INSTITUTION AND FINANCE

1. Financial Data

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1.1 Assumption for Projection

Financial projections are prepared on the basis of following assumptions.

1. Water sold is obtained, water production times percentage of sales production. Sales to production includes 10% of leakage and 20% of unaccounted for water.

2. Revenues are expected from water sales and connection fees and labor costs billed for installing new connections. Customers are assumed to pay for the meters, pipes and other materials used in installing the service connections.

3. The water rate, payable by the consumers, are determined on the basis of production cost. Water rates are assumed to be minimum to generate return of the operation and maintenance cost plus depreciation and interest for small portion of loan in distribution facilities.

4. Operating expenses are assumed at increasing levels necessary to operate and maintenance of the facilities in proportion to annual increment of production.

5. The straight line method of calculating depreciation for pipe facility is used with 40 years useful life and employed rate of depreciation of 2.5%.

1.2 Projection of Case 1 and Case 2

Financial projection of Case 1 is prepared considering that the project cost will be met by a full loan. As can be seen, the NWSDB has to raise water tariff as high as Rs. 6, to Rs. 8, which is already beyond the ability of the consumers to pay for water. It can be said that the Case 1 is not recommended, and to facilitate the NWSDB to operate water supply business on a sound basis, grant element should be considered.

Financial projection of Case 2 is prepared considering that the project cost of foreign portion will be met by a loan and that of local portion by a government grant. This Case shows that, comparing to the Case 1, rather low tariff of Rs. 4 to Rs. 6 can meet the costs of operation and payment of amortization and interest. However, the tariff is still high beyond the ability of the consumers to pay for water. In case the NWSDB is to implement the project and run business on a sound basis, more grant element should be considered.

Table F-1 Projected Income Statement (Case 1)

(Unit: Rs 1,000)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Water Production (1,000m^3)	4,201	4,519	4,863	5,233	5,658	6,060	6,523	7,022	7,560	8,140	8,709
Water Sold (1,000m^3)	1,470*	3,163	3,404	3,663	3,960	4,242	4,566	4,915	5,292	5,698	6,096
Sales to Production %	70	70	70	70	70	70	70	70	70	70	70
Average Water Rate Rs/m^3	6.00	6.00	6.00	6.00	6.00	8.00	8.00	8.00	8.00	8.00	8.00
OPERATING REVENUE											
Water Sales	8,820	18,978	20,424	21,978	23,760	33,936	36,528	39,320	42,336	45,584	48,768
Charges for New Connection	10,478	11,440	12,480	13,572	14,664	15,834	17,082	18,486	19,942	20,228	23,062
Total	19,298	30,418	32,904	35,550	38,424	49,770	53,610	57,806	62,278	65,812	71,830
OPERATING EXPENSES											
Personnel Cost	1,210	2,274	2,274	2,274	2,274	2,274	2,479	2,479	2,479	2,479	2,479
Electricity and Fuel	467	749	796	847	904	959	1,021	1,086	1,157	1,233	1,233
Chemicals	449	966	1,037	1,115	1,203	1,286	1,382	1,483	1,593	1,710	1,710
Maintenance	937	1,909	1,909	1,909	1,909	1,909	1,958	1,958	1,958	1,958	1,958
Overhead	387	727	727	727	727	727	793	793	793	793	793
Cost of New Connections	11,409	12,400	13,470	14,590	15,708	16,905	18,178	19,608	21,083	21,391	24,249
Total	14,859	19,025	20,213	21,462	22,725	24,060	25,811	27,405	29,063	29,564	32,422
Income Before Depreciation and Interest (Deficit)	4,439	11,393	12,691	14,088	15,699	25,710	27,799	30,401	33,215	36,248	39,408
Depreciation	10,575	10,575	10,575	10,575	10,575	10,575	10,575	10,575	10,575	10,575	10,575
Interest	10,887	11,632	11,632	11,632	11,632	11,632	11,632	11,621	11,562	11,361	10,835
Net Income (Deficit)	(17,023)	(10,814)	(9,516)	(8,119)	(6,508)	3,503	5,592	8,205	11,078	14,312	17,998

* Water sold in 1986 is expected half of the water production.

Table F-2 Projected Cash Flow Statement (Case 1)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
SOURCES OF CASH														
Internal Cash Generation														
Income Before Depreciation and Interest (Deficit)				4,439	11,393	12,691	14,088	15,699	25,710	27,799	30,401	33,215	36,248	39,408
Total				4,439	11,393	12,691	14,088	15,699	25,710	27,799	30,401	33,215	36,248	39,408
Loans from National Govt.	33,230	38,990	296,580	54,200										
Total	33,230	38,990	296,580	58,639	11,393	12,691	14,088	15,699	25,710	27,799	30,401	33,215	36,248	39,408
APPLICATION OF FUNDS														
Capital Expenditure														
- Foreign portion	31,780	8,240	203,490	29,490										
- Local portion	1,450	30,750	93,090	24,710										
Dept Amortization														
- Interest	457	1,450	6,064	10,887	11,632	11,632	11,632	11,632	11,632	11,632	11,621	11,562	11,361	10,835
- Principal	-	-	-	-	-	-	-	-	-	-	1,662	3,612	18,442	21,152
Total Debt Service	457	1,450	6,064	10,887	11,632	11,632	11,632	11,632	11,632	11,632	13,283	15,174	29,803	31,987
Total Application	33,687	40,440	302,644	65,087	11,632	11,632	11,632	11,632	11,632	11,632	13,283	15,174	29,803	31,987
Cash Surplus (or deficit) for year	(457)	(1,450)	(6,064)	(6,448)	(236)	1,059	2,456	4,067	14,078	16,167	17,118	18,041	6,445	7,421
Cash at beginning of year	(457)	(457)	(1,907)	(7,971)	(14,419)	(14,655)	(13,596)	(11,148)	(7,081)	6,997	23,164	40,282	58,323	64,768
end of year		(1,907)	(7,971)	(14,419)	(14,655)	(13,596)	(11,148)	(7,081)	6,997	23,164	40,282	58,323	64,768	72,189

Table F-3 Projected Income Statement (Case 2)

(Unit: Rs 1,000)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Water Production (1,000m^3)	4,201	4,519	4,863	5,233	5,658	6,060	6,523	7,022	7,560	8,140	8,709
Water Sold (1,000m^3)	1,470*	3,163	3,404	3,663	3,960	4,242	4,566	4,915	5,292	5,698	6,096
Sales to Production %	70	70	70	70	70	70	70	70	70	70	70
Average Water Rate Rs/m^3	4.00	4.00	4.00	4.00	4.00	6.00	6.00	6.00	6.00	6.00	6.00
OPERATING REVENUE											
Water Sales	5,880	12,652	13,616	14,652	15,840	25,452	27,396	29,490	31,752	34,188	36,576
Charges for New Connection	10,478	11,440	12,480	13,572	14,664	15,834	17,082	18,486	19,942	20,228	23,062
Total	16,358	24,092	26,096	28,224	30,504	41,286	44,478	47,976	51,694	54,416	59,638
OPERATING EXPENSES											
Personnel Cost	1,210	2,274	2,274	2,274	2,274	2,274	2,479	2,479	2,479	2,479	2,479
Electricity and Fuel	467	749	796	847	904	959	1,021	1,086	1,157	1,233	1,233
Chemicals	449	966	1,037	1,115	1,203	1,286	1,382	1,483	1,593	1,710	1,710
Maintenance	937	1,909	1,909	1,909	1,909	1,909	1,958	1,958	1,958	1,958	1,958
Overhead	387	727	727	727	727	727	793	793	793	793	793
Cost of New Connections	11,409	12,400	13,470	14,590	15,708	16,905	18,178	19,606	21,083	21,391	24,249
Total	14,859	19,025	20,213	21,462	22,725	24,060	25,811	27,405	29,063	29,564	32,422
Income Before Depreciation and Interest (Deficit)	1,499	5,067	5,883	6,762	7,779	17,226	18,667	20,571	22,631	24,852	27,216
Depreciation	6,825	6,825	6,825	6,825	6,825	6,825	6,825	6,825	6,825	6,825	6,825
Interest	7,102	7,508	7,508	7,508	7,508	7,508	7,508	7,508	7,450	7,325	6,980
Net Income (Deficit)	(12,428)	(9,266)	(8,450)	(7,571)	(6,554)	2,893	4,334	6,238	8,356	10,702	13,411

* Water sold in 1986 is expected half of the water production.

Table F-4 Projected Cash Flow Statement (Case 2)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
SOURCES OF CASH														
Internal Cash Generation														
Income Before Depreciation and Interest (Deficit)				1,499	5,067	5,883	6,762	7,779	17,226	18,667	20,571	22,631	24,852	27,216
Total				1,499	5,067	5,883	6,762	7,779	17,226	18,667	20,571	22,631	24 852	27,216
Loans from National Govt.	31,780	8,240	203,490	29,490										
National Government Grant	1,450	30,750	93,090	24,710										
Total	33,230	38,990	296,580	55,699	5,067	5,883	6,762	7,779	17,226	18,667	20,571	22,631	24,852	27,216
APPLICATION OF FUNDS														
Capital Expenditure														
- Foreign portion	31,780	8,240	203,490	29,490										
- Local portion	1,450	30,750	93,090	24,710										
Dept Amortization														
- Interest	437	987	3,898	7,102	7,508	7,508	7,508	7,508	7,508	7,508	7,497	7,450	7,325	6,980
- Principal	-	-	-	-	-	-	-	-	-	-	1,590	2,002	12,176	13,650
Total Debt Service	437	987	3,898	7,102	7,508	7,508	7,508	7,508	7,508	7,508	9,087	9,452	19,501	20,630
Total Application	33,667	39,977	300,478	61,302	7,508	7,508	7,508	7,508	7,508	7,508	9,087	9,452	19,501	20,630
Cash Surplus Oor deficit) for year	(437)	(987)	(3,898)	(5,603)	(2,441)	(1,625)	(746)	271	9,718	11,159	11,484	13,179	5,351	6,586
Cash at beginning of year	(437)	(437)	(1,424)	(5,322)	(10,925)	(13,342)	(14,967)	(15,713)	(15,442)	(5,724)	(5,435)	16,919	30,,98	35,449
end of year		(1,424)	(5,322)	(10,925)	(13,342)	(14,967)	(15,713)	(15,442)	(5,724)	5,435	16,919	30,098	35,449	42,035

1.3 Supporting Data

Table F-5 Projection of Production Cost, and Average Water Rate

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Accounted-for Water (1,000m3)	1,470	3,163	3,404	3,663	3,960	4,242	4,566	4,915	5,292	5,698	6,096
Cost											
Personnel Cost	1,210	2,274	2,274	2,274	2,274	2,274	2,479	2,479	2,479	2,479	2,479
Electricity and Fuels	467	749	796	847	904	959	1,021	1,086	1,157	1,233	1,233
Chemicals	449	966	1,037	1,115	1,203	1,286	1,382	1,483	1,593	1,710	1,710
Maintenance	937	1,909	1,909	1,909	1,909	1,909	1,958	1,958	1,958	1,958	1,958
Overhead	387	727	727	727	727	793	793	793	793	793	793
Cost of New Connections	11,409	12,400	13,470	14,590	15,708	16,905	18,178	19,606	21,083	21,391	24,249
Total I	14,859	19,025	20,213	21,462	22,725	24,060	25,811	27,405	29,063	29,564	32,422
Non Operation Cost											
Depreciation	454	454	454	454	454	454	454	454	454	454	454
Interest	498	498	498	498	498	498	498	498	498	492	468
Total II	952	952	952	952	952	952	952	952	952	946	922
Total III	15,811	19,977	21,165	22,414	23,677	25,012	26,763	28,357	30,015	30,510	33,344
Less											
Charges for New Connections	10,478	11,440	12,480	13,572	14,664	15,834	17,082	18,486	19,942	20,228	23,062
Sales Cost	5,333	8,537	8,685	8,842	9,013	9,178	9,681	9,871	10,073	10,282	10,282
Average Water Rate Rs/m3	3.62	2.70	2.55	2.41	2.28	2.16	2.12	2.01	1.90	1.80	1.69

Case 1 : Full loan

LOAN REPAYMENT SCHEDULE

INTEREST RATE 2.75 %

YEAR	DISBURSEMENT	PRINCIPAL REPAYMENT	PRINCIPAL	INTEREST REPAYMENT	TOTAL REPAYMENT
1983	33,250	0	33,250	0	0
1983	0	0	33,250	457	457
1984	38,970	0	72,220	457	457
1984	0	0	72,220	993	993
1985	296,580	0	368,800	993	993
1985	0	0	368,800	5,071	5,071
1986	54,200	0	423,000	5,071	5,071
1986	0	0	423,000	5,816	5,816
1987	0	0	423,000	5,816	5,816
1987	0	0	423,000	5,816	5,816
1988	0	0	423,000	5,816	5,816
1988	0	0	423,000	5,816	5,816
1989	0	0	423,000	5,816	5,816
1989	0	0	423,000	5,816	5,816
1990	0	0	423,000	5,816	5,816
1990	0	0	423,000	5,816	5,816
1991	0	0	423,000	5,816	5,816
1991	0	0	423,000	5,816	5,816
1992	0	0	423,000	5,816	5,816
1992	0	0	423,000	5,816	5,816
1993	0	831	422,169	5,816	6,647
1993	0	831	421,338	5,805	6,636
1994	0	1,806	419,532	5,793	7,599
1994	0	1,806	417,726	5,769	7,575
1995	0	9,221	408,505	5,744	14,965
1995	0	9,221	399,284	5,617	14,838
1996	0	10,576	388,708	5,490	16,066
1996	0	10,576	378,132	5,345	15,921
1997	0	10,576	367,556	5,199	15,775
1997	0	10,576	356,980	5,054	15,630
1998	0	10,576	346,404	4,908	15,484
1998	0	10,576	335,828	4,763	15,339
1999	0	10,576	325,252	4,618	15,194
1999	0	10,576	314,676	4,472	15,048
2000	0	10,576	304,100	4,327	14,903
2000	0	10,576	293,524	4,181	14,757
2001	0	10,576	282,948	4,036	14,612
2001	0	10,576	272,372	3,891	14,467
2002	0	10,576	261,796	3,745	14,321
2002	0	10,576	251,220	3,600	14,176
2003	0	10,576	240,644	3,454	14,030
2003	0	10,576	230,068	3,309	13,885
2004	0	10,576	219,492	3,163	13,739
2004	0	10,576	208,916	3,018	13,594
2005	0	10,576	198,340	2,873	13,449
2005	0	10,576	187,764	2,727	13,303
2006	0	10,576	177,188	2,582	13,158
2006	0	10,576	166,612	2,436	13,012
2007	0	10,576	156,036	2,291	12,867
2007	0	10,576	145,460	2,145	12,721
2008	0	10,576	134,884	2,000	12,576
2008	0	10,576	124,308	1,855	12,431
2009	0	10,576	113,732	1,709	12,285
2009	0	10,576	103,156	1,564	12,140
2010	0	10,576	92,580	1,418	11,994
2010	0	10,576	82,004	1,273	11,849
2011	0	10,576	71,428	1,128	11,704
2011	0	10,576	60,852	982	11,558
2012	0	10,576	50,276	837	11,413
2012	0	10,566	39,710	691	11,257
2013	0	9,745	29,965	546	10,291
2013	0	9,735	20,230	412	10,147
2014	0	8,770	11,460	278	9,048
2014	0	8,750	2,710	158	8,908
2015	0	1,355	1,355	37	1,392
2015	0	1,355	0	19	1,374
TOTAL	423,000	423,000		229,731	652,731

Case 2 : Loan for the cost of foreign portion

Grant for the cost of local portion

LOAN REPAYMENT SCHEDULE

INTEREST RATE 2.75 %

YEAR	DISBURSEMENT	PRINCIPAL REPAYMENT	PRINCIPAL	INTEREST REPAYMENT	TOTAL REPAYMENT
1983	31,780	0	31,780	0	0
1983	0	0	31,780	437	437
1984	8,240	0	40,020	437	437
1984	0	0	40,020	550	550
1985	203,490	0	243,510	550	550
1985	0	0	243,510	3,348	3,348
1986	29,490	0	273,000	3,348	3,348
1986	0	0	273,000	3,754	3,754
1987	0	0	273,000	3,754	3,754
1987	0	0	273,000	3,754	3,754
1988	0	0	273,000	3,754	3,754
1988	0	0	273,000	3,754	3,754
1989	0	0	273,000	3,754	3,754
1989	0	0	273,000	3,754	3,754
1990	0	0	273,000	3,754	3,754
1990	0	0	273,000	3,754	3,754
1991	0	0	273,000	3,754	3,754
1991	0	0	273,000	3,754	3,754
1992	0	0	273,000	3,754	3,754
1992	0	0	273,000	3,754	3,754
1993	0	795	272,205	3,754	4,549
1993	0	795	271,410	3,743	4,538
1994	0	1,001	270,409	3,732	4,733
1994	0	1,001	269,408	3,718	4,719
1995	0	6,088	263,320	3,704	9,792
1995	0	6,088	257,232	3,621	9,709
1996	0	6,825	250,407	3,537	10,362
1996	0	6,825	243,582	3,443	10,268
1997	0	6,825	236,757	3,349	10,174
1997	0	6,825	229,932	3,255	10,080
1998	0	6,825	223,107	3,162	9,987
1998	0	6,825	216,282	3,068	9,893
1999	0	6,825	209,457	2,974	9,799
1999	0	6,825	202,632	2,880	9,705
2000	0	6,825	195,807	2,786	9,611
2000	0	6,825	188,982	2,692	9,517
2001	0	6,825	182,157	2,599	9,424
2001	0	6,825	175,332	2,505	9,330
2002	0	6,825	168,507	2,411	9,236
2002	0	6,825	161,682	2,317	9,142
2003	0	6,825	154,857	2,223	9,048
2003	0	6,825	148,032	2,129	8,954
2004	0	6,825	141,207	2,035	8,860
2004	0	6,825	134,382	1,942	8,767
2005	0	6,825	127,557	1,848	8,673
2005	0	6,825	120,732	1,754	8,579
2006	0	6,825	113,907	1,660	8,485
2006	0	6,825	107,082	1,566	8,391
2007	0	6,825	100,257	1,472	8,297
2007	0	6,825	93,432	1,379	8,204
2008	0	6,825	86,607	1,285	8,110
2008	0	6,825	79,782	1,191	8,016
2009	0	6,825	72,957	1,097	7,922
2009	0	6,825	66,132	1,003	7,828
2010	0	6,825	59,307	909	7,734
2010	0	6,825	52,482	815	7,640
2011	0	6,825	45,657	722	7,547
2011	0	6,825	38,832	628	7,453
2012	0	6,825	32,007	534	7,359
2012	0	6,805	25,202	440	7,245
2013	0	6,030	19,172	347	6,377
2013	0	6,030	13,142	264	6,294
2014	0	5,824	7,318	181	6,005
2014	0	5,834	1,484	101	5,935
2015	0	737	747	20	757
2015	0	747	0	10	757
TOTAL	273,000	273,000		148,273	421,273

Case 3 : Loan for half of distribution cost of foreign portion

Grant for the remaining cost of foreign and local portion

LOAN REPAYMENT SCHEDULE

-INTEREST RATE 2.75 %

YEAR	DISBURSEMENT	PRINCIPAL REPAYMENT	PRINCIPAL	INTEREST REPAYMENT	TOTAL REPAYMENT
1985	18,140	0	18,140	0	0
1985	0	0	18,140	249	249
1986	0	0	18,140	249	249
1986	0	0	18,140	249	249
1987	0	0	18,140	249	249
1987	0	0	18,140	249	249
1988	0	0	18,140	249	249
1988	0	0	18,140	249	249
1989	0	0	18,140	249	249
1989	0	0	18,140	249	249
1990	0	0	18,140	249	249
1990	0	0	18,140	249	249
1991	0	0	18,140	249	249
1991	0	0	18,140	249	249
1992	0	0	18,140	249	249
1992	0	0	18,140	249	249
1993	0	0	18,140	249	249
1993	0	0	18,140	249	249
1994	0	0	18,140	249	249
1994	0	0	18,140	249	249
1995	0	454	17,686	249	703
1995	0	454	17,232	243	697
1996	0	454	16,778	237	691
1996	0	454	16,324	231	685
1997	0	454	15,870	224	678
1997	0	454	15,416	218	672
1998	0	454	14,962	212	666
1998	0	454	14,508	206	660
1999	0	454	14,054	199	653
1999	0	454	13,600	193	647
2000	0	454	13,146	187	641
2000	0	454	12,692	181	635
2001	0	454	12,238	175	629
2001	0	454	11,784	168	622
2002	0	454	11,330	162	616
2002	0	454	10,876	156	610
2003	0	454	10,422	150	604
2003	0	454	9,968	143	597
2004	0	454	9,514	137	591
2004	0	454	9,060	131	585
2005	0	454	8,606	125	579
2005	0	454	8,152	118	572
2006	0	454	7,698	112	566
2006	0	454	7,244	106	560
2007	0	454	6,790	100	554
2007	0	454	6,336	93	547
2008	0	454	5,882	87	541
2008	0	454	5,428	81	535
2009	0	454	4,974	75	529
2009	0	454	4,520	68	522
2010	0	454	4,066	62	516
2010	0	454	3,612	56	510
2011	0	454	3,158	50	504
2011	0	454	2,704	43	497
2012	0	454	2,250	37	491
2012	0	454	1,796	31	485
2013	0	454	1,342	25	479
2013	0	454	888	18	472
2014	0	454	434	12	466
2014	0	434	0	6	440
TOTAL	18,140	18,140		9,847	27,987

2. Institution in Water Supply and Sanitation Sectors

Related institution in the water supply and sanitation sectors are listed in the following table.

Source: Sri Lanka International Drinking
Water Supply & Sanitation Decade
(1981 - 1990)

INSTITUTIONS IN THE WATER SUPPLY AND SANITATION SECTORS

Institution	Function	Ministry Responsible
National Water Supply and Drainage Board	According to the National Water Supply and Drainage Board Law, No. 2, of 1974, the Board is required: To develop, operate, and control an efficient, coordinated water supply and to distribute water for public, domestic, or industrial purposes. To develop, operate, and control an efficient, coordinated sewerage system. To take over and carry on any water supply or sewerage undertaking of any local authority which may be transferred to the Board. To sell water in bulk to any local authority or other organization. To carry out investigations, conduct research, and provide training in connection with water supply and sewerage services. To enter into joint schemes with any approved organization for the development and maintenance of water supply and sewerage services.	Ministry of Local Government, Housing and Construction
Department of Local Government	Assists local authorities in the development, financing, operation, and maintenance of water supply and sanitation services.	Ministry of Local Government, housing and

- to be continued -

Institution	Function	Ministry Responsible
Local Authorities: Municipal Councils Urban Councils Town Councils Village Councils	Initiates development of new water supply and sanitation schemes and the improvement of existing.	(Same)
Department of Buildings: Division of Public Health Engineering	Designs and constructs water supply schemes as required for hospitals and Government offices.	(Same)
Local Loans and Development Fund	Grants loans to local authorities for construction of water supply schemes.	(Same)
Common Amenities Board	Designs, constructs, maintains, and finance communal water supply and sanitation facilities in Government-owned housing compounds in urban areas.	(Same)
Department of Public Health Services:	Responsible for preventive medical care and Environmental health measures.	Ministry of Health
Office Environmental and	Assists in the development of non-piped sanitation facilities in both urban and rural areas. Monitors water quality of both piped and non-piped water supplies.	
Water Resources Board	Conducts groundwater investigations and promotes exploitation of groundwater. Advises Minister on the control, regulation, and development of groundwater basins.	Ministry of Lands and Land Development

- to be continued -

Institution	Function	Ministry Responsible
Sri Lanka State Plantation Corporation	Responsible for development, operation, and Control of water supply and sanitation schemes on plantations under its jurisdiction.	Ministry of State Plantation
Janatha Estates Development Board	Responsible for development, operation, and Control of water supply and sanitation schemes on estates under its jurisdiction.	Ministry of Janatha Estates Development
Mahaweli Development Board	Responsible for development of water supply and sanitation schemes in Mahaweli area.	Ministry of Mahaweli Development
Greater Colombo Economic Commission	Responsible for development of water supply and sewerage schemes in Free Trade Zone.	(None)

3. Functional Responsibility

The functional responsibilities are summarized below:

Regional Level

Engineering :

- Supervises technical operation of water schemes within Region's boundary.
- Maintains data and statistics on water production, water quality and Chemical dosage.
- Performs chemical and bacteriological analysis.
- Maintains grounds and equipment.

Construction

- Monitors construction program of the scheme.
- Attains progress of construction.

Administration/

Secretary :

- Implements personnel policies and procedures.
- Handles personnel training and development.
- Prepare long term financial plans.
- Recommends a realistic annual expenditure program for operation, maintenance, and capital expenditures.
- Maintains construction cost records and generate construction cost reports.
- Maintains personnel medical cares and transportation.

Scheme Level

Technical :

- Operates the treatment plants and insures production of potable water.
- Delivers potable water to every type of customer.
- Maintains water transmission and distribution, facilities, including service connections.
- Installs approved water connections, implement closing and reconnection orders.

- Maintains shops and mobile equipment and stores,
- Conducts site survey for construction and controls and supervises construction of projects,

Finance :

- Maintain books of accounts and other financial records,
- Prepares water bills,
- Prepares regular disbursements/collection reports,
- Conducts customer service,
- Handles procurement of materials, supplies and equipment,
- Maintains vehicles and trucks,

4. Educational Qualifications and Experience of Staff

Educational qualifications and experience required for the staff are summarized below:

Job Title	Qualification	Experience
Regional Manager	University degree in civil or sanitary engineering	Five years' experience in managing water utility operation
Asst. Regional Manager	- do -	Three years' experience in managing water utility operation
ENGINEERING DIV.		
Division Head	University degree in Civil/sanitary engineering	Three years' experience in water works operation
Design Engineer	Collage degree in civil engineering	- do -
Electrical Foremen	High School/degree in electric engineering	Two years' experience in water works operation
Electrician	High School degree in electric engineering	- do -
Mechanical Foremen	High School degree in mechanical engineering	- do -
Mechanician	- do -	- do -
Laboratory Chief	University degree in chemistry	Three years' experience in water works operation
Laboratory Asst.	High School degree in chemistry	Two years' experience in water works operation
CONSTRUCTION DIV.		
Division Head	High School degree in civil engineering	Three years' experience in water work operation
Monitoring Officer	- do -	

ADMINISTRATION DIV.		
Financial Officer	University degree in business management	Five years' experience in finance work
Personnel Officer	High School degree in administration	Three years experience in administration
Administration Officer	- do -	- do -
AMPARAI WATER SCHEME		
Manager	University degree in civil/sanitary engineering	Three years' experience in water works operation
Technical Section		
Section Head	High School degree in civil sanitary engineering	Two years' experience in water works operation
Finance/Administration Section		
Accounting Officer	High School degree in business administration	Two years' experience in finance work
Billing Officer	High School degree in administration	Two years' experience in administration
Construction Section		
Head	High School degree in civil engineering	Two years' experience in construction

5. The Present Ongoing Scheme with Finance of External Sources

External Finance for Water Supply Scheme

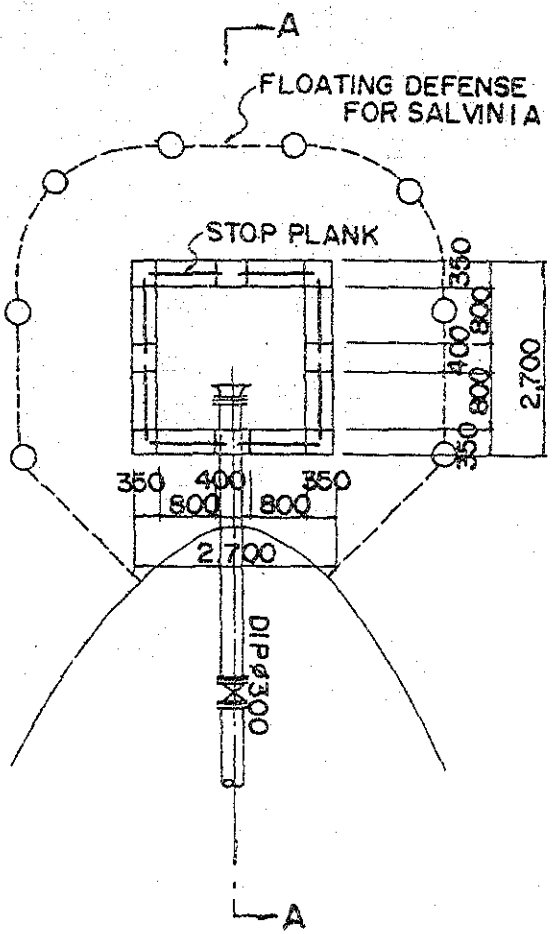
		Name of Scheme	Assistance	Project Cost
Grant	1.	Matara - Dickwella	England	₤ 3.0 million
	2.	Katugasteta - Kurunegala	West Germany	D.M. 1,162,713
	3.	Mannar	Netherland	DFI 2 million
	4.	Polonnaruwa & Matale	Danish	D.K. 75 million
	5.	Minuwangoda, Polgella, Amparai, Diyatalawa & Haputale	Sweden	Rs 10.30 million
	6.	Harispattuwa & Nilambe	Finland	Allocated F.M. 45.7 million Provided for 1981 F.M. 4.31 million
	7.	UNICEF Project for Rural Water Supply Scheme	UNICEF	Phase I US$ 1,150,000 Phase II US$ 3,084,000
	8.	Rehabilitation of W.S.S.	Netherland	D.G. 4,500,000
Loan	1.	Jaffna Peninsula	U.S.A.	US$ 8 million Grant US$ 2 m Loan US$ 6 m
	2.	Trincomalee	France	F.F. 519,555,585
	3.	Kandy - Improvement of existing plant	France	F.F. 1.5 million
	4.	South West Coastal Area Project I	I.D.A. & C.I.D.A.	US$ 9.2 million C$ 5.0 million
	5.	- Do - Project II	E.E.C.	US$ 7.0 million

DRAWINGS

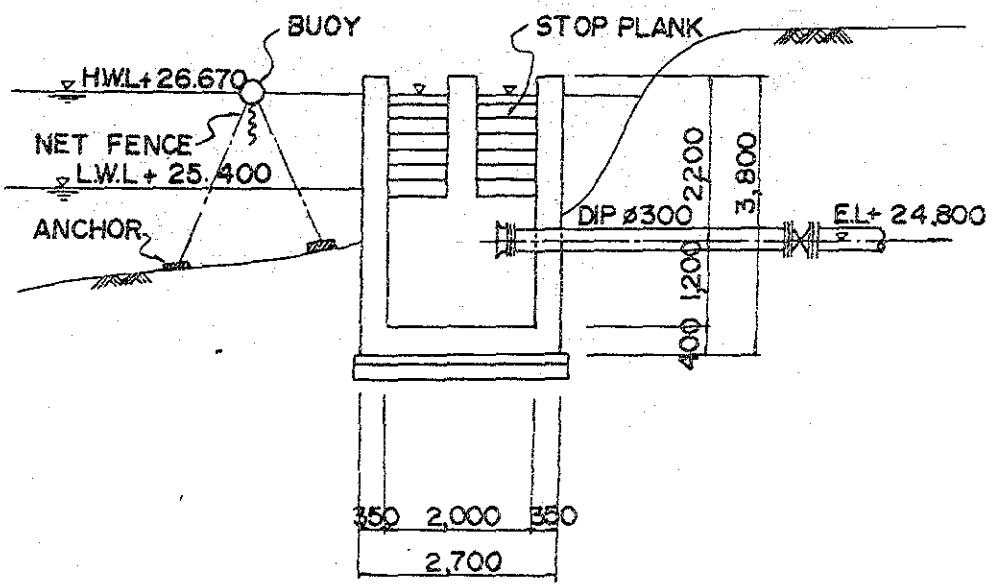
Fig. 1	Amparai Intake Facilities	
Fig. 2	Sambuveli Intake Facilities	
Fig. 3	Lay-out of Amparai Treatment Plant	
Fig. 4	Lay-out of Sambuveli Treatment Plant	
Fig. 5	Hydraulic Profile of Treatment Plants	
Fig. 6	Flow Chart of Chemical Feeding	
Fig. 7	Transmission and Distribution Main	in Amparai Area
Fig. 8	- do -	in Sammanthurai Area
Fig. 9	- do -	in Karavahu-North Area
Fig. 10	- do -	in Karavahu-West Area
Fig. 11	- do -	in Kalmunai Area
Fig. 12	- do -	in Karavahu-South (Saindamarudu) and Karativu Area
Fig. 13	- do -	in Akkaraipattu Area

FIG. - 1 AMPARAI INTAKE FACILITIES (S = 1 : 100)

PLAN



SECTION A-A



UNIT : MILLIMETER

FIG.-2 SAMBUVELI INTAKE FACILITIES (S=1: 100)

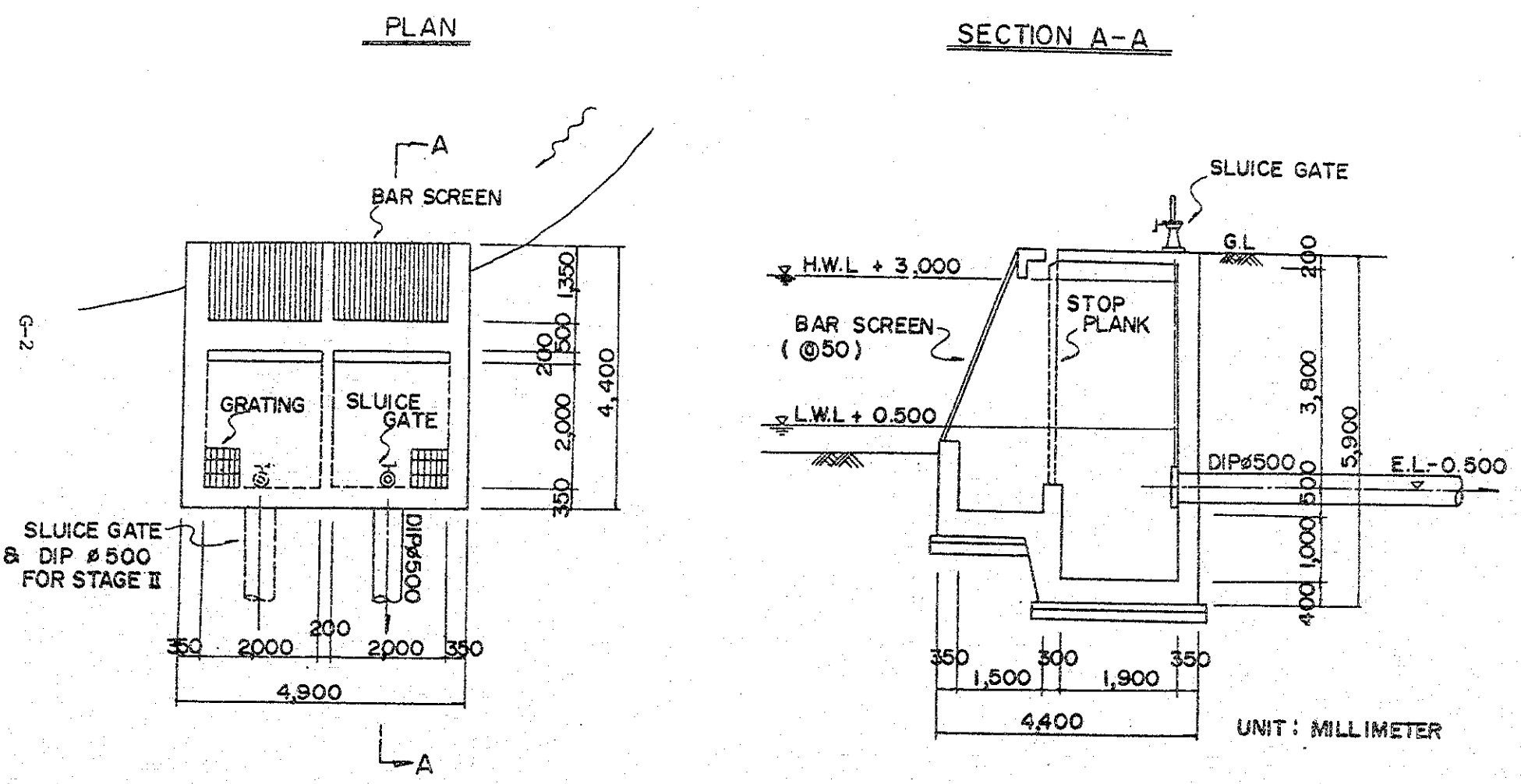


FIG.-3 LAY-OUT OF AMPARI TREATMENT PLANT

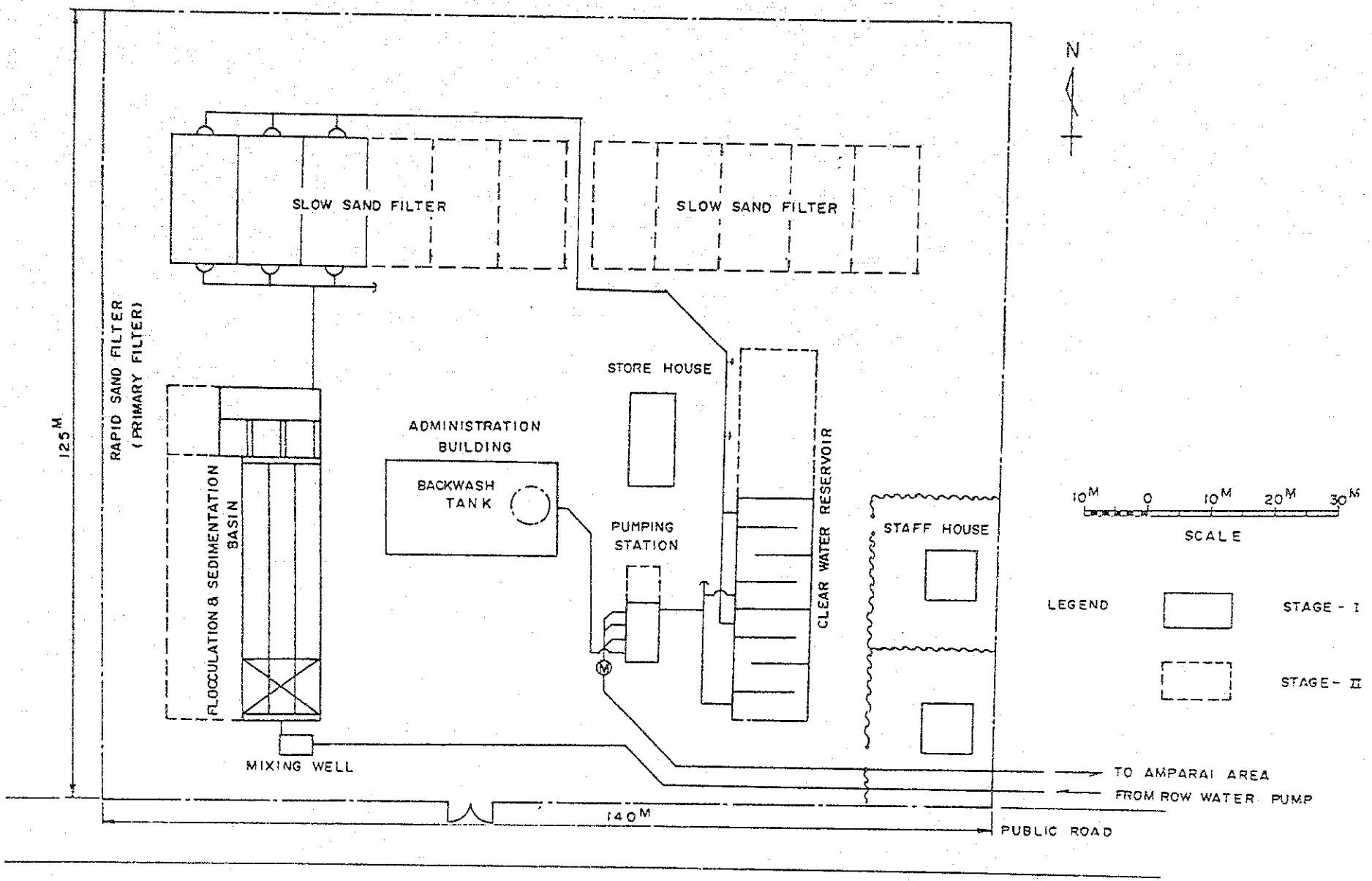


FIG.- 4 LAY-OUT OF SAMBUVELI TREATMENT PLANT

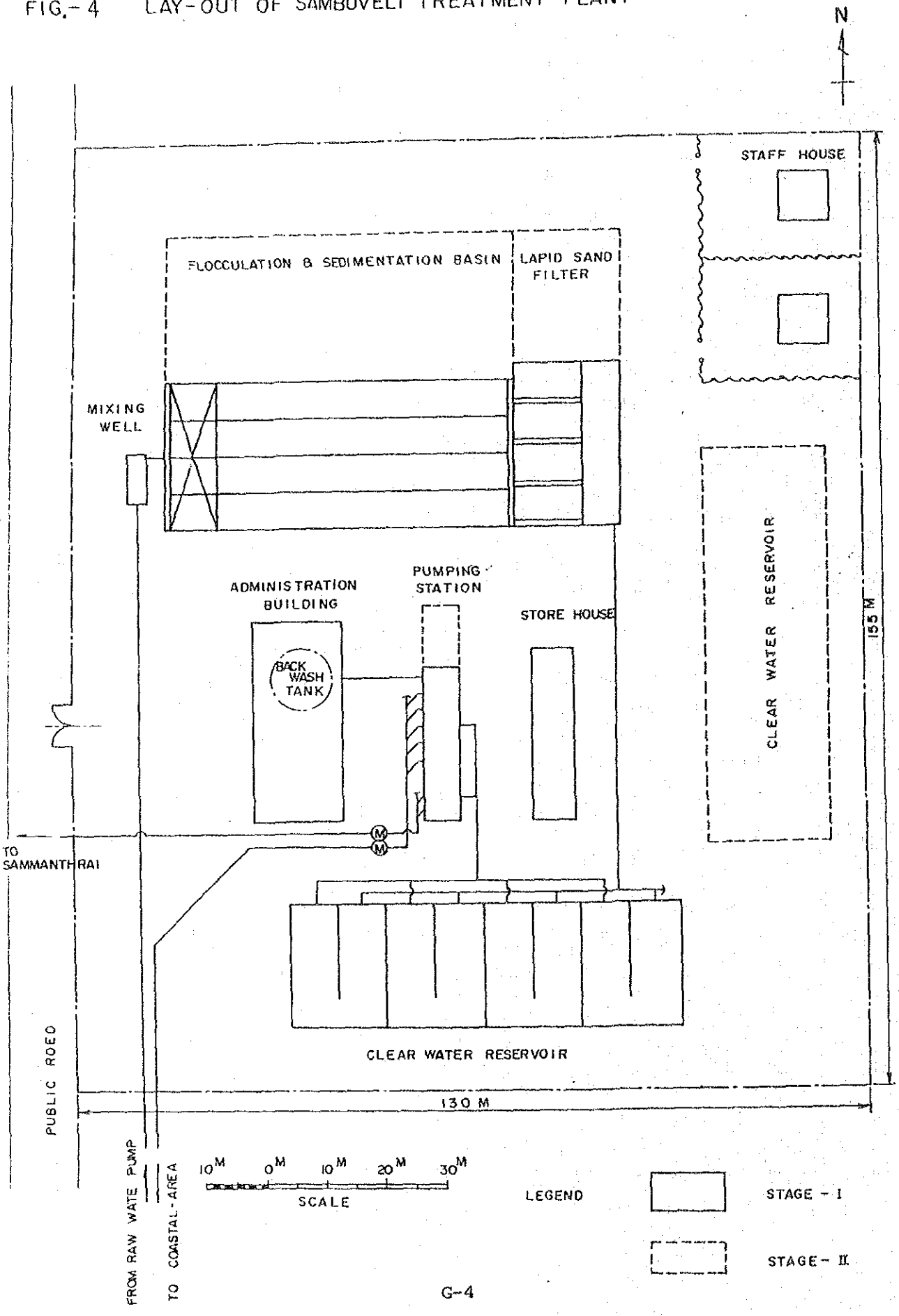
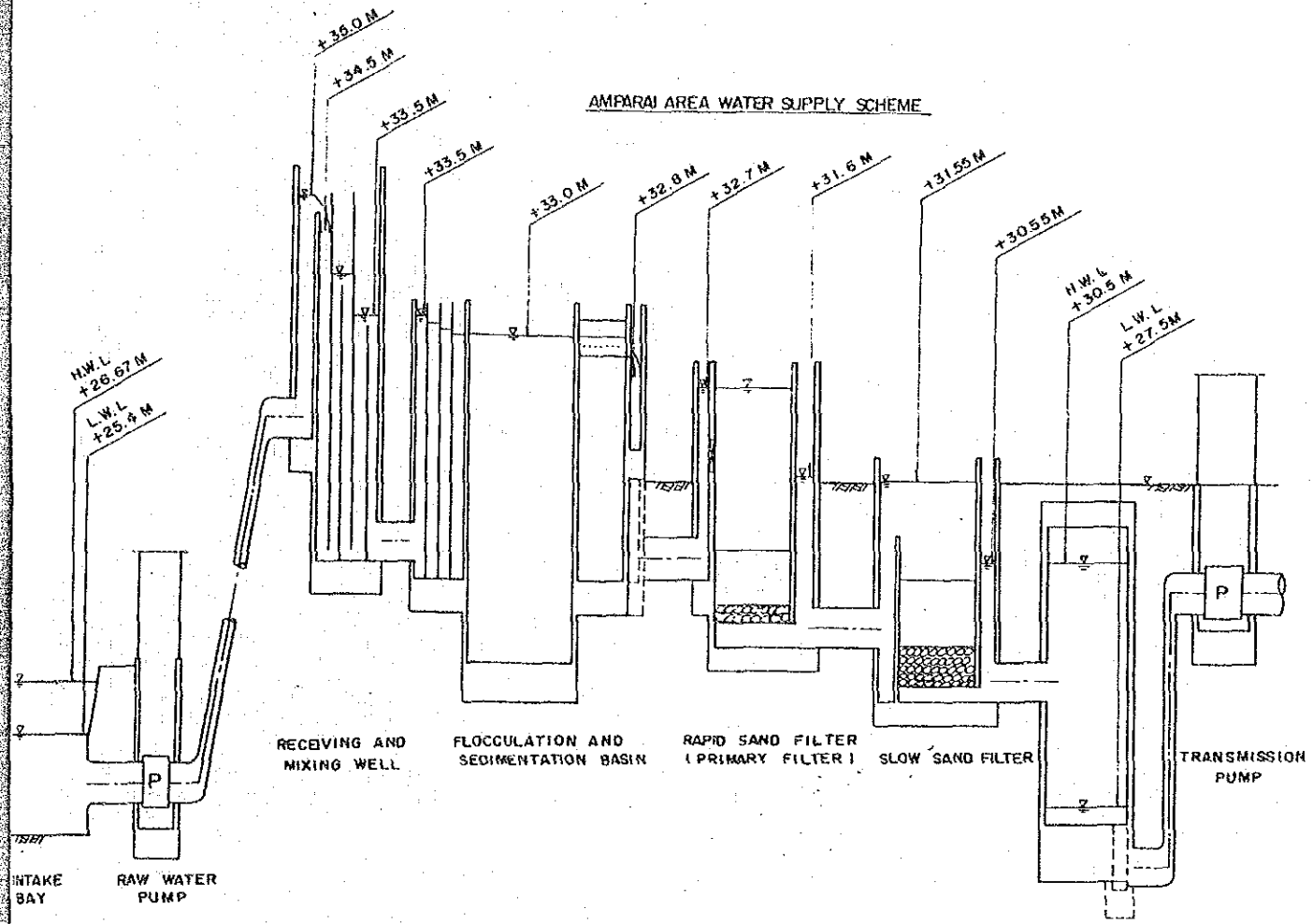


Fig.-5 HYDRAULIC PROFILE OF TREATMENT PLANTS



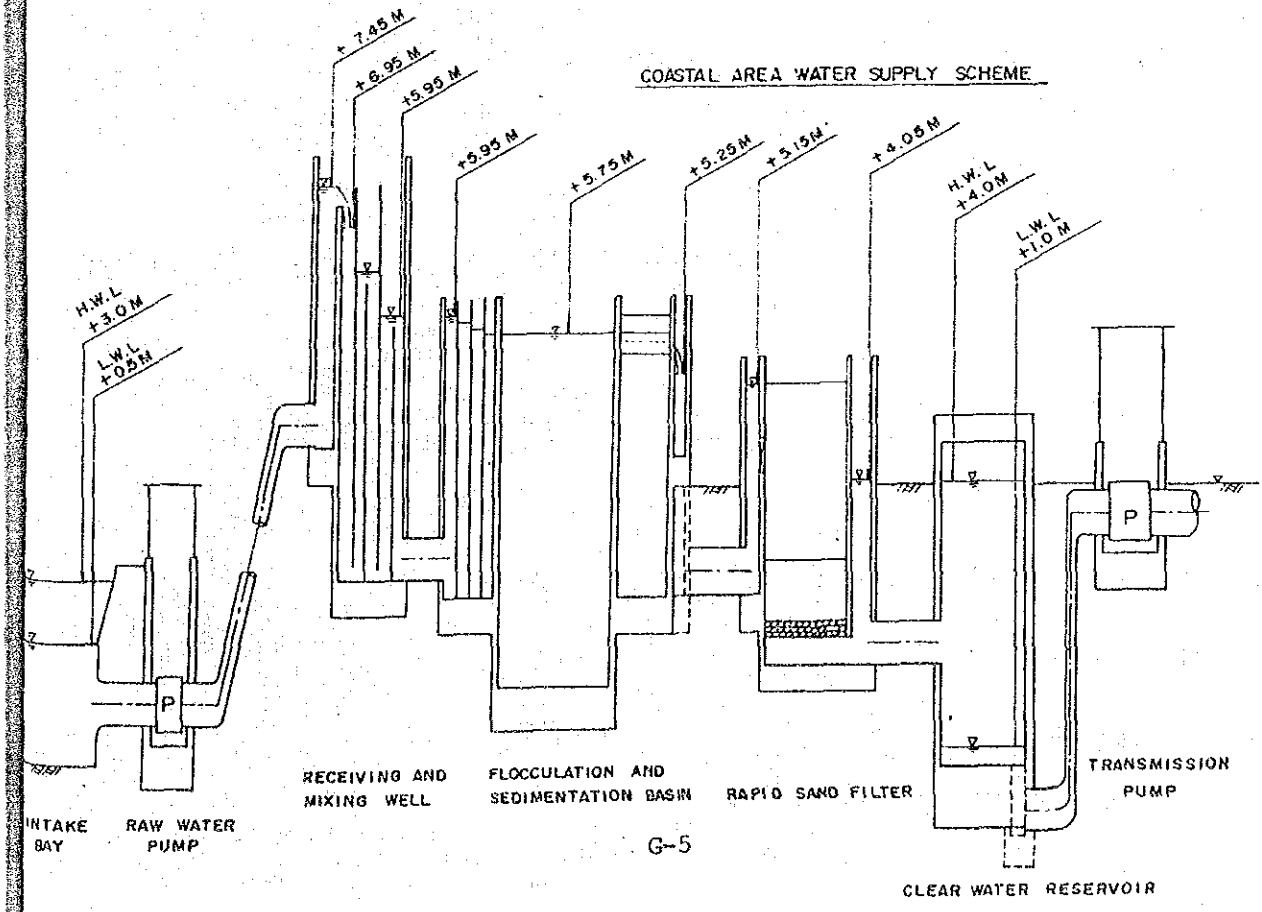


Fig. 6 Flow Chart of Chemical Feeding

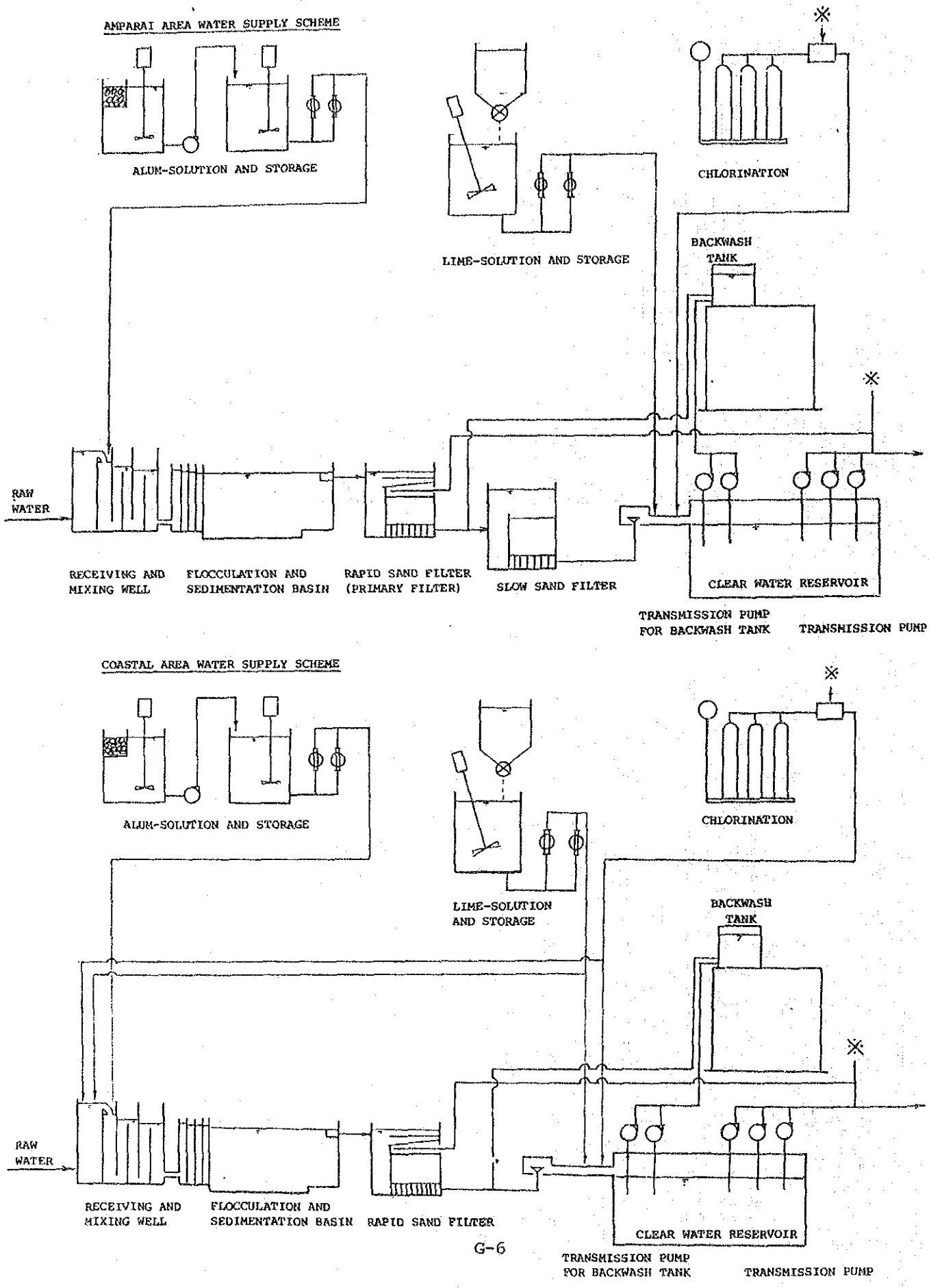


Fig. 7 Transmission and Distribution Pipelines

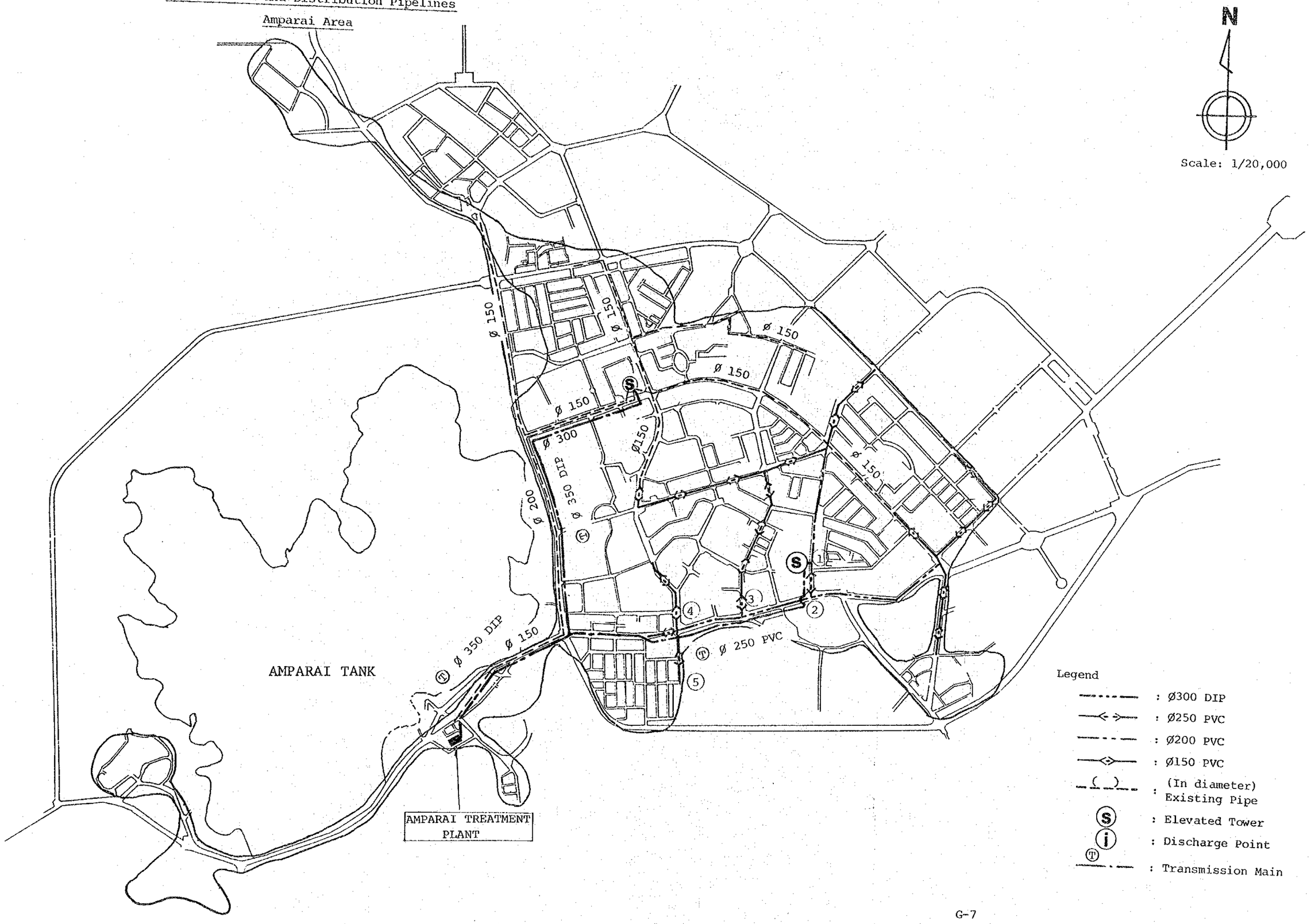
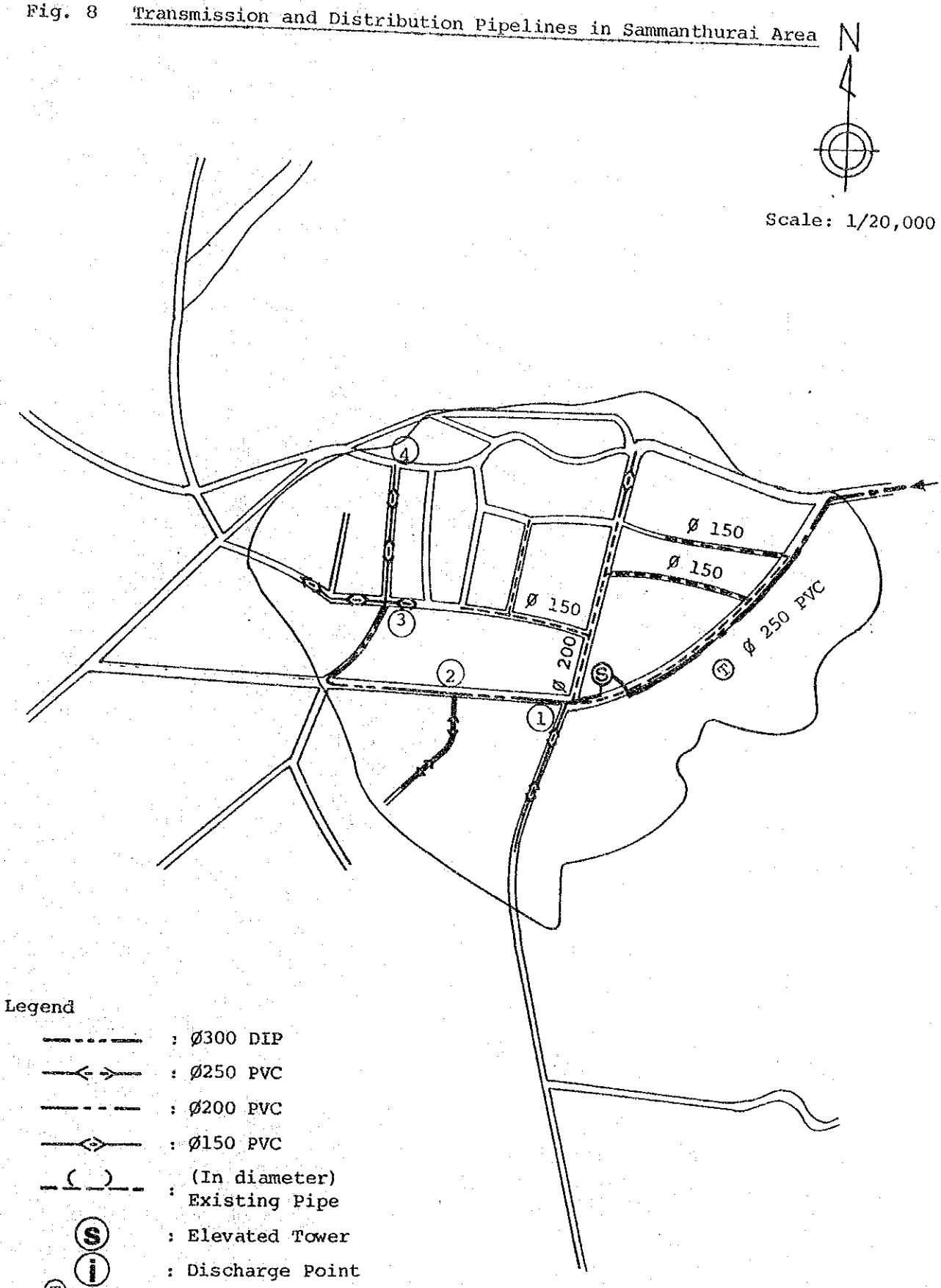


Fig. 8 Transmission and Distribution Pipelines in Sammanthurai Area



Legend

- : Ø300 DIP
- : Ø250 PVC
- : Ø200 PVC
- : Ø150 PVC
- : (In diameter) Existing Pipe
- (S) : Elevated Tower
- (i) : Discharge Point
- (T) : Transmission Main

Fig. 9 Transmission and Distribution Pipelines in Kalmunai Area

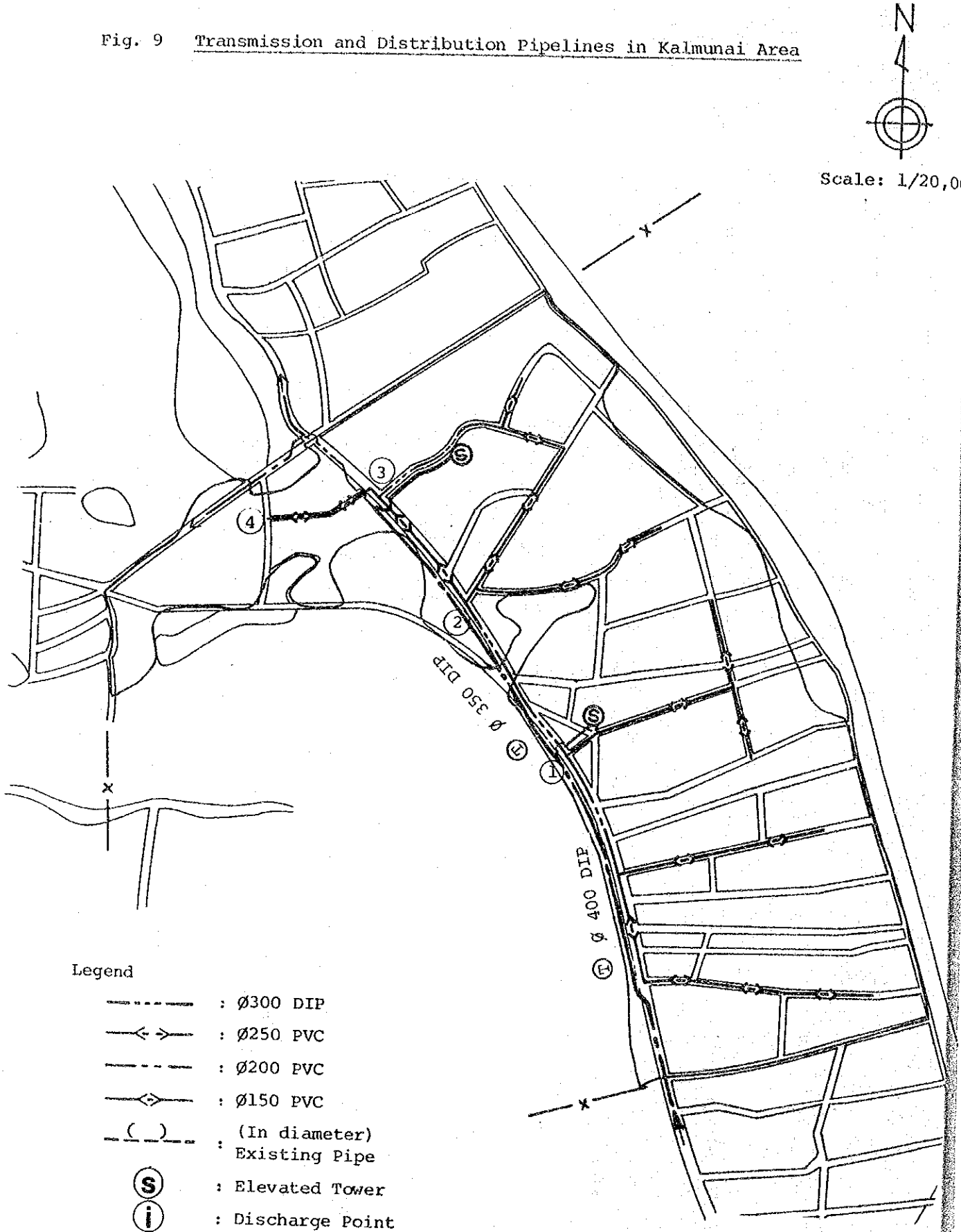
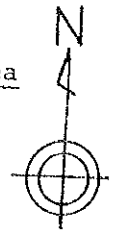


Fig. 10 Transmission and Distribution Pipelines in Karavahu-North Area



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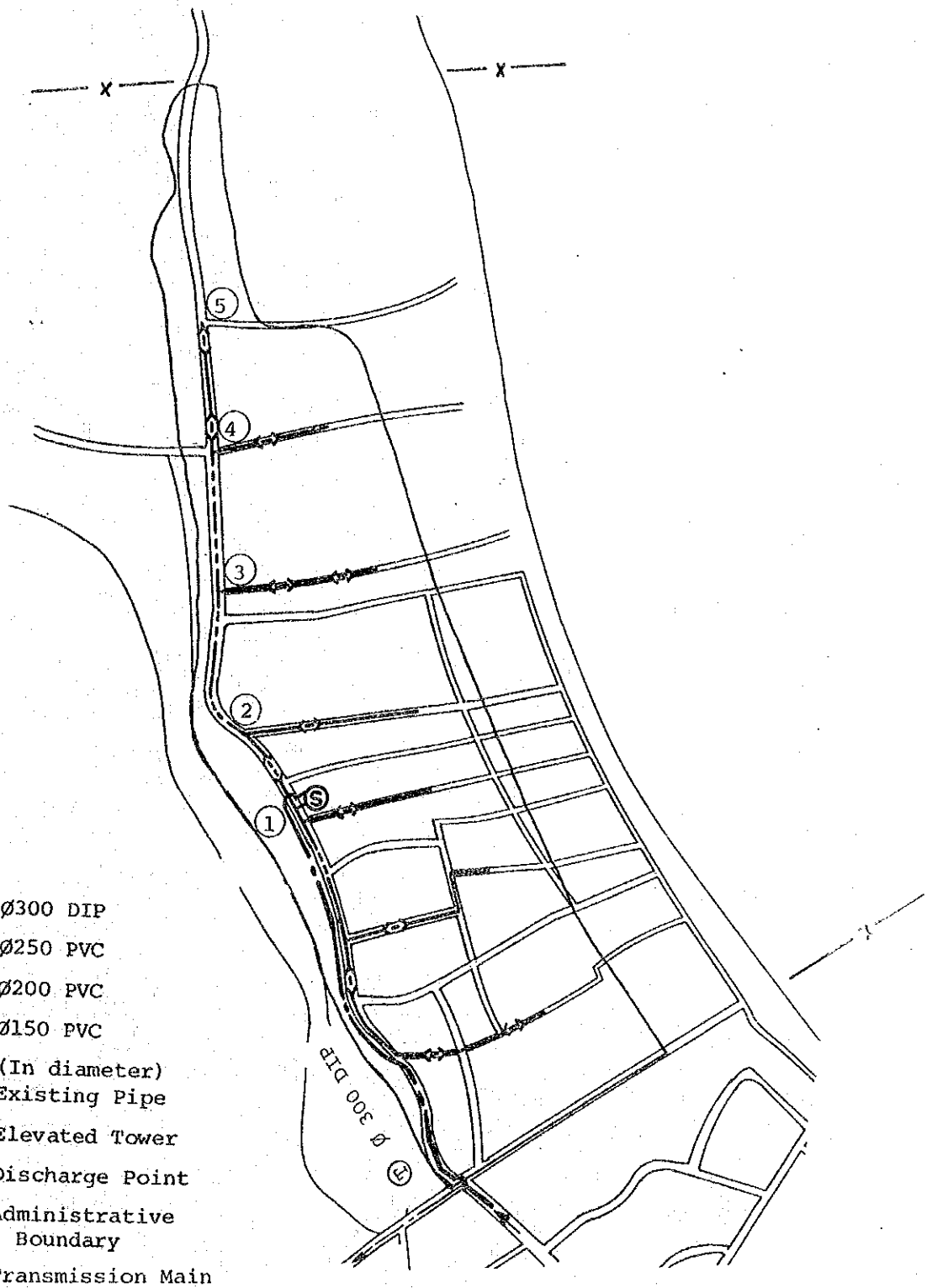
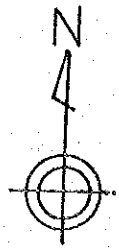


Legend

- : Ø300 DIP
- : Ø250 PVC
- : Ø200 PVC
- : Ø150 PVC
- : (In diameter) Existing Pipe
- : Elevated Tower
- : Discharge Point
- : Administrative Boundary
- : Transmission Main

Fig. 11 Transmission and Distribution Pipelines in Karavahu-West Area



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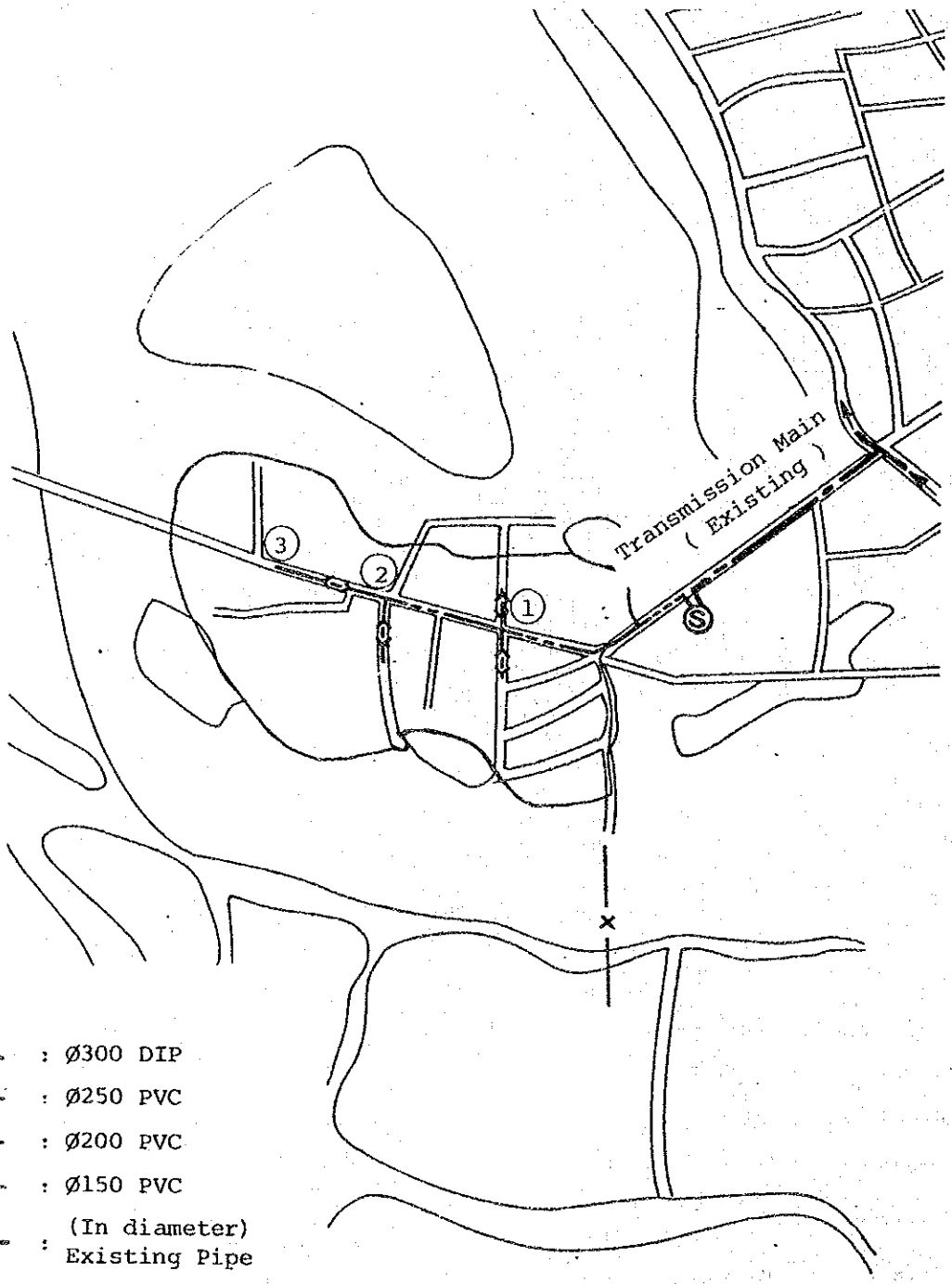

Legend

- : Ø300 DIP
- : Ø250 PVC
- : Ø200 PVC
- : Ø150 PVC
- : (In diameter) Existing Pipe
- (S) : Elevated Tower
- (i) : Discharge Point
- : Administrative Boundary
- (T) : Transmission Main

Fig. 12 Transmission and Distribution Pipelines in Karavahu-South, Karativu Area

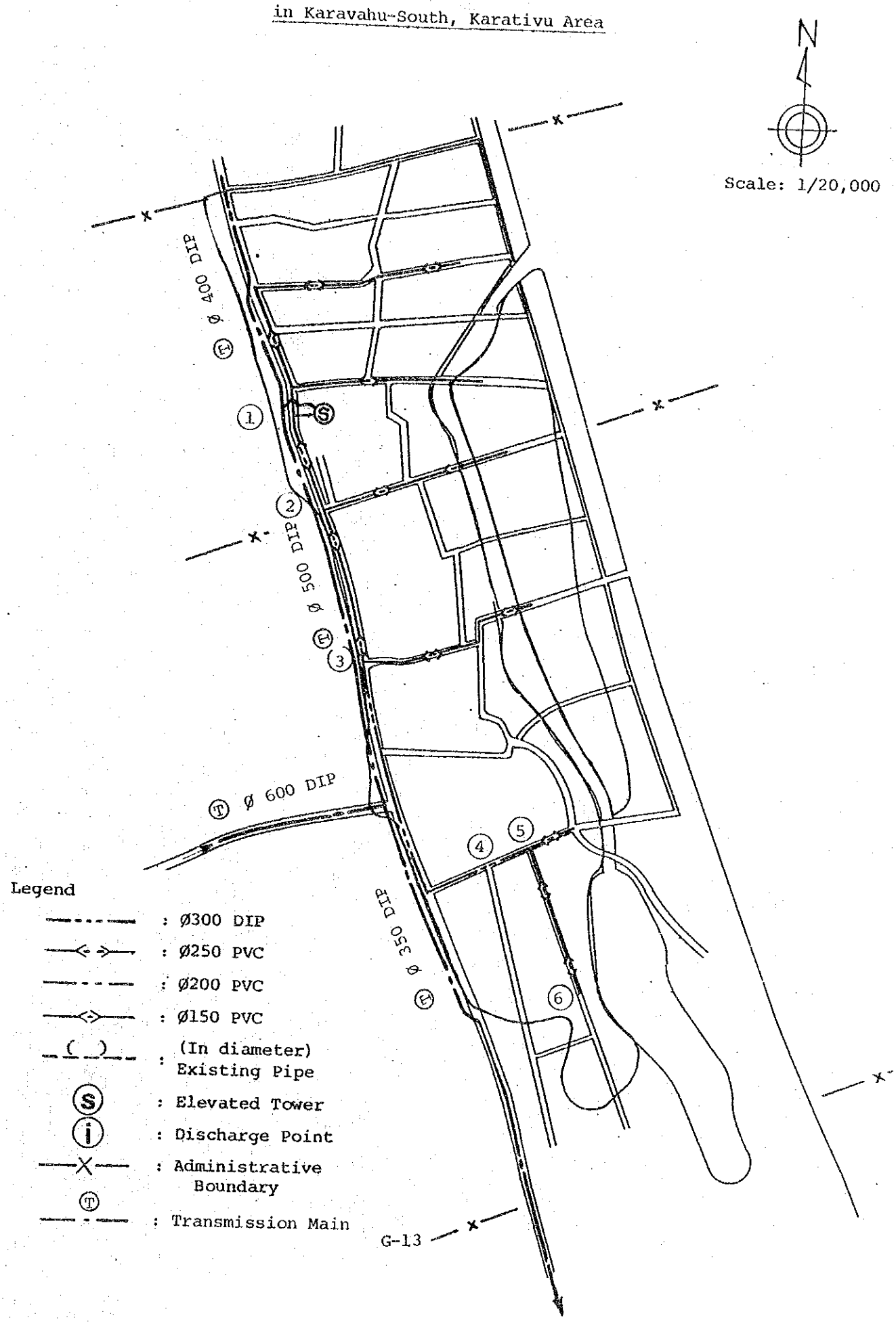

Fig. 13 Transmission and Distribution Pipelines in Akkaraipattu Area