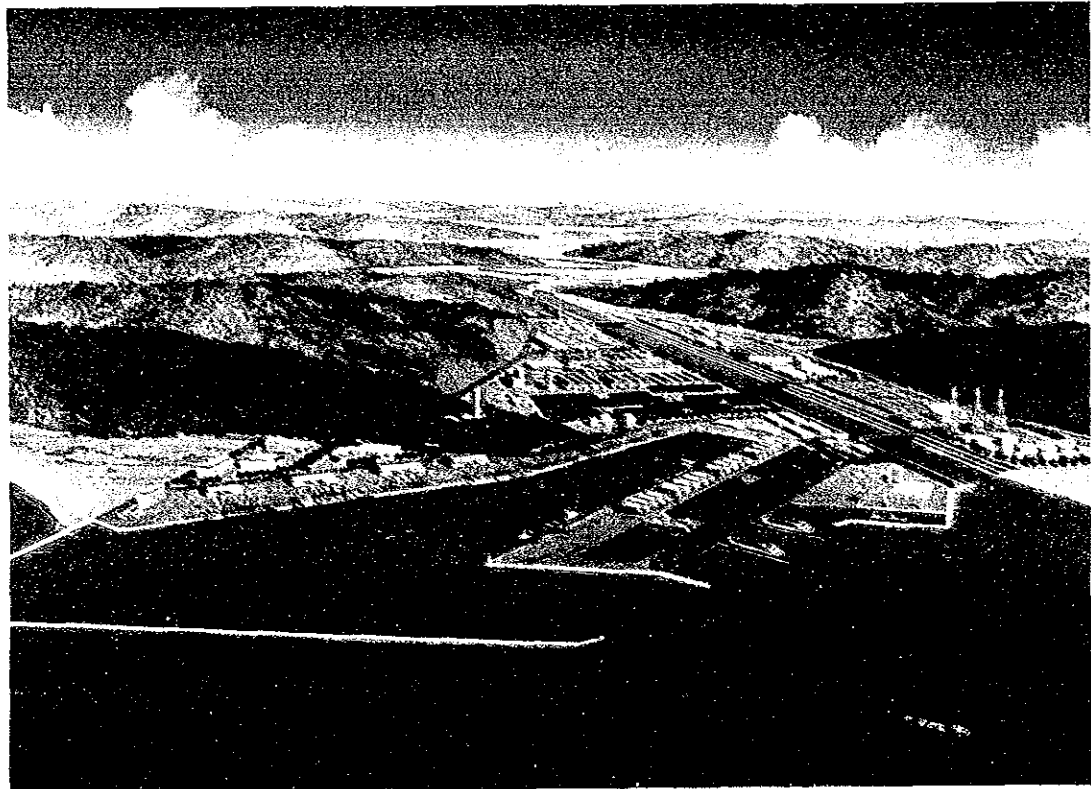


# FINAL REPORT

## FOR THE STUDY

## ON THE DEVELOPMENT PROJECT OF FILYOS PORT IN THE REPUBLIC OF TURKEY

### VOL.2 APPENDIXES



MARCH 1991

JAPAN INTERNATIONAL COOPERATION AGENCY

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**FINAL REPORT**

**FOR THE STUDY**

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IN THE REPUBLIC OF TURKEY**

**VOL.2 APPENDIXES**

**MARCH 1991**

国際協力事業団

22388

## ABBREVIATIONS

A	AMA	Ankara Metropolitan Area
	Ave	Average
B	BOT	Build, Operate and Transfer System
	BPSD	Barrel Per Standard Day
C	CFS	Container Freight Station
	CONS	Consumption
D	D	Domestic
	D/W	Dead Weight
	DDB	Do Decyle Benzene
	DLH	The Directorate General for the Construction of Railways, Harbours and Airports
	DSI	The General Directorate of State Hydraulic Works
	DWT	Dead Weight Tonnage
E	E.P.Z	Export Processing Zone
	EO5	National and International Highway Route 5
	EAF	Electric Arc Furnace
	EIRR	Economic Internal Rate of Return
	Exp	Export
F	F	Foreign
	F.T.Z	Free Trade Zone
	FCL	Full Container Load
	FIRR	Financial Internal Rate of Return
G	G.C	General Cargo
	G.D.P	Gross Domestic Product
	G.R.D.P	Gross Regional Domestic Product
	GNP	Gross National Product
H	H.W.L	High Water Level
	H1/3	Significant Wave Height

I	I&S	Iron and Steel
	IDT	Public Capital Autonomous Sector
	Imp	Import
J	JVC	Joint Venture Company
	J¥	Japanese Yen
K	KIT	Semi-public Sector
	KSS	Small Industrial Estates
L	L.W.L	Low Water Level
	LCL	Less Container Load
	LOA	Length Over All
	LPG	Liquid Petroleum Gass
O	OSB	Organized Industrial Estates
P	P.A	Per Annum
	P.OCL	Name of shipping company
	PCU	Passenger Car Units
	PMB	Port Management Body
	POL	Petroleum, Oil and Lubricant
	POP	Population
	PVC	Poly Vinyle Chloride
R	R.W.L	Residual Water Level
	Ro/Ro	Roll on Roll off system
S	SBR	Stylene Butadiene Rubber
	SPO(or DPT)	State Planning Organization
	Smax	A Parameter of Mixture in Wave Directional Element
T	T.I.R	Transport International Routier
	TCDD	Turkish State Railways
	TCK(KGM)	General Directorate of Highways
	TDCI	Turkish Iron and Steel Works
	TDI	Turkish Maritime Organization



T	TEU	Twenty Feet Equivalent Unit
	TKK	Turkish Coal Institute
	TL	Turkish Lira
U	UK	United Kingdom
	US\$	Currency of United States of America
	USA	United States of America
	USSR	Union of Soviet Socialist Republics
V	V.A.M	Value Added in Manufacturing Industry

US\$ 1.0 = J¥ 150 = TL 2,693



## CONTENTS

Appendix	1- 1	Exchange Rates (1977-1989).....	1
Appendix	1- 2	Wholesale Prices (1977-1989).....	2
Appendix	1- 3	Foreign Trade Balances and Import (1983-1989).....	3
Appendix	2- 1	Organization Chart SPO.....	4
Appendix	2- 2	Organization Chart MPWS.....	4
Appendix	2- 3	Organization Chart MOTC.....	5
Appendix	2- 4	Organization Chart DLH.....	6
Appendix	2- 5	DLH Department Duties.....	7
Appendix	2- 6	DLH Expenditure (1988).....	9
Appendix	2- 7	DLH Harbour Expenditure (1988).....	9
Appendix	2- 8	DLH Harbour Personnel, Position and Number.....	10
Appendix	2- 9	Organization Chart TCDD.....	11
Appendix	2-10	TCDD in Figures (1988).....	12
Appendix	2-11	Organization Chart TDI.....	13
Appendix	2-12	Activity of TCDD Ports.....	14
Appendix	2-13	Activity of TDI Ports.....	15
Appendix	2-14	Port Statistics (1987) Handled Cargo.....	16
Appendix	2-15	Port Statistics (1986) Handled Cargo.....	17
Appendix	2-16	Port Statistics (1985).....	18
Appendix	2-17	Commodity Handled at TCDD Ports (1988,87,86).....	19
Appendix	2-18	Number of Containers Handled (1984-1988).....	20
Appendix	2-19	Cargo Tonnages in Containers (1984-1988).....	21
Appendix	2-20	Port Layouts. Trabzon-Hopa.....	22
Appendix	2-21	Port Layouts. Samsun.....	23
Appendix	2-22	Port Layouts. Bartin-Zonguldak.....	24
Appendix	2-23-1	Port Layout . Eregli (1).....	25
Appendix	2-23-2	Port Layout . Eregli (2).....	26
Appendix	2-24	Port Layout. Istanbul.....	27
Appendix	2-25	Port Layout. Hayderpasa.....	28
Appendix	2-26	Port Layout. Derinca Port.....	29
Appendix	2-27	Port Layout. Bandirma Port.....	30
Appendix	2-28	Port Layout. Izmir Port.....	31
Appendix	2-29	Port Layout. Antalya Port.....	32
Appendix	2-30	Port Layout. Mersin Port.....	33

Appendix 2-31	Port Layout, Iskenderen Port.....	34
Appendix 2-32	Turkish Harbour Capacity Calculations (Turkish Harbour Physical Information, June-1986).....	35
Appendix 2-33	Quay Length.....	40
Appendix 2-34	Cargo Handling in Hayderpasa Port.....	41
Appendix 8- 1	Turkish Free Trade Zones(Introduction).....	117
Appendix 8- 2	Turkish Free Trade Zones(Figure).....	119
Appendix 8- 3	Turkish Free Trade Zones(Law).....	120
Appendix 10- 1	Inland Cargo Movement and Traffics.....	151
Appendix 11- 1	Simulation Test for the Analysis on the Increase of Wait Time.....	192
Appendix 12- 3	Conditions of Cost Estimation.....	195
Appendix 14	Calculated Results of EIRR.....	202
Appendix 16- 1	Translation Table.....	204
Appendix 16- 2	Location of Ports in Turkey.....	207
Appendix 16- 3	Route Map to Filyos Port.....	209
Appendix 16- 4	Study Schedule.....	210

Appendix 1-1 Exchange Rates (1977-1989)

TL / foreign currency

EXCHANGE RATES

	US dollar		Deutsche mark		Australian dollar		100 Japanese yen		Belgian franc		Danish krone		French franc		Netherl. guilder		Swedish krona	
	Buying	Selling	Buying	Selling	Buying	Selling	Buying	Selling	Buying	Selling	Buying	Selling	Buying	Selling	Buying	Selling	Buying	Selling
1970	14.85	15.15	4.09	4.14					0.30	0.32	2.00	2.02	2.59	2.73	4.13	4.10	2.89	2.92
1971	14.00	14.30	4.24	4.44					0.31	0.32	2.01	2.05	2.74	2.80	4.22	4.41	2.91	2.97
1972	14.00	14.30	4.24	4.44					0.31	0.32	2.01	2.05	2.74	2.80	4.22	4.41	2.91	2.97
1973	14.00	14.28	4.24	4.36					0.32	0.33	2.02	2.07	2.74	2.80	4.22	4.41	2.91	2.97
1974	13.85	14.15	4.25	4.36					0.32	0.33	2.02	2.07	2.74	2.80	4.22	4.41	2.91	2.97
1975	13.50	13.50	4.25	4.36					0.32	0.33	2.02	2.07	2.74	2.80	4.22	4.41	2.91	2.97
1976	14.50	14.50	4.25	4.36	16.75	17.08			0.40	0.41	2.40	2.44	3.43	3.55	5.77	5.89	3.58	3.62
1977	15.25	15.64	4.25	4.36	19.53	19.82			0.44	0.45	2.80	2.86	3.53	3.60	6.63	6.83	3.90	3.98
1978	15.00	15.50	4.25	4.36	20.35	20.94			0.54	0.55	3.12	3.18	3.90	3.98	7.81	7.97	3.93	4.01
1979	15.00	15.50	4.25	4.36	20.35	20.94			0.88	0.90	4.36	4.50	5.97	6.09	12.66	12.91	5.38	5.48
1980	15.00	15.50	4.25	4.36	20.35	20.94			1.26	1.26	6.69	6.82	8.60	8.77	18.33	18.70	8.40	8.57
1981	15.00	15.50	4.25	4.36	20.35	20.94			2.81	2.87	14.68	14.97	19.54	19.93	42.48	42.48	20.17	20.57
1982	15.00	15.50	4.25	4.36	20.35	20.94	59.68	60.87	3.46	3.53	17.91	18.27	23.07	23.53	53.03	54.09	24.18	24.18
1983	15.00	15.50	4.25	4.36	20.35	20.94	79.54	81.13	4.05	4.05	22.20	22.64	27.60	28.15	70.63	71.04	25.50	26.01
1984	15.00	15.50	4.25	4.36	20.35	20.94	119.91	122.31	4.99	5.09	28.08	28.64	33.25	33.92	90.50	92.31	34.78	35.48
1985	15.00	15.50	4.25	4.36	20.35	20.94	176.93	178.72	7.03	7.10	39.87	39.87	46.09	46.56	124.91	126.17	49.47	49.97
1986	15.00	15.50	4.25	4.36	20.35	20.94	285.86	288.70	11.42	11.53	63.94	64.58	76.08	76.84	207.00	209.06	75.58	76.33
1987	15.00	15.50	4.25	4.36	20.35	20.94	471.70	474.06	18.65	18.74	102.56	103.07	117.15	117.74	343.20	344.92	111.16	111.72
1988	15.00	15.50	4.25	4.36	20.35	20.94	825.24	829.37	30.44	30.59	165.72	166.55	188.30	189.24	567.77	570.61	174.67	175.54
1989	1813.82	1817.46	1022.86	1024.91	1551.58	1554.69	14.53	14.56	49.00	49.10	263.52	264.05	298.92	300.52	905.61	907.43	296.25	298.84
1.1988	1117.65	1123.24	666.95	670.29	794.65	798.62	874.53	878.90	31.92	32.08	174.22	175.09	197.41	198.80	593.83	596.80	185.66	186.59
2.	1176.45	1182.33	697.35	700.84	845.99	850.22	917.81	922.40	33.38	33.55	182.54	183.45	206.18	207.21	620.95	624.05	196.63	197.61
3.	1220.70	1226.80	731.60	735.26	899.66	904.16	974.77	979.64	34.97	35.14	190.70	191.65	215.86	216.94	651.74	655.00	206.79	207.82
4.	1266.30	1272.63	759.10	762.90	961.75	966.56	1016.29	1021.37	36.28	36.46	197.20	198.19	223.33	224.45	676.98	680.37	216.41	217.49
5.	1320.10	1326.70	764.20	768.02	1067.99	1072.99	1055.64	1060.94	36.68	36.86	201.23	202.24	227.45	228.59	682.75	686.16	221.14	222.25
6.	1385.85	1392.78	761.45	765.26	1101.38	1106.64	1044	1049	37.12	37.30	203.16	204.18	229.35	230.50	685.44	688.87	225.30	226.43
7.	1440.80	1448.00	772.95	776.81	1159.84	1165.64	1044	1049	37.12	37.30	203.16	204.18	229.35	230.50	685.44	688.87	225.30	226.43
8.	1533.21	1536.28	821.08	824.73	1240.05	1242.53	1144	1146	39.17	39.25	213.69	214.12	242.05	243.25	717.50	720.96	237.67	238.15
9.	1649.51	1652.32	875.91	877.67	1291.66	1294.25	1229	1231	41.85	41.93	228.39	228.85	257.55	258.07	777.39	778.95	255.86	256.37
10.	1681.51	1684.98	949.90	951.80	1384.80	1387.58	1340	1343	45.36	45.45	246.03	246.52	278.25	278.85	842.49	844.18	273.25	273.80
11.	1716.46	1720.02	1026.26	1028.32	1557.96	1561.08	1461	1464	49.04	49.14	266.34	266.87	300.72	301.32	910.54	912.36	295.19	295.78
12.	1813.82	1817.46	1022.86	1024.91	1551.58	1554.69	14.53	14.56	49.00	49.10	263.52	264.05	298.92	300.52	905.61	907.43	296.25	298.84
1.1989	1851.19	1884.96	1077.17	1079.33	1648.49	1651.79	14.51	14.54	48.16	48.26	259.51	260.03	296.49	297.08	892.62	894.41	296.95	297.54
2.	1927.63	1931.49	1064.11	1066.24	1555.59	1558.71	15.38	15.41	50.78	50.88	272.26	273.81	312.36	312.99	944.92	946.81	308.47	309.09
3.	2025.84	2029.50	1072.68	1074.83	1659.44	1662.77	15.30	15.33	52.68	52.78	275.65	276.20	317.71	318.35	951.80	953.71	315.06	315.63
4.	2074.84	2079.00	1102.76	1104.97	1649.50	1652.81	15.61	15.64	54.68	54.79	283.49	284.06	327.87	328.57	979.74	981.66	325.71	326.30
5.	2094.60	2098.80	1042.87	1044.96	1562.16	1565.29	14.64	14.67	49.84	49.94	268.02	268.56	308.03	308.65	925.79	927.64	310.77	311.39
6.	2138.08	2142.37	1099.27	1101.47	1623.16	1626.41	14.99	15.02	52.54	52.65	282.25	282.82	324.60	325.28	974.74	976.69	323.09	323.74
7.	2150.69	2155.00	1141.86	1144.15	1610.87	1614.10	15.47	15.50	54.61	54.72	293.91	294.50	338.69	339.37	1015.31	1017.25	335.13	335.80
8.	2212.57	2217.00	1136.10	1138.38	1690.84	1694.23	15.41	15.44	54.46	54.57	292.76	293.35	337.87	338.55	1009.85	1011.81	334.52	335.19
9.	2236.52	2241.00	1196.64	1199.04	1739.34	1742.83	16.05	16.08	57.04	57.15	307.25	307.87	352.87	353.58	1059.91	1062.93	348.86	349.56

Appendix 1-2 Wholesale Prices (1977-1989)

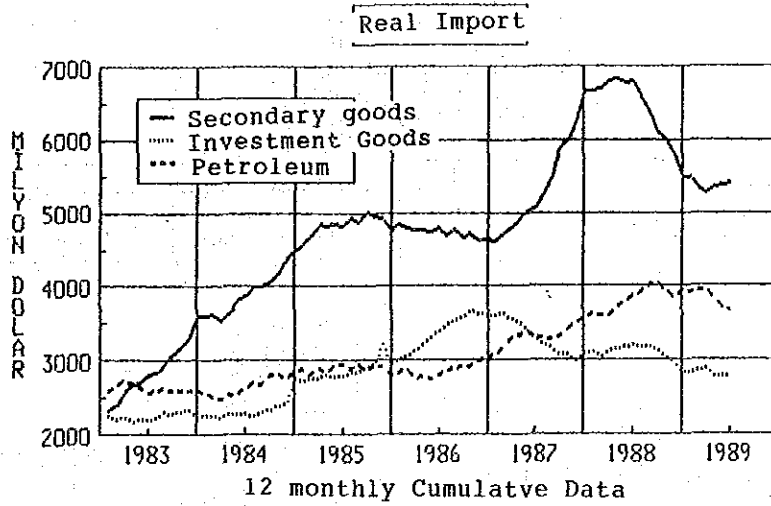
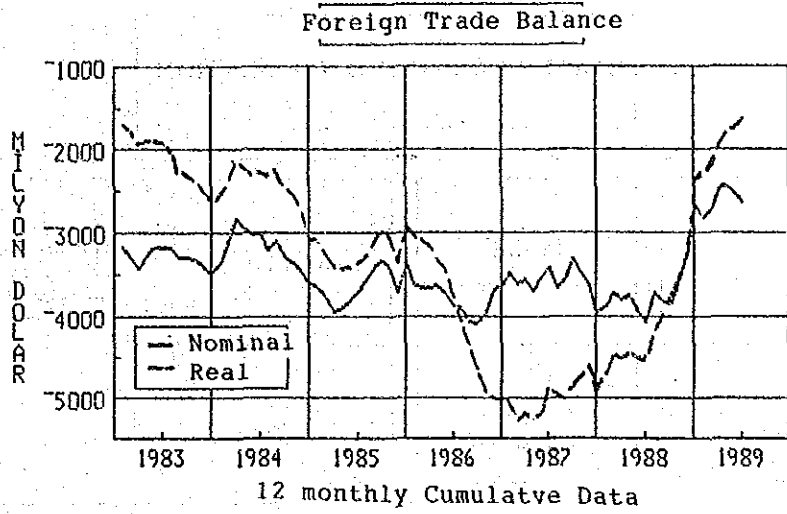
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WHOLESALE PRICES

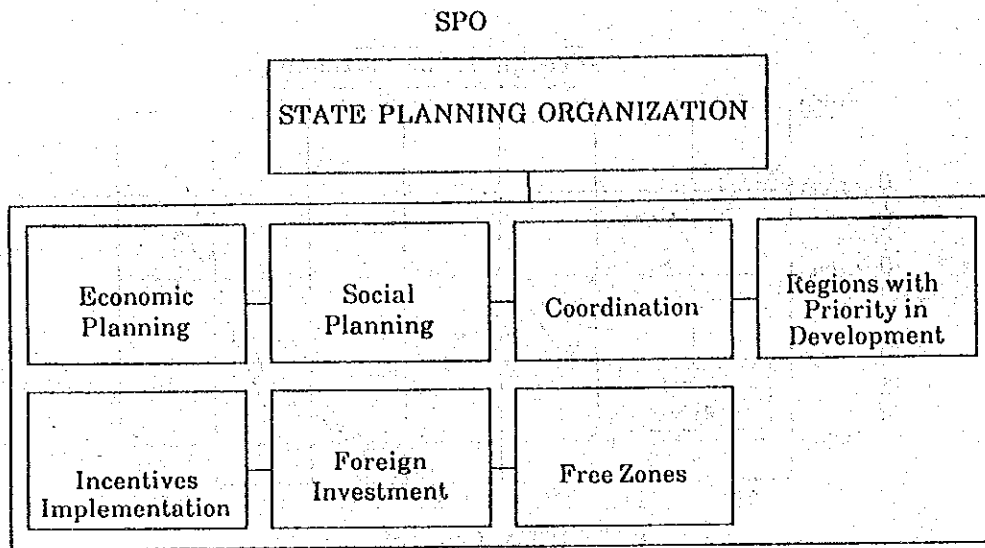
All Items	Agriculture					Mining					Manufacturing										Energy								
	All Items	Cereals	Pulses	Other Field Products	Vegetables and Fruits	Live Animals	Fishery Products	All Items	Coal Mining	Crude Petroleum	Metal Mining	Stones Quarrying	All Items	Food, Beverages, Tobacco	Textiles	Wood Products	Paper and Printing	Chemicals and Products	Non-Metallic Minerals	Metallic Minerals	Machinery, Vehicles	Other Industries	All Items	Gas	Water	Electricity			
1982	371.0	124.5	124.2	130.9	120.1	124.1	135.8	124.5	133.4	149.3	135.1	185.6	151.6	151.6	145.3	126.5	121.6	129.4	129.7	139.9	131.2	124.9	124.4	121.4	126.6	145.7	118.4	136.2	148.4
1983	365.7	140.4	152.3	138.0	157.5	160.6	254.8	160.3	171.0	179.9	165.5	225.1	181.9	169.1	166.0	153.3	179.5	193.3	187.2	170.1	176.3	156.6	157.1	157.1	157.1	157.1	157.1	157.1	157.1
1984	249.1	257.4	257.2	220.4	298.7	243.2	333.3	232.2	269.6	254.0	219.2	340.4	254.8	250.6	243.2	239.4	251.1	283.6	275.2	255.4	244.9	220.9	210.0	248.6	321.2	208.2	277.5	333.5	
1985	356.8	335.6	333.6	436.5	350.2	399.6	427.9	305.3	495.9	416.2	339.0	527.5	493.7	412.7	345.2	337.4	335.5	365.0	390.1	375.3	394.5	297.7	294.6	362.4	634.6	419.3	514.1	665.8	
1986	462.3	442.9	425.7	647.9	397.3	428.2	576.7	405.4	917.9	441.4	392.2	366.3	661.4	571.9	457.7	422.7	470.5	529.5	536.2	463.3	574.9	380.4	412.0	513.1	460.3	507.9	628.0	918.8	
1987	618.4	574.2	505.8	759.5	601.1	543.2	915.7	524.8	1008.0	599.1	496.2	560.9	765.0	785.9	631.3	565.2	694.0	814.6	783.3	822.7	563.1	575.9	688.8	1061.4	550.1	902.2	1108.6		
1988	1027.3	946.9	785.8	800.1	869.5	820.8	1399.9	790.9	1768.8	1018.3	891.1	726.3	1332.8	1510.4	1086.6	969.8	1180.3	1284.2	1499.8	963.5	1329.4	1080.7	1062.6	1233.2	1488.5	894.1	1223.2	1560.4	
1989	802.3	681.8	584.0	708.5	773.4	620.4	1089.5	654.0	1443.5	741.9	635.5	664.4	892.9	1002.4	840.7	747.2	941.6	1665.9	1149.0	740.3	1122.3	828.3	774.2	828.9	1404.6	819.6	1117.4	1480.8	
2.	852.4	729.3	624.1	759.4	805.6	656.3	1175.3	665.1	1337.6	847.8	762.2	712.6	929.6	1148.2	894.7	785.6	984.6	1195.9	1181.0	784.9	1207.1	883.9	836.6	972.7	1407.7	819.6	1135.4	1480.8	
3.	912.0	777.8	647.6	752.2	808.9	779.7	1288.3	660.4	1402.8	864.7	757.0	672.2	969.4	1247.7	959.4	887.1	1015.4	1212.0	1180.6	841.7	1237.3	966.9	901.0	992.6	1407.7	819.6	1135.4	1480.8	
4.	985.9	848.2	679.1	730.1	839.4	796.5	1285.0	669.2	1698.6	861.2	759.6	618.4	1016.6	1281.7	1013.3	905.3	1087.3	1234.5	1333.9	915.3	1265.0	1044.6	947.0	1059.6	1416.1	819.6	1184.4	1480.8	
5.	976.0	823.3	706.9	710.5	858.2	803.1	1293.0	712.6	1746.6	895.9	763.6	724.1	1038.3	1301.9	1036.4	914.6	1125.6	1236.9	1540.0	972.2	1315.4	1022.9	978.2	1136.1	1416.1	819.6	1184.4	1480.8	
6.	1000.9	853.4	735.2	742.0	866.7	876.7	1293.0	820.6	1298.5	926.6	777.2	750.7	1100.0	1360.4	1054.2	937.3	1147.4	1334.6	1558.9	939.3	1316.6	1046.9	981.1	1156.1	1416.1	819.6	1184.4	1480.8	
7.	1022.8	844.8	747.5	791.3	818.5	887.6	1372.9	785.5	1382.0	1021.3	882.4	738.3	1328.6	1555.8	1062.1	980.3	1199.8	1242.7	1563.5	970.5	1331.0	1057.4	1035.1	11165.2	1420.3	828.1	1207.8	1480.8	
8.	1065.0	892.4	821.3	800.9	897.8	813.0	1626.3	792.8	1995.5	1057.0	926.0	737.8	1417.3	1604.2	1113.3	1003.7	1198.0	1253.9	1567.1	995.9	1339.4	1096.3	1071.3	1500.0	1569.4	892.1	1215.2	1651.2	
9.	1093.7	913.3	881.7	839.5	897.8	822.6	1582.1	826.0	1929.6	1142.9	975.7	778.8	1625.1	1741.7	1159.6	1037.3	1285.4	1308.7	1621.8	1012.5	1372.1	1131.3	1124.0	1535.5	1560.4	899.0	1217.8	1651.2	
10.	1160.4	973.0	920.6	807.7	914.0	881.0	1599.8	927.9	2703.3	1209.5	1024.6	778.2	1823.1	1904.0	1232.1	1076.4	1424.5	1411.5	1638.8	1095.8	1433.7	1240.5	1200.9	1544.8	1562.0	944.7	1217.8	1651.2	
11.	1221.6	1069.8	996.5	960.3	951.3	918.6	1614.8	960.8	2045.6	1251.3	1104.2	732.2	1871.5	1939.6	1308.7	1166.0	1424.5	1435.3	1815.3	1151.3	1479.4	1290.4	1300.6	1582.8	1539.7	1044.2	1213.9	1621.8	
12.	1374.2	1075.9	1067.7	1026.8	1000.5	994.2	1666.1	1014.6	1992.4	1402.1	1325.8	787.9	1978.4	2037.6	1345.5	1197.0	1453.1	1478.7	1847.9	1782.6	1531.5	1330.4	1340.7	1585.1	1753.3	1211.3	1664.5	1783.9	
1.089	1372.7	1175.6	1124.2	1118.5	1064.5	1155.4	1748.6	1101.3	1883.1	1524.3	1433.2	988.1	2079.6	2166.8	1432.9	1231.8	1492.1	1599.1	2052.5	1900.6	1671.4	1452.1	1423.8	1650.3	2082.1	1286.8	2066.3	2106.4	
2.	1442.9	1339.9	1205.0	1312.4	1198.9	1415.4	1766.6	1058.0	1983.3	1590.6	1421.0	1096.1	2305.3	2411.6	1470.2	1246.2	1577.3	1543.8	2490.5	1314.3	1703.8	1475.6	1459.1	1721.3	2082.1	1286.8	2066.3	2106.4	
3.	1476.0	1331.3	1219.3	1439.2	1264.1	1368.4	1966.1	1127.9	1747.9	1626.9	1426.2	1148.8	2328.9	2448.9	1595.2	1271.6	1597.9	1574.1	2522.1	1330.7	1717.1	1547.0	1546.3	1739.0	2082.1	1286.8	2066.3	2106.4	
4.	1543.0	1344.8	1238.8	1482.6	1238.6	1376.8	2112.7	1178.7	1819.0	1695.7	1433.0	1318.1	2393.0	2335.3	1600.8	1351.0	1675.9	1683.4	2533.0	1420.8	1924.1	1637.2	1594.1	1807.3	2082.1	1286.8	2066.3	2106.4	
5.	1601.1	1372.4	1413.9	1431.9	1354.1	1199.5	2259.7	1164.9	1811.4	1766.4	1451.3	1468.2	2561.3	2598.9	1676.1	1459.1	1763.8	1745.4	2585.3	1448.8	1985.5	1753.7	1667.8	1971.1	2393.7	1286.8	2070.4	2367.4	
6.	1701.7	1479.1	1604.9	1537.0	1625.9	1182.4	2464.4	1213.1	1863.5	1839.5	1506.9	1385.8	3078.2	2627.2	1771.3	1665.7	1933.7	1649.4	2597.4	1467.5	2051.3	1832.8	1755.7	1979.2	2498.1	1286.8	2121.7	2609.7	
7.	1781.2	1522.8	1930.9	1609.7	1566.4	1213.0	2180.4	1254.5	2160.7	1899.9	1619.1	1388.6	3100.8	2685.4	1880.2	1745.5	2007.3	1895.0	2590.8	1720.9	2175.3	1843.7	1777.5	1988.2	2515.6	1286.8	2223.6	2609.7	
8.	1843.3	1613.8	2053.6	1628.0	1773.7	1259.9	2218.4	1258.1	2258.1	1927.6	1704.9	1341.2	3115.4	2704.3	1923.0	1825.4	2069.0	1971.5	2590.7	1746.8	2118.4	1836.7	1813.5	2023.7	2521.2	1286.8	2256.4	2609.7	
9.	1919.9	1748.9	1996.6	1970.8	1814.3	1530.6	2279.6	1458.0	3412.8	1982.1	1767.9	1399.6	3153.7	2760.2	1957.3	1832.3	2161.4	2092.0	2632.1	1749.9	2398.8	1853.3	1849.0	2104.8	2813.5	1286.8	2292.9	2963.9	

Source : Prime Ministry State Institute of Statistics

Appendix 1-3 Foreign trade Balance and Import(1983-1989)

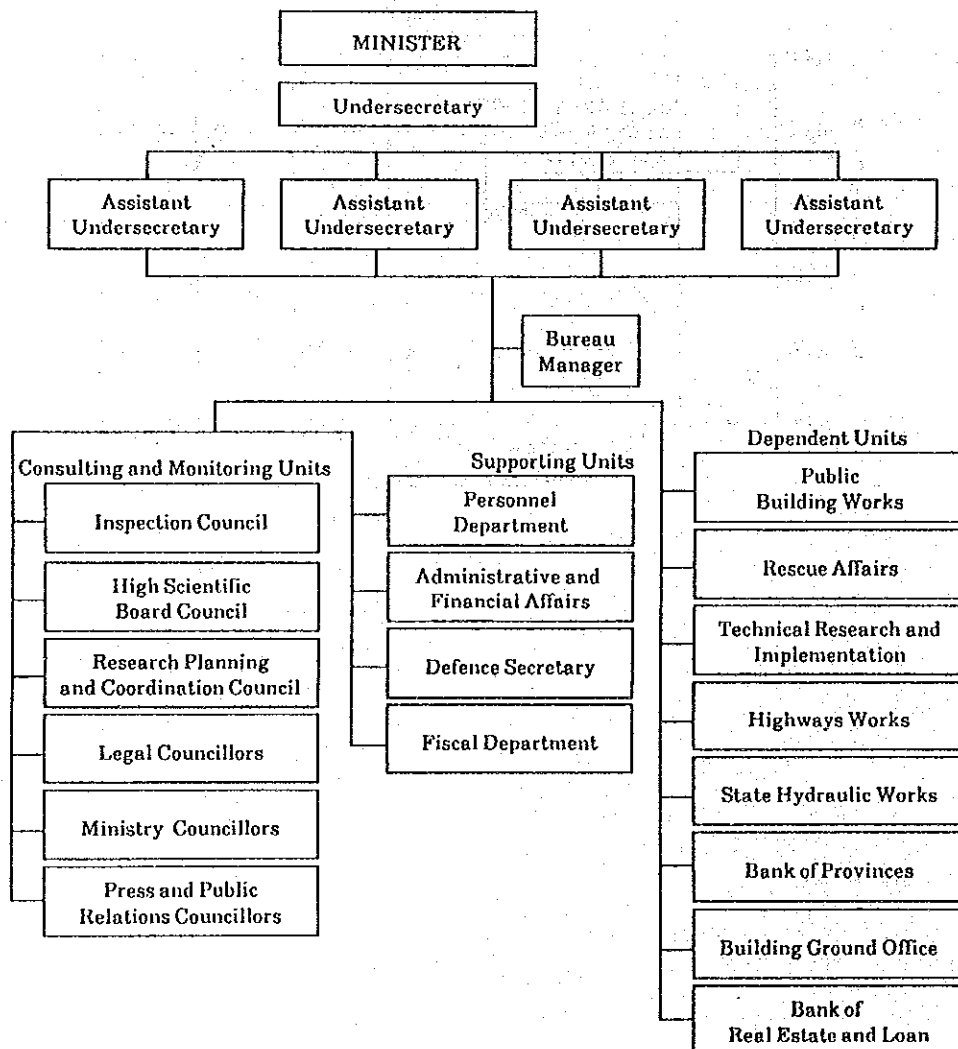


Appendix 2-1 Organization Chart SPO



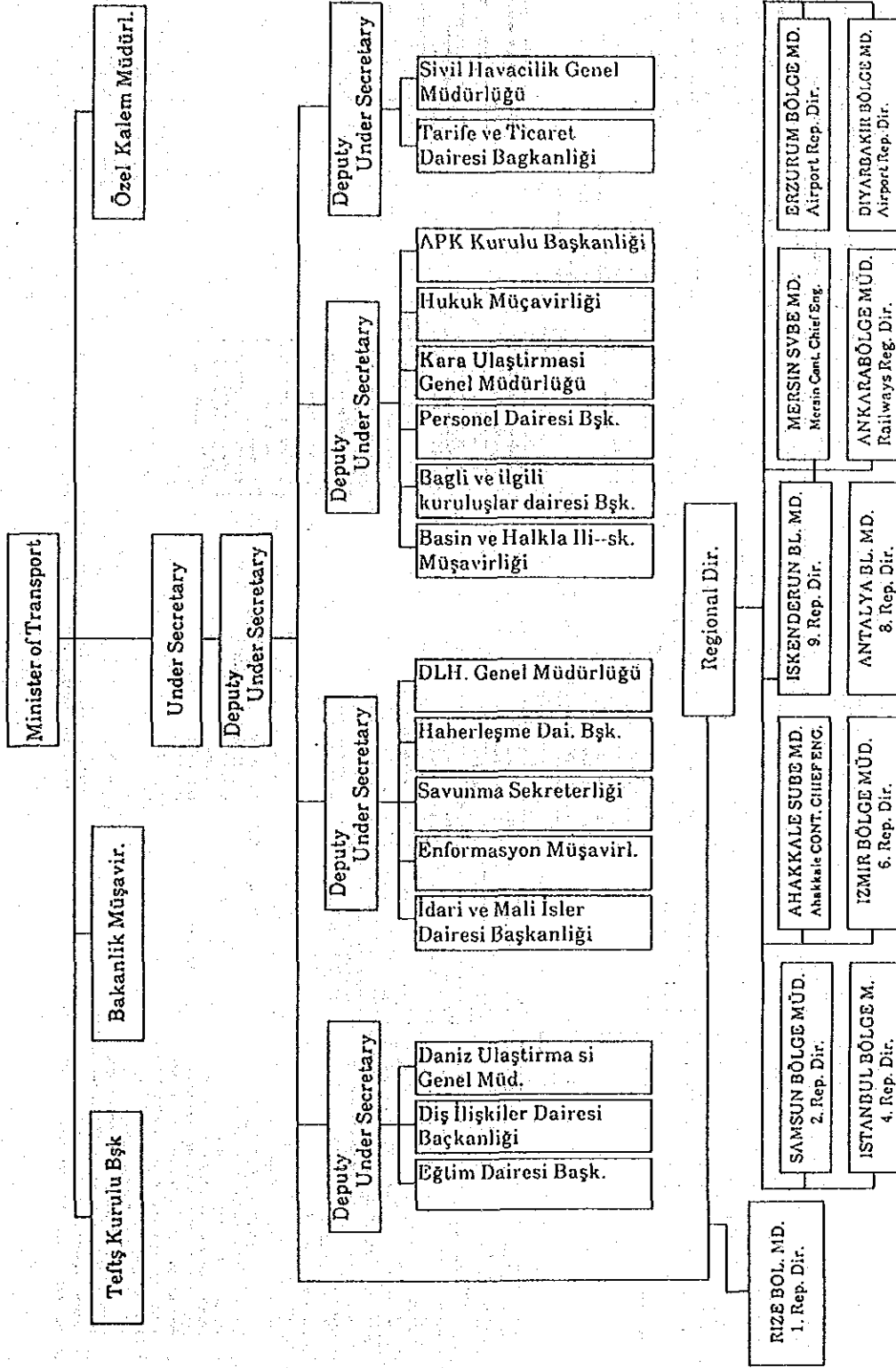
Appendix 2-2 Organization Chart MPWS

(Ministry of Public Works and Settlement)



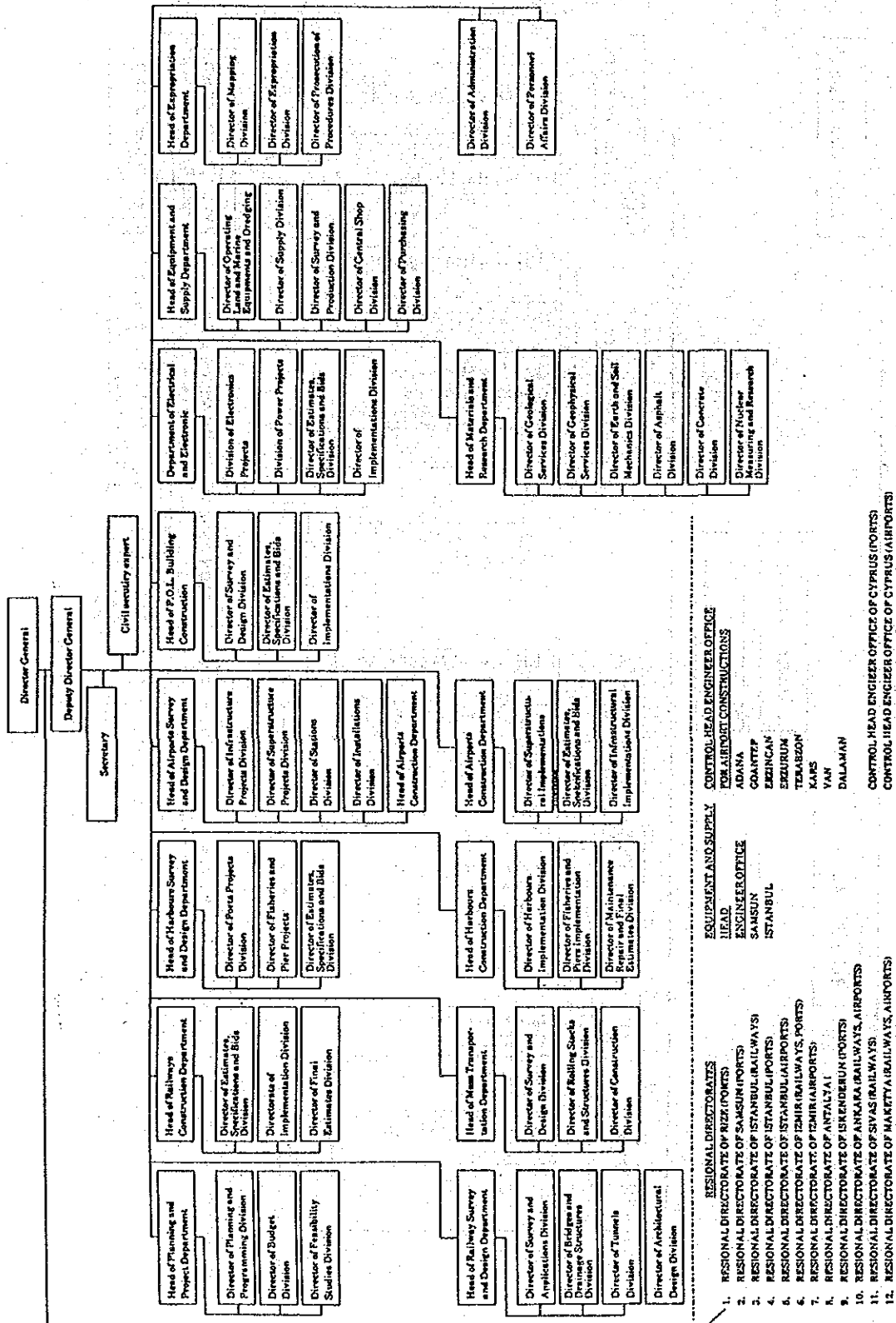


Appendix 2-3 Organization Chart MOTC



MOTC

Appendix 2-4 Organization Chart DLH



DLH  
 Organization Chart

Appendix 2-5 DLH Department Duties

DLH DEPARTMENTS AND DUTIES

- 1- Head of Planning and Project Department
  - Planning and Programing
  - Budget
  - Feasibility Studies
- 2- Head of Railways Construction Department
  - Estimates, Specifications and Bids.
  - Implementation
  - Final Estimate
- 3- Head of Railway Survey and Design Department
  - Survey and Applications
  - Tunnels
  - Bridges and Drainage structures
  - Architectural Design
- 4- Head of Hourbours Constructions Department
  - Port Implementation
  - Fisheries and Piers Implementation
  - Maintenance Repair and Final Estimates
- 5- Head of Harbours Survey and Design Department
  - Ports Project
  - Fisheries and Pier Project
  - Estimates, Specification and Bids
- 6- Head of Mass Transportation Department
  - Survey and Design
  - Rolling Stocks and Structures
  - Consturction
- 7- Head of Airports Construction Department
  - Superstructu al Implementations
  - Estimates, Specifications and Bids
  - Infrastructural Implementations
- 8- Head of Airports Survey and Design Department
  - Infrastructure Projects
  - Superstructure Projects
  - Airport Stations  
Installations
  - Airport Construction
- 9- Head of P.O.L. Building Constructions Department
  - Survey and Design
  - Estimates, Specifications and Bids .  
Implementation
- 10- Department of Electrical and Electronics
  - Electronic Projects
  - Power Projects  
Estimates, Specifications
- 11- Head of Equipment and Supply Department
  - Operating Land and Marine Equipments and Dredging

- Supply
- Survey and Production
- Control Shop
- Purchasing
- 12- Head of Expropriation Department
  - Mapping
  - Expropriation
  - Prosecution of Procedures
- 13- Head of Materials and Research Department
  - Geological
  - Geophysical
  - Earth and Soil Mechanics
  - Asphalt
  - Concrete
  - Nuclear Measuring and Research
- 14- Director of Administration Division
- 15- Director of Personnel Affairs Division

Appendix 2-6 DLH Expenditure(1988)

D.L.H. EXPENDITURE (1988)

	<u>Billion/TL</u>	<u>%</u>
- Railway	32.078	19.3
- " Remaining Amount	8.087	4.9
- Airway	30.638	18.6
- " " "	20.516	12.4
- Harbour	37.527	22.6
- " " "	36.918	22.3

Appendix 2-7 DLH Harbour Expenditure(1988)

HARBOUR : EXPENDITURE (1988)

- World Bank Credit	19.915
- Port	24.973
- " Remaining Amount	10.352
- Tourism(Marina)	2.755
- " " "	1.309
- Agriculture (Fisheries)	9.178
- " " "	4.695
- Products	0.621
- " " "	0.647

Appendix 2-8 DLH Personnel. Poasition and Number

DLH PERSONNEL

	<u>General Directorate</u>	<u>Regional Directorate</u>	<u>Total</u>
Employee	801	1325	2126
Mariner	-	313	313
	<u>801</u>	<u>1638</u>	<u>2439</u>

DLH PERSONNEL POSITION AND NUMBER

	<u>General Directorate</u>	<u>Regional Directorate</u>
M So. Engineer	22	39
B sc. "	153	215
City Planner	1	-
Geophysios	2	1
Geologist	-	1
Technician	31	62
Mechanic	9	9
Offfoal Administration Employee	84	39
Deputy Work	24	24
Field Surveyor	-	5
Mariner	-	303
	<u>801</u>	<u>1638</u>



# TCDD in Figures (1988)

LINES	
* Total length of line:	10 361 km.
* Of which, electrified	567 km.

TRACTIVE STOCK	
* Total stock :	798 loco
* Of which, 669 diesel loco	
	21 diesel units
	22 electric loco
	86 electric units

PASSENGER CARRIAGES	
* Suburban :	265 wagons, 21 762 seat places
* Mainline :	741 wagons 46 004 seat places
* Multiple Units :	338 25 456 seat places

FREIGHT WAGONS	
* 20 255 commercial wagons	Total capacity 682 897 ton
* 3 027 service wagons	
* 1 368 privately owned wagons	

PERSONNEL	
* General directorate and regions	: 52 848
* Affiliates	: 8 940
* Total personnel	: 61 788
* Permanent	: 47 080
* Contract	: 10 403
* Temporary	: 4 305

PASSENGER TRAFFIC	
* Pass. number (Thousand)	: 135 706
—Suburban	: 113 070
—Mainline	: 22 636
* Pass-km (Million)	: 6 708
—Suburban	: 2 906
—Mainline	: 3 802
* Average transportation distance	
—Suburban	: 25.7 km
—Mainline	: 167.9 km

FREIGHT TRAFFIC	
* Netton (Thousand)	: 14 831
* Netton-km (Million)	: 8 149
* Average transportation distance	549.4 km

PORTS TRAFFIC (TON)	
* Loading (Thousand)	: 10 812
* Unloading (Thousand)	: 11 390
* Total (Thousand)	: 22 202

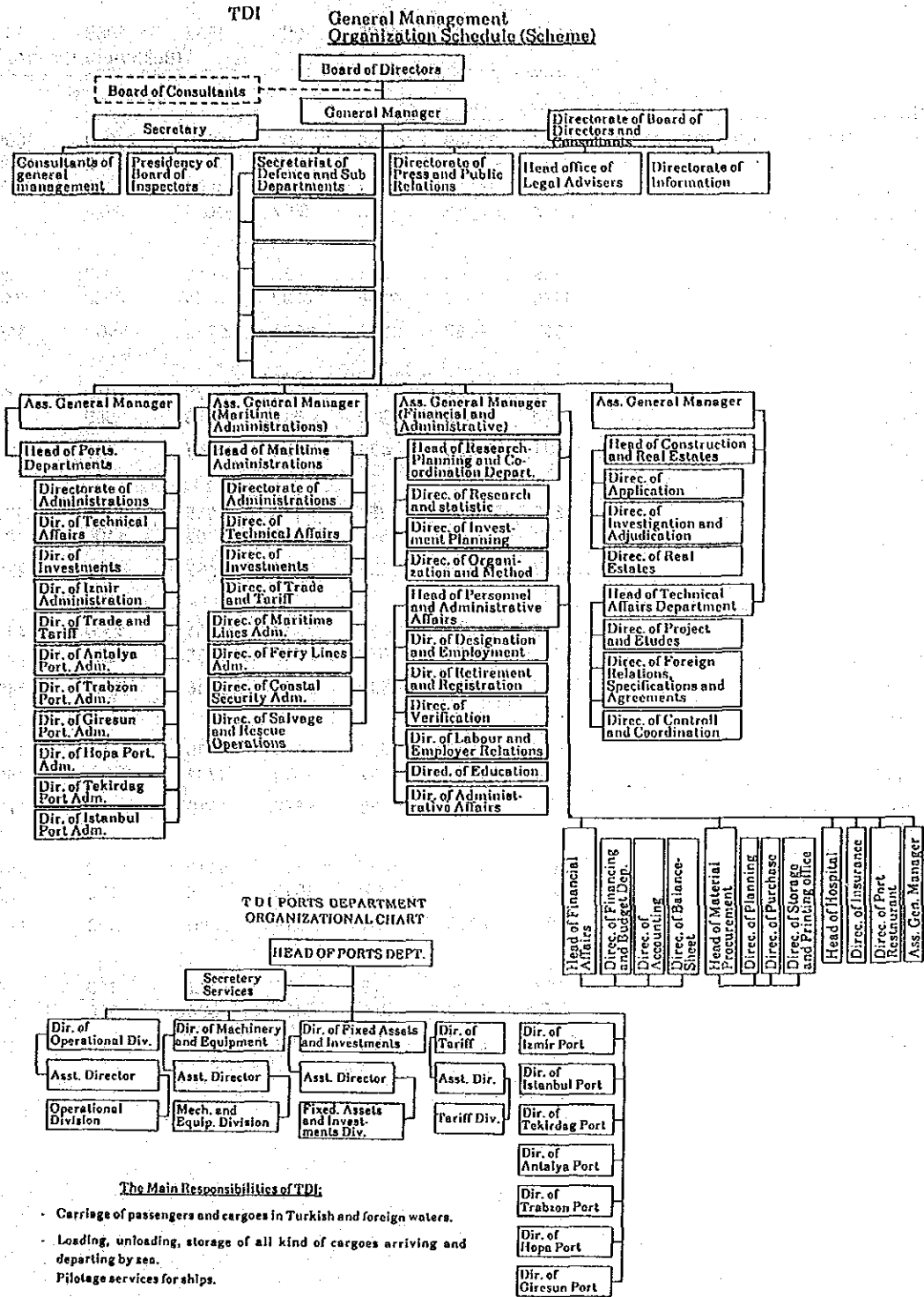
FINANCIAL STRUCTURE (TL MILLION)	
* Total of expenditures	: 614 882
* Total of revenues	: 531 981
* Gain-Loss	: -82 901

INVESTMENTS	
* 459 km track renewal, 137 000 m <sup>3</sup> finishing ballast, renewal of 95 railway switches, 35 km reinforcement of present tracks, 20 700 rail welding.	
* 301 km telecommunication installation	
* Production of 20 diesel mainline loco, 22 diesel shunting loco., 5 electric mainline loco, 36 passenger cars.	

Source: The New Face of TCDD



Appendix 2-11 Organization Chart TDI



Appendix 2-12 Activity of TCDD Ports

	1983	1984	1985	1986	1987	1988 (Beklenen)	1989 (Program)
<b>LİMANLAR</b>							
Loading-Unloading Capacity	15993	22989	22989	26000	26000	26000	26000
Fİll Loading	6371	6197	7782	8030	7514	10572	10000
Fİll Unloading	12736	14903	13777	13072	13964	11361	12500
Liman İşletme Ütillizasyo.	119,4	91,8	93,8	81,2	82,6	86,6	
<b>HAYDARPAŞA</b>							
Loading	718	258	471	661	641	1000	1200
Unloading	1139	1802	2056	2292	2634	2500	2300
<b>TOPLAM</b>	<b>1857</b>	<b>2060</b>	<b>2527</b>	<b>2953</b>	<b>3275</b>	<b>3500</b>	<b>3500</b>
<b>DERİNCE</b>							
Loading	27	82	81	119	179	240	300
Unloading	274	342	394	315	858	560	600
<b>TOPLAM</b>	<b>301</b>	<b>424</b>	<b>475</b>	<b>434</b>	<b>1037</b>	<b>800</b>	<b>900</b>
<b>SAMSUN</b>							
Loading	852	937	861	1033	1055	1100	1270
Unloading	1691	2191	1596	1382	1302	1100	1030
<b>TOPLAM</b>	<b>2543</b>	<b>3128</b>	<b>2457</b>	<b>2415</b>	<b>2357</b>	<b>2200</b>	<b>2300</b>
<b>MERSİN</b>							
Loading	3163	3048	3671	3534	3001	4000	4100
Unloading	4762	5591	5668	3708	5685	5280	5500
<b>TOPLAM</b>	<b>7925</b>	<b>8639</b>	<b>9339</b>	<b>9242</b>	<b>8686</b>	<b>9280</b>	<b>9600</b>
<b>İSKENDERUN</b>							
Loading	580	573	1529	1473	1395	1800	1750
Unloading	2188	2810	2557	1899	1781	1400	1400
<b>TOPLAM</b>	<b>2768</b>	<b>3383</b>	<b>4086</b>	<b>3372</b>	<b>3176</b>	<b>3200</b>	<b>3150</b>
<b>BANDIRMA</b>							
Loading	914	1205	1091	1118	1132	1300	1300
Unloading	105	764	1060	1015	1308	1200	1300
<b>TOPLAM</b>	<b>1019</b>	<b>1969</b>	<b>2151</b>	<b>2133</b>	<b>2440</b>	<b>2500</b>	<b>2600</b>
<b>İSKELELER</b>							
Loading	117	94	78	92	111	110	80
Unloading	2577	1403	446	461	396	396	370
<b>TOPLAM</b>	<b>2694</b>	<b>1497</b>	<b>524</b>	<b>553</b>	<b>507</b>	<b>520</b>	<b>450</b>

Appendix 2-13 Activity of TDI Ports

LİMANLAR	1983	1984	1985	1986	1987	1988 (Beklenen)	1989 (Program)
<b>HOPA</b>							
Handling Capacity	—	—	—	893	476	476	700
Actual Loading	—	—	—	98	69	155	193
Actual Unloading	—	—	—	200	248	190	273
Utilization rate of capacity	—	—	—	33	67	51	66
Ambarlama Hizmet.	—	—	—	21	17	75	35
Pilotage Services(Ton)	—	—	—	219	293	550	815
Pilotage Services(Quantity)	—	—	—	261	131	380	480
<b>TRABZON</b>							
Handling Capacity	1219	1219	1219	1463	1160	1160	1160
Actual Loading	162	166	106	51	93	65	90
Actual Unloading	1176	1427	1663	613	598	275	450
Utilization rate of capacity	110	131	145	45	60	29	47
Ambarlama Hizm.	1346	958	975	103	64	275	450
Pilotage Services(Ton)	3594	4418	3008	2400	1980	1500	2400
Pilotage Services(Quantity)	1316	982	881	564	478	400	430
<b>İZMİR</b>							
Handling Capacity	2509	2509	2509	2772	3689	4900	4900
Actual Loading	1002	1052	1495	1053	1276	1550	1470
Actual Unloading	871	1123	828	1072	1397	1150	1465
Utilization rate of capacity	75	87	92	77	54	55	60
Ambarlama Hizm.	288	338	399	452	488	500	288
Pilotage Services(Ton)	19790	20863	22831	19317	23213	26000	13500
Pilotage Services(Quantity)	4148	4396	4564	4246	5128	5000	2543
<b>TEKİRDAĞ</b>							
Handling Capacity	—	—	—	840	1525	1525	1525
Actual Loading	—	—	—	98	70	575	486
Actual Unloading	—	—	—	451	988	560	239
Utilization rate of capacity	—	—	—	65	69	74	48
Pilotage Services(Ton)	—	—	—	2	3	8	5
Pilotage Services(Quantity)	—	—	—	502	812	975	1000
<b>ANTALYA</b>							
Handling Capacity	1120	1120	1120	1044	1232	1232	1232
Actual Loading	268	239	198	194	213	230	235
Actual Unloading	478	551	562	560	466	495	534
Utilization rate of capacity	67	70	68	72	27	59	62
Ambarlama Hizmetleri	8	10	2	2	12	11	
Pilotage Services(Ton)	1988	2302	1247	1954	2027	2550	1334
Pilotage Services(Quantity)	671	824	493	796	1016	1000	525
<b>İSTANBUL</b>							
Handling Capacity	1523	1523	1523	1592	—	—	—
Actual Loading	1263	83	75	41	35	—	—
Actual Unloading	376	308	255	69	51	—	—
Utilization rate of capacity	33	26	22	7	—	—	—
Ambarlama Hizm.	608	660	568	423	186		
Pilotage Services(Ton)	319588	336666	336568	33928	385419	375000	466800
Pilotage Services(Quantity)	39234	40205	38547	39084	46037	45000	52400
<b>GİRESUN</b>							
Handling Capacity	612	612	612	740	770	770	770
Actual Loading	63	73	67,3	43	68	80	96
Actual Unloading	409	349	172	214	15	126	
Utilization rate of capacity	68	79	68	29	37	30	29
Ambarlama Hizm.	199	343	318	24	22	30	12
Pilotage Services(Ton)	2140	2158	1588	390	662	650	1234
Pilotage Services(Quantity)	7	- 7	5	2	273	250	318

Appendix 2-14 Port Statistics(1987) Handled Cargo

NAME OF PORT	Coastal Shipping '000 ton	Transit '000 ton	EX/IM '000 ton	TOTAL '000 ton
HOPA	165	153	60	378
PAZAR	1	0	14	15
RIZE	182	0	0	182
SURUMENE	0	0	0	0
TRABZON	531	36	138	705
VARFIKEBIR	4	0	0	4
GORELE	0	0	2	2
TIREBOLU	0	0	0	0
GIRESUN	101	0	134	235
ORUDU	22	0	8	30
FATSA	97	0	38	135
UNYE	0	0	0	0
SAMSUN	1,373	4	641	2,018
GERZE	1	0	3	4
SINOP	17	0	2	19
AYANCIK	6	0	0	6
INEBOLU	50	0	0	50
CIDE	18	0	0	18
AMASRA	102	0	0	102
BARTIN	206	0	66	272
ZONGULDAK	964	0	116	1,080
KDZ EREGLIS	1,889	0	3,468	5,357
KARASU	0	0	0	0
KEFKEN	0	0	0	0
SILE	38	0	0	38
IGNEADA	1	0	28	29
ISTANBUL	9,277	0	2,755	12,032
IZMIT	7,997	0	15,123	23,120
GEMLIK	313	35	795	1,143
MUDANYA	141	0	321	462
BANDIRMA	180	0	2,264	2,444
ERDEK	207	0	0	207
KARABIGA	232	0	0	232
SILIVRI	98	0	0	98
TEKIRDAG	507	18	714	1,239
GELIBORU	66	0	72	138
CANAKKALE	279	0	189	468
ENEZ	0	0	0	0
GOKCEADA	1	0	2	3
BOZCAADA	1	0	0	1
EDREMIT	0	0	0	0
AYUALIK	1	0	36	37
DIKILI	190	0	159	349
ALIAGA	8,454	0	3,545	11,999
IZMIR	356	0	1,731	2,087
CESME	0	0	0	0
KUSADASI	0	0	341	341
GULLUK	1	0	135	136
BODRUM	0	6	32	38
MARMARIS	4	0	0	4
FETHIYE	154	0	142	296
NEMRUT	426	177	3,703	4,306
KAS	0	0	2	2
FINIKE	1	0	0	1
ANTALYA	527	0	342	869
ALANYA	0	0	13	13
TASUCU	2	41	296	339
MERSIN	4,326	743	5,283	10,352
ISKENDERN	1,917	565	8,758	11,240
BOTAS	11,431	71,752	1,037	84,220
Total	52,859	73,530	52,506	178,895

Source: GESIBIL, MOT

Appendix 2-15 Port Statistics(1986) Handled Cargo

NAME OF PORT	LOADING '000 ton			UNLOADING '000 ton			Total '000 ton
	Domestic	Internatio	Total	Domestic	Internatio	Total	
HOPA	107		107	103	2	105	212
PAZAR	3	0	3	14	0	14	17
RIZE	11	0	11	146	0	146	157
SURMENE	0	0	0	0	0	0	0
TRABZON	33	8	41	455	205	660	701
VAKFIKEBIR	0	0	0	0	0	0	0
GORELE	1	1	2	0	3	3	5
TIREBOLU	0	0	0	2	0	2	2
GIRESUN	1	18	19	108	7	115	134
ORDU	0	23	23	17	19	36	59
FATSA	12	3	15	118	0	118	133
UNYE	0	0	0	0	0	0	0
SAMSUN	874	140	1,014	629	681	1,311	2,325
GERZE	0	0	0	0	0	0	0
SINOP	2	3	5	14	0	14	19
AYANCIK	7	0	7	1	0	1	8
INEBOLU	48		48	26		26	74
CIDE	4	0	4	7	0	7	11
AMASRA	117	0	117	9	0	9	126
BARTIN	92	21	113	143	73	216	329
ZONGULDAK	1,116	2	1,119	49	6	55	1,174
EREGLI	245	212	457	1,630	3,150	4,780	5,237
KARASU	0	0	0	0	0	0	0
KEFKEN	0	0	0	0	0	0	0
SILE	2	0	2	72	0	72	74
IGNEADA	30		30			30	60
ISTANBUL	155	694	849	4,786	2,075	6,861	7,710
IZMIT	4,163	1,823	5,988	3,200	9,522	12,722	18,710
GEMLIK	124	87	212	168	566	734	946
MUDANYA	30	95	125	123	91	214	339
BANDIRMA	224	1,005	1,230	47	939	987	2,217
ERDEK	40	0	40	154	0	154	194
KARABIGA	121	3	124	8	1	8	132
SILIVRI	4	0	4	109	0	109	113
TEKIRDAG	78	28	106	217	168	385	491
GERIBOLU	8	0	8	20	0	20	28
CANAKKALE	83	165	248	50	24	74	322
ENEZ	0	0	0	0	0	0	0
GOKCEADA	0	0	0	0	0	0	0
BOZCAADA	6	1	7	14	0	14	21
EDREMIT	62	0	62	0	0	0	62
AYVALIK	2	34	36	1	9	10	46
DIKILI	198	73	271	0	29	29	300
ALIAGA	2,135	910	3,045	2,771	2,983	5,754	8,799
IZMIR	214	680	894	222	838	1,060	1,954
CESME	0	0	0	0	0	0	0
KUSADASI	0	0	0	210	0	210	210
GULLUK	1	86	87	0	1	1	88
BODRUM	0	4	4	0	0	0	4
MARMARIS	11	6	17	1	0	1	18
FETHIYE	37	34	71	105	1	106	177
NEMRUT(See. ALAGA)							
KAS	0	0	0	0	0	0	0
FINIKE	1	0	1	1	0	1	2
ANTALYA	14	150	164	435	65	500	664
ALANYA	19	5	24	43	56	99	123
TASUCU	37	87	124	58	39	97	221
MERSIN	1,119	2,568	3,687	3,768	1,878	5,646	9,333
ISKENDERN	1,566	3,232	4,798	1,065	5,116	6,181	10,979
BOTAS	6,929	43,017	49,946	41	475	516	50,462
TOTAL							125,522

Appendix 2-16 Port Statistics(1985)

NAME OF PORT	Number of Ships		Arrival Total	Number of Passangers Domes/Inte	Cargo Volume 000 ton		
	National	Foreign			Domestic	Exp/Import	Total
HOPA							
PAZAR							
RIZE	317	9	326	0	224	54	278
SURMENE	23	0	23	0	0	0	0
TRABZON	1,556	133	1,689	8,355	588	769	1,357
VAKFIKEBIR							
GORELE	139	0	139	0	2	0	2
TIREBOLU							
GIRESUN	300	39	339	1,506	126	74	200
ORDU	50	9	59	450	18	45	63
FATSA							
UNYE	63	0	63	0	0	0	0
SAMSUN	518	119	637	3,111	1,153	816	1,969
GERZE							
SINOP	226	2	228	1,659	29	1	30
AYANCIK	46	0	46	0	13	0	13
INEBOLU	177	0	177	0	61	0	61
CIDE	26	0	26	0	6	0	6
AMASRA	334	0	334	0	184	11	195
BARTIN	516	0	516	0	214	223	437
ZONGULDAK	629	16	645	1,600	1,063	8	1,071
Eregli	669	54	723	20	1,783	2,452	4,235
KARASU	106	0	106	0	0	0	0
KEFKEN	56	0	56	0	0	0	0
SILE	74	0	74	0	25	0	25
IGNEADA	140	0	140	0	31	0	31
ISTANBUL	13,633	713		361,756	5,782	2,975	8,757
IZMIT	2,990	484	3,474	0	6,490	11,650	18,140
GEMLIK	685	115	800	1,421	336	657	993
MUDANYA	521	59	580	107,671	103	195	298
BANDIRMA	1,344	236	1,580	225,704	420	1,938	2,358
ERDEK	330	0	330	0	238	0	238
KARABIGA	527	0	527	6,975	215	0	215
SILIVRI	292	0	292	0	379	282	661
TEKIRDAG	908	164	1,072	0	464	233	697
GERIBOLU	140	0	140	0	44	0	44
CANAKKALE	512	75	587	104,099	737	285	1,022
ENEZ	0	0	0	0	0	0	0
GOKCEADA	384	0	384	93,279	5	0	5
BOZCAADA	84	0	84	90,092	32	0	32
EDREMIT	167	0	167	12	71	0	71
AYVALIK	317	239	556	21,558	2	37	39
DIKILI	338	83	421	0	261	41	302
ALIAGA	784	65	849	0	3,907	3,184	7,091
IZMIR	1,300	710	2,010	115,000	316	1,453	1,769
Cesme	211	246	457	19,141	0	35	35
KUSADASI	1,003	1,885	2,888	525,243	0	155	155
GULLUK	551	22	573	3	1	77	78
BODRUM	2,054	2,101	3,255	10,418	0	58	58
MARMARIS	1,260	1,496	2,756	54,144	32	5	37
FETHIYE	728	215	943	0	131	83	114
NEMRUT (See. ALAGA)							
KAS	58	3	61	1,329	0	0	0
FINIKE	30	61	91	0	14	2	16
ANTALYA	412	130	542	18,273	424	338	762
ALANYA	28	19	47	10,103	5	17	22
TASUCU	282	163	445	47,812	159	54	213
MERSIN	1,373	1,226	2,599	205,261	3,304	5,074	8,378
ISKENDERN	1,294	806	2,100	0	3,343	7,098	10,441
BOTAS	154	481	635	0	4,516	44,089	48,605
TOTAL	40,659	12,178	37,591	2,035,995	37,251	84,468	121,619
1985							

Appendix 2-17 Commodity Handled at TCDD Ports(1988,87,86)

Commodity Handled At TCDD Ports 1000 ton

Commodity	Port	HAYDER	DERINCE	SAMSUN	MERSIN	ISKENDRN	BANDIRMA
1. Foreign		3,244	597	680	5,234	1,360	2,486
Bulk		851	63	452	2,642	913	1,984
Grain		651	0	21	1,212	223	0
Coal		0	0	3	18	0	0
Mineral		0	63	289	487	236	1,719
Liquid		0	0	139	925	454	265
General Cargo		2,593	534	228	2,592	447	502
Fertilizer		0	0	220	41	105	376
Chemicals		28	0	0	0	0	0
Iron Steel		746	102	0	0	0	0
Construction		0	0	0	0	0	0
Electrical goods		0	0	0	0	0	0
Machinery		101	0	0	0	0	0
Mixed goods		1,718	432	8	2,551	342	126
2. Transit		184	0	5	597	1,467	0
3. Coastal		83	1	1,417	4,265	339	132
Grain		72	0	12	35	4	1
Coal		11	0	23	51	0	21
Mineral		0	0	971	6	64	107
Liquid		0	0	366	3,962	271	2
General Cargo		0	1	45	211	0	1
TOTAL 1988		3,511	598	2,102	10,096	3,166	2,618

Commodity	Port	HAYDER	DERINCE	SAMSUN	MERSIN	ISKENDRN	BANDIRMA
1. Foreign		3,055	1,034	970	3,564	1,326	2,331
Bulk		184	63	619	1,370	885	1,900
Grain		179	0	3	209	13	0
Coal		5	1	0	43	0	0
Mineral		0	62	296	147	149	1,569
Liquid		0	0	320	971	723	331
General Cargo		2,871	971	351	2,224	441	431
Fertilizer		0	15	302	145	177	271
Chemicals		35	3	0	0	0	0
Iron Steel		852	133	0	0	0	0
Construction		0	0	0	0	0	0
Electrical goods		0	0	0	0	0	0
Machinery		95	0	0	0	2	0
Mixed goods		1,889	820	49	2,079	262	160
2. Transit		155	0	0	503	1,684	0
3. Coastal		65	0	1,387	4,588	166	109
Grain		42	0	28	69	0	8
Coal		23	0	2	32	0	6
Mineral		0	0	896	32	119	85
Liquid		0	0	401	4,354	24	6
General Cargo		0	0	60	101	23	4
TOTAL 1987		3,275	1,034	2,357	8,655	3,176	2,440

Commodity	Port	HAYDER	DERINCE	SAMSUN	MERSIN	ISKENDRN	BANDIRMA
1. Foreign		2,705	426	845	3,653	1,223	1,981
Bulk		329	65	639	1,355	931	1,685
Grain		321	1	87	209	96	0
Coal		8	6	0	57	19	0
Mineral		0	58	297	100	131	1,437
Liquid		0	0	255	989	685	248
General Cargo		2,376	361	206	2,298	292	292
Fertilizer		0	13	170	89	138	173
Chemicals		27	5	0	0	0	0
Iron Steel		820	100	0	0	0	0
Construction		0	0	0	0	0	0
Electrical goods		0	0	0	0	0	0
Machinery		116	6	0	0	0	0
Mixed goods		1,413	237	36	2,209	154	123
2. Transit		188	0	41	854	2,059	0
3. Coastal		61	8	1,529	4,735	90	146
Grain		43	1	24	71	62	5
Coal		18	0	3	0	0	24
Mineral		0	0	968	4	8	111
Liquid		0	0	491	4,613	0	3
General Cargo		0	7	43	47	20	3
TOTAL 1986		2,954	434	2,415	9,242	3,372	2,127

Appendix 2-18 Number of Containers Handled(1984-1988)

Number of Containers Handled

Port	Year	LOADED (Number)						UNLOADED (Number)						Total (TEU)	
		20'			40'			20'			40'			Full	Empty
		Full	Empty		Full	Empty		Full	Empty		Full	Empty			
Hayderpasa	1984	2,950	2,133	1,525	608	3,934	1,647	541	1,611	541	15,479	7,184			
	1985	3,613	1,899	2,178	682	4,561	1,165	876	2,280	876	19,371	6,469			
	1986	4,525	4,306	3,114	1,338	7,099	2,011	1,540	2,585	1,540	27,536	12,544			
	1987	7,833	3,806	3,616	1,140	8,139	2,666	1,648	2,663	1,648	34,006	13,066			
	1988	7,960	5,098	4,128	1,766	10,243	2,885	1,662	3,884	1,662	40,586	16,062			
Mersin	1984	6,033	12,686	2,014	6,565	12,853	1,253	310	7,299	310	43,066	28,632			
	1985	5,910	12,961	2,947	6,950	11,913	2,183	198	7,815	198	43,445	31,425			
	1986	10,162	7,188	4,068	4,617	11,206	6,550	1,428	7,359	1,428	48,069	30,950			
	1987	14,745	2,474	6,243	905	6,757	9,063	3,417	3,973	3,417	44,718	25,827			
	1988	18,006	2,411	8,328	1,333	7,652	13,114	4,287	6,086	4,287	56,052	35,592			
Iskender	1984	340	3,858	457	2,834	5,783	36	36	3,619	36	16,459	9,588			
	1985	377	4,849	96	2,176	5,151	340	340	2,394	340	13,265	9,881			
	1986	487	2,935	1,106	1,398	3,038	313	313	1,360	313	10,135	6,357			
	1987	388	754	39	303	836	348	348	511	348	2,649	2,057			
	1988	444	639	7	520	591	516	516	694	516	2,334	2,721			
Samsun	1984	962	3,219	70	97	4,230	1	1	112	1	9,674	3,415			
	1985	196	1,298	40	141	1,148	24	24	133	24	2,705	1,628			
	1986		112		43							198			
	1987				22				22		22	44			
	1988		1		43	1			43		45	87			

Source: TCDD

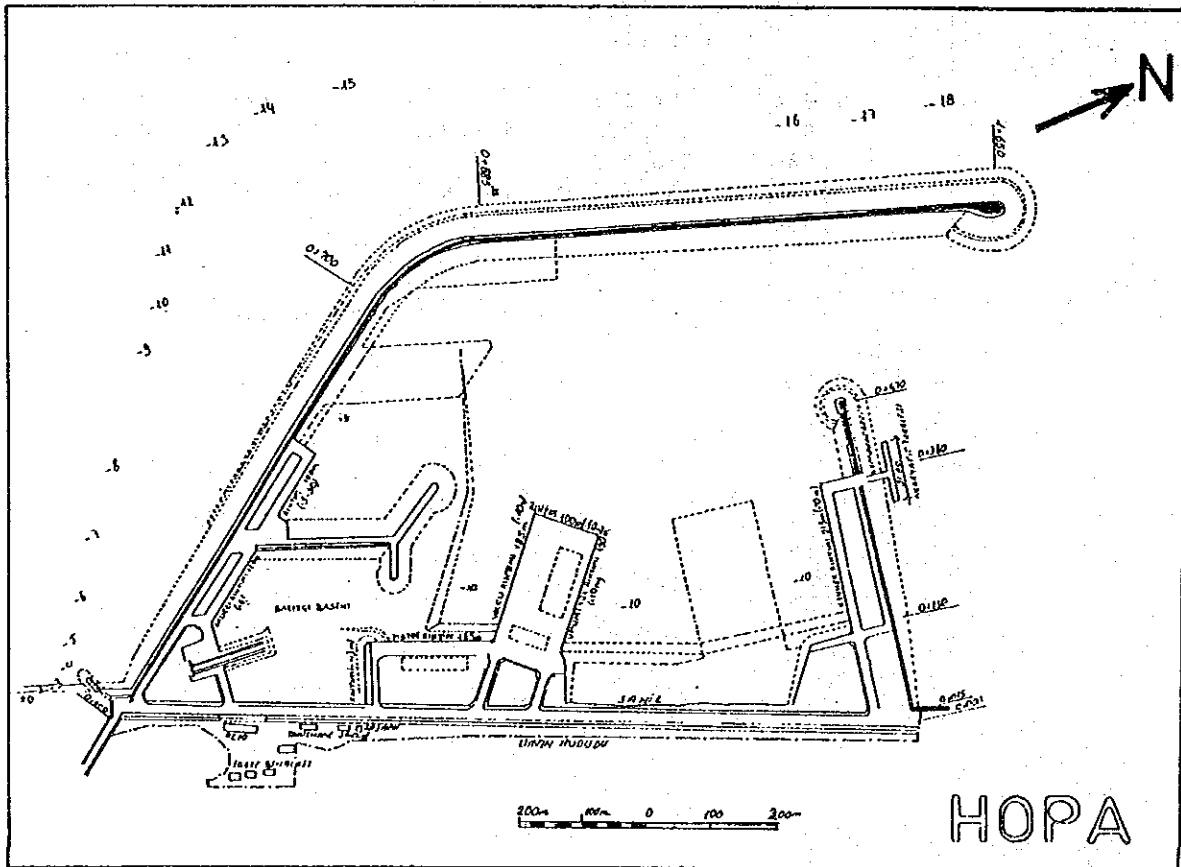
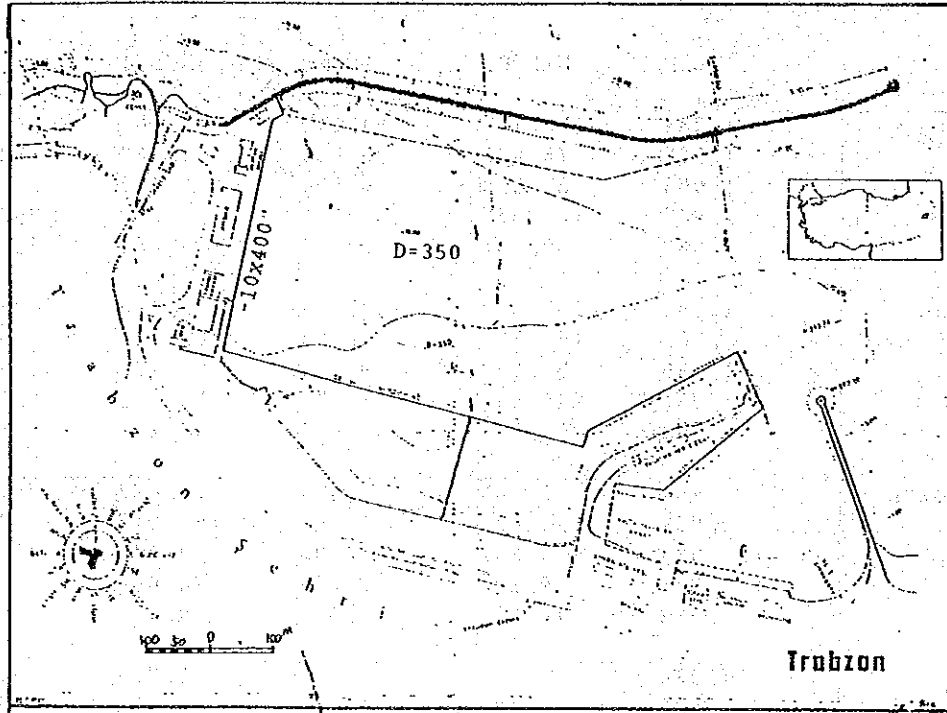


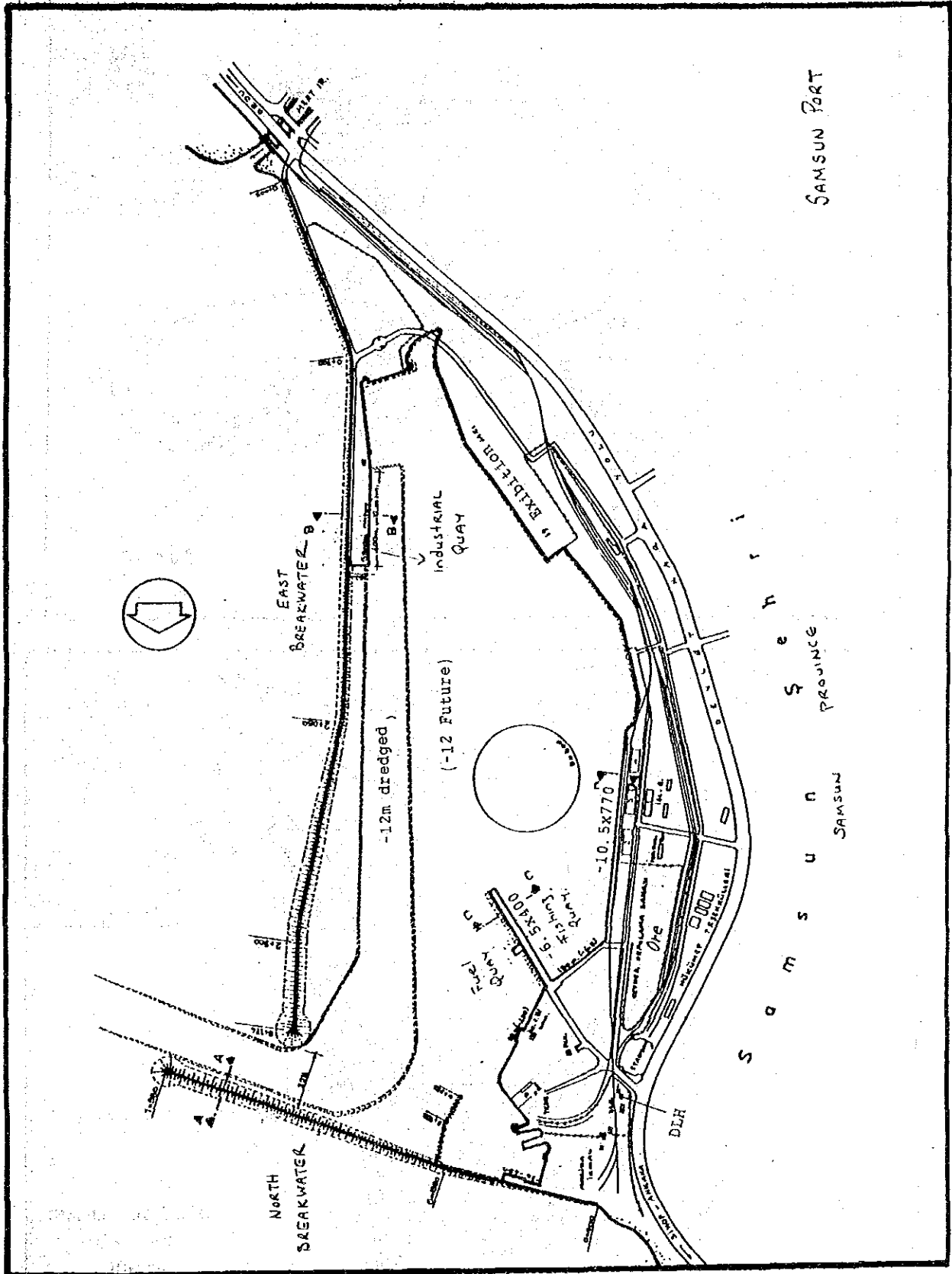
Appendix 2-19 Cargo Tonnages in Containers(1984-1988)

					Ton
PORTS	YEAR	EXPORT	IMPORT	TRANSIT	TOTAL (TON)
Hayderpasa	1,984	56,745	84,141	600	141,486
	1,985	76,636	96,766	9,587	182,989
	1,986	86,318	150,806	8,918	246,042
	1,987	104,375	187,851		292,226
	1,988	109,381	228,155	1,389	338,925
Mersin	1,984	131,323	17,943	338,560	487,826
	1,985	136,763	21,103	362,933	520,799
	1,986	257,660	49,800	361,276	668,736
	1,987	346,299	64,673	226,586	637,558
	1,988	420,598	44,643	340,205	805,446
Iskendern	1,984	6,105	416	200,828	207,349
	1,985	10,437	1,156	155,545	167,138
	1,986	9,861	3,192	79,848	92,901
	1,987	9,788	2,888	26,668	39,344
	1,988	10,807	1,847	29,362	42,016
Samsun	1,984			78,253	78,253
	1,985	489		27,755	28,244
	1,986			422	422
	1,987	* 91	396		487
	1,988	* 185 * coastal	902		1,087
TOTAL	1,984	194,173	102,500	618,241	914,914
	1,985	224,325	119,025	555,820	899,170
	1,986	353,839	203,798	450,464	1,008,101
	1,987	460,553	255,808	253,254	969,615
	1,988	540,971	275,547	370,956	1,187,474

Source: TCDD

Appendix 2-20 Port Layouts, Trabzon-Hopa

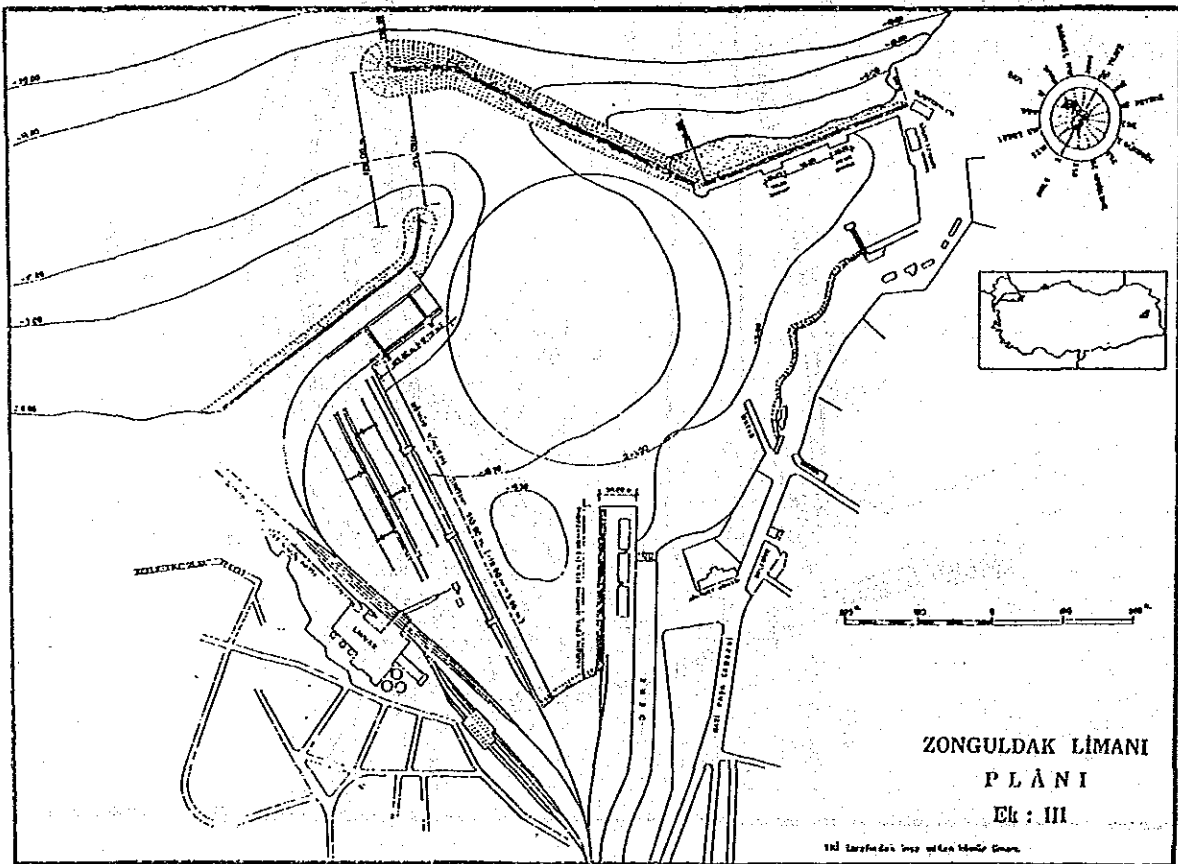
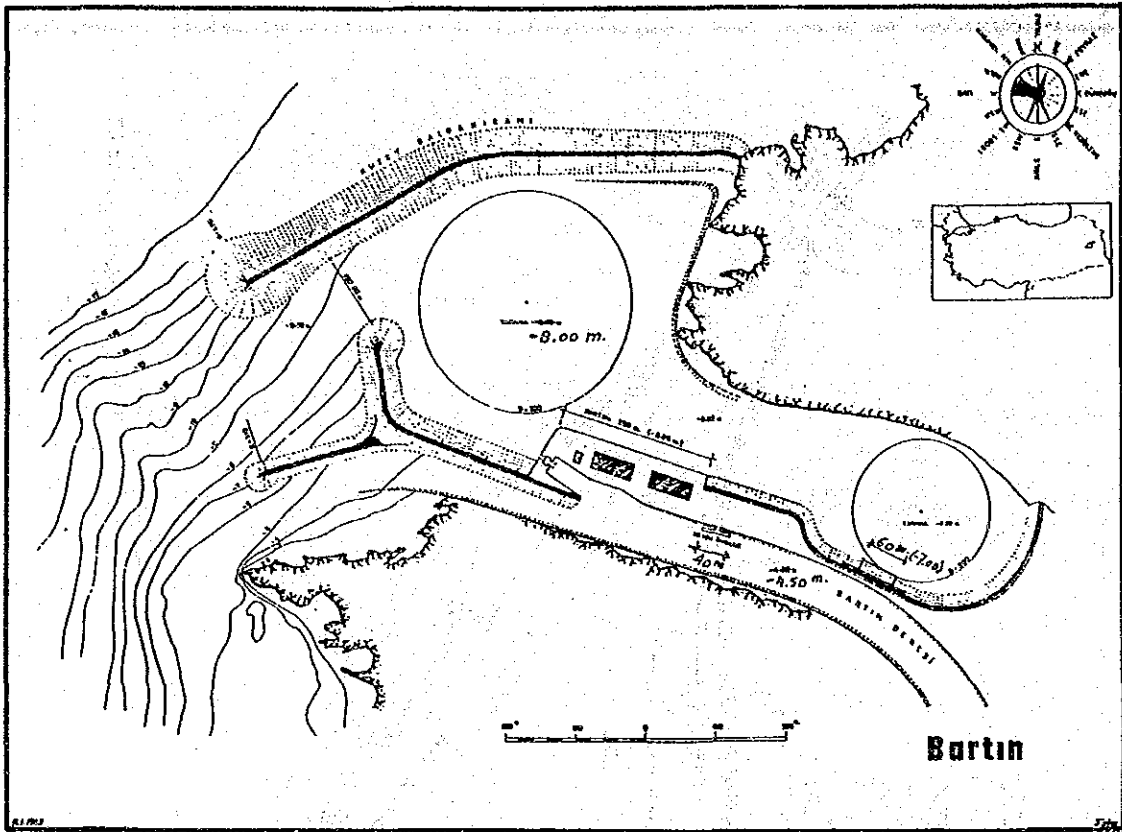




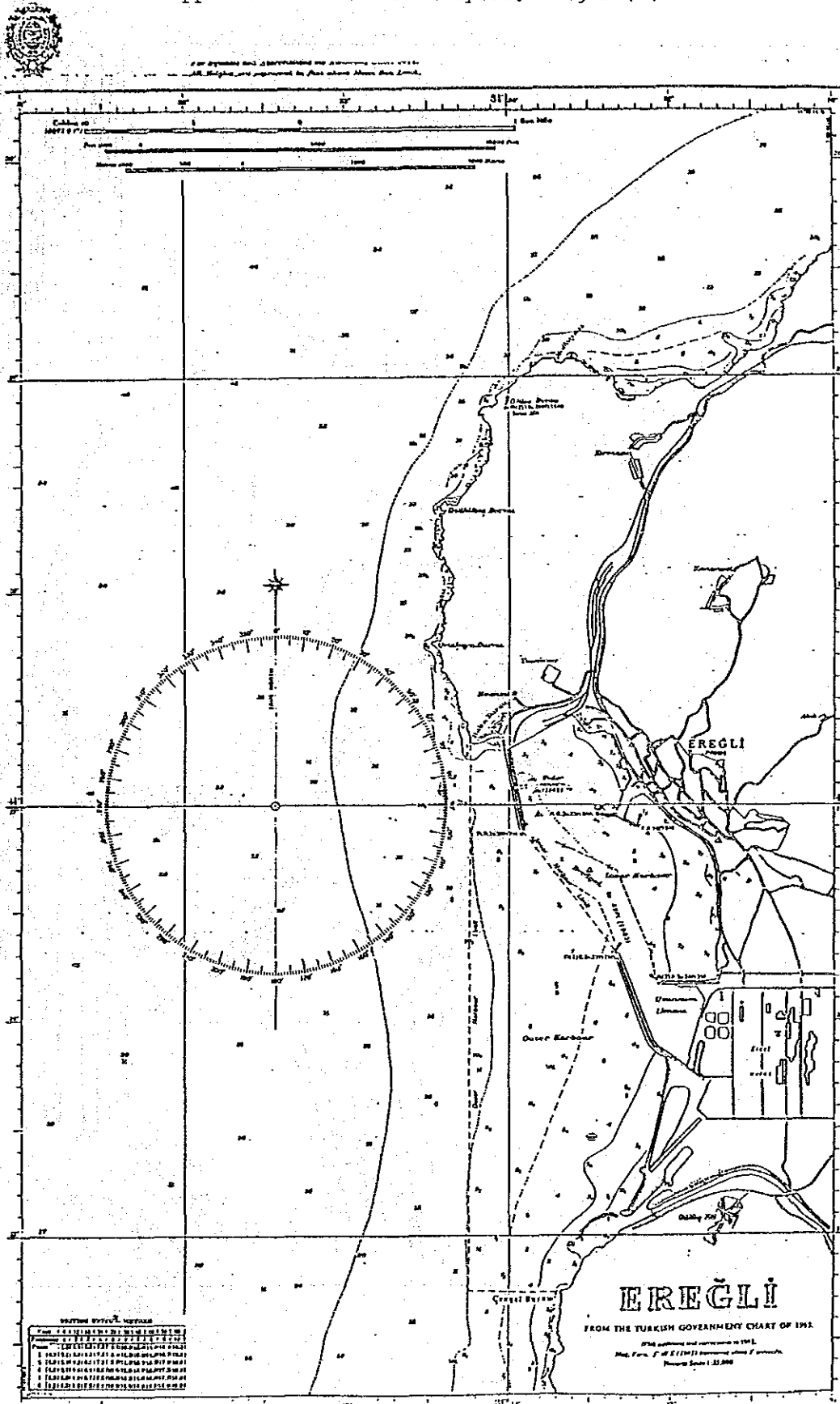
SAMSUN PORT

Samsun Province

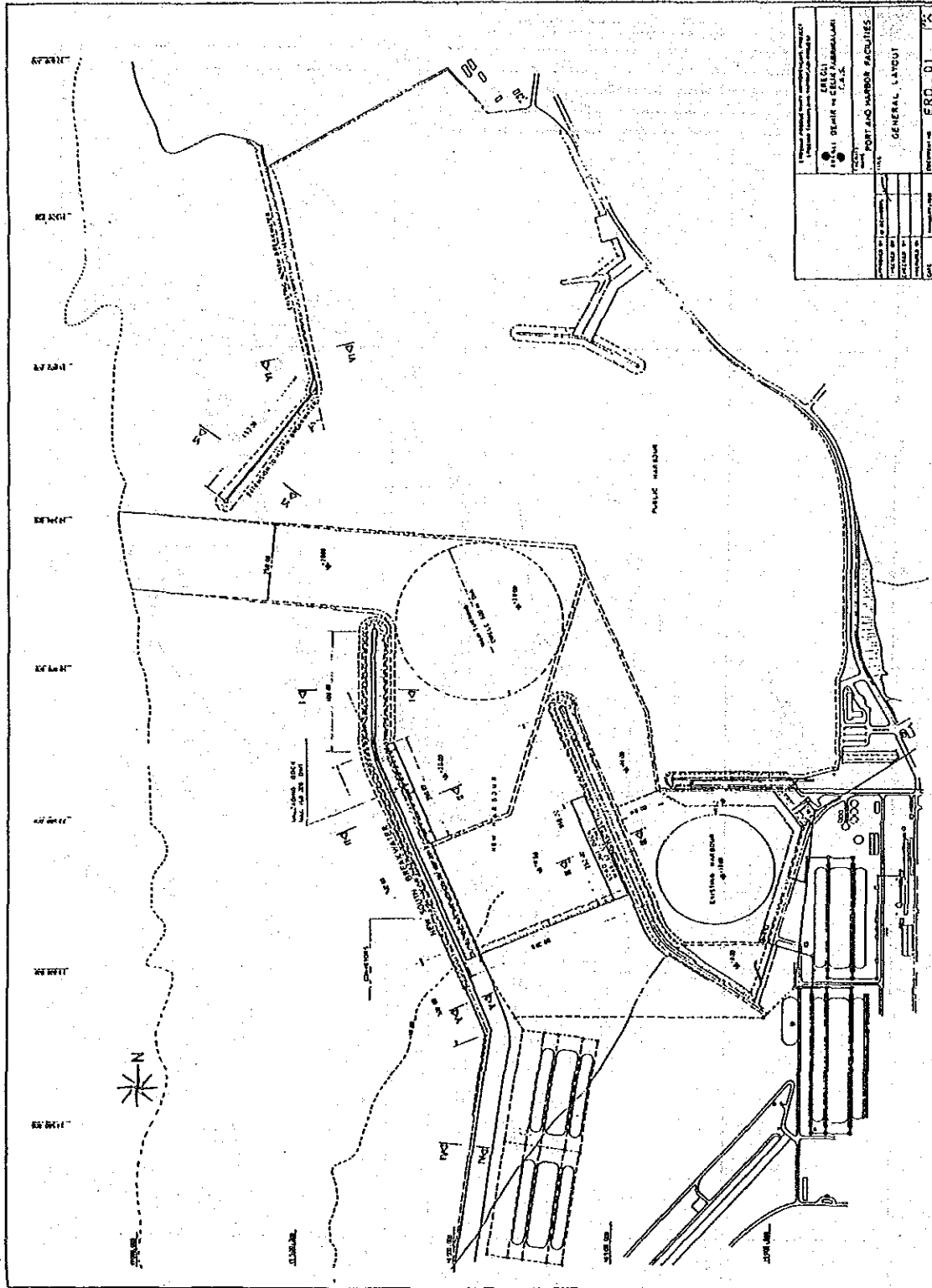
Appendix 2-22 Port Layouts. Bartın-Zonguldak



Appendix 2-23-1 Port Layout, Ereğli (1)

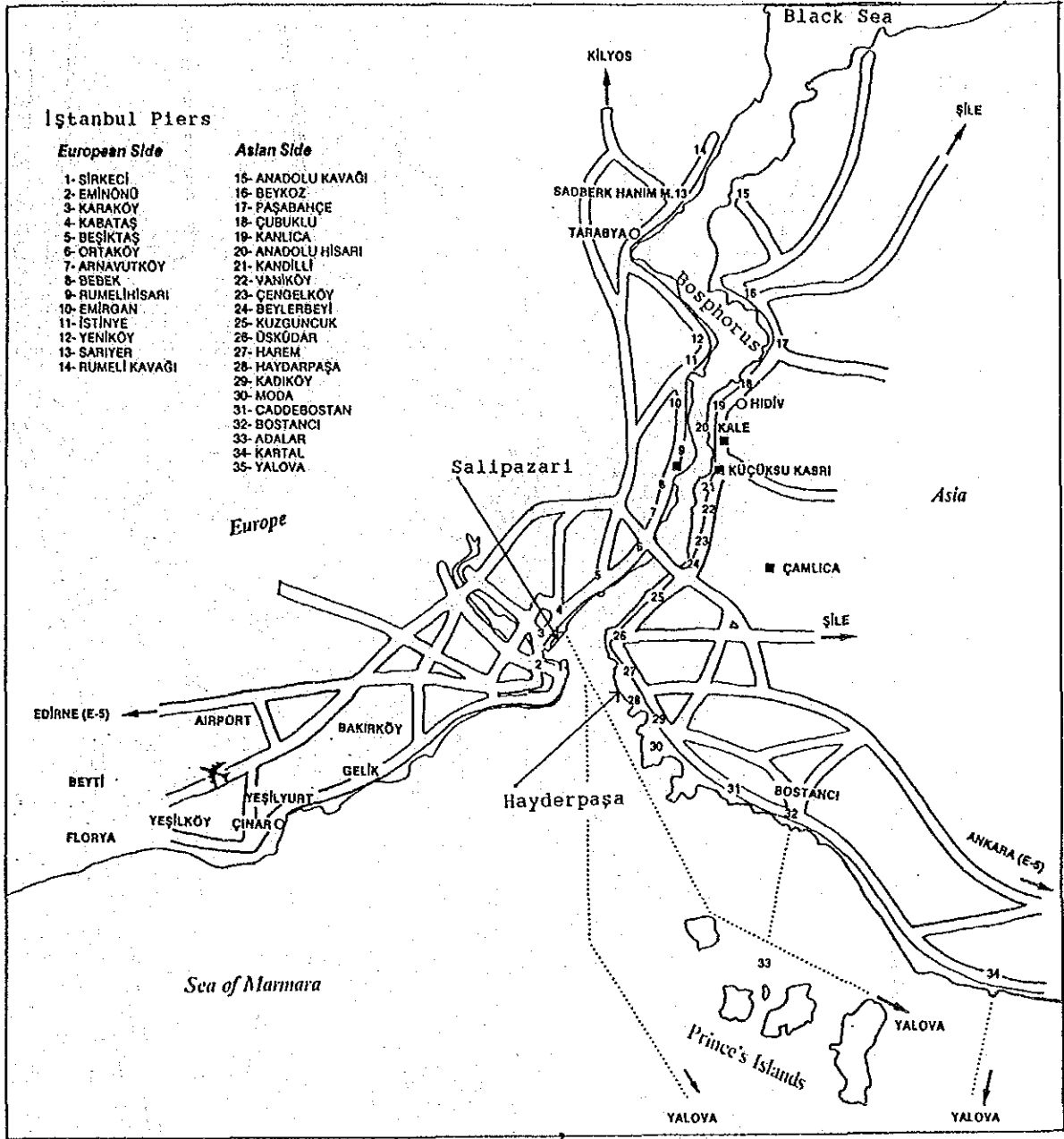


Appendix 2-23-2 Port Layout, Eregli (2)

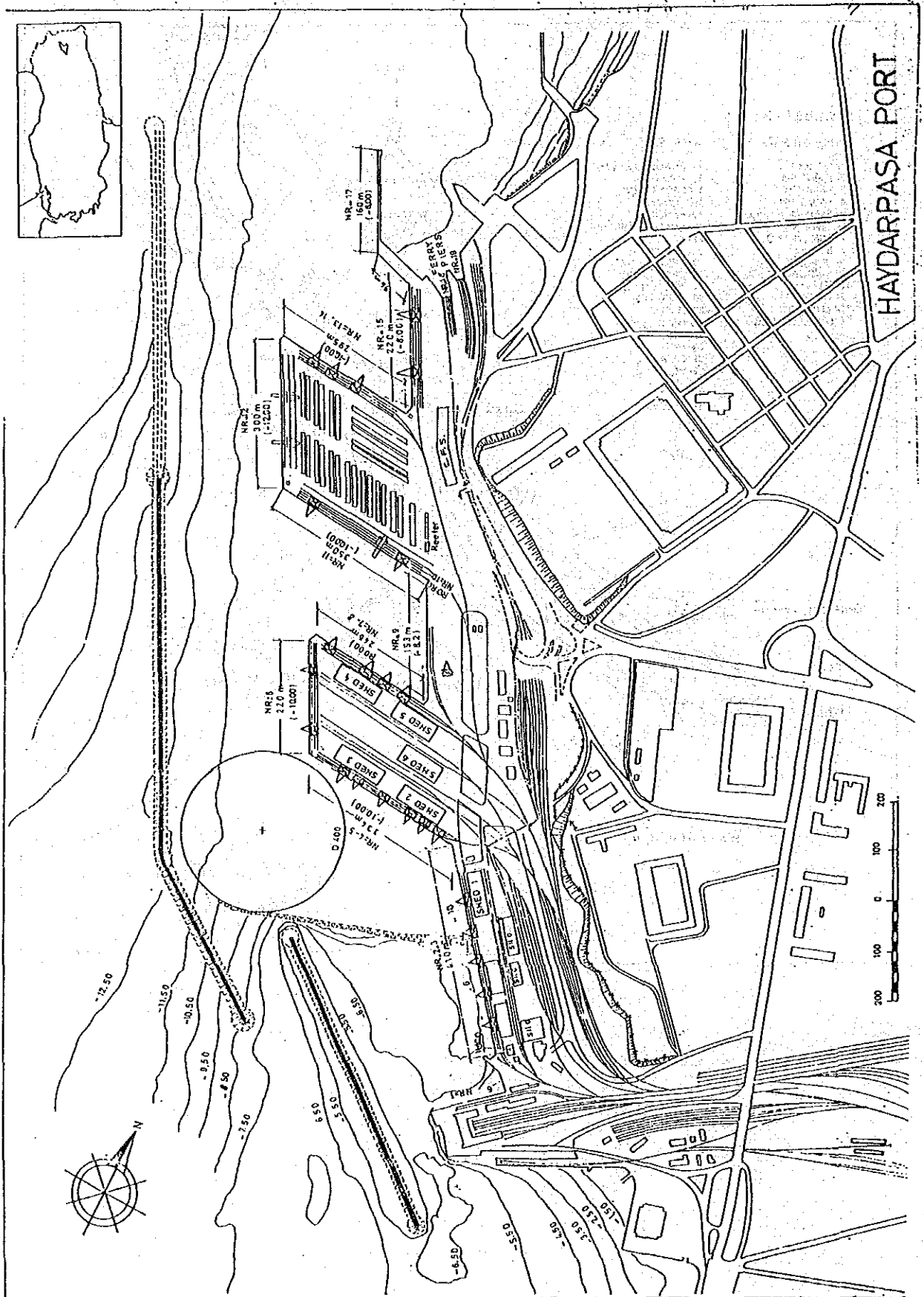


Eregli

Appendix 2-24 Port Layout, Istanbul

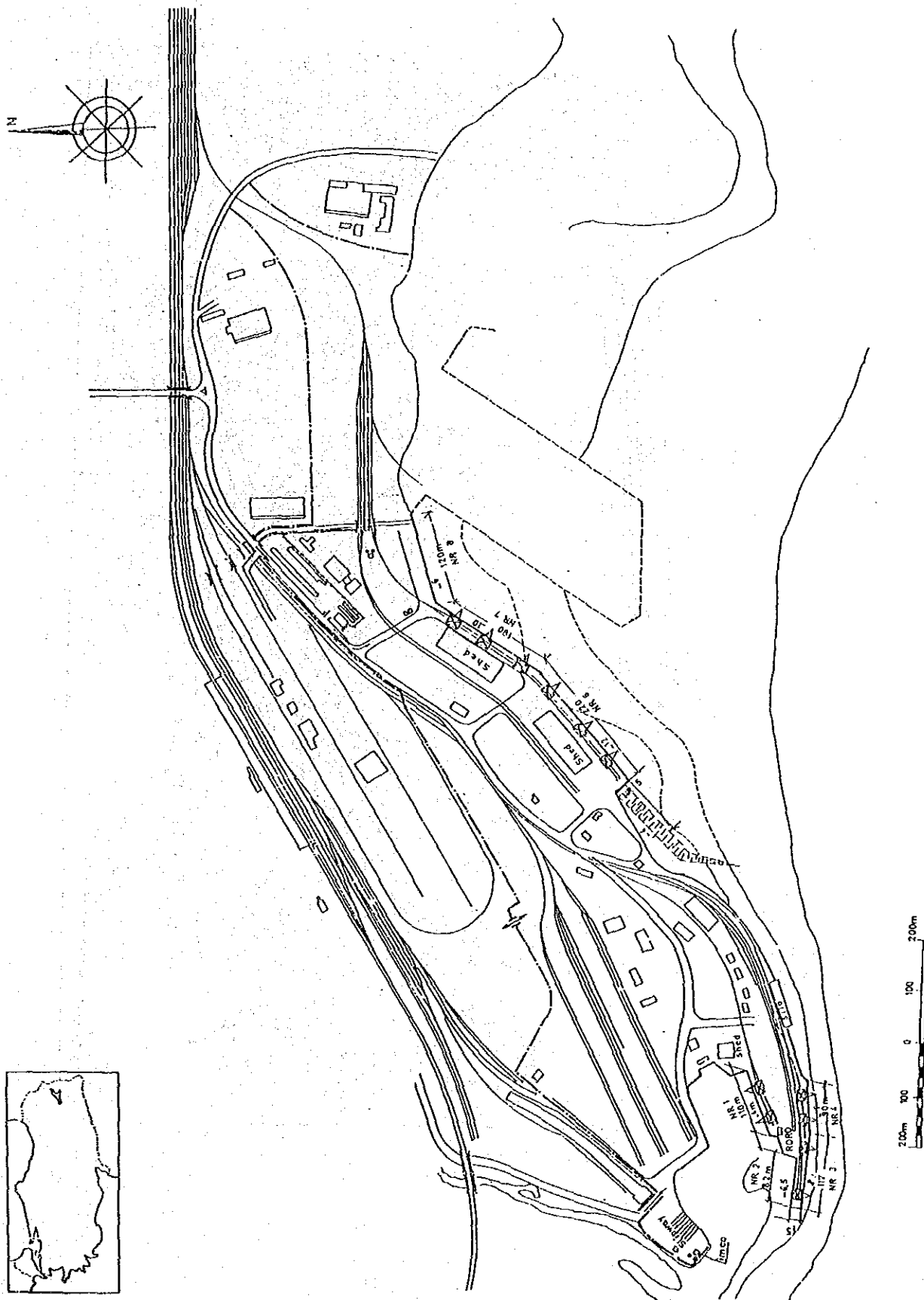


Appendix 2-25 Port Layout, Hayderpasa



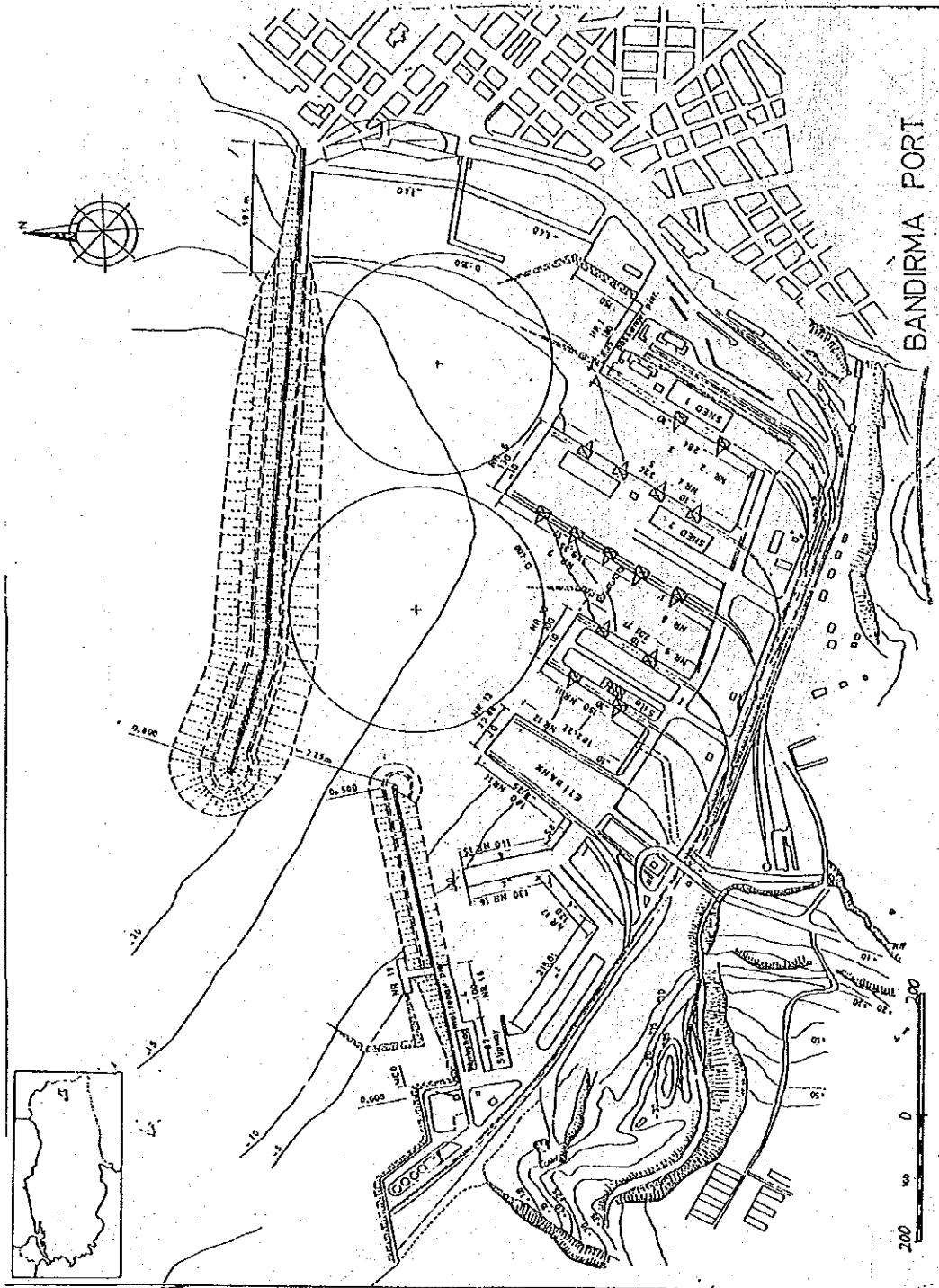


Appendix 2-26 Port Layout, Derince Port



DERINCE PORT

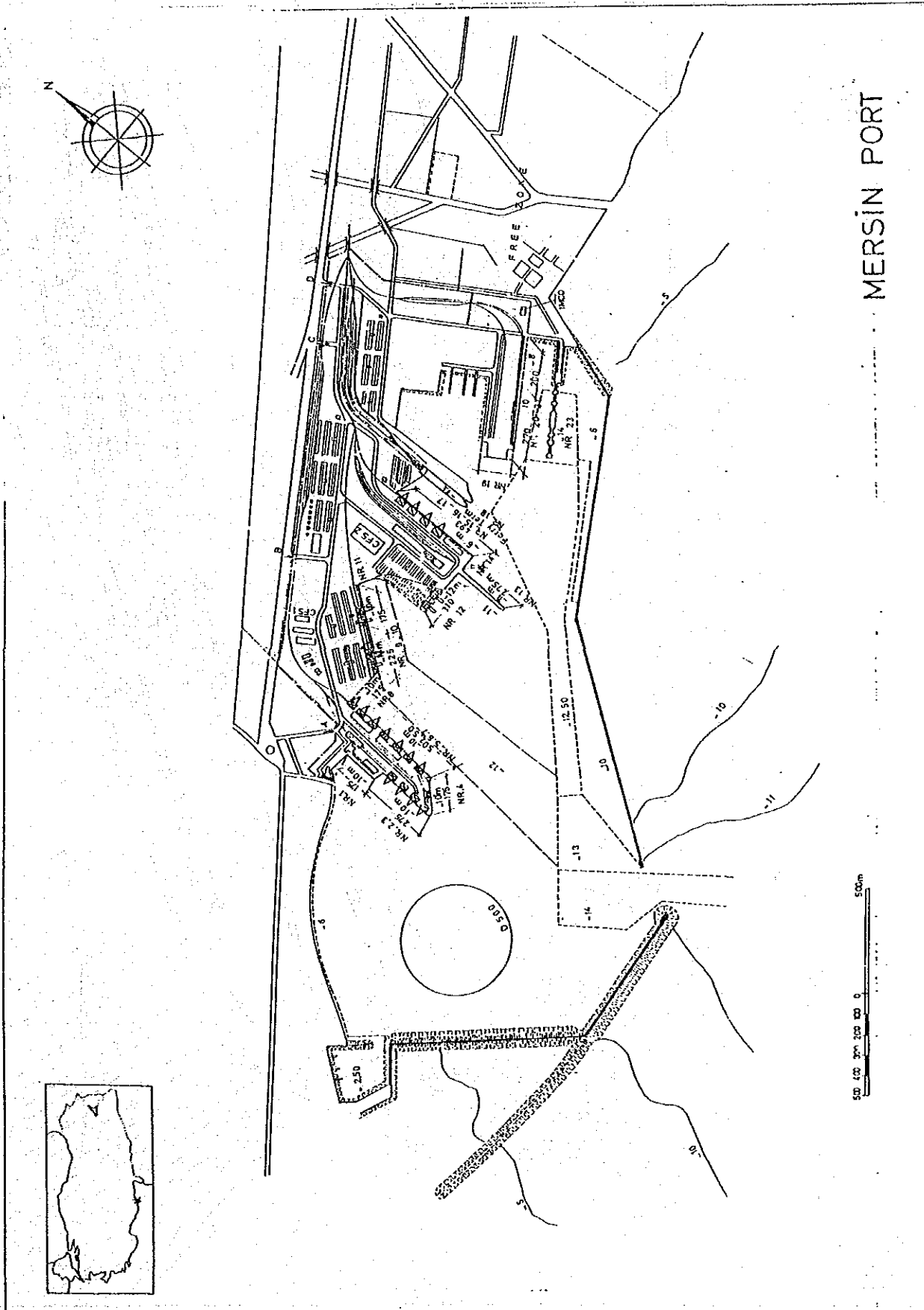
Appendix 2-27 Port Layout, Bandirma Port



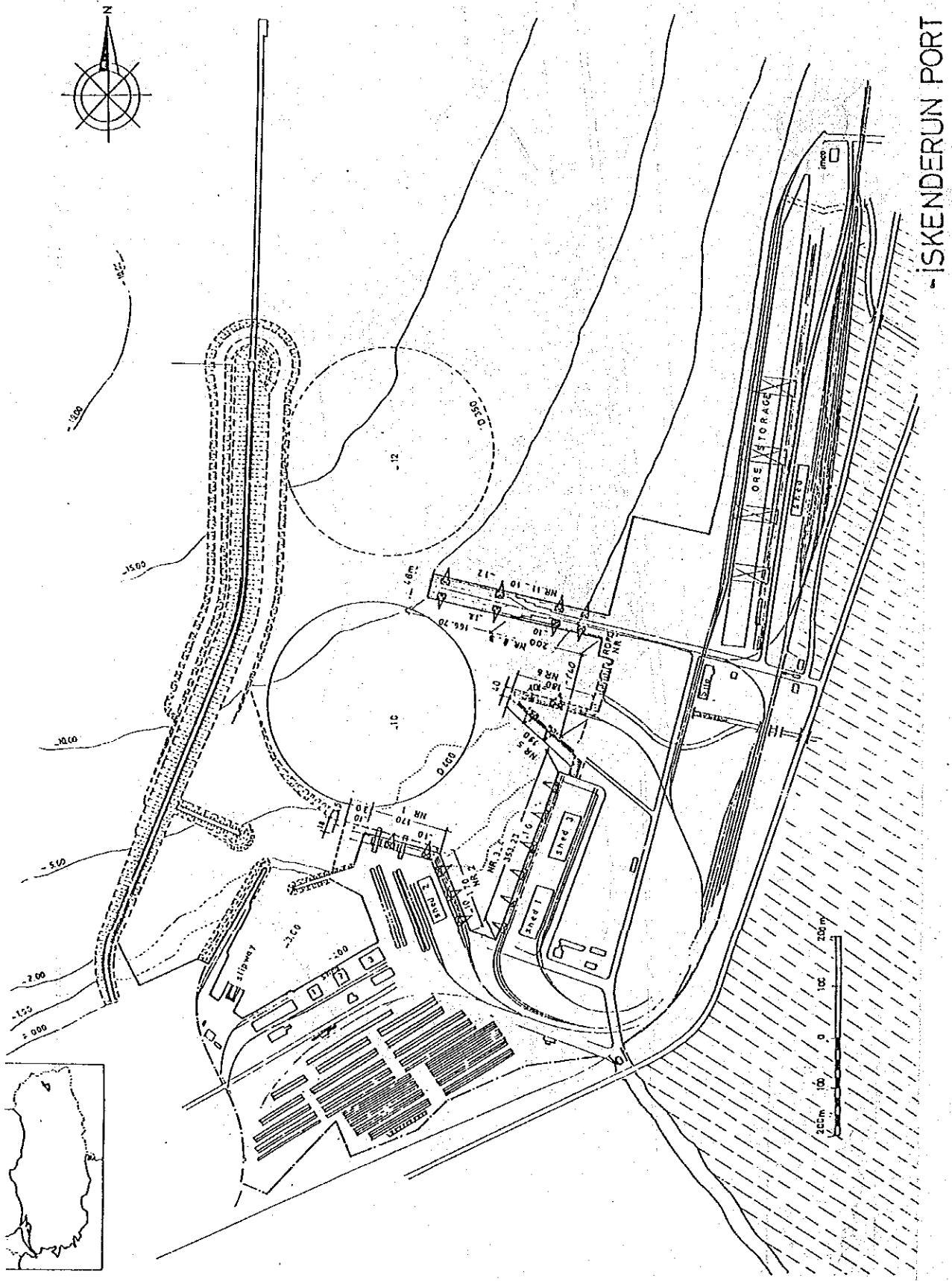




Appendix 2-30 Port Layout, Mersin Port



Appendix 2-31 Port Layout, Iskenderun Port



Appendix 2-32 Turkish Harbour Capacity Calculations

(Turkish Harbour Physical Information, JUNE-1986)

CAPACITY CALCULATIONS

Following points have been taken into account in the calculation of theoretical capacities for loading-unloading, vessel accommodation and storage at the harbours.

1. One year has been taken as equal to 350 days
2. All of the harbours have been assumed to be operating 24 hours per day and their handling capacities have been calculated according to three shifts per day.
3. The working hours of the shifts have been assumed to be at periods 08.00-16.00, 16.00-24.00 and 24.00-08.00.
4. For mixed goods, the handling capacity realized in 8 hours by a gang has been taken as 25 tons for the first gang; 23 tons for the second gang and 21 tons for the third gang.
5. In case of container handling, it has been assumed that each gang handles 90 tons per hour at every shift.
6. For bulk dry goods handling each gang has been assumed to be handling 40 tons per hour at all shifts by grasping method.
7. In determining the handling capacity made by using conveyors, pneumatic and similar systems; the only thing that has been done has been the mentioning of full loading-unloading capacities of

these systems per hour.

8. Waiting periods of RO-RO and ferryboats at harbours has been assumed to be 6 hours on average.
9. It has been assumed that the goods would normally be circulated after every 30-day periods in covered and open-air storage places, and that 2 tons of goods would be stored per square meter in covered stores and 3 tons of goods in per square meter in open-air storage areas, and that 2/3 of the total storage area would be used.
10. Annual vessel accommodation capacity of each harbour has been tried to be calculated by determining the optimum periods that the vessels stay in a harbour group by making use of the harbour productivity indicators which have been developed by UNCTAD and has begun to be applied as of the beginning of 1980.



THEORETICAL CARGO HANDLING  
CAPACITY OF HARBOURS  
(According to Minimum  
Number of Gangs)

1000 ton

NAME OF HARBOUR	MIXED GOODS	Container Goods	Bulk Dry Goods	Annual Capacity
Mersin	4.838	1.120	1.120	7.048
Iskenderun	2.746	672	896	3.614
Samsun	1.181	896	1.108	3.185
Haydarpaşa	4.057	672	336	5.065
Derince	2.615	-	-	2.615
Bandırma	2.469	-	1.344	3.813
Hopa	386	672	336	1.394
Giresun	386	672	336	1.394
Ordu	193	-	672	865
Trabzon	1.159	1.344	336	2.839
Tekirdağ	773	896	1.232	2.901
Izmir	3.108	1.344	448	4.900
Dikili	193	-	-	193
Güllük	-	-	336	336
Antalya	1.545	1.344	448	3.337
Rize	193	-	336	529
Kuşadası	-	-	-	-
Alanya	-	-	-	-
TOTAL	25.142	9.632	9.284	44.758

THEORETICAL VESSEL  
ACCOMMODATION CAPACITY  
OF HARBOURS

Ships

HARBOUR	Passanger Boat	Mixed Goods Vessel	Container Ro/Ro	Bulk Dry Goods Vessel	Annual Capacity
Mersin	1.050	1.641	530	1.329	4.550
İskenderun		476	235	265	976
Samsun		316	267	278	861
Haydarpaşa		831	350	279	1.460
İstanbul	5.250	-	-	-	5.250
Derince	-	861	-	-	861
Bandırma	1.050	750	250	384	2.434
Hopa	300	1.125			1.425
Giresun	1.050	350	-	175	1.575
Ordu	-	350	-	-	350
Trabzon		400	125		525
Tekirdağ		800	250		1.050
İzmir	2.441	1.300	340		4.081
Dikili		175			175
Güllük		170			170
Antalya	270	1.205		1.500	2.975
Rize	-	140	-	-	140
Kuşadası	1.741				1.741
Alanya	240				240
TOTAL	13.392	10.890	2.347	4.210	30.389

THEORETICAL STORING AREA  
CAPACITY OF HARBOURS

(000 ton/Year)

NAME OF HARBOUR	COVERED	OPEN-AIR	ANNUAL CAPACITY
MERSİN	332	15.630	15.962
İSKENDERUN	301	7.588	7.889
SAMSUN	208	3.500	3.708
HAYDARPAŞA	354	4.066	4.420
DERİNCE	226	4.254	4.480
BANDIRMA	109	3.500	3.609
HOPA	62	1.166	1.228
GİRESUN	36	1.339	1.375
OFDU	-	142	142
TRABZON	138	3.055	3.193
TEKİRDAÇ	11	350	361
İZMİR	367	3.116	3.483
DİKİLİ	-	-	-
GÜLLÜK	-	-	-
ANTALYA	47	4.667	4.714
RİZE	-	-	-
KUŞADASI	-	-	-
ALANYA	-	-	-
TOTAL	2.191	52.373	54.564

Appendix 2-33 Quay Length

Quay Length		(1986)	
TCDD Ports	Quay	length(m)	Draft(m)
Samsun	Bulk Solid	326	10.5
	Container	150	10.5
	Gen. Cargo	300	10.5
	Boat Quay	180	6.5
	Industrial Quay	400	12
	Fishing	400	6.5
		1,756	
Hayderpasa	Gen. Cargo	1,195	5.5-10
	Container	595	12
	Bulk Solid	716	10
		2,506	
Derince	Boat Quay	110	3.5
	Gen. Cargo	809	4-10
		919	
Bandirma	Passenger Quay	130	8.3
	Gen. Cargo	1,017	10-12
	Bulk-Solid	493	10
	Ore Wharf	442	10
	other service	590	-
		2,672	
Izmir	Passenger Quay	372	8-10
	Gen. Cargo	1,795	4-10
		2,167	
Mersin	Passenger Quay	150	10
	Mixed Goods	1,528	6-10
	Container	400	12
	RO/RO		12
	Bulk-Solid	400	6-10
	Bulk Liquid	700	14
Ferry Boat	253	12	
		3,431	
Iskendern	Container	170	10
	Gen. Cargo	523	10
	Bulk-Solid	332	11
		1,025	

Source: Turkish Harbours Physical Information, MOT

TDI Ports	Berths	Length(m)	Draft(m)
Antalya	Passenger Quay	170	10
	Gen. Cargo	770	5.5-10
	RO/RO	35	5.5-10
	Dry Bulk	925	4-8
Tekirdag	Old Quay	641	4-8
	New Quay	575	4-9
Giresun	Passenger Quay	150	9-10
	Gen. Cargo	275	8-9
	Dry Bulk	597	7-8
Hopa	Passenger	195	9
	Gen. Cargo	620	4-10
Trabzon	Gen. Cargo	714	9.5
	Cont. Berth	280	10

Source: TDI