APPENDIX FOR CHAPTER C3 PRESENT SEWERAGE SYSTEM

AC3.1 Present Sewer Capacity Assessment

To assess the present sewer capacity, the sewer calculation has been done to check the estimated present sewer against the sewer capacity. Table AC3.1 shows that the results and the ratio of the flow against the capacity more than 1.0 indicating insufficient capacity.

Table AC3.1 Sewer Capacity Calculation Sheet for the Existing Sewers

Ratio of Design Flow against Capacity			
More than 2.0		From 1.2 to 1.4	
From 1.8 to 2.0		From 1.0 to 1.2	
From 1.6 to 1.8		Less than 1.0	
From 1.4 to 1.6			

Population ($x10^3$)	Peaking Factor	Population ($x10^3$)	Peaking Factor
Up to 5	4.5	From 25 to 50	3.0
From 5 to 10	4.0	From 50 to 100	2.5
From 10 to 25	3.5	More than 100	2.0

Sewer No.	Incoming Sewer	Sewerage Area (ha)		Sewer Length	Domestic Wastewater				Point Souce			Design	Sewer Line Design				Remarks	Ratio of Design Flow against Capacity
					Unit Generation Rate (LPCD)			130										
		Increment / Total		(m)	Population (thousand) Increment / Total	Service Population (thousand) Increment / Total	Peaking Factor	Domestic WW Flow (m^3/sec)	Industrial WW Flow (m^3/sec)	Commercial WW Flow (m^3/sec)	I/I of Ground water Flow (m^3/sec)	Max. Flow (m^3/sec)	Dia. (mm)	Slope (‰)	Velocity (m/sec)	Capacity (m^3/sec)		
1		163.10 163.10		175.00	12.433 12.433	4.326 4.326	4.5	0.029	0.071	0.004	0.005	0.109	○ 600	0.75	0.60	0.168		0.65
2		64.30 227.40		1,236.00	5.009 17.442	4.518 8.844	4.0	0.053	0.099	0.005	0.007	0.164	○ 600	0.75	0.60	0.168		0.98
			To WP5		Pumped up to Millat Town B-Block(DP/S) 6.8m^3/min=0.113m^3/s Insufficient pump capacity													
3		201.90 201.90		158.00	11.906 11.906	10.738 10.738	3.5	0.057	0.087	0.005	0.006	0.155	○ 600	0.75	0.60	0.168		0.92
4		23.00 224.90		182.00	1.096 13.003	0.345 11.083	3.5	0.058	0.097	0.005	0.006	0.166	○ 675	0.65	0.60	0.214		0.78
			To WP5		Pumped up to Millat Town B-Block(DP/S) 6.8m^3/min=0.113m^3/s Insufficient pump capacity					Sewer No.2+No.4=		0.331						
5		94.40 94.40		690.00	6.373 6.373	0.000 0.000	4.5	0.000	0.041	0.002	0.003	0.046	○ 1050	0.40	0.63	0.546		0.08
			To Sewer No. 7															
6		41.30 41.30		969.00	6.093 6.093	5.495 5.495	4.0	0.033	0.018	0.001	0.001	0.053	○ 600	0.75	0.60	0.168		0.32
7	5	215.70 351.40		1,033.00	32.401 44.867	20.130 25.625	3.0	0.116	0.152	0.008	0.010	0.286	○ 1350	0.30	0.65	0.924		0.31
8		215.70 567.10		1,118.00	15.424 60.291	8.160 33.785	3.0	0.153	0.246	0.013	0.016	0.428	○ 1350	0.30	0.65	0.924		0.46
9		17.60 584.70		606.00	0.778 61.069	0.702 34.487	3.0	0.156	0.253	0.014	0.017	0.440	○ 1350	0.30	0.65	0.924		0.48
10		29.50 614.20		487.00	1.945 63.014	1.754 36.241	3.0	0.164	0.266	0.014	0.018	0.462	○ 1500	0.25	0.63	1.116		0.41
11		29.50 643.70		489.00	0.972 63.986	0.877 37.118	3.0	0.168	0.279	0.015	0.019	0.481	○ 1500	0.25	0.63	1.116		0.43
			To Sewer No. 13															
12		15.00 15.00		853.00	1.361 1.361	1.228 1.228	4.5	0.008	0.007	0.000	0.000	0.015	○ 675	0.65	0.60	0.214		0.07
13	11	13.60 672.30		637.00	1.750 67.097	1.578 39.924	3.0	0.180	0.291	0.016	0.019	0.506	○ 1500	0.25	0.63	1.116		0.45
14		7.20 679.50		229.00	0.583 67.680	0.526 40.450	3.0	0.183	0.294	0.016	0.020	0.513	○ 1650	0.20	0.60	1.289		0.40
			To Sewer No. 16															
15		193.00 193.00		848.00	20.149 20.149	17.067 17.067	3.5	0.090	0.084	0.005	0.006	0.185	○ 600	0.75	0.60	0.168	Insufficient capacity	1.10

Ratio of Design Flow against Capacity			
More than 2.0		From 1.2 to 1.4	
From 1.8 to 2.0		From 1.0 to 1.2	
From 1.6 to 1.8		Less than 1.0	
From 1.4 to 1.6			

Population ($x10^3$)	Peaking Factor	Population ($x10^3$)	Peaking Factor
Up to 5	4.5	From 25 to 50	3.0
From 5 to 10	4.0	From 50 to 100	2.5
From 10 to 25	3.5	More than 100	2.0

Sewer No.	Incoming Sewer	Sewerage Area (ha)		Sewer Length	Domestic Wastewater				Point Souce			Design	Sewer Line Design				Remarks	Ratio of Design Flow against Capacity
					Unit Generation Rate (LPCD)			130										
		Increment			Population (thousand) Increment	Service Population (thousand) Increment	Peaking Factor	Domestic WW Flow	Industrial WW Flow	Commercial WW Flow	I/I of Ground water Flow	Max. Flow	Dia.	Slope	Velocity	Capacity		
		Total		(m)	Total	Total		(m^3/sec)	(m^3/sec)	(m^3/sec)	(m^3/sec)	(m^3/sec)	(mm)	(‰)	(m/sec)	(m^3/sec)		
16	14	148.30 1,020.80		1,972.00	12.016 99.845	3.935 61.452	2.5	0.231	0.442	0.024	0.029	0.726	○ 1650	0.20	0.60	1.289		0.56
			To WP10		PS-19(DP/S), 84.9m³/min=1.415m³/s													
17		81.80 81.80		409.00	14.811 14.811	13.358 13.358	3.5	0.070	0.035	0.002	0.002	0.109	○ 600	0.75	0.60	0.168		0.65
18		85.40 167.20		747.00	14.362 29.173	12.953 26.311	3.0	0.119	0.072	0.004	0.005	0.200	○ 750	0.60	0.62	0.272		0.73
19		18.90 186.10		286.00	3.785 32.958	3.414 29.725	3.0	0.134	0.081	0.004	0.005	0.224	○ 825	0.50	0.60	0.321		0.70
20		57.30 243.40		339.00	8.108 41.066	7.313 37.038	3.0	0.167	0.105	0.006	0.007	0.285	○ 900	0.45	0.60	0.384		0.74
			To Sewer No. 22															
21		17.60 17.60		458.00	2.523 2.523	2.276 2.276	4.5	0.015	0.008	0.000	0.001	0.024	○ 600	0.75	0.60	0.168		0.15
22	20	17.00 278.00		607.00	3.785 47.374	3.414 42.728	3.0	0.193	0.120	0.007	0.008	0.328	○ 900	0.45	0.60	0.384		0.85
			To Sewer No. 26															
23		33.10 33.10		177.00	16.128 16.128	14.546 14.546	3.5	0.077	0.014	0.001	0.001	0.093	○ 600	0.75	0.60	0.168		0.55
24		37.10 70.20		472.00	9.964 26.092	8.987 23.533	3.5	0.124	0.030	0.002	0.002	0.158	○ 675	0.65	0.60	0.214		0.74
25		4.70 74.90		86.00	2.275 28.366	2.052 25.585	3.0	0.115	0.032	0.002	0.002	0.151	○ 675	0.65	0.60	0.214		0.71
26	22	43.70 396.60		248.00	7.945 83.686	7.166 75.479	2.5	0.284	0.172	0.009	0.011	0.476	○ 900	0.45	0.60	0.384	Insufficient capacity	1.24
27		24.90 421.50		68.00	2.898 86.584	2.614 78.093	2.5	0.294	0.183	0.010	0.012	0.499	○ 1050	0.40	0.63	0.546		0.91
28		128.70 550.20		1,082.00	21.287 107.871	19.199 97.292	2.5	0.366	0.238	0.013	0.016	0.633	○ 1200	0.30	0.60	0.675	The Lift PS (PS-28) is operated.	0.94
29		67.60 617.80		709.00	6.645 114.516	4.980 102.272	2.0	0.308	0.268	0.015	0.018	0.609	○ 1200	0.30	0.60	0.675		0.90
30		34.90 652.70		574.00	2.178 116.694	1.964 104.236	2.0	0.314	0.283	0.015	0.019	0.631	○ 1350	0.30	0.65	0.924		0.68
			To Sewer No. 32															
31		154.20 154.20		531.00	12.682 12.682	1.364 1.364	4.5	0.009	0.067	0.004	0.004	0.084	○ 1350	0.30	0.65	0.924		0.09
32	30	15.10 822.00		180.00	0.882 130.258	0.242 105.842	2.0	0.319	0.356	0.019	0.024	0.718	○ 1350	0.30	0.65	0.924		0.78

Ratio of Design Flow against Capacity			
More than 2.0		From 1.2 to 1.4	
From 1.8 to 2.0		From 1.0 to 1.2	
From 1.6 to 1.8		Less than 1.0	
From 1.4 to 1.6			

Population ($x10^3$)	Peaking Factor	Population ($x10^3$)	Peaking Factor
Up to 5	4.5	From 25 to 50	3.0
From 5 to 10	4.0	From 50 to 100	2.5
From 10 to 25	3.5	More than 100	2.0

Sewer No.	Incoming Sewer	Sewerage Area (ha)		Sewer Length	Domestic Wastewater				Point Souce			Design	Sewer Line Design				Remarks	Ratio of Design Flow against Capacity
					Unit Generation Rate (LPCD)			130										
		Increment			Population (thousand) Increment	Service Population (thousand) Increment	Peaking Factor	Domestic WW Flow	Industrial WW Flow	Commercial WW Flow	I/I of Ground water Flow	Max. Flow	Dia.	Slope	Velocity	Capacity		
		Total		(m)	Total	Total		(m^3/sec)	(m^3/sec)	(m^3/sec)	(m^3/sec)	(m^3/sec)	(mm)	(‰)	(m/sec)	(m^3/sec)		
33		261.70 1,083.70		1,128.00	18.272 148.530	3.972 109.814	2.0	0.330	0.470	0.025	0.031	0.856	○ 1650	0.20	0.60	1.289		0.66
			To WP8		PS-30(DP/S), 108.7m^3/min=1.811m^3/s													
34		36.70 36.70		735.00	8.222 8.222	7.416 7.416	4.0	0.045	0.016	0.001	0.001	0.063	○ 525	0.90	0.60	0.129		0.49
35		24.90 61.60		899.00	5.617 13.839	5.066 12.482	3.5	0.066	0.027	0.001	0.002	0.096	○ 600	0.75	0.60	0.168		0.57
			To WP22 and discharge to Sewer No. 47		pumped up to Nishatabad(LP/S) 0.8m^3/min=0.013m^3/s Insufficient capacity													
36		845.00 845.00		2,524.00	110.651 110.651	3.282 3.282	4.5	0.022	0.366	0.020	0.024	0.432	○ 750	0.60	0.62	0.272	Insufficient capacity	1.59
37		13.10 858.10		398.00	2.636 113.287	2.377 5.659	4.0	0.034	0.372	0.020	0.025	0.451	○ 1050	0.40	0.63	0.546		0.83
			To Sewer No. 42															
38		63.30 63.30		324.00	16.916 16.916	11.714 11.714	3.5	0.062	0.027	0.001	0.002	0.092	○ 525	0.90	0.60	0.129		0.71
39		7.40 70.70		340.00	3.025 19.941	2.728 14.442	3.5	0.076	0.031	0.002	0.002	0.111	○ 600	0.75	0.60	0.168		0.66
40		92.30 163.00		279.00	23.677 43.618	20.193 34.635	3.0	0.156	0.071	0.004	0.005	0.236	○ 675	0.65	0.60	0.214	Insufficient capacity	1.10
41		31.60 194.60		438.00	7.563 51.180	6.821 41.456	3.0	0.187	0.084	0.005	0.006	0.282	○ 750	0.60	0.62	0.272	Insufficient capacity	1.04
42	37	8.50 1,061.20		393.00	1.456 165.923	1.313 48.428	3.0	0.219	0.460	0.025	0.031	0.735	○ 1050	0.40	0.63	0.546	Insufficient capacity	1.35
			To Sewer No. 47															
43		75.70 75.70		286.00	15.715 15.715	14.174 14.174	3.5	0.075	0.033	0.002	0.002	0.112	○ 600	0.75	0.60	0.168		0.66
			To Sewer No. 46															
44		27.00 27.00		292.00	6.080 6.080	5.484 5.484	4.0	0.033	0.012	0.001	0.001	0.047	○ 600	0.75	0.60	0.168		0.28
45		4.20 31.20		383.00	3.126 9.207	2.819 8.303	4.0	0.050	0.014	0.001	0.001	0.066	○ 600	0.75	0.60	0.168		0.39
46	43	8.40 115.30		180.00	5.828 30.750	5.256 27.733	3.0	0.125	0.050	0.003	0.003	0.181	○ 750	0.60	0.62	0.272		0.67

Ratio of Design Flow against Capacity			
More than 2.0		From 1.2 to 1.4	
From 1.8 to 2.0		From 1.0 to 1.2	
From 1.6 to 1.8		Less than 1.0	
From 1.4 to 1.6			

Population ($x10^3$)	Peaking Factor	Population ($x10^3$)	Peaking Factor
Up to 5	4.5	From 25 to 50	3.0
From 5 to 10	4.0	From 50 to 100	2.5
From 10 to 25	3.5	More than 100	2.0

Sewer No.	Incoming Sewer	Sewerage Area (ha)		Sewer Length	Domestic Wastewater				Point Souce			Design	Sewer Line Design				Remarks	Ratio of Design Flow against Capacity
					Unit Generation Rate (LPCD)			130										
		Increment / Total		(m)	Population (thousand) Increment / Total	Service Population (thousand) Increment / Total	Peaking Factor	Domestic WW Flow (m^3/sec)	Industrial WW Flow (m^3/sec)	Commercial WW Flow (m^3/sec)	I/I of Ground water Flow (m^3/sec)	Max. Flow (m^3/sec)	Dia. (mm)	Slope (‰)	Velocity (m/sec)	Capacity (m^3/sec)		
47	35、42	65.20 1,303.30		2,309.00	15.990 226.502	14.422 103.065	2.0	0.310	0.565	0.031	0.038	0.944	○ 1200	0.30	0.60	0.675	Insufficient capacity	1.40
			To Sewer No. 49															
48		76.30 76.30		545.00	30.652 30.652	27.645 27.645	3.0	0.125	0.033	0.002	0.002	0.162	○ 600	0.75	0.60	0.168		0.96
49	47	15.80 1,395.40		314.00	4.690 261.843	4.230 134.940	2.0	0.406	0.605	0.033	0.040	1.084	○ 1200	0.30	0.60	0.675	Insufficient capacity	1.61
50		14.40 1,409.80		345.00	6.824 268.667	6.155 141.095	2.0	0.425	0.611	0.033	0.041	1.110	○ 1200	0.30	0.60	0.675	Insufficient capacity	1.64
			To Sewer No. 53															
51		11.20 11.20		381.00	5.018 5.018	4.526 4.526	4.5	0.031	0.005	0.000	0.000	0.036	○ 525	0.90	0.60	0.129		0.28
52		30.80 42.00		361.00	4.410 9.428	3.977 8.503	4.0	0.051	0.018	0.001	0.001	0.071	○ 525	0.90	0.60	0.129		0.55
53	50	14.40 1,466.20		790.00	5.703 283.798	5.144 154.742	2.0	0.466	0.635	0.034	0.042	1.177	○ 1200	0.30	0.60	0.675	Insufficient capacity	1.74
			To WP4 and discharge to Sewer No. 55		Gulistan Colony(LP/S) 88.3m^3/min=1.472m^3/s													
54		42.30 42.30		636.00	5.089 5.089	4.590 4.590	4.5	0.031	0.018	0.001	0.001	0.051	○ 750	0.60	0.62	0.272		0.19
			To WP4 and discharge to Sewer No. 55		Gulistan Colony(LP/S) 88.3m^3/min=1.472m^3/s						53+54=	1.228						
55	53 54	2.70 1,511.20		508.00	1.154 290.041	1.041 160.373	2.0	0.483	0.655	0.036	0.044	1.218	○ 1350	0.30	0.65	0.924	Insufficient capacity	1.32
56	77	28.60 1,793.80		380.00	4.615 313.164	4.162 181.228	2.0	0.545	0.777	0.042	0.052	1.416	○ 1350	0.30	0.65	0.924	Insufficient capacity	1.53
57		68.30 1,862.10		1,615.00	2.859 316.024	2.579 183.807	2.0	0.553	0.807	0.044	0.054	1.458	○ 1650	0.20	0.60	1.289	Insufficient capacity	1.13
			To Sewer No. 79															
58		11.00 11.00		171.00	0.617 0.617	0.556 0.556	4.5	0.004	0.005	0.000	0.000	0.009	○ 525	0.90	0.60	0.129		0.07
59		15.20 26.20		241.00	1.091 1.708	0.984 1.540	4.5	0.010	0.011	0.001	0.001	0.023	○ 525	0.90	0.60	0.129		0.18
60		8.20 34.40		241.00	0.475 2.183	0.428 1.968	4.5	0.013	0.015	0.001	0.001	0.030	○ 600	0.75	0.60	0.168		0.18
			To Sewer No. 62															
61		18.10 18.10		654.00	0.949 0.949	0.856 0.856	4.5	0.006	0.008	0.000	0.001	0.015	○ 675	0.65	0.60	0.214		0.07
62	60	4.20 56.70		107.00	0.475 3.606	0.428 3.252	4.5	0.022	0.025	0.001	0.002	0.050	○ 675	0.65	0.60	0.214		0.23

Ratio of Design Flow against Capacity			
More than 2.0		From 1.2 to 1.4	
From 1.8 to 2.0		From 1.0 to 1.2	
From 1.6 to 1.8		Less than 1.0	
From 1.4 to 1.6			

Population ($x10^3$)	Peaking Factor	Population ($x10^3$)	Peaking Factor
Up to 5	4.5	From 25 to 50	3.0
From 5 to 10	4.0	From 50 to 100	2.5
From 10 to 25	3.5	More than 100	2.0

Sewer No.	Incoming Sewer	Sewerage Area (ha) Increment	Sewerage Area (ha) Total	Sewer Length (m)	Domestic Wastewater: Unit Generation Rate (LPCD) 130 — Population (thousand) Increment	Population (thousand) Total	Service Population (thousand) Increment	Service Population (thousand) Total	Peaking Factor	Domestic WW Flow (m^3/sec)	Point Souce: Industrial WW Flow (m^3/sec)	Commercial WW Flow (m^3/sec)	I/I of Ground water Flow (m^3/sec)	Design Max. Flow (m^3/sec)	Sewer Line Design: Dia. (mm)	Slope (‰)	Velocity (m/sec)	Capacity (m^3/sec)	Remarks	Ratio of Design Flow against Capacity
			To WP6 and discharge to Sewer No. 75		Shadman(LP/S)	30.6m³/min=0.51m³/s														
63		19.30 19.30		165.00	0.925 0.925	0.834 0.834	4.5	0.006	0.008	0.000	0.001	0.015	○ 525	0.90	0.60	0.129		0.11
64		6.40 25.70		341.00	0.308 1.233	0.278 1.112	4.5	0.008	0.011	0.001	0.001	0.021	○ 525	0.90	0.60	0.129		0.16
65		20.50 46.20		120.00	0.925 2.158	0.834 1.946	4.5	0.013	0.020	0.001	0.001	0.035	○ 525	0.90	0.60	0.129		0.27
66		31.90 78.10		364.00	0.949 3.107	0.856 2.802	4.5	0.019	0.034	0.002	0.002	0.057	○ 675	0.65	0.60	0.214		0.27
67		15.50 93.60		906.00	1.424 4.531	1.284 4.086	4.5	0.028	0.041	0.002	0.003	0.074	○ 900	0.45	0.60	0.384		0.19
			To Sewer No. 70															
68		9.30 9.30		585.00	0.475 0.475	0.428 0.428	4.5	0.003	0.004	0.000	0.000	0.007	○ 1050	0.40	0.63	0.546		0.01
69		0.20 9.50		63.00	0.000 0.475	0.000 0.428	4.5	0.003	0.004	0.000	0.000	0.007	○ 1050	0.40	0.63	0.546		0.01
70	67	1.00 104.10		133.00	0.000 5.006	0.000 4.514	4.5	0.031	0.045	0.002	0.003	0.081	○ 900	0.45	0.60	0.384	Dia. of sewer of down stream is reduced. (Confirmed the GIS data)	0.21
71		11.60 115.70		475.00	1.623 6.629	1.464 5.978	4.0	0.036	0.050	0.003	0.003	0.092	○ 1050	0.40	0.63	0.546		0.17
			To Sewer No. 77															
72		13.20 13.20		306.00	0.949 0.949	0.856 0.856	4.5	0.006	0.006	0.000	0.000	0.012	○ 525	0.90	0.60	0.129		0.09
73		27.50 40.70		791.00	2.848 3.797	2.569 3.425	4.5	0.023	0.018	0.001	0.001	0.043	○ 600	0.75	0.60	0.168		0.26
74		5.20 45.90		97.00	0.475 4.272	0.428 3.853	4.5	0.026	0.020	0.001	0.001	0.048	○ 1200	0.30	0.60	0.675		0.07
			To Sewer No. 76															
75	62	23.10 79.80		1,177.00	1.899 5.505	1.713 4.965	4.5	0.034	0.035	0.002	0.002	0.073	○ 900	0.45	0.60	0.384		0.19
76	74	2.90 128.60		232.00	0.000 9.777	0.000 8.818	4.0	0.053	0.056	0.003	0.004	0.116	○ 1200	0.30	0.60	0.675		0.17
77	71	9.70 254.00		282.00	2.103 18.509	1.897 16.693	3.5	0.088	0.110	0.006	0.007	0.211	○ 1200	0.30	0.60	0.675		0.31
			To Sewer No. 56															
78		4.40 4.40		236.00	0.000 0.000	0.000 0.000	4.5	0.000	0.002	0.000	0.000	0.002	○ 1050	0.40	0.63	0.546		0.00
79	57	93.70 1,960.20		1,059.00	3.461 319.484	3.122 186.929	2.0	0.563	0.849	0.046	0.057	1.515	○ 1800	0.20	0.64	1.625		0.93
			To Sewer No. 91															

Ratio of Design Flow against Capacity			
More than 2.0		From 1.2 to 1.4	
From 1.8 to 2.0		From 1.0 to 1.2	
From 1.6 to 1.8		Less than 1.0	
From 1.4 to 1.6			

Population ($x10^3$)	Peaking Factor	Population ($x10^3$)	Peaking Factor
Up to 5	4.5	From 25 to 50	3.0
From 5 to 10	4.0	From 50 to 100	2.5
From 10 to 25	3.5	More than 100	2.0

Sewer No.	Incoming Sewer	Sewerage Area (ha)		Sewer Length	Domestic Wastewater				Point Souce			Design	Sewer Line Design				Remarks	Ratio of Design Flow against Capacity
					Unit Generation Rate (LPCD)			130										
					Population (thousand)	Service Population (thousand)	Peaking Factor	Domestic WW Flow	Industrial WW Flow	Commercial WW Flow	I/I of Ground water Flow	Max. Flow	Dia.	Slope	Velocity	Capacity		
		Increment / Total		(m)	Increment / Total	Increment / Total		(m^3/sec)	(m^3/sec)	(m^3/sec)	(m^3/sec)	(m^3/sec)	(mm)	(‰)	(m/sec)	(m^3/sec)		
80		91.50 91.50		693.00	5.070 5.070	4.573 4.573	4.5	0.031	0.040	0.002	0.003	0.076	○ 600	0.75	0.60	0.168		0.45
81		9.10 100.60		545.00	0.726 5.796	0.655 5.228	4.0	0.031	0.044	0.002	0.003	0.080	○ 675	0.65	0.60	0.214		0.38
			To Sewer No. 91															
82		52.60 52.60		415.00	3.351 3.351	3.022 3.022	4.5	0.020	0.023	0.001	0.002	0.046	○ 675	0.65	0.60	0.214		0.22
			To Sewer No. 85															
83		182.00 182.00		242.00	13.387 13.387	12.074 12.074	3.5	0.064	0.079	0.004	0.005	0.152	○ 675	0.65	0.60	0.214		0.71
84		2.40 184.40		249.00	0.238 13.625	0.215 12.289	3.5	0.065	0.080	0.004	0.005	0.154	○ 750	0.60	0.62	0.272		0.56
85	82	10.60 247.60		514.00	0.477 17.453	0.430 15.741	3.5	0.083	0.107	0.006	0.007	0.203	○ 750	0.60	0.62	0.272		0.74
86		21.30 268.90		432.00	0.964 18.417	0.869 16.610	3.5	0.087	0.117	0.006	0.008	0.218	○ 1200	0.30	0.60	0.675		0.32
			To Sewer No. 90															
87		28.10 28.10		321.00	5.270 5.270	4.753 4.753	4.5	0.032	0.012	0.001	0.001	0.046	○ 525	0.90	0.60	0.129		0.36
88		32.70 60.80		371.00	2.613 7.883	2.357 7.110	4.0	0.043	0.026	0.001	0.002	0.072	○ 675	0.65	0.60	0.214		0.34
89		13.00 73.80		339.00	0.726 8.609	0.655 7.765	4.0	0.047	0.032	0.002	0.002	0.083	○ 750	0.60	0.62	0.272		0.30
90	86	10.20 352.90		494.00	0.363 27.389	0.327 24.702	3.5	0.130	0.153	0.008	0.010	0.301	○ 1200	0.30	0.60	0.675		0.45
91	79 81	135.20 2,548.90		2,614.00	12.906 365.575	7.011 223.870	2.0	0.674	1.105	0.060	0.073	1.912	○ 1800	0.20	0.64	1.625	Insufficient capacity	1.18
			To WP9		PS-38(DP/S) 152.9m^3/min=2.548m^3/s													
92		182.70 182.70		1,111.00	11.384 11.384	10.267 10.267	3.5	0.054	0.079	0.004	0.005	0.142	○ 525	0.90	0.60	0.129	Insufficient capacity	1.10
			To WP3		Akbar Abad(DP/S) 37.4m^3/min=0.623m^3/s													
93		77.10 77.10		772.00	15.613 15.613	14.082 14.082	3.5	0.074	0.033	0.002	0.002	0.111	○ 525	0.90	0.60	0.129		0.86

Ratio of Design Flow against Capacity			
More than 2.0		From 1.2 to 1.4	
From 1.8 to 2.0		From 1.0 to 1.2	
From 1.6 to 1.8		Less than 1.0	
From 1.4 to 1.6			

Population ($x10^3$)	Peaking Factor	Population ($x10^3$)	Peaking Factor
Up to 5	4.5	From 25 to 50	3.0
From 5 to 10	4.0	From 50 to 100	2.5
From 10 to 25	3.5	More than 100	2.0

Sewer No.	Incoming Sewer	Sewerage Area (ha)		Sewer Length	Domestic Wastewater				Point Souce			Design	Sewer Line Design				Remarks	Ratio of Design Flow against Capacity
					Unit Generation Rate (LPCD)			130										
		Increment / Total		(m)	Population (thousand) Increment / Total	Service Population (thousand) Increment / Total	Peaking Factor	Domestic WW Flow (m^3/sec)	Industrial WW Flow (m^3/sec)	Commercial WW Flow (m^3/sec)	I/I of Ground water Flow (m^3/sec)	Max. Flow (m^3/sec)	Dia. (mm)	Slope (‰)	Velocity (m/sec)	Capacity (m^3/sec)		
94		2.30 79.40		76.00	0.238 15.851	0.215 14.297	3.5	0.075	0.034	0.002	0.002	0.113	○ 600	0.75	0.60	0.168		0.67
95		2.30 81.70		269.00	0.238 16.090	0.215 14.512	3.5	0.076	0.035	0.002	0.002	0.115	○ 675	0.65	0.60	0.214		0.54
96		0.00 81.70		149.00	0.000 16.090	0.000 14.512	3.5	0.076	0.035	0.002	0.002	0.115	○ 750	0.60	0.62	0.272		0.42
			To WP3		Akbar Abad(DP/S) 37.4m^3/分=0.623m^3/秒													
97		68.80 68.80		1,012.00	3.328 3.328	3.002 3.002	4.5	0.020	0.030	0.002	0.002	0.054	○ 600	0.75	0.60	0.168		0.32
			To WP3		Akbar Abad(DP/S) 37.4m^3/分=0.623m^3/秒					Sewer No. 92+96+97=		0.312						
98		12.30 12.30		948.00	5.088 5.088	4.589 4.589	4.5	0.031	0.005	0.000	0.000	0.036	○ 1050	0.40	0.63	0.546		0.07
			To Sewer No. 103															
99		14.70 14.70		167.00	2.713 2.713	2.447 2.447	4.5	0.017	0.006	0.000	0.000	0.023	○ 525	0.90	0.60	0.129		0.17
100		73.10 87.80		801.00	24.570 27.282	22.160 24.607	3.5	0.130	0.038	0.002	0.003	0.173	○ 600	0.75	0.60	0.168	Insufficient capacity	1.03
			To Sewer No. 102															
101		15.80 15.80		267.00	2.236 2.236	2.017 2.017	4.5	0.014	0.007	0.000	0.000	0.021	○ 525	0.90	0.60	0.129		0.16
102	100	6.40 110.00		320.00	1.245 30.763	1.123 27.747	3.0	0.125	0.048	0.003	0.003	0.179	○ 675	0.65	0.60	0.214		0.84
103	98	69.80 192.10		491.00	25.124 60.975	20.452 52.788	2.5	0.199	0.083	0.005	0.006	0.293	○ 1050	0.40	0.63	0.546		0.54
			To WP12		Weavers Colony(DP/S) 3.4m^3/min=0.056m^3/s Insufficient capacity													
104		80.10 80.10		811.00	28.842 28.842	18.608 18.608	3.5	0.098	0.035	0.002	0.002	0.137	○ 1050	0.40	0.63	0.546		0.25
			To WP11		PS-27(DP/S) 27.2m^3/min=0.453m^3/s													
105		20.60 20.60		739.00	4.160 4.160	3.752 3.752	4.5	0.025	0.009	0.000	0.001	0.035	○ 525	0.90	0.60	0.129		0.27
			To WP11		PS-27(DP/S) 27.2m^3/min=0.453m^3/s						104+105= 0.172							

Ratio of Design Flow against Capacity			
More than 2.0		From 1.2 to 1.4	
From 1.8 to 2.0		From 1.0 to 1.2	
From 1.6 to 1.8		Less than 1.0	
From 1.4 to 1.6			

Population ($x10^3$)	Peaking Factor	Population ($x10^3$)	Peaking Factor
Up to 5	4.5	From 25 to 50	3.0
From 5 to 10	4.0	From 50 to 100	2.5
From 10 to 25	3.5	More than 100	2.0

Sewer No.	Incoming Sewer	Sewerage Area (ha) Increment / Total		Sewer Length (m)	Domestic Wastewater: Unit Generation Rate (LPCD) 130 — Population (thousand) Increment / Total	Service Population (thousand) Increment / Total	Peaking Factor	Domestic WW Flow (m^3/sec)	Point Souce: Industrial WW Flow (m^3/sec)	Commercial WW Flow (m^3/sec)	I/I of Ground water Flow (m^3/sec)	Design: Max. Flow (m^3/sec)	Sewer Line Design: Dia. (mm)	Slope (‰)	Velocity (m/sec)	Capacity (m^3/sec)	Remarks	Ratio of Design Flow against Capacity
106		47.40 47.40			11.225 11.225	10.124 10.124	3.5	0.053	0.021	0.001	0.001	0.076	○ 450	1.10	0.60	0.095		0.81
			To WP13		PS-27 Kamak Basti (DP/S) 6.8m^3/min=0.113m^3/s													
107		31.00 31.00		271.00	1.724 1.724	1.555 1.555	4.5	0.011	0.013	0.001	0.001	0.026	○ 525	0.90	0.60	0.129		0.20
108		11.10 42.10		277.00	0.981 2.705	0.885 2.440	4.5	0.017	0.018	0.001	0.001	0.037	○ 600	0.75	0.60	0.168		0.22
			To Sewer No.W1 and then No. 109		Tariq Abad(LP/S) 5.9m^3/min=0.098m^3/s													
109	108	61.50 103.60		1,413.00	7.270 9.974	6.557 8.997	4.0	0.054	0.045	0.002	0.003	0.104	○ 600	0.75	0.60	0.168		0.62
			To WP20 and discharge to Sewer No. 112		Girja Ghar(LP/S)1.4m^3/min=0.023m^3/s Insufficient capacity													
110		8.00 8.00		354.00	4.980 4.980	4.492 4.492	4.5	0.030	0.003	0.000	0.000	0.033	○ 525	0.90	0.60	0.129		0.26
			To Sewer No. 112															
111		132.50 132.50	To WP2 and discharge to Sewer No. 112		31.922 31.922	28.784 28.784	3.0	0.130	0.057	0.003	0.004	0.194	○ 450	1.10	0.60	0.095	Chenab Chowk(LP/S) 6.8m^3/min=0.113 The pump is insufficient capacity	2.05
112	109 110	66.40 310.50		2,163.00	11.261 58.137	10.156 52.429	2.5	0.197	0.135	0.007	0.009	0.348	○ 600	0.75	0.60	0.168	Insufficient capacity	2.07
113		0.00 310.50		103.00	0.000 58.137	0.000 52.429	2.5	0.197	0.135	0.007	0.009	0.348	○ 600	0.75	0.60	0.168	Insufficient capacity	2.07
			To Sewer No. 123															
114		24.00 24.00		217.00	9.180 9.180	8.280 8.280	4.0	0.050	0.010	0.001	0.001	0.062	○ 675	0.65	0.60	0.214		0.29
			To Sewer No. 117															
115		9.20 9.20		670.00	5.322 5.322	4.800 4.800	4.5	0.033	0.004	0.000	0.000	0.037	○ 525	0.90	0.60	0.129		0.28
			To Sewer No. 117															
116		3.60 3.60		623.00	1.353 1.353	1.220 1.220	4.5	0.008	0.002	0.000	0.000	0.010	○ 525	0.90	0.60	0.129		0.08
117	114,115	41.30 78.10		647.00	8.406 24.261	7.581 21.881	3.5	0.115	0.034	0.002	0.002	0.153	○ 750	0.60	0.62	0.272		0.56
			To Sewer No. 122															
118		31.50 31.50		623.00	7.501 7.501	6.765 6.765	4.0	0.041	0.014	0.001	0.001	0.057	○ 525	0.90	0.60	0.129		0.44

Ratio of Design Flow against Capacity			
More than 2.0		From 1.2 to 1.4	
From 1.8 to 2.0		From 1.0 to 1.2	
From 1.6 to 1.8		Less than 1.0	
From 1.4 to 1.6			

Population ($x10^3$)	Peaking Factor	Population ($x10^3$)	Peaking Factor
Up to 5	4.5	From 25 to 50	3.0
From 5 to 10	4.0	From 50 to 100	2.5
From 10 to 25	3.5	More than 100	2.0

Sewer No.	Incoming Sewer	Sewerage Area (ha)		Sewer Length	Domestic Wastewater				Point Souce			Design	Sewer Line Design				Remarks	Ratio of Design Flow against Capacity
					Unit Generation Rate (LPCD)			130										
		Increment / Total		(m)	Population (thousand) Increment / Total	Service Population (thousand) Increment / Total	Peaking Factor	Domestic WW Flow (m^3/sec)	Industrial WW Flow (m^3/sec)	Commercial WW Flow (m^3/sec)	I/I of Ground water Flow (m^3/sec)	Max. Flow (m^3/sec)	Dia. (mm)	Slope (‰)	Velocity (m/sec)	Capacity (m^3/sec)		
119		40.20 71.70		921.00	7.528 15.029	6.790 13.555	3.5	0.071	0.031	0.002	0.002	0.106	○ 600	0.75	0.60	0.168		0.63
			To Sewer No. 121															
120		16.80 16.80		477.00	3.226 3.226	2.910 2.910	4.5	0.020	0.007	0.000	0.000	0.027	○ 600	0.75	0.60	0.168		0.16
121	119	0.00 88.50		320.00	0.000 18.255	0.000 16.465	3.5	0.087	0.038	0.002	0.003	0.130	○ 600	0.75	0.60	0.168		0.77
122	117	2.50 169.10		131.00	0.509 43.025	0.459 38.805	3.0	0.175	0.073	0.004	0.005	0.257	○ 750	0.60	0.62	0.272		0.94
123	113	53.50 533.10		535.00	15.894 117.057	14.335 105.569	2.0	0.318	0.231	0.013	0.015	0.577	○ 1050	0.40	0.63	0.546	Insufficient capacity	1.06
			To Sewer No. 126															
124		17.90 17.90		785.00	1.611 1.611	1.453 1.453	4.5	0.010	0.008	0.000	0.001	0.019	○ 600	0.75	0.60	0.168		0.11
125		18.10 36.00		693.00	3.848 5.458	3.471 4.924	4.5	0.033	0.016	0.001	0.001	0.051	○ 600	0.75	0.60	0.168		0.31
126	123	8.50 577.60		344.00	1.924 124.439	1.735 112.228	2.0	0.338	0.250	0.014	0.017	0.619	○ 1050	0.40	0.63	0.546	Insufficient capacity	1.13
			To Sewer No. 127															
126-1		9.40 9.40			1.897 1.897	1.711 1.711	4.5	0.012	0.004	0.000	0.000	0.016	○ 375	1.50	0.62	0.068		0.23
			To WP14 and discharge to Sewer No. 127		Ghulshan Colony(DP/S) 6.8m^3/min=0.113m^3/s													
127	126 132	141.60 889.00		1,325.00	33.208 195.897	29.951 176.676	2.0	0.532	0.385	0.021	0.026	0.964	○ 1350	0.30	0.65	0.924		1.04
			To Sewer No. 136															
128		19.70 19.70		342.00	4.058 4.058	3.660 3.660	4.5	0.025	0.009	0.000	0.001	0.035	○ 525	0.90	0.60	0.129		0.27
129		34.40 54.10		420.00	11.304 15.363	10.195 13.855	3.5	0.073	0.023	0.001	0.002	0.099	○ 600	0.75	0.60	0.168		0.59
130		6.70 60.80		183.00	0.537 15.899	0.484 14.339	3.5	0.076	0.026	0.001	0.002	0.105	○ 600	0.75	0.60	0.168		0.62
			To Sewer No. 132															
131		19.20 19.20		693.00	6.719 6.719	6.060 6.060	4.0	0.036	0.008	0.000	0.001	0.045	○ 600	0.75	0.60	0.168		0.27
132	130	80.40 160.40		793.00	13.734 36.353	12.387 32.786	3.0	0.148	0.070	0.004	0.005	0.227	○ 600	0.75	0.60	0.168	Insufficient capacity	1.35
			To WP15 and discharge to Sewer No. 127		Metropole(LP/S) 27.2m^3/min=0.453m^3/s													

Ratio of Design Flow against Capacity			
More than 2.0		From 1.2 to 1.4	
From 1.8 to 2.0		From 1.0 to 1.2	
From 1.6 to 1.8		Less than 1.0	
From 1.4 to 1.6			

Population ($x10^3$)	Peaking Factor	Population ($x10^3$)	Peaking Factor
Up to 5	4.5	From 25 to 50	3.0
From 5 to 10	4.0	From 50 to 100	2.5
From 10 to 25	3.5	More than 100	2.0

Sewer No.	Incoming Sewer	Sewerage Area (ha)		Sewer Length	Domestic Wastewater				Point Souce			Design	Sewer Line Design				Remarks	Ratio of Design Flow against Capacity
					Unit Generation Rate (LPCD)			130										
		Increment / Total		(m)	Population (thousand) Increment / Total	Service Population (thousand) Increment / Total	Peaking Factor	Domestic WW Flow (m^3/sec)	Industrial WW Flow (m^3/sec)	Commercial WW Flow (m^3/sec)	I/I of Ground water Flow (m^3/sec)	Max. Flow (m^3/sec)	Dia. (mm)	Slope (‰)	Velocity (m/sec)	Capacity (m^3/sec)		
133		18.60 18.60		275.00	4.160 4.160	3.752 3.752	4.5	0.025	0.008	0.000	0.001	0.034	○ 525	0.90	0.60	0.129		0.27
134		14.00 32.60		183.00	4.477 8.638	4.038 7.790	4.0	0.047	0.014	0.001	0.001	0.063	○ 525	0.90	0.60	0.129		0.49
135		22.20 54.80		688.00	3.635 12.272	3.278 11.068	3.5	0.058	0.024	0.001	0.002	0.085	○ 675	0.65	0.60	0.214		0.40
136	127	48.90 992.70		548.00	11.217 219.386	10.117 197.861	2.0	0.595	0.430	0.023	0.029	1.077	○ 1350	0.30	0.65	0.924	Insufficient capacity	1.17
			To Sewer No. 143															
137		58.30 58.30		744.00	14.111 14.111	12.727 12.727	3.5	0.067	0.025	0.001	0.002	0.095	○ 525	0.90	0.60	0.129		0.74
138		12.20 70.50		401.00	0.909 15.020	0.820 13.547	3.5	0.071	0.031	0.002	0.002	0.106	○ 675	0.65	0.60	0.214		0.50
			To Sewer No. 143															
139		5.60 5.60		309.00	0.646 0.646	0.583 0.583	4.5	0.004	0.002	0.000	0.000	0.006	○ 750	0.60	0.62	0.272		0.02
			To Sewer No. 142															
140		59.40 59.40		306.00	7.050 7.050	6.358 6.358	4.0	0.038	0.026	0.001	0.002	0.067	○ 525	0.90	0.60	0.129		0.52
141		15.60 75.00		261.00	4.388 11.438	3.958 10.316	3.5	0.054	0.033	0.002	0.002	0.091	○ 675	0.65	0.60	0.214		0.43
142	139	39.50 120.10		956.00	9.889 21.973	8.919 19.818	3.5	0.104	0.052	0.003	0.003	0.162	○ 750	0.60	0.62	0.272		0.60
143	136 138	9.80 1,193.10		385.00	0.909 257.288	0.820 232.046	2.0	0.698	0.517	0.028	0.034	1.277	○ 1950	0.20	0.67	2.012		0.63
			To Sewer No. 145															
144		90.40 90.40		1,164.00	17.842 17.842	16.092 16.092	3.5	0.085	0.039	0.002	0.003	0.129	○ 750	0.60	0.62	0.272		0.47
145	143	11.40 1,294.90		274.00	2.474 277.605	2.231 250.369	2.0	0.753	0.561	0.030	0.037	1.381	○ 1950	0.20	0.67	2.012		0.69
			To Sewer No. 148															
146		17.70 17.70		360.00	3.734 3.734	3.368 3.368	4.5	0.023	0.008	0.000	0.001	0.032	○ 525	0.90	0.60	0.129		0.25
147		29.50 47.20		707.00	4.860 8.594	4.383 7.751	4.0	0.047	0.020	0.001	0.001	0.069	○ 675	0.65	0.60	0.214		0.32
148	145	6.10 1,348.20		333.00	0.909 287.107	0.820 258.940	2.0	0.779	0.584	0.032	0.039	1.434	○ 1950	0.20	0.67	2.012		0.71
			To Sewer No. 151															
149		106.50 106.50		705.00	24.584 24.584	22.173 22.173	3.5	0.117	0.046	0.003	0.003	0.169	○ 750	0.60	0.62	0.272		0.62

Ratio of Design Flow against Capacity			
More than 2.0		From 1.2 to 1.4	
From 1.8 to 2.0		From 1.0 to 1.2	
From 1.6 to 1.8		Less than 1.0	
From 1.4 to 1.6			

Population ($x10^3$)	Peaking Factor	Population ($x10^3$)	Peaking Factor
Up to 5	4.5	From 25 to 50	3.0
From 5 to 10	4.0	From 50 to 100	2.5
From 10 to 25	3.5	More than 100	2.0

Sewer No.	Incoming Sewer	Sewerage Area (ha)		Sewer Length	Domestic Wastewater				Point Souce			Design	Sewer Line Design				Remarks	Ratio of Design Flow against Capacity
					Unit Generation Rate (LPCD)			130										
					Population (thousand)	Service Population (thousand)	Peaking Factor	Domestic WW Flow	Industrial WW Flow	Commercial WW Flow	I/I of Ground water Flow	Max. Flow	Dia.	Slope	Velocity	Capacity		
		Increment / Total		(m)	Increment / Total	Increment / Total		(m^3/sec)	(m^3/sec)	(m^3/sec)	(m^3/sec)	(m^3/sec)	(mm)	(‰)	(m/sec)	(m^3/sec)		
150		20.50 127.00		784.00	17.120 41.705	15.441 37.614	3.0	0.170	0.055	0.003	0.004	0.232	○ 750	0.60	0.62	0.272		0.85
151	148	262.40 1,737.60		1,783.00	40.147 368.958	25.435 321.989	2.0	0.969	0.753	0.041	0.050	1.813	○ 1950	0.20	0.67	2.012		0.90
152		76.70 1,814.30		900.00	6.186 375.144	0.000 321.989	2.0	0.969	0.786	0.043	0.052	1.850	○ 2250	0.15	0.64	2.551		0.73
			To Sewer No. 166															
153		37.00 37.00		187.00	1.393 1.393	0.354 0.354	4.5	0.002	0.016	0.001	0.001	0.020	○ 525	0.90	0.60	0.129		0.16
154		0.90 37.90		150.00	0.279 1.672	0.252 0.606	4.5	0.004	0.016	0.001	0.001	0.022	○ 750	0.60	0.62	0.272		0.08
155		35.90 73.80		951.00	4.686 6.358	4.226 4.832	4.5	0.033	0.032	0.002	0.002	0.069	○ 1200	0.30	0.60	0.675		0.10
156		9.00 82.80		1,492.00	2.661 9.019	2.400 7.232	4.0	0.044	0.036	0.002	0.002	0.084	○ 1350	0.30	0.65	0.924		0.09
157		1.50 84.30		297.00	1.353 10.372	1.220 8.452	4.0	0.051	0.037	0.002	0.002	0.092	○ 1650	0.20	0.60	1.289		0.07
158		3.50 87.80		676.00	1.074 11.446	0.969 9.421	4.0	0.057	0.038	0.002	0.003	0.100	○ 1650	0.20	0.60	1.289		0.08
159		2.90 90.70		352.00	0.537 11.982	0.484 9.905	4.0	0.060	0.039	0.002	0.003	0.104	○ 1800	0.20	0.64	1.625		0.06
			To Sewer No. 161															
160		3.10 3.10		129.00	2.050 2.050	1.849 1.849	4.5	0.013	0.001	0.000	0.000	0.014	○ 525	0.90	0.60	0.129		0.10
161	159	42.70 136.50		1,413.00	5.077 19.109	4.579 16.333	3.5	0.086	0.059	0.003	0.004	0.152	○ 1800	0.20	0.64	1.625		0.09
			To Sewer No. 165															
162		341.10 341.10		805.00	21.471 21.471	19.365 19.365	3.5	0.102	0.148	0.008	0.010	0.268	○ 600	0.75	0.60	0.168	Insufficient capacity	1.59
163		121.50 462.60		780.00	16.057 37.527	7.132 26.497	3.0	0.120	0.200	0.011	0.013	0.344	○ 675	0.65	0.60	0.214	Insufficient capacity	1.60
			To Sewer No. 165															
164		6.20 6.20		262.00	0.646 0.646	0.583 0.583	4.5	0.004	0.003	0.000	0.000	0.007	○ 600	0.75	0.60	0.168		0.04
165	161 163	145.60 750.90		4,056.00	20.044 77.326	7.830 51.243	2.5	0.193	0.325	0.018	0.022	0.558	○ 1800	0.20	0.64	1.625		0.34
166	152	0.00 2,565.20			0.000 452.470	0.000 373.232	2.0	1.123	1.112	0.060	0.074	2.369	○ 2250	0.15	0.64	2.551		0.93
			To WP21		PS-3 Chokera(DP/S) 305.8m^3/min=5.097m^3/s													

Ratio of Design Flow against Capacity			
More than 2.0		From 1.2 to 1.4	
From 1.8 to 2.0		From 1.0 to 1.2	
From 1.6 to 1.8		Less than 1.0	
From 1.4 to 1.6			

Population ($x10^3$)	Peaking Factor	Population ($x10^3$)	Peaking Factor
Up to 5	4.5	From 25 to 50	3.0
From 5 to 10	4.0	From 50 to 100	2.5
From 10 to 25	3.5	More than 100	2.0

Sewer No.	Incoming Sewer	Sewerage Area (ha)		Sewer Length	Domestic Wastewater				Point Souce			Design	Sewer Line Design				Remarks	Ratio of Design Flow against Capacity
					Unit Generation Rate (LPCD)			130										
		Increment			Population (thousand) Increment	Service Population (thousand) Increment	Peaking Factor	Domestic WW Flow	Industrial WW Flow	Commercial WW Flow	I/I of Ground water Flow	Max. Flow	Dia.	Slope	Velocity	Capacity		
		Total		(m)	Total	Total		(m^3/sec)	(m^3/sec)	(m^3/sec)	(m^3/sec)	(m^3/sec)	(mm)	(‰)	(m/sec)	(m^3/sec)		
167		27.80 27.80		312.00	4.224 4.224	3.810 3.810	4.5	0.026	0.012	0.001	0.001	0.040	○ 525	0.90	0.60	0.129		0.31
			To WP16		Liaqat Town(DP/S) 0.5m^3/min=0.008m^3/s Insufficient capacity													
168		107.20 107.20		922.00	3.280 3.280	1.134 1.134	4.5	0.008	0.046	0.003	0.003	0.060	○ 525	0.90	0.60	0.129		0.46
169		560.10 667.30		126.00	12.034 15.313	0.000 1.134	4.5	0.008	0.289	0.016	0.019	0.332	○ 675	0.65	0.60	0.214	Insufficient capacity	1.55
			To WP17		Jhang Road(DP/S) 40.8m^3/min=0.680m^3/s													
170		104.80 104.80		654.00	14.141 14.141	12.754 12.754	3.5	0.067	0.045	0.002	0.003	0.117	○ 600	0.75	0.60	0.168		0.70
171		1.50 106.30		107.00	0.957 15.098	0.863 13.617	3.5	0.072	0.046	0.002	0.003	0.123	○ 600	0.75	0.60	0.168		0.73
172		9.10 115.40		224.00	0.957 16.055	0.863 14.480	3.5	0.076	0.050	0.003	0.003	0.132	○ 675	0.65	0.60	0.214		0.62
173		27.10 142.50		219.00	4.503 20.557	4.061 18.541	3.5	0.098	0.062	0.003	0.004	0.167	○ 675	0.65	0.60	0.214		0.78
			To WP17		Jhang Road(DP/S) 40.8m^3/min=0.680m^3/s													
174		53.10 53.10		765.00	18.695 18.695	11.955 11.955	3.5	0.063	0.023	0.001	0.002	0.089	○ 525	0.90	0.60	0.129		0.69
			To Sewer No. 176															
175		70.10 70.10		593.00	17.897 17.897	8.070 8.070	4.0	0.049	0.030	0.002	0.002	0.083	○ 525	0.90	0.60	0.129		0.64
176	174	7.60 130.80		316.00	1.368 37.959	1.234 21.259	3.5	0.112	0.057	0.003	0.004	0.176	○ 750	0.60	0.62	0.272		0.65
			To Sewer No. 179															
177		9.90 9.90		304.00	1.368 1.368	1.234 1.234	4.5	0.008	0.004	0.000	0.000	0.012	○ 675	0.65	0.60	0.214		0.06
178	176	0.00 140.70		325.00	0.000 39.327	0.000 22.493	3.5	0.118	0.061	0.003	0.004	0.186	○ 750	0.60	0.62	0.272		0.68
179		8.10 148.80		718.00	2.735 42.062	2.467 24.960	3.5	0.131	0.064	0.003	0.004	0.202	○ 750	0.60	0.62	0.272		0.74
			To Sewer No. 181															
180		166.90 166.90		296.00	16.488 16.488	9.782 9.782	4.0	0.059	0.072	0.004	0.005	0.140	○ 600	0.75	0.60	0.168		0.83

Ratio of Design Flow against Capacity			
More than 2.0		From 1.2 to 1.4	
From 1.8 to 2.0		From 1.0 to 1.2	
From 1.6 to 1.8		Less than 1.0	
From 1.4 to 1.6			

Population ($x10^3$)	Peaking Factor	Population ($x10^3$)	Peaking Factor
Up to 5	4.5	From 25 to 50	3.0
From 5 to 10	4.0	From 50 to 100	2.5
From 10 to 25	3.5	More than 100	2.0

Sewer No.	Incoming Sewer	Sewerage Area (ha)		Sewer Length	Domestic Wastewater				Point Souce			Design	Sewer Line Design				Remarks	Ratio of Design Flow against Capacity
					Unit Generation Rate (LPCD)			130										
		Increment / Total		(m)	Population (thousand) Increment / Total	Service Population (thousand) Increment / Total	Peaking Factor	Domestic WW Flow (m^3/sec)	Industrial WW Flow (m^3/sec)	Commercial WW Flow (m^3/sec)	I/I of Ground water Flow (m^3/sec)	Max. Flow (m^3/sec)	Dia. (mm)	Slope (‰)	Velocity (m/sec)	Capacity (m^3/sec)		
181	179	10.10 325.80		686.00	2.940 61.490	2.652 37.394	3.0	0.169	0.141	0.008	0.009	0.327	○ 1050	0.40	0.63	0.546		0.60
			To Sewer No. 184															
182		14.00 14.00		221.00	0.279 0.279	0.252 0.252	4.5	0.002	0.006	0.000	0.000	0.008	○ 675	0.65	0.60	0.214		0.04
183		2.70 16.70		272.00	0.279 0.557	0.252 0.504	4.5	0.003	0.007	0.000	0.000	0.010	○ 675	0.65	0.60	0.214		0.05
184	181	28.10 370.60		796.00	4.571 66.619	4.123 42.021	3.0	0.190	0.161	0.009	0.011	0.371	○ 1050	0.40	0.63	0.546		0.68
			To Sewer No. 186															
185		34.50 34.50		255.00	1.672 1.672	1.508 1.508	4.5	0.010	0.015	0.001	0.001	0.027	○ 525	0.90	0.60	0.129		0.21
186	184	3.80 408.90		390.00	1.236 69.527	1.115 44.644	3.0	0.202	0.177	0.010	0.012	0.401	○ 1050	0.40	0.63	0.546		0.73
			To WP17		Jhang Road(DP/S) 40.8m^3/min=0.680m^3/s Insufficient capacity						169+173+186=	0.899						
187		77.30 77.30		636.00	13.627 13.627	12.290 12.290	3.5	0.065	0.033	0.002	0.002	0.102	○ 525	0.90	0.60	0.129		0.79
188		62.50 139.80		432.00	14.784 28.411	13.334 25.624	3.0	0.116	0.061	0.003	0.004	0.184	○ 600	0.75	0.60	0.168	Insufficient capacity	1.09
189		65.70 205.50		606.00	7.282 35.693	6.568 32.192	3.0	0.145	0.089	0.005	0.006	0.245	○ 675	0.65	0.60	0.214	Insufficient capacity	1.15
			To WP18		Shadab Colony(DP/S) 2.7m^3/min=0.045m^3/s Insufficient capacity													
190		3.10 3.10		250.00	0.086 0.086	0.078 0.078	4.5	0.001	0.001	0.000	0.000	0.002	○ 525	0.90	0.60	0.129		0.01
			To Sewer No. 192															
191		1.50 1.50		449.00	0.504 0.504	0.455 0.455	4.5	0.003	0.001	0.000	0.000	0.004	○ 525	0.90	0.60	0.129		0.03
192	190	14.70 19.30		469.00	0.173 0.763	0.156 0.689	4.5	0.005	0.008	0.000	0.001	0.014	○ 525	0.90	0.60	0.129		0.11
			To Sewer No. 194															
193		29.20 29.20		99.00	0.849 0.849	0.766 0.766	4.5	0.005	0.013	0.001	0.001	0.020	○ 525	0.90	0.60	0.129		0.16
194	192	0.20 48.70		31.00	0.000 1.612	0.000 1.455	4.5	0.010	0.021	0.001	0.001	0.033	○ 525	0.90	0.60	0.129		0.25
195		77.40 126.10		437.00	1.785 3.397	1.610 3.065	4.5	0.021	0.055	0.003	0.004	0.083	○ 600	0.75	0.60	0.168		0.49

Ratio of Design Flow against Capacity			
More than 2.0		From 1.2 to 1.4	
From 1.8 to 2.0		From 1.0 to 1.2	
From 1.6 to 1.8		Less than 1.0	
From 1.4 to 1.6			

Population ($x10^3$)	Peaking Factor	Population ($x10^3$)	Peaking Factor
Up to 5	4.5	From 25 to 50	3.0
From 5 to 10	4.0	From 50 to 100	2.5
From 10 to 25	3.5	More than 100	2.0

Sewer No.	Incoming Sewer	Sewerage Area (ha)		Sewer Length	Domestic Wastewater				Point Souce			Design	Sewer Line Design				Remarks	Ratio of Design Flow against Capacity
					Unit Generation Rate (LPCD)			130										
		Increment / Total		(m)	Population (thousand) Increment / Total	Service Population (thousand) Increment / Total	Peaking Factor	Domestic WW Flow (m^3/sec)	Industrial WW Flow (m^3/sec)	Commercial WW Flow (m^3/sec)	I/I of Ground water Flow (m^3/sec)	Max. Flow (m^3/sec)	Dia. (mm)	Slope (‰)	Velocity (m/sec)	Capacity (m^3/sec)		
196		10.10 136.20		262.00	0.173 3.569	0.156 3.221	4.5	0.022	0.059	0.003	0.004	0.088	○ 750	0.60	0.62	0.272		0.32
			To Sewer No. 198															
197		43.20 43.20		242.00	0.777 0.777	0.701 0.701	4.5	0.005	0.019	0.001	0.001	0.026	○ 525	0.90	0.60	0.129		0.20
198	196	16.70 196.10		448.00	0.173 4.518	0.156 4.078	4.5	0.028	0.085	0.005	0.006	0.124	○ 750	0.60	0.62	0.272		0.45
199		316.50 512.60		3,979.00	5.980 10.498	1.253 5.331	4.0	0.032	0.222	0.012	0.015	0.281	○ 1050	0.40	0.63	0.546		0.51
			To WP19		Djikot Drain(DP/S) 2.7m^3/min=0.045m^3/s Insufficient capacity													
301		7.30 7.30		833.00	1.022 1.022	1.022 1.022	4.5	0.007	0.002	0.000	0.000	0.009	○ 1200	0.30	0.60	0.675		0.01
			To Sewer No. 303															
302		62.10 62.10		830.00	7.184 7.184	7.184 7.184	4.0	0.043	0.015	0.001	0.001	0.060	○ 1350	0.30	0.65	0.924		0.07
303	301	7.90 77.30		486.00	1.022 9.228	1.022 9.228	4.0	0.056	0.019	0.001	0.001	0.077	○ 1350	0.30	0.65	0.924		0.08
304		1.20 78.50		239.00	0.000 9.228	0.000 9.228	4.0	0.056	0.019	0.001	0.001	0.077	○ 1350	0.30	0.65	0.924		0.08
			To Sewer No. 342															
305		23.70 23.70		418.00	2.025 2.025	2.025 2.025	4.5	0.014	0.006	0.000	0.000	0.020	○ 600	0.75	0.60	0.168		0.12
			To EP9 and discharge to Sewer No. 306		Abdullahpur(LP/S) 23.8m^3/min=0.397m^3/s													
306	305	10.20 33.90		587.00	0.617 2.641	0.617 2.642	4.5	0.018	0.008	0.001	0.001	0.028	○ 900	0.45	0.60	0.384		0.07
			To Sewer No. 309															
307		8.90 8.90		238.00	0.925 0.925	0.925 0.925	4.5	0.006	0.002	0.000	0.000	0.008	○ 600	0.75	0.60	0.168		0.05
308		25.90 34.80		63.00	0.925 1.850	0.925 1.850	4.5	0.013	0.008	0.001	0.001	0.023	○ 675	0.65	0.60	0.214		0.11
309	306	5.70 74.40		470.00	0.308 4.800	0.308 4.800	4.5	0.033	0.018	0.001	0.001	0.053	○ 1050	0.40	0.63	0.546		0.10
			To Sewer No. 312															
310		24.20 24.20		338.00	1.289 1.289	1.289 1.289	4.5	0.009	0.006	0.000	0.000	0.015	○ 600	0.75	0.60	0.168		0.09
311		11.70 35.90		252.00	0.799 2.088	0.799 2.088	4.5	0.014	0.009	0.001	0.001	0.025	○ 750	0.60	0.62	0.272		0.09
312	309	5.50 115.80		403.00	0.491 7.378	0.491 7.379	4.0	0.044	0.028	0.002	0.002	0.076	○ 1050	0.40	0.63	0.546		0.14

Ratio of Design Flow against Capacity			
More than 2.0		From 1.2 to 1.4	
From 1.8 to 2.0		From 1.0 to 1.2	
From 1.6 to 1.8		Less than 1.0	
From 1.4 to 1.6			

Population ($x10^3$)	Peaking Factor	Population ($x10^3$)	Peaking Factor
Up to 5	4.5	From 25 to 50	3.0
From 5 to 10	4.0	From 50 to 100	2.5
From 10 to 25	3.5	More than 100	2.0

Sewer No.	Incoming Sewer	Sewerage Area (ha)		Sewer Length	Domestic Wastewater				Point Souce			Design	Sewer Line Design				Remarks	Ratio of Design Flow against Capacity
					Unit Generation Rate (LPCD)			130										
					Population (thousand)	Service Population (thousand)	Peaking Factor	Domestic WW Flow	Industrial WW Flow	Commercial WW Flow	I/I of Ground water Flow	Max. Flow	Dia.	Slope	Velocity	Capacity		
		Increment / Total		(m)	Increment / Total	Increment / Total		(m^3/sec)	(m^3/sec)	(m^3/sec)	(m^3/sec)	(m^3/sec)	(mm)	(‰)	(m/sec)	(m^3/sec)		
313		100.90 216.70		630.00	14.300 21.678	14.300 21.679	3.5	0.114	0.052	0.004	0.004	0.174	○ 1200	0.30	0.60	0.675		0.26
			To Sewer No. 326															
314		18.50 18.50		460.00	2.852 2.852	2.852 2.852	4.5	0.019	0.004	0.000	0.000	0.023	○ 600	0.75	0.60	0.168		0.14
315		4.90 23.40		546.00	1.269 4.121	1.269 4.121	4.5	0.028	0.006	0.000	0.000	0.034	○ 750	0.60	0.62	0.272		0.12
			To Sewer No. 319															
316		79.70 79.70		200.00	0.000 0.000	0.000 0.000	4.5	0.000	0.019	0.001	0.001	0.021	○ 600	0.75	0.60	0.168		0.12
317		7.70 87.40		405.00	0.792 0.792	0.792 0.792	4.5	0.005	0.021	0.002	0.002	0.030	○ 750	0.60	0.62	0.272		0.11
			To Sewer No. 319															
318		7.10 7.10		248.00	0.308 0.308	0.308 0.308	4.5	0.002	0.002	0.000	0.000	0.004	○ 600	0.75	0.60	0.168		0.02
319	315 317	1.20 119.10		221.00	0.308 5.529	0.308 5.529	4.0	0.033	0.029	0.002	0.002	0.066	○ 900	0.45	0.60	0.384		0.17
			To EP10 and pumped up to Sewer No.321		Mansoorabad(LP/S) 27.2m^3/min=0.453m^3/s													
320		51.20 51.20		318.00	4.883 4.883	4.883 4.883	4.5	0.033	0.012	0.001	0.001	0.047	○ 600	0.75	0.60	0.168		0.28
			To EP10 and pumped up to Sewer No.321		Mansoorabad(LP/S) 27.2m^3/min=0.453m^3/s						319+320= 0.113							
321	319 320	204.10 374.40		165.00	33.460 43.871	33.460 43.872	3.0	0.198	0.090	0.007	0.007	0.302	○ 1050	0.40	0.63	0.546		0.55
			To Sewer No. 323															
322		20.10 20.10		348.00	2.557 2.557	2.557 2.557	4.5	0.017	0.005	0.000	0.000	0.022	○ 525	0.90	0.60	0.129		0.17
323	321	60.30 454.80		656.00	3.790 50.218	3.790 50.219	2.5	0.189	0.109	0.008	0.008	0.314	○ 1050	0.40	0.63	0.546		0.57
			To Sewer No. 325															
324		5.50 5.50		287.00	0.000 0.000	0.000 0.000	4.5	0.000	0.001	0.000	0.000	0.001	○ 600	0.75	0.60	0.168		0.01
325	323	2.60 462.90		1,194.00	9.357 59.575	9.357 59.576	2.5	0.224	0.111	0.008	0.008	0.351	○ 1050	0.40	0.63	0.546		0.64
326	313	79.50 759.10		1,262.00	20.778 102.032	20.778 102.033	2.0	0.307	0.183	0.014	0.013	0.517	○ 1200	0.30	0.60	0.675		0.77
			To Sewer No. 341															

Ratio of Design Flow against Capacity			
More than 2.0		From 1.2 to 1.4	
From 1.8 to 2.0		From 1.0 to 1.2	
From 1.6 to 1.8		Less than 1.0	
From 1.4 to 1.6			

Population ($x10^3$)	Peaking Factor	Population ($x10^3$)	Peaking Factor
Up to 5	4.5	From 25 to 50	3.0
From 5 to 10	4.0	From 50 to 100	2.5
From 10 to 25	3.5	More than 100	2.0

Sewer No.	Incoming Sewer	Sewerage Area (ha)		Sewer Length	Domestic Wastewater				Point Souce			Design	Sewer Line Design				Remarks	Ratio of Design Flow against Capacity
					Unit Generation Rate (LPCD)			130										
		Increment / Total		(m)	Population (thousand) Increment / Total	Service Population (thousand) Increment / Total	Peaking Factor	Domestic WW Flow (m^3/sec)	Industrial WW Flow (m^3/sec)	Commercial WW Flow (m^3/sec)	I/I of Ground water Flow (m^3/sec)	Max. Flow (m^3/sec)	Dia. (mm)	Slope (‰)	Velocity (m/sec)	Capacity (m^3/sec)		
327		3.50 3.50		425.00	1.124 1.124	1.124 1.124	4.5	0.008	0.001	0.000	0.000	0.009	○ 600	0.75	0.60	0.168		0.05
328		4.20 7.70		439.00	2.249 3.373	2.249 3.373	4.5	0.023	0.002	0.000	0.000	0.025	○ 675	0.65	0.60	0.214		0.12
			To Sewer No. 331															
329		2.60 2.60		332.00	1.124 1.124	1.124 1.124	4.5	0.008	0.001	0.000	0.000	0.009	○ 600	0.75	0.60	0.168		0.05
330		4.50 7.10		260.00	1.124 2.249	1.124 2.248	4.5	0.015	0.002	0.000	0.000	0.017	○ 750	0.60	0.62	0.272		0.06
331	328	17.90 32.70		150.00	4.170 9.791	4.170 9.791	4.0	0.059	0.008	0.001	0.001	0.069	○ 750	0.60	0.62	0.272		0.25
332		6.40 39.10		227.00	0.000 9.791	0.000 9.791	4.0	0.059	0.009	0.001	0.001	0.070	○ 1050	0.40	0.63	0.546		0.13
			To Sewer No. 334															
333		30.20 30.20		443.00	3.114 3.114	3.114 3.114	4.5	0.021	0.007	0.001	0.001	0.030	○ 675	0.65	0.60	0.214		0.14
334	332	16.60 85.90		288.00	2.882 15.787	2.882 15.787	3.5	0.083	0.021	0.002	0.002	0.108	○ 1050	0.40	0.63	0.546		0.20
335		2.20 88.10		460.00	0.961 16.748	0.961 16.748	3.5	0.088	0.021	0.002	0.002	0.113	○ 1050	0.40	0.63	0.546		0.21
336		13.80 101.90		97.00	2.050 18.798	2.050 18.798	3.5	0.099	0.025	0.002	0.002	0.128	○ 1050	0.40	0.63	0.546		0.23
			To Sewer No. 340															
337		33.80 33.80		204.00	6.679 6.679	6.679 6.679	4.0	0.040	0.008	0.001	0.001	0.050	○ 525	0.90	0.60	0.129		0.39
338		1.40 35.20		240.00	0.000 6.679	0.000 6.679	4.0	0.040	0.008	0.001	0.001	0.050	○ 525	0.90	0.60	0.129		0.39
339		0.50 35.70		158.00	0.000 6.679	0.000 6.679	4.0	0.040	0.009	0.001	0.001	0.051	○ 525	0.90	0.60	0.129		0.40
340	336	121.00 258.60		741.00	23.910 49.387	23.910 49.387	3.0	0.223	0.062	0.005	0.005	0.295	○ 1050	0.40	0.63	0.546		0.54
341	326	87.50 1,105.20		1,329.00	15.412 166.831	15.412 166.832	2.0	0.502	0.266	0.020	0.019	0.807	○ 1650	0.20	0.60	1.289		0.63
342	304	91.10 1,274.80		1,370.00	17.623 193.682	17.623 193.683	2.0	0.583	0.307	0.023	0.022	0.935	○ 1800	0.20	0.64	1.625		0.58
			To EP2		PS-31(DP/S) 169.9m³/min=2.831m³/s													
343		15.20 15.20		248.00	0.981 0.981	0.981 0.981	4.5	0.007	0.004	0.000	0.000	0.011	○ 600	0.75	0.60	0.168		0.06
344		2.20 17.40		197.00	0.000 0.981	0.000 0.981	4.5	0.007	0.004	0.000	0.000	0.011	○ 825	0.50	0.60	0.321		0.03
			To Sewer No. 346															

Ratio of Design Flow against Capacity			
More than 2.0		From 1.2 to 1.4	
From 1.8 to 2.0		From 1.0 to 1.2	
From 1.6 to 1.8		Less than 1.0	
From 1.4 to 1.6			

Population (x10^3)	Peaking Factor	Population (x10^3)	Peaking Factor
Up to 5	4.5	From 25 to 50	3.0
From 5 to 10	4.0	From 50 to 100	2.5
From 10 to 25	3.5	More than 100	2.0

Sewer No.	Incoming Sewer	Sewerage Area (ha)		Sewer Length	Domestic Wastewater				Point Souce			Design	Sewer Line Design				Remarks	Ratio of Design Flow against Capacity
					Unit Generation Rate (LPCD)			130										
		Increment / Total		(m)	Population (thousand) Increment / Total	Service Population (thousand) Increment / Total	Peaking Factor	Domestic WW Flow (m^3/sec)	Industrial WW Flow (m^3/sec)	Commercial WW Flow (m^3/sec)	I/I of Ground water Flow (m^3/sec)	Max. Flow (m^3/sec)	Dia. (mm)	Slope (‰)	Velocity (m/sec)	Capacity (m^3/sec)		
345		17.00 17.00			2.222 2.222	2.222 2.222	4.5	0.015	0.004	0.000	0.000	0.019	○ 300	2.00	0.61	0.043		0.44
			To EP8 and discharge to Sewer No. 346		Sharifpura(LP/S) 13.6m^3/min=0.226m^3/s													
346	344 345	2.80 37.20		327.00	0.511 3.713	0.511 3.714	4.5	0.025	0.009	0.001	0.001	0.036	○ 900	0.45	0.60	0.384		0.09
347		0.00 37.20		847.00	0.000 3.713	0.000 3.714	4.5	0.025	0.009	0.001	0.001	0.036	○ 900	0.45	0.60	0.384		0.09
			To Sewer No. 360															
348		8.60 8.60		741.00	1.022 1.022	1.022 1.022	4.5	0.007	0.002	0.000	0.000	0.009	○ 600	0.75	0.60	0.168		0.05
349		111.90 120.50		825.00	30.496 31.518	30.496 31.518	3.0	0.142	0.029	0.002	0.002	0.175	○ 900	0.45	0.60	0.384		0.46
			To Sewer No. 360															
350		11.80 11.80		442.00	0.981 0.981	0.981 0.981	4.5	0.007	0.003	0.000	0.000	0.010	○ 750	0.60	0.62	0.272		0.04
			To Sewer No. 352															
351		1.80 1.80		205.00	0.000 0.000	0.000 0.000	4.5	0.000	0.000	0.000	0.000	0.000	○ 900	0.45	0.60	0.384		0.00
352	350	0.60 14.20		62.00	0.000 0.981	0.000 0.981	4.5	0.007	0.003	0.000	0.000	0.010	○ 900	0.45	0.60	0.384		0.03
			To Sewer No. 354															
353		1.70 1.70		123.00	0.491 0.491	0.491 0.491	4.5	0.003	0.000	0.000	0.000	0.003	○ 750	0.60	0.62	0.272		0.01
354	352	4.80 20.70		582.00	0.511 1.982	0.511 1.983	4.5	0.013	0.005	0.000	0.000	0.018	○ 1050	0.40	0.63	0.546		0.03
355		3.70 24.40		313.00	0.511 2.493	0.511 2.494	4.5	0.017	0.006	0.000	0.000	0.023	○ 1050	0.40	0.63	0.546		0.04
356		3.00 27.40		214.00	0.511 3.004	0.511 3.005	4.5	0.020	0.007	0.000	0.000	0.027	○ 1050	0.40	0.63	0.546		0.05
			To Sewer No. 359															
357		22.30 22.30		139.00	1.533 1.533	1.533 1.533	4.5	0.010	0.005	0.000	0.000	0.015	○ 675	0.65	0.60	0.214		0.07
358		5.50 27.80		315.00	0.511 2.044	0.511 2.044	4.5	0.014	0.007	0.001	0.000	0.022	○ 675	0.65	0.60	0.214		0.10
359	356	0.90 56.10		740.00	0.511 5.559	0.511 5.560	4.0	0.033	0.014	0.001	0.001	0.049	○ 1050	0.40	0.63	0.546		0.09
360	347 349	38.20 252.00		737.00	2.044 42.834	2.044 42.836	3.0	0.193	0.061	0.005	0.004	0.263	○ 1350	0.30	0.65	0.924		0.28
			To Sewer No. 362															
361		29.20 29.20		116.00	13.125 13.125	13.125 13.125	3.5	0.069	0.007	0.001	0.001	0.078	○ 525	0.90	0.60	0.129		0.61

Ratio of Design Flow against Capacity			
More than 2.0		From 1.2 to 1.4	
From 1.8 to 2.0		From 1.0 to 1.2	
From 1.6 to 1.8		Less than 1.0	
From 1.4 to 1.6			

Population ($x10^3$)	Peaking Factor	Population ($x10^3$)	Peaking Factor
Up to 5	4.5	From 25 to 50	3.0
From 5 to 10	4.0	From 50 to 100	2.5
From 10 to 25	3.5	More than 100	2.0

Sewer No.	Incoming Sewer	Sewerage Area (ha)		Sewer Length	Domestic Wastewater				Point Souce			Design	Sewer Line Design				Remarks	Ratio of Design Flow against Capacity
					Unit Generation Rate (LPCD)			130										
		Increment / Total		(m)	Population (thousand) Increment / Total	Service Population (thousand) Increment / Total	Peaking Factor	Domestic WW Flow (m^3/sec)	Industrial WW Flow (m^3/sec)	Commercial WW Flow (m^3/sec)	I/I of Ground water Flow (m^3/sec)	Max. Flow (m^3/sec)	Dia. (mm)	Slope (‰)	Velocity (m/sec)	Capacity (m^3/sec)		
362	360	52.90 334.10		1,113.00	14.380 70.338	14.380 70.341	2.5	0.265	0.080	0.006	0.006	0.357	○ 1350	0.30	0.65	0.924		0.39
			To Sewer No. 364															
363		263.90 263.90		649.00	54.146 54.146	38.426 38.426	3.0	0.173	0.064	0.005	0.005	0.247	○ 525	0.90	0.60	0.129	Insufficient capacity	1.92
364	362	1.90 599.90		180.00	1.195 125.679	1.195 109.962	2.0	0.331	0.144	0.011	0.011	0.497	○ 1350	0.30	0.65	0.924		0.54
			To EP1		Satiana Road Old(DP/S) 113.8m^3/min=1.896m^3/s													
365		34.00 34.00		489.00	6.751 6.751	6.751 6.751	4.0	0.041	0.008	0.001	0.001	0.051	○ 525	0.90	0.60	0.129		0.39
			To EP1		Satiana Road Old(DP/S) 113.8m^3/min=1.896m^3/s						364+365=	0.548						
366		625.80 625.80		2,013.00	40.812 40.812	12.363 12.363	3.5	0.065	0.151	0.011	0.011	0.238	○ 900	0.45	0.60	0.384		0.62
			To Sewer No. 368															
367		64.90 64.90		383.00	6.705 6.705	4.652 4.652	4.5	0.031	0.016	0.001	0.001	0.049	○ 600	0.75	0.60	0.168		0.29
368	366	48.80 739.50		638.00	6.146 53.663	4.824 21.839	3.5	0.115	0.178	0.013	0.013	0.319	○ 900	0.45	0.60	0.384		0.83
369		51.70 791.20		1,037.00	4.401 58.064	3.449 25.288	3.0	0.114	0.190	0.014	0.014	0.332	○ 1050	0.40	0.63	0.546		0.61
370		52.40 843.60		1,034.00	5.430 63.494	5.430 30.718	3.0	0.139	0.203	0.015	0.015	0.372	○ 1050	0.40	0.63	0.546		0.68
371		18.80 862.40		977.00	2.387 65.880	2.387 33.105	3.0	0.149	0.208	0.016	0.015	0.388	○ 1350	0.30	0.65	0.924		0.42
372		4.60 867.00		336.00	0.961 66.841	0.961 34.066	3.0	0.154	0.209	0.016	0.015	0.394	○ 1350	0.30	0.65	0.924		0.43
373		35.50 902.50		549.00	4.564 71.405	3.171 37.237	3.0	0.168	0.217	0.016	0.016	0.417	○ 1350	0.30	0.65	0.924		0.45
374		26.30 928.80		96.00	5.817 77.222	5.817 43.054	3.0	0.194	0.224	0.017	0.016	0.451	○ 1350	0.30	0.65	0.924		0.49
			To Sewer No. 376															
375		1,791.70 1,791.70		527.00	55.504 55.504	1.775 1.775	4.5	0.012	0.431	0.032	0.031	0.506	○ 750	0.60	0.62	0.272	Insufficient capacity	1.86
376	374	6.90 2,727.40		594.00	29.790 162.517	29.790 74.619	2.5	0.281	0.656	0.049	0.048	1.034	○ 1500	0.25	0.63	1.116		0.93
			To Sewer No. 378															

Ratio of Design Flow against Capacity			
More than 2.0		From 1.2 to 1.4	
From 1.8 to 2.0		From 1.0 to 1.2	
From 1.6 to 1.8		Less than 1.0	
From 1.4 to 1.6			

Population ($x10^3$)	Peaking Factor	Population ($x10^3$)	Peaking Factor
Up to 5	4.5	From 25 to 50	3.0
From 5 to 10	4.0	From 50 to 100	2.5
From 10 to 25	3.5	More than 100	2.0

Sewer No.	Incoming Sewer	Sewerage Area (ha)		Sewer Length	Domestic Wastewater				Point Souce			Design	Sewer Line Design				Remarks	Ratio of Design Flow against Capacity
					Unit Generation Rate (LPCD)			130										
					Population (thousand)	Service Population (thousand)	Peaking Factor	Domestic WW Flow	Industrial WW Flow	Commercial WW Flow	I/I of Ground water Flow	Max. Flow	Dia.	Slope	Velocity	Capacity		
		Increment / Total		(m)	Increment / Total	Increment / Total		(m^3/sec)	(m^3/sec)	(m^3/sec)	(m^3/sec)	(m^3/sec)	(mm)	(‰)	(m/sec)	(m^3/sec)		
377		20.40 20.40		206.00	3.238 3.238	3.238 3.238	4.5	0.022	0.005	0.000	0.000	0.027	○ 525	0.90	0.60	0.129		0.21
378	376	56.50 2,804.30		482.00	11.918 177.673	11.918 89.775	2.5	0.338	0.675	0.051	0.049	1.113	○ 1500	0.25	0.63	1.116		1.00
379		74.40 2,878.70		672.00	14.558 192.231	14.558 104.333	2.0	0.314	0.693	0.052	0.050	1.109	○ 1500	0.25	0.63	1.116		0.99
			To Sewer No. 381															
380		31.00 31.00		445.00	7.458 7.458	7.458 7.458	4.0	0.045	0.007	0.001	0.001	0.054	○ 600	0.75	0.60	0.168		0.32
381	379	205.00 3,114.70		1,620.00	3.324 203.013	2.444 114.235	2.0	0.344	0.750	0.056	0.055	1.205	○ 1800	0.20	0.64	1.625		0.74
			To Sewer No. 385															
382		85.40 85.40		751.00	6.959 6.959	5.143 5.143	4.0	0.031	0.021	0.002	0.001	0.055	○ 525	0.90	0.60	0.129		0.43
383		750.70 836.10		1,256.00	30.969 37.928	9.704 14.847	3.5	0.078	0.201	0.015	0.015	0.309	○ 750	0.60	0.62	0.272	Insufficient capacity	1.14
384		128.20 964.30		1,828.00	6.417 44.345	6.417 21.264	3.5	0.112	0.232	0.017	0.017	0.378	○ 900	0.45	0.60	0.384		0.98
385	381	103.60 4,182.60		803.00	0.000 247.358	0.000 135.499	2.0	0.408	1.007	0.076	0.073	1.564	○ 1800	0.20	0.64	1.625		0.96
			To EP6		PS-42(DP/S) 118.9m^3/min=1.981m^3/s													
386		387.40 387.40		1,187.00	21.564 21.564	10.852 10.852	3.5	0.057	0.093	0.007	0.007	0.164	○ 600	0.75	0.60	0.168		0.98
			To EP6		PS-42(DP/S) 118.9m^3/min=1.981m^3/s						385+386=	1.728						
387		6.70 6.70		206.00	2.237 2.237	2.237 2.237	4.5	0.015	0.002	0.000	0.000	0.017	○ 600	0.75	0.60	0.168		0.10
388		1.30 8.00		336.00	1.502 3.740	1.502 3.739	4.5	0.025	0.002	0.000	0.000	0.027	○ 750	0.60	0.62	0.272		0.10
389		18.40 26.40		410.00	3.005 6.744	3.005 6.744	4.0	0.041	0.006	0.000	0.000	0.047	○ 750	0.60	0.62	0.272		0.17
			To Sewer No. 391															
390		25.20 25.20		419.00	4.251 4.251	4.251 4.251	4.5	0.029	0.006	0.000	0.000	0.035	○ 600	0.75	0.60	0.168		0.21
391	389	59.40 111.00		256.00	16.728 27.723	16.728 27.723	3.0	0.125	0.027	0.002	0.002	0.156	○ 1200	0.30	0.60	0.675		0.23
392		98.70 209.70		674.00	12.893 40.615	12.893 40.616	3.0	0.183	0.050	0.004	0.004	0.241	○ 1200	0.30	0.60	0.675		0.36
			To EP4		Elahiabad(DP/S) 68.0m^3/min=1.133m^3/s													

Ratio of Design Flow against Capacity			
More than 2.0		From 1.2 to 1.4	
From 1.8 to 2.0		From 1.0 to 1.2	
From 1.6 to 1.8		Less than 1.0	
From 1.4 to 1.6			

Population ($x10^3$)	Peaking Factor	Population ($x10^3$)	Peaking Factor
Up to 5	4.5	From 25 to 50	3.0
From 5 to 10	4.0	From 50 to 100	2.5
From 10 to 25	3.5	More than 100	2.0

Sewer No.	Incoming Sewer	Sewerage Area (ha) Increment	Sewerage Area (ha) Total	Sewer Length (m)	Domestic Wastewater: Population (thousand) Increment	Population (thousand) Total	Service Population (thousand) Increment	Service Population (thousand) Total	Peaking Factor	Unit Generation Rate (LPCD) 130: Domestic WW Flow (m^3/sec)	Point Souce: Industrial WW Flow (m^3/sec)	Commercial WW Flow (m^3/sec)	I/I of Ground water Flow (m^3/sec)	Design: Max. Flow (m^3/sec)	Sewer Line Design:	Dia. (mm)	Slope (‰)	Velocity (m/sec)	Capacity (m^3/sec)	Remarks	Ratio of Design Flow against Capacity
393		25.00 25.00		402.00	9.014 9.014	9.014 9.014			4.0	0.054	0.006	0.000	0.000	0.060	○	600	0.75	0.60	0.168		0.36
			To EP4		Elahiabad(DP/S) 68.0m^3/min=1.133m^3/s																
394		54.60 54.60		265.00	17.741 17.741	17.741 17.741			3.5	0.093	0.013	0.001	0.001	0.108	○	600	0.75	0.60	0.168		0.65
395		21.20 75.80		418.00	6.240 23.981	6.240 23.981			3.5	0.126	0.018	0.001	0.001	0.146	○	750	0.60	0.62	0.272		0.54
396		10.10 85.90		252.00	5.011 28.992	5.011 28.992			3.0	0.131	0.021	0.002	0.002	0.156	○	750	0.60	0.62	0.272		0.57
397		11.90 97.80		179.00	2.506 31.498	2.506 31.498			3.0	0.142	0.024	0.002	0.002	0.170	○	750	0.60	0.62	0.272		0.62
398		2.10 99.90		388.00	0.000 31.498	0.000 31.498			3.0	0.142	0.024	0.002	0.002	0.170	○	750	0.60	0.62	0.272		0.62
399		4.60 104.50		286.00	0.000 31.498	0.000 31.498			3.0	0.142	0.025	0.002	0.002	0.171	○	750	0.60	0.62	0.272		0.63
400		3.20 107.70		235.00	2.506 34.003	2.506 34.004			3.0	0.153	0.026	0.002	0.002	0.183	○	825	0.50	0.60	0.321		0.57
			To Sewer No. 402																		
401		50.10 50.10		290.00	17.996 17.996	17.996 17.996			3.5	0.095	0.012	0.001	0.001	0.109	○	525	0.90	0.60	0.129		0.84
402	400	20.10 177.90		467.00	12.456 64.455	12.456 64.456			2.5	0.242	0.043	0.003	0.003	0.291	○	825	0.50	0.60	0.321		0.91
403		11.00 188.90		55.00	3.756 68.211	3.756 68.212			2.5	0.257	0.045	0.003	0.003	0.308	○	825	0.50	0.60	0.321		0.96
			To EP4		Elahiabad(DP/S) 68.0m^3/min=1.133m^3/s							Sewer No. 392+393+403= 0.609									
404		48.80 48.80		607.00	4.226 4.226	4.226 4.226			4.5	0.029	0.012	0.001	0.001	0.043	○	525	0.90	0.60	0.129		0.33
405		51.60 100.40		472.00	5.161 9.388	5.161 9.387			4.0	0.056	0.024	0.002	0.002	0.084	○	600	0.75	0.60	0.168		0.50
			To EP7		D-Type(DP/S) 23.8m^3/min=0.396m^3/s																
406		19.60 19.60		137.00	1.811 1.811	1.811 1.811			4.5	0.012	0.005	0.000	0.000	0.017	○	525	0.90	0.60	0.129		0.13
407		3.70 23.30		635.00	0.000 1.811	0.000 1.811			4.5	0.012	0.006	0.000	0.000	0.018	○	600	0.75	0.60	0.168		0.11

Ratio of Design Flow against Capacity			
More than 2.0		From 1.2 to 1.4	
From 1.8 to 2.0		From 1.0 to 1.2	
From 1.6 to 1.8		Less than 1.0	
From 1.4 to 1.6			

Population ($x10^3$)	Peaking Factor	Population ($x10^3$)	Peaking Factor
Up to 5	4.5	From 25 to 50	3.0
From 5 to 10	4.0	From 50 to 100	2.5
From 10 to 25	3.5	More than 100	2.0

Sewer No.	Incoming Sewer	Sewerage Area (ha)		Sewer Length	Domestic Wastewater				Point Souce			Design	Sewer Line Design				Remarks	Ratio of Design Flow against Capacity
					Unit Generation Rate (LPCD)			130										
		Increment			Population (thousand) Increment	Service Population (thousand) Increment	Peaking Factor	Domestic WW Flow	Industrial WW Flow	Commercial WW Flow	I/I of Ground water Flow	Max. Flow	Dia.	Slope	Velocity	Capacity		
		Total		(m)	Total	Total		(m^3/sec)	(m^3/sec)	(m^3/sec)	(m^3/sec)	(m^3/sec)	(mm)	(‰)	(m/sec)	(m^3/sec)		
408		4.50 27.80		278.00	1.010 2.821	1.010 2.821	4.5	0.019	0.007	0.001	0.000	0.027	○ 825	0.50	0.60	0.321		0.08
			To Sewer No. 424															
409		27.60 27.60		194.00	8.003 8.003	8.003 8.003	4.0	0.048	0.007	0.000	0.000	0.055	○ 600	0.75	0.60	0.168		0.33
410		33.10 60.70		327.00	4.915 12.918	4.915 12.918	3.5	0.068	0.015	0.001	0.001	0.085	○ 675	0.65	0.60	0.214		0.40
411		16.30 77.00		331.00	3.686 16.604	3.686 16.604	3.5	0.087	0.019	0.001	0.001	0.108	○ 675	0.65	0.60	0.214		0.51
412		14.90 91.90		184.00	3.686 20.290	3.686 20.290	3.5	0.107	0.022	0.002	0.002	0.133	○ 675	0.65	0.60	0.214		0.62
413		2.00 93.90		165.00	0.000 20.290	0.000 20.290	3.5	0.107	0.023	0.002	0.002	0.134	○ 825	0.50	0.60	0.321		0.42
			To Sewer No. 418															
414		2.50 2.50		153.00	4.818 4.818	4.818 4.818	4.5	0.033	0.001	0.000	0.000	0.034	○ 600	0.75	0.60	0.168		0.20
			To Sewer No. 416															
415		26.60 26.60		533.00	7.082 7.082	7.082 7.082	4.0	0.043	0.006	0.000	0.000	0.049	○ 525	0.90	0.60	0.129		0.38
416	414	0.20 29.30		73.00	0.000 11.900	0.000 11.900	3.5	0.063	0.007	0.001	0.001	0.072	○ 600	0.75	0.60	0.168		0.43
417		31.70 61.00		643.00	6.863 18.762	6.863 18.763	3.5	0.099	0.015	0.001	0.001	0.116	○ 750	0.60	0.62	0.272		0.43
418	413	0.70 155.60		148.00	0.000 39.053	0.000 39.053	3.0	0.176	0.037	0.003	0.003	0.219	○ 825	0.50	0.60	0.321		0.68
419		65.50 221.10		423.00	11.008 50.060	11.008 50.061	2.5	0.188	0.053	0.004	0.004	0.249	○ 1050	0.40	0.63	0.546		0.46
420		2.70 223.80		154.00	0.000 50.060	0.000 50.061	2.5	0.188	0.054	0.004	0.004	0.250	○ 1200	0.30	0.60	0.675		0.37
			To Sewer No. 424															
421		40.80 40.80		637.00	7.128 7.128	7.128 7.128	4.0	0.043	0.010	0.001	0.001	0.055	○ 675	0.65	0.60	0.214		0.26
422		2.50 43.30		205.00	1.010 8.138	1.010 8.138	4.0	0.049	0.010	0.001	0.001	0.061	○ 600	0.75	0.60	0.168		0.36
423		15.30 58.60		303.00	3.029 11.167	3.029 11.167	3.5	0.059	0.014	0.001	0.001	0.075	○ 675	0.65	0.60	0.214		0.35
424	408 420	0.50 310.70		109.00	0.000 64.049	0.000 64.049	2.5	0.241	0.075	0.006	0.005	0.327	○ 1200	0.30	0.60	0.675		0.48
			To EP7		D-Type (DP/S) 23.8 m^3/min=0.396 m^3/s Insufficient capacity					Sewer No. 405+424= 0.411								

Ratio of Design Flow against Capacity			
More than 2.0		From 1.2 to 1.4	
From 1.8 to 2.0		From 1.0 to 1.2	
From 1.6 to 1.8		Less than 1.0	
From 1.4 to 1.6			

Population ($x10^3$)	Peaking Factor	Population ($x10^3$)	Peaking Factor
Up to 5	4.5	From 25 to 50	3.0
From 5 to 10	4.0	From 50 to 100	2.5
From 10 to 25	3.5	More than 100	2.0

Sewer No.	Incoming Sewer	Sewerage Area (ha)		Sewer Length	Domestic Wastewater				Point Souce			Design	Sewer Line Design				Remarks	Ratio of Design Flow against Capacity
					Unit Generation Rate (LPCD)			130										
		Increment / Total		(m)	Population (thousand) Increment / Total	Service Population (thousand) Increment / Total	Peaking Factor	Domestic WW Flow (m^3/sec)	Industrial WW Flow (m^3/sec)	Commercial WW Flow (m^3/sec)	I/I of Ground water Flow (m^3/sec)	Max. Flow (m^3/sec)	Dia. (mm)	Slope (‰)	Velocity (m/sec)	Capacity (m^3/sec)		
425		51.90 51.90		359.00	7.651 7.651	7.651 7.651	4.0	0.046	0.012	0.001	0.001	0.060	○ 525	0.90	0.60	0.129		0.47
426		6.50 58.40		243.00	1.010 8.661	1.010 8.661	4.0	0.052	0.014	0.001	0.001	0.068	○ 600	0.75	0.60	0.168		0.41
427		5.20 63.60		331.00	0.000 8.661	0.000 8.661	4.0	0.052	0.015	0.001	0.001	0.069	○ 675	0.65	0.60	0.214		0.32
428		7.10 70.70		676.00	1.010 9.671	1.010 9.671	4.0	0.058	0.017	0.001	0.001	0.077	○ 1350	0.30	0.65	0.924		0.08
429		2.20 72.90		334.00	0.176 9.847	0.176 9.847	4.0	0.059	0.018	0.001	0.001	0.079	○ 1350	0.30	0.65	0.924		0.09
			To Sewer No. 431															
430		20.80 20.80		138.00	0.956 0.956	0.956 0.956	4.5	0.006	0.005	0.000	0.000	0.011	○ 525	0.90	0.60	0.129		0.09
431	429	8.90 102.60		805.00	0.352 11.156	0.352 11.155	3.5	0.059	0.025	0.002	0.002	0.088	○ 1350	0.30	0.65	0.924		0.09
432		7.20 109.80		254.00	0.257 11.413	0.257 11.412	3.5	0.060	0.026	0.002	0.002	0.090	○ 1350	0.30	0.65	0.924		0.10
			To EP3		PS-36(DP/S) 135.9m^3/min=2.265m^3/s													
433		108.00 108.00		129.00	5.132 5.132	2.904 2.904	4.5	0.020	0.026	0.002	0.002	0.050	○ 600	0.75	0.60	0.168		0.30
434		2.10 110.10		194.00	1.580 6.712	1.580 4.484	4.5	0.030	0.026	0.002	0.002	0.060	○ 600	0.75	0.60	0.168		0.36
			To EP5 and discharge to Sewer No. 438		PS-34 Samanabad(LP/S) 44.2m^3/min=0.736m^3/s													
435		10.80 10.80		838.00	0.557 0.557	0.557 0.557	4.5	0.004	0.003	0.000	0.000	0.007	○ 600	0.75	0.60	0.168		0.04
436		83.20 94.00		324.00	23.572 24.129	23.572 24.129	3.5	0.127	0.023	0.002	0.002	0.154	○ 600	0.75	0.60	0.168		0.92
437		4.20 98.20		417.00	0.000 24.129	0.000 24.129	3.5	0.127	0.024	0.002	0.002	0.155	○ 675	0.65	0.60	0.214		0.72
			To EP5 and discharge to Sewer No. 438		PS-34 Samanabad(LP/S) 44.2m^3/min=0.736m^3/s					Sewer No. 434+437= 0.215								
438	434 437	8.70 217.00		261.00	0.081 30.922	0.081 28.694	3.0	0.130	0.052	0.004	0.004	0.190	○ 675	0.65	0.60	0.214		0.88
439		11.40 228.40		311.00	3.160 34.082	3.160 31.854	3.0	0.144	0.055	0.004	0.004	0.207	○ 675	0.65	0.60	0.214		0.97
440		266.40 494.80		935.00	23.749 57.831	23.749 55.603	2.5	0.209	0.119	0.009	0.009	0.346	○ 750	0.60	0.62	0.272	Insufficient capacity	1.27
			To Sewer No. 445															

Ratio of Design Flow against Capacity			
More than 2.0		From 1.2 to 1.4	
From 1.8 to 2.0		From 1.0 to 1.2	
From 1.6 to 1.8		Less than 1.0	
From 1.4 to 1.6			

Population ($x10^3$)	Peaking Factor	Population ($x10^3$)	Peaking Factor
Up to 5	4.5	From 25 to 50	3.0
From 5 to 10	4.0	From 50 to 100	2.5
From 10 to 25	3.5	More than 100	2.0

Sewer No.	Incoming Sewer	Sewerage Area (ha)		Sewer Length	Domestic Wastewater				Point Souce			Design	Sewer Line Design				Remarks	Ratio of Design Flow against Capacity
					Unit Generation Rate (LPCD)			130										
		Increment			Population (thousand) Increment	Service Population (thousand) Increment	Peaking Factor	Domestic WW Flow	Industrial WW Flow	Commercial WW Flow	I/I of Ground water Flow	Max. Flow	Dia.	Slope	Velocity	Capacity		
		Total		(m)	Total	Total		(m^3/sec)	(m^3/sec)	(m^3/sec)	(m^3/sec)	(m^3/sec)	(mm)	(‰)	(m/sec)	(m^3/sec)		
441		39.30 39.30		1,018.00	7.270 7.270	7.270 7.270	4.0	0.044	0.009	0.001	0.001	0.055	○ 600	0.75	0.60	0.168		0.33
			To Sewer No. 445															
442		71.90 71.90		649.00	3.422 3.422	1.470 1.470	4.5	0.010	0.017	0.001	0.001	0.029	○ 525	0.90	0.60	0.129		0.22
443		3.30 75.20		364.00	1.454 4.876	1.454 2.924	4.5	0.020	0.018	0.001	0.001	0.040	○ 600	0.75	0.60	0.168		0.24
			To Sewer No. 445															
444		66.70 66.70		193.00	4.339 4.339	4.339 4.339	4.5	0.029	0.016	0.001	0.001	0.047	○ 525	0.90	0.60	0.129		0.37
445	440 441 443	2.60 678.60		377.00	1.454 75.769	1.454 71.590	2.5	0.269	0.163	0.012	0.012	0.456	○ 750	0.60	0.62	0.272		1.68
			To Sewer No. 450															
446		48.40 48.40		270.00	6.163 6.163	6.163 6.163	4.0	0.037	0.012	0.001	0.001	0.051	○ 600	0.75	0.60	0.168		0.30
			To Sewer No. 448															
447		8.70 8.70		358.00	0.490 0.490	0.490 0.490	4.5	0.003	0.002	0.000	0.000	0.005	○ 600	0.75	0.60	0.168		0.03
448	446	8.50 65.60		343.00	0.279 6.931	0.279 6.932	4.0	0.042	0.016	0.001	0.001	0.060	○ 600	0.75	0.60	0.168		0.36
449		45.90 111.50		2,151.00	9.312 16.243	9.312 16.244	3.5	0.086	0.027	0.002	0.002	0.117	○ 675	0.65	0.60	0.214		0.54
450	445	18.20 808.30		1,005.00	4.115 96.127	4.115 91.949	2.5	0.346	0.195	0.015	0.014	0.570	○ 750	0.60	0.62	0.272		2.09
			To Sewer No. 453															
451		0.00 0.00		193.00	0.000 0.000	0.000 0.000	4.5	0.000	0.000	0.000	0.000	0.000	○ 525	0.90	0.60	0.129		0.00
452		139.10 139.10		129.00	2.735 2.735	2.735 2.735	4.5	0.019	0.033	0.003	0.002	0.057	○ 825	0.50	0.60	0.321		0.18
453	450	0.00 947.40		310.00	0.000 98.862	0.000 94.684	2.5	0.356	0.228	0.017	0.017	0.618	○ 825	0.50	0.60	0.321	Insufficient capacity	1.93
454		129.90 1,077.30		668.00	5.589 104.451	4.769 99.453	2.5	0.374	0.259	0.019	0.019	0.671	○ 1200	0.30	0.60	0.675		0.99
455		12.10 1,089.40		336.00	1.370 105.821	1.370 100.823	2.0	0.303	0.262	0.020	0.019	0.604	○ 1350	0.30	0.65	0.924		0.65
			To Sewer No. 457															
456		7.70 7.70		178.00	0.000 0.000	0.000 0.000	4.5	0.000	0.002	0.000	0.000	0.002	○ 675	0.65	0.60	0.214		0.01
457	455	60.60 1,157.70		674.00	1.050 106.871	0.851 101.674	2.0	0.306	0.279	0.021	0.020	0.626	○ 1350	0.30	0.65	0.924		0.68

Ratio of Design Flow against Capacity			
More than 2.0		From 1.2 to 1.4	
From 1.8 to 2.0		From 1.0 to 1.2	
From 1.6 to 1.8		Less than 1.0	
From 1.4 to 1.6			

Population (x10^3)	Peaking Factor	Population (x10^3)	Peaking Factor
Up to 5	4.5	From 25 to 50	3.0
From 5 to 10	4.0	From 50 to 100	2.5
From 10 to 25	3.5	More than 100	2.0

Sewer No.	Incoming Sewer	Sewerage Area (ha)		Sewer Length	Domestic Wastewater				Point Souce			Design	Sewer Line Design				Remarks	Ratio of Design Flow against Capacity
					Unit Generation Rate (LPCD)			130										
		Increment / Total		(m)	Population (thousand) Increment / Total	Service Population (thousand) Increment / Total	Peaking Factor	Domestic WW Flow (m^3/sec)	Industrial WW Flow (m^3/sec)	Commercial WW Flow (m^3/sec)	I/I of Ground water Flow (m^3/sec)	Max. Flow (m^3/sec)	Dia. (mm)	Slope (‰)	Velocity (m/sec)	Capacity (m^3/sec)		
458		8.80 1,166.50		197.00	0.121 106.992	0.081 101.755	2.0	0.306	0.281	0.021	0.020	0.628	○ 1350	0.30	0.65	0.924		0.68
			To EP3		PS-36(DP/S) 135.9m^3/min=2.265m^3/s					Sewer No. 432+458= 0.718								
459		70.30 70.30		659.00	0.863 0.863	0.863 0.863	4.5	0.006	0.017	0.001	0.001	0.025	○ 525	0.90	0.60	0.129		0.19
460		23.40 93.70		487.00	0.345 1.208	0.345 1.208	4.5	0.008	0.023	0.002	0.002	0.035	○ 525	0.90	0.60	0.129		0.27
461		0.00 93.70		393.00	0.000 1.208	0.000 1.208	4.5	0.008	0.023	0.002	0.002	0.035	○ 600	0.75	0.60	0.168		0.21
			To EP12		Sitara Colony(DP/S)													
EP11		17.30 17.30			2.001 2.001	2.001 2.001	4.5	0.014	0.004	0.000	0.000	0.018	○ 300	2.00	0.61	0.043	Because no sewer data available, pumping schene is assumed.	0.41
					Jhal Khnuana(LP/S) 6.8m^3/min=0.113m^3/s													
			the upper area (17.3 ha) covered by Sewer No. 302: tatal area of 62.10 ha, topulation of 7,184. The service population in the upper area is estimated as 2,001 (=7,184×17.3/62.1).															

AC3.2 General Plan of Present Sewer System

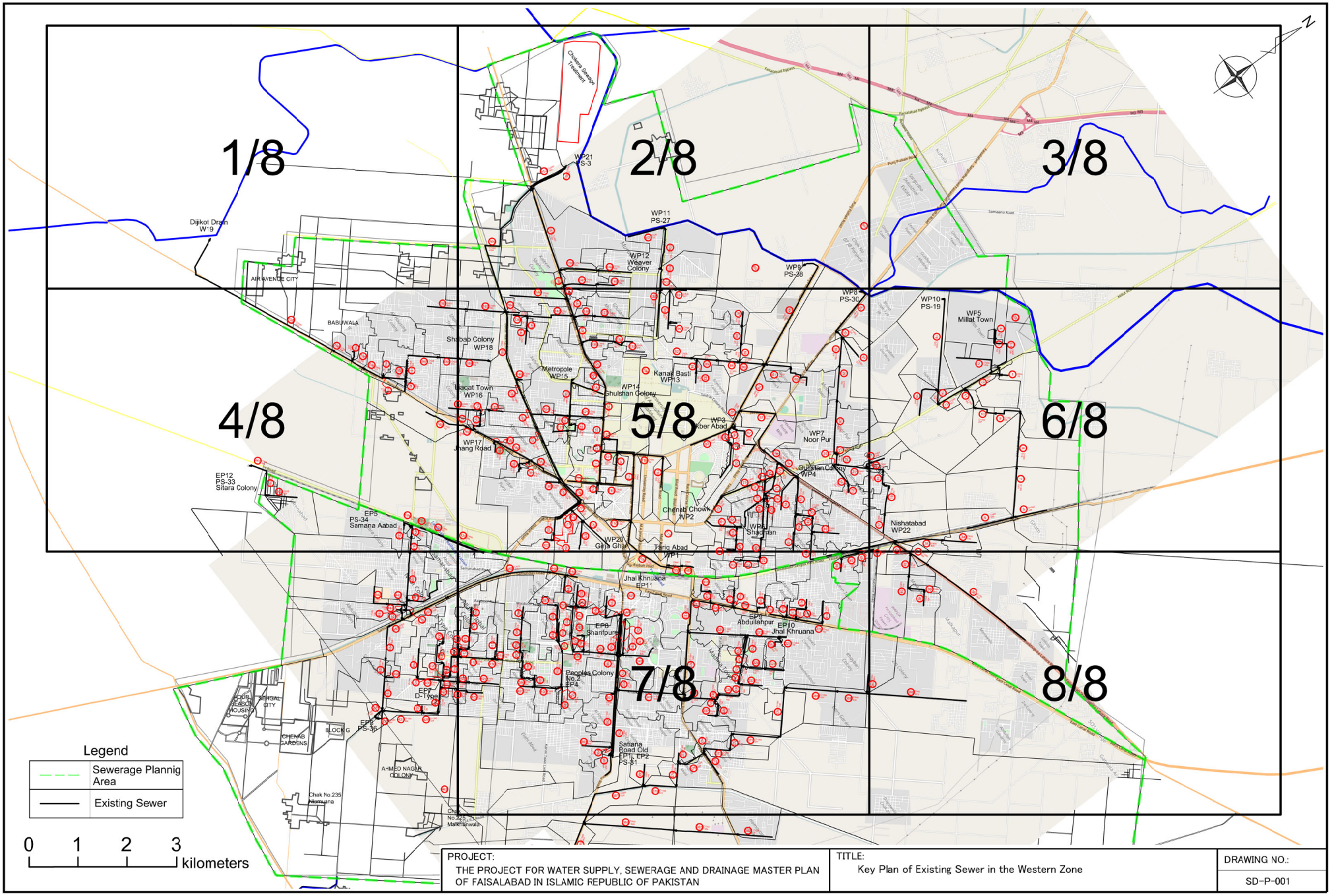
The existing sewers in the western zone and in the eastern zones are shown in the following draiwings, the lists of drawings are summarized in the following table.

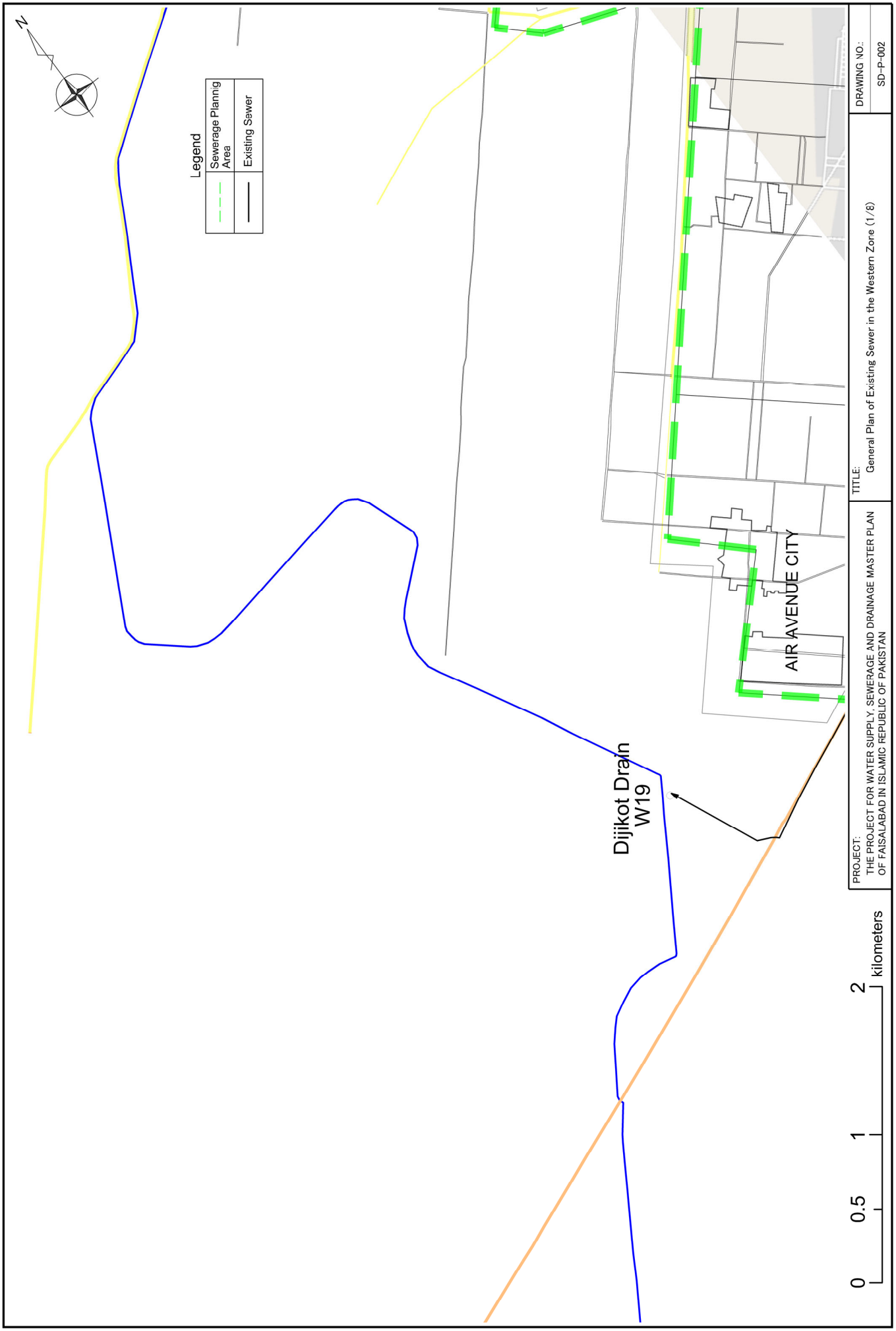
Table AC3.2.1 General Plan of the Present Sewer System in the Western Zone

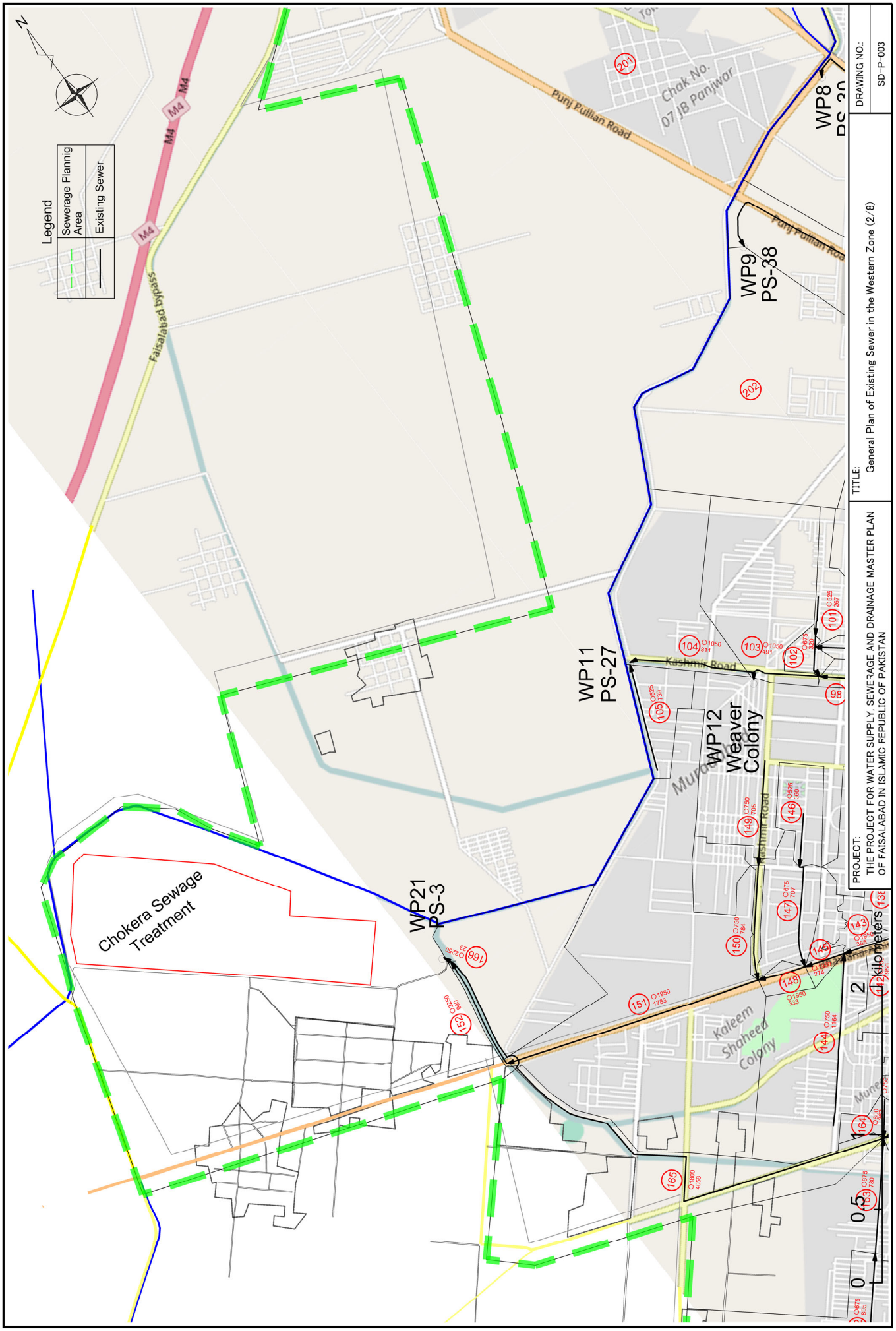
Drawing No.	Contents
SD-P- 001	Key Plan of Existing Sewer in the Western Zone
SD-P- 002	General Plan of Existing Sewers in the Western Zone (1/8)
SD-P- 003	General Plan of Existing Sewers in the Western Zone (2/8)
SD-P- 004	General Plan of Existing Sewers in the Western Zone (3/8)
SD-P- 005	General Plan of Existing Sewers in the Western Zone (4/8)
SD-P- 006	General Plan of Existing Sewers in the Western Zone (5/8)
SD-P- 007	General Plan of Existing Sewers in the Western Zone (6/8)
SD-P- 008	General Plan of Existing Sewers in the Western Zone (7/8)
SD-P- 009	General Plan of Existing Sewers in the Western Zone (8/8)

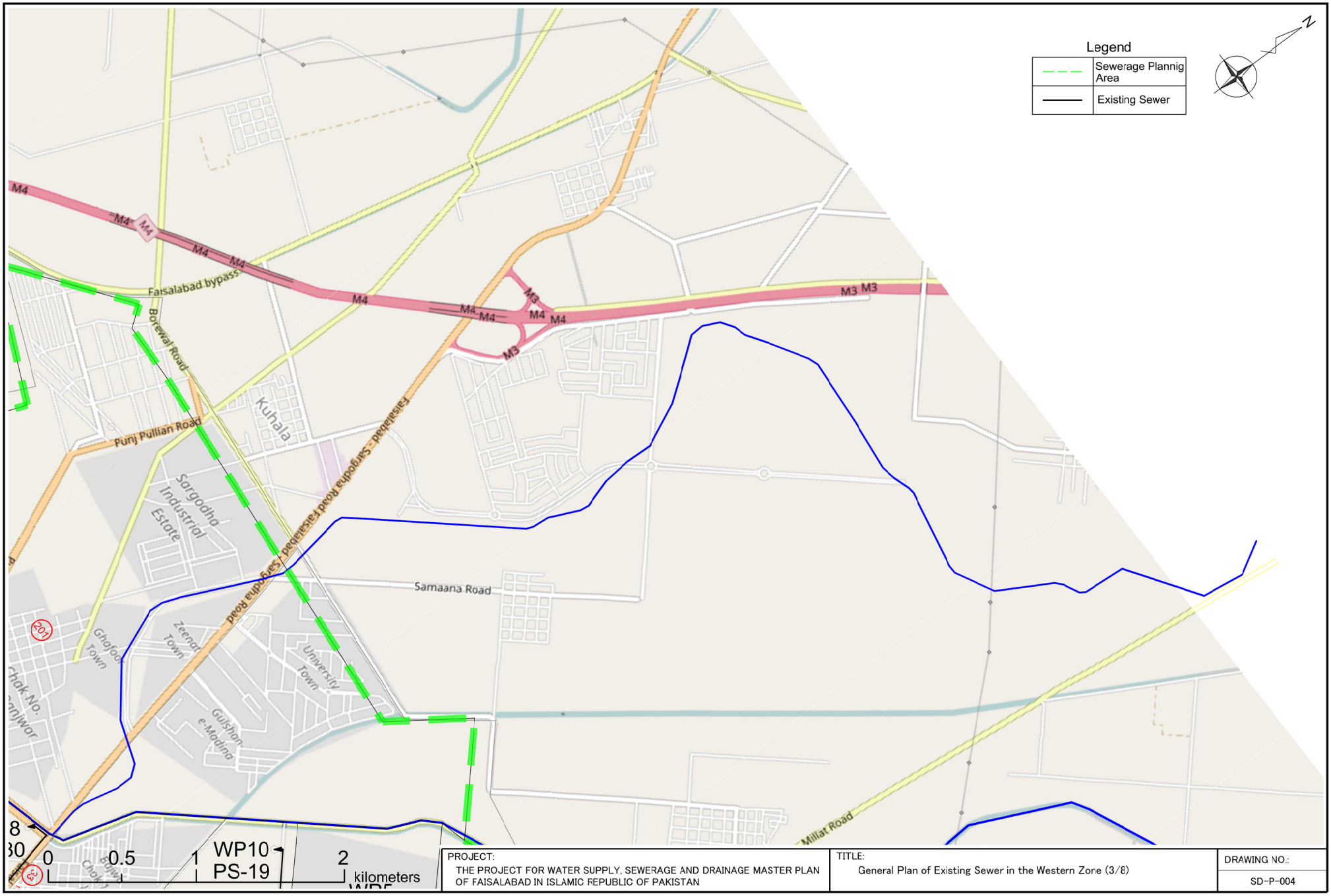
Table AC3.2.2 General Plan of the Present Sewer System in the Eastern Zone

Drawing No.	Contents
SD-P- 010	Key Plan of Existing Sewer in the Eastern Zone
SD-P- 011	General Plan of Existing Sewers in the Eastern Zone (1/7)
SD-P- 012	General Plan of Existing Sewers in the Eastern Zone (2/7)
SD-P- 013	General Plan of Existing Sewers in the Eastern Zone (3/7)
SD-P- 014	General Plan of Existing Sewers in the Eastern Zone (4/7)
SD-P- 015	General Plan of Existing Sewers in the Eastern Zone (5/7)
SD-P- 016	General Plan of Existing Sewers in the Eastern Zone (6/7)
SD-P- 017	General Plan of Existing Sewers in the Eastern Zone (7/7)

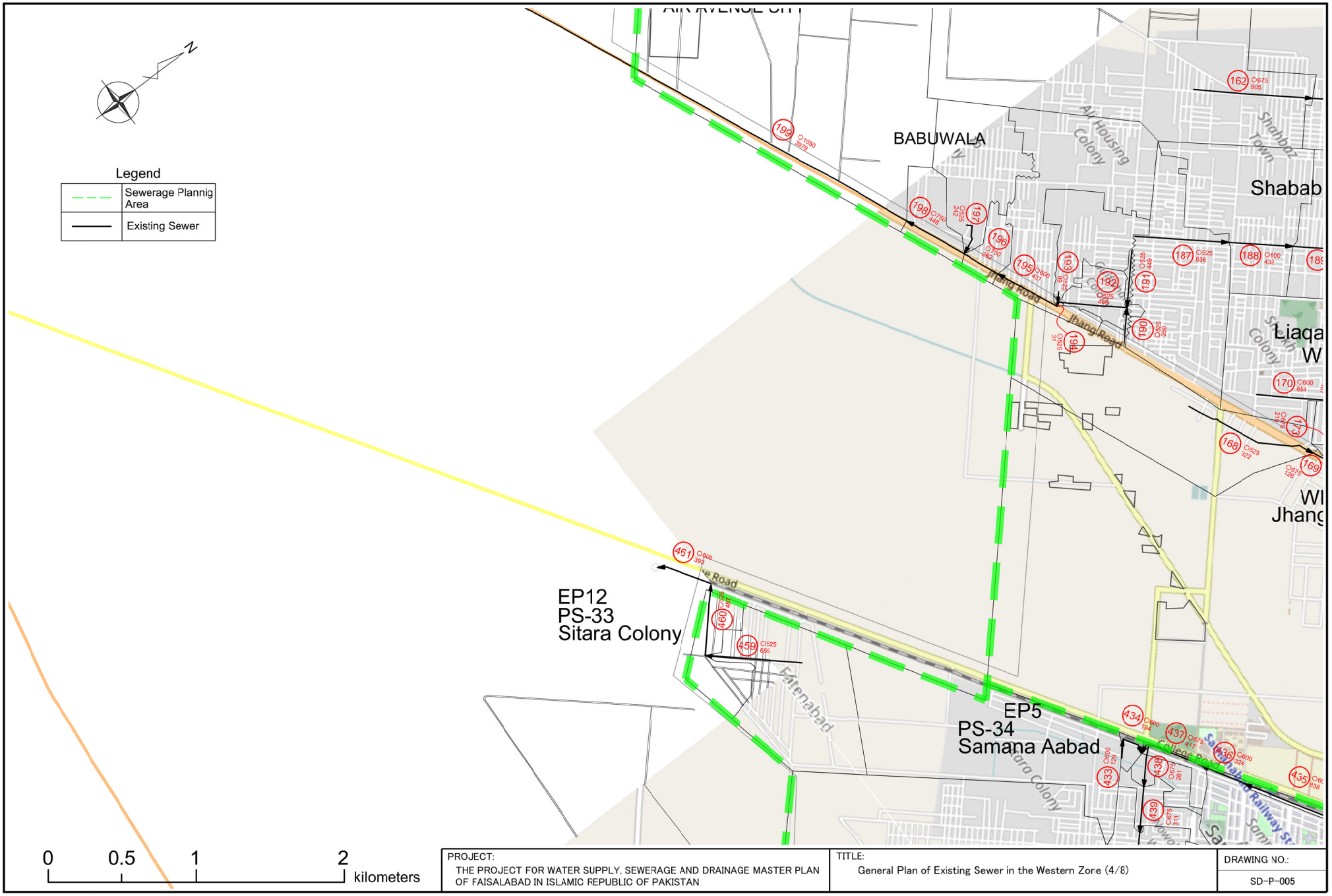

1/8
2/8
3/8
4/8
5/8
6/8
7/8
8/8
N
Legend
Sewerage Plannig Area
Existing Sewer
0 1 2 3 kilometers
Dijikot Drain W'9
AIR AVENUE CITY
BABUWALA
Shabab Colony WP18
Waqat Town WP16
WP17 Jhang Road
Metropole WP15
WP14 Shulshan Colony
Kanak Basti WP13
WP12 Weaver Colony
WP11 PS-27
WP21 PS-3
WP9 PS-28
WP8 PS-30
WP10 PS-19
WP5 Millat Town
WP3 Akber Abad
WP7 Noor Pur
Sultan Colony WP4
Chenab Chowk WP2
WP6 Shahdan
Nishatabad WP22
Tariq Abad WP1
WP20 Girja Ghar
Jhal Khnuana EP1
EP12 PS-33 Sitara Colony
EP5 PS-34 Samana Aabad
EP8 Sharifpura
EP9 Abdullahpur
EP10 Jhal Khnuana
Peoples Colony No.2 EP4
EP7 D-Type
EP6 PS-36
Satiana Road Old EP3, EP2 PS-81
FOUR SEASON MOJSING
BENGAL CITY
CHENAB GARDENS
BLOCK G
AHMED NAGAR COLONY
Chak No.235 Nemuana
Chak No.225 Malkhanwala
Chokera Sewage Treatment
Samaana Road
Faisalabad bypass
Jhang Road
Sargodha Road
Gulshan Road
Madina Road
Kotwali Road
Ghulam Road
Ghulam Road
Ghulam

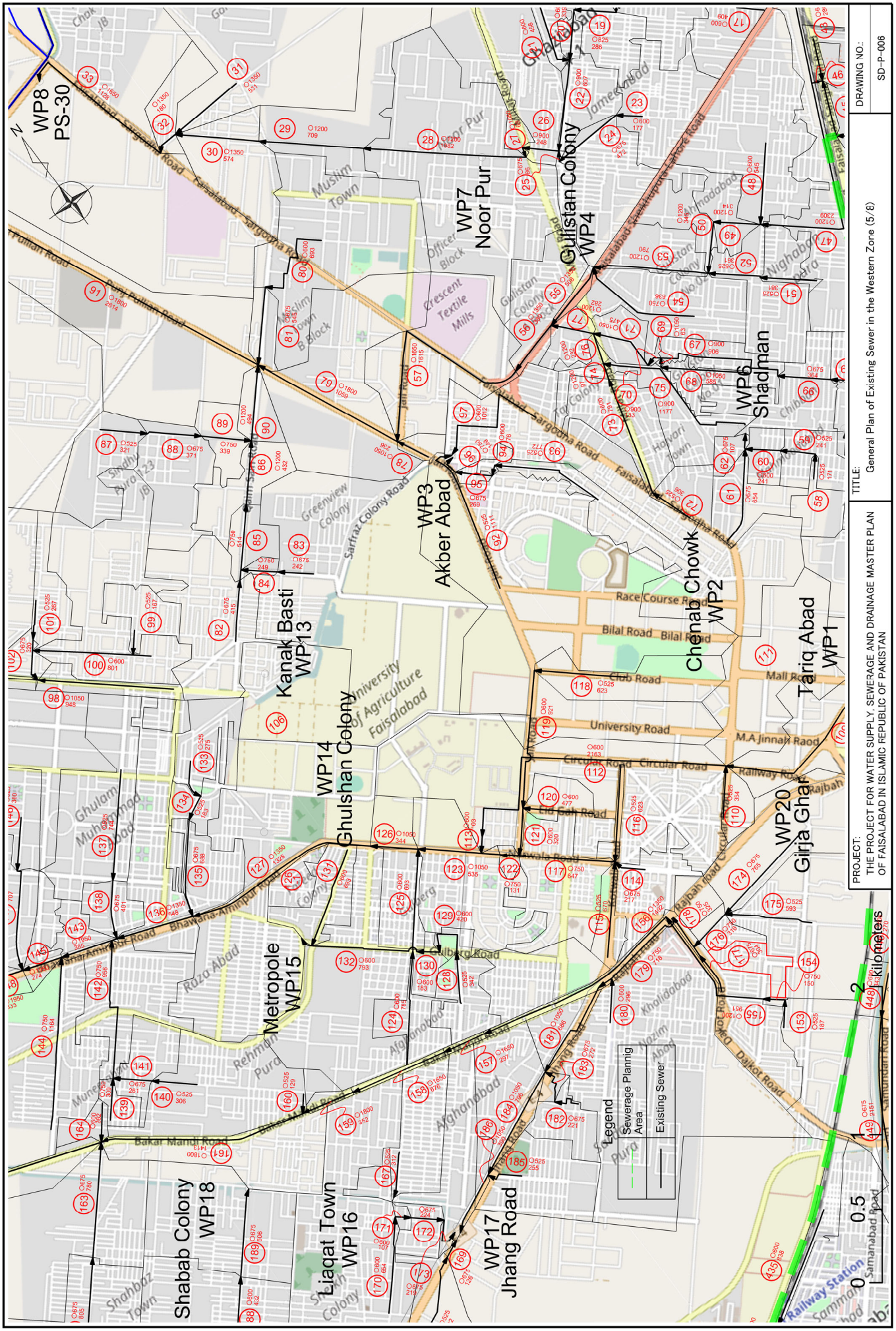

N
Legend
Sewerage Planning Area
Existing Sewer
Dijikot Drain
W19
AIR AVENUE CITY
0
0.5
1
2
kilometers
PROJECT:
THE PROJECT FOR WATER SUPPLY, SEWERAGE AND DRAINAGE MASTER PLAN OF FAISALABAD IN ISLAMIC REPUBLIC OF PAKISTAN
TITLE:
General Plan of Existing Sewer in the Western Zone (1/8)
DRAWING NO.:
SD-P-002

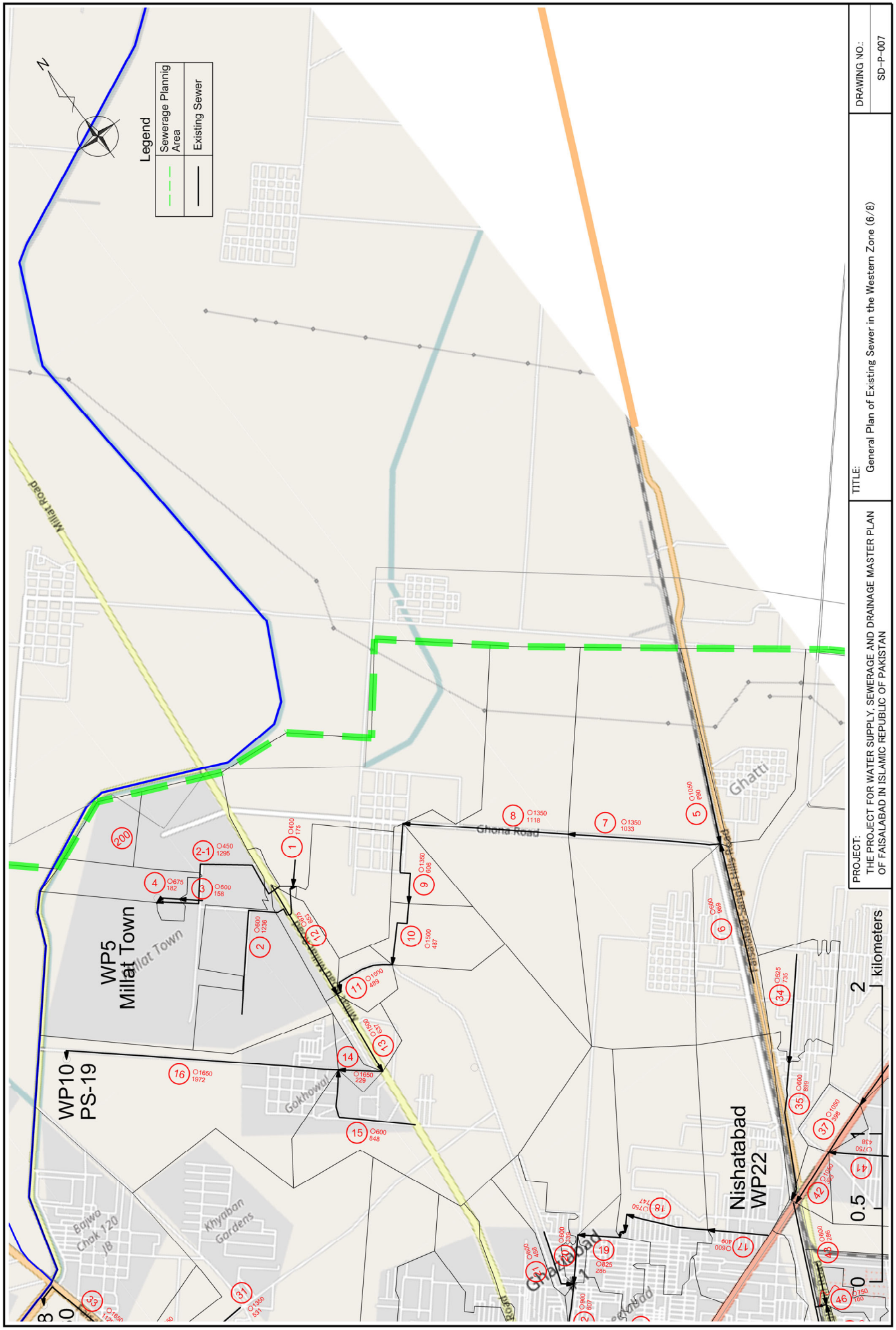

Legend
Sewerage Plannig Area
Existing Sewer
N
M4
Faisalabad bypass
Chokera Sewage Treatment
WP21
PS-3
WP11
PS-27
WP12
Weaver Colony
WP9
PS-38
WP8
Chak No. 07 /B Panjwar
Punj Pullian Road
Kashmir Road
Kaleem Shaheed Colony
0
0.5
1
2
kilometers
DRAWING NO.:
SD-P-003
TITLE:
General Plan of Existing Sewer in the Western Zone (2/8)
PROJECT:
THE PROJECT FOR WATER SUPPLY, SEWERAGE AND DRAINAGE MASTER PLAN OF FAISALABAD IN ISLAMIC REPUBLIC OF PAKISTAN

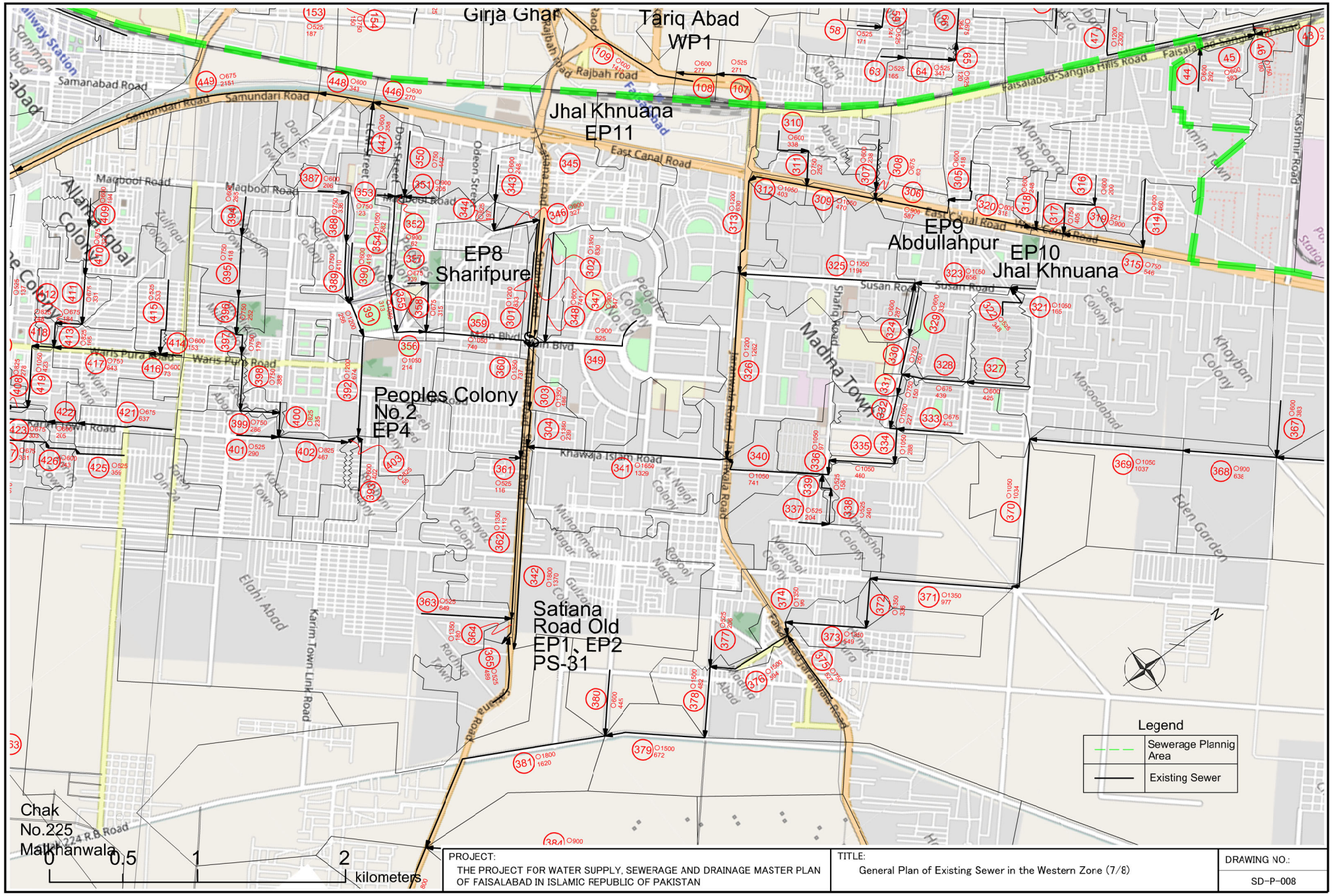


PROJECT:	TITLE:	DRAWING NO.:
THE PROJECT FOR WATER SUPPLY, SEWERAGE AND DRAINAGE MASTER PLAN OF FAISALABAD IN ISLAMIC REPUBLIC OF PAKISTAN	General Plan of Existing Sewer in the Western Zone (3/8)	SD-P-004

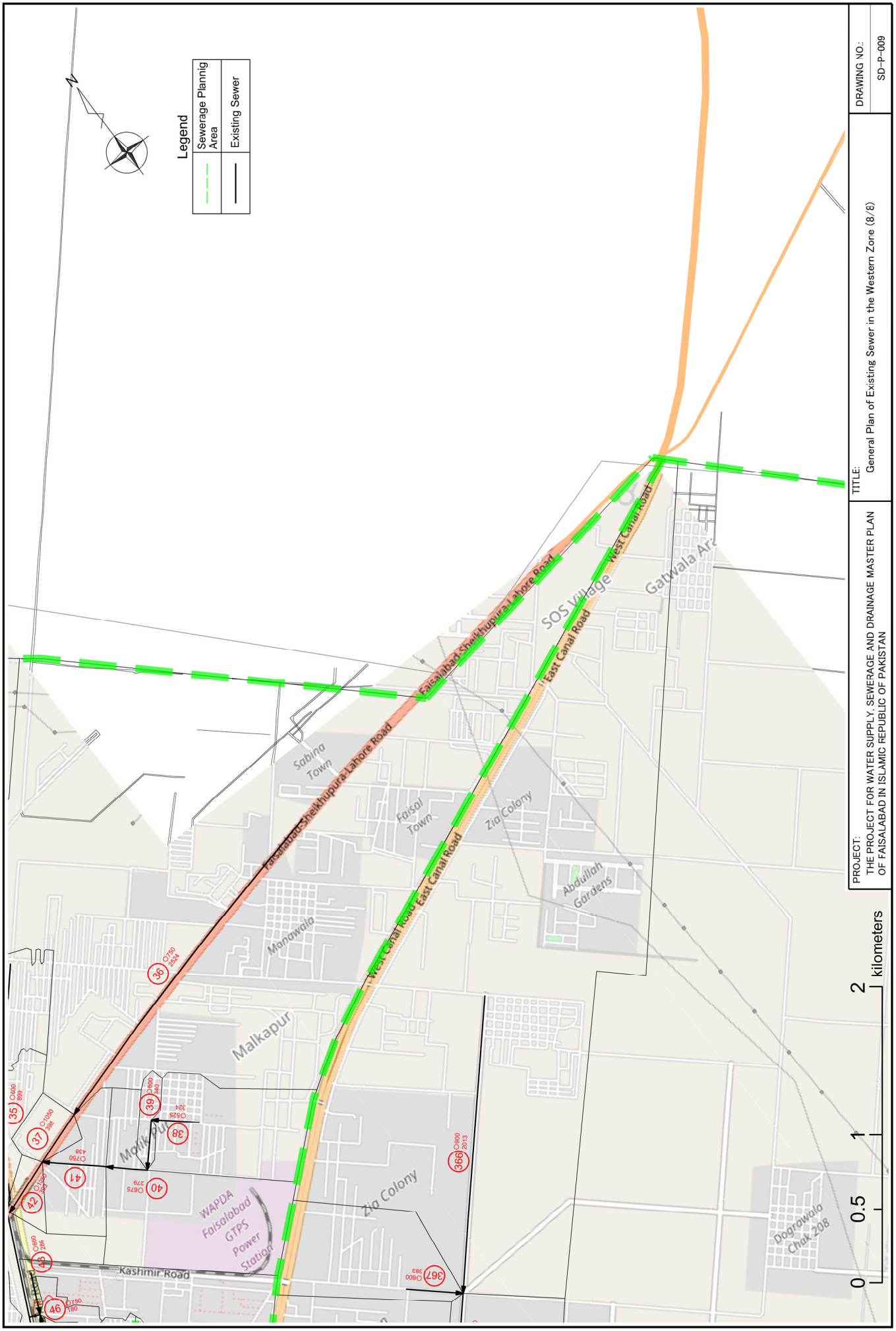

N
Legend
Sewerage Plannig Area
Existing Sewer
BABUWALA
Air Housing Colony
Shahbaz Town
Shabab
Liaqa
W
Jhang Road
EP12
PS-33
Sitara Colony
EP5
PS-34
Samana Aabad
Fatenabad
College Road
0
0.5
1
2
kilometers
PROJECT:
THE PROJECT FOR WATER SUPPLY, SEWERAGE AND DRAINAGE MASTER PLAN OF FAISALABAD IN ISLAMIC REPUBLIC OF PAKISTAN
TITLE:
General Plan of Existing Sewer in the Western Zone (4/8)
DRAWING NO.:
SD-P-005


WP8
PS-30
WP7
Noor Pur
Gulistan Colony
WP4
WP6
Shadman
WP3
Akber Abad
Chenab Chowk
WP2
Tariq Abad
WP1
Kanak Basti
WP13
WP14
Ghulshan Colony
WP20
Girja Ghar
Metropole
WP15
Shabab Colony
WP18
Liaqat Town
WP16
WP17
Jhang Road
Legend
Sewerage Planning Area
Existing Sewer
0
0.5
1
2
Kilometers
PROJECT:
THE PROJECT FOR WATER SUPPLY, SEWERAGE AND DRAINAGE MASTER PLAN OF FAISALABAD IN ISLAMIC REPUBLIC OF PAKISTAN
TITLE:
General Plan of Existing Sewer in the Western Zone (5/8)
DRAWING NO.:
SD-P-006


Legend
Sewerage Plannig Area
Existing Sewer
N
WP5
Millat Town
WP10
PS-19
Nishatabad
WP22
Millat Road
Ghona Road
Ghatti
Gokhowal
Khyaban Gardens
Bajwa Chak 120 JB
0
0.5
1
2
kilometers
PROJECT:
THE PROJECT FOR WATER SUPPLY, SEWERAGE AND DRAINAGE MASTER PLAN OF FAISALABAD IN ISLAMIC REPUBLIC OF PAKISTAN
TITLE:
General Plan of Existing Sewer in the Western Zone (6/8)
DRAWING NO.:
SD-P-007



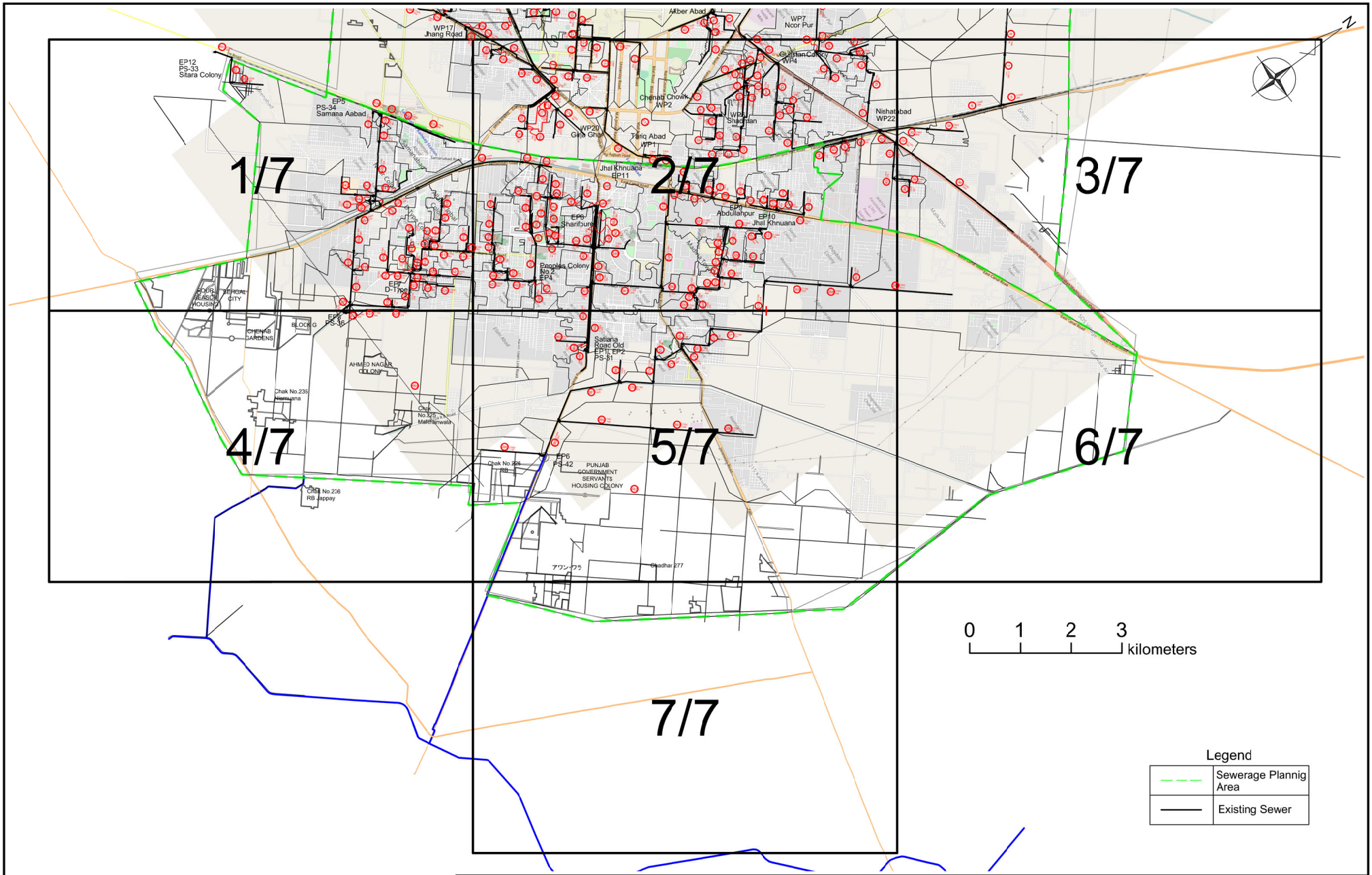
PROJECT:	TITLE:	DRAWING NO.:
THE PROJECT FOR WATER SUPPLY, SEWERAGE AND DRAINAGE MASTER PLAN OF FAISALABAD IN ISLAMIC REPUBLIC OF PAKISTAN	General Plan of Existing Sewer in the Western Zone (7/8)	SD-P-008



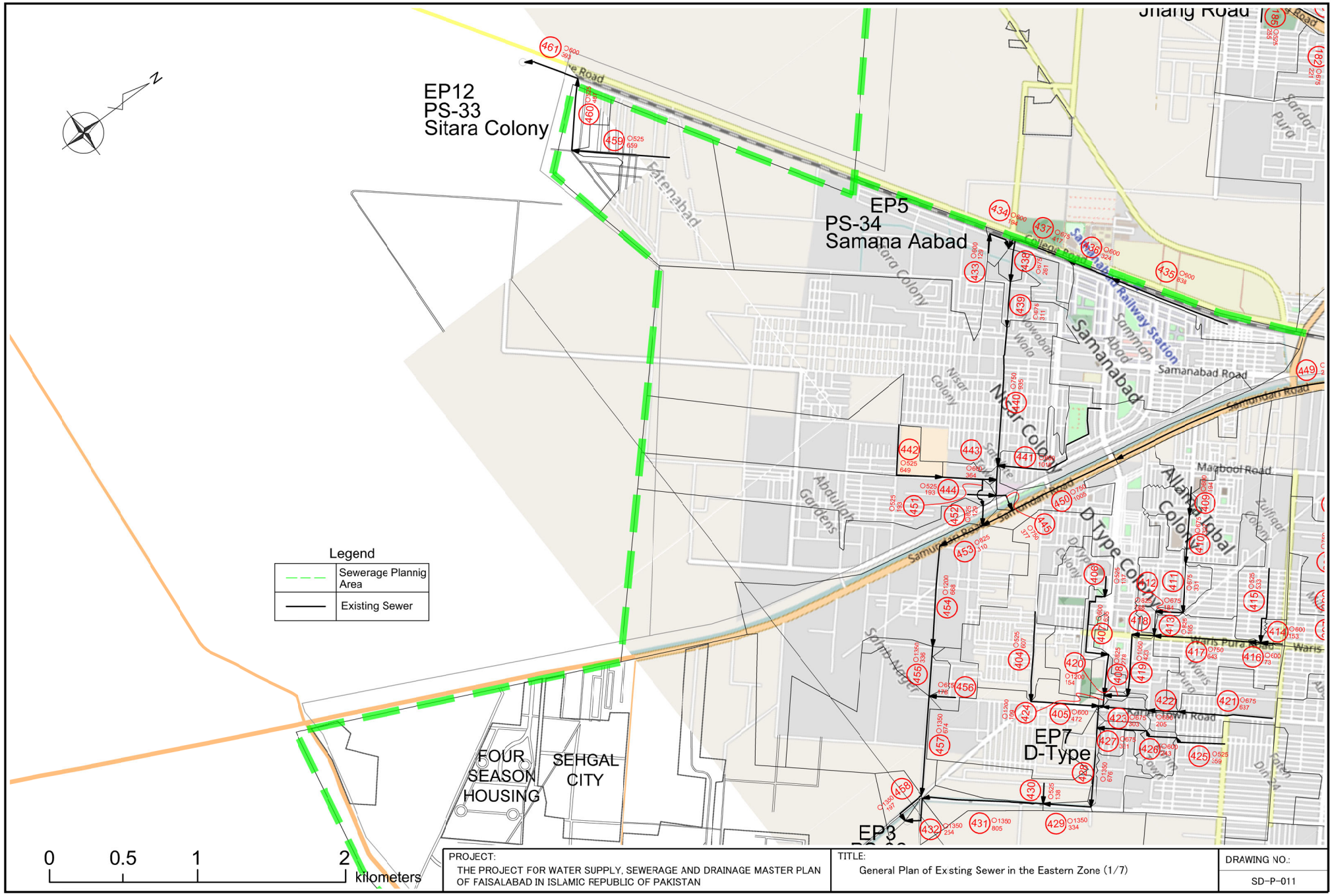
PROJECT:
THE PROJECT FOR WATER SUPPLY, SEWERAGE AND DRAINAGE MASTER PLAN OF FAISALABAD IN ISLAMIC REPUBLIC OF PAKISTAN

TITLE:
General Plan of Existing Sewer in the Western Zone (8/8)

DRAWING NO.:
SD-P-009



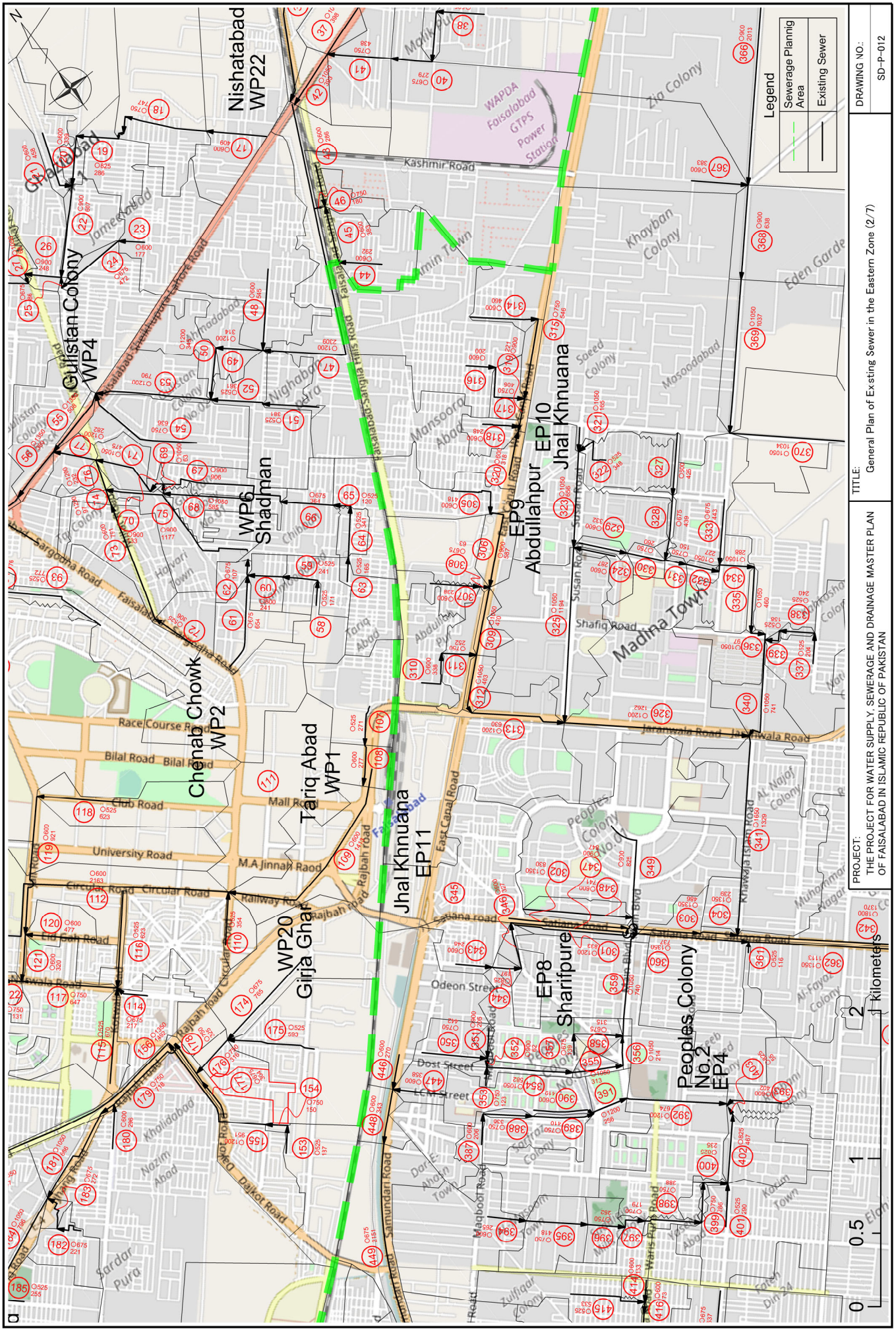
PROJECT:	TITLE:	DRAWING NO.:
THE PROJECT FOR WATER SUPPLY, SEWERAGE AND DRAINAGE MASTER PLAN OF FAISALABAD IN ISLAMIC REPUBLIC OF PAKISTAN	Key Plan of Existing Sewer in the Eastern Zone	SD-P-010

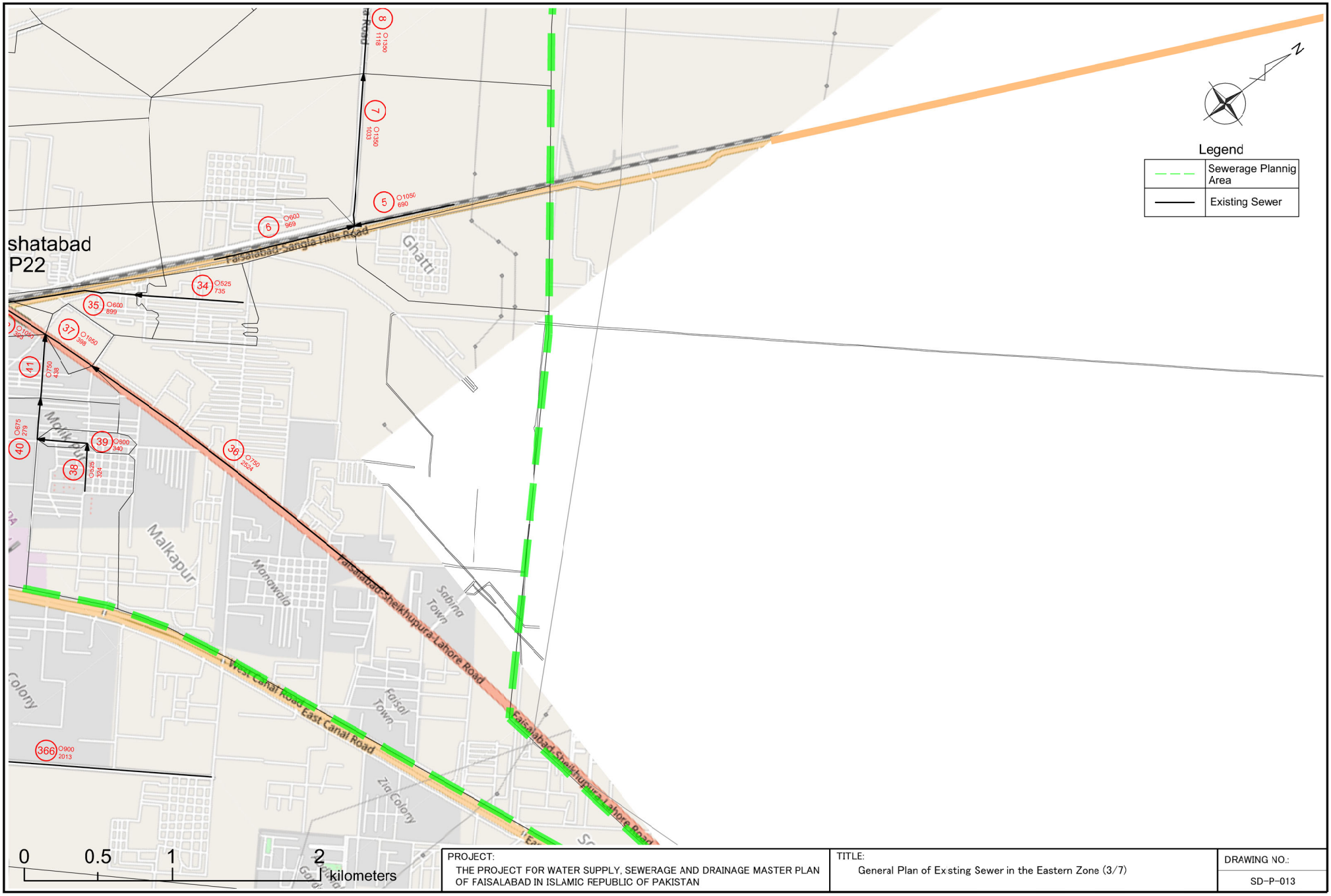


PROJECT:
THE PROJECT FOR WATER SUPPLY, SEWERAGE AND DRAINAGE MASTER PLAN OF FAISALABAD IN ISLAMIC REPUBLIC OF PAKISTAN

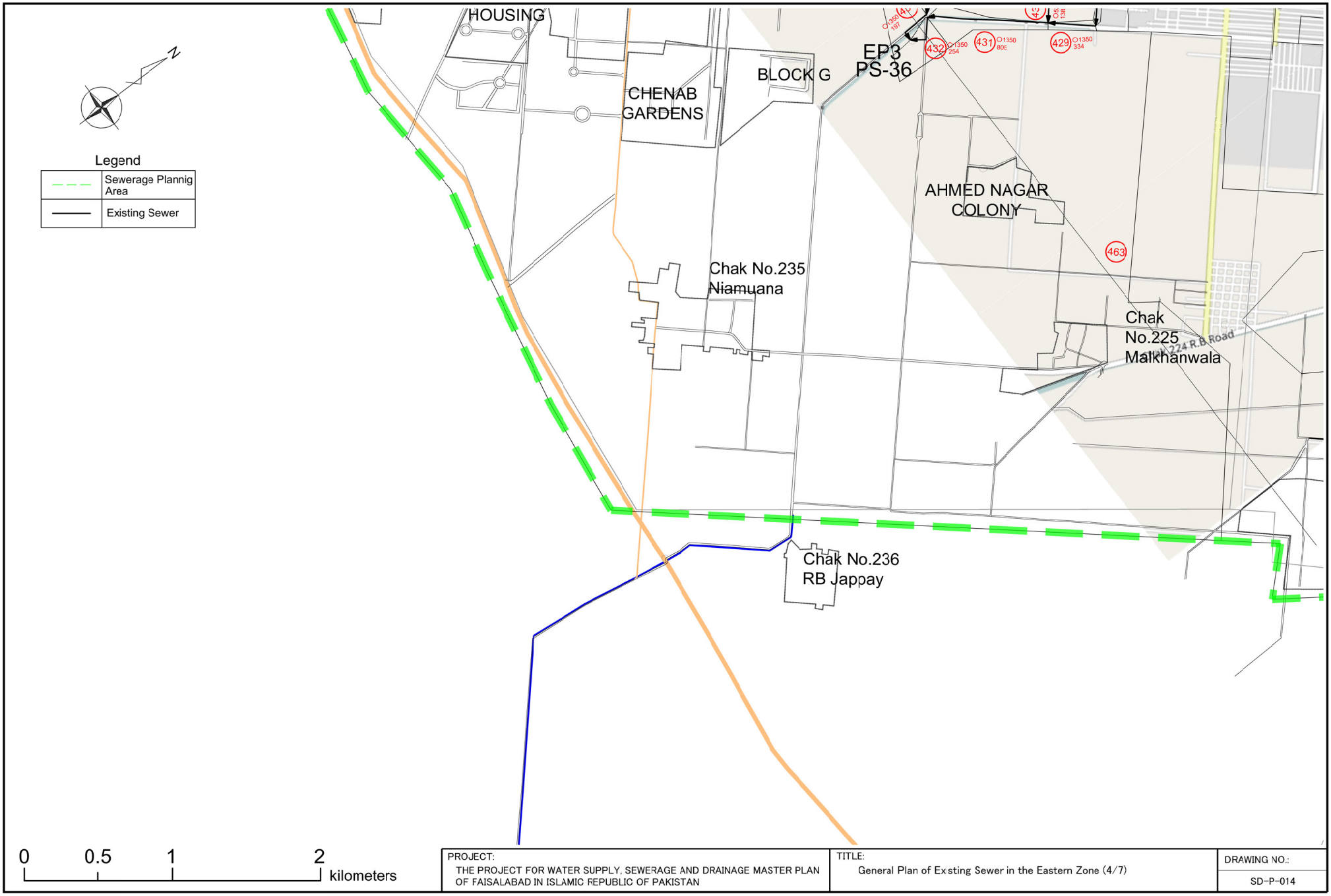
TITLE:
General Plan of Existing Sewer in the Eastern Zone (1/7)

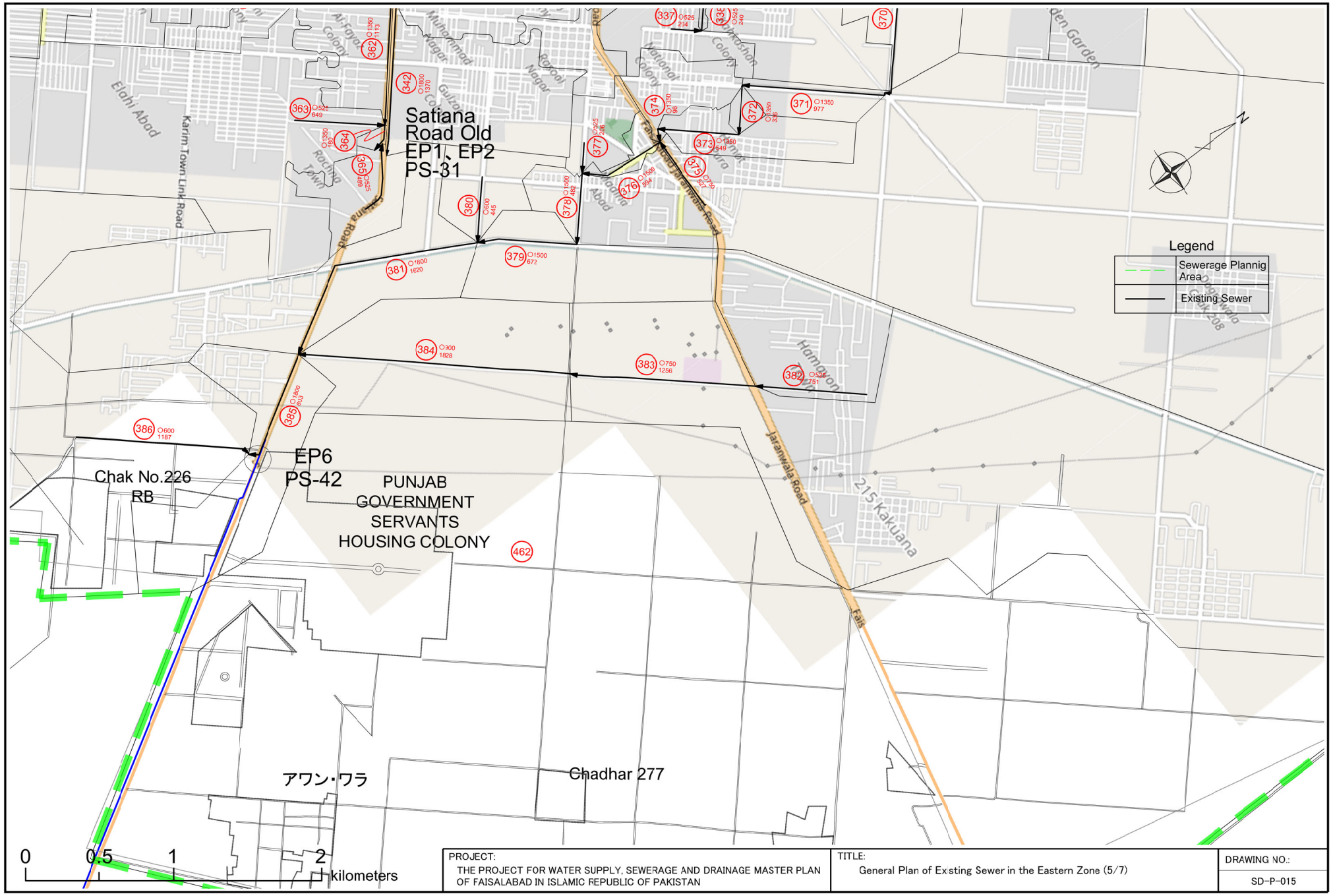
DRAWING NO.:
SD-P-011


Legend
Sewerage Plannig Area
Existing Sewer
DRAWING NO.:
SD-P-012
TITLE:
General Plan of Existing Sewer in the Eastern Zone (2/7)
PROJECT:
THE PROJECT FOR WATER SUPPLY, SEWERAGE AND DRAINAGE MASTER PLAN OF FAISALABAD IN ISLAMIC REPUBLIC OF PAKISTAN
Nishatabad WP22
Gulistan Colony WP4
WP6 Shadman
Chenab Chowk WP2
Tariq Abad WP1
WP20 Girja Ghar
Jhal Khnuana EP11
EP9 Abdullahpur
EP10 Jhal Khnuana
EP8 Sharifpure
Peoples Colony No.2 EP4
Kashmir Road
Madina Town
Jaranwala Road
Samundari Road
Dijkot Road
Faisalabad-Sangla Hills Road
Faisalabad-Shekhupura-Lahore Road
Faisalabad-Sargodha Road
Race Course Road
Bilal Road
Club Road
University Road
Circular Road
Mall Road
M.A Jinnah Raod
Rajbah road
Railway Road
Eid Gah Road
Odeon Street
Dost Street
LCM Street
Susan Road
Shafiq Road
East Canal Road
Madbool Road
Waris Pur Road
Khayban Colony
Zia Colony
Eden Garden
Mansoora Abad
Tariq Abad
Sardar Pura
Nazim Abad
Khoja Town
Kotla Town
Zulfiqar Colony
Al-Najaf Colony
Al-Fayaz Colony
Muhammadi Nagar
WAPDA Faisalabad GTPS Power Station
0 0.5 1 2 Kilometers



PROJECT:	TITLE:	DRAWING NO.:
THE PROJECT FOR WATER SUPPLY, SEWERAGE AND DRAINAGE MASTER PLAN OF FAISALABAD IN ISLAMIC REPUBLIC OF PAKISTAN	General Plan of Existing Sewer in the Eastern Zone (3/7)	SD-P-013

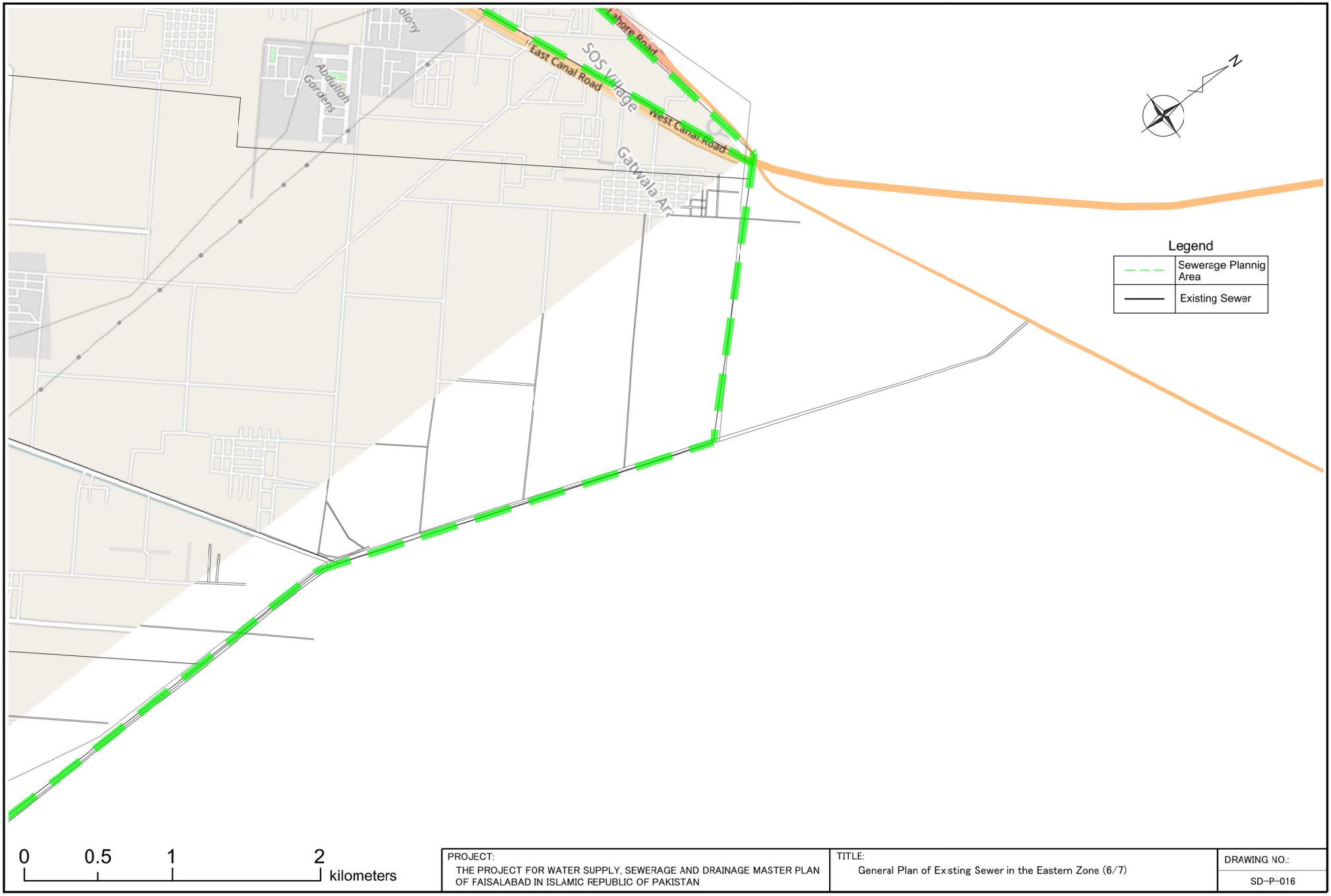

N
Legend
Sewerage Plannig Area
Existing Sewer
HOUSING
CHENAB GARDENS
BLOCK G
EP3
PS-36
AHMED NAGAR COLONY
Chak No.235 Niamuana
Chak No.225 Malkhanwala
Chak No.236 RB Jappay
0 0.5 1 2 kilometers
PROJECT:
THE PROJECT FOR WATER SUPPLY, SEWERAGE AND DRAINAGE MASTER PLAN OF FAISALABAD IN ISLAMIC REPUBLIC OF PAKISTAN
TITLE:
General Plan of Existing Sewer in the Eastern Zone (4/7)
DRAWING NO.:
SD-P-014

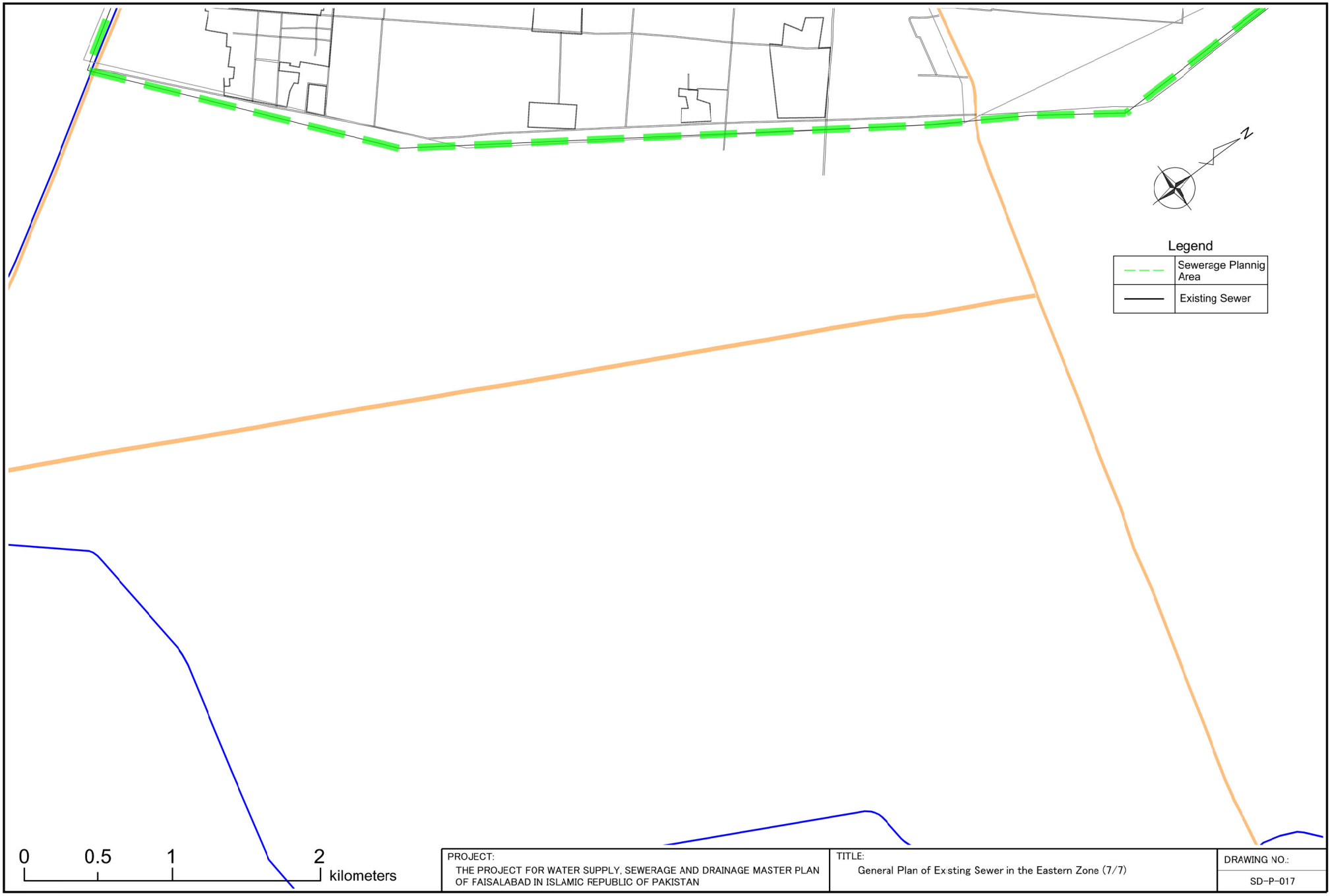


PROJECT:
THE PROJECT FOR WATER SUPPLY, SEWERAGE AND DRAINAGE MASTER PLAN OF FAISALABAD IN ISLAMIC REPUBLIC OF PAKISTAN

TITLE:
General Plan of Existing Sewer in the Eastern Zone (5/7)

DRAWING NO.:
SD-P-015


Lahore Road
East Canal Road
SOS Village
West Canal Road
Abdullah Gardens
Gatwala Are
N
Legend
Sewerage Plannig Area
Existing Sewer
0
0.5
1
2
kilometers
PROJECT:
THE PROJECT FOR WATER SUPPLY, SEWERAGE AND DRAINAGE MASTER PLAN OF FAISALABAD IN ISLAMIC REPUBLIC OF PAKISTAN
TITLE:
General Plan of Existing Sewer in the Eastern Zone (6/7)
DRAWING NO.:
SD-P-016



PROJECT:	TITLE:	DRAWING NO.:
THE PROJECT FOR WATER SUPPLY, SEWERAGE AND DRAINAGE MASTER PLAN OF FAISALABAD IN ISLAMIC REPUBLIC OF PAKISTAN	General Plan of Existing Sewer in the Eastern Zone (7/7)	SD-P-017