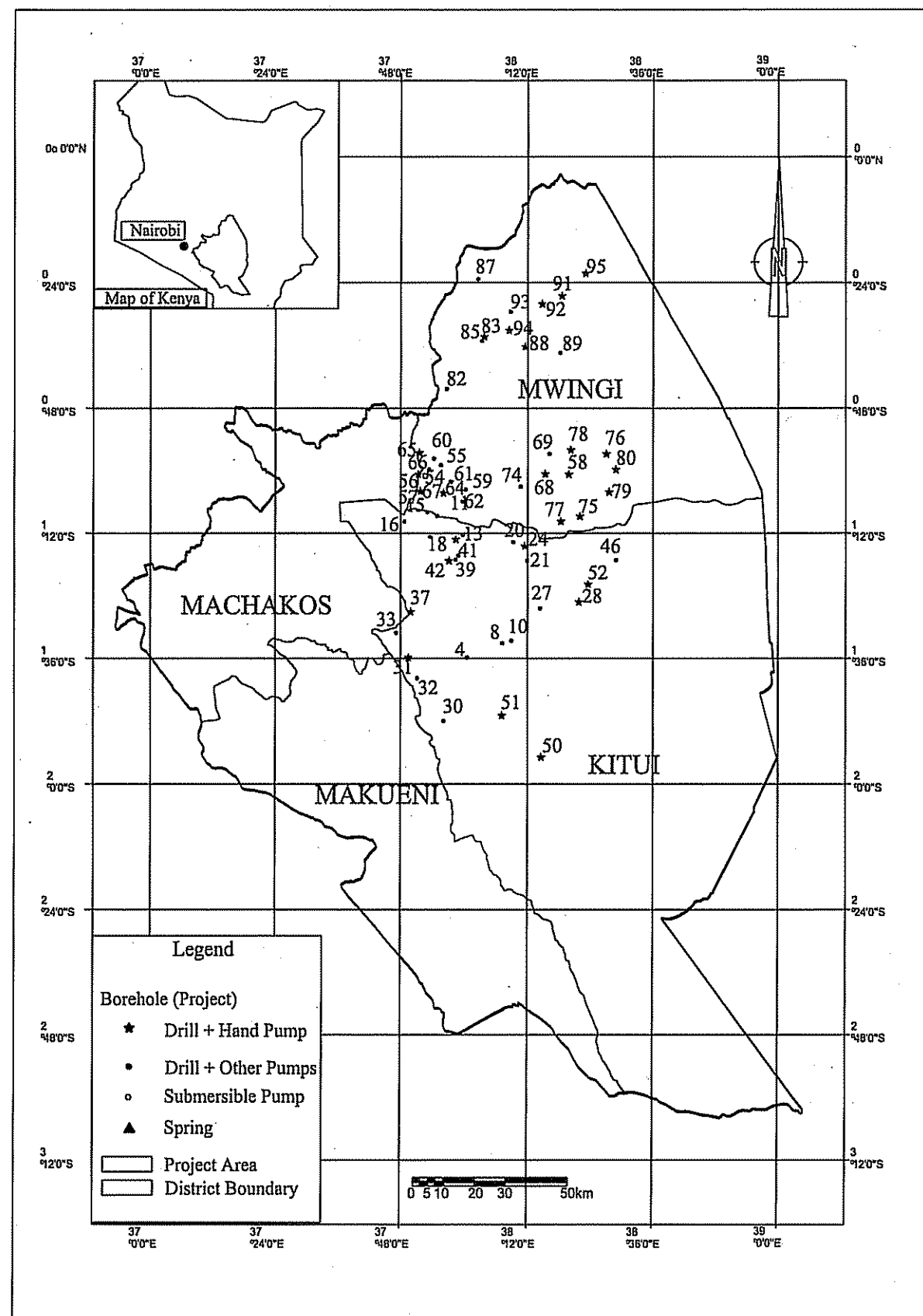



**5.12**  
***Basic Design Drawings***



No.	Location No.	District	Division	Proposed Village / Community	Latitude	Longitude
1	4	Kitui	Chuluni	Nguuni	01°34'56"S	38°00'22"E
2	8			Kanzauwu	01°32'55"S	38°07'48"E
3	10		Mutonguni	Kaluva secondary school	01°33'00"S	38°09'00"E
4	11			Kyangulu	01°11'06"S	37°57'34"E
5	13			Ilako Mututa secondary school	01°12'30"S	37°58'00"E
6	15			Kakeani secondary school	01°08'56"S	37°54'36"E
7	16		Mutito	Kasakini	01°10'19"S	37°49'54"E
8	18			Kasue secondary school	01°13'08"S	37°54'19"E
9	20			St. Mary's Miambani	01°15'00"S	38°10'00"E
10	21			Kawala	01°17'00"S	38°17'25"E
11	24		Yatta	Kabati	01°18'00"S	38°12'00"E
12	27			Katikoni	01°27'00"S	38°19'00"E
13	28			Makongo	01°24'54"S	38°23'02"E
14	30			Kanyongonyo	01°47'05"S	37°55'51"E
15	31	Matinyani	Nthongoni	01°36'00"S	37°49'28"E	
16	32		Kalulini	01°38'55"S	37°50'42"E	
17	33	Ikutha	Muselele	01°31'34"S	37°46'45"E	
18	37		Ngava	01°29'08"S	37°47'16"E	
19	39		Kunikila	01°17'44"S	37°58'31"E	
20	41		Kyaani secondary school	01°17'00"S	37°58'54"E	
21	42	Mwitika	Kakumuti	01°17'42"S	37°57'29"E	
22	46		Endau secondary	01°20'09"S	38°32'03"E	
23	50	Mwingi	Migwani	Mwala	01°53'34"S	38°14'21"E
24	51			Kyatune	01°46'36"S	38°06'55"E
25	52	Mwingi	Migwani	Yuku	01°21'00"S	38°26'00"E
26	54			Yenzuva	01°59'47"S	37°54'03"E
27	55			Winzei	00°58'02"S	37°55'16"E
28	56			Katuyu	01°00'46"S	37°52'00"E
29	57			Kakuluto	01°04'00"S	37°52'21"E
30	58			Makengekani	00°59'47"S	38°19'12"E
31	59			Itumbi	01°02'44"S	38°00'00"E
32	60			Kyusyanyi	00°56'46"S	37°53'57"E
33	61			Kavaini	01°01'14"S	37°57'10"E
34	62			Nzauni	01°07'06"S	38°00'33"E
35	64			Kasanga	01°04'16"S	37°56'43"E
36	65			Mavui	00°56'42"S	37°52'10"E
37	66			Ndaluni	01°01'30"S	37°51'04"E
38	67			Katoteni	01°05'36"S	37°53'50"E
39	68	Mui	Itiko	00°59'24"S	38°15'17"E	
40	69		Yumbu	00°55'55"S	38°16'03"E	
41	74	Nuu	Miambani	01°03'29"S	38°10'50"E	
42	75		Mutula	01°06'30"S	38°21'07"E	
43	76		Yatwa	00°55'04"S	38°26'45"E	
44	77		Nyaani	01°09'13"S	38°18'08"E	
45	78		Muangeni	00°55'07"S	38°20'13"E	
46	79		Engamba	01°06'00"S	38°28'00"E	
47	80	Mumoni	Ndunguni	01°00'21"S	38°28'44"E	
48	82		Tyaa Kamuthale	00°43'25"S	37°56'22"E	
49	83		Ndatha	00°34'24"S	38°04'43"E	
50	85		Ndathani	00°34'15"S	38°03'10"E	
51	87	Kyuso	Miramba Ikamba	00°23'26"S	38°02'16"E	
52	88		Muruu	00°36'20"S	38°12'40"E	
53	89		Kamusiliu	00°36'32"S	38°18'07"E	
54	91		Kamula	00°26'45"S	38°19'45"E	
55	92		Twimiwa	00°28'10"S	38°15'52"E	
56	93		Masevi	00°28'41"S	38°08'40"E	
57	94		Kandwira	00°33'15"S	38°09'30"E	
58	95		Kyanika	00°21'45"S	38°22'45"E	

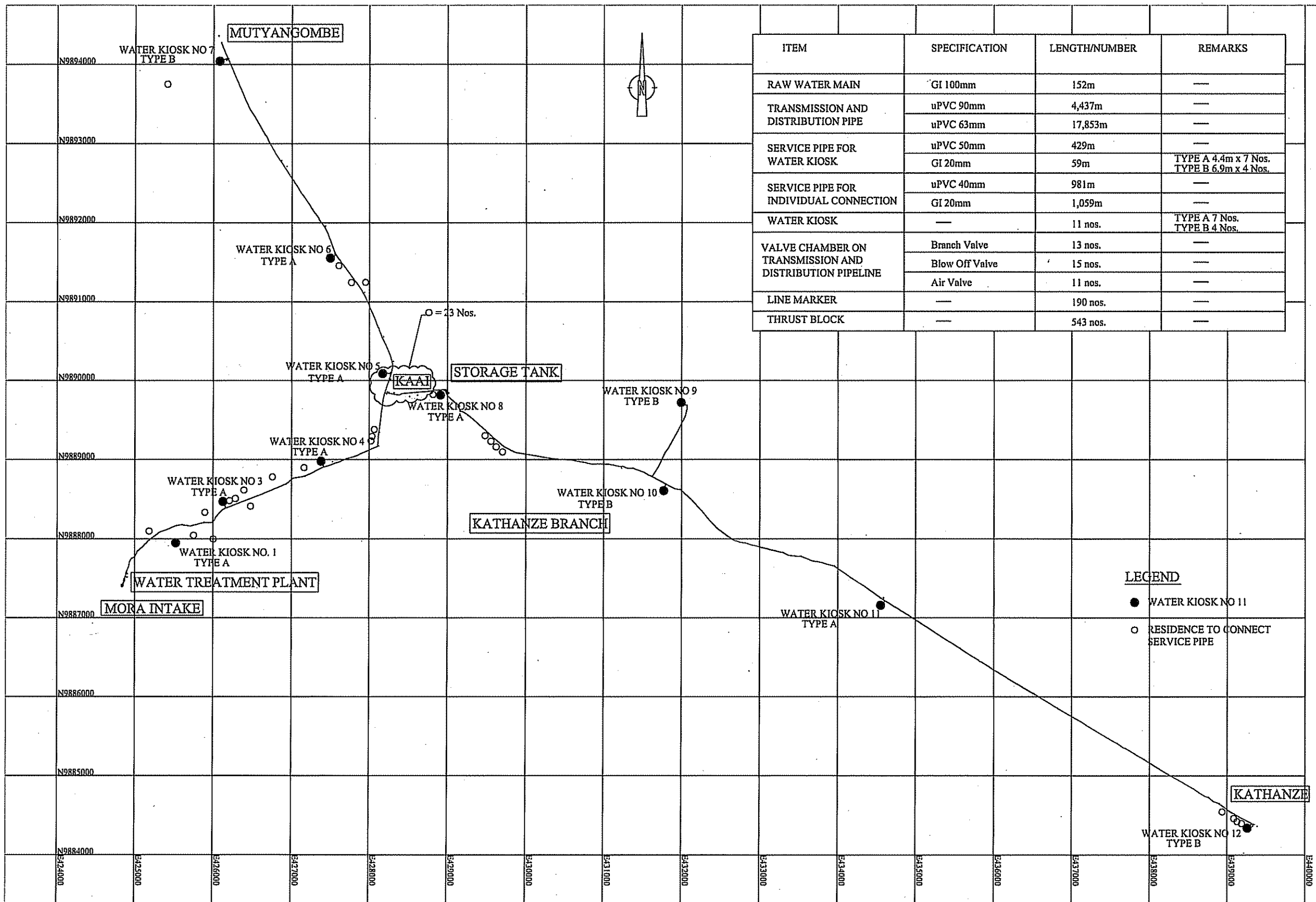
OWNER:  
THE MINISTRY OF WATER AND IRRIGATION  
THE REPUBLIC OF KENYA

PROJECT NAME:  
THE PROJECT FOR  
RURAL WATER SUPPLY

CONSULTING ENGINEERS:  
 NIPPON KOEI CO., LTD.

TITLE:  
GENERAL  
LOCATION MAP

SCALE NONE	DATE FEB. 2006	DRAWING NO. GE-001
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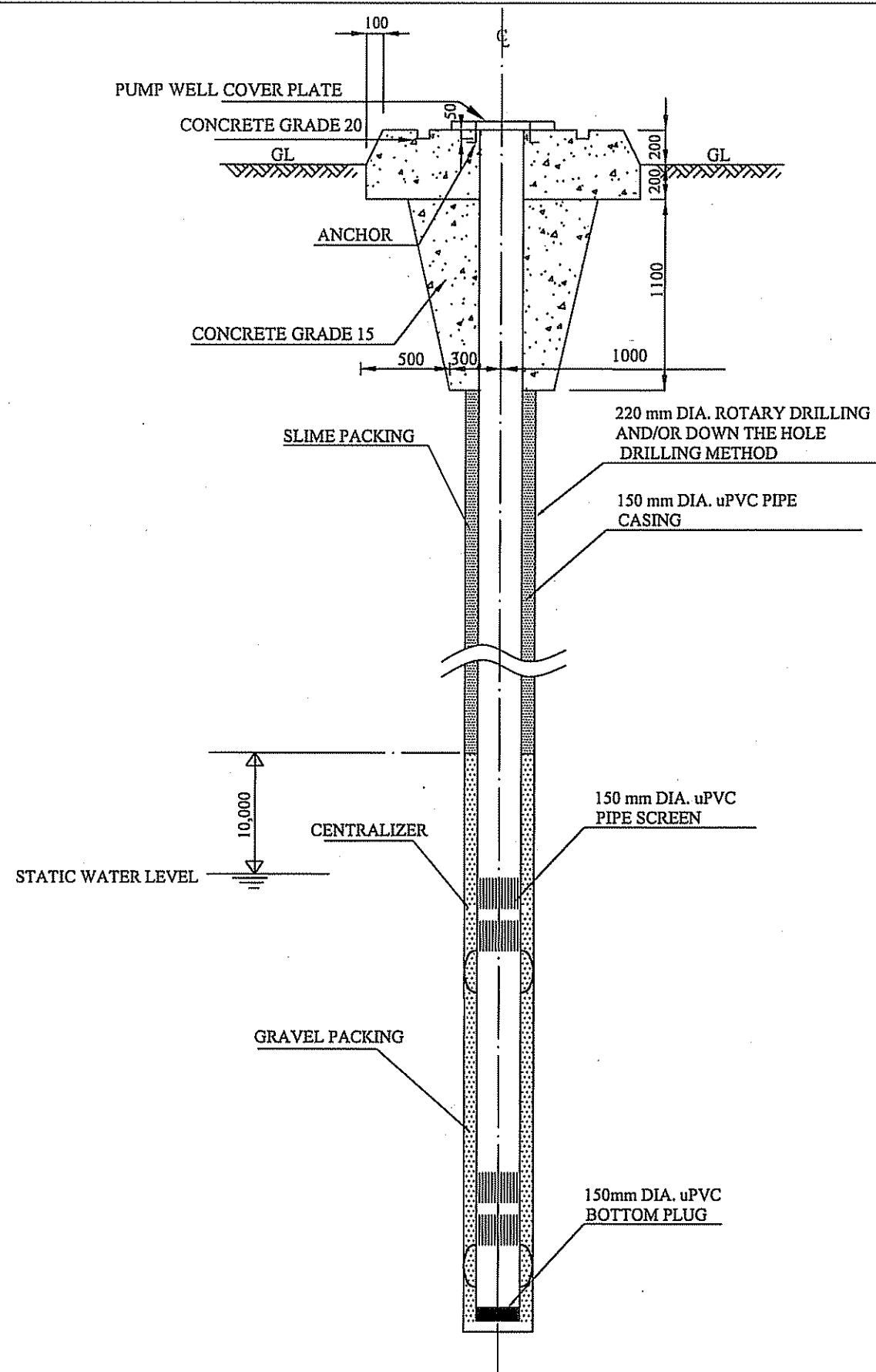


ITEM	SPECIFICATION	LENGTH/NUMBER	REMARKS
RAW WATER MAIN	GI 100mm	152m	---
TRANSMISSION AND DISTRIBUTION PIPE	uPVC 90mm	4,437m	---
	uPVC 63mm	17,853m	---
SERVICE PIPE FOR WATER KIOSK	uPVC 50mm	429m	---
	GI 20mm	59m	TYPE A 4.4m x 7 Nos. TYPE B 6.9m x 4 Nos.
SERVICE PIPE FOR INDIVIDUAL CONNECTION	uPVC 40mm	981m	---
	GI 20mm	1,059m	---
WATER KIOSK	---	11 nos.	TYPE A 7 Nos. TYPE B 4 Nos.
VALVE CHAMBER ON TRANSMISSION AND DISTRIBUTION PIPELINE	Branch Valve	13 nos.	---
	Blow Off Valve	15 nos.	---
	Air Valve	11 nos.	---
LINE MARKER	---	190 nos.	---
THRUST BLOCK	---	543 nos.	---

**LEGEND**

- WATER KIOSK NO 11
- RESIDENCE TO CONNECT SERVICE PIPE

OWNER: <b>THE MINISTRY OF WATER AND IRRIGATION</b> <b>THE REPUBLIC OF KENYA</b>	PROJECT NAME: <b>THE PROJECT FOR RURAL WATER SUPPLY</b>	CONSULTING ENGINEERS: <b>NIPPON KOEI CO., LTD.</b>	TITLE: <b>GENERAL</b> <b>PLAN OF MORA SPRING WATER SUPPLY FACILITY</b>
		SCALE: <b>1:5000</b>	DATE: <b>FEB. 2006</b>
		DRAWING NO.: <b>GE-002</b>	



STANDARD FIGURE OF BOREHOLE STRUCTURE

No	District	Division	Location No.	Proposed Village / Community	Well depth (m)	Water Supply Facilities		
1	Kitui	Chuluni	4	Nguuni	70	Submersible Pump		
2			8	Konzauwu	49	Submersible Pump		
3			10	Kaluva secondary school	154	Submersible Pump		
4		Mutonguni		11	Kyangulu	182	Submersible Pump	
5				13	Ilako Mututa secondary school	52	Handpump	
6				15	Kakeeni secondary school	112	Submersible Pump	
7				16	Kasakini	49	Submersible Pump	
8				18	Kasue secondary school	63	Submersible Pump	
9				Mutito		20	St. Mary's Miambani	35
10		21	Kawala			182	Submersible Pump	
11		24	Kabati			71	Handpump	
12		27	Katikoni			182	Submersible Pump	
13		28	Makongo			39	Handpump	
14		Yatta		30	Kanyongonyo	175	Submersible Pump	
15				31	Nihongoni	182	Handpump with Iron Filter	
16				32	Kalulini	77	Submersible Pump	
17				33	Muselele	182	Submersible Pump	
18				37	Ngava	45	Handpump	
19		Matinyani		39	Kunikila	154	Submersible Pump	
20				41	Kyanni secondary school	112	Submersible Pump	
21				42	Kakumuti	168	Handpump	
22				46	Endau secondary	70	Submersible Pump	
23		Ikutha		50	Mwala	45	Handpump	
24				51	Kyatune	155	Handpump	
25		Mwitika		52	Yuku	168	Handpump	
26		Mwingi	Migwani	54	Yenzuva	90	Submersible Pump	
27				55	Winzezi	145	Submersible Pump	
28				56	Katuyu	145	Handpump with Iron Filter	
29				57	Kakululo	100	Handpump with Iron Filter	
30				58	Makengekani	40	Handpump	
31				59	Itumbi	123	Submersible Pump	
32				60	Kyusyani	188	Submersible Pump	
33				61	Kavani	80	Submersible Pump	
34	62			Nzauni	72	Submersible Pump		
35	64			Kasanga	133	Handpump		
36	65			Mavui	146	Handpump		
37	66			Ndaluni	51	Submersible Pump		
38	67			Katoten	80	Submersible Pump		
39	Mui				68	Itiko	173	Handpump
40					69	Yumbu	94	Submersible Pump
41					74	Miambani	130	Submersible Pump
42	Nuu				75	Mutula	133	Handpump
43					76	Yatwa	146	Handpump
44					77	Nyaani	113	Handpump
45					78	Muungeni	120	Handpump
46					79	Engamba	120	Handpump
47					80	Ndunguni	93	Handpump
48	Mumoni				82	Tyaa Kamuthale	65	Submersible Pump
49					83	Ndathu	53	Handpump
50					85	Ndatheni	109	Submersible Pump
51	Kyuso		87	Miramba Ikamba	188	Submersible Pump		
52			88	Muruu	146	Handpump		
53			89	Kamusiliu	101	Submersible Pump		
54			91	Kamula	107	Handpump		
55			92	Tumiyva	47	Handpump		
56			93	Mosevi	145	Submersible Pump		
57			94	Kandwia	93	Handpump		
58			95	Kyanika	53	Handpump		

Note: Well depth in the above table except Serial No. 54 is estimated depth.  
Location of the Iron filter shall be changed based on the Chemical Analysis

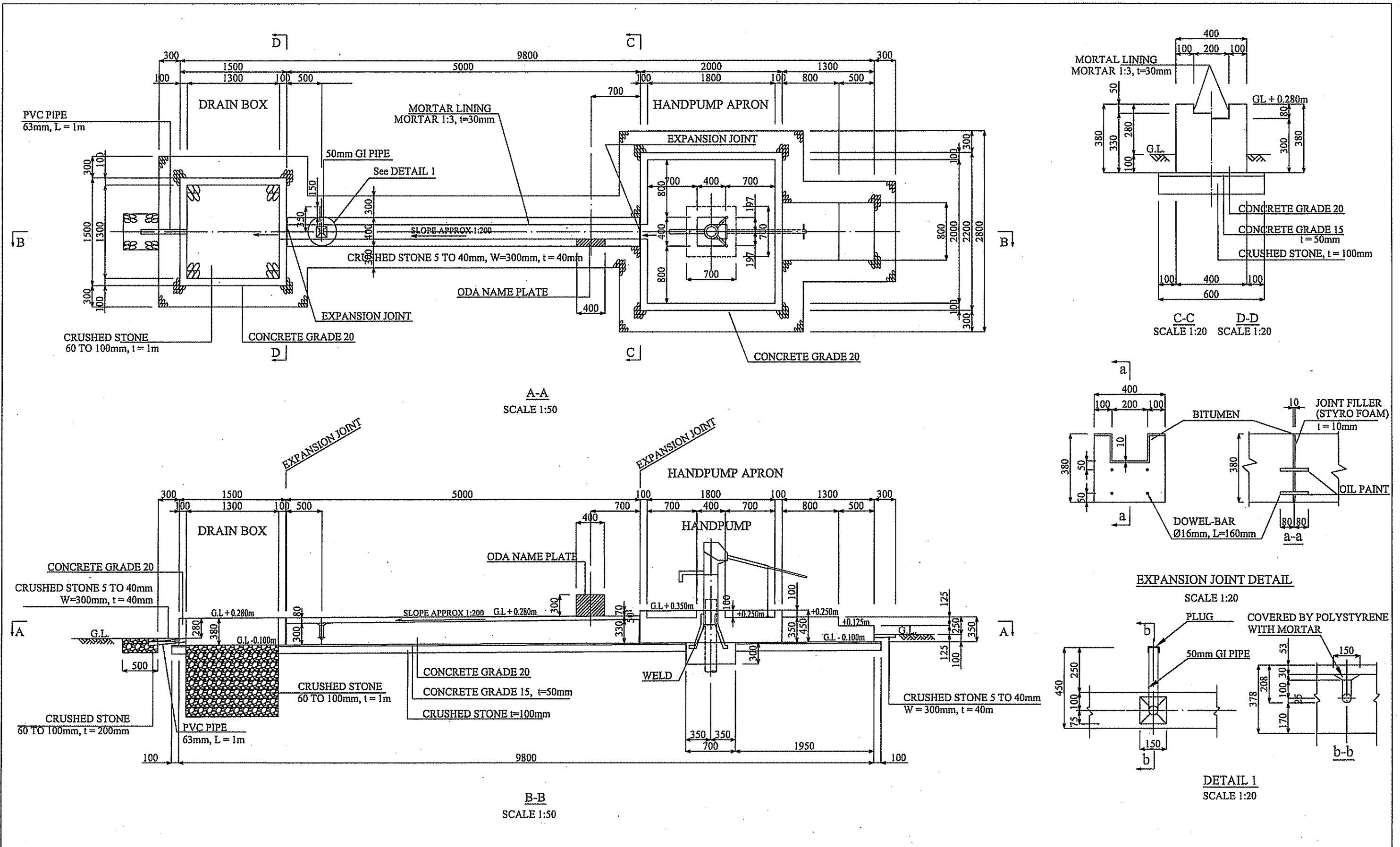
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THE MINISTRY OF WATER AND IRRIGATION  
THE REPUBLIC OF KENYA

PROJECT NAME:  
THE PROJECT FOR  
RURAL WATER SUPPLY

CONSULTING ENGINEERS:  
 NIPPON KOEI CO., LTD.

TITLE:  
GENERAL  
DETAILS OF BOREHOLE STRUCTURE

SCALE	DATE	DRAWING NO.
NONE	FEB. 2006	BW-001



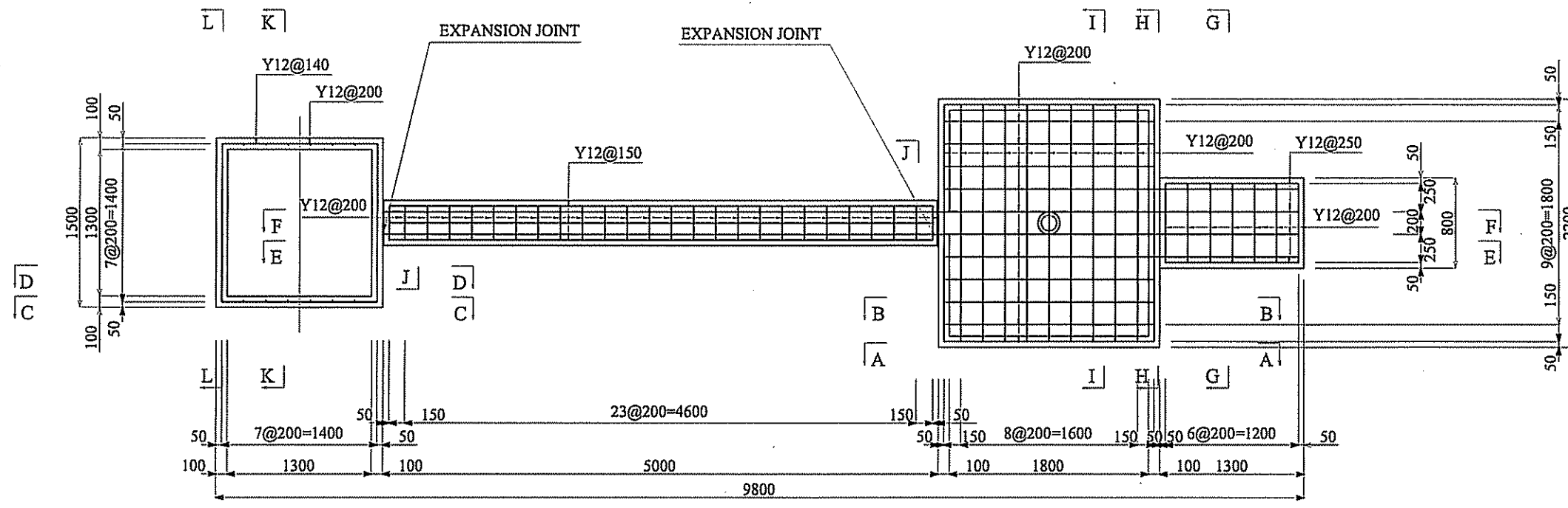
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THE MINISTRY OF WATER AND IRRIGATION  
THE REPUBLIC OF KENYA

PROJECT NAME:  
THE PROJECT FOR  
RURAL WATER SUPPLY

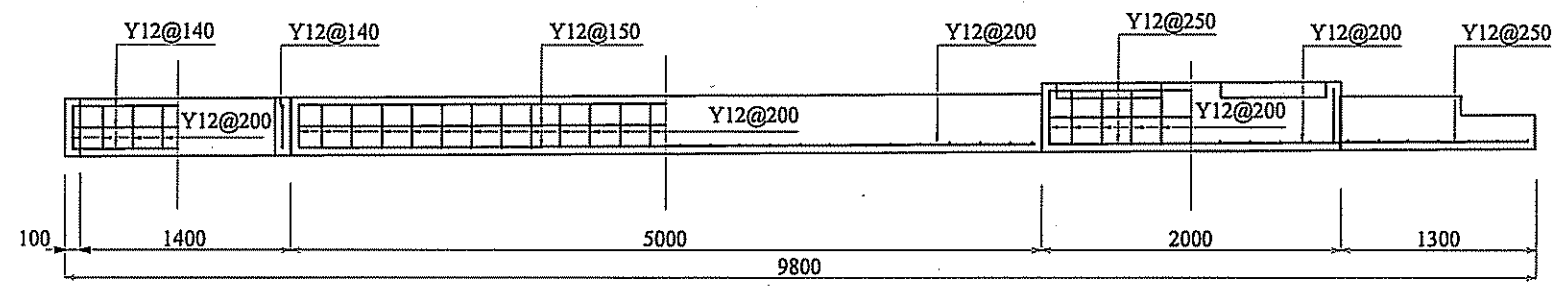
CONSULTING ENGINEERS:  
 **NIPPON KOEI CO., LTD.**

TITLE:  
**CONSTRUCTION OF BOREHOLE WATER SUPPLY FACILITIES**  
**HAND PUMP**

SCALE 1:50 1:20	DATE FEB.2006	DRAWING NO. BW-002
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SCALE 1:50

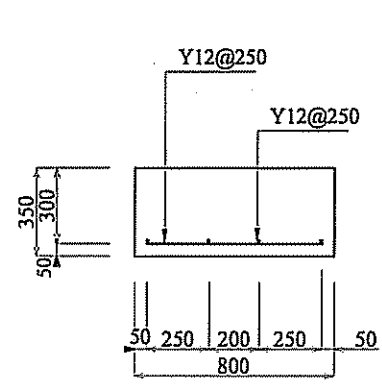


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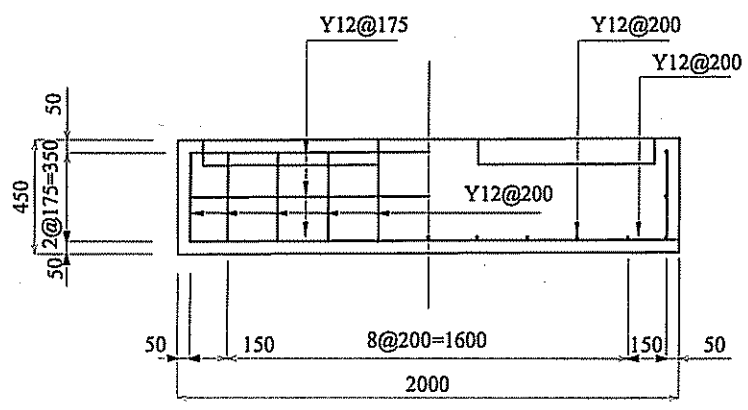
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SCALE 1:50

SCALE 1:50

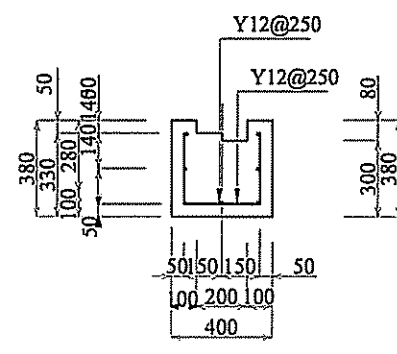


G-G  
SCALE 1:30

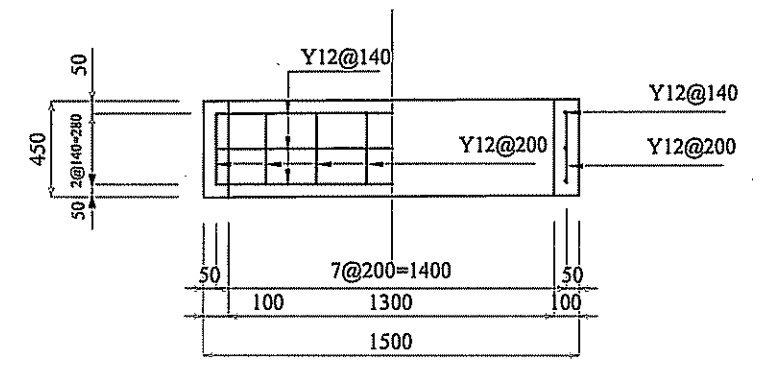


H-H  
SCALE 1:30

I-I  
SCALE 1:30



J-J  
SCALE 1:30



L-L  
SCALE 1:30

K-K  
SCALE 1:30

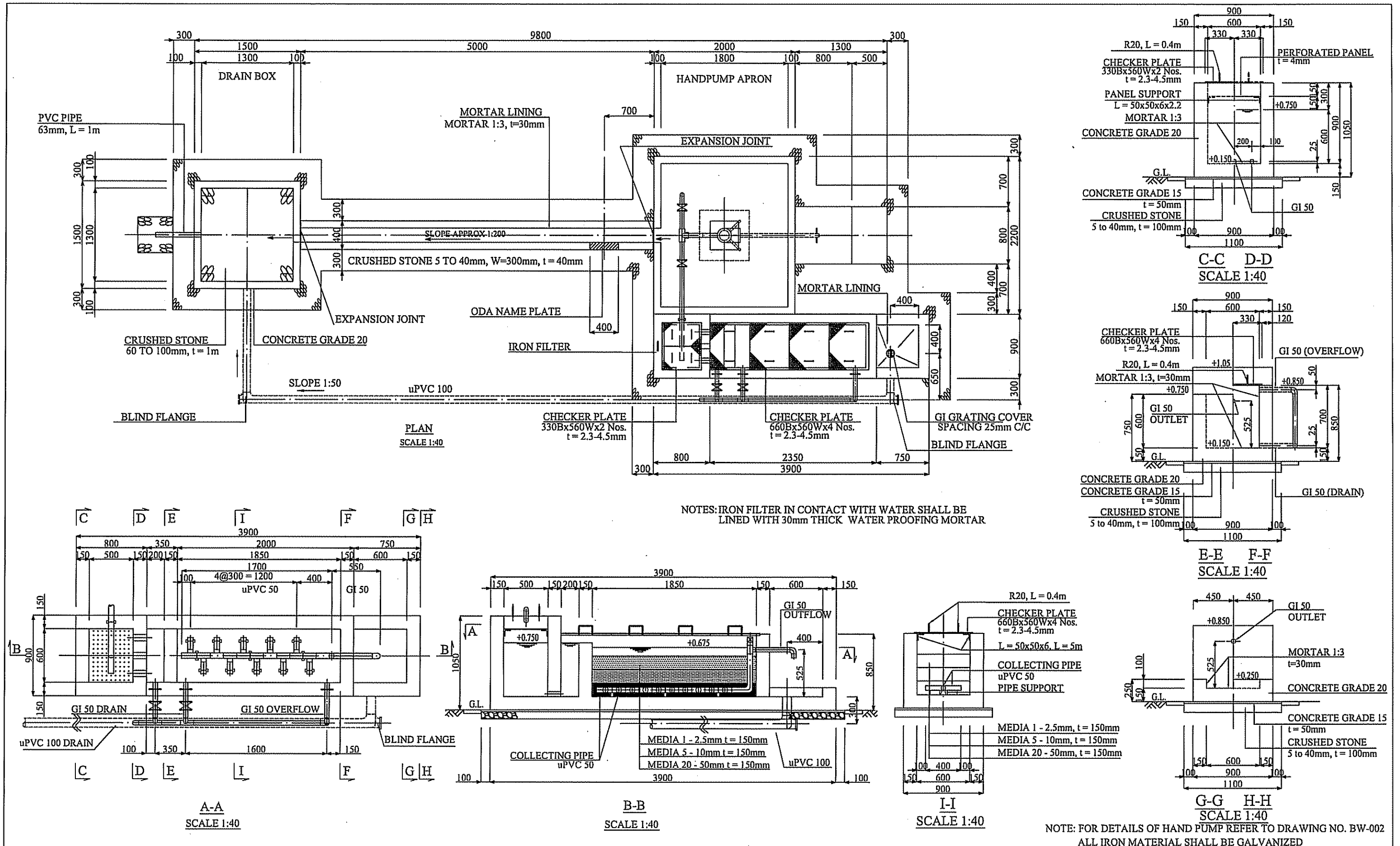
OWNER:  
THE MINISTRY OF WATER AND IRRIGATION  
THE REPUBLIC OF KENYA

PROJECT NAME:  
THE PROJECT FOR  
RURAL WATER SUPPLY

CONSULTING ENGINEERS:  
 NIPPON KOEI CO., LTD.

TITLE:  
CONSTRUCTION OF BOREHOLE WATER SUPPLY FACILITIES  
REINFORCEMENT BAR ARRANGEMENT OF HAND PUMP

SCALE 1:50 1:30	DATE FEB.2006	DRAWING NO. BW-003
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OWNER:  
**THE MINISTRY OF WATER AND IRRIGATION**  
**THE REPUBLIC OF KENYA**

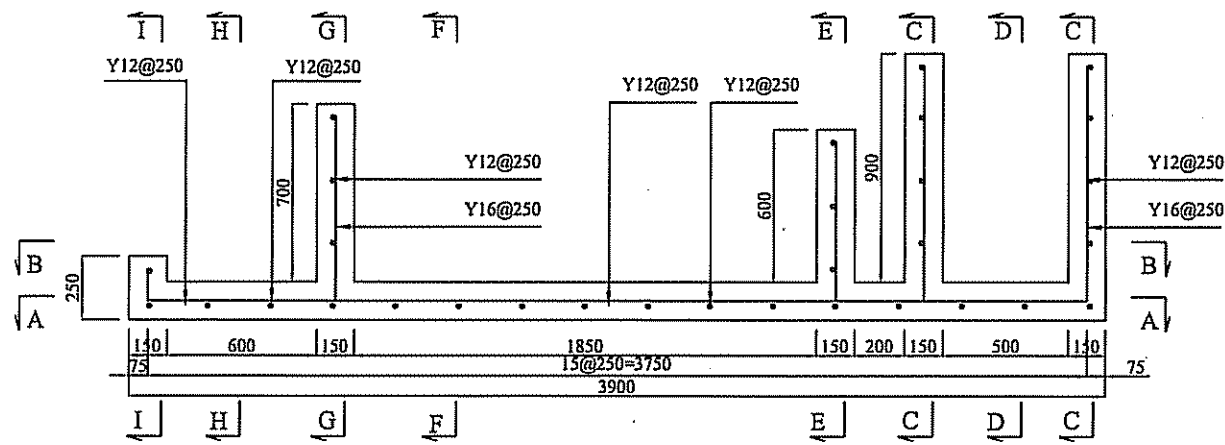
PROJECT NAME:  
**THE PROJECT FOR**  
**RURAL WATER SUPPLY**

CONSULTING ENGINEERS:  
 **NIPPON KOEI CO., LTD.**

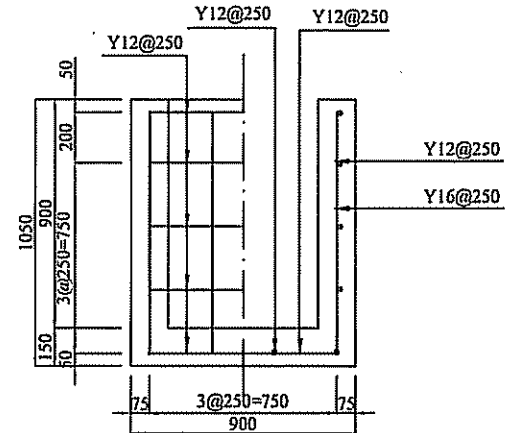
TITLE:  
**CONSTRUCTION OF BOREHOLE WATER SUPPLY FACILITIES**  
**HAND PUMP WITH IRON FILTER**

SCALE 1:50 1:40	DATE FEB.2006	DRAWING NO. BW-004
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NOTE: FOR DETAILS OF HAND PUMP REFER TO DRAWING NO. BW-002  
 ALL IRON MATERIAL SHALL BE GALVANIZED

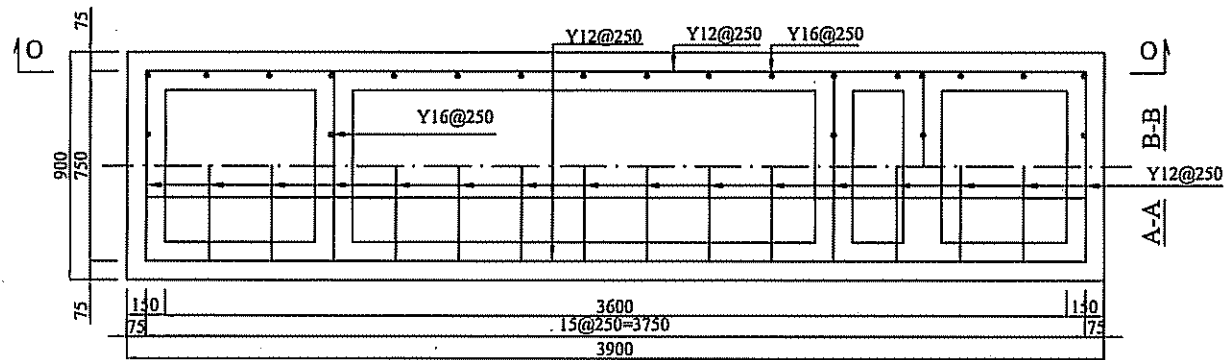


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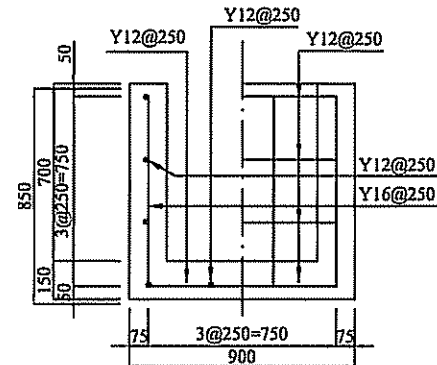


C-C D-D

SCALE 1:30

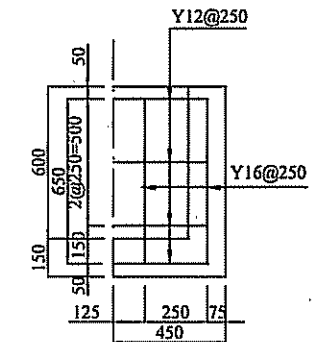


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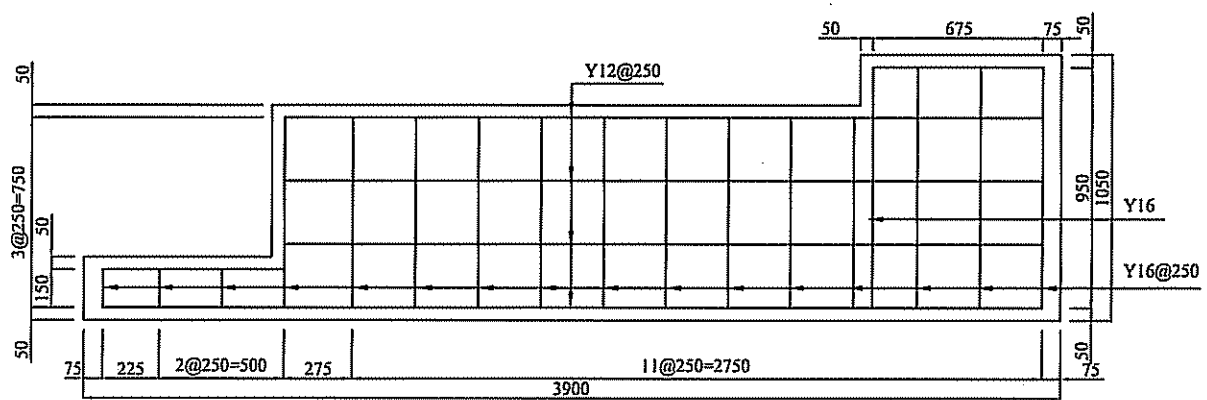
F-F G-G

SCALE 1:30



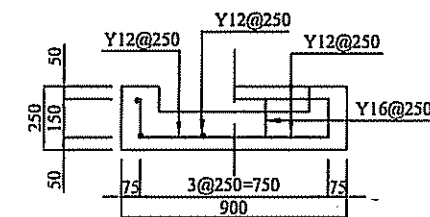
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SCALE 1:30



SECTION O-O

SCALE 1:30



H-H I-I

SCALE 1:30

OWNER:  
THE MINISTRY OF WATER AND IRRIGATION  
THE REPUBLIC OF KENYA

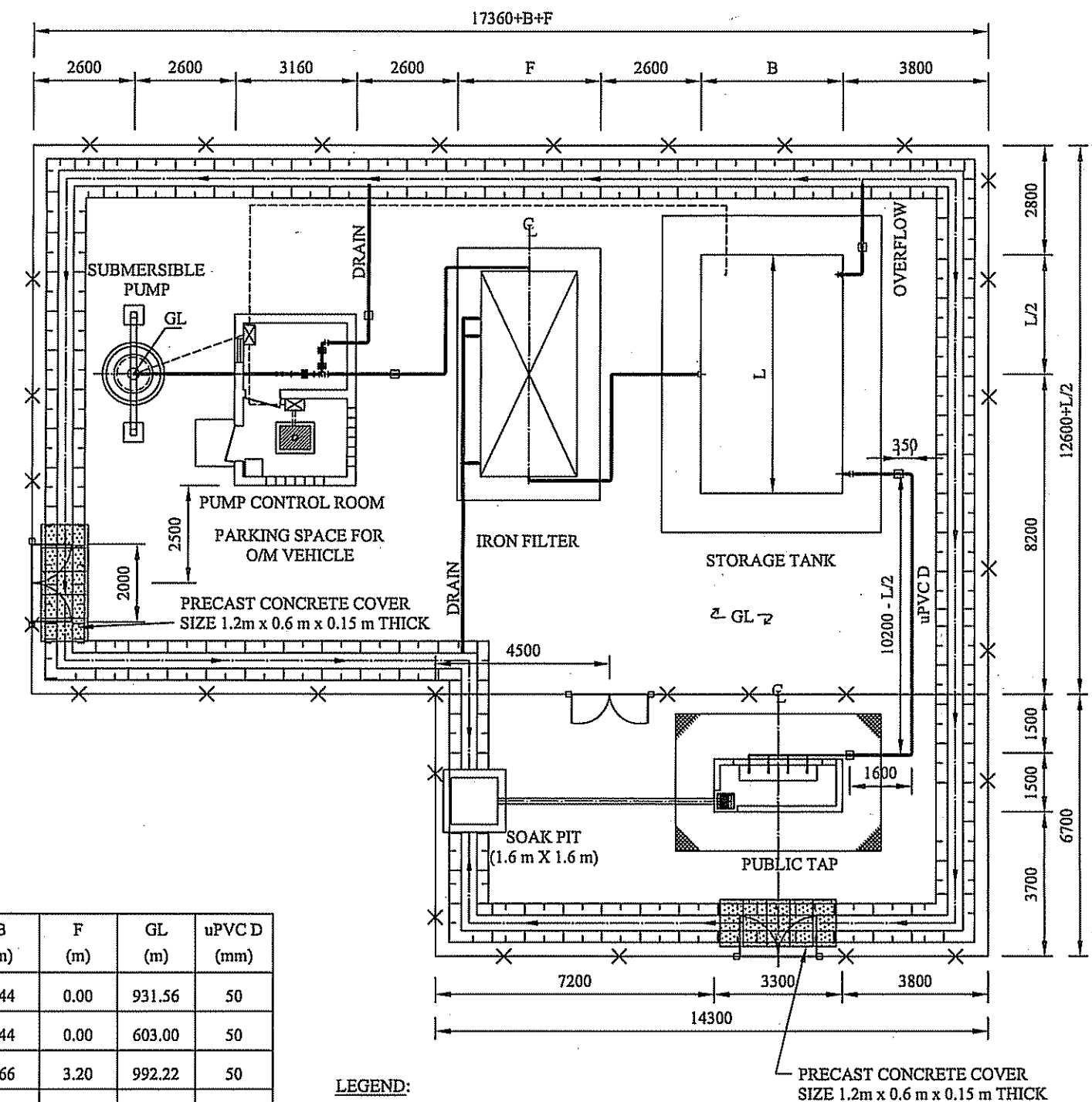
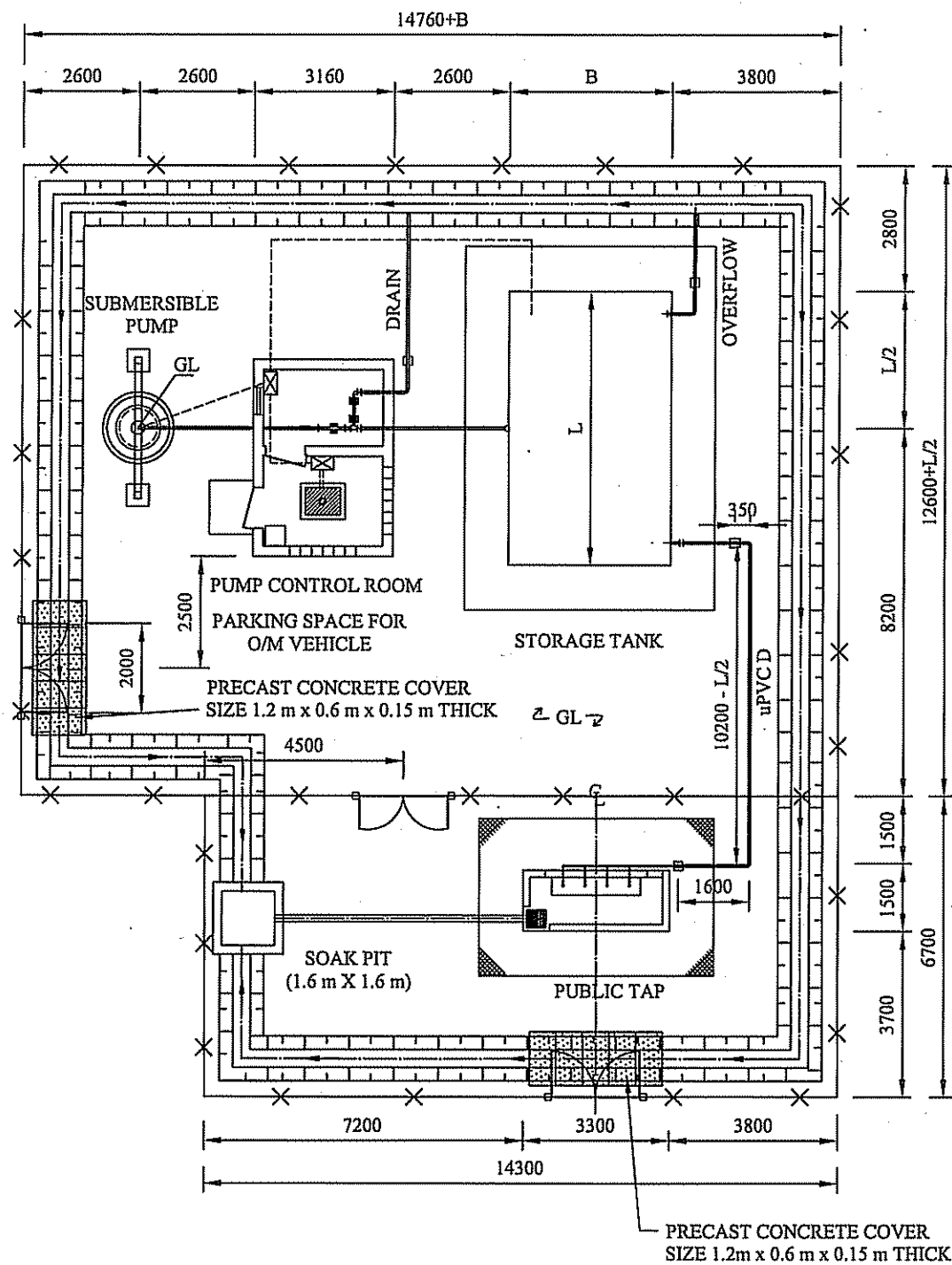
PROJECT NAME:  
THE PROJECT FOR  
RURAL WATER SUPPLY

CONSULTING ENGINEERS:  
 NIPPON KOEI CO., LTD.

TITLE:  
CONSTRUCTION OF BOREHOLE SUPPLY FACILITIES  
REINFORCEMENT BAR ARRANGEMENT OF IRON FILTER

SCALE	DATE	DRAWING NO.
1:30	FEB.2006	BW-005





LOCATION No.	L (m)	B (m)	F (m)	GL (m)	uPVC D (mm)
8	4.88	2.44	0.00	931.56	50
21	4.88	2.44	0.00	603.00	50
60	6.10	3.66	3.20	992.22	50
61	4.88	2.44	-2.90	1099.86	50
66	4.88	2.44	2.90	987.82	50
85	6.10	3.66	0.00	865.85	50

- LEGEND:**
- : PRECAST CONCRETE COVER
  - : GATE
  - : CHAIN-LINK FENCE
  - : CUT SLOPE (GRADIENT 1:0.5)
  - : WATER SUPPLY PIPE
  - : CABLE
- With Iron Filter**

- NOTES:**
- FOR DETAILS OF PRECAST CONCRETE COVER, GATE, FENCE AND DRAIN uPVC DITCH, SEE DRAWING No. SP-098 & 099.
  - CONSTRUCTION WORKS FOR 1) TRANSMISSION PIPES, 2) DISTRIBUTION PIPES, 3) FENCES, AND 4) DRAIN OUTLETS ARE DONE BY RURAL COMMUNITY PARTICIPATION BASED ON THE UNDERTAKINGS OF THE GOVERNMENT OF KENYA.

Without Iron Filter

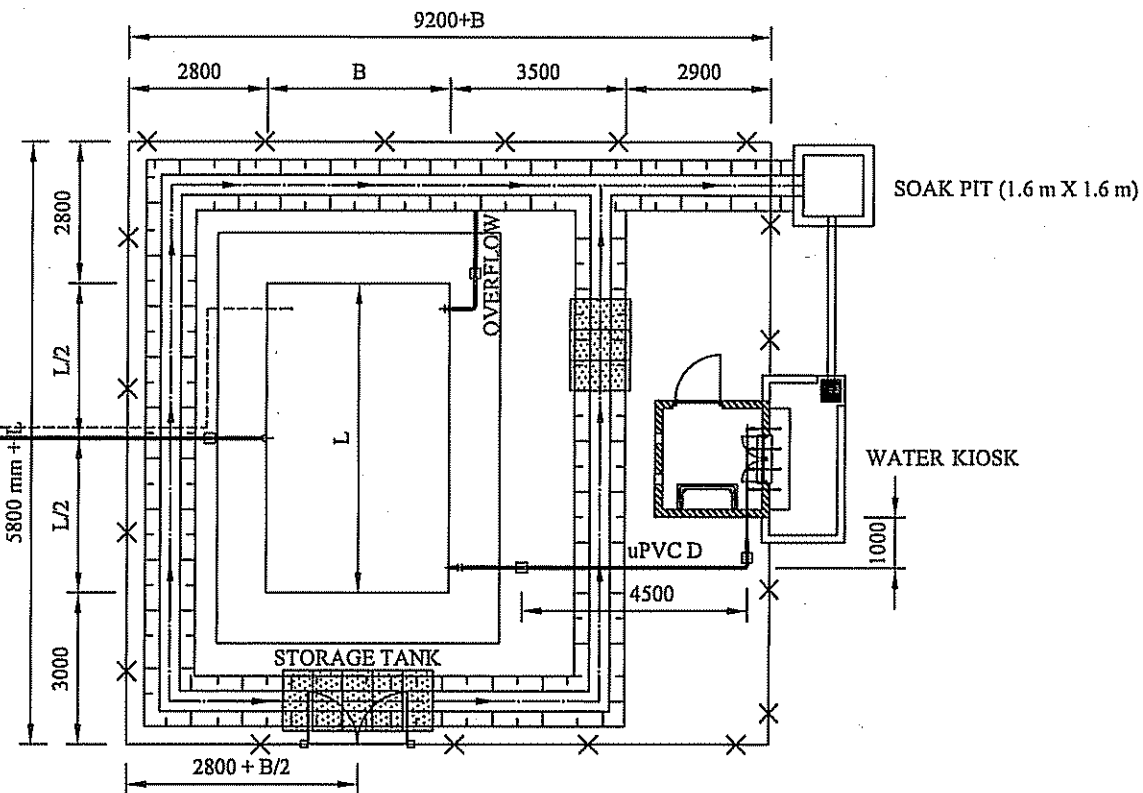
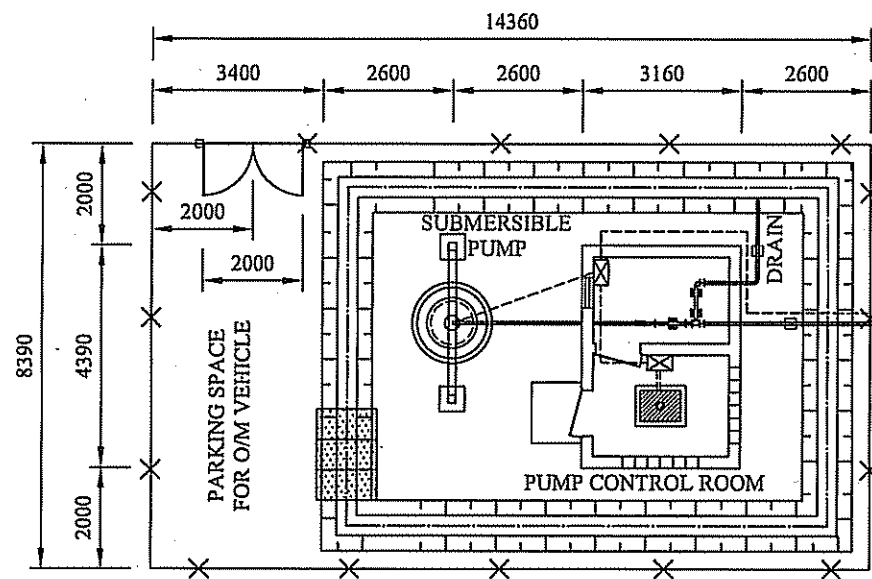
OWNER:  
THE MINISTRY OF WATER AND IRRIGATION  
THE REPUBLIC OF KENYA

PROJECT NAME:  
THE PROJECT FOR  
RURAL WATER SUPPLY

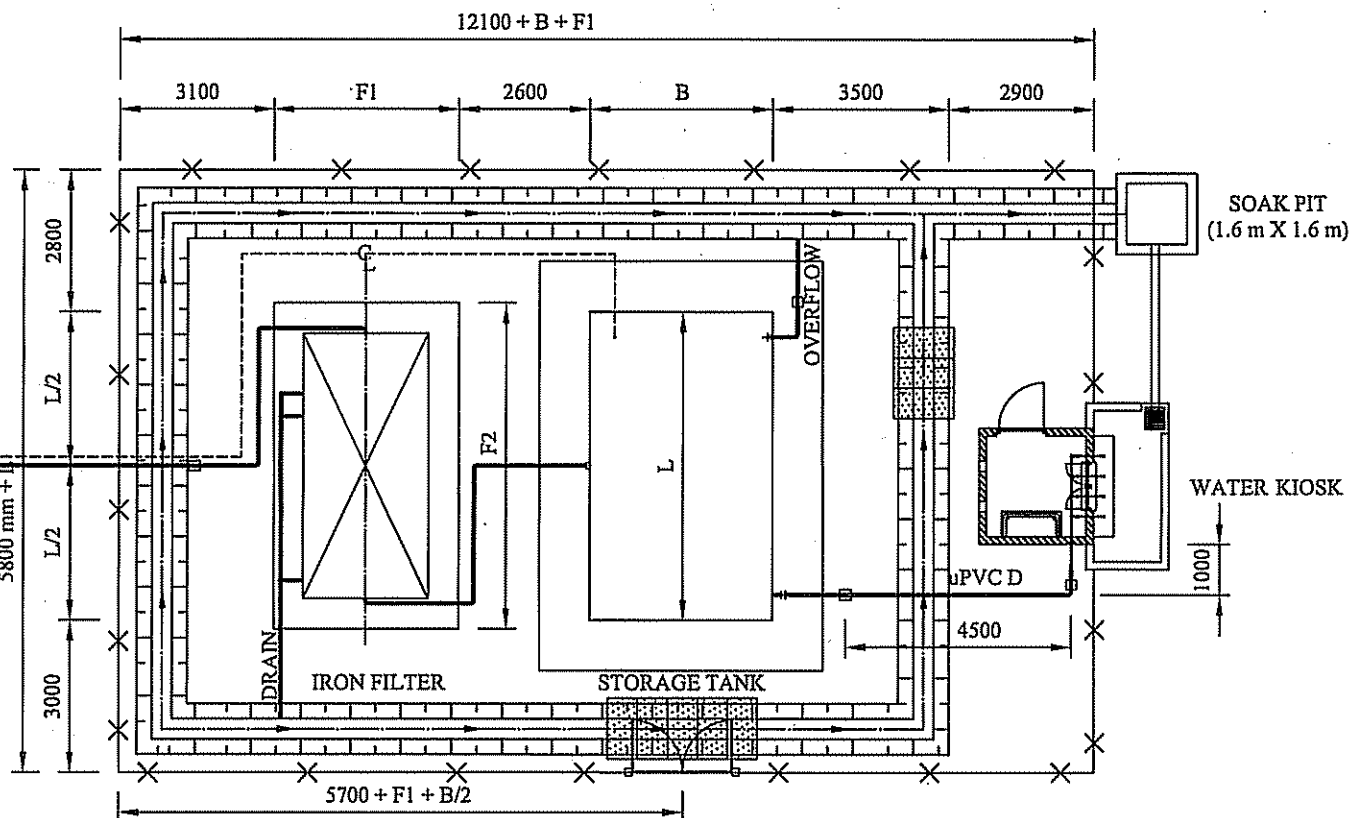
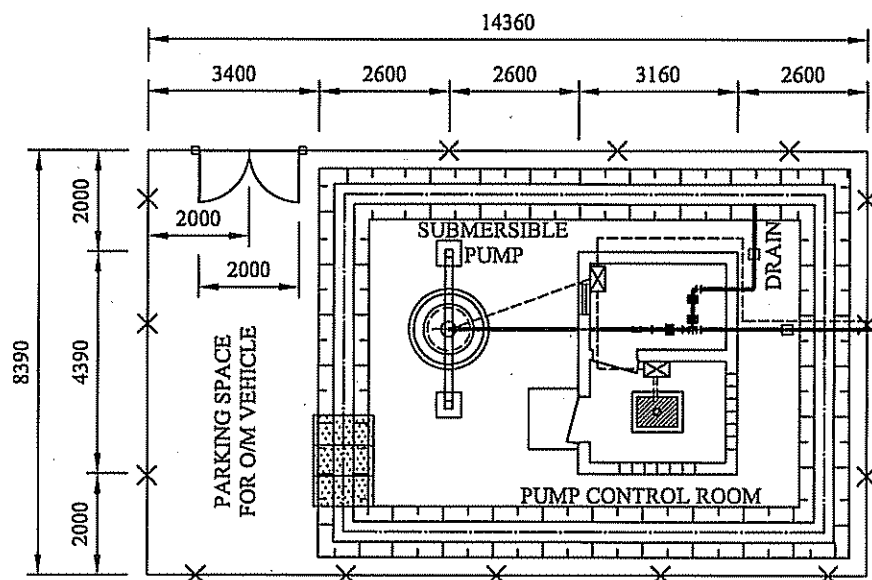
CONSULTING ENGINEERS:  
 NIPPON KOEI CO., LTD.

TITLE:  
CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP  
LAYOUT PLAN OF TYPE A

SCALE 1:150	DATE FEB. 2006	DRAWING NO. SP-001
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Without Iron Filter



With Iron Filter

LOCATION No.	L (m)	B (m)	F1 (m)	F2 (m)	uPVC D (mm)
16	6.10	3.66	0.00	0.00	75
20	6.10	3.66	0.00	0.00	50
27	6.10	3.66	0.00	0.00	50
30	6.10	3.66	0.00	0.00	75
32	6.10	3.66	3.70	6.45	50
46	4.88	2.44	0.00	0.00	50
67	6.10	3.66	3.70	6.45	50
74	6.10	3.66	0.00	0.00	50
87	3.66	3.66	0.00	0.00	40

NOTES:

- FOR DETAILS OF PRECAST CONCRETE COVER, GATE, FENCE AND DRAIN uPVC DITCH, SEE DRAWING No. SP-098 & 099.
- CONSTRUCTION WORKS FOR 1) TRANSMISSION PIPES, 2) DISTRIBUTION PIPES, 3) FENCES, AND 4) DRAIN OUTLETS ARE DONE BY RURAL COMMUNITY PARTICIPATION BASED ON THE UNDERTAKINGS OF THE GOVERNMENT OF KENYA.

LEGEND:

- : PRECAST CONCRETE COVER
- : GATE
- : CHAIN-LINK FENCE
- : CUT SLOPE (GRADIENT 1:0.5)
- : WATER SUPPLY PIPE
- : CABLE

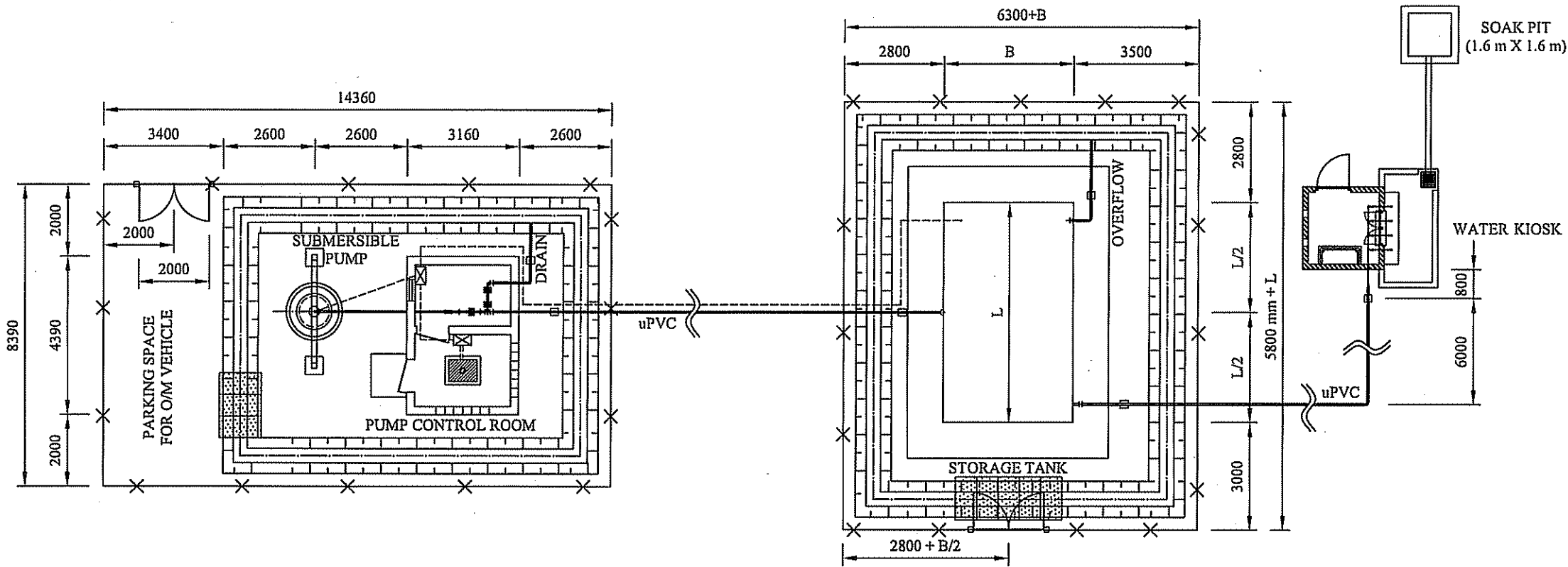
OWNER:  
THE MINISTRY OF WATER AND IRRIGATION  
THE REPUBLIC OF KENYA

PROJECT NAME:  
THE PROJECT FOR  
RURAL WATER SUPPLY

CONSULTING ENGINEERS:  
 NIPPON KOEI CO., LTD.

TITLE:  
CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP  
LAYOUT PLAN OF TYPE B

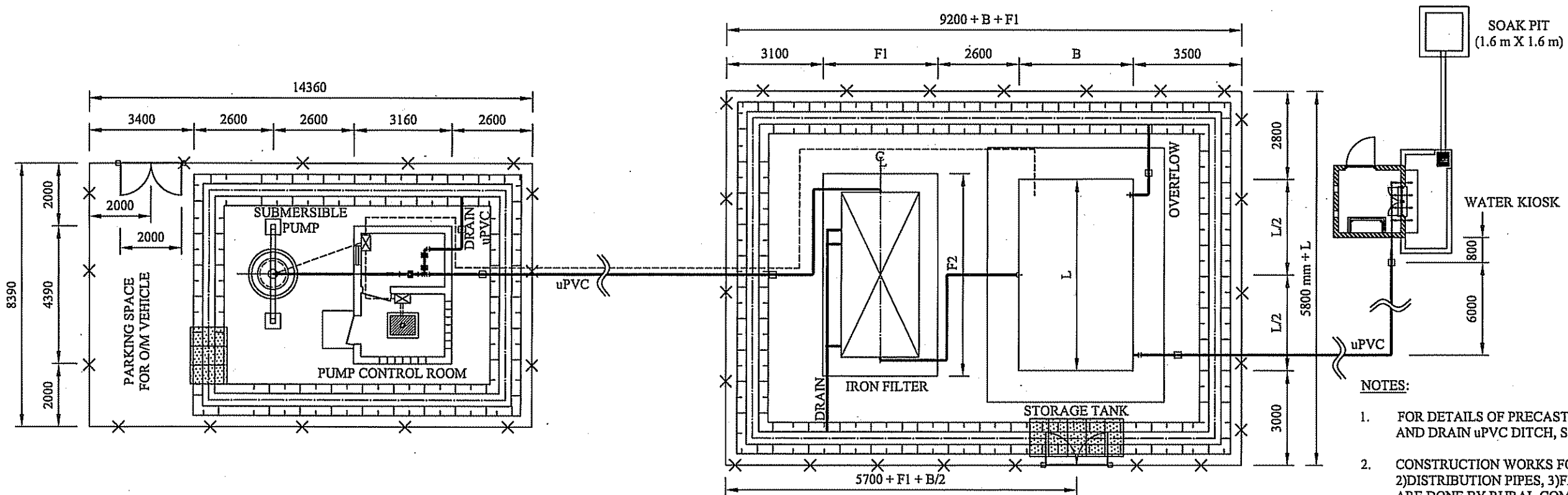
SCALE 1:150	DATE FEB. 2006	DRAWING NO. SP-002
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LOCATION No.	L (m)	B (m)	F1 (m)	F2 (m)
59	4.88	2.44	2.90	5.75
82	3.66	3.66	0.00	0.00
89	3.66	3.66	0.00	0.00
93	3.66	3.66	0.00	0.00

- LEGEND:**
- : PRECAST CONCRETE COVER
  - : GATE
  - : CHAIN-LINK FENCE
  - : CUT SLOPE (GRADIENT 1:0.5)
  - : WATER SUPPLY PIPE
  - : CABLE

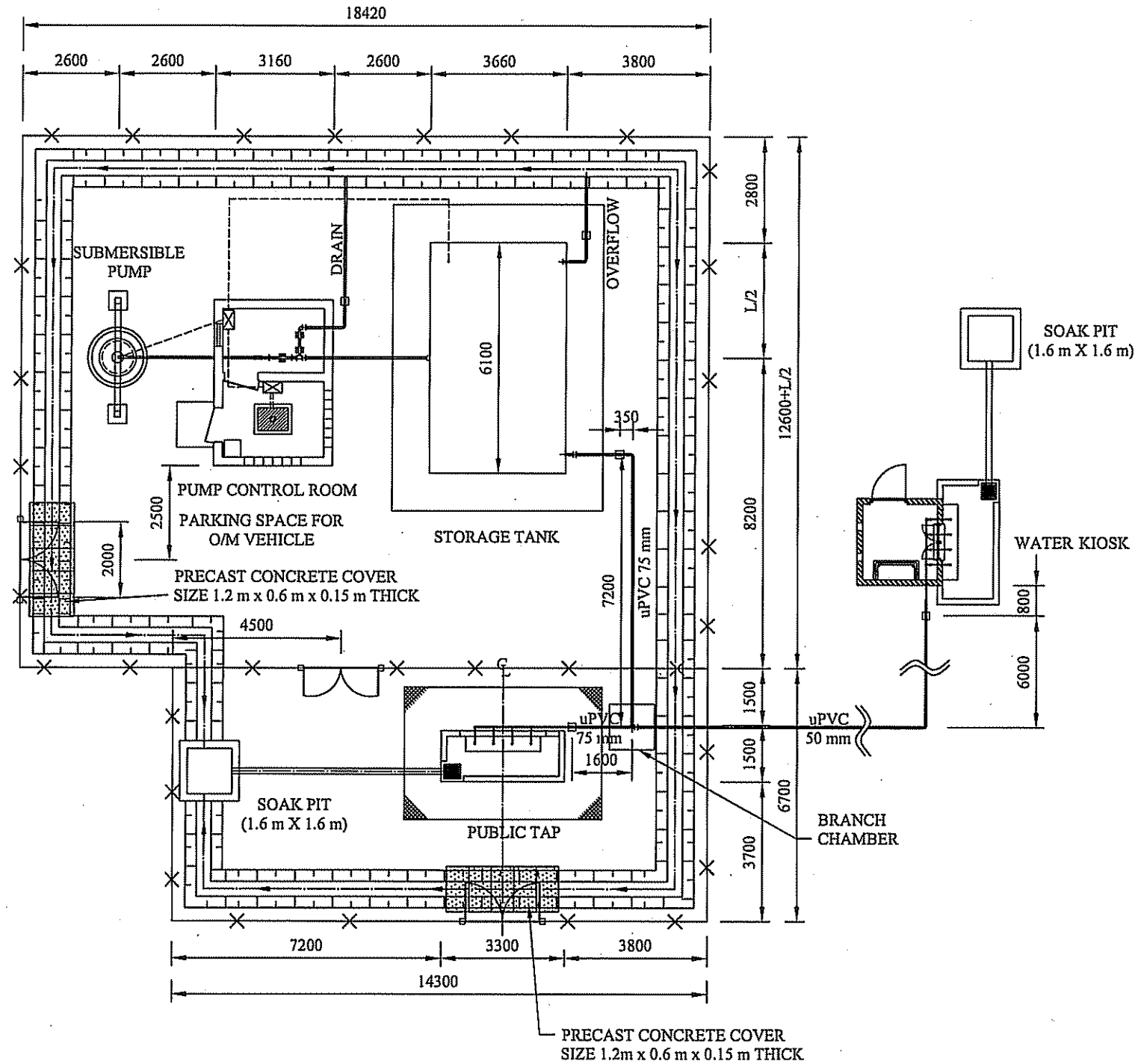
Without Iron Filter









- NOTES:**
- FOR DETAILS OF PRECAST CONCRETE COVER, GATE, FENCE AND DRAIN uPVC DITCH, SEE DRAWING No. SP-098 & 099.
  - CONSTRUCTION WORKS FOR 1) TRANSMISSION PIPES, 2) DISTRIBUTION PIPES, 3) FENCES, AND 4) DRAIN OUTLETS ARE DONE BY RURAL COMMUNITY PARTICIPATION BASED ON THE UNDERTAKINGS OF THE GOVERNMENT OF KENYA.

With Iron Filter

OWNER: <b>THE MINISTRY OF WATER AND IRRIGATION THE REPUBLIC OF KENYA</b>	PROJECT NAME: <b>THE PROJECT FOR RURAL WATER SUPPLY</b>	CONSULTING ENGINEERS: <b>NIPPON KOEI CO., LTD.</b>	TITLE: <b>CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP</b>		
			LAYOUT PLAN OF TYPE D		
SCALE <b>1:150</b>	DATE <b>FEB. 2006</b>	DRAWING NO. <b>SP-003</b>			



- LEGEND:**
-  : PRECAST CONCRETE COVER
  -  : GATE
  -  : CHAIN-LINK FENCE
  -  : CUT SLOPE (GRADIENT 1:0.5)
  -  : WATER SUPPLY PIPE
  -  : CABLE

- NOTES:**
1. FOR DETAILS OF PRECAST CONCRETE COVER, GATE, FENCE AND DRAIN uPVC DITCH, SEE DRAWING No. SP-098 & 099.
  2. CONSTRUCTION WORKS FOR 1) TRANSMISSION PIPES, 2) DISTRIBUTION PIPES, 3) FENCES, AND 4) DRAIN OUTLETS ARE DONE BY RURAL COMMUNITY PARTICIPATION BASED ON THE UNDERTAKINGS OF THE GOVERNMENT OF KENYA.

OWNER:  
THE MINISTRY OF WATER AND IRRIGATION  
THE REPUBLIC OF KENYA







PROJECT NAME:  
THE PROJECT FOR  
RURAL WATER SUPPLY

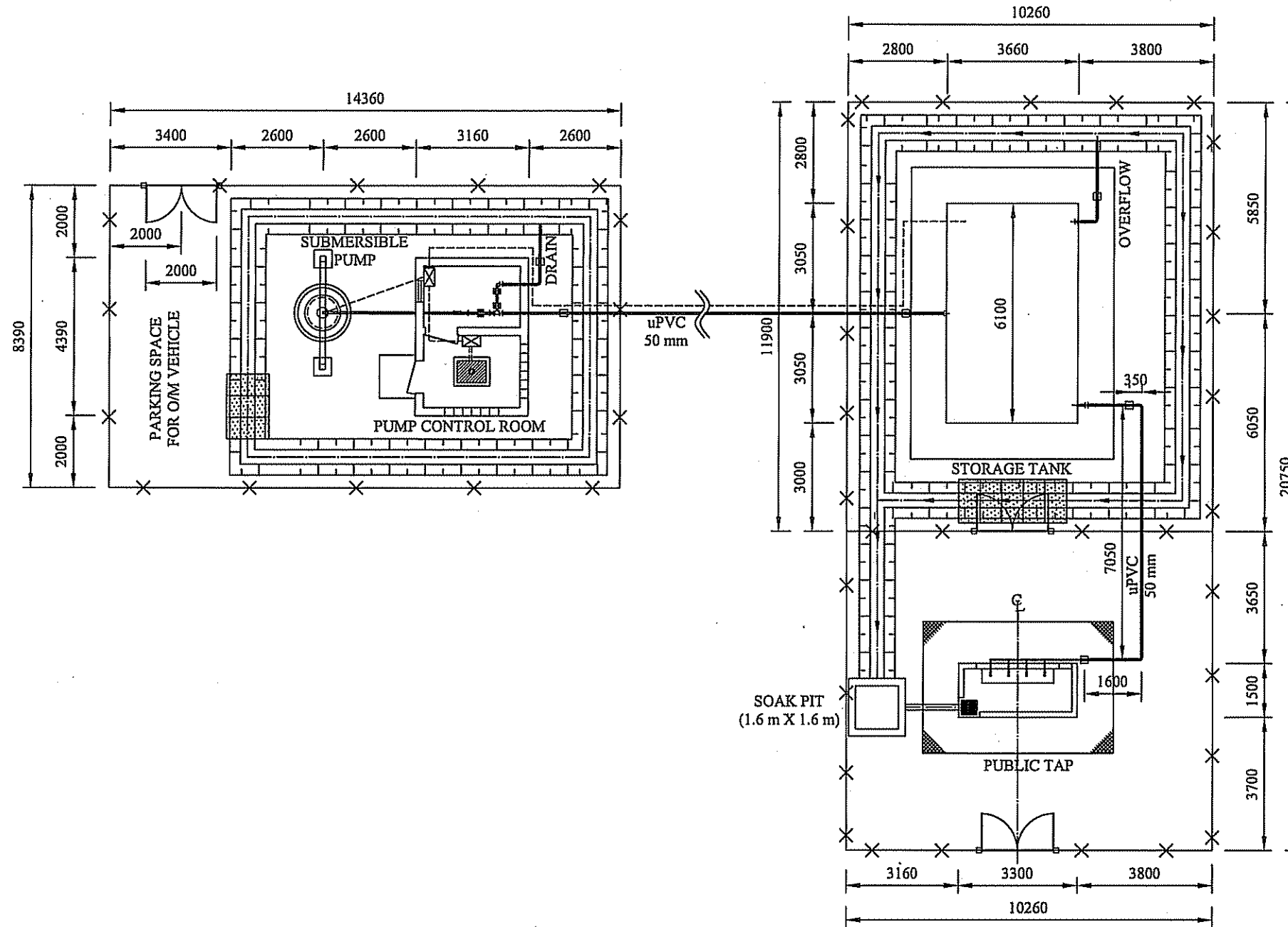
CONSULTING ENGINEERS:  
 **NIPPON KOEI CO., LTD.**

TITLE:  
CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP  
LAYOUT PLAN OF LOCATION No. 4

SCALE	DATE	DRAWING NO.
1:150	FEB. 2006	SP-004


**LEGEND:**

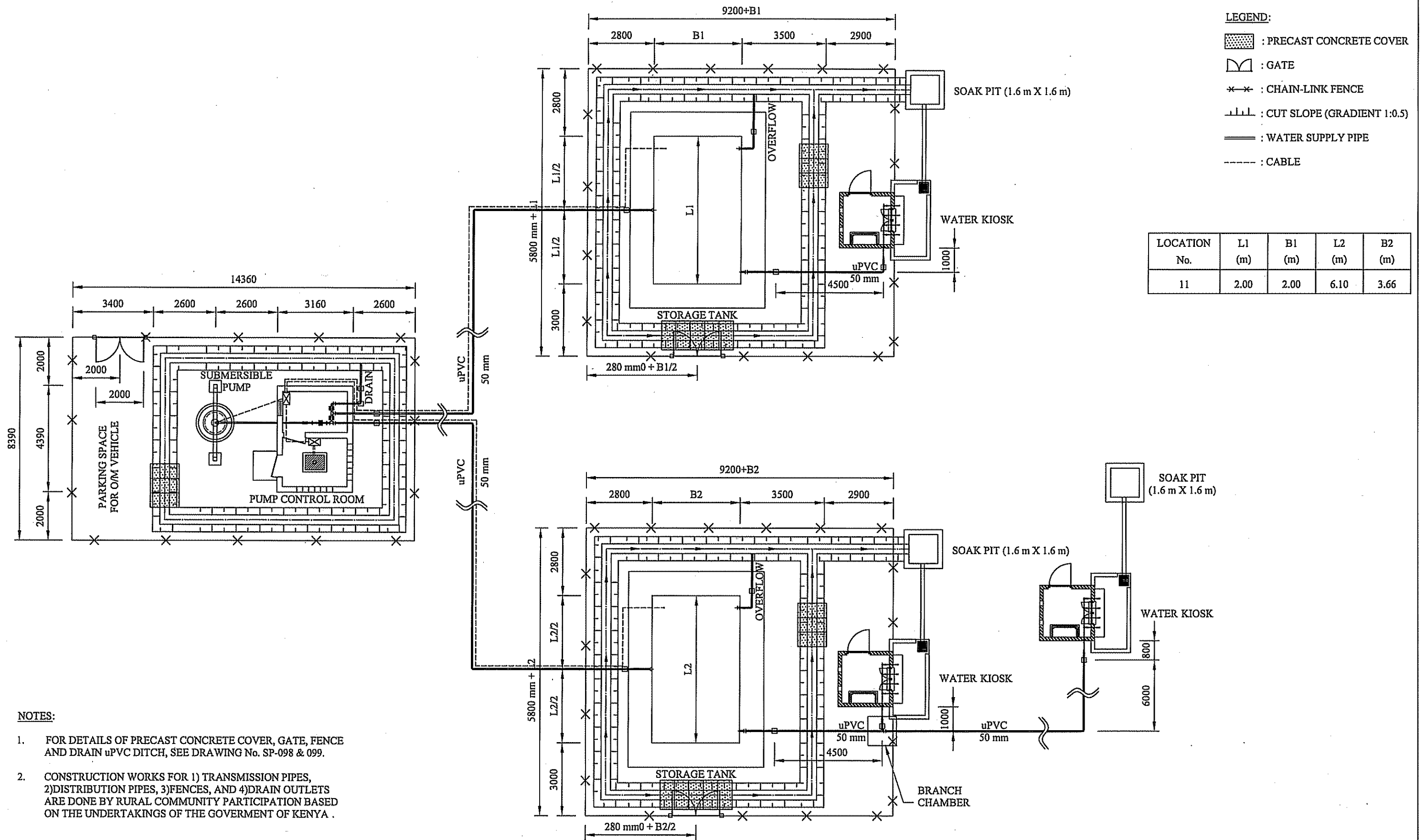
-  : PRECAST CONCRETE COVER
-  : GATE
-  : CHAIN-LINK FENCE
-  : CUT SLOPE (GRADIENT 1:0.5)
-  : WATER SUPPLY PIPE
-  : CABLE




**NOTES:**

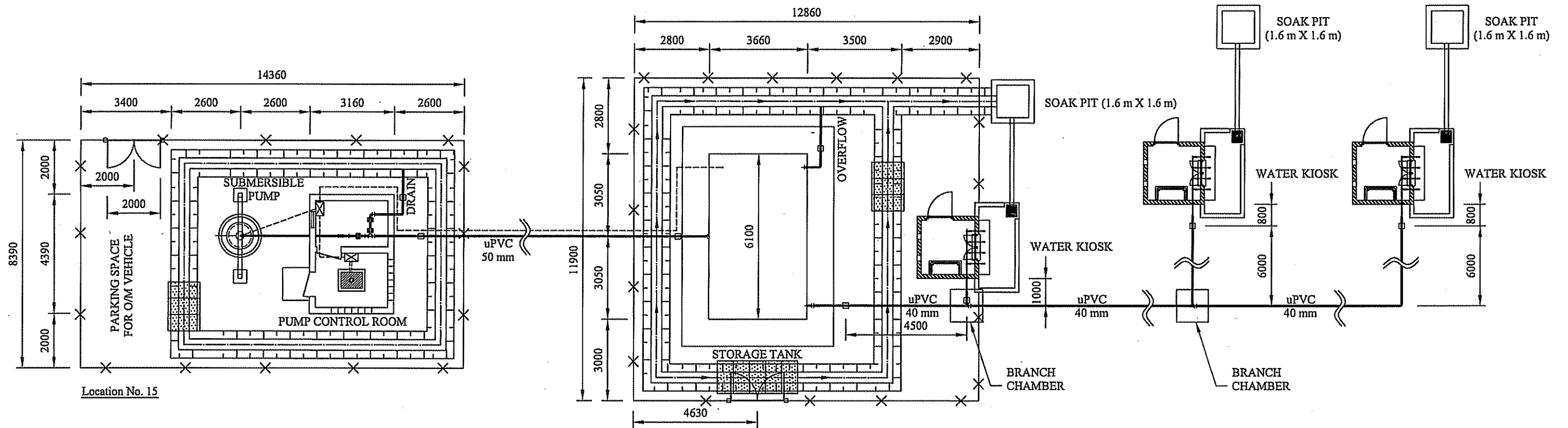
1. FOR DETAILS OF PRECAST CONCRETE COVER, GATE, FENCE AND DRAIN uPVC DITCH, SEE DRAWING No. SP-098 & 099.
2. CONSTRUCTION WORKS FOR 1) TRANSMISSION PIPES, 2) DISTRIBUTION PIPES, 3) FENCES, AND 4) DRAIN OUTLETS ARE DONE BY RURAL COMMUNITY PARTICIPATION BASED ON THE UNDERTAKINGS OF THE GOVERNMENT OF KENYA .

<p>OWNER:</p> <p style="text-align: center;">THE MINISTRY OF WATER AND IRRIGATION THE REPUBLIC OF KENYA</p>	<p>PROJECT NAME:</p> <p style="text-align: center;">THE PROJECT FOR RURAL WATER SUPPLY</p>	<p>CONSULTING ENGINEERS:</p> <p style="text-align: center;"> <b>NIPPON KOEI CO., LTD.</b></p>	<p>TITLE:</p> <p style="text-align: center;">CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP LAYOUT PLAN OF LOCATION No. 10</p>
		SCALE	DATE
		1:150	FEB. 2006
		DRAWING NO.	
		SP-005	









- NOTES:**
- FOR DETAILS OF PRECAST CONCRETE COVER, GATE, FENCE AND DRAIN uPVC DITCH, SEE DRAWING No. SP-098 & 099.
  - CONSTRUCTION WORKS FOR 1) TRANSMISSION PIPES, 2) DISTRIBUTION PIPES, 3) FENCES, AND 4) DRAIN OUTLETS ARE DONE BY RURAL COMMUNITY PARTICIPATION BASED ON THE UNDERTAKINGS OF THE GOVERNMENT OF KENYA.

<p>OWNER: <b>THE MINISTRY OF WATER AND IRRIGATION THE REPUBLIC OF KENYA</b></p>	<p>PROJECT NAME: <b>THE PROJECT FOR RURAL WATER SUPPLY</b></p>	<p>CONSULTING ENGINEERS:  <b>NIPPON KOEI CO., LTD.</b></p>	<p>TITLE: <b>CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP LAYOUT PLAN OF LOCATION No. 11</b></p> <table border="1" data-bbox="2058 1904 2866 2032"> <tr> <td>SCALE 1:150</td> <td>DATE FEB. 2006</td> <td>DRAWING NO. SP-006</td> </tr> </table>			SCALE 1:150	DATE FEB. 2006	DRAWING NO. SP-006
SCALE 1:150	DATE FEB. 2006	DRAWING NO. SP-006						



**LEGEND:**

-  : PRECAST CONCRETE COVER
-  : GATE
-  : CHAIN-LINK FENCE
-  : CUT SLOPE (GRADIENT 1:0.5)
-  : WATER SUPPLY PIPE
-  : CABLE

**NOTES:**

1. FOR DETAILS OF PRECAST CONCRETE COVER, GATE, FENCE AND DRAIN uPVC DITCH, SEE DRAWING No. SP-098 & 099.
2. CONSTRUCTION WORKS FOR 1) TRANSMISSION PIPES, 2) DISTRIBUTION PIPES, 3) FENCES, AND 4) DRAIN OUTLETS ARE DONE BY RURAL COMMUNITY PARTICIPATION BASED ON THE UNDERTAKINGS OF THE GOVERNMENT OF KENYA .

OWNER:  
**THE MINISTRY OF WATER AND IRRIGATION**  
**THE REPUBLIC OF KENYA**

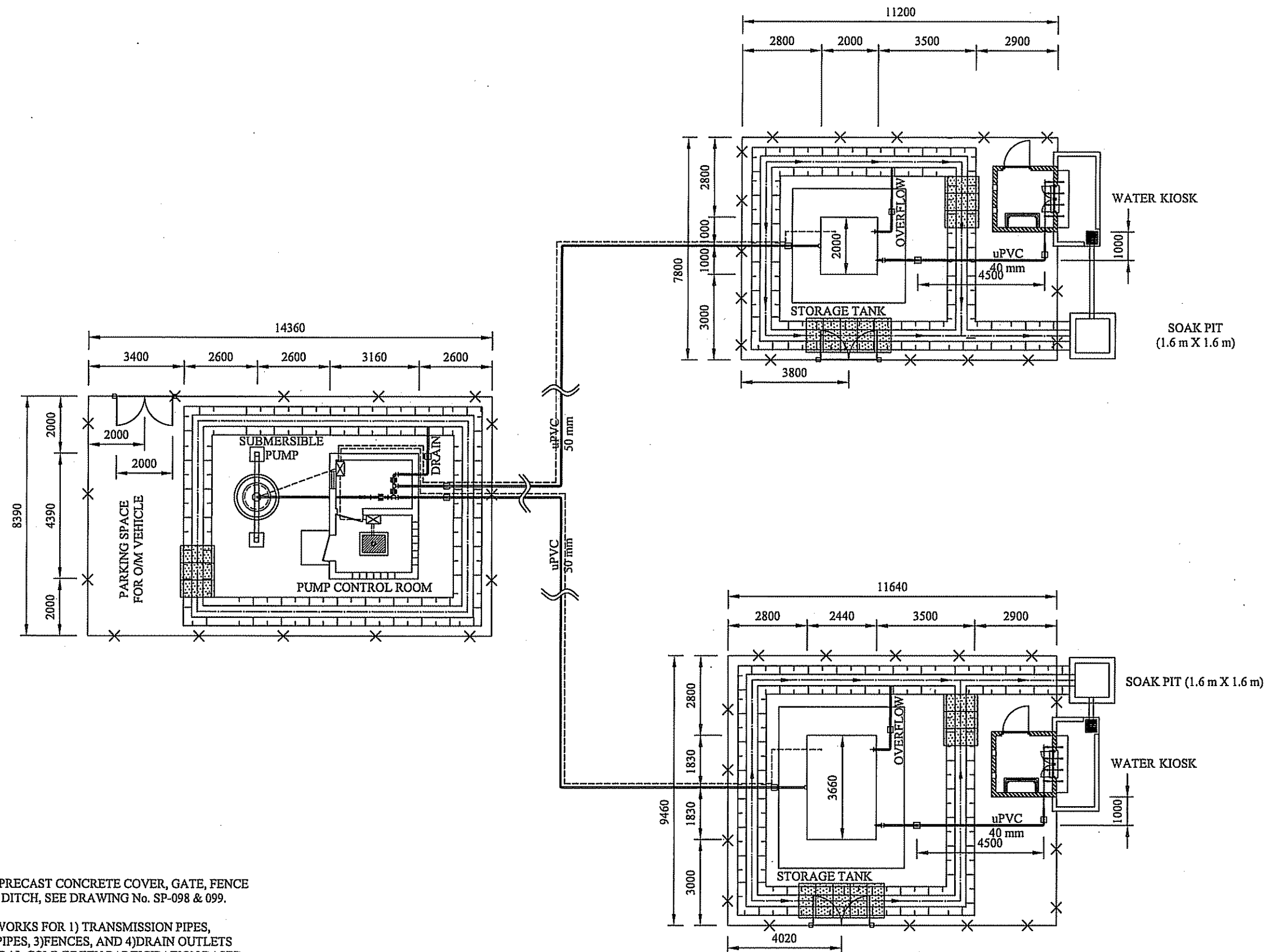
PROJECT NAME:  
**THE PROJECT FOR**  
**RURAL WATER SUPPLY**

CONSULTING ENGINEERS:  
 **NIPPON KOEI CO.,LTD.**

TITLE:  
**CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP**  
**LAYOUT PLAN OF LOCATION No. 15**

SCALE	DATE	DRAWING NO.
1:150	FEB. 2006	SP-007











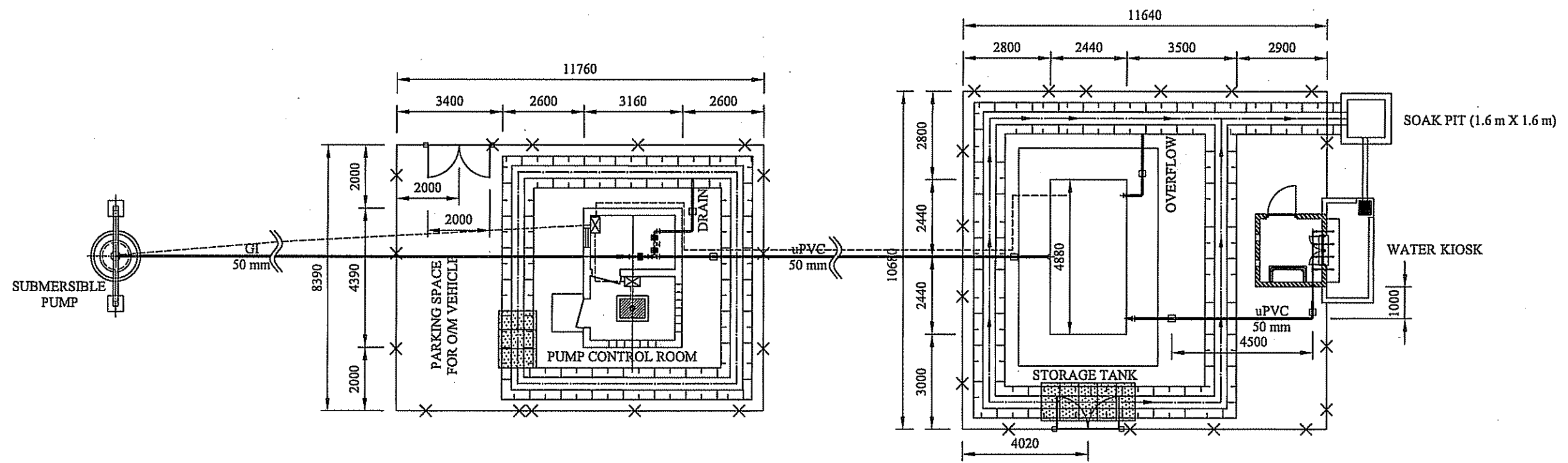
- LEGEND:**
- : PRECAST CONCRETE COVER
  - : GATE
  - : CHAIN-LINK FENCE
  - : CUT SLOPE (GRADIENT 1:0.5)
  - : WATER SUPPLY PIPE
  - : CABLE

- NOTES:**
1. FOR DETAILS OF PRECAST CONCRETE COVER, GATE, FENCE AND DRAIN uPVC DITCH, SEE DRAWING No. SP-098 & 099.
  2. CONSTRUCTION WORKS FOR 1) TRANSMISSION PIPES, 2) DISTRIBUTION PIPES, 3) FENCES, AND 4) DRAIN OUTLETS ARE DONE BY RURAL COMMUNITY PARTICIPATION BASED ON THE UNDERTAKINGS OF THE GOVERNMENT OF KENYA .

<p>OWNER:</p> <p style="text-align: center;"><b>THE MINISTRY OF WATER AND IRRIGATION</b> THE REPUBLIC OF KENYA</p>	<p>PROJECT NAME:</p> <p style="text-align: center;"><b>THE PROJECT FOR</b> RURAL WATER SUPPLY</p>	<p>CONSULTING ENGINEERS:</p> <p style="text-align: center;"> <b>NIPPON KOEI CO.,LTD.</b></p>	<p>TITLE:</p> <p style="text-align: center;"><b>CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP</b> LAYOUT PLAN OF LOCATION No. 18</p>
		SCALE	DATE
		1:150	FEB. 2006
		DRAWING NO.	
		SP-008	



- LEGEND:**
-  : PRECAST CONCRETE COVER
  -  : GATE
  -  : CHAIN-LINK FENCE
  -  : CUT SLOPE (GRADIENT 1:0.5)
  -  : WATER SUPPLY PIPE
  -  : CABLE



- NOTES:**
1. FOR DETAILS OF PRECAST CONCRETE COVER, GATE, FENCE AND DRAIN uPVC DITCH, SEE DRAWING No. SP-098 & 099.
  2. CONSTRUCTION WORKS FOR 1) TRANSMISSION PIPES, 2) DISTRIBUTION PIPES, 3) FENCES, AND 4) DRAIN OUTLETS ARE DONE BY RURAL COMMUNITY PARTICIPATION BASED ON THE UNDERTAKINGS OF THE GOVERNMENT OF KENYA .







OWNER:  
**THE MINISTRY OF WATER AND IRRIGATION**  
**THE REPUBLIC OF KENYA**

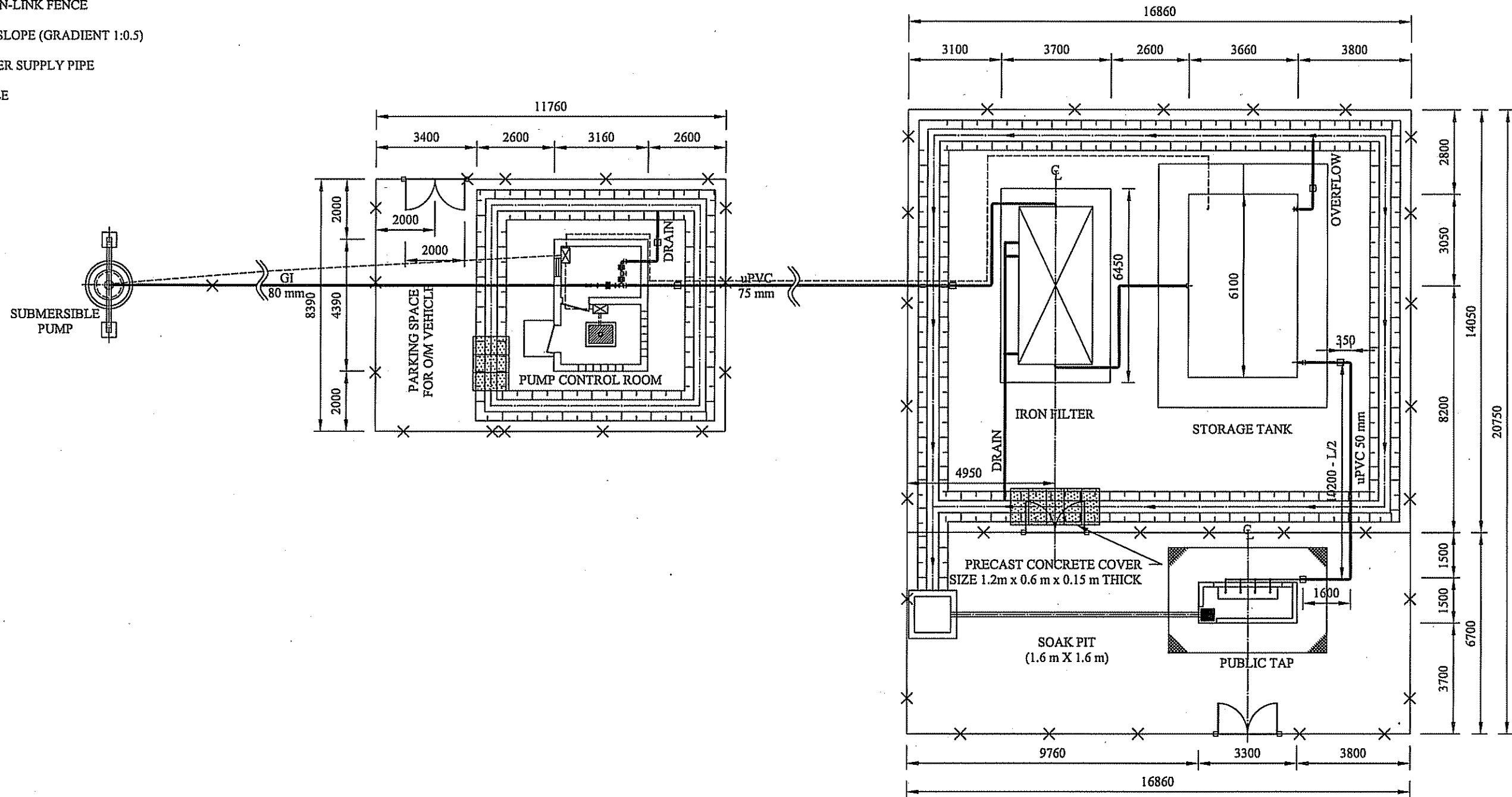
PROJECT NAME:  
**THE PROJECT FOR**  
**RURAL WATER SUPPLY**

CONSULTING ENGINEERS:  
 **NIPPON KOEI CO.,LTD.**

TITLE: <b>CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP</b>		
LAYOUT PLAN OF LOCATION No. 33		
SCALE	DATE	DRAWING NO.
1:150	FEB. 2006	SP-009


**LEGEND:**







-  : PRECAST CONCRETE COVER
-  : GATE
-  : CHAIN-LINK FENCE
-  : CUT SLOPE (GRADIENT 1:0.5)
-  : WATER SUPPLY PIPE
-  : CABLE

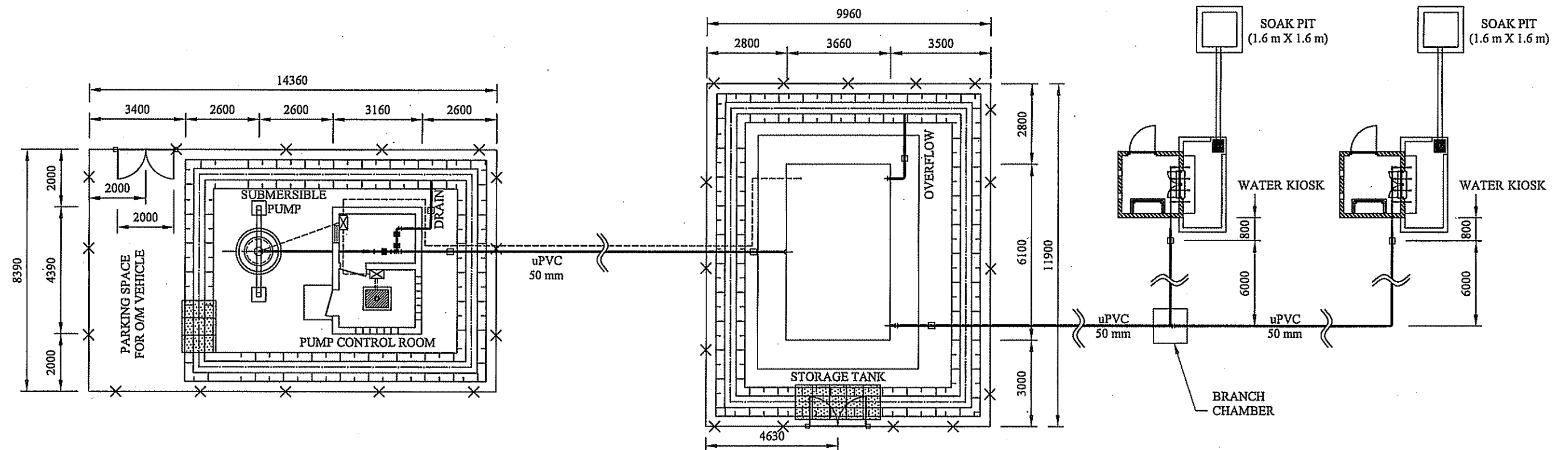


**NOTES:**

1. FOR DETAILS OF PRECAST CONCRETE COVER, GATE, FENCE AND DRAIN uPVC DITCH, SEE DRAWING No. SP-098 & 099.
2. CONSTRUCTION WORKS FOR 1) TRANSMISSION PIPES, 2) DISTRIBUTION PIPES, 3) FENCES, AND 4) DRAIN OUTLETS ARE DONE BY RURAL COMMUNITY PARTICIPATION BASED ON THE UNDERTAKINGS OF THE GOVERNMENT OF KENYA .


<p>OWNER:</p> <p style="text-align: center;"><b>THE MINISTRY OF WATER AND IRRIGATION</b> THE REPUBLIC OF KENYA</p>	<p>PROJECT NAME:</p> <p style="text-align: center;"><b>THE PROJECT FOR</b> RURAL WATER SUPPLY</p>	<p>CONSULTING ENGINEERS:</p> <p style="text-align: center;"> <b>NIPPON KOEI CO.,LTD.</b></p>	<p>TITLE:</p> <p style="text-align: center;"><b>CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP</b> LAYOUT PLAN OF LOCATION No. 39</p>
		SCALE	DATE
		1:150	FEB. 2006
		DRAWING NO.	
		SP-010	







- LEGEND:**
-  : PRECAST CONCRETE COVER
  -  : GATE
  -  : CHAIN-LINK FENCE
  -  : CUT SLOPE (GRADIENT 1:0.5)
  -  : WATER SUPPLY PIPE
  -  : CABLE

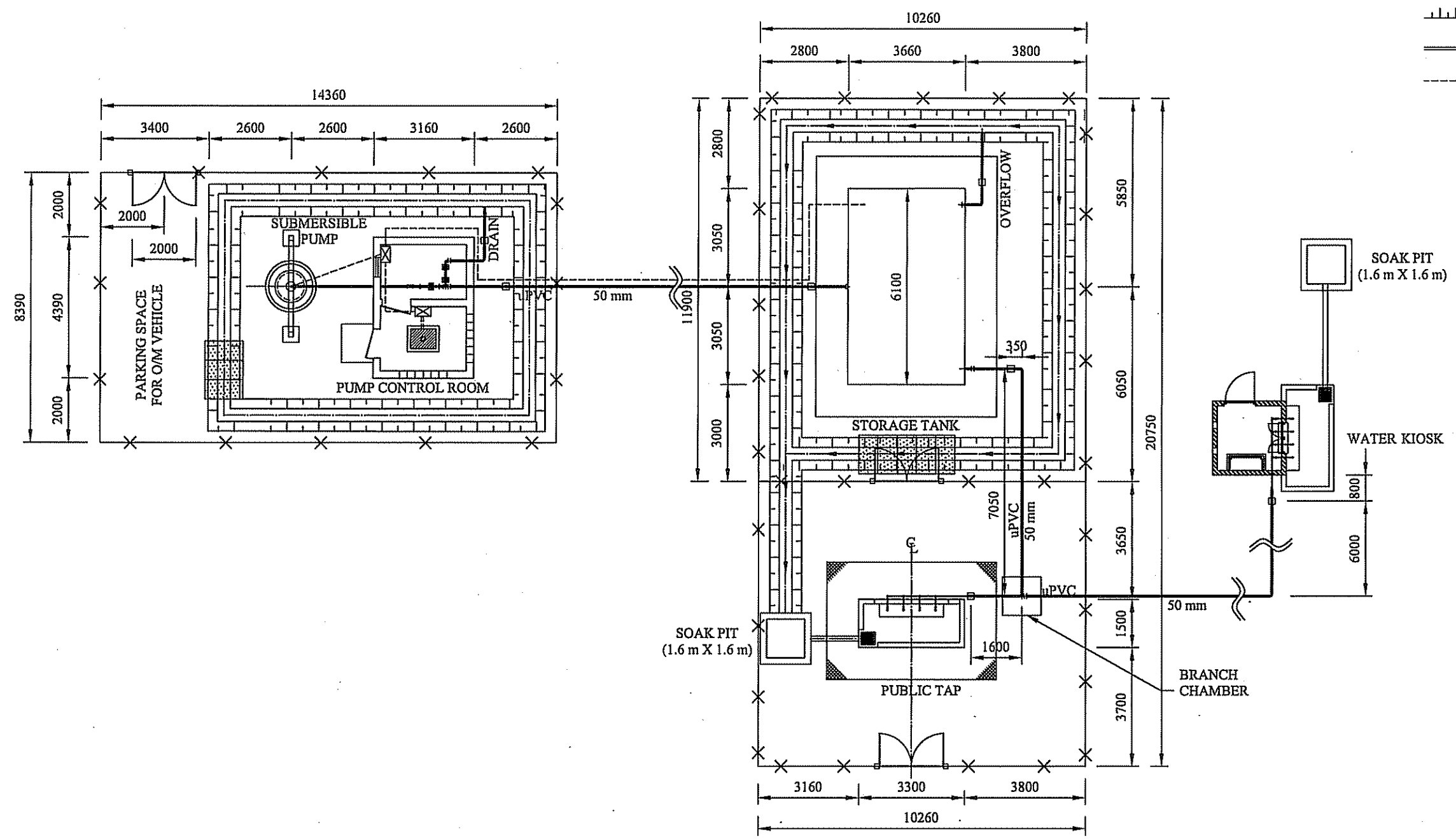


**NOTES:**

1. FOR DETAILS OF PRECAST CONCRETE COVER, GATE, FENCE AND DRAIN uPVC DITCH, SEE DRAWING No. SP-098 & 099.
2. CONSTRUCTION WORKS FOR 1) TRANSMISSION PIPES, 2) DISTRIBUTION PIPES, 3) FENCES, AND 4) DRAIN OUTLETS ARE DONE BY RURAL COMMUNITY PARTICIPATION BASED ON THE UNDERTAKINGS OF THE GOVERNMENT OF KENYA .


OWNER:  <b>THE MINISTRY OF WATER AND IRRIGATION</b> <b>THE REPUBLIC OF KENYA</b>	PROJECT NAME:  <b>THE PROJECT FOR</b> <b>RURAL WATER SUPPLY</b>	CONSULTING ENGINEERS:   <b>NIPPON KOEI CO.,LTD.</b>	TITLE: <b>CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP</b> LAYOUT PLAN OF LOCATION No. 41
		SCALE <b>1:150</b>	DATE <b>FEB. 2006</b>
		DRAWING NO. <b>SP-011</b>	

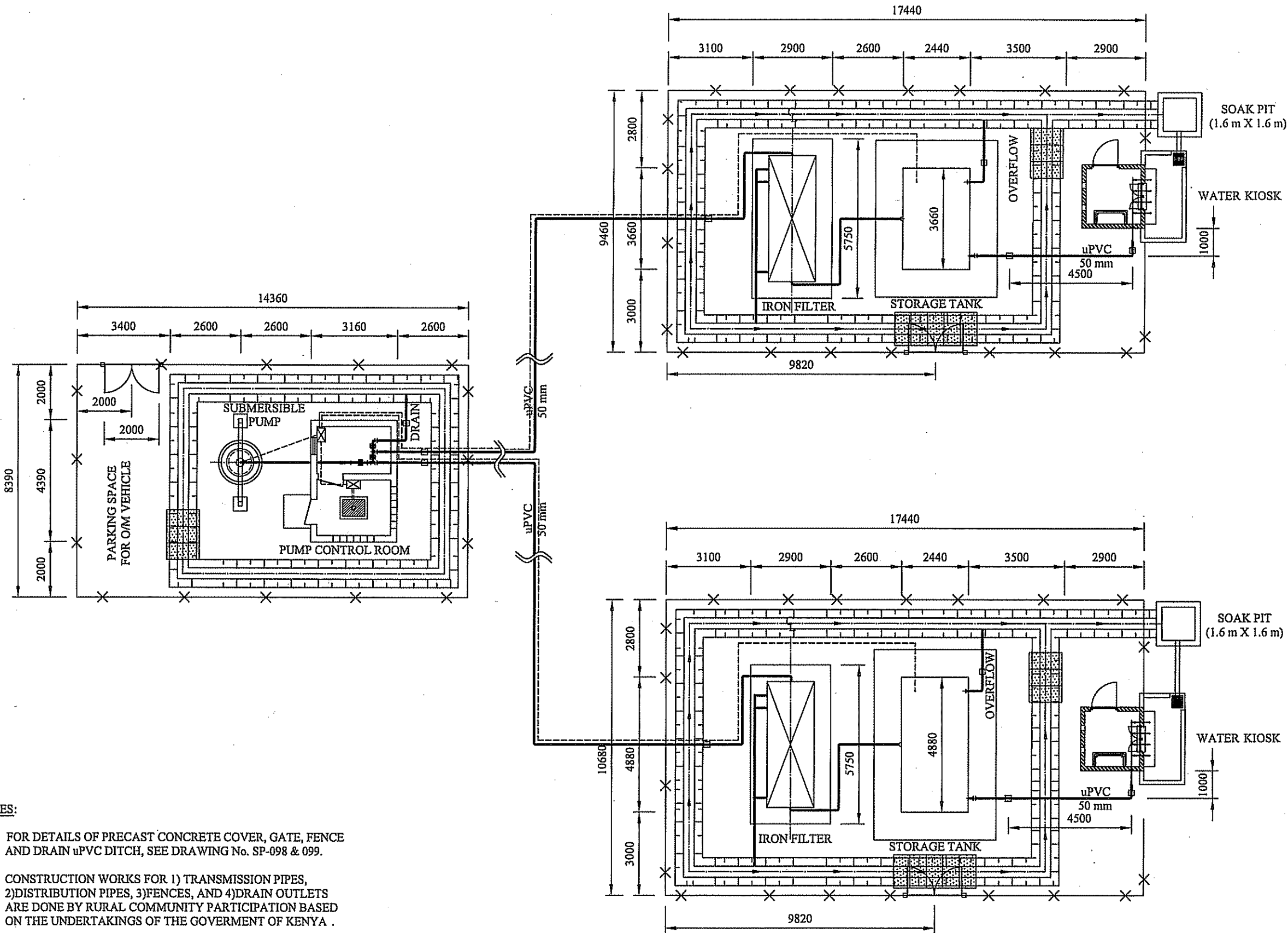
- LEGEND:**
-  : PRECAST CONCRETE COVER
  -  : GATE
  -  : CHAIN-LINK FENCE
  -  : CUT SLOPE (GRADIENT 1:0.5)
  -  : WATER SUPPLY PIPE
  -  : CABLE



**NOTES:**

1. FOR DETAILS OF PRECAST CONCRETE COVER, GATE, FENCE AND DRAIN uPVC DITCH, SEE DRAWING No. SP-098 & 099.
2. CONSTRUCTION WORKS FOR 1) TRANSMISSION PIPES, 2) DISTRIBUTION PIPES, 3) FENCES, AND 4) DRAIN OUTLETS ARE DONE BY RURAL COMMUNITY PARTICIPATION BASED ON THE UNDERTAKINGS OF THE GOVERNMENT OF KENYA .

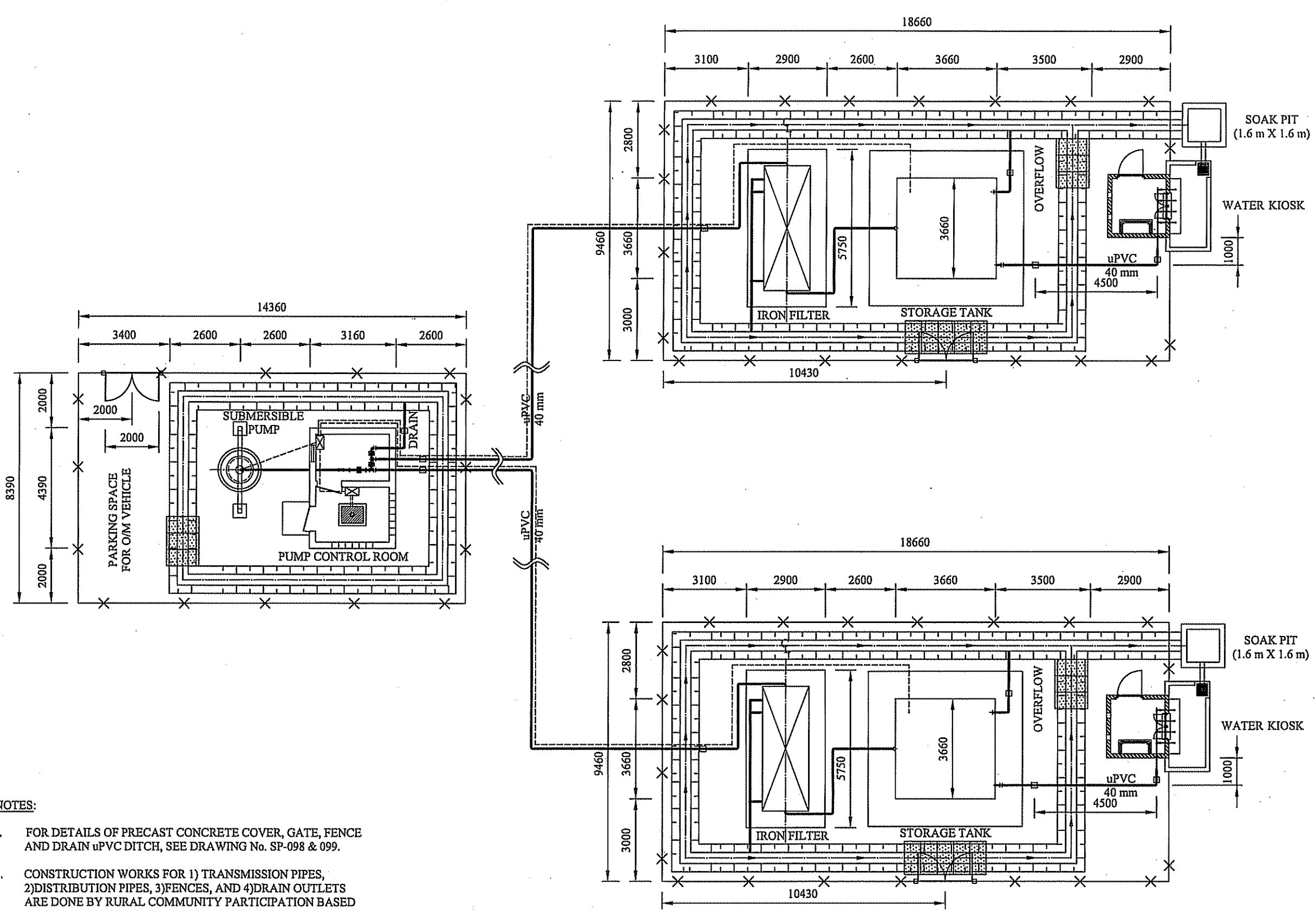
<p>OWNER:</p> <p style="text-align: center;"><b>THE MINISTRY OF WATER AND IRRIGATION</b> THE REPUBLIC OF KENYA</p>	<p>PROJECT NAME:</p> <p style="text-align: center;"><b>THE PROJECT FOR</b> RURAL WATER SUPPLY</p>	<p>CONSULTING ENGINEERS:</p> <p style="text-align: center;"> <b>NIPPON KOEI CO.,LTD.</b></p>	<p>TITLE:</p> <p style="text-align: center;"><b>CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP</b> LAYOUT PLAN OF LOCATION No. 54</p>
		SCALE	DATE
		1:150	FEB. 2006
		DRAWING NO.	
		SP-012	



- LEGEND:**
- : PRECAST CONCRETE COVER
  - : GATE
  - : CHAIN-LINK FENCE
  - : CUT SLOPE (GRADIENT 1:0.5)
  - : WATER SUPPLY PIPE
  - : CABLE

- NOTES:**
1. FOR DETAILS OF PRECAST CONCRETE COVER, GATE, FENCE AND DRAIN uPVC DITCH, SEE DRAWING No. SP-098 & 099.
  2. CONSTRUCTION WORKS FOR 1) TRANSMISSION PIPES, 2) DISTRIBUTION PIPES, 3) FENCES, AND 4) DRAIN OUTLETS ARE DONE BY RURAL COMMUNITY PARTICIPATION BASED ON THE UNDERTAKINGS OF THE GOVERNMENT OF KENYA .







<p>OWNER:</p> <p style="text-align: center;"><b>THE MINISTRY OF WATER AND IRRIGATION</b> THE REPUBLIC OF KENYA</p>	<p>PROJECT NAME:</p> <p style="text-align: center;"><b>THE PROJECT FOR</b> RURAL WATER SUPPLY</p>	<p>CONSULTING ENGINEERS:</p> <p style="text-align: center;"> <b>NIPPON KOEI CO., LTD.</b></p>	<p>TITLE:</p> <p style="text-align: center;"><b>CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP</b> LAYOUT PLAN OF LOCATION No. 55</p>
		SCALE	DATE
		1:150	FEB. 2006
		DRAWING NO.	
		SP-013	

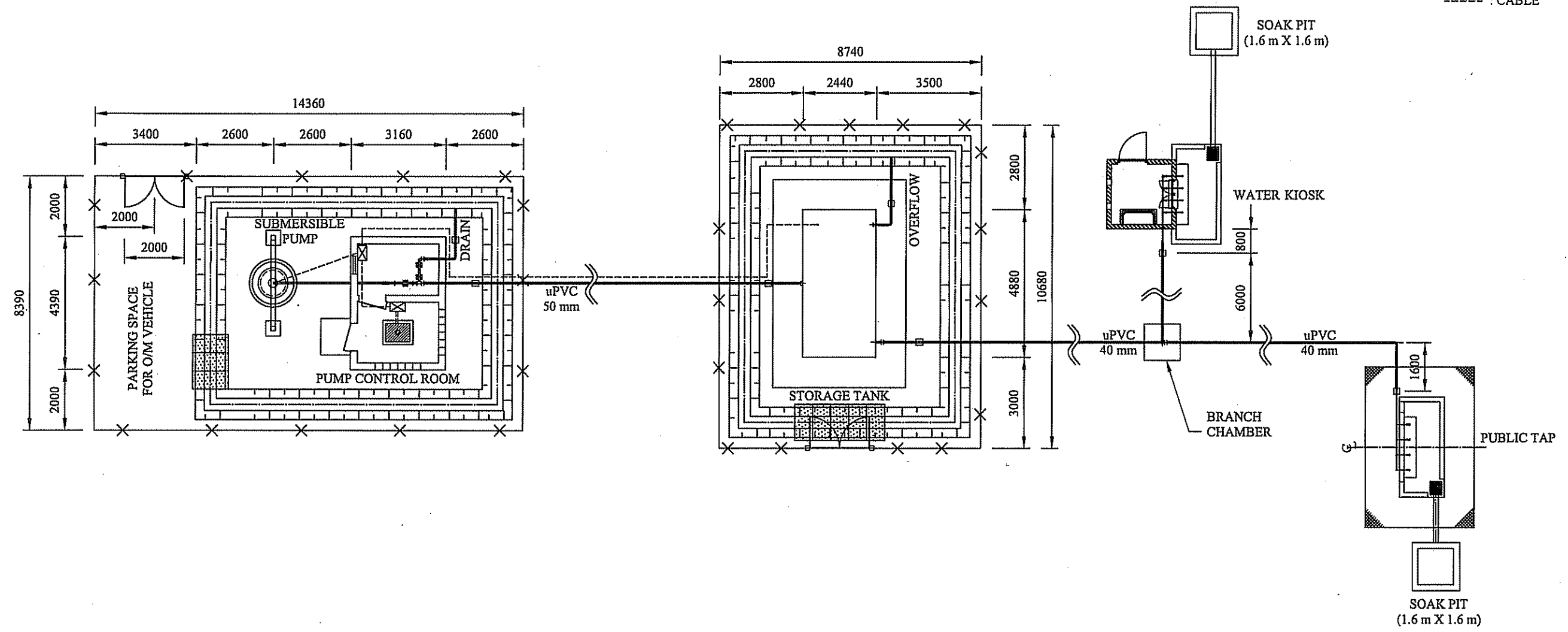


- LEGEND:**
- : PRECAST CONCRETE COVER
  - : GATE
  - : CHAIN-LINK FENCE
  - : CUT SLOPE (GRADIENT 1:0.5)
  - : WATER SUPPLY PIPE
  - : CABLE

- NOTES:**
1. FOR DETAILS OF PRECAST CONCRETE COVER, GATE, FENCE AND DRAIN uPVC DITCH, SEE DRAWING No. SP-098 & 099.
  2. CONSTRUCTION WORKS FOR 1) TRANSMISSION PIPES, 2) DISTRIBUTION PIPES, 3) FENCES, AND 4) DRAIN OUTLETS ARE DONE BY RURAL COMMUNITY PARTICIPATION BASED ON THE UNDERTAKINGS OF THE GOVERNMENT OF KENYA.


<p>OWNER:</p> <p style="text-align: center;"><b>THE MINISTRY OF WATER AND IRRIGATION</b> THE REPUBLIC OF KENYA</p>	<p>PROJECT NAME:</p> <p style="text-align: center;"><b>THE PROJECT FOR</b> RURAL WATER SUPPLY</p>	<p>CONSULTING ENGINEERS:</p> <p style="text-align: center;"> <b>NIPPON KOEI CO., LTD.</b></p>	<p>TITLE:</p> <p style="text-align: center;"><b>CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP</b> LAYOUT PLAN OF LOCATION No. 62</p>
		<p>SCALE</p> <p style="text-align: center;">1:150</p>	<p>DATE</p> <p style="text-align: center;">FEB. 2006</p>
		<p>DRAWING NO.</p> <p style="text-align: right;">SP-014</p>	

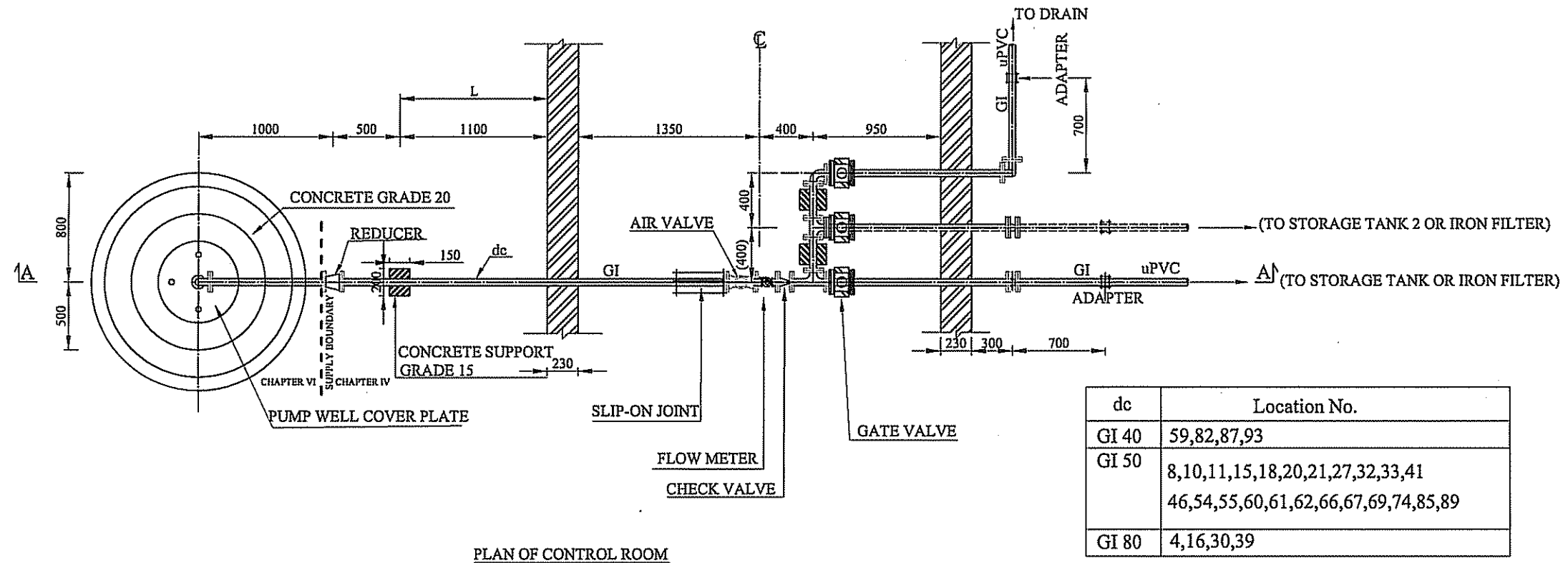
- LEGEND:**
-  : PRECAST CONCRETE COVER
  -  : GATE
  -  : CHAIN-LINK FENCE
  -  : CUT SLOPE (GRADIENT 1:0.5)
  -  : WATER SUPPLY PIPE
  -  : CABLE



**NOTES:**

1. FOR DETAILS OF PRECAST CONCRETE COVER, GATE, FENCE AND DRAIN uPVC DITCH, SEE DRAWING No. SP-098 & 099.
2. CONSTRUCTION WORKS FOR 1) TRANSMISSION PIPES, 2) DISTRIBUTION PIPES, 3) FENCES, AND 4) DRAIN OUTLETS ARE DONE BY RURAL COMMUNITY PARTICIPATION BASED ON THE UNDERTAKINGS OF THE GOVERNMENT OF KENYA .

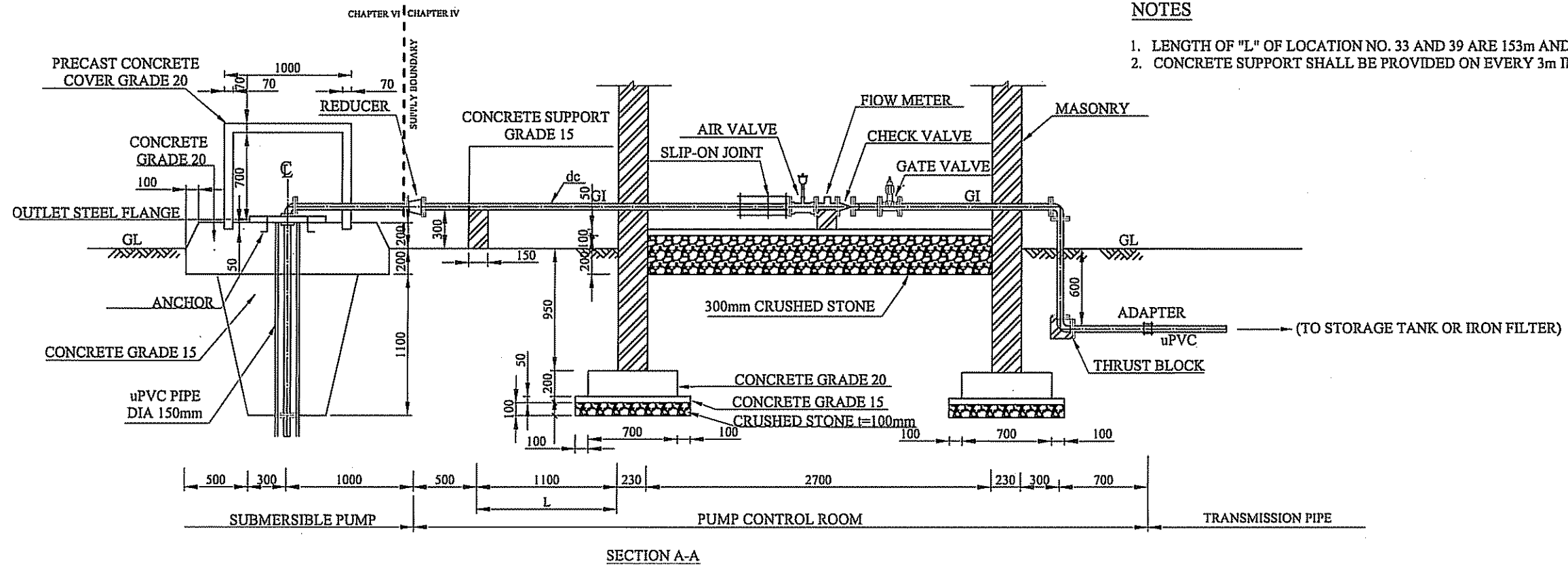
<p>OWNER:</p> <p style="text-align: center;"><b>THE MINISTRY OF WATER AND IRRIGATION</b> THE REPUBLIC OF KENYA</p>	<p>PROJECT NAME:</p> <p style="text-align: center;">THE PROJECT FOR RURAL WATER SUPPLY</p>	<p>CONSULTING ENGINEERS:</p> <p style="text-align: center;"> <b>NIPPON KOEI CO.,LTD.</b></p>	<p>TITLE:</p> <p style="text-align: center;"><b>CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP</b> LAYOUT PLAN OF LOCATION No. 69</p>
		SCALE	DATE
		1:150	FEB. 2006
		DRAWING NO.	
		SP - 015	



PLAN OF CONTROL ROOM

NOTES

1. LENGTH OF "L" OF LOCATION NO. 33 AND 39 ARE 153m AND 102m RESPECTIVELY.
2. CONCRETE SUPPORT SHALL BE PROVIDED ON EVERY 3m INTERVAL IN LENGTH OF "L".



SECTION A-A

OWNER:  
THE MINISTRY OF WATER AND IRRIGATION  
THE REPUBLIC OF KENYA

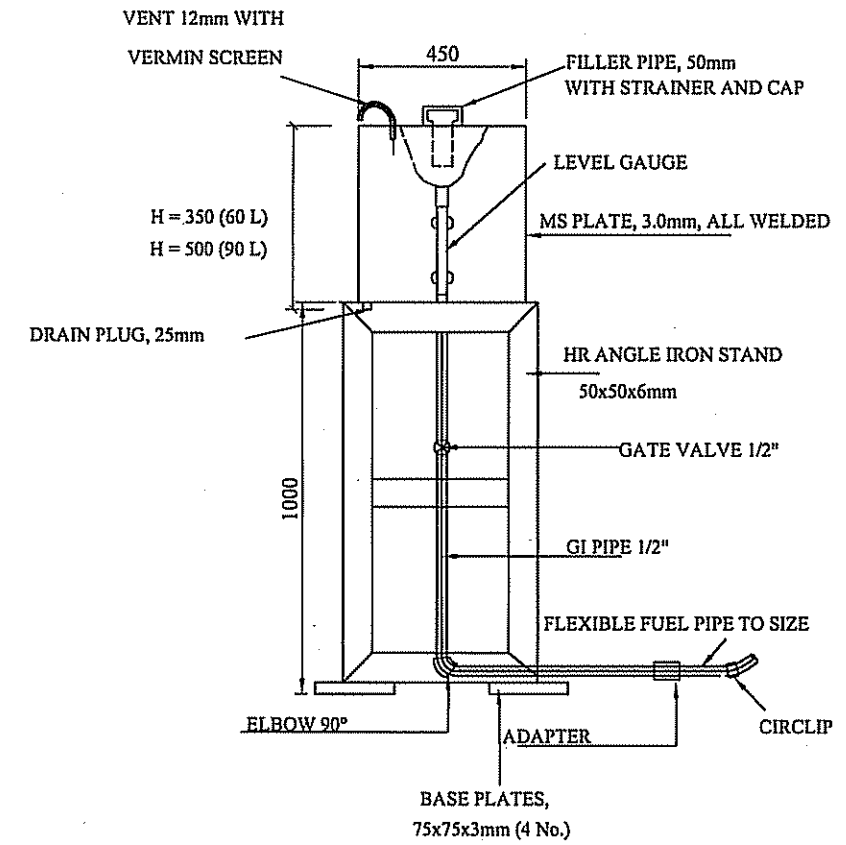
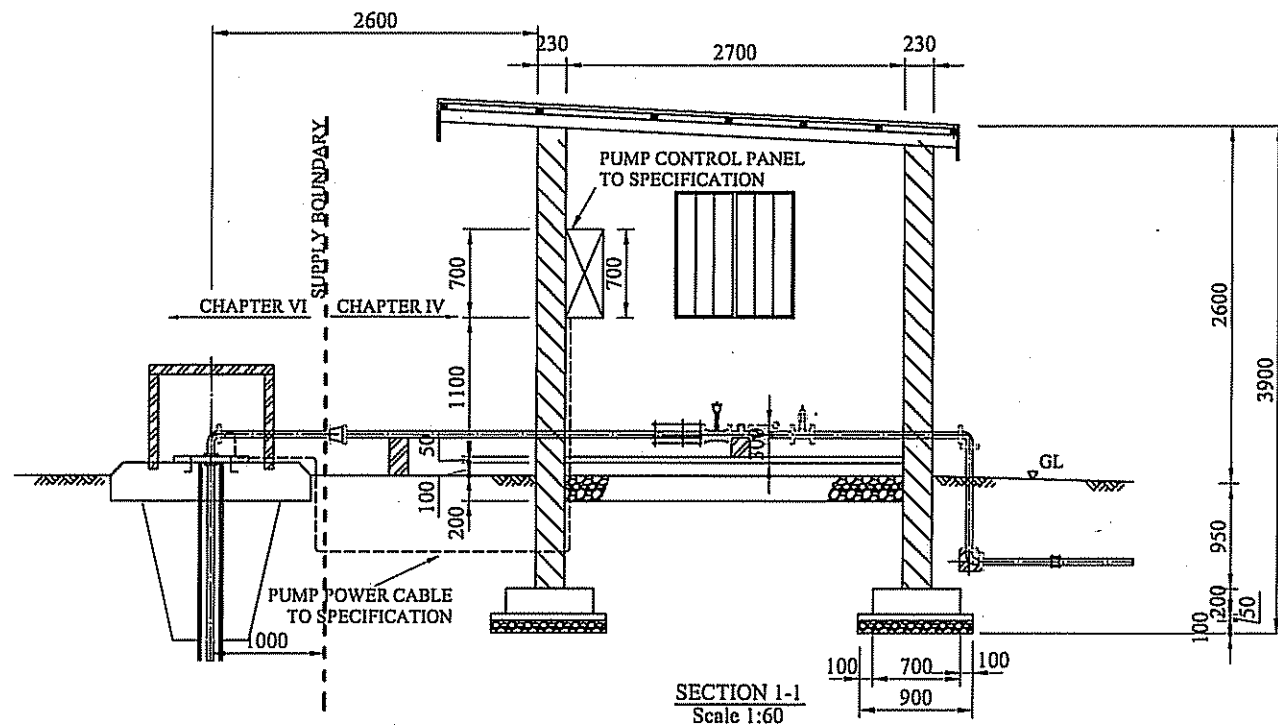
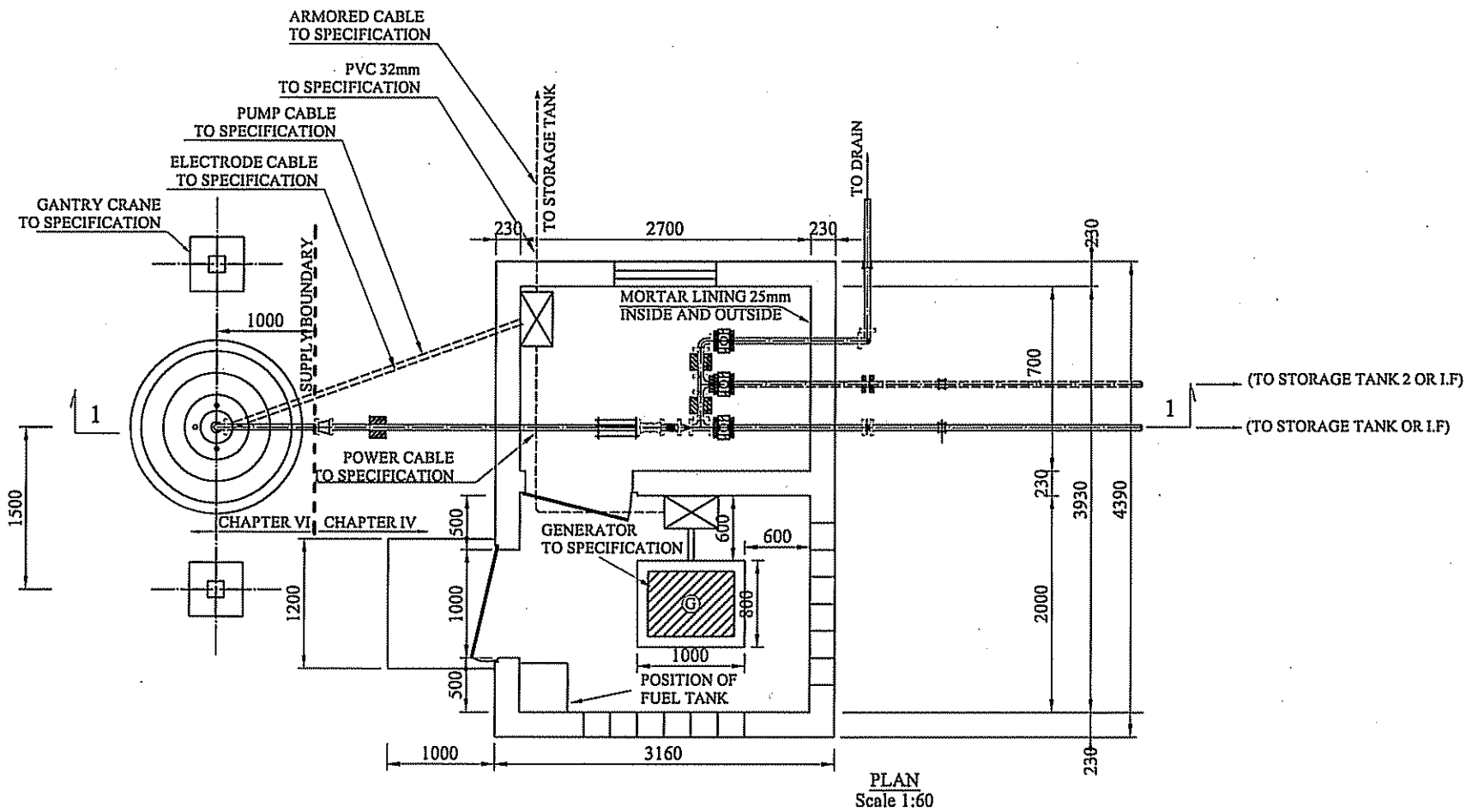
PROJECT NAME:  
THE PROJECT FOR  
RURAL WATER SUPPLY

CONSULTING ENGINEERS:  
 NIPPON KOEI CO., LTD.

TITLE:  
CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP  
PIPEWORK OF PUMP CONTROL ROOM

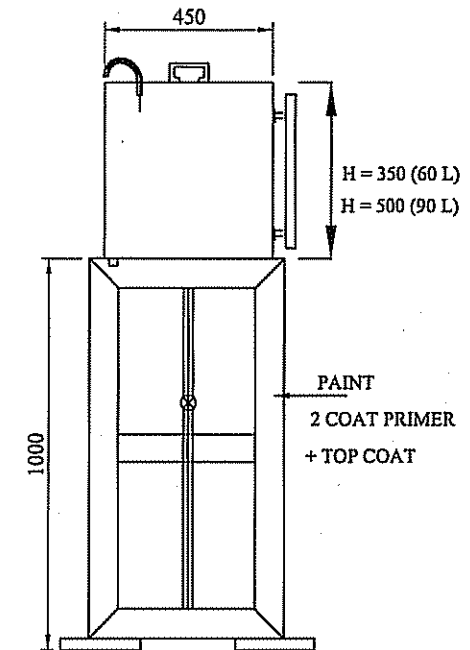
SCALE	DATE	DRAWING NO.
1:40	FEB. 2006	SP-066





FUEL TANK - FRONT VIEW

Scale 1:20



FUEL TANK - SIDE VIEW

Scale 1:20

NOTE

- THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING Nos. SP-065 TO SP-070.

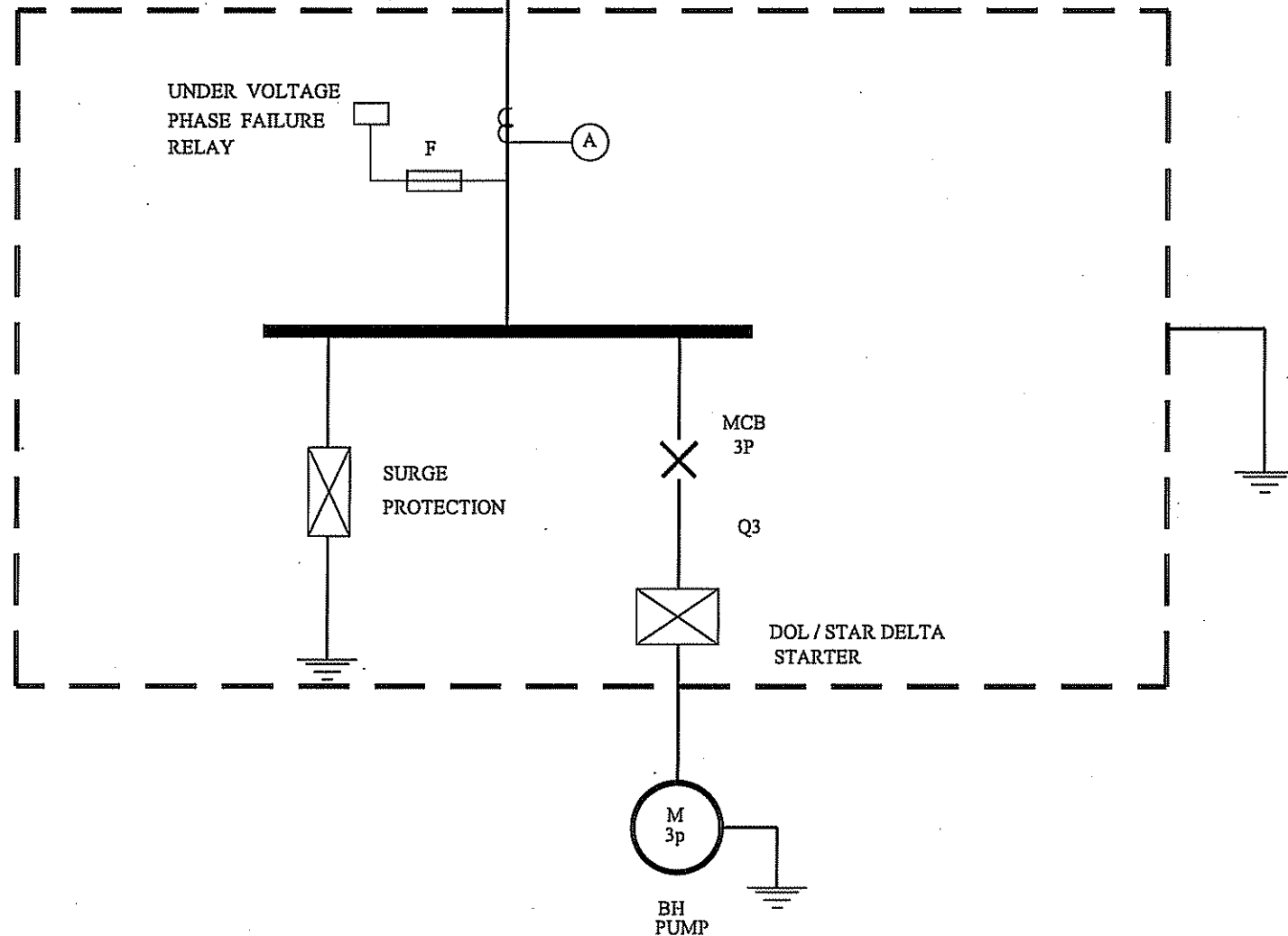
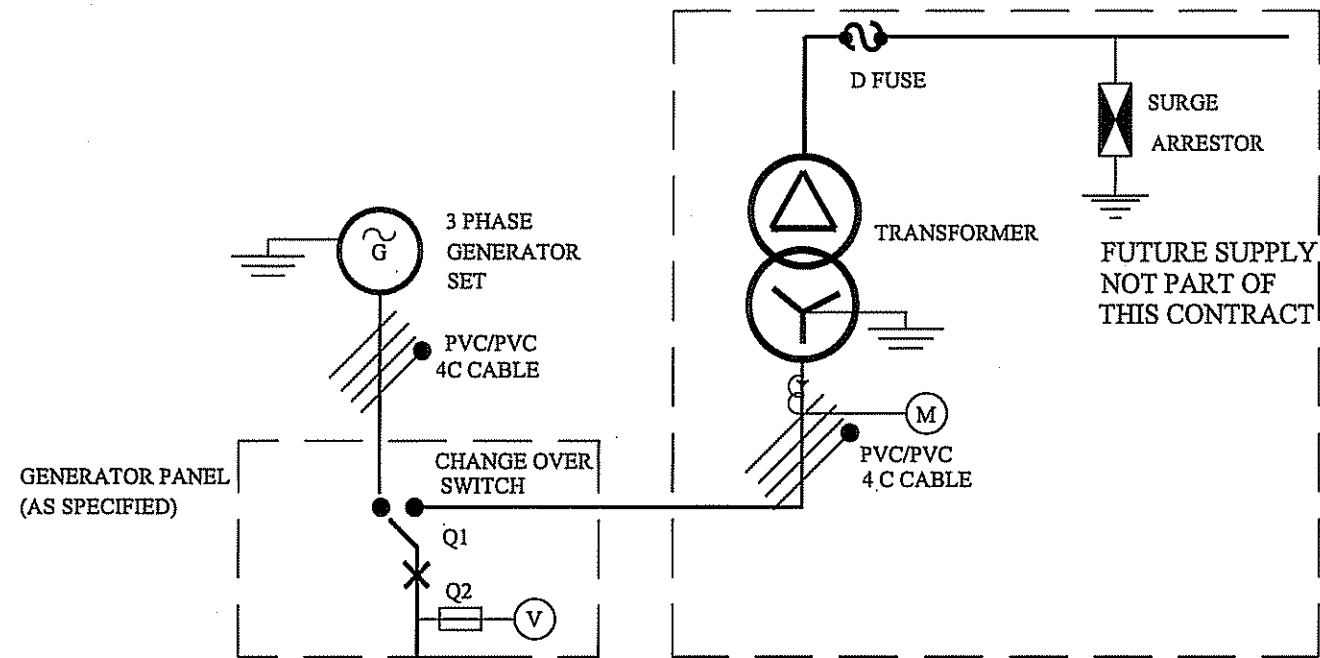
OWNER:  
THE MINISTRY OF WATER AND IRRIGATION  
THE REPUBLIC OF KENYA

PROJECT NAME:  
THE PROJECT FOR  
RURAL WATER SUPPLY

CONSULTING ENGINEERS:  
 NIPPON KOEI CO., LTD.

TITLE:  
CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP  
LAYOUT OF CABLES

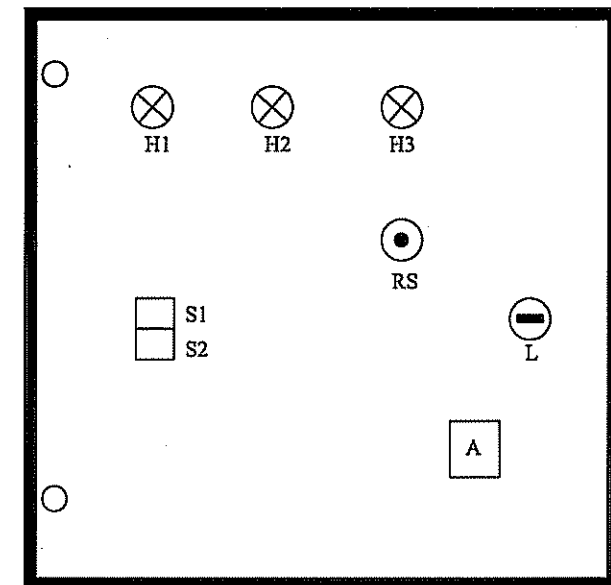
SCALE	DATE	DRAWING NO.
1:20 1:60	FEB. 2006	SP-068



**PANEL DESIGN**  
 CASING: SHEET METAL  
 THICKNESS: 2mm  
 PROTECTION: IP 54  
 PAINT: RAL 7032, GREEN  
 DEPTH: 200mm

**LEGEND**

ITEM No.	ITEM DESCRIPTION
Q1	CHANGE-OVER SWITCH, 4P BREAKER
Q2	MAIN CIRCUIT, MCB, 3P, Th/Mg, + RCD
Q3	MOTOR CIRCUIT, MCB, 3P, /Mg
V	VOLTMETER, 0-500V
A	AMMETER, 0-40A
S1	START BUTTON
S2	STOP BUTTON
H1	INDICATOR LIGHT 'POWER ON'
H2	INDICATOR LIGHT 'TRIP'
H3	INDICATOR LIGHT 'RUN'
L	LOCKABLE KEY
RS	ALARM RE-SET BUTTON



OWNER:  
 THE MINISTRY OF WATER AND IRRIGATION  
 THE REPUBLIC OF KENYA

PROJECT NAME:  
 THE PROJECT FOR  
 RURAL WATER SUPPLY

CONSULTING ENGINEERS:  
 **NIPPON KOEI CO., LTD.**

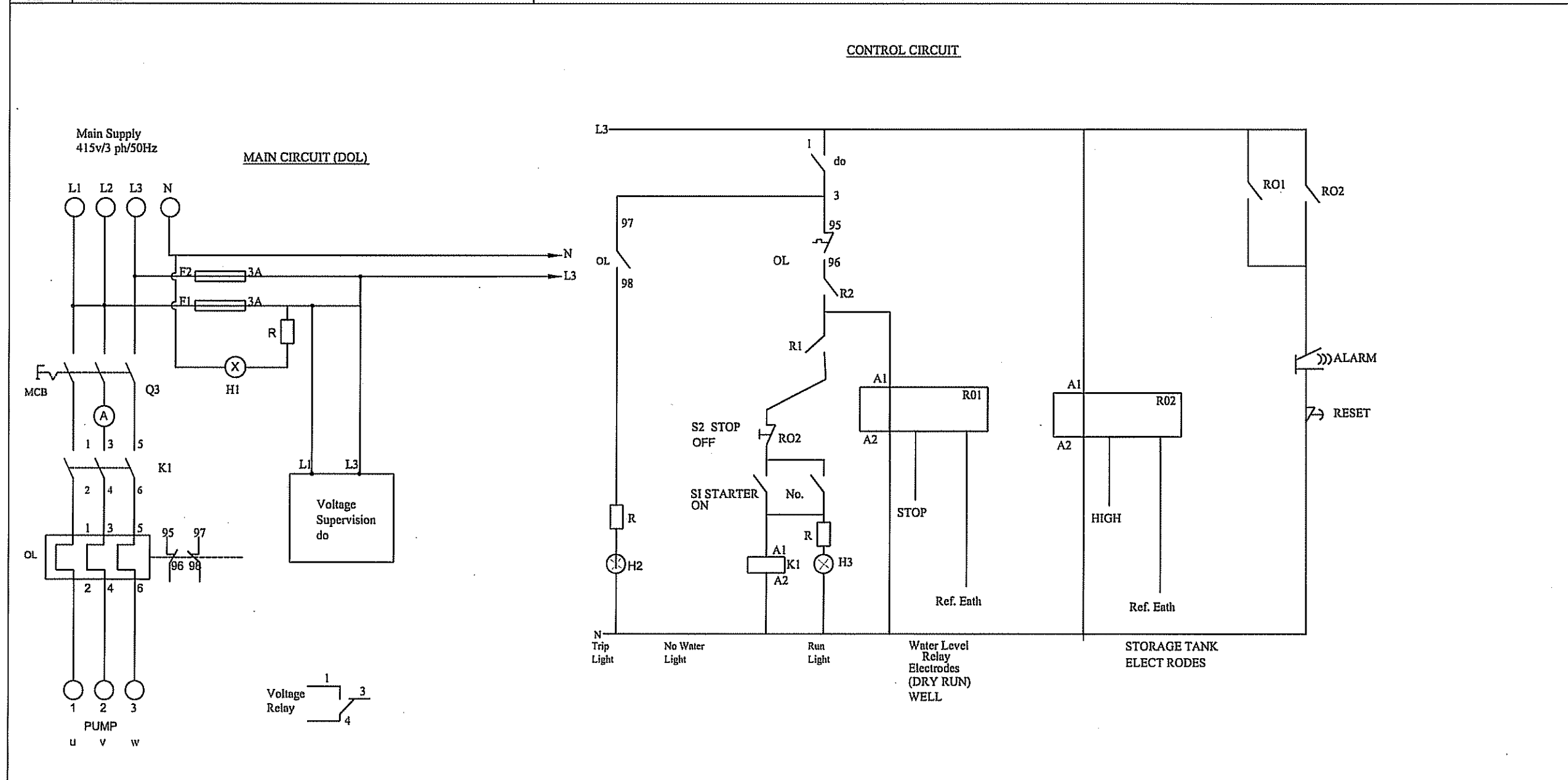
TITLE:  
 CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP  
 CONTROL PANEL

SCALE	DATE	DRAWING NO.
NONE	FEB. 2006	SP-069

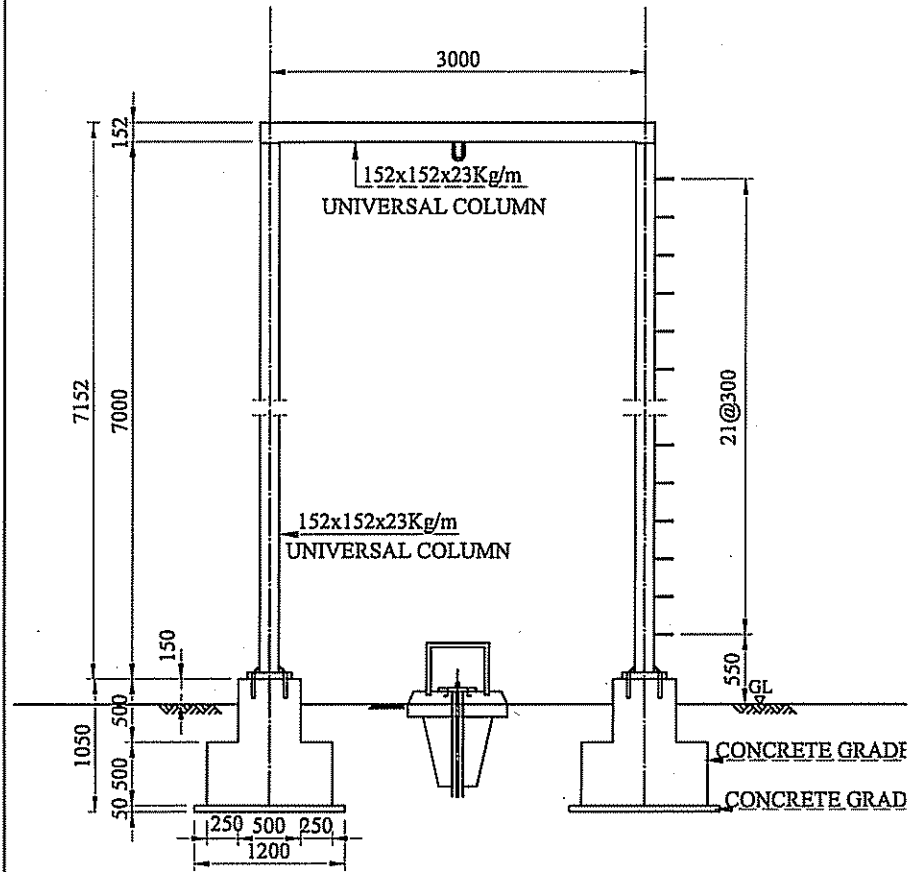
LEGEND	
Item No.	Item Description
Q3	Motor Circuit Breaker, mcb, 3P, Mg
K1	Motor Contactor with Auxiliary Relay
A	Ammeter, 0-40A
F1,F2	Fuses, 3A
S1	Start, On
S2	Stop, Off
H1	Indicator Light, Trip (Red)
H2	Indicator Light, Power on
do	Phase Failure, U/O Voltage Relay
R01	Level Relay: Well (Dry Run Protection), R02: Level Relay, Tank
R	Resistors
AL	Alarm

**NOTES:**

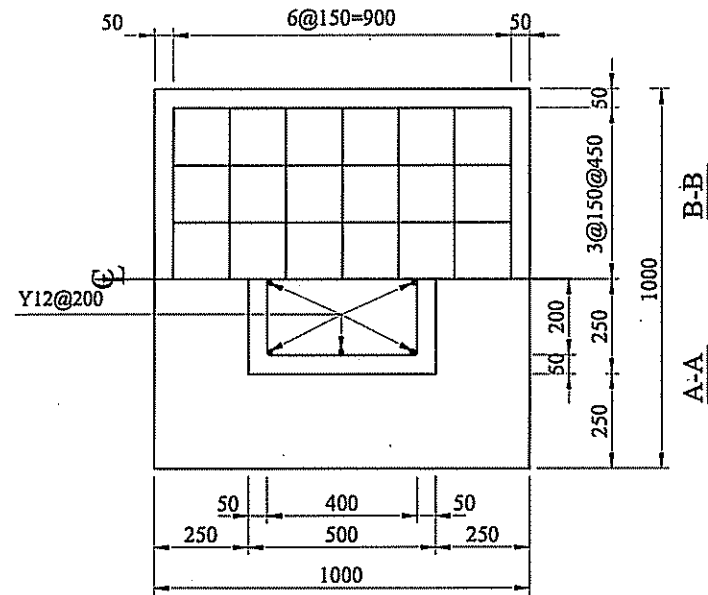
1. This schematic is for guidance only. The Contractor shall submit a complete design based on this schematic indicating the make and type of all the contactors, relays, etc.
2. The schematic is for DOL starter. A similar circuit will be required for Star Dela starter complete with star and delta contactors &, time delay relay and interlock.
3. Substantiation of correct logic and discrimination data such as i-t curves for mcb's shall be submitted for the approval of the Consultant.



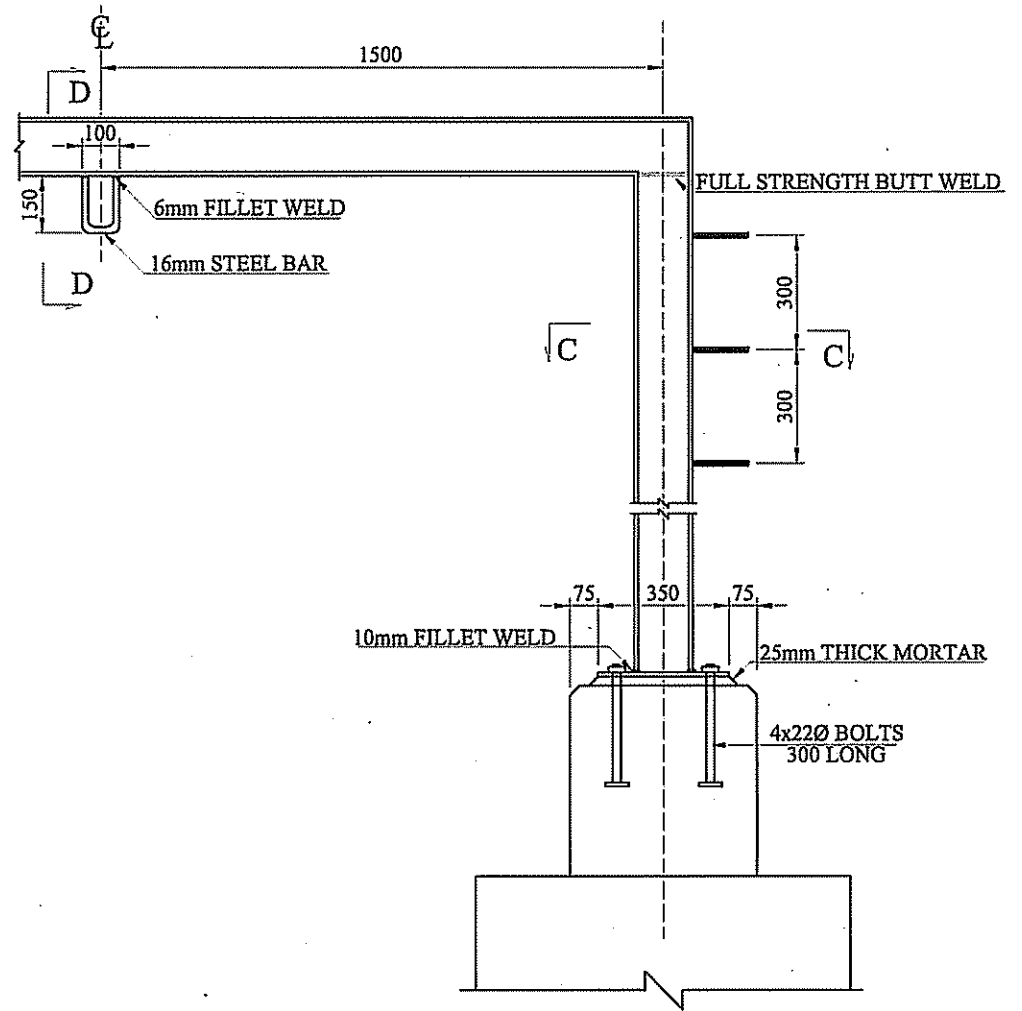
OWNER: THE MINISTRY OF WATER AND IRRIGATION THE REPUBLIC OF KENYA	PROJECT NAME: THE PROJECT FOR RURAL WATER SUPPLY	CONSULTING ENGINEERS: NIPPON KOEI CO., LTD.	TITLE: CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP		
			CONTROL CIRCUIT		
			SCALE NONE	DATE FEB. 2006	DRAWING NO. SP-070



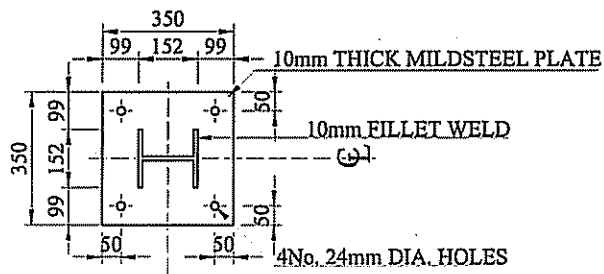
**GANTRY CRANE**  
Scale 1:60



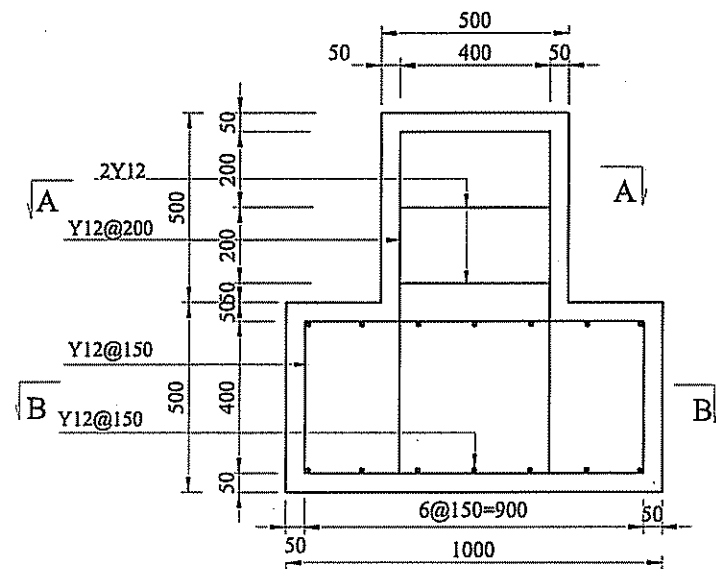
**SECTIONAL PLAN A-A & B-B**  
Scale 1:20



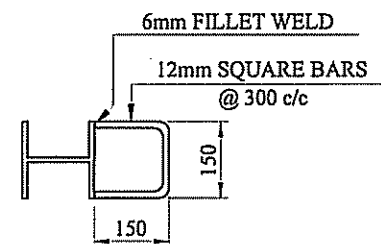
**DETAIL OF GANTRY**  
Scale 1:20



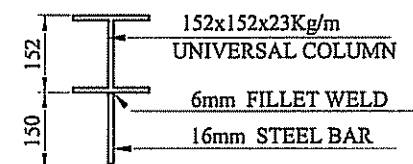
**DETAIL OF BASE PLATE**  
Scale 1:20



**FOUNDATION BASE**  
Scale 1:20



**SECTION C-C**  
Scale 1:15



**SECTION D-D**  
Scale 1:15

**NOTE**

THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH DRAWING NO. SP-068.

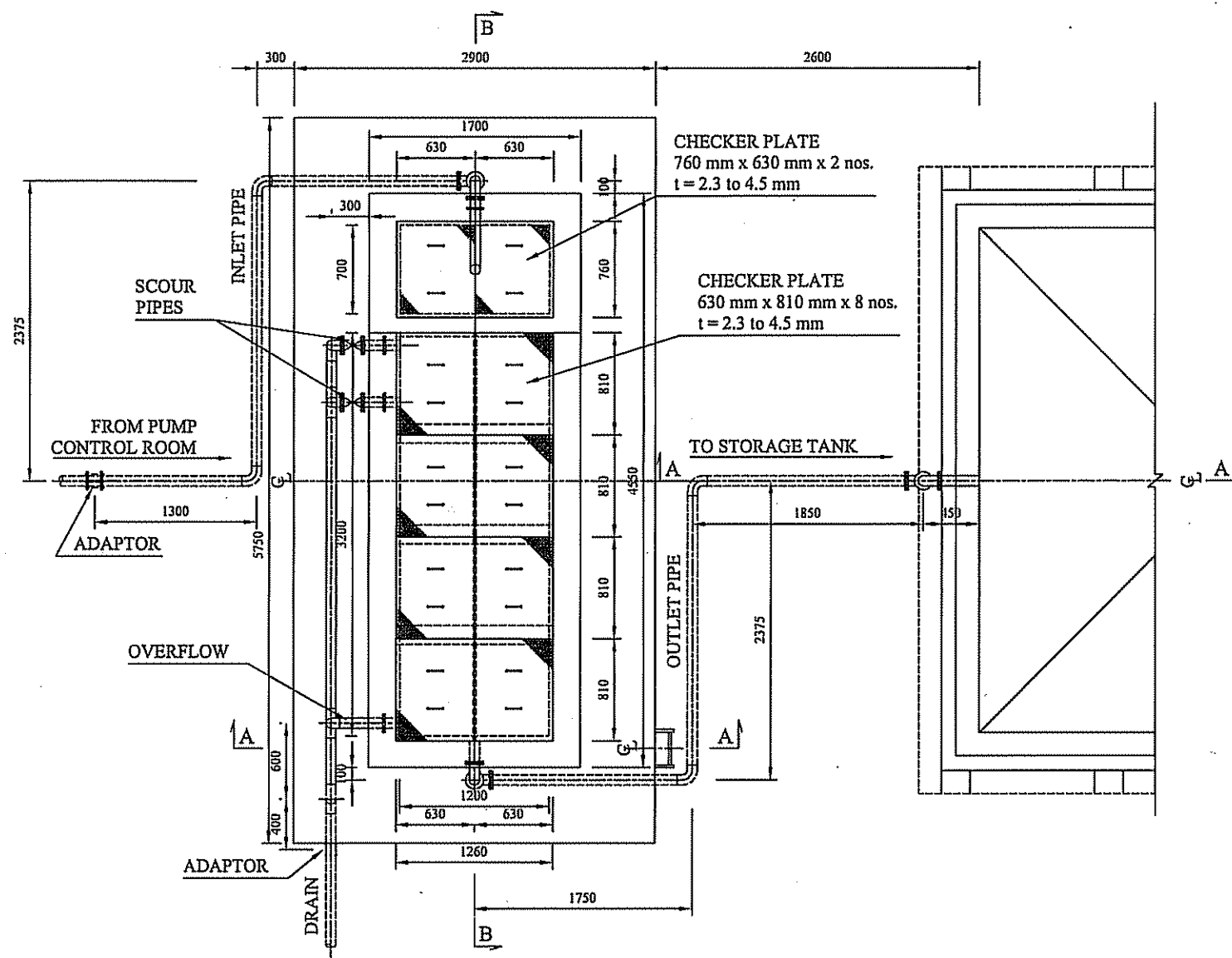
OWNER:  
THE MINISTRY OF WATER AND IRRIGATION  
THE REPUBLIC OF KENYA

PROJECT NAME:  
THE PROJECT FOR  
RURAL WATER SUPPLY

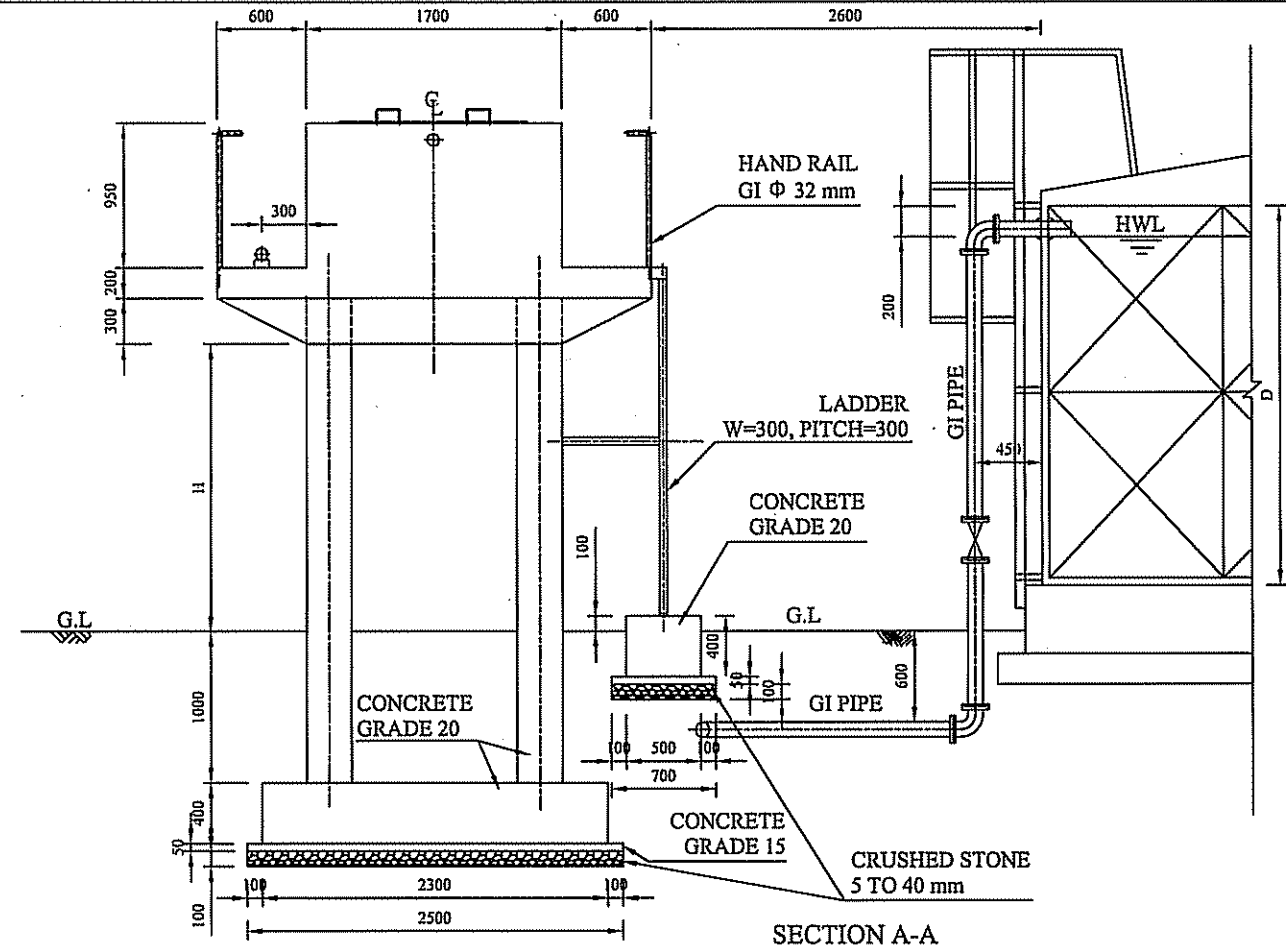
CONSULTING ENGINEERS:  
 **NIPPON KOEI CO., LTD.**

TITLE:  
CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP  
GANTRY CRANE DETAILS

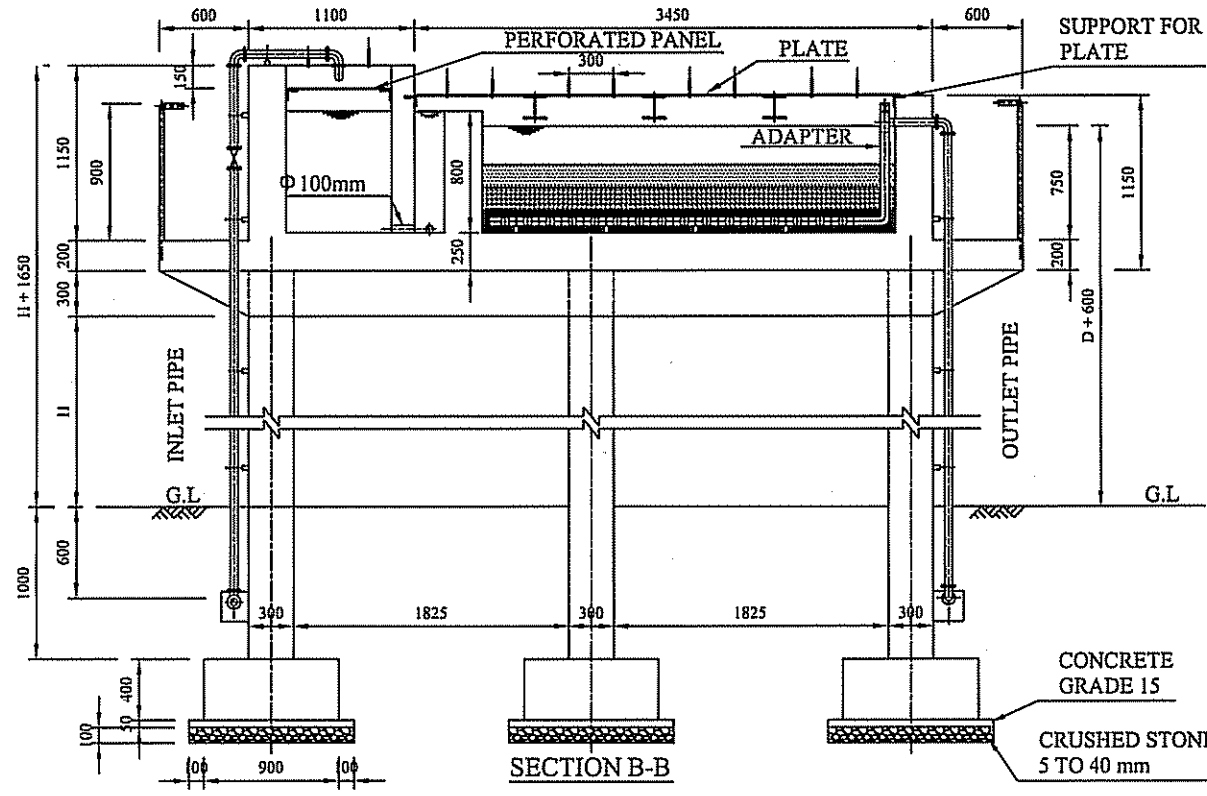
SCALE 1:60 1:20 1:15	DATE FEB 2006	DRAWING NO. SP-071
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LAYOUT PLAN



SECTION A-A



SECTION B-B

NOTE :

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRG. No. SP-078.
2. ALL METALLIC OR FERROUS PARTS SHALL BE GALVANISED.
3. ALL SECTIONS IN CONTACT WITH WATER SHALL BE LINED WITH 30 mm THICK WATER PROOFING MORTAR.

LOCATION No.	Tank Type	D (m)	H (m)	INLET PIPE	OUTLET PIPE
55	V10	1.22	0.57	GI 50 mm	GI 50 mm
59				GI 40 mm	
.61	V24	2.44	1.79	GI 50 mm	
66				GI 50 mm	

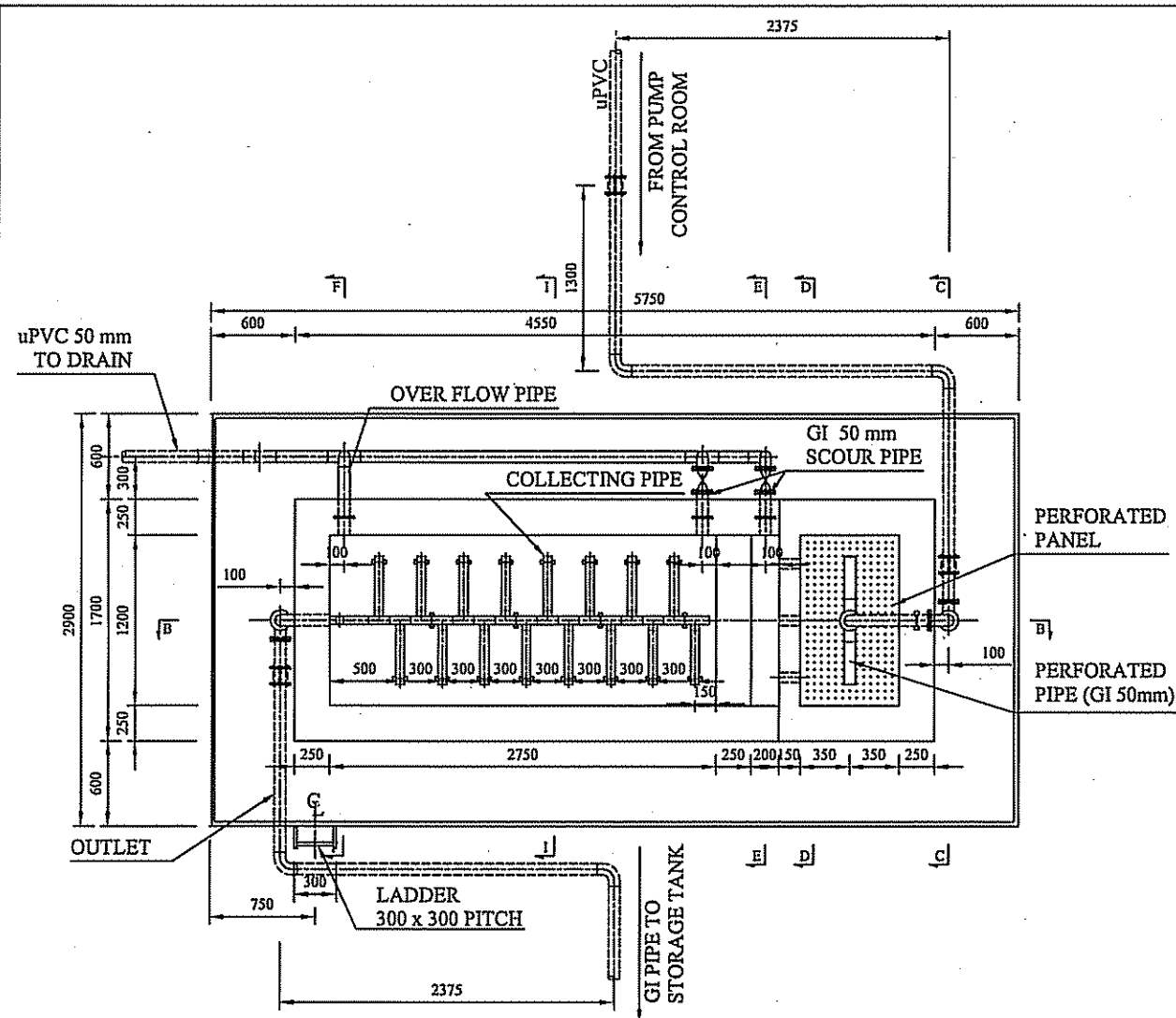
OWNER:  
THE MINISTRY OF WATER AND IRRIGATION  
THE REPUBLIC OF KENYA

PROJECT NAME:  
THE PROJECT FOR  
RURAL WATER SUPPLY

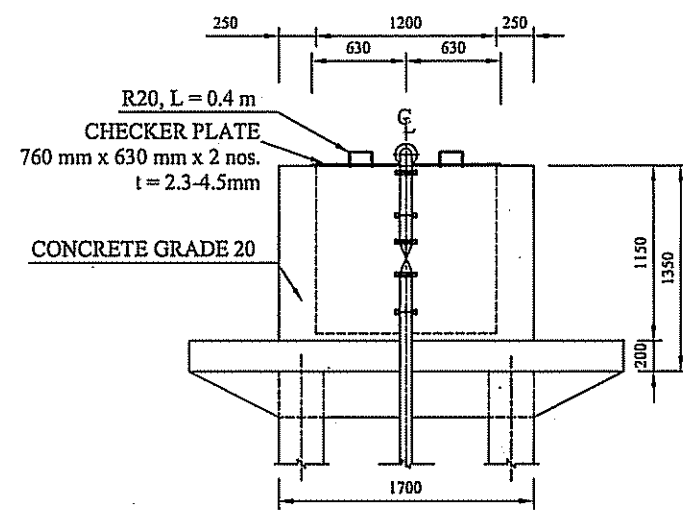
CONSULTING ENGINEERS:  
 NIPPON KOEI CO., LTD.

CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP  
IRON FILTER TYPE III (1/2)

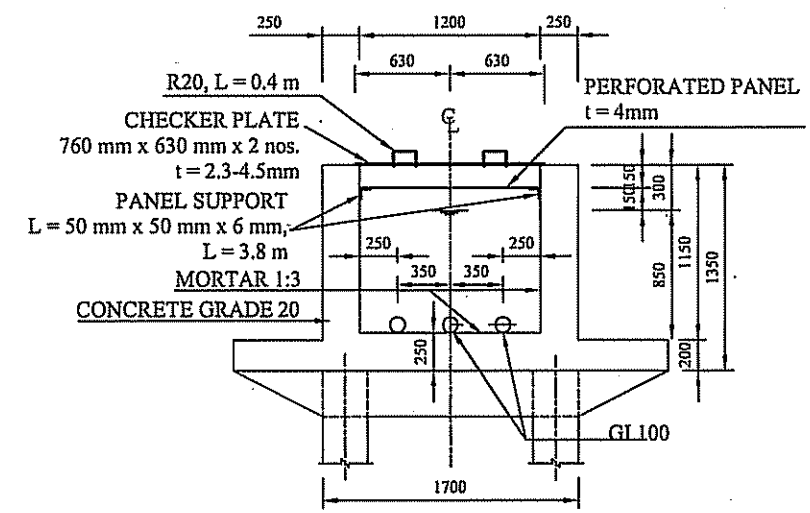
SCALE 1:50	DATE FEB. 2006	DRAWING NO. SP-076
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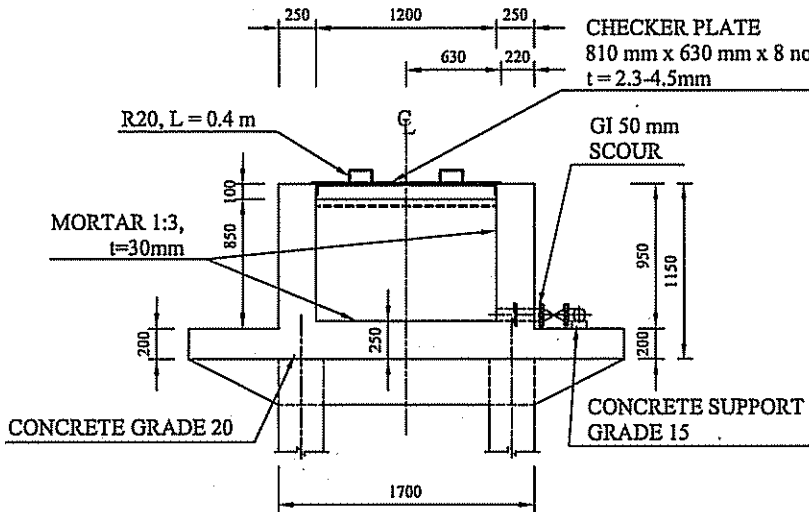
PLAN



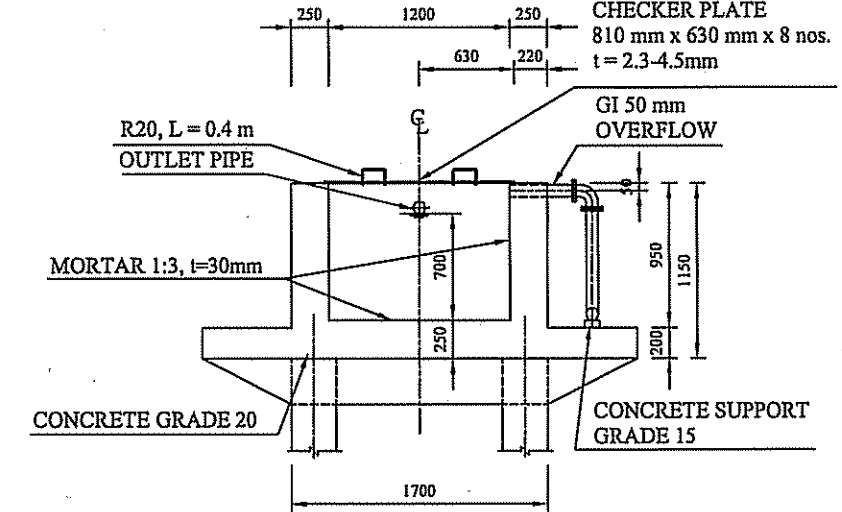
SECTION C-C



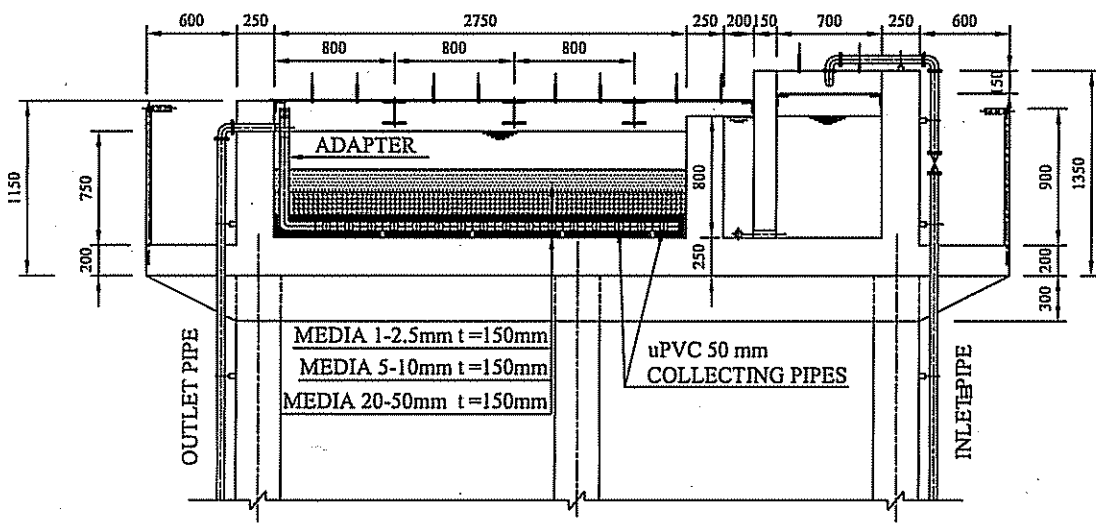
SECTION D-D



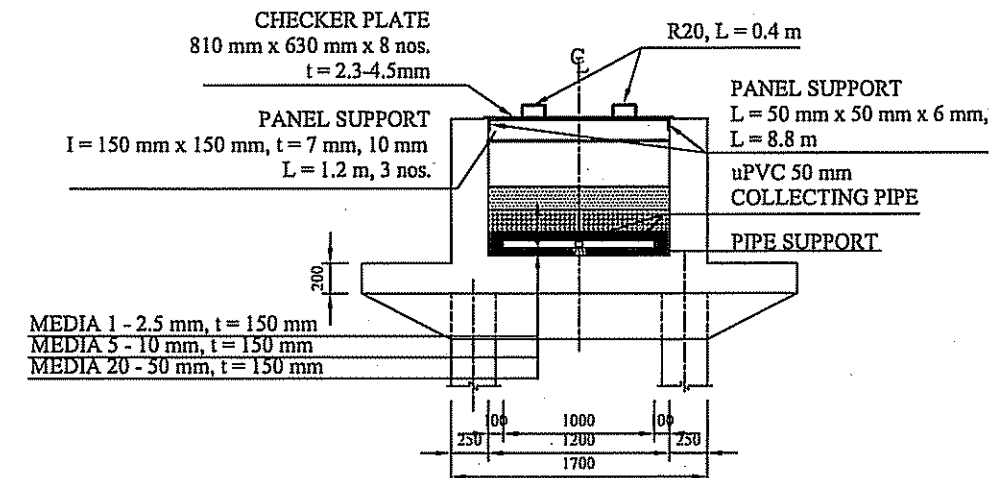
SECTION E-E



SECTION F-F




SECTION B-B

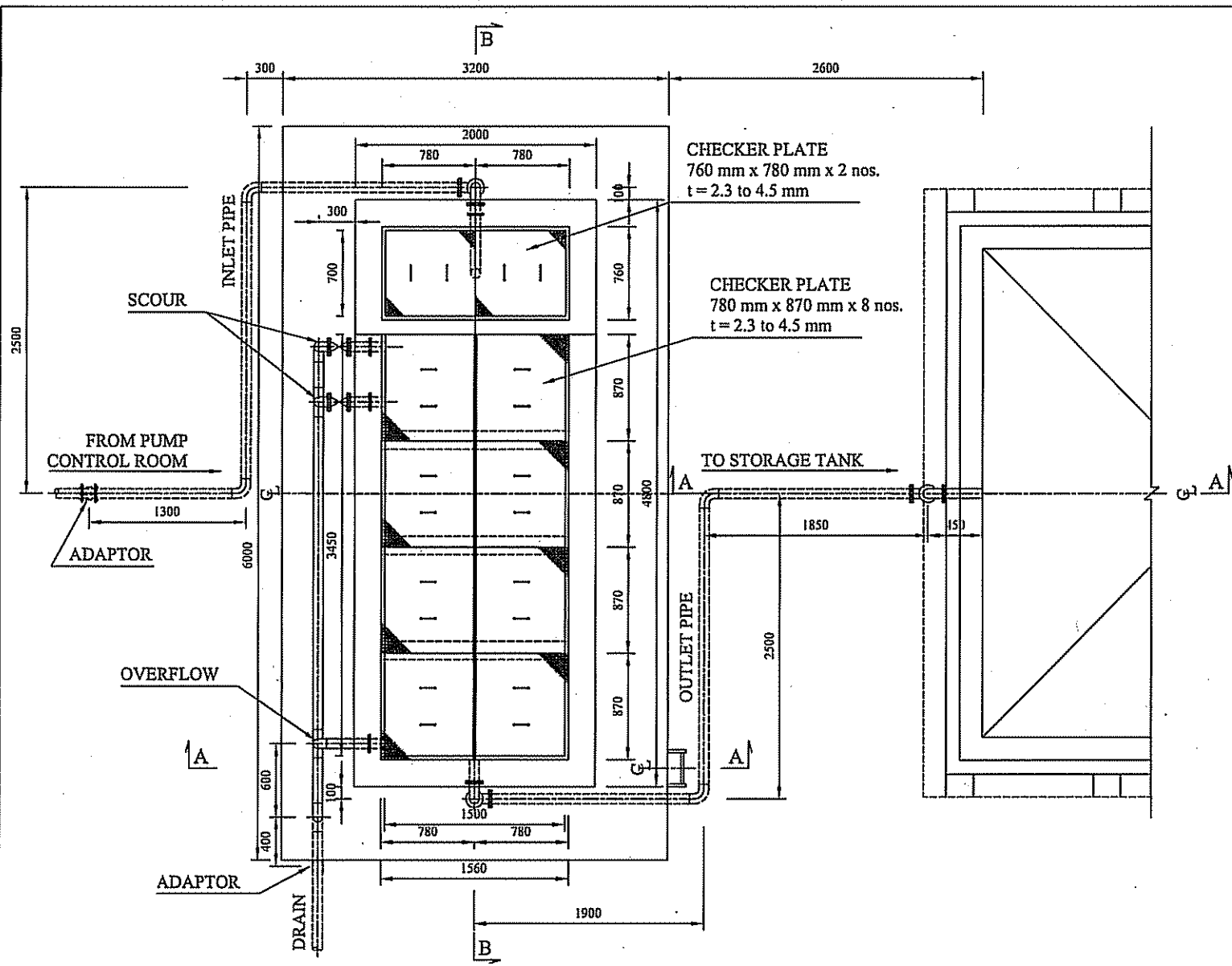


SECTION I-I

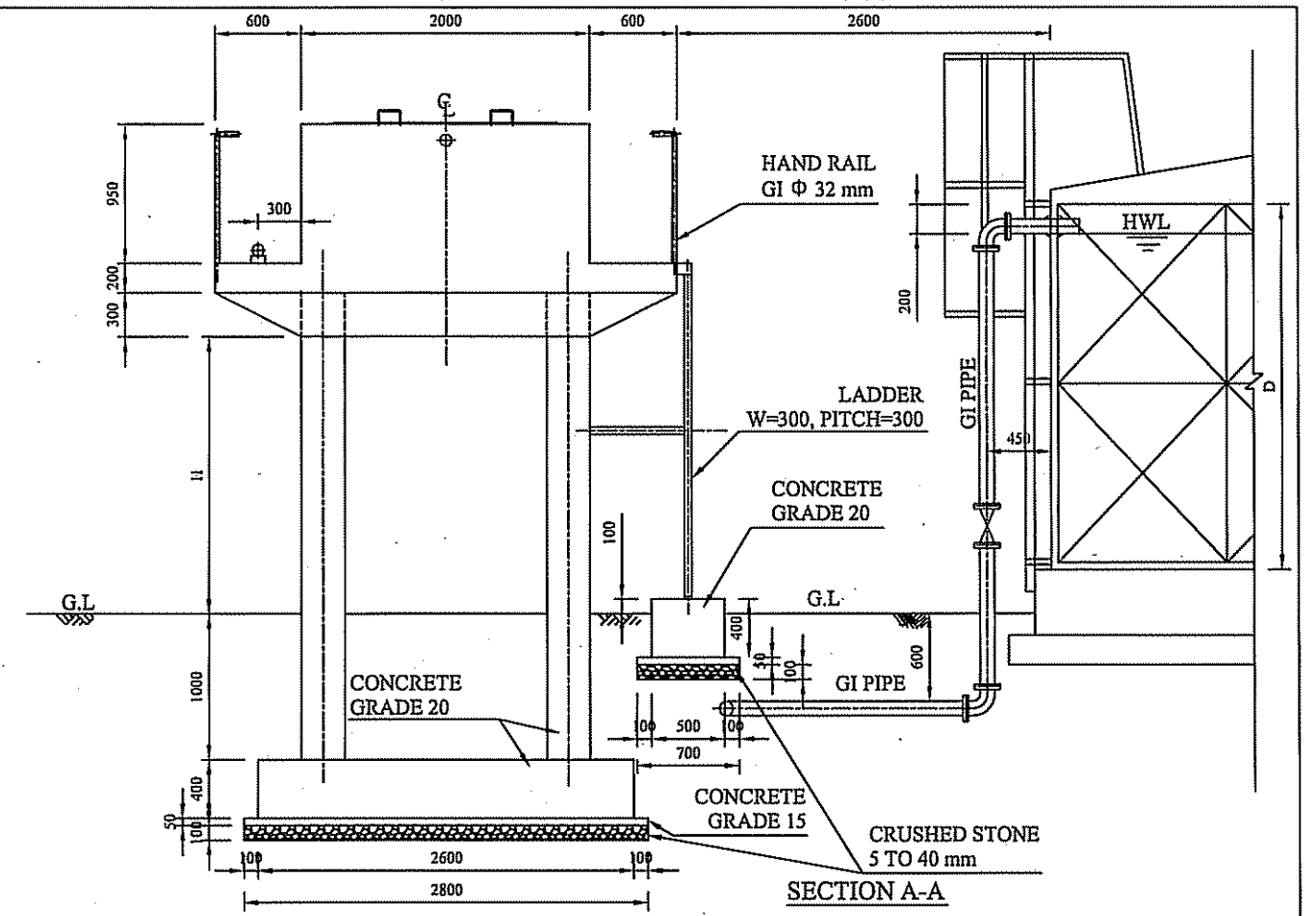
NOTE:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRG. No. SP-079.

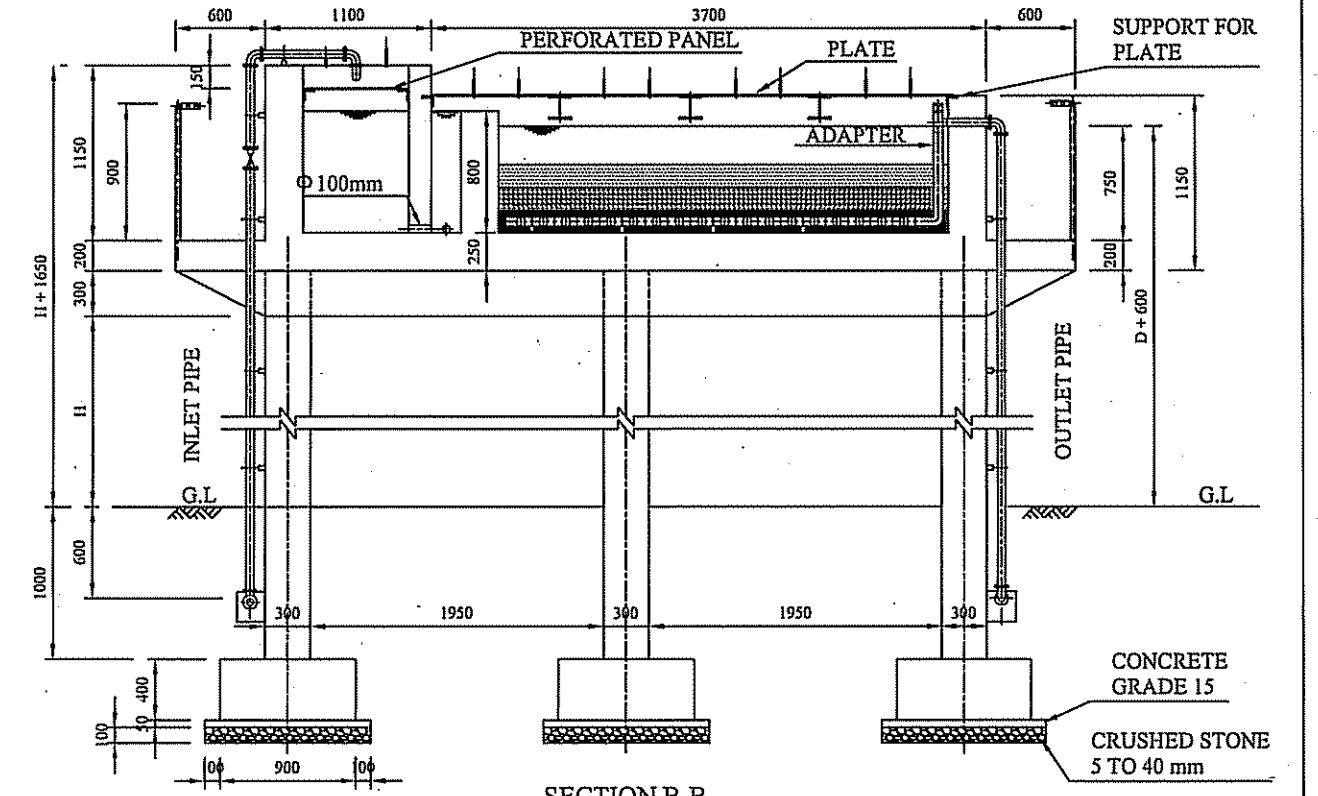
OWNER: <b>THE MINISTRY OF WATER AND IRRIGATION</b> <b>THE REPUBLIC OF KENYA</b>	PROJECT NAME: <b>THE PROJECT FOR</b> <b>RURAL WATER SUPPLY</b>	CONSULTING ENGINEERS:  <b>NIPPON KOEI CO., LTD.</b>	<b>CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP</b>		
			<b>IRON FILTER TYPE III (2/2)</b>		
		SCALE 1:50	DATE FEB. 2006	DRAWING NO. SP-077	



LAYOUT PLAN



SECTION A-A



SECTION B-B

NOTE:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRG. No. SP-082.
2. ALL METALLIC OR FERROUS PARTS SHALL BE GALVANISED.
3. ALL SECTIONS IN CONTACT WITH WATER SHALL BE LINED WITH 30 mm THICK WATER PROOFING MORTAR.

LOCATION No.	Tank Type	D (m)	H (m)	INLET PIPE	OUTLET PIPE
60	V50	2.44	1.79		
62	V15	1.22	0.57	GI 50 mm	GI 50 mm
	V15	1.22	0.57		

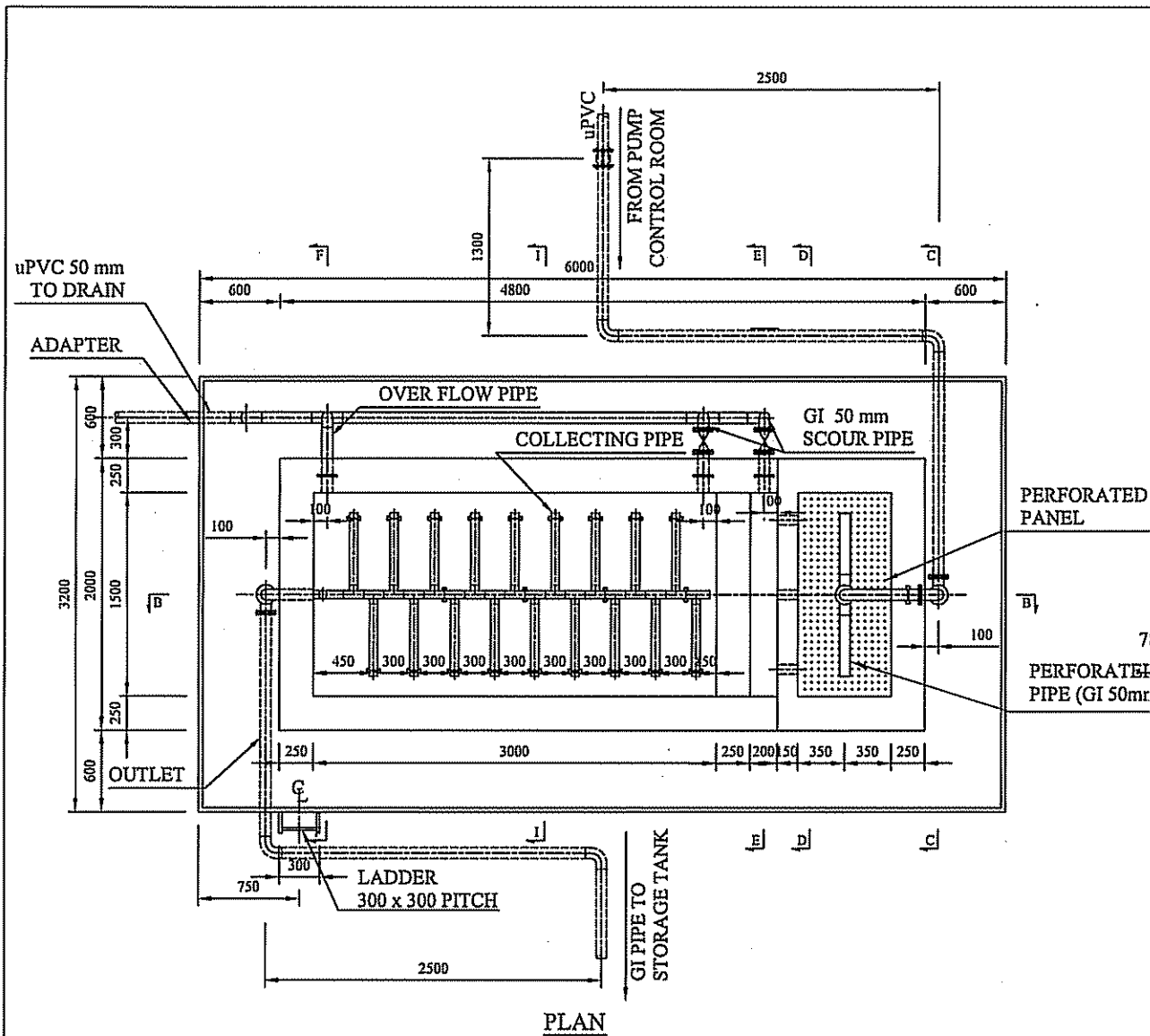
OWNER:  
THE MINISTRY OF WATER AND IRRIGATION  
THE REPUBLIC OF KENYA

PROJECT NAME:  
THE PROJECT FOR  
RURAL WATER SUPPLY

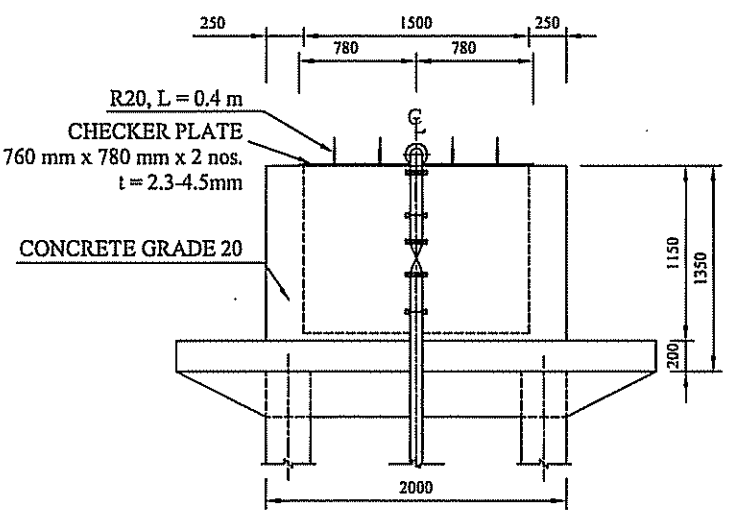
CONSULTING ENGINEERS:  
 NIPPON KOEI CO., LTD.

CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP  
IRON FILTER TYPE IV (1/2)

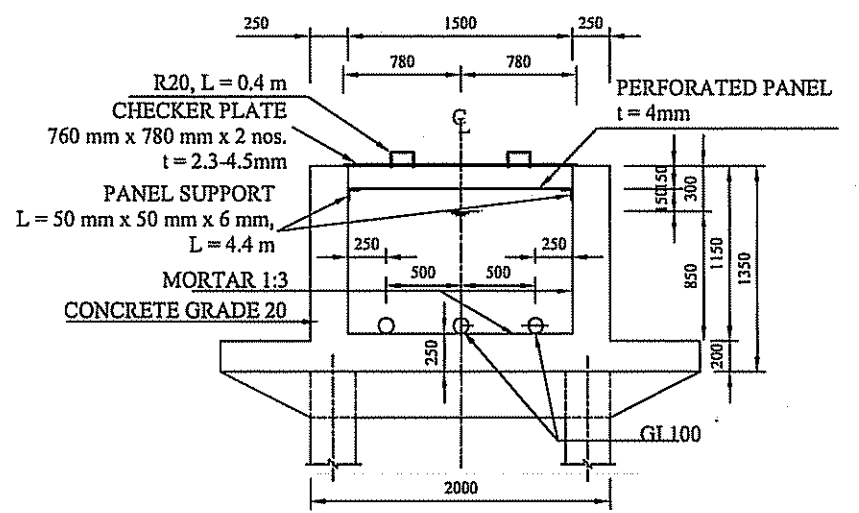
SCALE 1:50	DATE FEB. 2006	DRAWING NO. SP-080
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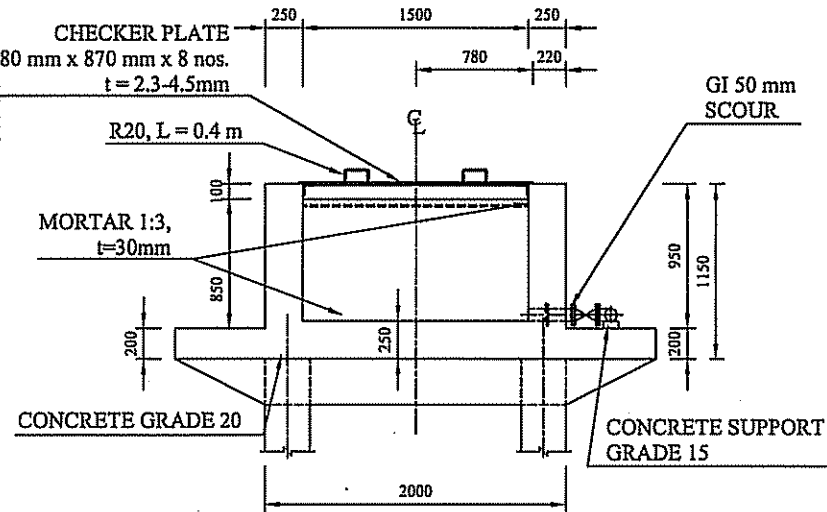
PLAN



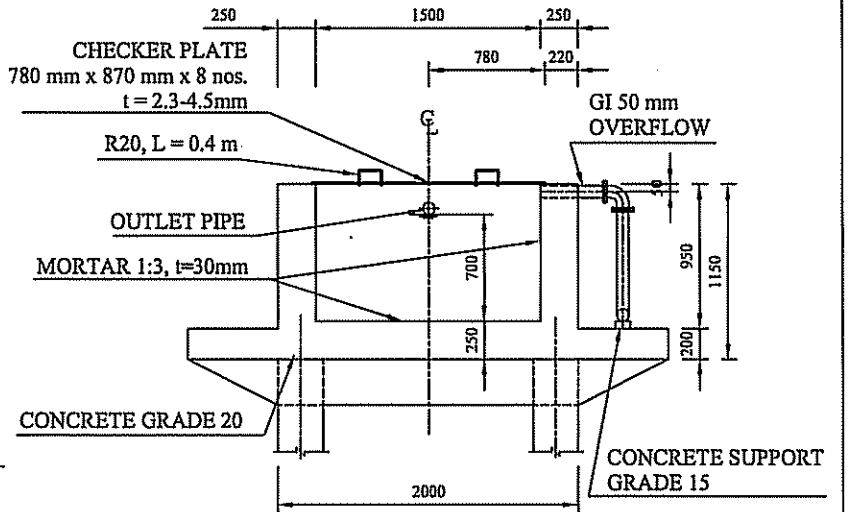
SECTION C-C



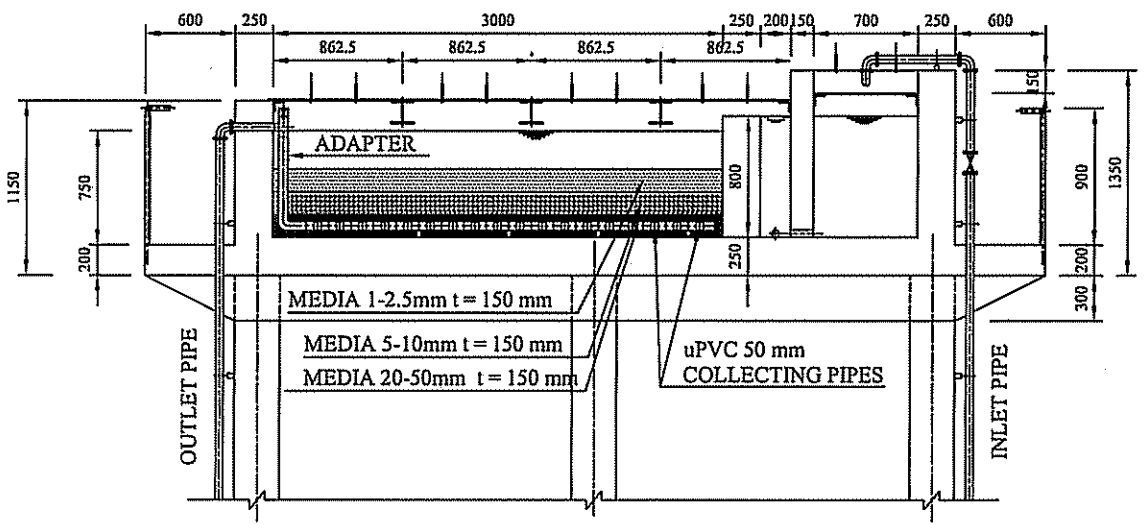
SECTION D-D



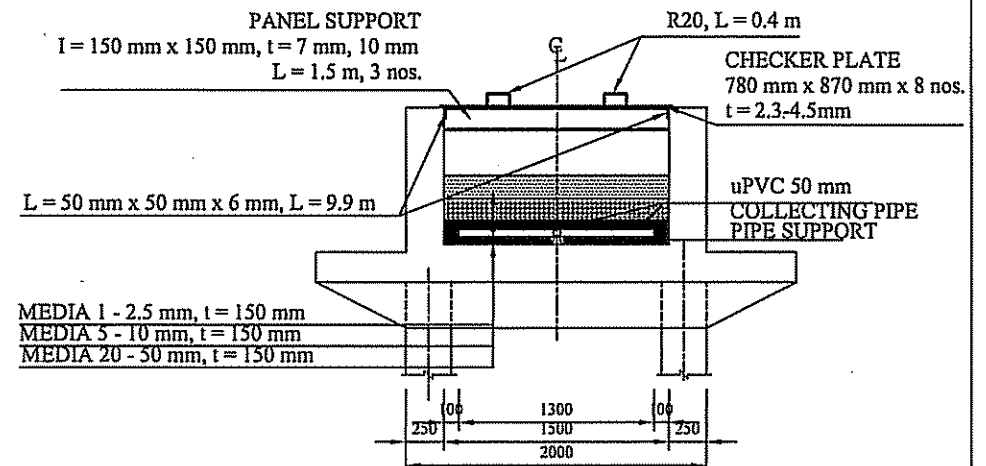
SECTION E-E



SECTION F-F



SECTION B-B



SECTION I-I

NOTE:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRG. No. SP-083.

OWNER:  
THE MINISTRY OF WATER AND IRRIGATION  
THE REPUBLIC OF KENYA

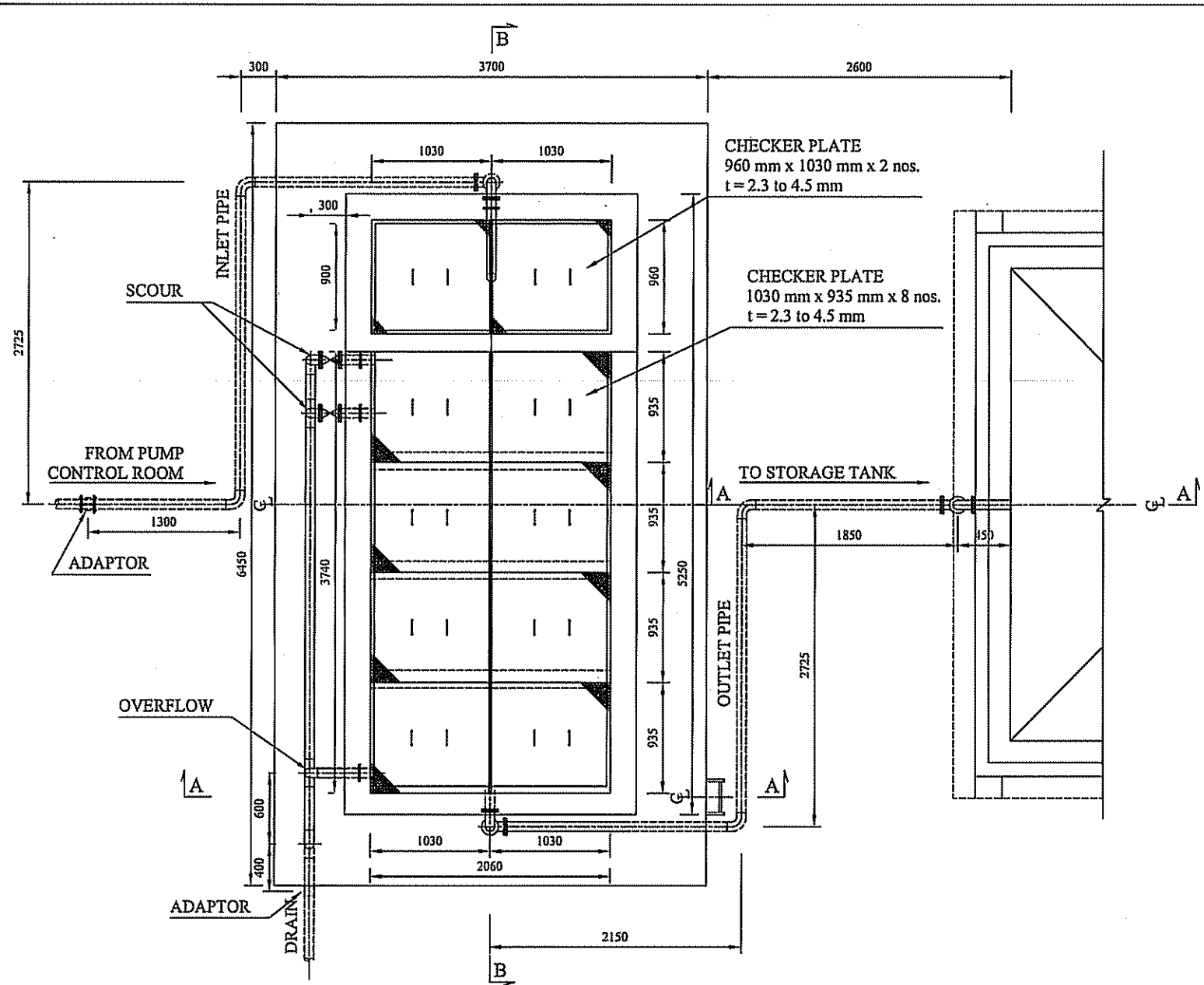
PROJECT NAME:  
THE PROJECT FOR  
RURAL WATER SUPPLY

CONSULTING ENGINEERS:  
 NIPPON KOEI CO., LTD.

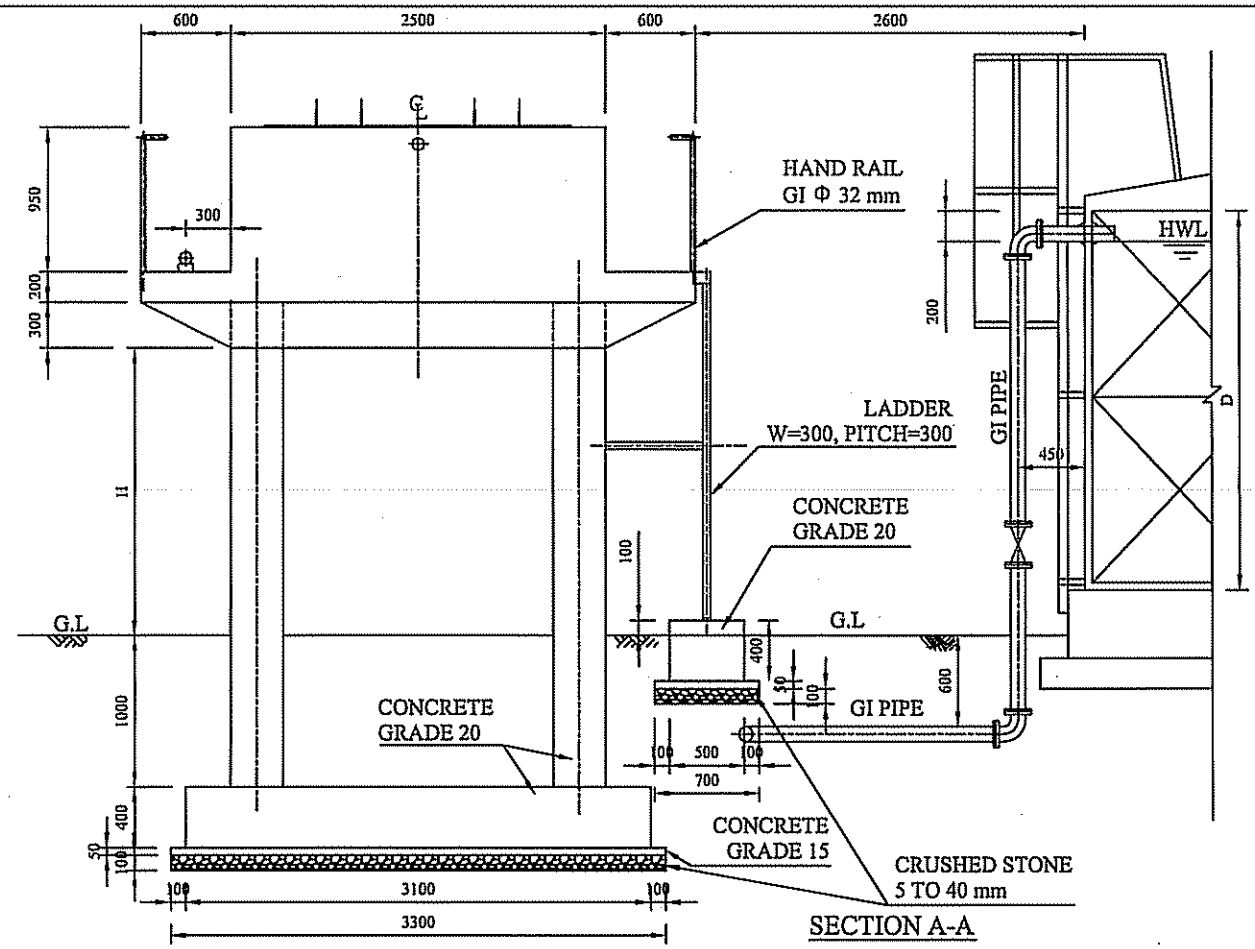
CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP  
IRON FILTER TYPE IV (2/2)

SCALE	DATE	DRAWING NO.
1:50	FEB. 2006	SP-081

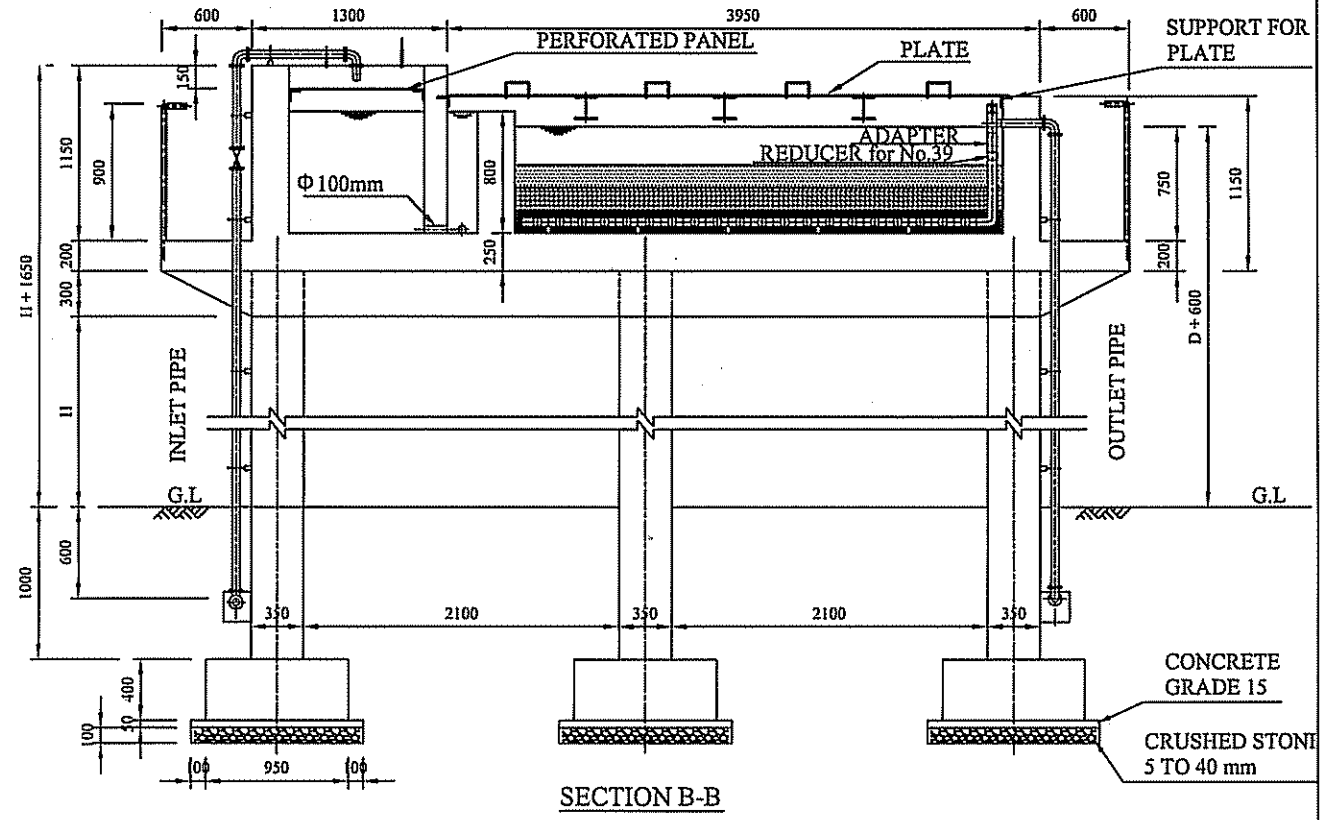




LAYOUT PLAN



SECTION A-A



SECTION B-B

- NOTE:**
- THIS DRAWING TO BE READ IN CONJUNCTION WITH DRG. No. SP-086.
  - ALL METALLIC OR FERROUS PARTS SHALL BE GALVANISED.
  - ALL SECTIONS IN CONTACT WITH WATER SHALL BE LINED WITH 30 mm THICK WATER PROOFING MORTAR.

LOCATION No.	Tank Type	D (m)	H (m)	INLET PIPE	OUTLET PIPE
32	V50	2.44	1.79	GI 50 mm	GI 50 mm
39				GI 80 mm	GI 80 mm
67				GI 50 mm	GI 50 mm

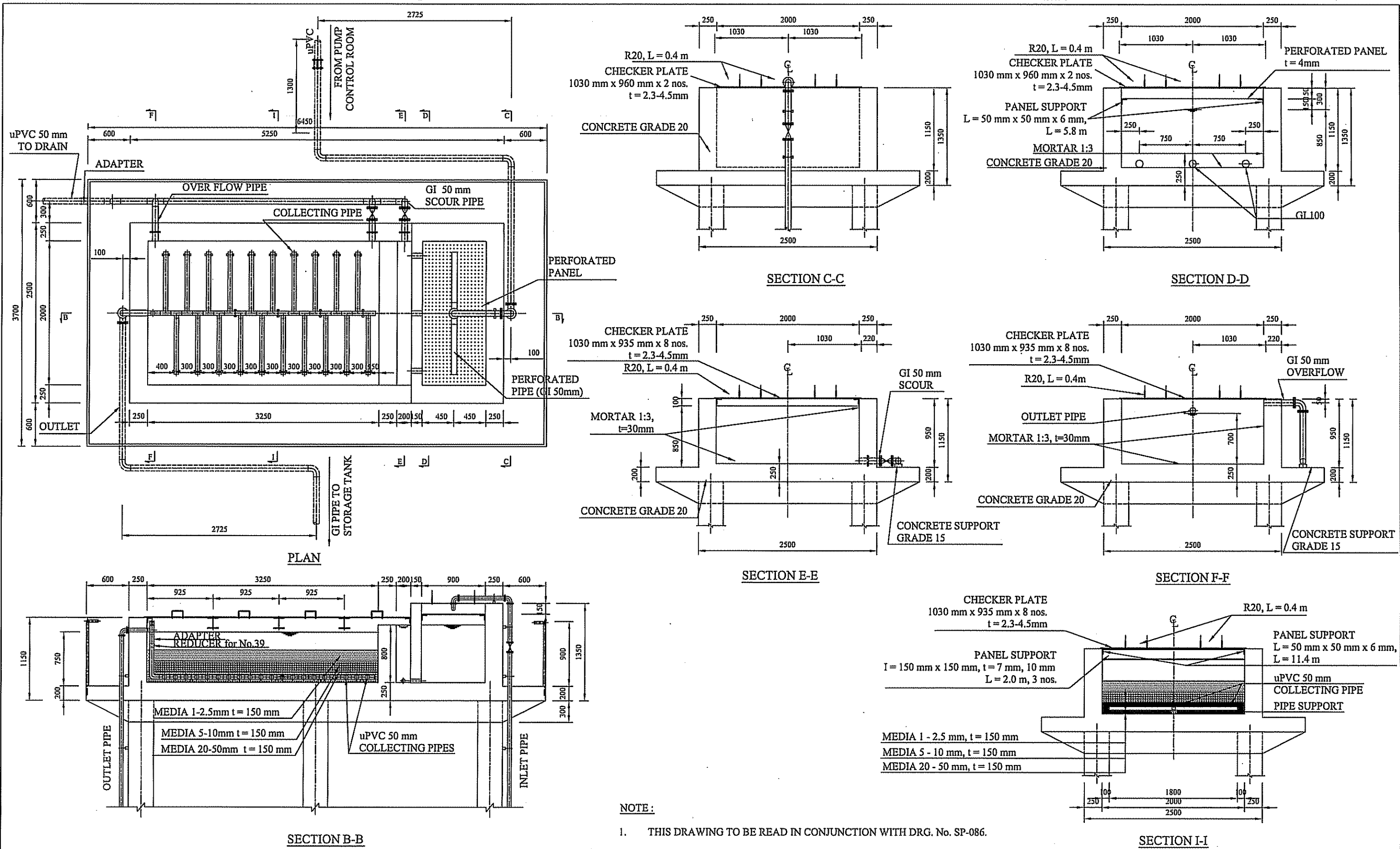
OWNER:  
THE MINISTRY OF WATER AND IRRIGATION  
THE REPUBLIC OF KENYA

PROJECT NAME:  
THE PROJECT FOR  
RURAL WATER SUPPLY

CONSULTING ENGINEERS:  
 NIPPON KOEI CO., LTD.

CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP  
IRON FILTER TYPE VI (1/2)

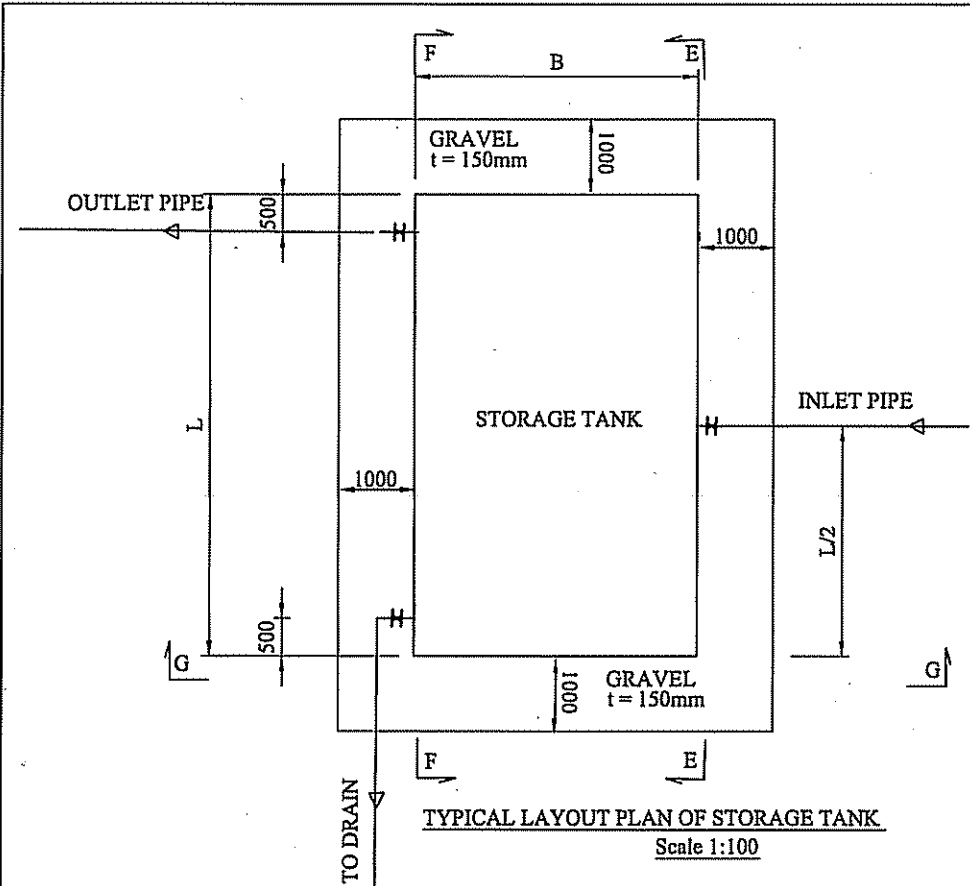
SCALE 1:50	DATE FEB. 2006	DRAWING NO. SP-084
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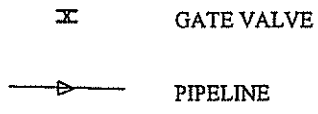
**NOTE:**

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRG. No. SP-086.

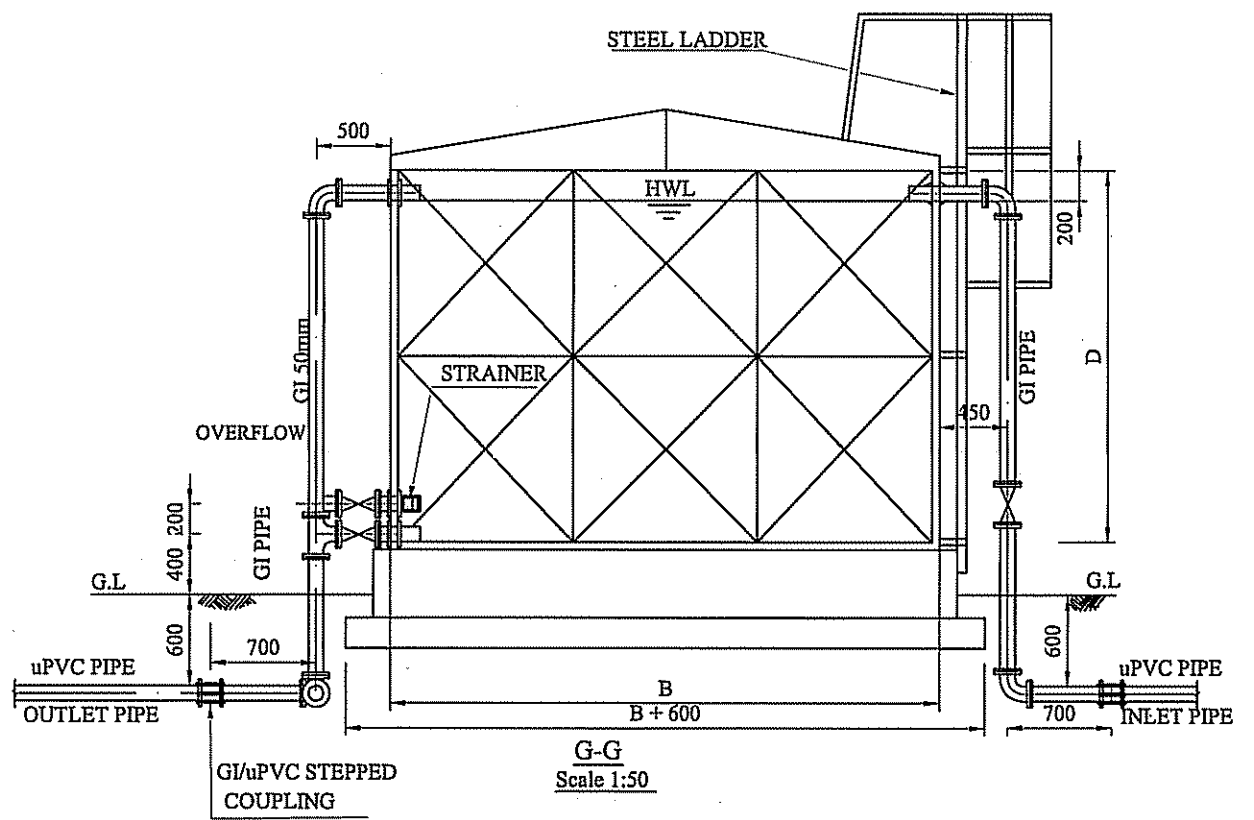
<p>OWNER: <b>THE MINISTRY OF WATER AND IRRIGATION THE REPUBLIC OF KENYA</b></p>	<p>PROJECT NAME: <b>THE PROJECT FOR RURAL WATER SUPPLY</b></p>	<p>CONSULTING ENGINEERS: <b>NIPPON KOEI CO., LTD.</b></p>	<p><b>CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP IRON FILTER TYPE VI (2/2)</b></p>		
		<p>SCALE <b>1:50</b></p>	<p>DATE <b>FEB. 2006</b></p>	<p>DRAWING NO. <b>SP-085</b></p>	



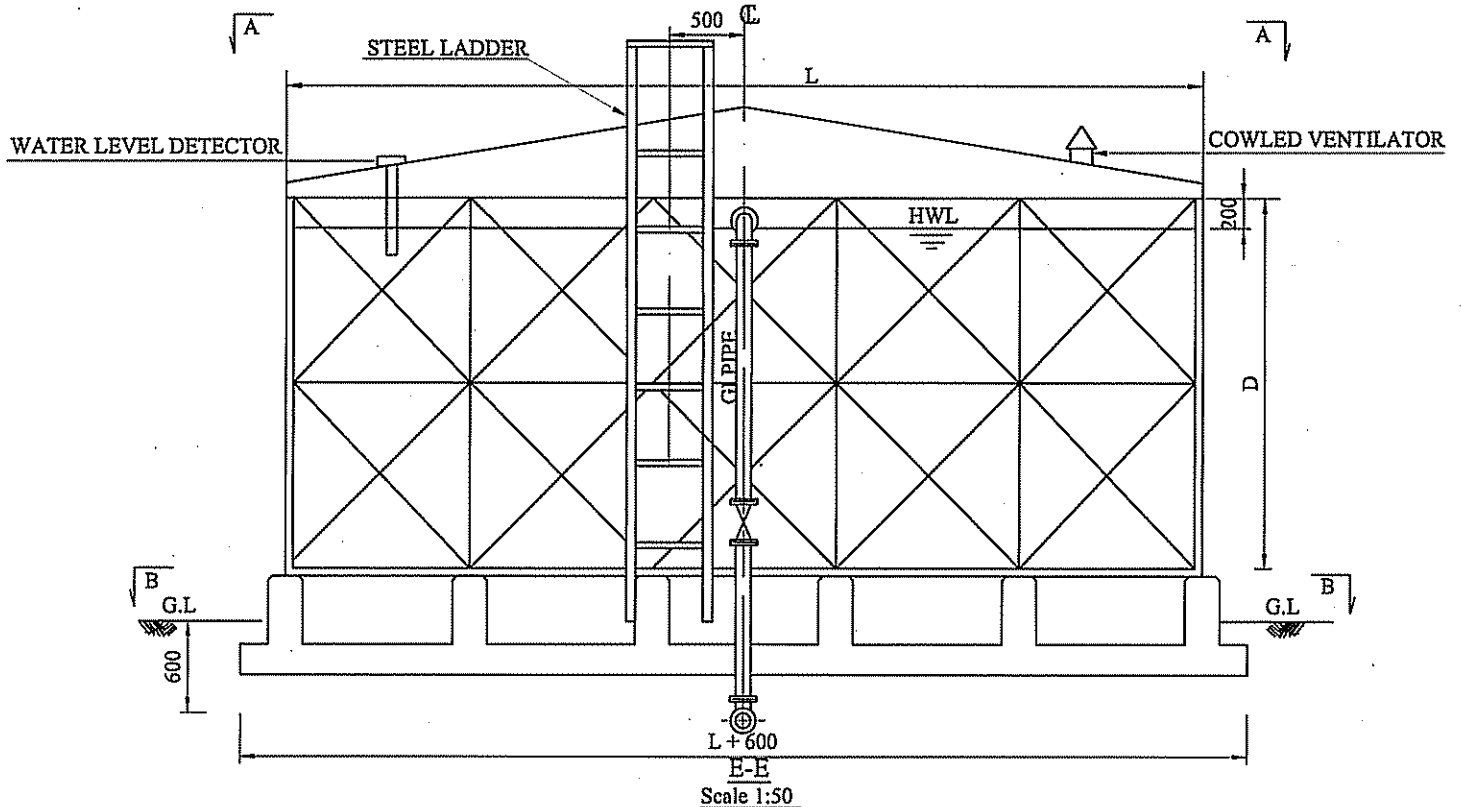
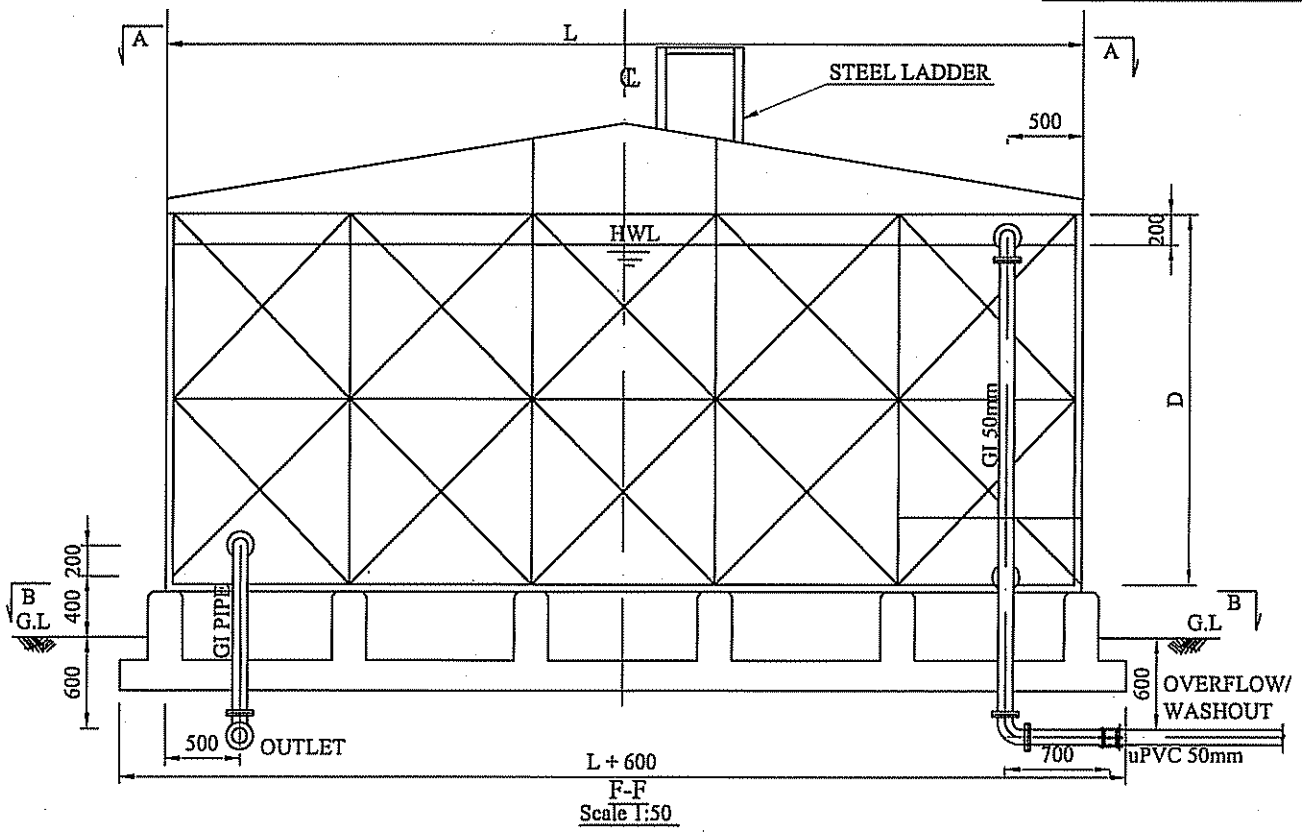
**LEGEND**



PIPE	DIMENSION (mm)	LOCATION NO.
INLET	GI40	87
	GI50	8, 10, 11, 15, 18, 20, 21, 27, 32, 33, 46, 55, 59, 60, 61, 62x2, 66, 67, 74, 85, 89
	GI80	16, 30, 39
OUTLET	GI40	87
	GI50	8, 10, 11, 15, 18, 20, 21, 27, 32, 33, 39, 46, 55, 59, 60, 61, 62x2, 66, 67, 74, 85, 87, 89
	GI80	16, 30



NOTE: FOR LADDER DETAILS SEE DRAWING NO SP-121



OWNER:  
 THE MINISTRY OF WATER AND IRRIGATION  
 THE REPUBLIC OF KENYA

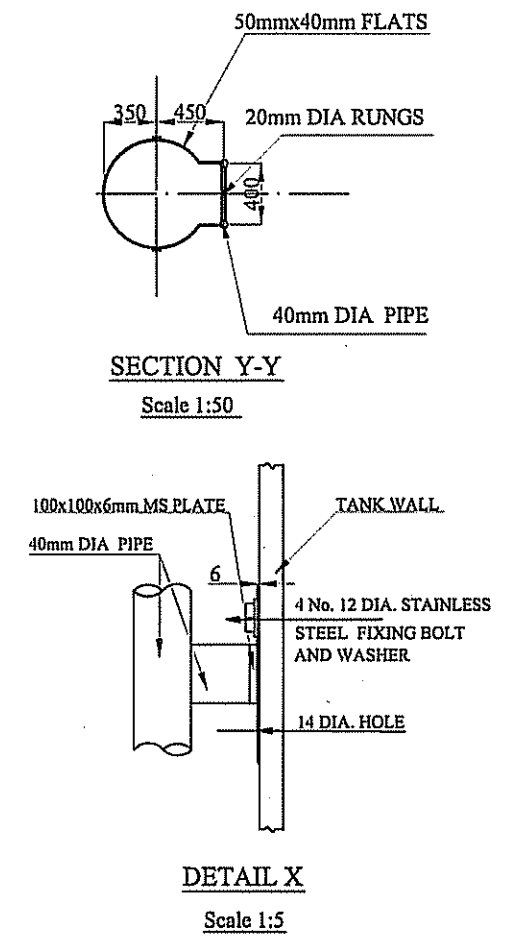
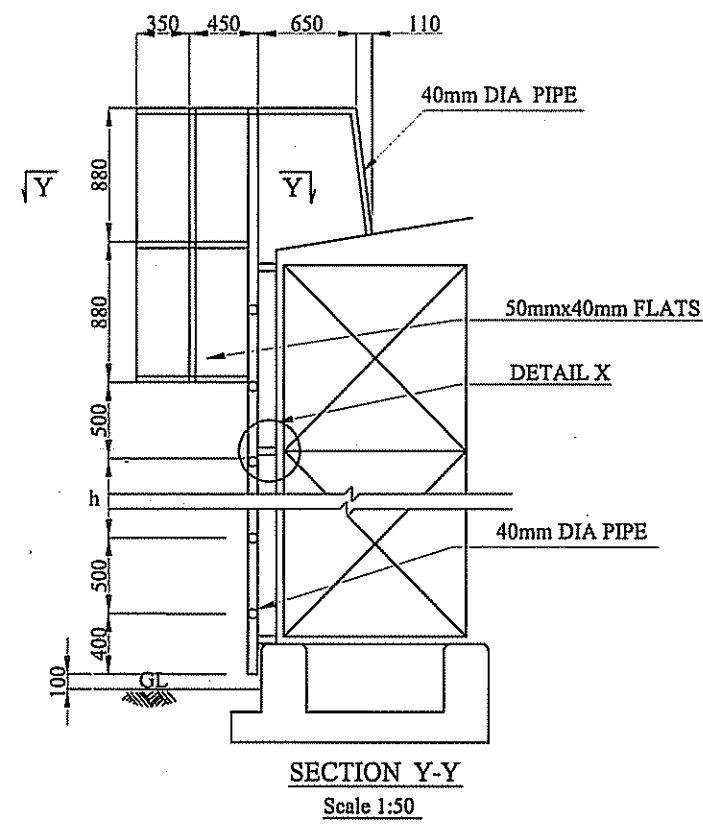
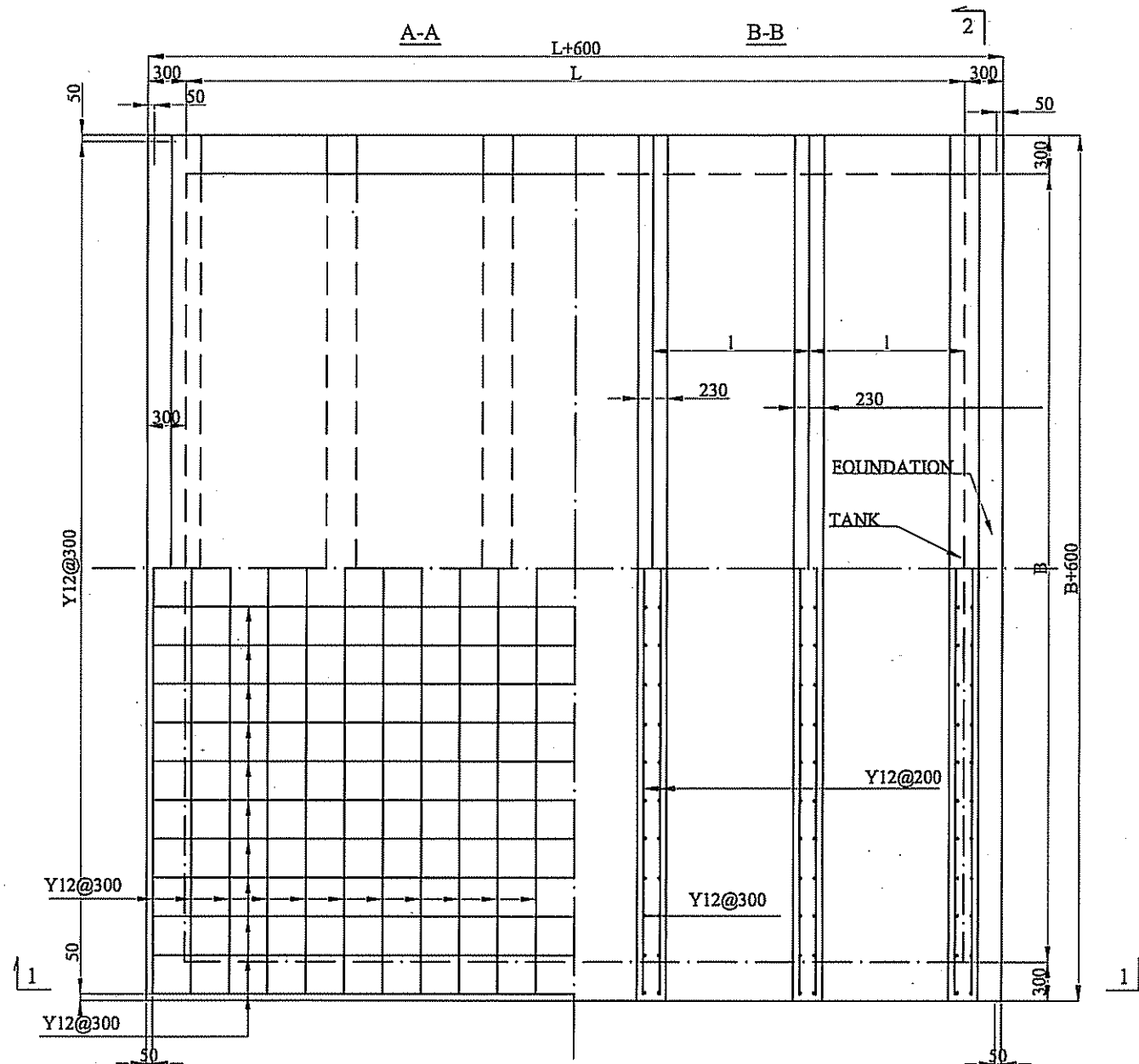
PROJECT NAME:  
 THE PROJECT FOR  
 RURAL WATER SUPPLY

CONSULTING ENGINEERS:  
**NIPPON KOEI CO., LTD.**

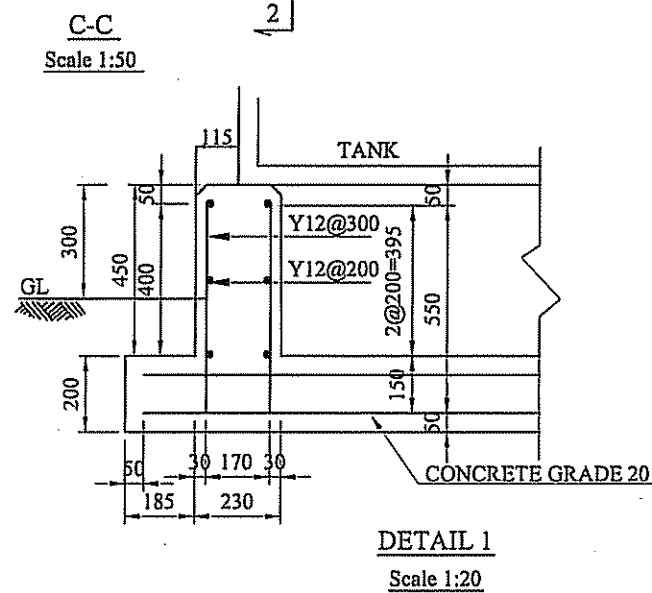
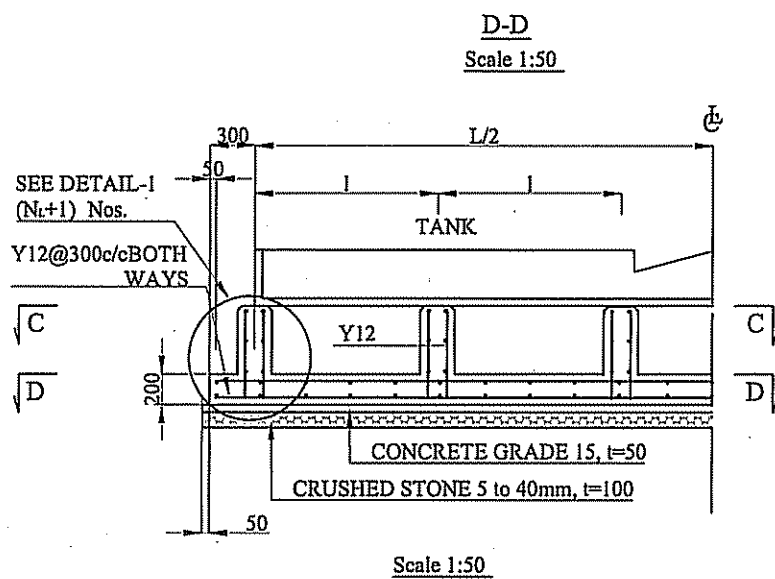
TITLE:  
 CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP

STORAGE TANK (1/2)

SCALE 1:50 1:100	DATE FEB. 2006	DRAWING NO. SP-087
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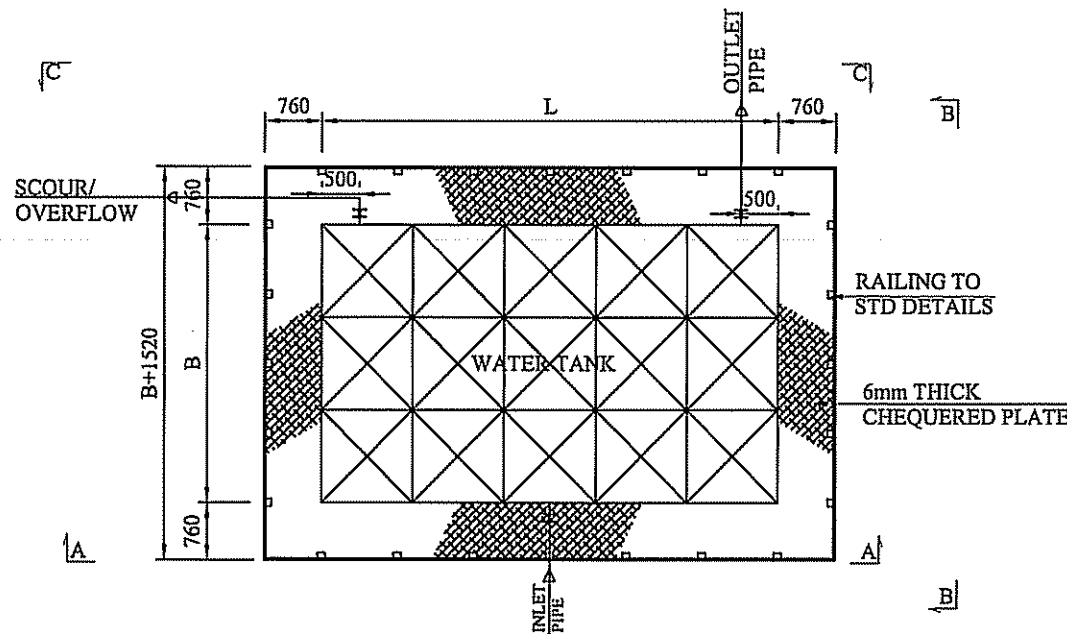
STEEL LADDER DETAILS



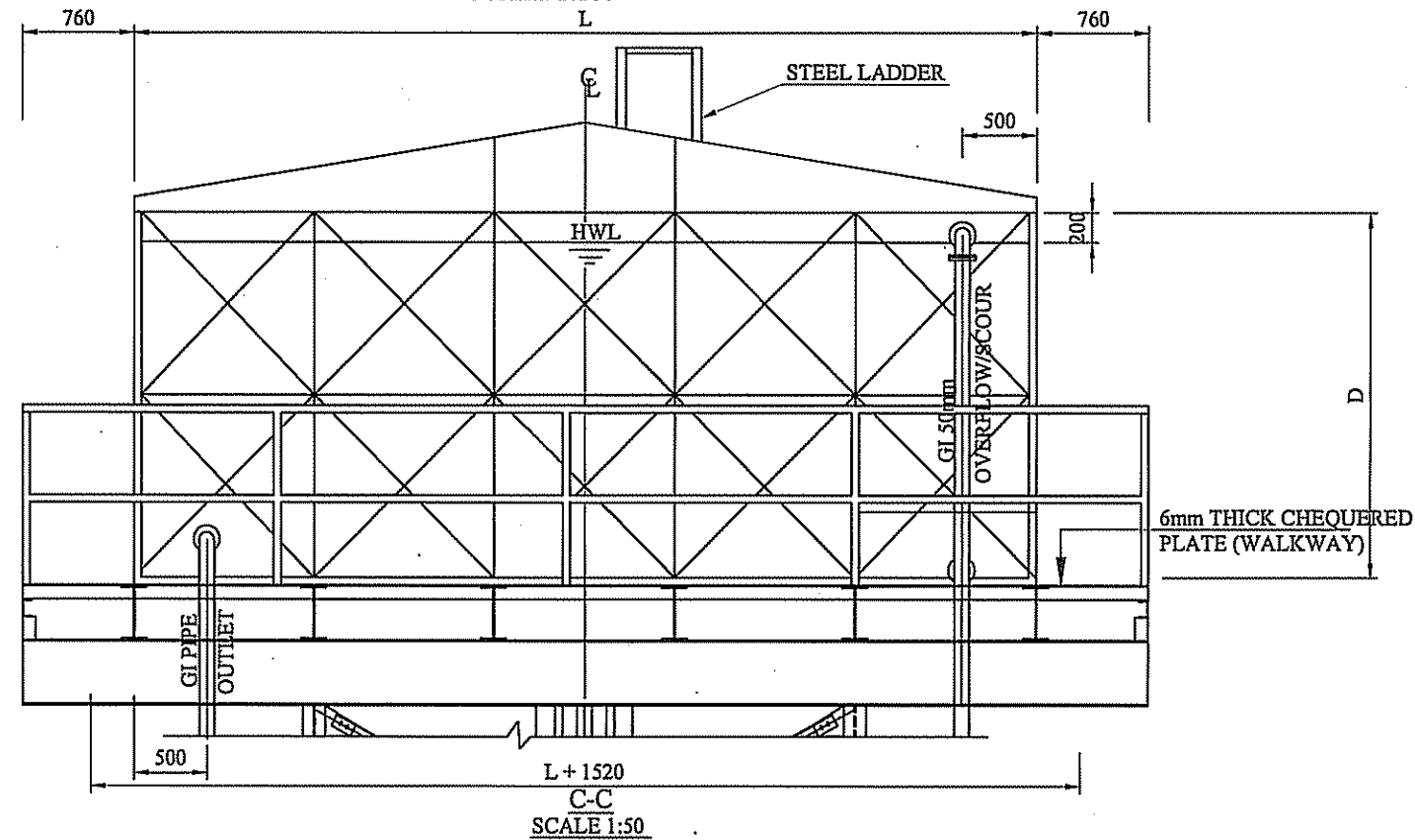
Tank Type	Storage Tank Vol		Square Side		Dimension & Number					Weight & Tank			Location No.
	Class (m <sup>3</sup> )	Actual (m <sup>3</sup> )	l (m)	L (m)	N <sub>l</sub> (nos.)	B (m)	N <sub>B</sub> (nos.)	D (m)	N <sub>D</sub> (nos.)	Empty (t)	Full Water (t)	Ladder Height h (m)	
V8	8.0	8.0	1.00	2.00	2	2.00	2	2.00	2	1.2	9.2	0	11, 18
V10	10.0	10.9	1.22	3.66	3	2.44	2	1.22	1	1.7	12.6	0	18, 55
V15	15.0	16.3	1.22	3.66	3	3.66	3	1.22	1	2.4	18.7	0	62x2, 87, 89, 93
V24	24.0	29.1	1.22	4.88	4	2.44	2	2.44	2	3.1	32.2	0.5	8, 21, 33, 46, 55, 59, 61, 66, 69
V50	50.0	54.5	1.22	6.10	5	3.66	3	2.44	2	4.8	59.2	0.5	10, 11, 15, 16, 20, 27, 30, 32, 39, 60, 67, 74, 85

OWNER: <b>THE MINISTRY OF WATER AND IRRIGATION THE REPUBLIC OF KENYA</b>	PROJECT NAME: <b>THE PROJECT FOR RURAL WATER SUPPLY</b>	CONSULTING ENGINEERS: <b>NIPPON KOEI CO., LTD.</b>	<b>CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP STORAGE TANK (2/2)</b>		
SCALE 1:5 1:20 1:50		DATE FEB. 2006	DRAWING NO. SP-088		

Tank Type	Storage Tank Volume		Square Side		Dimension & Number					Weight & Tank		Tower Height H (m)	Location No.
	Class (m <sup>2</sup> )	Actual (m <sup>2</sup> )	l (m)	L (m)	NL (nos.)	B (m)	NB (nos.)	D (m)	ND (nos.)	Empty (t)	Full Water (t)		
V15	15.0	16.3	1.22	3.66	3	3.66	3	1.22	1	2.4	18.7	5	82, 93
V50	50.0	54.5	1.22	6.10	5	3.66	3	2.44	2	4.8	59.2	5	41, 54
												10	4



TYPICAL LAYOUT PLAN OF ELEVATED STORAGE TANK  
SCALE 1:100

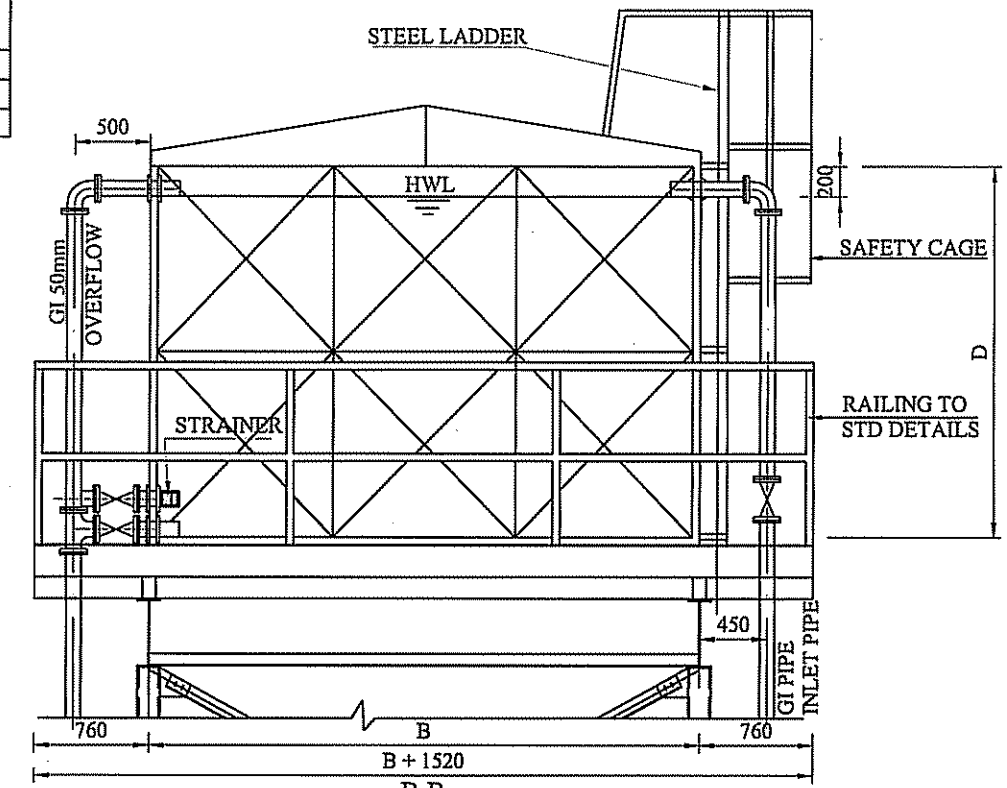


C-C  
SCALE 1:50

PIPE	DIMENSION (mm)	LOCATION NO.
INLET	GI 40	82, 93
	GI 50	41, 54
	GI 80	4
OUTLET	GI 50	41, 54, 82, 93
	GI 80	4

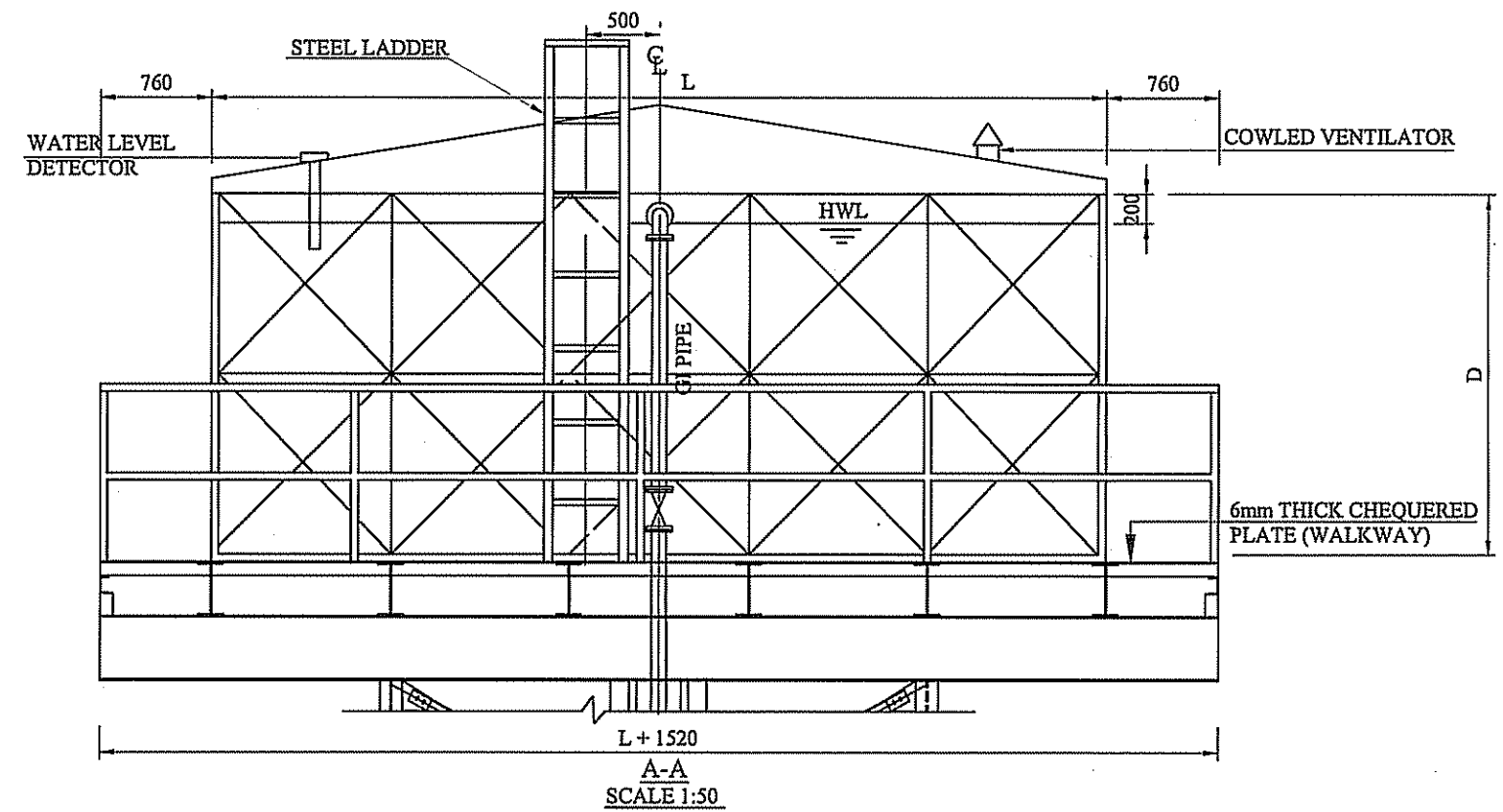
LEGEND:

- ⊞ GATE VALVE
- PIPELINE



B-B  
SCALE 1:50

NOTE: FOR LADDER DETAILS SEE DRAWING NO SP-103



A-A  
SCALE 1:50

OWNER:  
THE MINISTRY OF WATER AND IRRIGATION  
THE REPUBLIC OF KENYA

PROJECT NAME:  
THE PROJECT FOR  
RURAL WATER SUPPLY

CONSULTING ENGINEERS:  
 NIPPON KOEI CO., LTD.

TITLE:  
CONSTRUCTION OF WATER SUPPLY FACILITIES BY SUBMERSIBLE PUMP  
ELEVATED STORAGE TANK

SCALE 1:50 1:100	DATE FEB. 2006	DRAWING NO. SP089
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