

Appendix 4-6 Results of Regression Analysis 1  
(Wuhan Airport Passenger)

Explanatory Variable : Total Population in Wuhan City

Equation No.	Equation	Correlation Coefficient	Evaluation*
(1)	$\ln Y = 11.881 \ln X_1 - 97.845$ (16.272)	0.973	A
	where, Y: Arriving & Departing Passengers at Wuhan Airport ('000) X <sub>1</sub> : Total Population in Wuhan City ('000) Data Period: 1970-1987 (17 years, excluding 1983 and including potential demand in 1985, 1986 & 1987)		
	*Comments : Highest correlation coefficient and most significant t value, showing the best goodness of fit.		
(2)	$\ln Y = 10.941 \ln X_1 - 89.698$ (11.394)	0.957	B
	where, Y: Arriving & Departing Passengers at Wuhan Airport ('000) X <sub>1</sub> : Total Population in Wuhan City ('000) Data Period: 1973-1987 (14 years, excluding 1983 and including potential demand in 1985, 1986 & 1987)		
	*Comments : High correlation coefficient and significant t value.		
(3)	$\ln Y = 10.999 \ln X_1 - 90.210$ (9.225)	0.951	B
	where, Y: Arriving & Departing Passengers at Wuhan Airport ('000) X <sub>1</sub> : Total Population in Wuhan City ('000) Data Period: 1976-1987 (11 years, excluding 1983 and including potential demand in 1985, 1986 & 1987)		
	*Comments : High correlation coefficient and significant t value.		

Notes : Figures in parenthesis indicate t value of coefficient of explanatory variable.

Appendix 4-7 Results of Regression Analysis 2  
(Wuhan Airport Passenger)

Explanatory Variable : Gross Social Product of Wuhan City

Equation No.	Equation	Correlation Coefficient	Evaluation*
(4)	$\ln Y = 1.916 \ln X_1 - 13.302$ (10.530) where, Y: Arriving & Departing Passengers at Wuhan Airport ('000) X <sub>1</sub> : Gross Social Product of Wuhan City (million Yuan) Data Period: 1970-1987 (17 years, excluding 1983 and including potential demand in 1985, 1986 & 1987)	0.939	A
*Comments : Second highest correlation coefficient and most significant t value and longest data period, showing the best goodness of fit.			
(5)	$\ln Y = 1.611 \ln X_1 - 10.345$ (10.073) where, Y: Arriving & Departing Passengers at Wuhan Airport ('000) X <sub>1</sub> : Gross Social Product of Wuhan City (million Yuan) Data Period: 1973-1987 (14 years, excluding 1983 and including potential demand in 1985, 1986 & 1987)	0.946	A <sup>-</sup>
*Comments : Highest correlation coefficient and significant t value.			
(6)	$\ln Y = 1.471 \ln X_1 - 8.981$ (7.918) where, Y: Arriving & Departing Passengers at Wuhan Airport ('000) X <sub>1</sub> : Gross Social Product of Wuhan City (million Yuan) Data Period: 1976-1987 (11 years, excluding 1983 and including potential demand in 1985, 1986 & 1987)	0.935	B
*Comments : High correlation coefficient and significant t value.			

Notes : Figures in parenthesis indicate t value of coefficient of explanatory variable.

Appendix 4-8 Results of Regression Analysis 3  
(Wuhan Airport Passenger)

Explanatory Variables : Total Population in Wuhan City and Gross Social Product of Wuhan City

Equation No.	Equation	Correlation Coefficient	Evaluation*
(7)	$\ln Y = 15.005 \ln X_1 - 0.535 \ln X_2 - 119.793$ (4.363) (0.930)	0.974	D
	where, Y: Arriving & Departing Passengers at Wuhan Airport ('000) X <sub>1</sub> : Total Population in Wuhan City ('000) X <sub>2</sub> : Gross Social Product of Wuhan City (million Yuan) Data Period: 1970-1987 (17 years, excluding 1983 and including potential demand in 1985, 1986 & 1987)		
	*Comments : Highest correlation coefficient but negative value of coefficient for X <sub>2</sub> , thus rejected.		
(8)	$\ln Y = 9.689 \ln X_1 + 0.189 \ln X_2 - 80.668$ (1.676) (0.220)	0.957	C
	where, Y: Arriving & Departing Passengers at Wuhan Airport ('000) X <sub>1</sub> : Total Population in Wuhan City ('000) X <sub>2</sub> : Gross Social Product of Wuhan City (million Yuan) Data Period: 1973-1987 (14 years, excluding 1983 and including potential demand in 1985, 1986 & 1987)		
	*Comments : High correlation coefficient but less significant t value, thus rejected.		
(9)	$\ln Y = 16.477 \ln X_1 - 0.752 \ln X_2 - 130.488$ (1.713) (0.574)	0.951	D
	where, Y: Arriving & Departing Passengers at Wuhan Airport ('000) X <sub>1</sub> : Total Population in Wuhan City ('000) X <sub>2</sub> : Gross Social Product of Wuhan City (million Yuan) Data Period: 1976-1987 (11 years, excluding 1983 and including potential demand in 1985, 1986 & 1987)		
	*Comments : High correlation coefficient but negative value of coefficient for X <sub>2</sub> , thus rejected.		

Notes : Figures in parenthesis indicate t value of coefficient of explanatory variables.

Appendix 4-9 Results of Regression Analysis 4  
(Wuhan Airport Passenger)

Explanatory Variable : Time (Year)

Equation No.	Equation	Correlation Coefficient	Evaluation*
(10)	$Y=14.9x1.214^T$ where, Y:Arriving & Departing Passengers at Wuhan Airport ('000) T:Time (Year;1970=1) Data Period:1970-1987(17 years,excluding 1983 )	0.978	A
*Comments : Highest correlation coefficient.			
(11)	$Y=30.3x1.198^T$ where, Y:Arriving & Departing Passengers at Wuhan Airport ('000) T:Time (Year;1973=1) Data Period:1973-1987(14 years,excluding 1983 )	0.965	A <sup>-</sup>
*Comments : High correlation coefficient.			
(12)	$Y=51.9x1.196^T$ where, Y:Arriving & Departing Passengers at Wuhan Airport ('000) T:Time (Year;1976=1) Data Period:1976-1987(11 years,excluding 1983 )	0.964	A <sup>-</sup>
*Comments : High correlation coefficient.			

Appendix 4-10 Results of Regression Analysis 5  
(Total Air Passenger in China)

Explanatory Variable : Total Population in China

Equation No.	Equation	Correlation Coefficient	Evaluation*
(13)	$\ln Y = 15.068 \ln X_1 - 95.830$ (47.153)	0.997	A
	where, Y: Total Air Passengers in China ('000) X <sub>1</sub> : Total Population in China ('000) Data Period: 1970-1987 (17 years, excluding 1983)		
	*Comments : Highest correlation coefficient and most significant t value, showing the best goodness of fit.		
(14)	$\ln Y = 14.670 \ln X_1 - 93.147$ (29.695)	0.993	A
	where, Y: Total Air Passengers in China ('000) X <sub>1</sub> : Total Population in China ('000) Data Period: 1973-1987 (14 years, excluding 1983)		
	*Comments : High correlation coefficient and significant t value.		
(15)	$\ln Y = 14.178 \ln X_1 - 89.670$ (22.972)	0.992	A
	where, Y: Total Air Passengers in China ('000) X <sub>1</sub> : Total Population in China ('000) Data Period: 1976-1987 (11 years, excluding 1983)		
	*Comments : High correlation coefficient and significant t value.		

Notes : Figures in parenthesis indicate t value of coefficient of explanatory variable.

Appendix 4-11 Results of Regression Analysis 6  
(Total Air Passenger in China)

Explanatory Variable : Gross Social Product in China

Equation No.	Equation	Correlation Coefficient	Evaluation*
(16)	$\ln Y = 2.459 \ln X_1 - 8.734$ (13.489)	0.961	A <sup>-</sup>
	where, Y: Total Air Passengers in China ('000) X <sub>1</sub> : Gross Social Product in China (billion Yuan) Data Period: 1970-1987 (17 years, excluding 1983)		
	*Comments : High correlation coefficient and significant t value.		
(17)	$\ln Y = 2.050 \ln X_1 - 5.863$ (15.435)	0.976	A <sup>-</sup>
	where, Y: Total Air Passengers in China ('000) X <sub>1</sub> : Gross Social Product in China (billion Yuan) Data Period: 1973-1987 (14 years, excluding 1983)		
	*Comments : High correlation coefficient and significant t value.		
(18)	$\ln Y = 1.784 \ln X_1 - 3.978$ (23.102)	0.992	A
	where, Y: Total Air Passengers in China ('000) X <sub>1</sub> : Gross Social Product in China (billion Yuan) Data Period: 1976-1987 (11 years, excluding 1983)		
	*Comments : Highest correlation coefficient and most significant t value, showing the best goodness of fit.		

Notes : Figures in parenthesis indicate t value of coefficient of explanatory variable.

Appendix 4-12 Results of Regression Analysis 7  
(Total Air Passenger in China)

Explanatory Variables : Total Population in China and Gross  
Social Product of China

Equation No.	Equation	Correlation Coefficient	Evaluation*
(19)	$\ln Y = 16.000 \ln X_1 - 0.208 \ln X_2 - 100.869$ (8.927)                      (0.681)	0.994	D

where,

Y: Total Air Passengers in China ('000)

X<sub>1</sub>: Total Population in China ('000)

X<sub>2</sub>: Gross Social Product of China (billion Yuan)

Data Period: 1970-1987 (17 years, excluding 1983)

\*Comments : High correlation coefficient but negative  
value of coefficient for X<sub>2</sub>, thus rejected

(20)	$\ln Y = 16.494 \ln X_1 - 0.262 \ln X_2 - 103.877$ (5.441)                      (0.607)	0.993	D
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where,

Y: Total Air Passengers in China ('000)

X<sub>1</sub>: Total Population in China ('000)

X<sub>2</sub>: Gross Social Product of China (billion Yuan)

Data Period: 1973-1987 (14 years excluding)

\*Comments : High correlation coefficient but negative  
value of coefficient for X<sub>2</sub>, thus rejected

(21)	$\ln Y = 7.019 \ln X_1 + 0.907 \ln X_2 - 46.445$ (1.428)                      (1.466)	0.994	C
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where,

Y: Total Air Passengers in China ('000)

X<sub>1</sub>: Total Population in China ('000)

X<sub>2</sub>: Gross Social Product of China (billion Yuan)

Data Period: 1976-1987 (11 years, excluding 1983)

\*Comments : High correlation coefficient but less  
significant t value on explanatory variables,  
thus rejected.

Notes : Figures in parenthesis indicate t value of coefficient of  
explanatory variables.

Appendix 4-13 Results of Regression Analysis 8  
(Total Air Passenger in China)

Explanatory Variable : Time (Year)

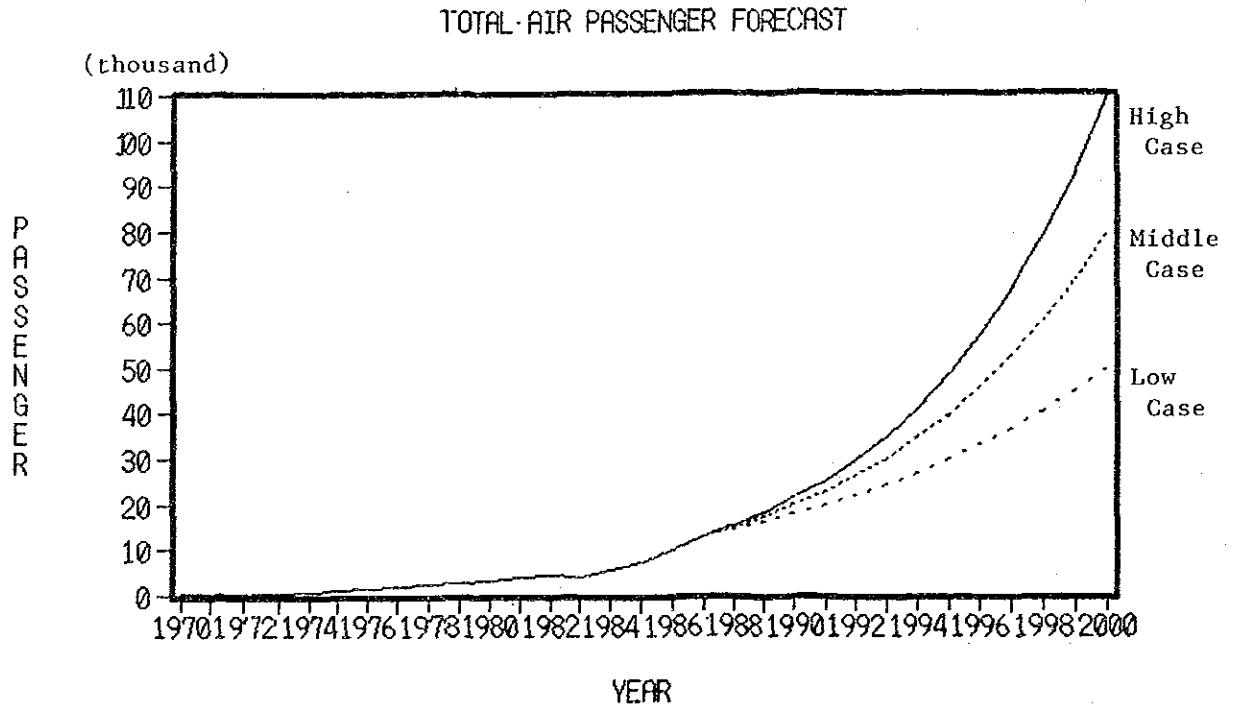
Equation No.	Equation	Correlation Coefficient	Evaluation*
(22)	$Y=246.1x1.264^T$ where, Y:Total Air Passengers in China ('000) T:Time (Year;1970=1) Data Period:1970-1987 (17 years,excluding 1983)	0.990	B
*Comments : High correlation coefficient but showing a high increase rate,leading to overestimation.			
(23)	$Y=614.0x1.236^T$ where, Y:Total Air Passengers in China ('000) T:Time (Year;1973=1) Data Period:1973-1987 (14 years,excluding 1983)	0.992	B
*Comments : High correlation coefficient but showing a high increase rate,leading to overestimation.			
(24)	$Y=1,212x1.228^T$ where, Y:Total Air Passengers in China ('000) T:Time (Year;1976=1) Data Period:1976-1987 (11 years,excluding 1983)	0.994	B
*Comments : High correlation coefficient but showing a high increase rate,leading to overestimation.			



Appendix 4-14 Forecast of Total Passenger Transport Demand in China

Case	Forecast of Year 2000 (million)	Annual Average Growth Rate (%) (1987 - 2000)	Regression Equation
High Case	110	18	Equation (13) in Appendix 4-10
Middle Case	80	15	(Average of High Case and Low Case)
Low Case	50*	11	Equation (18) in Appendix 4-11

\* Averaging the forecast results by the high case and the low case of the Gross Social Product of China due to a small difference.



Appendix 4-15 Results of Regression Analysis 9  
(Wuhan Airport Cargo)

Explanatory Variable : Total Population in Wuhan City

Equation No.	Equation	Correlation Coefficient	Evaluation*
(25)	$\ln Y = 4.203 \ln X_1 - 35.109$ (5.432)	0.805	B
	where, Y: Loaded & Unloaded Cargo at Wuhan Airport ('000 tons) X <sub>1</sub> : Total Population in Wuhan City ('000) Data Period: 1970-1987 (18 years)		
	*Comments : Not high correlation coefficient.		
(26)	$\ln Y = 5.518 \ln X_1 - 46.462$ (4.535)	0.834	B
	where, Y: Loaded & Unloaded Cargo at Wuhan Airport ('000 tons) X <sub>1</sub> : Total Population in Wuhan City ('000) Data Period: 1976-1987 (12 years)		
	*Comments : Not high correlation coefficient.		
(27)	$\ln Y = 12.215 \ln X_1 - 104.838$ (5.279)	0.935	A
	where, Y: Loaded & Unloaded Cargo at Wuhan Airport ('000 tons) X <sub>1</sub> : Total Population in Wuhan City ('000) Data Period: 1981-1987 (7 years)		
	*Comments : Highest correlation coefficient and significant t value, showing the best goodness of fit.		

Notes : Figures in parenthesis indicate t value of coefficient of explanatory variable.

Appendix 4-16 Results of Regression Analysis 10  
(Wuhan Airport Cargo)

Explanatory Variable : Gross Social Product in Wuhan City

Equation No.	Equation	Correlation Coefficient	Evaluation*
(28)	$\ln Y = 0.747 \ln X_1 - 5.842$ (5.432)	0.852	B
	where, Y: Loaded & Unloaded Cargo at Wuhan Airport ('000 tons) X <sub>1</sub> : Gross Social Product in Wuhan City (million Yuan) Data Period: 1970-1987 (18 years)		
*Comments : Not high correlation coefficient.			
(29)	$\ln Y = 0.758 \ln X_1 - 5.901$ (4.691)	0.842	B
	where, Y: Loaded & Unloaded Cargo at Wuhan Airport ('000 tons) X <sub>1</sub> : Gross Social Product in Wuhan City (million Yuan) Data Period: 1976-1987 (12 years)		
*Comments : Not high correlation coefficient.			
(30)	$\ln Y = 1.614 \ln X_1 - 14.388$ (4.360)	0.909	A
	where, Y: Loaded & Unloaded Cargo at Wuhan Airport ('000 tons) X <sub>1</sub> : Gross Social Product in Wuhan City (million Yuan) Data Period: 1981-1987 (7 years)		
*Comments : Highest correlation coefficient and significant t value, showing the best goodness of fit.			

Notes : Figures in parenthesis indicate t value of coefficient of explanatory variable.

Appendix 4-17 Results of Regression Analysis 11  
(Wuhan Airport Cargo)

Explanatory Variables : Total Population in Wuhan City and Gross Social Product of Wuhan City

Equation No.	Equation	Correlation Coefficient	Evaluation*
(31)	$\ln Y = -3.268 \ln X_1 + 1.284 \ln X_2 + 17.3243$ (1.001) (2.339)	0.862	D
	where, Y: Loaded & Unloaded Cargo at Wuhan Airport ('000 tons) X <sub>1</sub> : Total Population in Wuhan City ('000) X <sub>2</sub> : Gross Social Product of Wuhan City (million Yuan) Data Period: 1970-1987 (18 years)		
	*Comments : Not high correlation coefficient and negative value of coefficient for X <sub>1</sub> , thus rejected.		
(32)	$\ln Y = -0.559 \ln X_1 + 0.834 \ln X_2 - 1.778$ (0.057) (0.627)	0.843	D
	where, Y: Loaded & Unloaded Cargo at Wuhan Airport ('000 tons) X <sub>1</sub> : Total Population in Wuhan City ('000) X <sub>2</sub> : Gross Social Product of Wuhan City (million Yuan) Data Period: 1976-1987 (12 years)		
	*Comments : Not high correlation coefficient and negative value of coefficient for X <sub>1</sub> , thus rejected.		
(33)	$\ln Y = 20.254 \ln X_1 - 1.106 \ln X_2 - 163.929$ (1.713) (0.574)	0.940	D
	where, Y: Loaded & Unloaded Cargo at Wuhan Airport ('000 tons) X <sub>1</sub> : Total Population in Wuhan City ('000) X <sub>2</sub> : Gross Social Product of Wuhan City (million Yuan) Data Period: 1981-1987 (7 years)		
	*Comments : High correlation coefficient but negative value of coefficient for X <sub>2</sub> , thus rejected.		

Notes : Figures in parenthesis indicate t value of coefficient of explanatory variables.

Appendix 4-18 Results of Regression Analysis 12  
(Wuhan Airport Cargo)

Explanatory Variable : Time (Year)

Equation No.	Equation	Correlation Coefficient	Evaluation*
(34)	$Y=1.553x1.078^T$ where, Y:Loaded & Unloaded Cargo at Wuhan Airport ('000 tons) T:Time (Year;1970=1) Data Period:1970-1987 (18 years)	0.835	B
*Comments : Not high correlation coefficient.			
(35)	$Y=1.45x1.112^T$ where, Y:Loaded & Unloaded Cargo at Wuhan Airport ('000 tons) T:Time (Year;1973=1) Data Period:1973-1987 (15 years)	0.919	A
*Comments : Highest correlation coefficient, showing the best goodness of fit.			
(36)	$Y=2.117x1.102^T$ where, Y:Loaded & Unloaded Cargo at Wuhan Airport ('000 tons) T:Time (Year;1976=1) Data Period:1976-1987 (12 years)	0.842	B
*Comments : Not high correlation coefficient.			

Appendix 4-19 Results of Regression Analysis 13  
(Total Air Cargo in China)

Explanatory Variable : Total Population in China

Equation No.	Equation	Correlation Coefficient	Evaluation*
(37)	$\ln Y = 8.710 \ln X_1 - 55.524$ (11.503)	0.946	A <sup>-</sup>
	where, Y: Total Air Cargo in China ('000 tons) X <sub>1</sub> : Total Population in China ('000) Data Period: 1970-1987 (18 years)		
	*Comments : High correlation coefficient and significant t value.		
(38)	$\ln Y = 11.569 \ln X_1 - 75.275$ (25.348)	0.991	A
	where, Y: Total Air Cargo in China ('000 tons) X <sub>1</sub> : Total Population in China ('000) Data Period: 1973-1987 (15 years)		
	*Comments : Highest correlation coefficient and most significant t value, showing the best goodness of fit.		
(39)	$\ln Y = 12.118 \ln X_1 - 79.080$ (17.812)	0.986	A <sup>-</sup>
	where, Y: Total Air Cargo in China ('000 tons) X <sub>1</sub> : Total Population in China ('000) Data Period: 1976-1987 (12 years)		
	*Comments : High correlation coefficient and significant t value.		

Notes : Figures in parenthesis indicate t value of coefficient of explanatory variable.

Appendix 4-20 Results of Regression Analysis 14  
(Total Air Cargo in China)

Explanatory Variable : Gross Social Product in China

Equation No.	Equation	Correlation Coefficient	Evaluation*
(40)	$\ln Y = 1.549 \ln X_1 - 6.019$ (23.166)	0.985	A <sup>-</sup>
	where, Y: Total Air Cargo in China ('000 tons) X <sub>1</sub> : Gross Social Product in China (billion Yuan) Data Period: 1970-1987 (18 years)		

\*Comments : High correlation coefficient and significant t value.

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(41)	$\ln Y = 1.645 \ln X_1 - 6.688$ (26.153)	0.991	A <sup>-</sup>
	where, Y: Total Air Cargo in China ('000 tons) X <sub>1</sub> : Gross Social Product in China (billion Yuan) Data Period: 1973-1987 (15 years)		

\*Comments : High correlation coefficient and significant t value.

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(42)	$\ln Y = 1.540 \ln X_1 - 5.943$ (34.179)	0.996	A
	where, Y: Total Air Cargo in China ('000 tons) X <sub>1</sub> : Gross Social Product in China (billion Yuan) Data Period: 1976-1987 (12 years)		

\*Comments : Highest correlation coefficient and most significant t value, showing the best goodness of fit.

Notes : Figures in parenthesis indicate t value of coefficient of explanatory variable.

Appendix 4-21 Results of Regression Analysis 15  
(Total Air Cargo in China)

Explanatory Variables : Total Population in China and Gross  
Social Product of China

No.	Equation	Correlation Coefficient	Evaluation*
(43)	$\ln Y = -2.159 \ln X_1 + 1.906 \ln X_2 + 6.428$ (1.330) (6.891)	0.987	D
	where, Y: Total Air Cargo in China ('000 tons) X <sub>1</sub> : Total Population in China ('000) X <sub>2</sub> : Gross Social Product of China (billion Yuan) Data Period: 1970-1987 (18 years)		

\*Comments : High correlation coefficient but negative value of coefficient for X<sub>1</sub>, thus rejected.

(44)	$\ln Y = 5.600 \ln X_1 + 0.861 \ln X_2 - 39.966$ (2.566) (2.775)	0.995	A
	where, Y: Total Air Cargo in China ('000 tons) X <sub>1</sub> : Total Population in China ('000) X <sub>2</sub> : Gross Social Product of China (billion Yuan) Data Period: 1973-1987 (15 years)		

\*Comments : Second highest correlation coefficient and significant t value of coefficient for explanatory variables, showing the best goodness of fit.

(45)	$\ln Y = -2.706 \ln X_1 + 1.878 \ln X_2 + 10.430$ (0.882) (4.865)	0.997	D
	where, Y: Total Air Cargo in China ('000 tons) X <sub>1</sub> : Total Population in China ('000) X <sub>2</sub> : Gross Social Product of China (billion Yuan) Data Period: 1976-1987 (12 years)		

\*Comments : High correlation coefficient but negative value of coefficient for X<sub>1</sub>, thus rejected.

Notes : Figures in parenthesis indicate t value of coefficient of explanatory variables.



Appendix 4-22 Results of Regression Analysis 16  
(Total Air Cargo in China)

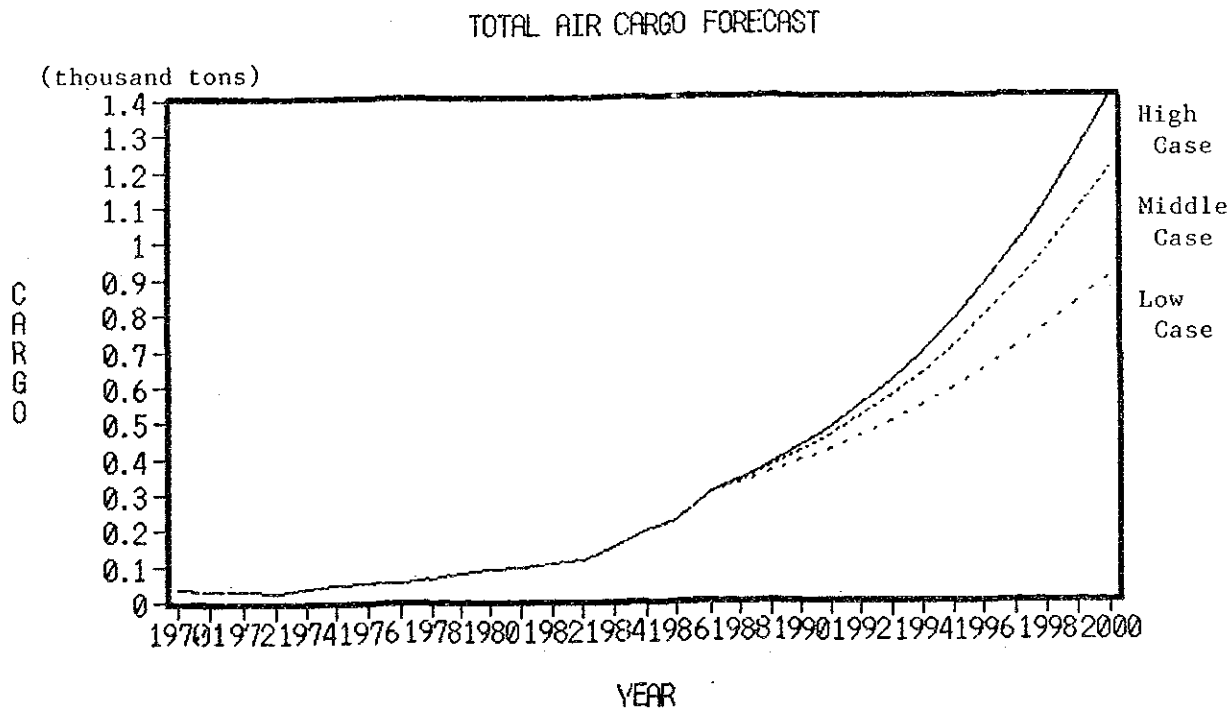
Explanatory Variable : Time (year)

Equation No.	Equation	Correlation Coefficient	Evaluation*
(46)	$Y=20.3 \times 1.152^T$ where, Y:Total Air Cargo in China ('000 tons) T:Time (Year;1970=1) Data Period:1970-1987 (17 years,excluding 1983)	0.966	A
*Comments : High correlation coefficient and showing a moderate increase rate,resulted in the same forecast as the Equation (38).			
(47)	$Y=24.5 \times 1.181^T$ where, Y:Total Air Cargo in China ('000 tons) T:Time (Year;1973=1) Data Period:1973-1987 (14 years,excluding 1983)	0.987	B
*Comments : High correlation coefficient but showing a high increase rate,leading to overestimation.			
(48)	$Y=38.1 \times 1.190^T$ where, Y:Total Air Cargo in China ('000 tons) T:Time (Year;1976=1) Data Period:1976-1987 (11 years,excluding 1983)	0.981	B
*Comments : High correlation coefficient but showing a high increase rate,leading to overestimation.			

Appendix 4-23

Forecast Results of Total Air Cargo in China

Case	Forecast of Year 2000 ('000 tons)	Annual Average Growth Rate (%) (1987 - 2000)	Regression Equation
High Case	1,400	13	Equation (38) in Appendix 4-19
Middle Case	1,200	11	Equation (44) in Appendix 4-21
Low Case	900	9	Equation (42) in Appendix 4-20



Appendix 4-24 Gravity Model Formula

$$T_{ij} = \frac{1.213(P_i P_j)^{0.900} (K_{ij})^{1.497}}{(D_{ij})^{0.921}}$$

or

$$\ln T_{ij} = 0.193 + 0.900 \ln(P_i P_j) - 0.921 \ln(D_{ij}) + 1.497 (K_{ij})$$

where,

$T_{ij}$  = Number of air passengers between i and j airport

$P_i P_j$  = Population of i city and j city (thousand)

$K_{ij}$  = Dummy variable representing socio-economic characteristics of ij route; If any,  $K_{ij} = e$ .  
Otherwise,  $K_{ij} = 1$ .

$D_{ij}$  = Distance between i airport and j airport (km)

i = Wuhan Airport/City

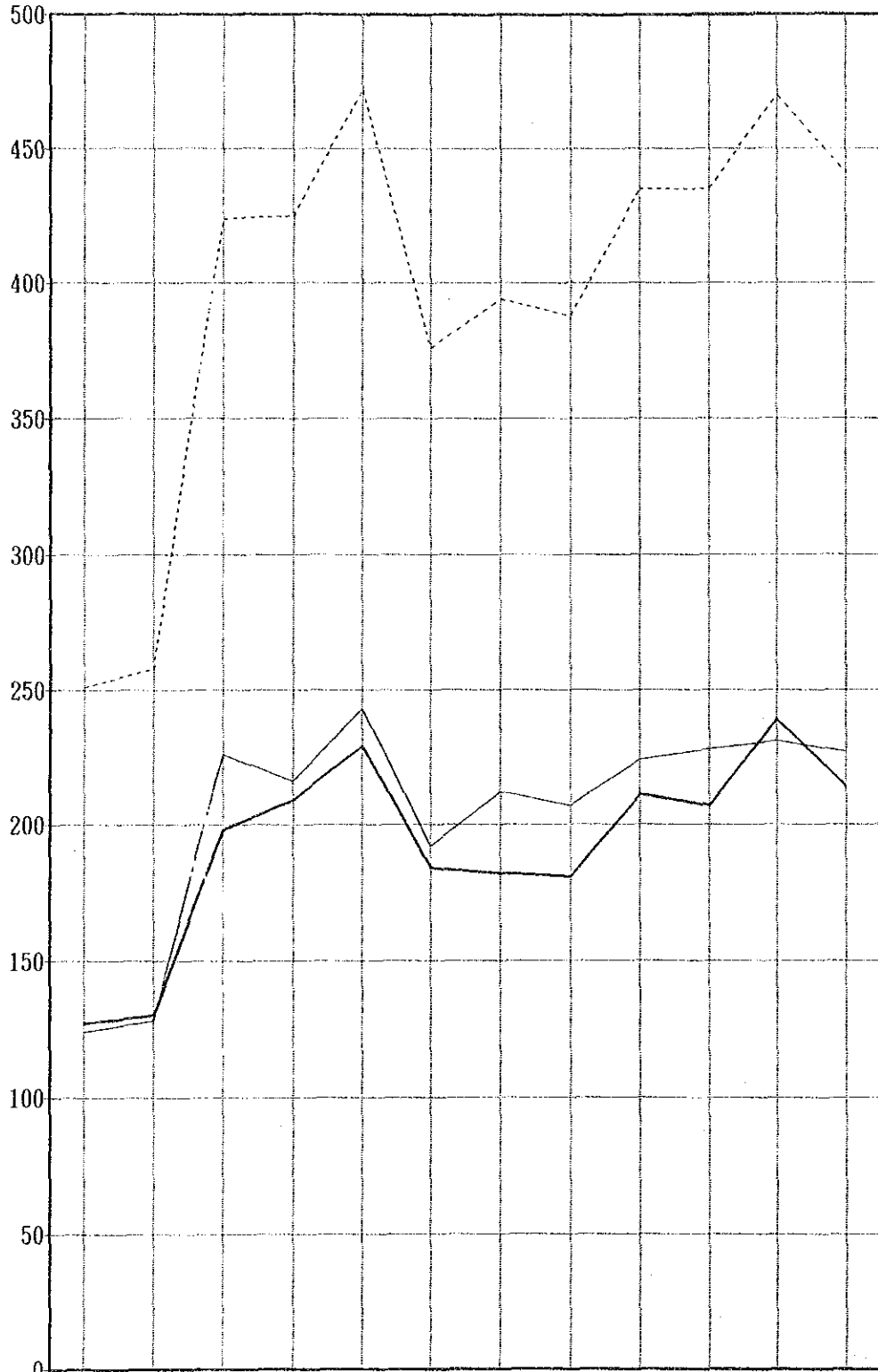
Correlation coefficient = 0.736

Appendix 4-25 Monthly Air Passengers in Nan-Hu Airport

Year \ Month	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Mean	Remarks	
1985	Dep. Passenger	6.344	7.162	7.657	11.117	11.443	9.833	10.268	11.056	11.374	13.386	9.963	120.639	10.053		
	Index	0.631	0.712	0.762	1.105	1.138	0.978	1.021	1.100	1.131	1.332	0.991	0.000	0.000		
	Arv. Passenger	6.542	6.953	8.171	9.875	10.335	10.211	10.070	9.850	8.972	9.587	12.288	9.913	112.767	9.397	
	Index	0.696	0.740	0.870	1.051	1.100	1.087	1.072	1.048	0.955	1.020	1.308	1.055	0.000	0.000	
	Total Passenger	12.886	14.115	15.828	20.992	21.778	21.247	19.903	20.118	20.028	20.961	25.674	19.876	233.406	19.451	
1986	Index	0.662	0.726	0.814	1.079	1.120	1.023	1.034	1.030	1.078	1.320	1.022	0.000	0.000		
	Dep. Passenger	10.461	8.911	12.863	13.256	14.837	13.912	15.554	17.052	17.104	19.038	20.646	179.044	14.920		
	Index	0.701	0.597	0.862	0.888	0.994	0.932	1.042	1.143	1.146	1.276	1.384	0.000	0.000		
	Arv. Passenger	10.702	7.331	13.004	11.584	16.061	14.057	12.931	13.905	15.707	16.808	18.367	18.575	169.032	14.086	
	Index	0.760	0.520	0.923	0.822	1.140	0.938	0.913	0.987	1.115	1.193	1.304	1.319	0.000	0.000	
1987	Total Passenger	21.163	16.242	25.867	24.840	30.898	26.843	29.459	32.759	33.912	37.405	39.221	348.076	29.006		
	Index	0.730	0.560	0.892	0.856	1.065	0.925	1.016	1.129	1.169	1.290	1.352	0.000	0.000		
	Dep. Passenger	12.444	12.745	22.616	21.555	24.303	19.244	21.175	20.719	22.386	22.822	23.105	22.702	245.816	20.485	
	Index	0.507	0.622	1.104	1.052	1.186	0.939	1.034	1.011	1.093	1.114	1.128	1.108	0.000	0.000	
	Arv. Passenger	12.668	13.039	19.763	20.915	22.864	18.362	18.253	18.043	21.114	20.706	23.875	21.370	230.972	19.248	
1988	Index	0.658	0.677	1.027	1.087	1.188	0.948	0.937	1.097	1.076	1.240	1.110	0.000	0.000		
	Total Passenger	25.112	25.784	42.379	42.470	47.167	39.428	38.762	43.500	43.528	46.980	44.072	476.788	39.732		
	Index	0.632	0.649	1.067	1.069	1.187	0.992	0.976	1.095	1.096	1.182	1.109	0.000	0.000		

Appendix 4-26 Monthly Air Passengers/1987

(Unit : 100Passengers)



	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
—Dep.	124	128	226	216	243	192	212	207	224	228	231	227
—Arv.	127	130	198	209	229	184	182	181	211	207	239	214
---Total	251	258	424	425	472	376	394	388	435	435	470	441

Appendix 4-27 Monthly Air Passengers/1986

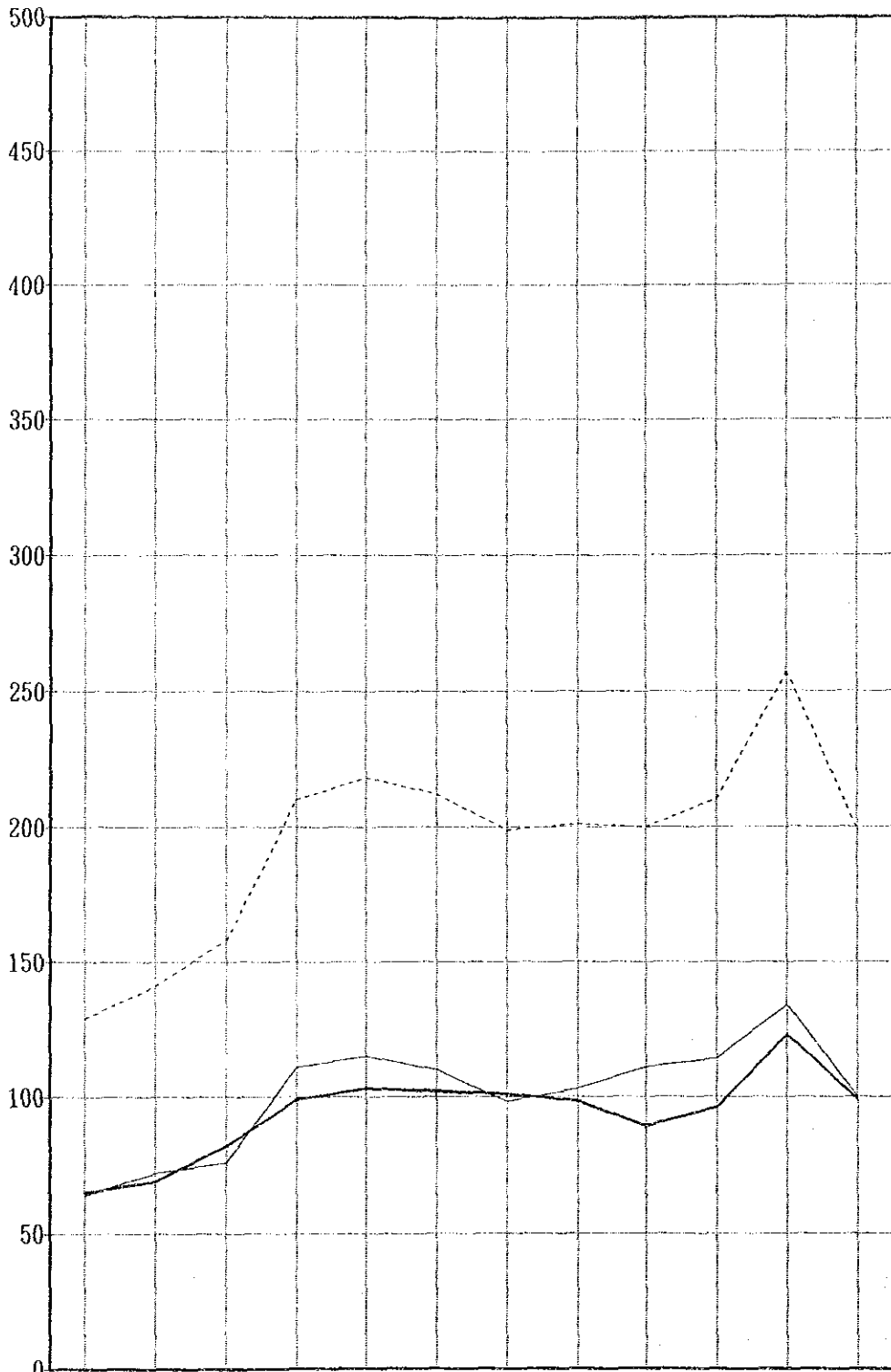
(Unit : 100Passengers)



	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Dep.	105	89	129	133	148	154	139	156	171	171	190	206
Arv.	107	73	130	116	161	141	129	139	157	168	184	186
Total	212	162	259	248	309	295	268	295	328	339	374	392

Appendix 4-28 Monthly Air Passengers/1985

(Unit : 100Passengers)



	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
—Dep.	64	72	76	111	115	110	98	103	111	114	134	100
---Arv.	65	69	82	99	103	102	101	98	89	96	123	99
...Total	129	141	158	210	218	212	199	201	200	210	257	199

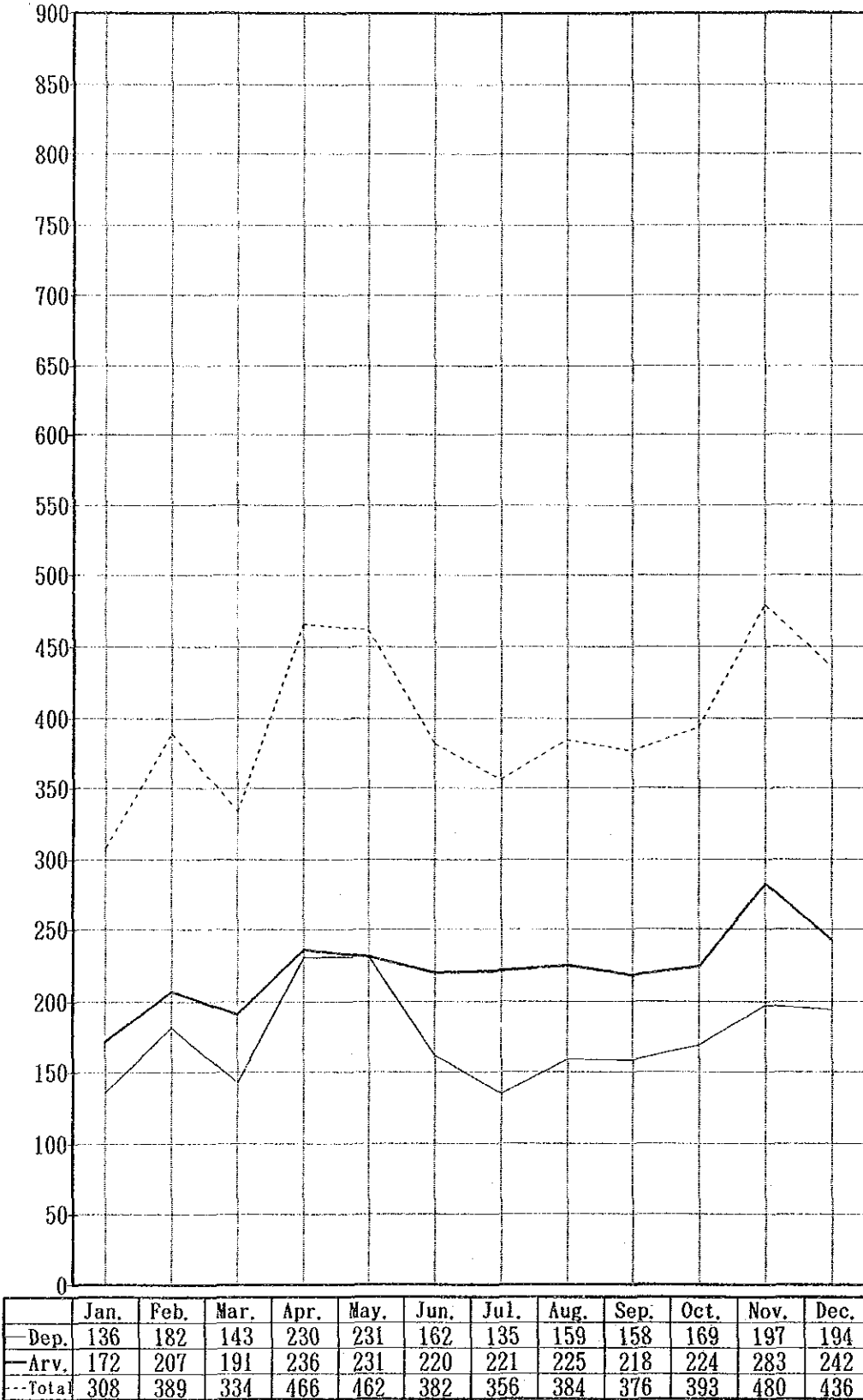
Appendix 4-29 Monthly Air Freight in Nan-Hu Airport

Year \ Month	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Mean	Remarks	
1985	Dep. Freight	135.700	182.100	142.600	230.000	230.900	162.300	134.500	158.900	188.900	197.000	193.500	2,094.200	174.517		
	Index	0.778	1.043	0.817	1.318	1.323	0.930	0.771	0.911	0.904	1.129	1.109	0.000	0.000		
	Arv. Freight	172.300	206.600	191.000	235.600	230.900	219.800	221.300	225.000	218.600	223.700	282.700	242.000	2,669.500	222.458	
	Index	0.775	0.929	0.859	1.059	1.038	0.988	0.995	1.011	0.983	1.006	1.271	1.088	0.000	0.000	
	Total Freight	308.000	388.700	333.600	465.600	461.800	382.100	355.800	383.900	376.400	392.600	479.700	435.500	4,763.700	396.975	
Index	0.776	0.979	0.840	1.173	1.163	0.963	0.896	0.967	0.948	0.989	1.208	1.097	0.000	0.000		
1986	Dep. Freight	172.500	97.700	137.200	152.400	337.400	274.000	131.500	144.200	204.400	257.100	318.500	2,496.900	208.075		
	Index	0.829	0.470	0.659	0.732	1.622	1.317	0.632	0.693	0.982	1.236	1.531	0.000	0.000		
	Arv. Freight	253.000	186.700	209.100	238.100	216.100	247.000	219.200	237.000	269.900	313.700	327.900	350.300	3,068.000	255.667	
	Index	0.990	0.730	0.818	0.931	0.845	0.965	0.857	0.927	1.056	1.227	1.283	1.370	0.000	0.000	
	Total Freight	425.500	284.400	346.300	390.500	553.500	521.000	350.700	381.200	474.300	583.700	585.000	668.800	5,564.900	463.742	
Index	0.918	0.613	0.747	0.842	1.194	1.123	0.756	0.822	1.023	1.259	1.261	1.442	0.000	0.000		
1987	Dep. Freight	212.400	208.700	286.400	351.800	392.300	306.500	284.900	295.300	405.700	421.800	390.400	3,896.700	324.725		
	Index	0.654	0.643	0.882	1.083	1.208	0.944	0.877	0.909	1.049	1.249	1.202	0.000	0.000		
	Arv. Freight	276.000	282.700	341.900	319.100	412.300	319.400	322.500	369.300	406.800	420.700	460.100	381.500	4,312.300	359.358	
	Index	0.768	0.787	0.951	0.888	1.147	0.889	0.897	1.028	1.132	1.171	1.280	1.062	0.000	0.000	
	Total Freight	488.400	491.400	628.300	670.900	804.600	625.900	607.400	664.600	747.300	826.400	881.900	771.900	8,209.000	684.083	
Index	0.714	0.718	0.918	0.981	1.176	0.915	0.888	0.972	1.092	1.208	1.289	1.128	12.000	1.000		



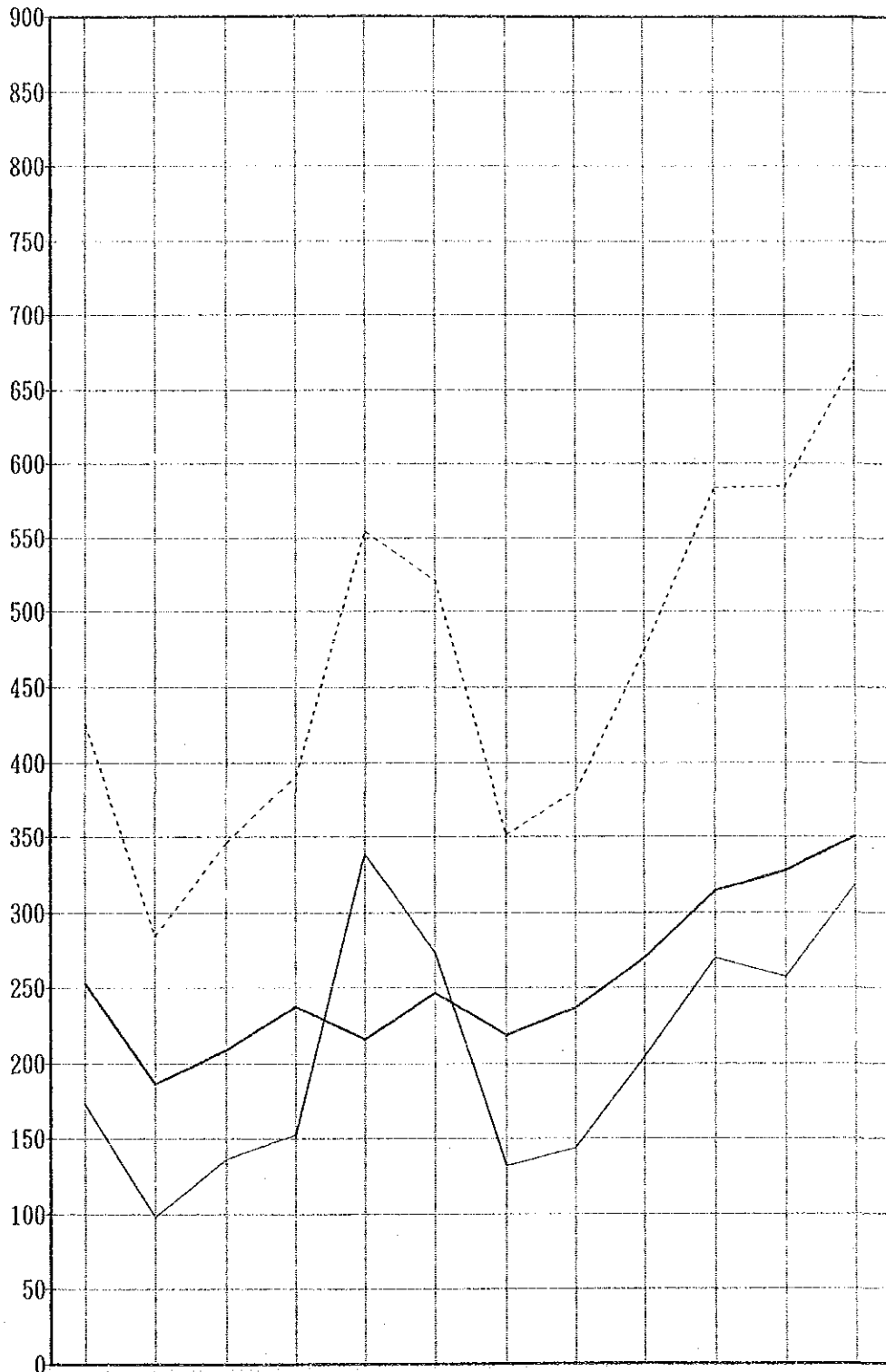
Appendix 4-30 Monthly Air Freight/1985

(Unit : t)



Appendix 4-31 Monthly Air Freight/1986

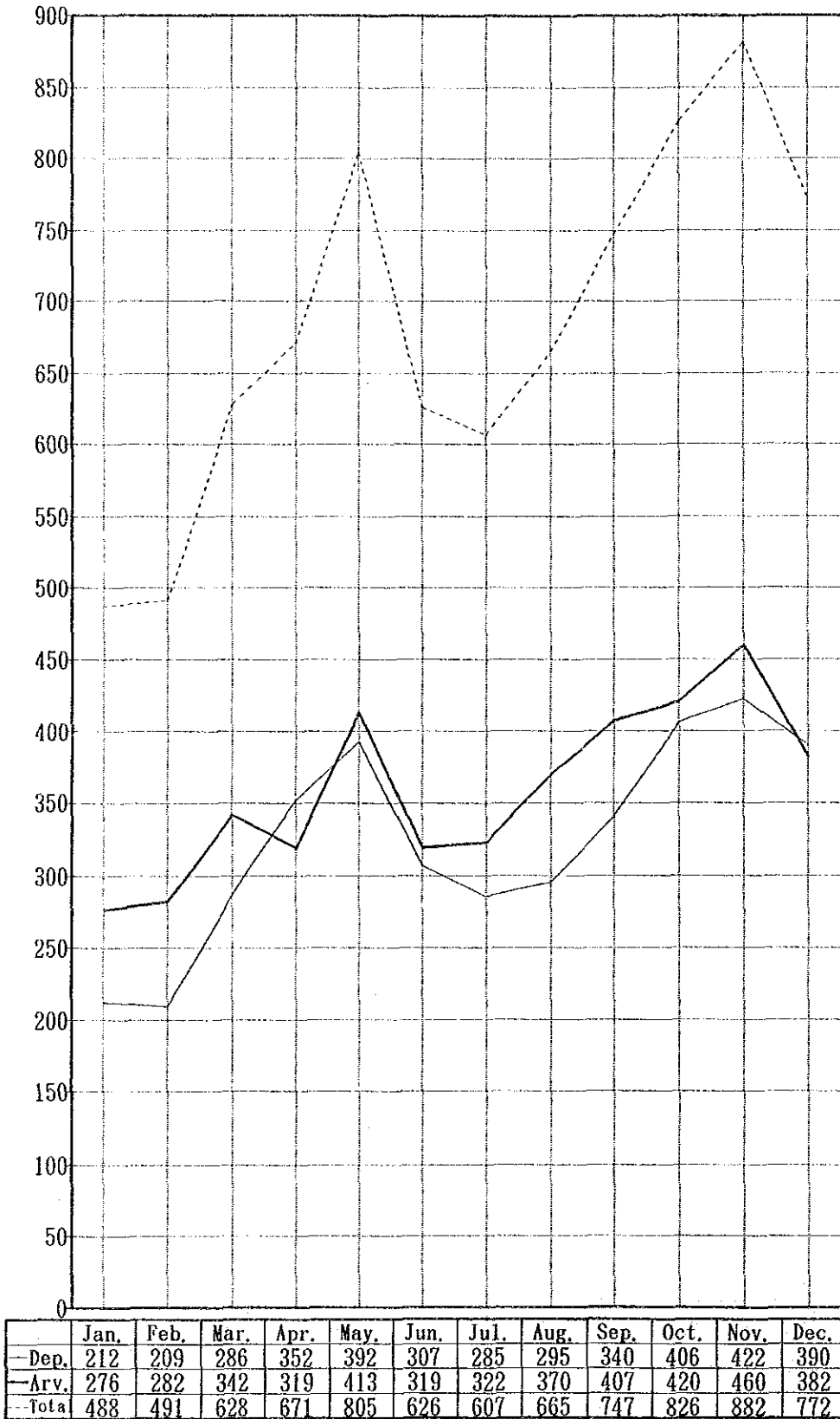
(Unit : t)



	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec
—Dep.	173	98	137	153	338	274	132	144	204	270	257	319
—Arv.	253	186	209	238	216	247	219	237	270	314	328	350
---Total	426	284	346	391	554	521	351	381	474	584	585	669

Appendix 4-32 Monthly Air Freight/1987

(Unit : t)

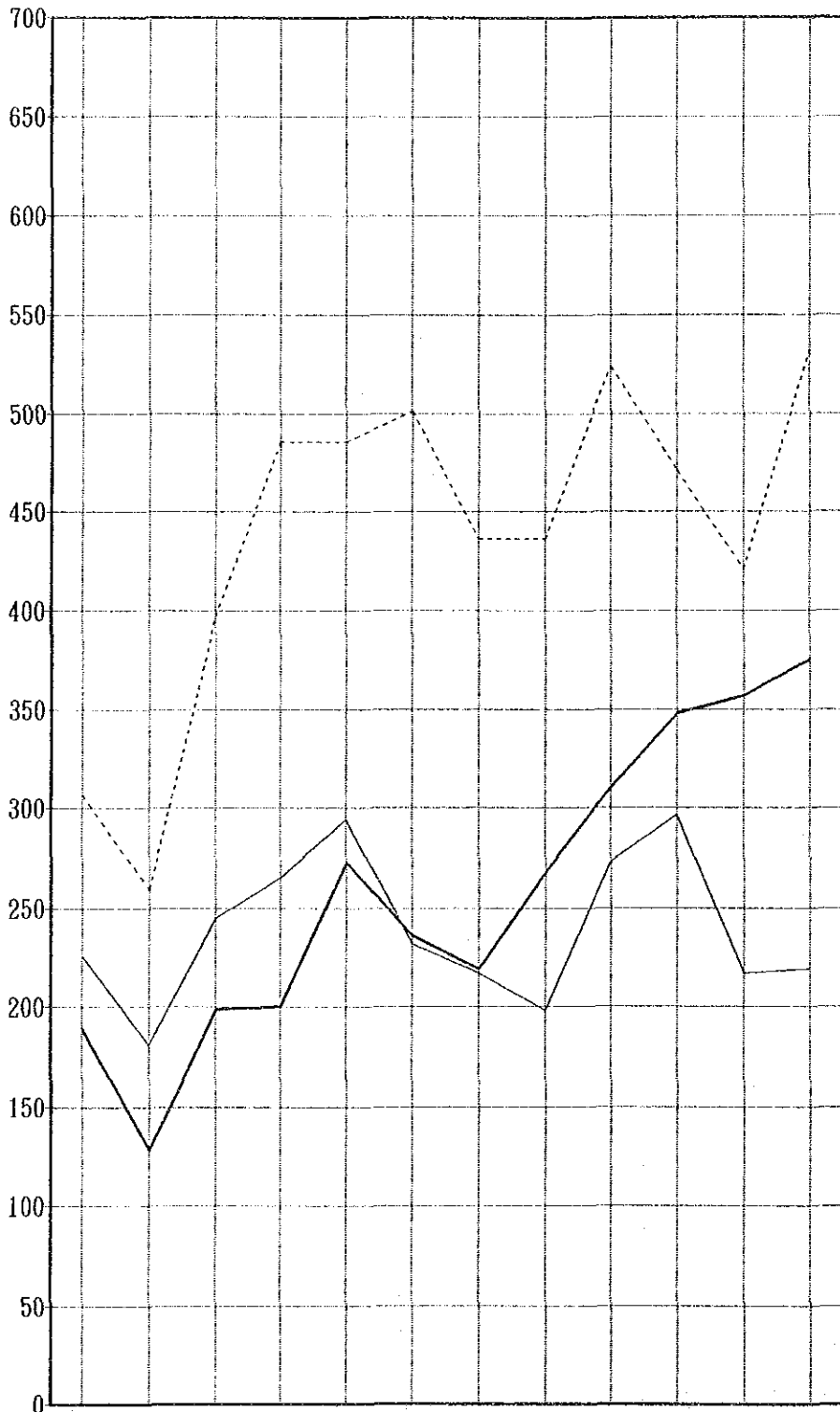


Appendix 4-33 Monthly Aircraft Movements in Nan-Hu Airport

Year\Month	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Mean	Remarks	
1985	Flights	226	181	245	265	295	217	198	274	297	217	219	2,866	239		
	Index	0.947	0.758	1.025	1.109	1.235	0.972	0.909	0.829	1.147	1.243	0.909	0.917	-	-	
1986	Flights	190	128	199	200	273	219	268	311	348	357	375	3,104	259		
	Index	0.735	0.496	0.769	0.773	1.055	0.912	0.847	1.036	1.202	1.345	1.380	1.450	-	-	
1987	Flights	307	260	397	486	486	436	436	524	471	421	532	5,257	438		
	Index	0.701	0.594	0.906	1.109	1.109	0.995	0.995	1.196	1.075	0.961	1.215	-	-	-	
Mean Index	0.794	0.617	0.900	0.997	1.133	1.009	0.917	0.953	1.182	1.221	1.083	1.194	-	-	-	

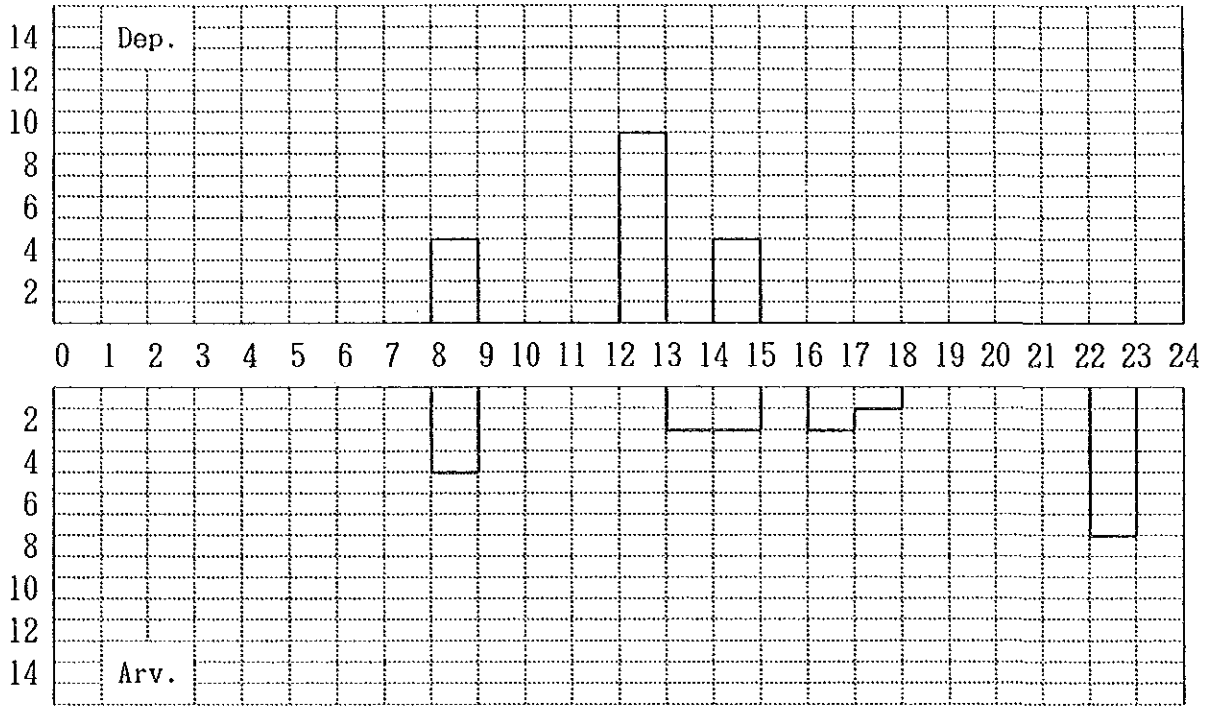
Appendix 4-34 Monthly Aircraft Movement

(Unit : Flight)

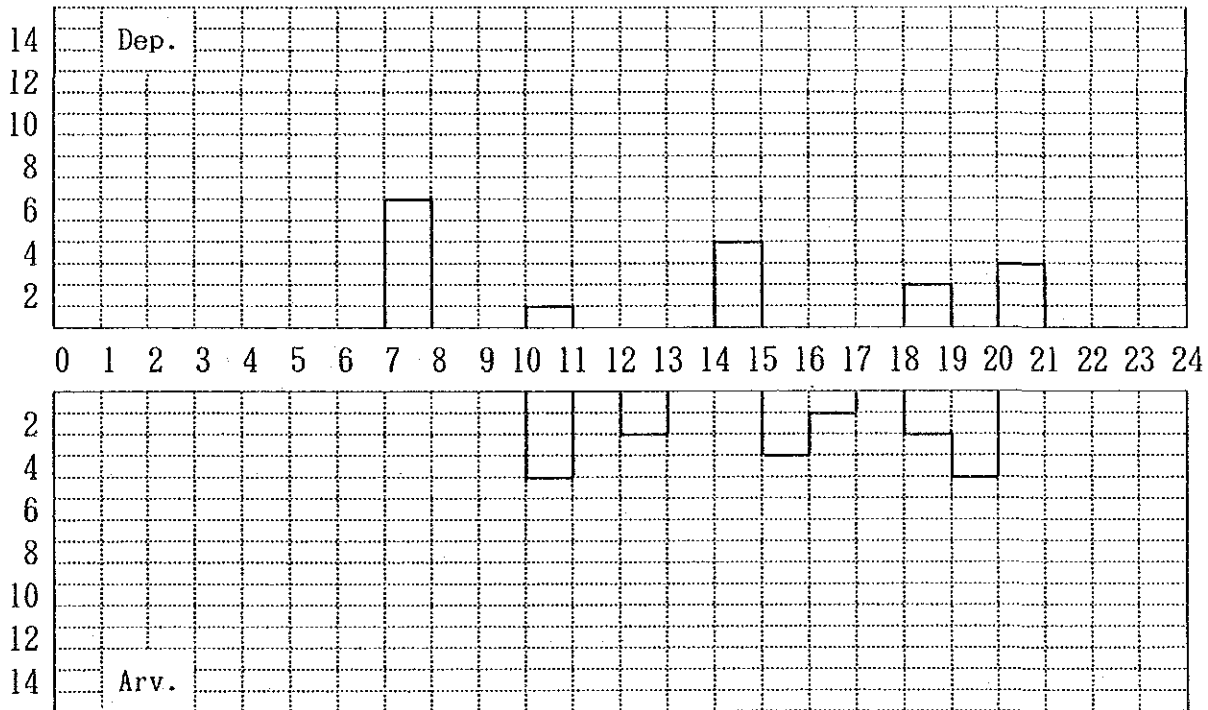


	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
— 1 9 8 5	226	181	245	265	295	232	217	198	274	297	217	219
- 1 9 8 6	190	128	199	200	273	236	219	268	311	348	357	375
... 1 9 8 7	307	260	397	486	486	501	436	436	524	471	421	532

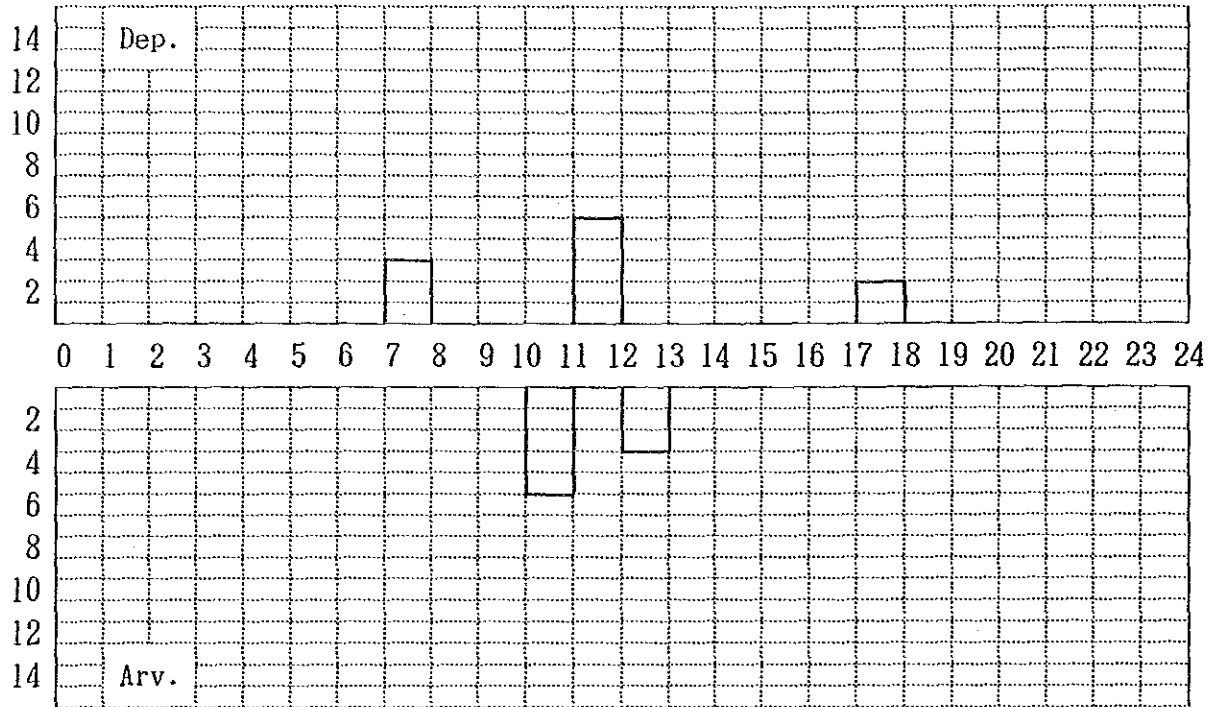
Appendix 4-35 Flight Distribution - Guangzhou



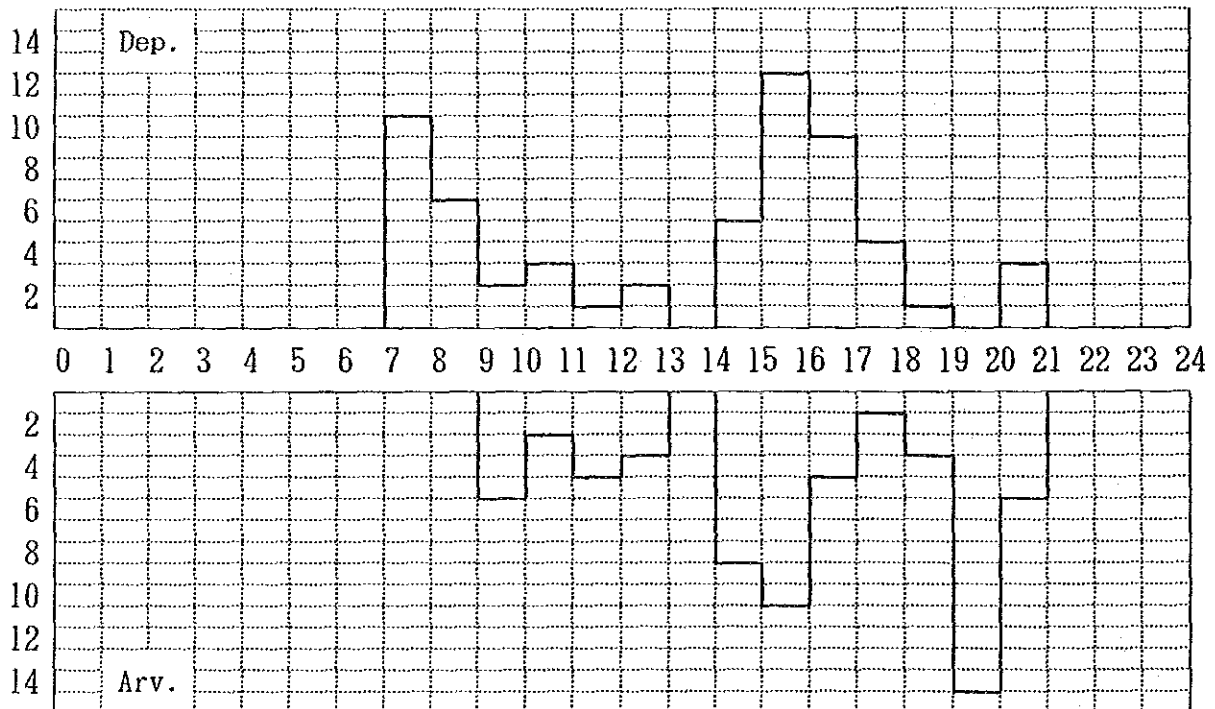
Appendix 4-36 Flight Distribution - Shanghai



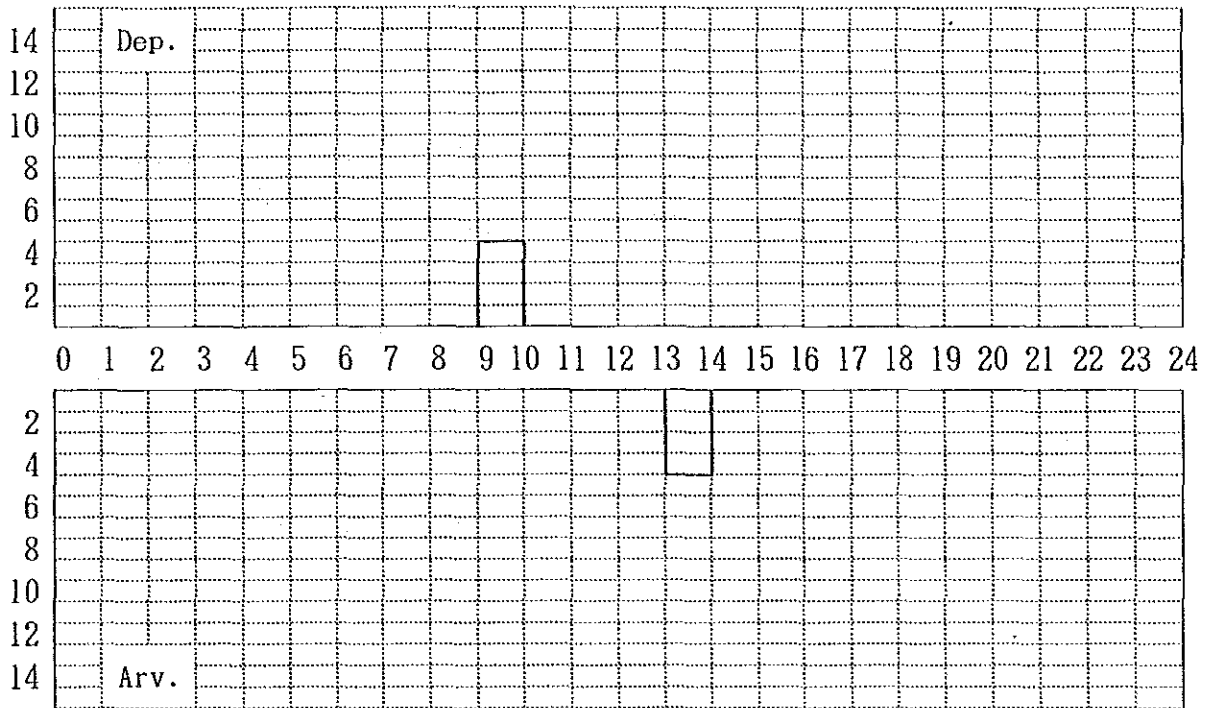
Appendix 4-37 Flight Distribution -- Beijing



Appendix 4-38 Flight Distribution -- Another domestic line

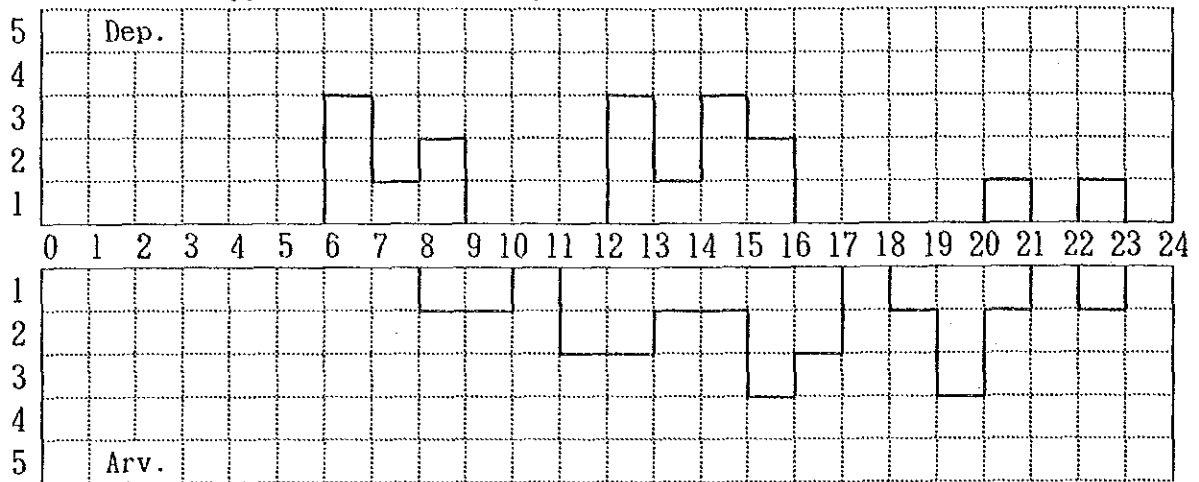


Appendix 4-39 Flight Distribution - Hongkong

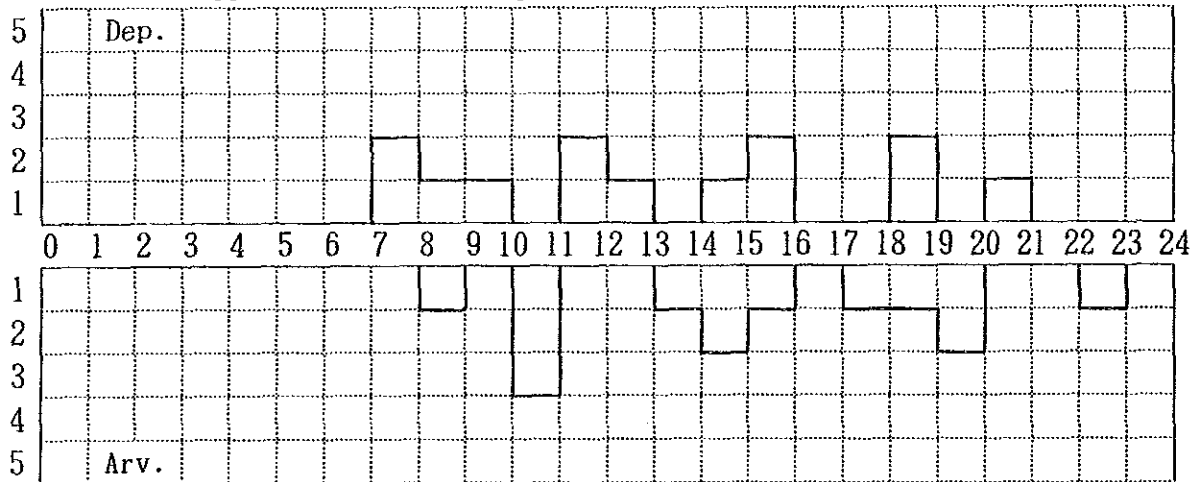




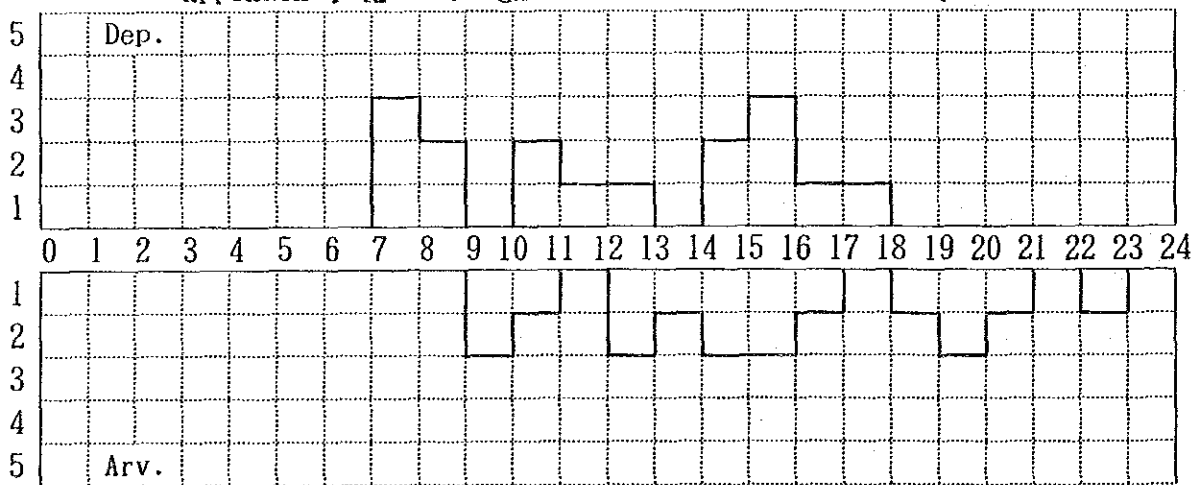
Appendix 4-40 Flight Distribution - Monday



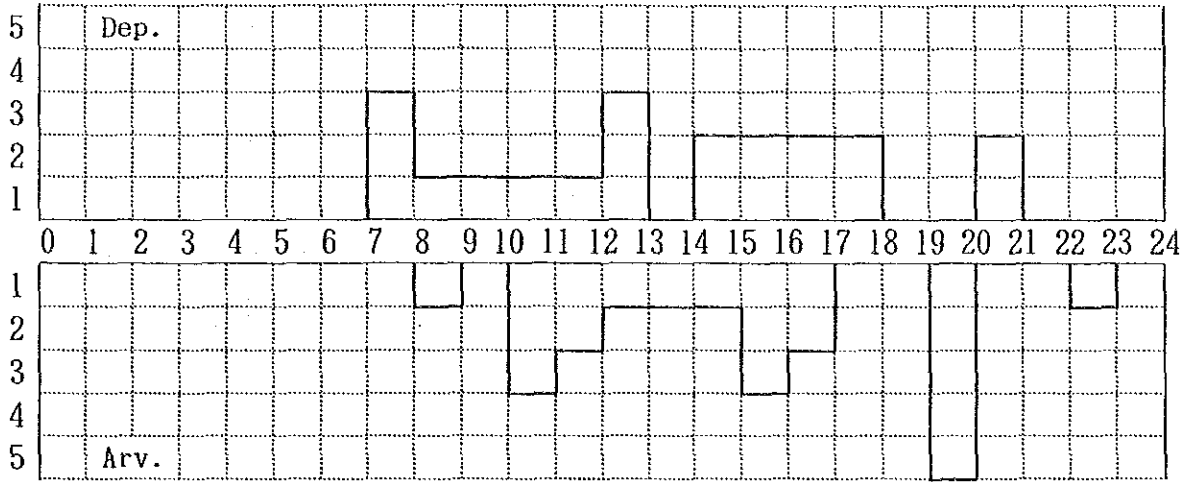
Appendix 4-41 Flight Distribution - Tuesday



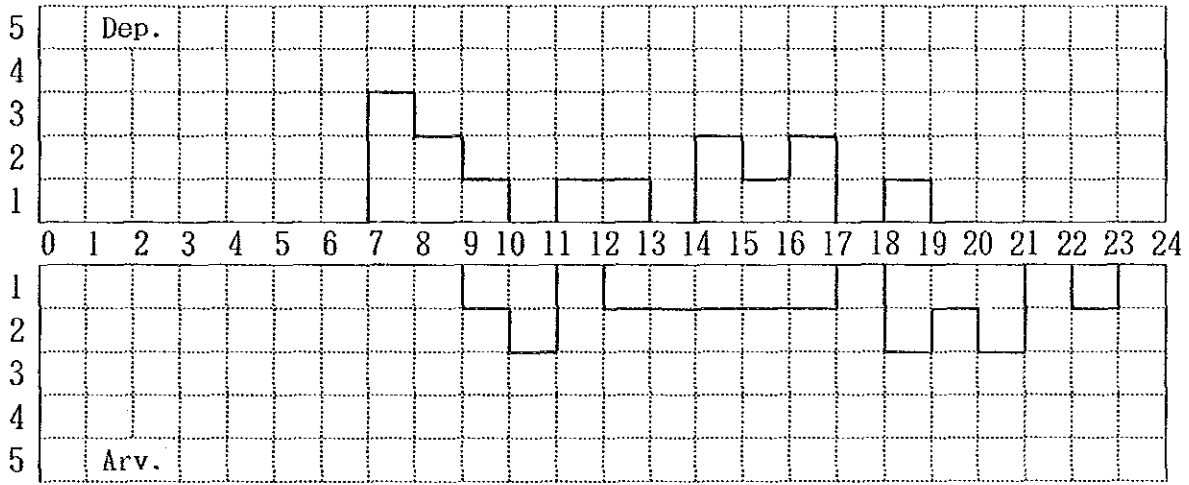
Appendix 4-42 Flight Distribution - Wednesday



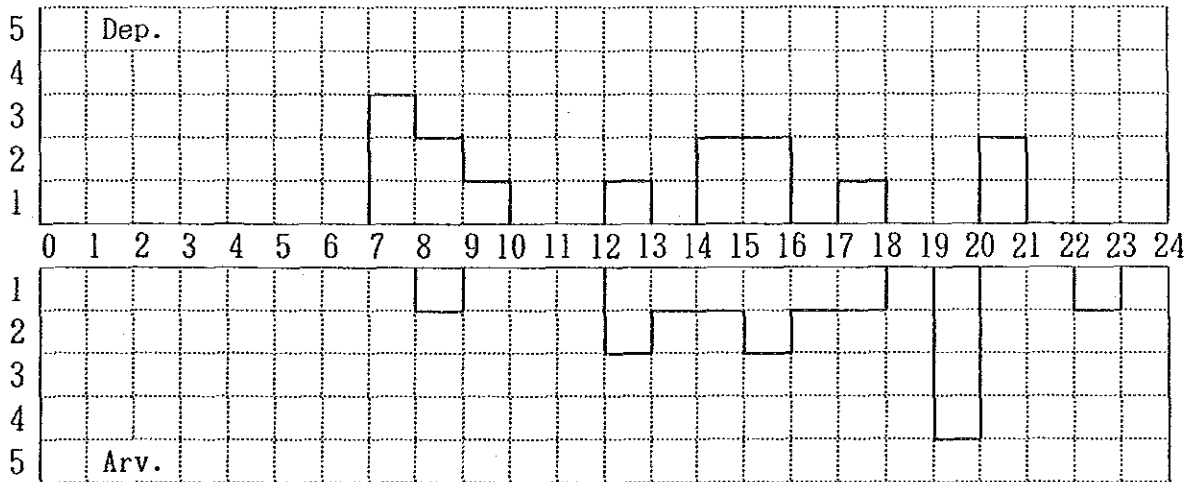
Appendix 4-43 Flight Distribution - Thursday



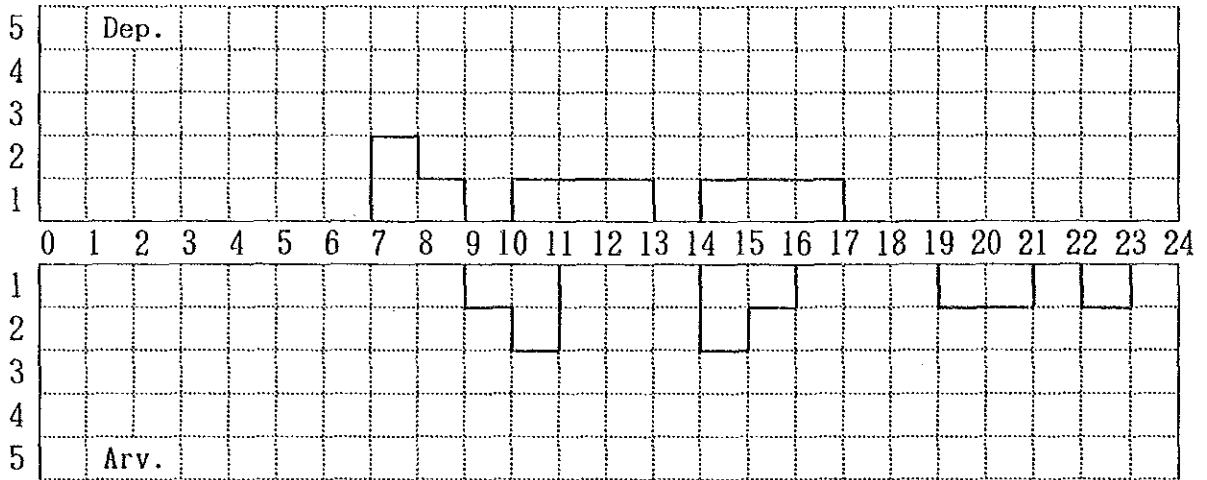
Appendix 4-44 Flight Distribution - Friday



Appendix 4-45 Flight Distribution - Saturday



Appendix 4-46 Flight Distribution - Sunday



Appendix 4-47 Estimated Flight Schedule

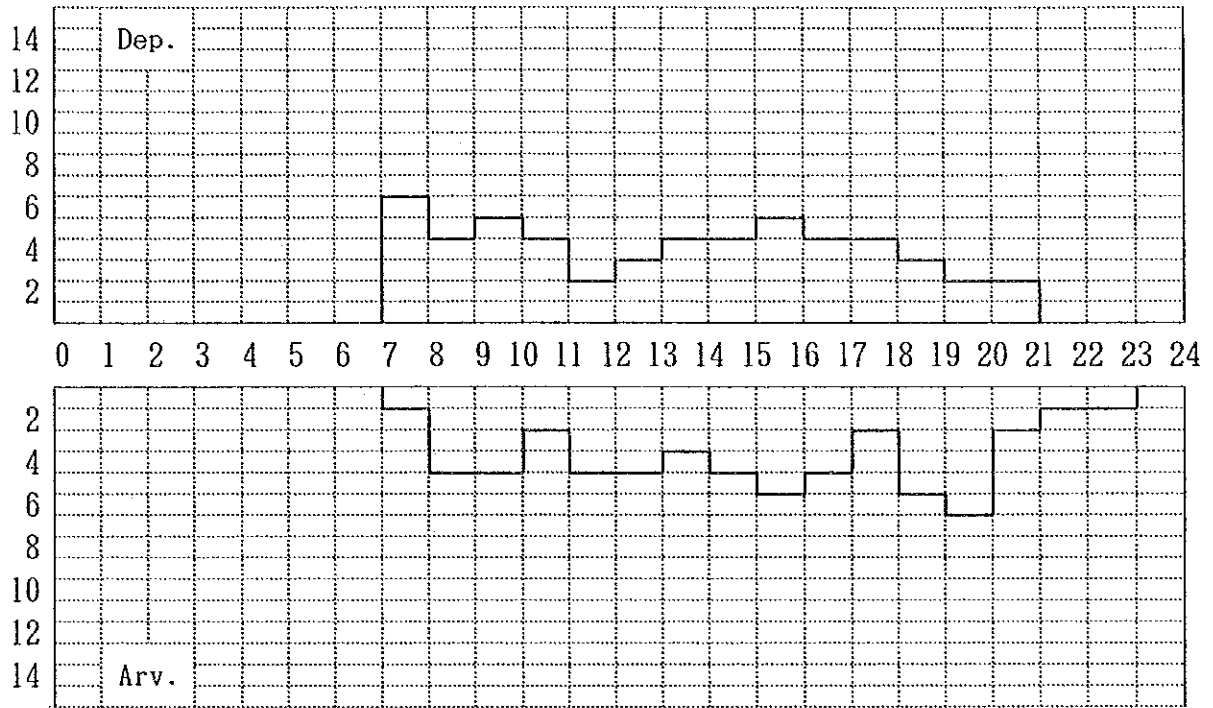
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
		M-J	10 45	M-J	10 55	S-1	45 25	M-J	35 10	M-J	25	S-1	20 50	M-J	05 45	S-1	45 25	S-1	45 25	M-J	50
			50 S-1	45 S-2	45	S-1	05 05	S-1	05	S-2	25 25	S-1	15 55	S-1	10 0	S-1	40	S-2	40		
		40 S-2	40		S-1	25	S-1	05	S-2	05 35	S-1	30	S-1	30	S-1	40					
		40 PRO	25	50 PRO		30	PRO	10	PRO	45	PRO	0 40	PRO	05	PRO	05					
		45 M-J	0 45	M-J	05	M-J	35	M-J	0	S-1	0 30	M-J	0	M-J	20 35	S-1	05				
		50 S-1	50		S-1	55	S-1	10	S-1	25 20	S-1	50	S-1	0	S-1	45	S-2	45			
				M-J	10 55	M-J	15	M-J	25	M-J	25	M-J	35	M-J	45 30	M-J	45				
		05 S-1	05		S-1	30	S-1	30	S-1	50	S-1	35	S-1	40	S-1	50					
				M-J	15 20	M-J	45	M-J	45	M-J	10	M-J	05	M-J	20 55	M-J	10				
		05 S-1	05		M-J	45	M-J	25	M-J	40	M-J	25	M-J	25	M-J	40					
		10 S-1	10		M-J*	45	M-J	40	M-J	30	M-J*	05	M-J	05	M-J	25					
													PRO	45	PRO	50					

\*Resional rout (Hongkong rout)

Appendix 4-48 Estimated Aircraft Movement Distribution by Time Period

ROUTE	A/C TYPE	DEP./ARR.	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	TOTAL		
Guangzhou	200 S	Departure				1	1	1		2	1	1			1	1	1						10	
		Arrival			1	1	1			2	1	1		1	1	1	1					1		10
		Total			1	1	1			2	1	1		1	1	1	1					1		20
Shanghai	200 S	Departure			1	1	1	1		1	1	1				1	1	1					7	
		Arrival			2	1	1			1	1	1		1	1	1	1							7
		Total			1	1	1	1	1	1	1	1	1	1	1	1	1	1						14
Beijing	200 S	Departure				1	1	1		1	1			1	1	1							5	
		Arrival			1	1	1			1	1			1	1	1								5
		Total			1	1	1	1	1	1	1	1	1	1	1	1	1							10
All Types	All Types	Departure			5	3	1	2	1	1	1	2	4	4	2	1	1	1					28	
		Arrival					2	1	2	1	1	4	4	2	1	2	5	2	1					28
		Total			5	3	2	3	2	2	5	8	8	6	3	3	6	3	2	1				56
Other	150S	Departure			3	2	2	2		1	1	1	3	2	1	1							18	
		Arrival					2	2	2		1	3	3	1	1	1	1	3	2				18	
		Total			3	2	4	4	4	2	4	4	4	4	2	2	2	4	4	2				36
Domestic	100S	Departure			1	1	1				1	1	1	1									4	
		Arrival									1	1	1	1	1			1	1				4	
		Total			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				8
Domestic Total	50S	Departure			1	1	1	1				1	1	1	1	1							6	
		Arrival										1	1	1	1	1	1	1	1				6	
		Total			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12
Domestic Total	200S	Departure			6	4	4	4	2	3	4	4	4	4	4	4	3	2	2				50	
		Arrival			1	3	4	2	4	4	2	4	5	4	2	5	6	2	1	1				50
		Total			7	7	8	6	6	7	6	8	9	8	6	8	8	4	3	1	1			100
Hongkong	200S	Departure				1	1				1												2	
		Arrival																					2	
		Total																					4	
Grand Total	Grand Total	Departure			6	4	5	4	2	3	4	4	5	4	4	4	3	2	2				52	
		Arrival			1	4	4	2	4	4	3	4	5	4	2	5	6	2	1	1				52
		Total			7	8	9	6	6	7	7	8	10	8	6	8	8	4	3	1	1			104

Appendix 4-49 Estimated Aircraft Movement Distribution by Time Period



Appendix 4-50 Volume of Passenger (Inflow and Outflow) by Time period—Domestic passenger

Time	Inflow	Outflow	Total	Time	Inflow	Outflow	Total
5 : 00	18	0	18	15 : 00	76	119	195
5 : 15	27	0	27	15 : 15	96	105	201
5 : 30	43	0	43	15 : 30	125	48	173
5 : 45	69	0	69	15 : 45	138	65	203
6 : 00	97	0	97	16 : 00	128	84	212
6 : 15	133	0	133	16 : 15	95	159	254
6 : 30	146	0	146	16 : 30	84	201	285
6 : 45	167	0	167	16 : 45	105	104	209
7 : 00	181	0	181	17 : 00	113	78	191
7 : 15	147	0	147	17 : 15	123	153	276
7 : 30	99	0	99	17 : 30	98	212	310
7 : 45	94	0	94	17 : 45	62	155	217
8 : 00	119	41	160	18 : 00	47	66	113
8 : 15	149	108	257	18 : 15	63	17	80
8 : 30	133	145	278	18 : 30	92	12	104
8 : 45	108	118	226	18 : 45	122	99	221
9 : 00	100	94	194	19 : 00	105	174	279
9 : 15	117	83	200	19 : 15	71	199	270
9 : 30	125	39	164	19 : 30	32	183	215
9 : 45	125	86	211	19 : 45	9	137	146
10 : 00	99	119	218	20 : 00	2	152	154
10 : 15	81	137	218	20 : 15	0	157	157
10 : 30	60	141	201	20 : 30	0	141	141
10 : 45	55	78	133	20 : 45	0	97	97
11 : 00	69	41	110	21 : 00	0	71	71
11 : 15	98	12	110	21 : 15	0	61	61
11 : 30	127	34	161	21 : 30	0	29	29
11 : 45	160	91	251	21 : 45	0	10	10
12 : 00	179	177	356	22 : 00	0	21	21
12 : 15	166	212	378	22 : 15	0	33	33
12 : 30	158	180	338	22 : 30	0	18	18
12 : 45	154	166	320	22 : 45	0	7	7
13 : 00	148	159	307	23 : 00	0	42	42
13 : 15	130	150	280	23 : 15	0	67	67
13 : 30	105	164	269	23 : 30	0	37	37
13 : 45	82	144	226	23 : 45	0	14	14
14 : 00	89	67	156	24 : 00	0	2	2
14 : 15	94	22	116				
14 : 30	102	34	136				
14 : 45	82	81	163				

Peak hour inflow volume  $(160+179+166+158) \times 1.1 \approx 730$

" outflow volume  $(177+212+180+166) \times 1.1 \approx 810$

" total volume  $(356+378+338+320) \times 1.1 \approx 1,530$

Appendix 4-51 Volume of Passenger (Inflow and Outflow) by Time period—Regional passenger

Time	Inflow	Outflow	Total	Time	Inflow	Outflow	Total
5:00	0	0	0	15:00	0	14	14
5:15	0	0	0	15:15	0	0	0
5:30	0	0	0	15:30	0	0	0
5:45	0	0	0	15:45	0	0	0
6:00	0	0	0	16:00	0	0	0
6:15	0	0	0	16:15	0	0	0
6:30	0	0	0	16:30	0	0	0
6:45	3	0	3	16:45	0	0	0
7:00	5	0	5	17:00	0	0	0
7:15	6	0	6	17:15	0	0	0
7:30	8	0	8	17:30	0	0	0
7:45	13	0	13	17:45	0	0	0
8:00	22	0	22	18:00	0	0	0
8:15	32	0	32	18:15	0	0	0
8:30	39	0	39	18:30	0	0	0
8:45	22	0	22	18:45	0	0	0
9:00	8	0	8	19:00	0	0	0
9:15	2	0	2	19:15	0	0	0
9:30	0	0	0	19:30	0	0	0
9:45	0	0	0	19:45	0	42	42
10:00	0	0	0	20:00	0	67	67
10:15	0	0	0	20:15	0	37	37
10:30	0	0	0	20:30	0	14	14
10:45	0	0	0	20:45	0	0	0
11:00	0	0	0	21:00	0	0	0
11:15	0	0	0	21:15	0	0	0
11:30	0	0	0	21:30	0	0	0
11:45	0	0	0	21:45	0	0	0
12:00	0	0	0	22:00	0	0	0
12:15	3	0	3	22:15	0	0	0
12:30	5	0	5	22:30	0	0	0
12:45	6	0	6	22:45	0	0	0
13:00	8	0	8	23:00	0	0	0
13:15	13	0	13	23:15	0	0	0
13:30	22	0	22	23:30	0	0	0
13:45	32	0	32	23:45	0	0	0
14:00	39	0	39	24:00	0	0	0
14:15	22	42	64				
14:30	8	67	75				
14:45	2	37	39				

Peak hour inflow volume  $(22+32+39+22) \times 1.1 \approx 130$

" outflow volume  $(42+67+37+14) = 160$

" total volume  $(39+64+75+39) \approx 240$



Appendix 4-52 Volume of Passenger (Inflow and Outflow) by Time period-All passenger

Time	Inflow	Outflow	Total	Time	Inflow	Outflow	Total
5:00	18	0	18	15:00	76	133	209
5:15	27	0	27	15:15	96	105	201
5:30	43	0	43	15:30	125	48	173
5:45	69	0	69	15:45	138	65	203
6:00	97	0	97	16:00	128	84	212
6:15	133	0	133	16:15	95	159	254
6:30	146	0	146	16:30	84	201	285
6:45	167	0	167	16:45	105	104	209
7:00	184	0	184	17:00	113	78	191
7:15	152	0	152	17:15	123	153	276
7:30	105	0	105	17:30	98	212	310
7:45	102	0	102	17:45	62	155	217
8:00	132	41	173	18:00	47	66	113
8:15	171	108	279	18:15	63	17	80
8:30	165	145	310	18:30	92	12	104
8:45	147	118	265	18:45	122	99	221
9:00	122	136	258	19:00	105	174	279
9:15	125	150	275	19:15	71	199	270
9:30	127	76	203	19:30	32	183	215
9:45	125	100	225	19:45	9	137	146
10:00	99	119	218	20:00	2	152	154
10:15	81	137	218	20:15	0	157	157
10:30	60	141	201	20:30	0	141	141
10:45	55	78	133	20:45	0	97	97
11:00	69	41	110	21:00	0	71	71
11:15	98	12	110	21:15	0	61	61
11:30	127	34	161	21:30	0	29	29
11:45	160	91	251	21:45	0	10	10
12:00	179	177	356	22:00	0	21	21
12:15	169	212	381	22:15	0	33	33
12:30	163	180	343	22:30	0	18	18
12:45	160	160	326	22:45	0	7	7
13:00	156	159	315	23:00	0	42	42
13:15	143	150	293	23:15	0	67	67
13:30	127	164	291	23:30	0	37	37
13:45	114	144	258	23:45	0	14	14
14:00	128	67	195	24:00	0	2	2
14:15	116	64	180				
14:30	110	101	211				
14:45	84	118	202				

Peak hour inflow volume  $(160+179+169+163) \times 1.1 \approx 740$

" outflow volume  $(177+212+180+166) \times 1.1 \approx 810$

" total volume  $(356+381+343+326) \times 1.1 \approx 1,550$

APPENDIX 5



APPENDIX 5-1(1) Calculation of required runway length

Airplane: B767

At sea level, Standard day

Takeoff runway length requirement is 1,952m  
for maximum takeoff weight

Corrections to runway takeoff length:

- 1) Correction for aerodrome elevation  
Planning elevation is 35m from sea level

$$\left[ 1,952 \times 0.07 \times \frac{35}{300} \right] + 1,952 = 1,968\text{m}$$

- 2) Correction for temperature  
Temperature in the standard atmosphere for 35m is 14.7725°

Aerodrome reference temperature is 32.7°

$$\left[ 1,968 \times (32.7 - 14.7725) \times 0.01 \right] + 1,968 = 2,321\text{m}$$

- 3) Correction for runway slope  
Planning runway slope is 0.2%

$$\left[ 2,321 \times 0.2 \times 0.1 \right] + 2,321 = 2,367\text{m}$$

At Wuhan Tian-He Airport, takeoff runway length requirement of B767 is 2,367m. (for maximum takeoff weight)

Relation of takeoff runway length requirement with takeoff gross weight is shown in below table

Takeoff gross weight	Takeoff runway length requirement	
	At sea level, Standard day	At Tian-He airport
143,800kg	1,952m	2,367m
141,500kg	1,878m	2,277m
137,000kg	1,756m	2,129m
132,400kg	1,635m	1,983m
127,900kg	1,537m	1,864m
123,400kg	1,415m	1,716m

APPENDIX 5-1(2)

Airplane: MD-82

At sea level, Standard day

Takeoff runway length requirement is 2,270m

for maximum takeoff weight

Corrections to runway takeoff length:

1) Correction for aerodrome elevation

Planning elevation is 35m from sea level

$$\left[ \underline{2,270} \times 0.07 \times \frac{35}{300} \right] + \underline{2,270} = \underline{2,289m}$$

2) Correction for temperature

Temperature in the standard atmosphere for 35m is  
14.7725°

Aerodrome reference temperature is 32.7°

$$\left[ \underline{2,289} \times (32.7 - 14.7725) \times 0.01 \right] + \underline{2,289} = \underline{2,700m}$$

3) Correction for runway slope

Planning runway slope is 0.2%

$$\left[ \underline{2,700} \times 0.2 \times 0.1 \right] + \underline{2,700} = \underline{2,754m}$$

At Wuhan Tian-He Airport, takeoff runway length requirement  
of MD-82 is 2,754m. (for maximum takeoff weight)

Relation of takeoff runway length requirement with takeoff  
gross weight is shown in below table

Takeoff gross weight	Takeoff runway length requirement	
	At sea level, Standard day	At Tian-He airport
149,500lb	2,270m	2,754m
145,000lb	2,073m	2,514m
140,000lb	1,871m	2,269m
135,000lb	1,704m	2,067m
130,000lb	1,563m	1,896m
125,000lb	1,454m	1,764m

APPENDIX 5-1(3)

Airplane: B757

At sea level, Standard day

Takeoff runway length requirement is 2,305m  
for maximum takeoff weight

Corrections to runway takeoff length:

- 1) Correction for aerodrome elevation

Planning elevation is 35m from sea level

$$\left[ \underline{2,305} \times 0.07 \times \frac{35}{300} \right] + \underline{2,305} = \underline{2,324m}$$

- 2) Correction for temperature

Temperature in the standard atmosphere for 35m is  
14.7725°

Aerodrome reference temperature is 32.7°

$$\left[ \underline{2,324} \times (32.7 - 14.7725) \times 0.01 \right] + \underline{2,324} = \underline{2,741m}$$

- 3) Correction for runway slope

Planning runway slope is 0.2%

$$\left[ \underline{2,741} \times 0.2 \times 0.1 \right] + \underline{2,741} = \underline{2,796m}$$

At Wuhan Tian-He Airport, takeoff runway length requirement  
of B767 is 2,796m. (for maximum takeoff weight)

Relation of takeoff runway length requirement with takeoff  
gross weight is shown in below table

Takeoff gross weight	Takeoff runway length requirement	
	At sea level, Standard day	At Tian-He airport
240,000lb	2,305m	2,796m
230,000lb	1,910m	2,316m
220,000lb	1,736m	2,105m
210,000lb	1,588m	1,926m
200,000lb	1,453m	1,762m
190,000lb	1,317m	1,598m

APPENDIX 5-1(4)

Airplane:TU-154

At sea level, Standard day

Takeoff runway length requirement is 2,160m

for maximum takeoff weight

Corrections to runway takeoff length:

1) Correction for aerodrome elevation

Planning elevation is 35m from sea level

$$\left[ \underline{2,160} \times 0.07 \times \frac{35}{300} \right] + \underline{2,160} = \underline{2,178} \text{m}$$

2) Correction for temperature

Temperature in the standard atmosphere for 35m is

14.7725°

Aerodrome reference temperature is 32.7°

$$\left[ \underline{2,178} \times (32.7 - 14.7725) \times 0.01 \right] + \underline{2,178} = \underline{2,569} \text{m}$$

3) Correction for runway slope

Planning runway slope is 0.2%

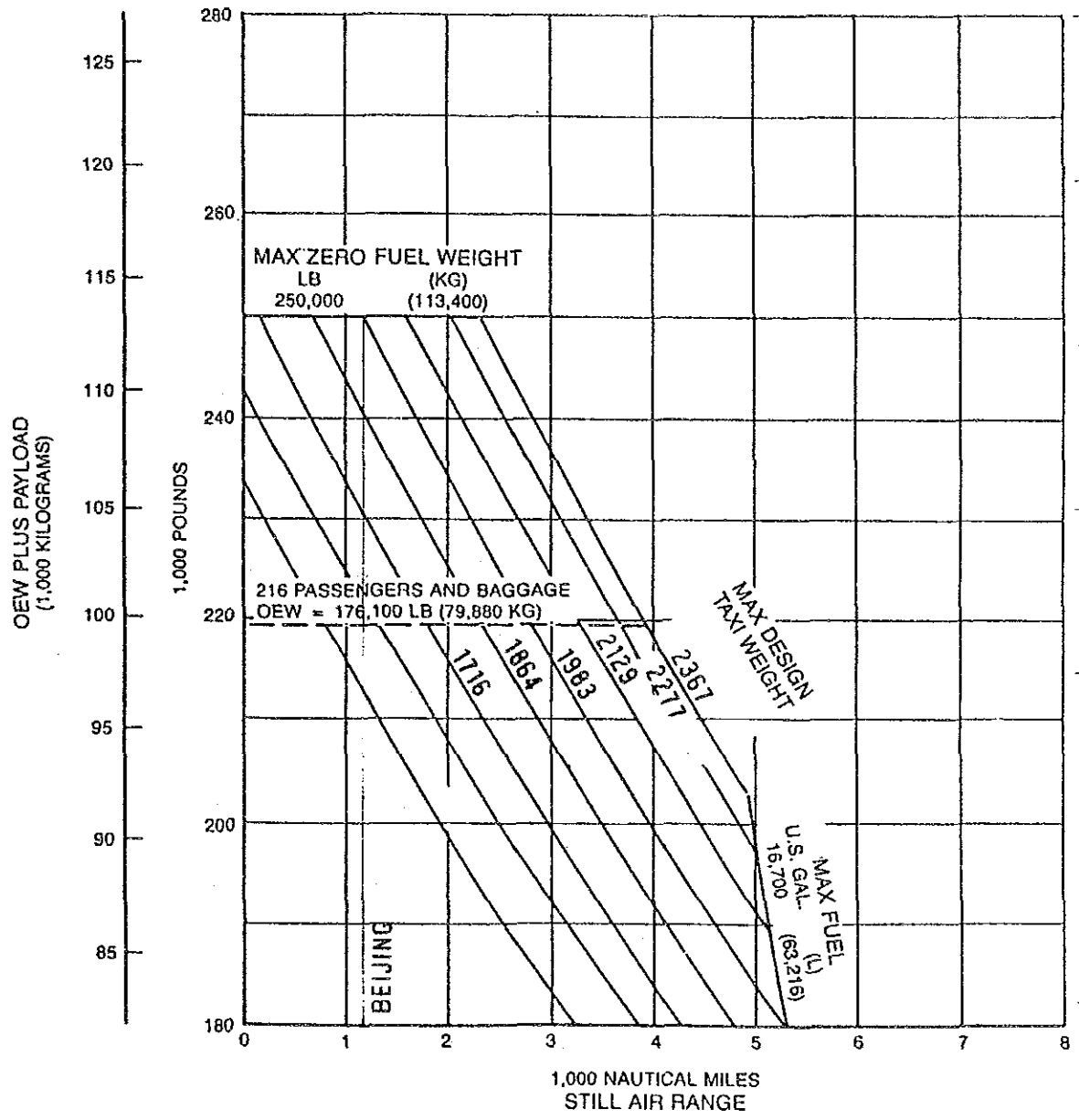
$$\left[ \underline{2,569} \times 0.2 \times 0.1 \right] + \underline{2,569} = \underline{2,621} \text{m}$$

At Wuhan Tian-He Airport, takeoff runway length requirement of TU-154 is 2,621m. (for maximum takeoff weight)

### APPENDIX 5-1(5) Take-off Performance Chart for B-767

**NOTES:**

- 0.80 MACH AT 35,000 AND 39,000 FT (10,668 AND 11,887M).
- ATA DOMESTIC RESERVES.
- STANDARD DAY.
- TAKEOFF WEIGHTS ARE 2,000 LB (907 KG) LESS THAN CORRESPONDING TAXI WEIGHTS.
- CONSULT USING AIRLINE FOR SPECIFIC OPERATING PROCEDURE PRIOR TO FACILITY DESIGN.



## B-767

FROM WUHAN TO BEIJING 1068 KM

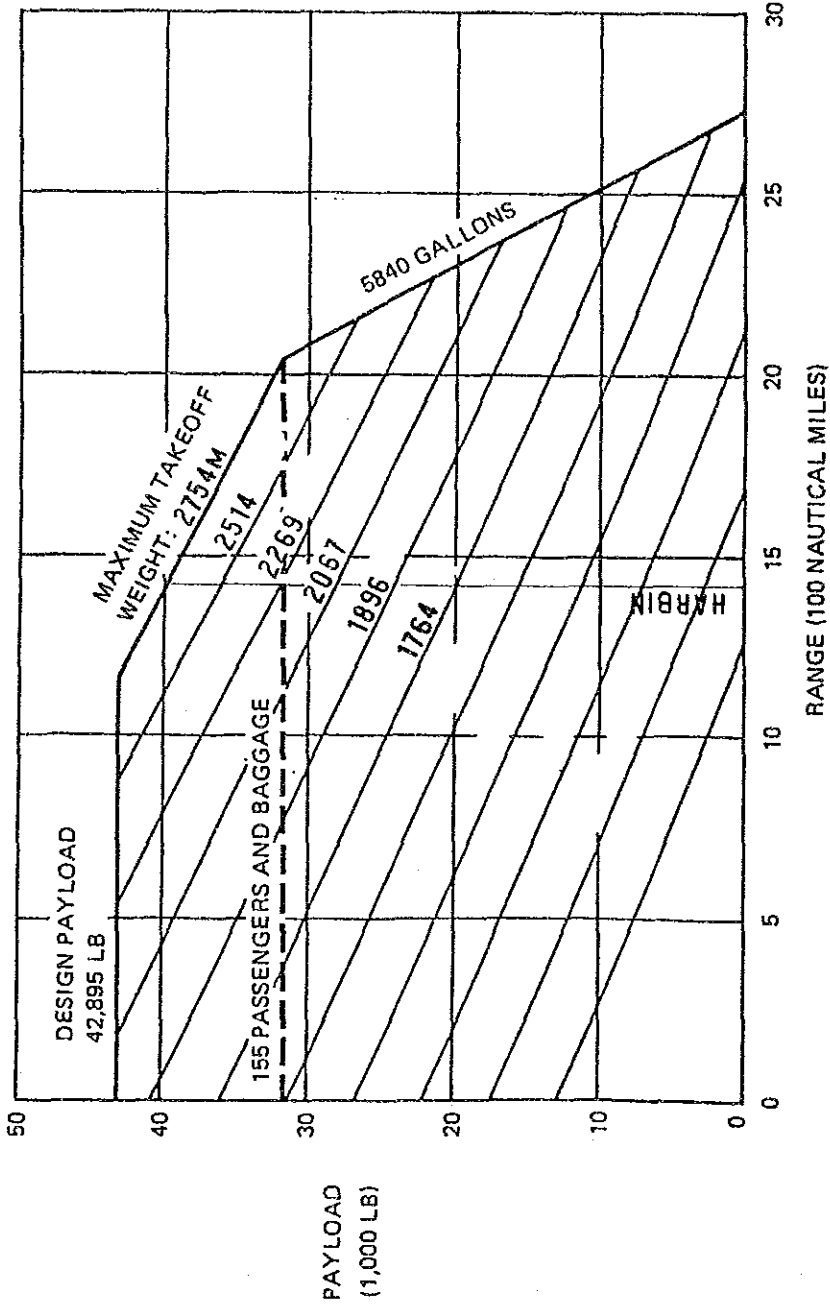
IF LANDING TO BEIJING AIRPORT IS IMPOSSIBLE,  
RETURN TO WUHAN



APPENDIX 5-1(6) Take-off Performance Chart for MD-82

- STANDARD DAY
- NO WIND
- OEW = 78,549 LB
- JT8D-217/217A ENGINES

NOTE: RESERVES BASED ON  
 FAR 121.639  
 200 N MI DISTANCE  
 TO ALTERNATE



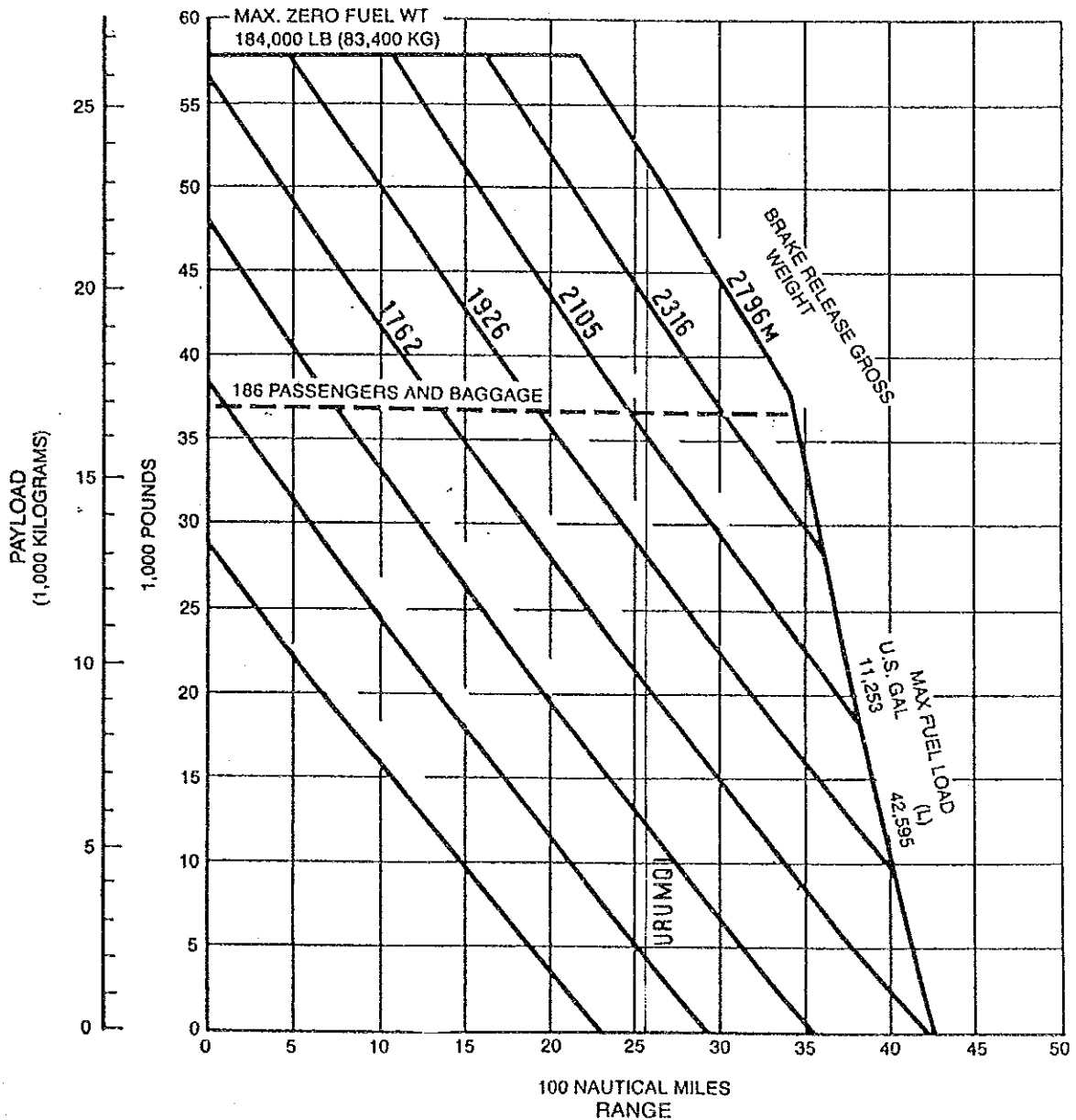
MD-82

FROM WUHAN TO HARBIN 2137 KM  
 ASSUMED ALTERNATE AIRPORT IS SHENYANG

# APPENDIX 5-1(7) Take-off Performance Chart for B-757

### NOTES:

- TYPICAL AIRLINE OEW 126,250 LB (57,250 KG)
- 0.80 MACH AT 35,000 AND 39,000 FT (10,668 AND 11,887 M)
- ATA DOMESTIC RESERVES
- RB211-535C ENGINES
- STANDARD DAY
- NOMINAL PERFORMANCE
- CONSULT USING AIRLINE FOR SPECIFIC OPERATING PROCEDURE PRIOR TO FACILITY DESIGN



## B-757

FROM WUHAN TO URUMQI 3008KM

ASSUMED ALTERNATIVE AIRPORT IS LANZHOU

APPENDIX 5-1(8)  
 RUNWAY LENGTH CALCULATION SHEET

Design conditions

Airplane:	B747
Normal Maximum Temperature	32.7° C
Airport Elevation	35m
Effective Runway Gradient	0.2%
Length of Haul	1,660 mile
Payload	

Landing runway length (Flaps 30°, table 51 )

Maximum Landing Weight	256,000 kg
Landing Runway Length	2,315 m

Landing Runway Length (Flaps 25°, table 52 )

Maximum Landing Weight	256,000 kg
Landing Runway Length	2,493 m

Desired Takeoff Weight (table )

Length of Haul	3,072 km
Average Fuel Consumption	x 13.25 kg/km
Haul Fuel	= 40,704 kg
Typical Operating Empty Weight +Res.	+ 187,790 kg
Weight(No Payload)	= 228,494 kg
Payload	+ 72,894 kg
Desired Takeoff Weight	= 301,388 kg

Takeoff Runway Length (Flaps 20°, table 53 )

Maximum Takeoff Weight	301,388 kg
Reference Factor "R"	66.91
Limiting Weight	353,900 kg
Runway Length	2,292 m
Gradient Correction $2,292 \times 0.1 \times 0.2 =$	+ 46 m
Corrected Runway Length	2,338 m

Takeoff Runway Length (Flaps 10°, table 54 )

Maximum Takeoff Weight	301,388 kg
Reference Factor "R"	74.75
Limiting Weight	356,000 kg
Runway Length	2,475 m
Gradient Correction $2,475 \times 0.1 \times 0.2 =$	+ 50 m
Corrected Runway Length	2,525 m

APPENDIX 5-2(1) Study of the location of the rapid exit taxiway

Calculation of the exit point

Exit point is calculated by following formulas.

$V_1$  : Approach speed 1.3×stalling speed with maximum landing weight

$a_1$  : Reducing rate of speed from the threshold to the touch down point

0.88m/sec<sup>2</sup> (ICAO AERODROME DESIGN MANUAL PART-2)

$V_2$  : Speed at the touch down point  $V_2 = \text{SQR}((V_1)^2 - 2 a_1 S_1)$

$a_2$  : Reducing rate of speed from the touch down point to the exit point

1.52m/sec<sup>2</sup> (ICAO AERODROME DESIGN MANUAL PART-2)

$S_1$  : Distance from the threshold to the touch down point 450m

(ICAO AERODROME DESIGN MANUAL PART-2, FAA等)

$S_2$  : Distance from the touch down point to the exit point

$$S_2 = \{(V_2)^2 - (V_3)^2\} \div (2 a_2)$$

$V_3$  : Exit speed 25.7m/sec

(ICAO AERODROME DESIGN MANUAL PART-2)

$S_0$  : Distance from the threshold to the exit point  $S_0 = S_1 + S_2$

$S_c$  : Corrected value of  $S_0$  based on the runway elevation and temperature

$$S_c = S_0 \times C$$

$C$  : Coefficient of correction for the runway elevation and temperature

$$C = (1 + 0.03 \times H \div 300) \times \{1 + 0.01 \times (T - 15 + 0.0065 \times H) \div 5.6\}$$

$H$  : Elevation 35m

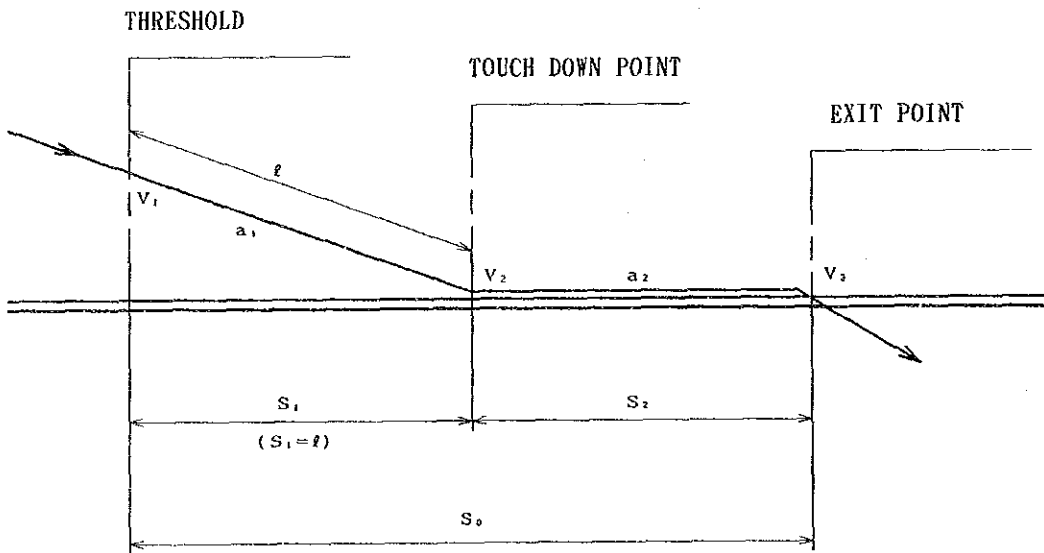
$T$  : Temperature 32.7° C

$$C = 1.0356$$

According to ICAO AERODROME DESIGN MANUAL PART-2,

the correcting rate is 1%/1° C over the temperature of 15° C.

APPENDIX 5-2 (2)

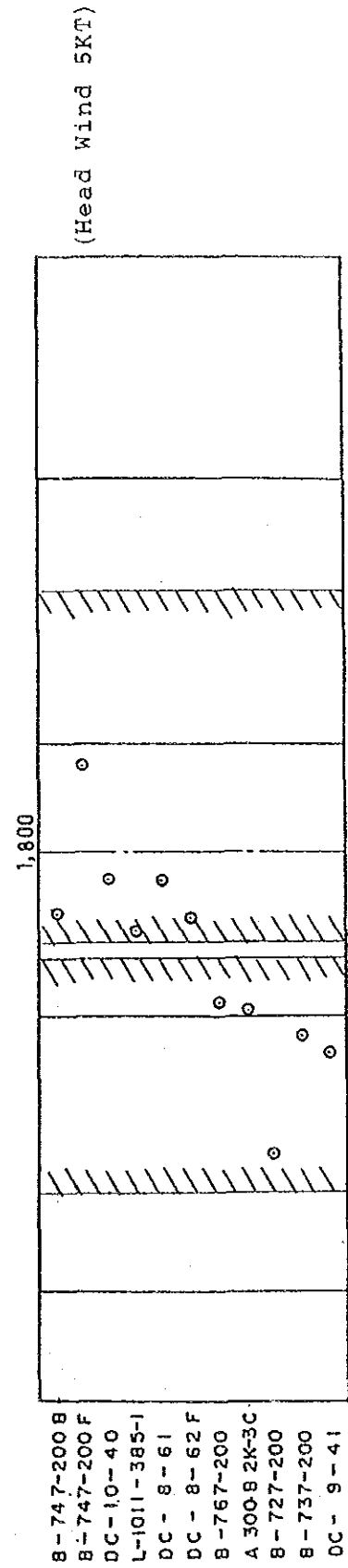
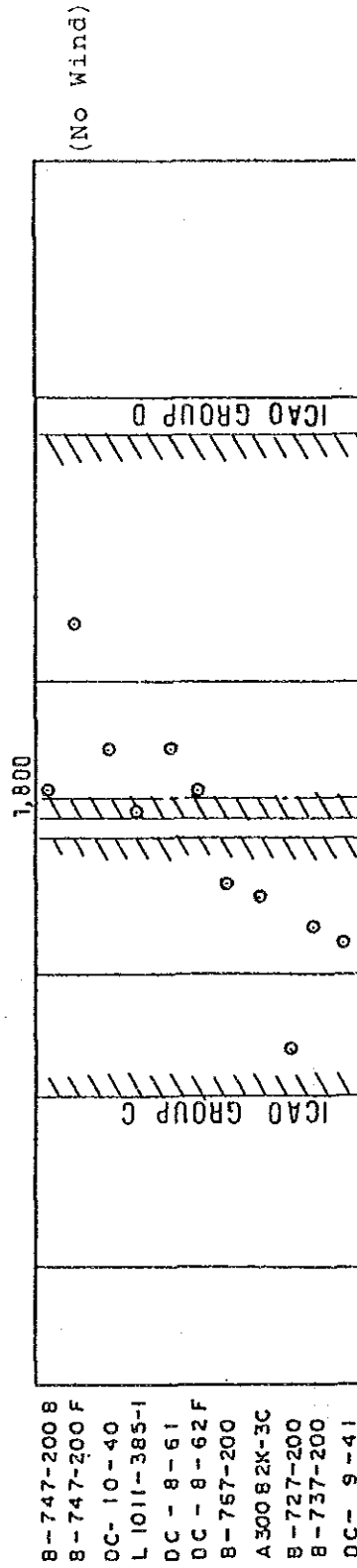
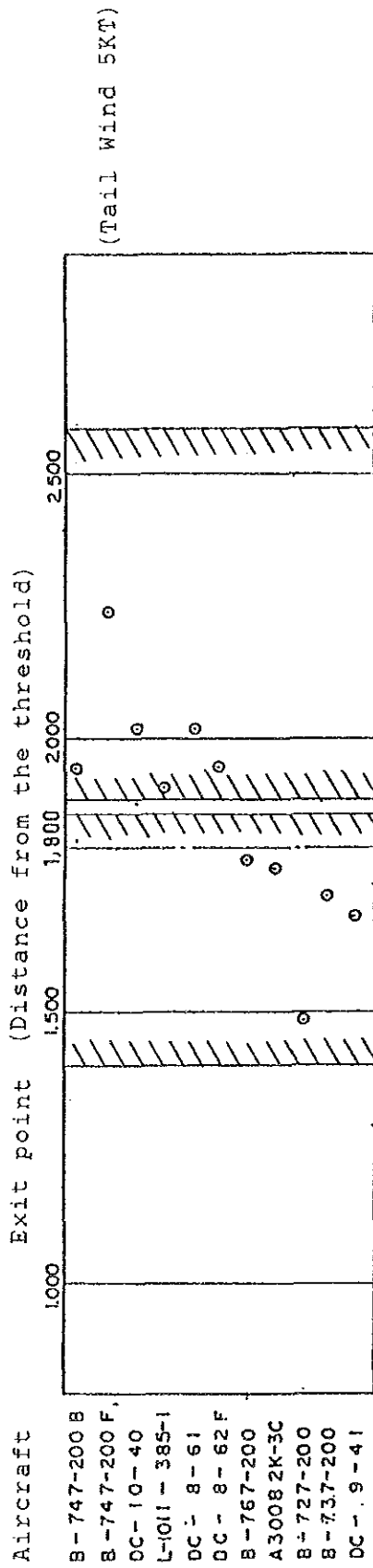


APPENDIX 5-2 (3)

Aircraft	a <sub>1</sub> (m/sec <sup>2</sup> )	a <sub>2</sub> (m/sec <sup>2</sup> )	S <sub>1</sub> (#)	V <sub>3</sub> (m/sec)	No Wind				Tail Wind 5 kt				Nose Wind 5 kt						
					V <sub>1</sub> (m/sec)	V <sub>2</sub> (m/sec)	S <sub>2</sub> (#)	S <sub>0</sub> (#)	V <sub>1</sub> (m/sec)	V <sub>2</sub> (m/sec)	S <sub>2</sub> (#)	S <sub>0</sub> (#)	V <sub>1</sub> (m/sec)	V <sub>2</sub> (m/sec)	S <sub>2</sub> (#)	S <sub>0</sub> (#)			
B-747-200B	0.88	1.52	450	25.7	72.9	67.2	1.268	1.718	1.810	75.5	70.1	1.399	1.849	1.948	70.3	64.4	1.147	1.597	1.683
B-747-200F	"	"	"	"	78.3	73.1	1.541	1.991	2.098	80.9	75.8	1.673	2.123	2.237	75.7	70.3	1.408	1.858	1.958
DC-10-40	"	"	"	"	74.2	68.7	1.335	1.785	1.880	76.8	71.5	1.464	1.914	2.017	71.6	65.8	1.207	1.657	1.746
L-1011-535-1	"	"	"	"	72.2	66.5	1.237	1.687	1.775	74.8	69.3	1.363	1.813	1.911	69.6	63.7	1.118	1.568	1.652
DC-8-61	"	"	"	"	74.2	68.7	1.335	1.785	1.880	76.8	71.5	1.464	1.914	2.017	71.6	65.8	1.207	1.657	1.746
DC-8-62F	"	"	"	"	72.9	67.2	1.268	1.718	1.810	75.5	70.1	1.399	1.849	1.948	70.3	64.4	1.147	1.597	1.683
B-767-200	"	"	"	"	69.6	63.7	1.118	1.568	1.652	72.2	66.5	1.237	1.687	1.777	67.0	60.8	999	1.449	1.527
A300B-2K-3C	"	"	"	"	69.2	63.2	1.097	1.547	1.630	71.8	66.1	1.220	1.670	1.760	66.6	60.4	983	1.433	1.510
B-727-200	"	"	"	"	63.5	58.9	848	1.298	1.368	66.1	59.8	959	1.409	1.485	60.9	54.0	742	1.192	1.256
B-737-200	"	"	"	"	68.2	62.1	1.051	1.501	1.582	70.8	65.0	1.173	1.623	1.710	65.6	59.3	939	1.389	1.463
DC-9-41	"	"	"	"	67.5	61.4	1.023	1.473	1.552	70.1	64.2	1.139	1.589	1.674	64.9	58.5	908	1.358	1.431
ICAO GROUP C (MIN)	"	"	"	"	62.2	55.5	795	1.245	1.289	64.8	58.4	905	1.355	1.403	59.6	52.6	692	1.142	1.183
ICAO GROUP C (MAX)	"	"	"	"	71.9	66.2	1.224	1.674	1.734	74.5	69.0	1.348	1.798	1.862	69.4	63.4	1.105	1.555	1.610
ICAO GROUP D (MIN)	"	"	"	"	72.5	66.8	1.252	1.702	1.763	75.1	69.6	1.377	1.827	1.892	69.9	64.0	1.131	1.581	1.637
ICAO GROUP D (MAX)	"	"	"	"	85.0	80.2	1.899	2.349	2.433	87.6	83.0	2.047	2.497	2.586	82.4	77.5	1.757	2.207	2.286

Remark: V<sub>1</sub> of no wind condition is got from the data of aircraft makers, and V<sub>1</sub> of other conditions are calculated based on V<sub>1</sub> of no wind condition.

APPENDIX 5-2 (4)



Appendix 5-3(1) Inflow Pearsons and Cars by Time Period

Time Period	Passenger	Sending off	Welcoming	Total Person	Cumulated Person	Taxi	Bus	Private Car	Total Car	Cumulated Car	Cumulated Taxi	Cumulated Bus	Cumulated Private Car
5:00	157	79	0	236	236	28	1	31	61	61	28	1	31
6:00	543	271	0	814	1,050	98	5	108	211	272	126	7	139
7:00	543	212	240	1,055	2,105	127	7	140	273	544	253	13	279
8:00	615	308	160	1,083	3,188	130	7	143	280	824	383	20	472
9:00	499	250	280	1,029	4,217	123	6	136	266	1,091	506	26	558
10:00	295	148	80	523	4,740	63	3	69	135	1,226	569	30	627
11:00	454	228	380	1,062	5,802	127	7	141	275	1,500	696	36	768
12:00	671	337	340	1,348	7,150	162	8	178	349	1,849	858	45	946
13:00	540	271	140	951	8,101	114	6	126	246	2,095	972	51	1,072
14:00	438	220	140	798	8,899	96	5	106	206	2,301	1,068	56	1,178
15:00	435	218	320	973	9,872	117	6	129	252	2,553	1,185	62	1,307
16:00	412	207	320	939	10,811	113	6	124	243	2,796	1,297	68	1,431
17:00	396	198	20	614	11,425	74	4	81	159	2,955	1,371	71	1,512
18:00	324	163	380	867	12,292	104	5	115	224	3,179	1,475	77	1,627
19:00	217	109	300	625	12,918	75	4	83	162	3,341	1,550	81	1,710
20:00	2	1	60	63	12,981	8	0	8	16	3,357	1,558	81	1,718
21:00	0	0	40	40	13,021	5	0	5	10	3,367	1,563	81	1,723
22:00	0	0	80	80	13,101	10	1	11	21	3,388	1,572	82	1,734
23:00	0	0	0	0	13,101	0	0	0	0	3,388	1,572	82	1,734
24:00	0	0	0	0	13,101	0	0	0	0	3,388	1,572	82	1,734

Table Outflow Pearsons and Cars by Time Period

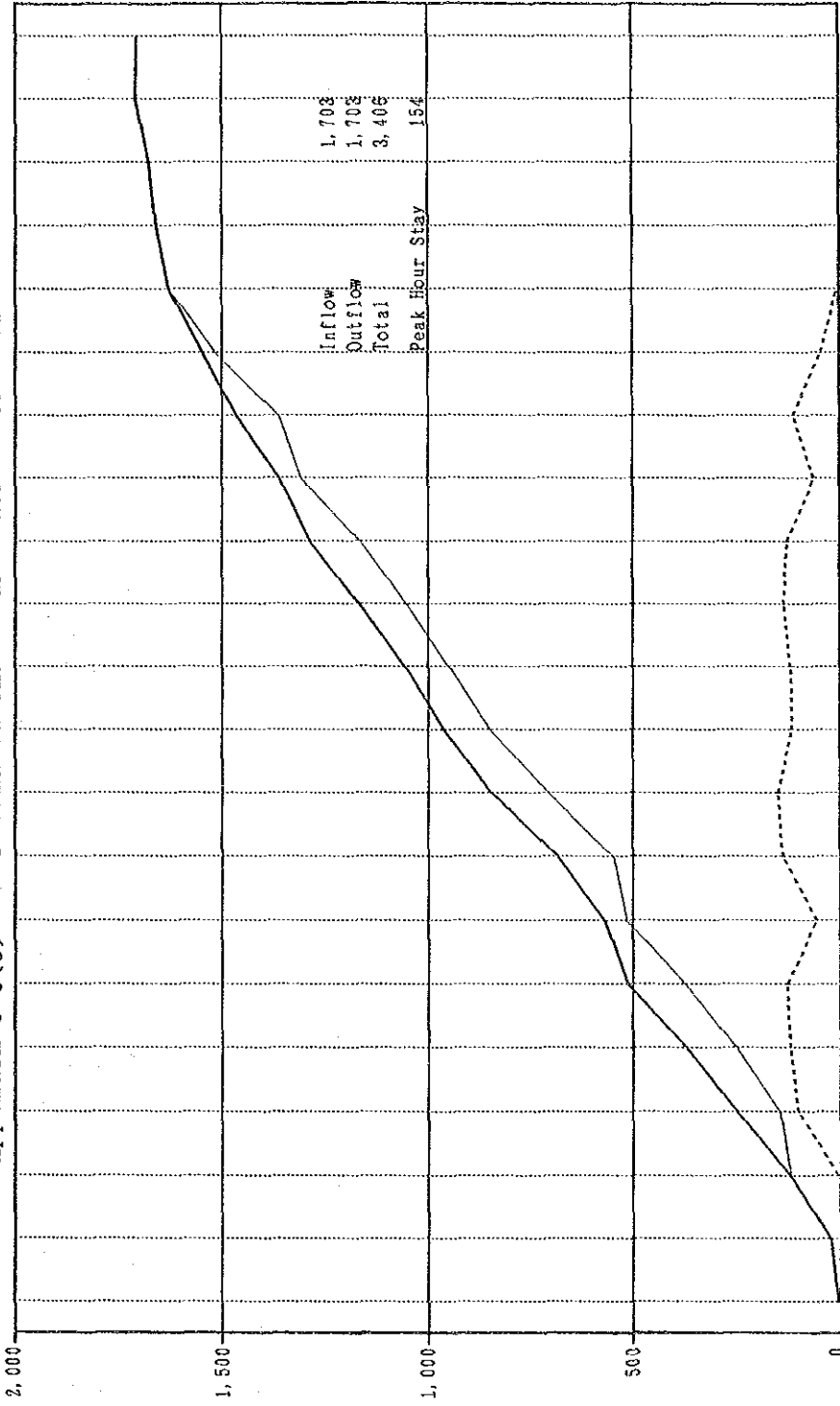
Time Period	Passenger	Sending off	Welcoming	Total Person	Cumulated Person	Taxi	Bus	Private Car	Total Car	Cumulated Car	Cumulated Taxi	Cumulated Bus	Cumulated Private Car
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00	0	200	0	200	200	24	1	26	52	52	24	1	26
8:00	412	320	206	938	1,138	113	6	124	243	294	137	7	151
9:00	462	300	232	994	2,132	119	6	132	257	551	256	13	282
10:00	475	360	237	1,072	3,204	129	7	142	277	829	384	20	424
11:00	178	100	90	368	3,572	44	2	49	95	924	429	22	473
12:00	735	140	368	1,243	4,815	149	8	165	321	1,245	578	30	637
13:00	617	390	309	1,305	6,121	157	8	173	338	1,583	735	38	810
14:00	350	260	176	786	6,907	94	5	104	203	1,786	829	43	914
15:00	351	290	176	807	7,714	97	5	107	209	1,995	926	48	1,021
16:00	548	180	275	1,003	8,717	120	6	133	259	2,254	1,046	54	1,154
17:00	598	240	300	1,138	9,855	137	7	151	294	2,549	1,183	62	1,304
18:00	194	220	97	511	10,366	61	3	68	132	2,681	1,244	65	1,372
19:00	693	160	347	1,200	11,566	144	8	159	310	2,991	1,388	72	1,531
20:00	547	140	273	960	12,526	115	6	127	248	3,239	1,503	78	1,658
21:00	171	0	84	255	12,781	31	2	34	66	3,305	1,534	80	1,692
22:00	79	0	40	119	12,900	14	1	16	31	3,336	1,548	81	1,707
23:00	160	0	80	240	13,140	29	2	32	62	3,399	1,577	82	1,739
24:00	2	0	1	3	13,143	0	0	0	1	3,399	1,577	82	1,740



Appendix 5-3(2) Inflow, Outflow of Cars and Staying Cars by Time Period

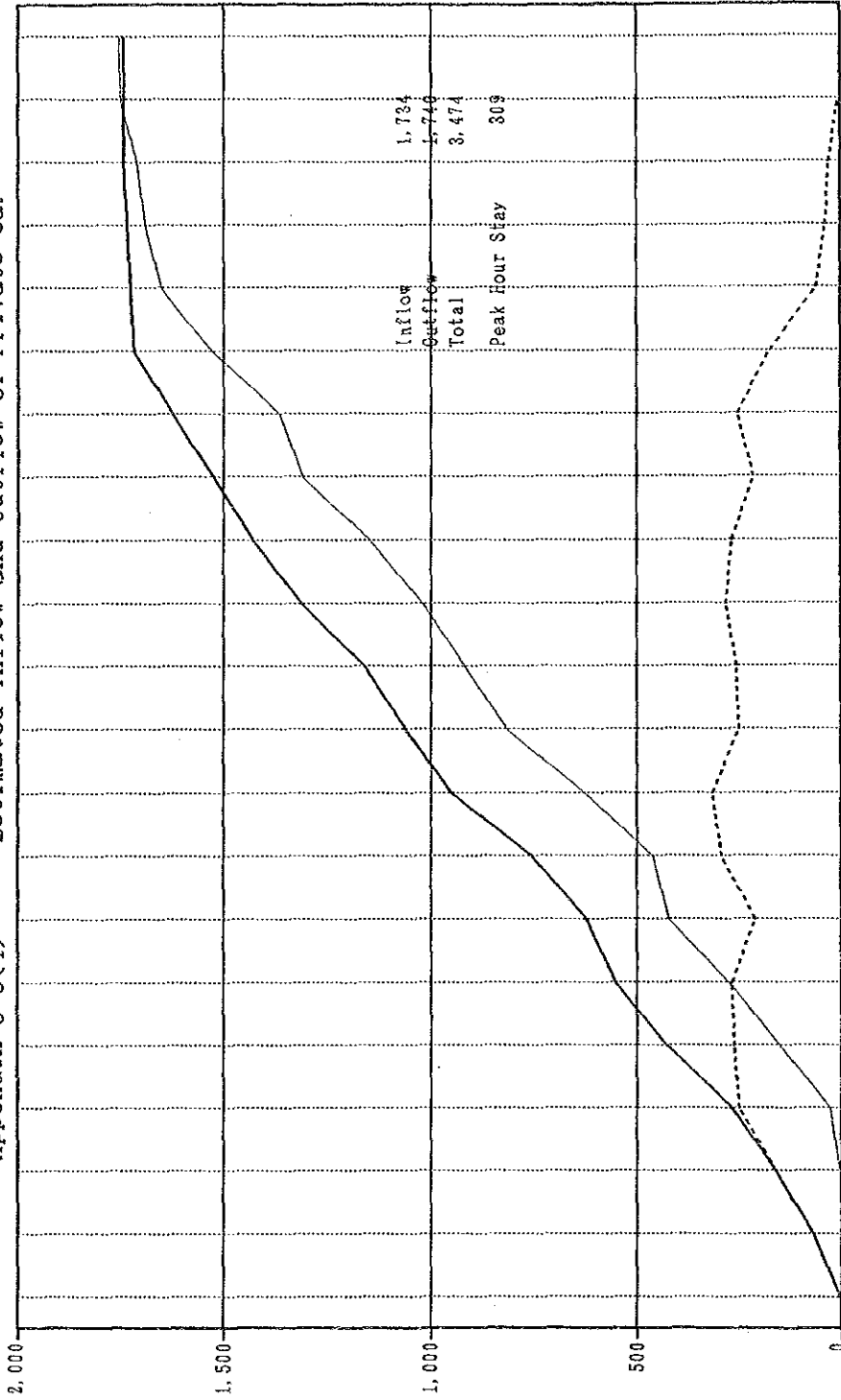
Time Period	Taxi Inflow	Taxi Outflow	Staying Taxi	Bus Inflow	Bus Outflow	Staying Bus	Private Car Inflow	Private Car Outflow	Staying Private Car
5:00	28	28	0	1	0	1	31	0	31
6:00	126	126	0	7	0	7	139	0	139
7:00	253	150	103	13	1	12	279	26	253
8:00	383	263	120	20	7	13	422	151	271
9:00	506	382	124	27	13	14	558	282	276
10:00	569	510	59	30	20	10	627	424	203
11:00	696	555	141	36	22	14	768	473	295
12:00	858	704	154	45	30	15	946	637	309
13:00	972	861	111	51	38	13	1,072	810	262
14:00	1,068	955	113	56	43	13	1,178	914	264
15:00	1,185	1,052	133	62	48	14	1,307	1,021	286
16:00	1,297	1,172	125	68	54	14	1,431	1,154	277
17:00	1,371	1,309	62	72	62	10	1,512	1,304	208
18:00	1,475	1,370	105	77	65	12	1,627	1,372	255
19:00	1,550	1,514	36	81	72	9	1,710	1,531	179
20:00	1,629	1,629	0	81	78	3	1,718	1,658	60
21:00	1,660	1,660	0	81	80	1	1,723	1,692	31
22:00	1,674	1,674	0	82	81	1	1,734	1,707	27
23:00	1,703	1,703	0	82	82	0	1,734	1,739	-5
24:00	1,703	1,703	0	82	82	0	1,734	1,740	-6

Appendix 5-3(3) Estimated Inflow and Outflow of Taxi



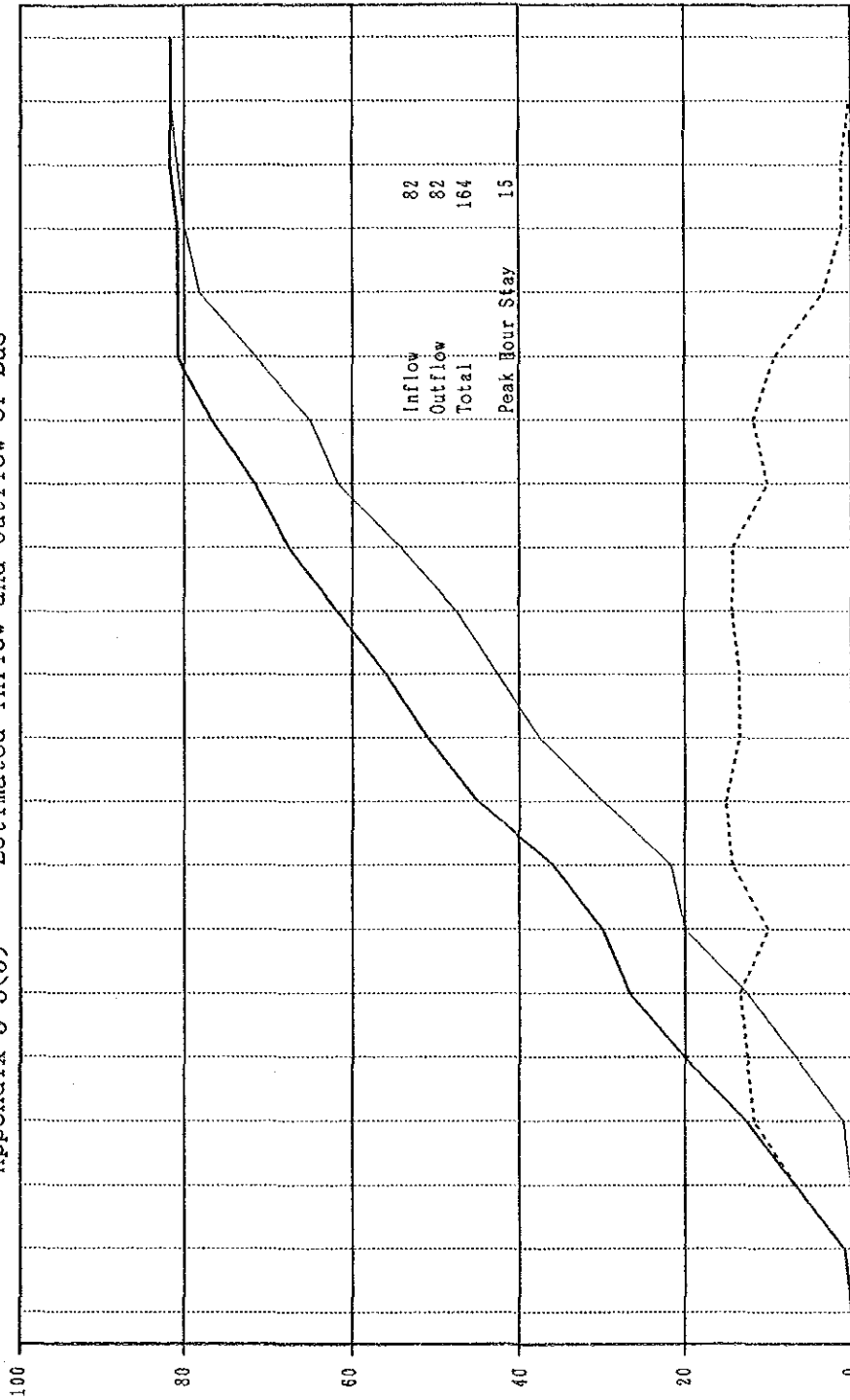
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
— Inflow	0	28	126	258	383	508	569	696	858	972	1,068	1,185	1,297	1,371	1,475	1,550	1,629	1,660	1,674	1,703	1,703
--- Outflow	0	28	126	150	263	382	510	555	704	861	955	1,052	1,172	1,309	1,370	1,514	1,629	1,660	1,674	1,703	1,703
--- Stay	0	0	0	103	120	124	59	141	154	114	118	132	125	62	105	88	0	0	0	0	0

Appendix 5-3(4) Estimated Inflow and Outflow of Private Car



	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
--- Inflow	0	31	139	279	422	558	627	758	946	1,072	1,178	1,307	1,431	1,512	1,627	1,710	1,718	1,728	1,734	1,734	1,734
--- Outflow	0	0	0	26	151	282	424	473	637	810	914	1,021	1,154	1,304	1,372	1,531	1,658	1,692	1,707	1,733	1,740
--- Stay	0	31	139	253	271	276	203	295	309	262	254	288	277	208	253	179	60	31	27	0	0

Appendix 5-3(5) Estimated Inflow and Outflow of Bus



	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
— Inflow	0	1	7	13	20	27	30	36	45	51	56	62	68	72	77	81	81	81	82	82	82	82
--- Outflow	0	0	0	1	7	13	20	22	30	38	43	48	54	62	65	72	78	80	81	82	82	82
--- Stay	0	1	7	12	13	14	10	14	15	13	13	14	14	10	12	9	3	1	1	0	0	0



Appendix 5-4 WATER CONSUMPTION QUANTITIES

Facility Name	Scale	Water Consumption Units	Water Consumption Quantities
Passenger Terminal Building	4,100,000 pax./year	76 l/pax. year	311,600 m <sup>3</sup> /y
Aircraft Maintenance Facility	14,000 m <sup>2</sup>	4 m <sup>3</sup> /m <sup>2</sup> . year	56,000
Canteen, Staff Housing, Catering, etc.	27,500 m <sup>2</sup>	6 m <sup>3</sup> /m <sup>2</sup> . year	165,000
Fire Fighting Bld.	1,500 m <sup>2</sup>	5 m <sup>3</sup> /m <sup>2</sup> . year	7,500
Office/Others	43,300 m <sup>2</sup>	2 m <sup>3</sup> /m <sup>2</sup> . year	86,600
Total			626,700

Annual Water Consumption  
 $626,700 \times 1.1 = 689,370 \text{ === } 690,000 \text{ m}^3$

Mean Daily Water Consumption  
 $689,370 \div 365 = 1,889 \text{ === } 2,000 \text{ m}^3$

Appendix 5-5 TRASH DISPOSAL QUANTITIES

Total Facility Scale: 113,300 m<sup>2</sup>

Trash Disposal Units: 30 kg/m<sup>2</sup>.year

Trash Disposal Quantities (Annual)

$113,300 \times 30 \times 1.1 = 3,738,900 \text{ (kg)} \text{ === } \underline{\underline{3,800,000 \text{ (kg)}}}$

Mean Daily Trash Quantities

$3,800,000 \div 365 = 10,410 \text{ kg} \text{ === } \underline{\underline{11,000 \text{ kg}}}$

Appendix 5-6 COMPARISON OF FUEL TRANSPORT SYSTEM FROM  
OIL TERMINAL TO AIRPORT FUEL DEPOT

ITEM	PIPELINE SYSTEM	TANK LORRY SYSTEM
1. Quality Control		
- Water mixing chance	few	comparatively many
- Elimination of mixed water	easy	comparatively difficult
- Filtration of impurity	easy	comparatively difficult
- Stability	good	inferior to pipeline system
2. Safety Control		
- Danger for ignition	low	high
- Static electricity	no charge	high possibility to charge
- Grounding	good	poor
3. Transfer Operation		
- Fuel transfer	continuous and stability	intermittent and instability
- Road traffic condition	no influenced	great influenced
4. Maintenance	easy	not so easy
5. Cost		
- Initial	high	low
- Operation	low	high
VALUATION	good	poor

Appendix 5-7 COMPARISON OF AIRCRAFT FUELING SYSTEM

ITEM	HYDRANT SYSTEM	REFUELER SYSTEM
1. Quality Control		
- Water mixing chance	few	comparatively many
- Elimination of mixed water	easy	comparatively difficult
- Filtration of impurity	easy	comparatively difficult
- Stability	good	inferior to hydrant system
2. Safety Control		
- Danger for ignition	low	high
- Static electricity	no charge	high possibility to charge
- Grounding	good	poor
3. Fueling Operation		
- Fueling to aircraft	continuous and stability	intermittent and instability
- Fueling time	short	long
- Space requirement on apron	few	many
- Number of operator	few	many
- Workability	simple	complicated
- Control of flow rate and pressure for aircraft	easy	not so easy
4. Maintenance	easy	not so easy
5. Cost		
- Initial	high	low
- Operation	low	high
VALUATION	good	poor



Air-route	Average Flight Time (H)	Aircraft Types	Numbers of Dpt. Flights (Flt/Year)	Fuel Consumption units (kl/H)	Fuel Consumption quantities (kl/H)
GUANGZHOU	1.4	200s	6,158/2	6.5	28,019
SHANGHAI	1.3	200s	4,180/2	6.5	17,661
BEIJING	1.8	200s	3,192/2	6.5	18,673
FUZHOU	1.4	150s	818/2	4.5	2,577
NANJING	0.9	150s	1,490/2	4.5	3,017
HANGZHOU	1.4	150s	878/2	4.5	2,766
HEFEI	0.7	150s	776/2	4.5	1,222
XIAN	1.3	150s	680/2	4.5	1,989
XIAMEN	2.1	100s	472/2	3.0	1,487
SHENYANG	2.4	150s	428/2	4.5	2,311
CHENGDU	1.8	150s	420/2	4.5	1,701
DALIAN	2.2	150s	278/2	4.5	1,376
GUILIN	1.3	150s	458/2	4.5	1,340
CHONGQING	1.4	150s	606/2	4.5	1,909
NANCHANG	0.7	150s	596/2	4.5	939
JINAN	1.4	150s	456/2	4.5	1,436
ZHENGZHOU	0.9	150s	548/2	4.5	1,110
TIANIJIN	1.7	150s	856/2	4.5	3,274
HARBIN	3.0	150s	226/2	4.5	1,526
CHANGSHA	0.7	150s	606/2	4.5	954
TAIYUAN	1.4	150s	410/2	4.5	1,292
YICHANG	1.0	50s	884/2	1.0	442
SHASHI	0.8	50s	840/2	1.0	336

Appendix 5-8 (2) ANNUAL FUEL CONSUMPTION QUANTITIES FOR AIRCRAFT

Air-route	Average Flight Time (H)	Aircraft Types	Numbers of Dpt. Flights (Flt/Year)	Fuel Consumption units (kl/H)	Fuel Consumption quantities (kl/H)
ENSHI	1.5	50s	820/2	1.0	615
XIANGFAN	1.1	50s	860/2	1.0	473
HAIKOU/ SANYA	2.4	100s	226/2	3.0	814
KUNMING	2.4	100s	314/2	3.0	1,130
LANZHOU	2.3	100s	304/2	3.0	1,049
URUMQI	4.0	150s	104/2	4.5	936
QINGDAO	2.1	100s	308/2	3.0	970
NANNING	2.0	100s	258/2	3.0	774
SHENZHEN	1.8	100s	298/2	3.0	805
XINING	2.5	100s	130/2	3.0	488
YANTAI	2.3	100s	124/2	3.0	428
GUIYANG	1.8	100s	380/2	3.0	1,026
HONG KONG	1.7	200s	1,282/2	6.5	7,083
Total					113,948

Annual Fuel Consumption

$$113,948 \times 1.1 = 125,343 \text{ === } \underline{\underline{126,000 \text{ (kl)}}}$$

Mean Daily Fuel Consumption

$$125,434 \div 365 = 343 \text{ === } \underline{\underline{350 \text{ (kl)}}}$$

LPG CONSUMPTION QUANTITIES

LPG Supply Facility	Facility Scale	LPG Consumption Units	LPG Consumption Quantities
Passenger Terminal Building	27,000 (m <sup>2</sup> )	5.8 (kg/m <sup>2</sup> .Year)	156,600 (kg/Year)
Employee's residence	1,925 (houses)	15 x 12 (kg/house.Year)	346,500
Total			503,100

## Note:

## Employee's residence

CAAC	1,362 (employee)
Airport authority	1,320
Airline	1.169
Total	<u>3,851</u>

Married men ----- 50%  
 $3.851 \times 0.5 = \underline{1925}$

Annual LPG Consumption  
 $503,100 \times 1.1 = 553,410 \text{ kg} === \underline{560,000 \text{ kg}}$

Mean Daily LPG Consumption  
 $560,000 \div 365 = 1,534 \text{ kg} === \underline{1,600 \text{ kg}}$

COOLING LOAD CAPACITIES

FACILITY NAME	SCALE m <sup>2</sup>	COOLING LOAD UNITS Kcal/m <sup>2</sup> .h.	COOLING LOAD CAPACITIES Kcal/h.
Passenger Terminal Building	27,000	135	3,645,000
Aircraft Mainte.	14,000	50	700,000
Control Tower	3,000	100	300,000
Catering Facility	2,000	100	200,000
Airfield Admin.Bld.	2,000	100	200,000
Pilot & Crew Room	3,000	130	390,000
Medical Check and Health Control	500	130	65,000
Clinic Office	800	130	104,000
Other Facilities	4,300	100	430,000
Total			6,034,000

## Cooling Load Capacities

$$6,034,000 \times 1.1 \approx 6,700,000 \text{ Kcal/H (2,220 RT)}$$

HEATING LOAD CAPACITIES

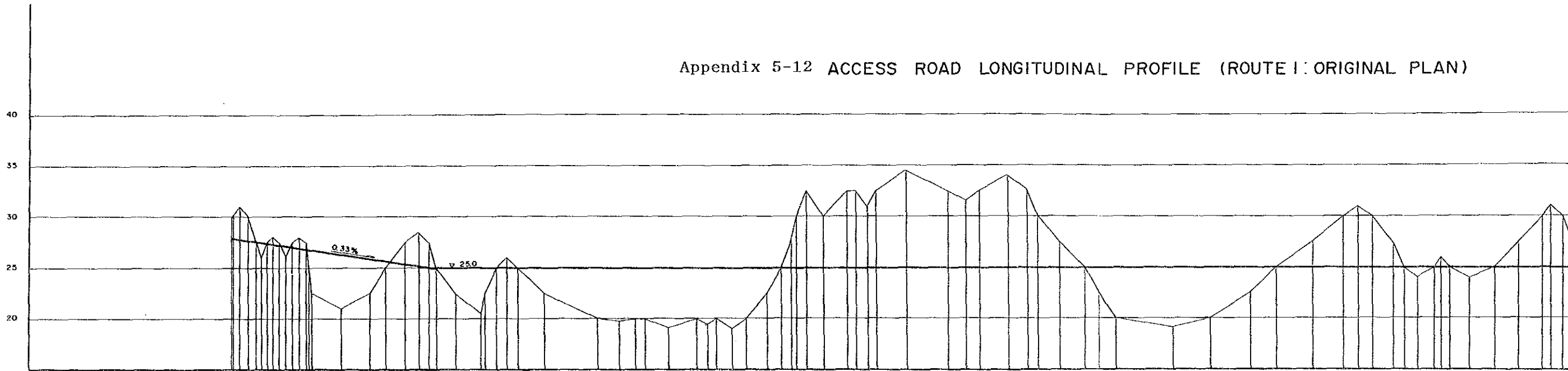
FACILITY NAME	SCALE m <sup>2</sup>	HEATING LOAD UNITS Kcal/m <sup>2</sup> .h.	HEATING LOAD CAPACITIES Kcal/h.
Passenger Terminal Building	27,000	95	2,565,000
Aircraft Mainte.	14,000	65	910,000
Fire Fighting and Rescue Station	1,500	100	150,000
Admin. Building	4,000	100	400,000
ATC & MET Facility	3,000	100	300,000
Catering Facility	2,000	310	620,000
Airfield Admin.	2,000	100	200,000
Pilot & Crew Room	3,000	100	300,000
Other Facilities	13,100	100	1,310,000
Total			6,755,000

Heating Load Capacities

6,755,000 x 1.1 = 7,500,000 Kcal/H

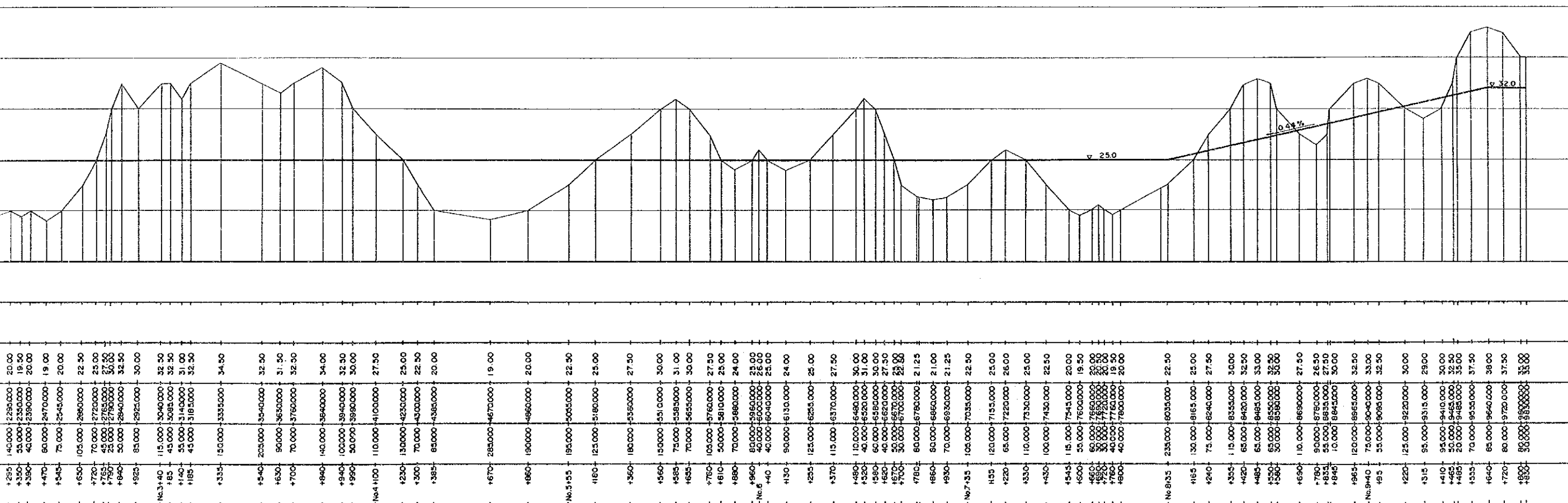
Appendix 5-12 ACCESS ROAD LONGITUDINAL PROFILE (ROUTE 1: ORIGINAL PLAN)

ELEVATION (m)

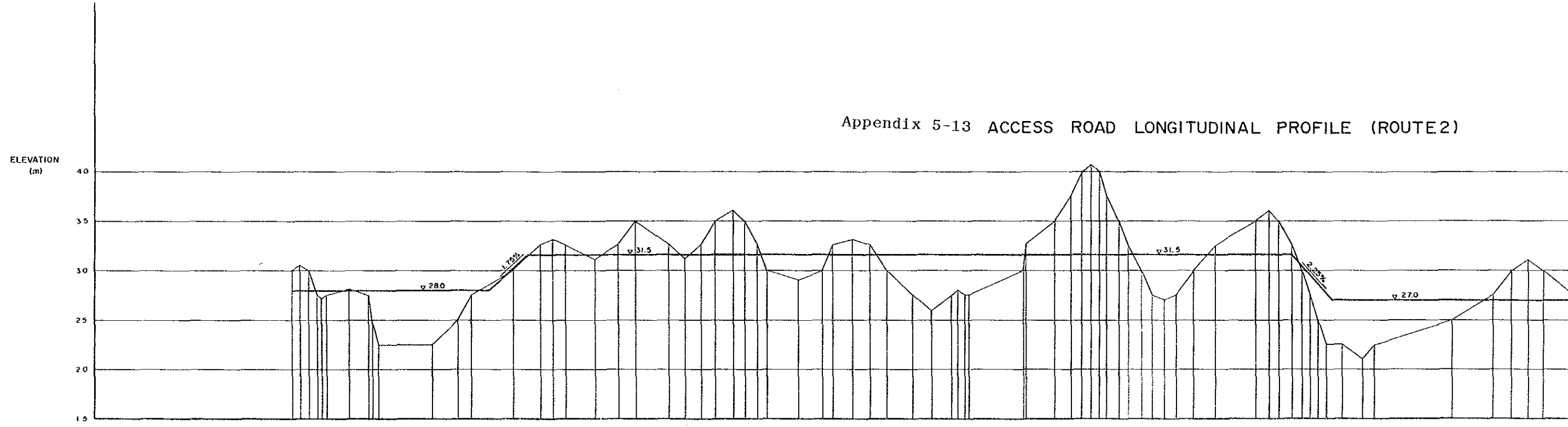


No.	SECTION ACCUMULATED DISTANCE	GROUND ELEVATION	PLANNING ELEVATION
No. 0	0+00	30.00	
+10	10+00	31.00	
+20	20+00	27.50	
+30	30+00	27.50	
+40	40+00	27.50	
+50	50+00	27.50	
+60	60+00	27.50	
+70	70+00	27.50	
+80	80+00	27.50	
+90	90+00	27.50	
+100	100+00	27.50	
+110	110+00	27.50	
+120	120+00	27.50	
+130	130+00	27.50	
+140	140+00	27.50	
+150	150+00	27.50	
+160	160+00	27.50	
+170	170+00	27.50	
+180	180+00	27.50	
+190	190+00	27.50	
+200	200+00	27.50	
+210	210+00	27.50	
+220	220+00	27.50	
+230	230+00	27.50	
+240	240+00	27.50	
+250	250+00	27.50	
+260	260+00	27.50	
+270	270+00	27.50	
+280	280+00	27.50	
+290	290+00	27.50	
+300	300+00	27.50	
+310	310+00	27.50	
+320	320+00	27.50	
+330	330+00	27.50	
+340	340+00	27.50	
+350	350+00	27.50	
+360	360+00	27.50	
+370	370+00	27.50	
+380	380+00	27.50	
+390	390+00	27.50	
+400	400+00	27.50	
+410	410+00	27.50	
+420	420+00	27.50	
+430	430+00	27.50	
+440	440+00	27.50	
+450	450+00	27.50	
+460	460+00	27.50	
+470	470+00	27.50	
+480	480+00	27.50	
+490	490+00	27.50	
+500	500+00	27.50	
+510	510+00	27.50	
+520	520+00	27.50	
+530	530+00	27.50	
+540	540+00	27.50	
+550	550+00	27.50	
+560	560+00	27.50	
+570	570+00	27.50	
+580	580+00	27.50	
+590	590+00	27.50	
+600	600+00	27.50	
+610	610+00	27.50	
+620	620+00	27.50	
+630	630+00	27.50	
+640	640+00	27.50	
+650	650+00	27.50	
+660	660+00	27.50	
+670	670+00	27.50	
+680	680+00	27.50	
+690	690+00	27.50	
+700	700+00	27.50	
+710	710+00	27.50	
+720	720+00	27.50	
+730	730+00	27.50	
+740	740+00	27.50	
+750	750+00	27.50	
+760	760+00	27.50	
+770	770+00	27.50	
+780	780+00	27.50	
+790	790+00	27.50	
+800	800+00	27.50	
+810	810+00	27.50	
+820	820+00	27.50	
+830	830+00	27.50	
+840	840+00	27.50	
+850	850+00	27.50	
+860	860+00	27.50	
+870	870+00	27.50	
+880	880+00	27.50	
+890	890+00	27.50	
+900	900+00	27.50	
+910	910+00	27.50	
+920	920+00	27.50	
+930	930+00	27.50	
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+960	960+00	27.50	
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+980	980+00	27.50	
+990	990+00	27.50	
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+1050	1050+00	27.50	
+1060	1060+00	27.50	
+1070	1070+00	27.50	
+1080	1080+00	27.50	
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+1100	1100+00	27.50	
+1110	1110+00	27.50	
+1120	1120+00	27.50	
+1130	1130+00	27.50	
+1140	1140+00	27.50	
+1150	1150+00	27.50	
+1160	1160+00	27.50	
+1170	1170+00	27.50	
+1180	1180+00	27.50	
+1190	1190+00	27.50	
+1200	1200+00	27.50	
+1210	1210+00	27.50	
+1220	1220+00	27.50	
+1230	1230+00	27.50	
+1240	1240+00	27.50	
+1250	1250+00	27.50	
+1260	1260+00	27.50	
+1270	1270+00	27.50	
+1280	1280+00	27.50	
+1290	1290+00	27.50	
+1300	1300+00	27.50	
+1310	1310+00	27.50	
+1320	1320+00	27.50	
+1330	1330+00	27.50	
+1340	1340+00	27.50	
+1350	1350+00	27.50	
+1360	1360+00	27.50	
+1370	1370+00	27.50	
+1380	1380+00	27.50	
+1390	1390+00	27.50	
+1400	1400+00	27.50	
+1410	1410+00	27.50	
+1420	1420+00	27.50	
+1430	1430+00	27.50	
+1440	1440+00	27.50	
+1450	1450+00	27.50	
+1460	1460+00	27.50	
+1470	1470+00	27.50	
+1480	1480+00	27.50	
+1490	1490+00	27.50	
+1500	1500+00	27.50	
+1510	1510+00	27.50	
+1520	1520+00	27.50	
+1530	1530+00	27.50	
+1540	1540+00	27.50	
+1550	1550+00	27.50	
+1560	1560+00	27.50	
+1570	1570+00	27.50	
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+1590	1590+00	27.50	
+1600	1600+00	27.50	
+1610	1610+00	27.50	
+1620	1620+00	27.50	

Appendix 5-12 ACCESS ROAD LONGITUDINAL PROFILE (ROUTE 1 ORIGINAL PLAN)



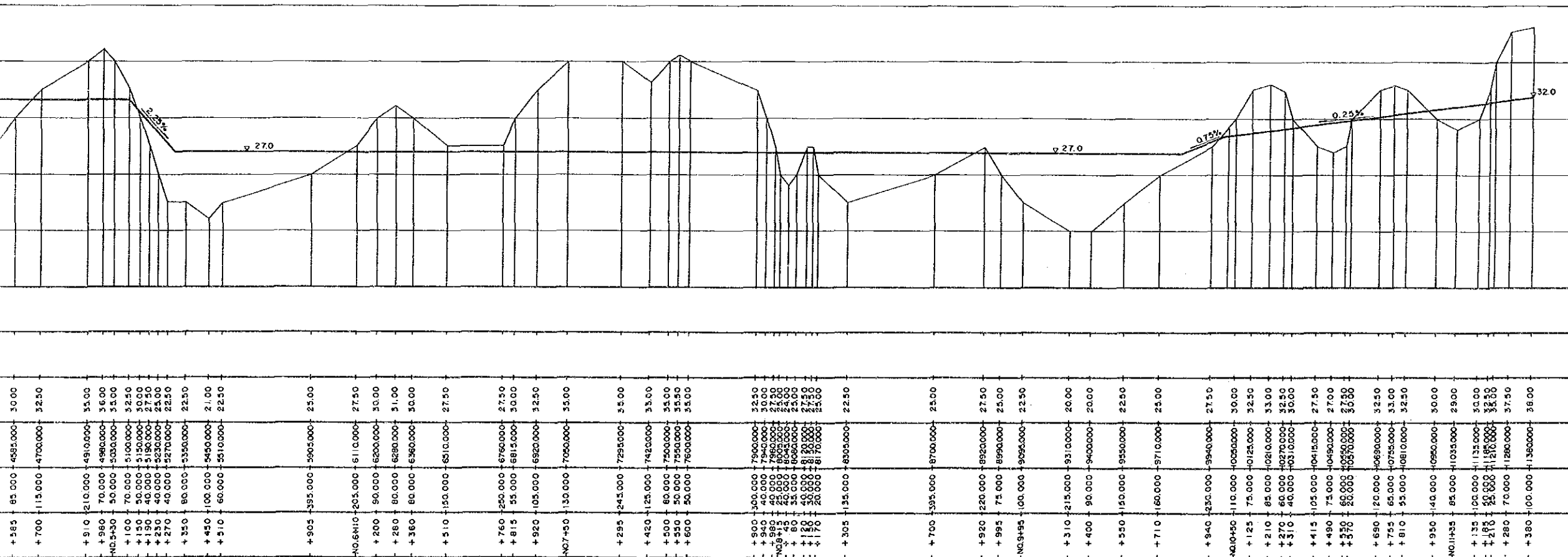
Appendix 5-13 ACCESS ROAD LONGITUDINAL PROFILE (ROUTE 2)



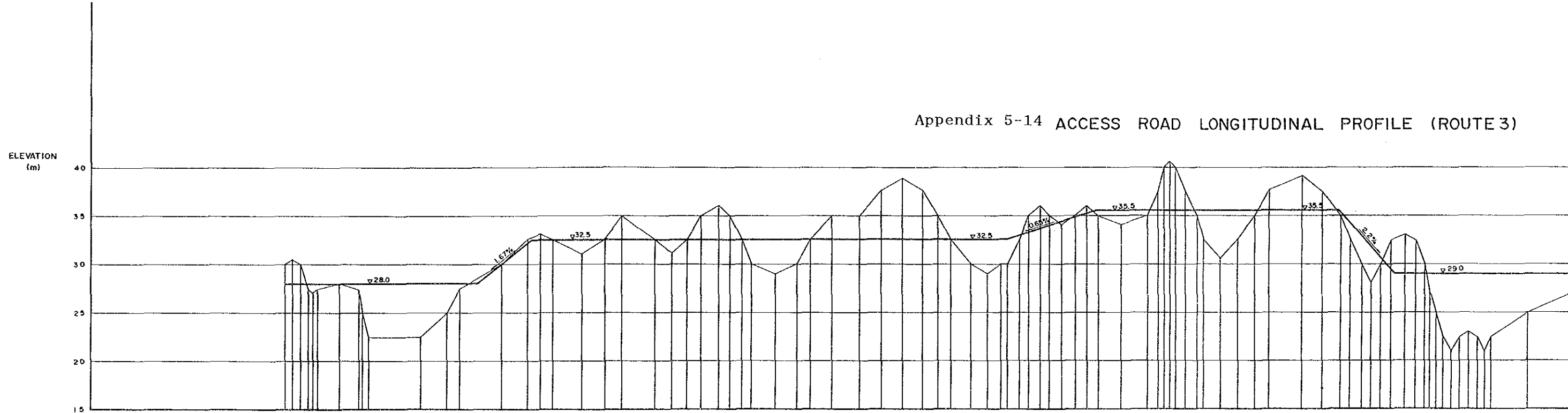
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+ 85	45.000	85000	30.00	
+ 125	50.000	125000	27.50	
+ 180	55.000	180000	27.50	
+ 285	105.000	285000	28.00	
+ 385	100.000	385000	27.50	
+ 425	80.000	425000	28.50	
+ 710	275.000	710000	22.50	
+ 840	130.000	840000	25.00	
+ 910	70.000	910000	27.50	
NO. 1	210.000	1120000	30.00	
+ 260	140.000	1260000	32.50	
+ 325	65.000	1325000	35.00	
+ 390	65.000	1390000	32.50	
+ 540	150.000	1540000	31.00	
+ 665	125.000	1665000	32.50	
+ 750	85.000	1750000	35.00	
+ 920	170.000	1920000	32.50	
NO. 2	85.000	2005000	31.00	
+ 85	80.000	2085000	32.50	
+ 155	70.000	2155000	35.00	
+ 250	95.000	2250000	36.00	
+ 310	60.000	2310000	35.00	
+ 370	60.000	2370000	32.50	
+ 420	50.000	2420000	30.00	
+ 575	155.000	2575000	29.00	
+ 695	20.000	2695000	30.00	
+ 750	55.000	2750000	32.50	
+ 850	100.000	2850000	33.00	
+ 940	90.000	2940000	32.50	
NO. 3	85.000	3025000	30.00	
+ 160	135.000	3160000	27.50	
+ 235	95.000	3255000	26.00	
+ 350	100.000	3355000	27.50	
+ 390	55.000	3390000	28.00	
+ 425	35.000	3425000	27.50	
+ 445	20.000	3445000	27.50	
+ 730	270.000	3715000	30.00	
+ 750	15.000	3730000	32.50	
+ 880	150.000	3880000	35.00	
+ 965	85.000	3965000	37.50	
NO. 4	20	55.000	4020000	40.00
+ 65	45.000	4065000	40.50	
+ 105	50.000	4105000	40.00	
+ 140	55.000	4145000	37.50	
+ 210	70.000	4210000	35.00	
+ 235	45.000	4255000	32.50	
+ 320	85.000	4320000	30.00	
+ 380	60.000	4380000	27.50	
+ 440	60.000	4440000	27.00	
+ 500	60.000	4500000	27.50	
+ 585	85.000	4585000	30.00	
+ 700	115.000	4700000	32.50	
+ 910	210.000	4910000	35.00	
+ 980	70.000	4980000	36.00	
NO. 5	50.000	5030000	35.00	
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+ 150	50.000	5150000	30.00	
+ 190	40.000	5190000	28.00	
+ 270	40.000	5270000	22.50	
+ 350	80.000	5350000	22.50	
+ 450	100.000	5450000	21.00	
+ 510	60.000	5510000	22.50	
+ 905	285.000	5905000	25.00	
NO. 6	110	205.000	6110000	27.50
+ 200	90.000	6200000	30.00	
+ 280	80.000	6280000	31.00	
+ 360	80.000	6360000	30.00	
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LONGITUDINAL PROFILE (ROUTE 2)

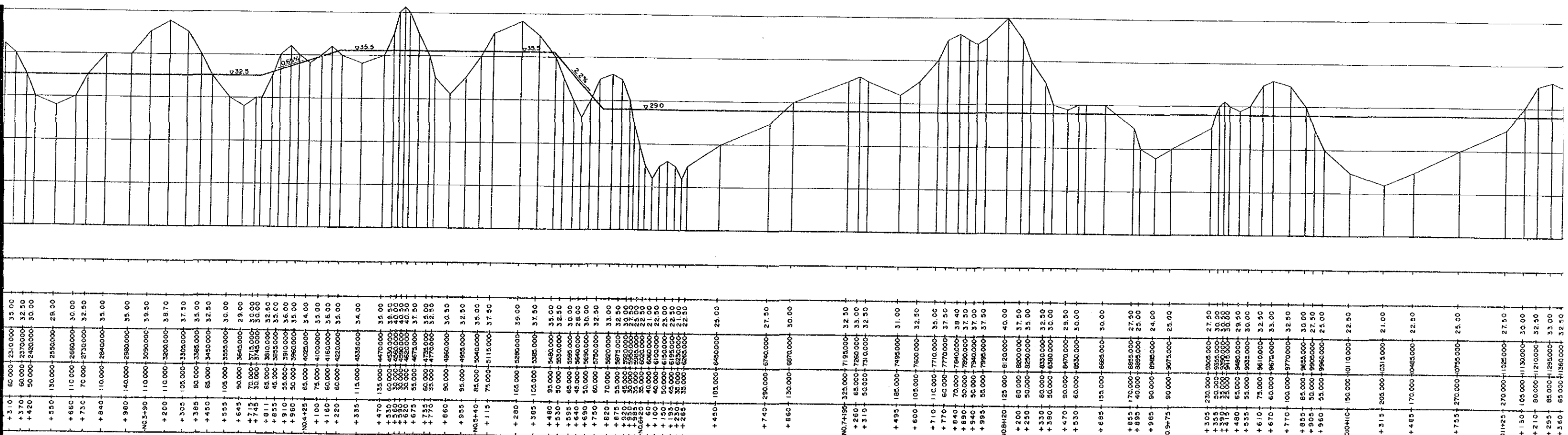


Appendix 5-14 ACCESS ROAD LONGITUDINAL PROFILE (ROUTE 3)



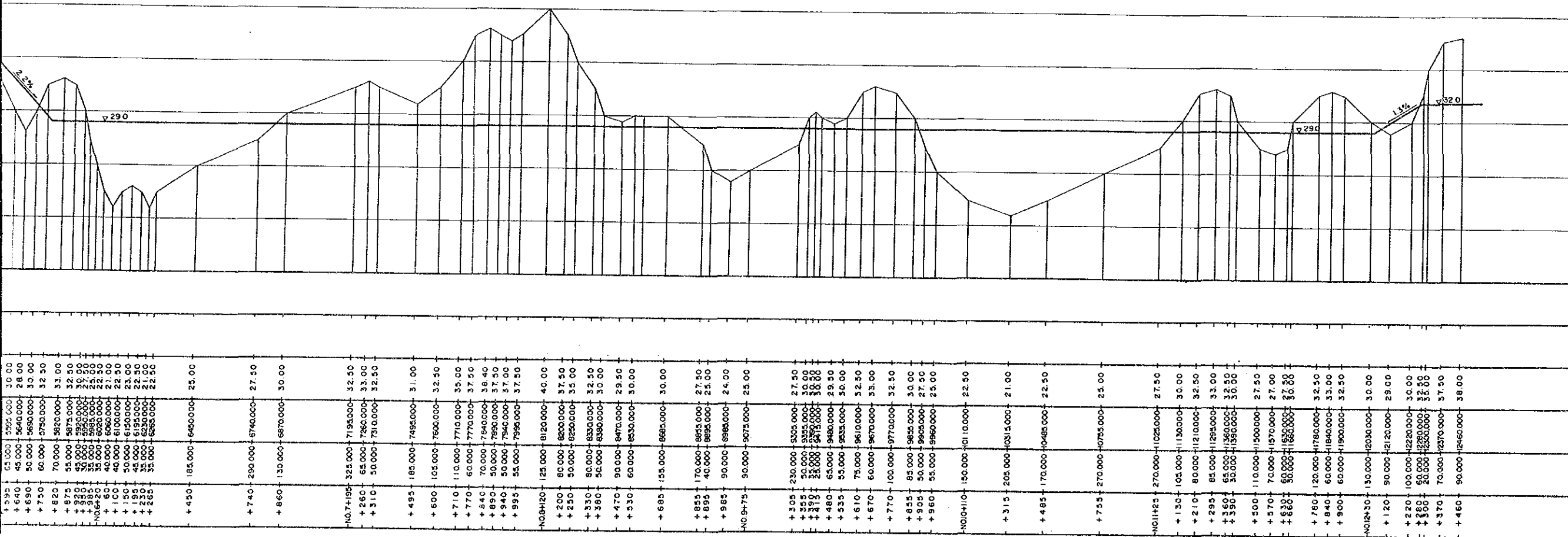
No.	SECTION DISTANCE	SECTION DISTANCE	GROUND ELEVATION	PLANNING ELEVATION
+0.0	40.000	40.000	30.00	30.00
+0.5	40.000	40.000	30.00	30.00
+1.0	40.000	40.000	27.50	27.50
+1.5	40.000	40.000	27.50	27.50
+2.85	105.000	265.000	28.00	28.00
+3.85	100.000	385.000	27.50	27.50
+4.35	30.000	435.000	22.50	22.50
+7.10	275.000	710.000	22.50	22.50
+8.40	130.000	840.000	25.00	25.00
+9.10	70.000	910.000	27.50	27.50
NO.120	210.000	1120.000	30.00	30.00
+2.60	140.000	1260.000	32.50	32.50
+3.25	65.000	1325.000	33.00	33.00
+3.90	65.000	1390.000	32.50	32.50
+5.40	150.000	1540.000	31.00	31.00
+6.65	125.000	1665.000	32.50	32.50
+7.50	85.000	1750.000	35.00	35.00
+9.20	170.000	1920.000	32.50	32.50
NO.2+5	85.000	2005.000	31.00	31.00
+8.5	80.000	2085.000	32.50	32.50
+1.55	70.000	2155.000	35.00	35.00
+2.50	95.000	2250.000	36.00	36.00
+3.10	60.000	2310.000	35.00	35.00
+3.70	60.000	2370.000	32.50	32.50
+4.20	50.000	2420.000	30.00	30.00
+5.50	130.000	2550.000	29.00	29.00
+6.60	110.000	2660.000	30.00	30.00
+7.30	70.000	2730.000	32.50	32.50
+8.40	110.000	2840.000	35.00	35.00
+9.80	140.000	2980.000	35.00	35.00
NO.3+90	110.000	3090.000	39.50	39.50
+2.00	110.000	3200.000	38.70	38.70
+3.05	105.000	3305.000	37.50	37.50
+3.95	80.000	3385.000	35.00	35.00
+4.50	65.000	3450.000	32.50	32.50
+5.55	105.000	3555.000	30.00	30.00
+6.45	90.000	3645.000	29.00	29.00
+7.15	70.000	3715.000	30.00	30.00
+7.45	30.000	3745.000	30.00	30.00
+8.11	65.000	3810.000	32.50	32.50
+8.55	45.000	3855.000	35.00	35.00
+9.10	55.000	3910.000	36.00	36.00
+9.60	50.000	3960.000	35.00	35.00
NO.4+25	65.000	4025.000	34.00	34.00
+1.00	75.000	4100.000	35.00	35.00
+1.60	60.000	4160.000	36.00	36.00
+2.20	60.000	4220.000	35.00	35.00
+3.25	115.000	4335.000	34.00	34.00
+4.70	135.000	4470.000	35.00	35.00
+5.00	450.000	4500.000	39.50	39.50
+5.30	30.000	4530.000	40.50	40.50
+6.20	30.000	4620.000	40.50	40.50
+6.75	55.000	4675.000	37.50	37.50
+7.35	60.000	4735.000	35.00	35.00
+7.70	35.000	4770.000	32.50	32.50
+8.60	90.000	4860.000	30.50	30.50
+9.55	95.000	4955.000	32.50	32.50
NO.5+40	65.000	5040.000	35.00	35.00
+1.15	75.000	5115.000	37.50	37.50
+2.80	165.000	5280.000	39.00	39.00
+3.85	105.000	5385.000	37.50	37.50
+4.80	95.000	5480.000	35.00	35.00
+5.30	50.000	5530.000	32.50	32.50
+5.95	65.000	5595.000	30.00	30.00
+6.40	45.000	5640.000	28.00	28.00
+6.90	50.000	5690.000	30.00	30.00
+7.50	60.000	5750.000	32.50	32.50
+8.20	70.000	5820.000	33.00	33.00
+8.75	55.000	5875.000	32.50	32.50
+9.20	45.000	5920.000	30.00	30.00
+9.55	35.000	5955.000	27.00	27.00
NO.6+20	35.000	6020.000	22.50	22.50
+6.0	40.000	6060.000	21.00	21.00
+1.00	40.000	6100.000	22.50	22.50
+1.50	30.000	6150.000	23.00	23.00
+2.00	45.000	6200.000	27.00	27.00
+2.55	35.000	6255.000	22.50	22.50
+4.50	185.000	6440.000	25.00	25.00

Appendix 5-14 ACCESS ROAD LONGITUDINAL PROFILE (ROUTE 3)



+310	50,000	2310,000	35.00
+370	50,000	2370,000	32.50
+420	50,000	2420,000	30.00
+550	130,000	2550,000	29.00
+650	110,000	2660,000	30.00
+730	70,000	2730,000	32.50
+840	110,000	2840,000	35.00
+980	140,000	2980,000	35.00
NO.3+90	110,000	3090,000	39.50
+200	110,000	3200,000	38.70
+305	105,000	3305,000	37.50
+385	90,000	3385,000	35.00
+450	65,000	3450,000	32.50
+535	105,000	3555,000	30.00
+645	90,000	3645,000	29.00
+715	70,000	3715,000	30.00
+745	50,000	3745,000	30.00
+811	65,000	3810,000	32.50
+855	45,000	3855,000	35.00
+910	55,000	3910,000	35.00
+960	50,000	3960,000	35.00
NO.4+25	65,000	4025,000	34.00
+100	75,000	4100,000	35.00
+160	60,000	4160,000	35.00
+220	60,000	4220,000	35.00
+335	115,000	4335,000	34.00
+470	135,000	4470,000	35.00
+510	50,000	4520,000	38.00
+530	50,000	4570,000	40.50
+580	50,000	4620,000	40.50
+675	55,000	4675,000	37.50
+735	60,000	4735,000	35.00
+770	55,000	4770,000	32.50
+860	90,000	4860,000	30.50
+955	95,000	4955,000	32.50
NO.5+40	85,000	5040,000	35.00
+115	75,000	5115,000	37.50
+280	165,000	5280,000	39.00
+385	105,000	5385,000	37.50
+480	95,000	5480,000	35.00
+530	50,000	5530,000	32.50
+595	65,000	5595,000	30.00
+640	45,000	5640,000	28.00
+690	50,000	5690,000	30.00
+750	60,000	5750,000	32.50
+820	70,000	5820,000	33.00
+875	95,000	5875,000	32.50
+930	50,000	5930,000	30.00
+980	55,000	5985,000	25.00
NO.6+50	55,000	6040,000	25.00
+100	40,000	6100,000	23.50
+150	50,000	6150,000	25.00
+195	45,000	6195,000	22.50
+230	35,000	6230,000	21.00
+285	35,000	6285,000	22.50
+450	185,000	6450,000	25.00
+740	290,000	6740,000	27.50
+860	130,000	6870,000	30.00
NO.7+195	325,000	7195,000	32.50
+260	65,000	7260,000	33.00
+310	50,000	7310,000	32.50
+495	185,000	7495,000	31.00
+600	105,000	7600,000	32.50
+710	110,000	7710,000	35.00
+770	60,000	7770,000	37.50
+840	70,000	7840,000	38.40
+890	50,000	7890,000	37.50
+940	50,000	7940,000	37.00
+995	55,000	7995,000	37.50
NO.8+20	125,000	8120,000	40.00
+200	80,000	8200,000	37.50
+250	50,000	8250,000	35.00
+330	60,000	8330,000	32.50
+380	50,000	8380,000	30.00
+470	50,000	8470,000	29.50
+530	60,000	8530,000	30.00
+685	155,000	8685,000	30.00
+855	170,000	8855,000	27.50
+895	40,000	8895,000	25.00
+965	90,000	8985,000	24.00
NO.9+75	90,000	9075,000	25.00
+305	230,000	9305,000	27.50
+355	50,000	9355,000	30.00
+375	25,000	9380,000	30.00
+480	65,000	9445,000	29.50
+535	55,000	9500,000	30.00
+610	75,000	9575,000	32.50
+670	60,000	9635,000	33.00
+770	100,000	9735,000	32.50
+855	85,000	9820,000	30.00
+905	50,000	9870,000	27.50
+960	35,000	9905,000	25.00
NO.10+10	190,000	10100,000	22.50
+315	205,000	10315,000	21.00
+485	170,000	10485,000	22.50
+755	270,000	10755,000	25.00
NO.11+25	270,000	11025,000	27.50
+130	105,000	11130,000	30.00
+210	80,000	11210,000	32.50
+295	85,000	11295,000	33.00
+360	65,000	11360,000	32.50

PROFILE (ROUTE 3)





**APPENDIX 6**



Appendix 6-1 Grading Area for LLZ Antenna Site

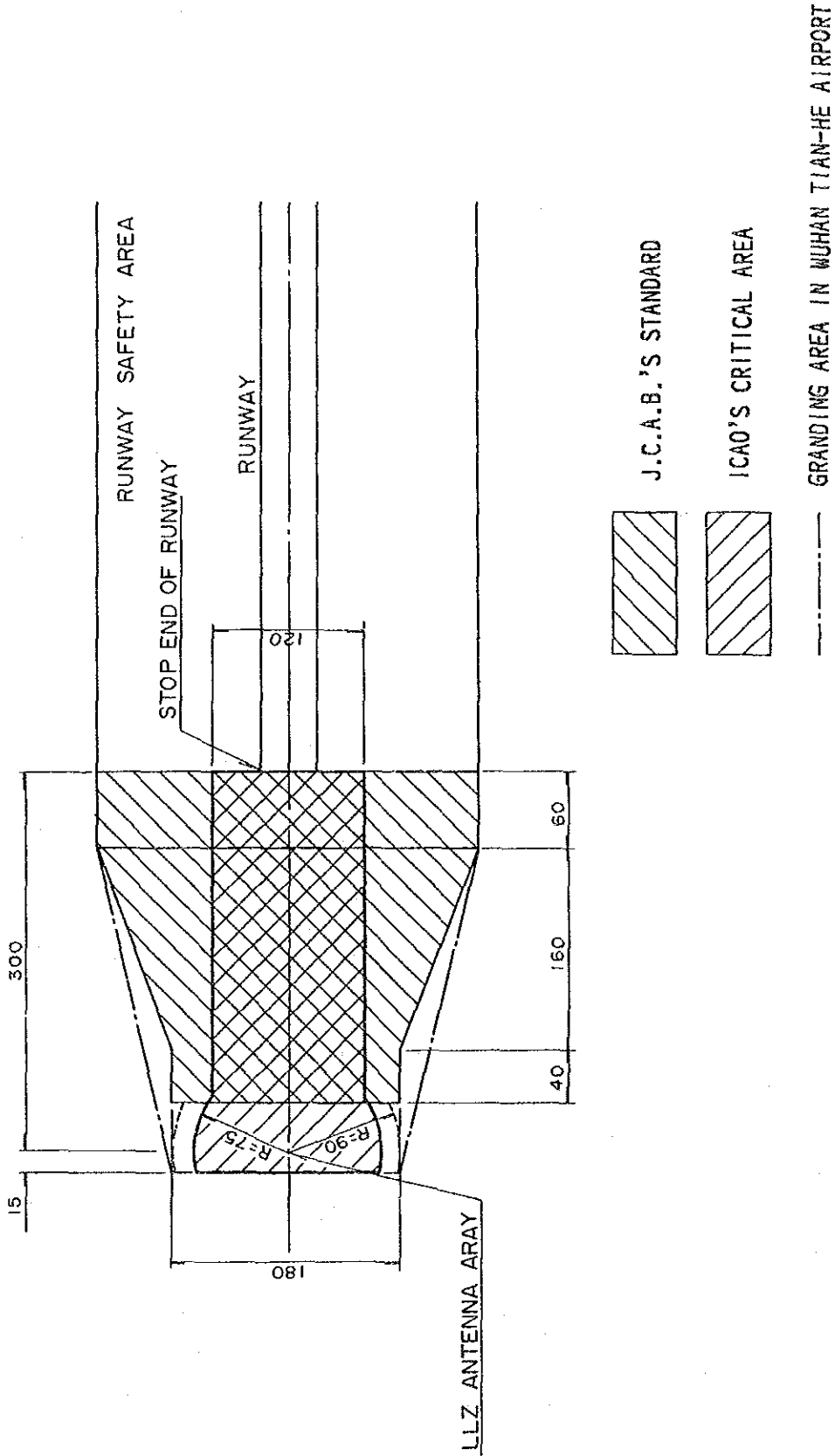


Fig. GRADING AREA FOR LLZ ANTENNA SITE



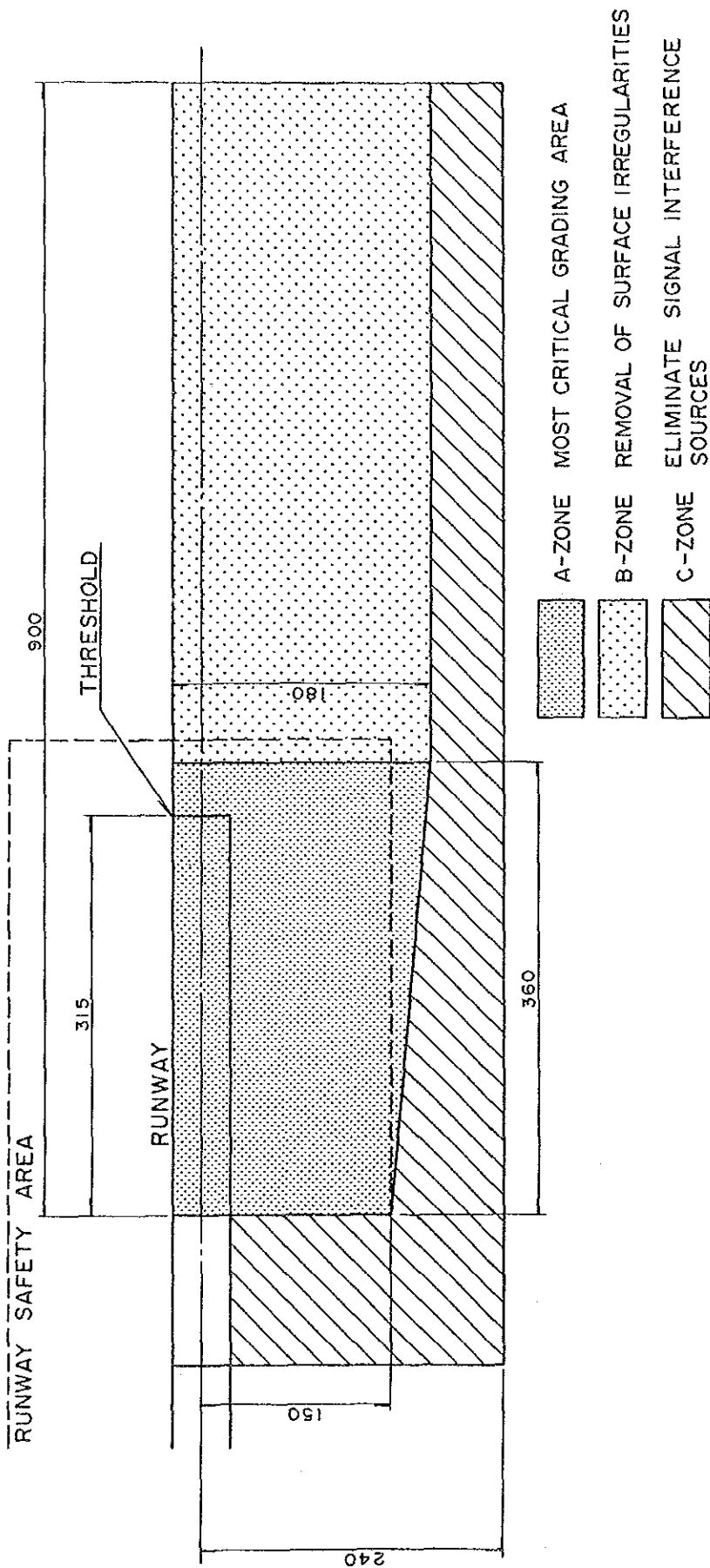


Fig FAA's STANDARD OF G.S. ANTENNA SITE

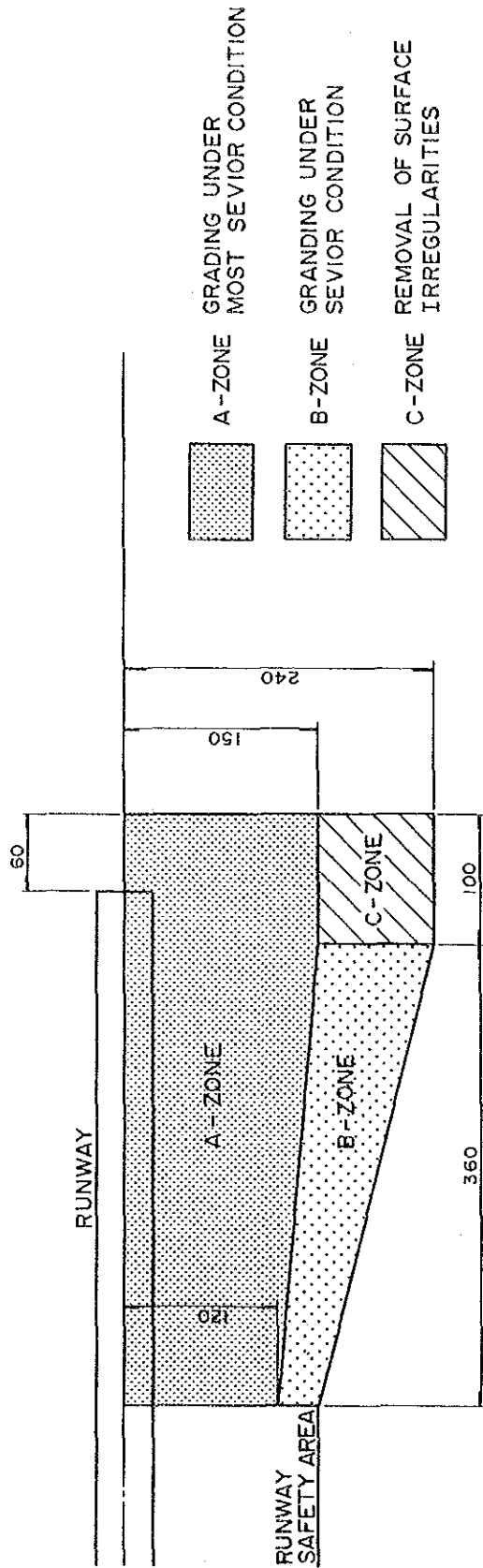


Fig THE J.C.A.B.'s STANDARD OF GRADING FOR G.S. ANTENNA SITE (CAT-1)

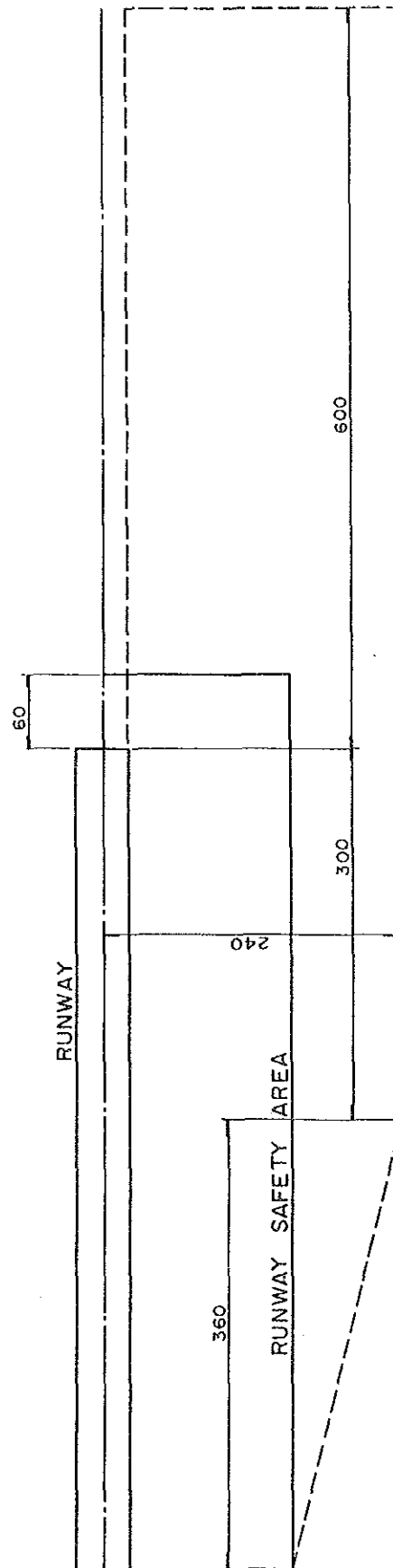
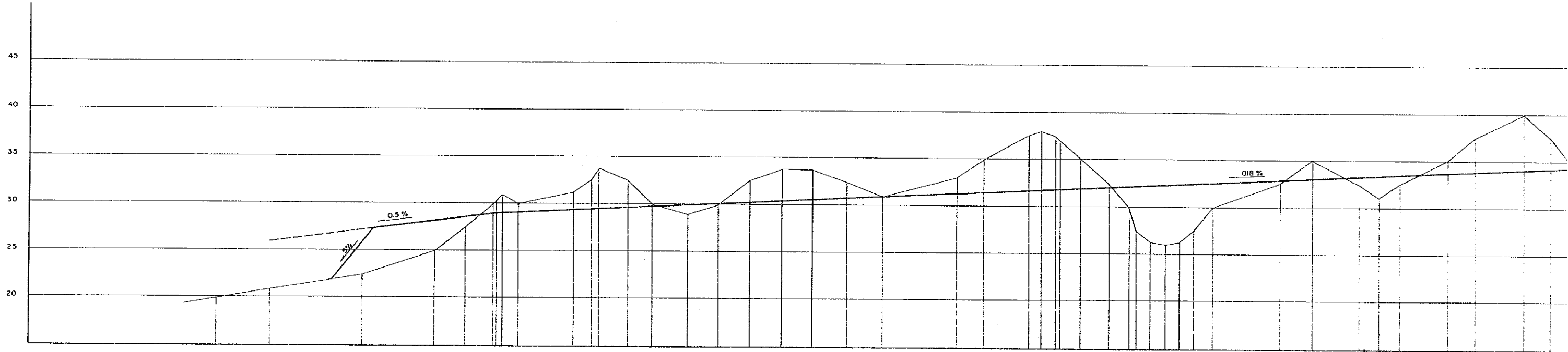


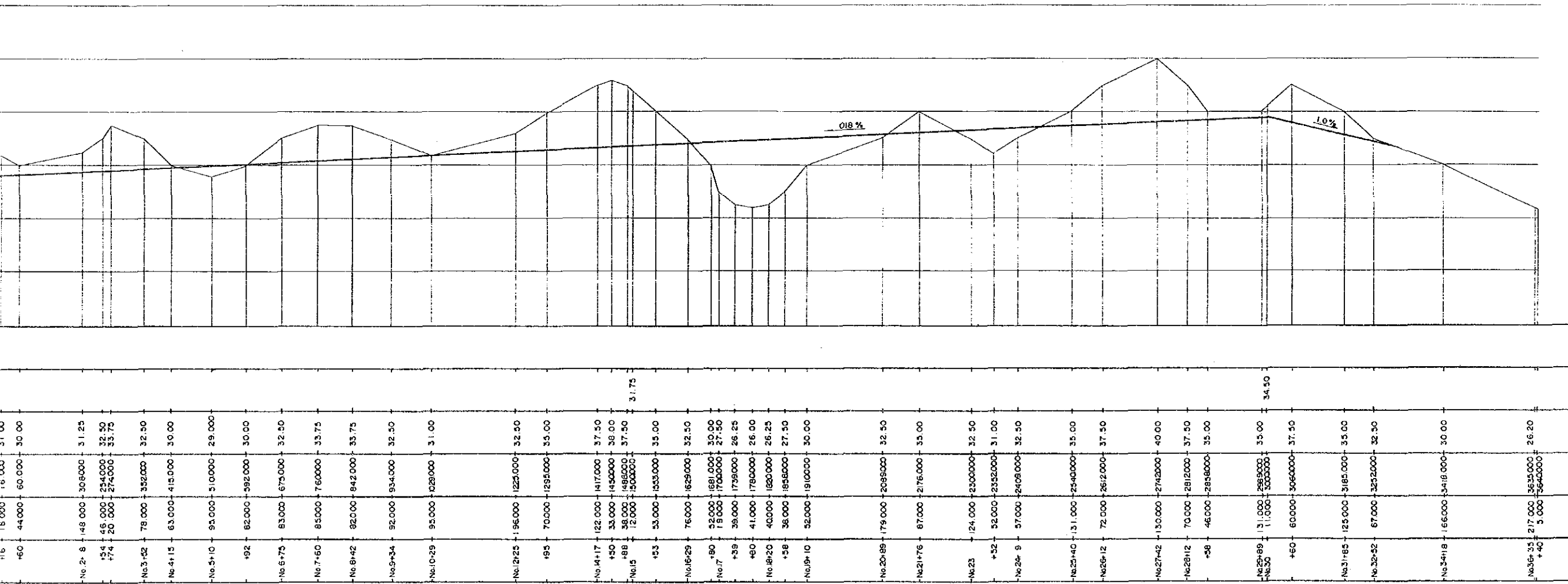
Fig AN EXAMPLE OF G.S. ANTENNA SITE FOR CAT-II IN JAPAN (UNDER CONSTRUCTION)  
TOKYO AIRPORT OFF-SHORE DEVELOPMENT

# ORIGINAL RUNWAY LONGITUDINAL PROFILE



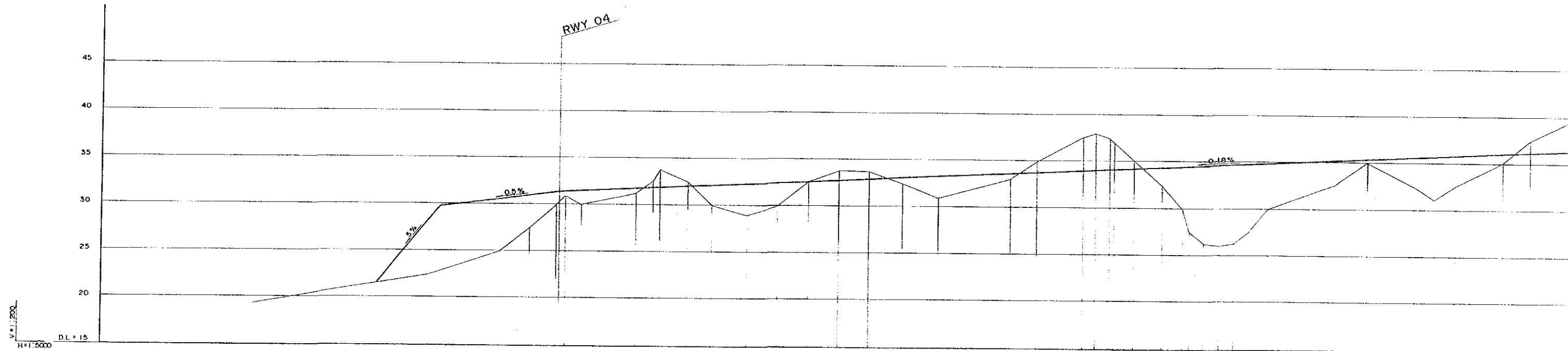
No.	SECTION	ACCUMULATE	GROUND	PLANNING
		DISTANCE	ELEVATION	ELEVATION
No. 7-42	142,000	742,000	20.00	
No. 6	246,000	600,000		
No. 3-54	192,000	354,000	24.50	
No. 1-62	82,000	162,000	25.00	
No. 0-80	72,000	80,000	27.50	
No. 0-8	8,000	8,000	30.00	29.00
+16	16,000	16,000	31.00	
+60	44,000	60,000	30.00	
No. 2-8	148,000	308,000	31.25	
+54	15,000	254,000	32.50	
+174	20,000	274,000	33.75	
No. 3-82	78,000	332,000	32.50	
No. 4-12	63,000	415,000	30.00	
No. 5-10	95,000	510,000	29.000	
+92	82,000	592,000	30.00	
No. 6-75	83,000	675,000	32.50	
No. 7-60	65,000	760,000	33.75	
No. 8-42	82,000	842,000	33.75	
No. 9-34	92,000	934,000	32.50	
No. 10-29	95,000	1,029,000	31.00	
No. 12-25	196,000	1,225,000	32.50	
+95	70,000	1,295,000	35.00	
No. 14-17	122,000	1,417,000	37.50	
+50	33,000	1,450,000	38.00	
+68	38,000	1,488,000	37.50	31.75
No. 15	12,000	1,500,000		
+53	53,000	1,553,000	35.00	
No. 16-29	76,000	1,629,000	32.50	
+60	52,000	1,681,000	30.00	
No. 17	19,000	1,700,000	27.50	
+39	39,000	1,739,000	26.25	
+60	41,000	1,780,000	26.00	
No. 18-20	40,000	1,820,000	26.25	
+58	36,000	1,856,000	27.50	
No. 19-10	52,000	1,910,000	30.00	
No. 20-89	179,000	2,089,000	32.50	
No. 21-76	87,000	2,176,000	35.00	
No. 23	124,000	2,300,000	32.50	
+52	52,000	2,352,000	31.00	
No. 24-9	57,000	2,409,000	32.50	
No. 25-10	131,000	2,540,000	35.00	
No. 26-12	72,000	2,612,000	37.50	
No. 27-42	130,000	2,742,000	40.00	
No. 28-12	70,000	2,812,000	37.50	

ORIGINAL RUNWAY LONGITUDINAL PROFILE



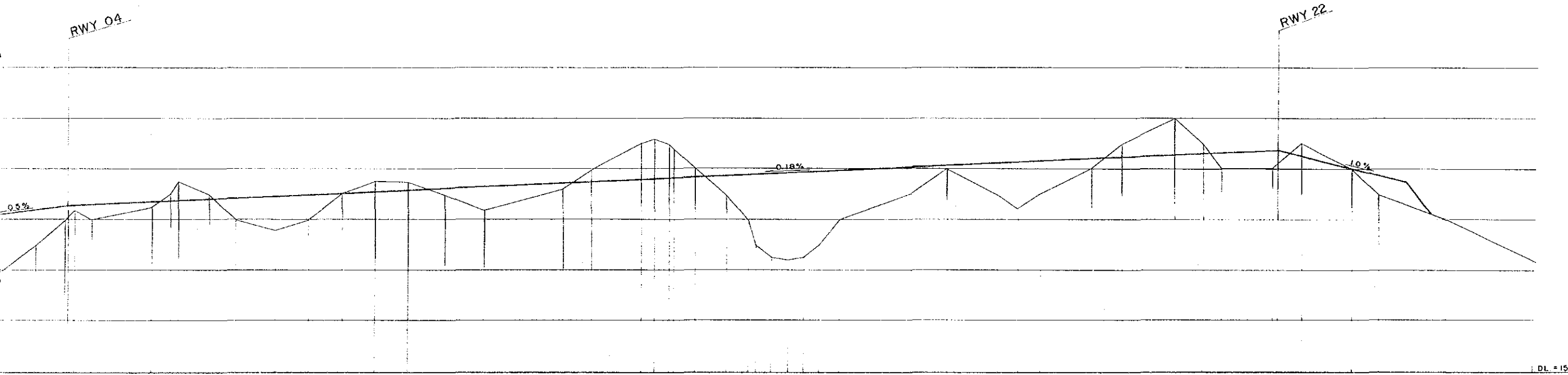
Appendix 6-4 Original Runway Longitudinal Profile

# MODIFIED RUNWAY LONGITUDINAL PROFILE



No.	SECTION DISTANCE	MODIFIED DISTANCE	GROUND ELEVATION	PLANNING ELEVATION
No. 7-42	142 000	742 000	20.00	
No. 6	246 000	600 000		
No. 3-54	192 000	334 000	22.50	
No. 1-62	82 000	162 000	25.00	
No. 0-80	72 000	80 000	27.50	
8	8 000	8 000	30.00	
116	16 000	16 000	31.00	31.35
160	44 000	60 000	30.00	
No. 2-8	148 000	308 000	31.25	
154	46 000	254 000	32.50	
174	20 000	274 000	33.75	
No. 3-82	78 000	352 000	32.50	
No. 4-15	63 000	415 000	30.00	
No. 5-10	93 000	510 000	29.00	
82	82 000	592 000	30.00	
No. 6-75	83 000	675 000	32.80	
No. 7-60	85 000	760 000	33.75	
No. 8-42	82 000	842 000	33.75	
No. 9-34	92 000	934 000	32.50	
No. 10-29	98 000	1029 000	31.00	
No. 12-25	196 000	1225 000	32.50	
92	700 000	1290 000	33.00	
No. 14-17	222 000	1417 000	37.50	
150	33 000	1450 000	38.00	
168	35 000	1485 000	37.50	34.10
No. 15	12 000	1500 000		
153	53 000	1553 000	35.00	
No. 16-29	76 000	1629 000	32.50	
180	32 000	1661 000	30.00	
No. 17	19 000	1700 000	27.50	
139	39 000	1739 000	26.25	
180	41 000	1780 000	26.00	
No. 18-20	40 000	1820 000	26.25	
158	36 000	1856 000	27.50	
No. 19-10	32 000	1910 000	30.00	
No. 20-69	179 000	2069 000	32.50	
No. 21-76	87 000	2176 000	33.00	
No. 23	124 000	2300 000	32.50	
152	52 000	2352 000	31.00	
No. 24-9	37 000	2409 000	32.50	
No. 23-40	131 000	2540 000	33.00	
No. 25-12	72 000	2612 000	37.50	

MODIFIED RUNWAY LONGITUDINAL PROFILE



No. 0+00	72 000	-80 000	27.50	
No. 0+15	8 000	8 000	30.00	31.35
No. 0+30	16 000	16 000	31.00	
No. 0+45	44 000	60 000	30.00	
No. 2+08	148 000	306 000	31.25	
No. 2+23	45 000	254 000	32.50	
No. 2+38	20 000	274 000	33.75	
No. 3+52	76 000	332 000	32.50	
No. 4+15	63 000	415 000	30.00	
No. 5+10	93 000	510 000	29.000	
No. 6+75	83 000	675 000	32.50	
No. 7+60	95 000	760 000	33.75	
No. 8+42	82 000	842 000	33.75	
No. 9+34	92 000	934 000	32.50	
No. 10+29	95 000	1 029 000	31.00	
No. 12+23	196 000	1 225 000	32.50	
No. 13+00	70 000	1 295 000	35.00	
No. 14+17	122 000	1 417 000	37.50	
No. 15+00	33 000	1 450 000	38.00	
No. 15+08	36 000	1 486 000	37.50	34.10
No. 15+15	12 000	1 500 000		
No. 15+33	53 000	1 553 000	35.00	
No. 16+25	76 000	1 629 000	32.50	
No. 17+00	32 000	1 661 000	30.00	
No. 17+08	19 000	1 700 000	27.50	
No. 17+39	39 000	1 739 000	26.25	
No. 18+00	41 000	1 780 000	26.00	
No. 18+20	40 000	1 820 000	26.25	
No. 18+56	38 000	1 858 000	27.50	
No. 19+10	52 000	1 910 000	30.00	
No. 20+85	179 000	2 089 000	32.50	
No. 21+76	97 000	2 176 000	35.00	
No. 23+00	124 000	2 300 000	32.50	
No. 23+32	52 000	2 352 000	31.00	
No. 24+09	57 000	2 409 000	32.50	
No. 25+40	131 000	2 540 000	35.00	
No. 26+12	72 000	2 612 000	37.50	
No. 27+42	130 000	2 742 000	40.00	
No. 28+12	70 000	2 812 000	37.50	
No. 28+58	46 000	2 858 000	35.00	
No. 29+89	131 000	2 989 000	35.00	36.85
No. 30+00	11 000	3 000 000		
No. 30+60	60 000	3 060 000	37.50	
No. 31+85	125 000	3 185 000	35.00	
No. 32+32	87 000	3 272 000	32.50	
No. 34+18	166 000	3 438 000	30.00	
No. 36+35	217 000	3 655 000	26.20	
No. 36+85	5 000	3 660 000		

DL = 15

PEOPLE'S REPUBLIC OF CHINA  
FEASIBILITY STUDY  
ON  
THE CONSTRUCTION PROJECT  
OF  
WUHAN/TIANHE AIRPORT

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MODIFIED RUNWAY LONGITUDINAL PROFILE

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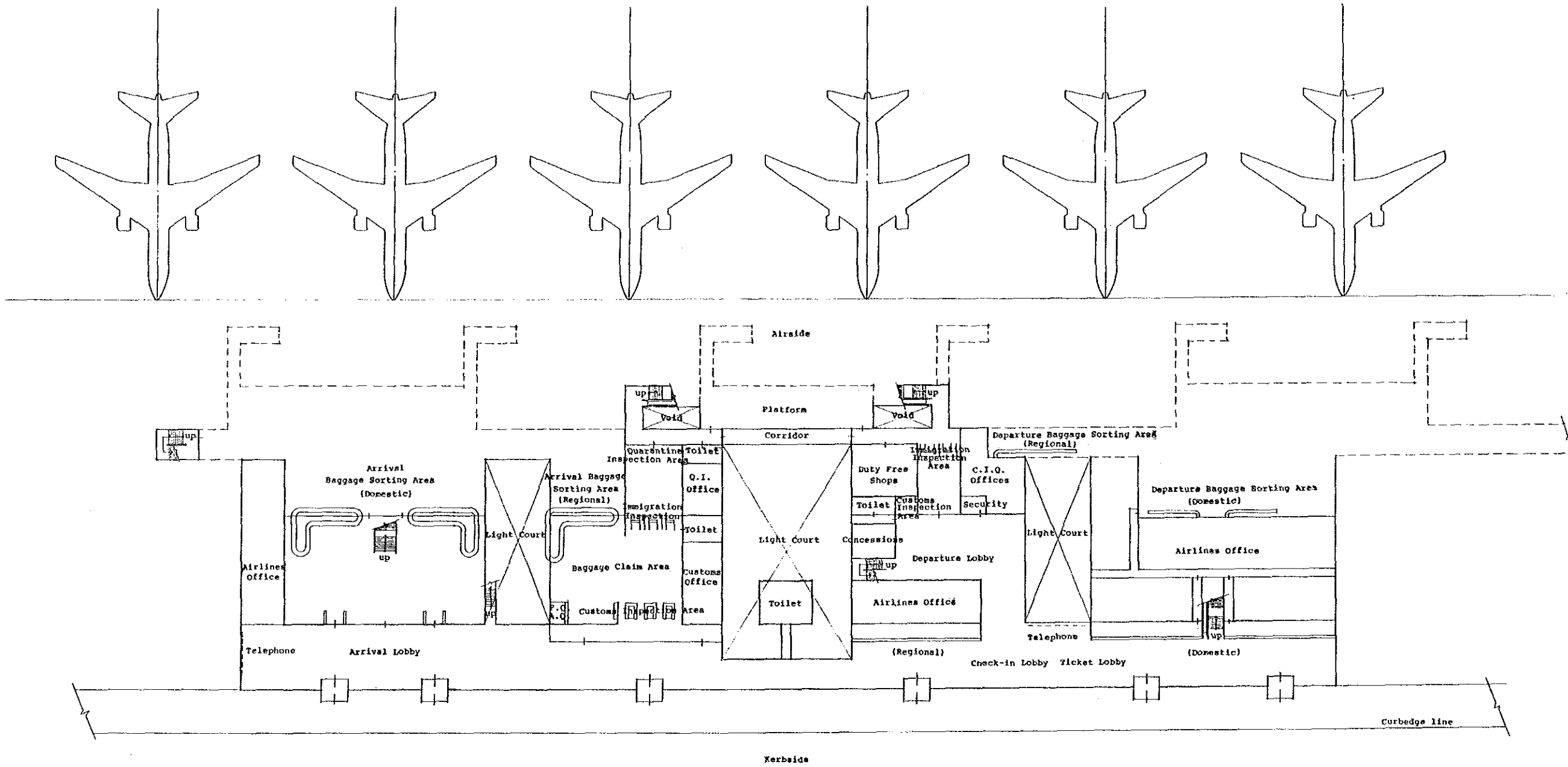
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No. C-4

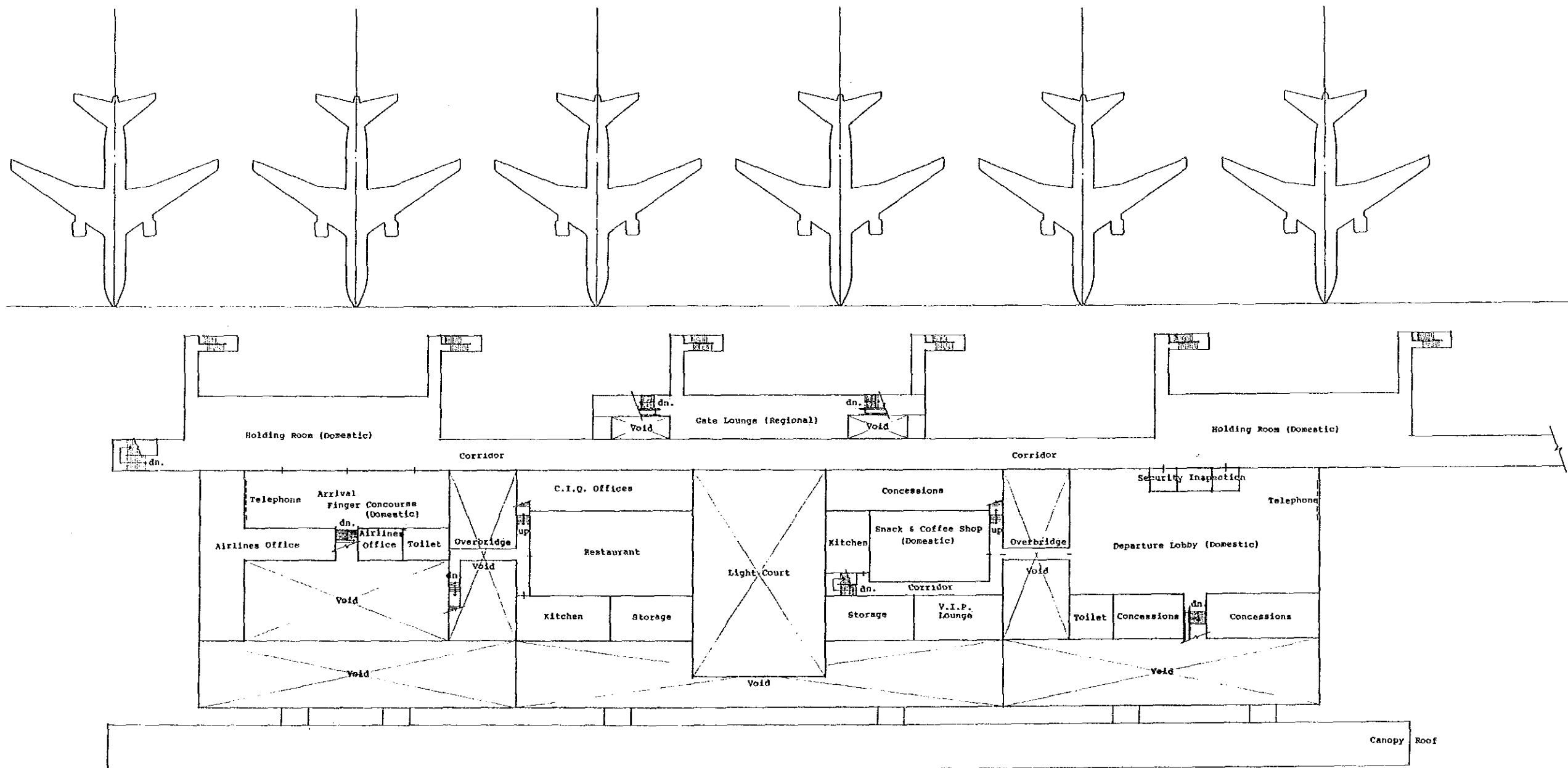
MAR. 1990

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JAPAN INTERNATIONAL COOPERATION AGENCY

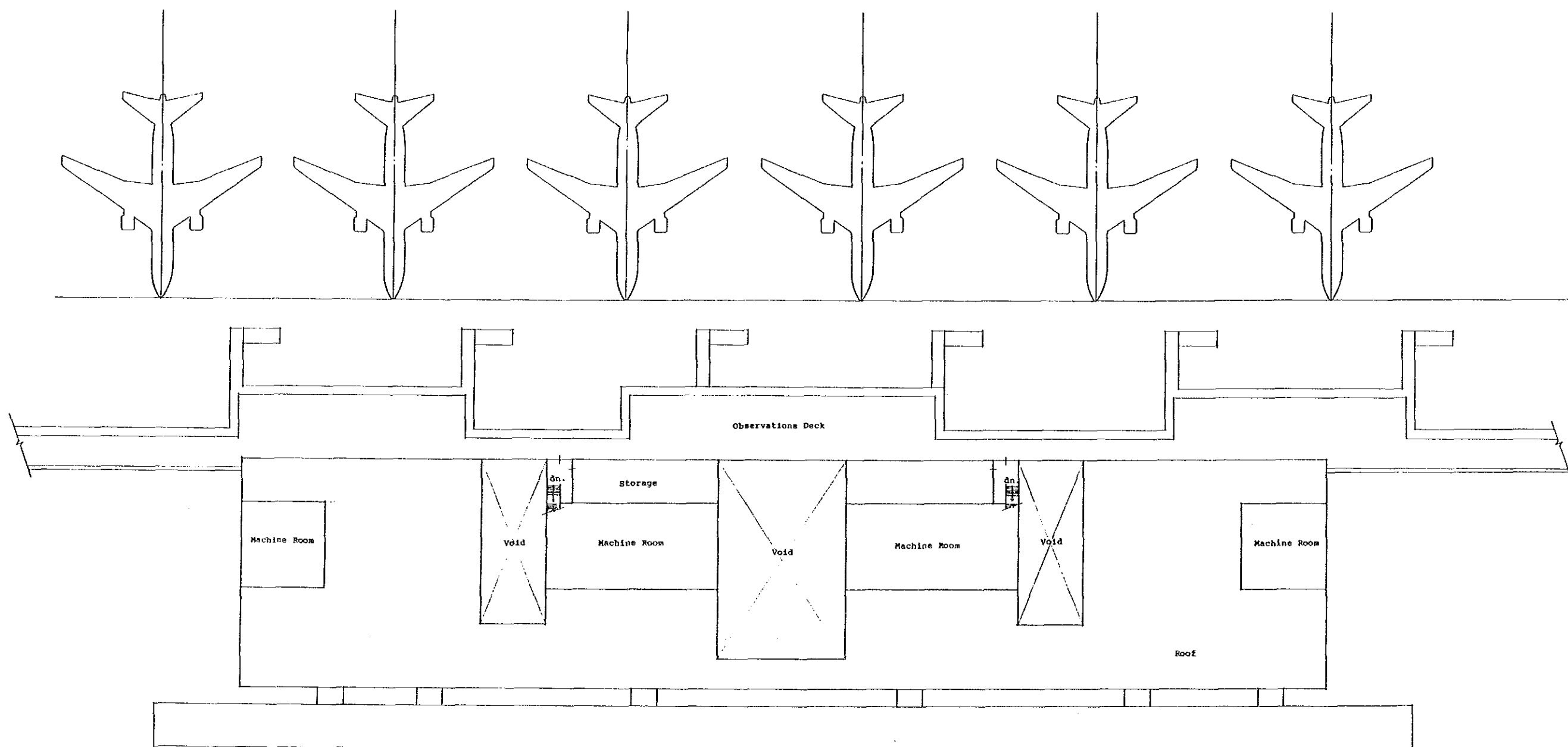


Concept A / Passenger Terminal Building (1st. Floor Plan)  
A-119 scale 1:1000

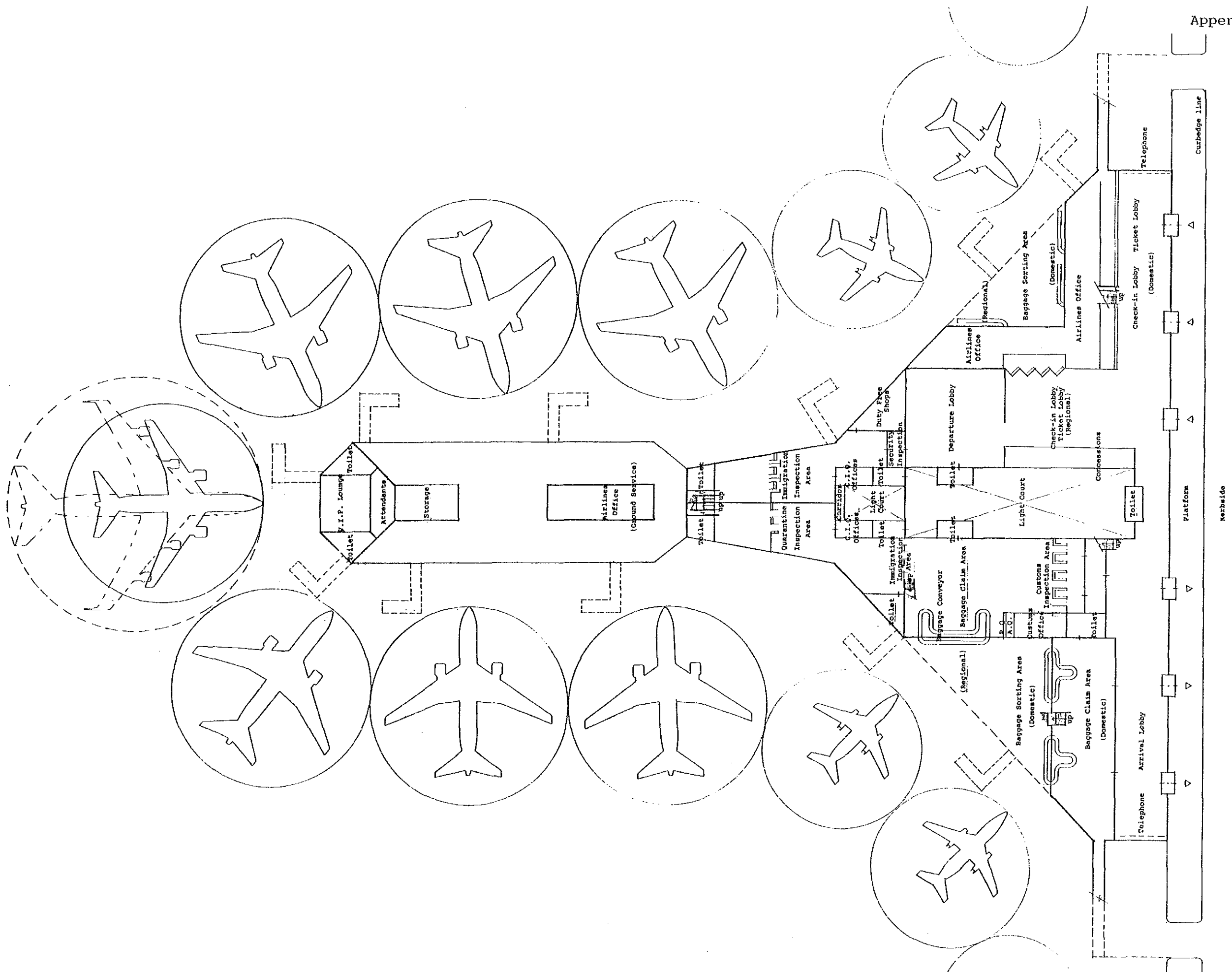


Concept A / Passenger Terminal Building (2nd. Floor Plan)  
A-120 scale 1:1000

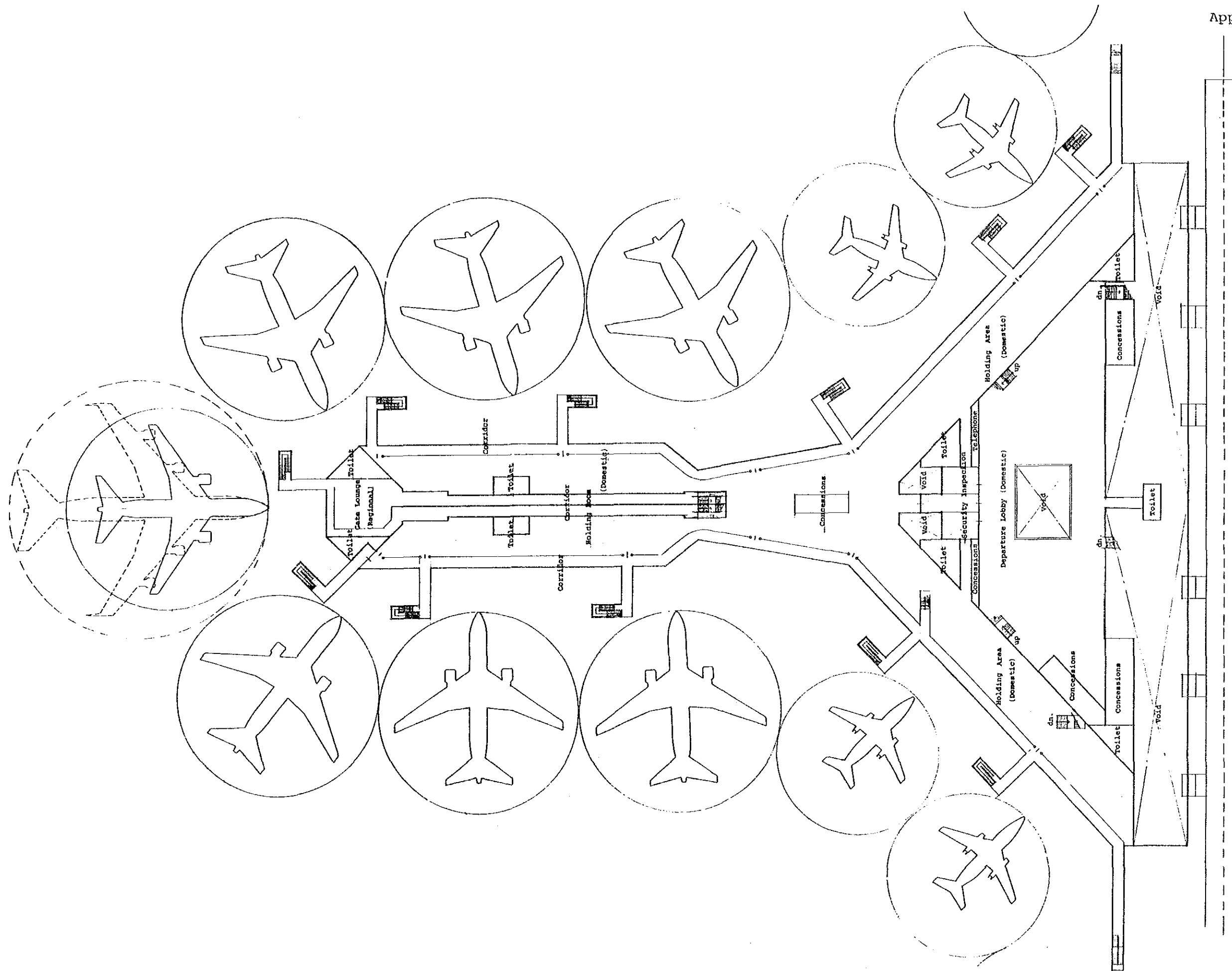




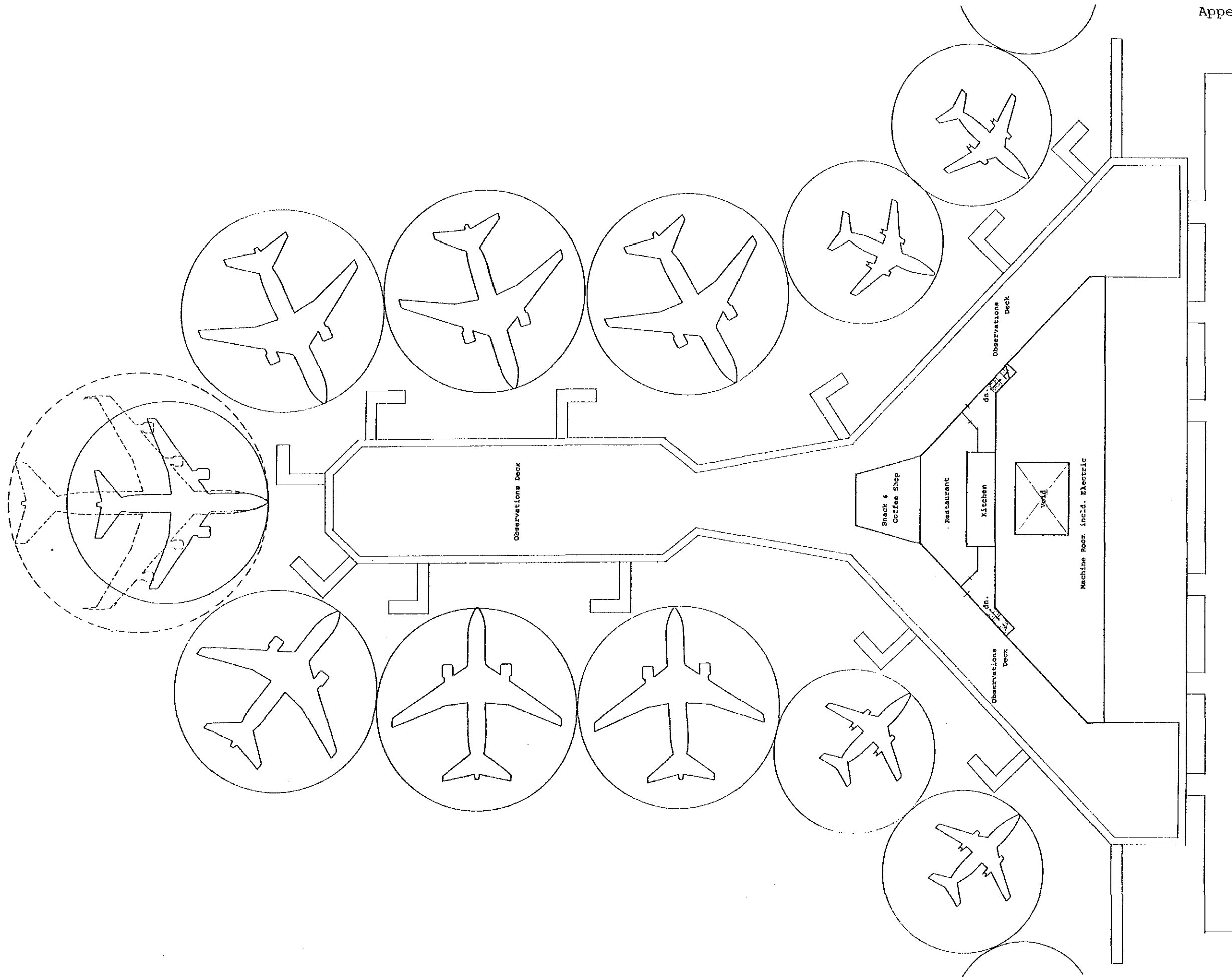
Concept A / Passenger Terminal Building (3rd. Floor Plan)  
A-121 scale 1:1000



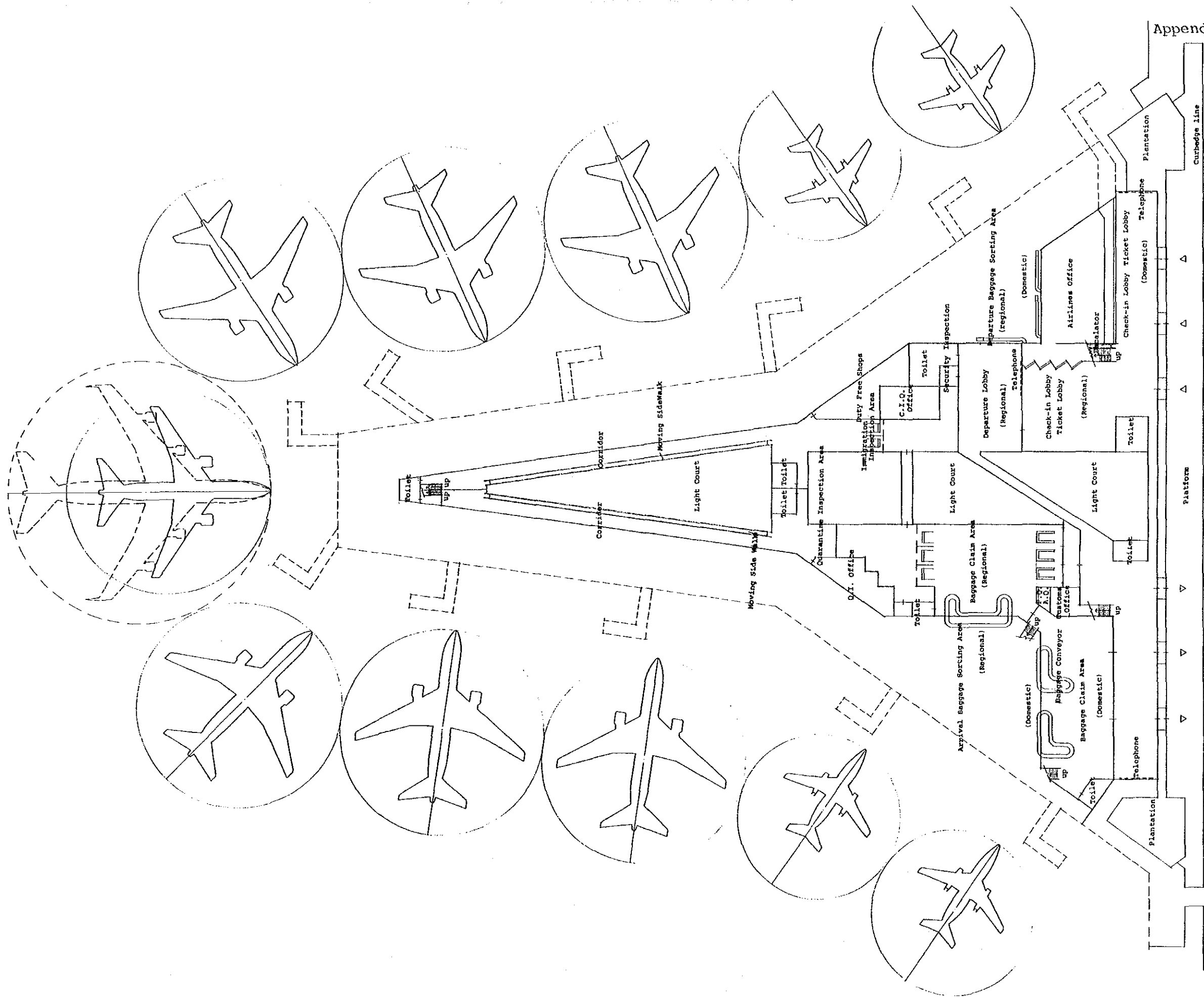
Concept B / Passenger Terminal Building (1st. Floor Plan)  
A-122 scale 1:1000



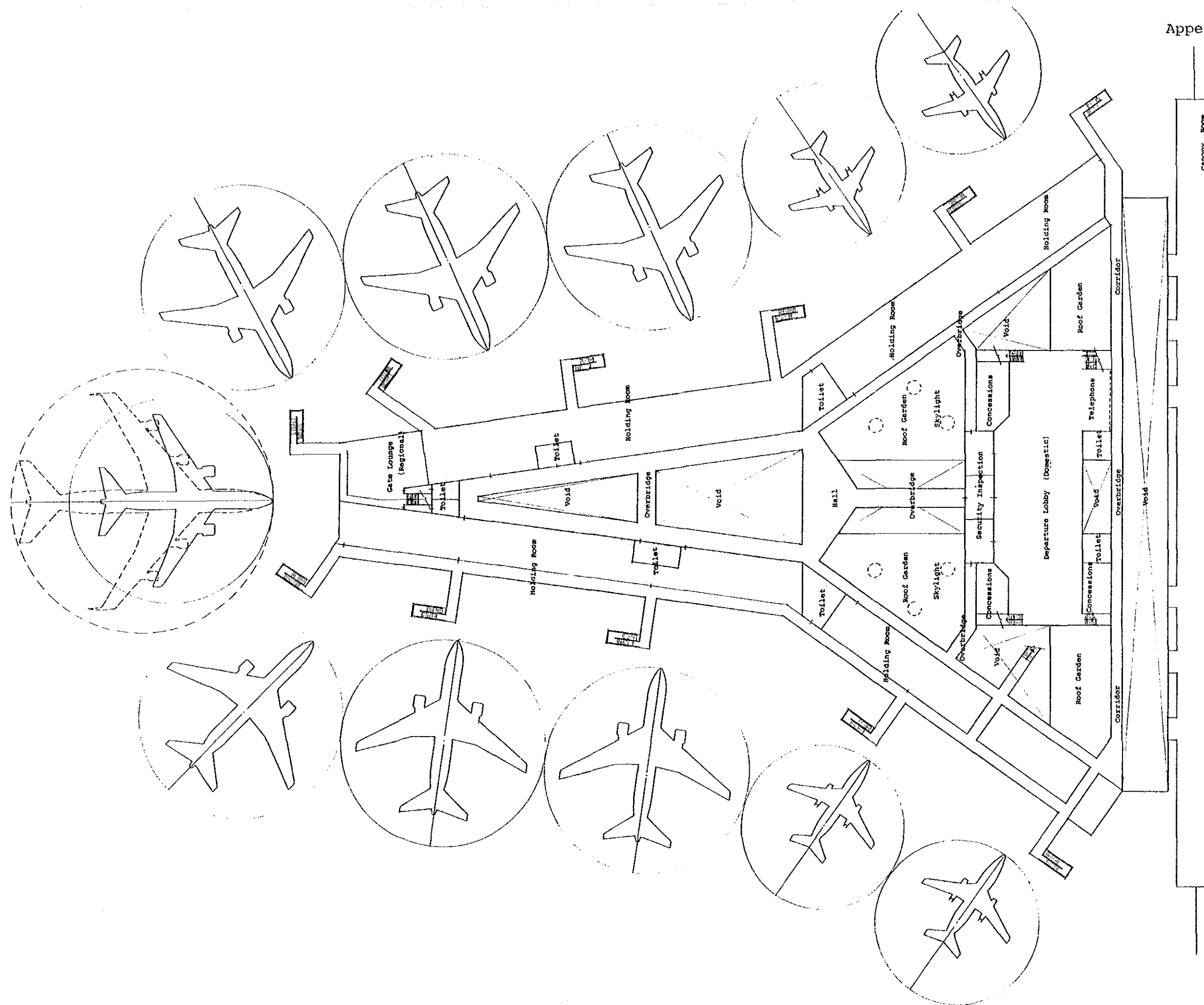
Concept B / Passenger Terminal Building (2nd. Floor Plan)  
A-123 scale 1:1000



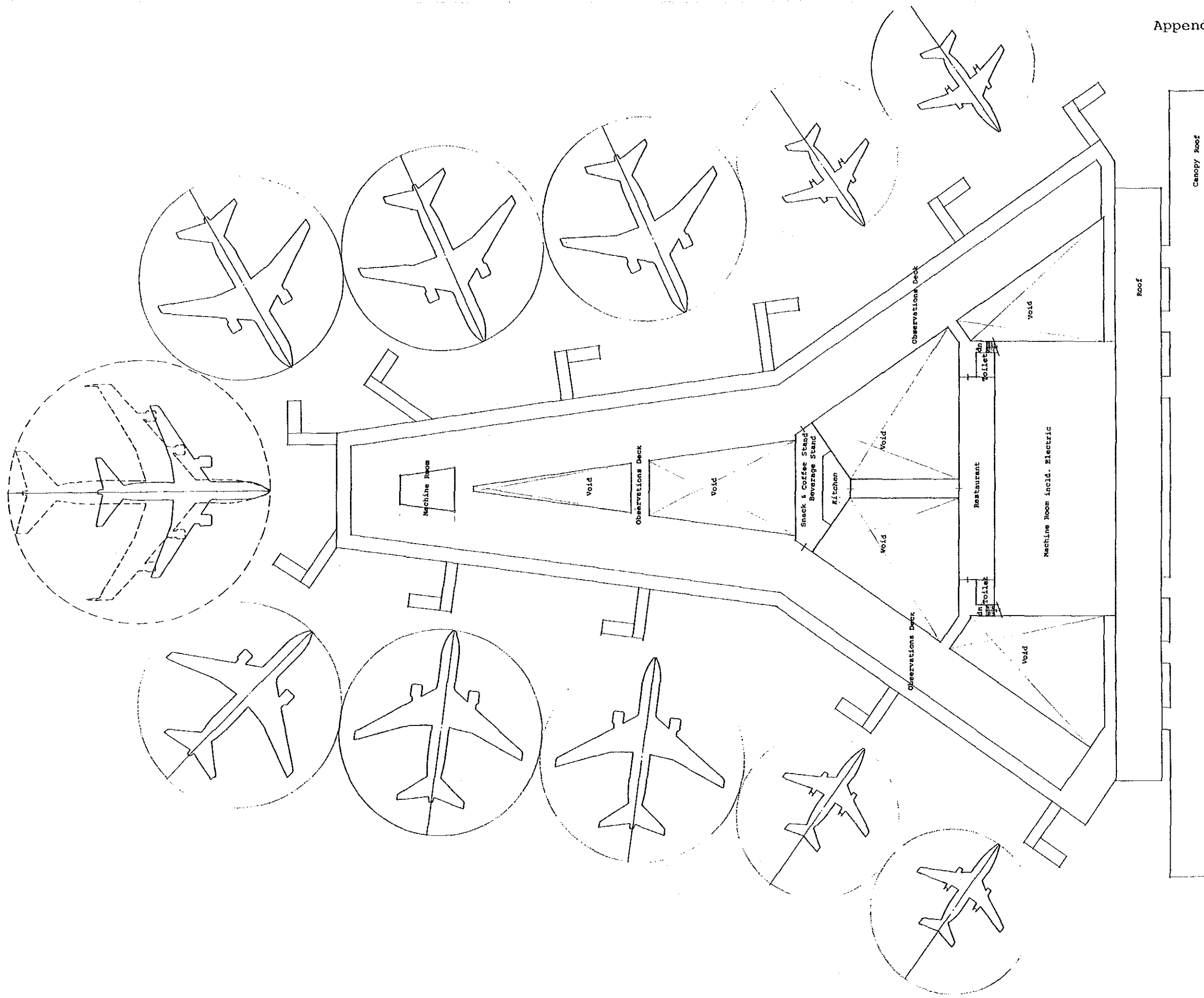
Concept B / Passenger Terminal Building (3rd. Floor Plan)  
A-124 scale 1:1000



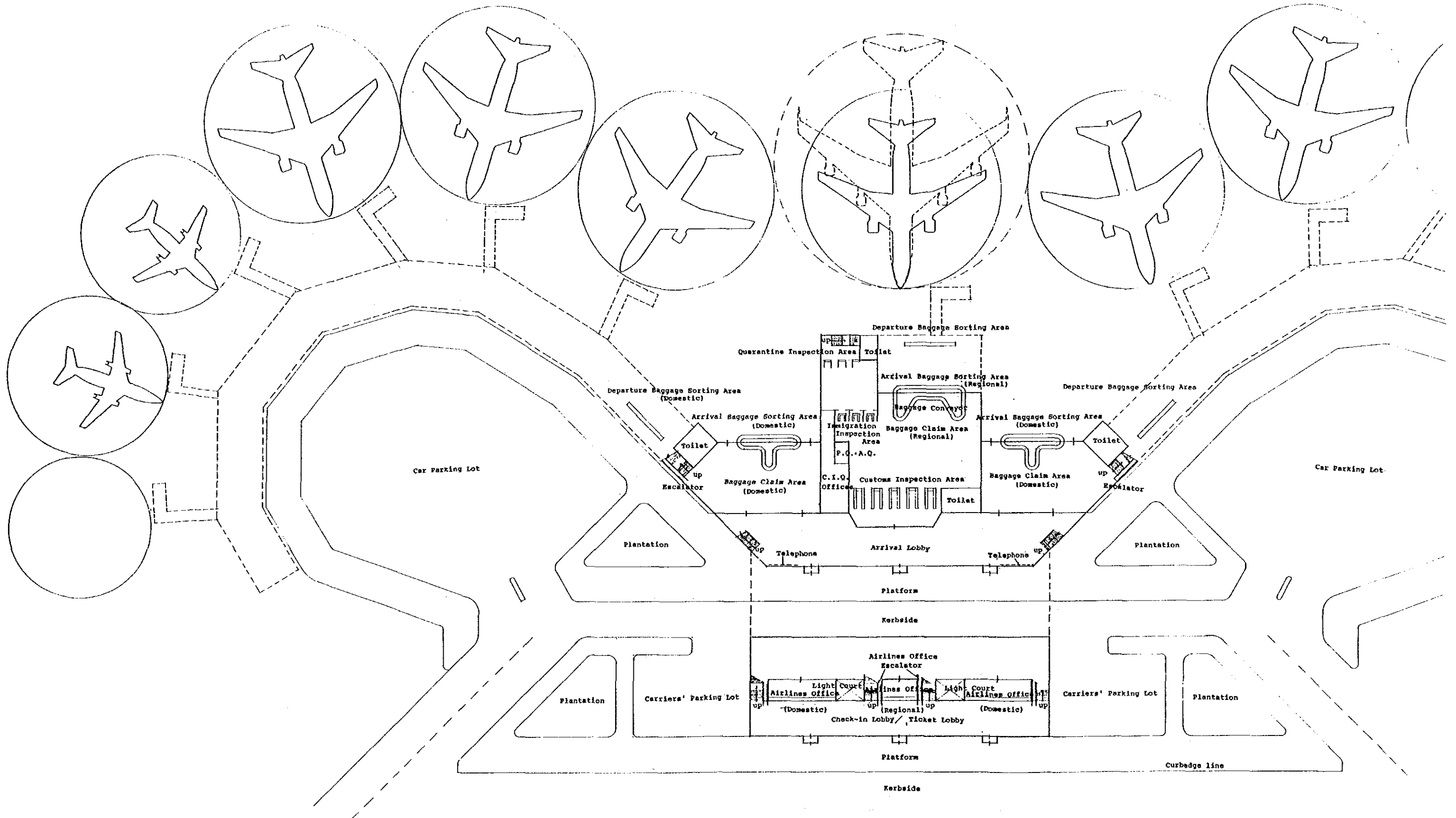
Concept C / Passenger Terminal Building (1st. Floor Plan) scale 1:1000



Concept C / Passenger Terminal Building (2nd. Floor Plan)  
A-126 scale 1:1000

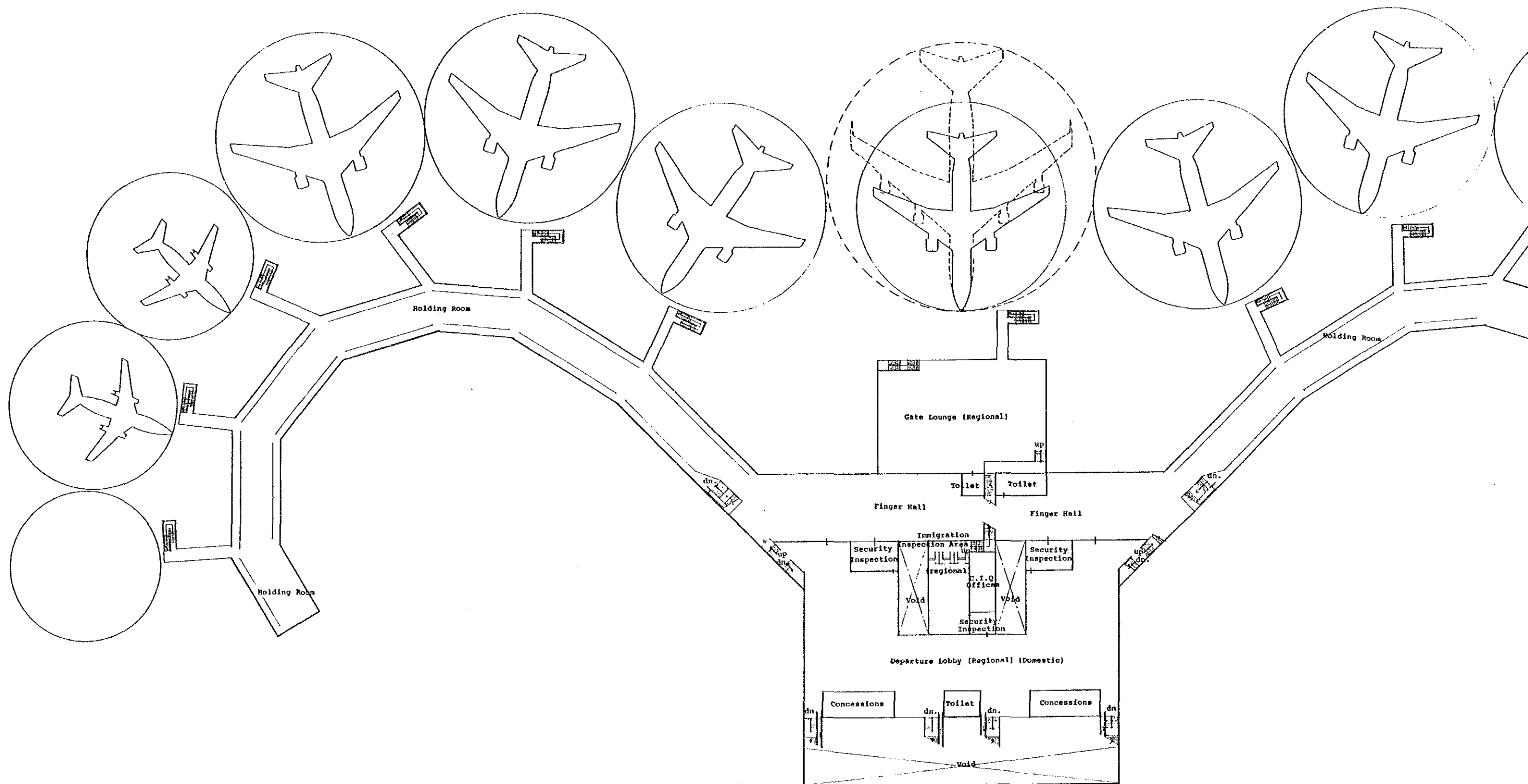


Concept C / Passenger Terminal Building (3rd. Floor Plan)  
A-127 scale 1:1000

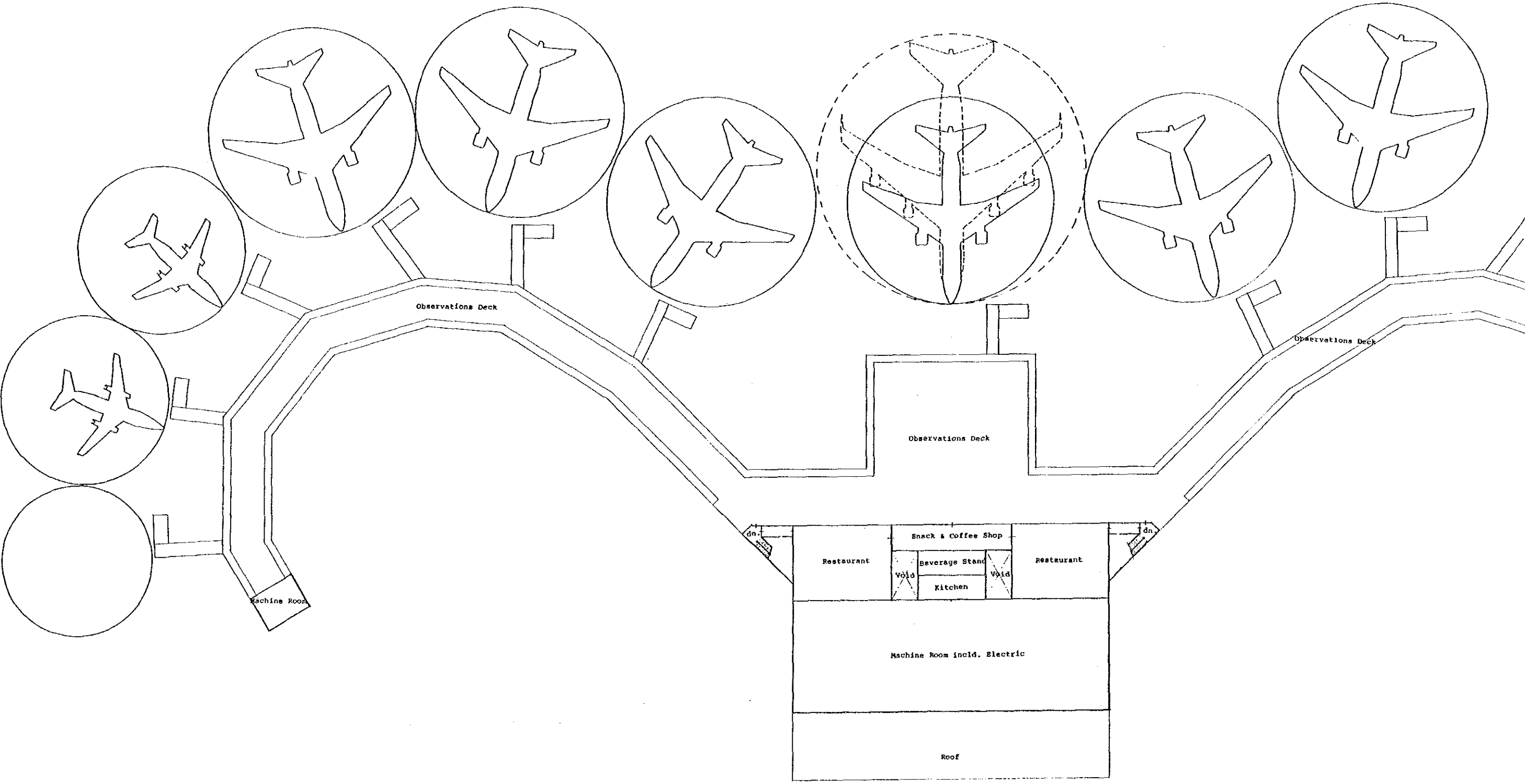


Concept D / Passenger Terminal Building (1st. Floor Plan) scale 1:1000





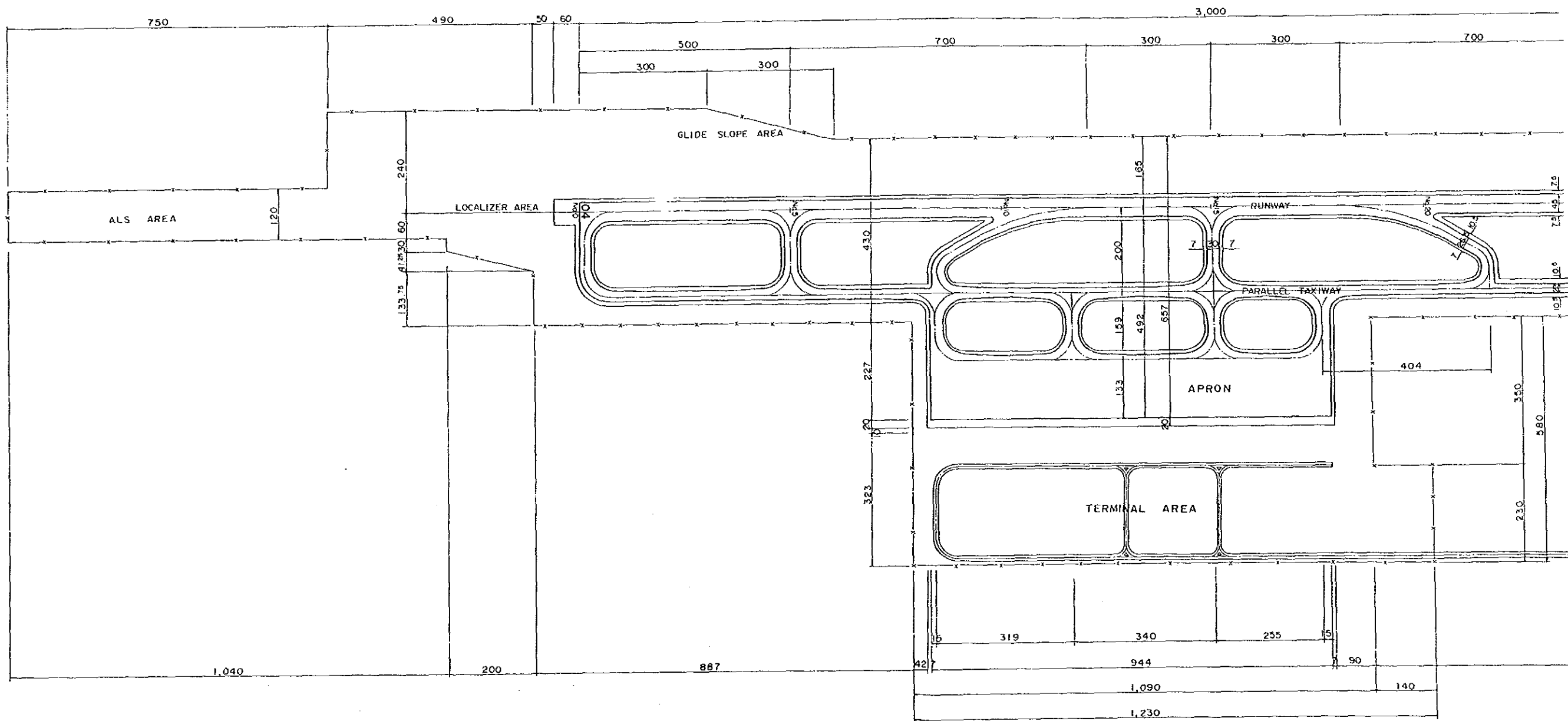
Concept D / Passenger Terminal Building (2nd. Floor Plan)  
A-129 scale 1:1000

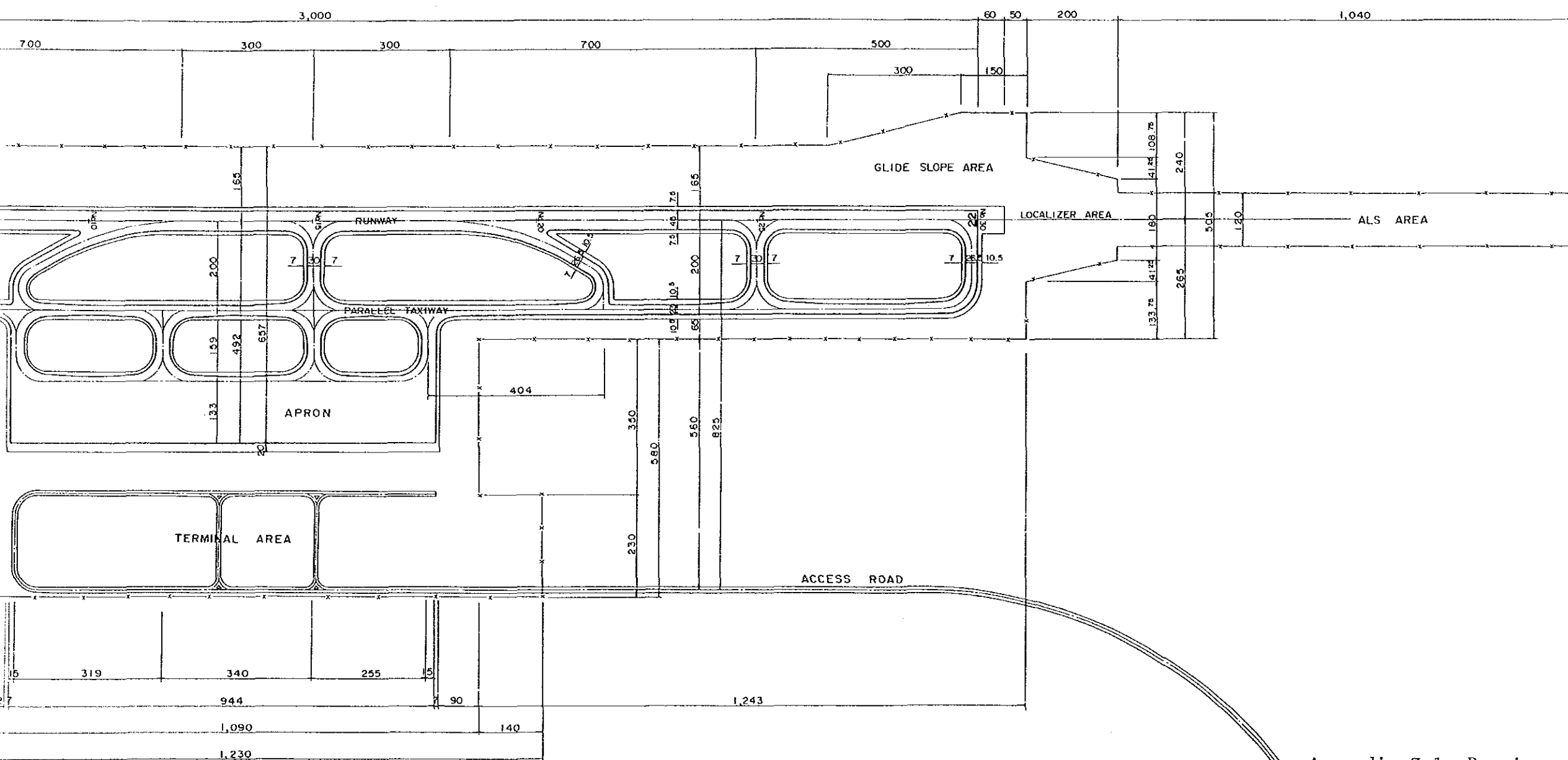


Concept D / Passenger Terminal Building (3rd. Floor Plan)  
A-130 scale 1:1000



**APPENDIX 7**



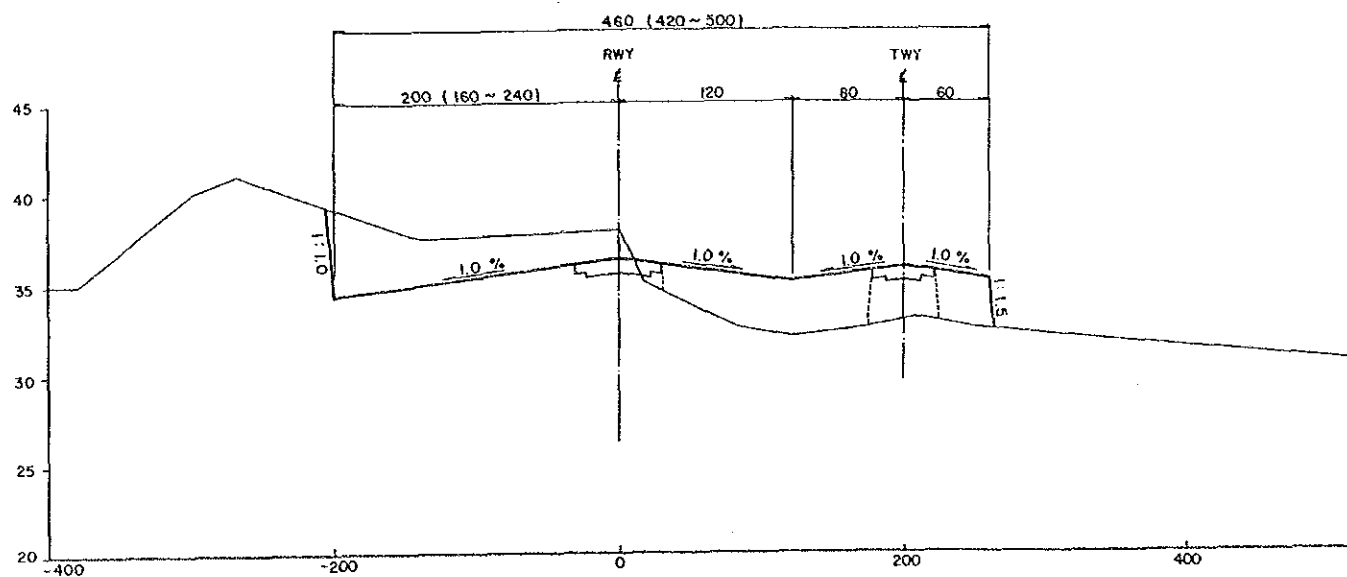


Appendix 7-1 Drawings of Airfield Facilities  
(1) Dimensions of airfield Facilities

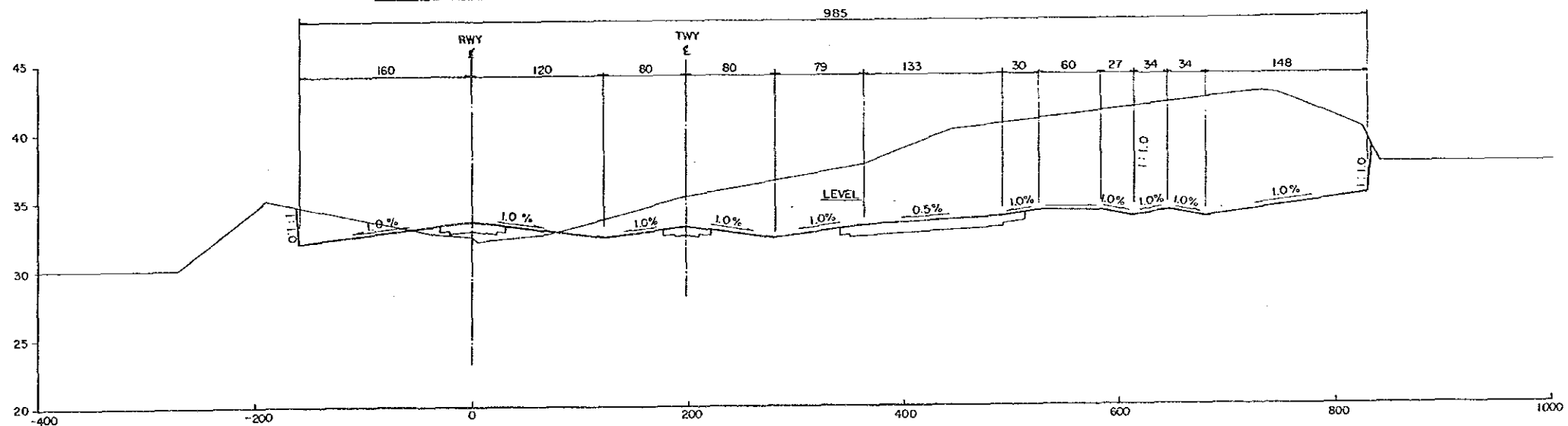
PEOPLE'S REPUBLIC OF CHINA FEASIBILITY STUDY ON THE CONSTRUCTION PROJECT OF WUHAN/TIANHE AIRPORT		
AIRPORT BASIC FACILITY LAYOUT PLAN		
SCALE: 1:10000	No. 2	MAR. 1990
JAPAN INTERNATIONAL COOPERATION AGENCY		

TYPICAL CROSS SECTION (AIR PORT)  
 V=1:400  
 H=1:5000

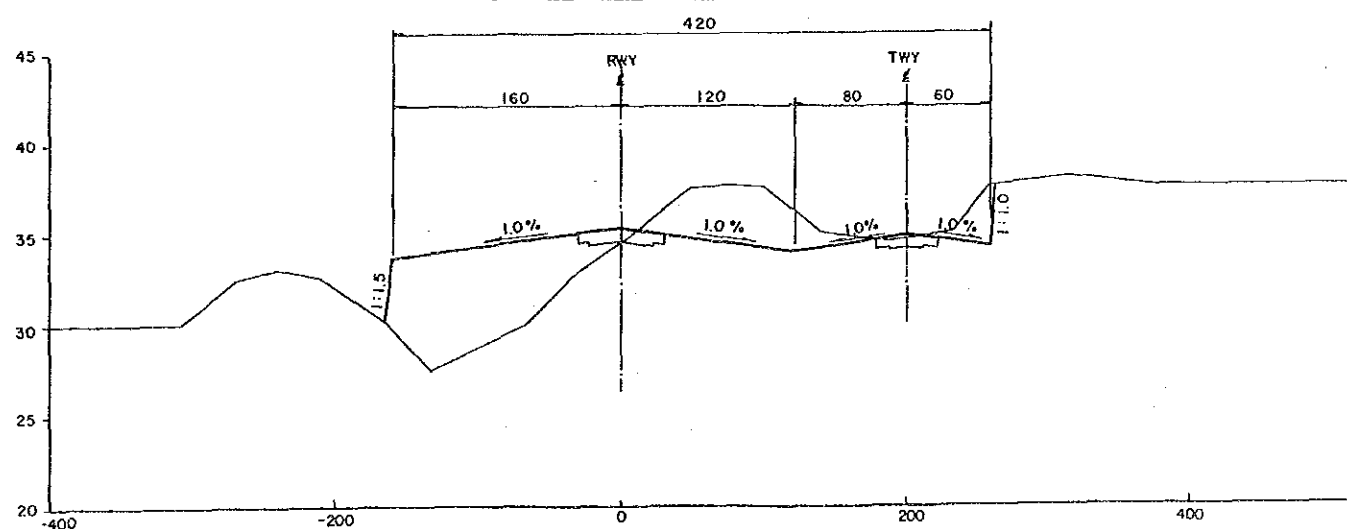
GLIDE SLOPE AREA (NO.28)



APRON, TERMINAL AREA (NO.12)



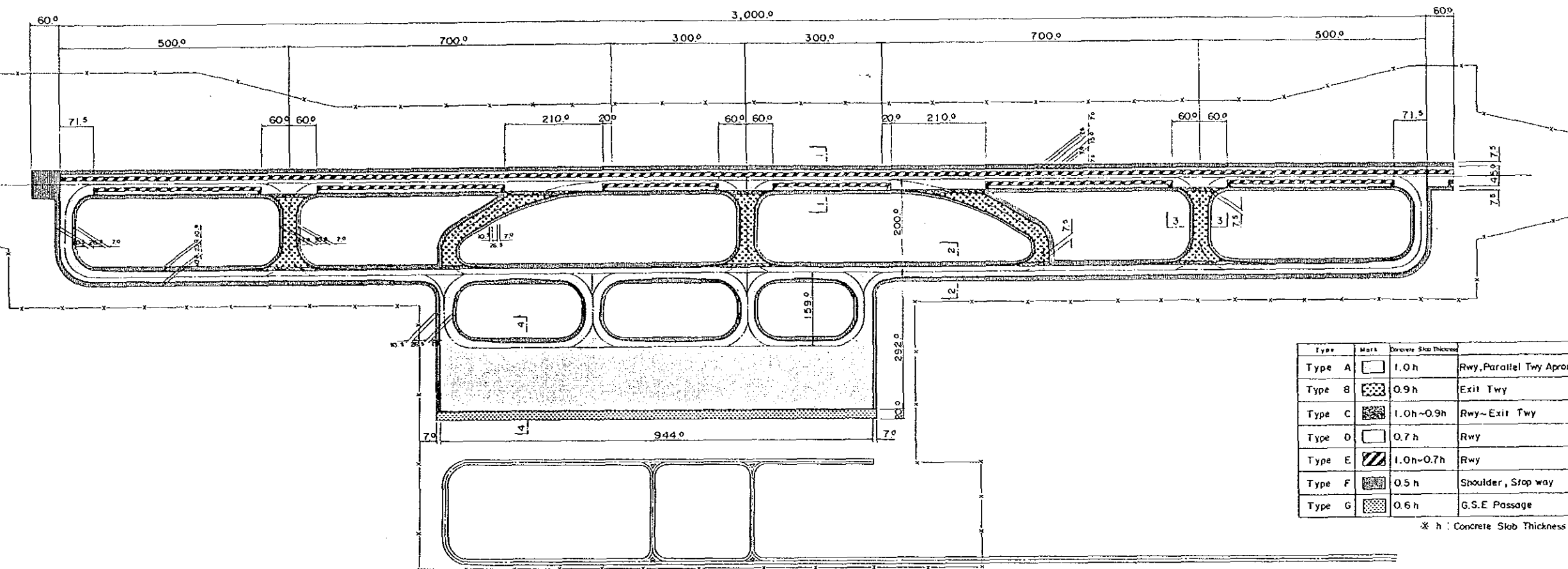
NORMAL AREA (NO.22)



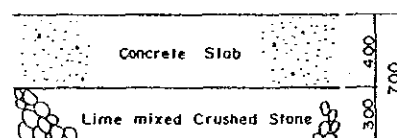
Appendix 7-1 Drawings of Airfield Facilities  
 (2) Typical Cross Section of Runway Strip

PEOPLE'S REPUBLIC OF CHINA FEASIBILITY STUDY ON THE CONSTRUCTION PROJECT OF WUHAN/TIANHE AIRPORT		
TYPICAL CROSS SECTION (AIRPORT)		
SCALE: 1:400 1:5000	No. 5	MAR. 1990
JAPAN INTERNATIONAL COOPERATION AGENCY		
A-132		

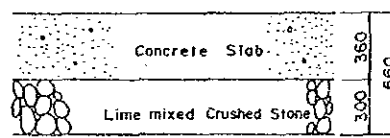
PAVEMENT PLAN S=1:10000



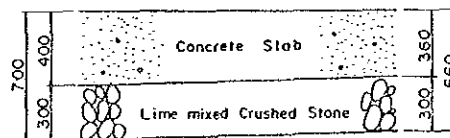
Type - A



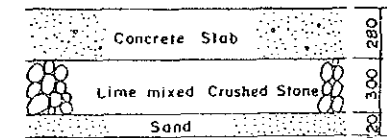
Type - B



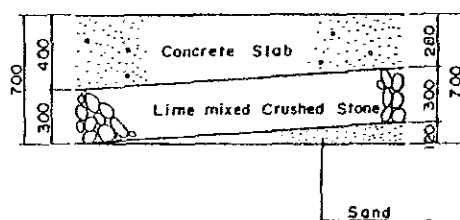
Type - C



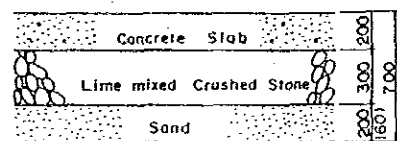
Type - D



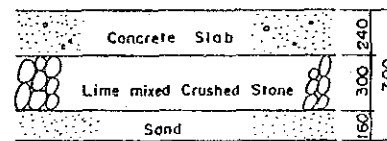
Type - E



Type - F



Type - G



Appendix 7-1 Drawings of Airfield Facilities  
(3) Pavement Plan

PEOPLE'S REPUBLIC OF CHINA  
FEASIBILITY STUDY  
ON  
THE CONSTRUCTION PROJECT  
OF  
WUHAN/TIANHE AIRPORT

PAVEMENT PLAN

SCALE: 1:10000	No. 6	MAR. 1990
JAPAN INTERNATIONAL COOPERATION AGENCY		

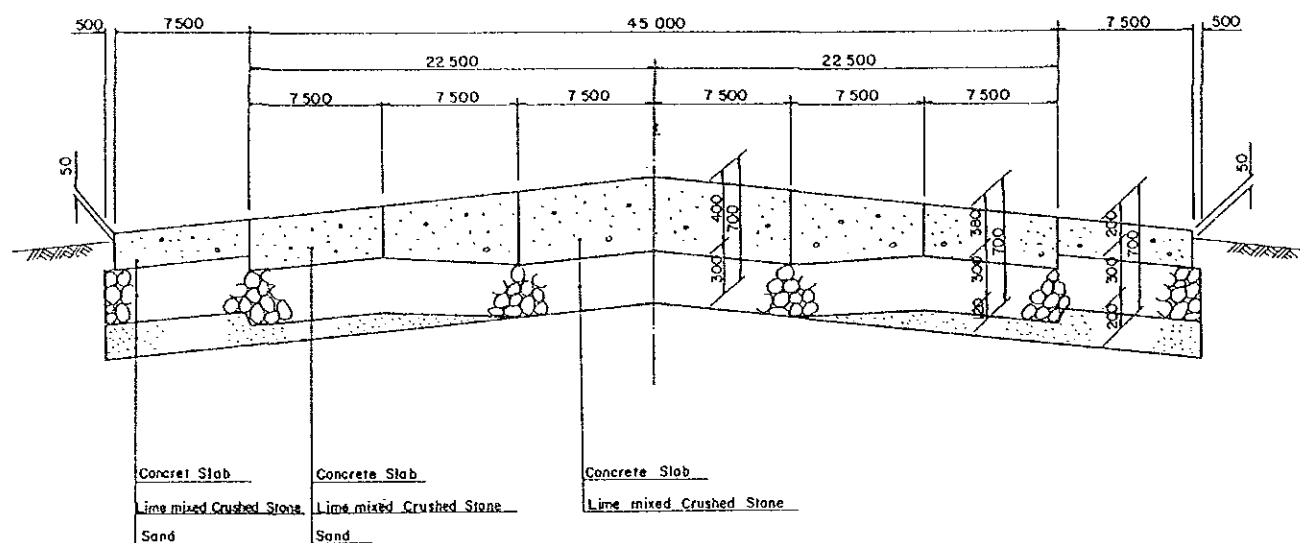
A-133



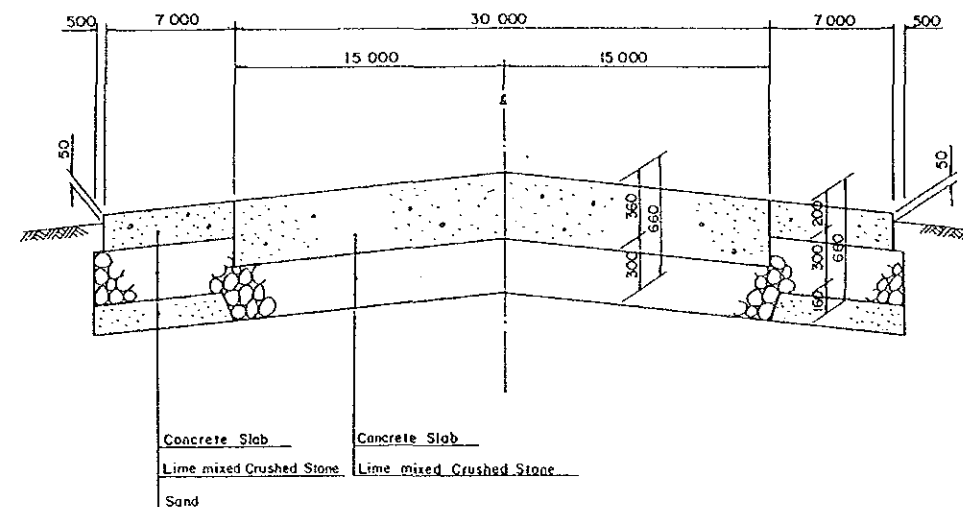
TYPICAL CROSS SECTION

V = 1:40  
H = 1:400

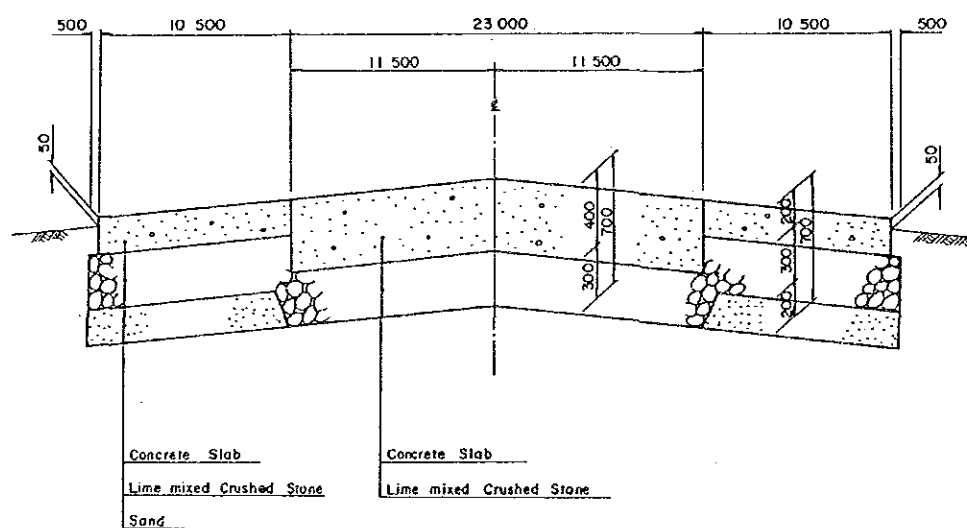
SECTION 1-1



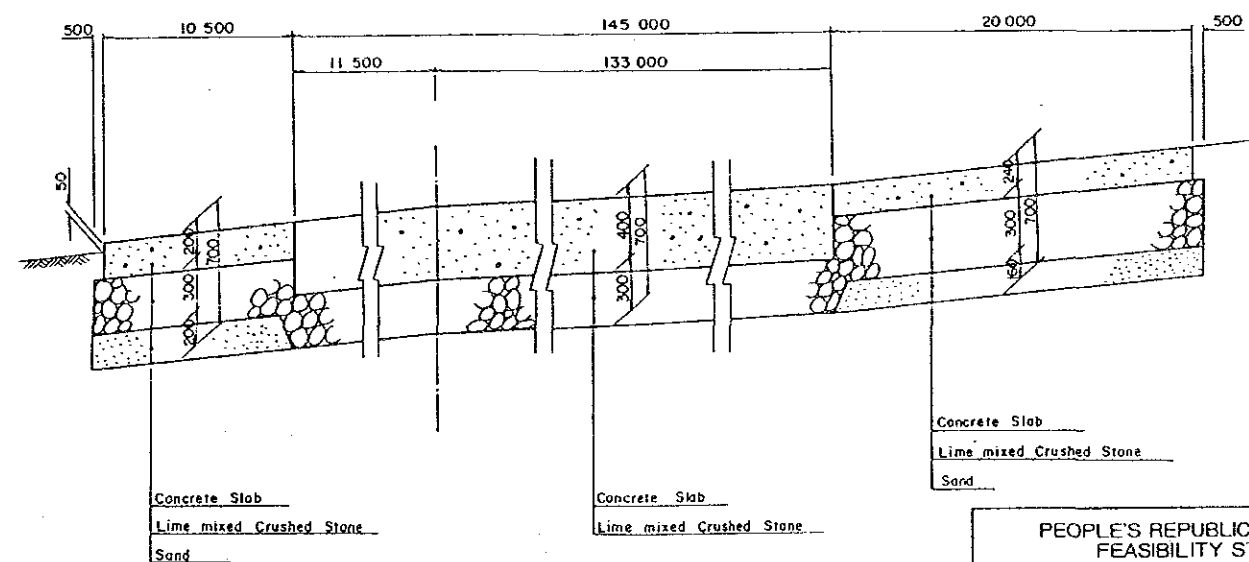
SECTION 3-3



SECTION 2-2



SECTION 4-4



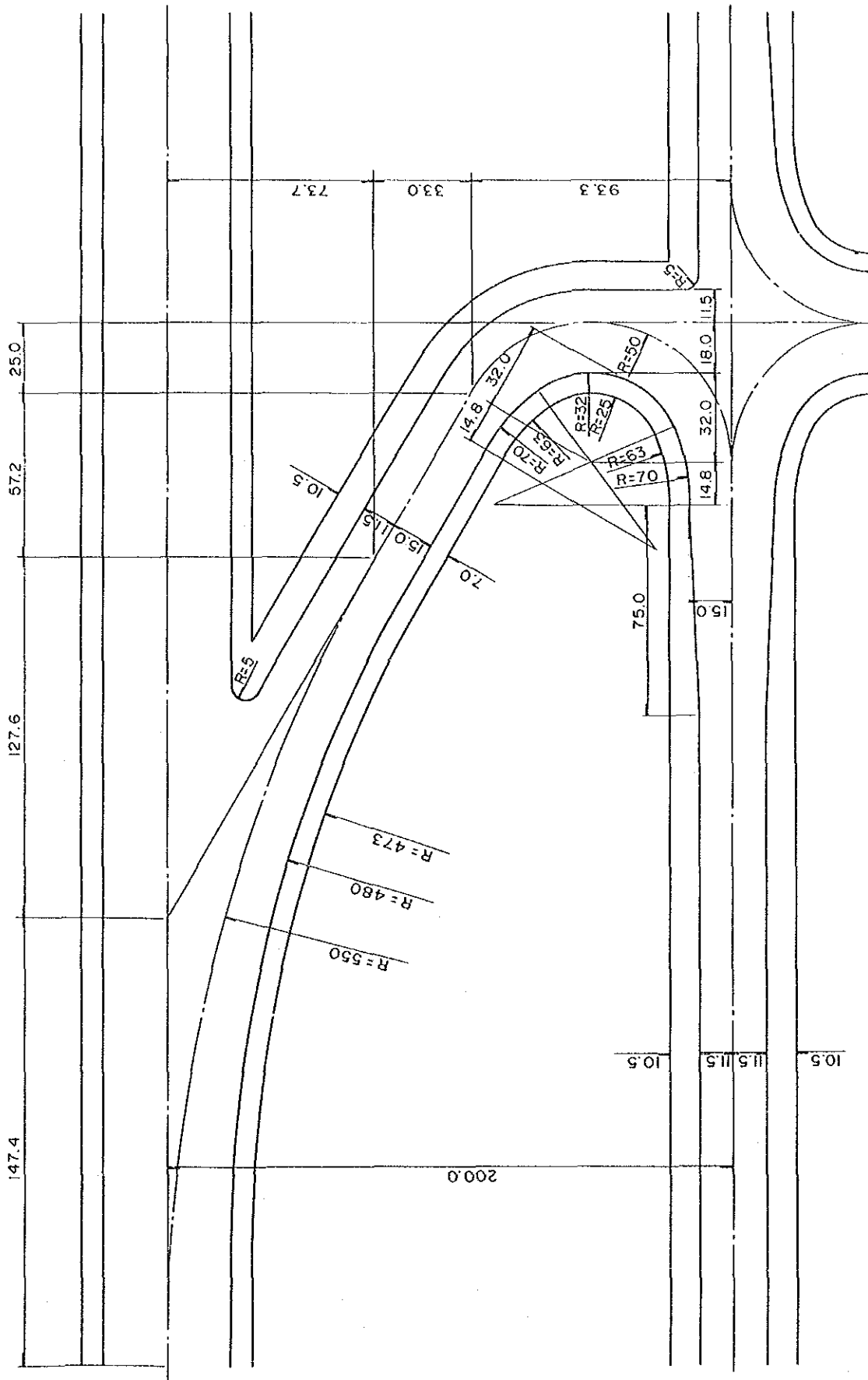
PEOPLE'S REPUBLIC OF CHINA  
FEASIBILITY STUDY  
ON  
THE CONSTRUCTION PROJECT  
OF  
WUHAN/TIANHE AIRPORT

TYPICAL CROSS SECTION  
(PAVEMENT)

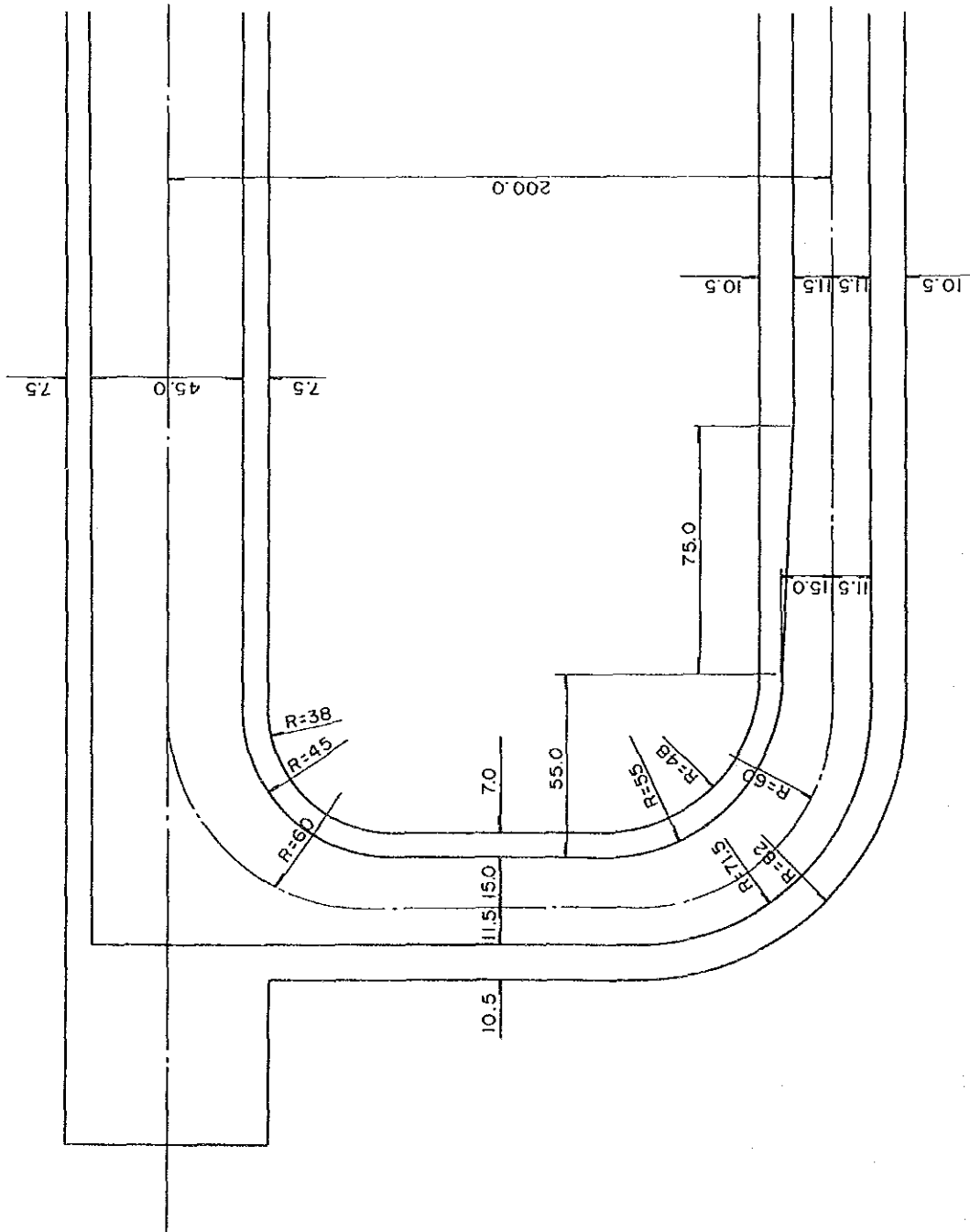
SCALE: AS SHOWN No. 7 MAR. 1990

JAPAN INTERNATIONAL COOPERATION AGENCY

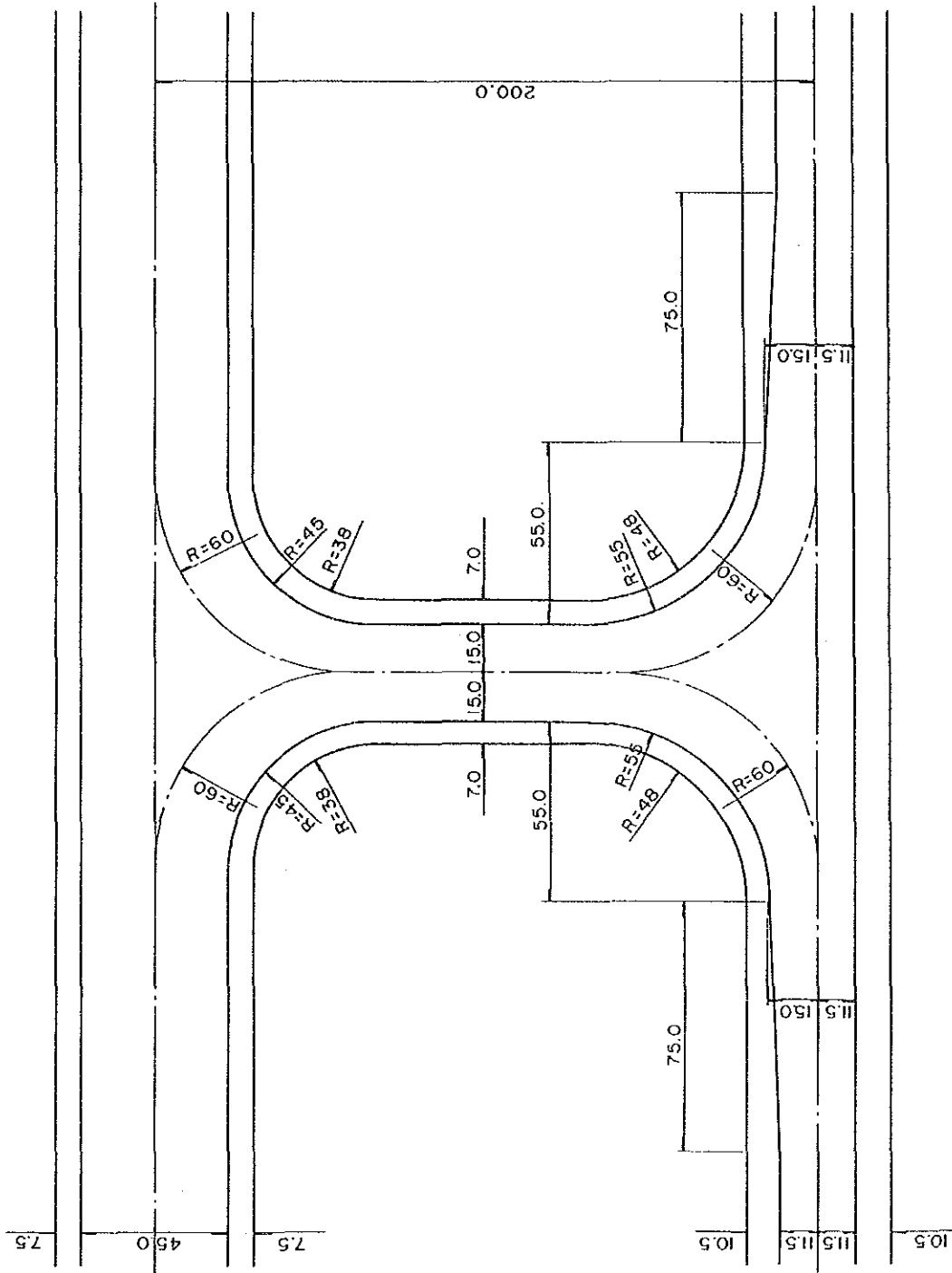




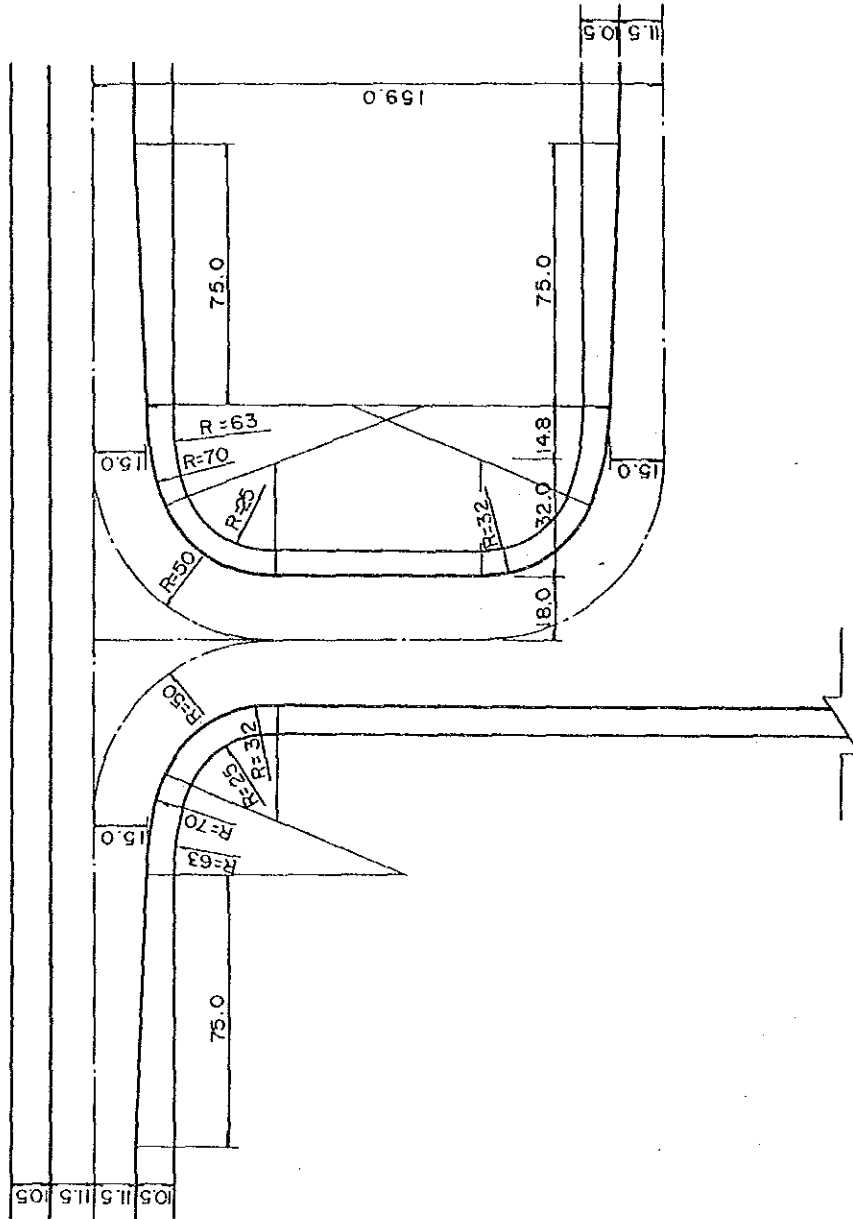
Appendix 7-1 Drawings of Airfield Facilities  
 (5) Details of Rapid Exit Taxiway



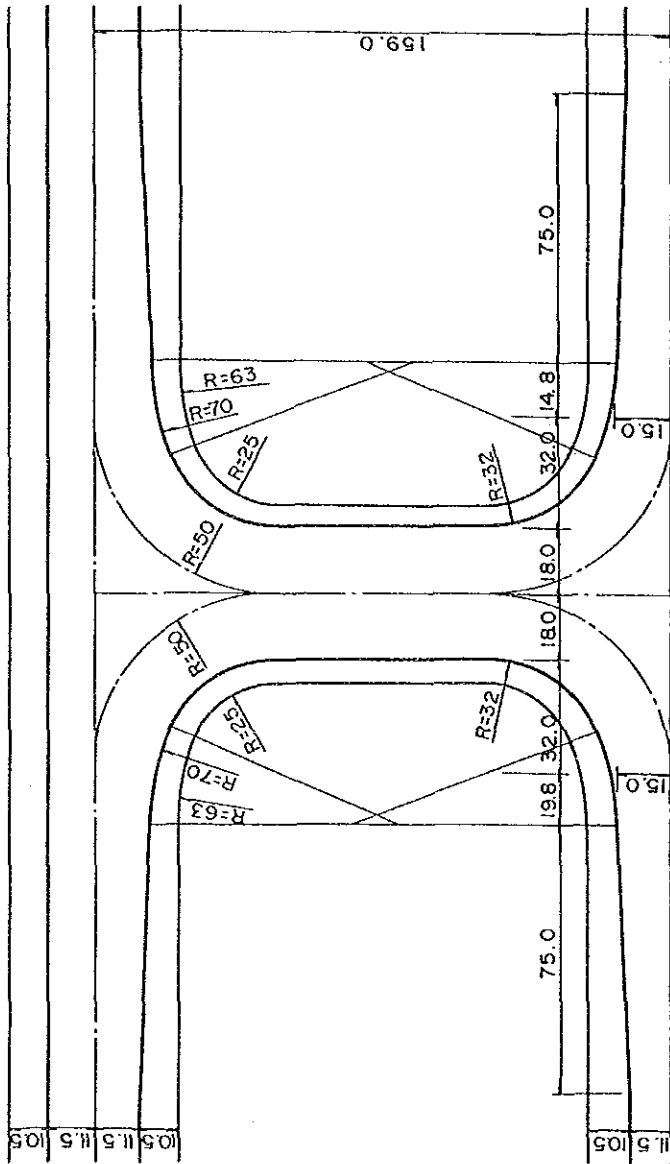
Appendix 7-1 Drawings of Airfield Facilities  
 (6) Details of Entrance Taxiway



Appendix 7-1 Drawings of Airfield Facilities  
 (7) Details of Right Angled Exit Taxiway



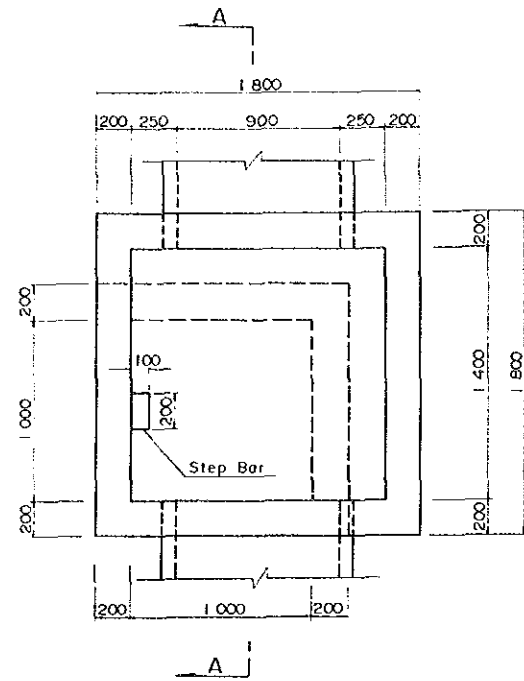
Appendix 7-1 Drawings of Airfield Facilities  
 (8) Details of Connecting Taxiway (1)



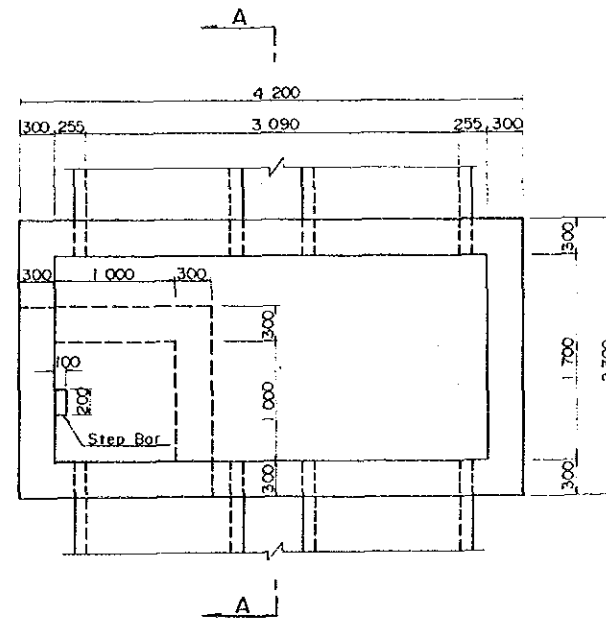
Appendix 7-1 Drawings of Airfield Facilities  
 (9) Details of Connecting Taxiway (2)

Catch Basin

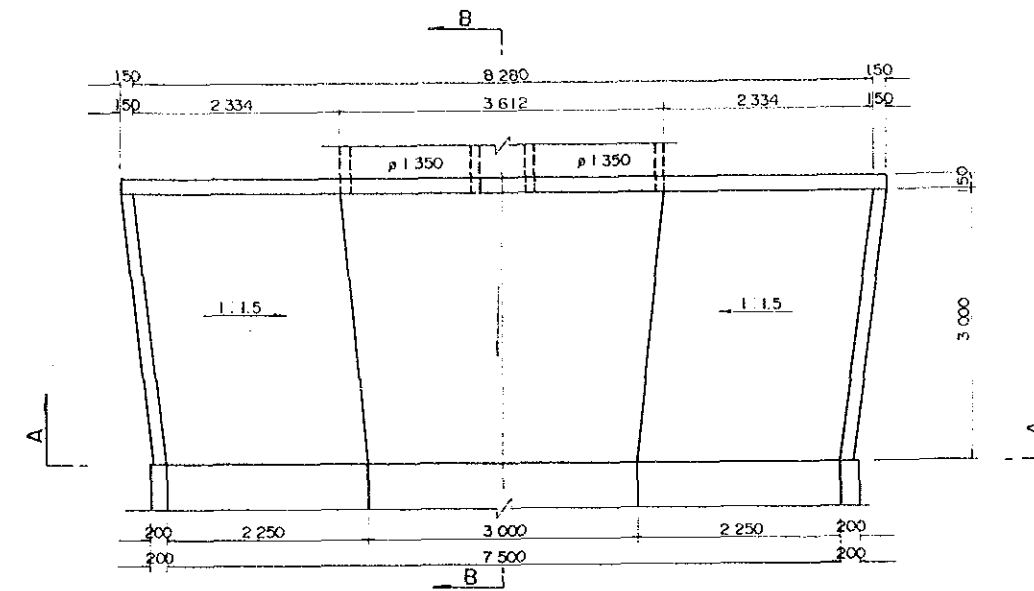
Type-A (Single Pipe)  $s = 1:20$



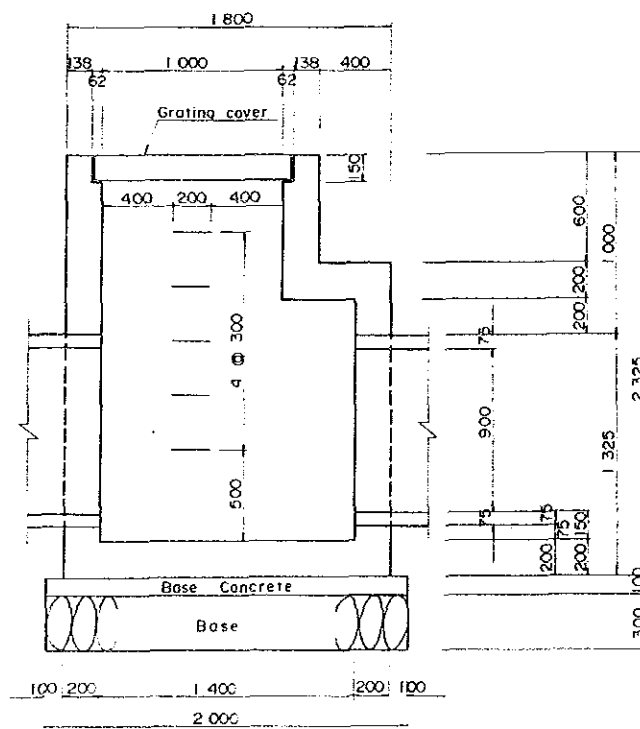
Type-B (Double Pipe)  $s = 1:30$



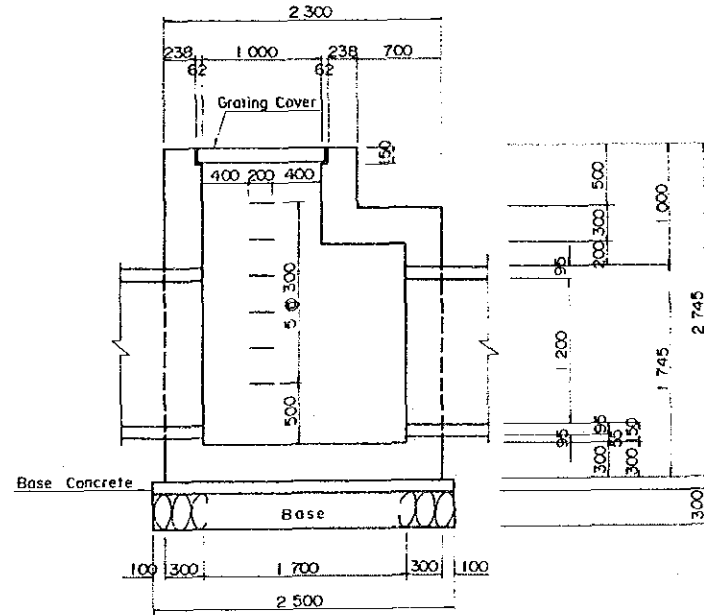
Outlet  $s = 1:40$



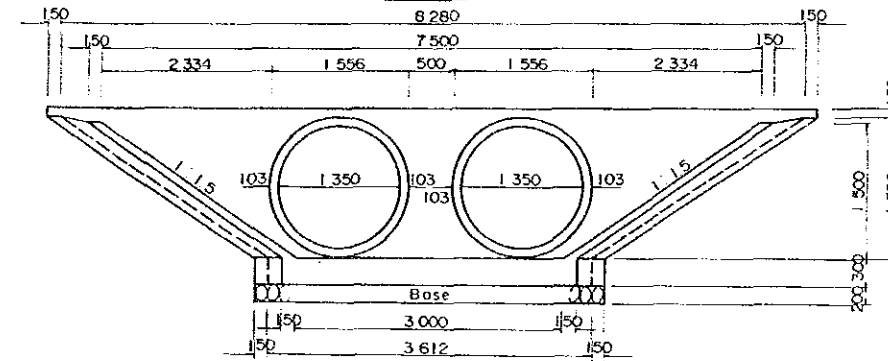
A - A



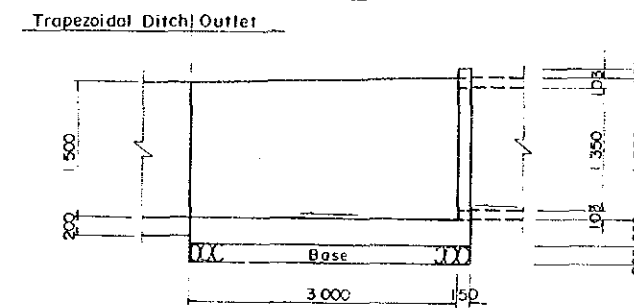
A - A



A - A



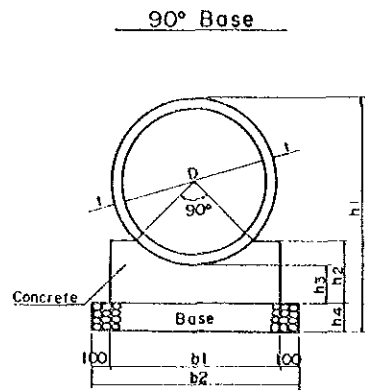
B - B



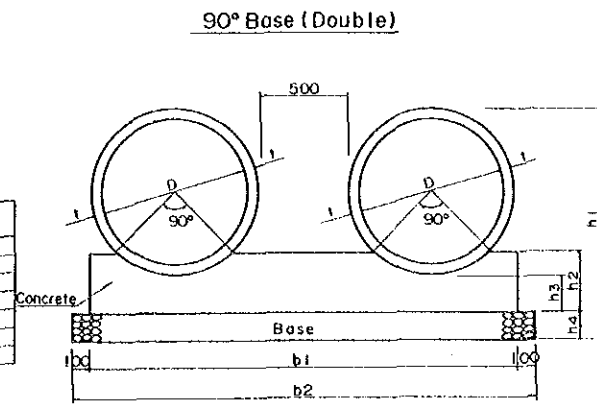
Appendix 7-1 Drawings of Airfield Facilities  
(10) Drainage Structures (1)

PEOPLE'S REPUBLIC OF CHINA FEASIBILITY STUDY ON THE CONSTRUCTION PROJECT OF WUHAN/TIANHE AIRPORT		
DRAINAGE STRUCTURES GENERAL VIEW-1 (AIRPORT)		
SCALE:AS SHOWN	No. C-10	MAR. 1990
JAPAN INTERNATIONAL COOPERATION AGENCY		

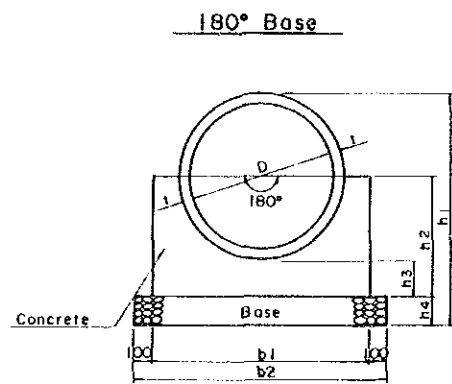
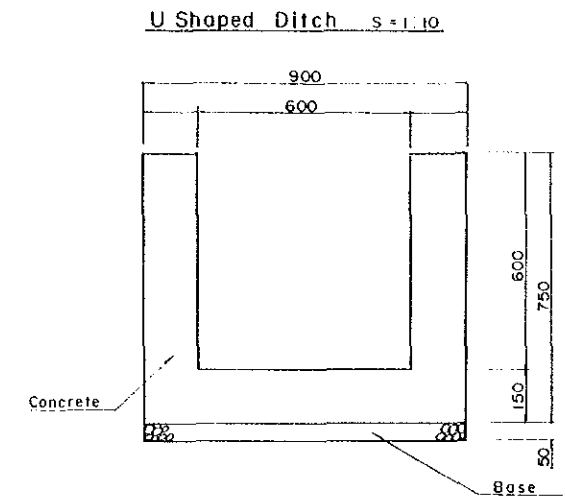




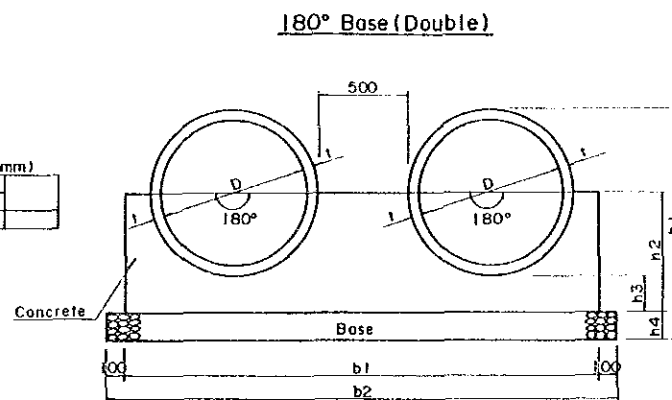
φ	Size (unit: mm)							
	D	t	b1	b2	h1	h2	h3	h4
600	600	50	750	950	1000	260	180	150
750	750	62	800	1000	1224	330	200	150
900	900	75	1050	1250	1400	360	200	150
1000	1000	82	1200	1400	1564	380	200	200
1100	1100	88	1300	1500	1726	440	250	200
1200	1200	95	1400	1600	1840	460	250	200
1350	1350	103	1600	1800	2006	480	250	200



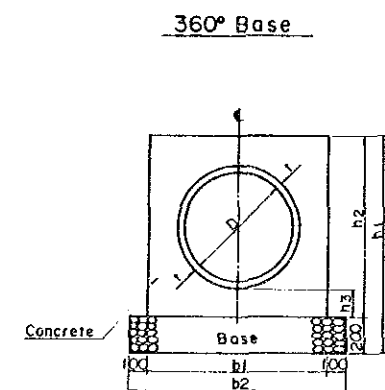
φ	Size (unit: mm)							
	D	t	b1	b2	h1	h2	h3	h4
1100	1100	88	3076	3276	1726	440	250	200
1200	1200	95	3290	3490	1840	460	250	200
1350	1350	103	3656	3856	2006	480	250	200



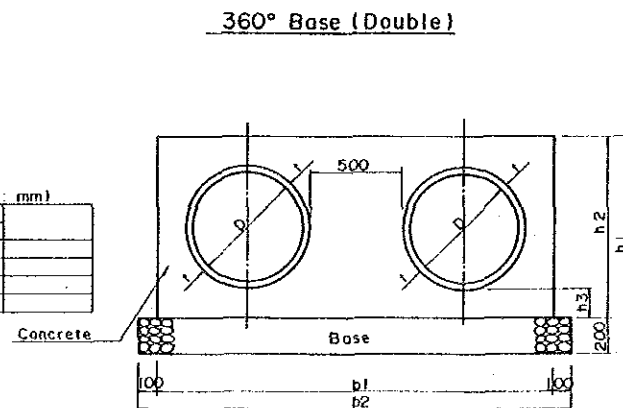
φ	Size (unit: mm)							
	D	t	b1	b2	h1	h2	h3	h4
1100	1100	88	1600	1800	1726	890	250	200



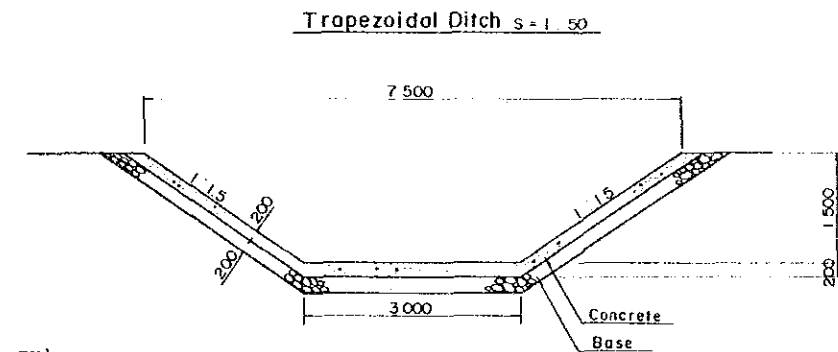
φ	Size (unit: mm)							
	D	t	b1	b2	h1	h2	h3	h4
1100	1100	88	3376	3576	1726	890	250	200
1350	1350	103	3956	4156	2006	1030	250	200



φ	Size (unit: mm)							
	D	t	b1	b2	h1	h2	h3	h4
1000	1000	82	1580	1780	1780	1580	200	
1100	1100	88	1680	1880	1880	1680	200	
1200	1200	95	1780	1980	1980	1780	200	
1350	1350	103	1980	2180	2180	1980	200	



φ	Size (unit: mm)							
	D	t	b1	b2	h1	h2	h3	h4
1100	1100	88	3456	3656	1880	1680	200	
1350	1350	103	4016	4216	2180	1980	200	



Appendix 7-1 Drawings of Airfield Facilities  
(11) Drainage Structures (2)

PEOPLE'S REPUBLIC OF CHINA  
FEASIBILITY STUDY  
ON  
THE CONSTRUCTION PROJECT  
OF  
WUHAN/TIANHE AIRPORT

CONCRETE STRUCTURES GENERAL  
VIEW-2 (AIRPORT)

SCALE: AS SHOWN No. C-11 MAR. 1990

JAPAN INTERNATIONAL COOPERATION AGENCY