b. 管網計算

Node Data

Node No.	Discharge	WL	GL	Eff. Head
	l/sec	m	m	m
0	-55.49	207.66	183.7	23.96
1	2.38	207.15	183.5	23.65
2	1.94	206.12	184.0	22.12
3	6.86	205.26	183.9	21.36
4	5.02	205.21	183.8	21.41
5	9.37	203.90	185.0	18.90
6	4.83	204.19	184.1	20.09
7	3.82	206.42	184.0	22.42
8	7.53	205.78	184.3	21.48
9	7.28	203.60	184.6	19.00
10	6.46	205.59	184.4	21.19
	55.49			

Pipeline Data

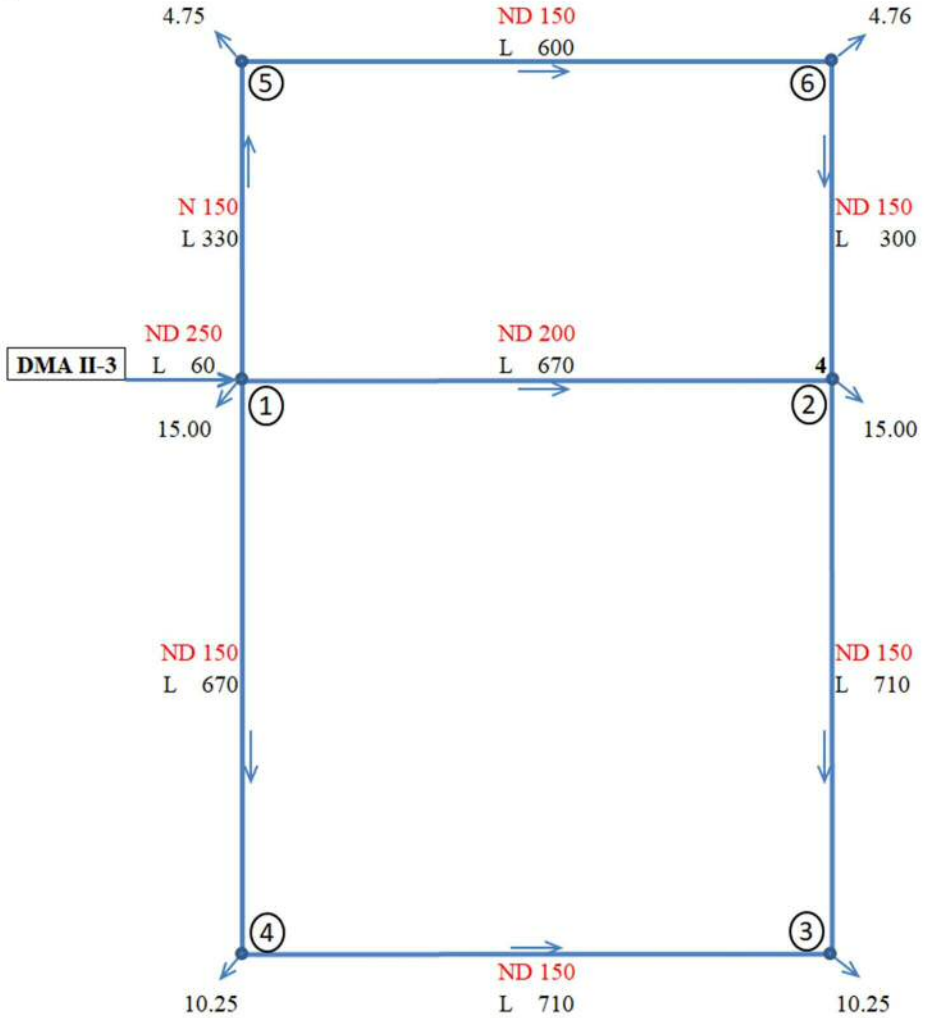
Node Number		Dia.	Length	Friction	Head Loss	Flow	Velocity	H.Gradient
Up-stream	Dn-stream	m	m	Co-efficient	m	l/sec	m/sec	‰
0	1	250	84	120	0.51	55.49	1.13	6.17
1	2	150	310	120	1.03	10.44	0.59	3.37
2	3	150	380	120	0.86	8.50	0.48	2.31
3	4	150	460	120	0.05	1.64	0.09	0.11
4	5	150	240	120	1.31	13.67	0.77	5.56
5	6	100	480	120	-0.29	-1.44	-0.18	0.62
6	1	150	500	120	-2.96	-14.27	-0.81	6.02
1	7	200	140	120	0.73	28.41	0.91	5.30
7	8	200	160	120	0.64	24.59	0.78	4.06
8	4	200	280	120	0.57	17.06	0.54	2.06
6	9	150	290	120	0.59	8.00	0.45	2.06
9	10	150	520	120	0.01	0.72	0.04	0.02
10	5	150	280	120	-0.31	-5.74	-0.33	1.12

5) 配水管管網計算 (Madina Town: DMA II－3)

日最大需要水量： 3,050 m3/d　　時間最大需要水量: 216 m3/h
60.01 l/s
(Peak Hourly Factor: 1.7)

放出点.:	1	2	3	4	5	6	Σq
放出流量 (l/s):	15.00	15.00	10.25	10.25	4.75	4.76	60.01
地盤高:	184.5	183.8	184.0	184.7	184.7	184.6	
区間:	①～②	①～⑤	②～③	③～④	④～①	⑤～⑥	⑥～②
管径 (mm):	200	150	150	150	150	150	150
延長 (m):	670	330	710	710	670	600	300

a. 管網模式図



b. 管網計算

Node Data

Node No.	Discharge	WL	GL	Eff. Head
	l/sec	m	m	m
0	-60.01	207.16	184.6	22.56
1	15.00	206.18	184.5	21.68
2	15.00	204.14	183.8	20.34
3	10.25	202.78	184.0	18.78
4	10.25	202.95	184.7	18.25
5	4.75	204.96	184.7	20.26
6	4.76	204.17	184.6	19.57

Pipeline Data

Node Number		Dia.	Length	Friction	Head Loss	Flow	Velocity	H.Gradient
Up-stream	Dn-stream	m	m	Co-efficient	m	l/sec	m/sec	‰
0	1	250	140	120	0.99	60.01	1.22	7.13
1	2	200	670	120	2.03	21.20	0.68	3.08
2	3	150	710	120	1.36	7.75	0.44	1.94
3	4	150	710	120	-0.17	-2.50	-0.14	0.24
4	1	150	670	120	-3.22	-12.75	-0.72	4.89
1	5	150	330	120	1.22	11.06	0.63	3.76
5	6	150	600	120	0.79	6.31	0.36	1.33
6	2	150	300	120	0.03	1.55	0.09	0.10

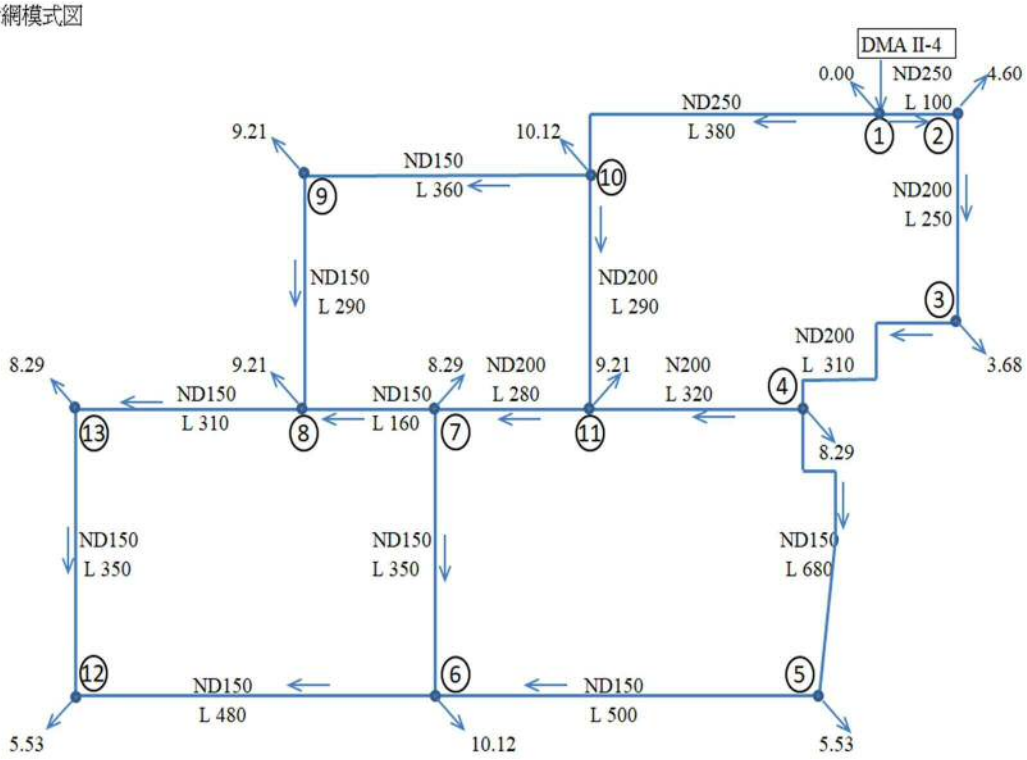
6) 配水管管網計算 (Madina Town: DMA II－4)

日最大需要水量： 4,680 m3/d　　時間最大需要水量: 332 m3/h
92.08 l/s
(Peak Hourly Factor: 1.7)

Node No.:	1	2	3	4	5	6		7	
Demand (l/s):	0.00	4.60	3.68	8.29	5.53	10.12		8.29	
GL:	183.5	183.40	183.8	183.9	184.1	184.6		184.2	
Section:	①～②	②～③	③～④	④～⑤	⑤～⑧	⑧～⑦	⑧～⑫	⑦～⑧	⑦～⑪
ND:	250	200	150	150	150	150	150	150	200
L:	100	250	310	680	500	350	480	160	280

Node No.:	8	9	10		11	12	13		
Demand (l/s):	9.21	9.21	10.12		9.21	5.53	8.29		92.08
GL:	184.4	184.3	183.8		183.8	194.6	185.0		
Section:	⑧～⑨	⑨～⑩	⑩～⑪	⑩～①	⑪～④	⑫～⑬	⑬～⑧		
ND (mm):	150	150	200	250	200	150	150		
L (m):	290	360	290	380	320	350	310		

a. 管網模式図



b. 管網計算

Node Data

Node No.	Discharge	WL	GL	Eff. Head
	l/sec	m	m	m
0	-92.08	206.13	183.4	
1	0.00	205.15	183.5	21.65
2	4.60	204.87	183.4	21.47
3	3.68	203.22	183.8	19.42
4	8.29	201.59	183.9	17.69
5	5.53	199.29	184.1	15.19
6	10.12	198.86	184.6	14.26
7	8.29	199.88	184.2	15.68
8	9.21	199.34	184.4	14.94
9	9.21	199.90	184.3	15.60
10	10.12	202.85	183.8	19.05
11	9.21	201.36	183.8	17.56
12	5.53	198.51	184.6	13.91
13	8.29	198.52	185.0	13.52

Pipeline Data

Node Number		Dia.	Length	Friction	Head Loss	Flow	Velocity	H.Gradient
Up-stream	Dn-stream	m	m	Co-efficient	m	l/sec	m/sec	‰
0	1	250	63	120	0.98	92.08	1.88	15.75
1	2	250	100	120	0.28	36.79	0.75	2.89
2	3	200	250	120	1.65	32.19	1.03	6.68
3	4	200	310	120	1.63	28.51	0.91	5.34
4	5	150	680	120	2.30	10.55	0.60	3.44
5	6	150	500	120	0.43	5.02	0.28	0.87
6	7	150	350	120	-1.02	-9.73	-0.55	2.96
7	8	150	160	120	0.55	10.60	0.60	3.47
8	9	150	290	120	-0.56	-7.81	-0.44	1.97
9	10	150	360	120	-2.96	-17.02	-0.96	8.34
10	11	200	290	120	1.49	28.15	0.90	5.21
10	1	250	380	120	-2.30	-55.29	-1.13	6.13
11	7	200	280	120	1.48	28.61	0.91	5.37
11	4	200	320	120	-0.23	-9.67	-0.31	0.72
6	12	150	480	120	0.35	4.63	0.26	0.75
12	13	150	350	120	-0.01	-0.91	-0.05	0.04
13	8	150	310	120	-0.81	-9.20	-0.52	2.67

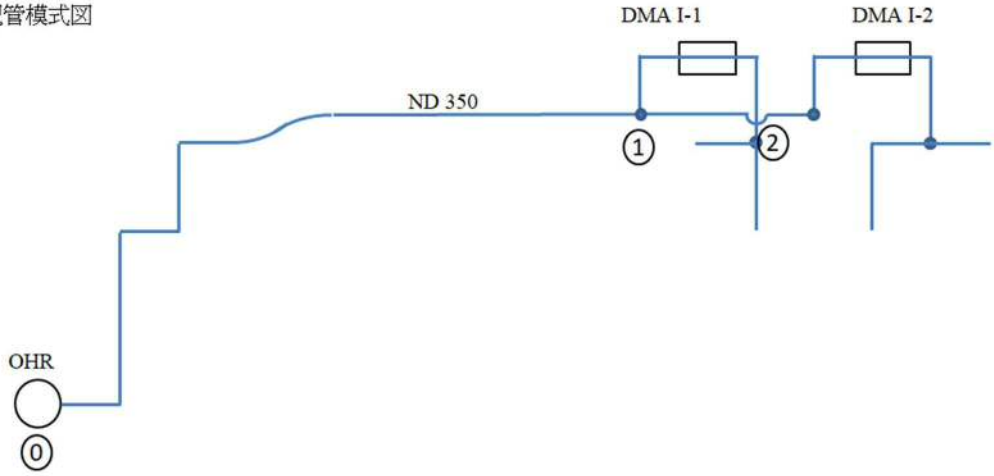
参考：2028 年における配水管システム

(1) 配水本管水理計算と管径の決定

1) 配水本水理計算（DZ-I Abddulahpur）

計画流量	unit	本計画（2028） Zone I	Zone I - 1	DMA II - 2
日最大需要水量	m^3/d	5,960	3,100	2,860
時間最大需要水量	m^3/hr	373	194	179
	l/s	103.47	53.82	49.65

a. 配管模式図



b. 水理計算

Year 2028

Section	Flow (l/s)	ND (mm)	L (m)	i ‰	hf (m)	GL	WL* (m)	Eff. Head (m)
⓪						186.1	210.60	24.5
	103.5	350	630	3.80	2.39			
①						186.3	208.21	21.9
	49.7	300	100	2.07	0.21			
②						185.1	208.00	22.9

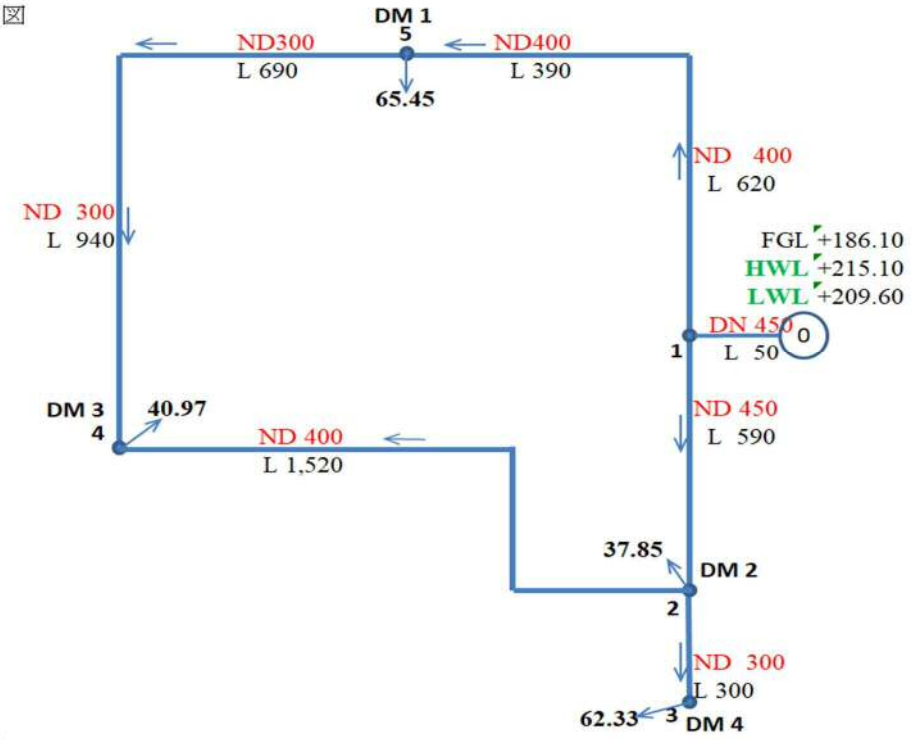
注 *: 配水塔低水位 + 211.10
配水場内損失水頭 0.5 mを見込む.

2) 配水本管管網計算と管径の決定（DZ II Madina Town)

計画流量（2028):	単位	Zone II	DMA II-1	DMA II-2	DMA II-3	DMA II-4
日最大需要水量	m^3/d	11,900	3,770	2,180	2,360	3,590
時間最大重要水量	m^3/hr	744	236	136	148	224
	l/s	206.60	65.45	37.85	40.97	62.33

管網計算
2028 年

a. 管網模式図



b. 管網計算

Node Data

Node No.	Type	Flow l/sec	WL*1 m	GL m	Eff. Head m	Note
0		-206.60	**209.60**	186.1	23.5	
1		0.00	209.40	183.9	25.5	
2		37.85	208.40	183.7	24.8	DM 2
3		62.33	207.47	183.4	24.0	DM 4
4		40.97	208.09	184.6	23.5	DM 3
5		65.45	208.29	185.8	22.4	DM 1

note *: LWL of OHR + 209.60
loss in Distribution Center as 0.5m is assumed.

Pipeline Data

Node Number Up-stream	Dn-stream	Dia. m	Length m	Friction Co-efficient	Head Loss m	Flow l/sec	Velocity m/sec	H. gradient ‰
0	1	450	50	120	0.20	206.60	1.30	4.01
1	2	450	590	120	1.00	130.55	0.82	1.72
2	3	300	300	120	0.93	62.33	0.88	3.15
4	5	300	1630	120	-0.19	-10.60	-0.15	-0.12
4	2	400	1520	120	-0.31	-30.37	-0.24	-0.21
5	1	400	1010	120	-1.12	-76.05	-0.61	-1.12

(2) 配水支管管網計算と口径の決定

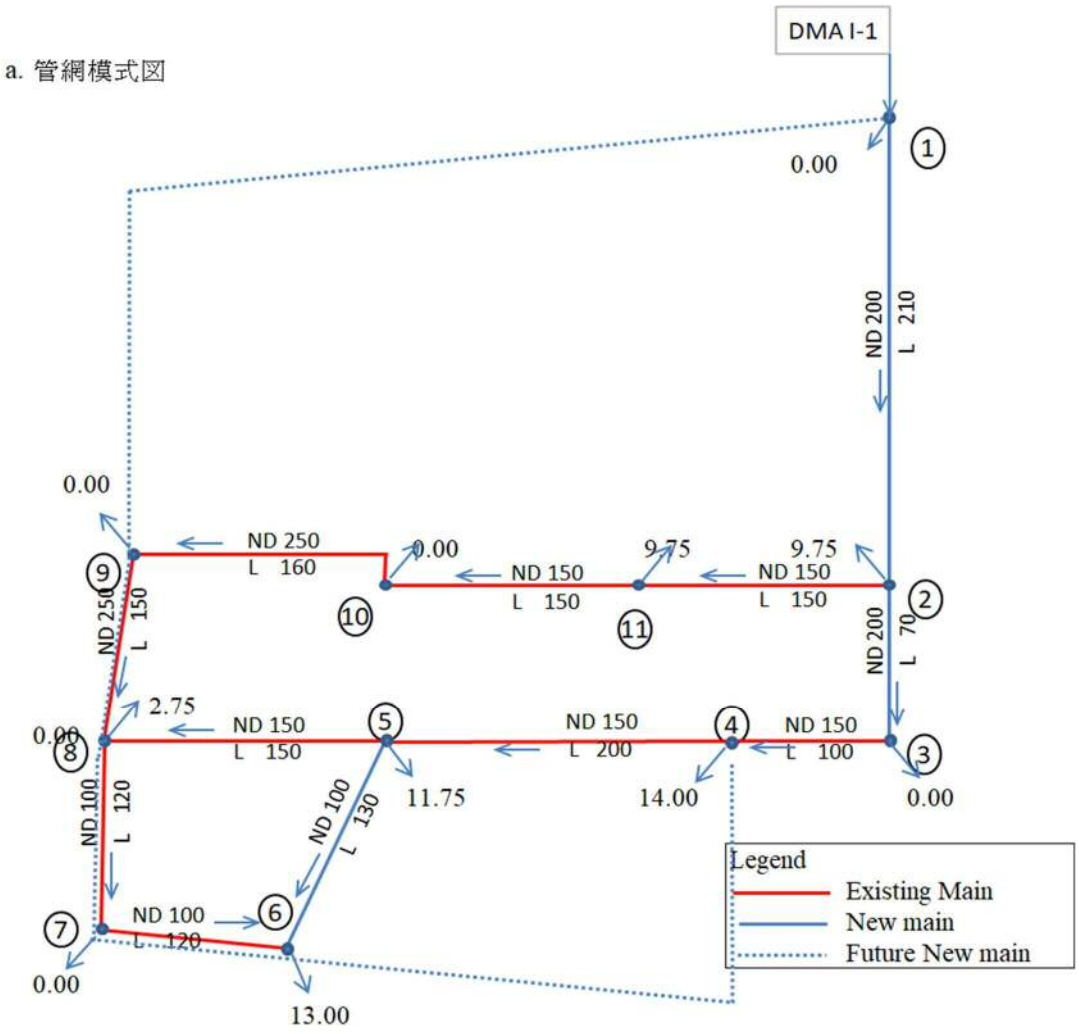
1) 配水管管網計算 (Abddulahpur: DMA I – 1)

日最大需要水量： 3,100 m3/d　　時間最大需要水量: 219.6 m3/h
61.00 l/s
(Peak Hourly Factor: 1.7)

放出点.:	1	2	3	4	5		6	7
放出流量 (l/s):	0.00	9.75	0.00	14.00	11.75		13.00	0.00
地盤高:	185.3	185.5	185.50	185.6	185.7		185.8	185.9
区間:	①～②	②～③	③～④	④～⑤	⑤～⑧	⑤～⑥	⑥～⑦	⑦～⑧
管径 (mm):	200	200	150	150	150	100	100	100
延長 (m):	210	70	100	200	150	130	120	120

放出点.:	8	9	10	11	Σq
放出流量 (l/s):	2.75	0.00	0.00	9.75	61.00
地盤高:	185.8	185.8	185.7	185.6	
区間:	⑧～⑨	⑨～⑩	⑩～⑪	⑪～②	
管径 (mm):	250	250	150	150	
延長 (m):	150	160	150	150	

a. 管網模式図



b. 管網計算

Node Data

Node No.	Flow	WL	GL	Eff. Head
	l/sec	m	m	m
0	-61.000	208.21	185.3	22.91
1	0.000	207.64	185.3	22.34
2	9.750	203.13	185.5	17.63
3	0.000	202.78	185.5	17.28
4	14.000	200.78	185.6	15.18
5	11.750	199.70	185.7	14.00
6	13.000	198.05	185.8	12.25
7	0.000	198.96	185.9	13.06
8	2.750	199.86	185.8	14.06
9	0.000	199.93	185.8	14.13
10	0.000	200.01	185.7	14.31
11	9.750	200.86	185.6	15.26

Pipeline Data

Node Number		Dia.	Length	Friction	Head Loss	Flow	Velocity	H.Gradient
Up-stream	Dn-stream	m	m	Co-efficient	m	l/sec	m/sec	‰
0	1	250	78	120	0.57	61.00	1.24	7.35
1	2	200	210	120	4.52	61.00	1.94	21.80
2	3	200	70	120	0.35	27.56	0.88	5.01
3	4	150	100	120	2.00	27.56	1.56	20.34
4	5	150	200	120	1.08	13.56	0.77	5.48
5	8	150	150	120	-0.16	-5.60	-0.32	1.07
5	6	100	130	120	1.65	7.41	0.94	12.90
6	7	100	120	120	-0.90	-5.59	-0.71	7.66
7	8	100	120	120	-0.90	-5.59	-0.71	7.66
8	9	250	150	120	-0.07	-13.94	-0.28	0.48
9	10	250	160	120	-0.08	-13.94	-0.28	0.48
10	11	150	150	120	-0.85	-13.94	-0.79	5.77
11	2	150	150	120	-2.27	-23.69	-1.34	15.38

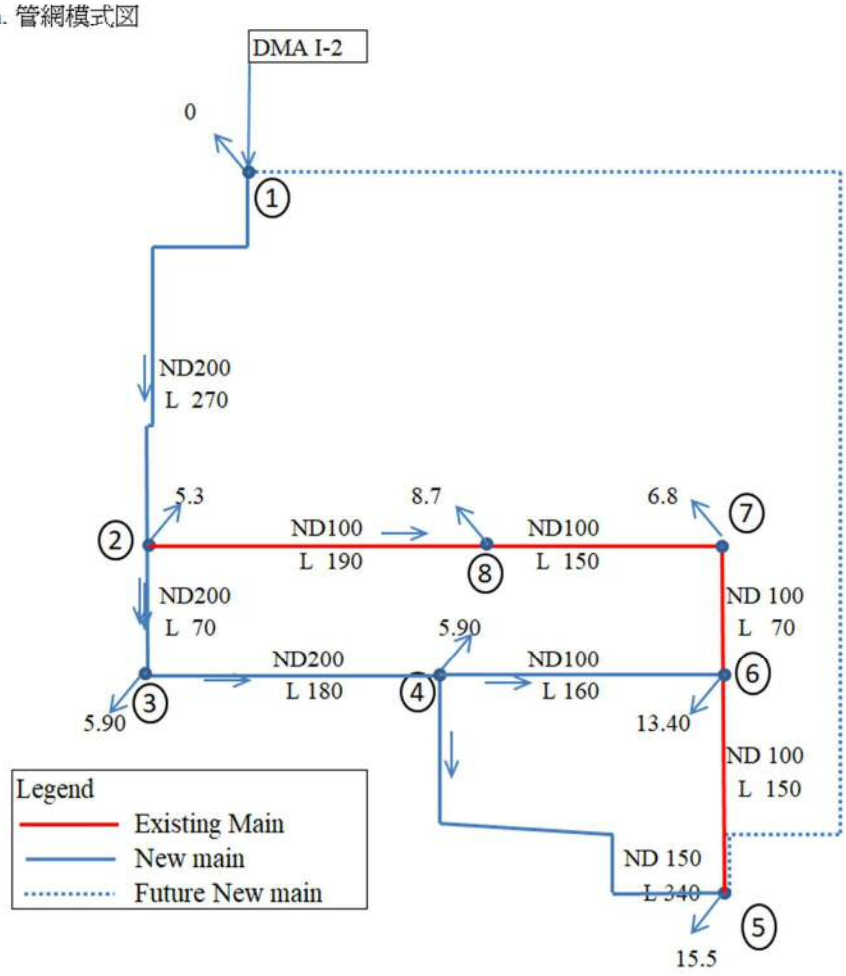
2) 配水管管網計算 (Abddulahpur: DMA I - 2)

日最大需要水量 : 2,860 m3/d　　時間最大需要水量: 202.6 m3/h
56.3 l/s
(Peak Hourly Factor: 1.7)

放出点.:	1	2	3	4	5	6		7
放出流量 (l/s):	0.00	5.30	5.90	5.90	15.50	8.10		6.90
地盤高:	185.1	185.2	185.4	185.9	186.1	185.5		185.5
区間:	①~②	②~③	③~④	④~⑤	⑤~⑥	⑥~⑦	⑥~④	⑦~⑧
管径 (mm):	200	200	200	150	100	100	100	100
延長 (m):	270	70	180	340	150	70	160	150

放出点.:	8	Σq
放出流量 (l/s):	8.70	56.30
地盤高:	185.4	
区間:	⑧~②	
管径 (mm):	100	
延長 (m):	190	1,390

a. 管網模式図



b. 管網計算

Node Data

Node No.	Flow	WL	GL	Eff. Head
	l/sec	m	m	m
0	-56.30	208.00	185.10	22.90
1	0.00	207.51	185.10	22.41
2	5.30	202.51	185.20	17.31
3	5.90	201.83	185.40	16.43
4	5.90	200.54	185.90	14.64
5	15.50	197.43	186.10	11.33
6	8.10	197.17	185.50	11.67
7	6.90	196.86	185.50	11.36
8	8.70	197.15	185.40	11.75

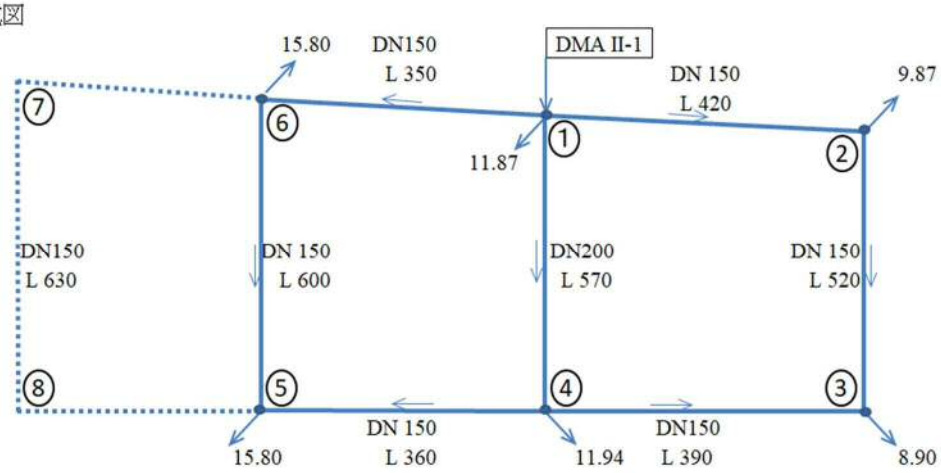
Pipeline Data

Node Number		Dia.	Length	Friction	Head Loss	Flow	Velocity	H.Gradient
Up-stream	Dn-stream	m	m	Co-efficient	m	l/sec	m/sec	‰
0	1	250	78	120	0.49	56.30	1.15	6.34
1	2	200	270	120	5.01	56.30	1.79	18.79
2	3	200	70	120	0.68	39.60	1.26	9.80
3	4	200	180	120	1.29	33.70	1.07	7.27
4	5	150	340	120	3.11	18.05	1.02	9.30
5	6	100	150	120	0.26	2.55	0.32	1.79
6	7	100	70	120	0.31	4.20	0.53	4.51
6	4	100	160	120	-3.37	-9.75	-1.24	21.44
7	8	100	150	120	-0.29	-2.70	-0.34	2.00
8	2	100	190	120	-5.36	-11.40	-1.45	28.65

3) 配水管管網計算 (Madina Town: DMA II – 1)

日最大需要水量：	3,770 m3/d			時間最大需要水量:		267.0 m3/h 74.18 l/s	
				(Peak Hourly Factor:		1.7)	
放出点.:	1	2	3	4	5	6	Σq
放出流量 (l/s):	11.87	9.87	8.90	11.94	15.80	15.80	74.18
地盤高:	185.6	186.8	184.6	184.6	184.9	185.1	
区間:	①~②	①~④	②~③	③~④	④~⑤	⑤~⑥	⑥~①
管径 (mm):	150	200	150	150	150	150	150
延長 (m):	420	570	520	390	360	600	350

a. 管網模式図



b. 管網計算

Node Data

Node No.	Discharge	WL	GL	Eff. Head
	l/sec	m	m	m
0	-74.18	208.29	185.8	22.49
1	11.87	207.67	185.6	22.07
2	9.87	205.04	186.8	18.24
3	8.90	204.62	184.6	20.02
4	11.94	204.85	184.6	20.25
5	15.80	203.40	184.9	18.50
6	15.80	203.78	185.1	18.68

Pipeline Data

Node Number		Dia.	Length	Friction	Head Loss	Flow	Velocity	H.Gradient
Up-stream	Dn-stream	m	m	Co-efficient	m	l/sec	m/sec	‰
0	1	250	60	120	0.63	74.18	1.51	10.56
1	2	150	420	120	2.63	14.70	0.83	6.36
2	3	150	520	120	0.41	4.83	0.27	0.81
3	4	150	390	120	-0.23	-4.07	-0.23	0.59
4	5	150	360	120	1.45	11.56	0.66	4.08
5	6	150	600	120	-0.38	-4.24	-0.24	0.64
6	1	150	350	120	-3.89	-20.04	-1.13	11.28
1	4	200	570	120	2.82	27.57	0.88	5.02

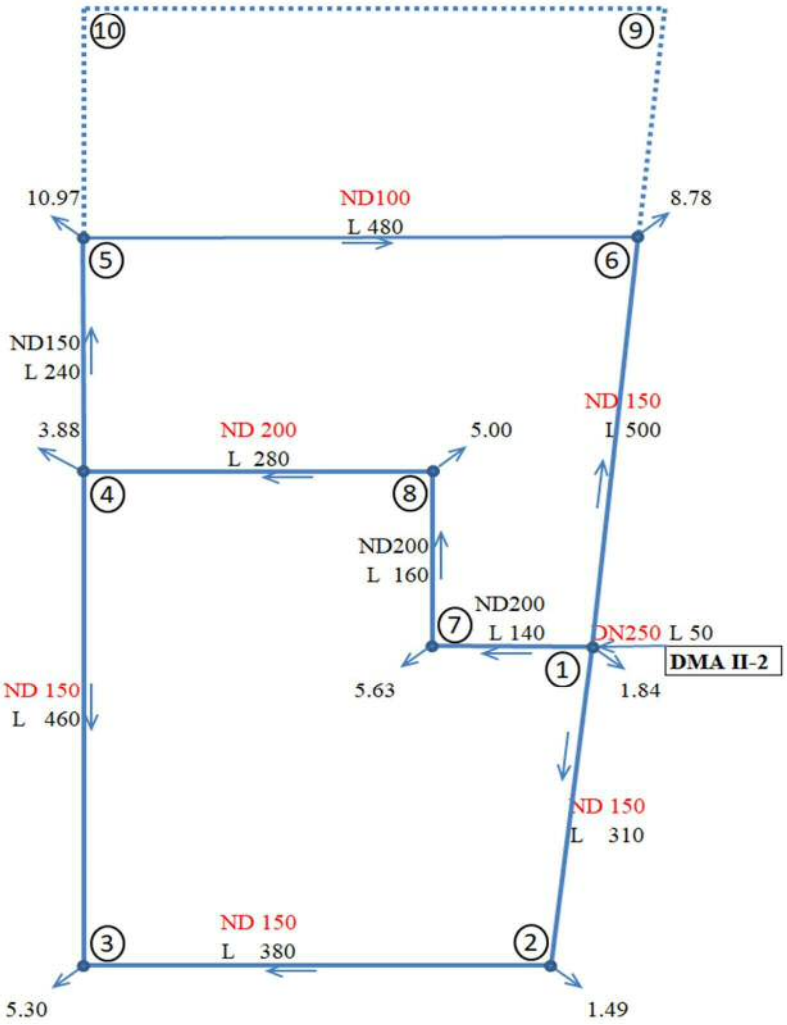
4) 配水管管網計算 (Madina Town: DMA II－2)

日最大需要水量： 2,180 m3/d　　時間最大需要水量: 154 m3/h
42.89 l/s
(Peak hourly Factor: 1.7)

放出点.:	1	2		3	4	5	
放出流量 (l/s):	1.84	1.49		5.30	3.88	10.97	
地盤高:	183.5	184.0		183.9	183.8	185.0	
区間:	①～②	①～⑦	②～③	③～④	④～⑤	⑤～⑥	
管径 (mm):	150	200	150	150	150	100	
延長 (m):	310	140	380	460	240	480	

放出点.:	6		7	8	9	10	
放出流量 (l/s):	8.78		5.63	5.00	0.00	0.00	Σq
地盤高:	184.1		184.0	184.3	184.6	184.4	42.89
区間:	⑥～①	⑥～⑨	⑦～⑧	⑧～④			
管径 (mm):	150	150	200	200			
延長 (m):	500	290	160	280			

a. 管網模式図



b. 管網計算

Node Data

Node No.	Discharge	WL	GL	Eff. Head
	l/sec	m	m	m
0	-42.89	208.40	183.7	24.70
1	1.84	208.08	183.5	24.58
2	1.49	207.47	184.0	23.47
3	5.30	206.96	183.9	23.06
4	3.88	206.94	183.8	23.14
5	10.97	206.25	185.0	21.25
6	8.78	206.51	184.1	22.41
7	5.63	207.59	184.0	23.59
8	5.00	207.25	184.3	22.95

Pipeline Data

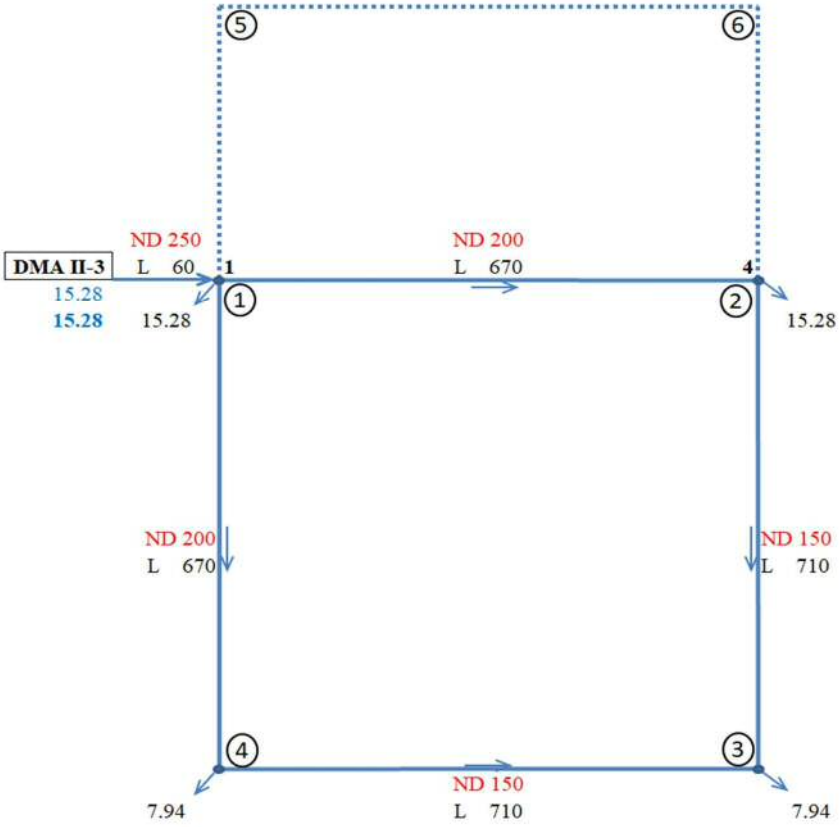
Node Number		Dia.	Length	Friction	Head Loss	Flow	Velocity	H.Gradient
Up-stream	Dn-stream	m	m	Co-efficient	m	l/sec	m/sec	‰
0	1	250	84	120	0.32	42.89	0.87	3.83
1	2	150	310	120	0.61	7.89	0.45	2.01
2	3	150	380	120	0.51	6.40	0.36	1.37
3	4	150	460	120	0.02	1.10	0.06	0.05
4	5	150	240	120	0.69	9.62	0.55	2.90
5	6	100	480	120	-0.26	-1.35	-0.17	0.55
6	1	150	500	120	-1.57	-10.13	-0.57	3.20
1	7	200	140	120	0.50	23.03	0.73	3.59
7	8	200	160	120	0.34	17.40	0.55	2.14
8	4	200	280	120	0.32	12.40	0.40	1.14

5) 配水管管網計算 Madina Town: (DMA II – 3)

日最大需要水量： 2,360 m3/d　　時間最大需要水量: 167 m3/h
46.44 l/s
(Peak Hourly Factor: 1.7)

放出点.:	1		2	3	4	5	6	Σq
放出流量 (l/s):	15.28		15.28	7.94	7.94	0.00	0.00	46.44
地盤高:	184.5		183.8	184.0	184.7	184.7	184.6	
区間:	①～②	①～⑤	②～③	③～④	④～①	⑤～⑥	⑥～②	
管径 (mm):	200	150	150	150	150	150	150	
延長 (m):	670	330	710	710	670	600	300	

a. 管網模式図



b. 管網計算

Node Data

Node No.	Discharge	WL	GL	Eff. Head
	l/sec	m	m	m
0	-46.44	208.09	184.6	23.49
1	15.28	207.48	184.5	22.98
2	15.28	205.58	183.8	21.78
3	7.94	204.94	184.0	20.94
4	7.94	205.14	184.7	20.44

Pipeline Data

Node Number		Dia.	Length	Friction	Head Loss	Flow	Velocity	H.Gradient
Up-stream	Dn-stream	m	m	Co-efficient	m	l/sec	m/sec	‰
0	1	250	140	120	0.61	46.44	0.95	4.44
1	2	200	670	120	1.90	20.44	0.65	2.88
2	3	150	710	120	0.64	5.16	0.29	0.92
3	4	150	710	120	-0.20	-2.78	-0.16	0.29
4	1	150	670	120	-2.34	-10.72	-0.61	3.55

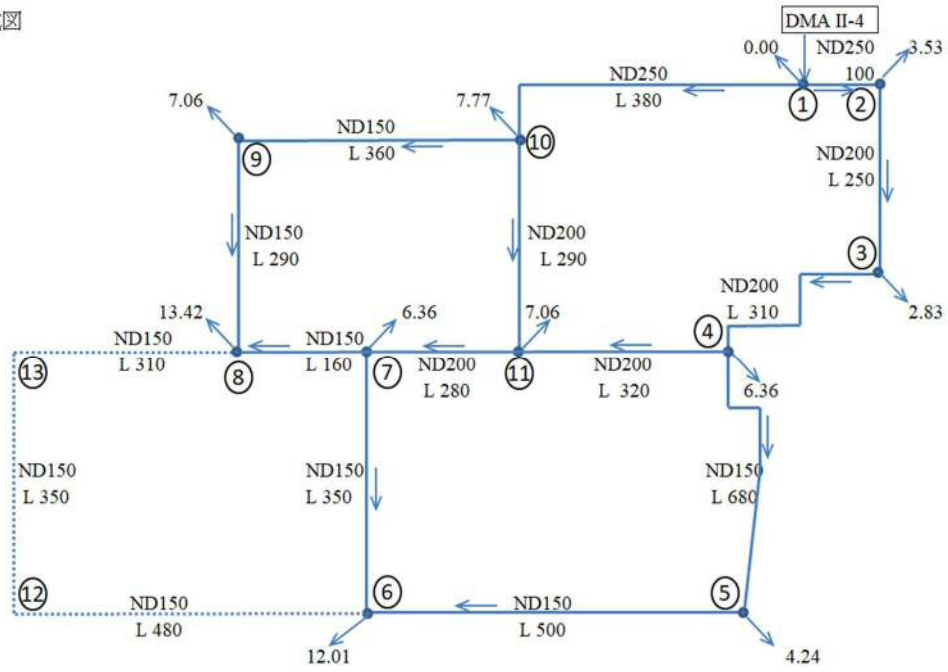
6) 配水管管網計算 (Madina Town: DMA II－4)

日最大需要水量： 3,590 m3/d　　時間最大需要水量: 254 m3/h
70.64 l/s
(Peak Hourly Factor: 1.7)

放出点.:	1	2	3	4	5	6		7	
放出流量 (l/s):	0.00	3.53	2.83	6.36	4.24	12.01		6.36	
地盤高:	183.5	183.40	183.8	183.9	184.1	184.6		184.2	
区間:	①～②	②～③	③～④	④～⑤	⑤～⑧	⑧～⑦	⑧～⑫	⑦～⑧	⑦～⑪
管径 (mm):	250	200	150	150	150	150	150	150	200
延長 (m):	100	250	310	680	500	350	480	160	280

放出点.:	8	9	10		11	12	13		Σq
放出流量 (l/s):	13.42	7.06	7.77		7.06	0	0		70.64
地盤高:	184.4	184.3	183.8		183.8	194.6	185.0		
区間:	⑧～⑨	⑨～⑩	⑩～⑪	⑩～①	⑪～④	⑫～⑬	⑬～⑧		
管径 (mm):	150	150	200	250	200	150	150		
延長 (m):	290	360	290	380	320	350	310		

a. 管網模式図



b. 管網計算

Node Data

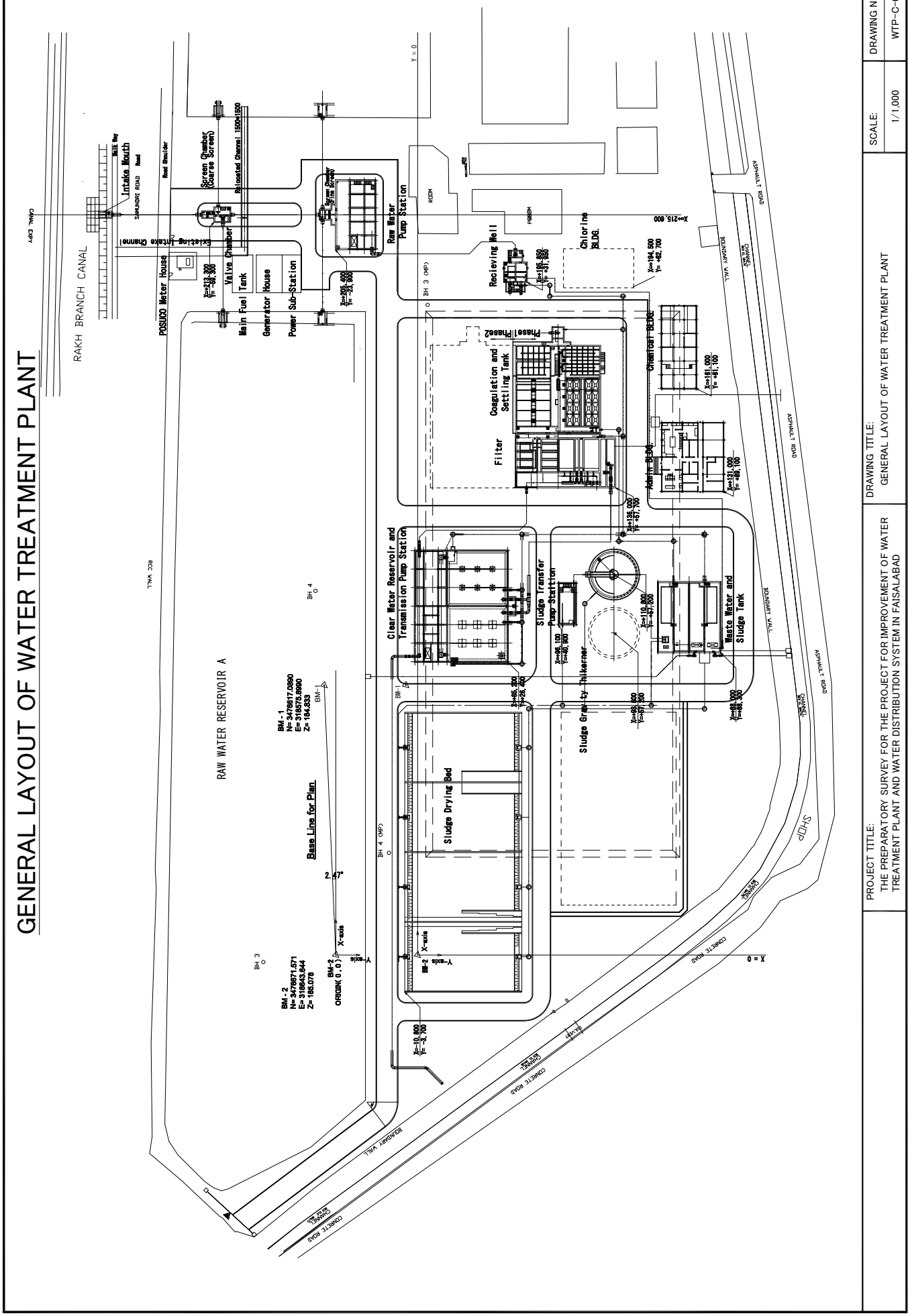
Node No.	Discharge	WL	GL	Eff. Head
	l/sec	m	m	m
0	70.64	207.47	183.4	24.07
1	0.00	206.87	183.5	23.37
2	3.53	206.70	183.4	23.30
3	2.83	205.68	183.8	21.88
4	6.36	204.67	183.9	20.77
5	4.24	203.19	184.1	19.09
6	12.01	202.90	184.6	18.30
	28.97			

Node No.	Discharge	WL	GL	Eff. Head
	l/sec	m	m	m
7	6.36	203.60	184.2	19.40
8	13.42	203.52	184.4	19.12
9	7.06	203.81	184.3	19.51
10	7.77	205.47	183.8	21.67
11	7.06	204.53	183.8	20.73
	41.67		70.64	

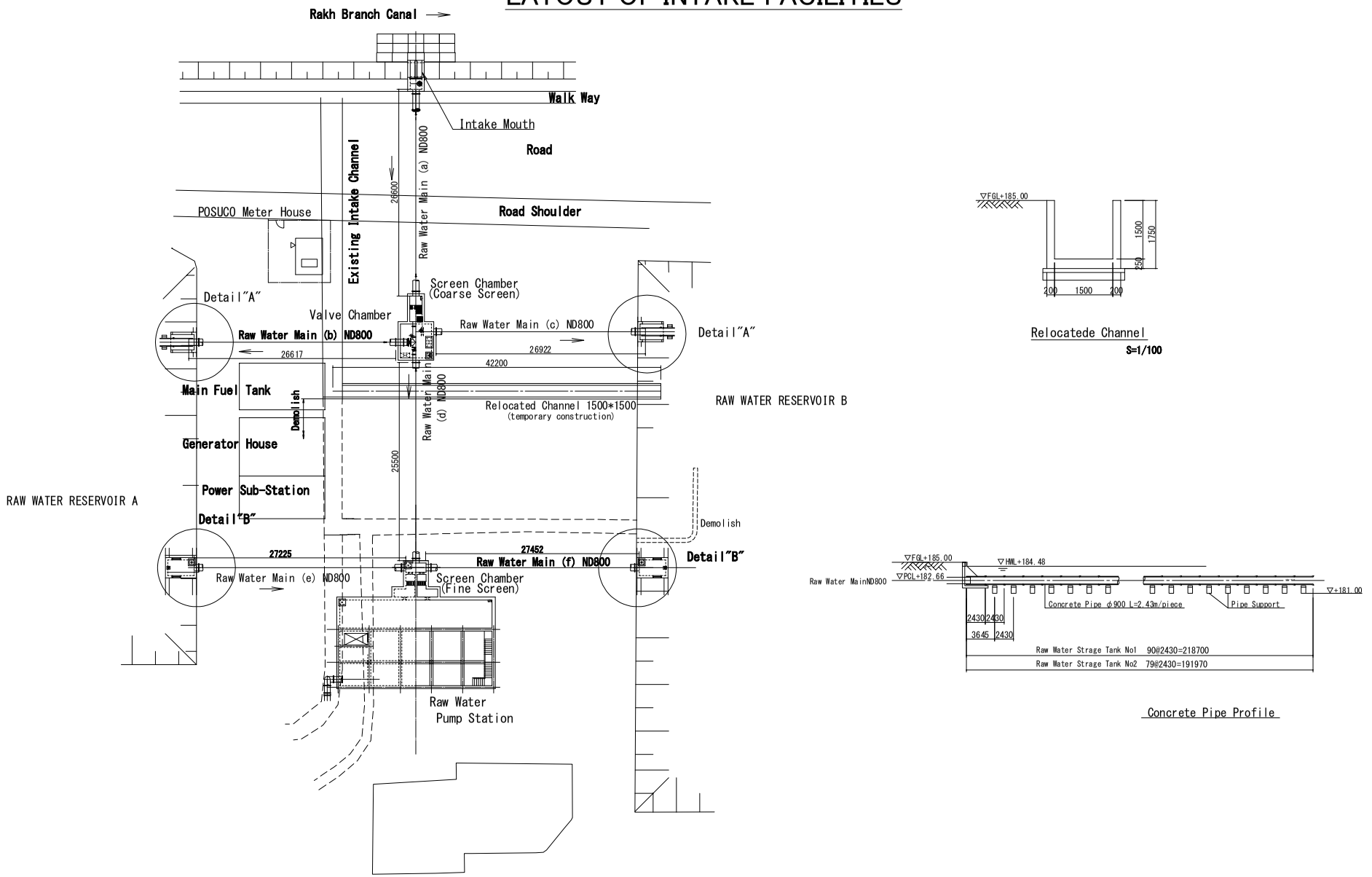
Pipeline Data

Node Number		Dia.	Length	Friction	Head Loss	Flow	Velocity	H.Gradient
Up-stream	Dn-stream	m	m	Co-efficient	m	l/sec	m/sec	‰
0	1	250	63	120	0.60	70.64	1.44	9.65
1	2	250	100	120	0.18	28.37	0.58	1.78
2	3	200	250	120	1.02	24.84	0.79	4.14
3	4	200	310	120	1.01	22.01	0.70	3.31
4	5	150	680	120	1.48	8.31	0.47	2.21
5	6	150	500	120	0.29	4.07	0.23	0.59
6	7	150	350	120	-0.70	-7.94	-0.45	2.04
7	8	150	160	120	0.08	7.98	0.45	2.06
8	9	150	290	120	-0.29	-5.44	-0.31	1.01
9	10	150	360	120	-1.67	-12.50	-0.71	4.71
10	11	200	290	120	0.94	22.00	0.70	3.30
11	7	200	280	120	0.93	22.29	0.71	3.38
11	4	200	320	120	-0.14	-7.35	-0.23	0.43
10	1	250	380	120	-1.40	-42.27	-0.86	3.73

(5) 概略設計図


GENERAL LAYOUT OF WATER TREATMENT PLANT
RAKH BRANCH CANAL
RAW WATER RESERVOIR A
Intake Mouth
Screen Chamber (Coarse Screen)
Relocated Channel 1500×1500
Valve Chamber
Main Fuel Tank
Generator House
Power Sub-Station
POSUCO Meter House
Raw Water Pump Station
Recieving Well
Chlorine BLDG.
Chemical BLDG.
Admin BLDG.
Coagulation and Setting Tank
Filter
Phase1
Phase2
Clear Water Reservoir and Transmission Pump Station
Sludge Transfer Pump Station
Sludge Gravity Thikkener
Waste Water and Sludge Tank
Sludge Drying Bed
Base Line for Plan
BM - 1
N= 3478617.0880
E= 318575.8980
Z= 184.833
BM - 2
N= 3478671.571
E= 318643.844
Z= 185.078
ORIGIN (0, 0)
2.47°
X-axis
Y-axis
BOUNDARY WALL
CONCRETE ROAD
ASPHALT ROAD
PROJECT TITLE:
THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD
DRAWING TITLE:
GENERAL LAYOUT OF WATER TREATMENT PLANT
SCALE:
1/1,000
DRAWING NO:
WTP-C-01
WTP-01

LAYOUT OF INTAKE FACILITIES



Relocatede Channel

S=1/100

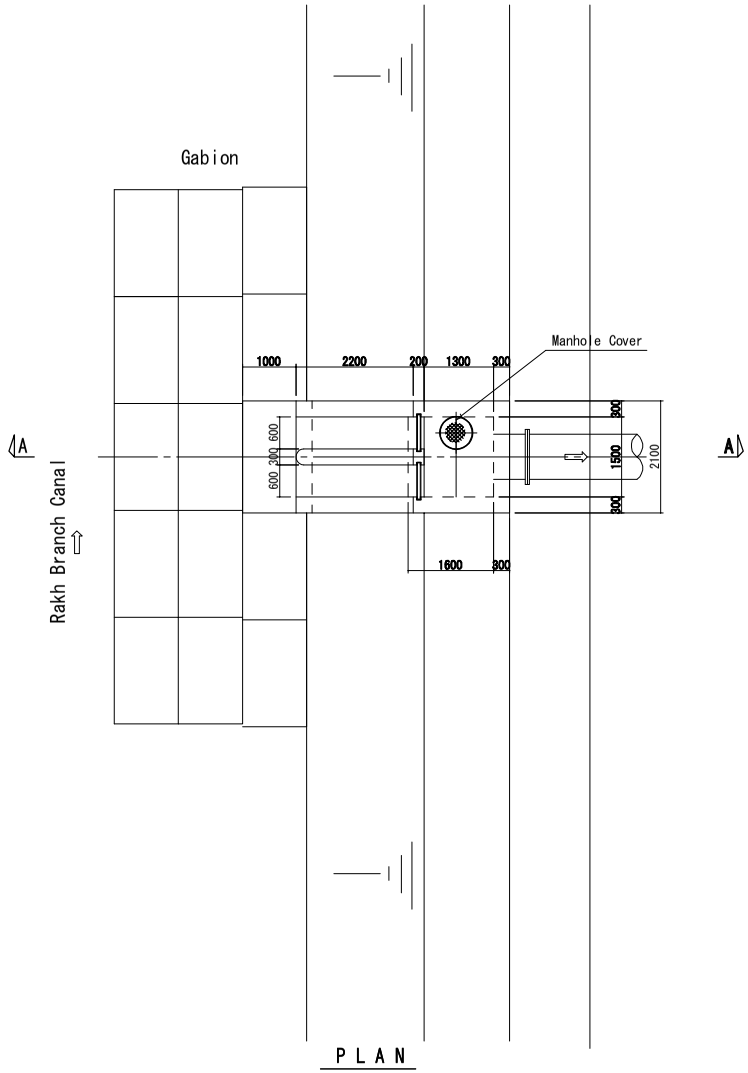
Concrete Pipe Profile

	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	LAYOUT OF INTAKE FACILITIES	1/500	WTP-C-02

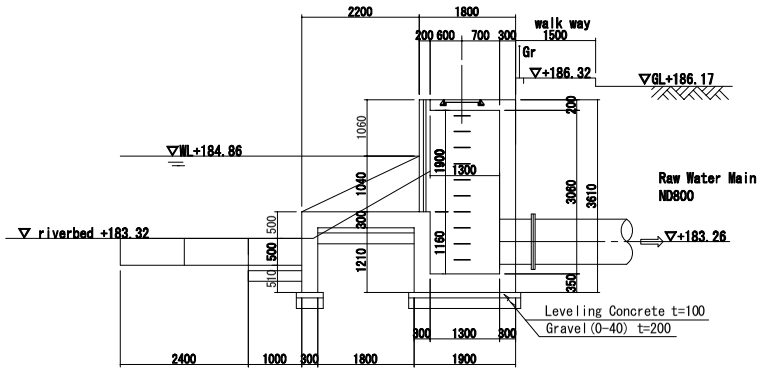
App 7(5)-2

WTP-02

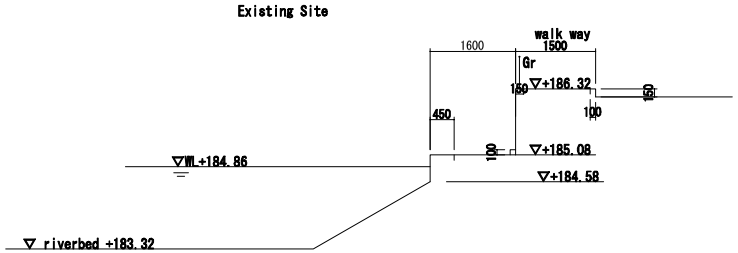
INTAKE MOUTH



P L A N



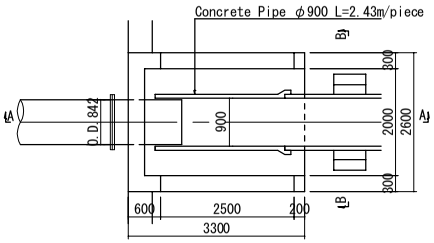
A - A SECTION



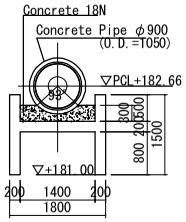
	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	INTAKE MOUTH	1/100	WTP-C-03

CONNECTION FACILITIES OF STORAGE TANK

Detail"A"
S=1/100

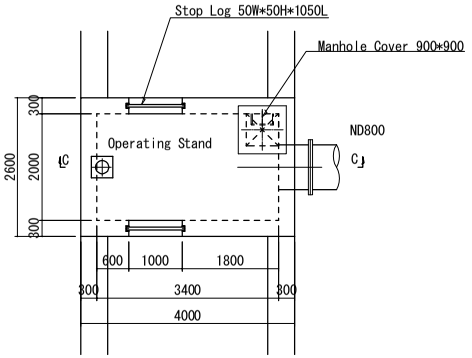


Plan

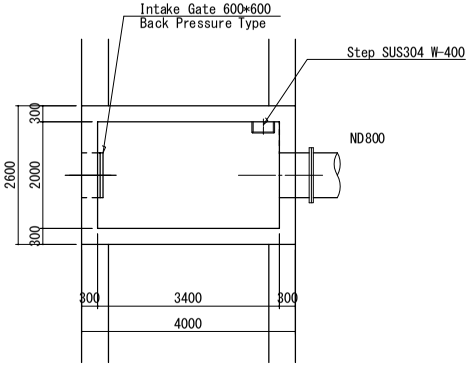


B-B Section

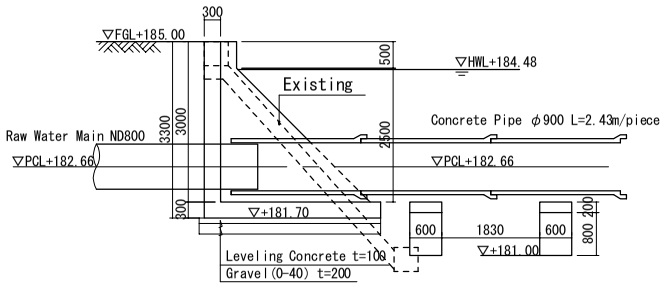
Detail"B"
S=1/100



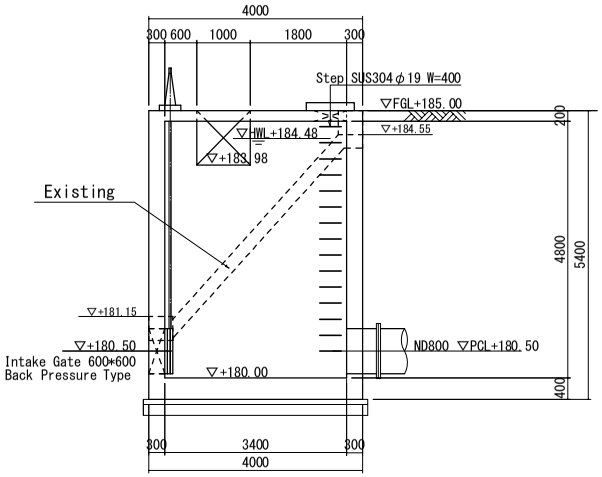
PLAN



Plane Section



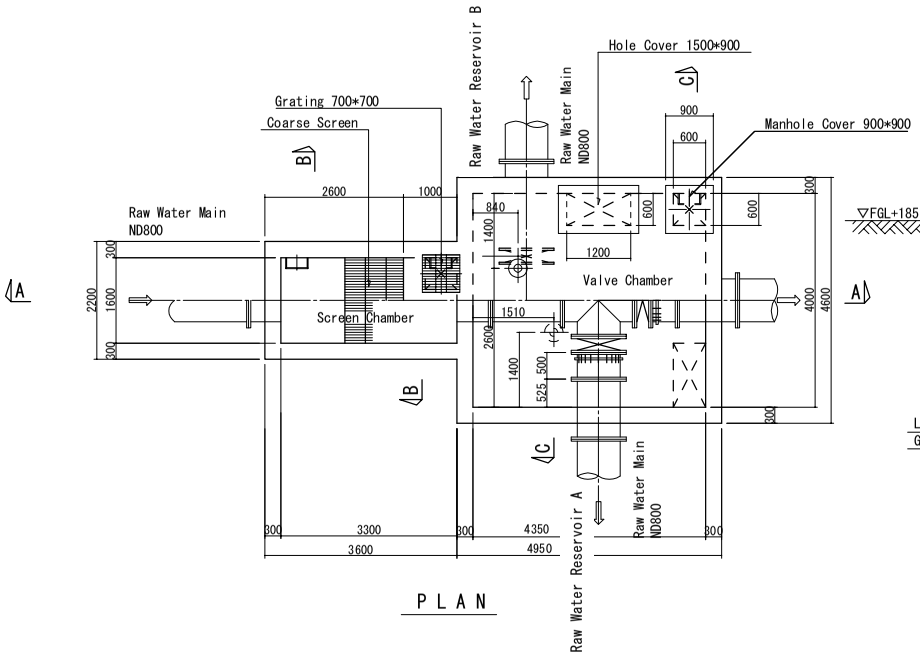
A-A Section



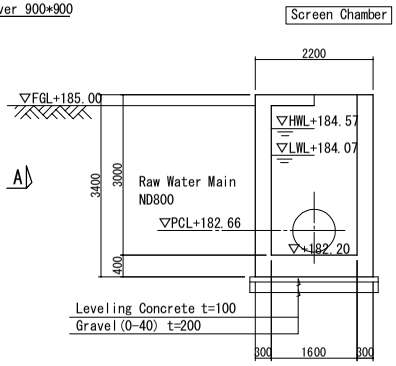
C-C Section

	PROJECT TITLE: THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	DRAWING TITLE: CONNECTION FACILITIES OF STORAGE TANK	SCALE: 1/100	DRAWING NO: WTP-C-04

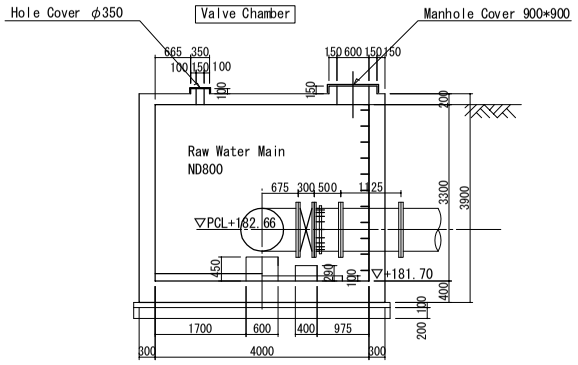
SCREEN AND RAW WATER DISTRIBUTION VALVE CHAMBER



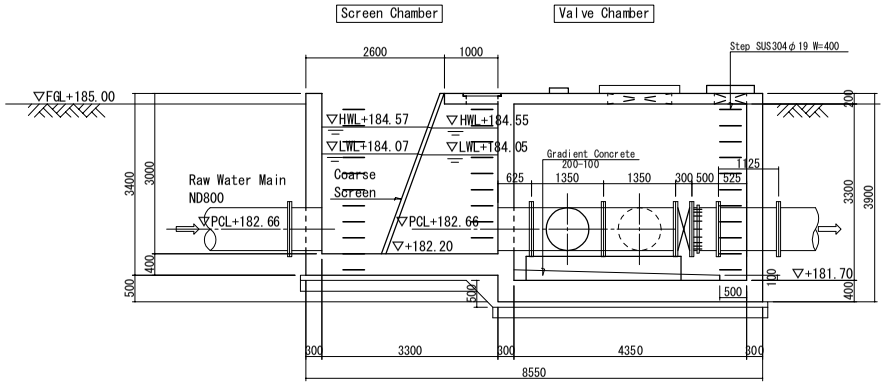
P L A N



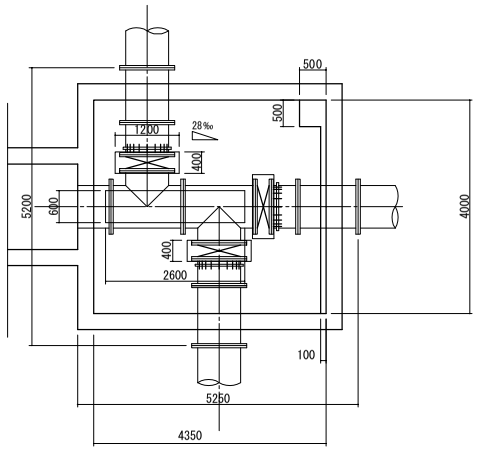
B - B SECTION



C - C SECTION



A - A SECTION



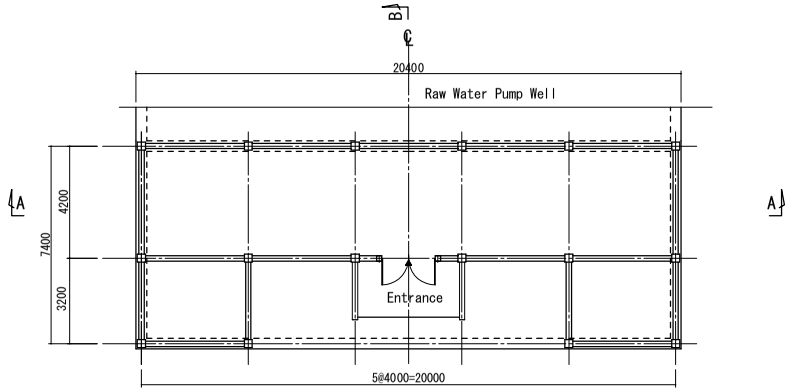
PIPE SUPPORT

	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	SCREEN AND RAW WATER DISTRIBUTION VALVE CHAMBER	1/100	WTP-C-05

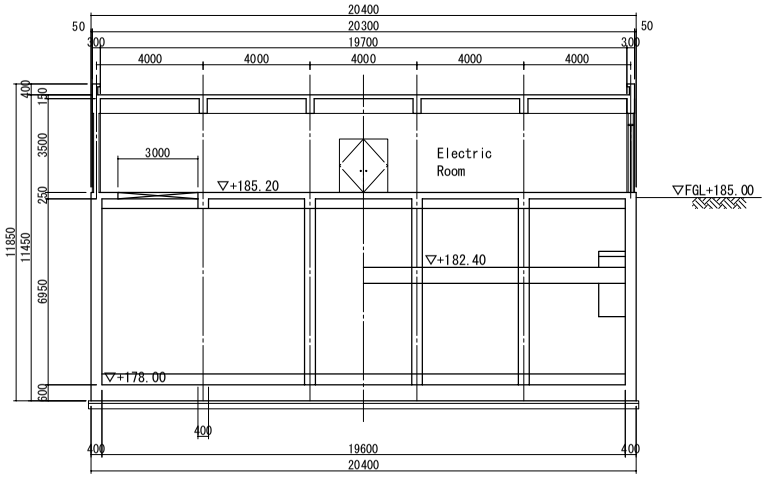
App 7(5)-5

WTP-05

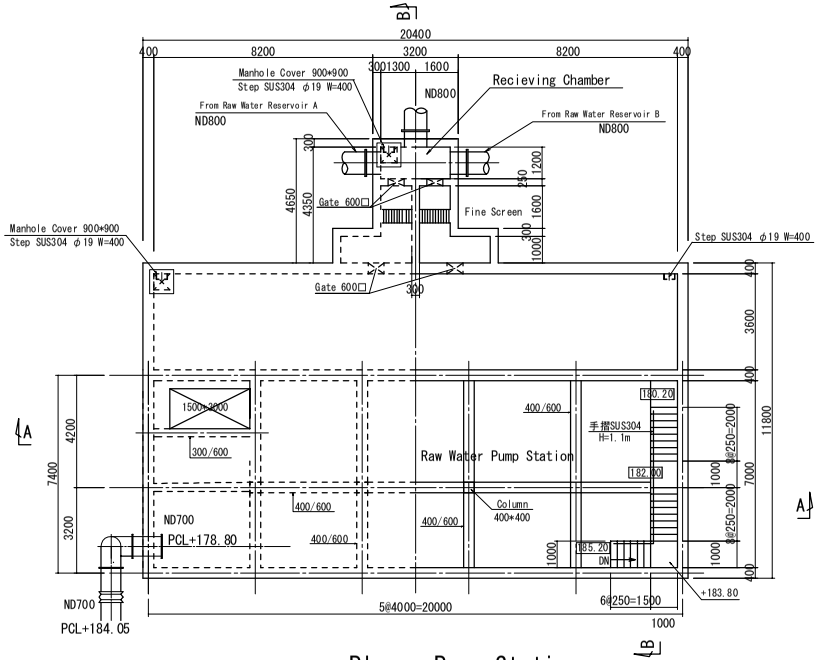
RAW WATER PUMP STATION



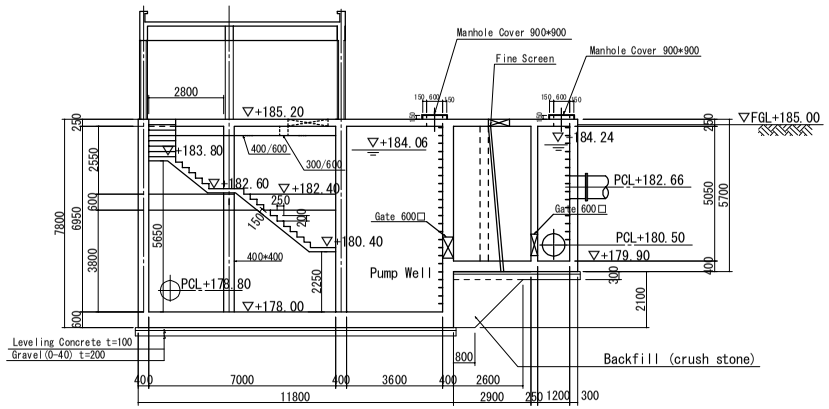
Plan - Electric Room



A-A SECTION



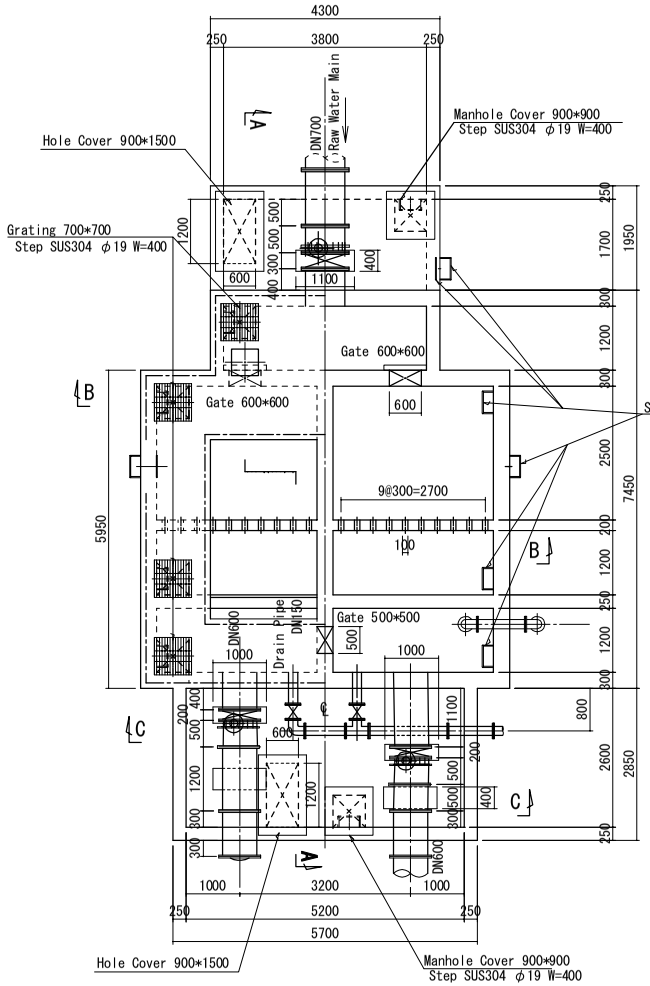
Plan - Pump Station



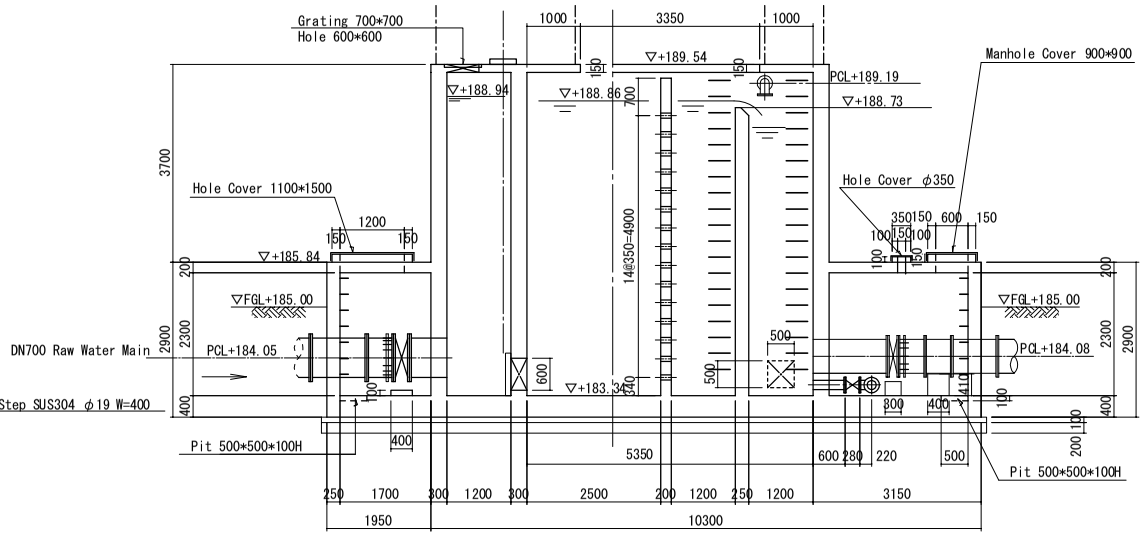
B-B SECTION

	PROJECT TITLE: THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	DRAWING TITLE: RAW WATER PUMP STATION	SCALE: 1/200	DRAWING NO: WTP-C-06

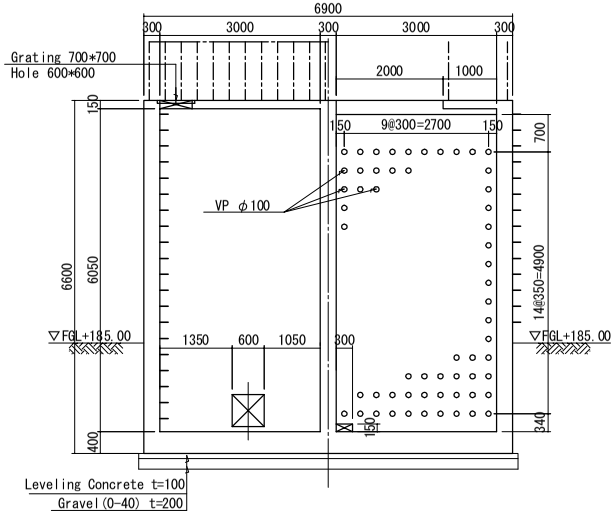
RECEIVING AND DISTRIBUTION TANK



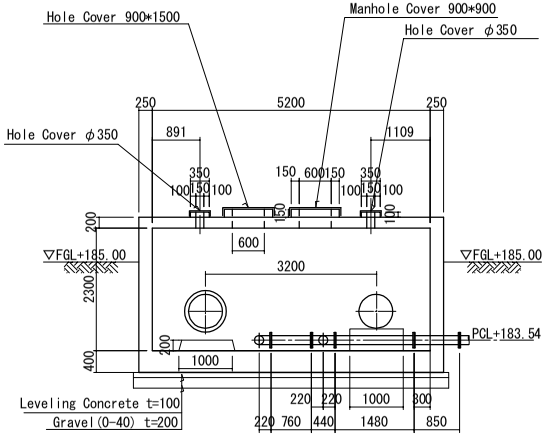
PLAN



A-A SECTION



B-B SECTION



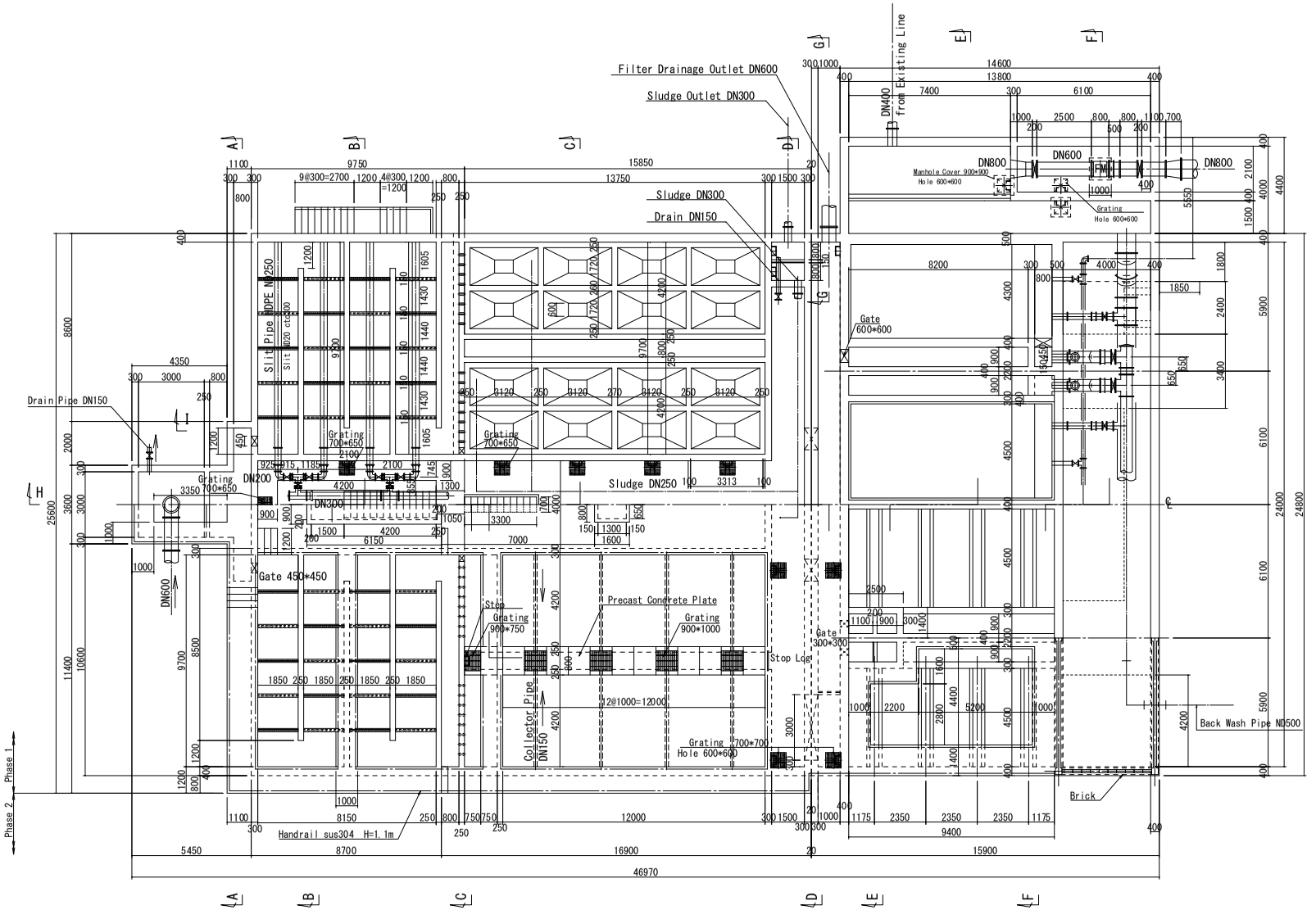
C-C SECTION

	PROJECT TITLE: THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	DRAWING TITLE: RECEIVING AND DISTRIBUTION TANK	SCALE: 1/100	DRAWING NO: WTP-C-07

App 7(5)-7

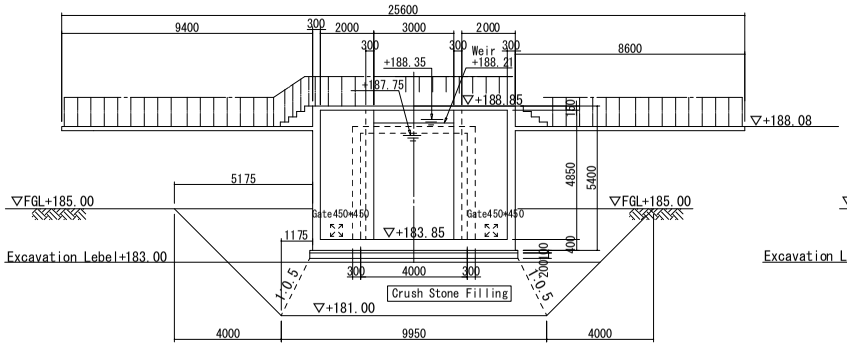
WTP-07

COAGULATION, SETTLING TANK AND RAPID SAND FILTER (1)

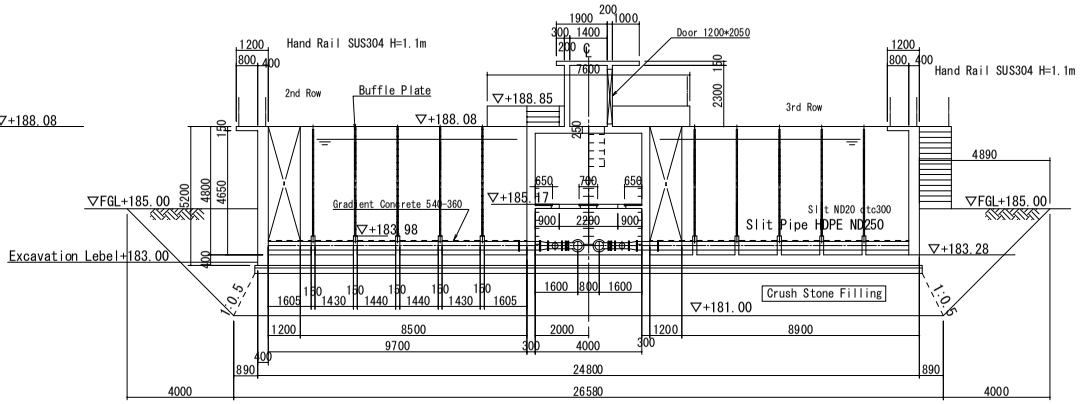


	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	COAGULATION, SETTLING TANK AND RAPID SAND FILTER (1)	1/200	WTP-C-08

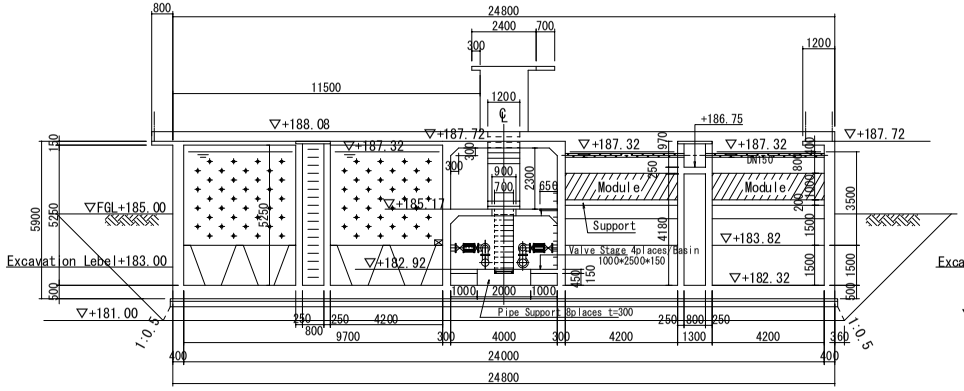
COAGULATION, SETTLING TANK AND RAPID SAND FILTER (2)



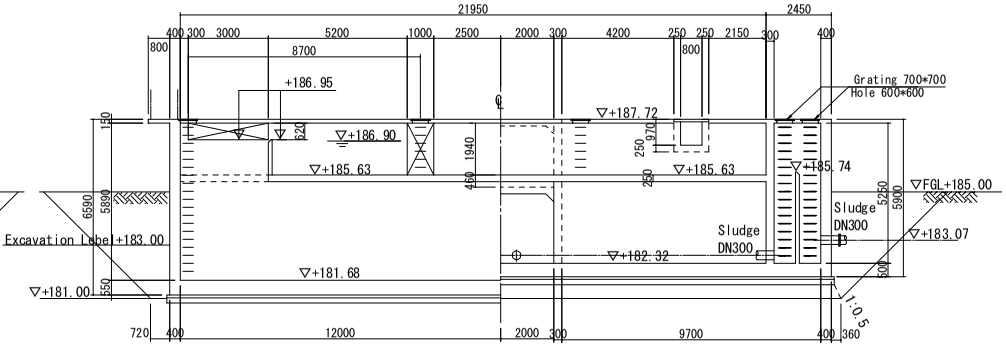
A-A SECTION



B-B SECTION



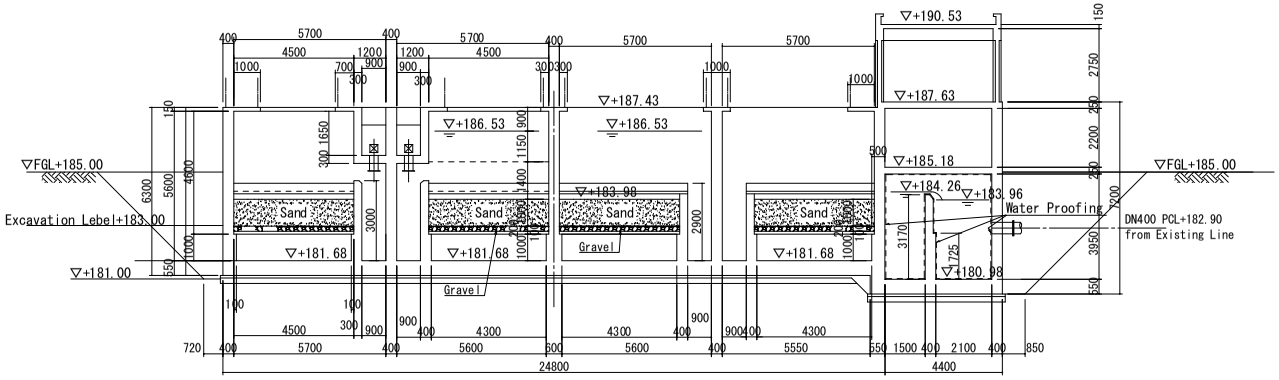
C-C SECTION



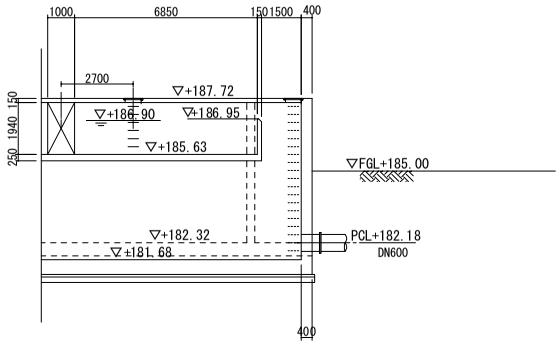
D-D SECTION

	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	COAGULATION, SETTLING TANK AND RAPID SAND FILTER (2)	1/200	WTP-C-09

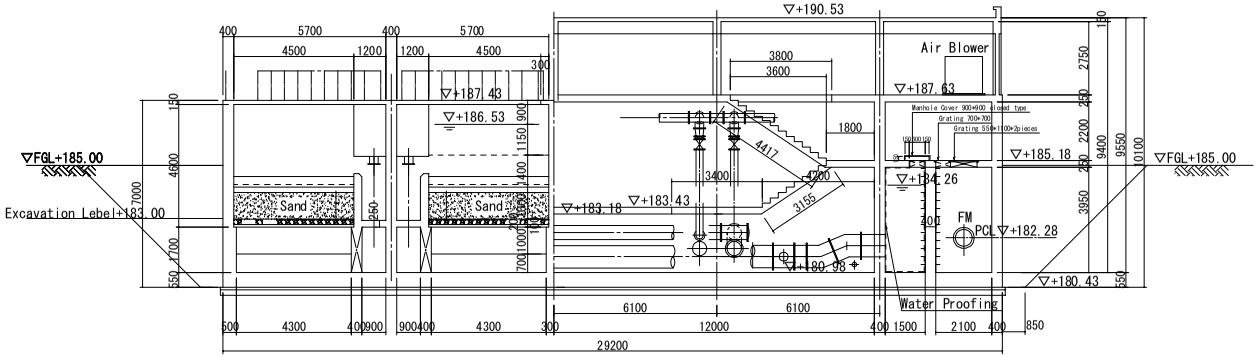
COAGULATION, SETTLING TANK AND RAPID SAND FILTER (3)



E-E SECTION



G-G SECTION

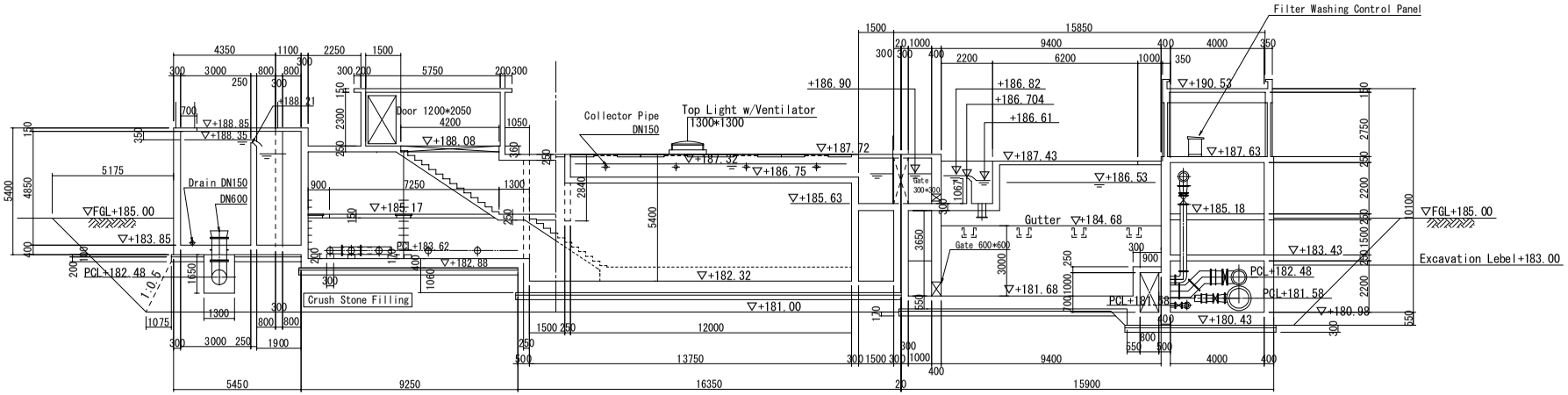


F-F SECTION

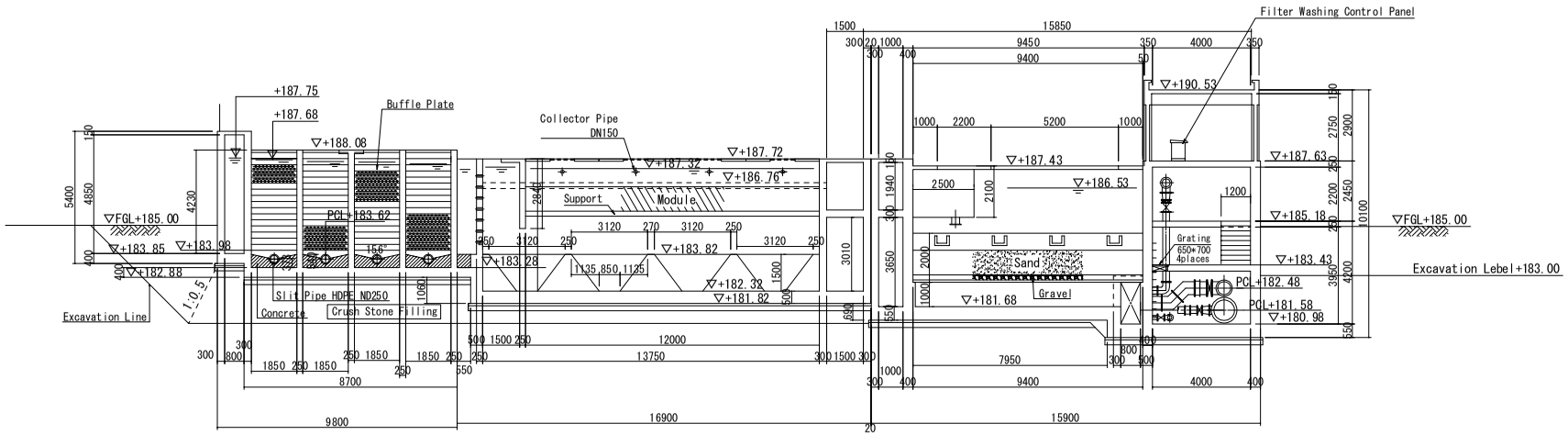
	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	COAGULATION, SETTLING TANK AND RAPID SAND FILTER (3)	1/200	WTP-C-10

App 7(5)-10

COAGULATION, SETTLING TANK AND RAPID SAND FILTER (4)



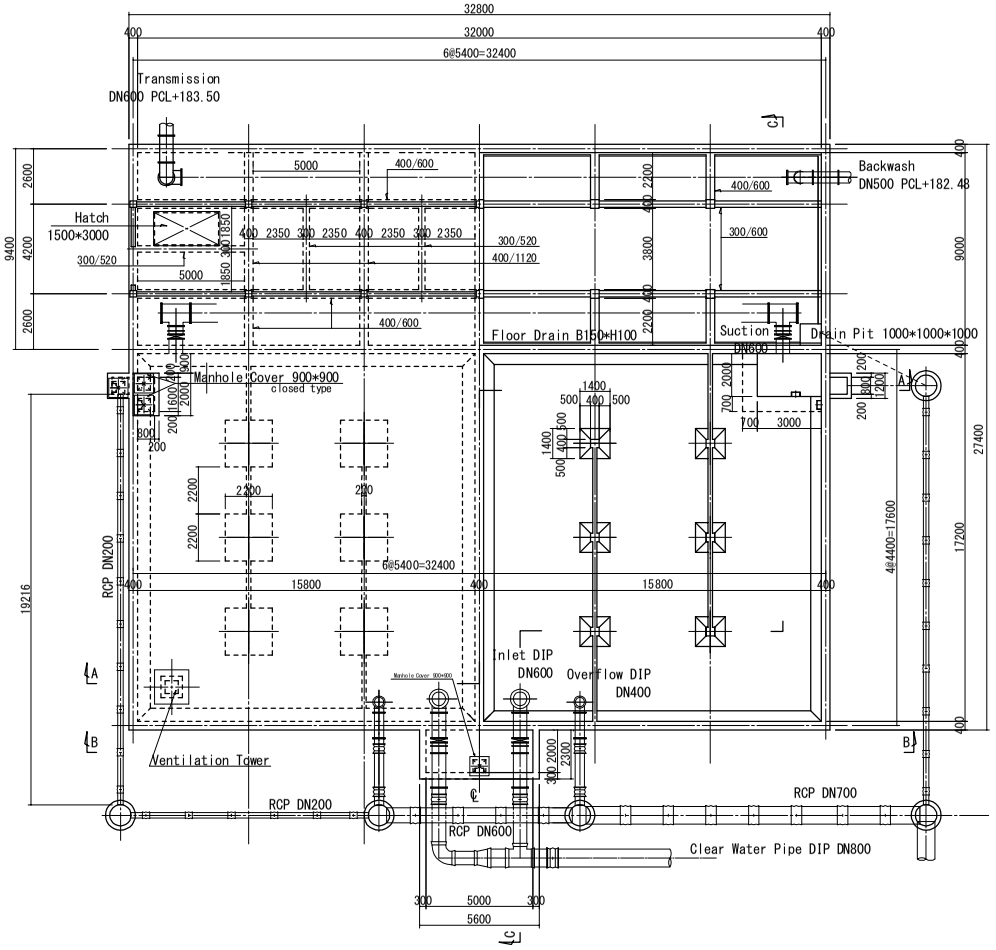
H-H SECTION



I-I SECTION

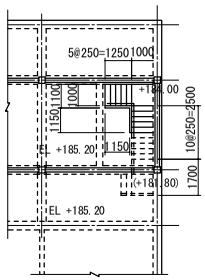
	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	COAGULATION, SETTLING TANK AND RAPID SAND FILTER (4)	1/200	WTP-C-11

CLEAR WATER RESERVOIR AND TRANSMISSION PUMP STATION (1)

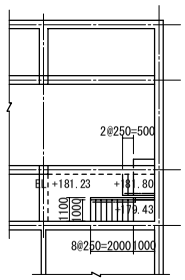


PLAN

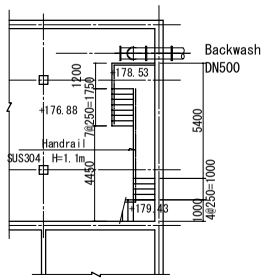
STAIRS



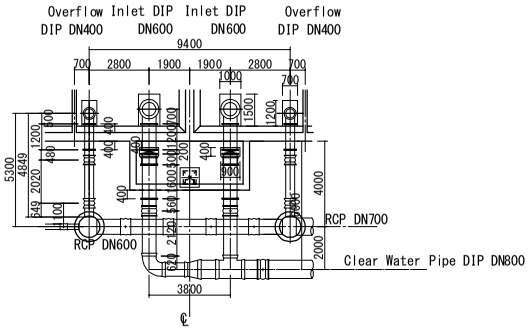
Section +185.20



Section +181.23



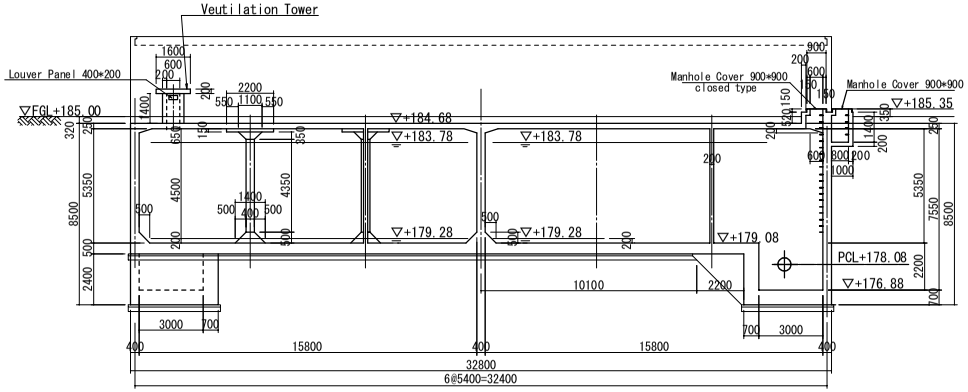
Section +179.43



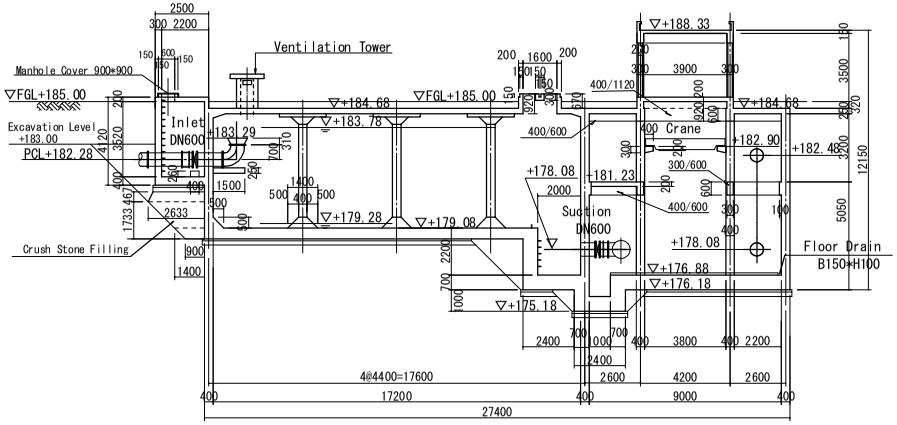
Pipe Arrangement

	PROJECT TITLE: THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	DRAWING TITLE: CLEAR WATER RESERVOIR AND TRANSMISSION PUMP STATION (1)	SCALE: 1/250	DRAWING NO: WTP-C-12

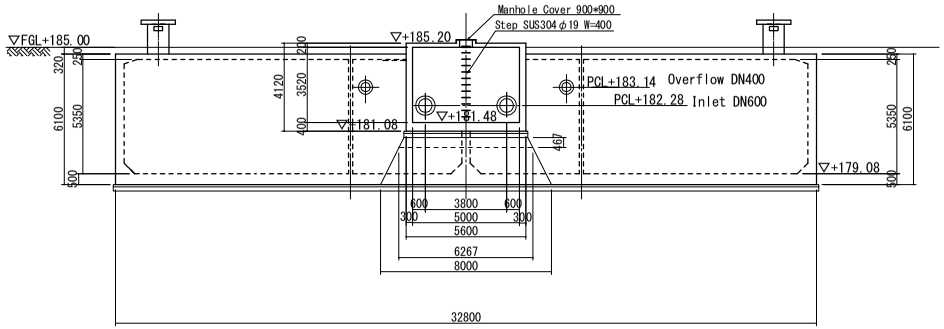
CLEAR WATER RESERVOIR AND TRANSMISSION PUMP STATION (2)



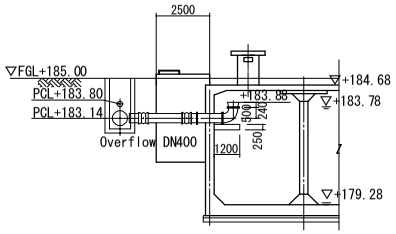
A-A SECTION



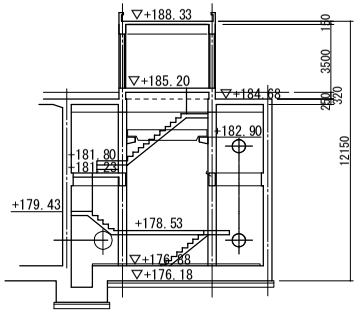
C-C SECTION



B-B SECTION



Overflow Pipe

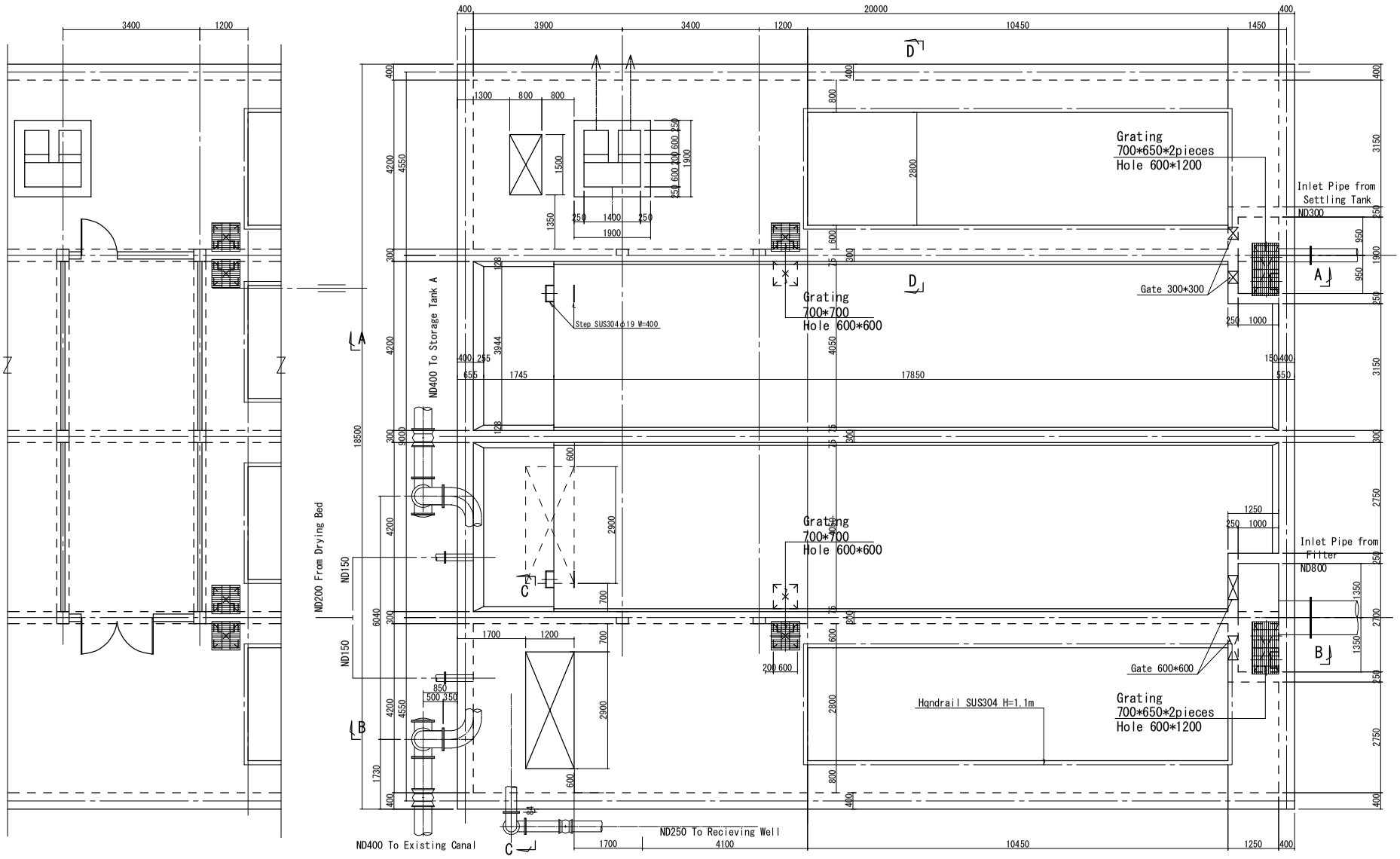


Stairs - Section

	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	CLEAR WATER RESERVOIR AND TRANSMISSION PUMP STATION (2)	1/250	WTP-C-13

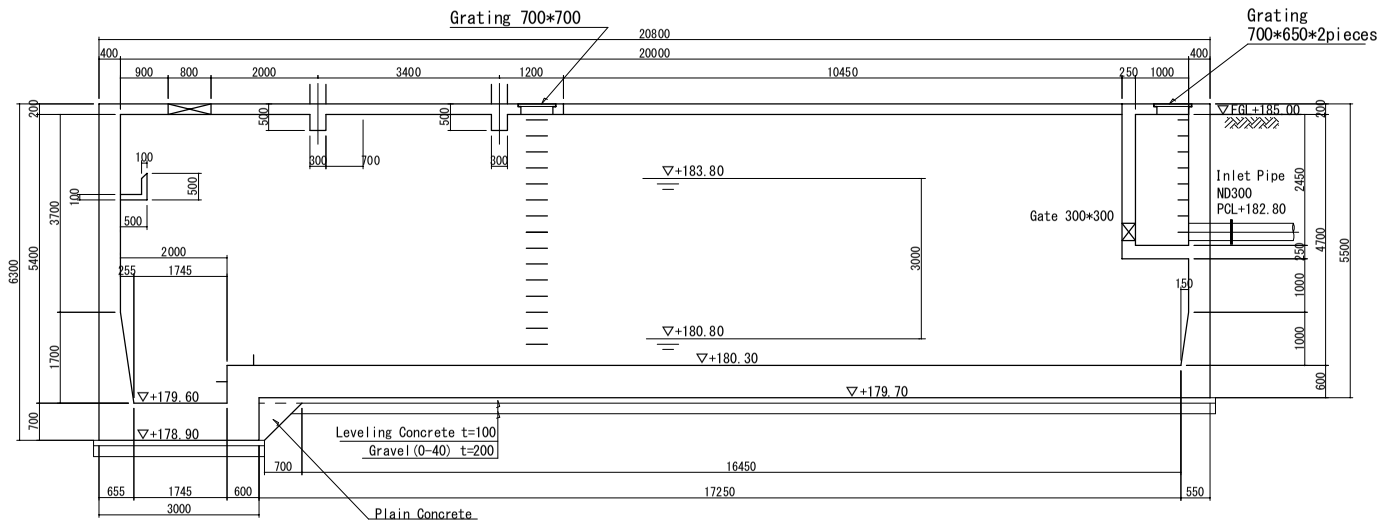
WASTE WATER TANK (1)

P L A N

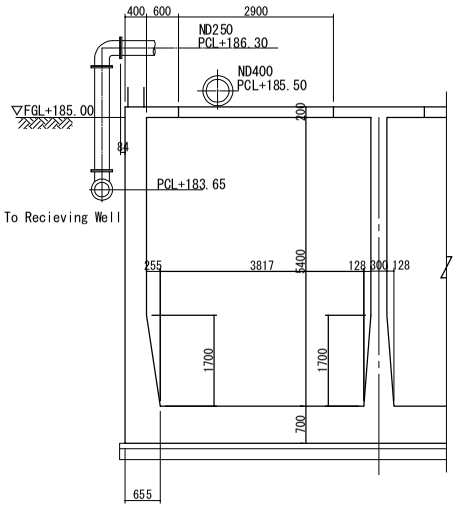


	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	WASTE WATER TANK (1)	1/100	WTP-C-14

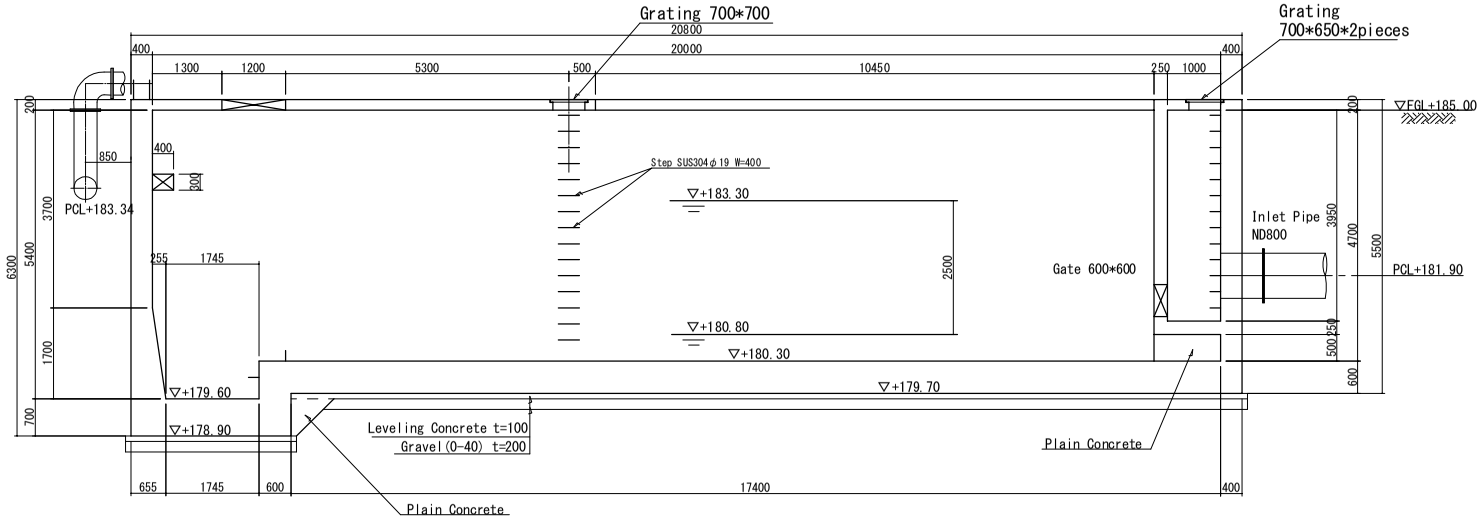
WASTE WATER TANK (2)



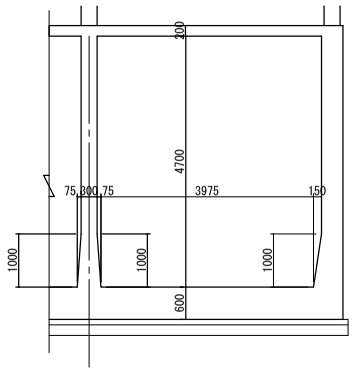
A - A SECTION



C - C SECTION



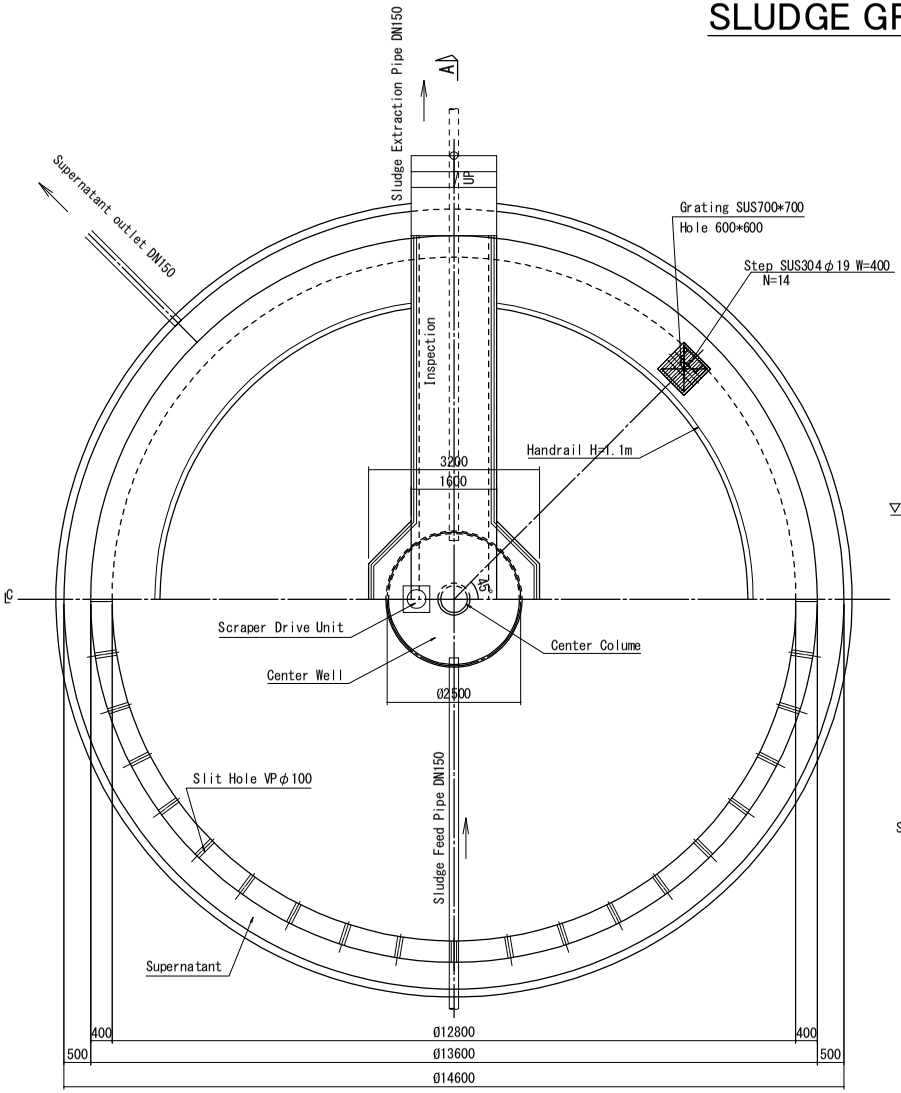
B - B SECTION



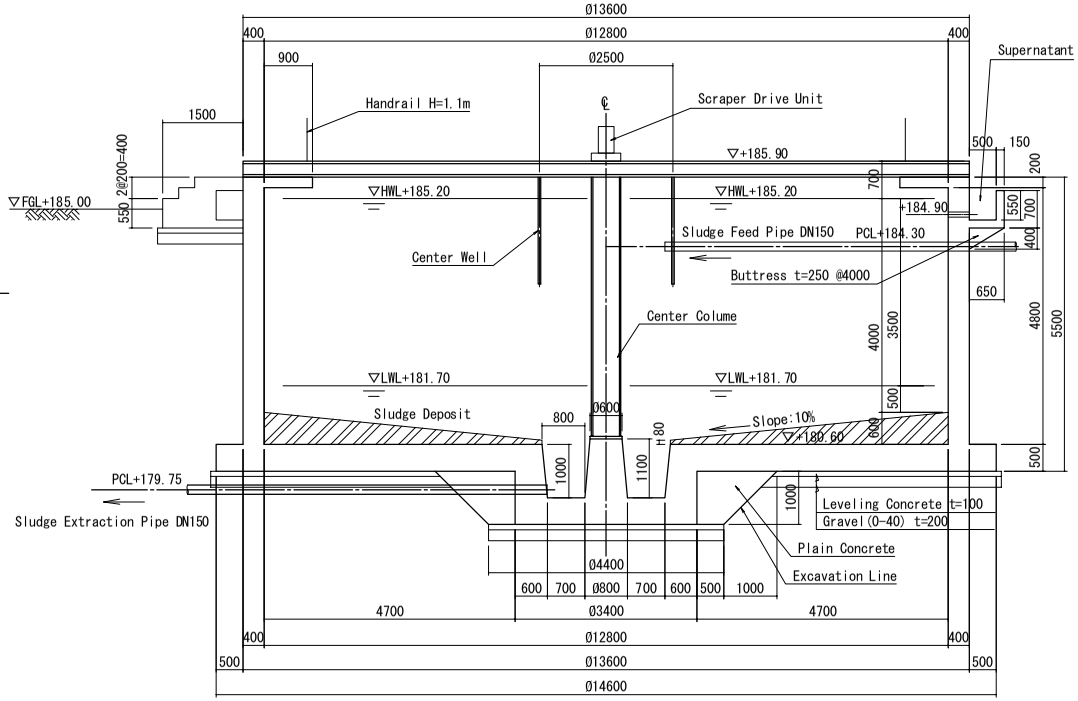
D - D SECTION

	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	WASTE WATER TANK (2)	1/100	WTP-C-15

SLUDGE GRAVITY THICKENER



PLAN

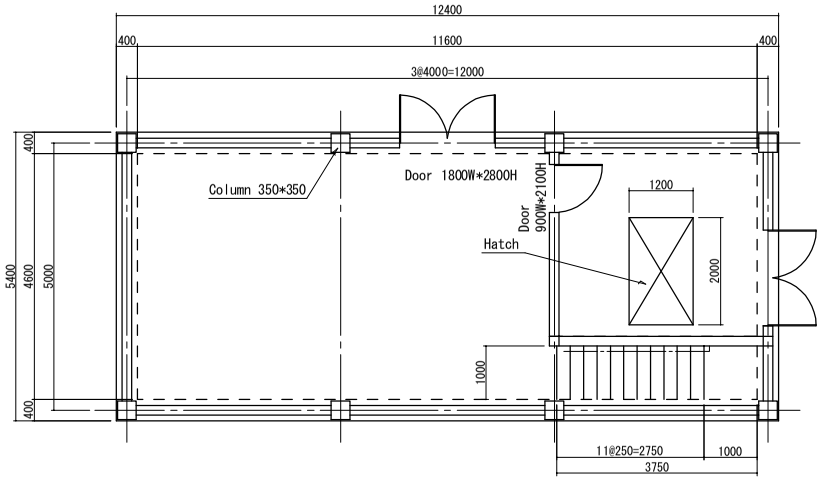


SECTION A-A

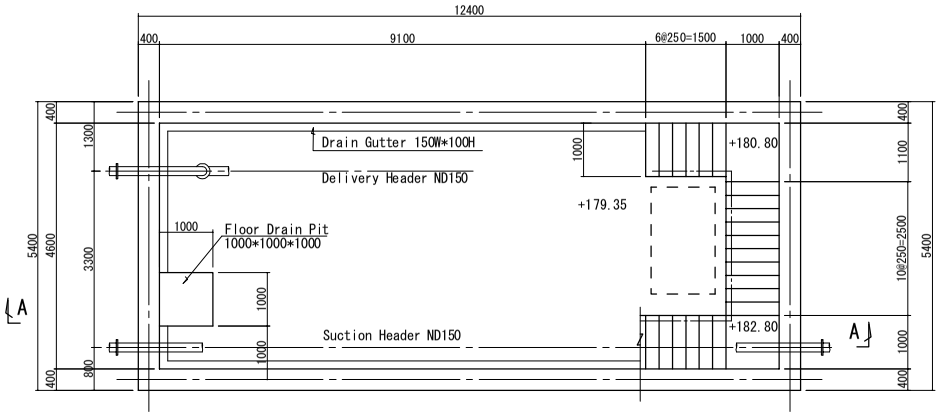
	PROJECT TITLE: THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	DRAWING TITLE: SLUDGE GRAVITY THICKENER	SCALE: 1/100	DRAWING NO: WTP-C-16

App 7(5)-16

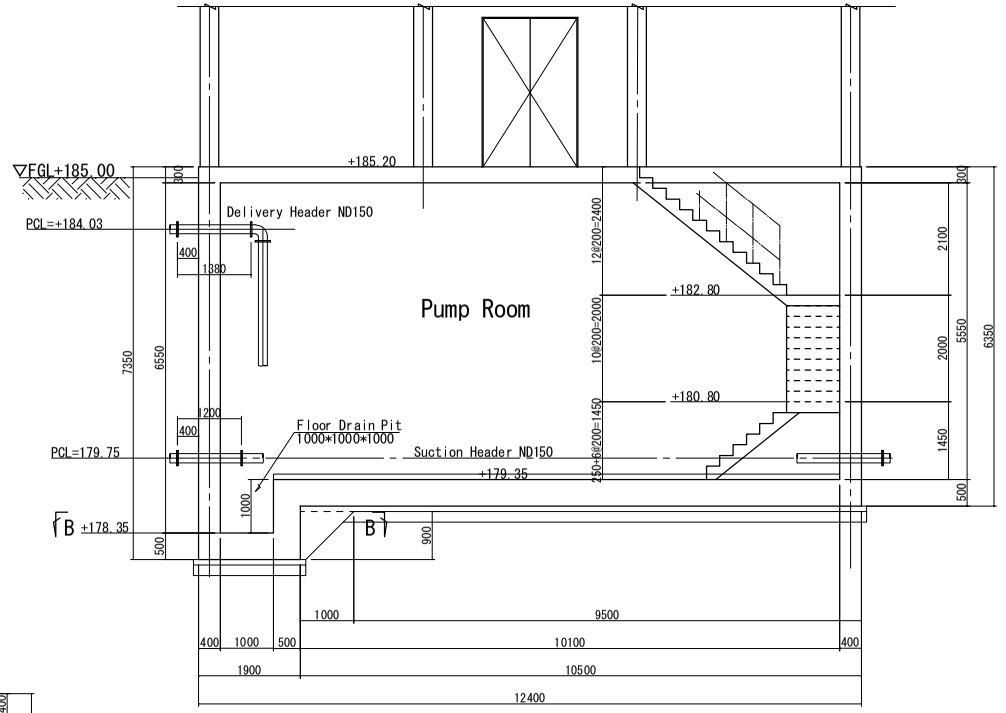
SLUDGE TRANSFER PUMP STATION



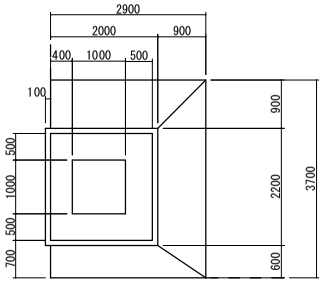
P L A N



P L A N - Pump Room



SECTION A-A

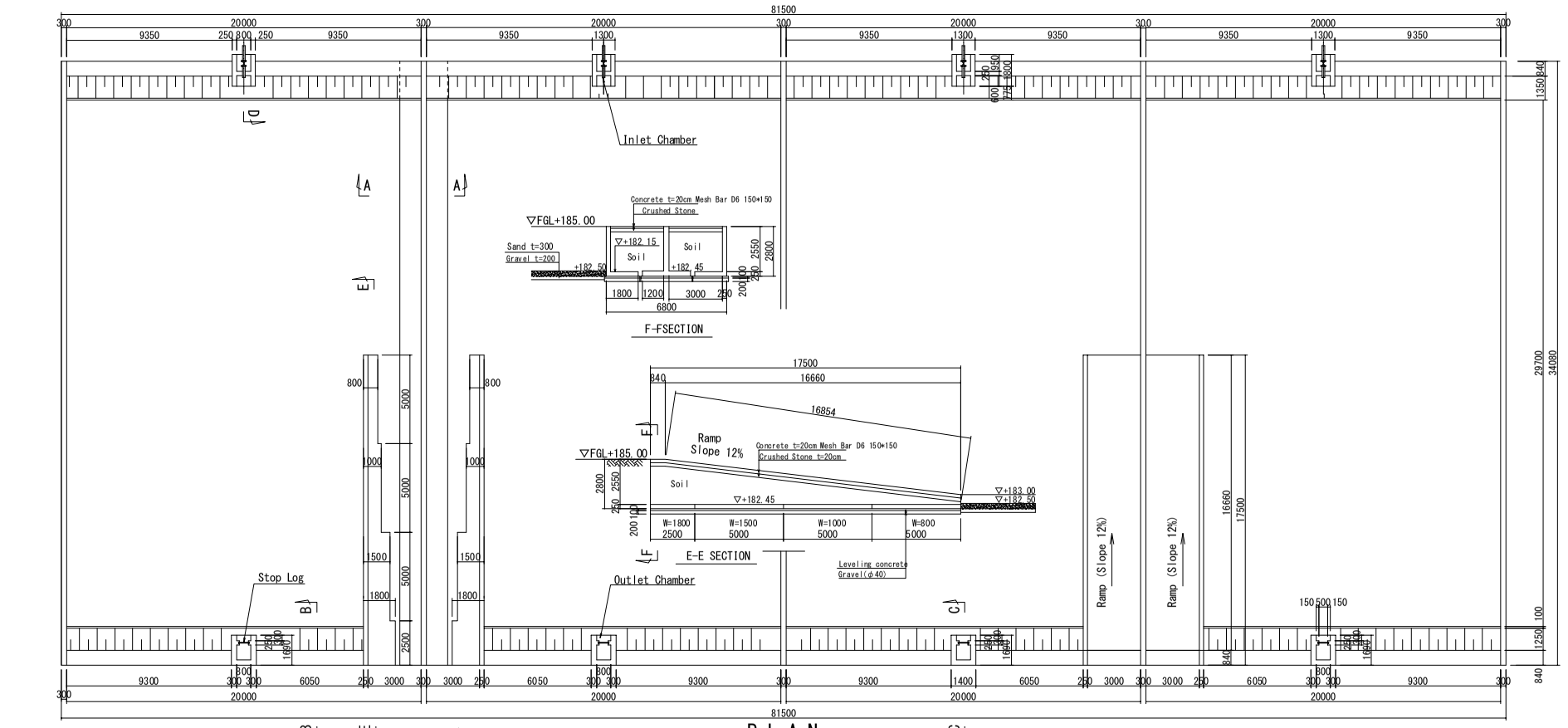


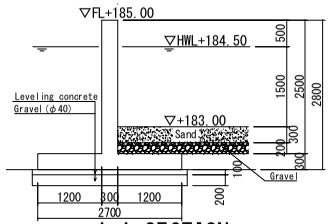
SECTION B-B

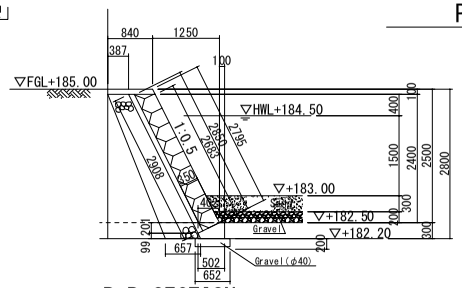
	PROJECT TITLE: THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	DRAWING TITLE: SLUDGE TRANSFER PUMP STATION	SCALE: 1/100	DRAWING NO: WTP-C-17

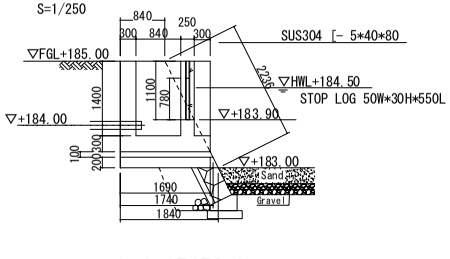
App 7(5)-17

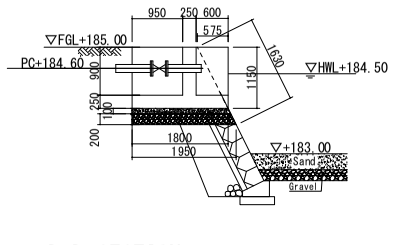
SLUDGE DRYING BED







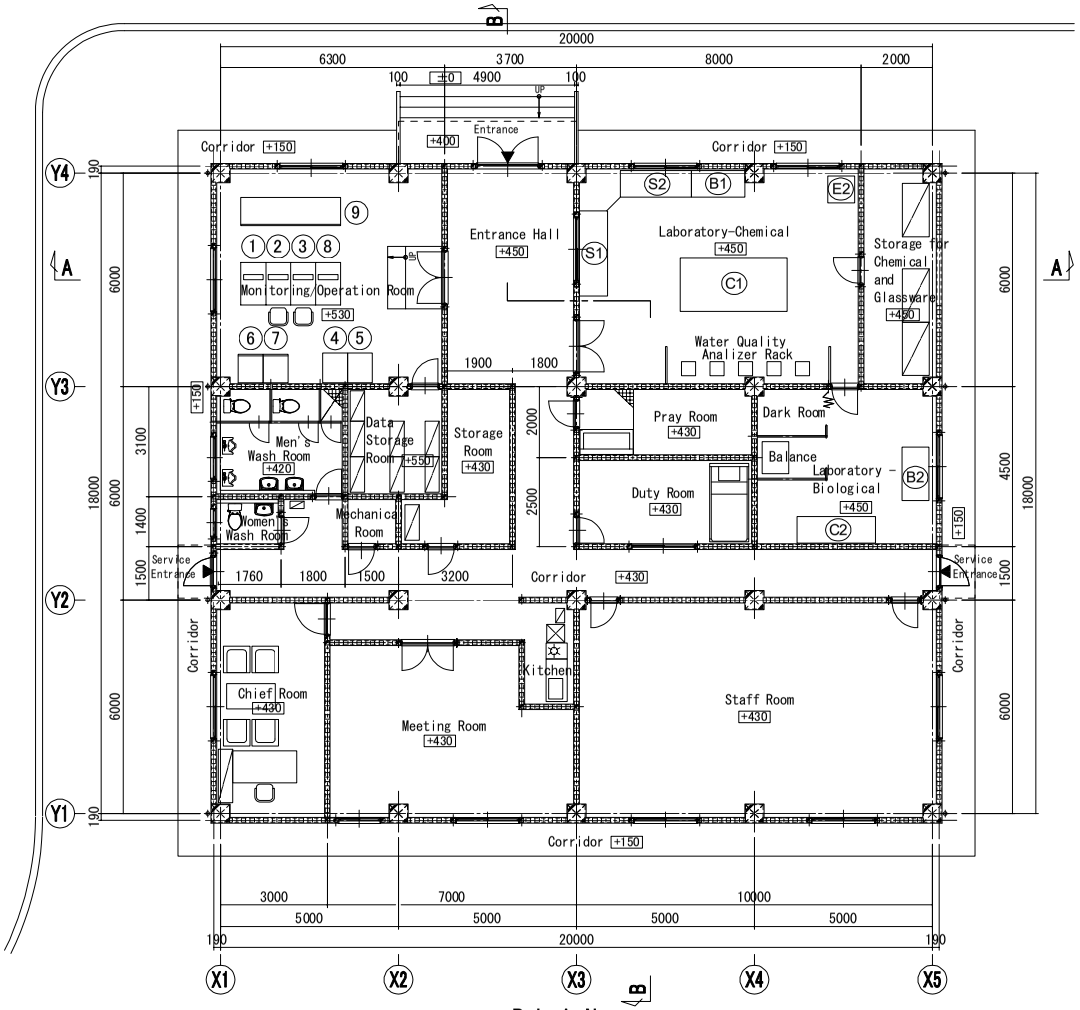




	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	SLUDGE DRYING BED	1/250	WTP-C-18

ADMINISTRATION BUILDING(1)

Layout Plan S=1/150



PLAN

Monitoring/Operation Room

	ID No.	NAME
①	AB-ES	ENGINEERING STATION
②	AB-OS-1	OPERATOR STATION
③	AB-OS-2	OPERATOR STATION
④	AB-PR-1	A4 COLOR LASER PRINTER
⑤	AB-PR-2	A3 MONOCHROME LASER PRINTER
⑥	AB-PDB	POWER DISTRIBUTION PANEL
⑦	AB-TM	TELEMETER PANEL
⑧	AB-CS	CAMERA SERVER
⑨	AB-GMP	GRAPHIC MONITORING PANEL

Laboratory - Chemical/Biological

Fumiture			Equipment/Testing
Chemical Test	C1	Center Table	Water quality testing
	S1	Side Table	pH meter,
			Turbidity meter,
			Conductivity,
			Stirrer
			Spectrophotometer
	S2	Side Table	Jar Tester
	B1	Sink Basin	
	E2	Refrigerator	
Biological Test	C2	Center Table	Water quality testing
	B2	Sink Basin	

+000 GL+

Reinforced Concrete Pillar (500mm x 500mm)

Brick Wall and Mortar Finish(total thickness 160mm)

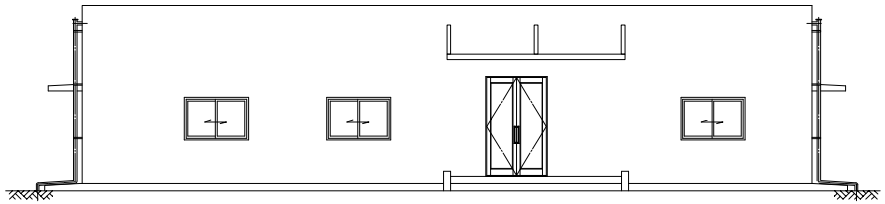
Partition Wall(Print Plywood)

Roof Drain

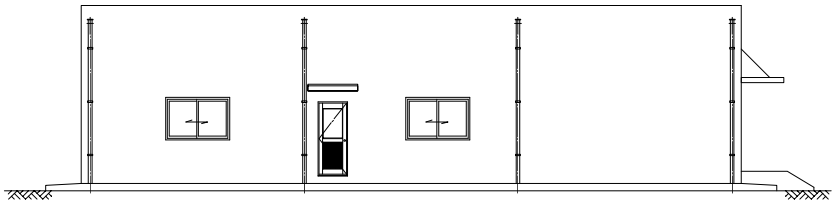
	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	Administration Building(1) - Layout Plan	1/150	WTP-A-01

ADMINISTRATION BUILDING(2)

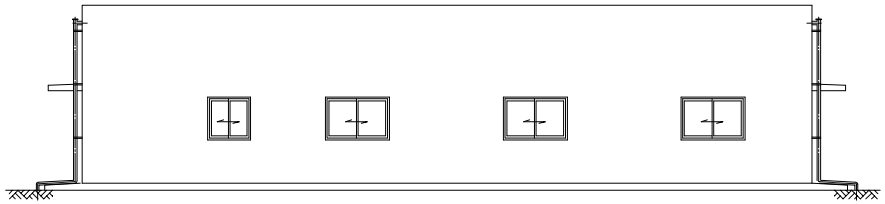
Side View S=1/150



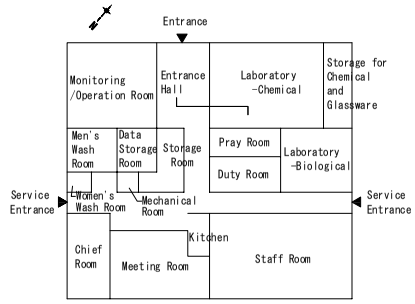
FRONT VIEW
(Entrance Facade)



SIDE VIEW
(Eastwest)



BACK VIEW

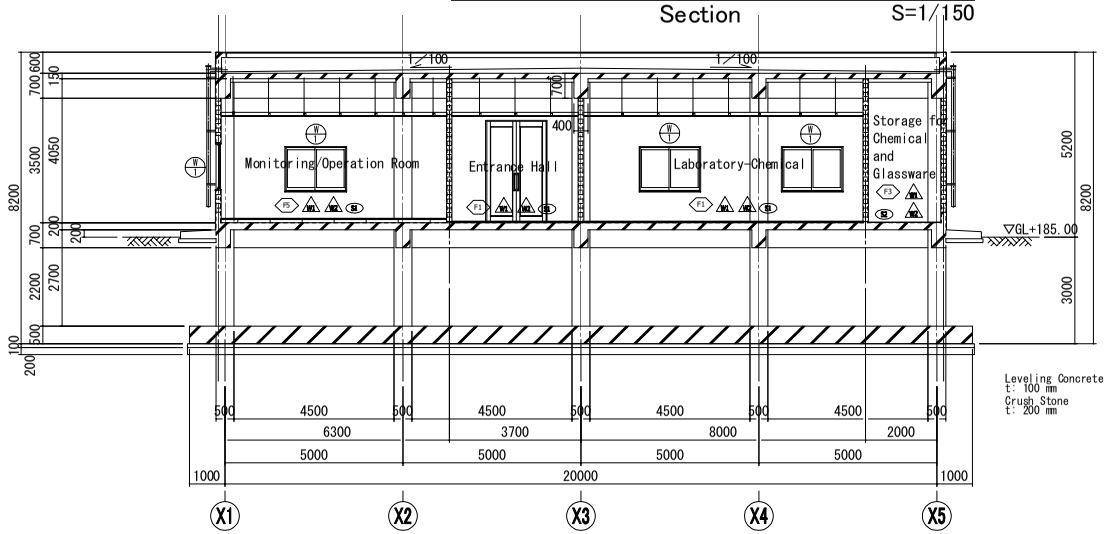


Key Plan

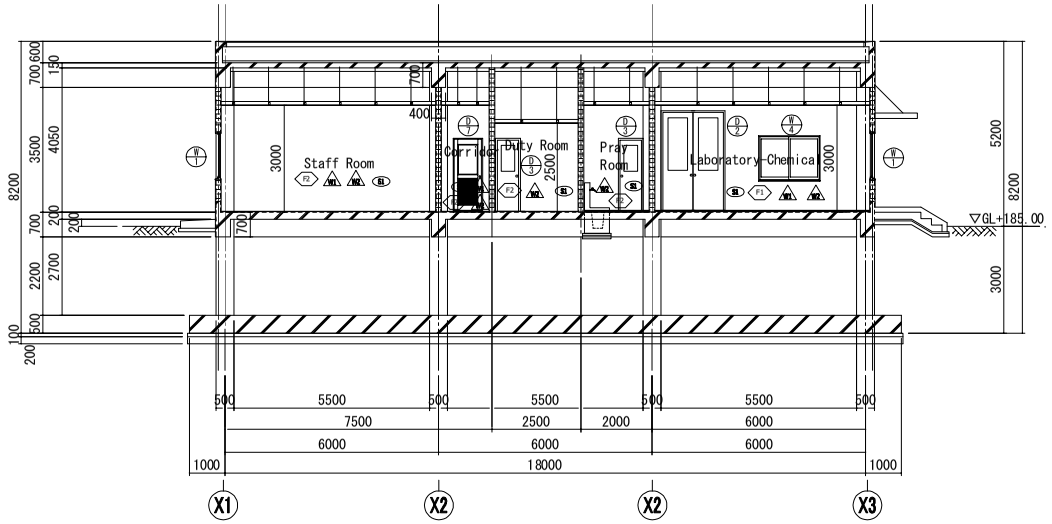
	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	Administration Building(2) -Side View	1/150	WTP-A-02

ADMINISTRATION BUILDING(3)

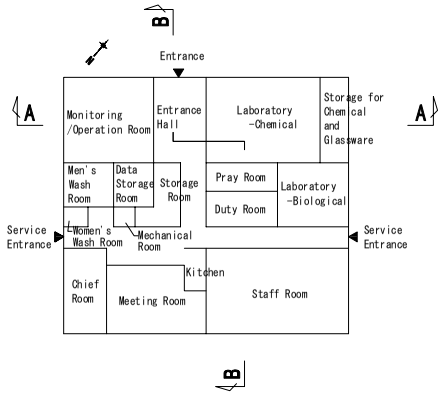
Section S=1/150



A-A SECTION



B-B SECTION

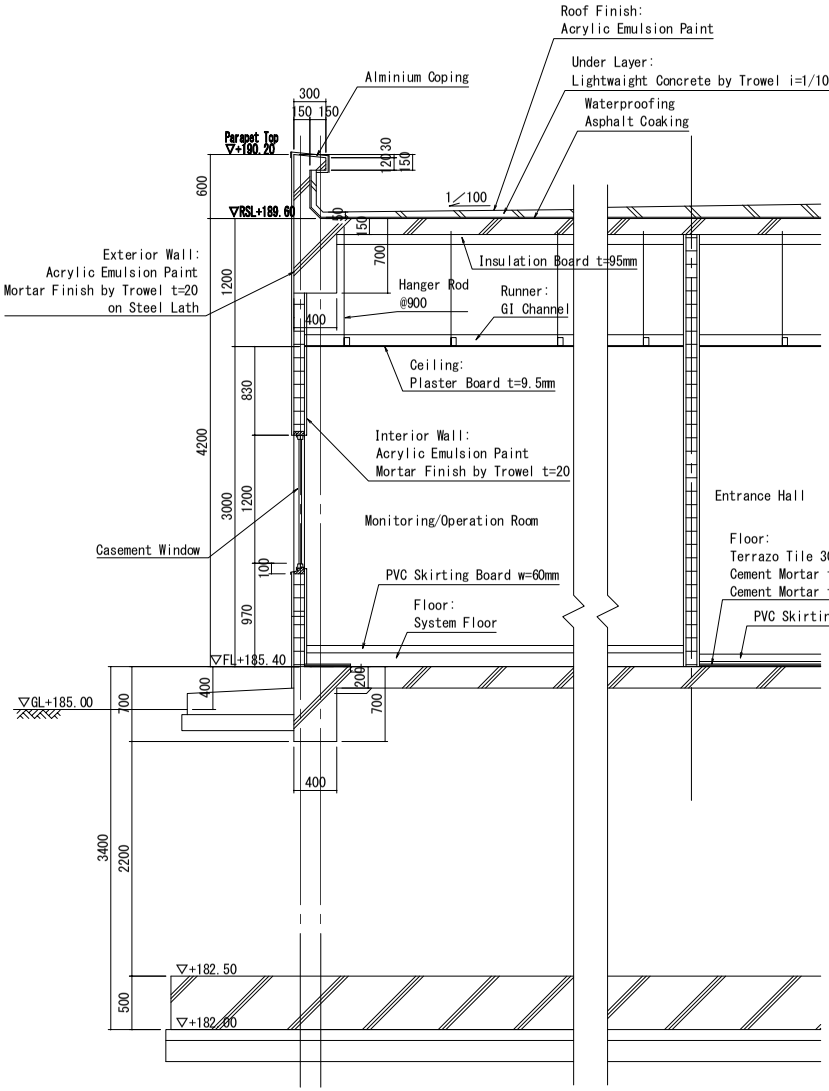


Key Plan

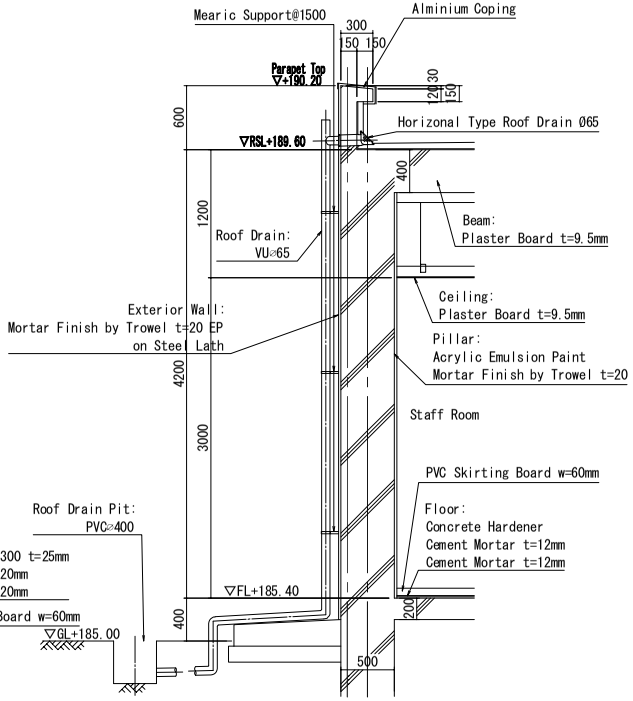
	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	Administration Building(3) - Section	1/150	WTP-A-03

ADMINISTRATION BUILDING(4)

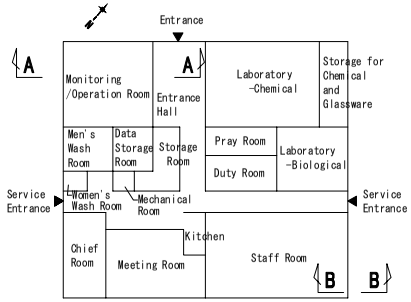
Sectional Details S=1/50



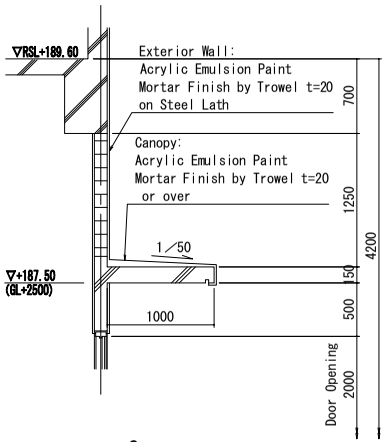
SECTIONAL DETAIL A



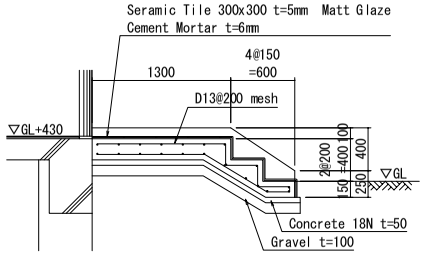
SECTIONAL DETAIL B
(Roof Drain)



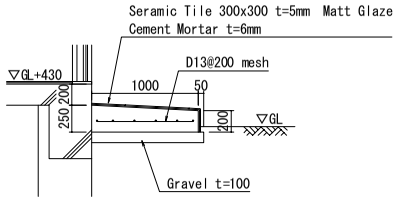
Key Plan



Canopy
Service Entrance



Step
Entrance

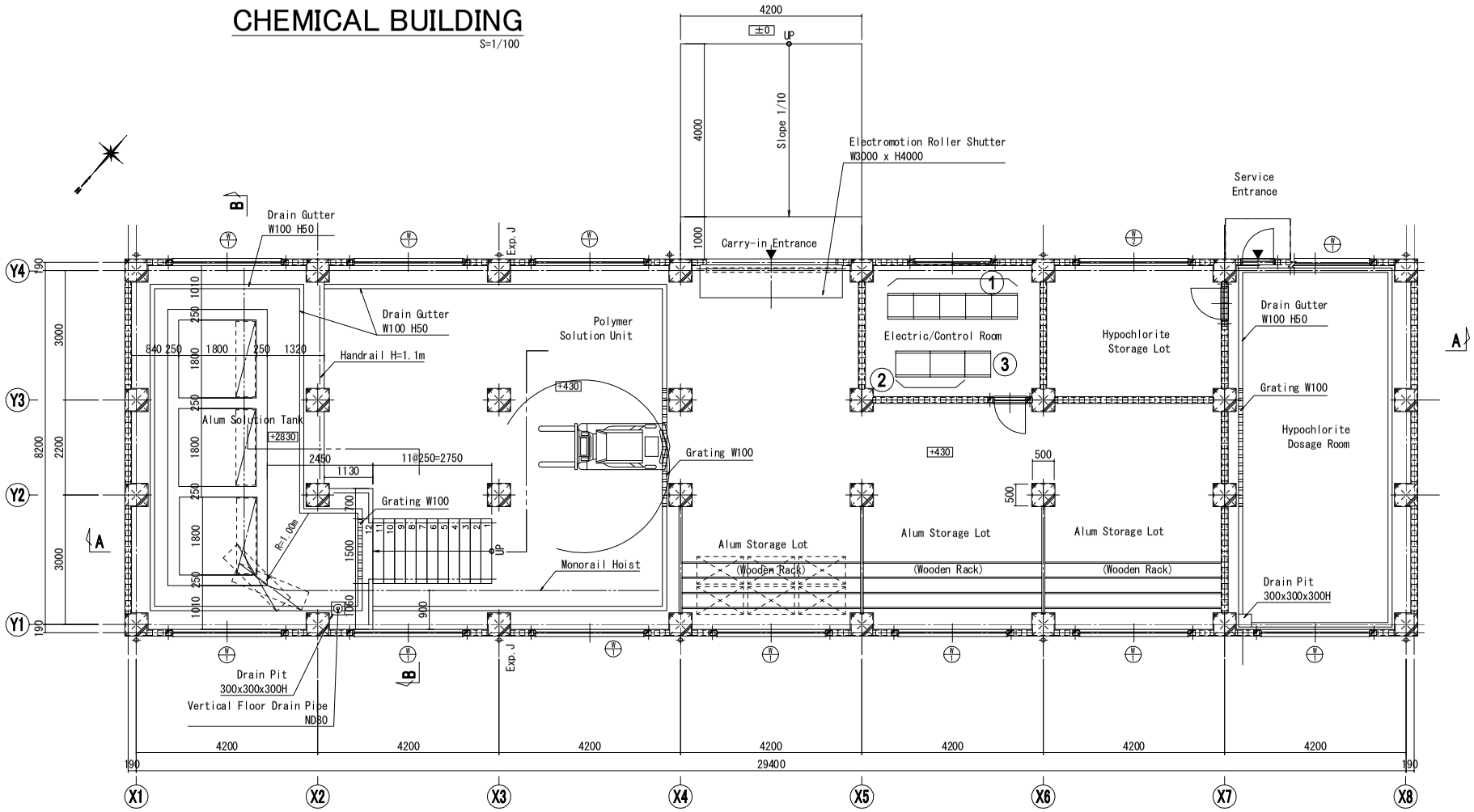


Corridor

	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	Administration Building(4) -Sectional Details	1/50	WTP-A-04

CHEMICAL BUILDING

S=1/100



P L A N

	ID No.	NAME
①	CHB-MCC	MCC FOR CHEMICAL BUILDING
②	CHB-RY	AUX. RELAY PANEL FOR CHEMICAL BUILDING
③	CHB-IP	INSTRUMENTATION PANEL

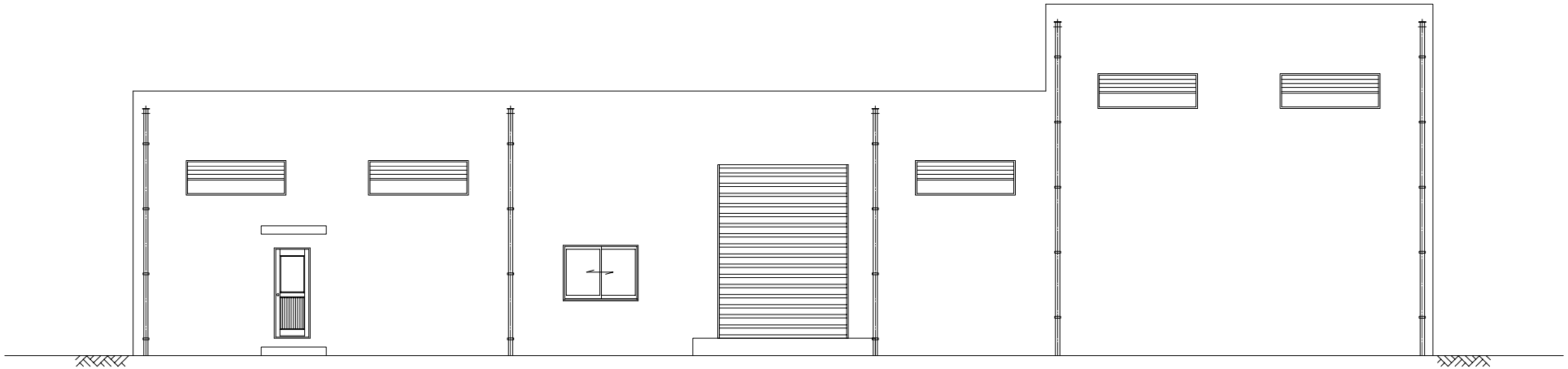
+000 GL+

Reinforced Concrete Pillar (500mm x 500mm)

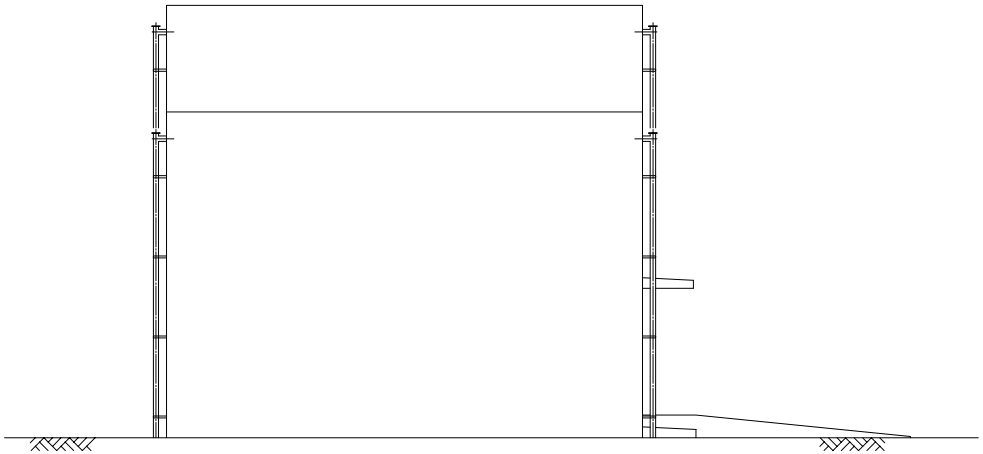
Brick Wall(thickness 160mm)

Roof Drain PVC ND80

	PROJECT TITLE: THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	DRAWING TITLE: Chemical Building - Layout Plan	SCALE: 1/100 / DRAWING NO: WTP-A-10

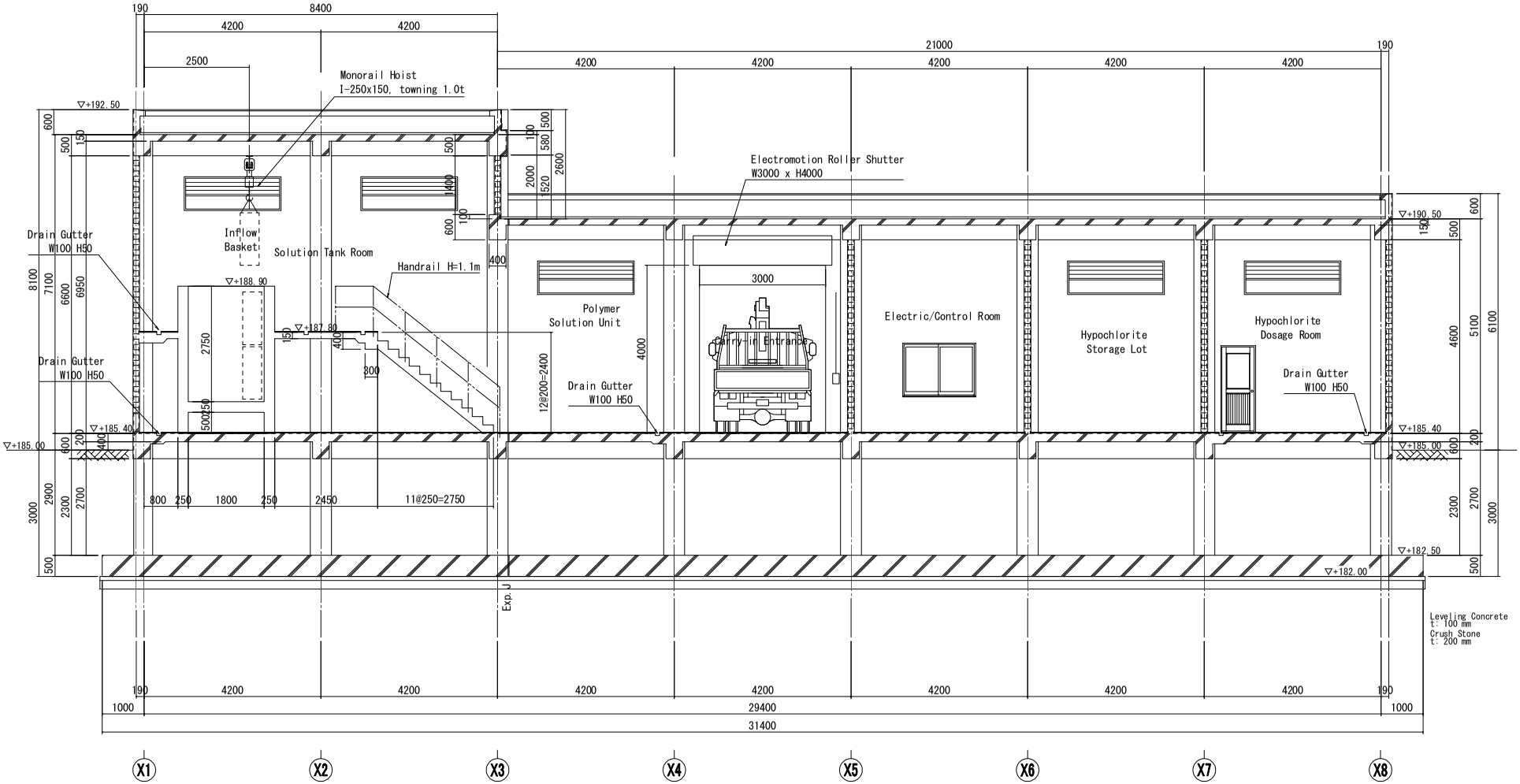


FRONT VIEW



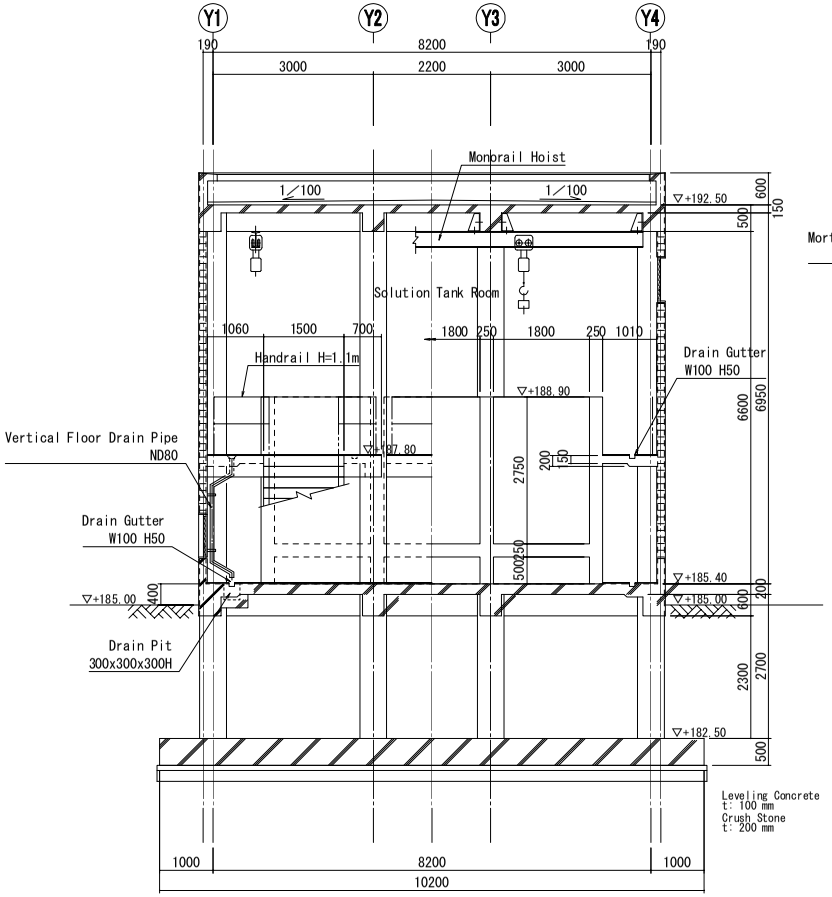
SIDE VIEW

	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	Chemical Building - Side View	1/100	WTP-A-11

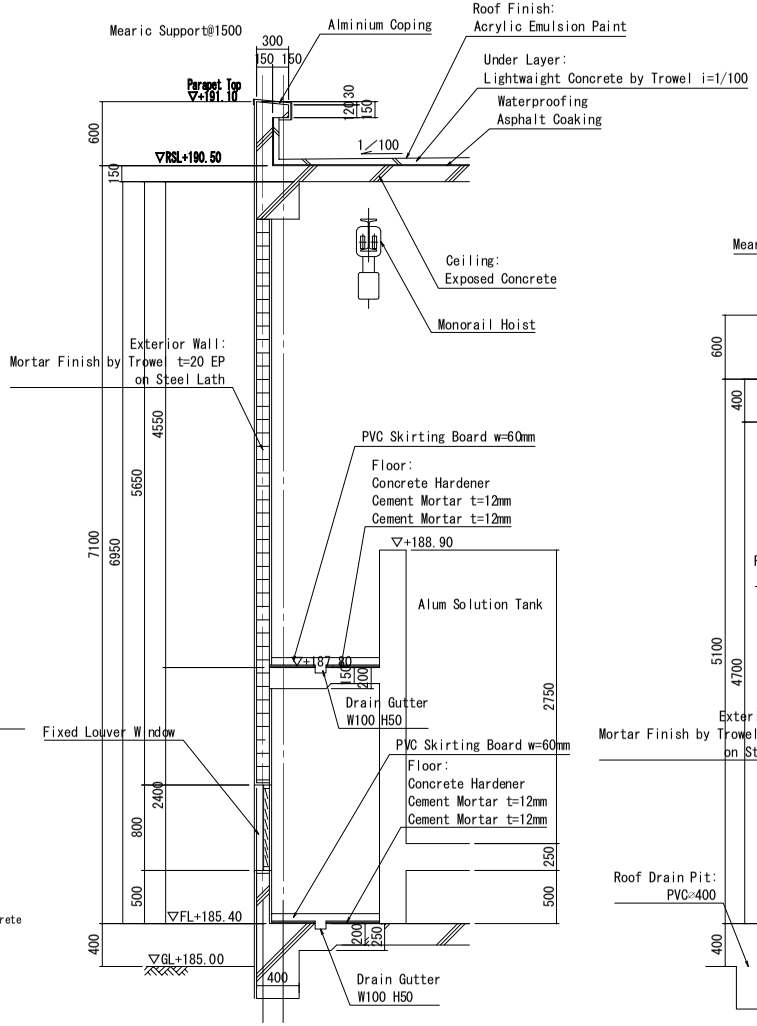


SECTION A-A

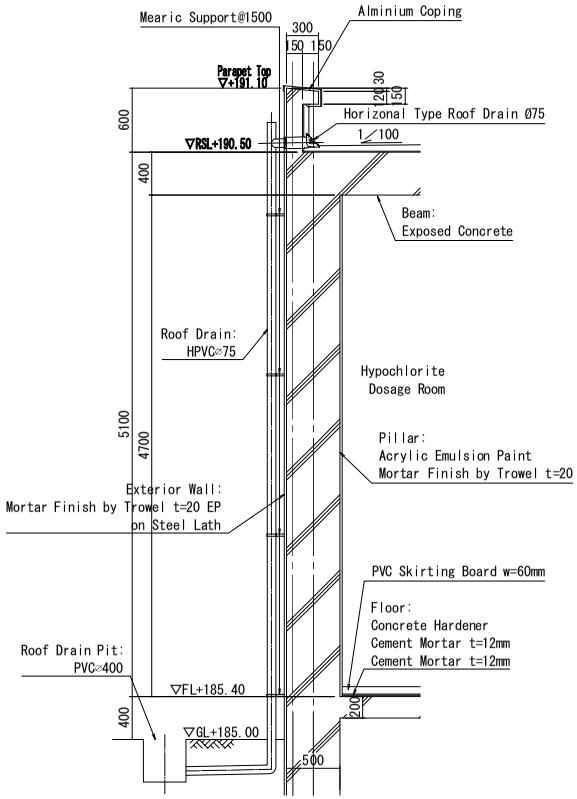
	PROJECT TITLE: THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	DRAWING TITLE: Chemical Building – Section(1)	SCALE: 1/100	DRAWING NO: WTP-A-12



SECTION B-B



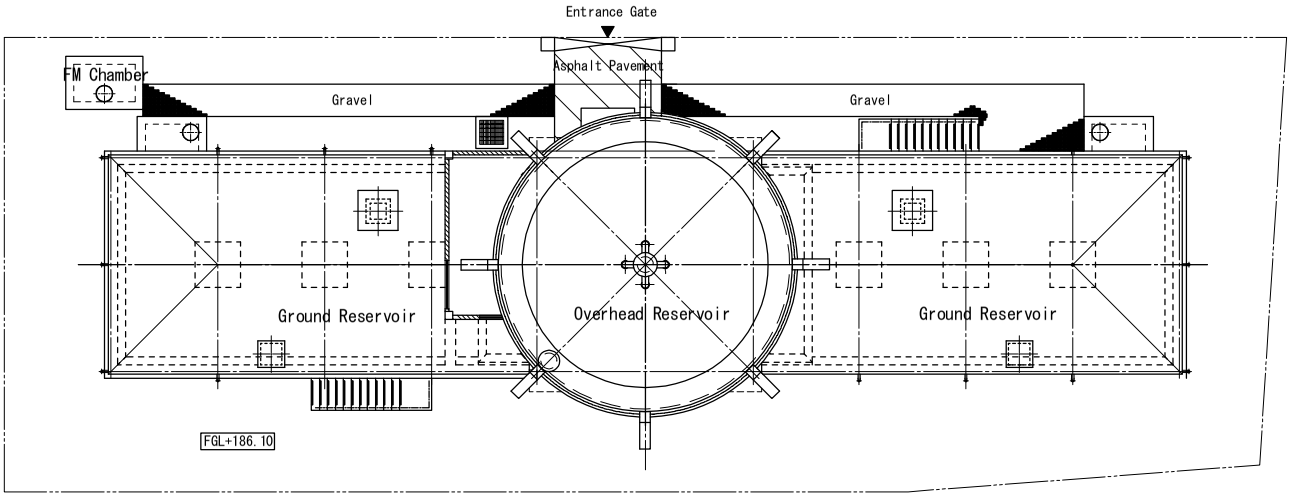
SECTIONAL DETAIL
(Solution Tank Room)



SECTIONAL DETAIL
(Roof Drain)

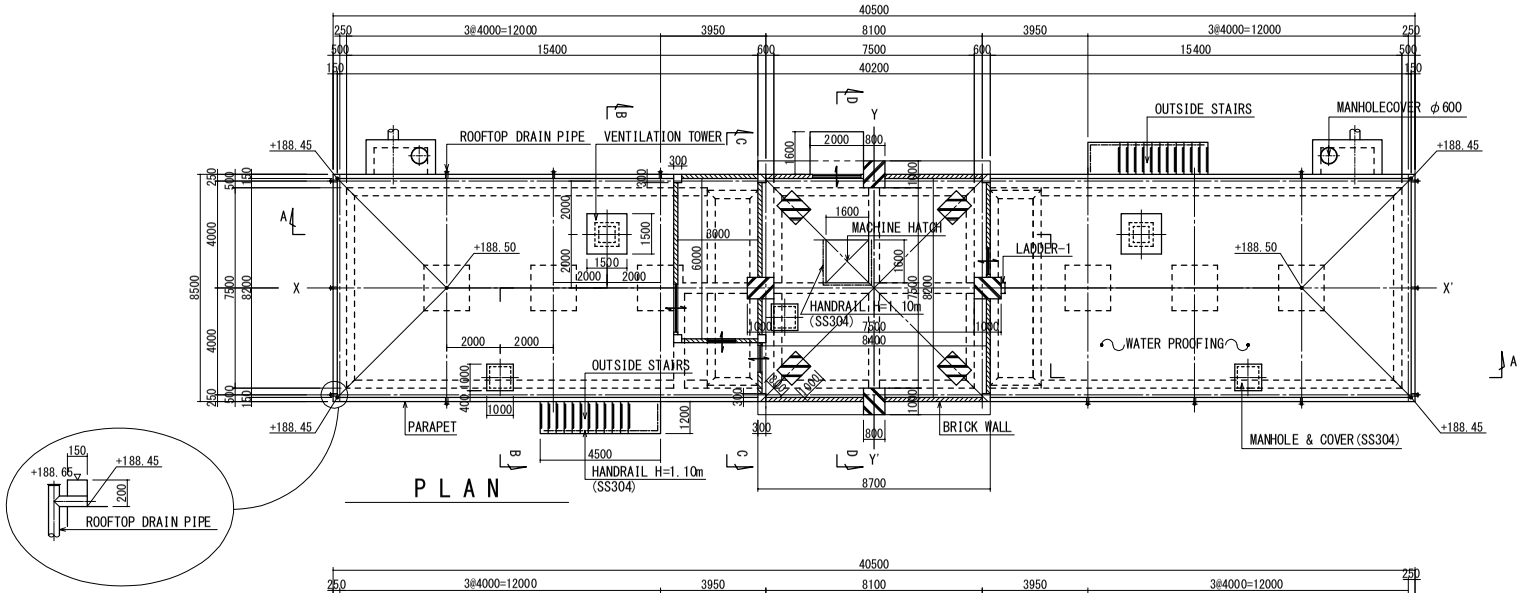
	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	Chemical Building - Section(2), Sectional Detail	1/100,1/50	WTP-A-13

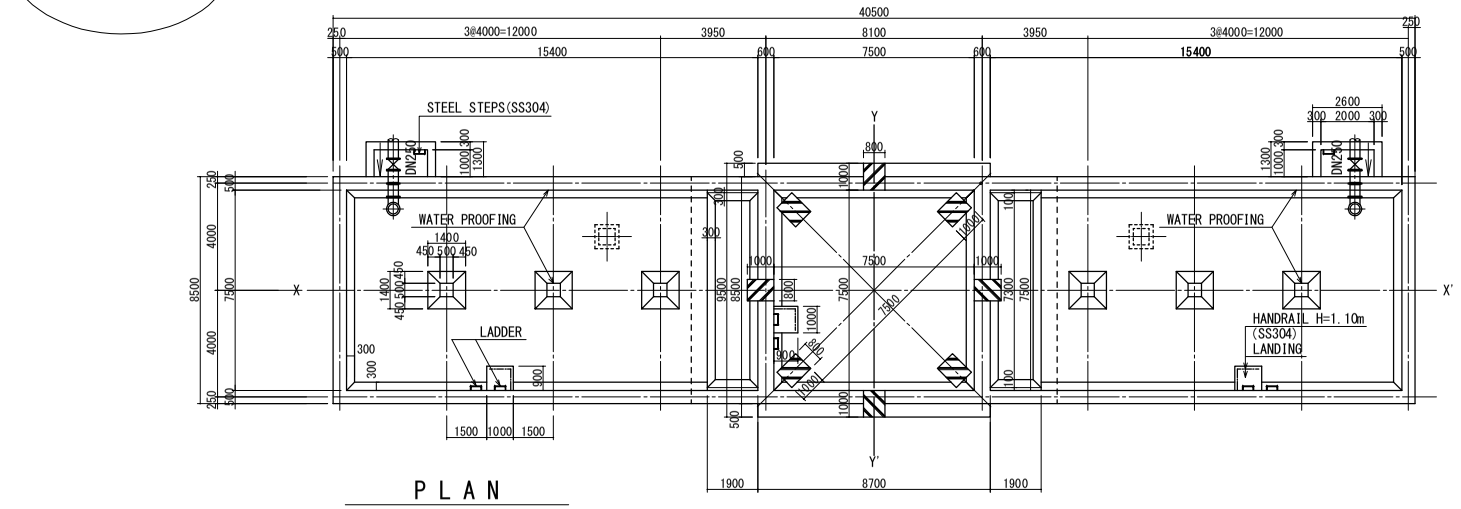
GENERAL LAYOUT



	PROJECT TITLE: THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	DRAWING TITLE: GENERAL LAYOUT	SCALE: 1/200	DRAWING NO: DC#1-C-01

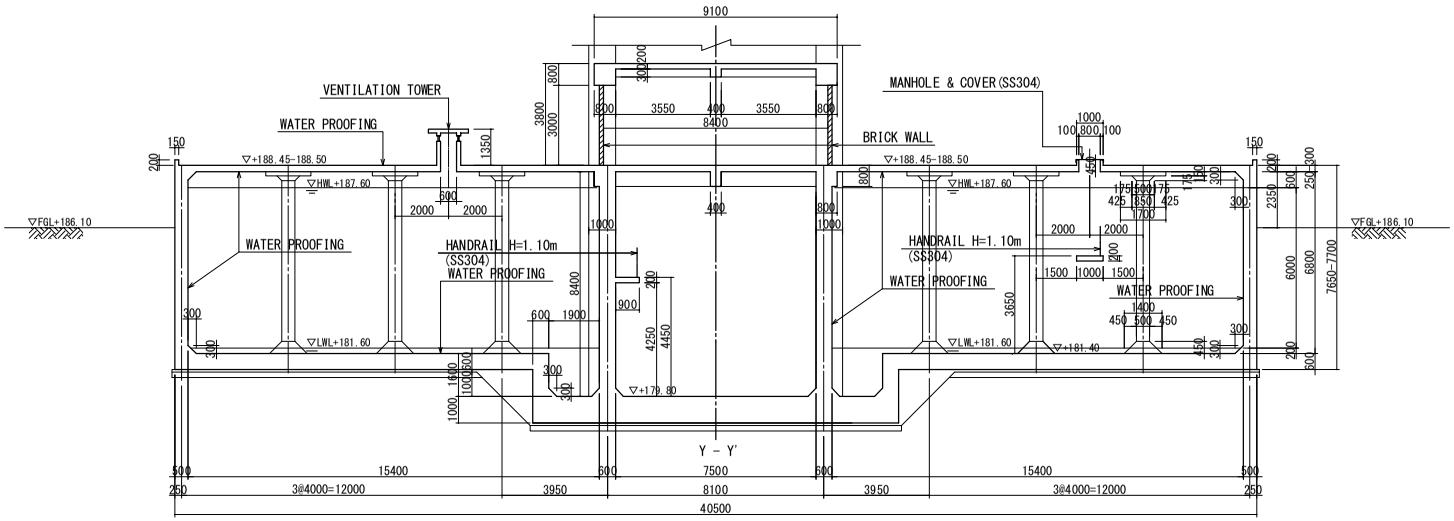
GROUND RESERVOIR (1)



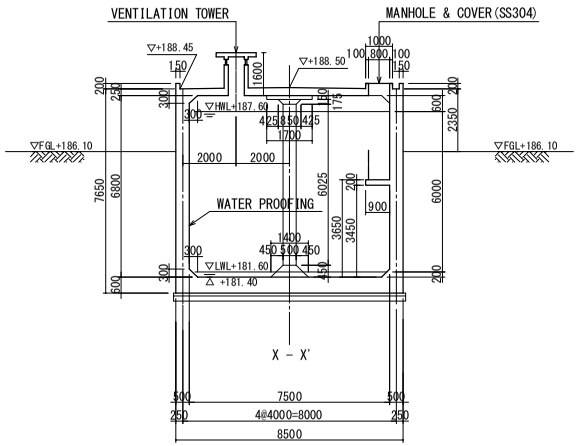


	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	GROUND RESERVOIR (1)	1/200	DC#1-C-02

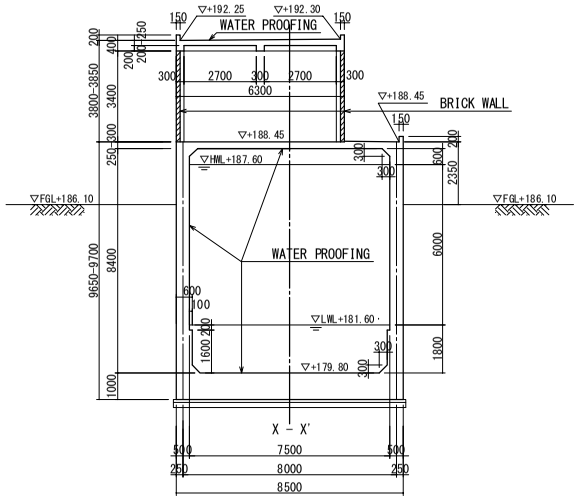
GROUND RESERVOIR (2)



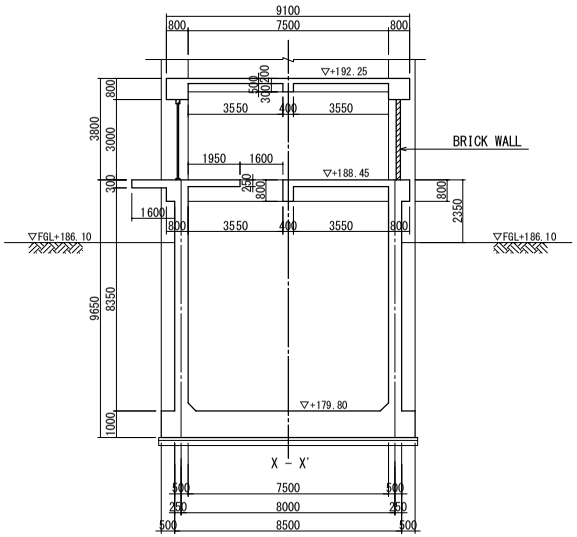
A - A SECTION



B - B SECTION



C - C SECTION



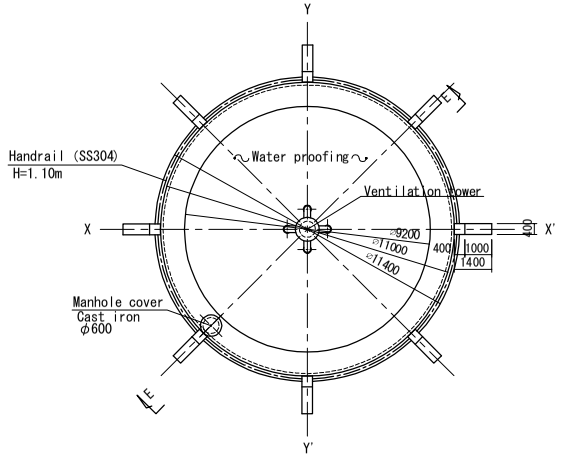
D - D SECTION

	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	GROUND RESERVOIR (2)	1/200	DC#1-C-03

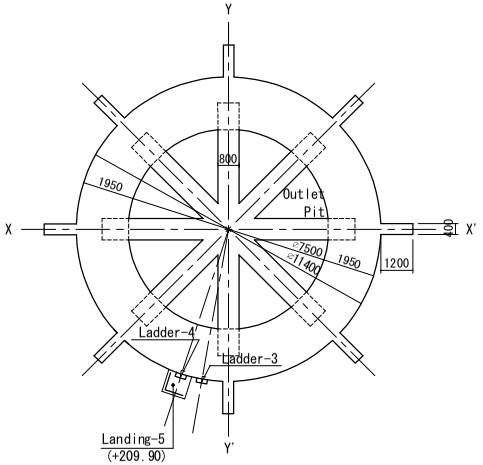
App 7(5)-29

DC#1-03

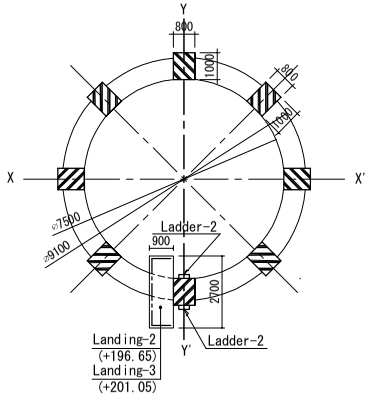
OVERHEAD RESERVOIR (1)



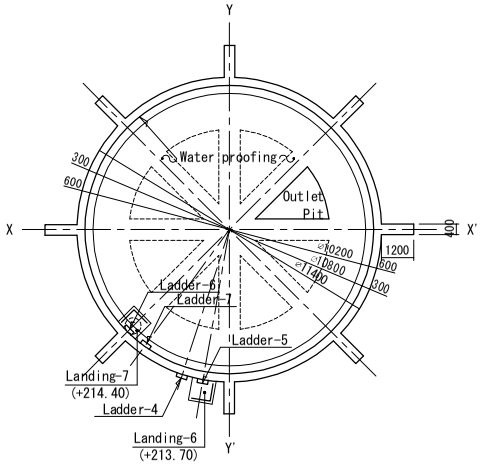
P L A N



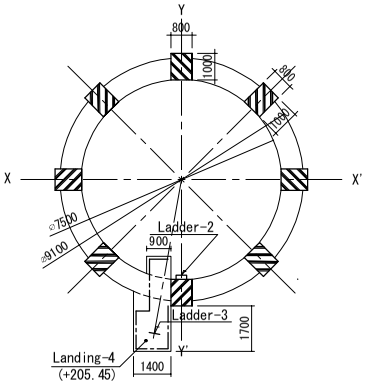
B - B SECTION



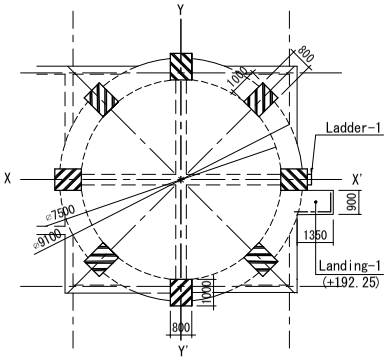
C - C SECTION
(C-2, C-3)



A - A SECTION



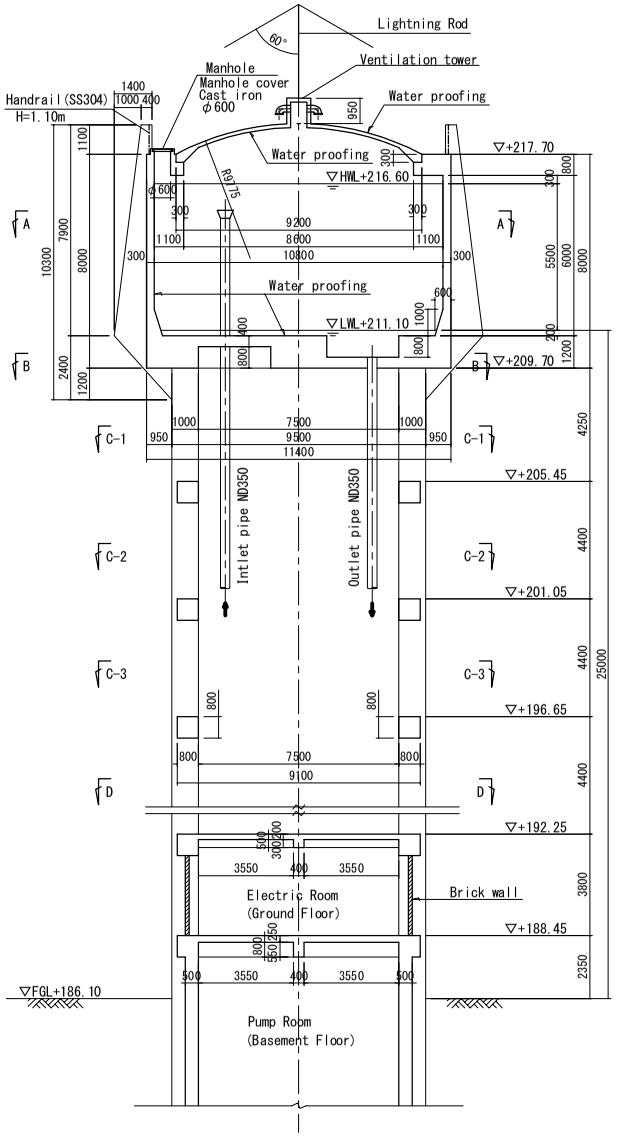
C - C SECTION
(C-1)



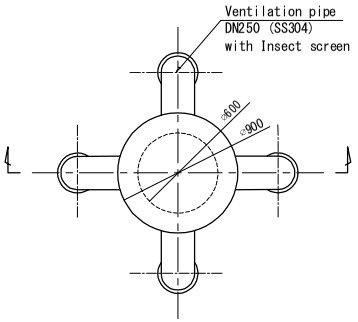
D - D SECTION

	PROJECT TITLE: THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	DRAWING TITLE: OVERHEAD RESERVOIR (1)	SCALE: 1/200	DRAWING NO: DC#1-C-05

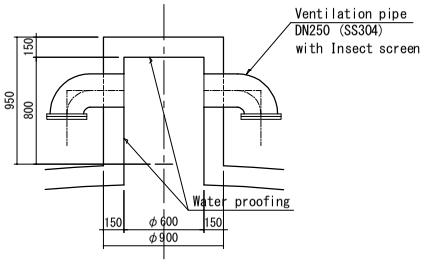
OVERHEAD RESERVOIR (2)



E - E SECTION
S=1/200



PLAN

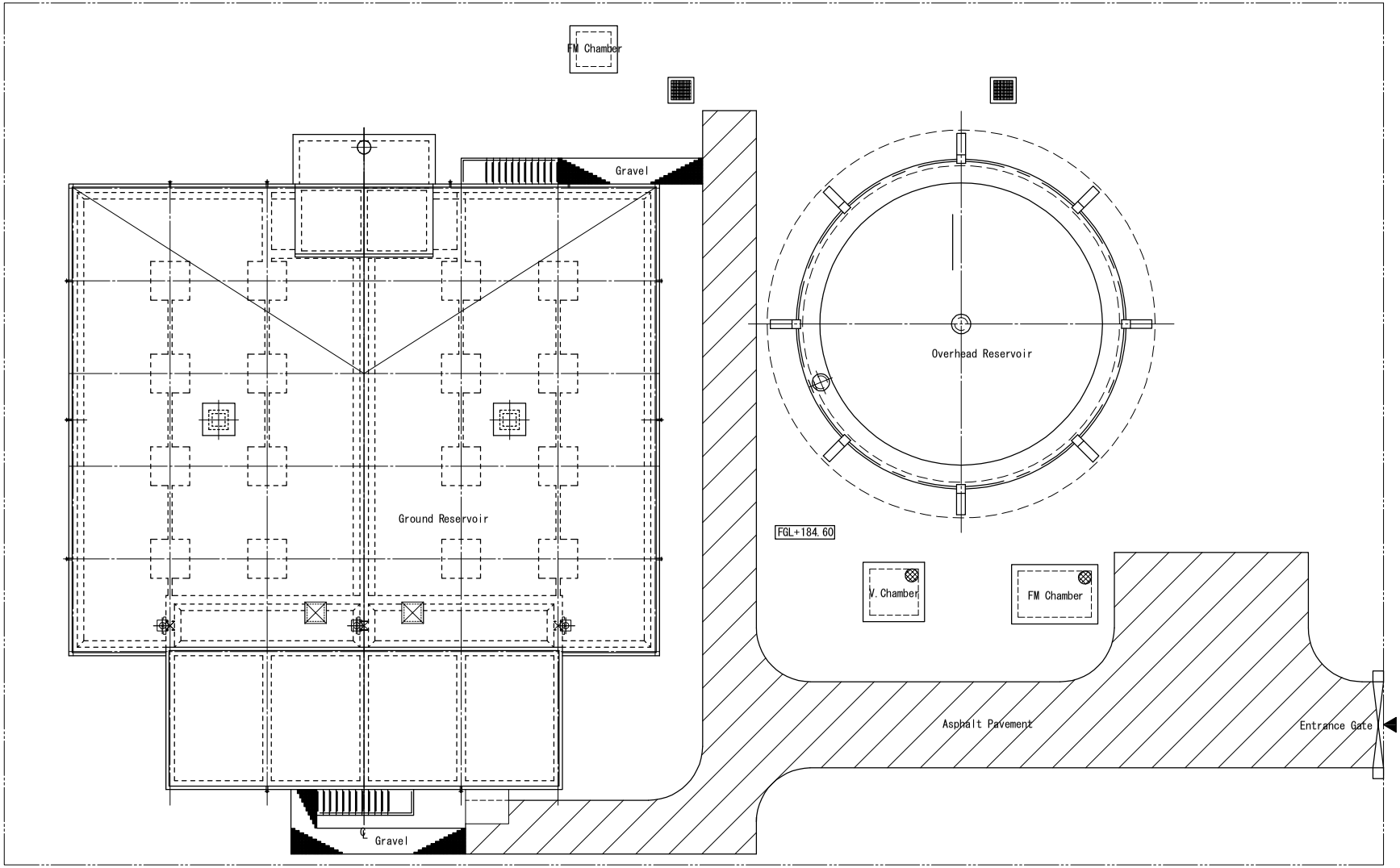


SECTION

Ventilation tower
S=1/50

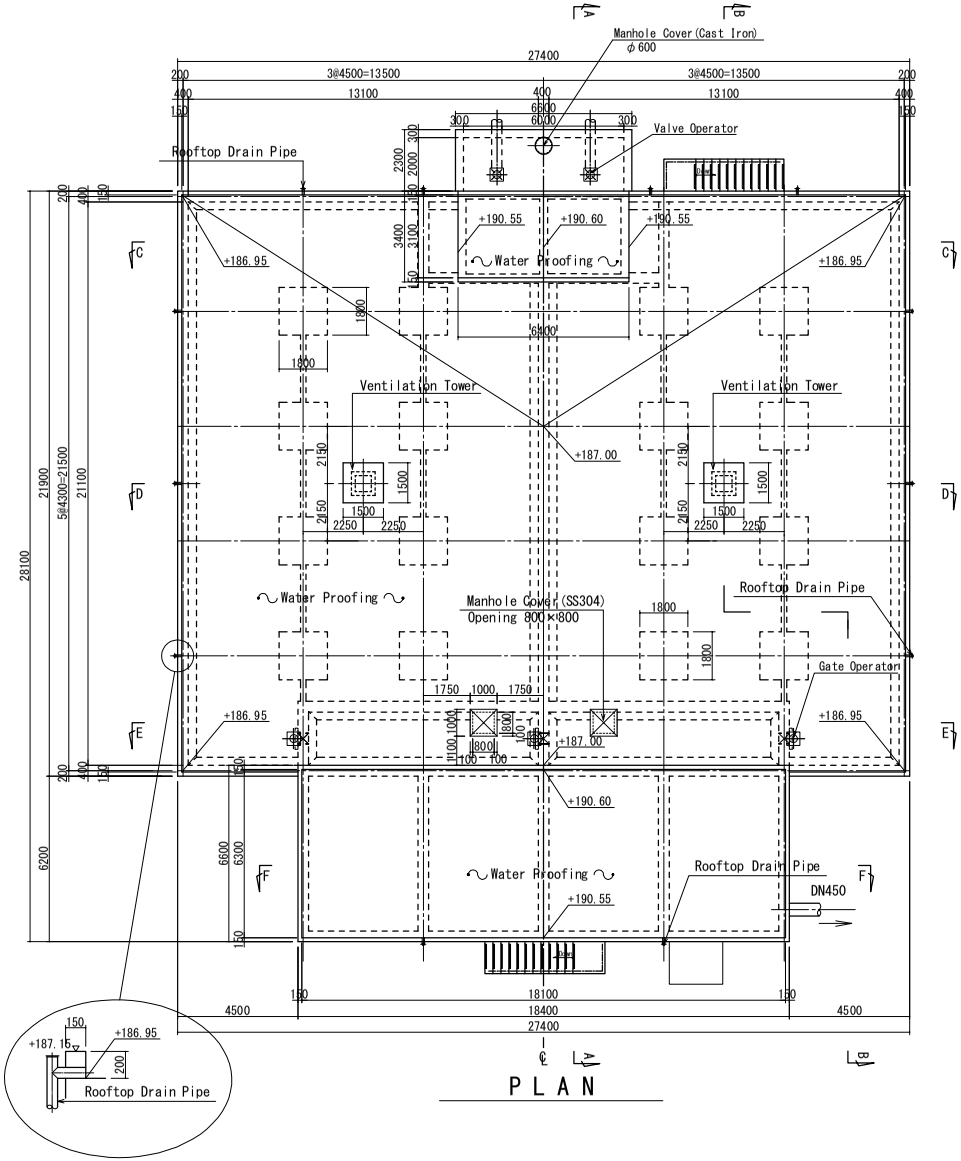
	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	OVERHEAD RESERVOIR (2)	1/200	DC#1-C-06

GENERAL LAYOUT

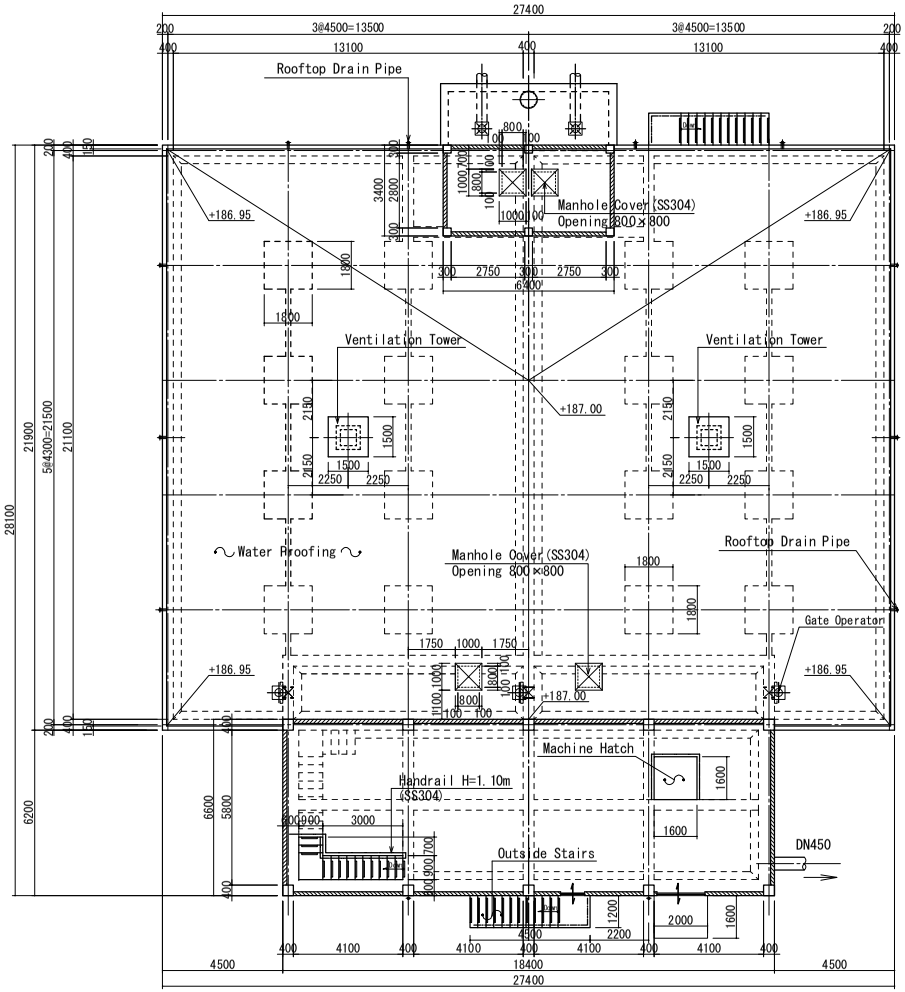


	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	GENERAL LAYOUT	1/200	DC#2-C-01

GROUND RESERVOIR (1)



PLAN



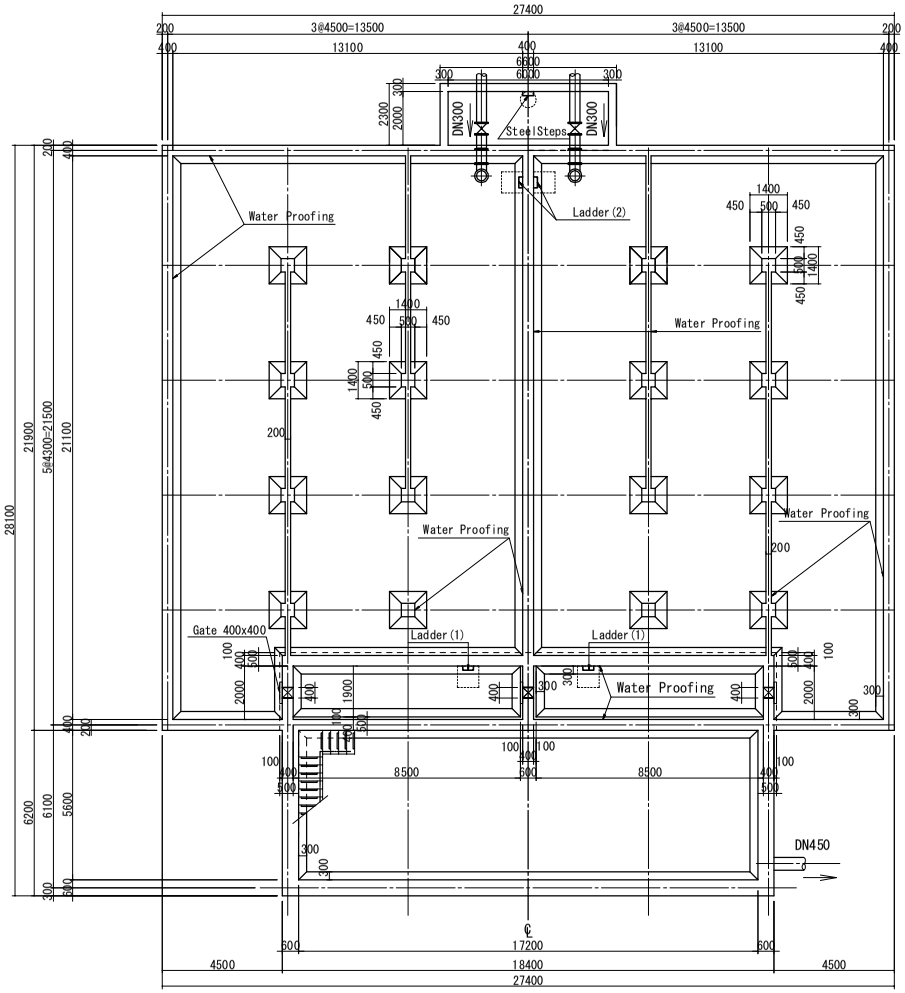
SECTIONAL PLAN(1)
(+186.95)

	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	GROUND RESERVOIR(1)	1/200	DC#2-C-02

App 7(5)-33

DC#2-02

GROUND RESERVOIR (2)



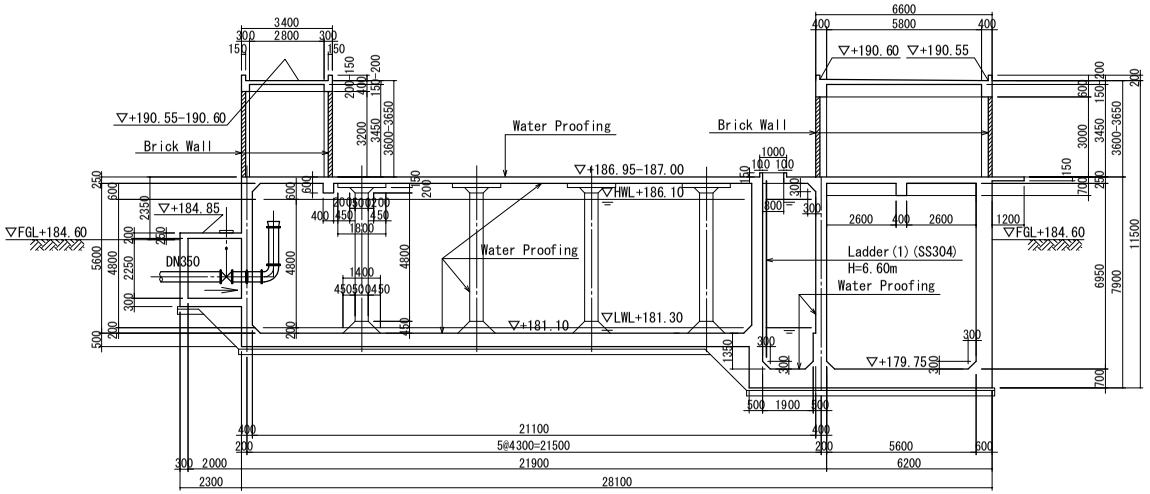
SECTIONAL PLAN (2)

	PROJECT TITLE: THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	DRAWING TITLE: GROUND RESERVOIR (2)	SCALE: 1/200	DRAWING NO: DC#2-C-02

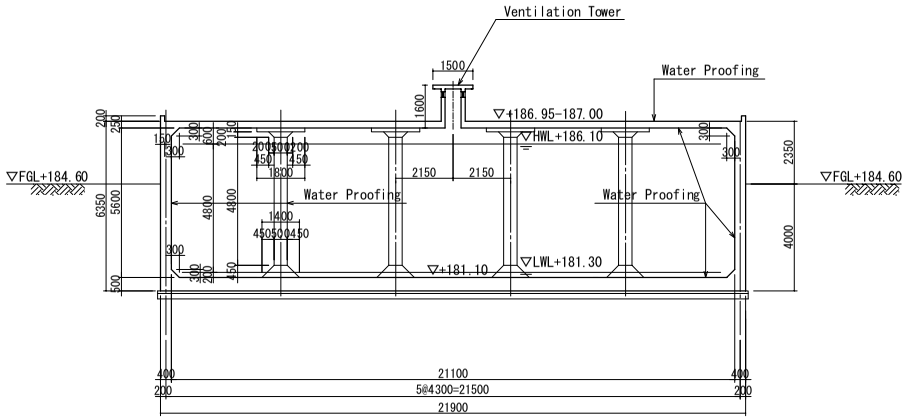
App 7(5)-34

DC#2-03

GROUND RESERVOIR (3)



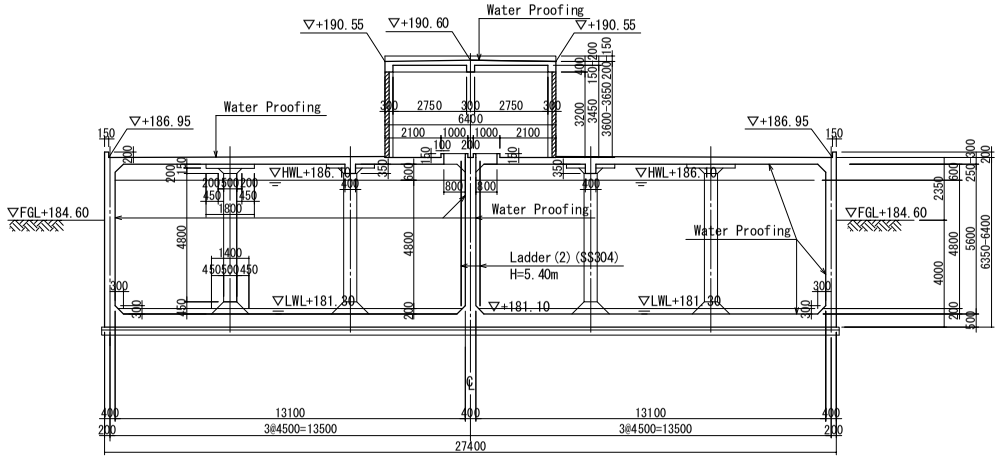
A - A SECTION



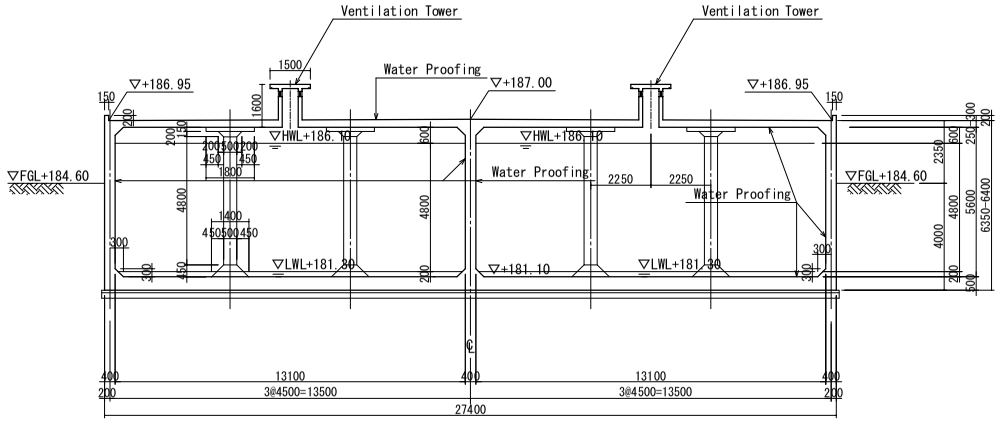
B - B SECTION

	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	GROUND RESERVOIR (3)	1/200	DC#2-C-04

GROUND RESERVOIR (4)



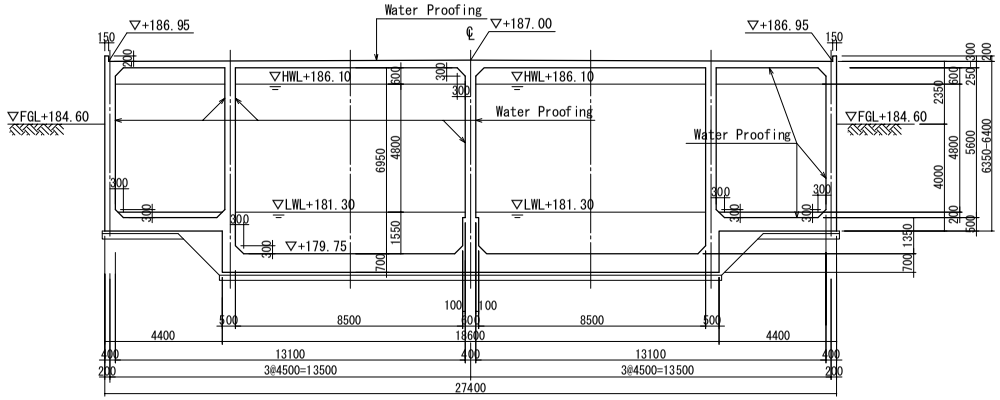
C - C SECTION



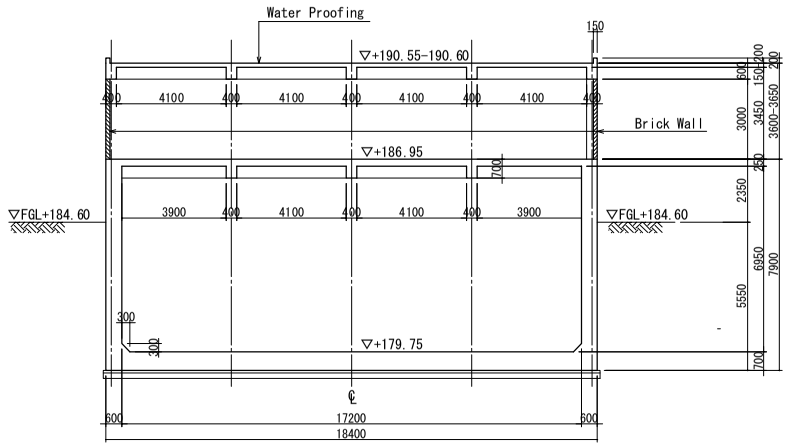
D - D SECTION

	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	GROUND RESERVOIR (4)	1/200	DC#2-C-05

GROUND RESERVOIR (5)



E - E SECTION



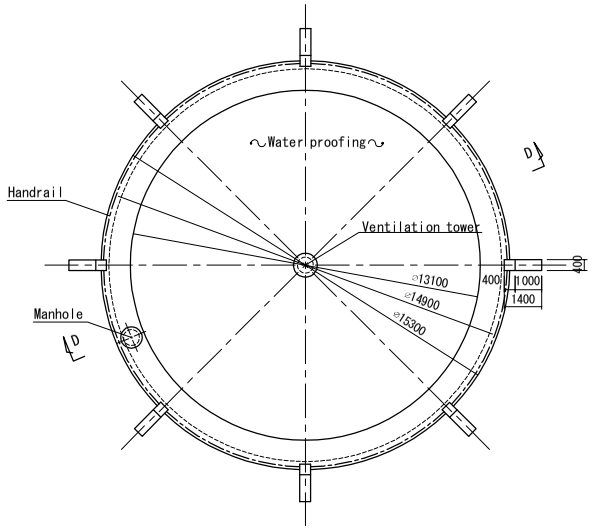
F - F SECTION

	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	GROUND RESERVOIR (5)	1/200	DC#2-C-06

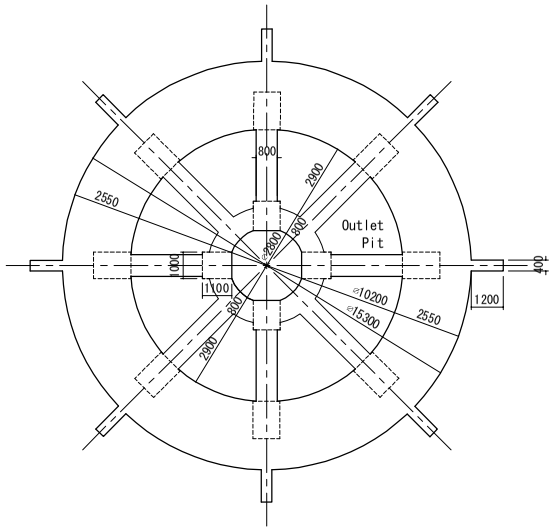
App 7(5)-37

DC#2-06

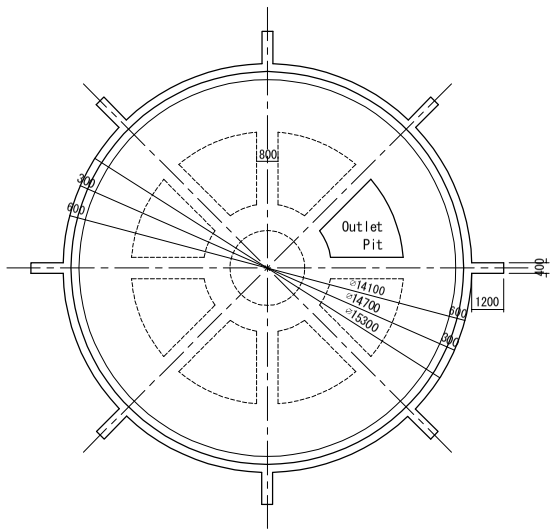
OVERHEAD RESERVOIR (1)



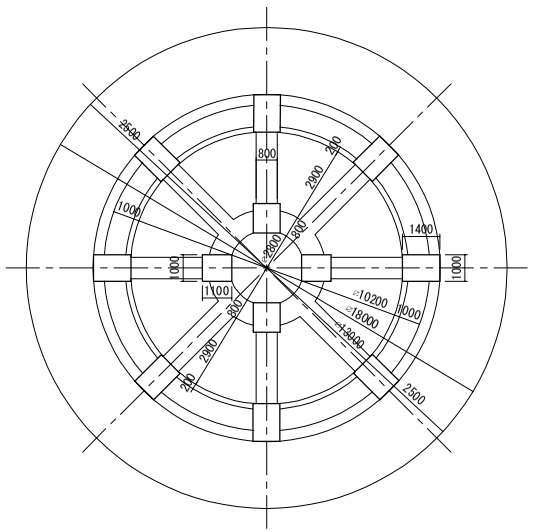
P L A N



B - B SECTION



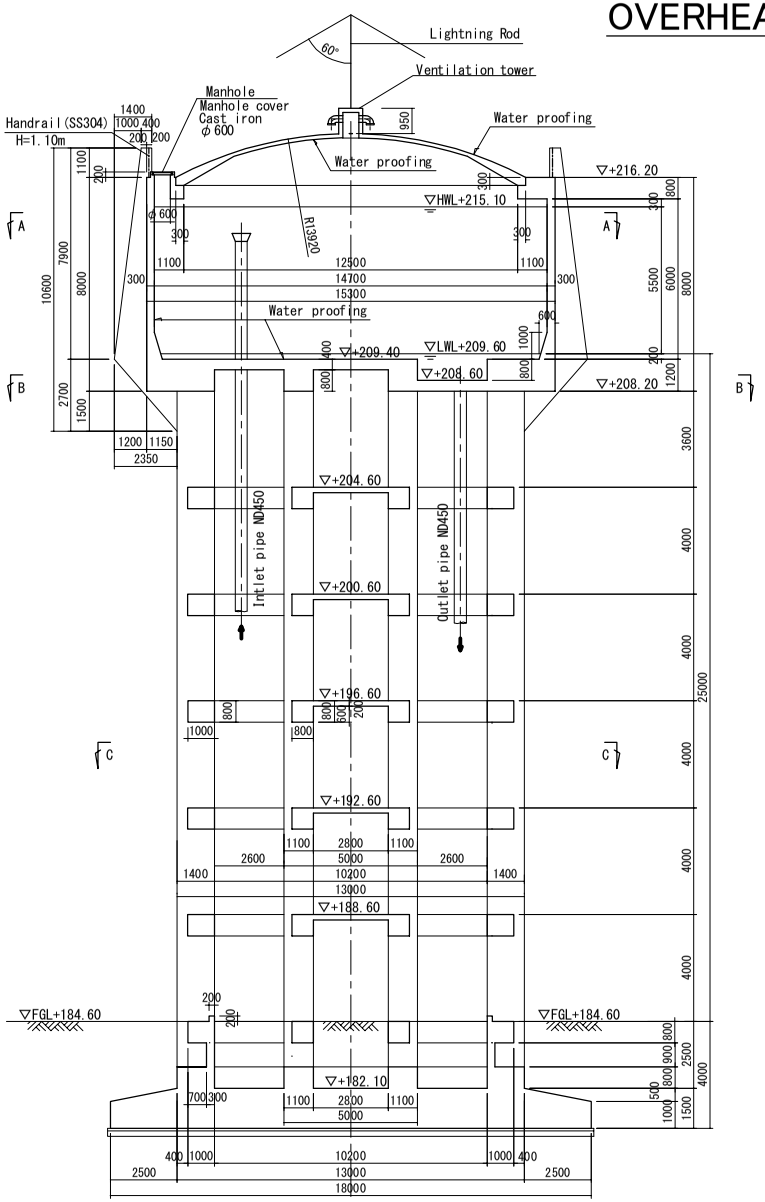
A - A SECTION



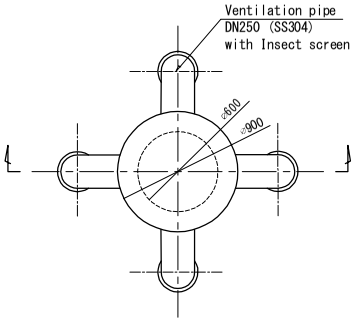
C - C SECTION

	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	OVERHEAD RESERVOIR (1)	1/200	DC#2-C-09

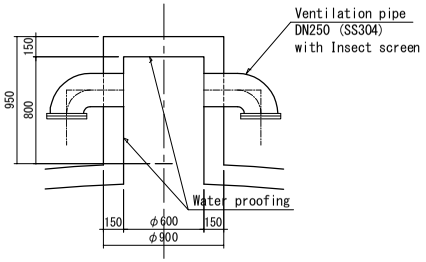
OVERHEAD RESERVOIR (2)



D - D SECTION
S=1/200



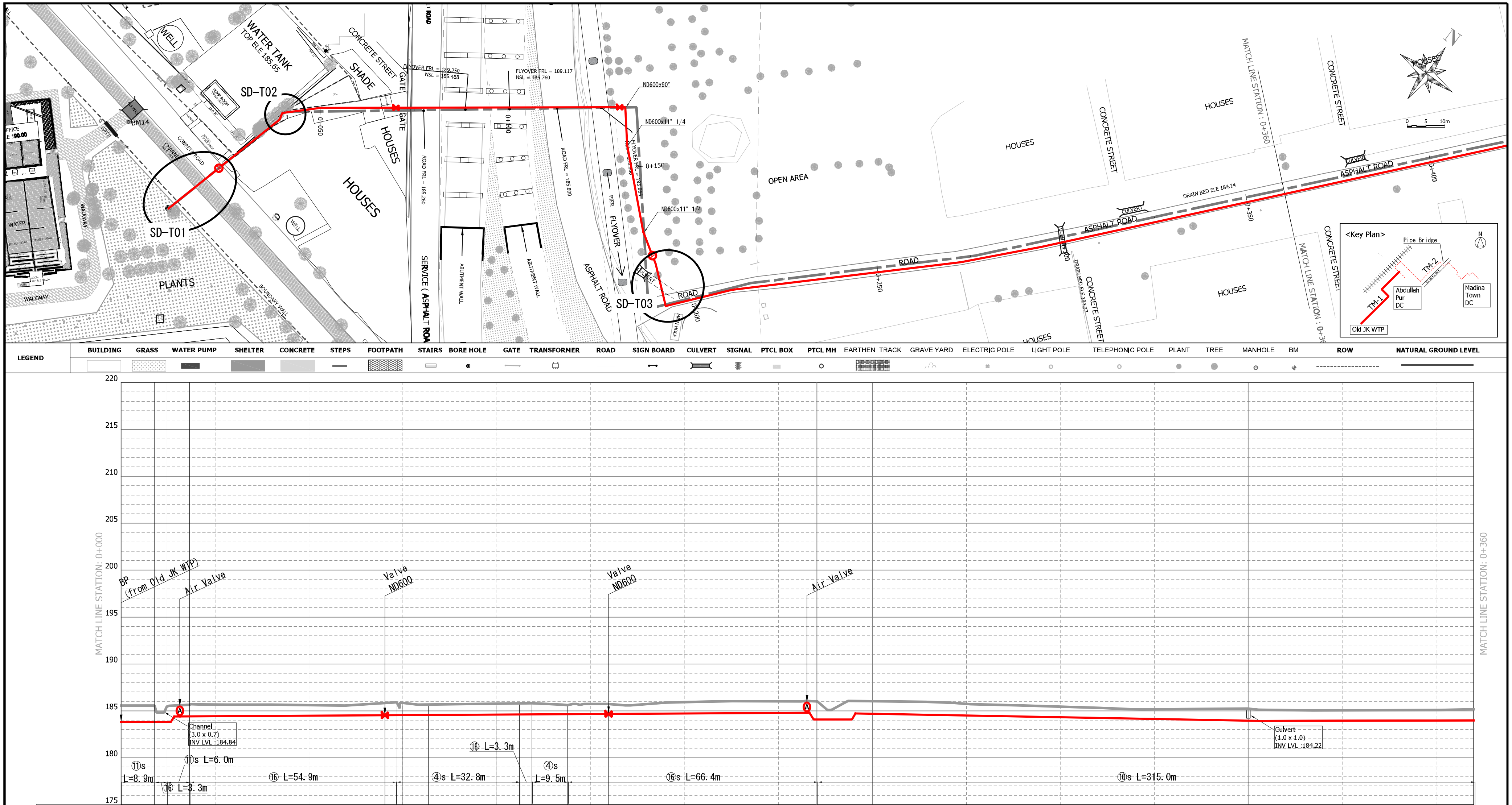
PLAN



SECTION

Ventilation tower
S=1/50

	PROJECT TITLE: THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	DRAWING TITLE: OVERHEAD RESERVOIR (2)	SCALE: 1/200	DRAWING NO: DC#2-C-10



Chainage	Cumulative Distance	Pipeline (Diameter)	Pipe Center Level	Ground Elevations	Water Level
0+000	0	TM-1 DIP ND600 L=985m	000.000	185.55	000.00
+12	12		000.000	185.66	000.00
+25	25		000.000	185.66	000.00
+50	50		000.000	185.66	000.00
+73	73		000.000	185.91	000.00
+75	75		000.000	185.67	000.00
0+100	100		000.000	185.76	000.00
+119	119		000.000	185.61	000.00
+25	125		000.000	185.73	000.00
+50	150		000.000	185.93	000.00
+75	175		000.000	186.02	000.00
+85	185		000.000	185.99	000.00
0+200	200		000.000	186.01	000.00
+25	225		000.000	185.74	000.00
+50	250		000.000	185.43	000.00
+75	275		000.000	185.15	000.00
0+300	300		000.000	185.23	000.00
+25	325		000.000	185.05	000.00
+50	350		000.000	185.07	000.00
0+360	360		000.000	185.16	000.00

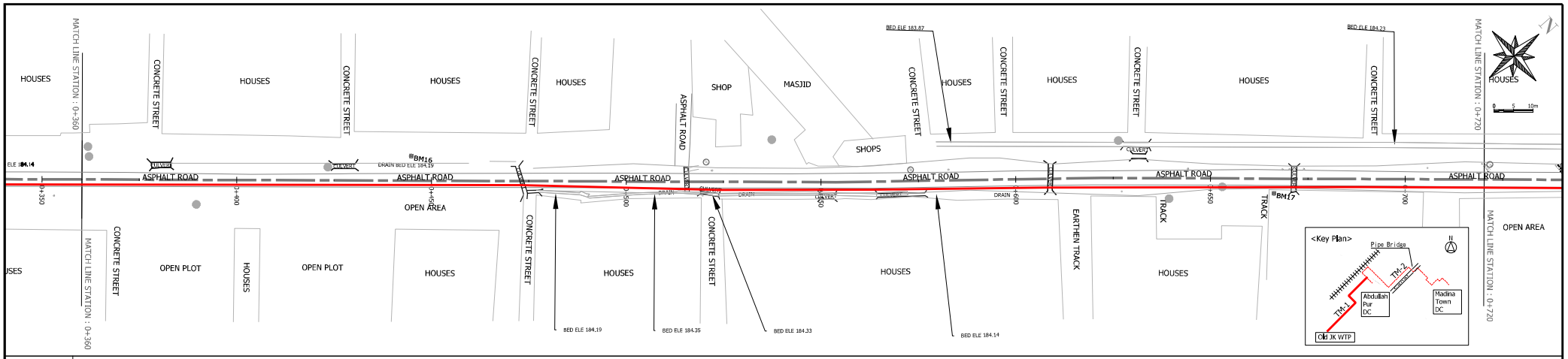
PROJECT TITLE:
THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD

DRAWING TITLE:
PLAN AND PROFILE OF TRANSMISSION MAIN (1)

SCALE: 1/1000,1/400

DRAWING NO: TM-001

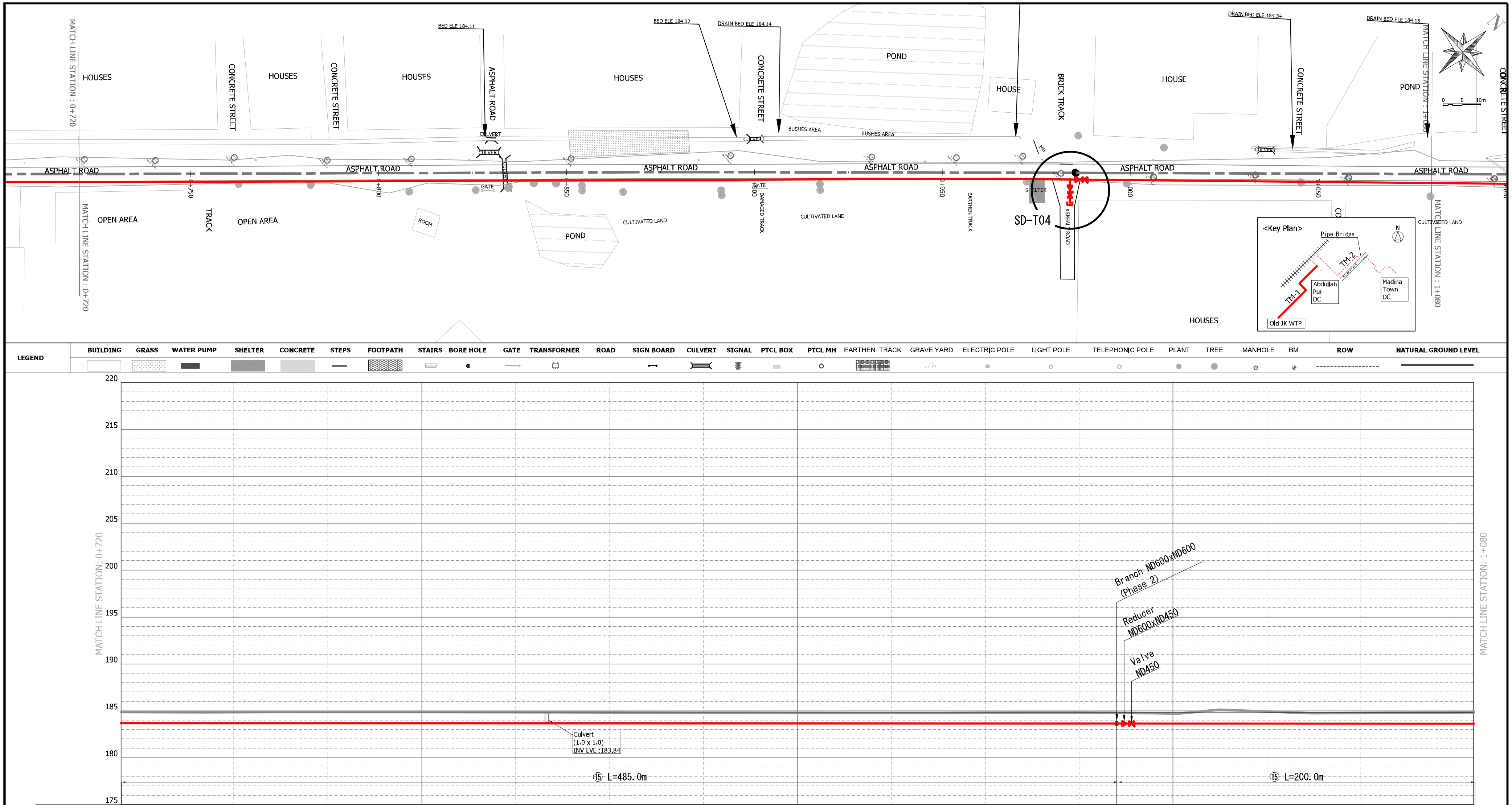
TM-01



LEGEND	BUILDING	GRASS	WATER PUMP	SHELTER	CONCRETE	STEPS	FOOTPATH	STAIRS	BORE HOLE	GATE	TRANSFORMER	ROAD	SIGN BOARD	CULVERT	SIGNAL	PTCL BOX	PTCL MH	EARTHEN TRACK	GRAVE YARD	ELECTRIC POLE	LIGHT POLE	TELEPHONIC POLE	PLANT	TREE	MANHOLE	BM	ROW	NATURAL GROUND LEVEL

Water Level																													
Ground Elevations	185.16	185.04	185.04	185.03	184.99	185.00	184.99	184.99	184.93	184.89	184.95	184.94	184.96	184.98	184.94	184.86													
Pipe Center Level	000.000	000.000	000.000	000.000	000.000	000.000	000.000	000.000	000.000	000.000	000.000	000.000	000.000	000.000	000.000	000.000													
Pipeline (Diameter)	TM-1 DIP ND600 L=985m																												
Cumulative Distance	360	375	400	425	450	475	500	525	550	575	600	625	650	675	700	720													
Chainage	**0+360**	+75	**0+400**	+25	+50	+75	**0+500**	+25	+50	+75	**0+600**	+25	+50	+75	**0+700**	**0+720**													

	PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
	THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	PLAN AND PROFILE OF TRANSMISSION MAIN (2)	1/1000,1/400	TM-002



Water Level																		
Ground Elevations	184.86	184.85	184.86	184.86	184.86	184.84	184.82	184.79	184.77	184.77	184.80	184.82	184.77	184.70	185.50	185.07	184.72	184.83
Pipe Center Level	000.000	000.000	000.000	000.000	000.000	000.000	000.000	000.000	000.000	000.000	000.000	000.000	000.000	000.000	000.000	000.000	000.000	000.000
Pipeline (Diameter)	TM-1 DIP ND600 L=985m													TM-1 HDPE ND450 L=640m				
Cumulative Distance	720	725	750	775	800	825	850	875	900	925	950	975	985	1000	1025	1050	1075	1080
Chainage	0+720	+25	+50	+75	0+800	+25	+50	+75	0+900	+25	+50	+75	+85	1+000 (Branch Point Phase-II)	+25	+50	+75	1+080

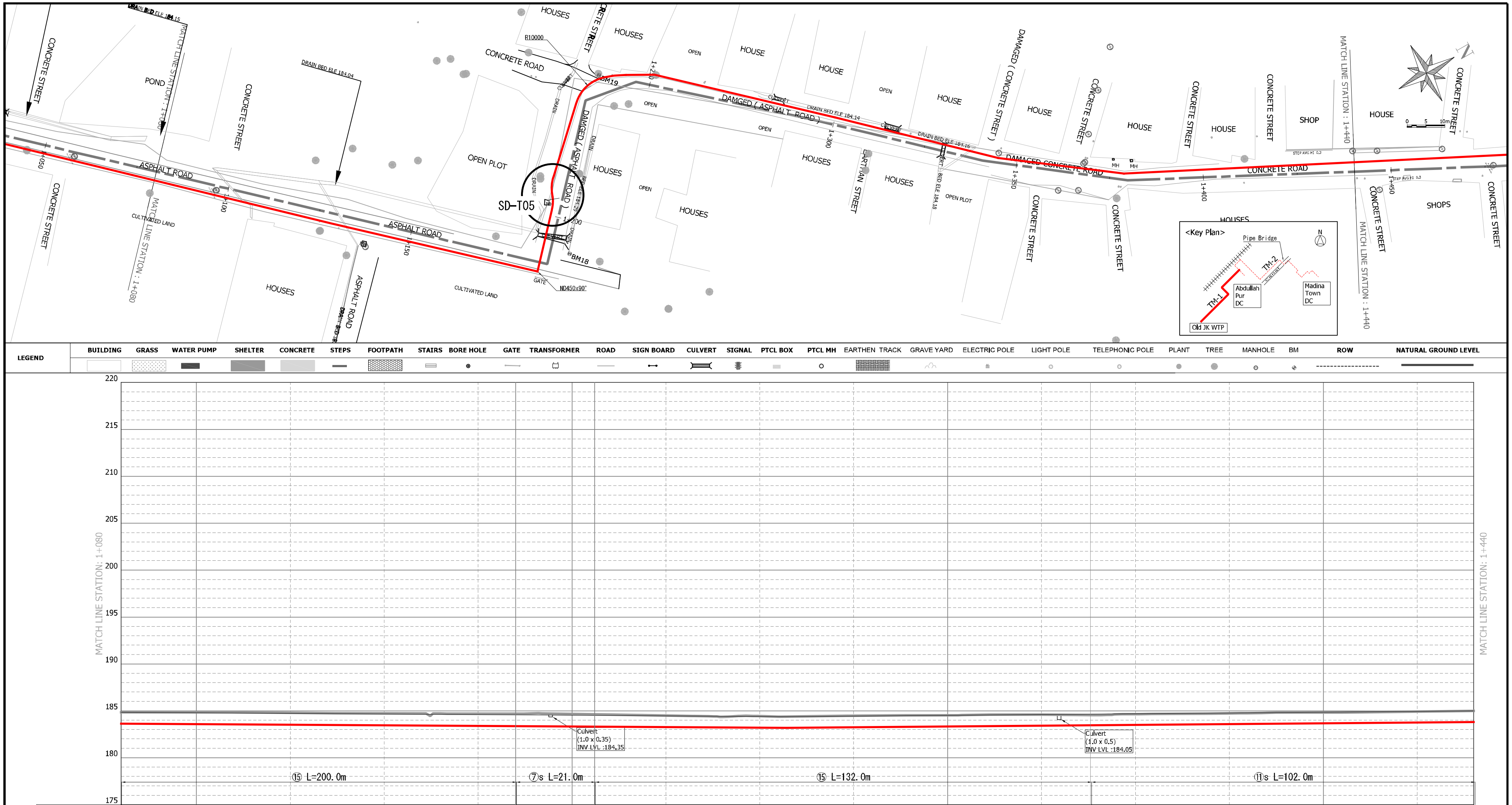
PROJECT TITLE:
THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD

DRAWING TITLE:
PLAN AND PROFILE OF TRANSMISSION MAIN (3)

SCALE: 1/1000,1/400

DRAWING NO: TM-003

TM-03



Chainage	Cumulative Distance	Ground Elevations	Pipe Center Level	Water Level
1+080	1080	184.83	000.000	
1+100	1100	184.85	000.000	
+25	1125	184.79	000.000	
+50	1150	184.73	000.000	
+75	1175	184.69	000.000	
+85	1185	184.68		
1+200	1200	184.66		
+6	1206	184.62		
+25	1225	184.49	000.000	
+50	1250	184.42	000.000	
+75	1275	184.47	000.000	
1+300	1300	184.52	000.000	
+25	1325	184.59		
+38	1338	184.54		
+50	1350	184.65		
+75	1375	184.72		
1+400	1400	184.82		
+25	1425	184.92		
1+440	1440	184.99		

Pipeline (Diameter): TM-1 HDPE ND450 L=640m

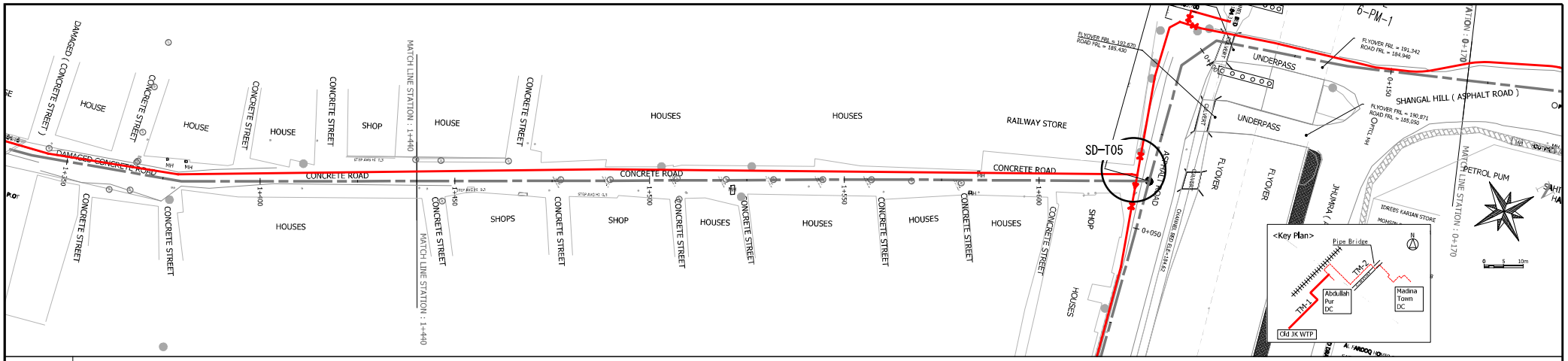
PROJECT TITLE:
THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD

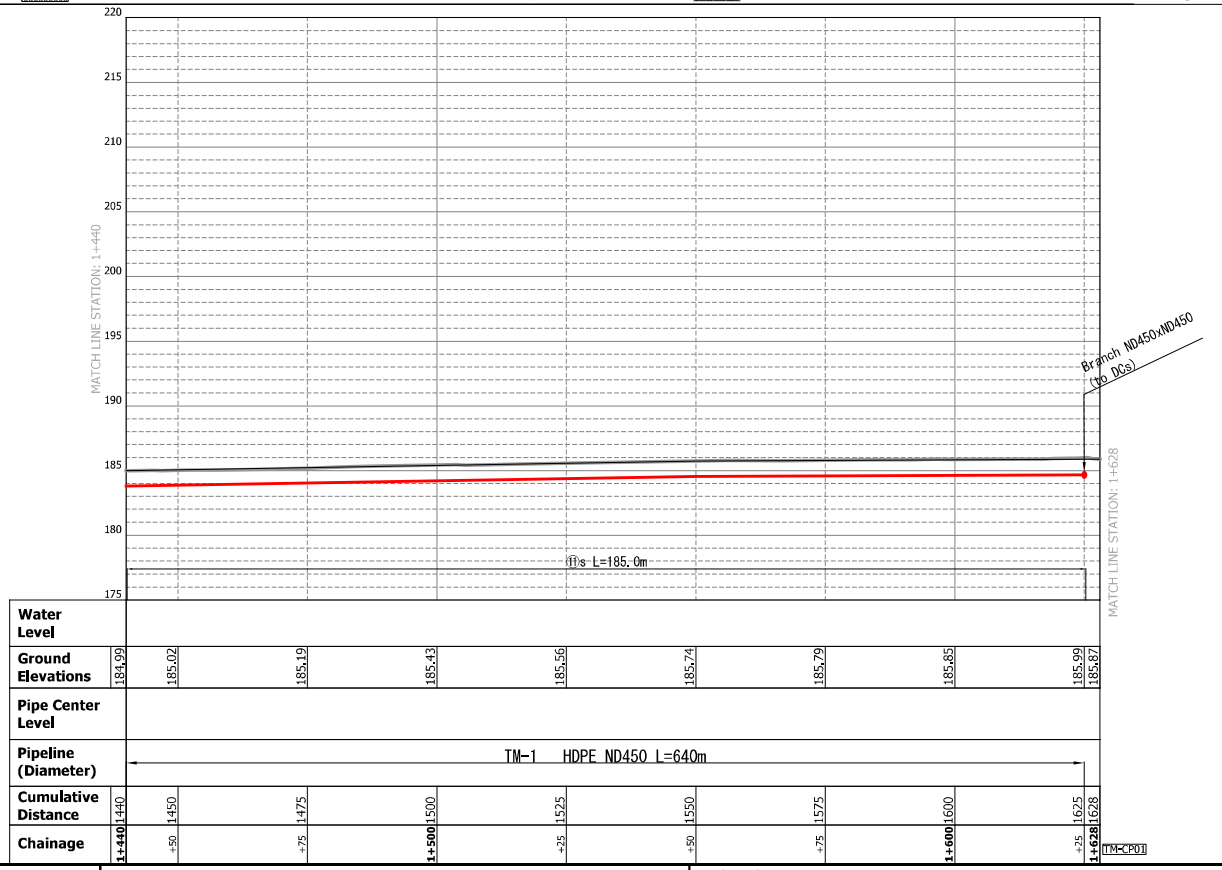
DRAWING TITLE:
PLAN AND PROFILE OF TRANSMISSION MAIN (4)

SCALE: 1/1000,1/400

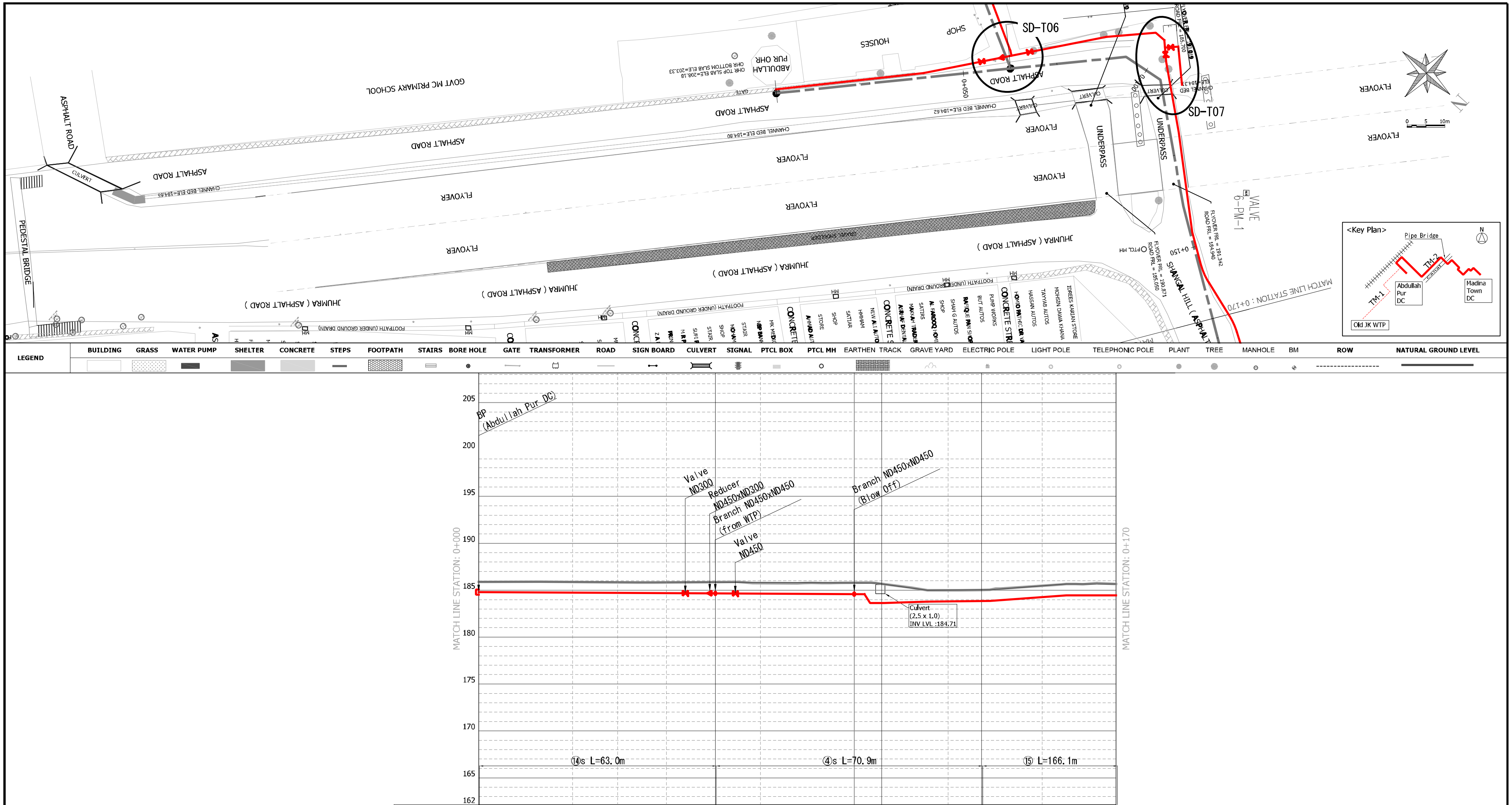
DRAWING NO: TM-004

TM-04





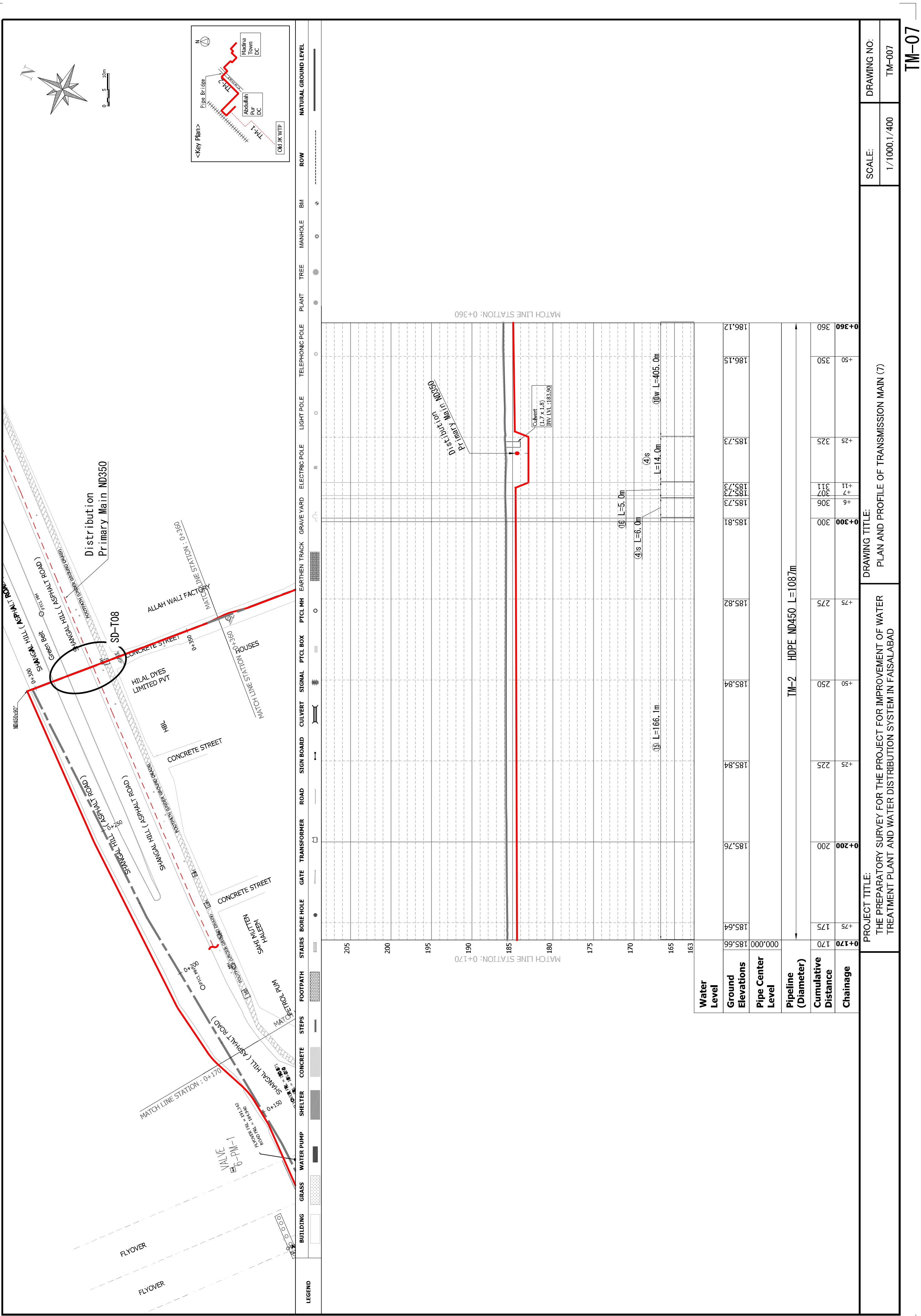
	PROJECT TITLE: THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	DRAWING TITLE: PLAN AND PROFILE OF TRANSMISSION MAIN (5)	SCALE: 1/1000,1/400 / DRAWING NO: TM-005

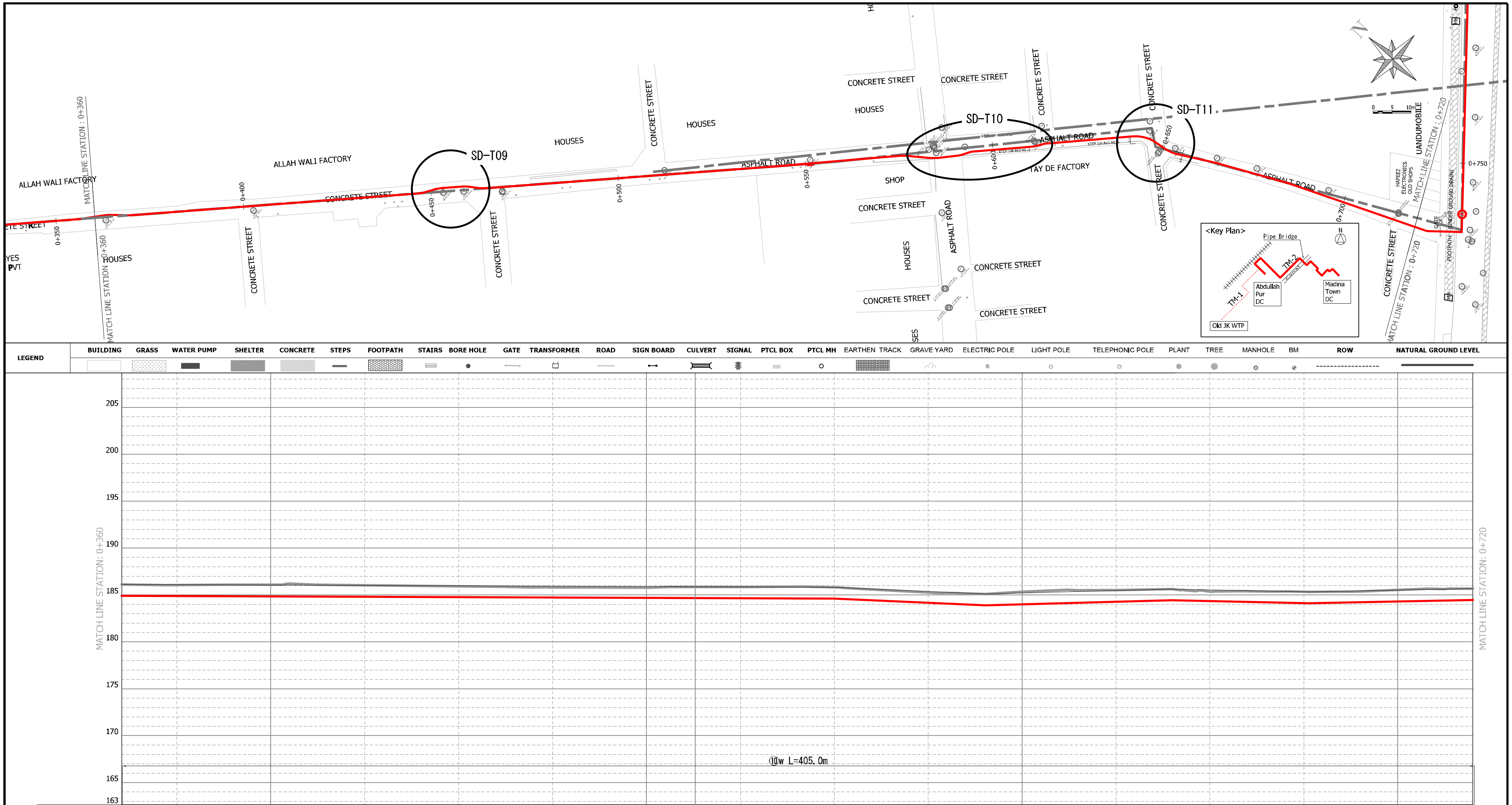


Water Level										
Ground Elevations	185.88	185.88	185.84	185.86	185.92	185.75	185.80	184.59	185.49	185.66
Pipe Center Level	000.000									
Pipeline (Diameter)	TM-2 HDPE ND300 L=63.0m					TM-2 HDPE ND450 L=1087m				
Cumulative Distance	0	25	37	50	63	75	100	125	150	170
Chainage	0+000	+25	+37	+50	+63	TM-CP01 +75	0+100	+25	+50	0+170

PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	PLAN AND PROFILE OF TRANSMISSION MAIN (6)	1/1000,1/400	TM-006

TM-06


PROJECT TITLE:
THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD
DRAWING TITLE:
PLAN AND PROFILE OF TRANSMISSION MAIN (7)
SCALE:
1/1000,1/400
DRAWING NO:
TM-007
TM-07
TM-2 HDPE ND450 L=1087m
Distribution Primary Main ND350
SD-T08
MATCH LINE STATION : 0+170
MATCH LINE STATION : 0+360
SHANGAL HILL (ASPHALT ROAD)
CONCRETE STREET
ALLAH WALI FACTORY
HILAL DYES LIMITED PVT
HOUSES
HBL
SAHI MUTTEN HALEEM
PETROL PUMP
FLYOVER
VALVE G-PM-1
Green Belt
Water Level
Ground Elevations
Pipe Center Level
Pipeline (Diameter)
Cumulative Distance
Chainage
LEGEND
NATURAL GROUND LEVEL
ROW
BM
MANHOLE
TREE
PLANT
TELEPHONE POLE
LIGHT POLE
ELECTRIC POLE
GRAVE YARD
EARTHEN TRACK
PTCL MH
PTCL BOX
SIGNAL
CULVERT
SIGN BOARD
ROAD
TRANSFORMER
GATE
BORE HOLE
STAIRS
FOOTPATH
STEPS
CONCRETE
SHELTER
WATER PUMP
GRASS
BUILDING
<Key Plan>
Pipe Bridge
Madina Town DC
Abdullah Pur DC
Old JK WTP
Culvert (1.7 x 1.8) INV. LVL :183.90



Water Level																	
Ground Elevations	186.12	186.05	186.10	186.04	185.94	185.82	185.78	185.84	185.85	185.82	185.25	185.34	185.52	185.35	185.33	185.54	185.67
Pipe Center Level	000.000																
Pipeline (Diameter)	TM-2 HDPE ND450 L=1087m																
Cumulative Distance	360	375	400	425	450	475	500	513	525	550	575	600	625	650	675	700	720
Chainage	**0+360**	+75	**0+400**	+25	+50	+75	**0+500**	+13	+25	+50	+75	**0+600**	+25	+50	+75	**0+700**	**0+720**

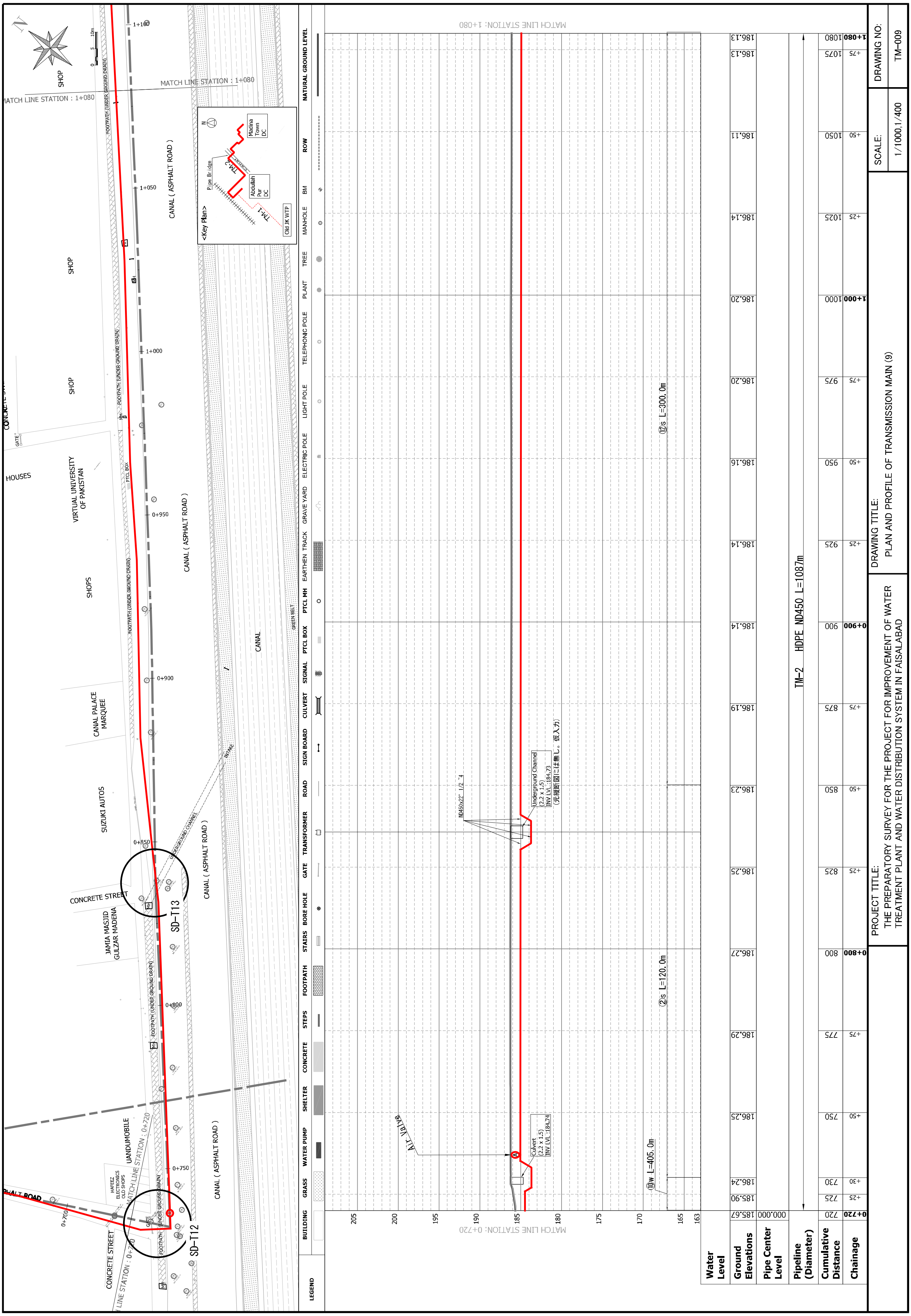
PROJECT TITLE:
THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD

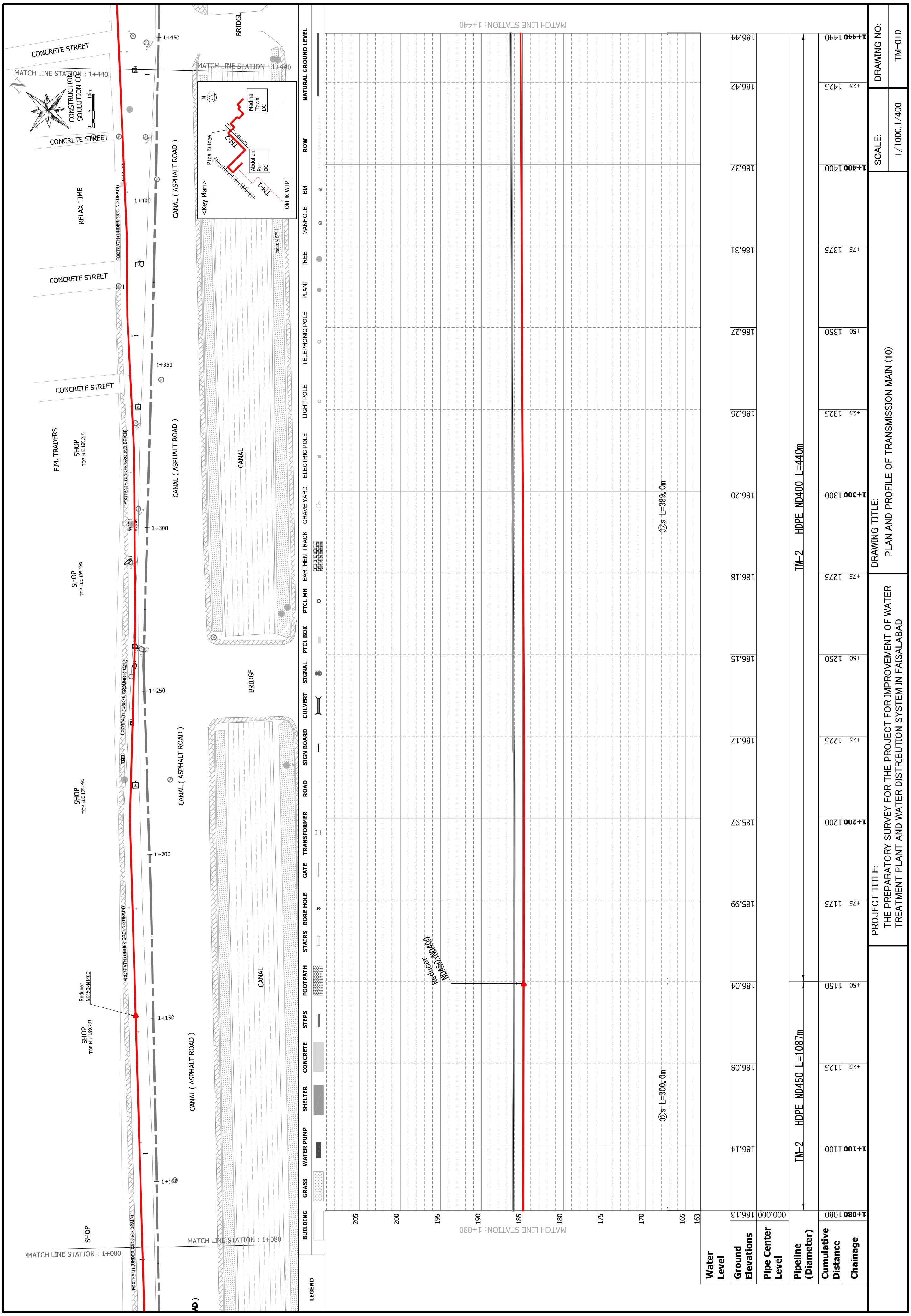
DRAWING TITLE:
PLAN AND PROFILE OF TRANSMISSION MAIN (8)

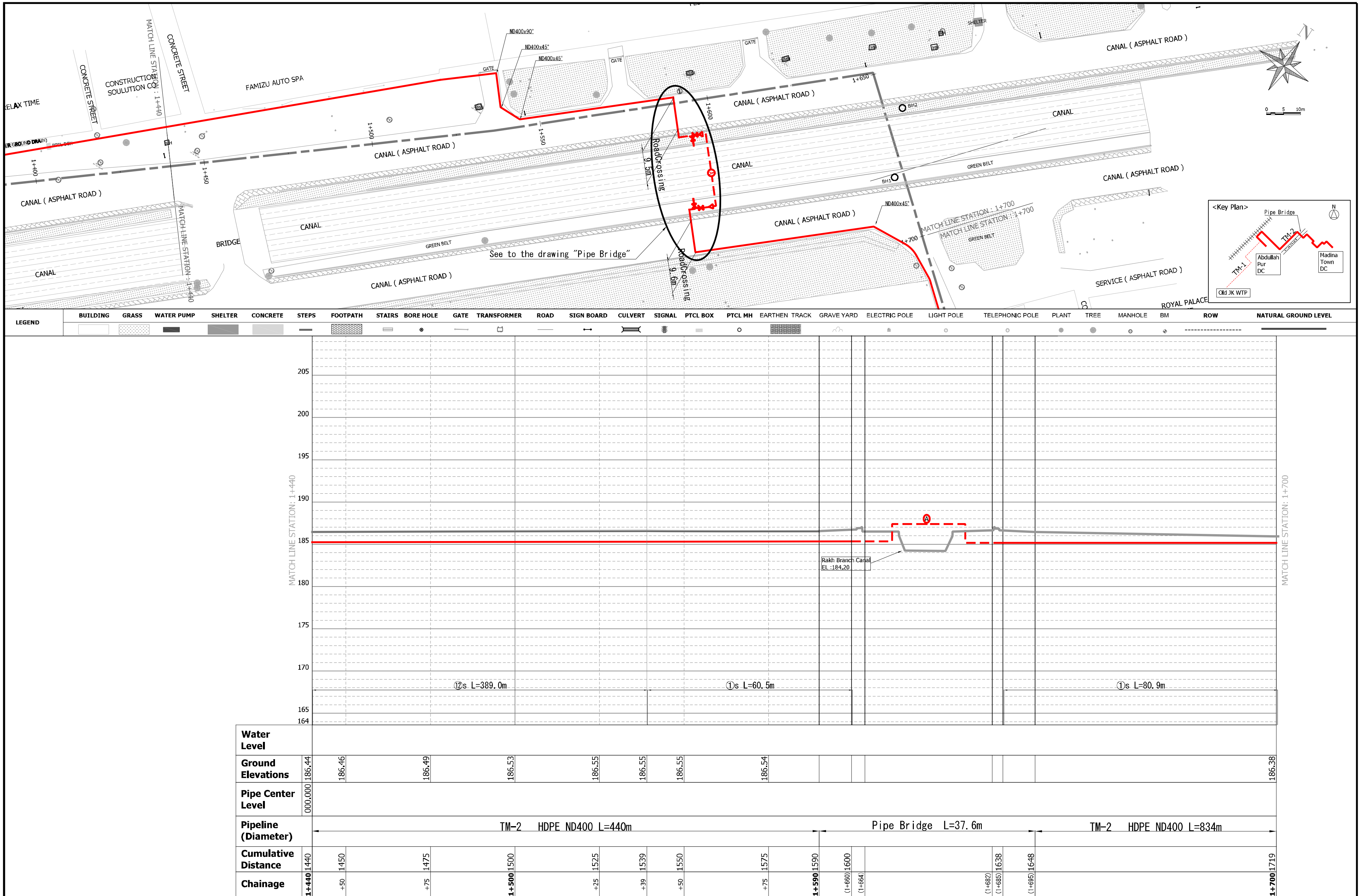
SCALE: 1/1000,1/400

DRAWING NO: TM-008

TM-08

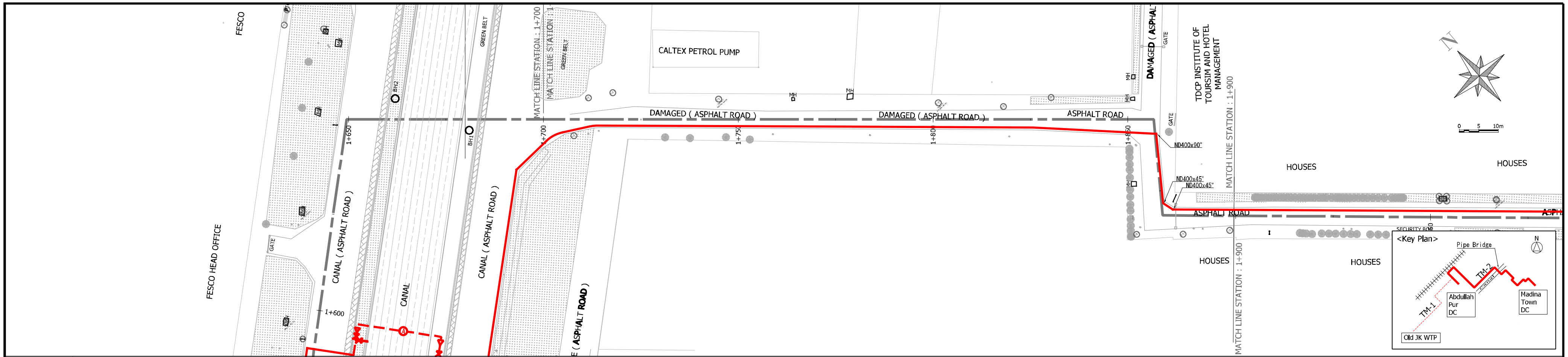

PROJECT TITLE:
THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD
DRAWING TITLE:
PLAN AND PROFILE OF TRANSMISSION MAIN (9)
SCALE:
1/1000,1/400
DRAWING NO:
TM-009
TM-09
TM-2 HDPE ND450 L=1087m
MATCH LINE STATION : 1+080
MATCH LINE STATION : 0+720
CANAL (ASPHALT ROAD)
CANAL
VIRTUAL UNIVERSITY OF PAKISTAN
CANAL PALACE MARQUEE
SUZUKI AUTOS
CONCRETE STREET
JAMIA MASJID GULZAR MADENA
SD-T13
SD-T12
Air Valve
Culvert (2.2 x 1.5) INV LVL :184,74
Underground Channel (2.2 x 1.5) INV LVL :184,73
<Key Plan>
Water Level
Ground Elevations
Pipe Center Level
Pipeline (Diameter)
Cumulative Distance
Chainage
LEGEND


TM-10
DRAWING NO:
TM-010
SCALE:
1/1000,1/400
DRAWING TITLE:
PLAN AND PROFILE OF TRANSMISSION MAIN (10)
PROJECT TITLE:
THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD
MATCH LINE STATION : 1+440
MATCH LINE STATION : 1+080
CONCRETE STREET
RELAX TIME
F.M. TRADERS
SHOP
CANAL (ASPHALT ROAD)
CANAL
BRIDGE
<Key Plan>
Pipe Bridge
TM-1
TM-2
Old JK WTP
Abdullah Pur DC
Madina Town DC
Reducer ND450/ND400
TM-2 HDPE ND400 L=440m
TM-2 HDPE ND450 L=1087m
12's L=389.0m
12's L=300.0m
LEGEND
BUILDING
GRASS
WATER PUMP
SHELTER
CONCRETE
STEPS
FOOTPATH
STAIRS
BORE HOLE
GATE
TRANSFORMER
ROAD
SIGN BOARD
CULVERT
SIGNAL
PTCL BOX
PTCL MH
EARTHEN TRACK
GRAVE YARD
ELECTRIC POLE
LIGHT POLE
TELEPHONIC POLE
PLANT
TREE
MANHOLE
BM
ROW
NATURAL GROUND LEVEL
Water Level
Ground Elevations
Pipe Center Level
Pipeline (Diameter)
Cumulative Distance
Chainage
1+080 1+100 1+200 1+300 1+400 1+440
186.13 186.14 186.08 186.04 185.99 185.97 186.17 186.15 186.18 186.20 186.26 186.27 186.31 186.37 186.42 186.44
000.000
1080 1100 1125 1150 1175 1200 1225 1250 1275 1300 1325 1350 1375 1400 1425 1440

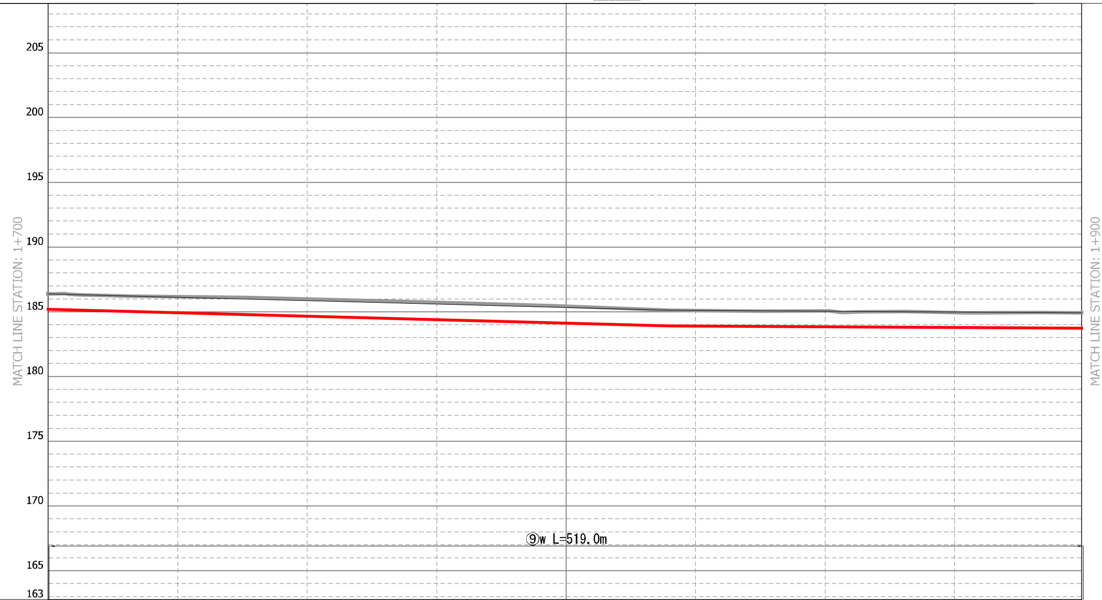


PROJECT TITLE: THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	DRAWING TITLE: PLAN AND PROFILE OF TRANSMISSION MAIN (11)	SCALE: 1/1000,1/400	DRAWING NO: TM-011

TM-11



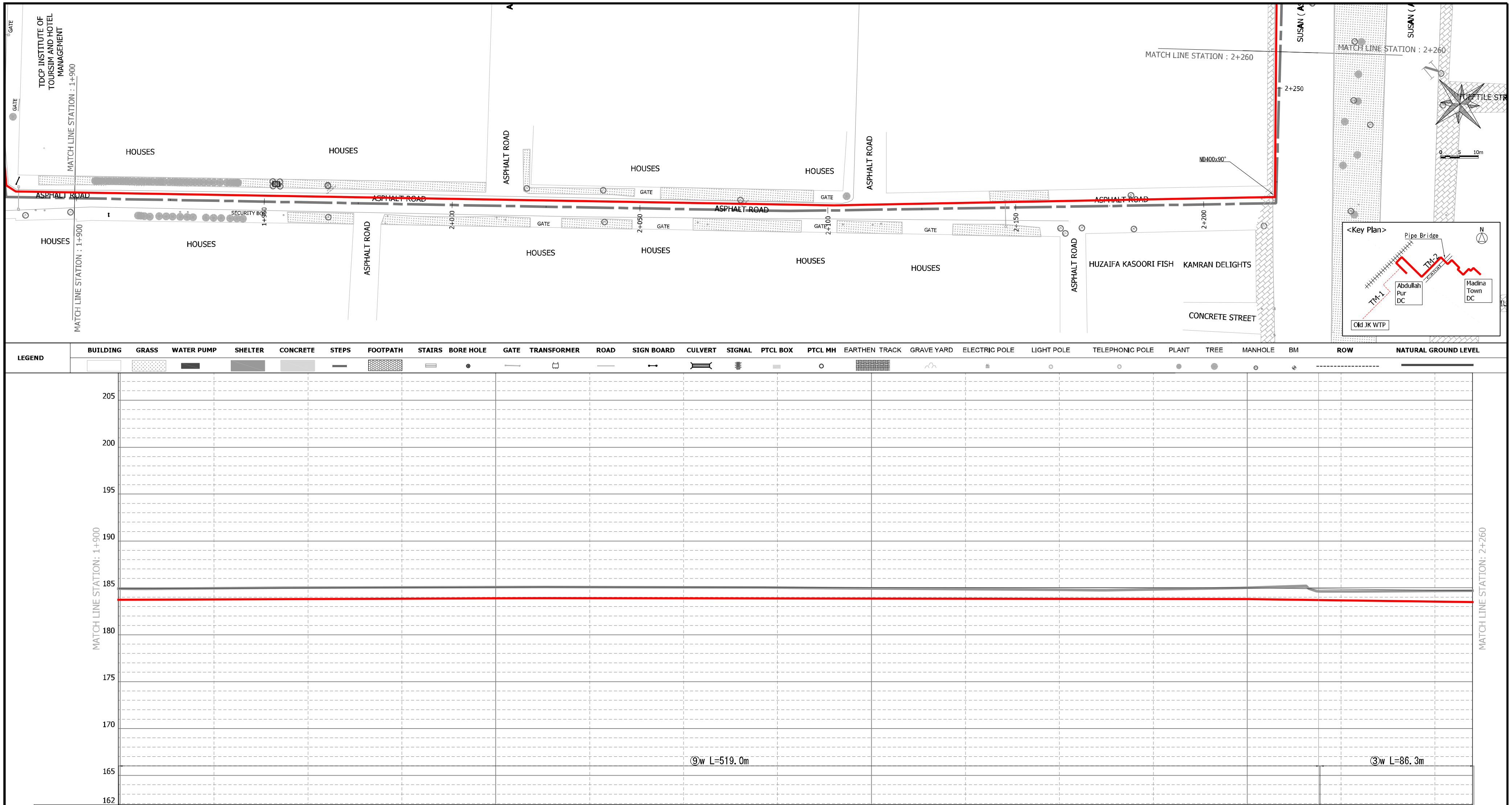
LEGEND	BUILDING	GRASS	WATER PUMP	SHELTER	CONCRETE	STEPS	FOOTPATH	STAIRS	BORE HOLE	GATE	TRANSFORMER	ROAD	SIGN BOARD	CULVERT	SIGNAL	PTCL BOX	PTCL MH	EARTHEN TRACK	GRAVE YARD	ELECTRIC POLE	LIGHT POLE	TELEPHONIC POLE	PLANT	TREE	MANHOLE	BM	ROW	NATURAL GROUND LEVEL



Water Level									
Ground Elevations	186.38	186.17	185.99	185.73	185.42	185.10	185.06	184.92	184.92
Pipe Center Level									
Pipeline (Diameter)	TM-2 HDPE ND400 L=834m								
Cumulative Distance	1719	1744	1769	1794	1819	1844	1869	1894	1919
Chainage	**1+700**	+25	+50	+75	**1+800**	+25	+50	+75	**1+900**

PROJECT TITLE:	DRAWING TITLE:	SCALE:	DRAWING NO:
THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD	PLAN AND PROFILE OF TRANSMISSION MAIN (12)	1/1000,1/400	TM-012

TM-12



Water Level																	
Ground Elevations	184.92	184.95	185.01	185.04	185.07	185.07	185.05	185.01	184.94	184.87	184.81	184.83	184.99	184.63	184.63	184.66	184.67
Pipe Center Level	000.000																
Pipeline (Diameter)	TM-2 HDPE ND400 L=834m																
Cumulative Distance	1919	1944	1969	1994	2019	2044	2069	2094	2119	2144	2169	2194	2219	2238	2244	2269	2279
Chainage	1+900	+25	+50	+75	2+000	+25	+50	+75	2+100	+25	+50	+75	2+200	+19	+25	+50	2+260

PROJECT TITLE:
THE PREPARATORY SURVEY FOR THE PROJECT FOR IMPROVEMENT OF WATER TREATMENT PLANT AND WATER DISTRIBUTION SYSTEM IN FAISALABAD

DRAWING TITLE:
PLAN AND PROFILE OF TRANSMISSION MAIN (13)

SCALE: 1/1000,1/400

DRAWING NO: TM-013

TM-13