

	.....	1
1	.....	4
1.1	.....	4
1.2	.....	9
2	.....	15
2.1	.....	15
2.2	.....

6.4	.....	44
6.5	.....	46
6.6	.....	49
6.7	.....	49
6.8	.....	50
7	.....	51
7.1	.....	51
7.2	.....	51
7.3	.....	51
8	.....	52

~

200/10

丁楼平

胡晓华

胡金亮

/ 2~6

马美景

/ 1 7

白翠

/

陈花

2010 2020

~

ZXK1+000

ZXK4+986.66

3986m

40~70m

+

20.52hm²

18.35hm²

2.17hm²

59.24 m³

38.54 m³

18.87 m³

39.61

m³

19.41

2012

4 2012 12

2015 7

2015 11

2016 2

2019 4

2019 6

41

2013 2

2013 7 23

2013

7 23

[2013] 26

~

2019 5

~

2019

6 19

2019 7 29

[2019]

22

~

~

	~			
		3986m	40~70m	
			2016 2	2019 6
	20.52hm ²			20.52hm ²

1

1.1

1.1.1

~

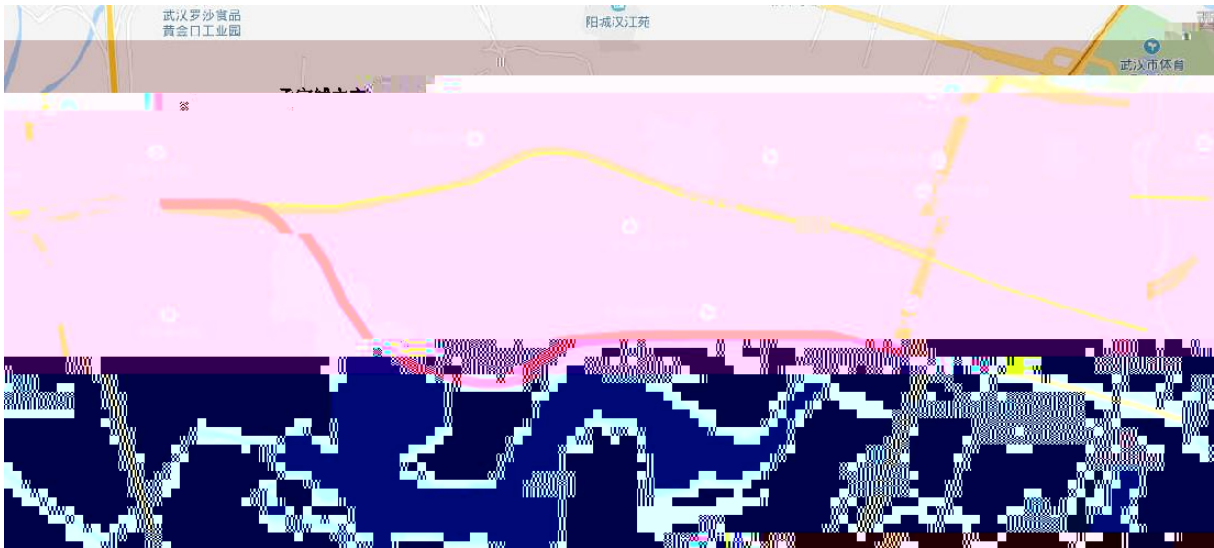
ZXK1+000

ZXK4+986.66

3986m

40~70m

+



1.1.2

~

ZXK1+000

ZXK4+986.66

3986m

40~70m

+

:

1.1.3

192072.42

107713.84

11024.44

5936.91

48209.62

7013.50

12174.11

1.1.4

ZXK1+000~ZXK1+860 ZXK2+827.67~ ZXK4+986.66
3018.99m 184.46m 2834.53m 40~70m

ZXK1+184.46
ZXK4+541=LK021=RK021 LK0+470.71
RK0+463.12 3356.54 m 26 m
449.71 m 442.12 m 12.75 m
30m

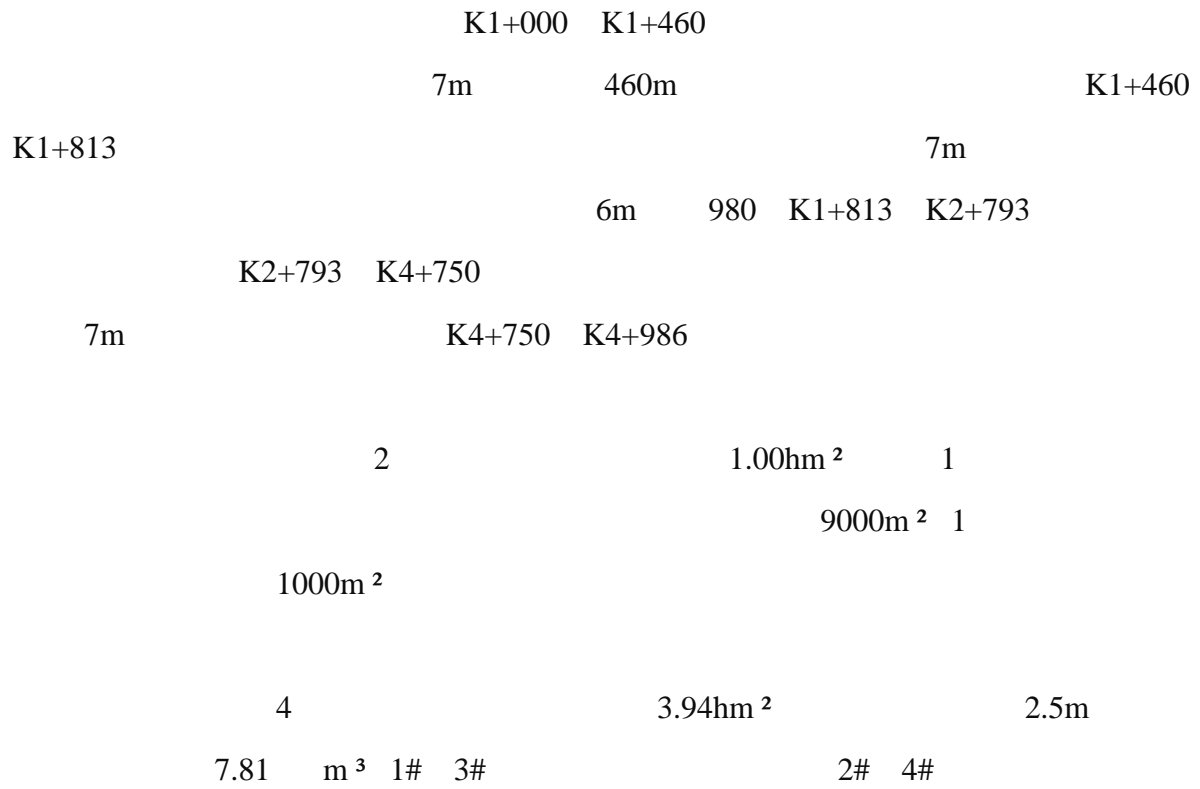
3

938.1m 8m
30m

;

d600mm~d800 mm HDPE 2177m
d1000mm ~d2000 mm 2941 BH=3.6m×2.0m ~5.5m×2.2m
382m;d400mm~d600 mm HDPE
2824 m d800 mm ~d1000 mm 1038 m DN300~DN400

201 m



1.1.5

~ 3986m 40~70m

+

:

2016 2 2019 6

41

1.1.6

38.54 m³ 18.87 m³ 59.24 m³

39.57 m³

1-1

1-1

		m ³	m ³	m ³		m ³		m ³		m ³	
		0.05				0.05					
		3.59								3.59	
		1.61	0.24			0.12					1.25
		0.04	0.16	0.12							
		0.59									0.59
		5.88	0.40	0.12		0.17					5.43
		1.04				1.04					
		48.04	37.05					18.87		29.86	
		1.73								1.73	
		1.78								1.78	
		0.77								0.77	
		53.36	37.05			1.04		18.87		34.14	
			1.09	1.09							
		59.24	38.54	1.21		1.21		18.87		39.57	

1.1.7

20.52hm²

18.35hm²

2.17hm²

1-2

1-2

hm²

		4.41	4.41		0.79	0.34	2.55	0.33	0.08	0.05	0.27
		9.90	9.90		0.93	5.29		0.43	1.11	1.50	0.64
		4.04	4.04		0.92	3.12					
		18.35	18.35		2.64	8.75	2.55	0.76	1.19	1.55	0.91
		3.94	3.36	0.58	0.37	3.57					
		2.53	1.94	0.59	0.32	1.62	0.59				
		1.00		1.00		0.80			0.20		
		7.47	5.30	2.17	0.69	5.99	0.59		0.20		
		20.52	18.35	2.17	2.79	9.98	3.14	0.76	1.39	1.55	0.91

1.1.8

10.84 m² 1~2

1.2

1.2.1

1

19.7 28.6m 1985

2

1 1-1

2 1-2

3 2-1

4 2-2

5 3-1

6 3-2

7 3-3

8 3-4

9 4-1

-

10 4-2

11 4-2a

12 4-2b

13 5-1

14 5-2

15 6

16 7-1

17 7-2

18 8

19 8b-1

20 8b-2

21 8c

22 9-12D

23 ~~9-222~~

24 9-2

VI

III

~~150~~

3

1256mm

98.6mm 332.6mm 20 1

590.4mm 20 1h 48.3mm 16.8 41.3

-18.1 5200 5300

1.5 3.3m/s 25m/s 2000 6

22 1928.6h 1437 1573mm 237 271

1-3

1256mm	2107.1mm	476.4mm	98.6mm	332.6mm
			20	1
458.3mm	203.3mm	590.4mm	339.0mm	48.3mm

4

368km²

(100m³/s)

(7 m³/s)

5

B

pH 5.5~6.7

20~40cm

2.94hm²

1.13 m³

14.3%

1.2.2

[2013]188

2016~2030

2011 2020

2018

14.11km²

12.65%

10.97km²

2.32km²

0.82km²

500t/km²a

170

2

2.1

1	2012	12	5			
~					[2012]58	
2	2015	7	2			
~					[2015]8	
3	2015	11	12			
~					[2015]44	
4	2013	7	23			~
					[2013] 26	
5	2019	7	29			~
					[2019] 22	

2.2

2013	2					
					2013 6	
	~					
		6	21			~
						~
2013	7	23			[2013] 26	

2.3

[2016]65
~
2019 5 24
~
2019
6
~
6 19
2019 7 29
[2019] 22

2.4

2015 11 12 [2015]44
M10
PVC

3

3.1

3.1.1

20.52hm² ~ 18.35hm² 2.17hm²
3-1

3-1

hm²

		4.41	4.41		4.41
		9.90	9.90		9.90
		4.04	4.04		4.04
		18.35	18.35		18.35
		3.94	3.36	0.58	3.94
		2.53	1.94	0.59	2.53
		1.00		1.00	1.00
		7.47	5.30	2.17	7.47
		20.52	18.35	2.17	20.52

3.1.2

1

2016 2 2019 6
2019 5

3-2

3-2

hm²

				-
		4.41	4.41	0.00
		9.90	9.90	0.00
		4.04	4.04	0.00
		18.35	18.35	0.00
		3.94	3.94	0.00
		2.53	2.53	0.00
		1.00	1.00	0.00
		7.47	7.47	0.00
		20.52	20.52	0.00

3.2

3.2.1

3-3

		hm ²	
		4.41	
		9.90	
		4.04	
		18.35	
		3.94	3.36
		2.53	1.94
		1.00	
		7.47	5.30
		20.52	

3.2.2

1

4.41hm²

2

9.90hm²

K3+820~K4+260

3

4.04hm²

4

1.00hm²

5

3.94hm²

6

2.53hm²



3-1

3.2.3

3-4

XB

3-5

			m ³	500
	M7.5		m ³	10400
			m	330
			m ³	343.20
			m ³	227.70
			m ³	105.60
			m	330
			m ³	230.1
		M10	m ³	772.4
			m ³	10900
			hm ²	4.04
			m ³	400
			m ³	400
			hm ²	1.00
			m ³	3000
			hm ²	3.94
			m ²	1678
			m ²	40400
			m ²	0.58
			kg	46.4
			m ²	1.00
			kg	80.00
			m ²	6800
			m	37.38
			m	10552
			m ³	5698.08
			m ³	3165.6
				2
			m ³	13.68
			m ³	7.58
			m ²	42300
		m	10580	
			m ²	40400
		m ²	0.58	

			kg	34.8
			m ²	

							-
				2	2		
			m ³	13.68	13.68		
			m ³	7.58	7.58		
			m ²	42300	42300		
			m	10580	10580		
			m ²	40400	40400		
			m ²	0.58	0.58		
			kg	34.8	34.8		
			m ²	39400	39400		
			m ²	850	850		
				351	351		
			m ³	189.54	189.54		
			m ³	105.30	105.3		
			m ²	500	500		
				421	421		
		m	421	421			

3-7

				2016	2017	2018	2019		
			m ³	500				500	
	M7.5		m ³	10400					10400
			m				330		330
			m ³				343.20		343.20
			m ³				227.70		227.70
			m ³				105.60		105.60
			m				330		330
			m ³					230.10	230.10
	M10		m ³					772.40	772.40
			m ³					10900	10900
			hm ²					4.04	4.04
			m ³					400.00	400.00
			m ³					400.00	400.00
			hm ²					1.00	1.00
			m ³					3000.00	3000.00
		hm ²					3.94	3.94	
		m ²				1678		1678	

				2016	2017	2018	2019		
			m ²				40400	40400	
			m ²				0.58	0.58	
			kg				46.40	46.40	
			m ²				1.00	1.00	
			kg				80.00	80.00	
				m ²	4080	1632	1088		6800
			m	37.38				37.38	
			m	6331	4221			10552	
			m ³	3418.85	2279.23			5698.08	
			m ³	1899.36	1266.24			3165.60	
					2			2	
				m ³		13.68			13.68
				m ³		7.58			7.58
				m ²	21996	13113	2538	4653	42300
				m	10580				10580
				m ²	16160	9696	6464	8080.00	40400
				m ²	0.58				0.58
				kg	34.8				34.80
				m ²	39400				39400
				m ²	850				850
					351				351
				m ³	189.54				189.54
				m ³	105.3				105.30
				m ²	500				500
			m	421				421	

3-8

1		1		m ² 40400
2		1		m ³ 10502
3		1		m ³ 2100
4		1	2 17~18cm 3	
		601cm 4	451cm 5	680

		3	6	9	7	8		
		300						
5		1 601cm 6	4	2 401cm 9 7 300	16~18cm 5	3 8		89
6		1 3	221cm 3	2 4	7.1~8cm 151cm 9 7	5		42
7		1 3	221cm 3 6 0.8m	2 4	7.1~8cm 161cm 9	5		129

19		1	2	41~50cm	3	35cm	
		4	25	/ m ²	5	3	m ²
		6	9				7630

20		1	2	L50cm	3		
		25	/ m ²	4	3	5	m ²
		9					597

3.4

3.4.1

			2717.32
65.28	2056.94		481.52
78.77	27.78		5.00
30.78			

3-9

			m ³	500	0.40
			m ³	10400	8.34
			m	330	
			m ³	343.20	1.17
		M7.5	m ³	227.70	2.43
			m ³	105.60	1.09
			m	330	
			m ³	230.10	2.78
		M10	m ³	772.40	13.52
			m ³	10900	8.16
			hm ²	4.04	5.34
			m ³	400	0.32
			m ³	400	0.30
			hm ²	1.00	1.32
			m ³	3000	14.90
			hm ²	3.94	5.21
					65.28
			m ²	1678	20.14
			m ²	40400	2036.16
			m ²	0.58	0.06
			kg	46.4	0.18

m²

1.00

0.10

3-10

	65.28
	2056.94
	481.52
	2603.74
	1.34
	32.74
	5.00
	27.78
	11.91
	78.77
	4.03
	30.78
	2717.32

2

~

3-11

3-11

	65.28	65.28	
	2056.94	2056.94	
	481.52	481.52	
	2603.74	2603.74	
	1.34	1.34	
	32.74	32.74	
	5.00	5.00	
	27.78	27.78	
	11.91	11.91	
	78.77	78.77	
	4.03	4.03	
	30.78	30.78	
	2717.32	2717.32	

3-12

						-	
			m ³	0.40	0.40		
				m ³	8.34	8.34	
				m			
				m ³	1.17	1.17	
			M7.5	m ³	2.43	2.43	
				m ³	1.09	1.09	

						-	
			m				
			m ³	2.78	2.78		
		M10	m ³	13.52	13.52		
			m ³	8.16	8.16		
			hm ²	5.34	5.34		
			m ³	0.32	0.32		
			m ³	0.30	0.30		
			hm ²	1.32	1.32		
			m ³	14.90	14.90		
			hm ²	5.21	5.21		
				65.28	65.28		
				m ²	20.14	20.14	
			m ²	2036.16	2036.16		
			m ²	0.06	0.06		
			kg	0.18	0.18		
			m ²	0.10	0.10		
			kg	0.30	0.30		
				2056.94	2056.94		
			m ²	4.20	4.20		
			m	19.01	19.01		
			m				
			m ³	19.37	19.37		
			m ³	124.64	124.64		
			m ³	0.05	0.05		
			m ³	0.30	0.30		
			m ²	26.10	26.10		
			m	211.60	211.60		
			m ²	24.93	24.93		
				m ²	0.06	0.06	
				kg	0.13	0.13	
				m ²	24.31	24.31	
				m ²	12.75	12.75	
				m ³	0.64	0.64	
				m ³	4.15	4.15	
				m ²	0.31	0.31	
				m	8.42	8.42	

						-
				0.55	0.55	
				481.52	481.52	
				78.77	78.77	
				1.34	1.34	
				5.00	5.00	
				32.74	32.74	
				27.78	27.78	
				11.91	11.91	
				4.03	4.03	
				30.78	30.78	
				2717.32	2717.32	

2019 6

2016 2
2019 5

4

4.1

4.1.1

4.1.2

4.1.3

4.1.4

/

4.1.5

66

4-1

4-1

1		1		1		4				4
2		1		1		4				4
3		1		1			5	3	3	11
				1				2		2
4		1		1			5	2	2	9
				1	30		6			36
		4		6	66					

4.2.2

~

GB/T22490-2008

50%

2

3

33

100%

95%

~

~

4

6

66

100%

4-2

4-2

1		1			1		4	4	100%
2		1			1		4	4	100%
3		1			1		11	11	100%
					1		2	2	100%
4		1			1		9	9	100%
					1		36	36	100%

~

4.3

4

8

5

5.1

5-2

	hm ²	hm ²	hm ²	%
	4.41	4.41	4.41	100.0
	4.60	4.60	4.60	100.0
	4.04	4.04	4.02	99.5
	3.94	3.94	3.89	98.7
	2.53	2.53	2.50	98.8
	1.00	1.00	1.00	100.0
	20.52	20.52	20.42	99.5

5.2.2

6 , 2019
1.67

5.2.3

59.24 m³
58.35 m³ 98.50%

5.2.4

1.13 m³
1.12 m³ 99.2%

5.2.5

~ 20.52hm²
6.23hm² 6.21hm²
99.7

5-3

	hm ²	(hm ²)	(hm ²)	(%)
	4.41	0.02	0.01	50.0
	4.60			
	4.04	4.04	4.03	99.8
	3.94	0.58	0.58	100.0
	2.53	0.59	0.59	100.0
	1.00	1.00	1.00	100.0
	20.52	6.23	6.21	99.7

5.2.6

~

20.52hm²

6.21hm²

30.3%

5-4

	hm ²	(hm ²)	%
	4.41	0.01	0.2
	4.60		
	4.04	4.03	99.8
	3.94	0.58	14.7
	2.53	0.59	23.3
	1.00	1.00	100.0
	20.52	6.21	30.3

5.2.7

5-5

(%)	98		hm ²	20.42	99.5	
			hm ²	20.52		
	1.1		t/km ² a	500	1.67	
			t/km ² a	300		
(%)	98		m ³	58.35	98.5	
			m ³	59.24		
%	92		m ³	1.12	99.2	
			m ³	1.13		

(%)	98		hm ²	6.21	99.8	
			hm ²	6.23		
%	26		hm ²	6.21	30.3	
			hm ²	20.52		

5.3

(GB/T22490-2008)

50 50 100%

5-6

5-6

			42	8
			27	23
		<40	31	19
				22

6

6.1

6.1.1

~

~

6.1.2

1

2

3

4

5

6.2

~

~

6.3

6.3.1

~

6.3.2

6.4

6.4.1

2017 6

2017 7

2019 6

6.4.2

3

6-1

6-1

1			1
2		1#	1
3		1#	1
			3

6.4.3

1
1 1
1 1
1 1

6.4.4

2017 8 2019 6

~

2017 6

2017 7

2019 6

~

6.4.5

~

				59.24 m ³
	38.54 m ³	18.87 m ³	39.57 m ³	
	400t/km ² a		500t/km ² a	
1.25				
				2019 6
	99.5%			
	1.67		98.5%	99.2%
	99.8%	30.3%		

6.5

2016 2

6.5.1

1

2016 2

4

6

66

2

1

3

6.5.2

6-2

6-2

			m ³	500	
			m ³	10400	
			m	330	
			m ³	343.20	
		M7.5	m ³	227.70	
			m ³	105.60	
			m	330	
			m ³	230.1	
		M10	m ³	772.4	
			m ³	10900	
		hm ²	4.04		
			m ³	400	
			m ³	400	
			hm ²	1.00	
			m ³	3000	
			hm ²	3.94	
			m ²	1678	
			m ²	40400	
			m ²	0.58	
			kg	46.4	
			m ²	1.00	
			kg	80.00	
			m ²	6800	
			m	37.38	
			m	10552	
			m ³	5698.08	
			m ³	3165.6	
				2	

			m ³	13.68		
			m ³	7.58		
			m ²	42300		
			m	10580		
				m ²	40400	
				m ²	0.58	
				kg	34.8	
				m ²	39400	
				m ²	850	
					351	
				m ³	189.54	
				m ³	105.3	
				m ²	500	
			m	421		

6.6

~

6.7

~

[2019] 22

30.78

30.78

2018 8

6.8

~

7

7.1

~

~

7.2

~

1

2

3

7.3

1

2

