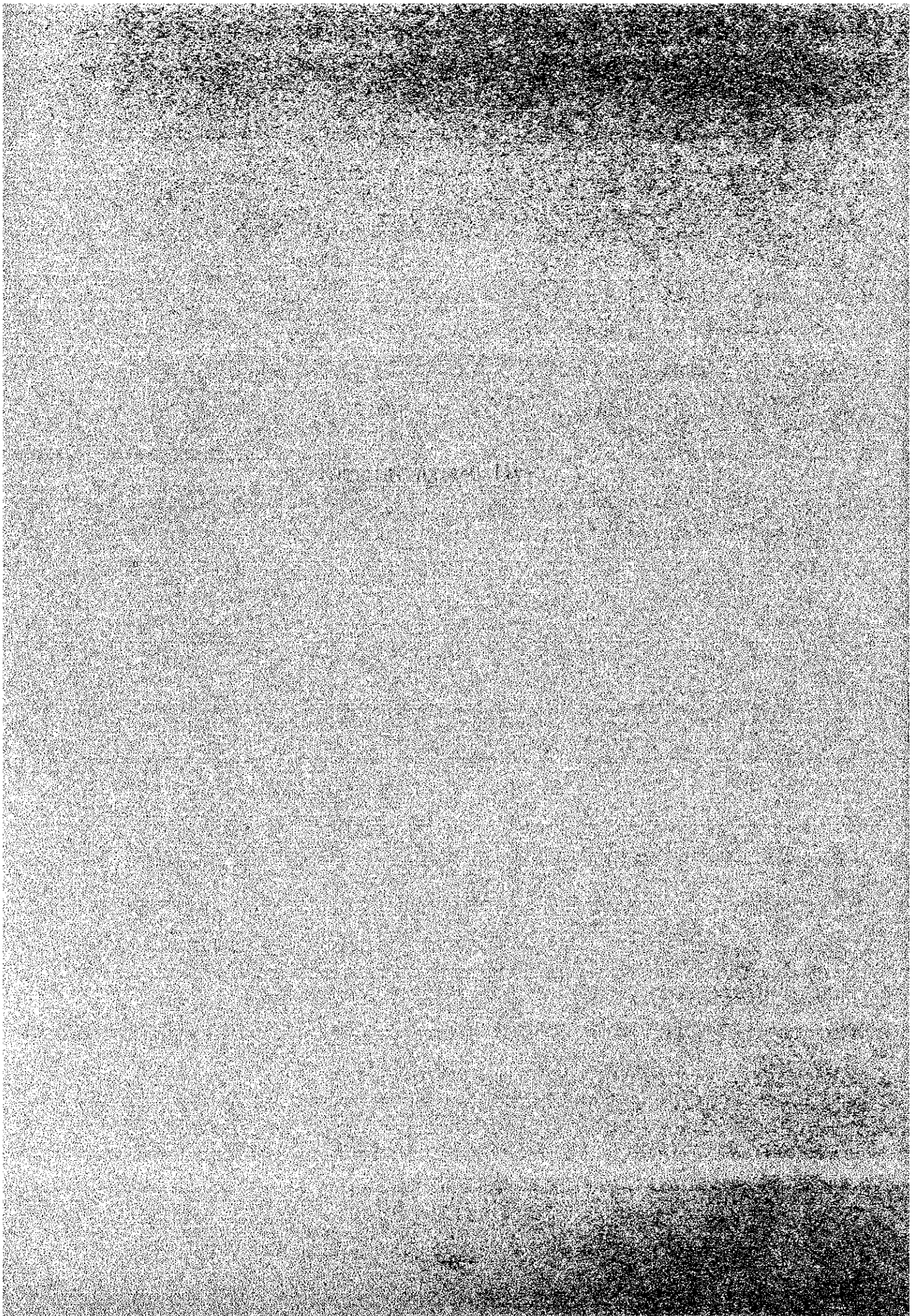


7. Civil Design Information



CETESB are kindly requested to accept the following conditions about submission of Civil Design Informations.

1. Following informations are out of submissions from Japanese side.
 - 1) Detail of drainage
 - 2) Detail of walls, roofs, opening of floors and penetrated parts.
 - 3) Detail of stair.
 - 4) Detail of doors and windows.
 - 5) Out of scope of works from Japanese side described in GS.025/QHB. 001.
0187 LIST OF SCOPE OF WORKS.

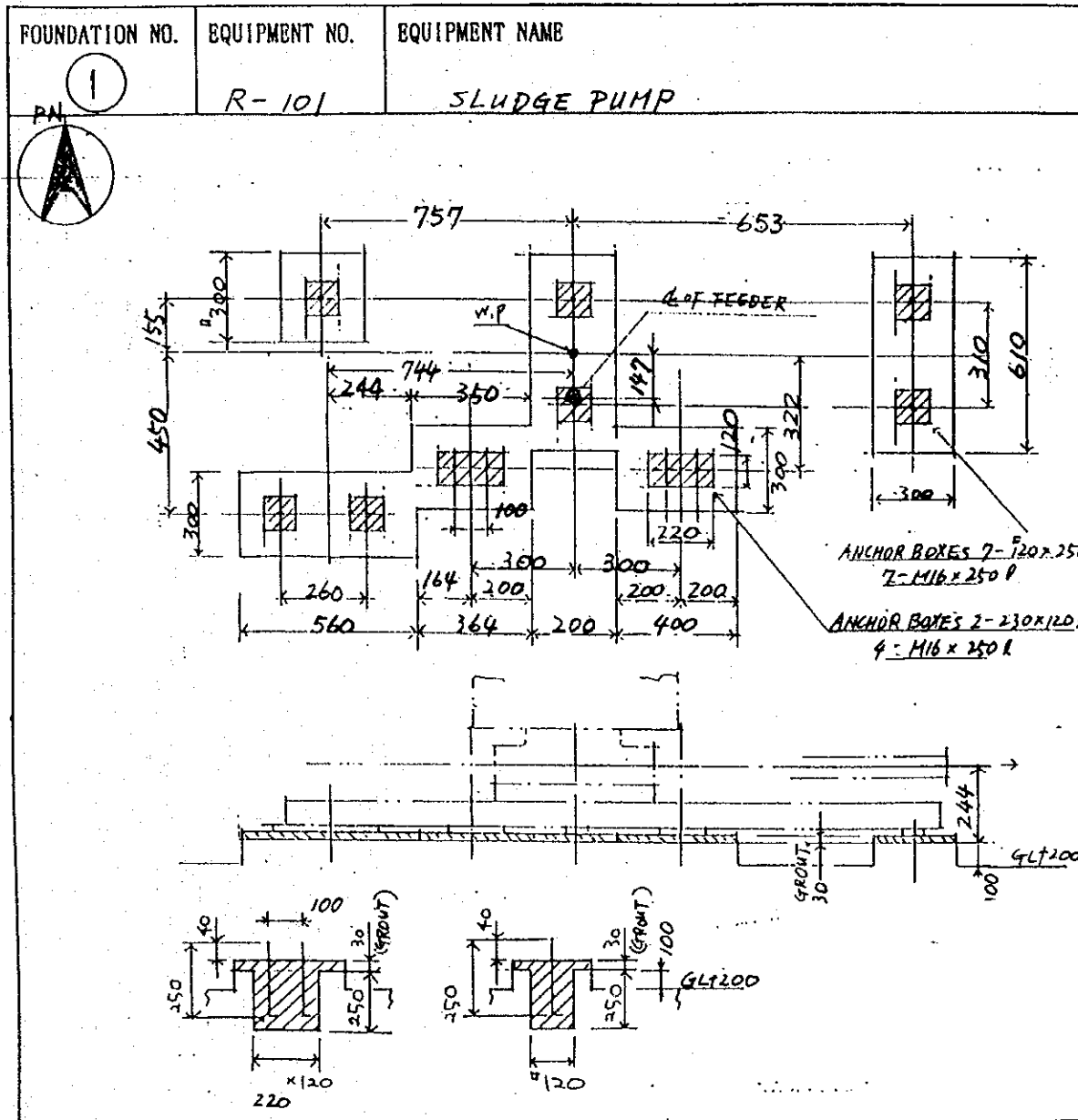
2. The chemical anchors (or drive-it) can be used for small equipment, supports for piping and stanchon for electrical/instrumentation equipment.

3. Japanese side and CETESB have to discuss and get mutually agreed about following items.
 - 1) Changes of size of equipment foundation.
 - 2) Changes of size of building.

FOUNDATION NO.	EQUIPMENT NO.	NAME
1.	R-101	SLUDGE PUMP
2.	T-109	HOPPER
3.	T-110, R-102	HOPPER & CRUSHER
4.	F-101	CONVEYOR
5.	F-104	HOIST WITH BUCKET
6.	T-113	STEEL STRUCTURE
7.	R-103	FLUIDIZING AIR FAN
8.	R-104	SECONDARY FAN
9.	R-105	AIR FAN
10.	R-106	INDUCED DRAFT FAN
11.	R-108	COMPRESSOR
12.	F-103	SCREW CONVEYOR
13.	F-115	VIBRATING SCREEN
14.	S-108	COOLING TOWER
15.	S-110	COOLING TOWER
16.	F-112	WALK WAY FOR FLAP DAMPER
17.	R-115	CIRCULATION PUMP (3) <u>COOLING WATER PUMP (2)</u>
18.	R-107 <u>R-109</u>	CIRCULATION PUMP (2)
19.	R-109 <u>R-107</u>	CIRCULATION PUMP (1)
20.	R-114	COOLING WATER PUMP (1)
21.	S-111	WASTE WATER TREATMENT (1/3)
22.	S-111	WASTE WATER TREATMENT (2/3)
23.	S-111	WASTE WATER TREATMENT (3/3)
24.	S-111-12	AERATION BLOWER <u>BACK WASH BLOWER</u>
25.	T-102	WASTE OIL TANK
	T-103	WASTE LIQUID TANK
	T-105	CAUSTIC SODA TANK
26.	R-113	CAUSTIC SODA PUMP
27.	R-110	INJECTION PUMP
28.	R-111	WASTE OIL PUMP
29.	S-107	GAS ABSORBER WITH STACK
30.	T-113	STEEL STRUCTURE (2)
31.	IP-1	CONTROL PANEL
32.	CP-1	CONTROL PANEL
33.	SP-1	CONTROL PANEL

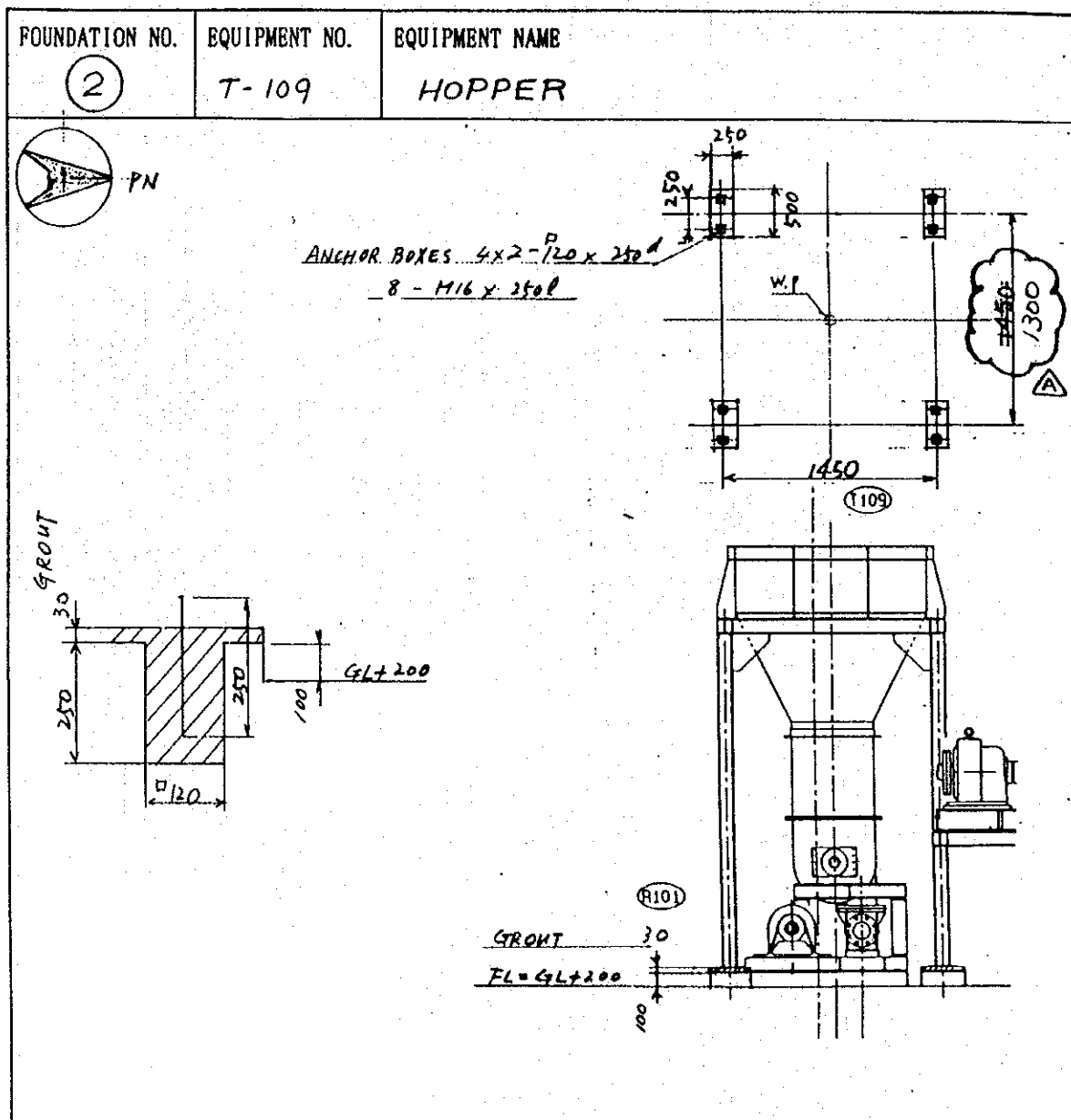
M 3 6 9 2 - 1 8 - 0 0 1

LOADING DATA AND ANCHOR PLAN



		LOAD	REMARKS
	DEAD LOAD	0.6 (tons)	
	LIVE LOAD	0.9 (tons)	DYNAMIC COEFFICIENT 1.5
SEISMIC	VERTICAL	(tons)	
	HORIZONTAL	(tons)	
WIND	VERTICAL	(tons)	
	HORIZONTAL	(tons)	

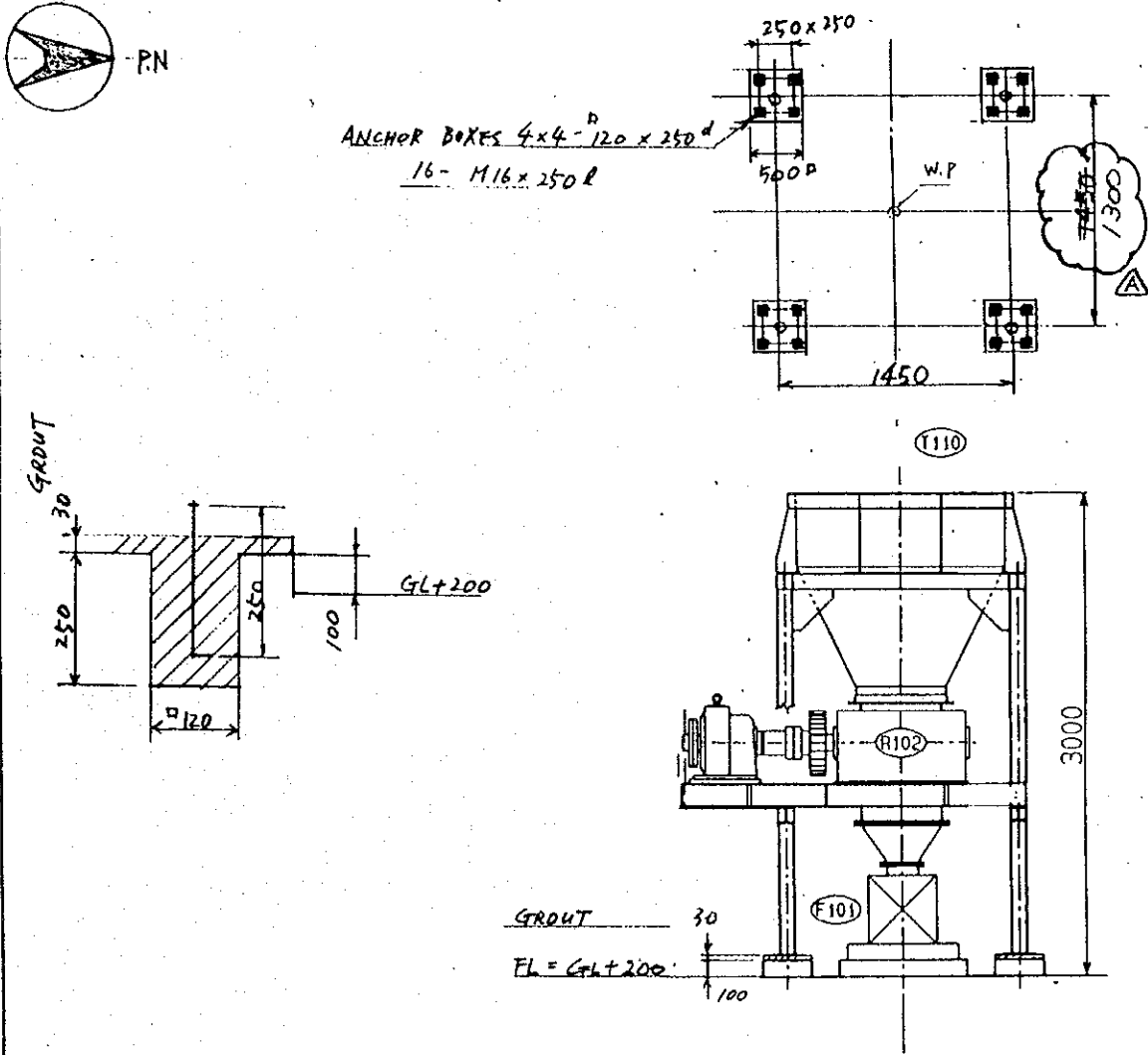
LOADING DATA AND ANCHOR PLAN



LOAD		REMARKS
DEAD LOAD	4 - 0.4 (tons)	HOPPER
LIVE LOAD	4 - 0.75 (tons)	+ SLUDGE
SEISMIC	VERTICAL	(tons)
	HORIZONTAL	(tons)
WIND	VERTICAL	(tons)
	HORIZONTAL	(tons)

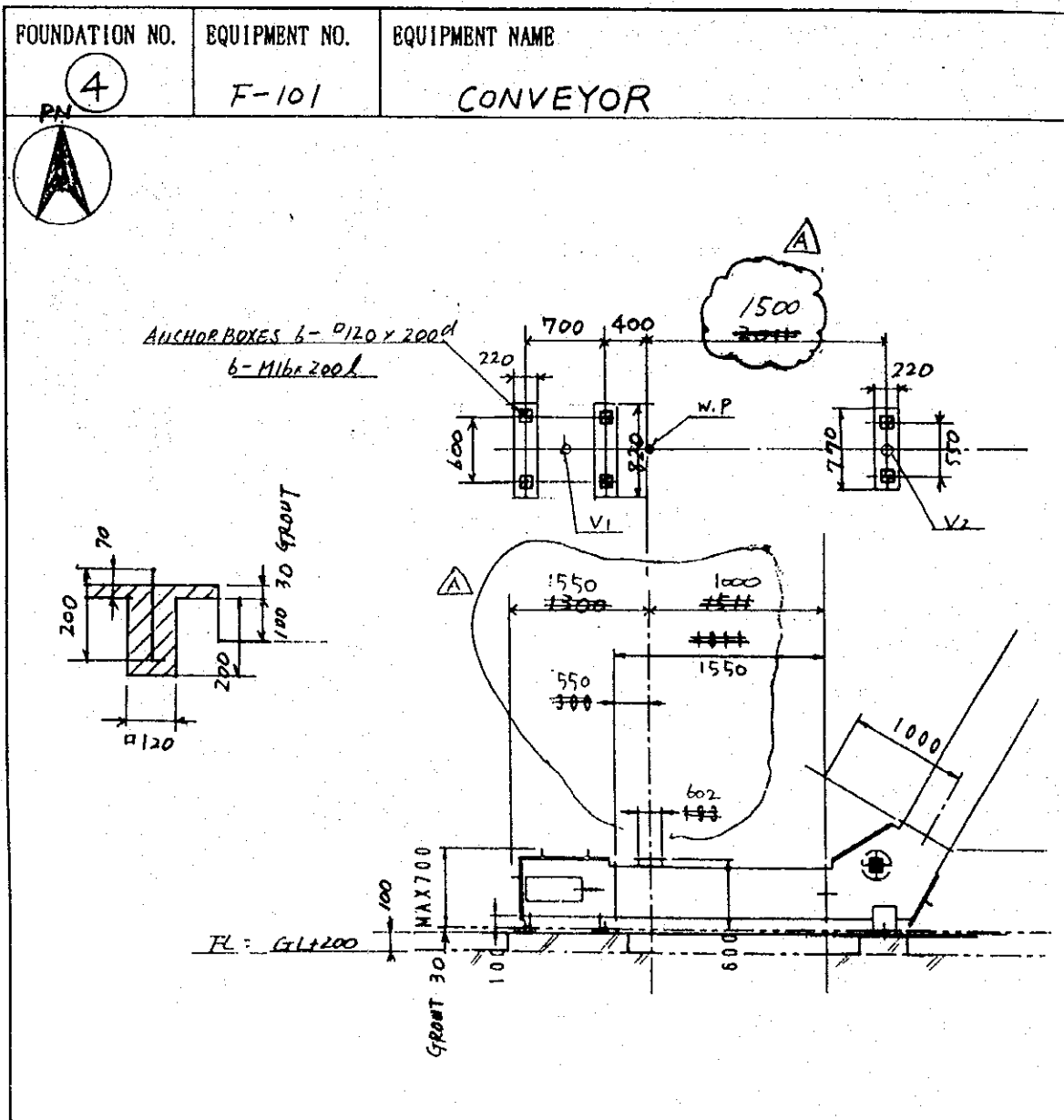
LOADING DATA AND ANCHOR PLAN

FOUNDATION NO. 3	EQUIPMENT NO. T-110, R-102	EQUIPMENT NAME HOPPER & CRUSHER
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LOAD		REMARKS
DEAD LOAD	4 - 1.0 (tons)	HOPPER + CRUSHER.
LIVE LOAD	4 - 1.7 (tons)	+ {INDUSTRIAL WASTE (0.2 T) + DYNAMIC LOAD OF CRUSHER (0.25 T)}
SEISMIC	VERTICAL	(tons)
	HORIZONTAL	(tons)
WIND	VERTICAL	(tons)
	HORIZONTAL	(tons)

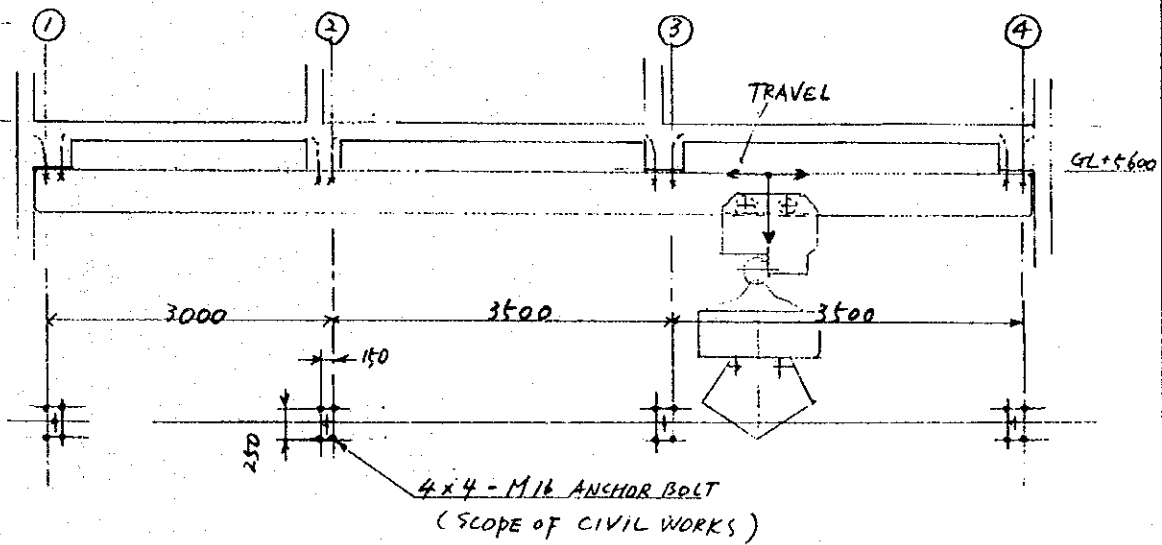
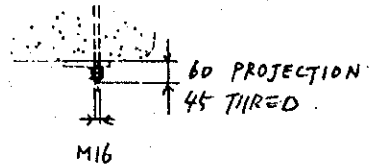
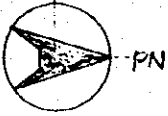
LOADING DATA AND ANCHOR PLAN



		LOAD		REMARKS
		V ₁	V ₂	
DEAD LOAD		0.3	1.2 (lons)	
LIVE LOAD		0.4	1.5 (lons)	
SEISMIC	VERTICAL		(lons)	
	HORIZONTAL		(lons)	
WIND	VERTICAL		(lons)	
	HORIZONTAL		(lons)	

LOADING DATA AND ANCHOR PLAN

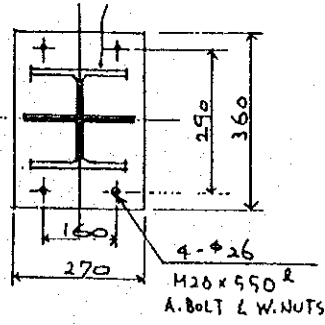
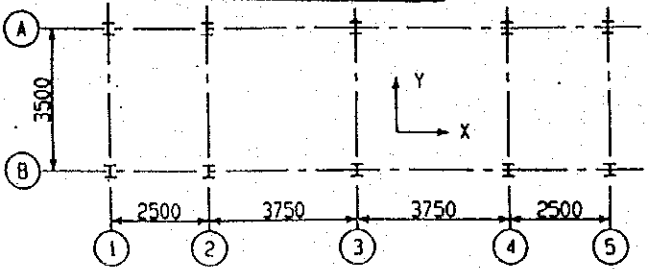
FOUNDATION NO. 5	EQUIPMENT NO. F-104	EQUIPMENT NAME HOIST WITH BUCKET
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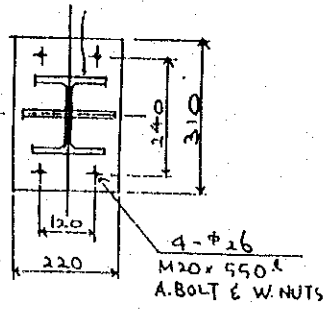
LOAD		REMARKS
DEAD LOAD	4 - 1.5 (tons)	
LIVE LOAD	4 - 3 (tons)	
SEISMIC	VERTICAL	(tons)
	HORIZONTAL	(tons)
WIND	VERTICAL	(tons)
	HORIZONTAL	(tons)

LOADING DATA AND ANCHOR PLAN

FOUNDATION NO. 6	EQUIPMENT NO. T-113	EQUIPMENT NAME STEEL STRUCTURE
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COLUMN NO. A-2, A-3
B-2, B-3



COLUMN NO. A-1, A-4, A-5
B-1, B-4, B-5

DETAIL OF BASE PLATE

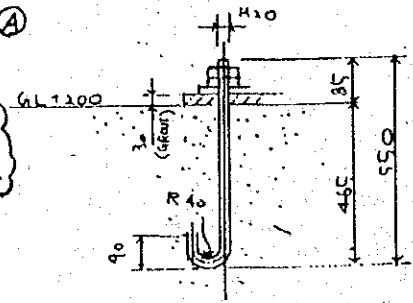
(UNIT: TON)

COLUMN MARK	6. LOADING DATA						SHORT LOAD	
	D. L.		L. L.		M. L.		WIND, L.	
	V	X Y	V	X Y	V	X Y	V	X Y
GA1	2.0		2.0		2.0		±3	±0.5 ±1
CA2	3.5		5.0		15.0		±7	±0.5 ±2
CA3	4.0		5.0		21.0		±8	±0.5 ±3
CA4	3.5		4.0		9.0		±7	±0.5 ±2
CA5	2.0		2.0		5.0		±3	±0.5 ±1
CB1	2.0		2.0		1.5		±3	±0.5 ±1
CB2	3.5		5.0		12.0		±7	±0.5 ±2
CB3	4.0		5.0		22.0		±8	±0.5 ±3
CB4	3.5		4.0		11.0		±7	±0.5 ±2
CB5	2.0		2.0		5.5		±3	±0.5 ±1

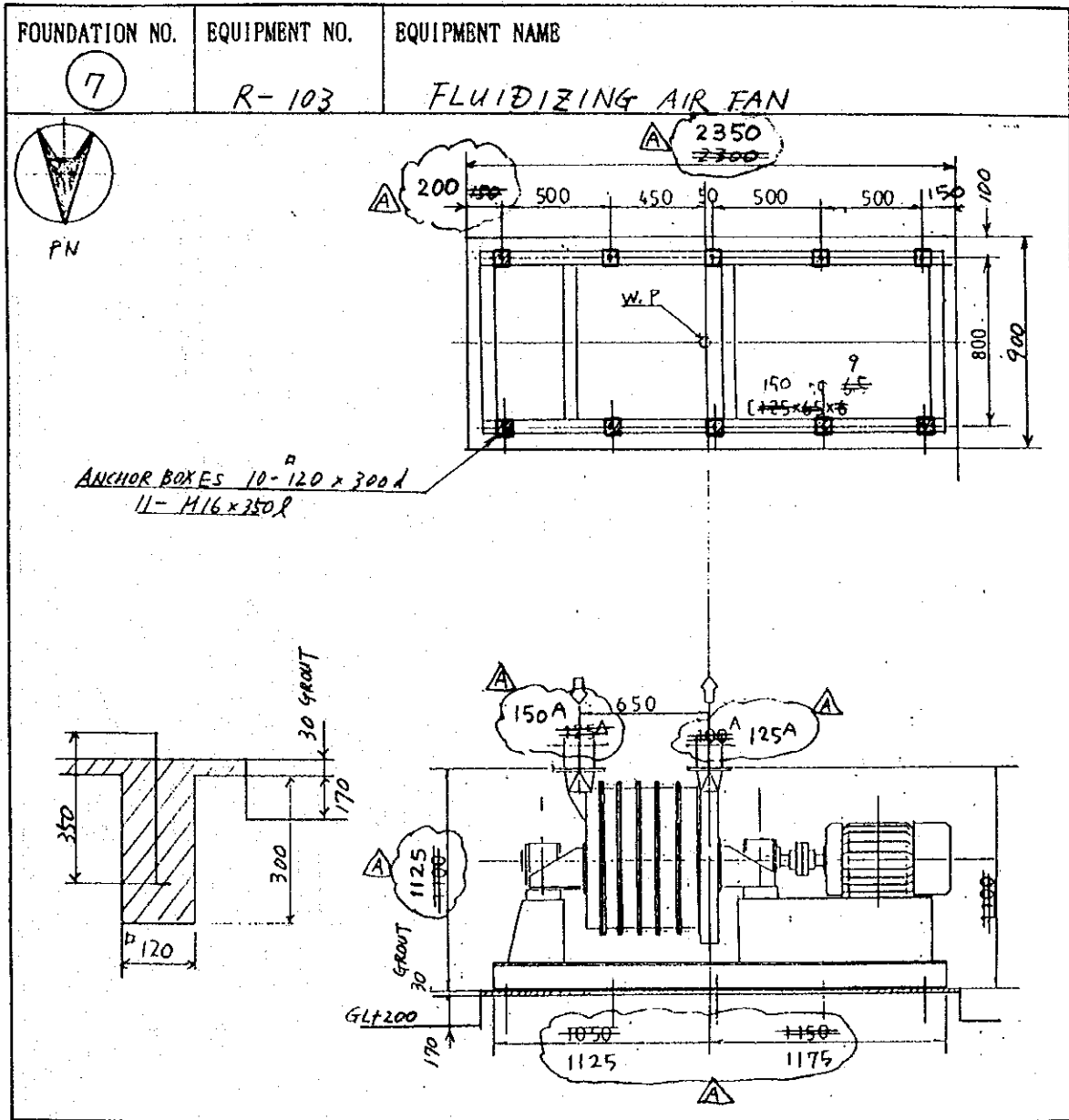
NOTE:
D. L. : DEAD LOAD
L. L. : LIVE LOAD
M. L. : MACHINE LOAD

REMARK
ANCHOR BOLTS/NUTS SHOULD BE PREPARED AND BURIED BY CETESB SIDE AT THE TIME OF CONCRETE WORK.
DETAILED DRAWINGS FOR ANCHOR BOLTS/NUTS WILL BE SENT TO YOU NEXT WEEK FROM HHI.

REMARKS



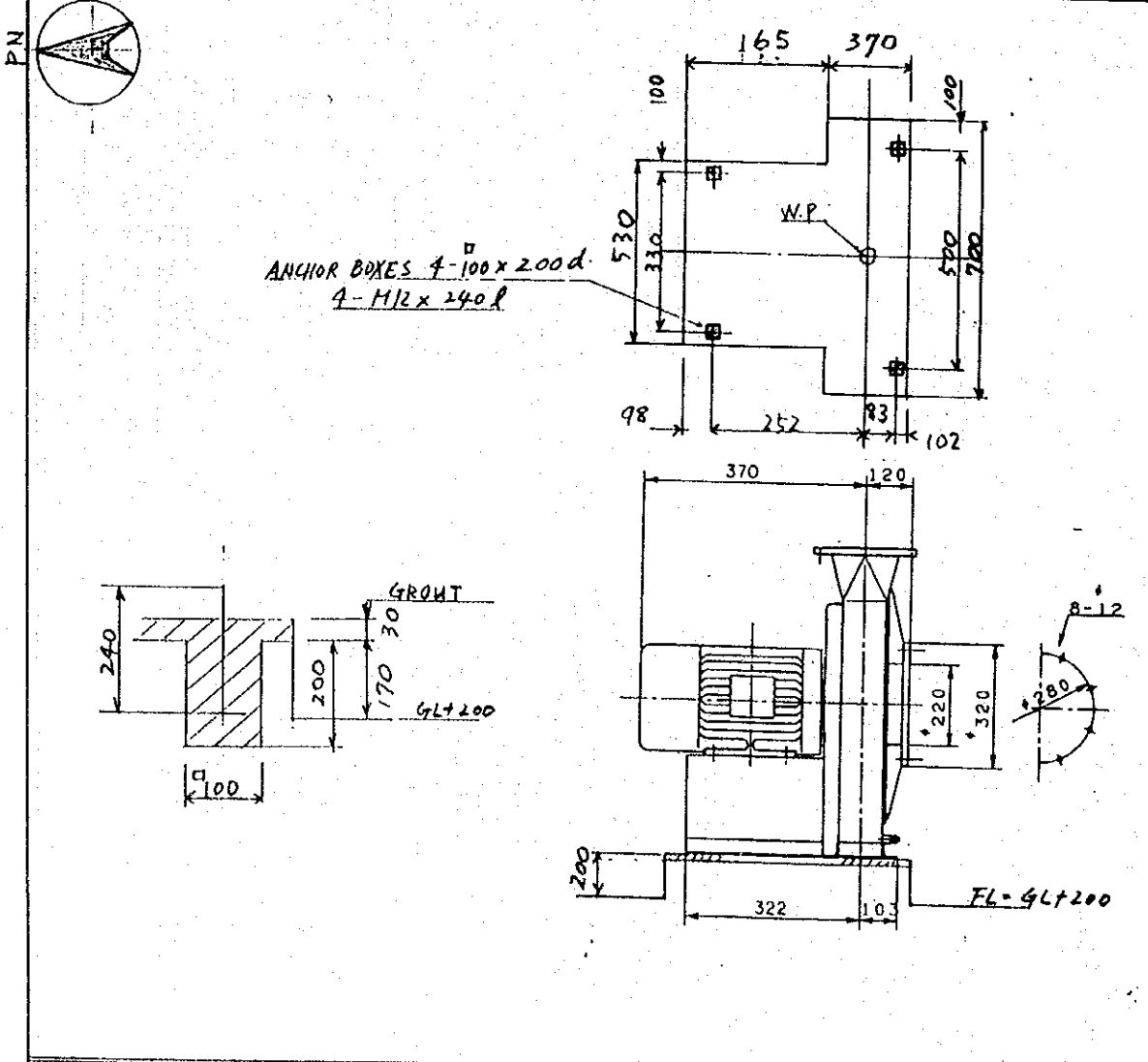
LOADING DATA AND ANCHOR PLAN



LOAD		REMARKS
DEAD LOAD	1.5 (tons)	
LIVE LOAD	3.0 (tons)	DYNAMIC CO-EFFICIENT. 2
SEISMIC	VERTICAL	(tons)
	HORIZONTAL	(tons)
WIND	VERTICAL	(tons)
	HORIZONTAL	(tons)

LOADING DATA AND ANCHOR PLAN


FOUNDATION NO. 8	EQUIPMENT NO. R-104	EQUIPMENT NAME SECONDARY FAN
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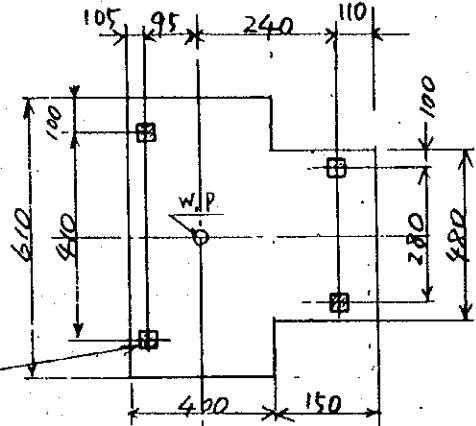


LOAD		REMARKS
DEAD LOAD	0.25 (tons)	FAN + MOTOR
LIVE LOAD	0.5 (tons)	DYNAMIC CO-EFFICIENT : 2
SEISMIC	VERTICAL	(tons)
	HORIZONTAL	(tons)
WIND	VERTICAL	(tons)
	HORIZONTAL	(tons)

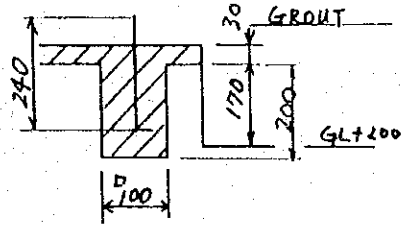
LOADING DATA AND ANCHOR PLAN

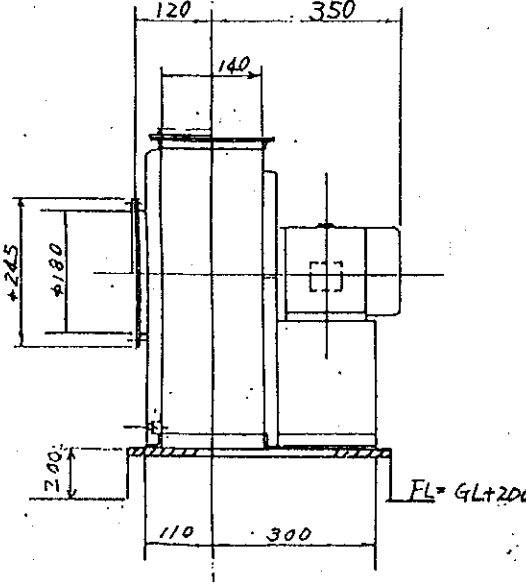
FOUNDATION NO.		EQUIPMENT NO.	EQUIPMENT NAME
9		R-105	AIR FAN





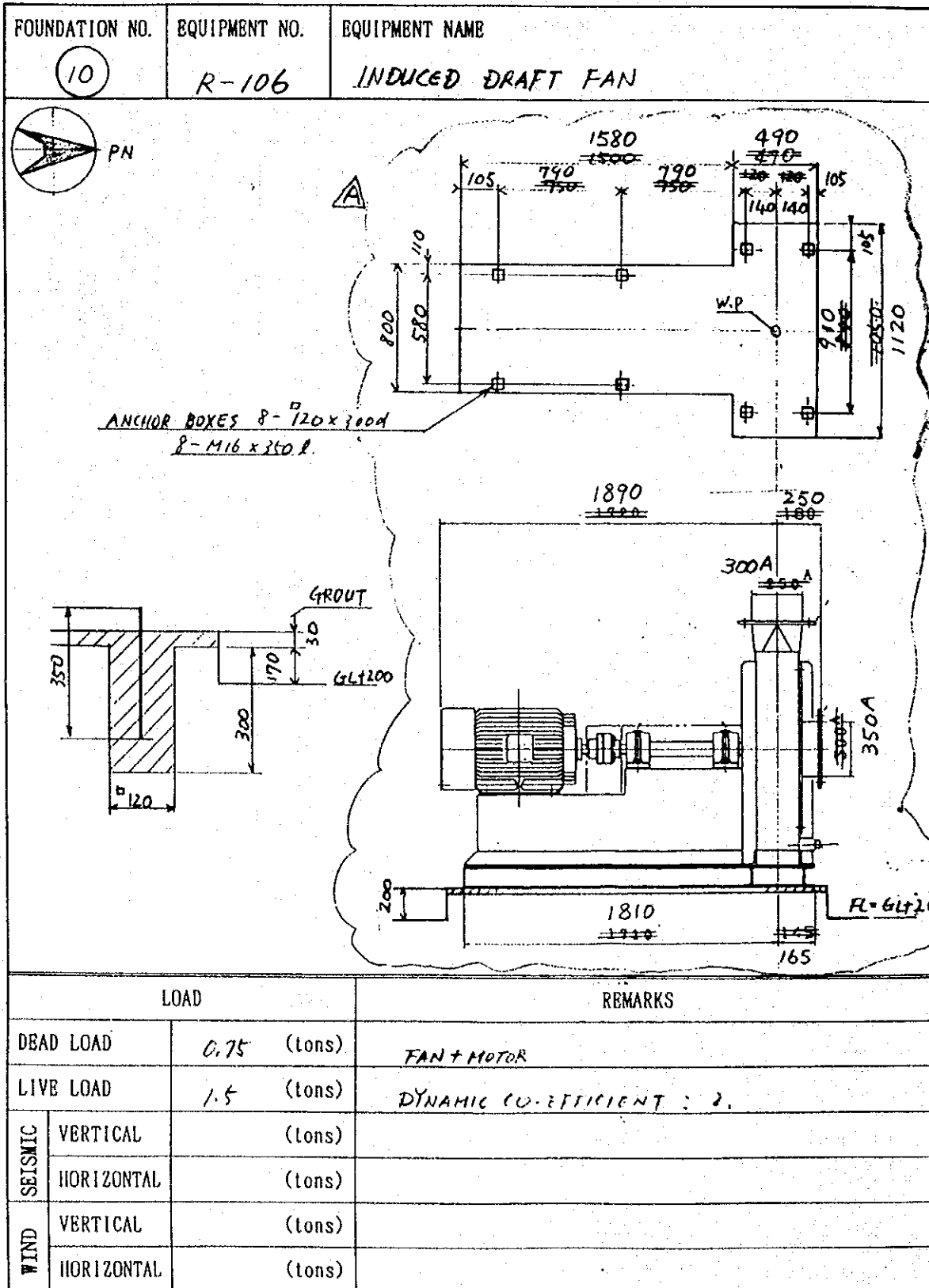
ANCHOR BOXES 4- $\phi 100 \times 200d$
4- $M12 \times 240R$





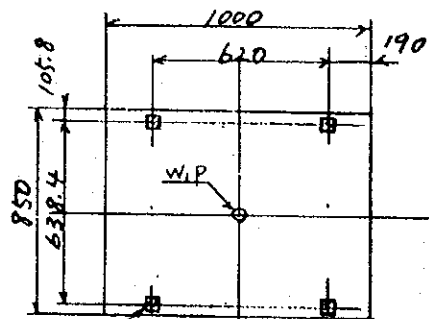
LOAD		REMARKS
DEAD LOAD	0.15 (tons)	FAN + MOTOR
LIVE LOAD	0.3 (tons)	DYNAMIC CO-EFFICIENT = 2
SEISMIC	VERTICAL	(tons)
	HORIZONTAL	(tons)
WIND	VERTICAL	(tons)
	HORIZONTAL	(tons)

LOADING DATA AND ANCHOR PLAN

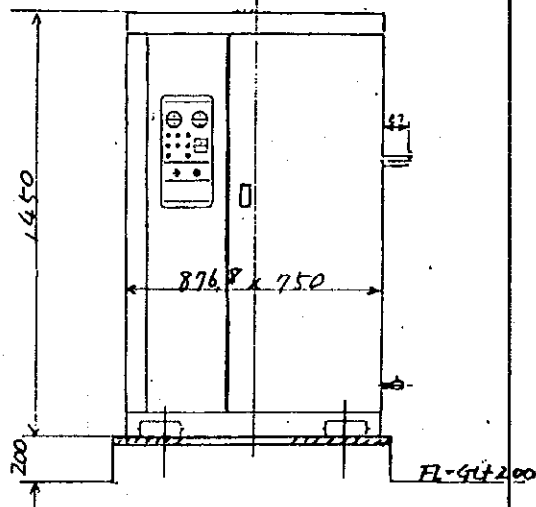
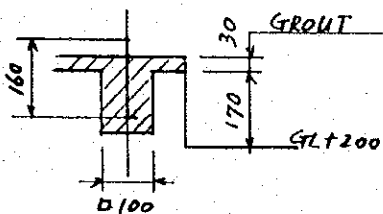


LOADING DATA AND ANCHOR PLAN

FOUNDATION NO. PN (11)	EQUIPMENT NO. R-108	EQUIPMENT NAME COMPRESSOR
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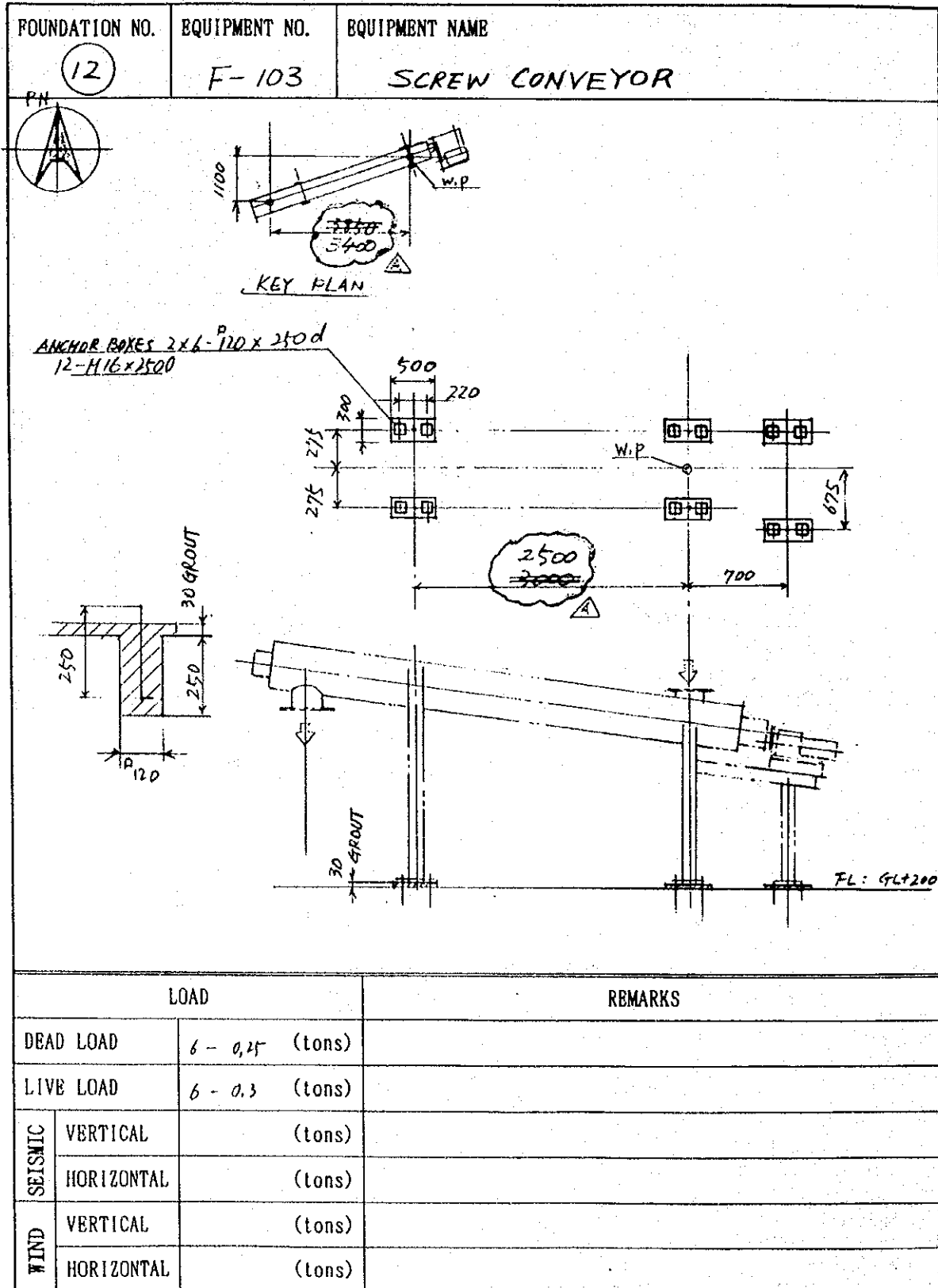


ANCHOR BOXES 4 - $\varnothing 100 \times 150d$
4 - M12 x 160



LOAD		REMARKS
DEAD LOAD	0.5 (tons)	
LIVE LOAD	0.75 (tons)	DYNAMIC CO-EFFICIENT : 1.5
SEISMIC	VERTICAL	(tons)
	HORIZONTAL	(tons)
WIND	VERTICAL	(tons)
	HORIZONTAL	(tons)

LOADING DATA AND ANCHOR PLAN



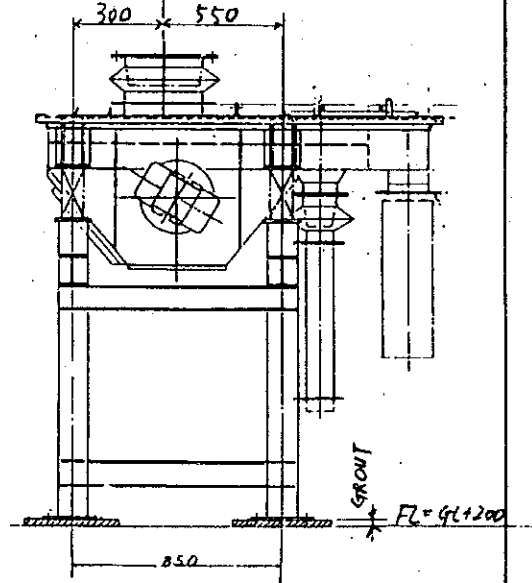
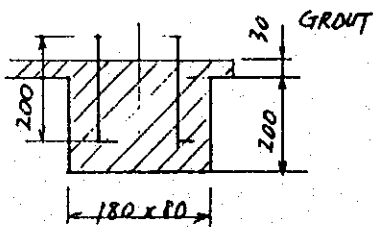
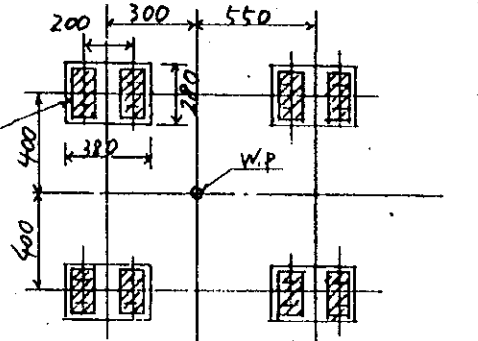
LOAD		REMARKS
DEAD LOAD	6 - 0.25 (tons)	
LIVE LOAD	6 - 0.3 (tons)	
SEISMIC	VERTICAL	(tons)
	HORIZONTAL	(tons)
WIND	VERTICAL	(tons)
	HORIZONTAL	(tons)

LOADING DATA AND ANCHOR PLAN

FOUNDATION NO. 13	EQUIPMENT NO. F-115	EQUIPMENT NAME VIBRATING SCREEN
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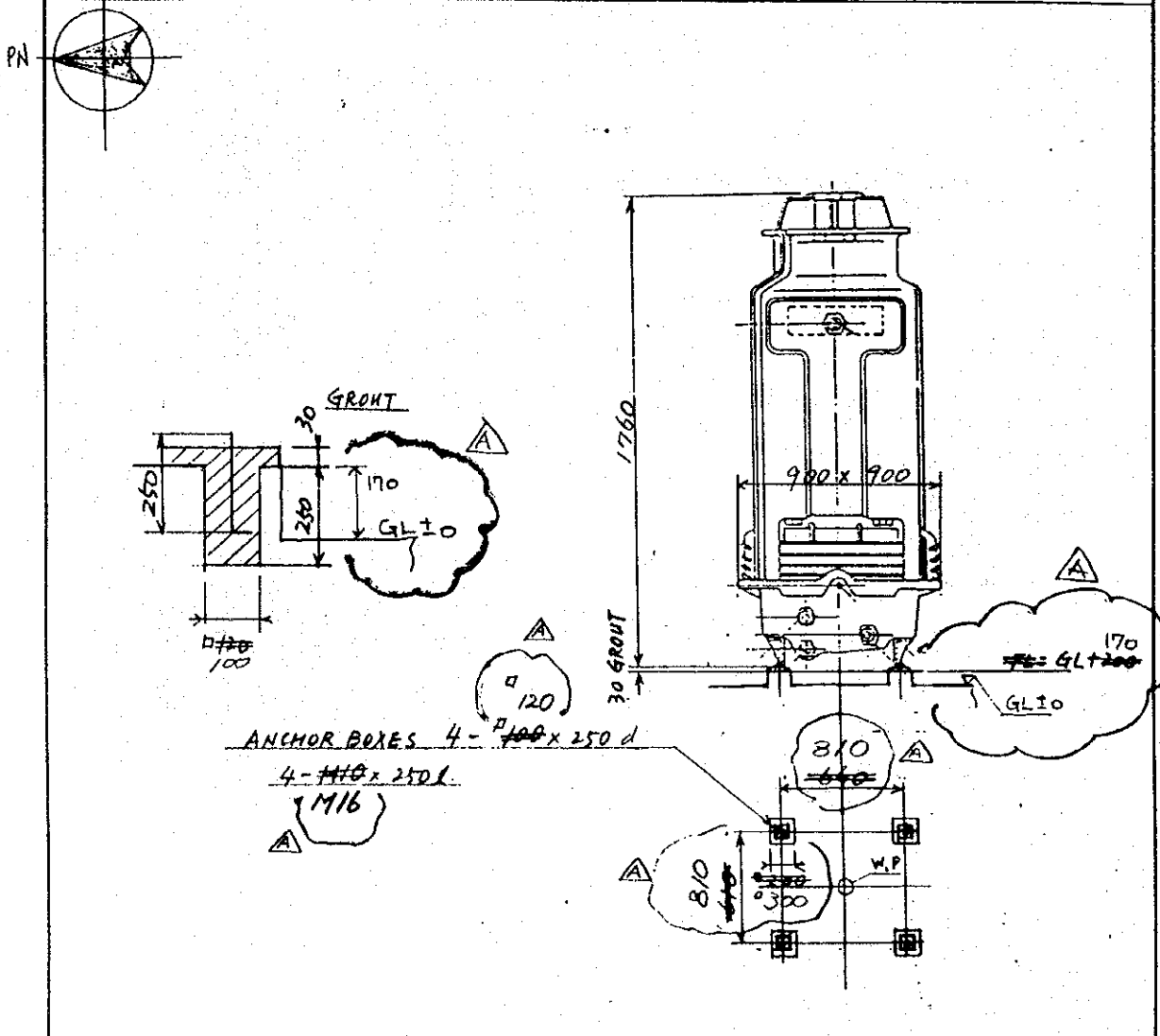
ANCHOR BOXES 8- 80x180 x 200 d
16- M12 x 200 L



LOAD		REMARKS	
DEAD LOAD	0.3 (tons)		
LIVE LOAD	0.9 (tons)	DYNAMIC CO-EFFICIENT; 3.	
SEISMIC	VERTICAL	(tons)	
	HORIZONTAL	(tons)	
WIND	VERTICAL	(tons)	
	HORIZONTAL	(tons)	

LOADING DATA AND ANCHOR PLAN

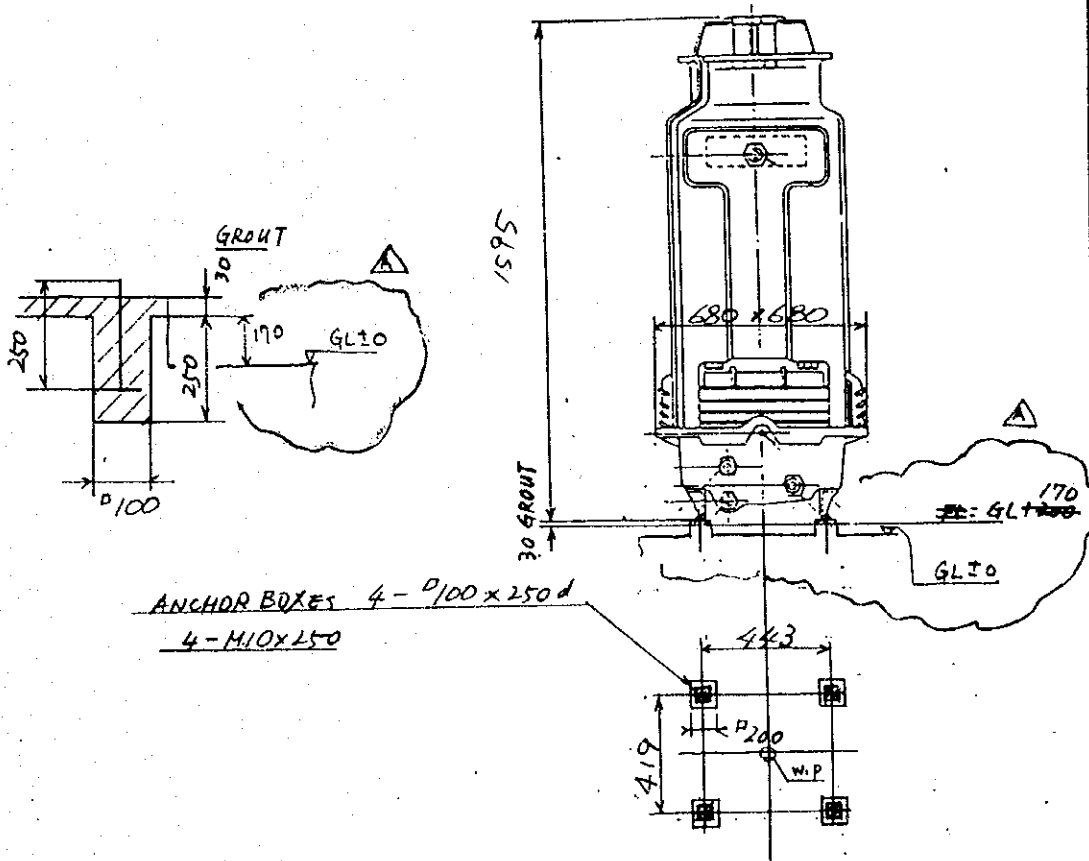
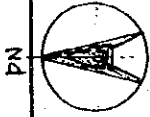
FOUNDATION NO. 14	EQUIPMENT NO. S-108	EQUIPMENT NAME COOLING TOWER
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		LOAD 0.07 A	REMARKS
DEAD LOAD		0.07 (tons)	
LIVE LOAD		0.3 (tons)	
SEISMIC	VERTICAL	(tons)	
	HORIZONTAL	(tons)	
WIND	VERTICAL	(tons)	
	HORIZONTAL	(tons)	

LOADING DATA AND ANCHOR PLAN

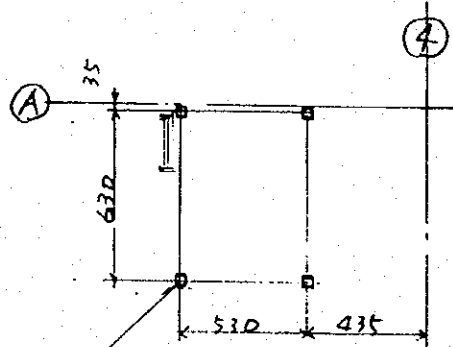
FOUNDATION NO. 15	EQUIPMENT NO. S-110	EQUIPMENT NAME COOLING TOWER
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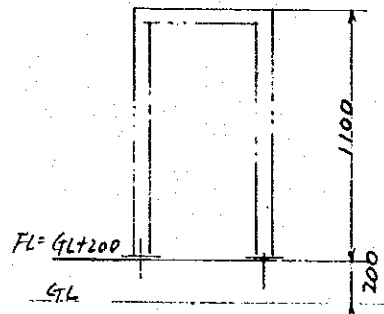
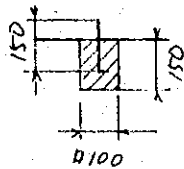
		LOAD	REMARKS
DEAD LOAD		0.035 (tons)	
LIVE LOAD		0.09 (tons)	
SEISMIC	VERTICAL	(tons)	
	HORIZONTAL	(tons)	
WIND	VERTICAL	(tons)	
	HORIZONTAL	(tons)	

LOADING DATA AND ANCHOR PLAN

FOUNDATION NO. 16	EQUIPMENT NO. F-112	EQUIPMENT NAME WALK WAY FOR FLAP DAMPER
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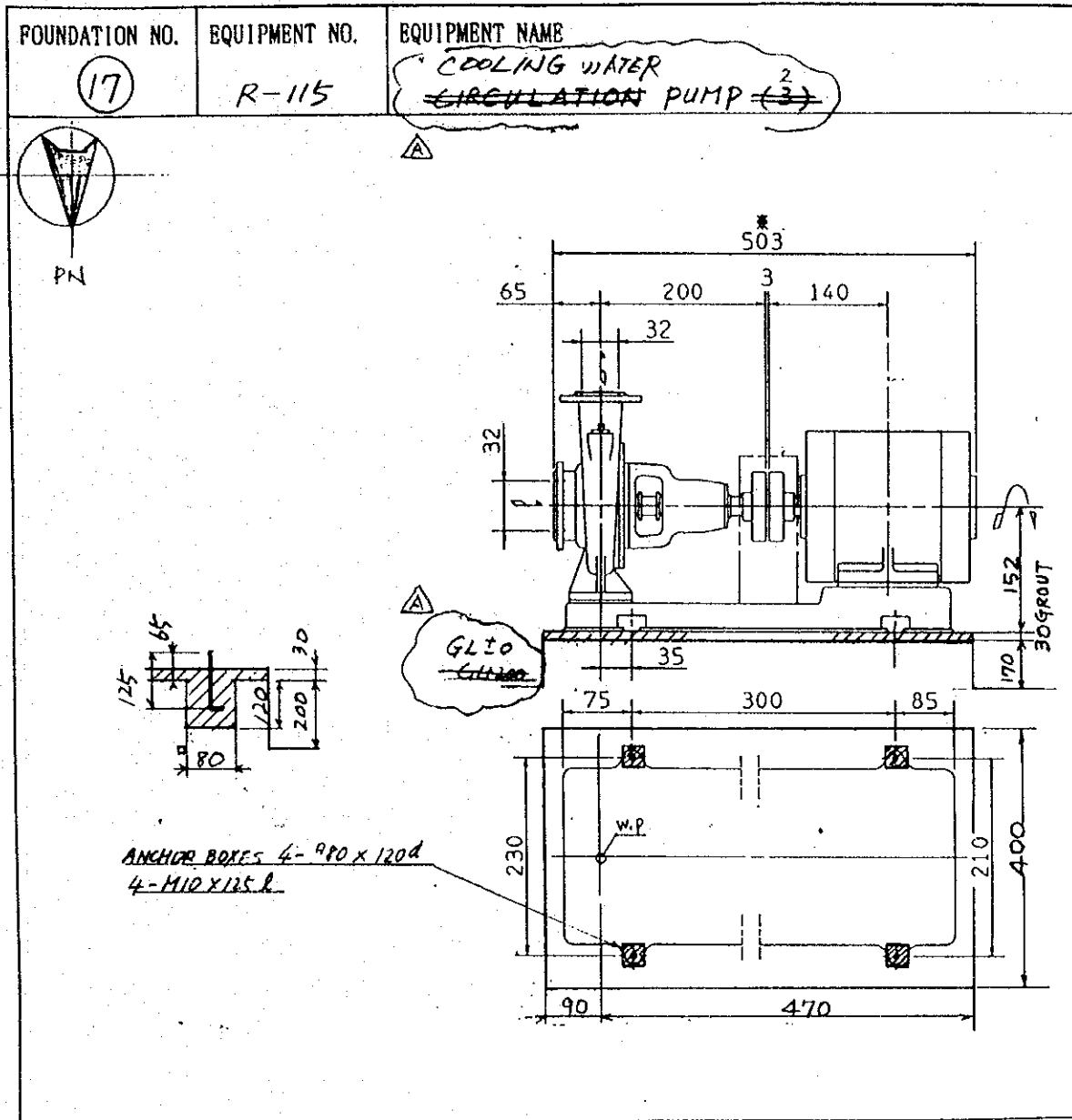


*ANCHOR BOXES 4 - 100 x 150
4 - 110 x 150*



LOAD		REMARKS
DEAD LOAD	4 - 0.1 (tons)	
LIVE LOAD	4 - 0.1 (tons)	
SEISMIC	VERTICAL	(tons)
	HORIZONTAL	(tons)
WIND	VERTICAL	(tons)
	HORIZONTAL	(tons)

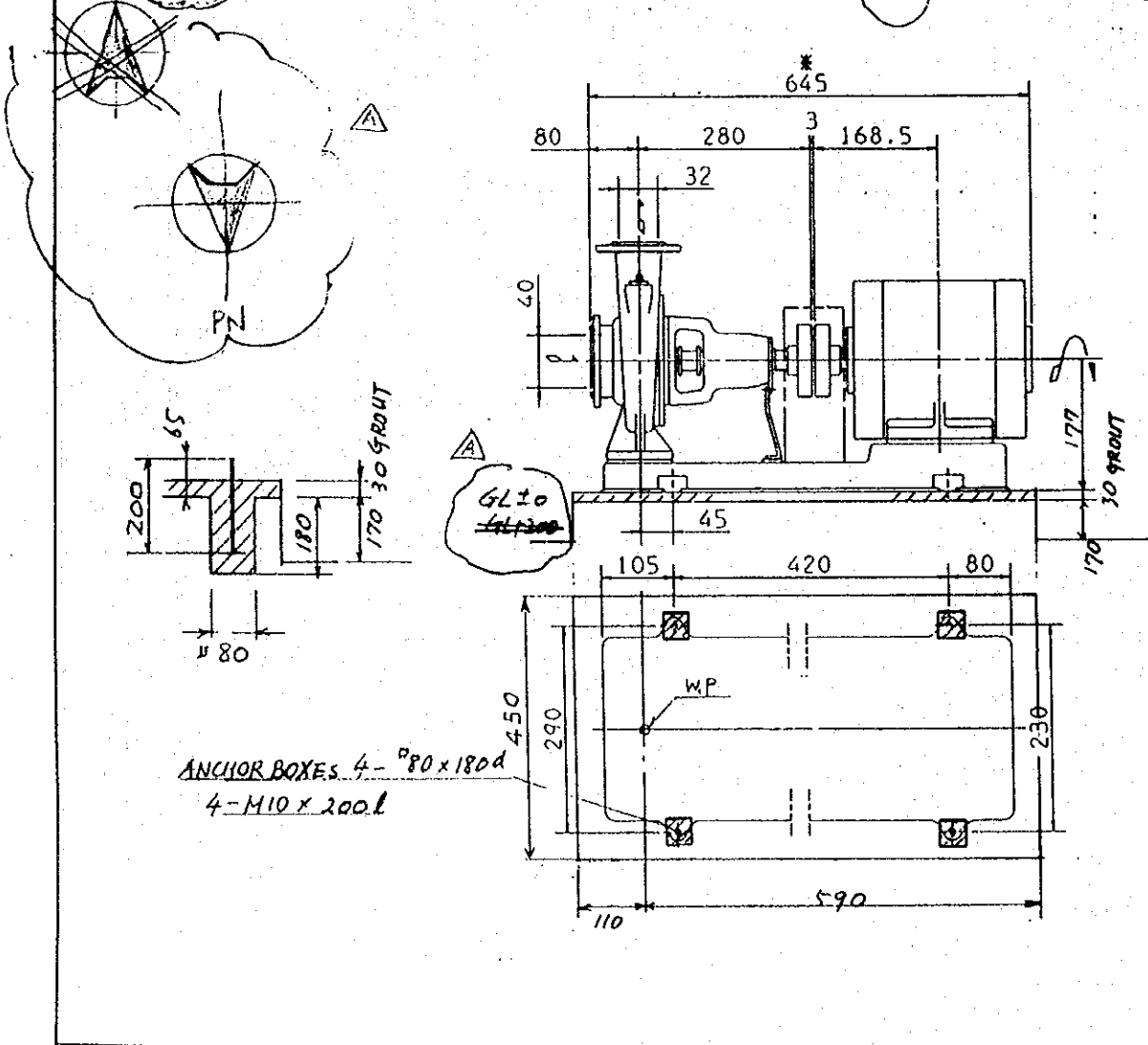
LOADING DATA AND ANCHOR PLAN



LOAD		REMARKS	
DEAD LOAD	0,4 (tons)		
LIVE LOAD	0,5 (tons)	DYNAMIC CO-EFFICIENT: 1,2	
SEISMIC	VERTICAL	(tons)	
	HORIZONTAL	(tons)	
WIND	VERTICAL	(tons)	
	HORIZONTAL	(tons)	

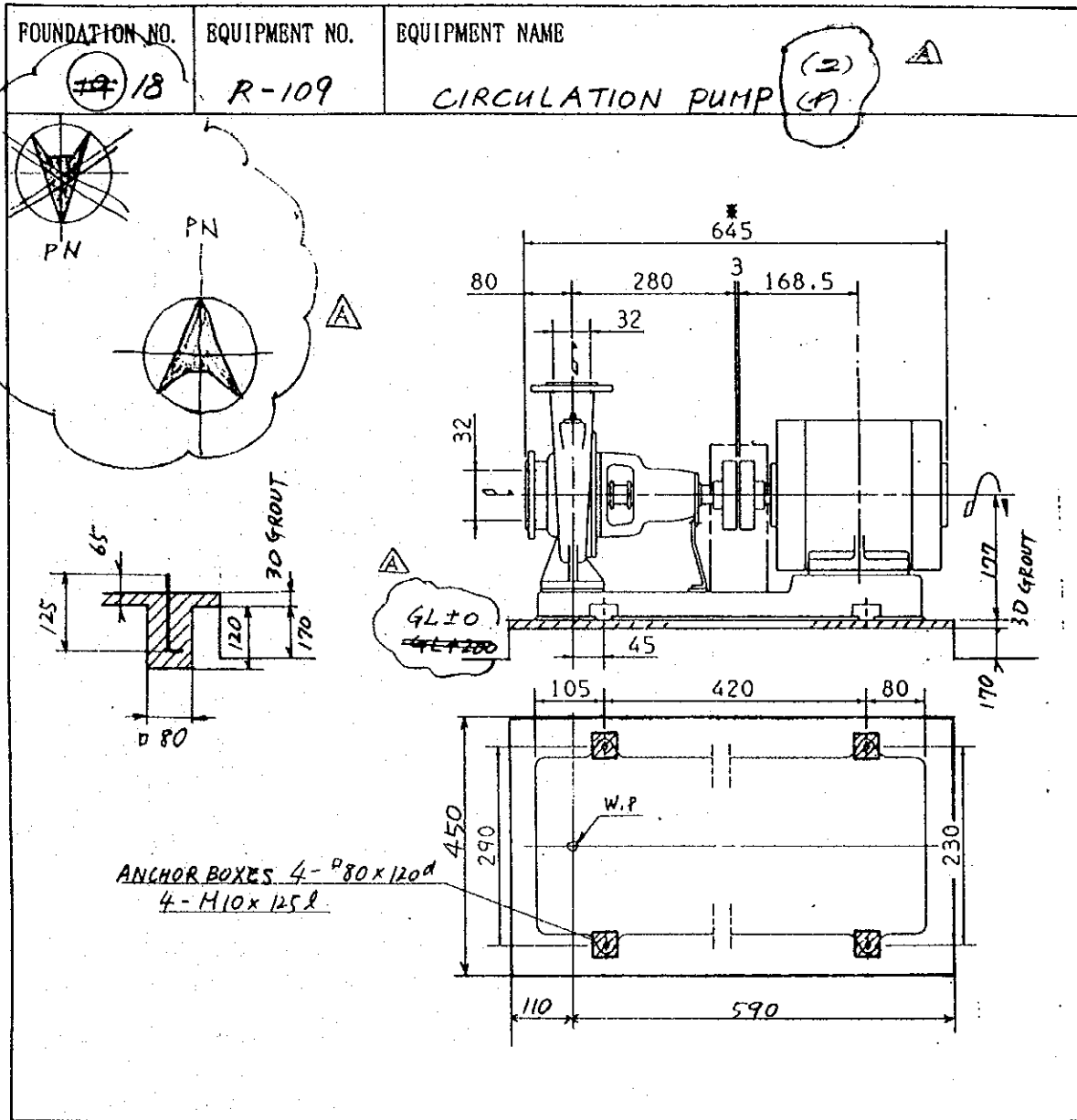
LOADING DATA AND ANCHOR PLAN

FOUNDATION NO. #19	EQUIPMENT NO. R-107	EQUIPMENT NAME CIRCULATION PUMP (11)
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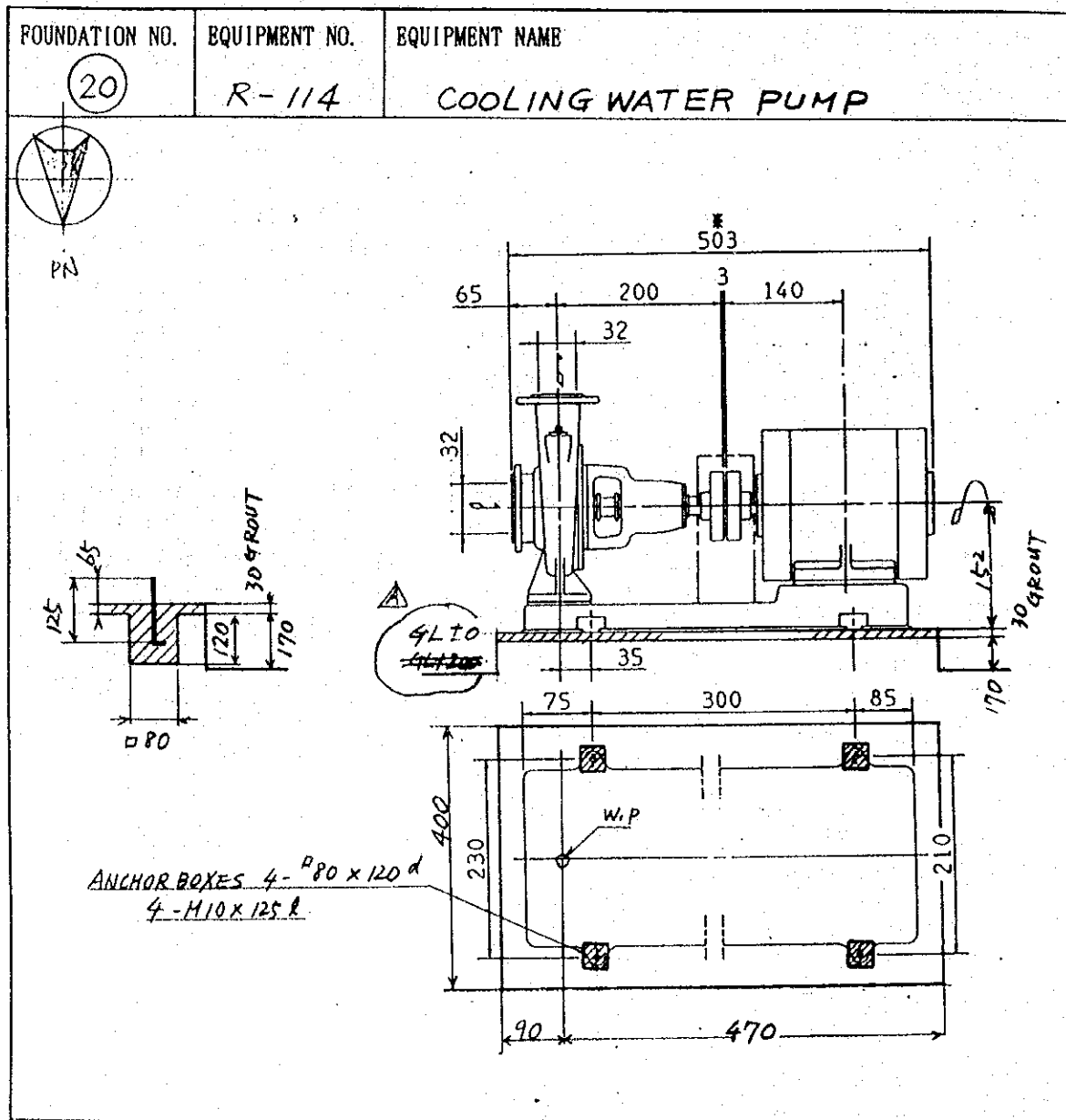
LOAD		REMARKS
DEAD LOAD	0.5 (lons)	
LIVE LOAD	0.6 (lons)	DYNAMIC CO-EFFICIENT = 1.2
SEISMIC	VERTICAL	(lons)
	HORIZONTAL	(lons)
WIND	VERTICAL	(lons)
	HORIZONTAL	(lons)

LOADING DATA AND ANCHOR PLAN

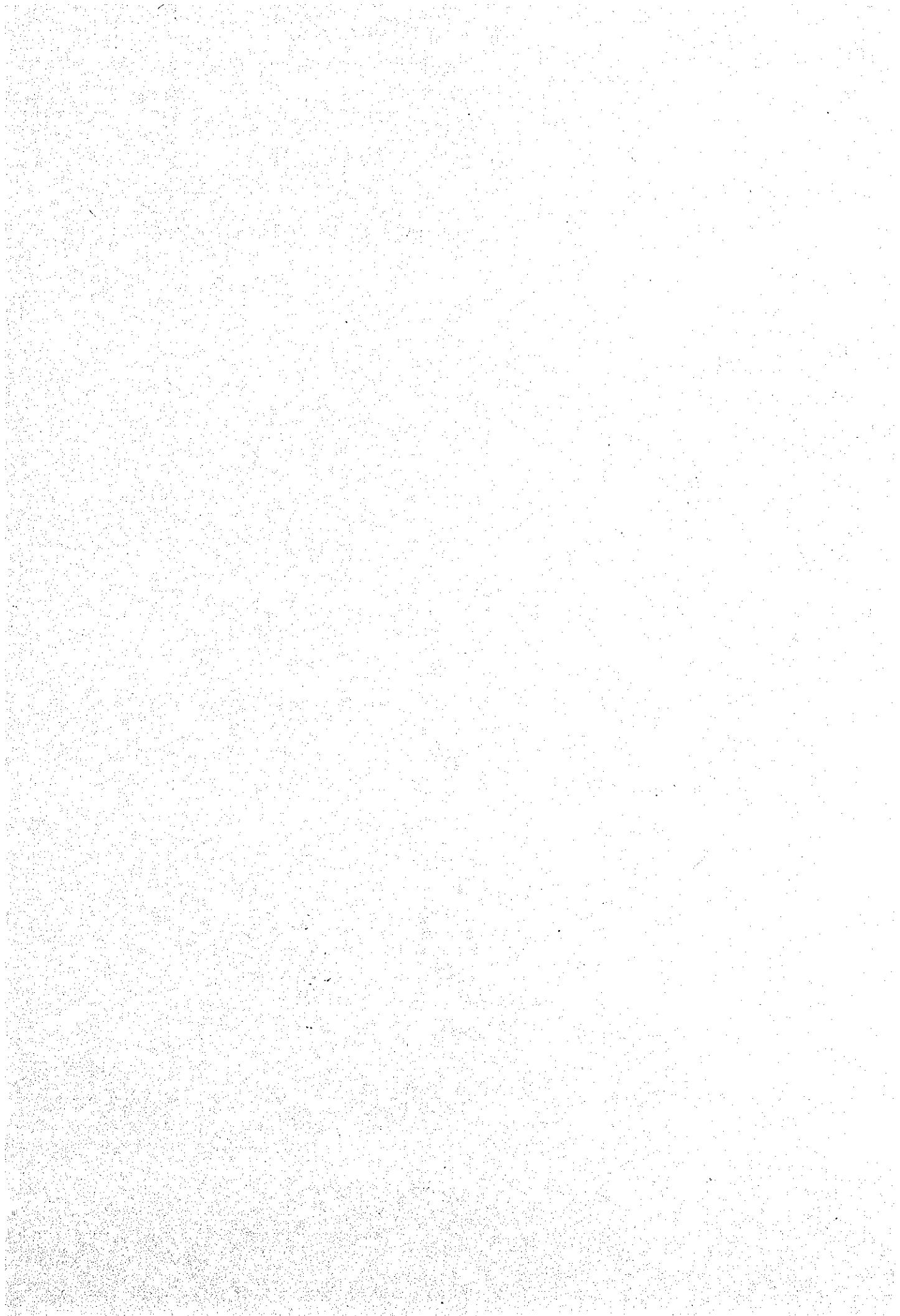


LOAD		REMARKS
DEAD LOAD	0.5 (tons)	
LIVE LOAD	0.6 (tons)	DYNAMIC CO-EFFICIENT : 1.2
SEISMIC	VERTICAL	(tons)
	HORIZONTAL	(tons)
WIND	VERTICAL	(tons)
	HORIZONTAL	(tons)

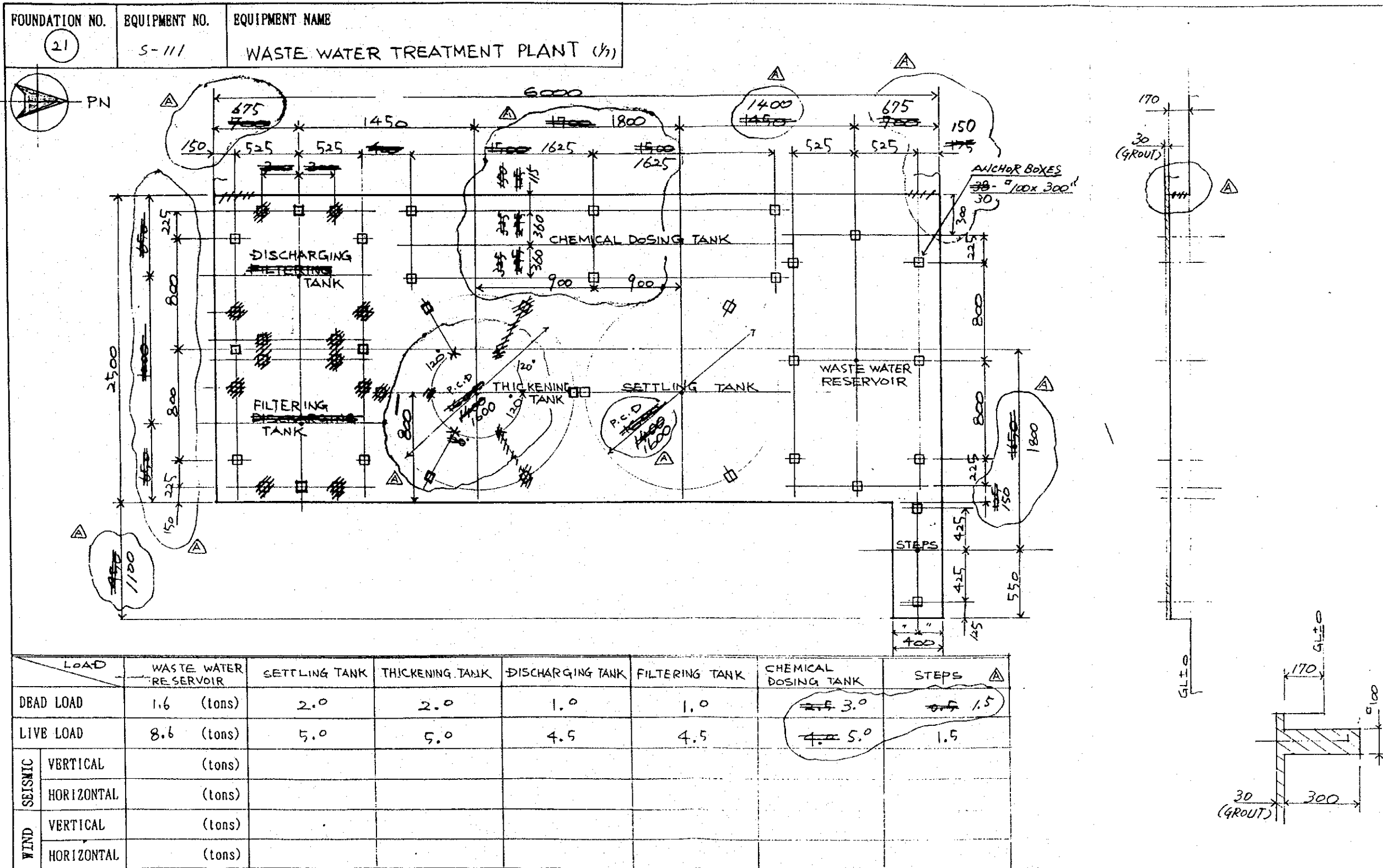
LOADING DATA AND ANCHOR PLAN

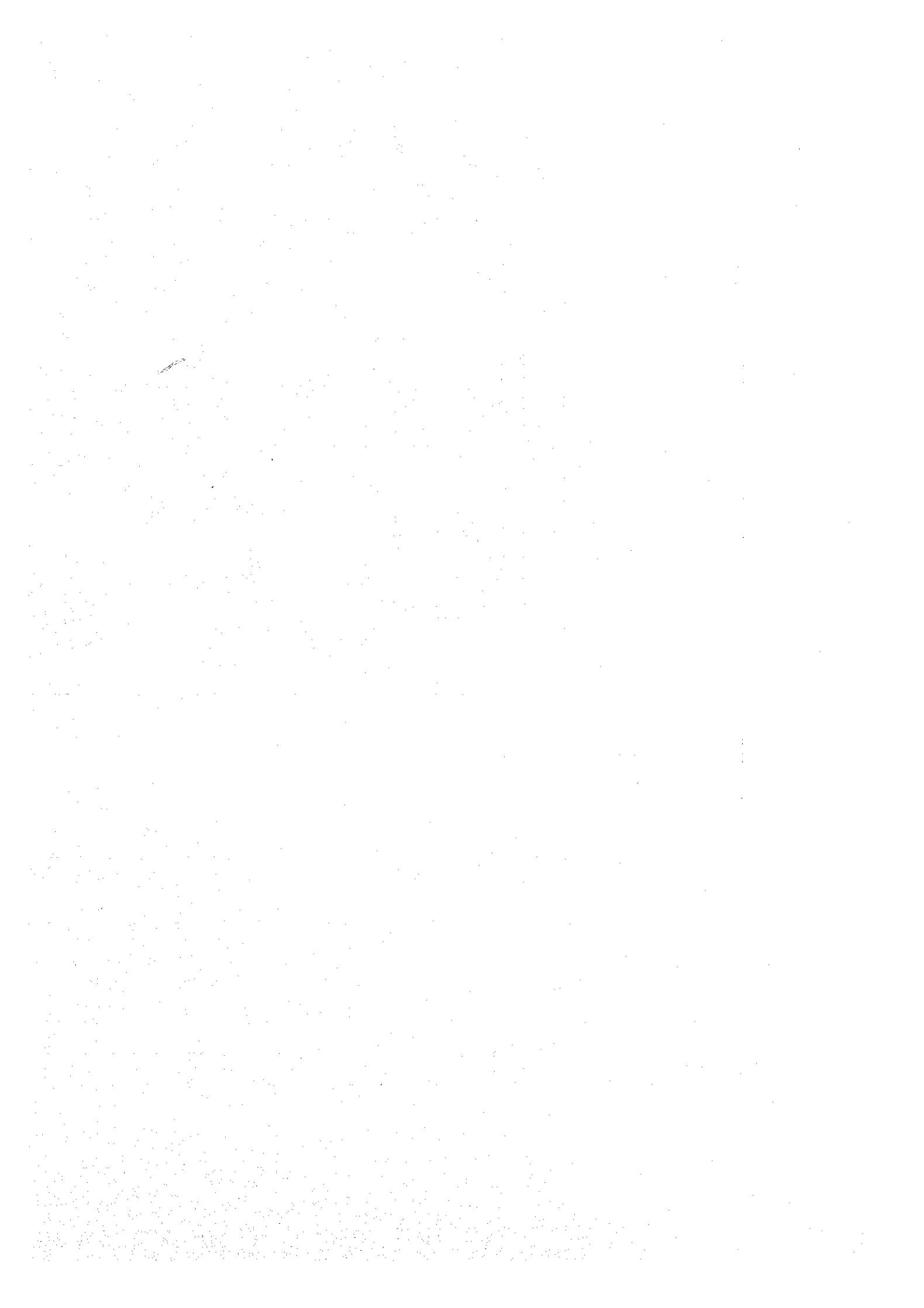


LOAD		REMARKS
DEAD LOAD	0.4 (tons)	
LIVE LOAD	0.5 (tons)	DYNAMIC CO-EFFICIENT: 1.2.
SEISMIC	VERTICAL	(tons)
	HORIZONTAL	(tons)
WIND	VERTICAL	(tons)
	HORIZONTAL	(tons)

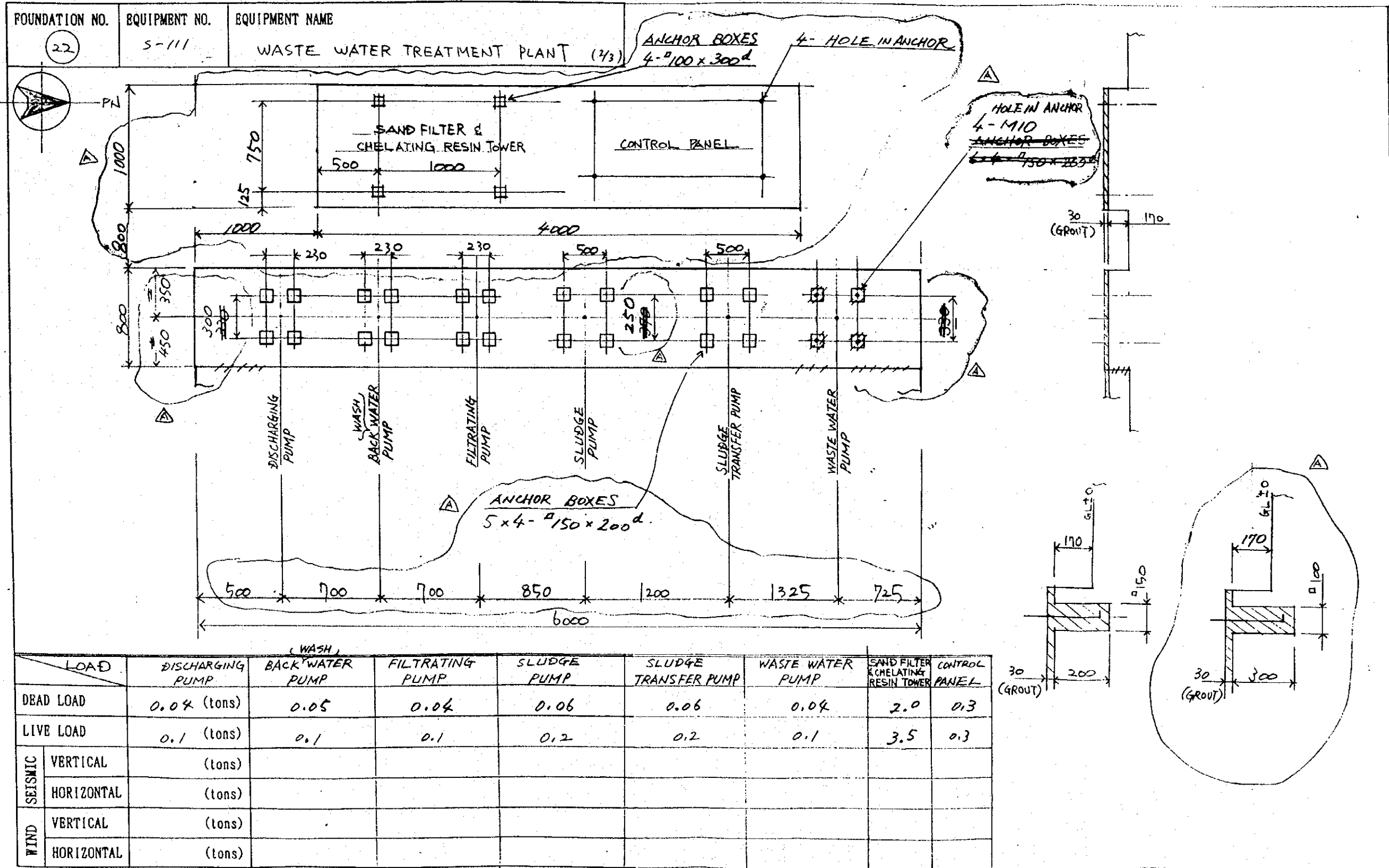


LOADING DATA AND ANCHOR PLAN



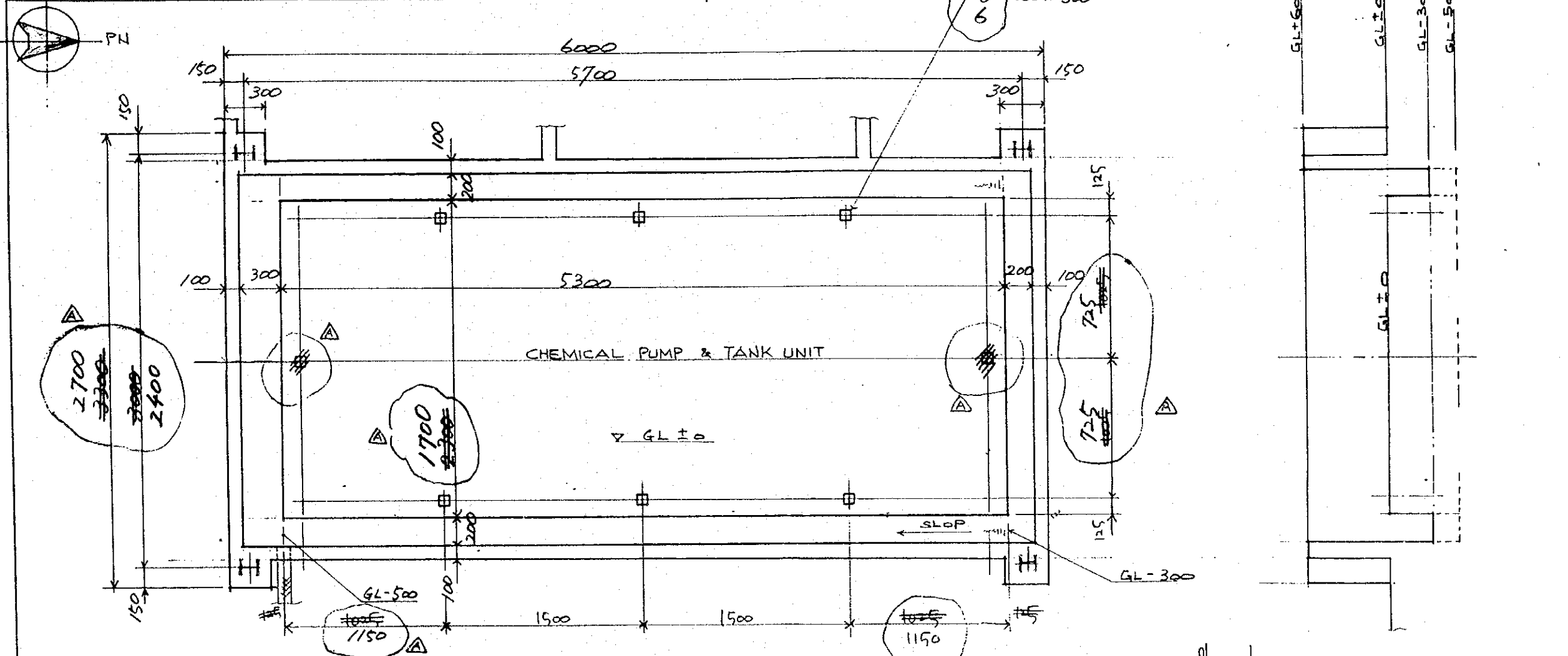


LOADING DATA AND ANCHOR PLAN

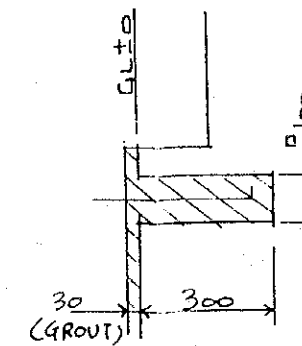


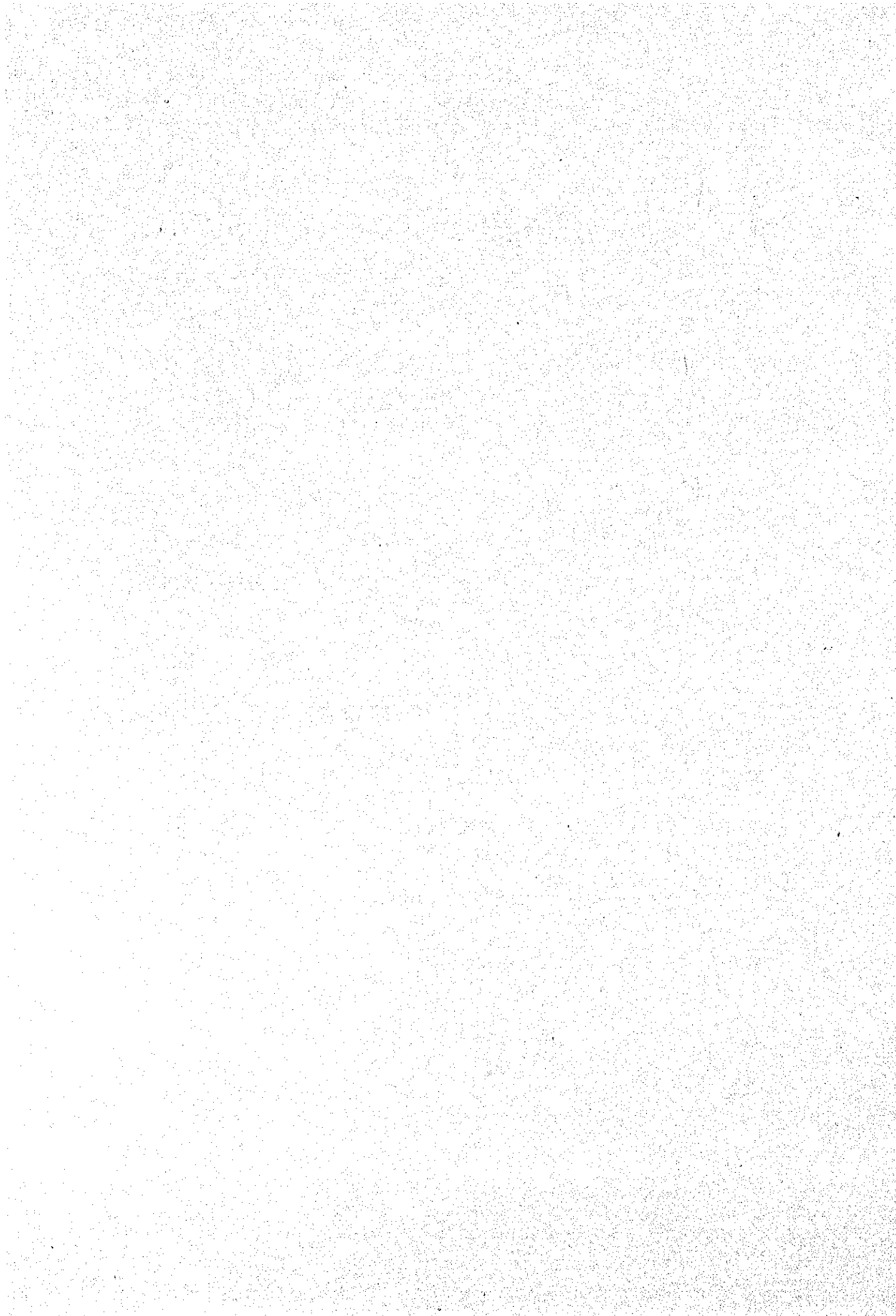
LOADING DATA AND ANCHOR PLAN

FOUNDATION NO.	EQUIPMENT NO.	EQUIPMENT NAME
23	S-111	WASTE WATER TREATMENT PLANT (1/3)

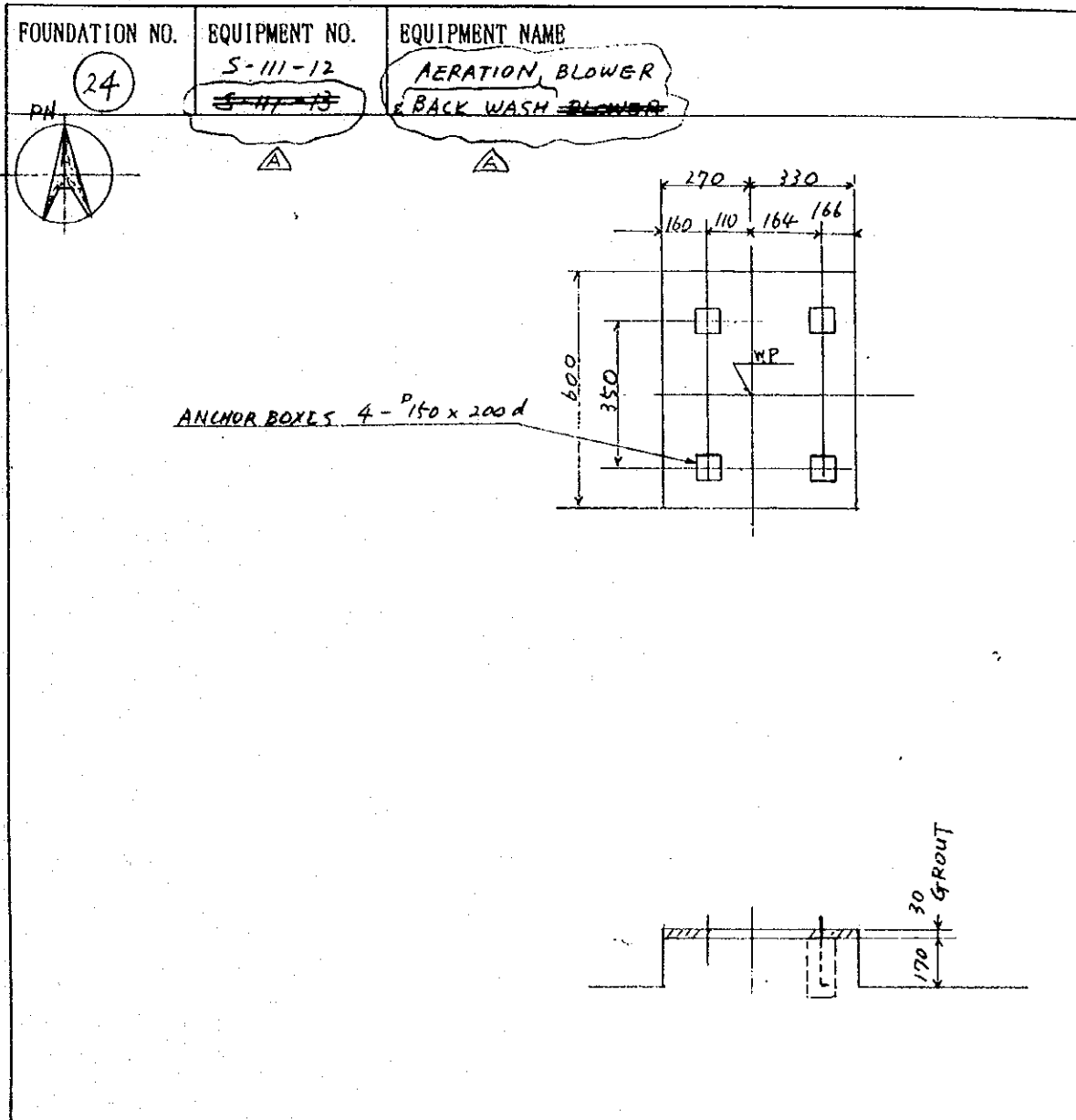


LOAD		REMARKS
DEAD LOAD	2.0 (tons)	
LIVE LOAD	3.0 (tons)	
SEISMIC	VERTICAL	(tons)
	HORIZONTAL	(tons)
WIND	VERTICAL	(tons)
	HORIZONTAL	(tons)





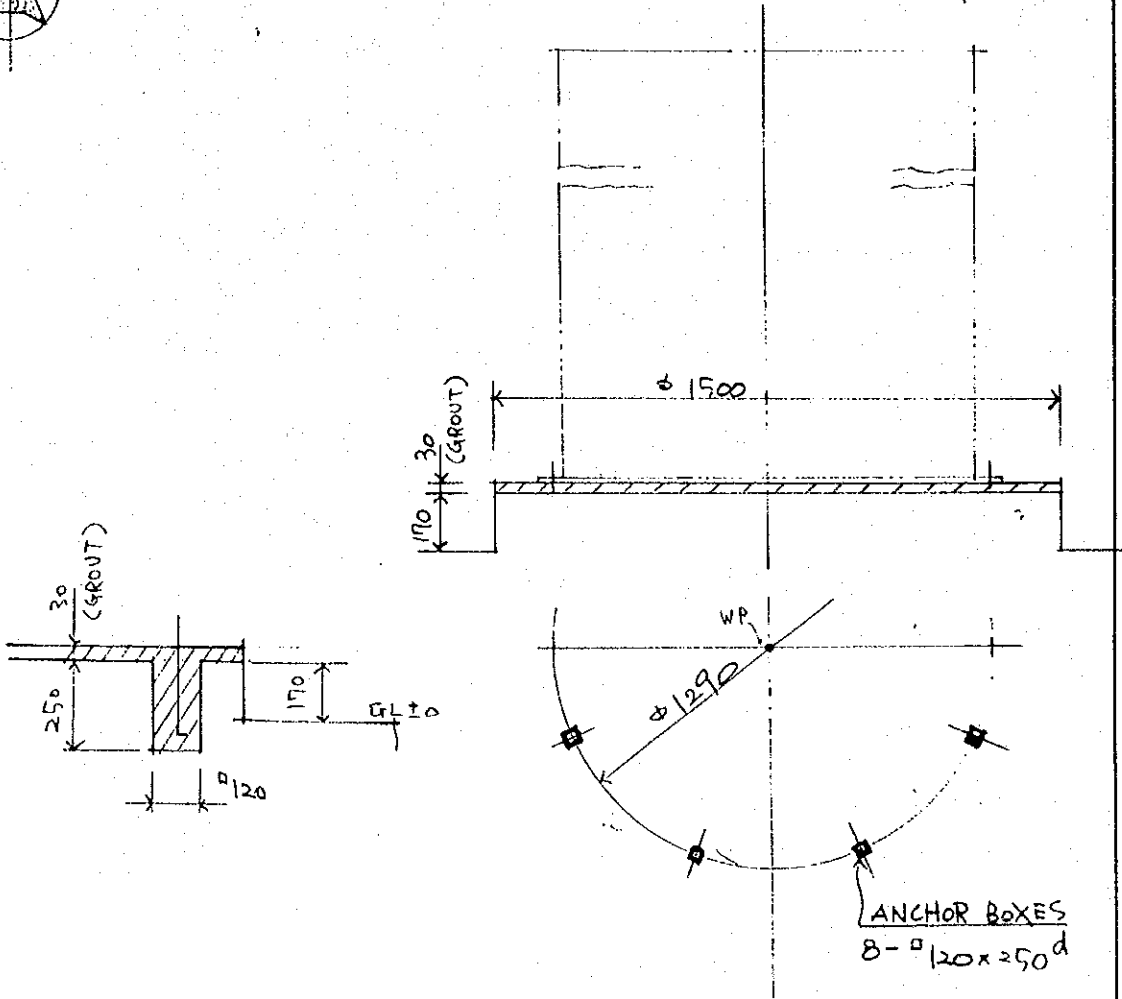
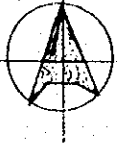
LOADING DATA AND ANCHOR PLAN



LOAD		REMARKS
DEAD LOAD	0.05 0.05 (tons)	
LIVE LOAD	0.1 0.1 (tons)	DYNAMIC CO-EFFICIENT: 2
SEISMIC	VERTICAL	(tons)
	HORIZONTAL	(tons)
WIND	VERTICAL	(tons)
	HORIZONTAL	(tons)

LOADING DATA AND ANCHOR PLAN

FOUNDATION NO. 25	EQUIPMENT NO. T-102 T-103 T-105	EQUIPMENT NAME WASTE OIL TANK WASTE LIQUID TANK CAUSTIC SODA TANK
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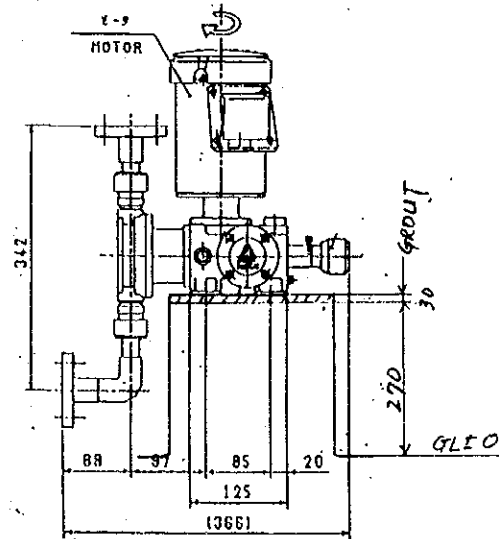
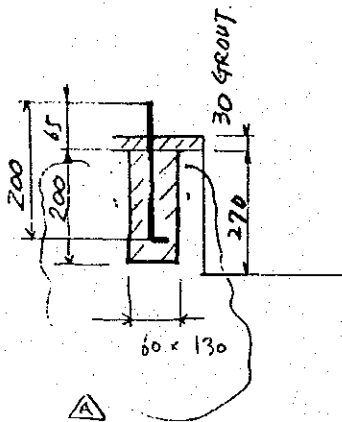
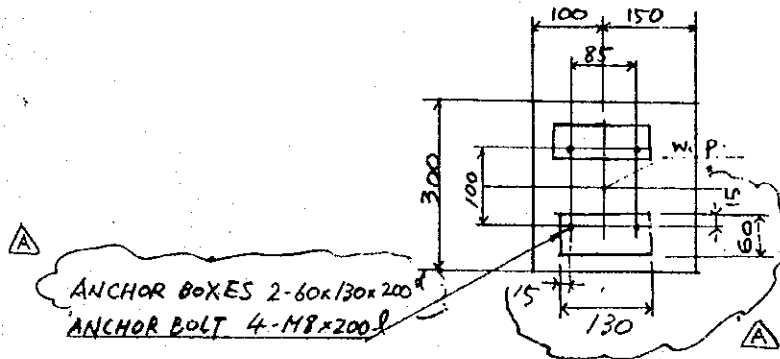
LOAD		REMARKS
DEAD LOAD	(tons)	
LIVE LOAD	incl 3.0 (tons)	
SEISMIC	VERTICAL	(tons)
	HORIZONTAL	(tons)
WIND	VERTICAL	(tons)
	HORIZONTAL	(tons)

LOADING DATA AND ANCHOR PLAN

FOUNDATION NO. 26	EQUIPMENT NO. R-113.	EQUIPMENT NAME CAUSTIC SODA PUMP
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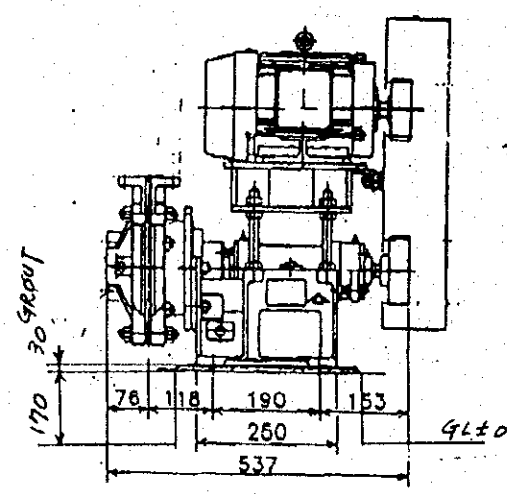
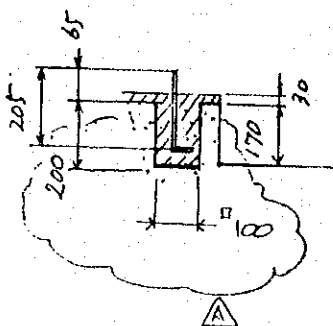
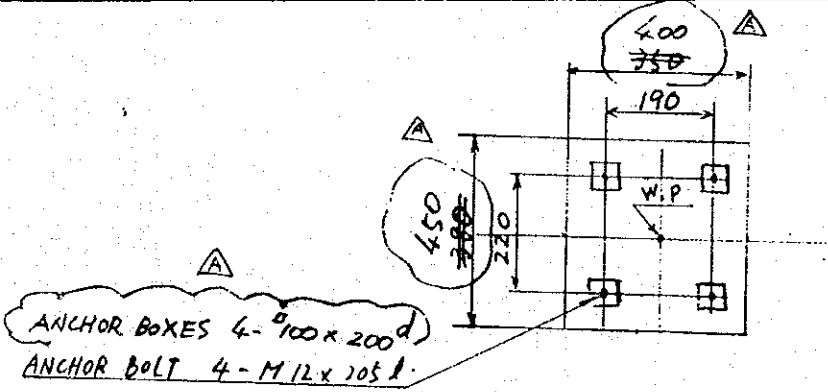
FN



LOAD		REMARKS
DEAD LOAD	0.05 (tons)	
LIVE LOAD	0.06 (tons)	
SEISMIC	VERTICAL	(tons)
	HORIZONTAL	(tons)
WIND	VERTICAL	(tons)
	HORIZONTAL	(tons)

LOADING DATA AND ANCHOR PLAN

FOUNDATION NO. 27	EQUIPMENT NO. R-110	EQUIPMENT NAME INJECTION PUMP
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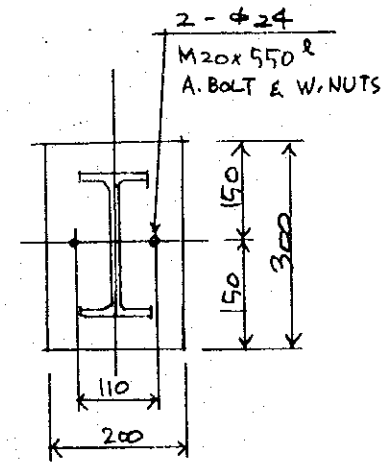
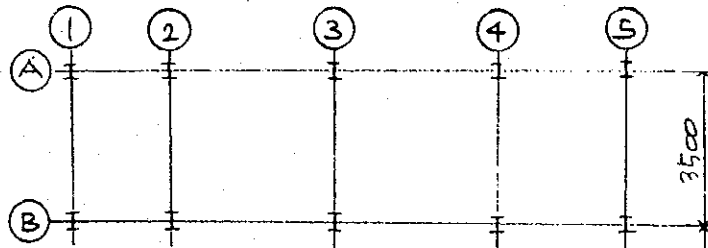
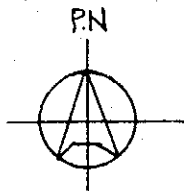
LOAD		REMARKS
DEAD LOAD	0.05 (tons)	
LIVE LOAD	0.06 (tons)	
SEISMIC	VERTICAL	(tons)
	HORIZONTAL	(tons)
WIND	VERTICAL	(tons)
	HORIZONTAL	(tons)

LOADING DATA AND ANCHOR PLAN

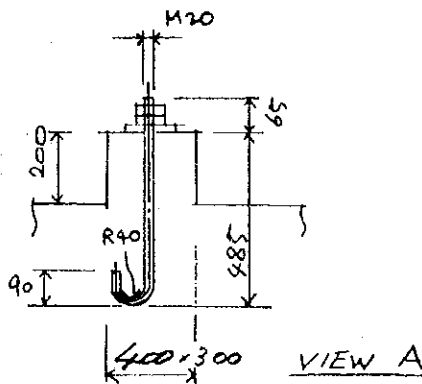
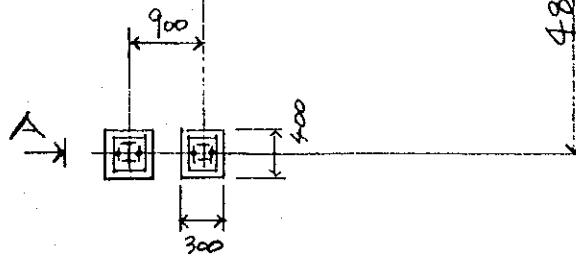
FOUNDATION NO.		EQUIPMENT NO.	EQUIPMENT NAME
28		R-111	WASTE OIL PUMP
LOAD		REMARKS	
DEAD LOAD	0.05 (tons)		
LIVE LOAD	0.06 (tons)		
SEISMIC	VERTICAL	(tons)	
	HORIZONTAL	(tons)	
WIND	VERTICAL	(tons)	
	HORIZONTAL	(tons)	

LOADING DATA AND ANCHOR PLAN

FOUNDATION NO. 30	EQUIPMENT NO. T-113	EQUIPMENT NAME STEEL STRUCTURE (2)
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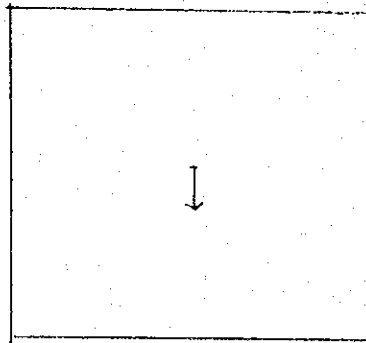
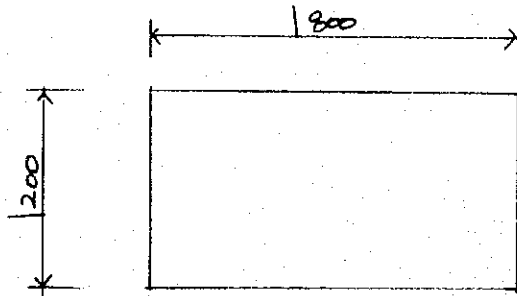
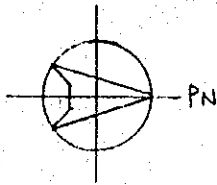
DETAIL OF BASE PLATE



LOAD		REMARKS	
DEAD LOAD	1.0 (tons)	ANCHOR BOLTS/NUTS SHOULD BE PREPARED AND BURIED BY CETESB SIDE AT THE TIME OF CONCRETE WORK.	
LIVE LOAD	1.0 (tons)		
SEISMIC	VERTICAL	(tons)	DETAILED DRAWINGS FOR ANCHOR BOLTS/NUTS WILL BE SENT TO YOU NEXT WEEK FROM MHI.
	HORIZONTAL	(tons)	
WIND	VERTICAL	(tons)	
	HORIZONTAL	(tons)	

LOADING DATA AND ANCHOR PLAN

FOUNDATION NO. 31	EQUIPMENT NO. 1P-1	EQUIPMENT NAME CONTROL PANEL
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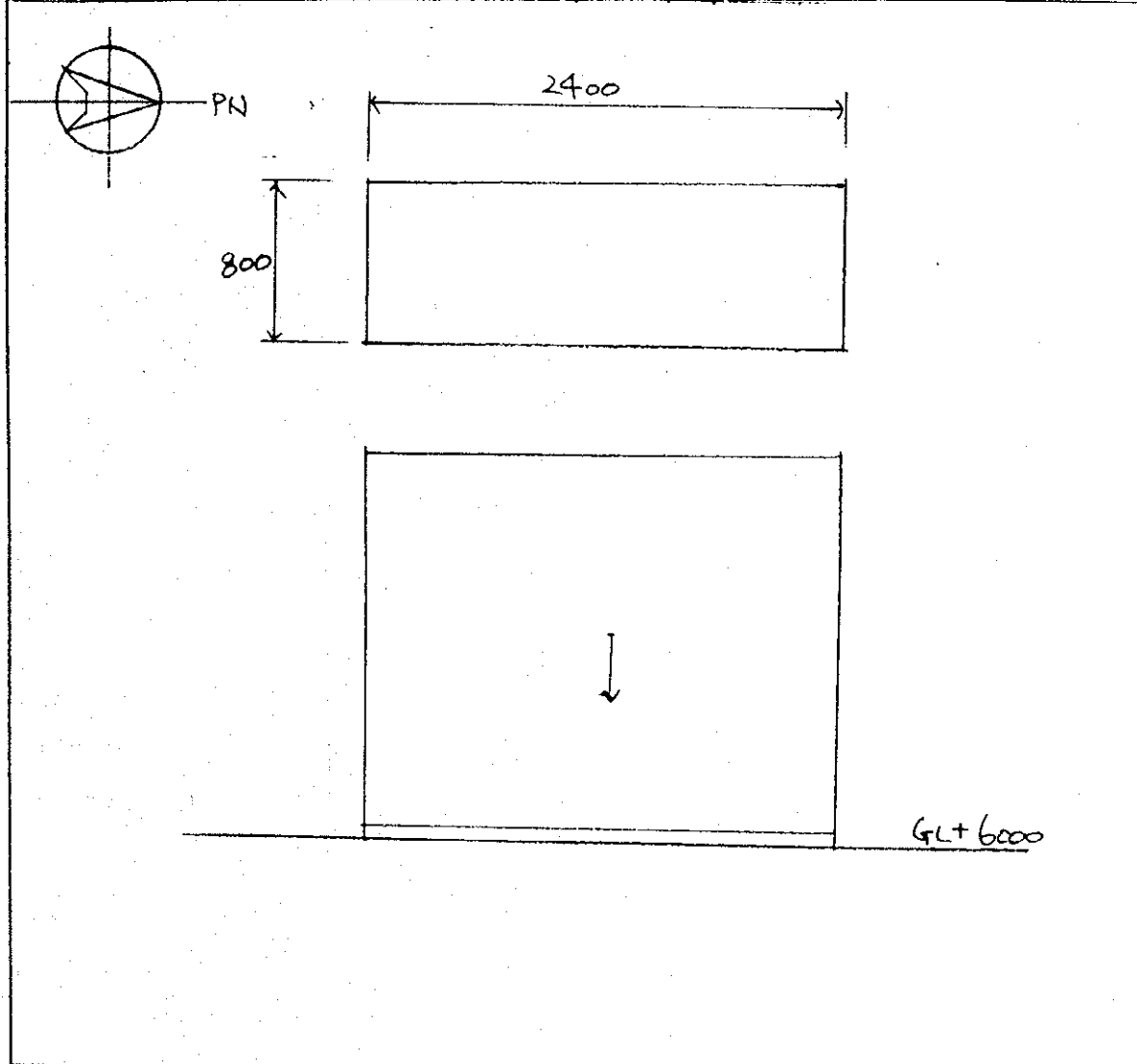


GL+6000

LOAD		REMARKS
DEAD LOAD	1.5 (tons)	
LIVE LOAD	1.5 (tons)	
SEISMIC	VERTICAL	(tons)
	HORIZONTAL	(tons)
WIND	VERTICAL	(tons)
	HORIZONTAL	(tons)

LOADING DATA AND ANCHOR PLAN

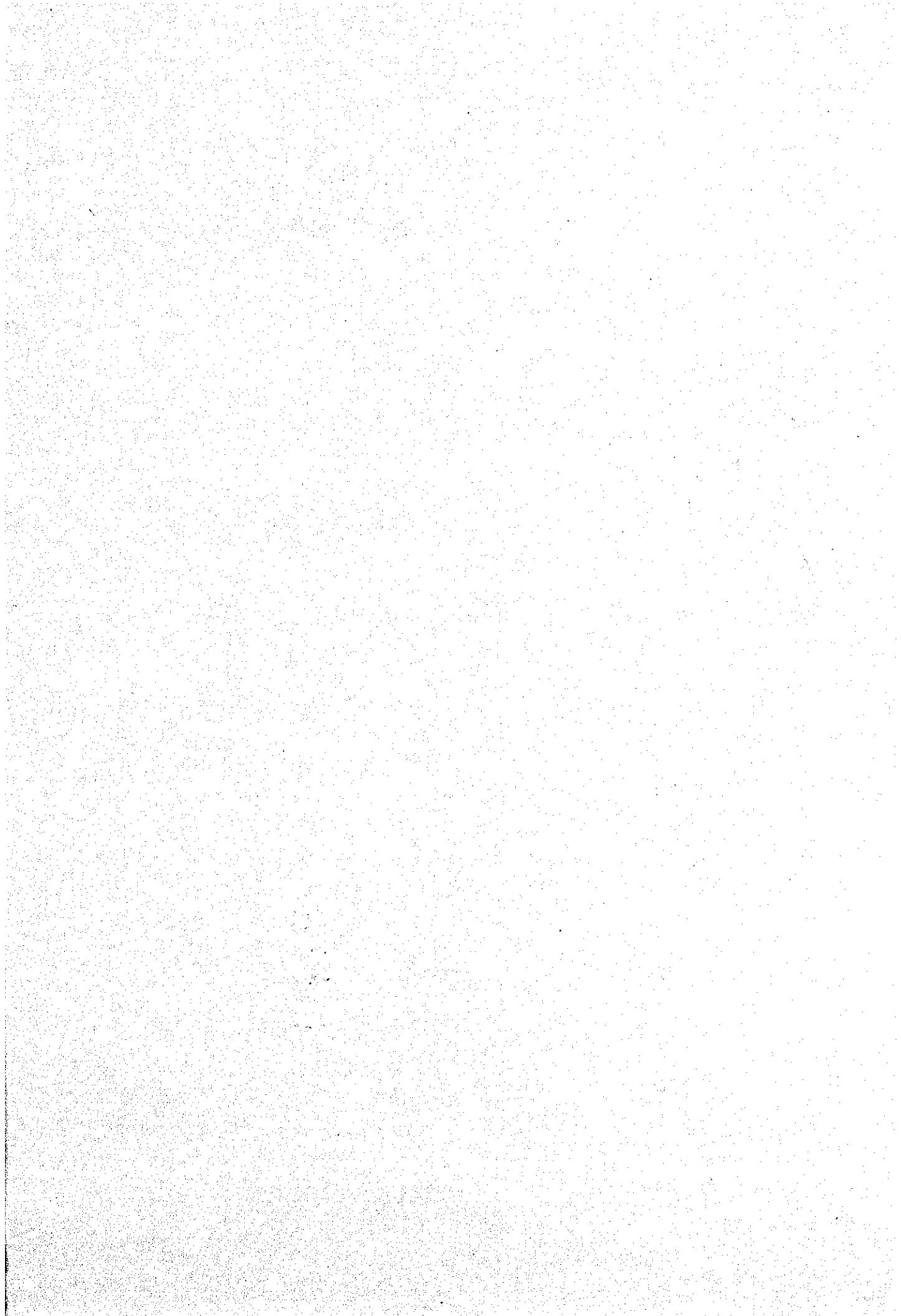
FOUNDATION NO. 32	EQUIPMENT NO. CP-1	EQUIPMENT NAME CONTROL PANEL
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LOAD		REMARKS
DEAD LOAD	1.5 (tons)	
LIVE LOAD	1.5 (tons)	
SEISMIC	VERTICAL	(tons)
	HORIZONTAL	(tons)
WIND	VERTICAL	(tons)
	HORIZONTAL	(tons)

LOADING DATA AND ANCHOR PLAN

FOUNDATION NO. <div style="text-align: center;">33</div>	EQUIPMENT NO. <i>SP-1</i>	EQUIPMENT NAME <i>CONTROL PANEL</i>
LOAD		REMARKS
DEAD LOAD	<i>1.0</i> (tons)	
LIVE LOAD	<i>1.0</i> (tons)	
SEISMIC	VERTICAL	(tons)
	HORIZONTAL	(tons)
WIND	VERTICAL	(tons)
	HORIZONTAL	(tons)



JICA

