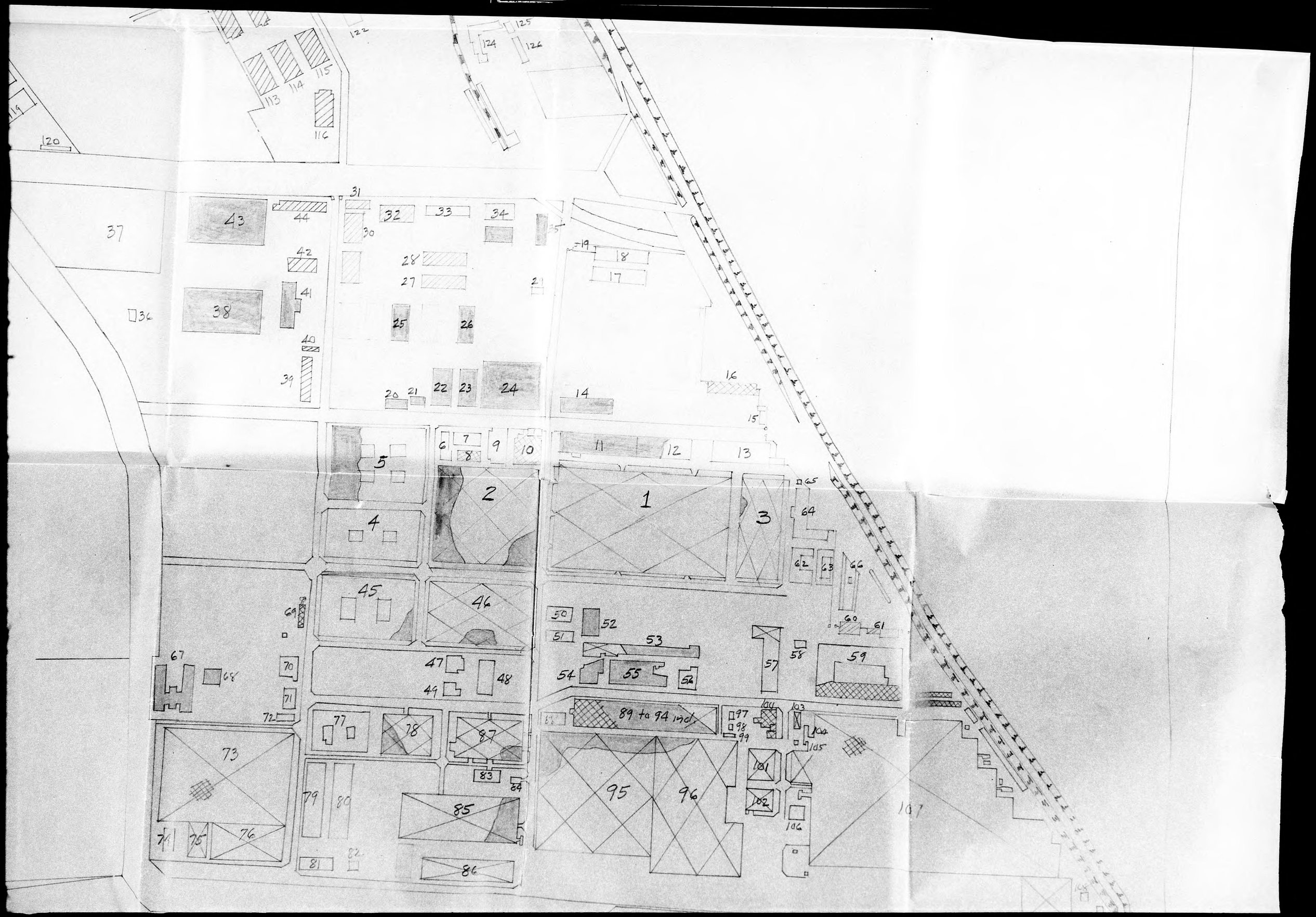
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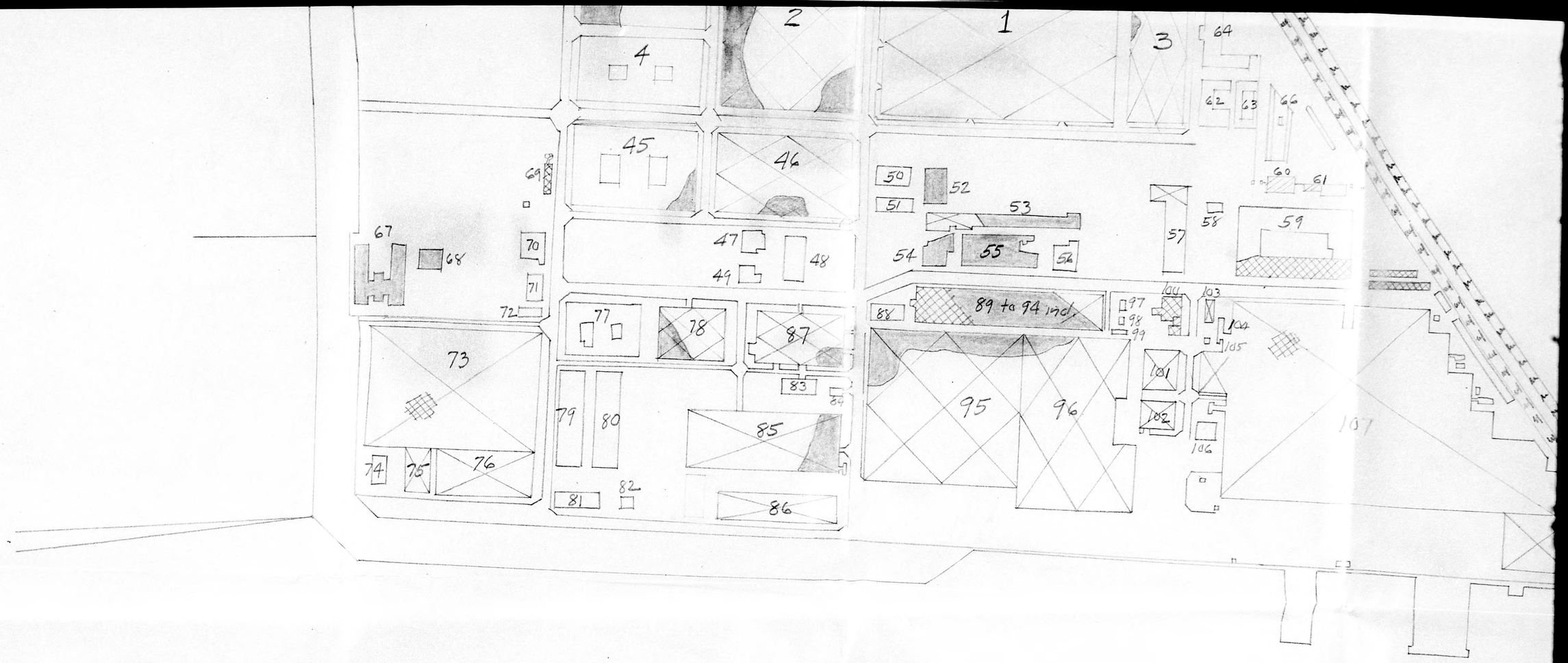


屋根側破損 Roof Damaged

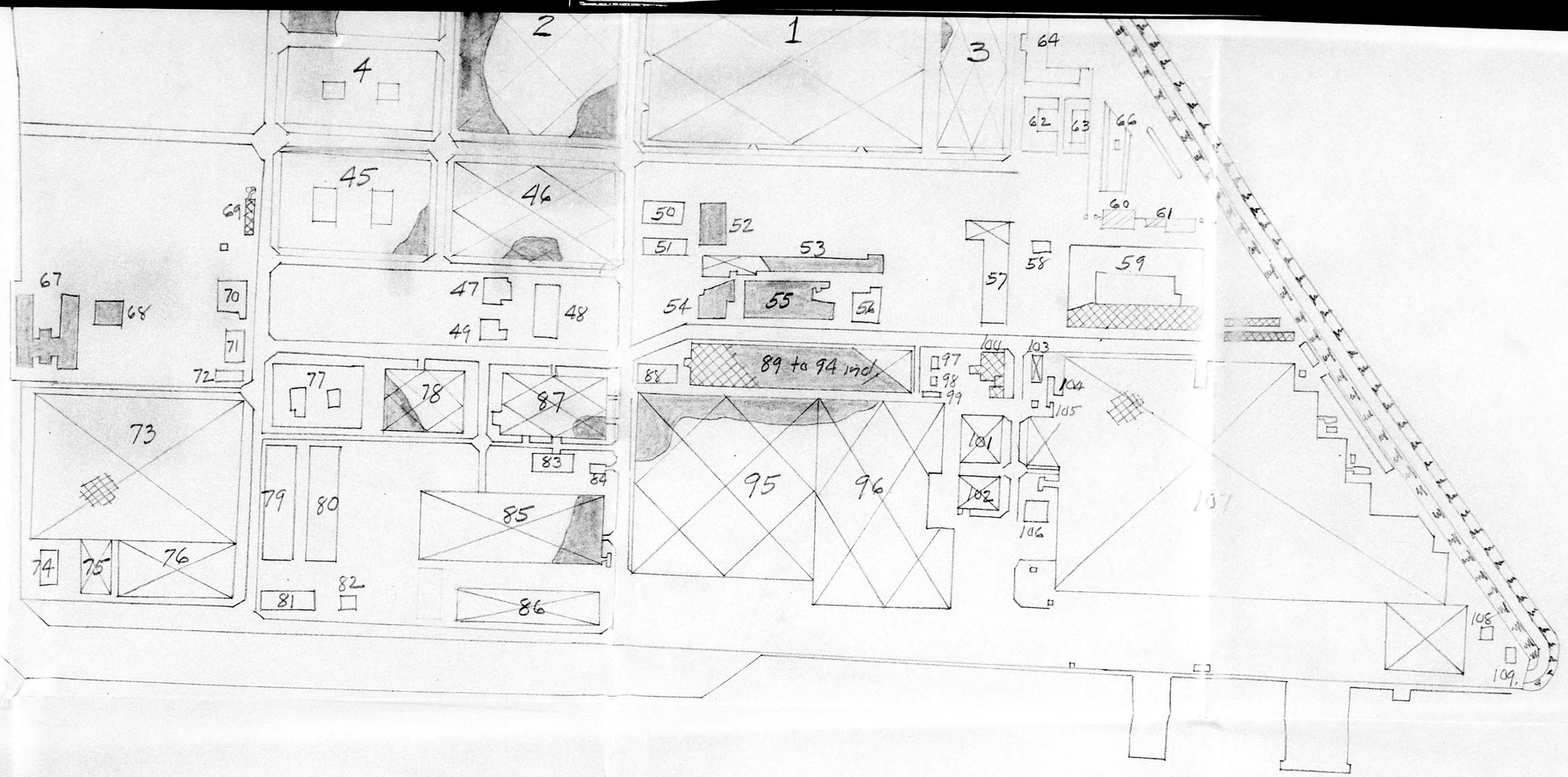
屋根側破損及骨骼破損 Roof and Structure Damaged

半壊 Partialy Damaged

大破 Totaly Damaged

焼失 Burnt.

Kawanishi Aircr
Kobe
Target 9025-18



屋根側破損 Roof Damaged

屋根側破損及骨骼破損 Roof and Structure Damaged

半壊 Partialy Damaged

大破 Totaly Damaged

焼失 Burnt.

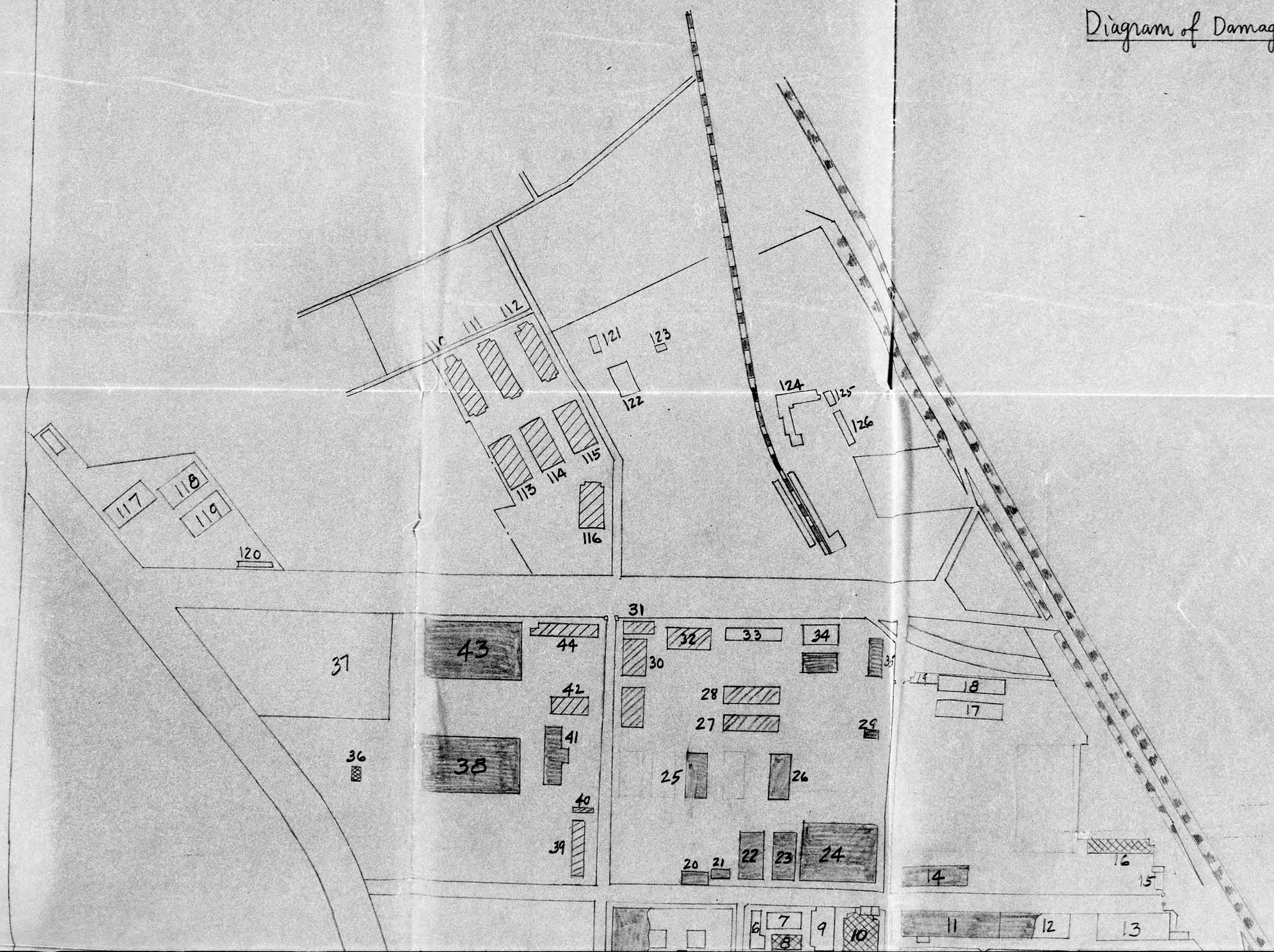
Kawanishi Aircraft
Kobe
Target 9025-18

鳴尾製作所内建物焼失破壊状況

昭和20年6月9日被爆ニ依ル

Diagram of Damage Plots of Naruo Plant.

air-raid, June

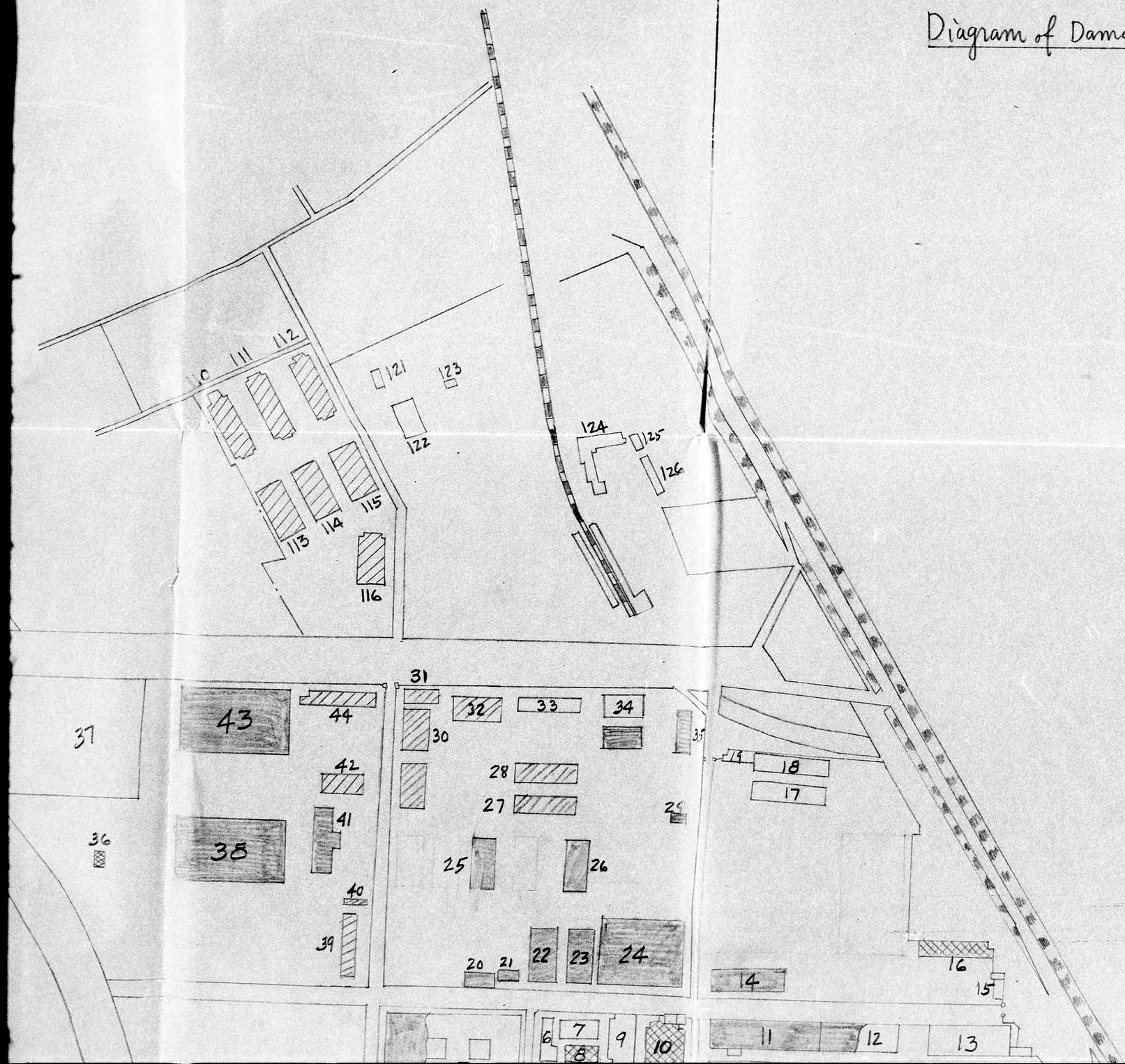


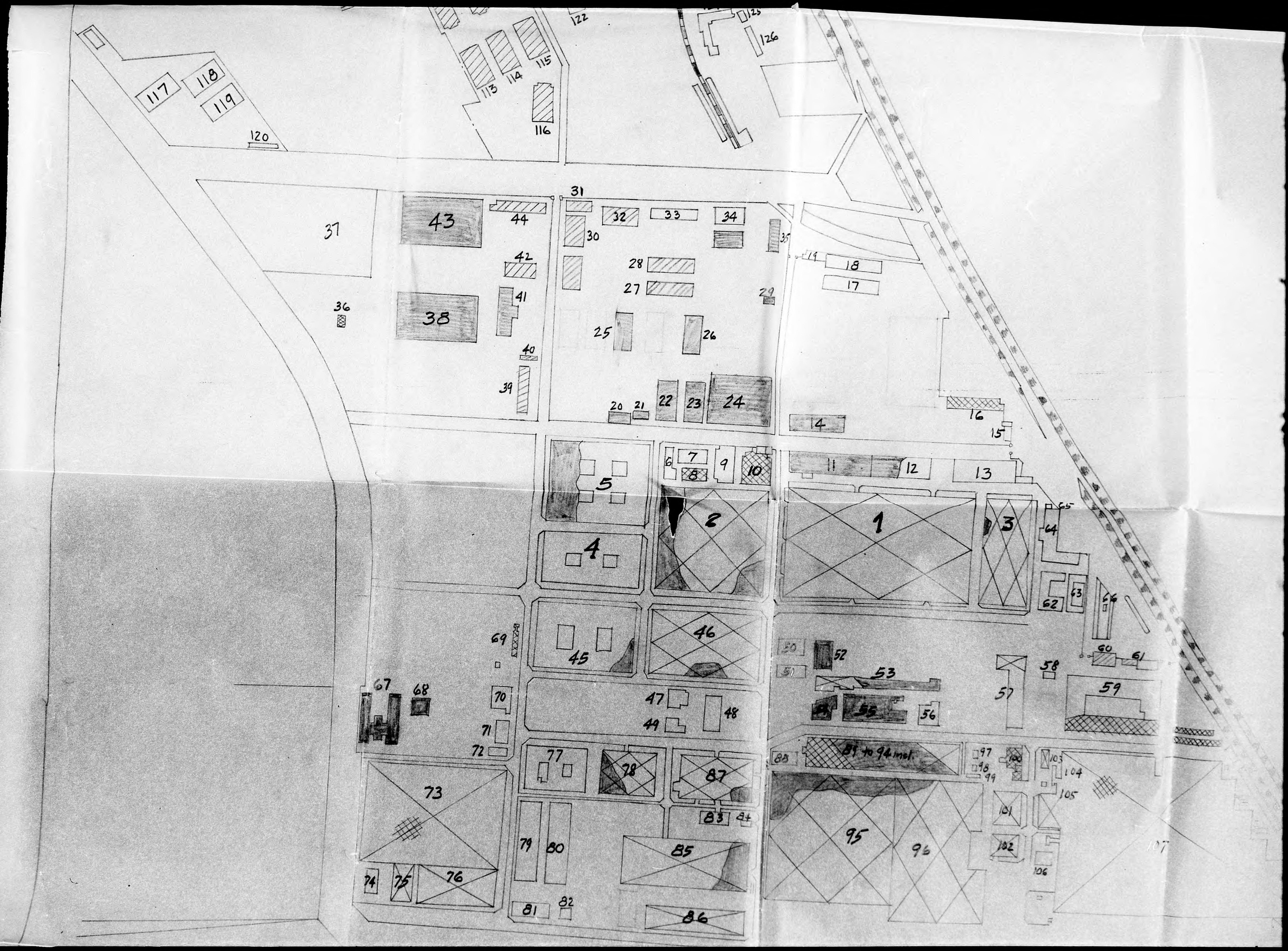
鳴尾製作所内建物焼失破壊状況

昭和20年6月9日被爆ニ依ル

Diagram of Damage Plots of Naruo Plant.

air-raid, June 9th 1945

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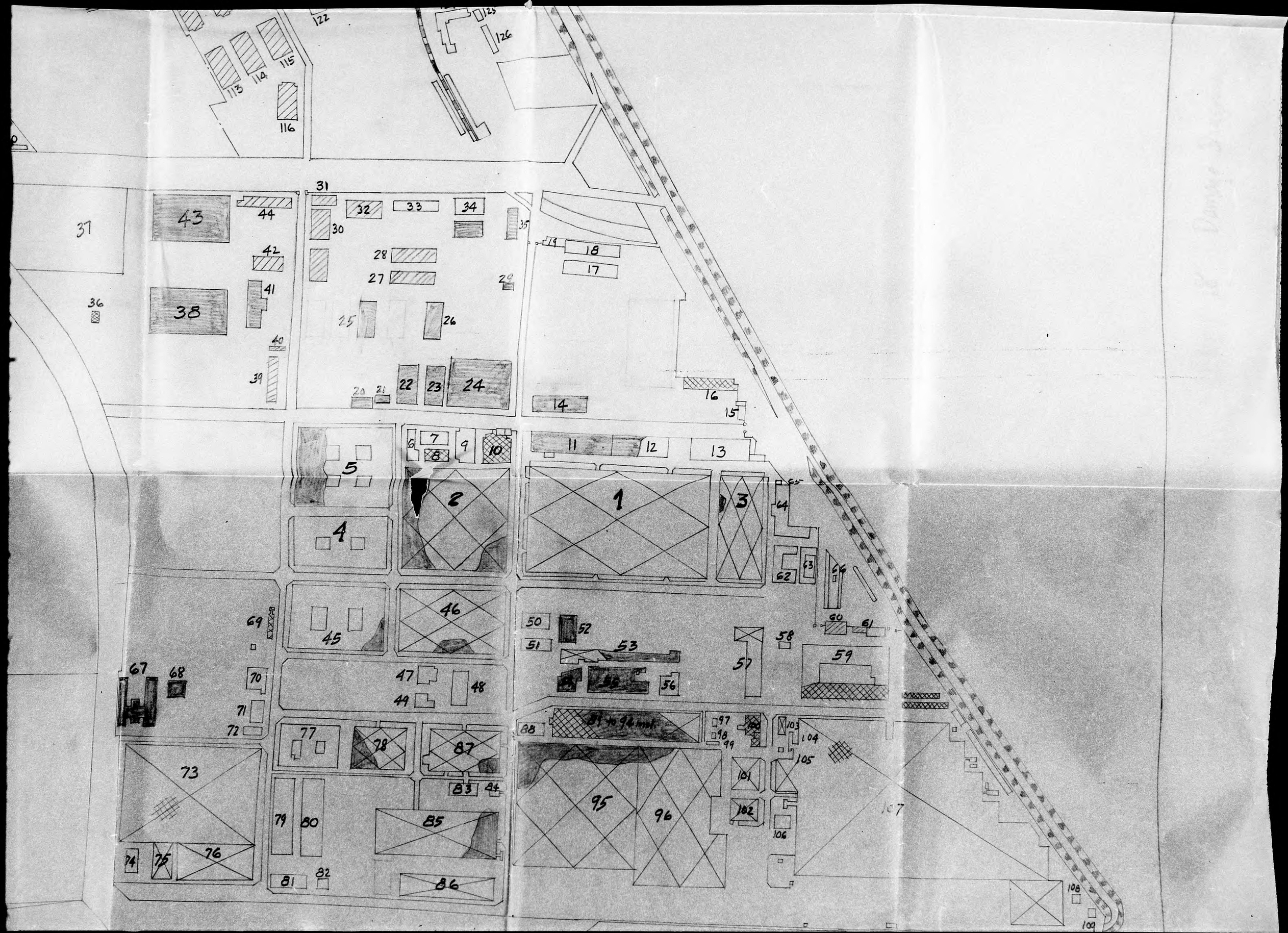
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屋根側破損 Roof Damaged

屋根側破損及骨骼破損 Roof and Structure Damaged

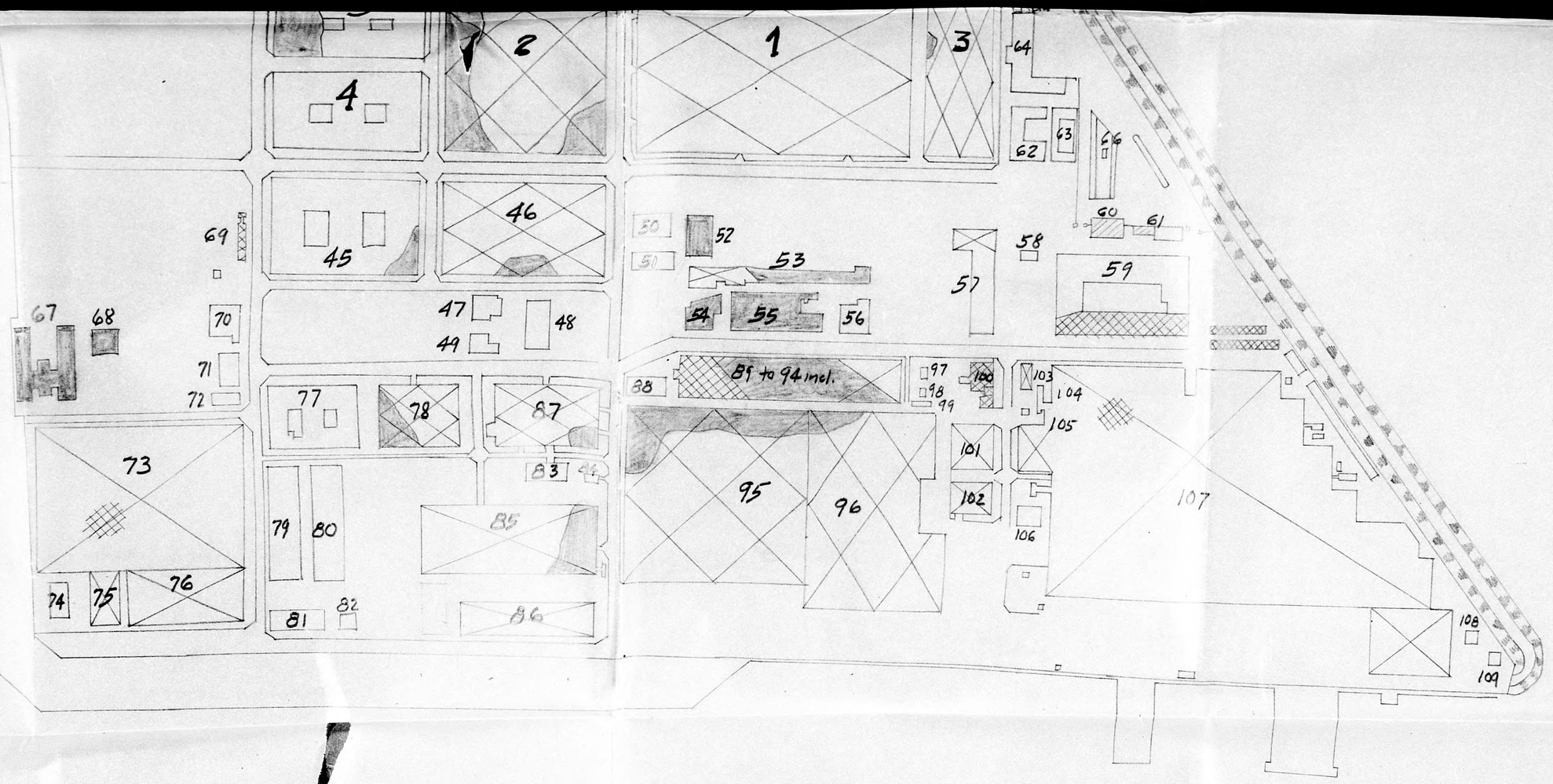
半壊 Partialy Damaged

大破 Totaly Damaged

焼失 Burnt

Kawanishi
Kobe
Target 9

SHEET 3



屋根側破損 Roof Damaged

屋根側破損及骨骼破損 Roof and Structure Damaged

半壊 Partialy Damaged

大破 Totaly Damaged

焼失 Burnt

Kawanishi Aircraft
Kobe
Target 9025-18

By HR-M NARA, Date 3/5/91

Bomb Plots in Naruo Plant.

scale $\frac{1}{2000}$

Note

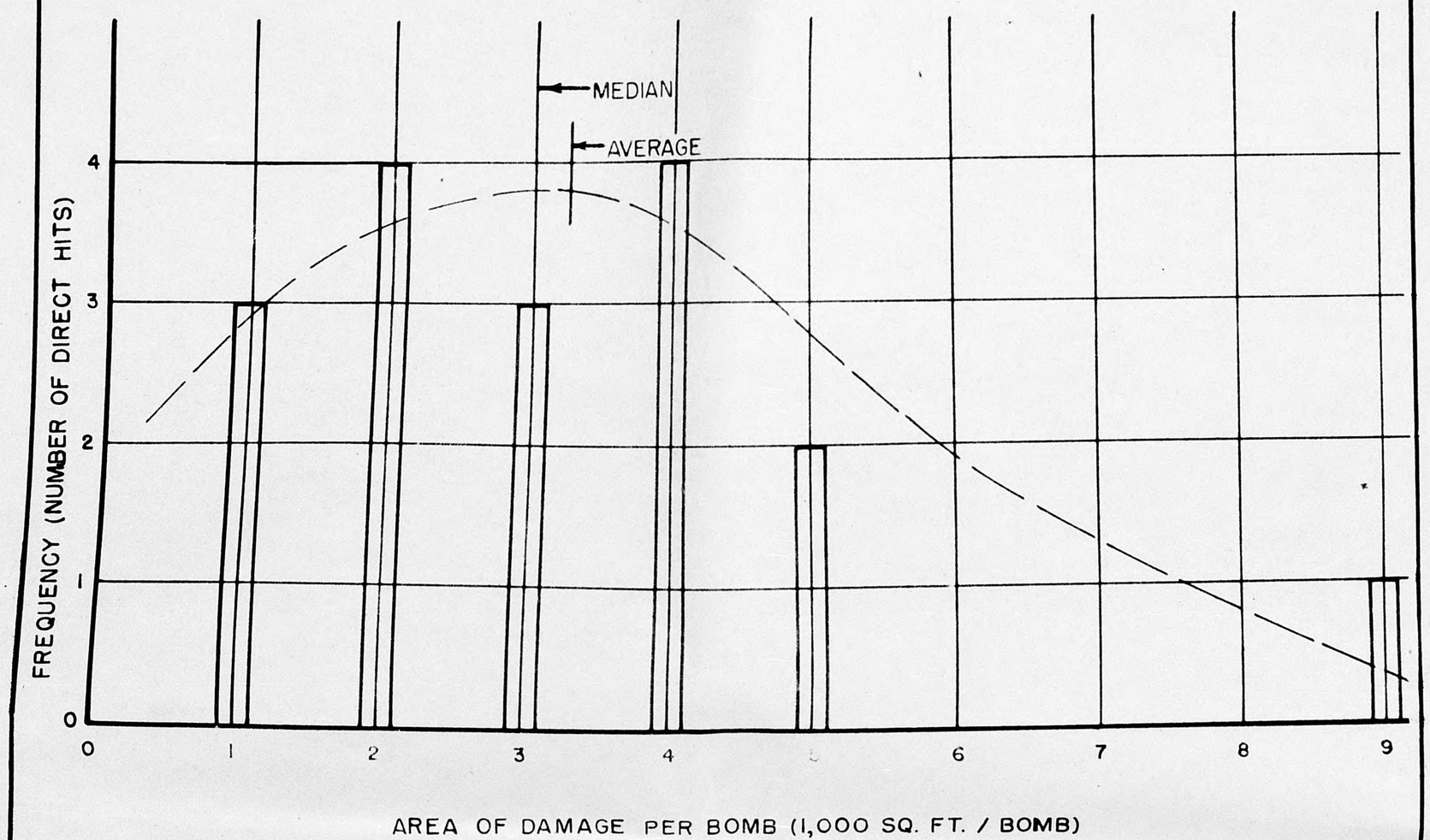
Date	Ordinary Bomb ○	Bomb with instantanious fuse ×	Effective	Ineffective	Total
June 9th.	208	120	213	115	328
July 19th.	110	—	13	97	110
Aug. 6th.	About 325 incendiary bombs in //// coloured part.				

Susaki Station
Sheet metal Shop
Assembling Shop
Machine Shop
Line Shop
Mukogawa
Metal

Sheet metal Shop
Assembling Shop
Machine Shop
Crane runs every other root bay
Mute-gowa
note show 3rd fl.
Detail
Bldg. Plan
as of 3-28-45
X - BUILDING NO
NOTE: Bomb Numbers in open - 1
① One Story Building
② Two Story Building
③ One Story with Mezzanine Floor
④ Three Story Building
⑤ One Story with Basement
⑥ Steel Building
⑦ Concrete Building

DISTRIBUTION OF STRUCTURAL DAMAGE PER BOMB

FOR 17 NON-CRATERING 1,000-LB. G.P. BOMBS



1,000-LB. G.P.; .01 SEC. NOSE DELAY, N.D. TAIL

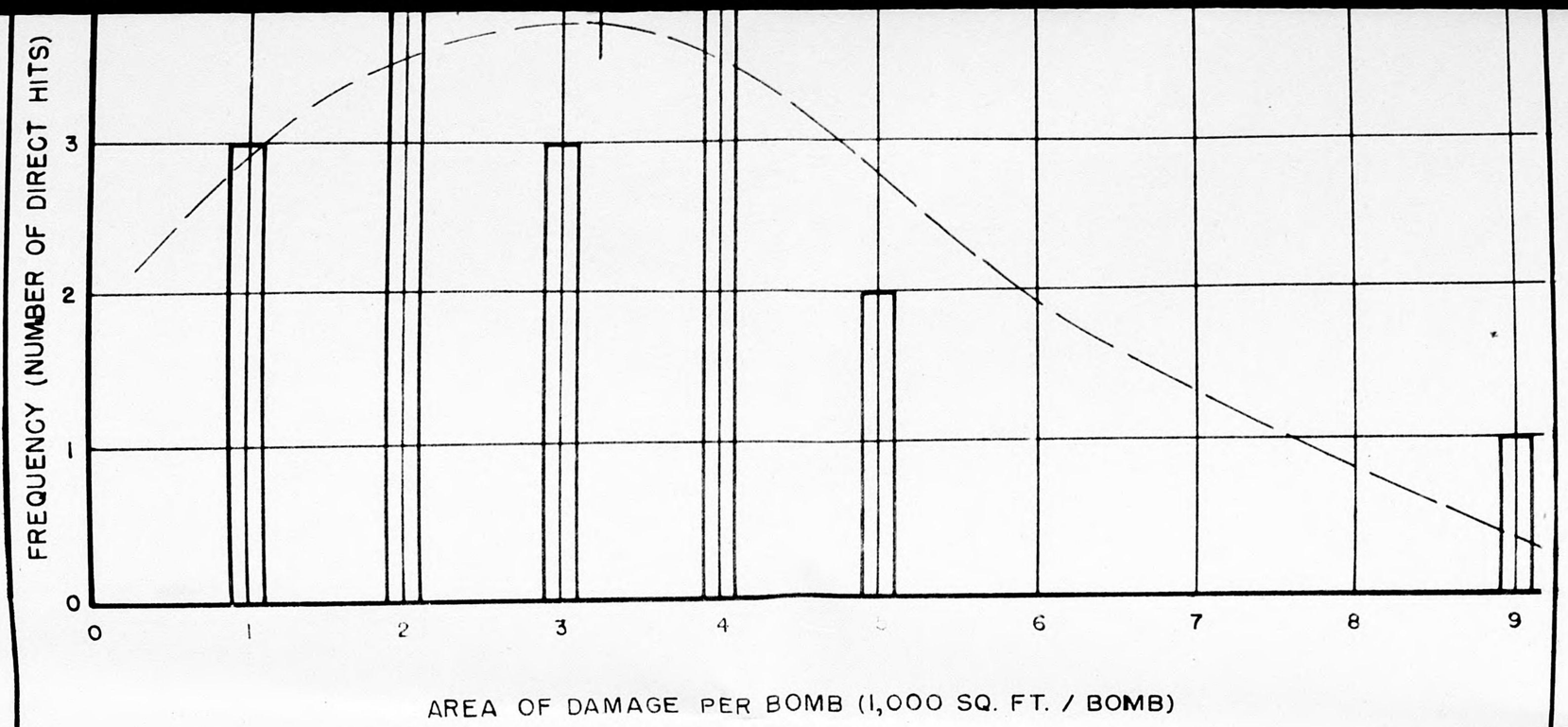
KAWANISHI AIRCRAFT, NARUO PLANT

TYPE B2 BUILDINGS (JTG)

STRUCTURAL STEEL, LIGHT CRANES

U.S. STRATEGIC BOMBING SURVEY

PHYSICAL DAMAGE



1,000-LB. G.P.; .01 SEC. NOSE DELAY, N.D. TAIL

KAWANISHI AIRCRAFT, NARUO PLANT

TYPE B2 BUILDINGS (JTG)

STRUCTURAL STEEL, LIGHT CRANES

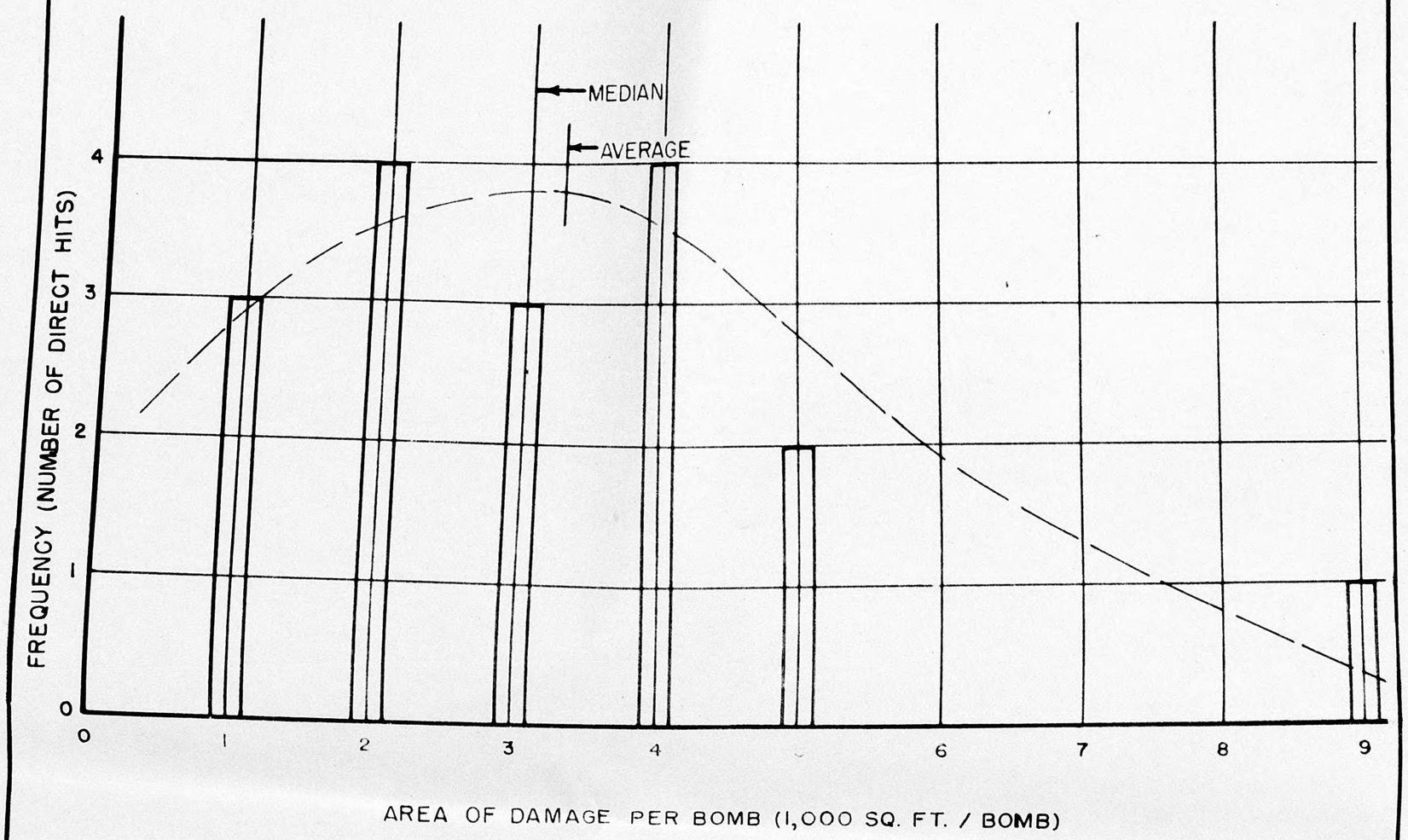
U.S. STRATEGIC BOMBING SURVEY

PHYSICAL DAMAGE

FIGURE 2

DISTRIBUTION OF STRUCTURAL DAMAGE PER BOMB

FOR 17 NON-CRATERING 1,000-LB. G.P. BOMBS



1,000-LB. G.P.; .01 SEC. NOSE DELAY, N.D. TAIL

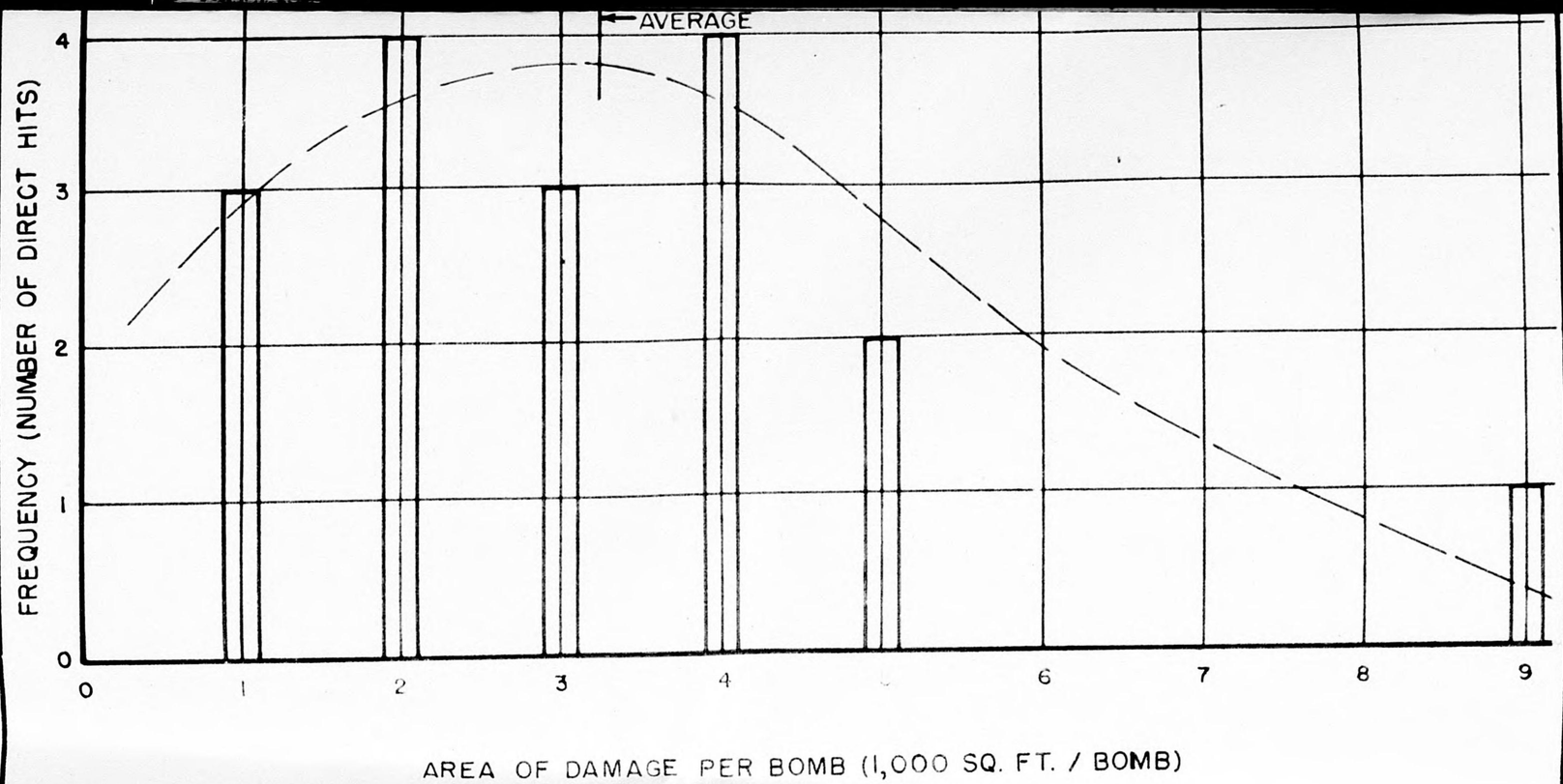
KAWANISHI AIRCRAFT, NARUO PLANT

TYPE B2 BUILDINGS (JTG)

STRUCTURAL STEEL, LIGHT CRANES

U.S. STRATEGIC BOMBING SURVEY

PHYSICAL DAMAGE



1,000-LB. G.P.; .01 SEC. NOSE DELAY, N.D. TAIL

KAWANISHI AIRCRAFT, NARUO PLANT

TYPE B2 BUILDINGS (JTG)

STRUCTURAL STEEL, LIGHT CRANES

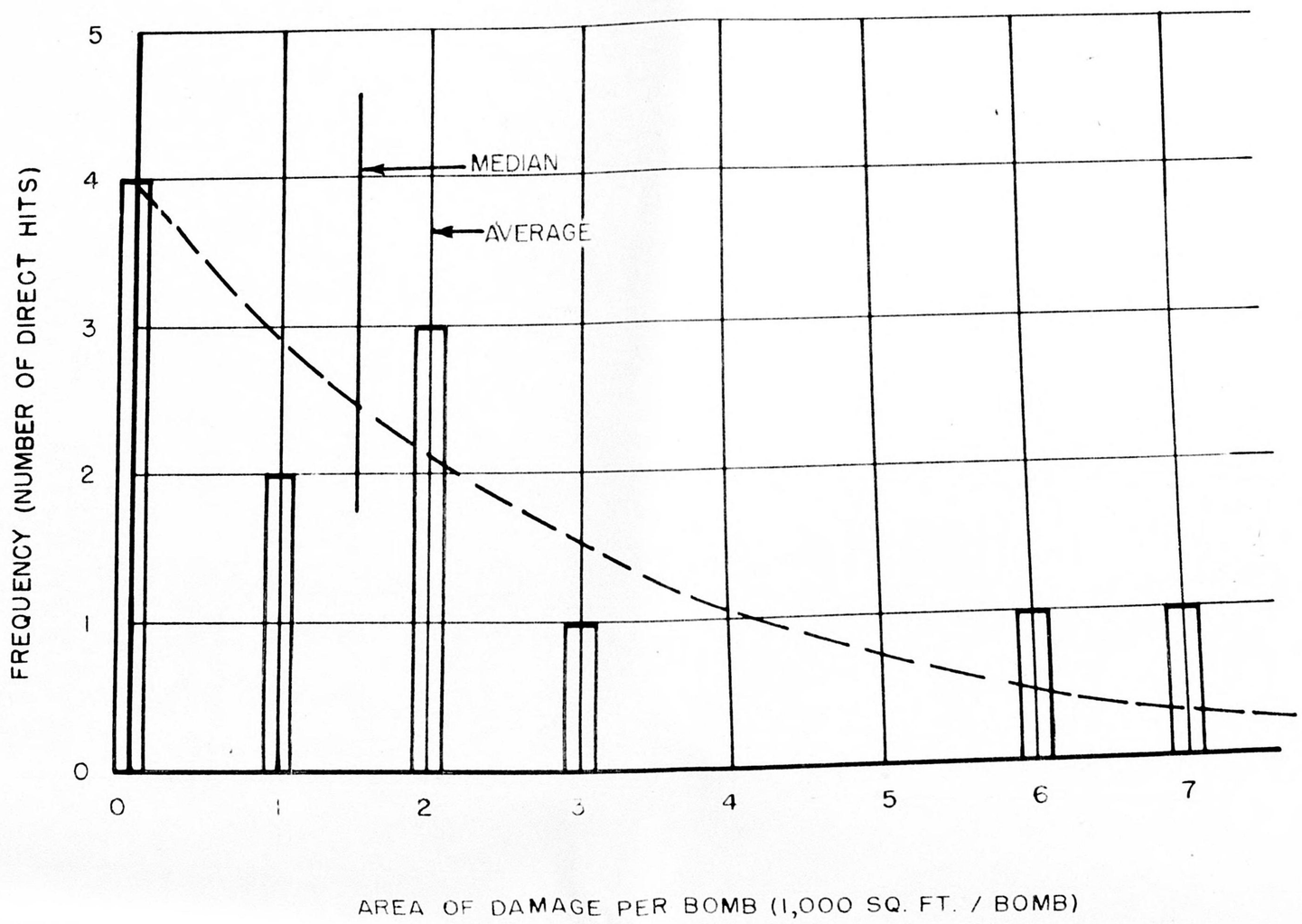
U.S. STRATEGIC BOMBING SURVEY

PHYSICAL DAMAGE

FIGURE 2

DISTRIBUTION OF STRUCTURAL DAMAGE PER BOMB

FOR 12 CRATERING 1,000-LB. G.P. BOMBS



1,000-LB. G.P.; .01 SEC. NOSE DELAY, N.D. TAIL

KAWANISHI AIRCRAFT, NARUO PLANT

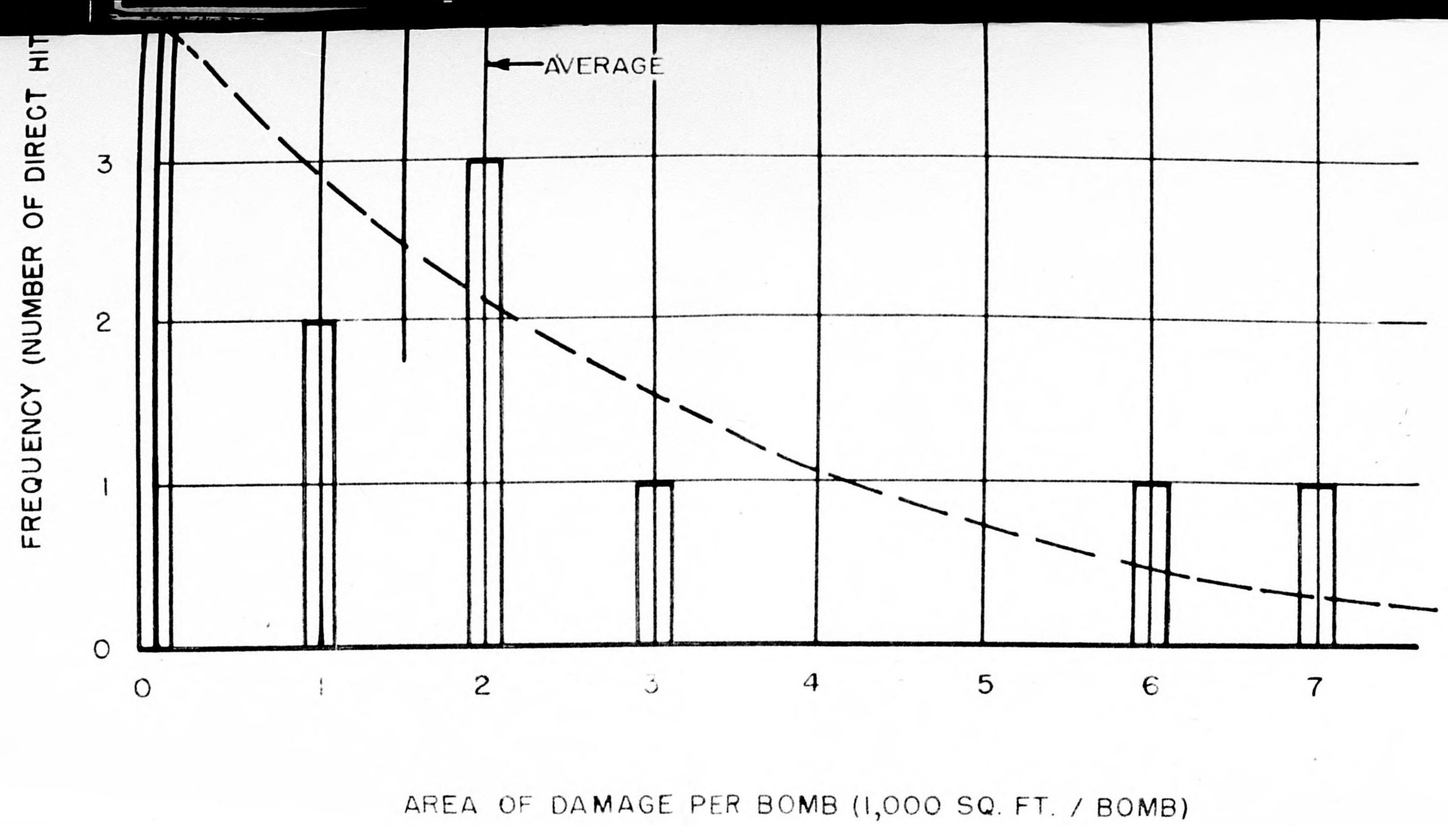
TYPE B2 BUILDINGS (JTG)

STRUCTURAL STEEL, LIGHT CRANES

U.S. STRATEGIC BOMBING SURVEY

PHYSICAL DAMAGE

FIGURE 3



1,000-LB. G.P.; .01 SEC. NOSE DELAY, N.D. TAIL

KAWANISHI AIRCRAFT, NARUO PLANT

TYPE B2 BUILDINGS (JTG)

STRUCTURAL STEEL, LIGHT CRANES

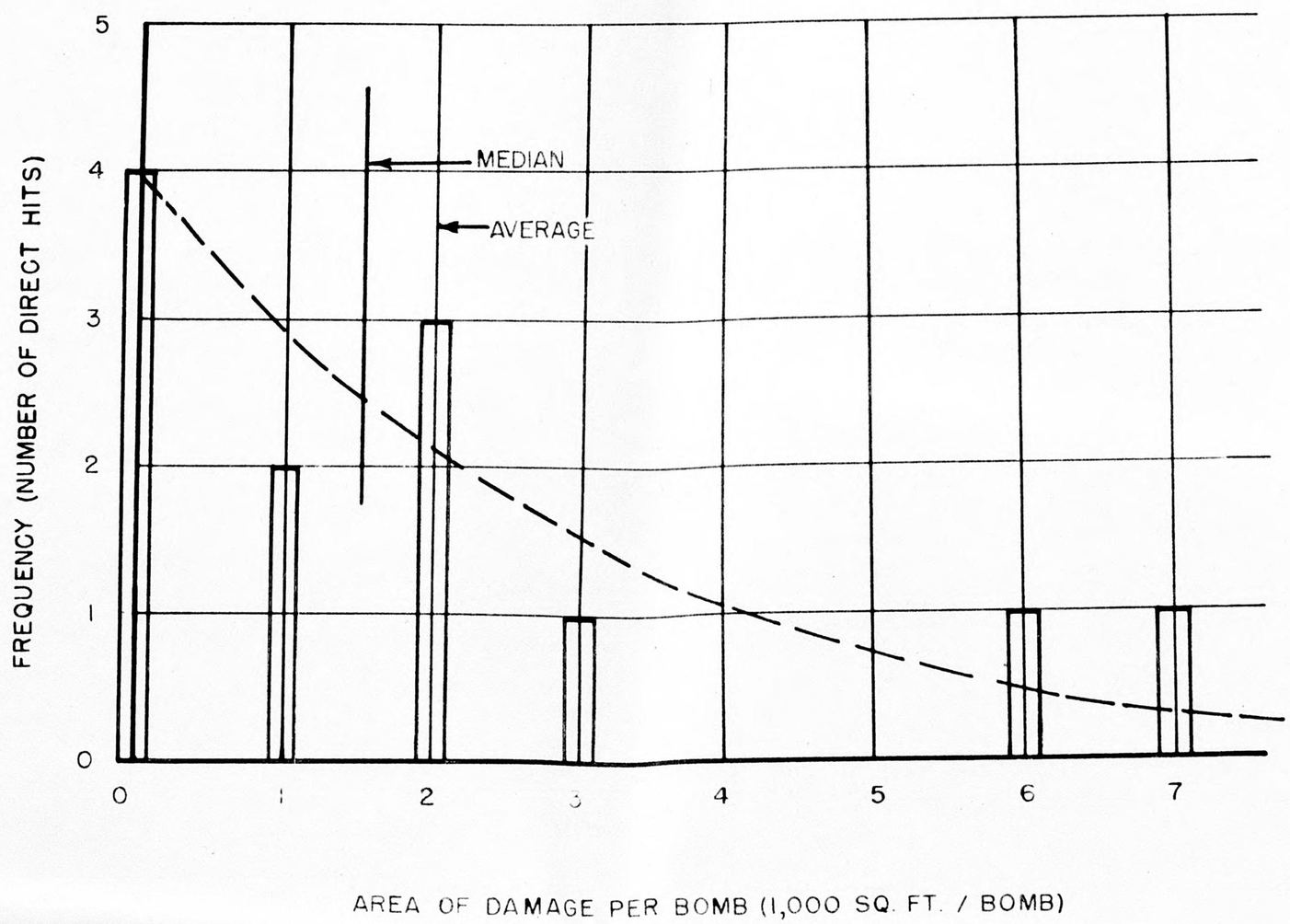
U.S. STRATEGIC BOMBING SURVEY

PHYSICAL DAMAGE

FIGURE 3

DISTRIBUTION OF STRUCTURAL DAMAGE PER BOMB

FOR 12 CRATERING 1,000-LB. G.P. BOMBS



1,000-LB. G.P.; .01 SEC. NOSE DELAY, N.D. TAIL

KAWANISHI AIRCRAFT, NARUO PLANT

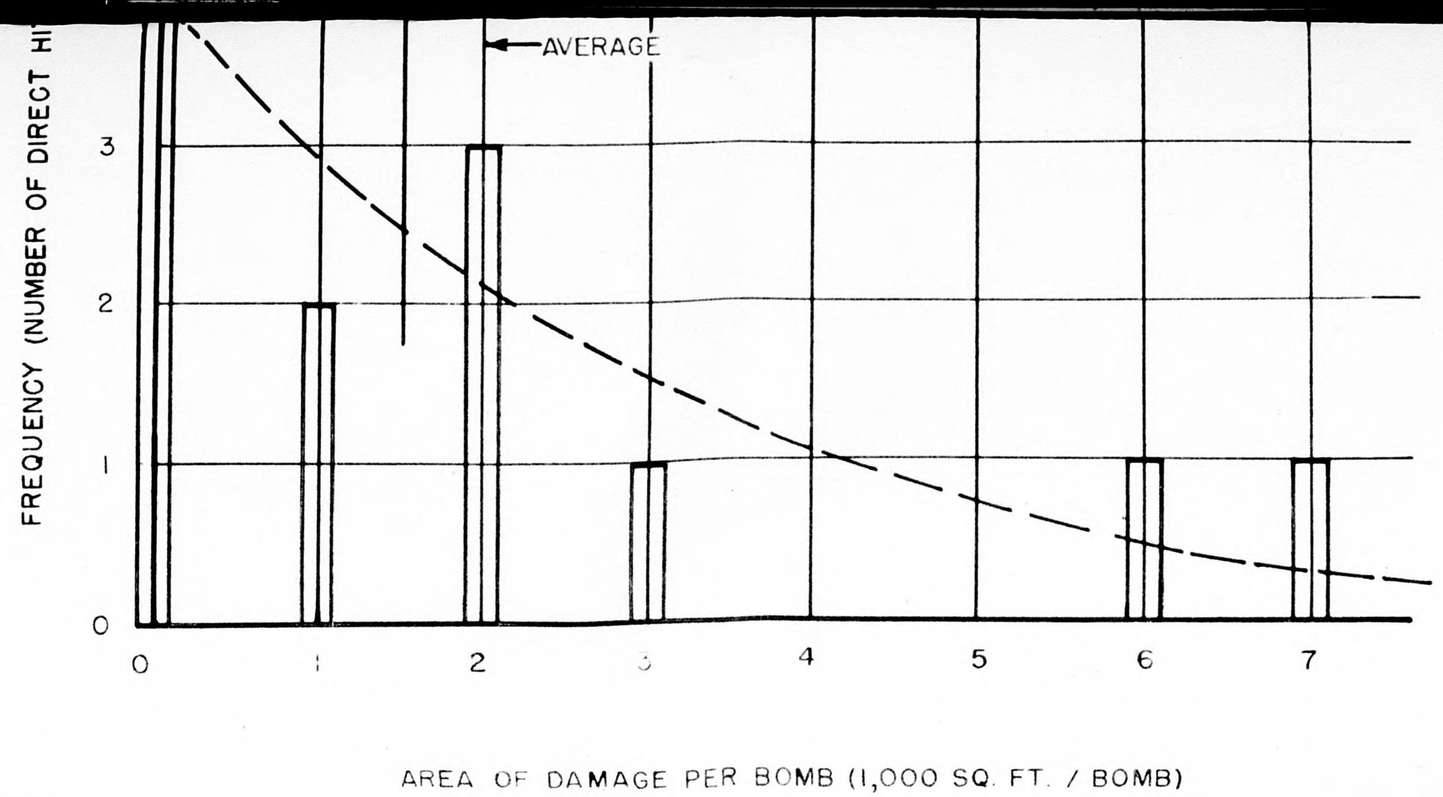
TYPE B2 BUILDINGS (JTG)

STRUCTURAL STEEL, LIGHT CRANES

U.S. STRATEGIC BOMBING SURVEY

PHYSICAL DAMAGE

FIGURE 3



1,000-LB. G.P.; .01 SEC. NOSE DELAY, N.D. TAIL

KAWANISHI AIRCRAFT, NARUO PLANT

TYPE B2 BUILDINGS (JTG)

STRUCTURAL STEEL, LIGHT CRANES

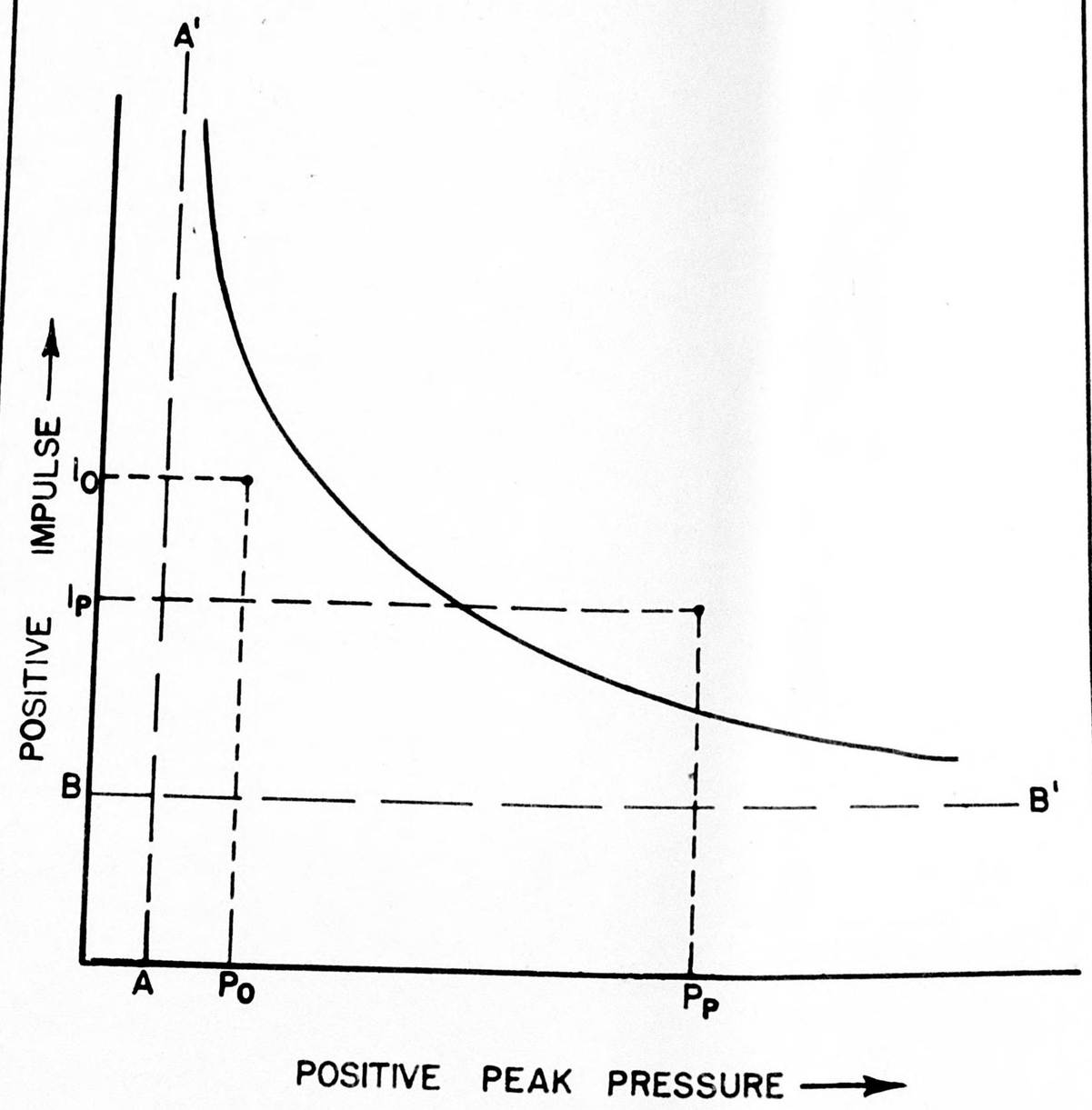
U.S. STRATEGIC BOMBING SURVEY

PHYSICAL DAMAGE

FIGURE 3

By HR-M NARA, Date 3/5/91

PRESSURE—IMPULSE VULNERABILITY CURVE

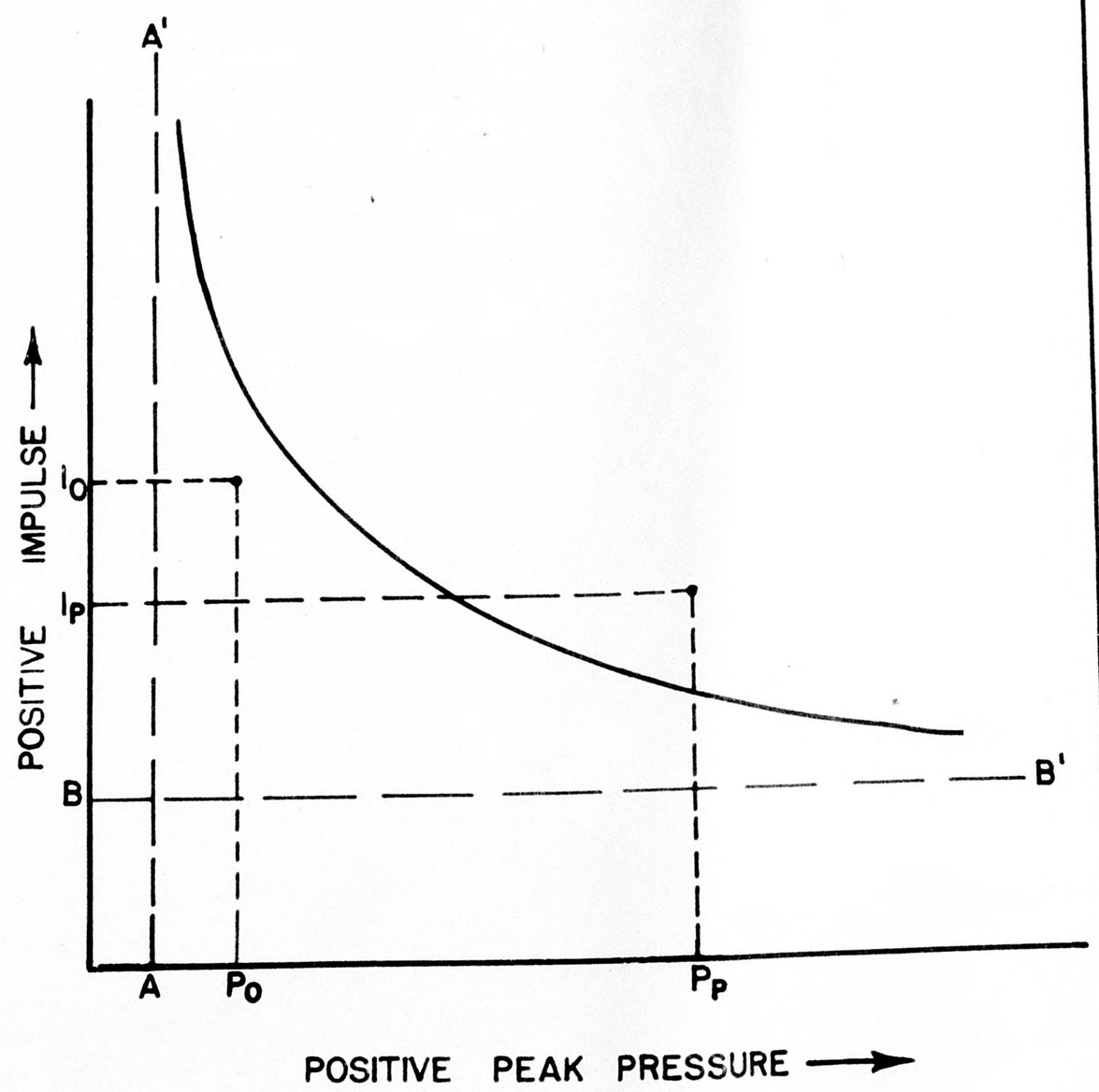


U.S. STRATEGIC BOMBING SURVEY

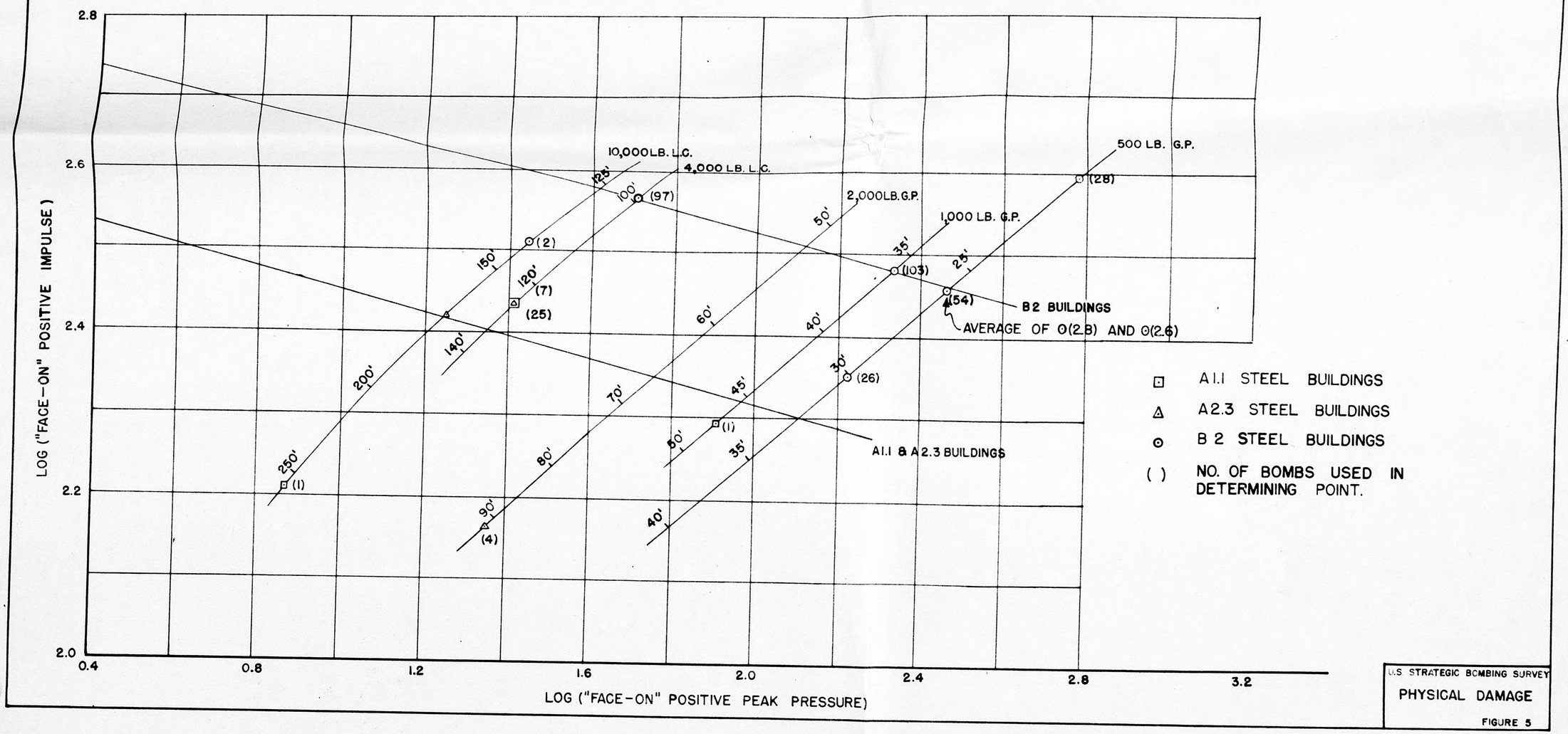
PHYSICAL DAMAGE

FIGURE 4

PRESSURE — IMPULSE VULNERABILITY CURVE



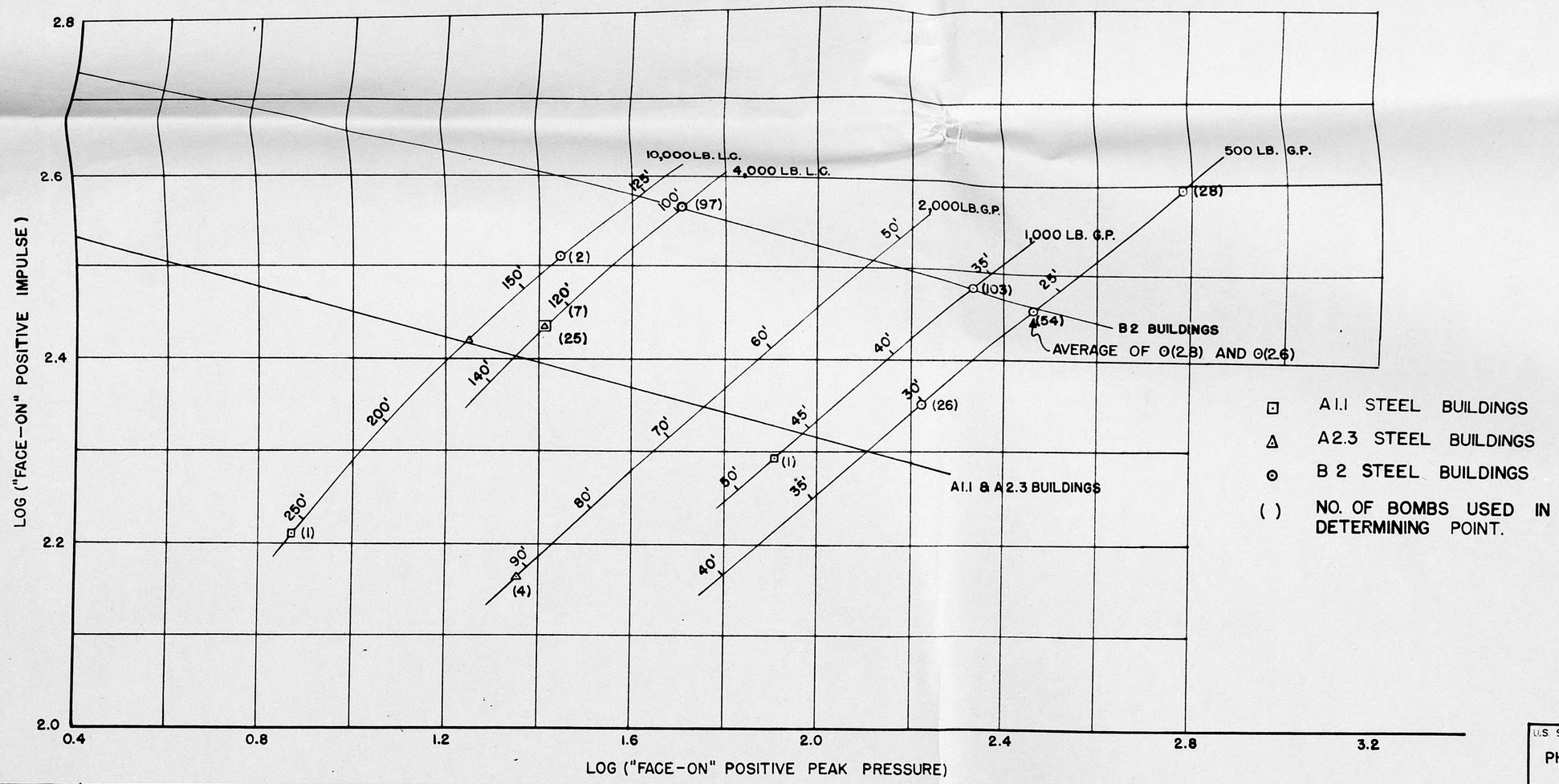
U.S. STRATEGIC BOMBING SURVEY
PHYSICAL DAMAGE
FIGURE 4



U.S. STRATEGIC BOMBING SURVEY

PHYSICAL DAMAGE

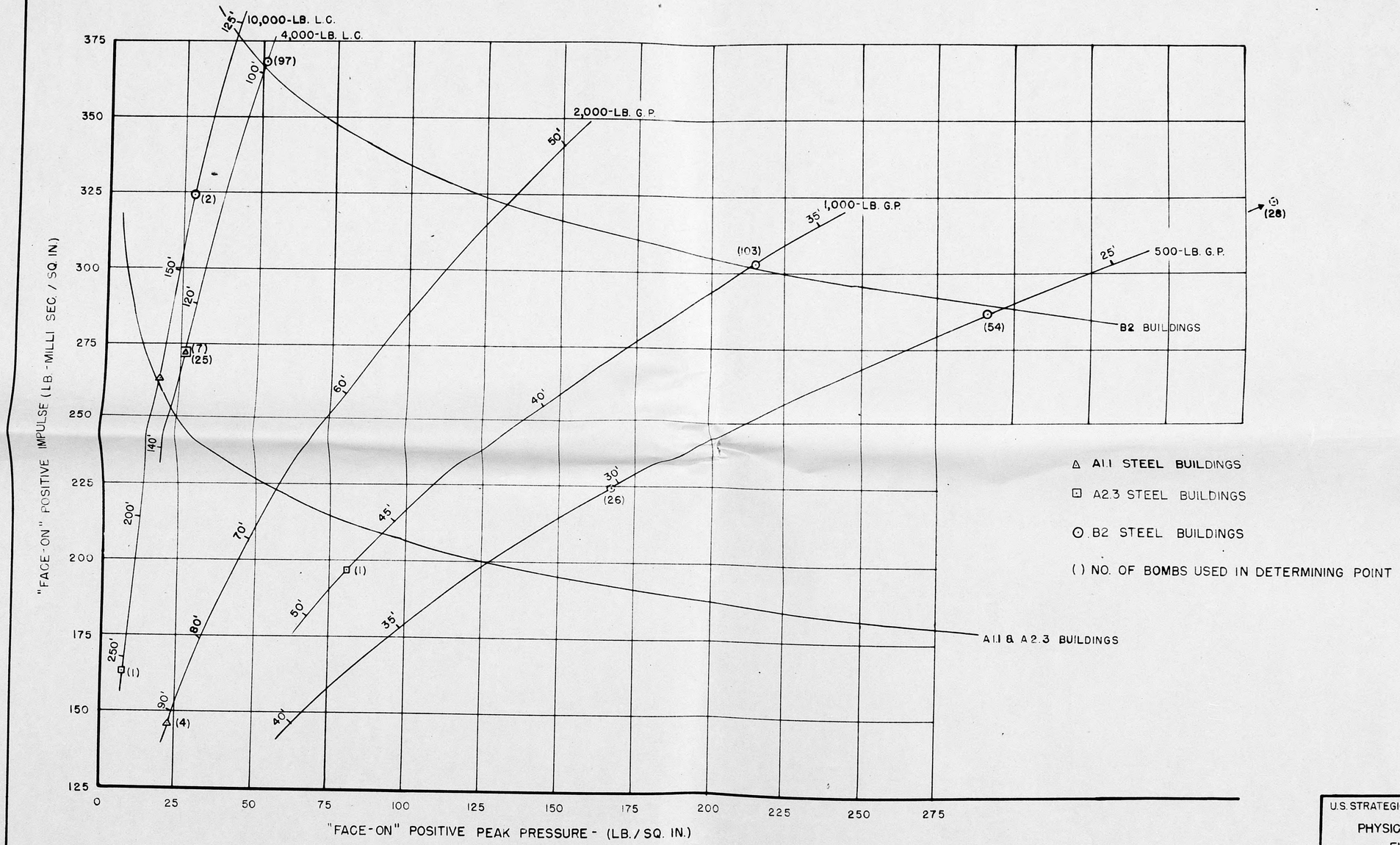
FIGURE 5



U.S. STRATEGIC BOMBING SURVEY

PHYSICAL DAMAGE

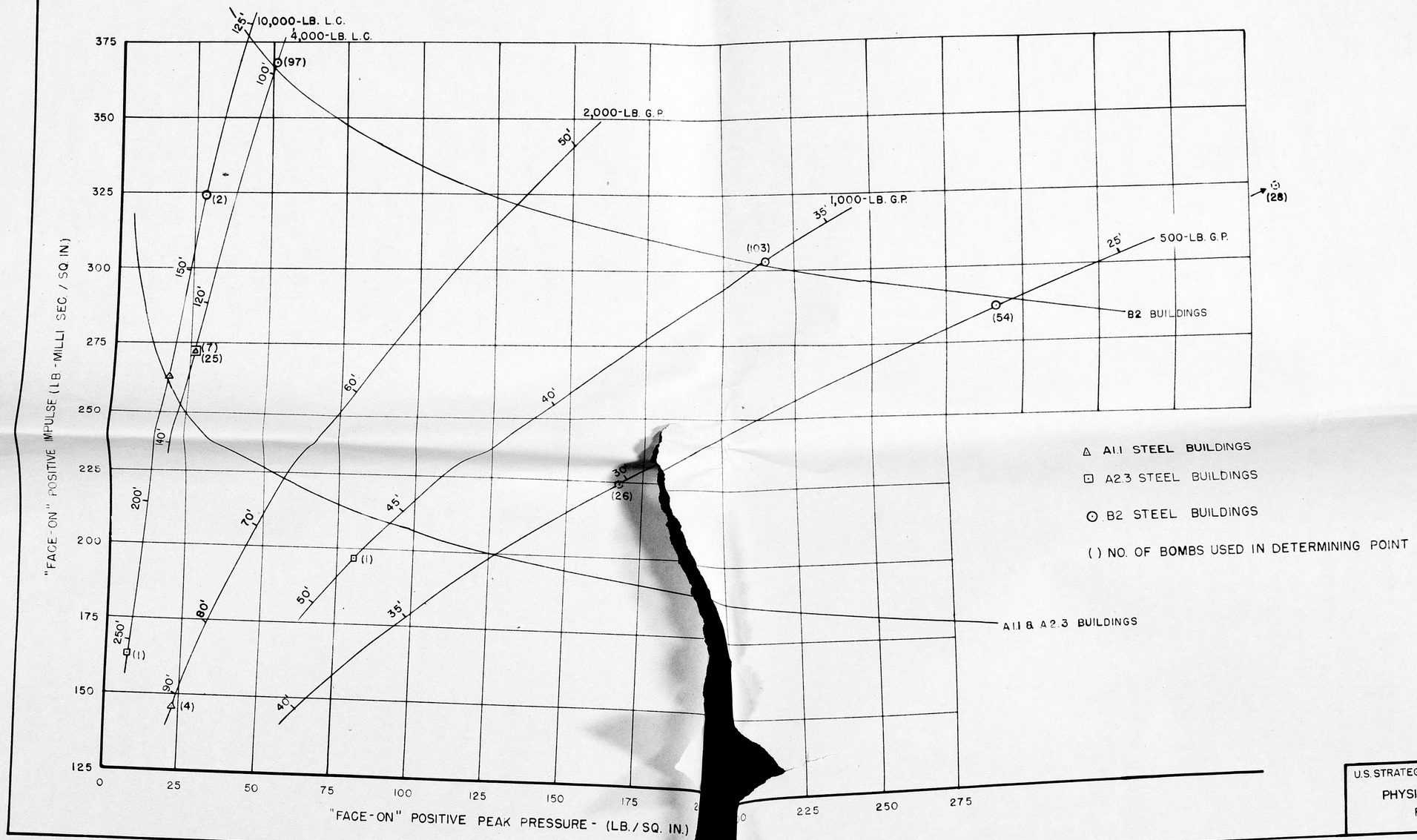
FIGURE 5



U.S. STRATEGIC BOMBING SURVEY

PHYSICAL DAMAGE

FIGURE-6



U.S. STRATEGIC BOMBING SURVEY

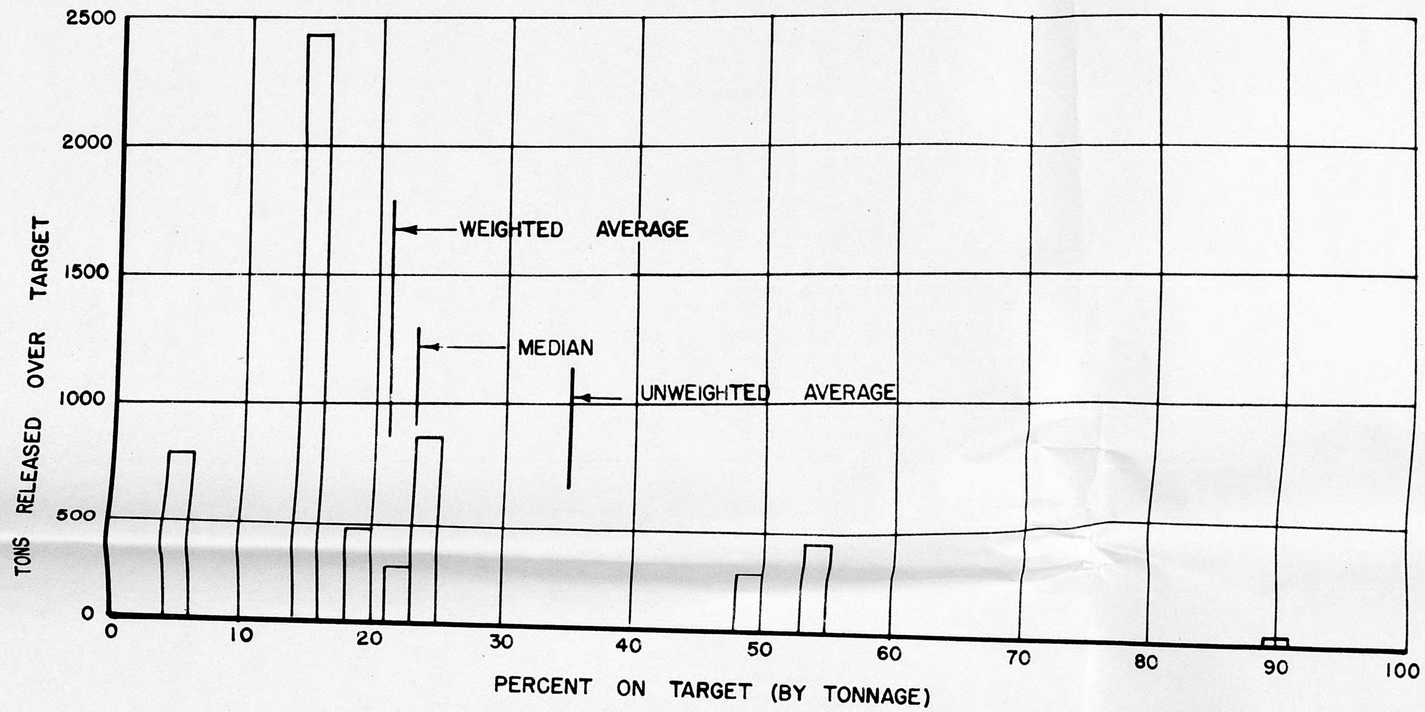
PHYSICAL DAMAGE

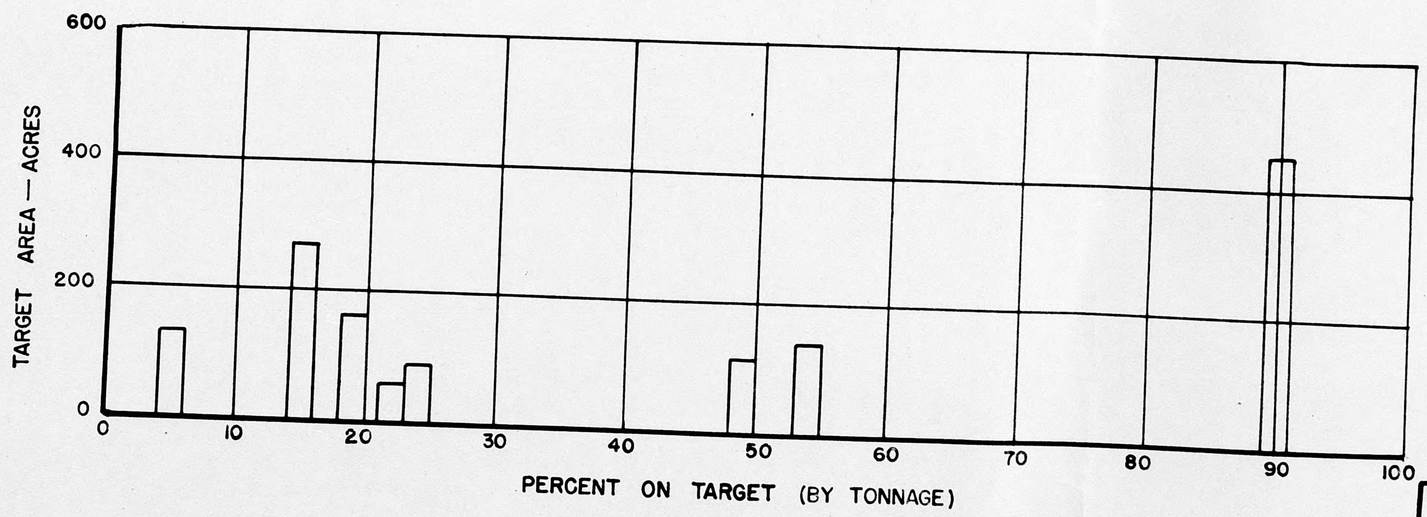
FIGURE-6

By AR-A NARA, Date 3/13/91

BOMBS ON TARGET AREA

(FOR A SAMPLE OF 8 JAPANESE TARGETS)





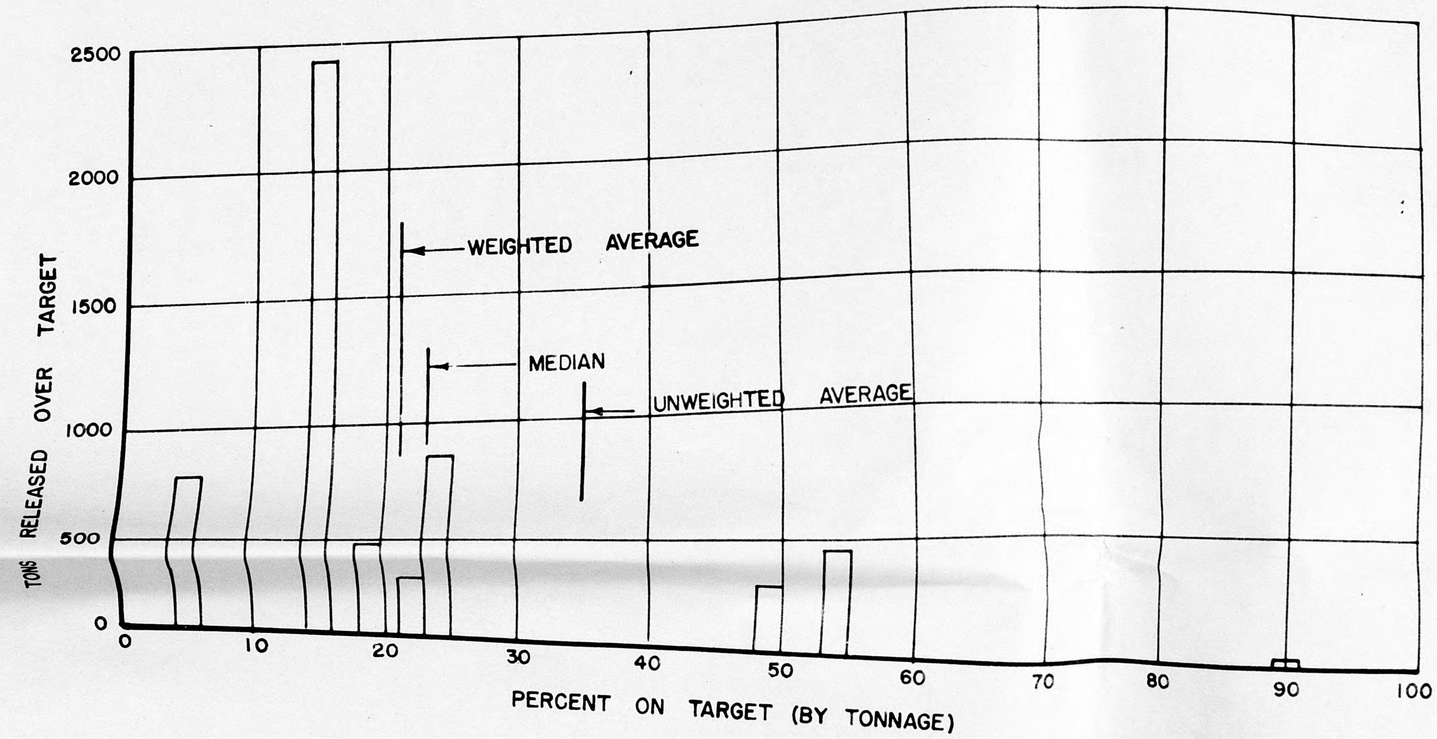
U.S. STRATEGIC BOMBING SURVEY

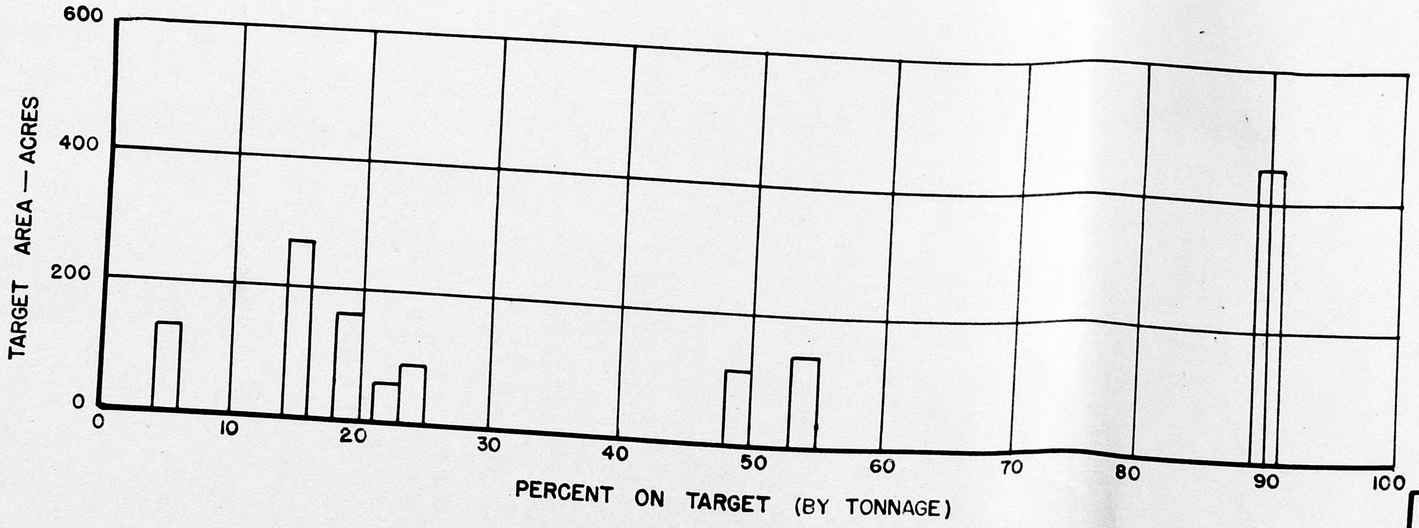
PHYSICAL DAMAGE

FIGURE 7

BOMBS ON TARGET AREA

(FOR A SAMPLE OF 8 JAPANESE TARGETS)

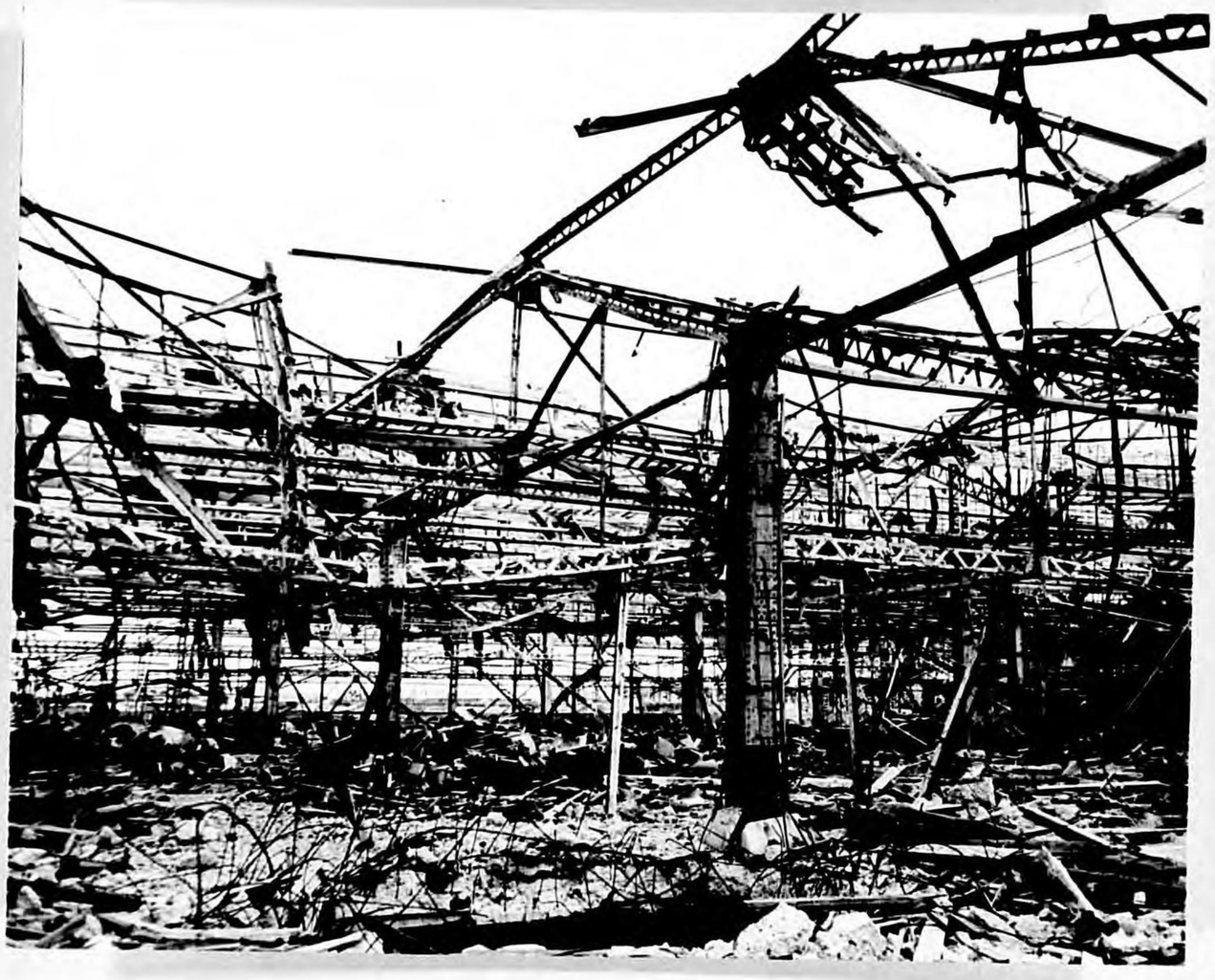


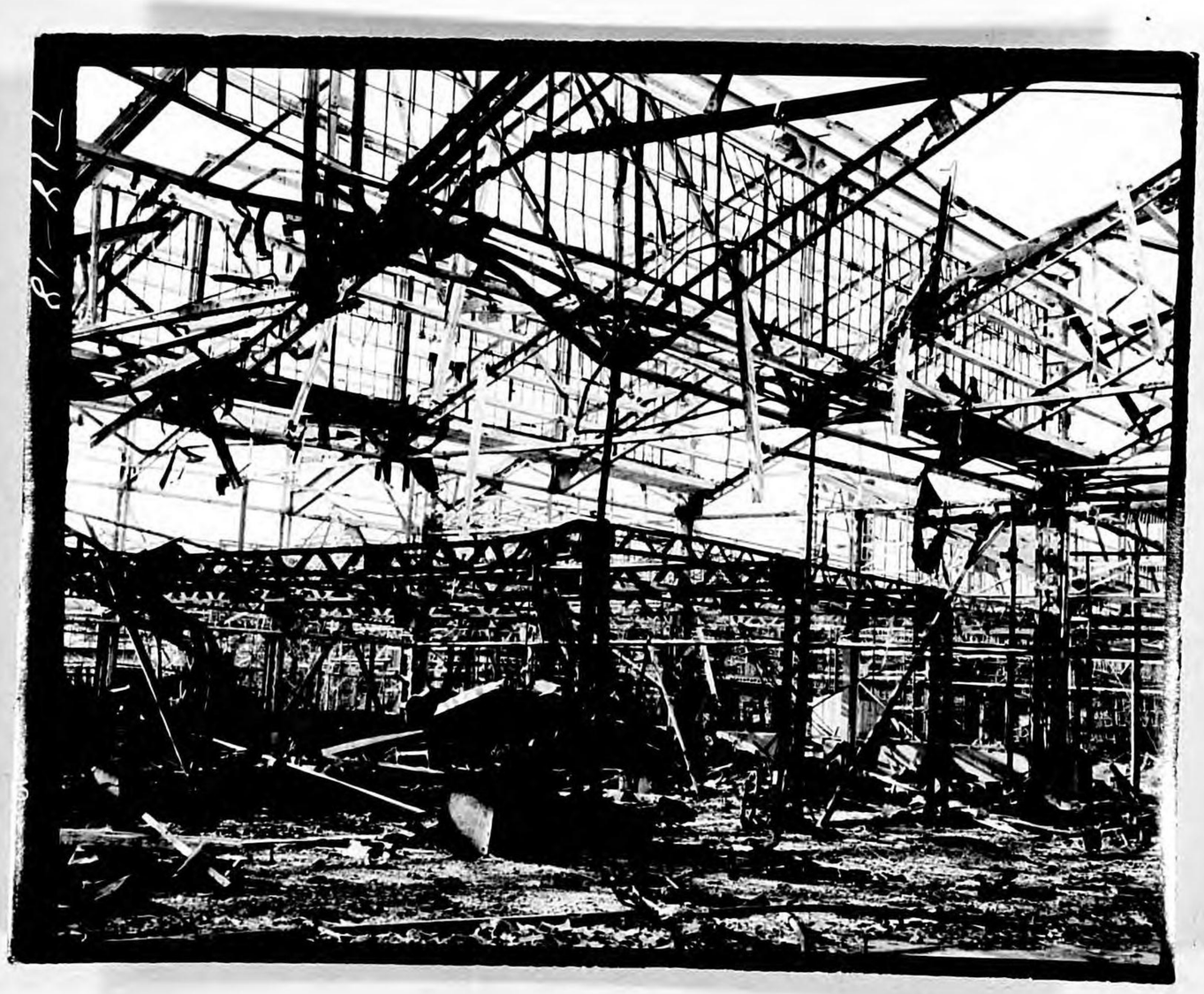


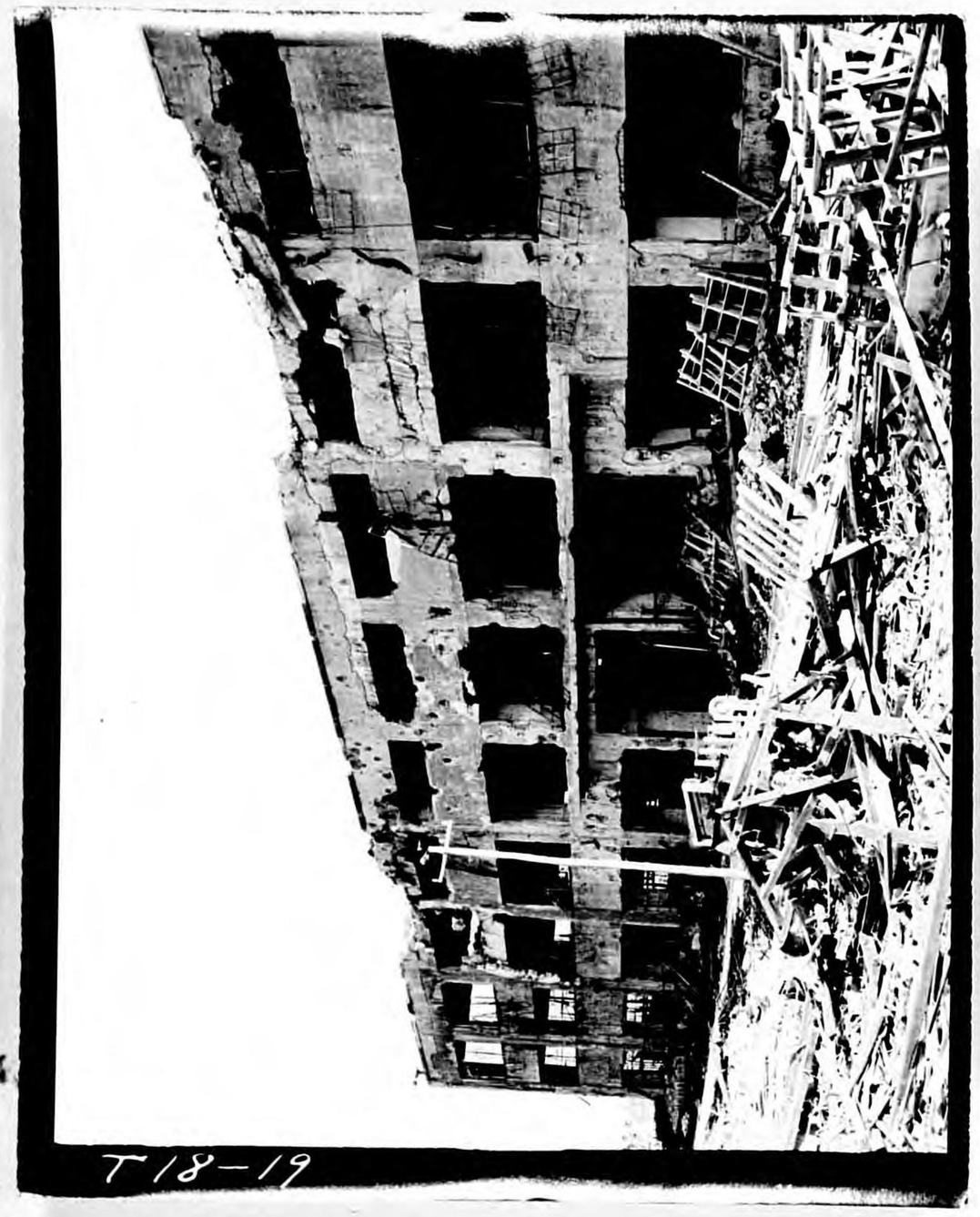
U.S. STRATEGIC BOMBING SURVEY

PHYSICAL DAMAGE

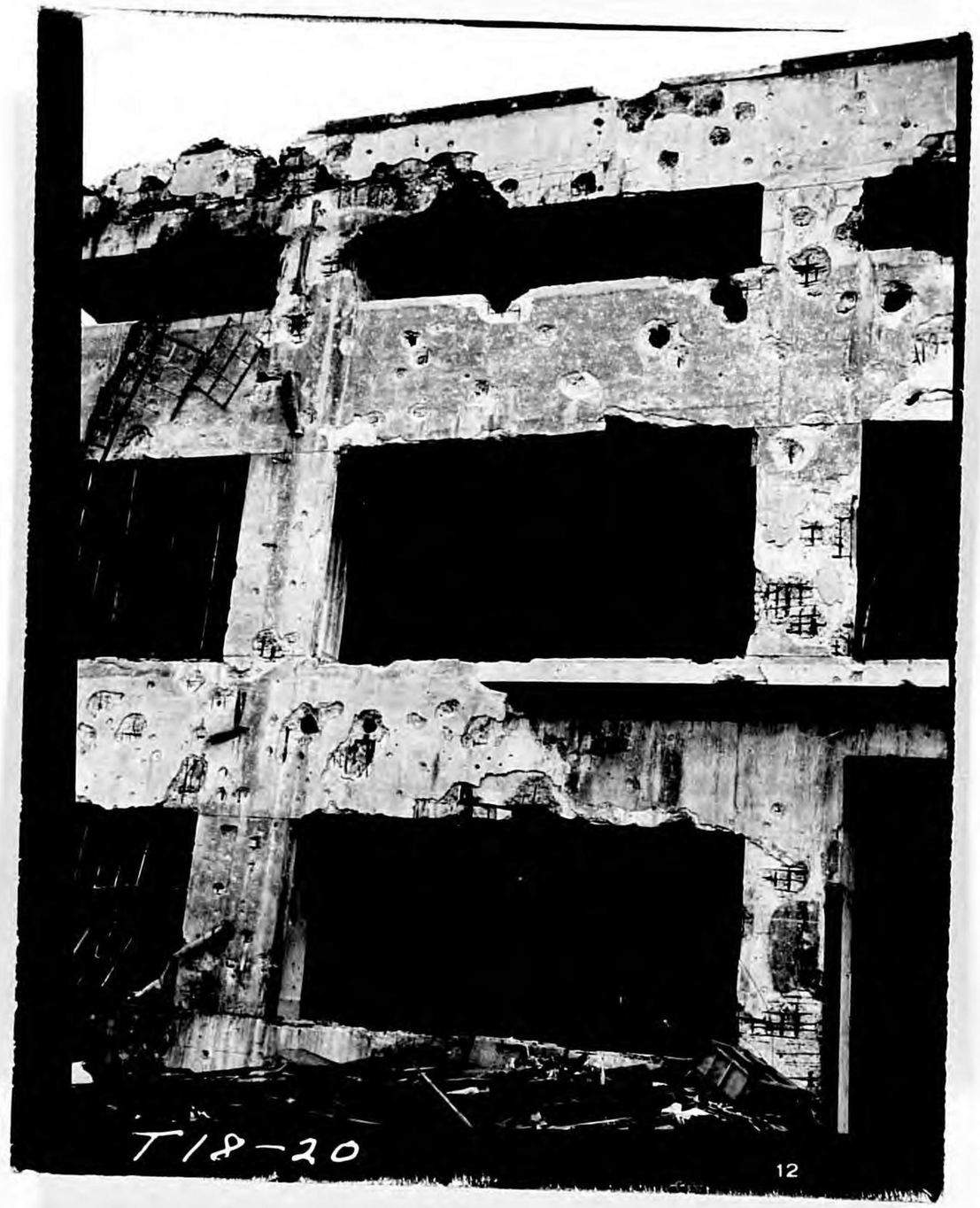
FIGURE 7





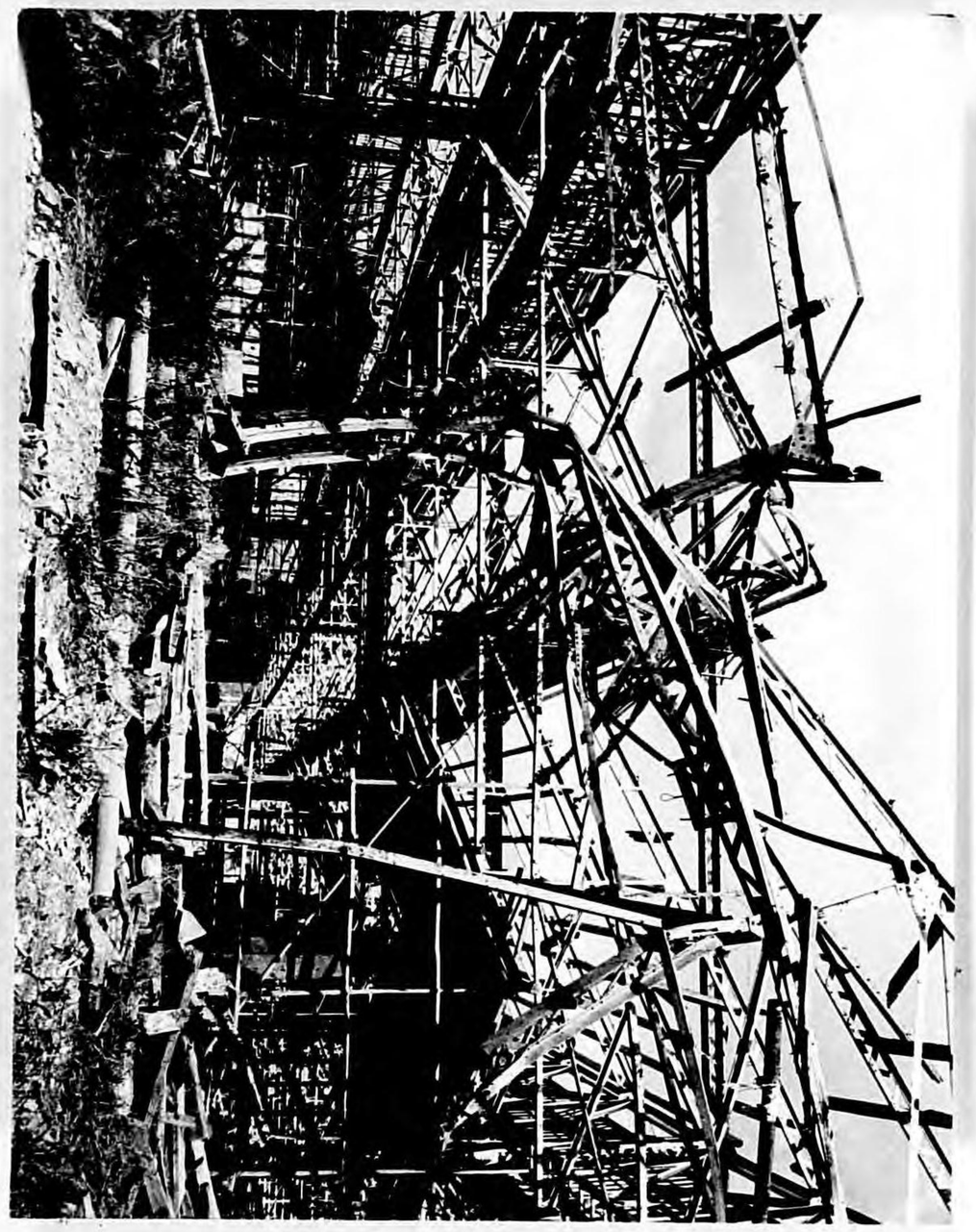


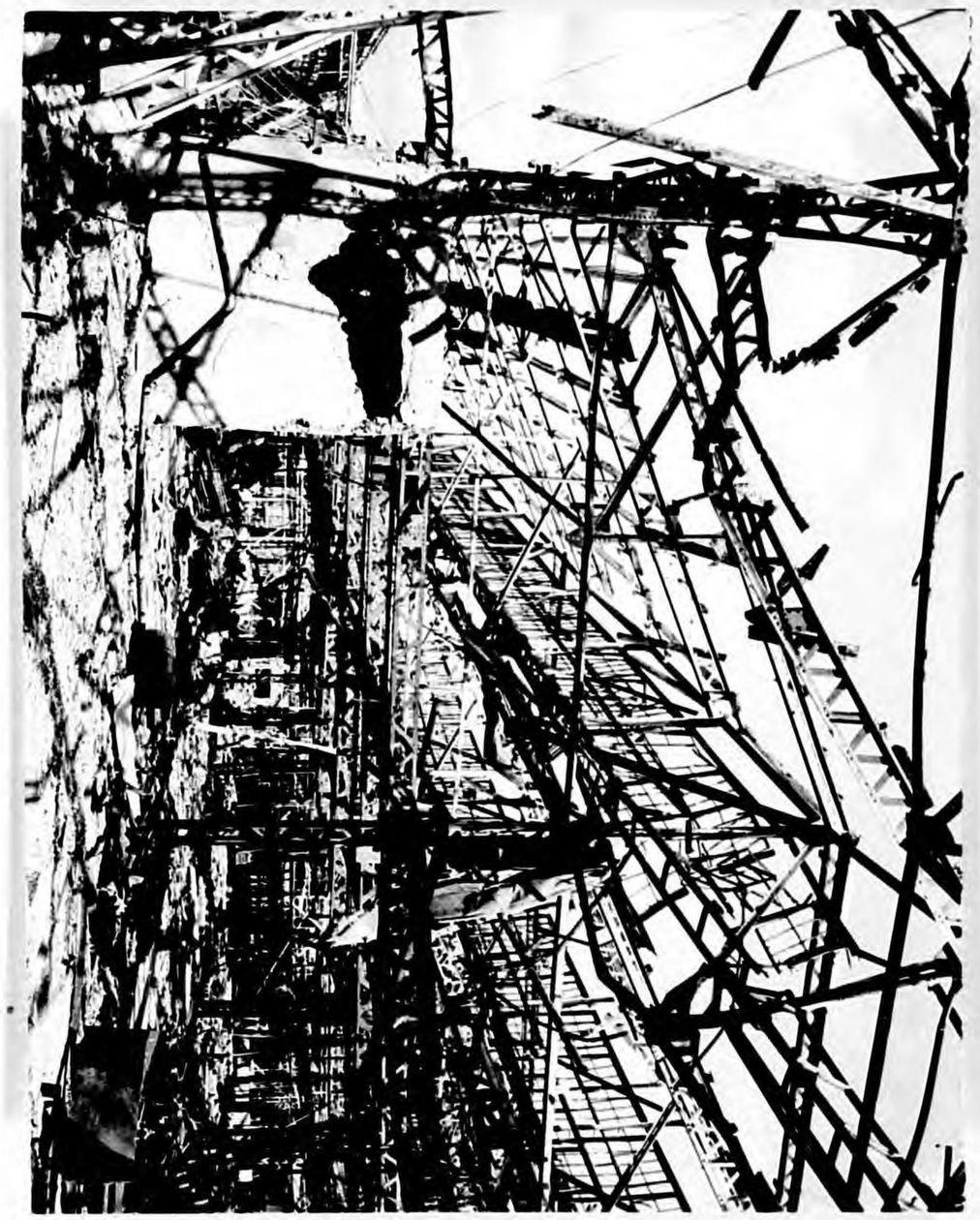
T18-19

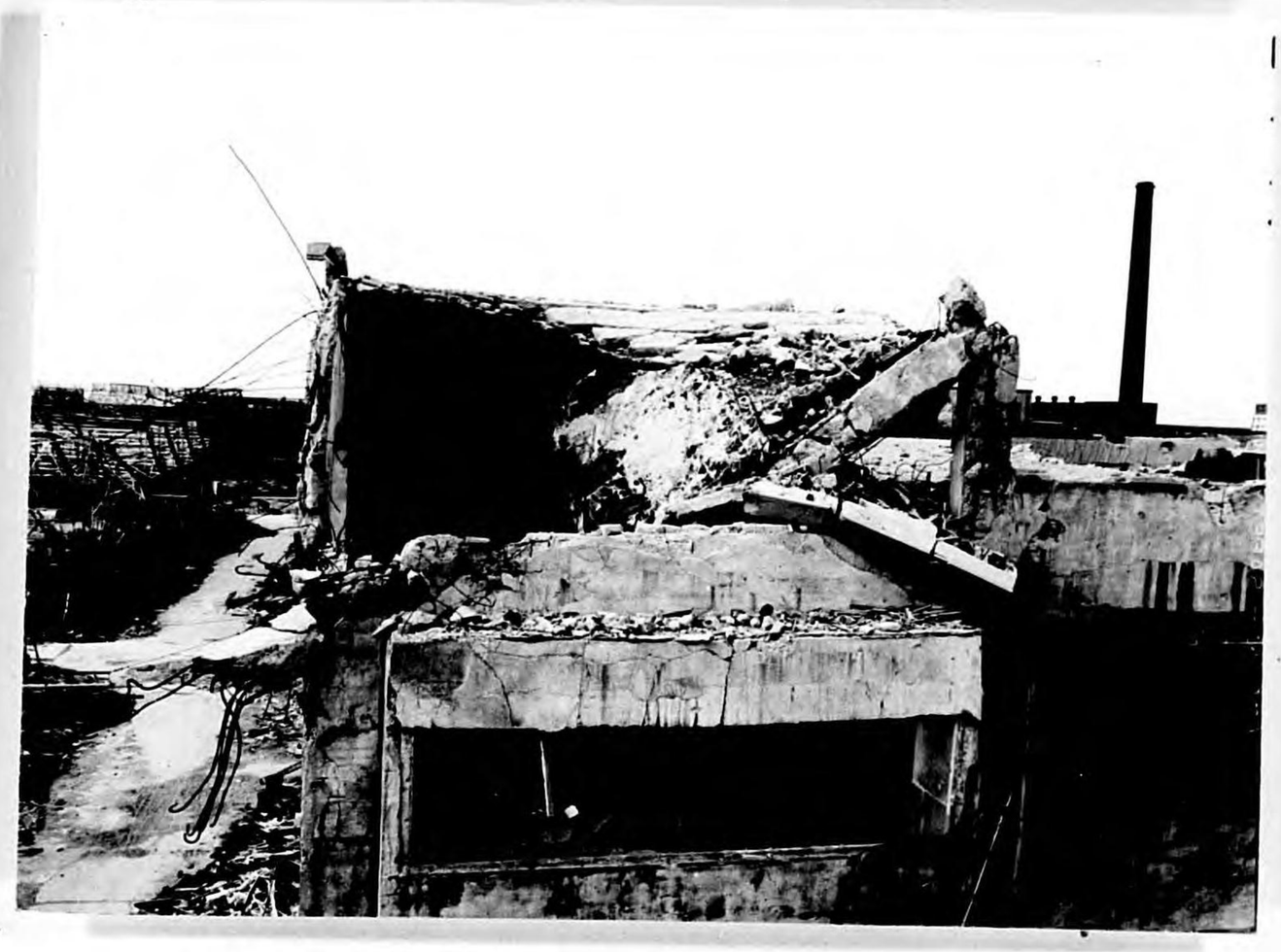


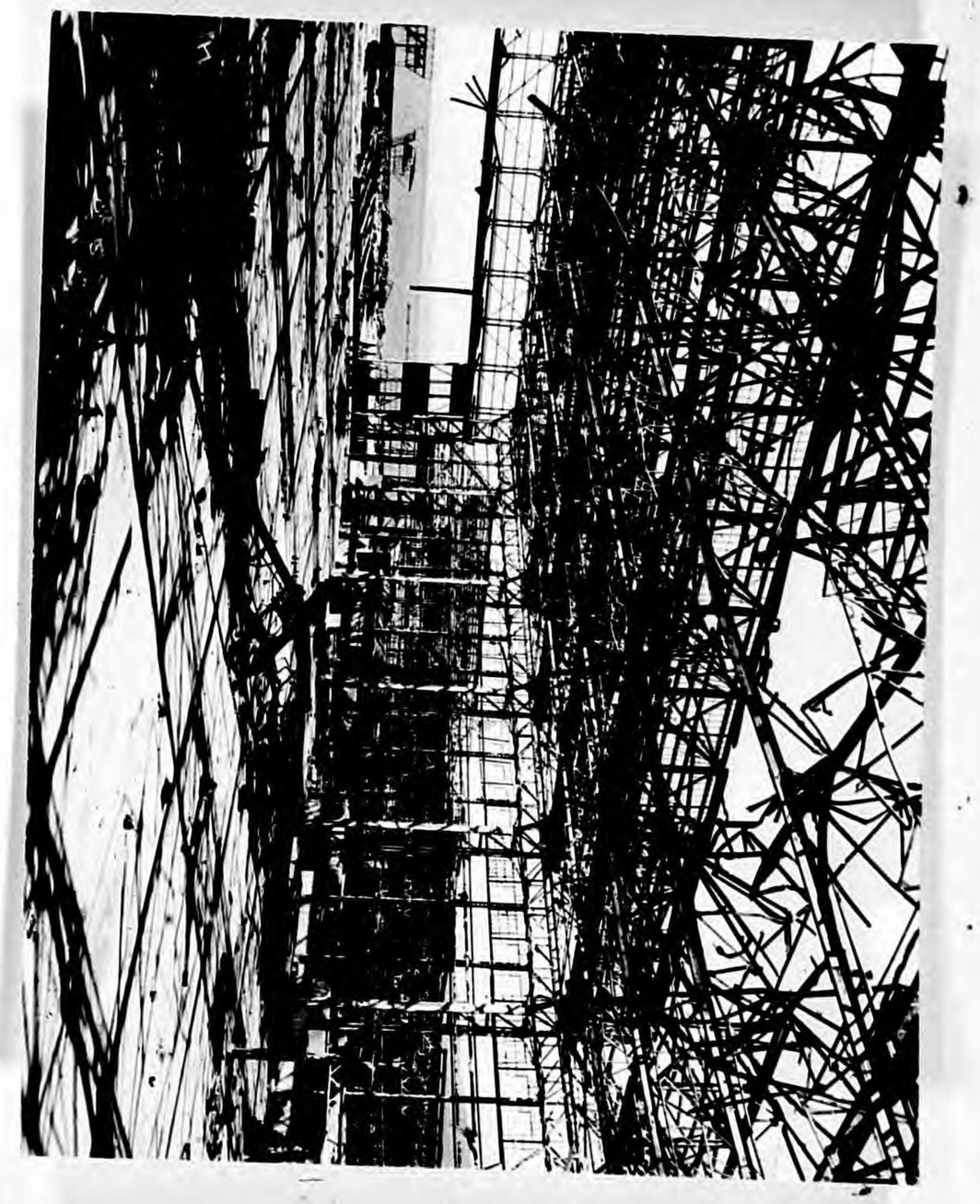
T18-20

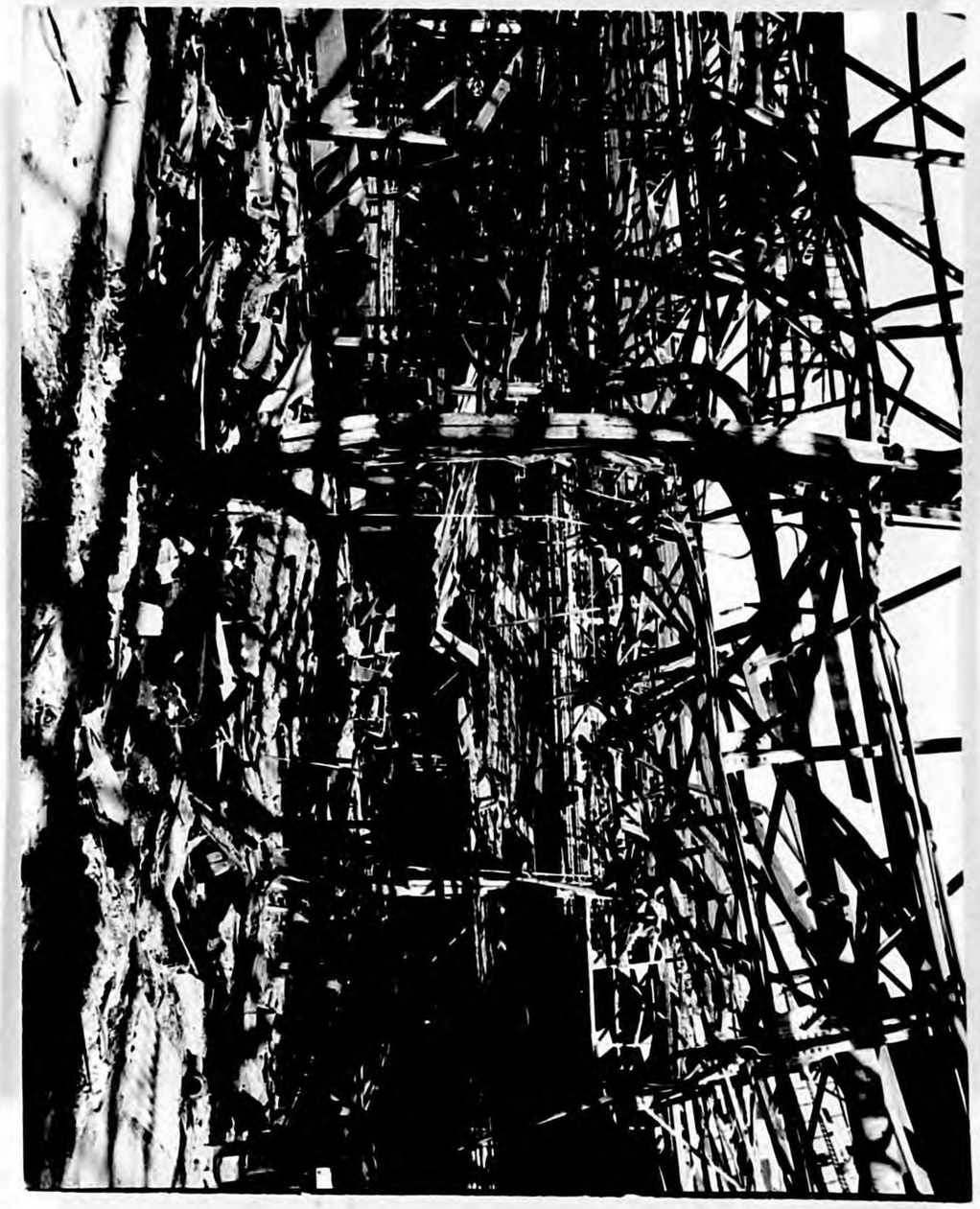
T18-1











UNIT _____ No. _____

DATE TAKEN _____

WHERE TAKEN _____

GIVE COMPLETE STORY OF PICTURE
Include following where applicable:
Names, with initials or first names, rank and hometown; DETAILS of occasion or action; ALTITUDE flown and FOCAL LENGTH of lens (in all aerial photos).

OFFICIAL U. S. NAVY PHOTOGRAPH

Prints on target No. 18
Kawanishi Aircraft Co.
Kobe, Japan.

Negative No.

13. Interior view of Bldg 46 showing bomb damage to roof.

14. Bomb damage to roof of Bldg. 87.

15. High view of boiler house.

16. Closeup of bomb crater and complete cut off of roof support piller. Bldg 1.

17. Large bomb crater in floor of Bldg 1, also bomb blast damage to roof structure.

[redacted]

Special Damage No. TARGET 18.

DATE TAKEN Nov. 1, 1945

WHERE TAKEN Kobe Japan

GIVE COMPLETE STORY OF PICTURE

Include following where applicable:
Names, with initials or first names, rank and hometown; DETAILS of occasion or action; ALTITUDE flown and FOCAL LENGTH of lens (in all aerial photos).

OFFICIAL U. S. NAVY PHOTOGRAPH.

Kawanishi Aircraft Co., Narao plant
Kobe, Japan.

CE67 to 72

113

Negatives 1 through 6.

CALVIN

PHYSICAL DAMAGE DIVISION TEAM NO. 3

PHOTO NOTES
TARGET NO. 18

	PHOTO	BLDG.	BOMB NO.	DIR.	REMARKS
11	1	1	145	180	Typical cratering in floor of bldg.
14	2	1	147	000	Frag. cutting and roof structure
1	3	1	148	270	Bomb explosion within column
15	4	2	83	320	Fragmentation
3	5	4	115	250	Concrete collapse
6	6	73	253	350	Frag. and blast; laced girders
17	7	46	171A(?)	320	Crater at edga of bldg.
10	8	95	No. bms [redacted]	300	Fallen crane
9	9	95	219-221, 229 220	350	Cut roof
7	10	78	235	300	Lifted columns
18	11	96	211-212	035	Cut column and damaged roof
19	12	96	214	295	Crater and moved column
16	13	46	175	030	Cut roof
8	14	87	233,238	320	Frag. cutting
20	15	100	207	300	Direct hit on boiler house
12	16	1	124	030	Cut and moved column
13	17	1	140(prob)	100	Cut column
2	18	1	148	290	Top of blasted col. and trusses
4	19	5	87-89	090	Frag. cutting of NW side of Bldg.#5.
5	20	5	88	135	" " " " " " " ".

DAMAGED AREA OF BLDGS. #382

2) .2 x .4	= .08	2240
~~3) .1 x .3~~	~~= .04~~	
10) 1.3 x 1.4	= 1.82	50960
~~14) .3 x .5~~	~~= .15~~	
15) .3 x .5	= .15	
.1 x .3	= .03	5040
20) .1 x .6	= .06	
21) .1 x .2	= .02	2240
21) .6 x .6	= .36	
.1 x .35	= .03	
.1 x .1	= .01	11200
22) .2 x .65	= .13	
.4 x .4	= .16	
.4 x .4	= .16	12600
26) .1 x .2 ~~.6 x .3~~	= .02	560
27) ~~.3 x .3~~ .1 x .2	= .39 ~~.02~~	10920
29) .15 x .7	= .10	
.35 x .6	= .21	8680
31) .35 x .45	= .16	
.15 x .3	= .04	5600
34) .25 x .5	= .13	3640
35) .2 x 1.5	= .30	8400
36) .15 x 1.65	= .25	
.15 x 1.65	= .25	14000
37) .2 x .4	= .08	2240
39) .2 x .6	= .12	3360
51) .2 x .6	= .12	3360
58) .3 x .9	= .27	7560
59) .1 x .45	= .04	1120
62) .4 x .4	= .16	4480
65) .4 x .55	= .22	
.2 x .25	= .05	7560
66) .5 x 1.9	= .95	
.25 x .5	= .12	29960
67) .4 x .65	= .26	
.4 x .3	= .12	
.3 x .55	= .16	
.15 x .3	= .04	
.25 x .6	= .15	
.35 x .3	= .10	
.6 x .95	= .57	
.3 x .65	= .20	
.25 x .3	= .08	47040
68) .2 x .45	= .09	
.3 x .7	= .21	8400
69) .2 x .3	= .06	
.45 x .5	= .22	
.5 x .15 / 2	= .03	8680
	9.28 D"	259,840 O.K.

70) .2 x .2	= .04	1120
.35 x .5	= .17	5880
71) .4 x 1.0	= .40	11,200
72) .4 x 1.0	= .40	11,200
73) .55 x 4.8	= 2.64	
74) .55 x 4.9	= 2.70	
75) .2 x .4	= .08	
.6 x .6	= .36	
.4 x .4	= .16	
.2 x .75	= .15	
.3 x .45	= .13	
.4 x .75	= .30	73920
.25 x .5	= .12	75,600
OK .2 x .65	= .13	
.1 x .4	= .04	1.47 41,160
80) .45 x .5	= .22	6160
81) .35 x .6	= .21	5880
82) .2 x .6	= .12	3360
83) .3 x .3	= .09	
.1 x .1	= .01	2800
84) .15 x .25	= .04	1120
85) .6 x .7	= .42	
.2 x .35	= .07	
.2 x .5	= .10	16520
86) .5 x .6	= .30	8400
87) .2 x 1.3	= .26	7280
88) .2 x .4	= .08	
.1 x .1	= .01	2520
91) .3 x 1.2	= .36	10080
92) .25 x .65	= .16	4480
93) .45 x .5	= .23	
.2 x .4	= .08	
.15 x .25	= .04	9800
94) .2 x .2	= .04	1120
95) .65 x 1.7	= 1.11	31080
96) .2 x .25	= .05	
.15 x .25	= .03	
.75 x 1.0	= .75	
.25 x .45	= .27	29960
97) .15 x .5	= .07	
.2 x .4	= .08	
.2 x .7	= .14	
.1 x .35	= .04	49240
98) .1 x .25	= .04	1120
99) .2 x .3	= .06	
.1 x .25	= .04	2800
100) .2 x .35	= .07	
.2 x .4	= .08	4200
103) .25 x .3	= .07	1960
	13.53 D"	378,840 O.K.

14) .3 x .55 =	.16
5) .25 x .9 =	.22
~~75) .1 x .4 =~~	~~.04~~ added
106) .7 x 1.3 =	.91
109) .5 x .45 =	.22
134) .7 x .5 =	.35
147A) .1 x .35 =	.04
351) .2 x .5 =	.10
79	= .225
102)	.28
	2.28 OK

14	4480
5	6160
~~75~~	
106	25,480
109	6160
134	9800
147A	1120
351	2800
102	7840
	63840 O.K.
79	6300
	70140

56 - 10080

TOTAL BUILDING AREA #382

1)	.15 x .3 = .05	
	.1 x .2 = .02	
	.25 x .25 = .06	
	.2 x .9 = .18	
	.15 x .25 = .04	9800.
2)	.25 x 2.2 = .55	
	.1 x .15 = .02	15960.
3)	.15 x 2.3 = .34	9520.
4)	.3 x 1.35 = .41	
	.15 x .35 = .05	
	.1 x .1 = .01	13160.
5)	.25 x .85 = .20	6160. ~~1600~~
	.1 x .2 = .02	
6)	.25 x 1.65 = .42	
	.1 x .1 = .01	
	.1 x .35 = .04	13160.
7)	.4 x .6 = .24	6720.
8)	.2 x 1.0 .20	5600
	.1 x .15 .02	6160.
9)	.3 x 1.4 .42	11760.
10)	1.3 x 1.4 = 1.82	50960.
11)	.25 x .75 = .18	5040.
12)	.2 x 1.0 = .20	5600.
13)	.2 x 1.2 = .24	6720.
14)	.3 x 1.2 = .36	10080.
15)	.55 x .85 = .47	14000.
	.1 x .55 / 2 = .03 / .04	
16)	.6 x .7 = .42	12600.
	.1 x .6 / 2 = .03	
17)	.35 x .7 = .24	
	.2 x 1.15 = .23	
	.7 x .85 / 2 = .29	21280.
18)	.2 x .4 = .08	
	.15 x .6 = .09	4760.
19)	.45 x .55 = .25	7000.
20)	.6 x .7 = .42	11760.
21)	1.0 x 2.3 = 2.30	64400.
22)	1.8 x 2.8 = 5.04	141120.
23)	1.85 x 1.9 = 2.78	77840
	.1 x 1.8 = .18	
	.1 x 1.8 = .18	87920.
24)	1.85 x 1.55 = 2.25	63000.
25)	.45 x 2.0 = .90	
	.15 x 1.6 = .24	31920.
26)	.6 x 1.3 = .78	21840.
27)	.25 x 1.3 = .32	8960.
	23.62 □'' =	661360? O.K.

28)	.75 x 1.95 = 1.46	
	.3 x 1.0 = .30	49280.
29)	.75 x 1.95 = 1.46	
	.3 x 1.0 = .30	49280.
30)	.6 x 1.6 = .97	
	.2 x 1.2 = .24	33880.
31)	.65 x 1.6 = .99	27720.
32)	.15 x 1.6 = .24	6720.
33)	.35 x 1.6 = .56	15680.
34)	.3 x 1.6 = .48	13440.
35)	.2 x 1.5 = .30	8400.
36)	.15 x 1.65 = .25	14000.
	.15 x 1.65 = .25	
37)	.65 x 2.4 = 3.96	
	.1 x 1.95 = .20	116480.
38)	.1 x 1.55 = .15	
	.15 x 1.15 = .17	8960.
39)	.2 x 1.3 = .26	7280.
40)	1.0 x 1.6 = 1.60	44800.
41)	.25 x .8 = .20	
	.8 x .5 / 2 = .20	11200.
42)	.4 x .85 = .35	
	.4 x .25 / 2 = .01	10080.
43)	.65 x .65 = .42	11760.
44)	.4 x 1.95 = .78	21840.
45)	.8 x 2.1 = 1.68	
	.1 x .25 = .03	
	.1 x .3 = .03	48720.
46)	.2 x .4 = .08	2240.
47)	.2 x .4 = .08	2240.
48)	.25 x .4 = .10	2800.
49)	.3 x .8 = .24	6720.
50)	.3 x .9 = .27	7560.
51)	.2 x .8 = .16	4480.
52)	.2 x .9 = .18	5040.
53)	.4 x 1.9 = .76	21280.
54)	.15 x .3 = .04	1120.
55)	.3 x .4 = .12	3360.
56)	.4 x .9 = .36	10080.
57)	.4 x 1.9 = .76	21280.
58)	.3 x 1.15 = .34	9520.
59)	.3 x 1.0 = .30	8400.
60)	.9 x 2.2 = 1.98	
	.25 x .35 = .06	
	.1 x .5 = .05	58520.
61)	.65 x .85 = .55	
	.1 x .1 = .01	15680.
62)	.45 x .45 = .20	5600.
63)	.5 x .9 = .45	12600.
	24.93 □''	698,040 O.K.

BURGESS BLUINING COMPANY, INC.

TOTAL BUILDING AREA #382

64) .4 x .4	= .16	4,480
65) 1.0 x 1.7	= 1.70	
.1 x .95	= .05	
.1 x .6	= .06	50,960
.1 x .1	= .01	1.82
66) .5 x 2.45	= 1.25	35,000
67) .4 x .7	= .28	
1.6 x 1.9	= 3.04	
.1 x .6	= .06	
.15 x .35	= .05	101,920
.3 x .7	= .21	3.64
68) .2 x .45	= .09	
.3 x .7	= .21	8,400
69) .5 x .7	= .35	
$\frac{.5 \times .15}{2}$	= .03	10,640
70) .3 x .9	= .27	
$\frac{.4 \times .9}{2}$	= .18	12,600
71) .4 x 1.0	= .40	11,200
72) .4 x 1.0	= .40	11,200
73) .55 x 4.8	= 2.64	73,920
74) .55 x 4.9	= 2.70	75,600
75) 1.4 x 5.0	= 7.00	
.65 x 2.7	= 1.76	
1.5 x 5.0	= 7.50	455,280
		16.26
76) .6 x 3.95	= 2.38	66,640
77) .6 x 3.95	= 2.38	66,640
78) .4 x 1.9	= .76	21,280
79) .25 x 1.1	= .28	7,840
80) .45 x 1.2	= .54	15,120
81) .35 x .6	= .21	5,880
82) .2 x .6	= .12	3,360
83) .3 x .3	= .09	2,800
.1 x .1	= .01	
84) .2 x .6	= .12	3,360
85) .8 x 1.9	= 1.54	
.6 x .55	= .33	52,360
86) .55 x .8	= .44	
.25 x .3	= .07	14,280
87) .2 x 1.3	= .26	7,280
88) .2 x .85	= .17	
.1 x .4	= .04	5,880
89) .15 x .5	= .08	2,240
90) .15 x .3	= .04	1,120
91) .3 x 1.2	= .364	10,080
	40.62 □"	1,137,360 O.K.

92) .25 x 1.1	= .27	7,560
93) .7 x .75	= .54	
.1 x .1	= .01	
.1 x .3	= .03	16,240
		.58
94) .55 x .65	= .36	10,080
95) .65 x 1.7	= 1.11	31,080
96) .65 x 2.2	1.46	
.1 x .65	= .07	
.1 x .15	= .02	
.1 x .3	= .03	
.1 x .3	= .03	
.15 x .6	= .09	47,600
		1.70
97) .4 x 1.3	= .52	
.1 x .1	= .01	
.2 x .3	= .06	
.3 x .35	= .10	19,320
		.69
98) .5 x .9	= .45	
.1 x .4	= .01	12,880
99) 1.0 x 1.45	= 1.45	
.2 x .7	= .14	44,520
100) .2 x .4	= .08	
.15 x .7	= .10	5,040
101) .25 x .45	= .11	3,080
102) .25 x 1.0	= .25	
.1 x .25	= .03	7,840
103) .1 x 1.0	= .10	2,800
104) .1 x .4	= .04	
.1 x .4	= .04	2,240
105) .5 x .8	= .40	11,200
106) .65 x 1.4	= .91	
.1 x .5	= .05	
.1 x .45	= .04	28,000
107) .3 x .7	= .21	
.1 x .4	= .04	7,000
108) .4 x .5	= .20	
.1 x .3	= .03	6,440
109) .5 x .85	= .42	11,760
110) .2 x 1.5	= .30	8,400
111) .8 x 1.45	= 1.32	
.1 x .4	= .04	38,080
112) .6 x 1.0	= .60	16,800
113) .1 x .45	= .05	
.8 x .9	= .72	21,560
114) .15 x 1.6	= .24	
.2 x .55	= .11	9,800
115) .7 x 1.75	= 1.23	
.1 x .25	= .02	35000
116) .35 x 1.3	= .45	
.2 x .25	= .05	14,000
	14.94 □"	418,320 O.K

DIETZGEN-EUGENE DIETZGEN COMPANY, INC.

TOTAL BUILDING AREA #382

117) .2x.4	= .08	2240.
118) .35x1.2	= .42	11760.
119) .55x1.3	= .72	20160.
120) ~~.75x1.1~~		
.75x1.1	= .82	
.1x.5	= .05	
.1x.2	= .02	24920.
121) .6x1.2	= .72	~~[illegible]~~
.15x.3	= .04	
.1x.6	= .06	22960.
122) .5x.7	= .35	
.85x1.5	= 1.27	
.4x.5	= .20	50,960.
123) .3x1.1	= .33	
.15x.2	= .03	10080.
124) .15x.6	= .09	
.1x.15	= .02	3080.
125) .2x.75	= .15	
.1x.15	= .01	4480.
126) .35x1.4	= .49	13720.
127) .6x3.95	= 2.37	69160.
128) .6x1.3	= .78	21840.
129) .3x.9	= .27	7560.
130) .2x.35	= .05	
.2x.7	= .14	
$\frac{.15x.3}{2}$	= .02	5880.
? ~~131) .2x1.2~~	= .24	6720.
132) .6x.8	= .48	13440.
133) .3x.8	= .24	6720.
134) .5x.7	= .35	9800.
135) .55x.8	= .44	
.15x.6	= .09	
.15x.6	= .09	17360.
136) .2x1.5	= .30	8400.
137) .5x1.6	= .80	22400.
138) ~~[illegible]~~ $\pi x.3^2$	= 2.50	70000.
~~139) .2x1.0~~	= .20	
140) .35x.4	= .12	3360.
141) .4x1.2	= .48	13440.
142) .25x1.8	= .45	12600.
143) .85x2.1	= 1.78	49840.
144) .9x1.7	= 1.56	43680.
145) 1.8x2.9	= 5.23	146,440.
146) .15x1.3	= .19	
.15x.4	= .06	
.15x3.3	= .99	20720
147) .65x1.0	= .65	18200.
148) .2x1.45	= .29	8120.
149) .35x3.15	= 1.10	30800.
	27.53 □''	770,840 □' O.K.

150) .25x1.0	= .25	7000.
151) 1.7x2.9	= 4.93	138040.
152) 1.6x2.9	= 4.64	129920.
153) .7x1.8	= 1.26	35280.
154) .55x1.8	= .90	25200.
155) .85x1.2	= 1.02	28560. 31920
~~[illegible]~~ .35x.4	= .12	3360.
156) .85x1.2	= 1.02	28560.
157) 1.0x1.3	= 1.30	36400.
158) .5x1.1	= .55	15400.
159) .2x.6	= .12	3360.
160) .3x.35	= .09	2520.
161) .1x1.0	= .10	2800.
162) .2x.35	= .07	1960.
~~163) .1x.45~~	= .04	1120.
164) .4x.6	= .24	6720.
164A) .2x.55	= .11	3080.
165) .8x1.0	= .80	22400.
165A) .5x.65	= .33	~~[illegible]~~
.3x.4	= .12	12600.
166) .2x1.45	= .29	
.3x.65	= .19	
.1x.1	= .01	
.2x.8	= .16	
.25x1.65	= .41	
.2x.6	= .12	
.2x.6	= .12	
.1x.15	= .01	37240.
.1x.15	= .02 (1.33)	
167) .1x.3	= .03	840.
168) .1x.25	= .02	560.
169) .1x.1	= .01	280.
170) .15x.3	= .04	1120.
171) .15x.2	= .03	840.
172) .1x.2	= .02	560.
173) .2x.4	= .08	2240.
174) .1x.2	= .02	560.
175) .1x.6	= .06	1680.
176) .25x.6	= .15	4200.
177) .2x.8	= .16	4480.
178) .1x.1	= .01	280.
179) .25x.8	= .20	5600.
180) .2x.35	= .07	1960.
181) .15x.6	= .09	2520.
182) .3x.6	= .18	
.15x.35	= .05	
.3x.7	= .21	
.1x.2	= .02	12880.
183) .1x.2	= .02	560.
184) .1x.6	= .06	1680.
	20.87 □''	584360 OK

TOTAL BUILDING AREA #382

185) .15 x .85 = .11	3080	234) .1 x .1 = .01	280
186) .1 x .1 = .01	280	235) .2 x .3 = .06	1680
187) .2 x .7 = .14	3920	236) .15 x .3 = .04	1120
188) .2 x 1.6 = .32	8960	237) .2 x .5 = .10	2800
189) .1 x .1 = .01	280	238) .1 x .5 = .05	1400
190) .2 x .55 = .10	2800	239) .1 x .3 = .03	840
191) .2 x .8 = .16	4480	240) .1 x .55 = .05	1400
192) .1 x .1 = .01	280	241) .15 x .35 = .05	1400
193) .2 x .6 = .12	3360	242) .2 x .35 = .07	1960
194) .1 x .2 = .02	560	243) .2 x .55 = .11	3080
195) .2 x .8 = .16	4480	.15 x .85 = .06	4760
196) .2 x .5 = .10	2800	244) .15 x .15 = .02	560
197) .2 x .4 = .08	2240	245) .2 x .3 = .06	1680
198) .1 x .3 = .03	840	246) .2 x .35 = .07	1960
199) .2 x .3 = .06	1680	247) .2 x .2 = .04	1120
200) .15 x .5 = .02	560	248) .2 x .2 = .04	1120
201) .15 x .4 = .06	1680	.1 x .15 = .01	1400
202) .1 x .15 = .02	560	249) .15 x .4 = .06	1680
203) .15 x .35 = .05	1400	250) .1 x .3 = .03	840
.2 x .3 = .06 .11	3080	251) .35 x .5 = .17	4760
204) .2 x .25 = .03	840	252) .1 x 1.5 = .15	4200
205) .15 x .3 = .04	1120	253) .1 x .9 = .09	2520
206) .1 x .25 = .02	560	254) .35 x .5 = .17	4760
207) .1 x .1 = .01	280	255) .25 x .4 = .10	2800
208) .1 x .2 = .02	560	.2 x .25 = .05	4200
209) .25 x .3 = .07	1960	256) .3 x .4 = .12	3360
210) .15 x .35 = .05	1400	257) .1 x .15 = .01	280
211) .1 x .2 = .02	560	258) .15 x .2 = .03	840
212) .1 x .4 = .04	1120	259) .2 x .3 = .06	1680
213) .25 x .8 = .20	5600	260) .1 x .2 = .02	560
214) .15 x .35 = .05	1400	261) .15 x .3 = .07	1960
215) .1 x .1 = .01	280	262) .1 x .55 = .05	1400
216) .1 x .3 = .03	840	263) .1 x .25 = .02	560
217) .15 x .4 = .06	1680	264) .2 x 1.0 = .20	5600
218) .1 x .3 = .03	840	265) .1 x .65 = .06	1680
219) .15 x .2 = .04	1120	266) .1 x .3 = .03	840
220) .1 x .25 = .03	840	267) .15 x .4 = .06	1680
221) .15 x .35 = .05	1400	268) .2 x .3 = .06	1680
222) .1 x .2 = .02	560	269) .1 x .85 = .04	1120
223) .1 x .3 = .03	840	.15 x .25 = .03	1960
224) .1 x .3 = .03	840	270) .1 x .25 = .02	560
225) .1 x .6 = .06	1680	271) .15 x .25 = .03	840
226) .1 x .35 = .03	840	272) .1 x .3 = .03	840
227) .1 x .4 = .04	1120	273) .25 x .5 = .12	3360
228) .1 x .1 = .01	280	274) .15 x .4 = .06	1680
229) .1 x .3 = .03	840	275) .2 x .6 = .12	3360
230) .15 x .4 = .06	1680	.15 x .2 = .03	840
231) .1 x .15 = .02	560	276) .2 x .4 = .08	2240
232) .2 x .2 = .04	1120	277) .2 x .1 = .02	560
233) .2 x .55 = .05	1400	278) .2 x .5 = .10	2800
286 2.86 □"	80080 O.K.	3.16 □"	88480 O.K.

BRUNING COMPANY, INC.

TOTAL BUILDING AREA # 382

279) .1X.2) = .02	1120		
280) .1X.3) = .03	840		
281) .1X.2) = .02	560		
282) .2X.6) = .12	3360		
283) .2X.4) = .08	2240		
284) .1X.5) = .05	1400		
285) .1X.4) = .04	1120		
286) .2X.35) = .07	1960		
.1X.1) = .01	2240		
287) .15X.3) = .04			
.15X.3) = .04	2240		
288) .1X.4) = .04	1120		
289) .15X.55) = .06	1680		
290) .1X.2) = .02	560		
291) .15X.2) = .03	840		
292) .1X.25) = .02	560		
293) .1X.2) = .02	560		
294) .15X.15) = .02	560		
295) .25X.35) = .07	1960		
296) .15X.3) = .04	1120		
297) .1X.25) = .02	560		
298) .2X.4) = .08	2240		
299) .1X.2) = .02	560		
300) .2X.3) = .06	1680		
301) .2X.35) = .07	1960		
302) .1X.3) = .03	840		
303) .3X.55) = .18	5040		
304) .1X.15) = .02	560		
305) .1X.15) = .01	280		
306) .1X.2) = .02	560		
307) .1X.3) = .03	840	23.42	
308) .1X.1) = .01	280	23.47	
309) .1X.1) = .01	280	40.62	
310) .1X.4) = .04	1120	14.85	
311) .1X.5) = .05	1400	27.73	
312) .1X.3) = .03	840	19.60	
313) .1X.4) = .04	1120	2.79	
314) .2X.35) = .07	1960	3.18	
315) .3X.3) = .09		2.27	
.15X.25) = .03	3360	4.95	
316) .15X.45) = .05	1400		
317) .1X.2) = .02	560		
318) .1X.2) = .02	560		
319) .15X.45) = .06	1680		
320) .15X.15) = .02	560		
321) .1X.4) = .04	1120		
322) .15X.15) = .02	560		
323) .15X.15) = .02	560		
324) .2X1.1) = .22	6160		
325) .15X.2) = .03	840		
326) .1X.1) = .01	280		
327) .1X.15) = .02	560		
328) .1X.1) = .01	280		
329) .15X.55 = .06	1680		
330) .15X.8 = .12	3360		
331) .1X.4 = .04	1120		
332) .15X.65 = .09	2520		
333) .35X1.1 = .38	10640		
334) .1X.1 = .01	280		
335) .1X.1 = .01	280		
336) .15X.25 = .03	840		
337) .1X.1 = .01	280		
338) .1X.2 = .02	560		
339) .1X.1 = .01	280		
340) .1X.25 = .02	560		
341) .1X.2 = .02	560		
342) .1X.2 = .02	560		
343) .1X.1 = .01	280		
344) .1X.15 = .02	560		
345) .1X.15 = .02	560		
346) .1X.3 = .03	840		
347) .1X.2 = .02	560		
348) .15X.65 = .09	2520		
349) .1X.2 = .02	560		
350) .15X.2 = .02	560		
351) .4X.6 = .24	6720		
MISC 3.60	100800		
4.95 □"	138600 O.K.		

23.56
23.47
40.62
14.85
27.73
20.75
3.55
2.79
2.76
1.31

AREA: ~~160.9~~ X 2,8000 = ~~4,505,200~~ □'

4,641,000

TOTAL AREA = ~~160.90~~ SQ. IN

~~162.88~~ 13"

165.75 X 28,000 = 4,641,000. □'

2.27 □" 63,560 OK

CHARLES BRUNING COMPANY, INC.

PLANT AREA #382 SCALE 1/2000

8" x 15" =	120 IN² ✓	120
8" x 16" =	128 IN² ✓	128
3" x 6" =	18 IN² ✓	102
6" x 6" =	36 IN² ✓	18
3" x 4" =	12 IN² ✓	36
2" x 5" =	10 IN² ✓	12
2" x 3" =	6 IN² ✓	10
2 3" x .75" =	17.5 IN² ✓	6
12" x .5" =	6 IN² ✓	17.5
23" x .25" =	5.75 IN²	6
		5.75 OK.
+ 102 SQ IN ✓		461.25 IN²

1" = 2000"

1" = 167'

1 SQ IN : 28000 SQ FT

AREA = 461.25 x 28,000

= 12,915,000 SQ FT O.K.

AREA : 12,915,000 / 43,560

AREA : 296.5 ACRES O.K.

CHARLES BRUNING COMPANY, INC.

DAMAGED AREA #382
OF BLDGS.

104) .1 X .4	= .04	1400
.1 X .1	= .01	
105) .2 X .5	= .10	
.3 X .35	.10	5600
107) .3 X .7	= .21	5880
108) .4 X .5	= .20	
.1 X .3	= .03	6440.
110) .2 X 1.5	= .30	8400
111) .1 X .35	= .03	
.1 X .15	= .02	1400
113) .3 X .3	= .09	
.65 X .8	.52	17080
114) .15 X 1.6	= .24	
.2 X .55	= .11	9800
115) .7 X 1.75	= 1.23	
.1 X .25	= .02	35000.
116) .35 X 1.3	= .45	
.2 X .25	= .05	14000.
~~117) .2 X .4 = .08~~		
118) .35 X 1.2	= .42	11760.
119) .55 X 1.3	= .72	20160.
120) .2 X .5	= .10	2800
121) .3 X .65	= .19	
.4 X .4	= .16	
.4 X .65	= .27	17360
122) .25 X .35	= .07	
.4 X .6	= .24	
.4 X .7	= .28	
.15 X .55	= .08	
.3 X .65	= .19 (.86)	24080
123) .15 X .3	= .04	
.3 X .35	= .10	3920
124) .15 X .25	= .03	840
125) .2 X .75	= .15	
.1 X .15	= .01	4480
126) .35 X 1.4	= .49	13720
127) .6 X .65	= .39	
.4 X .45	= .18	15960
130) .2 X .25	= .05	
.2 X .7	= .14	
.15 X .3 / 2	= .02	5880.
~~131) .2 X 1.2 = .24~~		
132) .6 X .8	= .48	
133) .3 X .4	= .12	13440
.1 X .15	= .01	
.1 X .1	= .01	3920
	8.69 D"✓	243,320 O.K.

136) .2 X .35	= .07	(166)
.2 X .9	= .18	7,000
137) .2 X .8	= .16	
.25 X .5	= .13	8120
142) .25 X .15	= .03	
.25 X 1.15	= .29	8960
143) .85 X 1.6	1.35	
.1 X .45	= .05	39,200
144) .3 X 1.0	= .30	
.15 X .3	= .05	
.4 X .6	= .24	
.4 X .45	= .18 (.76)	
~~145) 1.4 X 2.9 = 5.66~~		21,280
146) .15 X 1.9	= .29	8120
147) .4 X .05 X .40	.02	
147) .6 X .7	= .42	480
148) .2 X 1.45	.29	11,760
149) .35 X 3.15	1.10	8120
150) .25 X 1.0	= .25	30,800
151) .5 X .9	= .45	7000
.2 X .5	= .10	
.1 X .3	= .03	
.4 X .5	= .20	
152) .5 X 1.65	= .83	21,840
.2 X .65	= .13	
.35 X .4	= .14	
.3 X .6	= .18	
.3 X .5	= .15	
.4 X .5	= .20	
.25 X .7	= .17 (1.80)	
153) .3 X .3	= .09	
.25 X .5	= .12	
.15 X .35	= .05	
154) .1 X .3	= .03	
~~155) .1 X .3 = .03~~		
156) .85 X 1.2	= 1.02	
157) .8 X 1.3	= 1.10	
.25 X .5	= .12	
.15 X .25	= .03	
158) .1 X .1	= .01	
159) .1 X .1	= .01	
162) .2 X .35	= .07	
164) .2 X .4	= .08	
.1 X .1	= .01	
164A) .2 X .55	= .11	
165) .3 X 1.0	= .30	
.15 X .2	= .03	
.1 X .15	= .02	
165A) .3 X .3	= .09	
	11.24 D"✓	314,720 O.K.

(166) .2 X 1.25	= .29
.3 X .65	= .19
.1 X .1	= .01
.2 X .8	= .16
.25 X 1.65	= .41
.2 X .6	= .12
.2 X .6	= .12
.1 X .15	= .01
.1 X .15	= .02
(133) .2 X .55	= .11
.2 X .55	= .11
155 □"	
166 37,240	
351 6160	
43,400 O.K.	
11,760	
8,120	
30,800	
7000	
~~46.15 □" total~~	
21,840	
~~23.17 x 26,000 = 602,420~~	
% DAMAGE	
50,400	
1,377,320 / 4,545,700 x 100 = ~~30.4~~ %	
7280	
840	
28,560	
35,000	
280	
280	
1960	
2520	
3080	
9800	
2520	
314,720 O.K.	

Total = 46.57 □ = 1,316,540 □ = 1,310,290

...LES PRINTING COMPANY, INC.