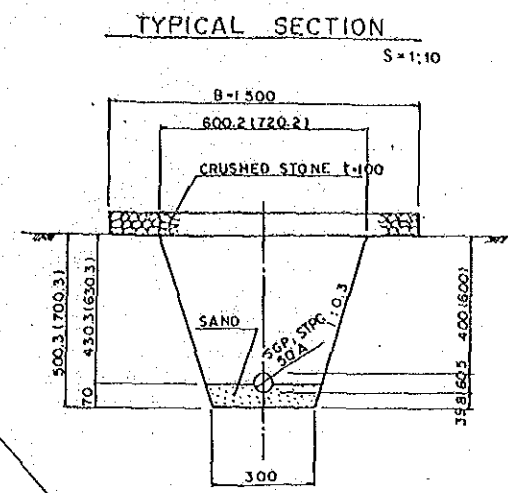
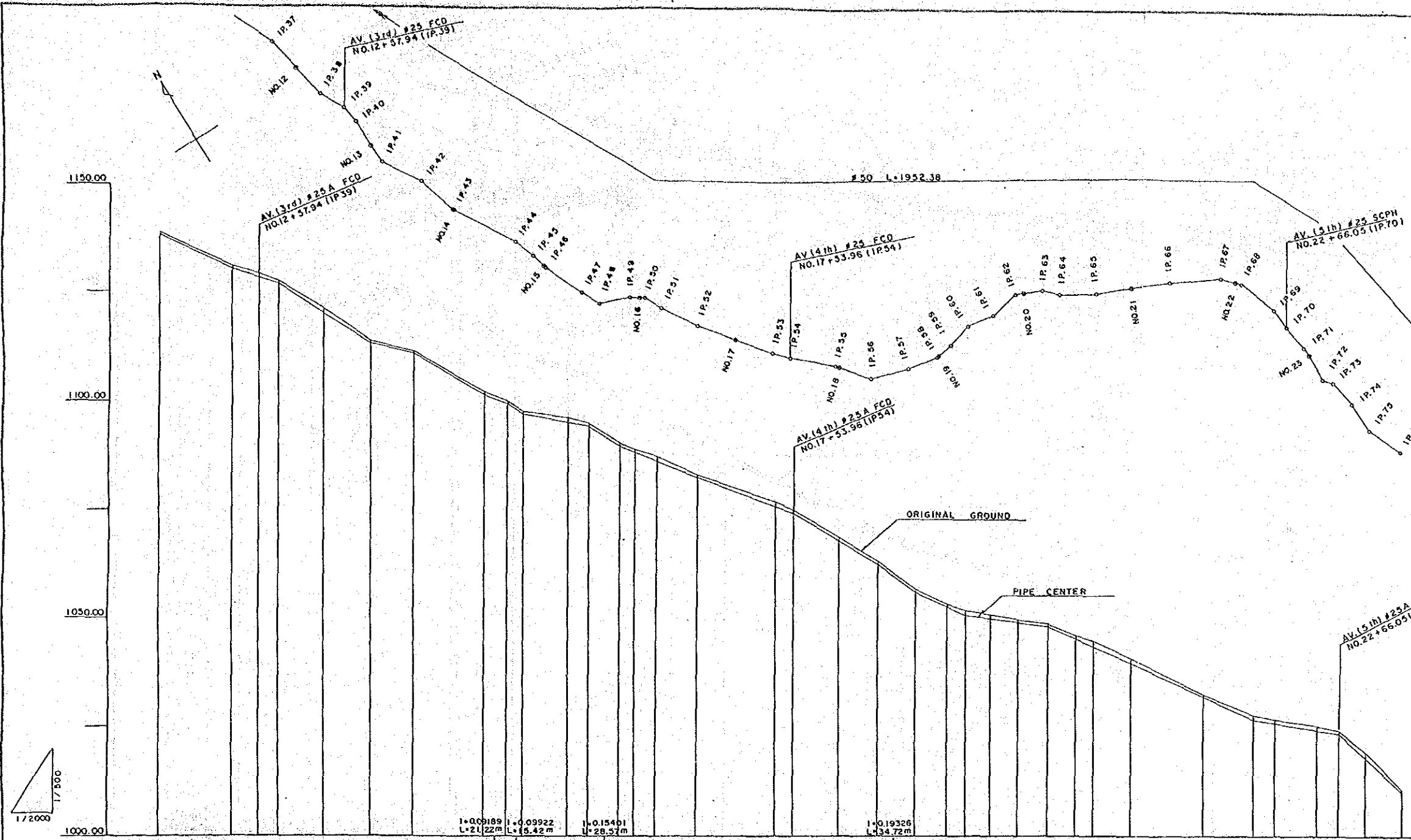


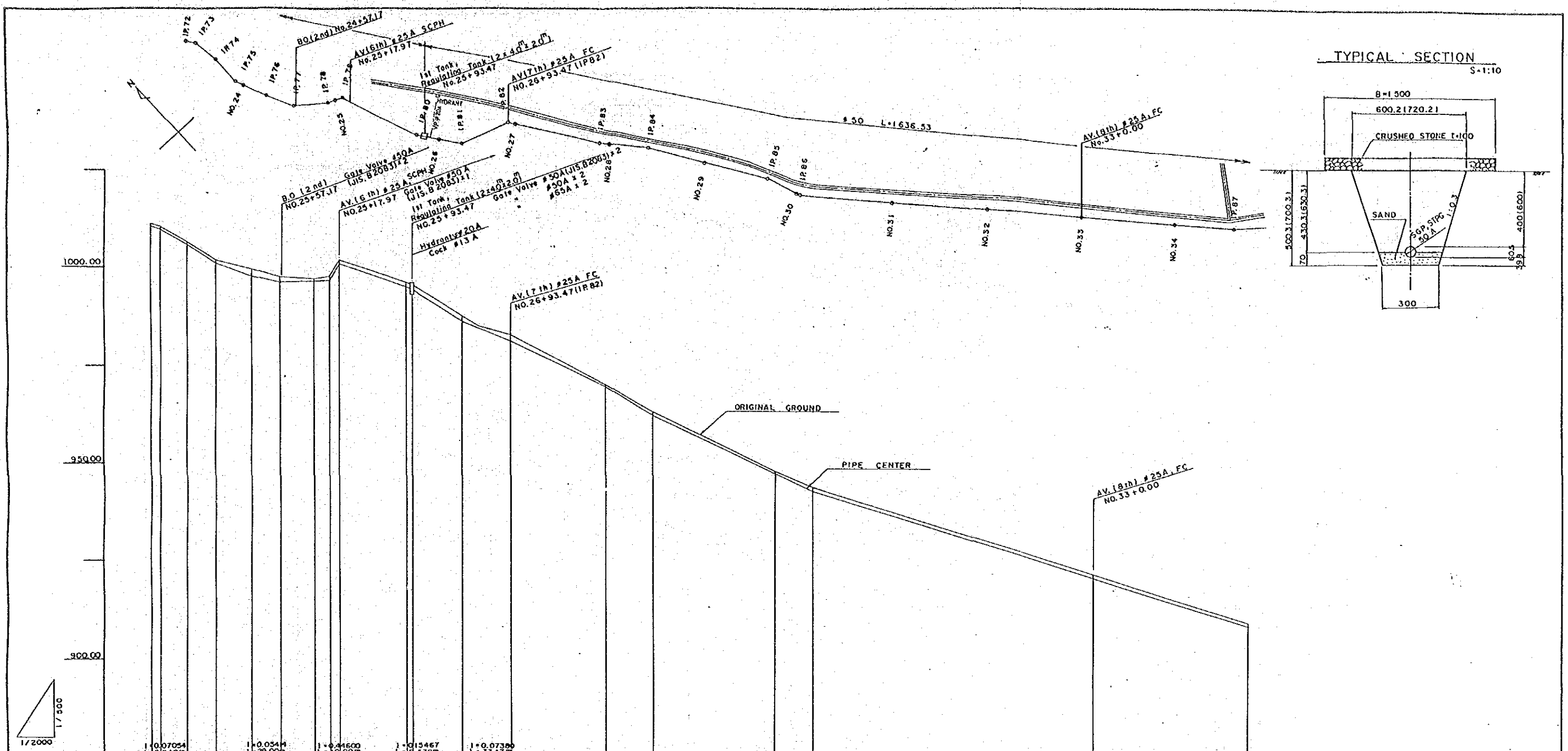
Station	Distance	Ground Height	Pipe Center	Pipe	Slope	Curve
BP	0.00	1210.16			0.00	0° 5' 56"
IP.1	14.99	1208.32	1208.76	SGP #65A Flange L=163.94m	1:0.02148 L=219.74m	5' 2' 35"
IP.2	10.25	1208.08	1208.31			2' 5' 40"
IP.3	52.06	1207.11	1208.98	SGP #65A Flange L=302.58m	1:0.03476 L=226.13m	2' 54' 10"
IP.4	15.76	1206.59	1208.64			6' 26' 35"
IP.5	10.25	1206.05	1208.42	SGP #65A Flange L=159.77m	1:0.02047 L=141.68m	2' 5' 30"
IP.6	13.94	1205.82	1208.12			10' 10' 10"
IP.7	8.05	1205.00	1207.57	SGP #50A L=758.26m	1:0.01983 L=35.97m	27' 44' 30"
IP.8	9.24	1204.22	1207.75			14' 20' 30"
IP.9	16.55	1203.76	1207.40	SGP #50A L=758.26m	1:0.01364 L=93.35m	23' 22' 30"
IP.10	26.00	1203.44	1206.84			22' 43' 40"
IP.11	11.84	1203.56	1205.33	SGP #50A L=758.26m	1:0.01219 L=118.6m	14' 6' 0"
IP.12	22.70	1203.65	1205.06			7' 44' 20"
IP.13	28.30	1204.40	1204.08	SGP #50A L=758.26m	1:0.01021 L=118.6m	7' 13' 50"
IP.14	37.16	1203.74	1202.77			7' 31' 10"
IP.15	40.49	1203.94	1202.36	SGP #50A L=758.26m	1:0.00922 L=102.65m	7' 38' 30"
IP.16	43.60	1203.25	1199.84			21' 18' 10"
IP.17	30.30	1198.75	1198.24	SGP #50A L=758.26m	1:0.00892 L=102.65m	14' 29' 50"
IP.18	16.87	1198.65	1197.67			20' 30' 40"
IP.19	13.90	1198.11	1197.20	SGP #50A L=758.26m	1:0.00892 L=102.65m	18' 50' 0"
IP.20	20.65	1196.93	1196.07			25' 15' 20"
IP.21	17.00	1202.62	1200.50	SGP #50A L=758.26m	1:0.00892 L=102.65m	1' 20' 40"
IP.22	44.87	1200.95	1199.65			24' 16' 20"
IP.23	30.30	1202.15	1199.03	SGP #50A L=758.26m	1:0.00892 L=102.65m	22' 56' 20"
IP.24	11.97	1200.94	1198.27			5' 48' 10"
IP.25	28.03	1197.70	1196.16	SGP #50A L=758.26m	1:0.00892 L=102.65m	54' 48' 20"
IP.26	49.20	1196.57	1195.95			47' 1' 30"
IP.27	9.53	1195.60	1195.60	SGP #50A L=758.26m	1:0.00892 L=102.65m	11' 11' 50"
IP.28	47.66	1192.52	1192.09			10' 36' 50"
IP.29	31.15	1181.09	1180.66	SGP #50A L=758.26m	1:0.00892 L=102.65m	17' 23' 30"
IP.30	11.75	1179.51	1179.51			5' 36' 20"
IP.31	35.75	1176.30	1175.67	SGP #50A L=758.26m	1:0.00892 L=102.65m	17' 23' 30"
IP.32	24.75	1171.88	1171.45			4' 36' 40"
IP.33	9.10	1170.31	1170.31	SGP #50A L=758.26m	1:0.00892 L=102.65m	13' 24' 20"
IP.34	48.75	1159.90	1159.47			16' 42' 20"
IP.35	10.15	1155.92	1155.49	SGP #50A L=758.26m	1:0.00892 L=102.65m	14' 0' 0"
IP.36	34.49	1150.77	1150.34			13' 30' 0"
IP.37	67.04	1138.63	1138.20			

DIRECTORATE GENERAL OF LIVESTOCK SERVICES
 THE MODEL INFRASTRUCTURE IMPROVEMENT WORKS FOR
 THE STRENGTHENING OF ARTIFICIAL INSEMINATION CENTER PROJECT
 TITLE OF DRAWING
**PLAN AND PROFILE,
 INSTALLATION OF PIPELINE** (1/4)
 JAPAN INTERNATIONAL COOPERATION AGENCY DWG. NO
 TOKYO 2



Station	Distance	Curvature Distance	Ground Height	Pipe Center	Pipe	Slope	Curve
IP.37	67.04	1167.04	1136.63	1138.20	SGP # 50 A L=758.28 m	1:0.11647 L=66.20 m	13°30' 0"
NO.12	32.96	1200.00		1134.36		1:0.09222 L=53.42 m	7°45' 0"
IP.38	33.24	1233.24	1130.92	1130.49	STPG # 65 A L=1194.10 m	1:0.15814 L=87.73 m	21°34' 30"
IP.39	34.70	1267.94	1128.18	1128.42		1:0.10358 L=71.13 m	5°31' 30"
IP.40	17.08	1285.02	1127.42	1126.99	Flange	1:0.15814 L=87.73 m	3°33' 30"
NO.13	24.98	1300.00		1123.03		1:0.09222 L=53.42 m	16°53' 0"
IP.41	18.12	1318.12	1121.12	1120.16	1:0.14134 L=66.33 m	1:0.14134 L=66.33 m	4°41' 10"
IP.42	42.65	1360.77	1113.83	1113.40	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	9°47' 20"
IP.43	32.60	1393.37	1111.06	1111.13	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	7°46' 20"
NO.14	0.63	1400.00		1111.04	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	1°33' 10"
IP.44	66.30	1466.30	1103.10	1101.67	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	0°1' 30"
IP.45	21.22	1487.52	1100.12	1099.72	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	4°5' 10"
NO.15	12.48	1500.00		1098.48	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	13°9' 0"
IP.46	2.84	1502.84	1098.62	1098.19	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	34°38' 10"
IP.47	41.28	1544.12	1096.18	1096.68	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	9°17' 10"
IP.48	18.80	1563.02	1094.94	1094.55	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	4°5' 10"
IP.49	28.57	1591.59	1090.36	1090.15	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	5°4' 10"
NO.16	8.41	1600.00		1089.43	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	5°11' 0"
IP.50	3.05	1603.05	1089.17	1088.75	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	5°1' 50"
IP.51	18.10	1621.15	1087.48	1086.77	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	8°5' 40"
IP.52	38.55	1662.74	1083.22	1082.78	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	34°36' 10"
NO.17	37.26	1700.00		1079.48	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	5°6' 10"
IP.53	37.23	1737.23	1076.96	1076.16	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	17°12' 40"
IP.54	16.73	1753.96	1075.10	1074.33	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	21°30' 10"
IP.55	43.00	1796.96	1068.93	1068.43	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	27°25' 50"
NO.18	3.00	1800.00		1067.95	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	19°42' 50"
IP.56	33.50	1833.50	1066.55	1063.12	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	31°26' 10"
IP.57	34.72	1868.22	1057.00	1056.41	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	26°22' 0"
IP.58	29.48	1897.70	1053.57	1052.72	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	15°59' 35"
NO.19	2.26	1900.00		1052.72	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	8°23' 10"
IP.59	14.74	1914.74	1052.22	1051.00	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	5°24' 30"
IP.60	33.45	1948.19	1051.29	1050.37	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	5°54' 40"
IP.61	25.90	1973.59	1050.24	1049.68	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	23°29' 30"
IP.62	28.50	1992.09	1049.33	1048.92	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	15°34' 0"
NO.20	7.91	2000.00		1048.03	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	6°15' 55"
IP.63	17.49	2017.49	1046.49	1046.06	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	2°09' 30"
IP.64	16.35	2033.84	1045.22	1044.21	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	35°11' 50"
IP.65	34.00	2067.84	1041.11	1040.38	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	
NO.21	32.16	2100.00		1036.75	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	
IP.66	37.78	2137.78	1032.87	1032.49	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	
IP.67	48.68	2186.47	1028.20	1027.00	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	
NO.22	13.33	2200.00		1026.84	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	
IP.68	6.35	2206.35	1027.03	1026.32	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	
IP.69	39.79	2246.14	1023.73	1024.96	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	
IP.70	19.67	2265.81	1024.74	1024.31	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	
IP.71	25.32	2291.13	1019.64	1016.52	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	
NO.23	8.63	2300.00		1016.54	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	
IP.72	25.97	2325.97	1011.03	1010.60	1:0.15814 L=87.73 m	1:0.15814 L=87.73 m	

DIRECTORATE GENERAL OF LIVESTOCK SERVICES
 THE MODEL INFRASTRUCTURE IMPROVEMENT WORKS FOR
 THE STRENGTHENING OF ARTIFICIAL INSEMINATION CENTER PROJECT
 TITLE OF DRAWING
**PLAN AND PROFILE,
 INSTALLATION OF PIPELINE.** 2
4
 JAPAN INTERNATIONAL COOPERATION AGENCY DWG. NO
 TOKYO 3.

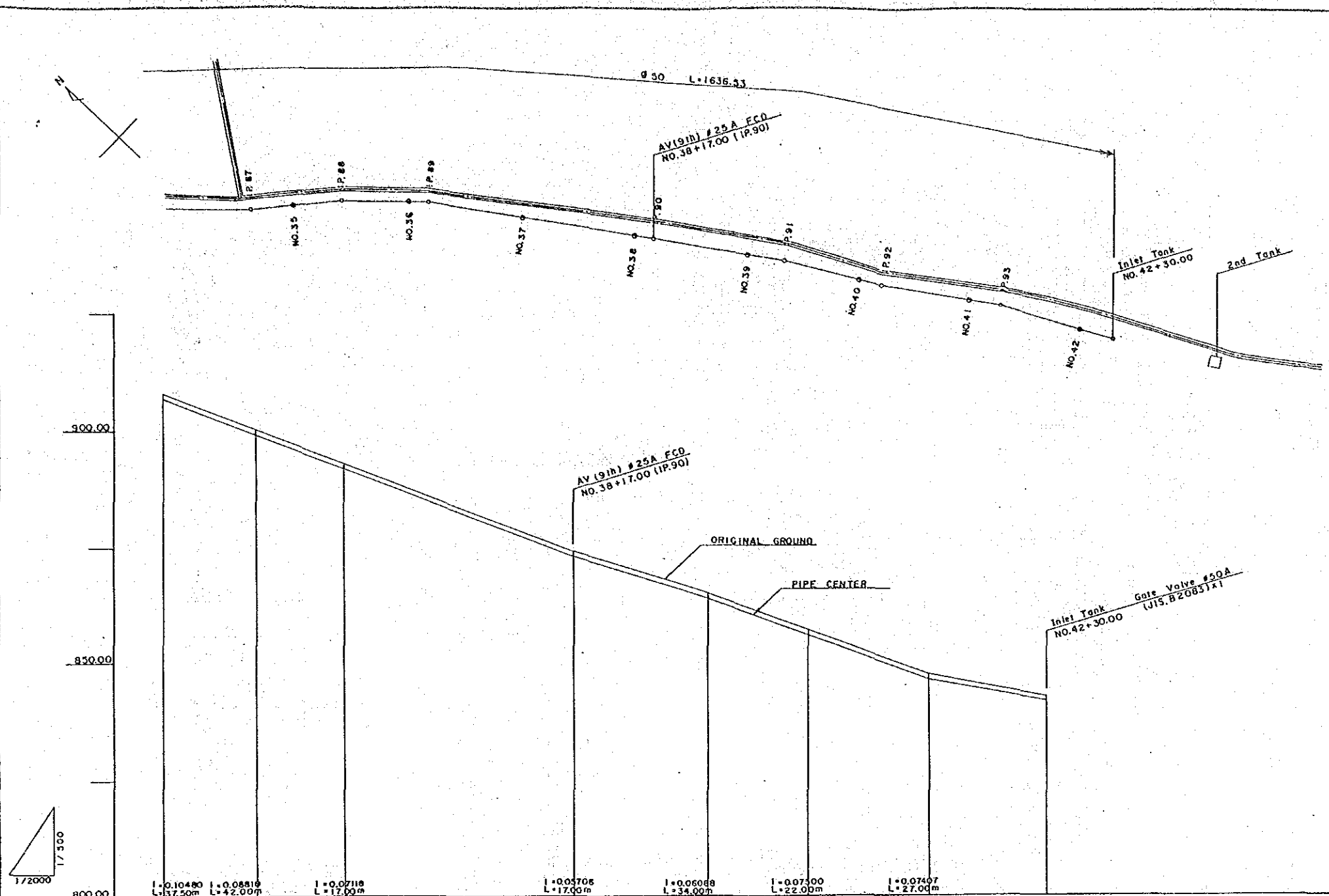
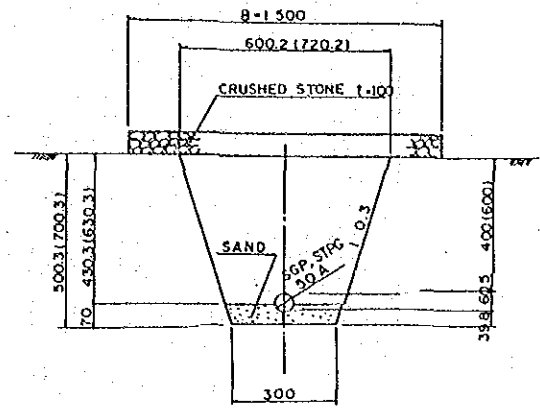


Station	Distance	Ground Height	Pipe Center	Slope
IP.72	25.97	1011.03	1010.60	1:0.07054
IP.73	9.64	1010.35	1009.92	1:0.0544
IP.74	26.49	1006.43	1003.77	1:0.041600
IP.75	29.39	1001.77	1001.17	1:0.13467
NO.24	8.31	1000.00	1000.24	1:0.07300
IP.76	27.17	998.29	997.08	1:0.11826
IP.77	30.00	996.17	996.12	1:0.08884
IP.78	35.00	996.31	996.31	1:0.07300
NO.25	7.83	996.34	996.34	1:0.08300
IP.79	7.97	997.39	996.39	1:0.07300
IP.80	10.00	1001.68	1000.85	1:0.08300
NO.26	70.00	996.20	993.06	1:0.11826
IP.81	5.50	994.60	994.60	1:0.08300
NO.27	8.33	995.23	993.39	1:0.07300
IP.82	43.47	987.50	986.91	1:0.08300
NO.28	18.33	985.00	984.37	1:0.07300
IP.83	90.28	970.00	969.37	1:0.08300
NO.29	8.72	969.00	968.10	1:0.07300
IP.84	40.28	962.29	962.00	1:0.08300
NO.30	33.47	982.50	981.90	1:0.07300
IP.85	6.33	981.07	981.07	1:0.08300
NO.31	67.00	947.00	947.00	1:0.07300
IP.86	33.00	943.13	943.13	1:0.08300
NO.32	5.00	942.34	942.34	1:0.07300
IP.87	100.00	908.03	907.23	1:0.08300

DIRECTORATE GENERAL OF LIVESTOCK SERVICES
 THE MODEL INFRASTRUCTURE IMPROVEMENT WORKS FOR
 THE STRENGTHENING OF ARTIFICIAL INSEMINATION CENTER PROJECT
 TITLE OF DRAWING
**PLAN AND PROFILE,
 INSTALLATION OF PIPELINE**
 JAPAN INTERNATIONAL COOPERATION AGENCY
 TOKYO

DWG. NO.
 4

TYPICAL SECTION
S=1:10

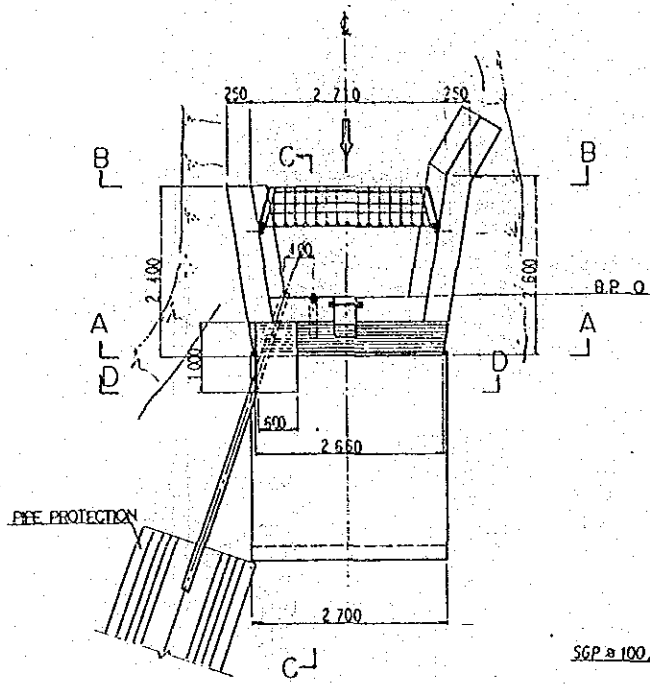


Station	Stationing	Distance	Ground Height	Pipe Center	Curve
IP.87	82.50	82.50	898.02	907.23	9° 0' 0"
NO.35	37.50	37.50	903.32	903.32	6° 30' 0"
IP.88	42.00	42.00	900.40	899.60	8° 30' 0"
NO.36	38.00	38.00	893.60	893.60	0° 25' 0"
IP.89	17.00	17.00	893.19	892.39	4° 30' 0"
NO.37	83.00	83.00	874.23	873.53	4° 30' 0"
IP.90	100.00	100.00	866.60	866.60	7° 0' 0"
NO.38	17.00	17.00	863.23	863.23	
IP.91	34.00	34.00	858.10	858.10	
NO.39	83.00	83.00	856.43	856.43	
IP.92	22.00	22.00	848.00	848.00	
NO.40	66.00	66.00	844.84	844.01	
IP.93	27.00	27.00	843.27	842.30	
NO.41	78.00	78.00			
IP.94	73.00	73.00			
NO.42	30.00	30.00			

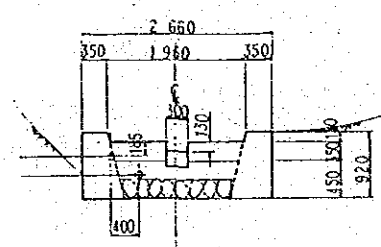
DIRECTORATE GENERAL OF LIVESTOCK SERVICES
THE MODEL INFRASTRUCTURE IMPROVEMENT WORKS FOR
THE STRENGTHENING OF ARTIFICIAL INSEMINATION CENTER PROJECT
TITLE OF DRAWING
**PLAN AND PROFILE,
INSTALLATION OF PIPELINE** ④
JAPAN INTERNATIONAL COOPERATION AGENCY DWG. NO
TOKYO 5

* SHALL INSTALL 320^{MM} FENCE.

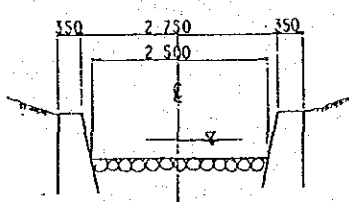
INTAKE
S=1:50



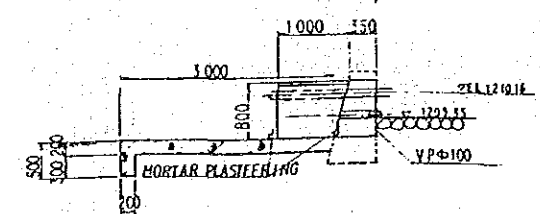
SECTION A - A



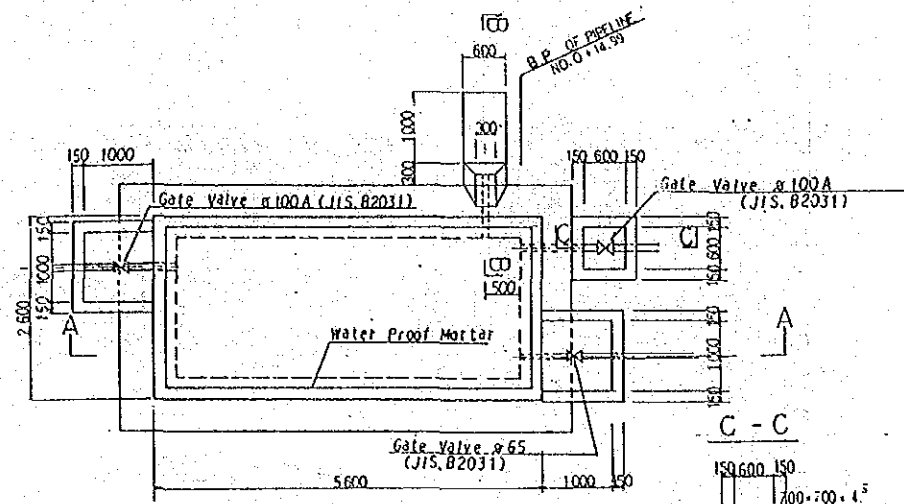
SECTION B - B



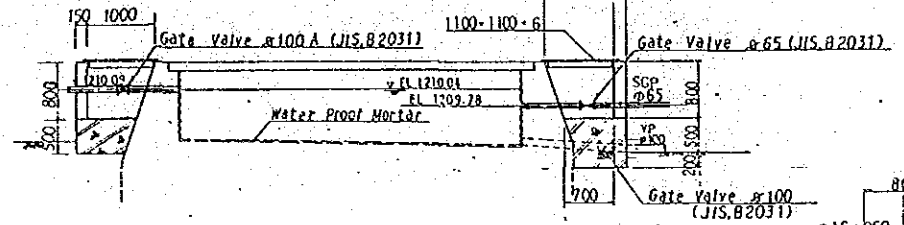
SECTION C - C



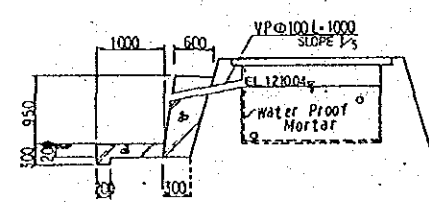
SETTLING BOX
S=1:50



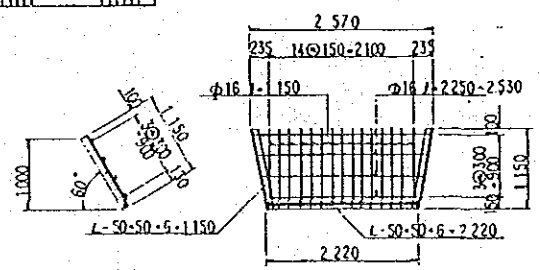
SECTION A - A



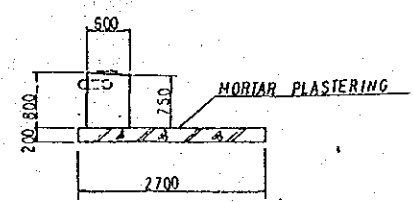
SECTION B - B



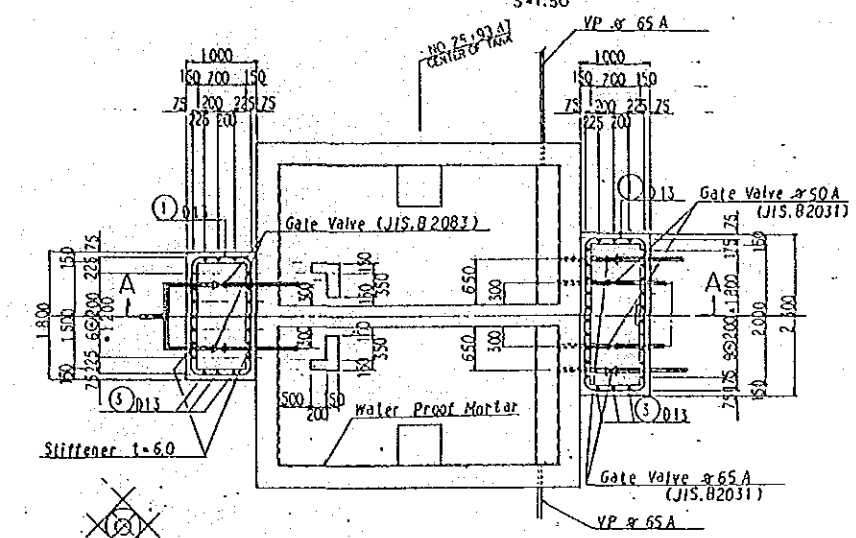
DETAIL OF SCREEN
S=1:50



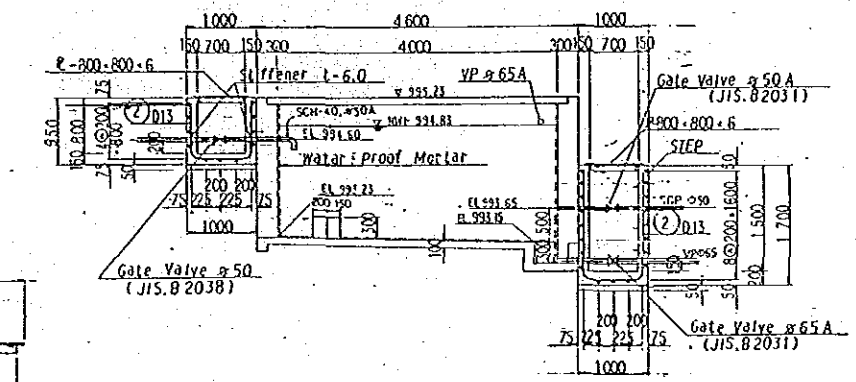
SECTION D - D



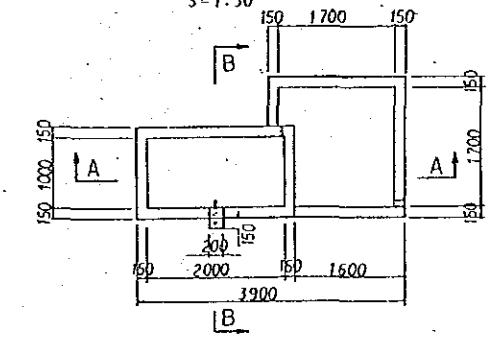
REGULATING TANK
S=1:50



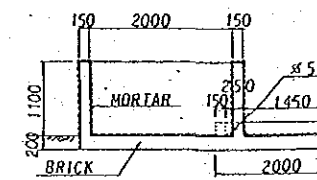
SECTION A - A



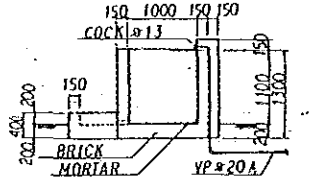
HYDRANT
S=1:50



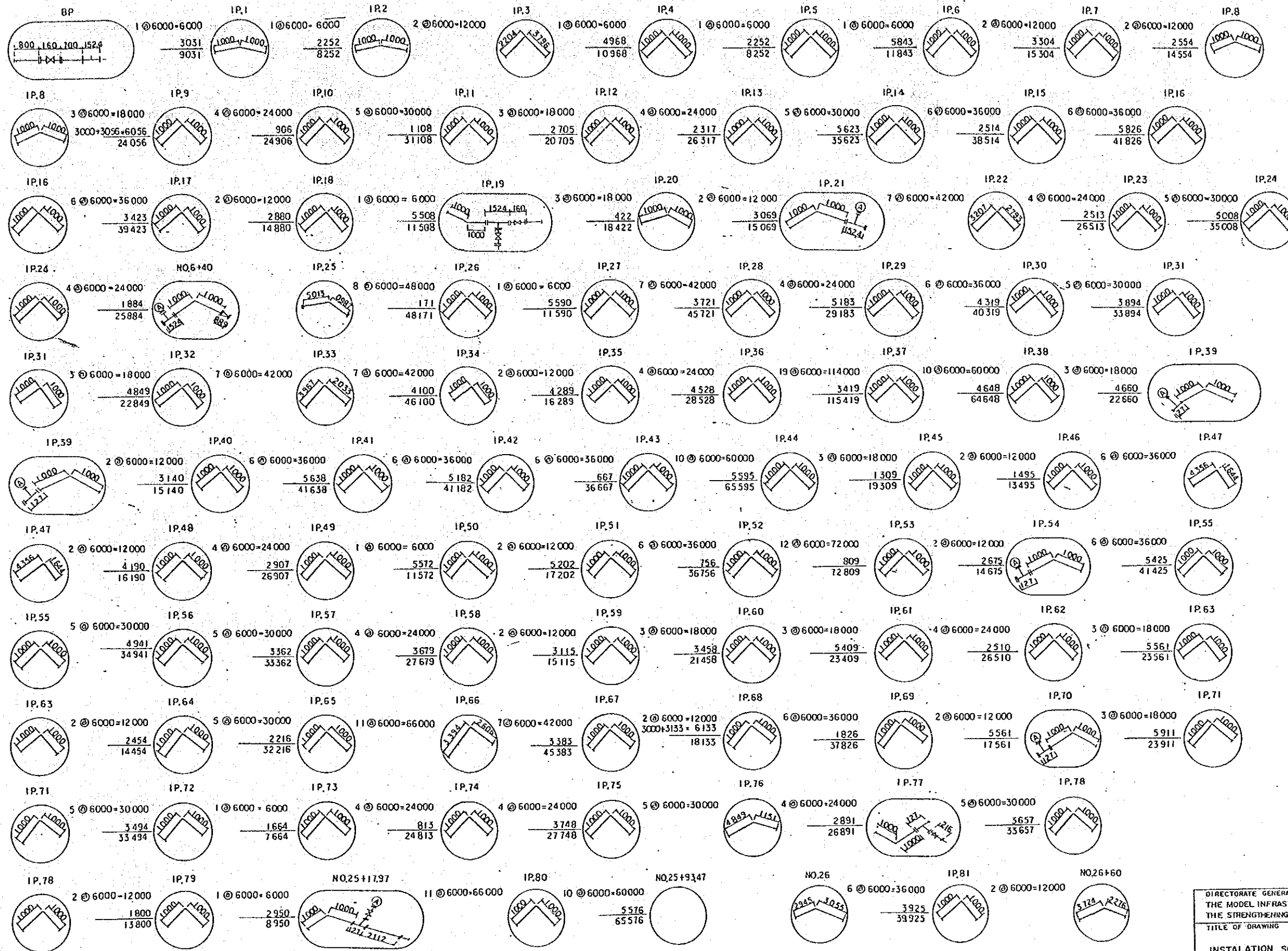
SECTION A - A



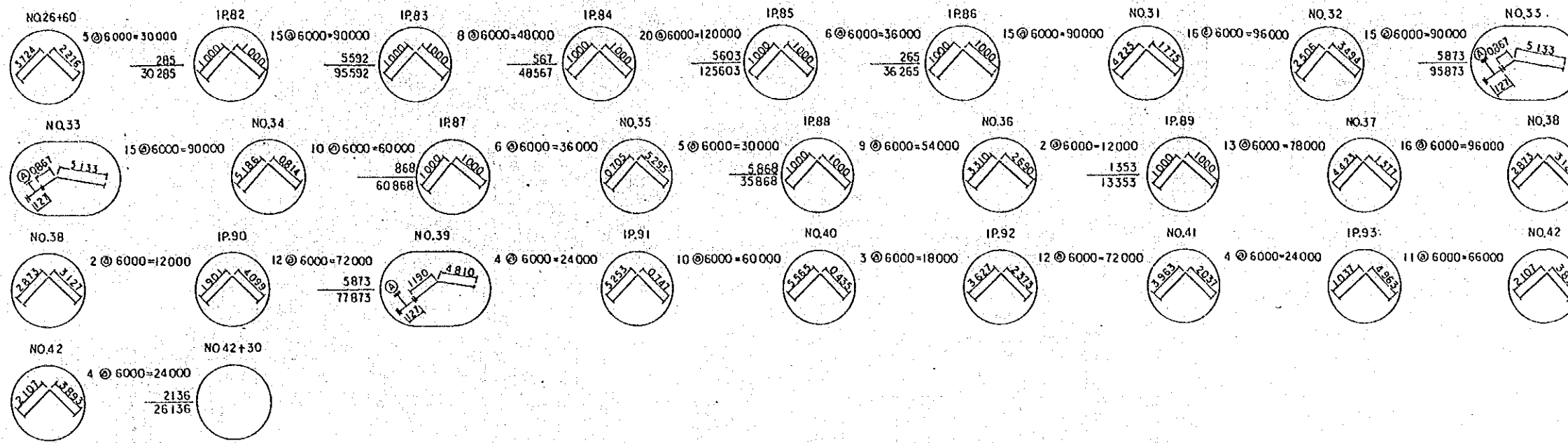
SECTION B - B



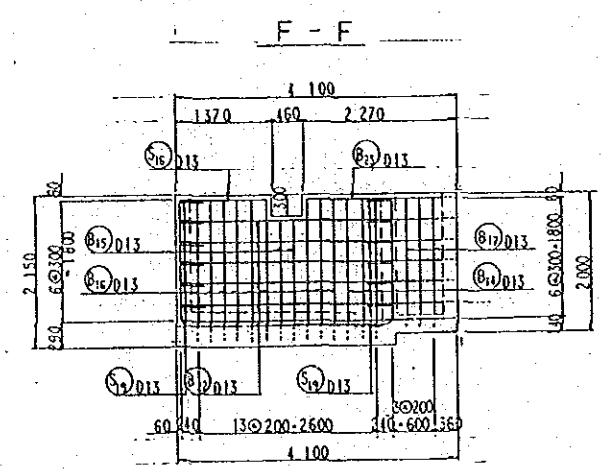
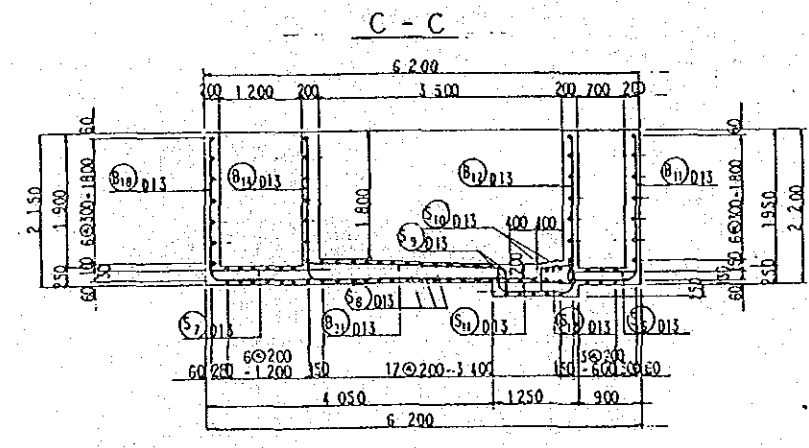
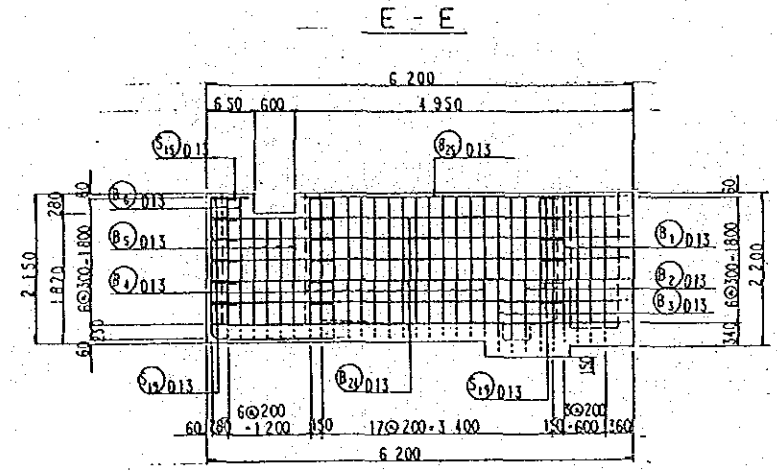
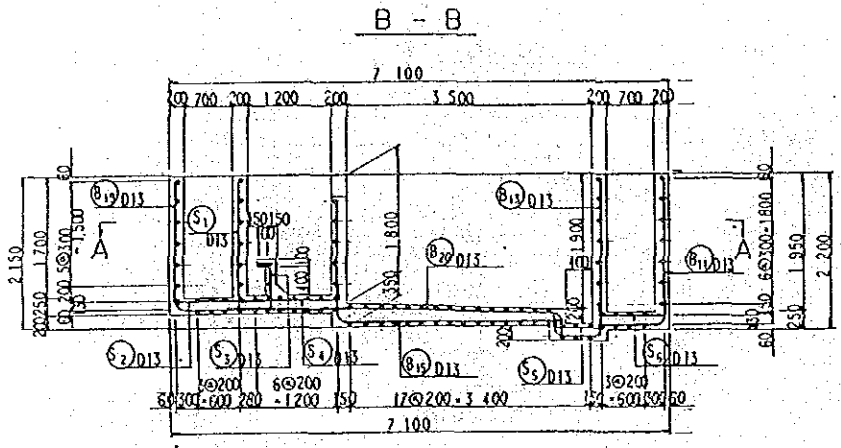
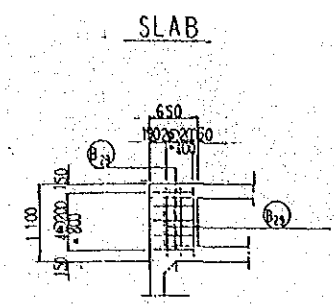
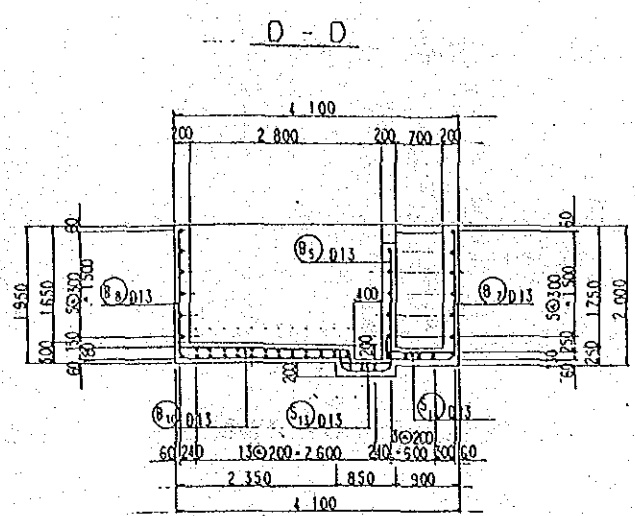
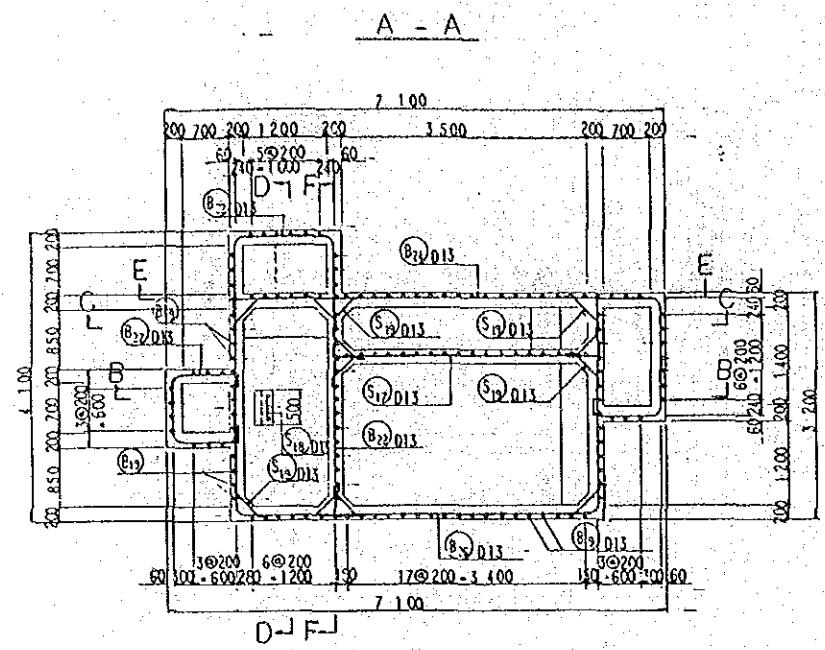
DIRECTORATE GENERAL OF LIVESTOCK SERVICES
THE MODEL INFRASTRUCTURE IMPROVEMENT WORKS FOR
THE STRENGTHENING OF ARTIFICIAL INSEMINATION CENTER PROJECT
TITLE OF DRAWING
**PLAN OF IMPROVEMENT OF INTAKE, SETTLING BOX
AND REGULATING TANK**
JAPAN INTERNATIONAL COOPERATION AGENCY DWG. NO
TOKYO 6.



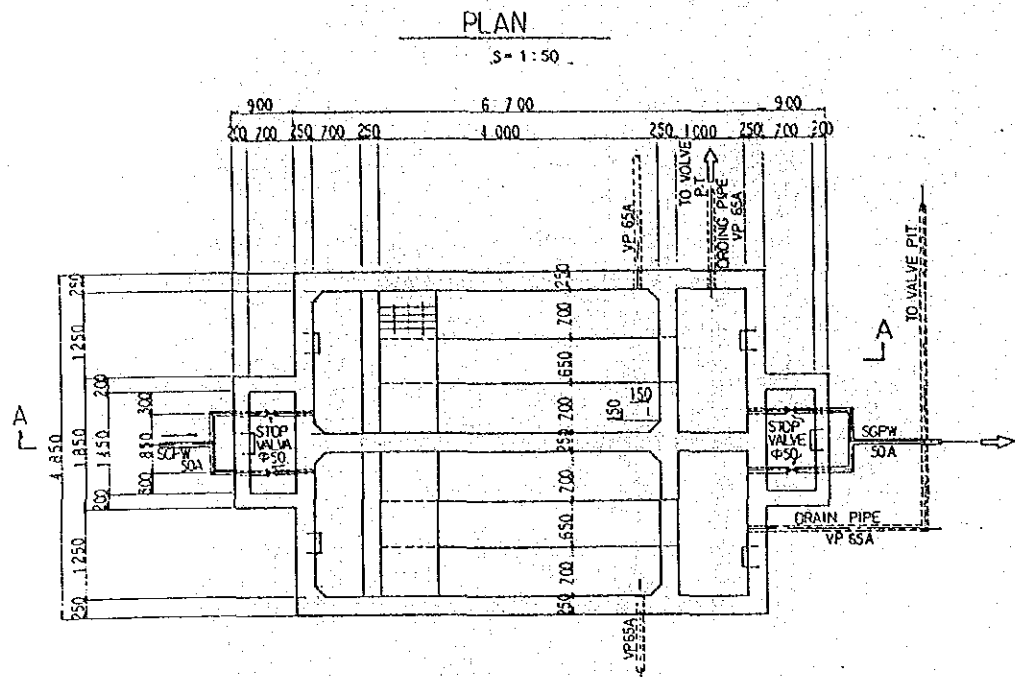
DIRECTORATE GENERAL OF LIVESTOCK SERVICES
 THE MODEL INFRASTRUCTURE IMPROVEMENT WORKS FOR
 THE STRENGTHENING OF ARTIFICIAL INSEMINATION CENTER PROJECT
 TITLE OF DRAWING
 INSTALLATION SCHEDULE FOR PIPELINE
 JAPAN INTERNATIONAL COOPERATION AGENCY
 TOKYO
 DWG. NO
 8



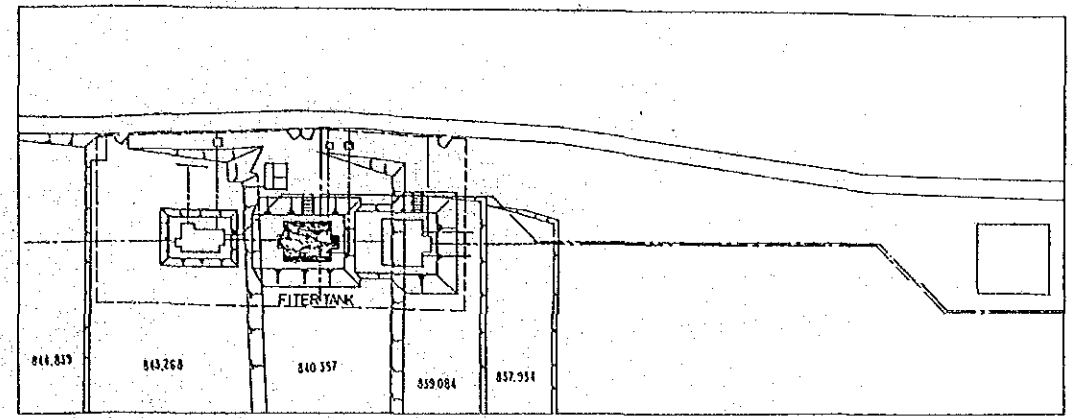
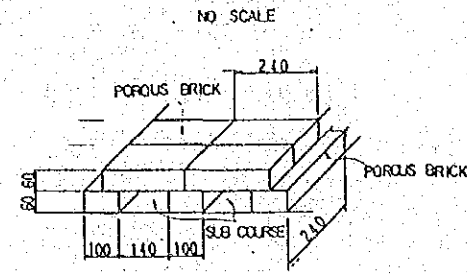
DIRECTORATE GENERAL OF LIVESTOCK SERVICES
 THE MODEL INFRASTRUCTURE IMPROVEMENT WORKS FOR
 THE STRENGTHENING OF ARTIFICIAL INSEMINATION CENTER PROJECT
 TITLE OF DRAWING
 INSTALLATION SCHEDULE FOR PIPELINE
 JAPAN INTERNATIONAL COOPERATION AGENCY
 TOKYO
 DWG. NO
 9



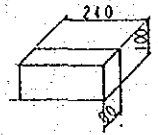
DIRECTORATE GENERAL OF LIVESTOCK SERVICES	
THE MODEL INFRASTRUCTURE IMPROVEMENT WORKS FOR	
THE STRENGTHENING OF ARTIFICIAL INSEMINATION CENTER PROJECT	
TITLE OF DRAWING	
BAR SCHEDULE OF INLET TANK	
S = 1:50	
JAPAN INTERNATIONAL COOPERATION AGENCY	DWG. NO
TOKYO	11



INSTALLATION OF POROUS BRICK

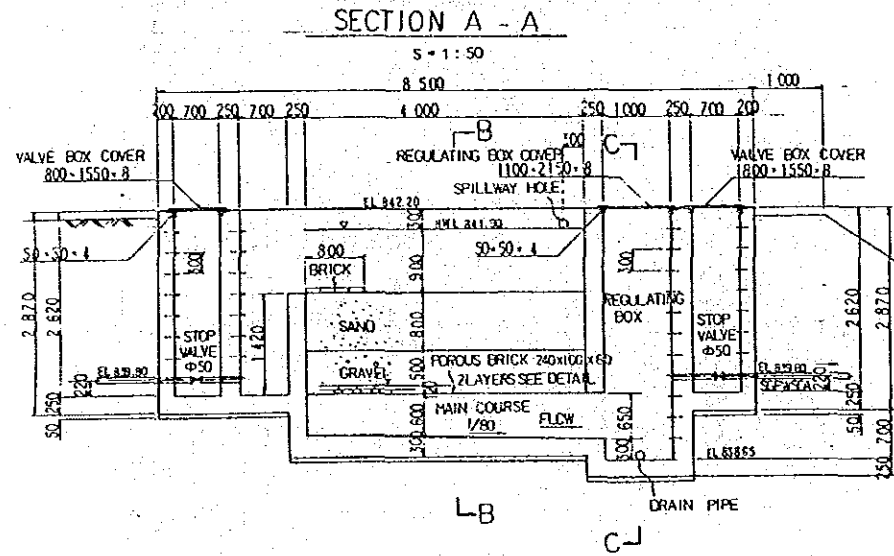
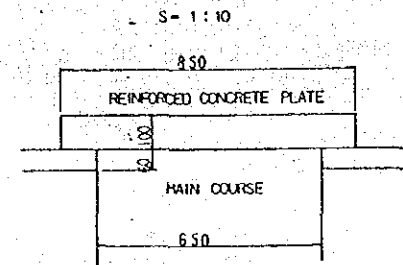


SPECIFICATION OF POROUS BRICK



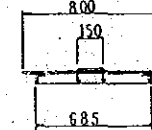
SPECIFICATION	
COMPRESSIVE STRENGTH	600 $\frac{kg}{cm^2}$
TENSILE STRENGTH	75 $\frac{kg}{cm^2}$
WEIGHT	2.4 kg

REINFORCED CONCRETE COVER ON MAIN COURSE



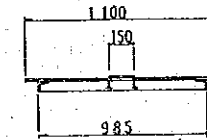
DETAIL OF VALVE BOX COVER

S = 1:20



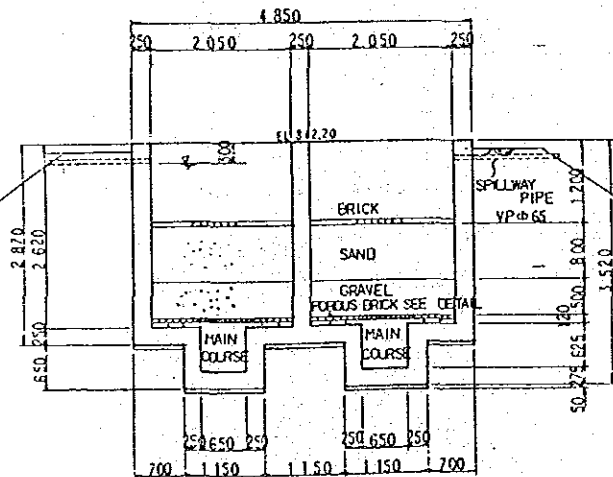
DETAIL OF REGULATING BOX COVER

S = 1:20



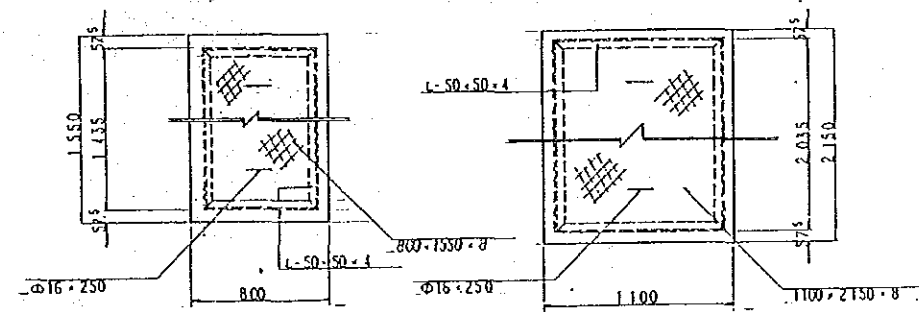
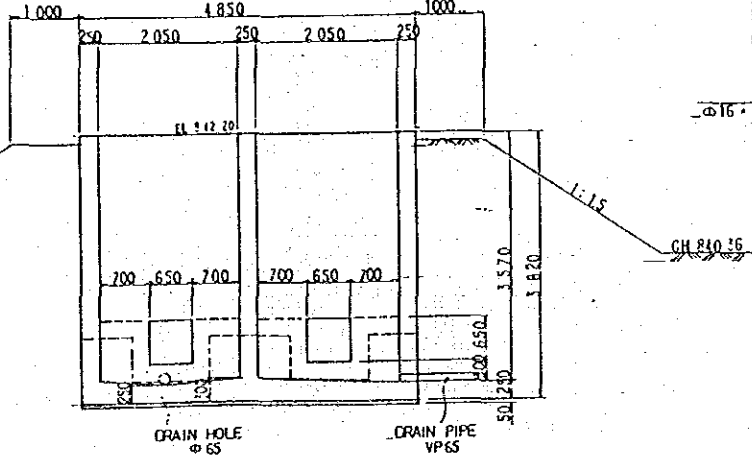
SECTION B - B

S = 1:50



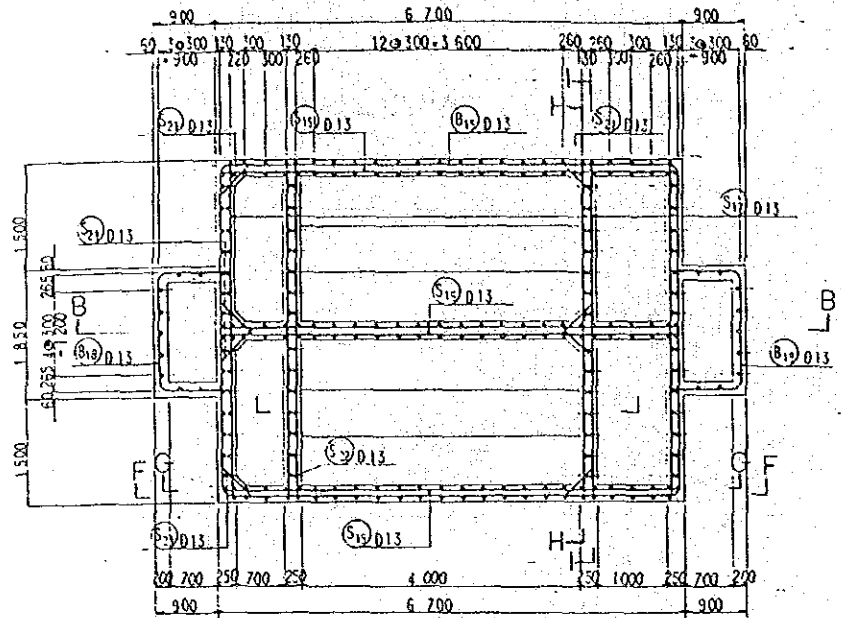
SECTION C - C

S = 1:50

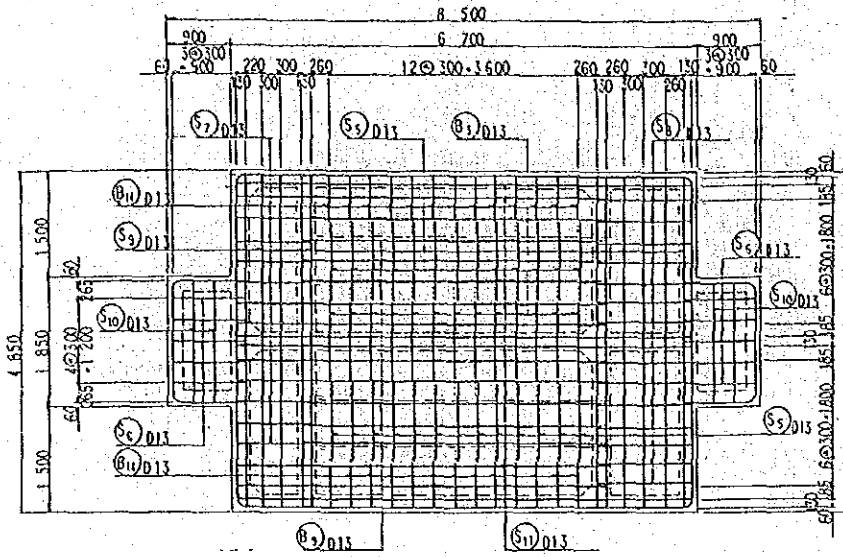


DIRECTORATE GENERAL OF LIVESTOCK SERVICES	
THE MODEL INFRASTRUCTURE IMPROVEMENT WORKS FOR	
THE STRENGTHENING OF ARTIFICIAL INSEMINATION CENTER PROJECT	
TITLE OF DRAWING	
FILTER TANK S = 1:50	
JAPAN INTERNATIONAL COOPERATION AGENCY	02-0-10
TOKYO	12

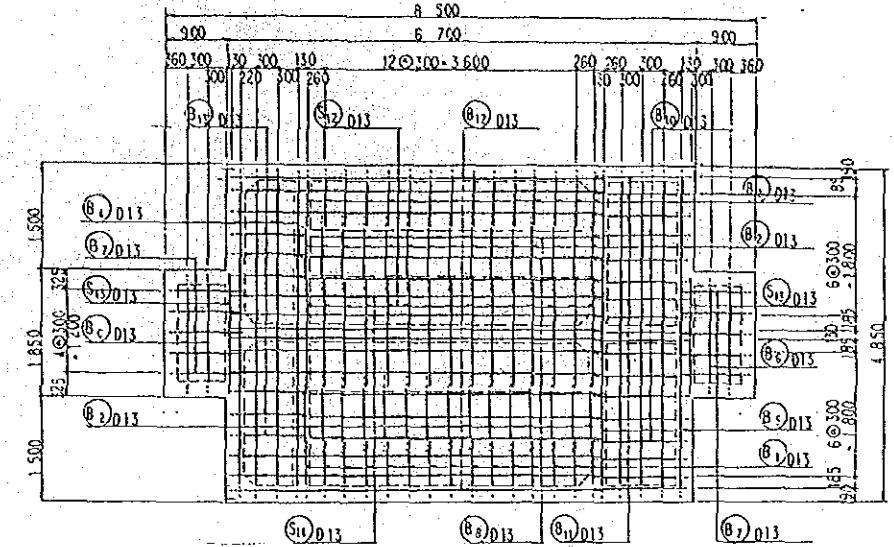
A - A

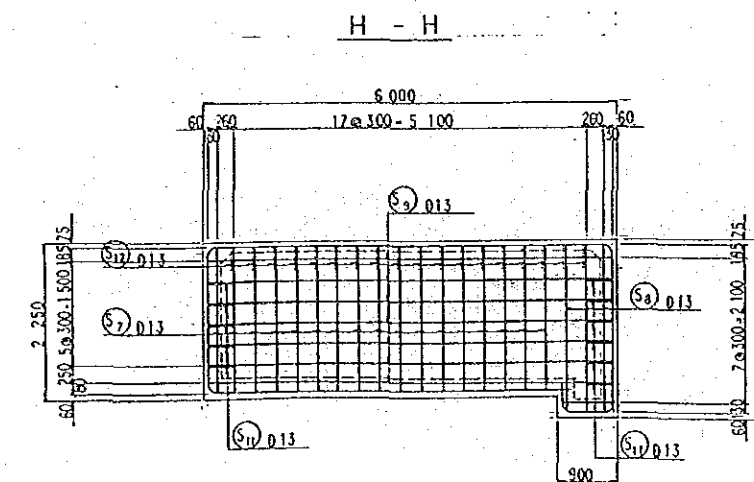
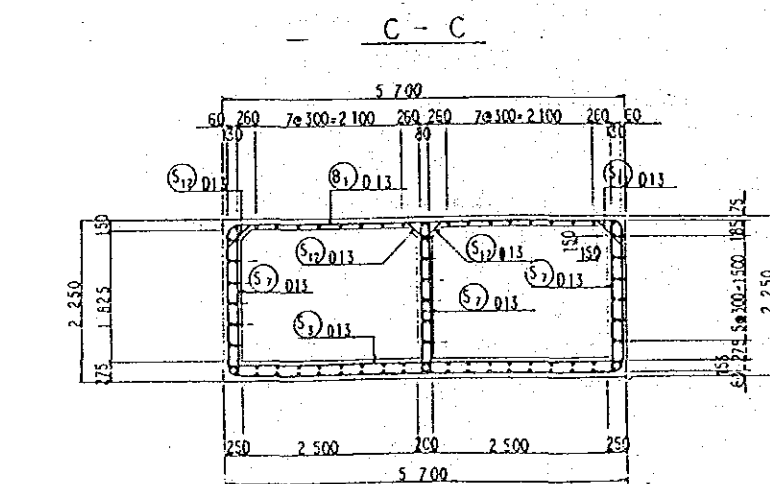
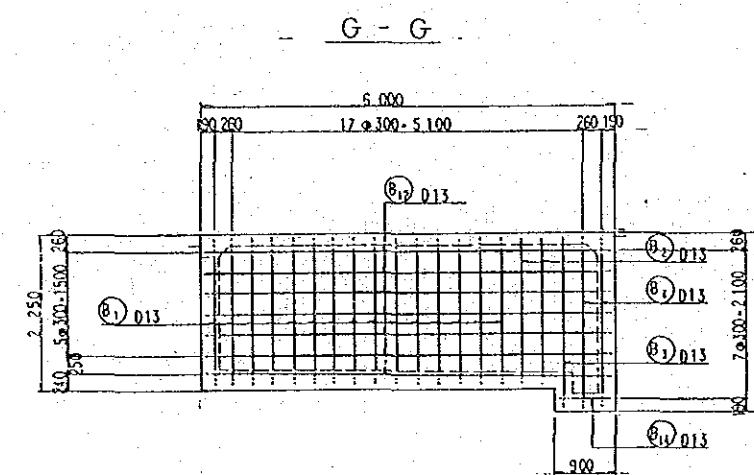
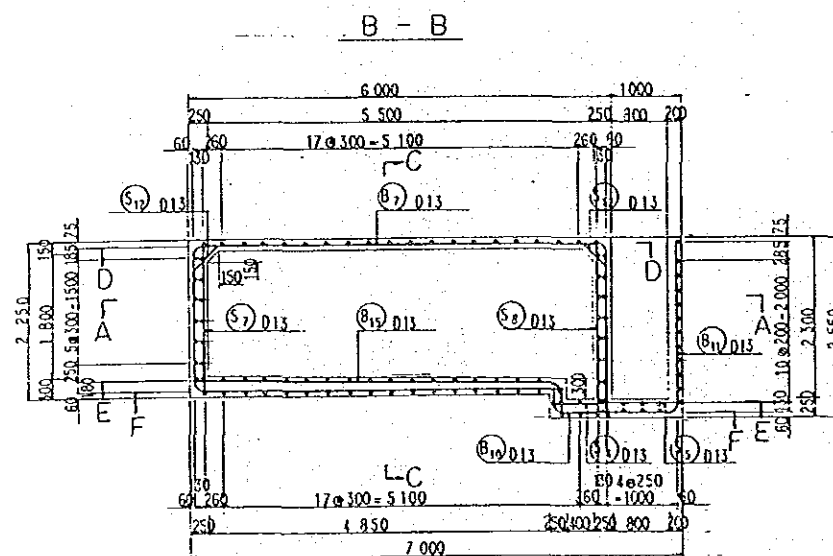
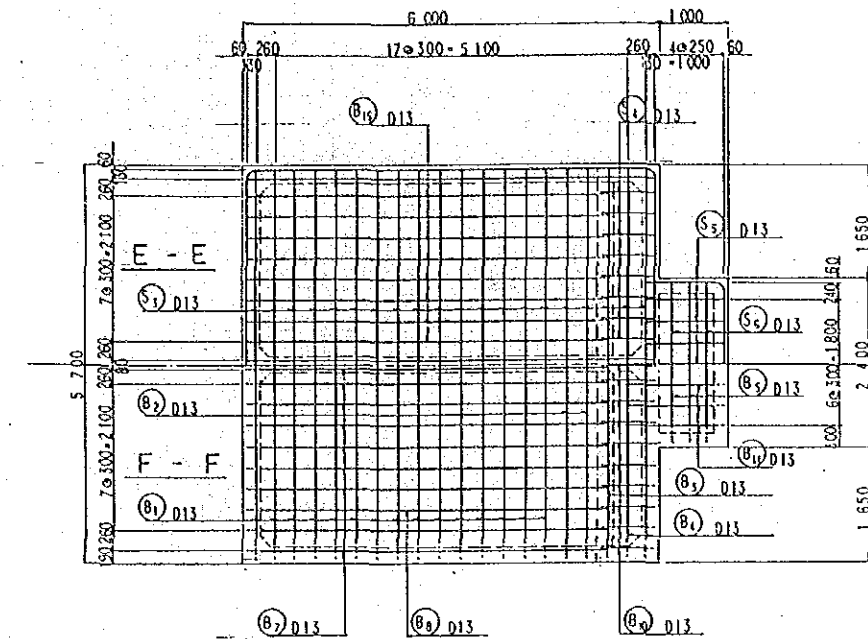
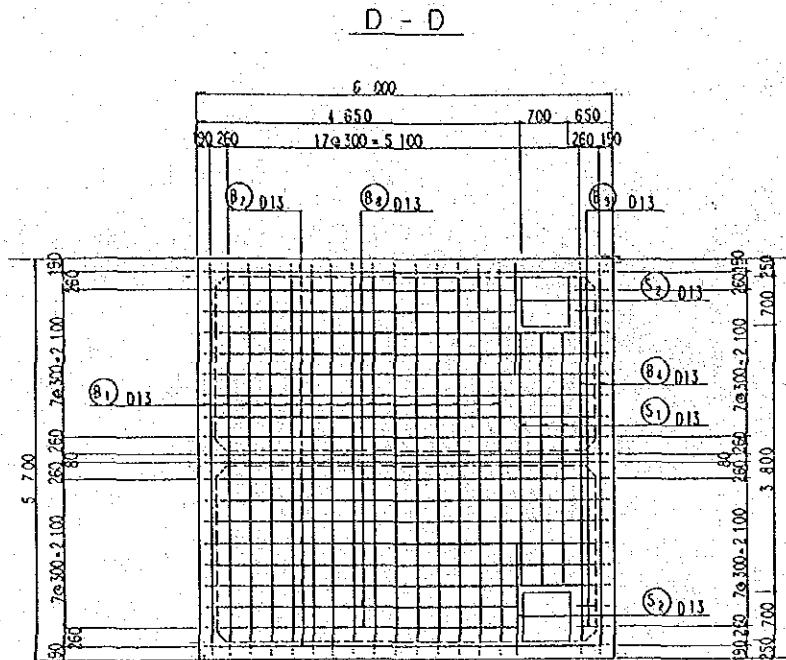
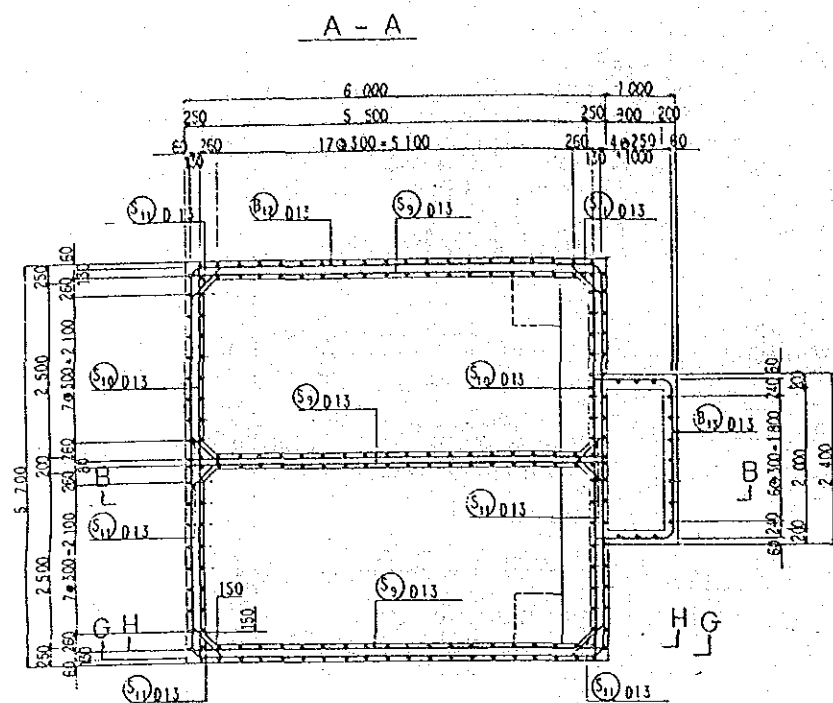


D - D



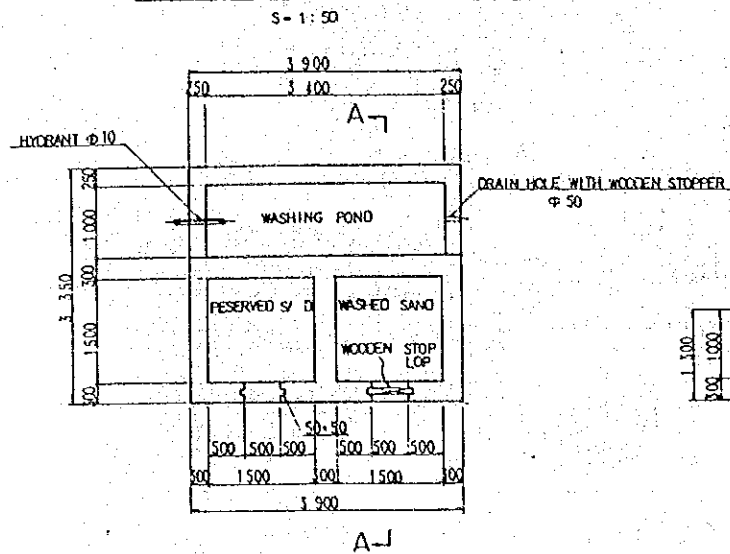
E - E



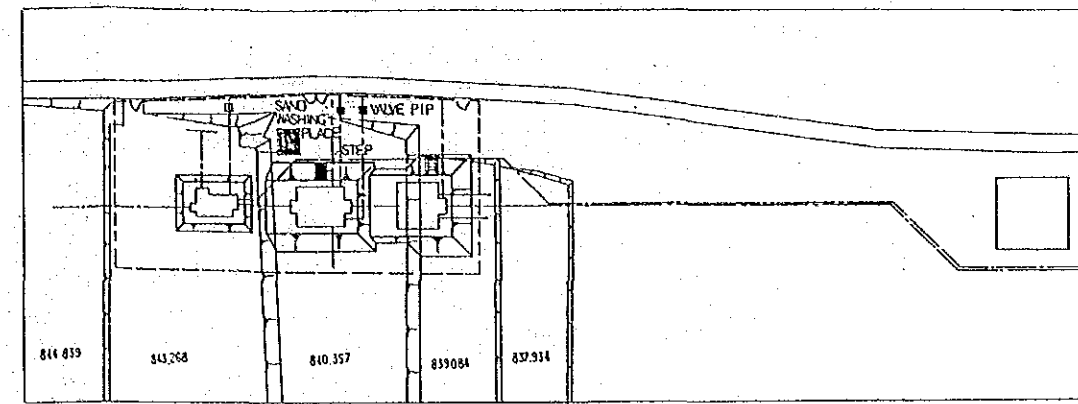
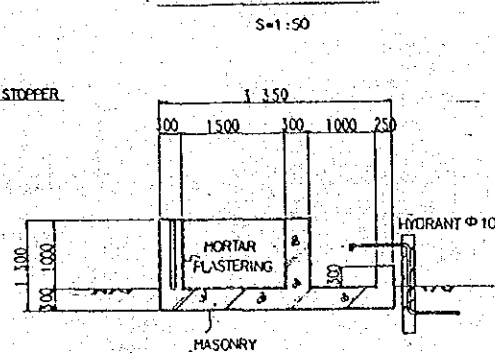


DIRECTORATE GENERAL OF LIVESTOCK SERVICES	
THE MODEL INFRASTRUCTURE IMPROVEMENT WORKS FOR	
THE STRENGTHENING OF ARTIFICIAL INSEMINATION CENTER PROJECT	
TITLE OF DRAWING	
BAR SCHEDULE OF DISTRIBUTING TANK	
S = 1 : 50	
JAPAN INTERNATIONAL COOPERATION AGENCY	DWG. NO
TOKYO	15

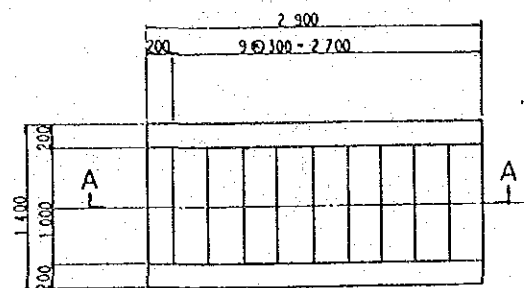
PLAN OF SAND WASHING PLACE



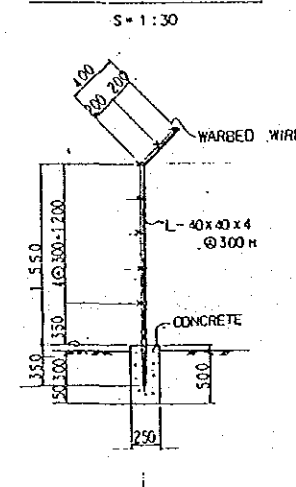
SECTION A - A



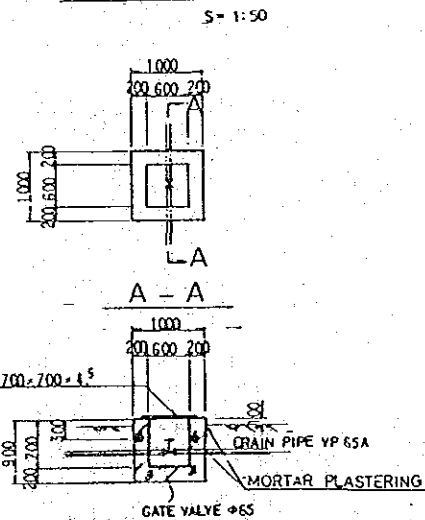
DETAIL OF STEP S=1:30



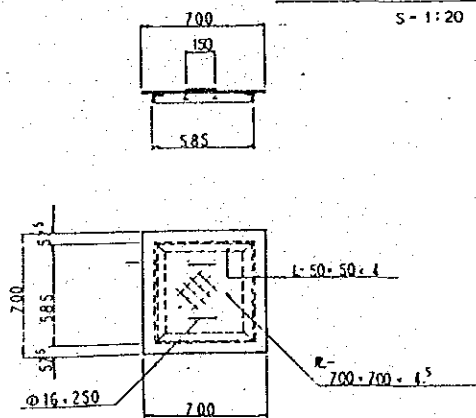
DETAIL OF FENCE



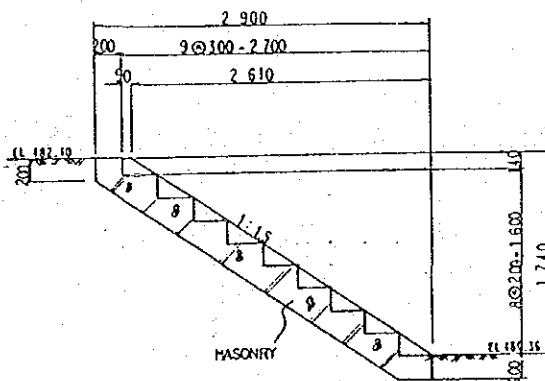
DETAIL OF VALVE PIT



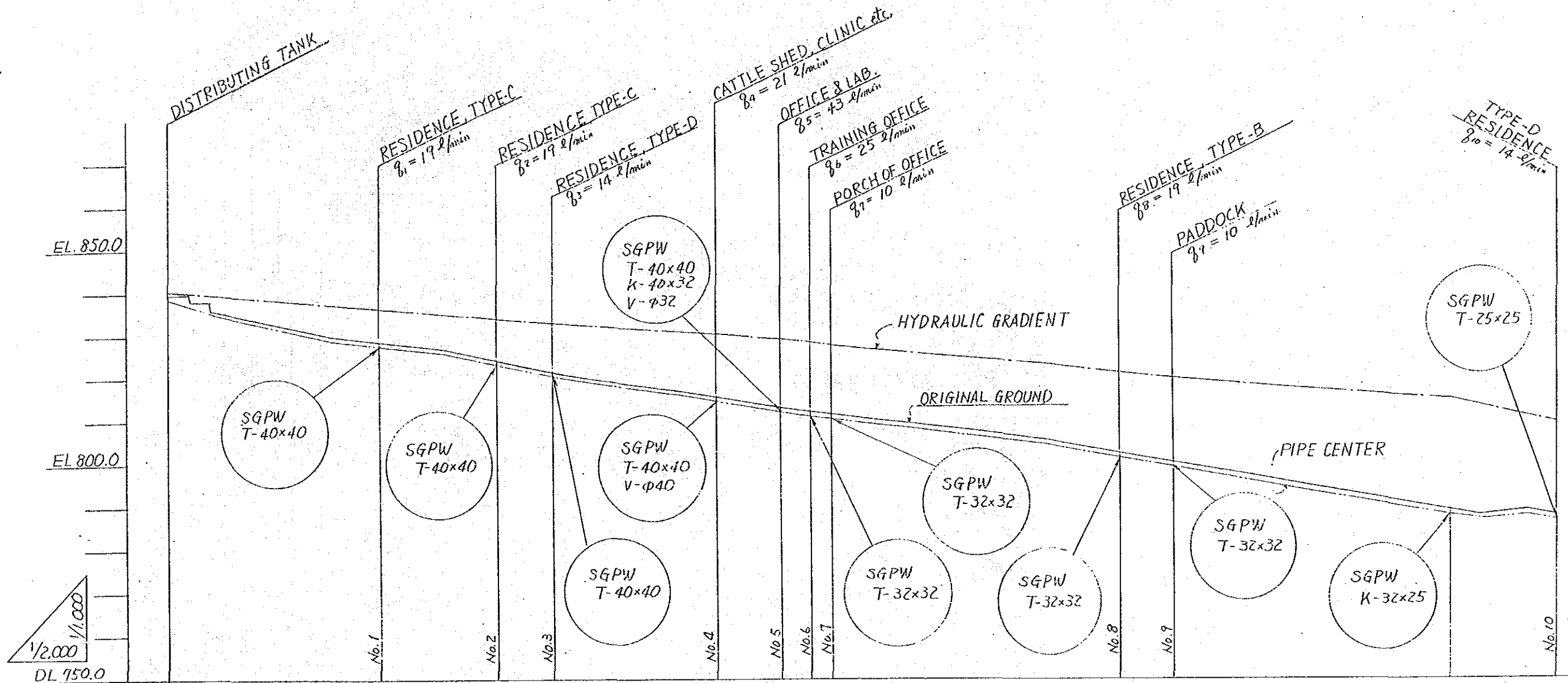
DETAIL OF COVER



A - A



DIRECTORATE GENERAL OF LIVESTOCK SERVICES	
THE MODEL INFRASTRUCTURE IMPROVEMENT WORKS FOR	
THE STRENGTHENING OF ARTIFICIAL INSEMINATION CENTER PROJECT	
TITLE OF DRAWING	
SAND WASHING PLACE	
AND MISCELLANEOUS	
JAPAN INTERNATIONAL COOPERATION AGENCY	DWG. NO
TOKYO	16



PLAN	HYDRAU. GRADIENT	840.65	836.70	834.67	833.70	831.01	829.91	828.90	828.32	821.99	820.94	816.07	810.25
	HYDRAU. PROPERTY	$Q = 75 \text{ l/m}, V = 0.995 \text{ m/s}$ $I = 1/30.86$	$Q = 73 \text{ l/m}, V = 0.988 \text{ m/s}$ $I = 1/32.35$	$Q = 71 \text{ l/m}, V = 0.942 \text{ m/s}$ $I = 1/33.75$	$Q = 70 \text{ l/m}, V = 0.928 \text{ m/s}$ $I = 1/34.80$	$Q = 67 \text{ l/m}, V = 0.889 \text{ m/s}$ $I = 1/37.53$	$Q = 47 \text{ l/m}, V = 0.974 \text{ m/s}, I = 1/24.77$ $Q = 46 \text{ l/m}, V = 0.753 \text{ m/s}, I = 1/25.71$		$Q = 42 \text{ l/m}, V = 0.870 \text{ m/s}$ $I = 1/30.09$		$Q = 41 \text{ l/m}, V = 0.850 \text{ m/s}$ $I = 1/31.37$		$Q = 41 \text{ l/m}, V = 1.392 \text{ m/s}$ $I = 1/10.10$
PIPE & DIA. USED	SGPW 40A					SGPW 32A					SGPW 25A		
DISTANCE	0.0	98.4	55.9	25.7	76.6	30.7	13.9	9.5		136.7	26.0	130.0	50.6
ACCUMULATED DISTANCE	0.0	98.4	154.3	180.0	256.6	287.3	301.2	310.7		447.4	473.4	603.4	654.0

ABBREVIATIONS

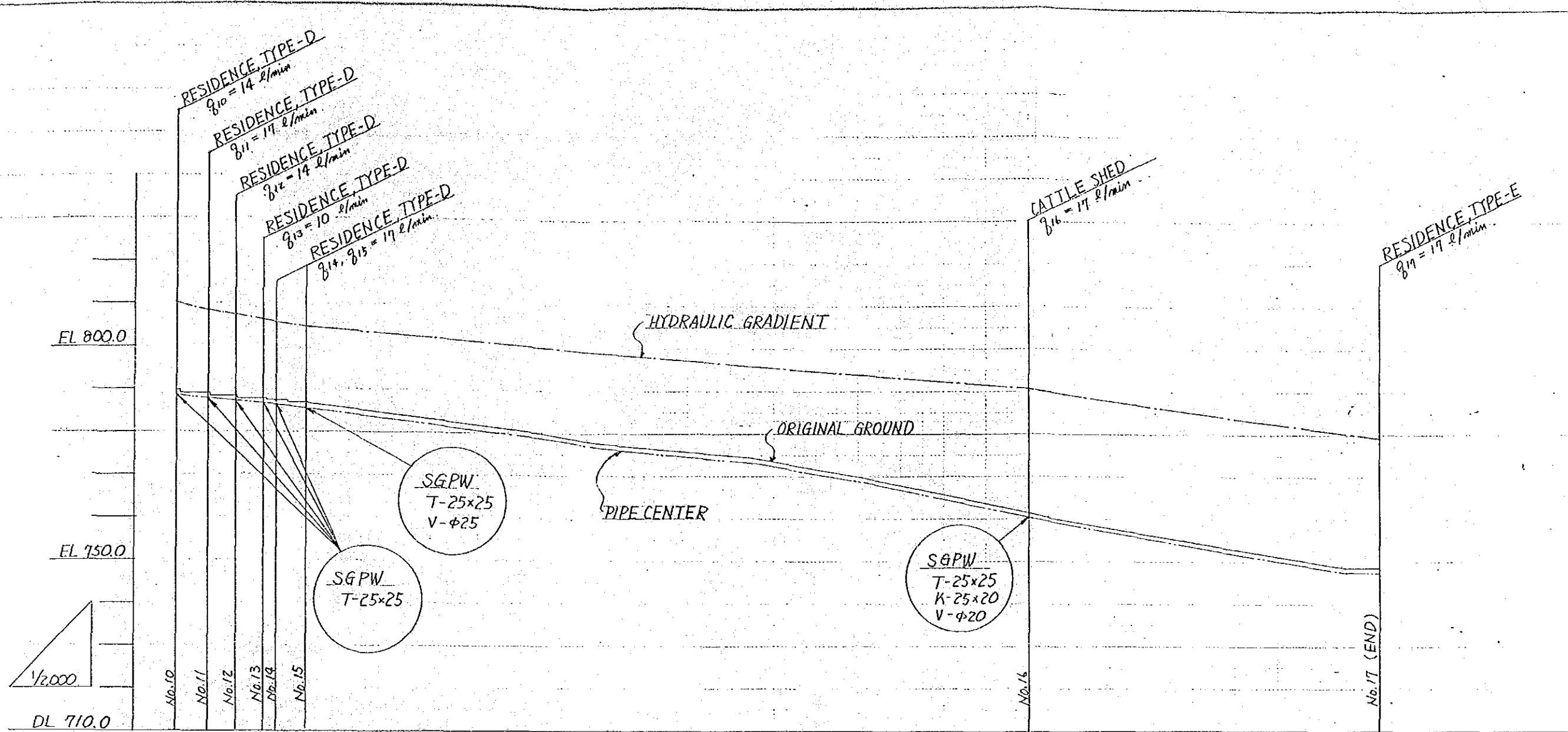
- SGPW : Galvanized Steel Pipes for Water Service
- T : Tee
- K : Reducer Pipe
- V : Stop Valve
- A : Nominal Size

DIRECTORATE GENERAL OF LIVESTOCK SERVICES
 THE MODEL INFRASTRUCTURE IMPROVEMENT WORKS FOR
 THE STRENGTHENING OF ARTIFICIAL INSEMINATION CENTER PROJECT

TITLE OF DRAWING
 HYDRAULIC PROFILE OF
 WATER SUPPLY FACILITIES

JAPAN INTERNATIONAL COOPERATION AGENCY
 TOKYO

DWG. NO
 18



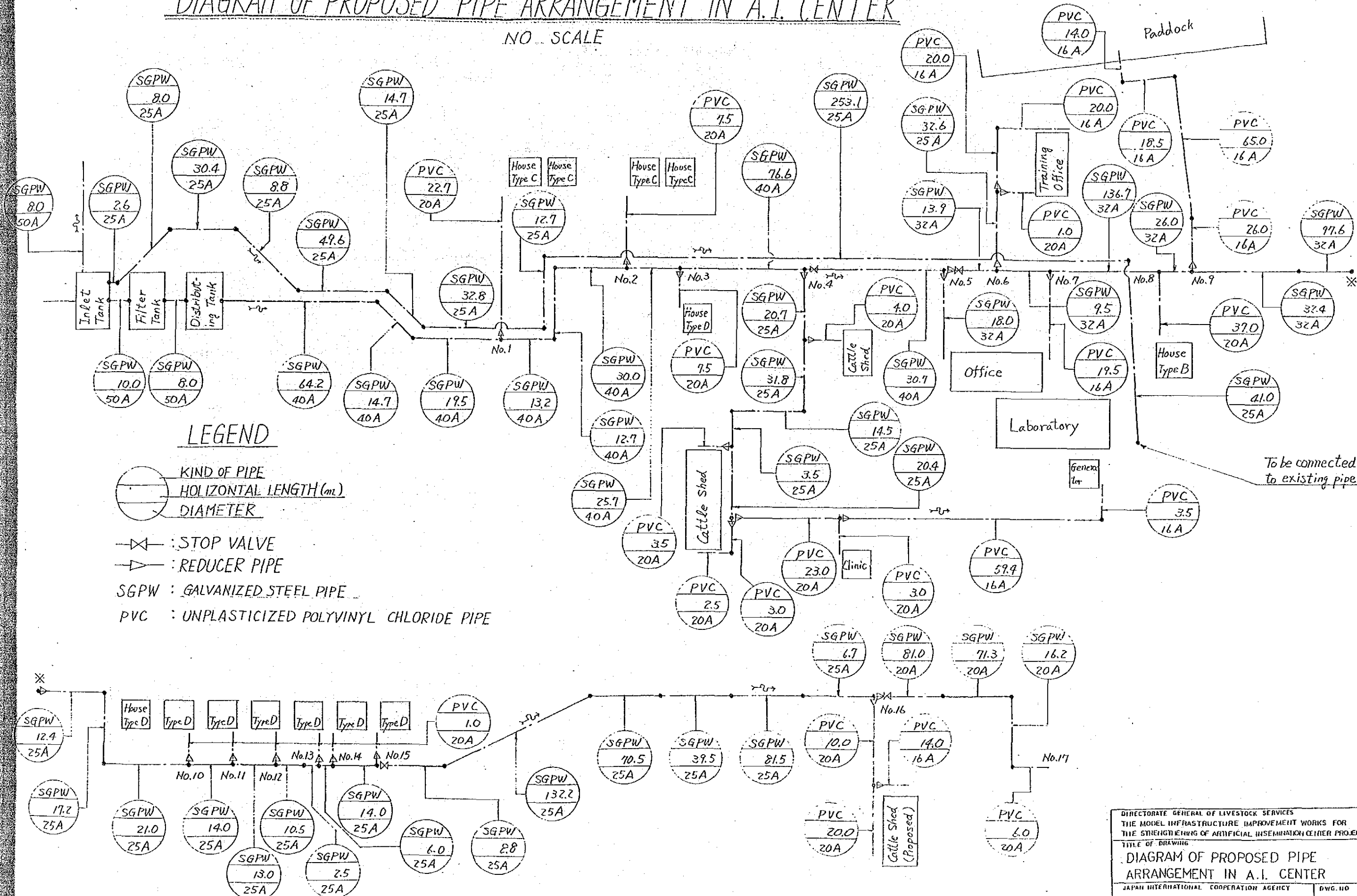
HYDRAU. GRADIENT	810.25	808.64	807.33	806.13	805.50	804.59	790.44	779.16
HYDRAU. PROPERTIES	①	②	③	④	⑤	$Q = 23 \text{ l/min}, V = 0.781 \text{ m/s}, I = 1/27.51$		$Q = 17 \text{ l/min}, V = 0.902 \text{ m/s}, I = 1/16.84$
PIPE & DIA. USED	SGPW 25A					SGPW 20A		
DISTANCE	50.6	14.0	13.0	13.0	6.0	14.0	339.2	168.6
ACCUMULATED DISTANCE	654.0	668.0	681.0	694.0	700.0	714.0	1053.2	1221.8

- ① $Q = 39 \text{ l/min}, V = 1.324 \text{ m/s}, I = 1/11.02$
- ② $Q = 36 \text{ l/min}, V = 1.222 \text{ m/s}, I = 1/12.68$
- ③ $Q = 34 \text{ l/min}, V = 1.154 \text{ m/s}, I = 1/14.00$
- ④ $Q = 33 \text{ l/min}, V = 1.120 \text{ m/s}, I = 1/14.75$
- ⑤ $Q = 28 \text{ l/min}, V = 0.951 \text{ m/s}, I = 1/19.61$

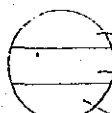
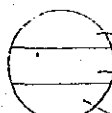
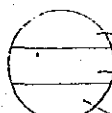
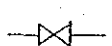
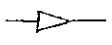
DIRECTORATE GENERAL OF LIVESTOCK SERVICES
 THE MODEL INFRASTRUCTURE IMPROVEMENT WORKS FOR
 THE STRENGTHENING OF ARTIFICIAL RESEMINATION CENTER PROJECT
 TITLE OF DRAWING
 HYDRAULIC PROFILE OF WATER SUPPLY FACILITIES (2)
 JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO DWG. NO. 19

DIAGRAM OF PROPOSED PIPE ARRANGEMENT IN A.I. CENTER

NO SCALE

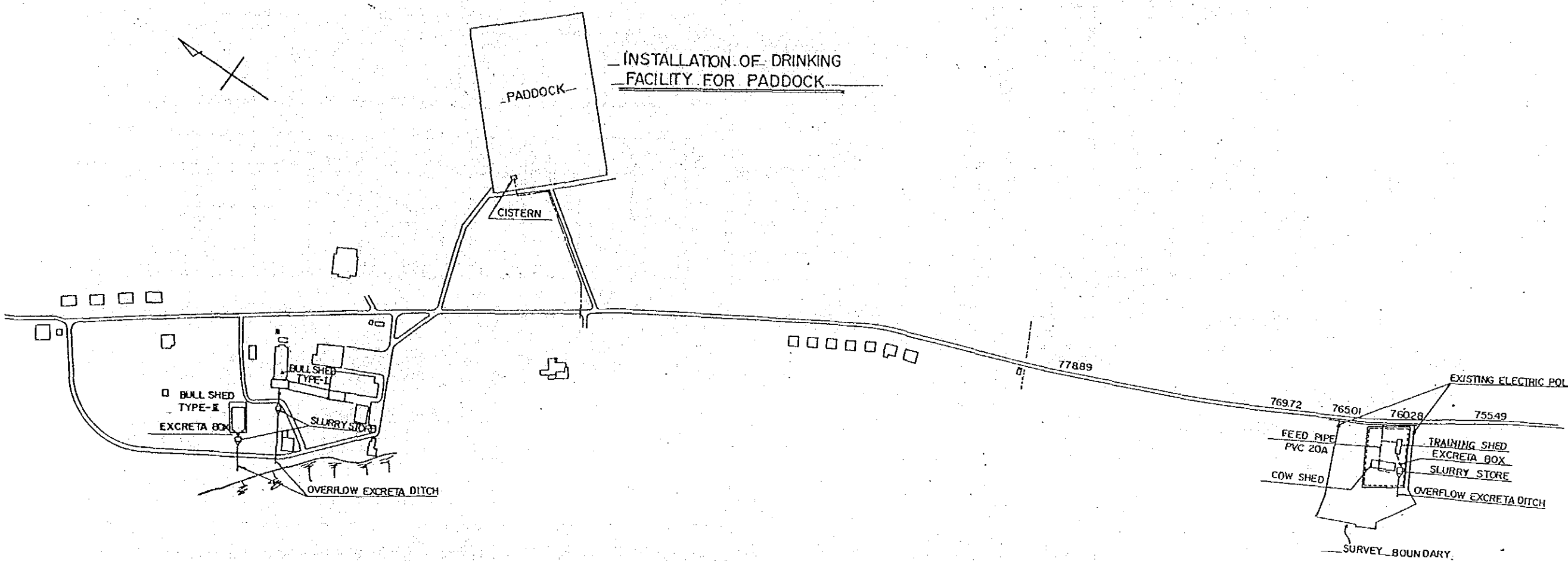


LEGEND

-  KIND OF PIPE
-  HORIZONTAL LENGTH (m.)
-  DIAMETER
-  : STOP VALVE
-  : REDUCER PIPE
- SGPW : GALVANIZED STEEL PIPE
- PVC : UNPLASTICIZED POLYVINYL CHLORIDE PIPE

DIRECTORATE GENERAL OF LIVESTOCK SERVICES
 THE MODEL INFRASTRUCTURE IMPROVEMENT WORKS FOR
 THE STRENGTHENING OF ARTIFICIAL INSEMINATION CENTER PROJECT
 TITLE OF DRAWING
**DIAGRAM OF PROPOSED PIPE
 ARRANGEMENT IN A.I. CENTER**
 JAPAN INTERNATIONAL COOPERATION AGENCY
 TOKYO

DWG. NO
 20

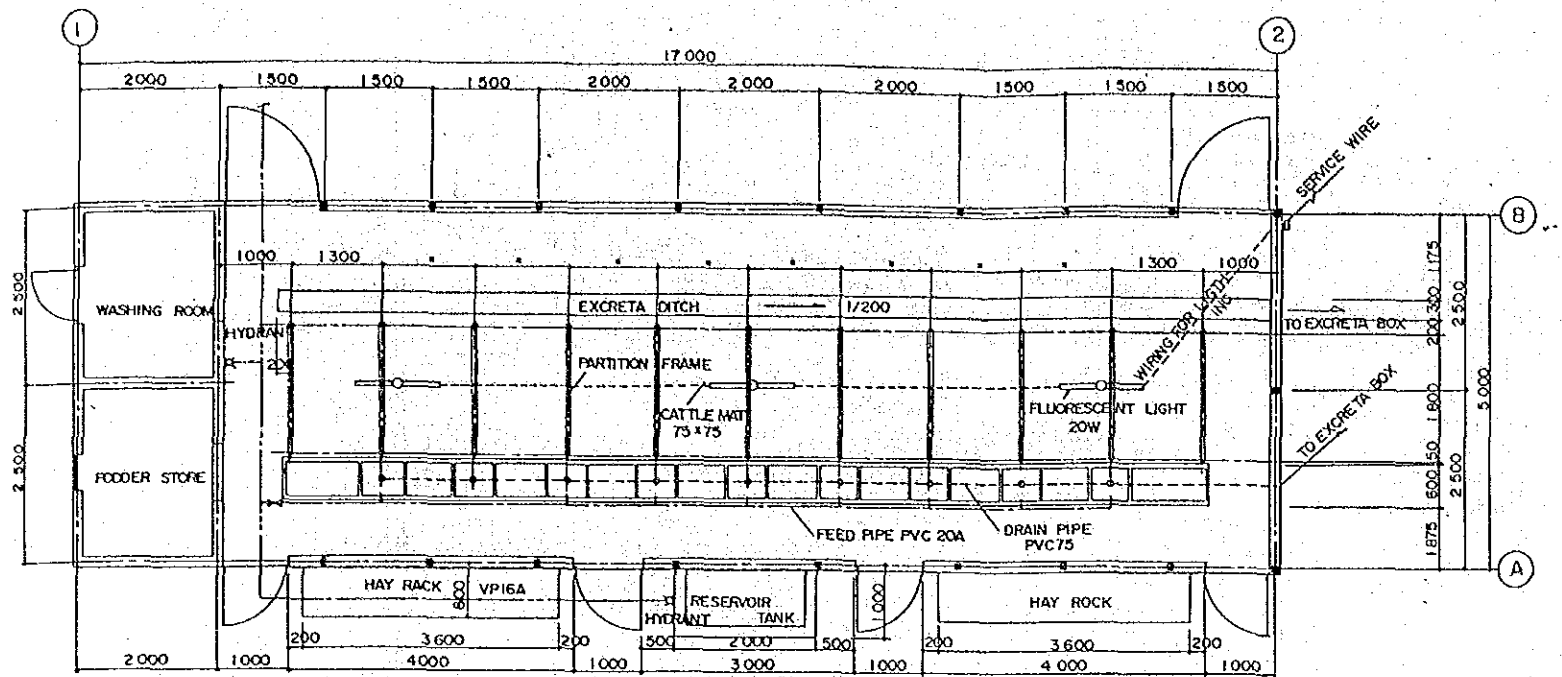


INSTALLATION OF DRINKING FACILITY FOR PADDOCK

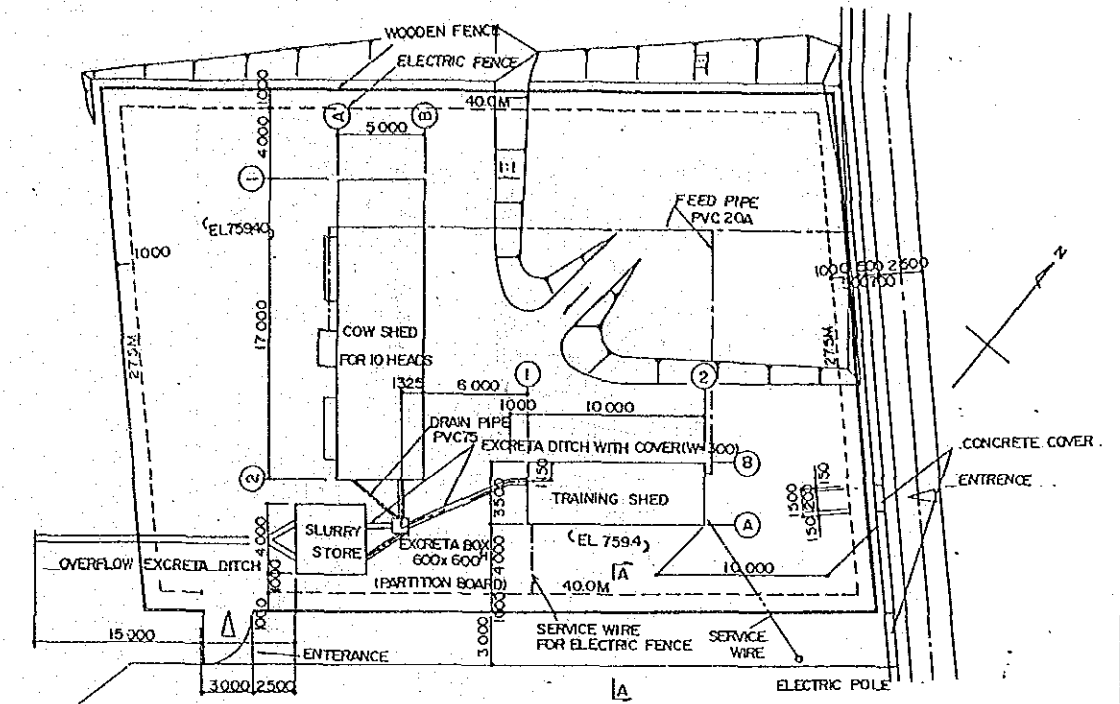
INSTALLATION OF SLURRY STORE AND EXCRETA DITCH FOR EXISTING BULL SHEDS

INSTALLATION OF COW SHED FACILITIES

DIRECTORATE GENERAL OF LIVESTOCK SERVICES	
THE MODEL INFRASTRUCTURE IMPROVEMENT WORKS FOR THE STRENGTHENING OF ARTIFICIAL INSEMINATION CENTER PROJECT	
TITLE OF DRAWING	
ARRANGEMENT OF CATTLE SHED FACILITIES 5-1-2000	
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO	DWG. NO 21

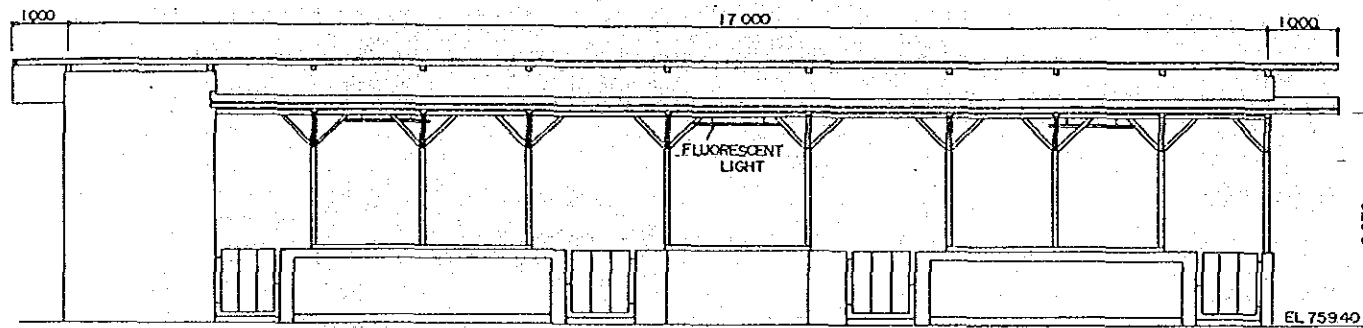


PLAN OF COW SHED
S = 1:20

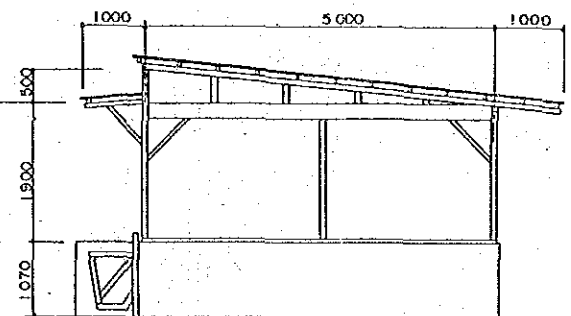


GENERAL PLAN OF COW SHED FACILITIES

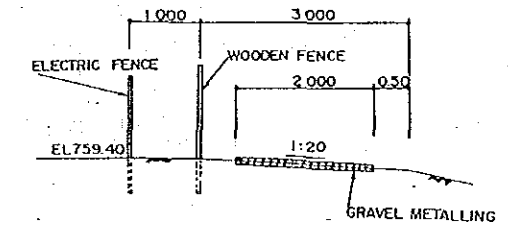
SCALE 1:200



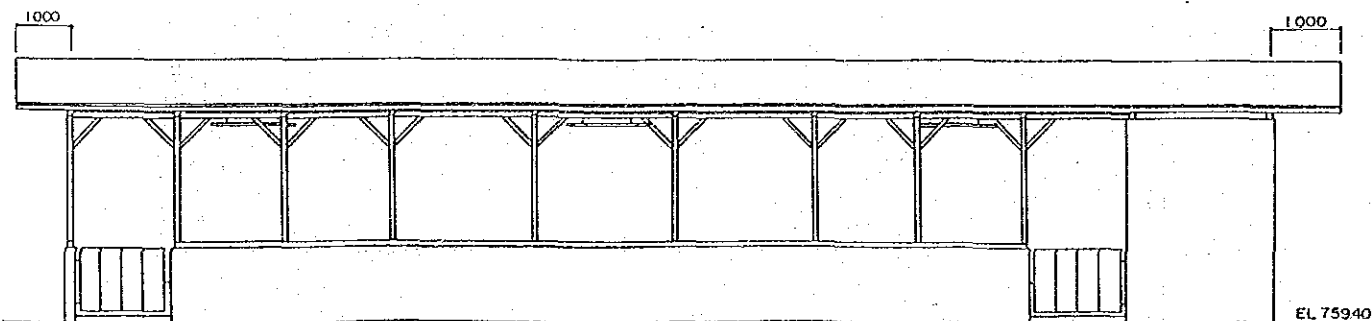
FRONT VIEW
S = 1:20



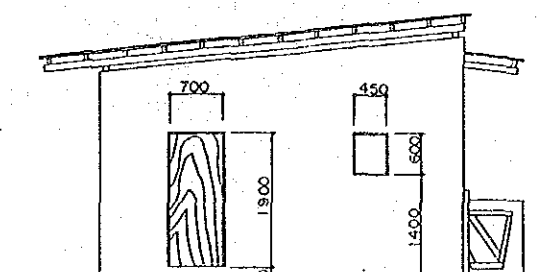
RIGHT SIDE VIEW
S = 1:20



SECTION A-A
S = 1:50

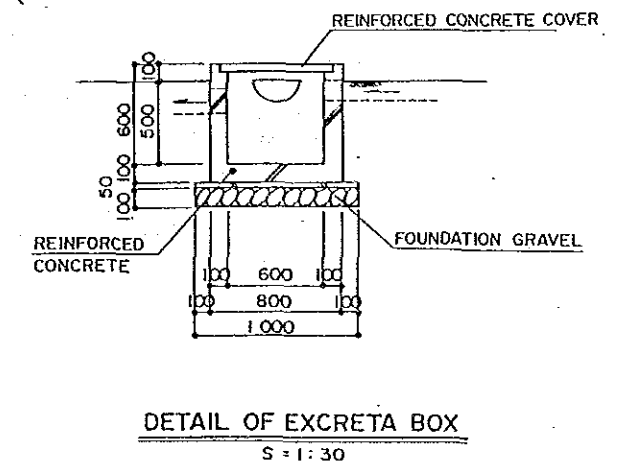
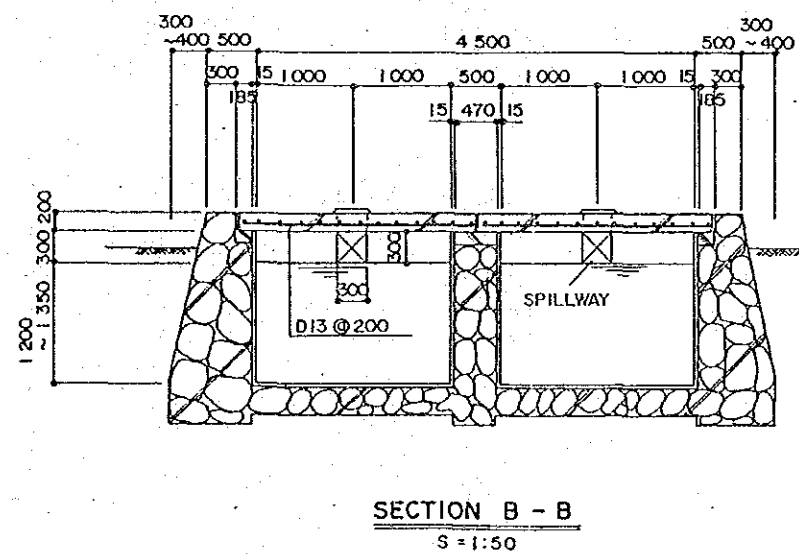
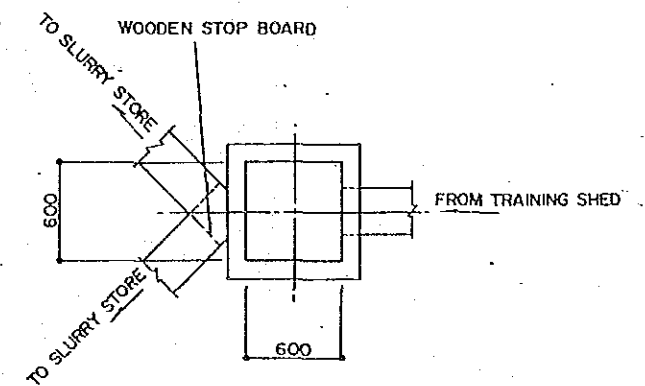
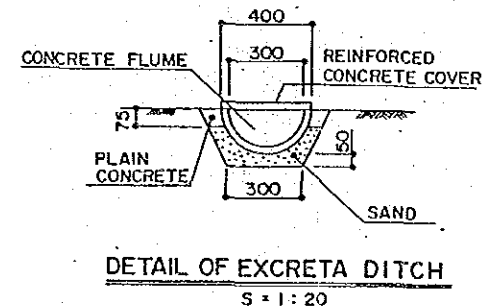
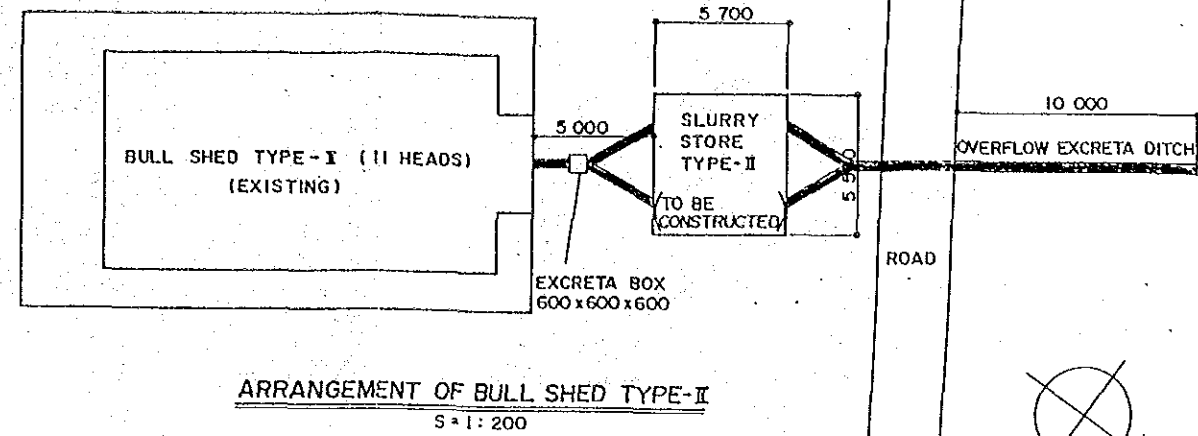
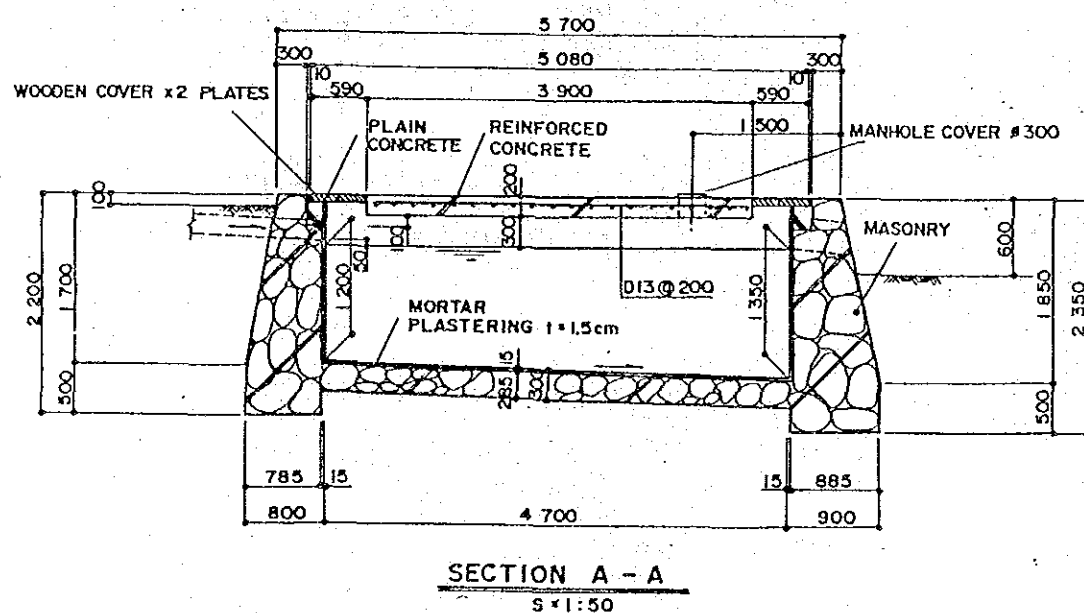
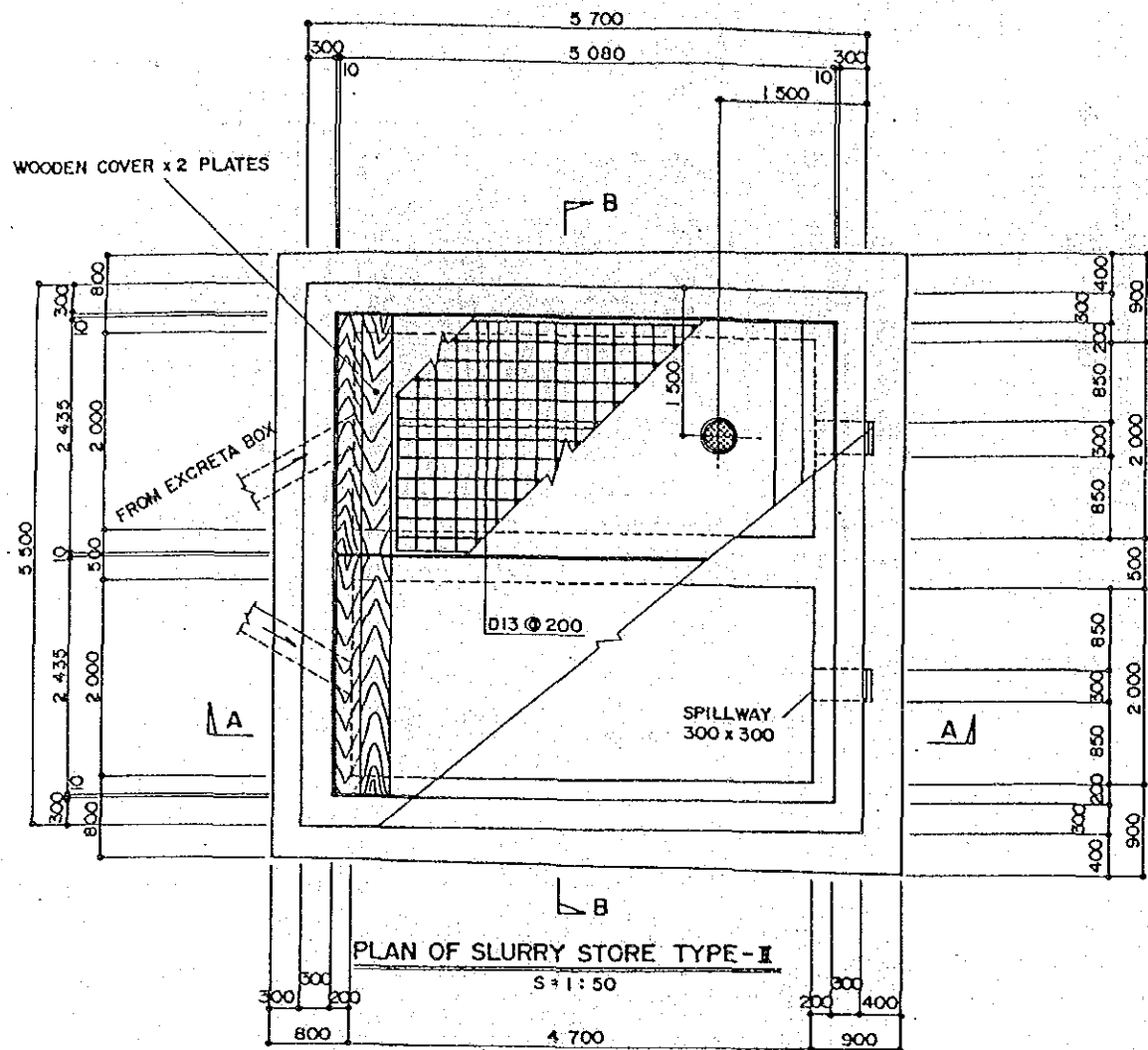


REAR VIEW
S = 1:20

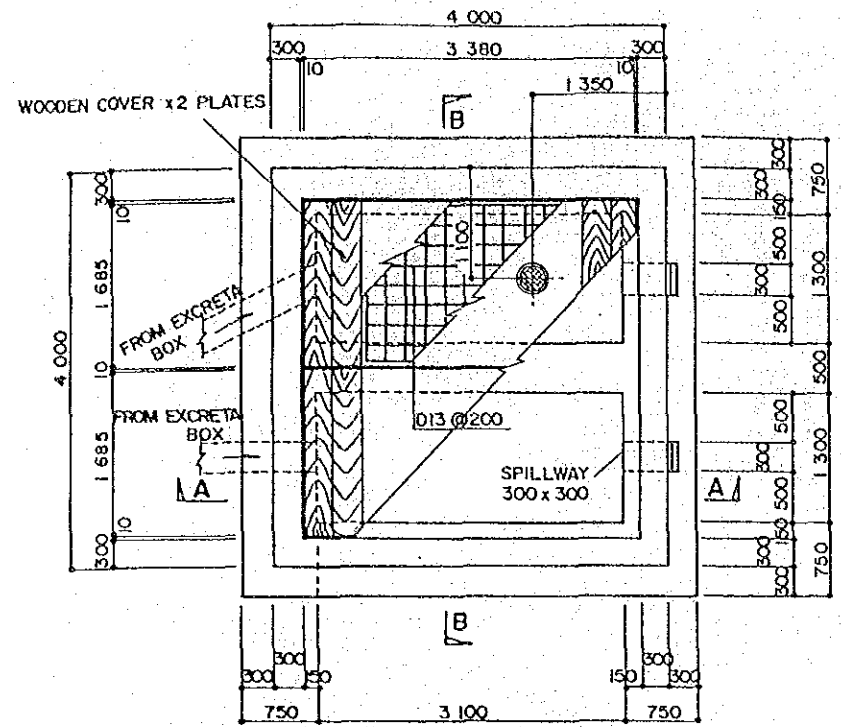


LEFT SIDE VIEW
S = 1:20

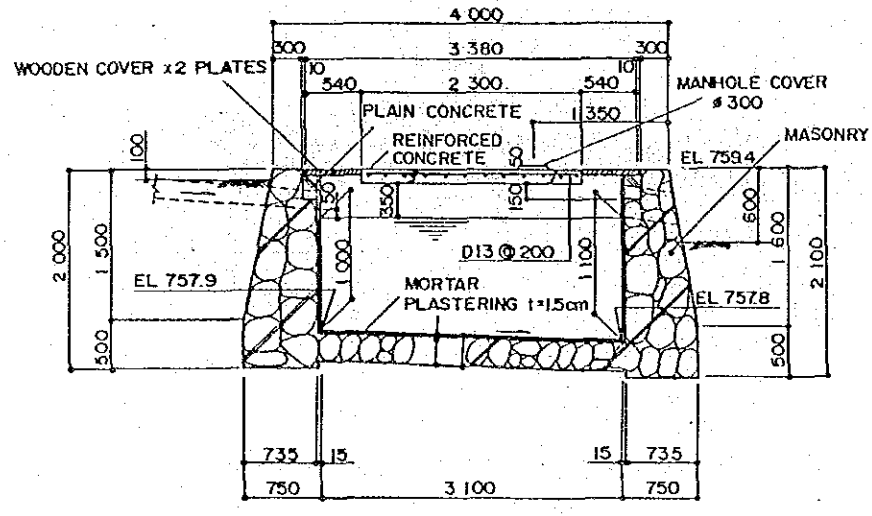
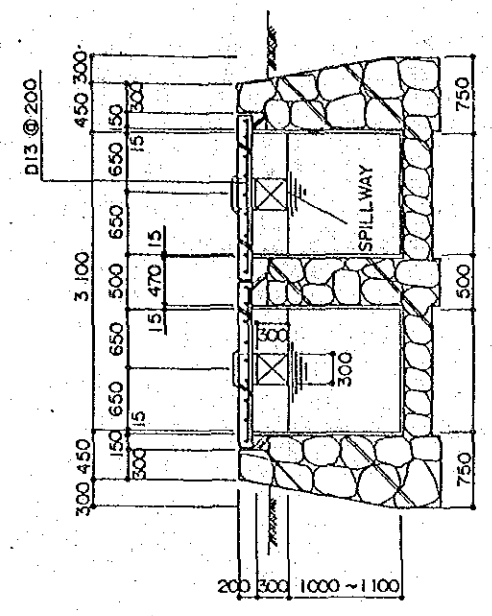
DIRECTORATE GENERAL OF LIVESTOCK SERVICES
THE MODEL INFRASTRUCTURE IMPROVEMENT WORKS FOR
THE STRENGTHENING OF ARTIFICIAL INSEMINATION CENTER PROJECT
TITLE OF DRAWING
COW SHED FACILITIES
GENERAL PLAN
DETAIL OF COW SHED
JAPAN INTERNATIONAL COOPERATION AGENCY
TOKYO
DWG. NO
22



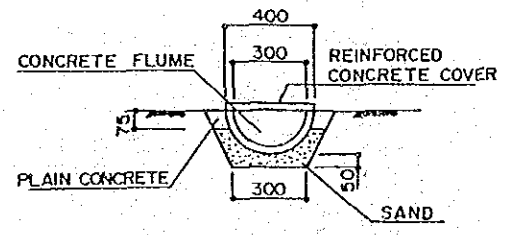
DIRECTORATE GENERAL OF LIVESTOCK SERVICES	
THE MODEL INFRASTRUCTURE IMPROVEMENT WORKS FOR THE STRENGTHENING OF ARTIFICIAL INSEMINATION CENTER PROJECT	
TITLE OF DRAWING	
SLURRY STORE FOR BULL SHED TYPE - II	
JAPAN INTERNATIONAL COOPERATION AGENCY	DWG. NO
TOKYO	26



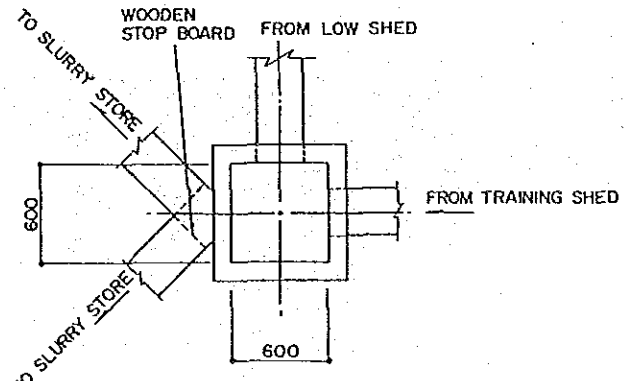
PLAN OF SLURRY STORE FOR COW SHED



SECTION A - A
S = 1:50

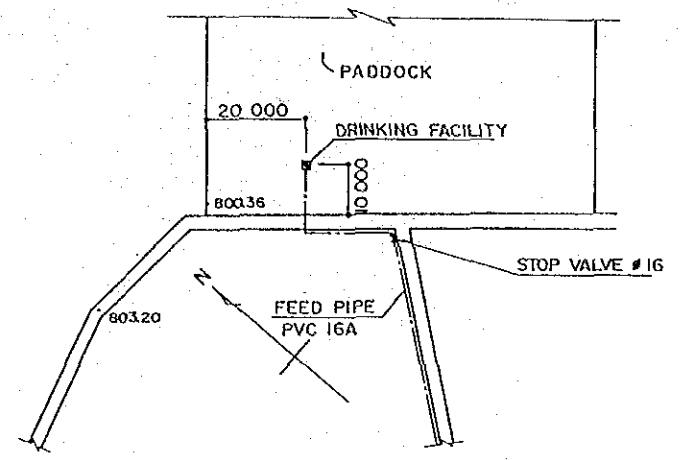


DETAIL OF EXCRETA DITCH
S = 1:20

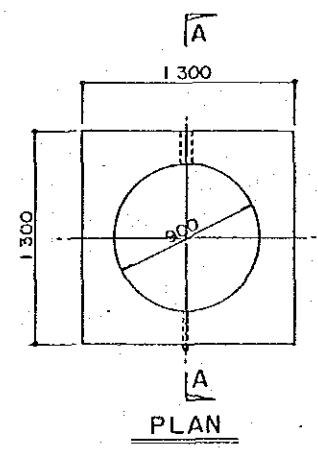


DETAIL OF EXCRETA BOX
S = 1:30

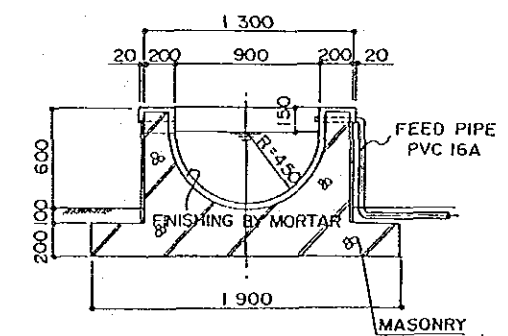
DRINKING FACILITY FOR PADDOCK



LOCATION MAP
S = 1:1,000



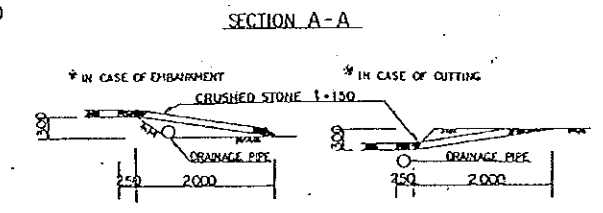
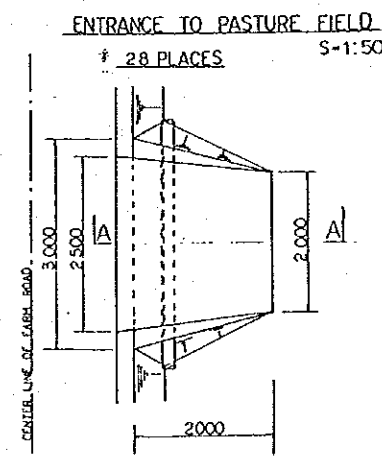
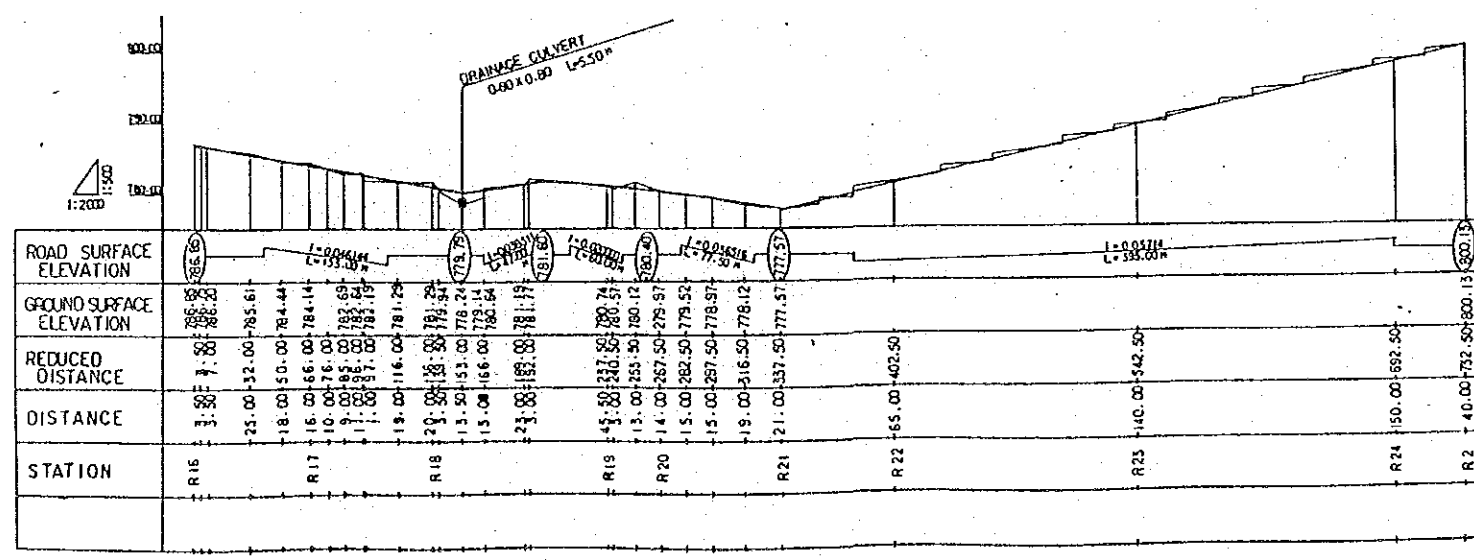
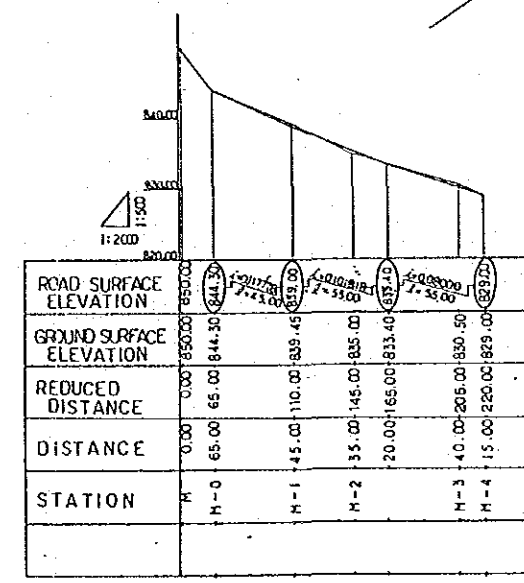
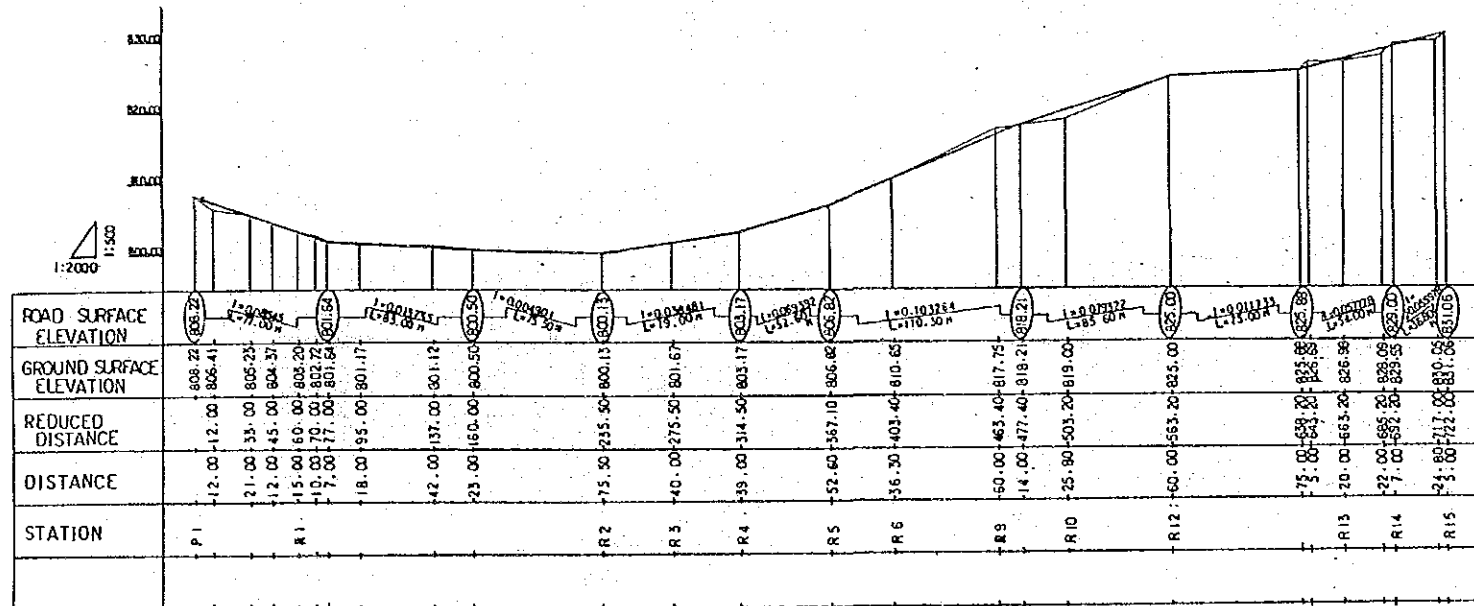
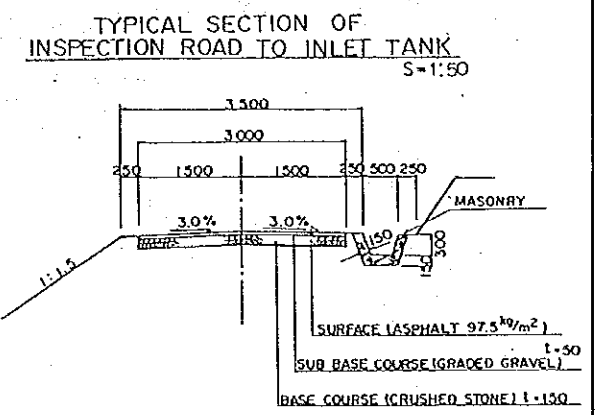
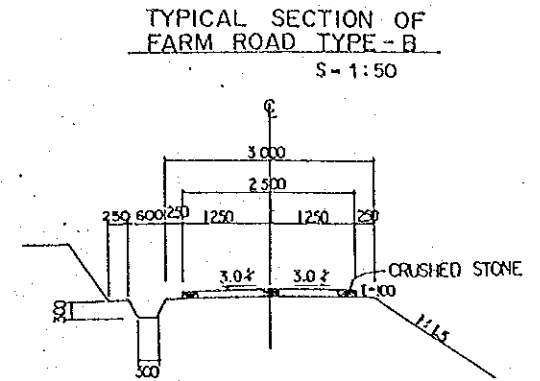
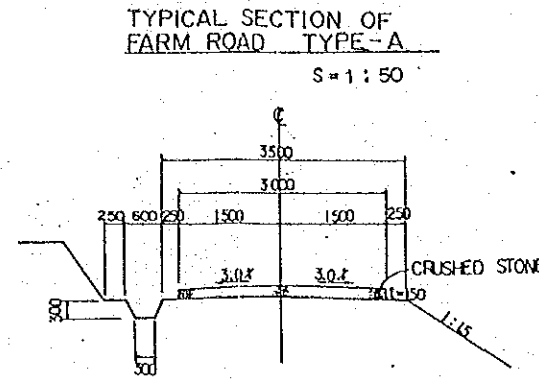
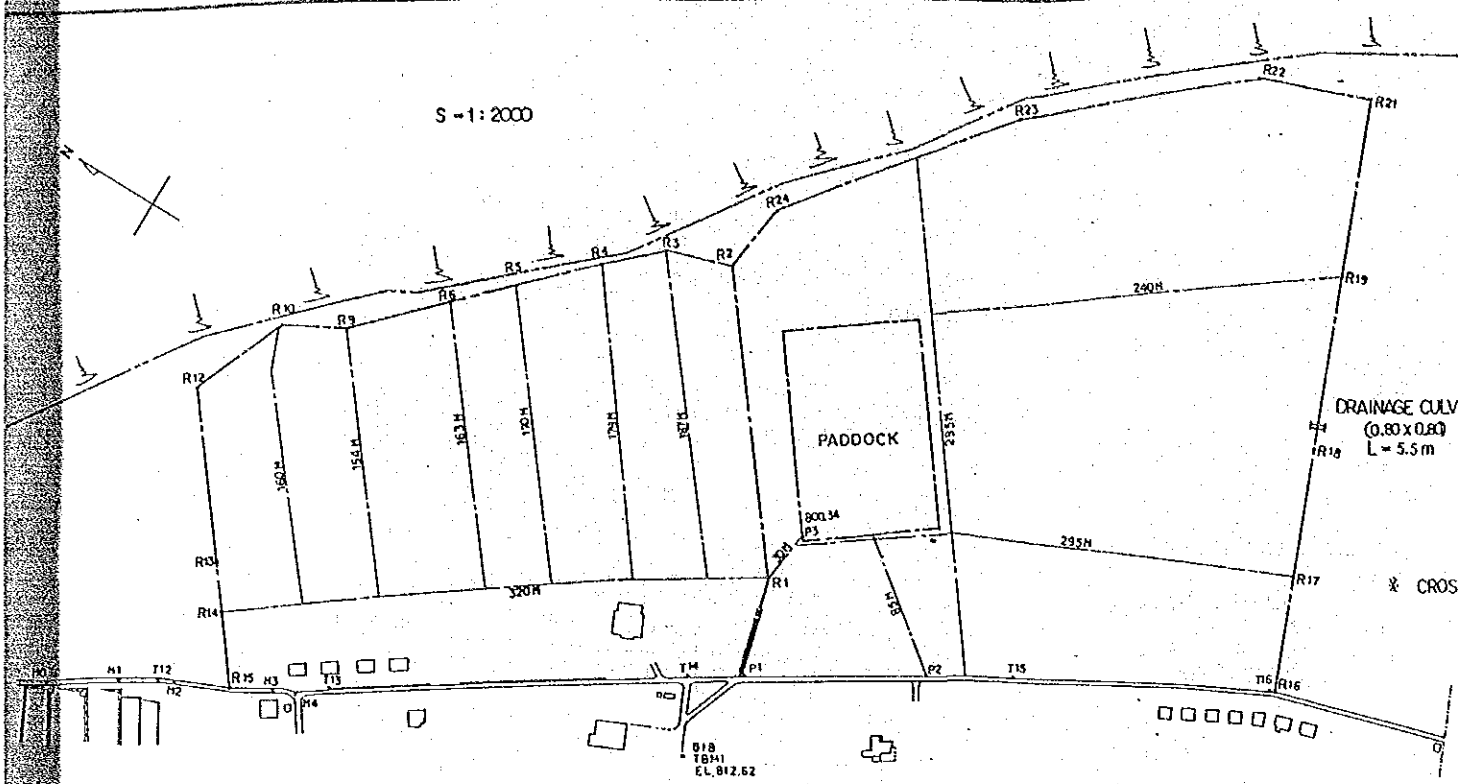
PLAN



SECTION A - A

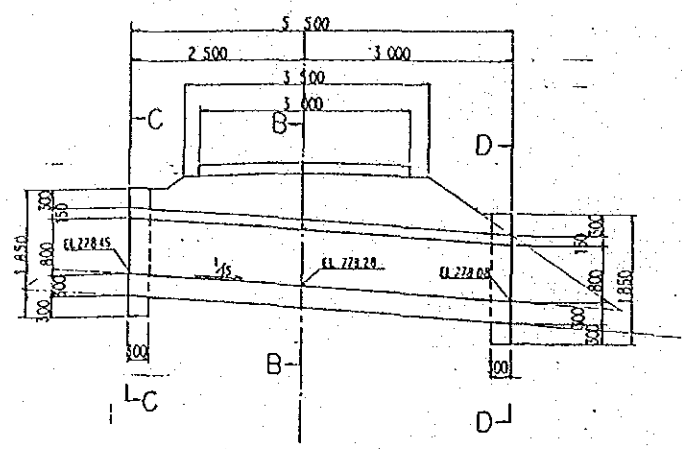
DETAIL OF DRINKING FACILITY
S = 1:30

DIRECTORATE GENERAL OF LIVESTOCK SERVICES	
THE MODEL INFRASTRUCTURE IMPROVEMENT WORKS FOR	
THE STRENGTHENING OF ARTIFICIAL INSEMINATION CENTER PROJECT	
TITLE OF DRAWING	
SLURRY STORE FOR COW SHED	
AND DRINKING FACILITY FOR PADDOCK	
JAPAN INTERNATIONAL COOPERATION AGENCY	DWG. NO
TOKYO	27

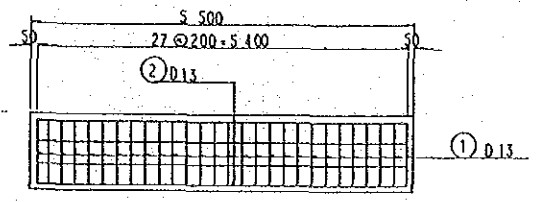
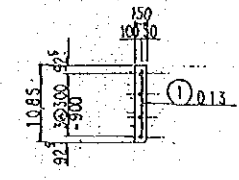
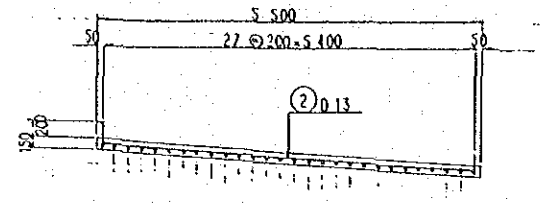
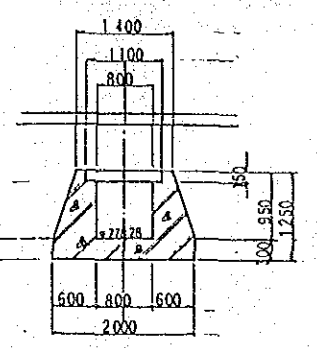


DIRECTORATE GENERAL OF LIVESTOCK SERVICES
 THE MODEL INFRASTRUCTURE IMPROVEMENT WORKS FOR
 THE STRENGTHENING OF ARTIFICIAL INSEMINATION CENTER PROJECT
 TITLE OF DRAWING IMPROVEMENT OF FARM ROAD
 PLAN OF IMPROVEMENT OF FARM ROAD
 AND INSPECTION ROAD TO INLET TANK
 JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO
 DWG. NO. 28

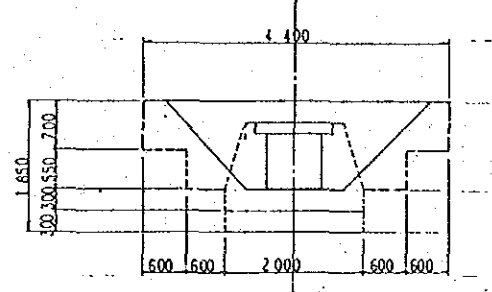
SECTION A - A



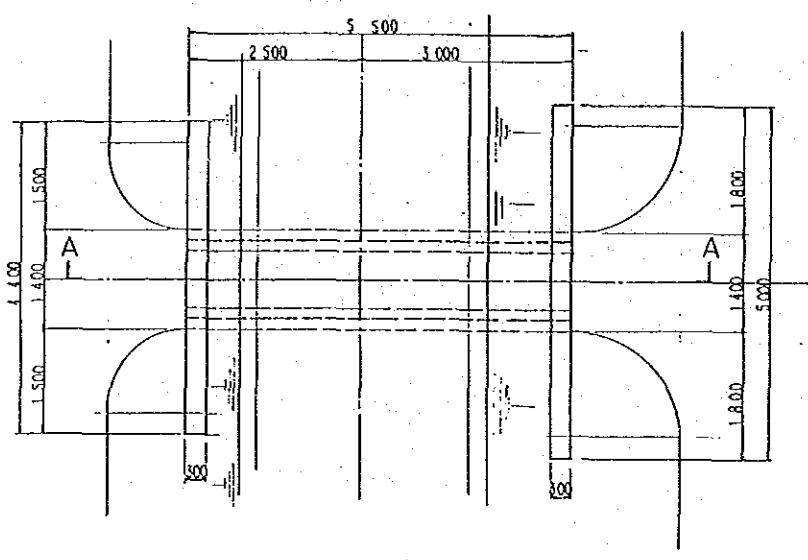
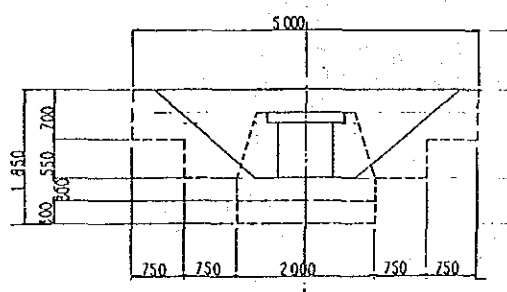
SECTION B - B



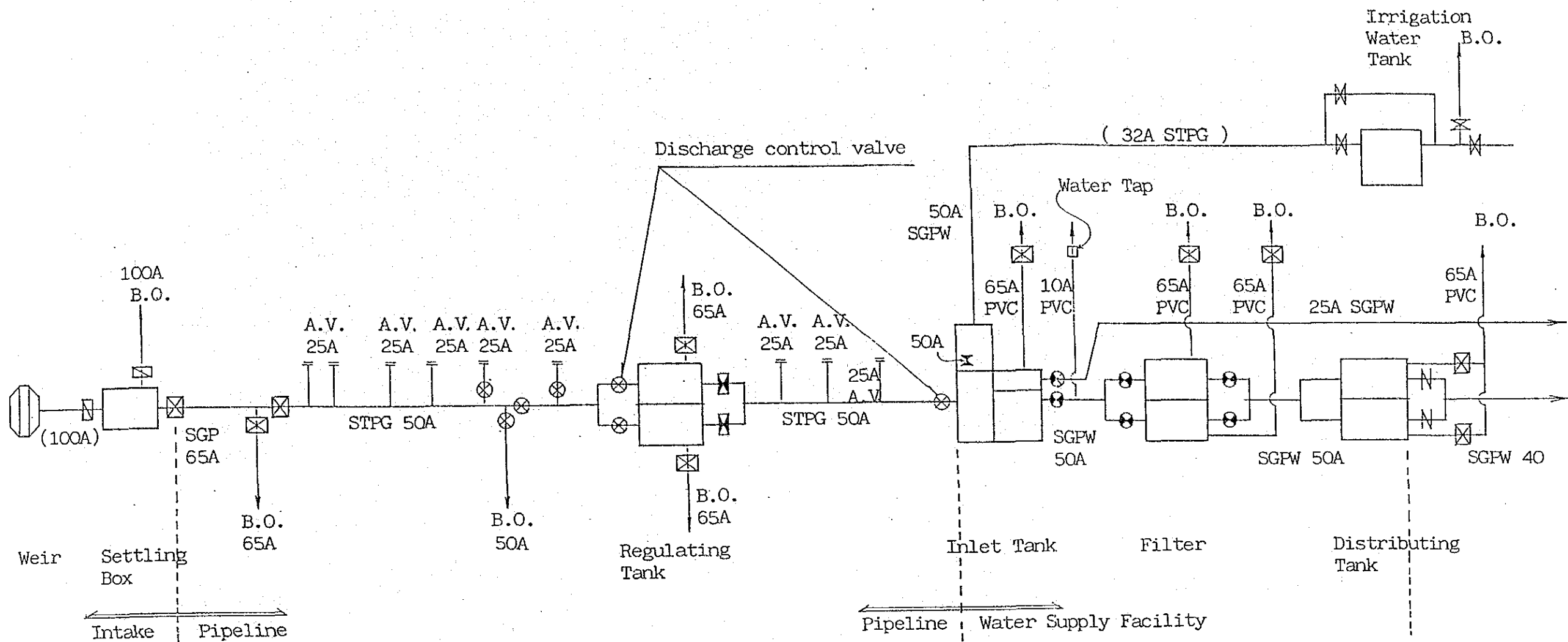
SECTION C - C



SECTION D - D



DIRECTORATE GENERAL OF LIVESTOCK SERVICES	
THE MODEL INFRASTRUCTURE IMPROVEMENT WORKS FOR	
THE STRENGTHENING OF ARTIFICIAL INSEMINATION CENTER PROJECT	
TITLE OF DRAWING IMPROVEMENT OF FARM ROAD	
DRAINAGE CULVERT CROSSING	
FARM ROAD TYPE - A	
JAPAN INTERNATIONAL COOPERATION AGENCY	DWG. NO
TOKYO	29



- ☐ : JIS B2031 5K, Flange, Gate valve, ϕ 100
- ☒ : JIS B2031 5K, Flange, Gate valve, ϕ 65
- ⊗ : JIS B2083, 20K, Flange, Gate valve ϕ 50
- ☒ : JIS B2031 10K, Flange, Gate valve, ϕ 50
- ⊗ : JIS B2062 7.5K, Flange, Submerged valve, ϕ 50
- ⊗ : JIS B2051, Socket, Stop valve, ϕ 50
- ⊗ : JIS B2051, Socket, Stop valve, ϕ 25
- N : JIS B2051, Socket, Stopvalve, ϕ 40
- ⊗ : Existing valve

Abbreviation :

- SGP ; Carbon steel pipes for ordinary piping
- SGPW ; Galvanized steel pipes for water service
- STPG ; Carbon steel pipes for pressure service
- PVC(VP) ; Unplasticized polyvinyl chloride pipe
- A ; Nominal size
- B.O. ; Blow off
- A.V. ; Air valve

DIRECTORATE GENERAL OF LIVESTOCK SERVICES	
THE MODEL INFRASTRUCTURE IMPROVEMENT WORKS FOR	
THE STRENGTHENING OF ARTIFICIAL INSEMINATION CENTER PROJECT	
TITLE OF DRAWING	
OUTLINE OF VALVE ARRANGEMENT ...	
JAPAN INTERNATIONAL COOPERATION AGENCY	DWG. 110
TOKYO	30

CHAPTER 7 DATA AVAILABLE

LIST OF COLLECTED DATA

Maps

M-1	Map of East Java , Scale 1:500,000		1 Sheet
M-2	Topographic map around Mt.Arjuno (HIND)		
	Scale 1:50,000		4 Sheets
M-3	- ditto - (US ARMY)		
	Scale 1:50,000		4 Sheets
M-4	Topographic map , Scale 1:25,000		
	(not including Singosari)		7 Sheets
M-5	Demarcation map of A.I. center	S=1:2,500	1 Sheet
M-6	- ditto -	S=1:2,000	1 Sheet
M-7	Topographic map of A.I. center		
	as of Sep.1980	S=1:2,000	1 Sheet
M-8	Administration map of Singosari		
	Oct. - Nov.1984, Oct.1986	S=1:25,000	4 Sheets
M-9	Landuse map of Singosari		
	Oct. - Nov.1984, Oct.1986	S=1:25,000	4 Sheets
M-10	- ditto - , July.1977, Dec.1980	S=1:25,000	2 Sheets
M-11	Land classification map of Singosari		
	Nov. - Dec.1971, Feb.1974	S=1:50,000	4 Sheets

Hydrology and Meteorology

H-1	Monthly rainfall at Wonosari Tea Plantation		
	1971-1986		
H-2	Daily climatological data at Wonosari		
	Rainfall Feb.1981- Dec.1986		
	Humidity, Temperature Mar.1981- Dec.1986		
	Wind Sep.1984- Dec.1986		
H-3	Monthly rainfall data at Singosari		

- H-4 Brantas river climatological station
networks , S=1:250,000 1 Sheet
- H-5 - ditto - , Raingauge station 1 Sheet
- H-6 - ditto - , Water level recording station 1 Sheet

Soil and Water Quality

- So-1 Soil analysis at A.I center
- So-2 Soil map at A.I center by Agraria S=1:10,000 1 Sheet
- So-3 Report on Land conservation in Brantas upstream
by Brawijaya university, Sep.1983, June.1984
- W-1 Test results of water quality analysis
 - Oct.2.1986 Weir site
 - Oct.2.1986 Labo
 - Jan.6.1987 Weir site

Contract Documents of A.I center Facilities

- C-1 No 81/CB1B , Jun.23.1980
- C-2 No.58/XII-C , Mar.18.1981
- C-3 No. 5/XII-C , May. 2.1981
- C-4 No.117/XII-C , Nov.23.1981
- C-5 No.056/XII-C , Apr.16.1983
- C-6 No.69/XII-C , Sep. 4.1983
- C-7 No.229/XIV-UM , Feb.23.1985

Cost, Material and Contractor's List

- Co-1 Example of Unit price for building construction at Malang
in June.1986 from Cipitakarya
- Co-2 List of Registered Contractors at Marang from Cipitakarya
- Co-3 List of survey and design company at Malang from Cipitakarya
- PR-1 List of Construction material price and wage for building
in Jakarta, May.1985

- PR-2 List of Material price at Brantas Project from Nov.1985
- PR-3 List of Labour fee at Brantas Project in Dec.1986
- PR-4 List of Construction material price and labour fee
at DPU Cipitakarya, Malang in Nov.1986
- PR-5 List of construction material price and labour fee
at D.P.U. Irigasi, Malang in Nov.1986

Table A.I Center Contractor's List during 1978/79 - 86/87

No.	FUND (APBD)	Kind of work	Design Consultant	Contractor	Contract No. & Date
1	1978/79	Master plan	Gajah Mada University, Cattle Breeding Faculty, Yogyakarta	-	No. 01/X11-a/1979/Pectita
2	1979/80	Land acquisition	-	-	-
3	1979/80	Design & construction - House Type-E 88 m ² - Fence 2,000 m - Bull shed 20 m ² - Tractor's garage	Biro Arsitek dan Insinyur ADI Jl. Taman Siswa No. 3, Malang	CV Resultant Sari Cabang Malang Jl. Kampar No. 11 Malang	Design: No. 13/X11-C/CBIB/ III-80, Mar 7, 1980 Construction: 81/CBIB/X11- C/VI-80, June 23, 1980
4	1980/81	Production and staking of boarder post	-	CV Resultant Sari Cabang Malang	No. 66/X11-C/CBIB/VI-80, June, 10, 1980
5	1980/81	Topographic survey and soil investigation	CV Peni/Bir Peran- cang Nasional Indonesia Jl. Kebon Jeruk V No. 8 Malang Jl. Gading No. 11, Malang	-	No. 120/X11-C/CBIB/IX-80, Sep. 2, 1980

No.	FUND (APBD)	Kind of work	Design Consultant	Contractor	Contract No. & Date
6	1980/81	- Road - Generator room and Storehouse - Drainage canal	Biro Arsitek dan Insinyur ADI	CV Resultan Sari Cabang Malang	Design: No. 69/XII-C/CBIB/IV-80, June 10, 1980 Construction: No. 92/XII-C/CBIB/VII-80, July. 21, 1980
7	1980/81	- Intake and pipeline facilities $\phi 3''$ 3,000 m $\phi 2''$ 1,400 m water tank 1 box	Biro Arsitek dan Insinyur ADI	CV T.T. Pembangunan JL. Arjasmoro No.58 Malang	Design: No. 166/XII-C/CBIB/XII-80, Dec. 30, 1980 Construction: 58/XII-C/CBIB/III-81, Mar. 18, 1981
8	1980/81	- Construction of forrage field	-	Daily labours	From Nov. 1980
9	1981/82	- Main office - Laboratory - Bull shed - House Type D 50 x 3 m ² - water supply facility $\phi 1-1/4''$ 1650 m - Road and parking - Generator installation 1 unit	Biro Arsitek dan Insinyur ADI	CV ARDHI JL. Bogor No. 36, Malang	Desitn; 5/XII-C/CBIB/V/81, May 2, 1981 Construction: 117/XII-C/CBIB/XI, Nov. 23, 1981

No.	FUND (AFBD)	Kind of work	Design Consultant	Contractor	Contract No. & Date
10	1982/83 1983/84	- Trainee's house 278 m ² - House Type-B 120 m ² -C 70 x 4 m ² -D 50 x 5 m ² - Fence 175 m - Pos Jaga 2 houses - Feeder pipe ø3" - ø1.5" 3000 m	BIRO ARISTEK DAN INSINYUR ADI	CV. WINDUWARDANA JL. Mawar, No.47, Malang	Construction: 056/XII-C/BIB/ IV/83, Apr. 16, 1983
11	1983/84	- Bull shed 160 m ² - Clinic 68 m ² - Road & Side ditch improvement, Asphalt	BIRO KONSULATAN IRA JL. Bantaran 1/45, Malang	CV. AHMAD NING JL. Dinoyo 167A, Malang	Construction: 69/XII-E/BIB/ IX/1983, Sept. 24, 1983
12	1984/85	- Concentrated fodder store 50 m ² - Water tank 100 m ³ - Fence of paddock 400 m		CV. DINAMIKA JL. Kebon Jeruk Va/14 No.8, Malang	Construction: 229/XIV-UM/BIB/ II/85, Feb. 23, 1985
13	1986/87	- Catch dam - Pipeline ø4", ø3" - Settling box		CV. DINAMIKA	Under construction from Nov. 24, 1986

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Milai Pekerjaan : Rp. 500 JUTA
Kodya (Kodanya) : MALANG

No. : Kode Rekanan : Nama Perusahaan : Alamat :
001 : 1522100069 : PT. BRANTAS API PRAYA : JL. SURABAYA 3, MALANG.

- PENGALIRAN
- JALAN
- JEMBATAN
- BANGUNAN GEDUNG DAN PABRIK
- PENERUKAN
- DERMAGA, PENAHAN GELOMBANG DAN TAKAH (BROK WATER & TALUD)
- ELEKTRIKAL (INSTALASI PEMBANGKIT DAN LISTRIK)
- PENGUPASAN
- PENGEALIAN / PENAMBANGAN

RI

KOMUNIKASI

DAFTAR REKAMAN WAMPU

DAFTAR BIDANG PEKERJAAN PEMERINTAH

Klasifikasi : E1
 Nilai Pekerjaan : Rp. 200 JUTA-500 JUTA
 Kota : MALANG

No. Relahan	Nama Perusahaan	Alamat	Sub Bidang Pekerjaan (Spesialisasi)
001	CV. ARDI LAKSA	JL. BROSUJUR 34 - 36, MALANG.	- PENGAIRAN - JALAN - JEMBATAN - BANGUNAN GEDUNG DAN PABRIK - BANGUNAN PENGOLAHAN AIR BERSIH, AIR LIMBAH DAN PERPIPAAN
002	CV. BUKIT BARISAH	JL. LETJEN. SUTOMO 116A, TLP. 41835, MALANG.	- JALAN; JEMBATAN - PENGAIRAN - BANGUNAN GEDUNG DAN PABRIK
003	PT. BRANTAS ABI PRAYA CABANG MALANG	JL. SURABAYA 3, MALANG.	- PENGAIRAN - JALAN; JEMBATAN, LANDASAN - PENGUPASAN - BANGUNAN GEDUNG DAN PABRIK
004	CV. CENTRAL KARYA	JL. TAMAN SELAMET 18, TLP. 25029, MALANG.	- BANGUNAN GEDUNG DAN PABRIK
005	PT. PURNA YUDHA	JL. SENS PUTEA G - 70, MALANG.	- BANGUNAN GEDUNG DAN PABRIK
006	PT. T. T. PEMBANGUNAN	JL. ANJASMORO 58, TLP. 24106, MALANG.	- BANGUNAN GEDUNG DAN PABRIK - BANGUNAN PENGOLAHAN AIR BERSIH, AIR LIMBAH DAN PERPIPAAN
007	PT. BRANTAS ABIPRAYA	JL. SURABAYA 3, MALANG.	- LANDASAN