

0072

ZW17-1661-SB-177



法定代表人：潘裕和

张

张和明

张

张

余振华

			张霞
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			余振华

		104 45 42.94 31 30 23.39			
		10 6 33474.65m² 5481.95m² 600m 4m 18 285 0.56hm² 209m 16m 0.47hm² 0.48hm²			
					6357.80
		2388.13	hm²		2.44
					0.00
		2012 2			2013 5
	m³				
		1.94	1.94	0	0
	[t/(km²·a)]	300	[t/(km²·a)]	500	
		GB50433 2018			
		174.30t			
hm²		2.44			
	%	97		1	
	%	94	%	92	
	%	97	%	25	
	1				
	1				
	2	0.35hm²	30cm	0.11 m³	
		6500m²			

2
1
240mm
DN300mm
20
25
0.54hm²
2
0.20m
1.0m
3
3
1
2
2800m²
8~12 /m²
1000m
M5
P=3
HDPE
0.70m
100
700
30cm
4.0m
8.0m
200m
M7.5
1.50m
1.0m
12cm
M7.5
0.25m
0.25m
0.5%
500m
0.16 m³
400m²
0.57hm²
0.95hm²
30cm
46cm
0.17 m³
0.44 m³
587
800m²
28000
5900

1	.....	1
1.1	.....	1
1.2	.....	4
1.3	.....	5
1.4	.....	5
1.5	.....	5
1.6	.....	6
1.7	.....	7
1.8	.....	7
1.9	.....	8
1.10	.....	9
1.11	.....	9
2	.....	10
2.1	.....	10
2.2	.....	11
2.3	.....	16
2.4	.....	18
2.5	.....	18
2.6	.....	22
2.7	.....	22
2.8	.....	23
3	.....	25
3.1	.....	25
3.2	.....	27
3.3	.....	28
3.4	.....	30
4	.....	31

4.1	.....	31
4.2	.....	31
4.3	.....	31
4.4	.....	34
4.5	.....	34
5	.....	36
5.1	.....	36
5.2	.....	36
5.3	.....	37
5.4	.....	41
6	.....	43
7	.....	44
7.1	.....	44
7.2	.....	52
8	.....	55

1

1.1

1.1.1

	10	6	33474.65m ²	
5481.95m ²			600m	4m
18		285		
0.56hm ²			5~12m	1 3~1 4
			209m	
		0.95hm ²		16m
0.47hm ²				0.48hm ²
	2.44hm ²			
	1.94 m ³	0.44 m ³	1.94 m ³	
0.44 m ³				
2012 2	2013 5	15		
6357.80	2388.13			

1.1.2

1				
2009 2 4				
			[2009]80	
			800	
35924.4m ²				

=====

2009 3 30

[2009]349 700 34917m²

2011 4 21

[2011]306

651 33560m²

6565.4

2009 4 9

[2009]082

2013 12 6

2013 29196

2020 5 20

2020 039

2020 11 12

2

2012 2 2013 5 15

2012 2 ~2012 11 10

2012 6 ~2013 2

2013

1.1.3

GB 18306		2001						1	
		7						0.10g	
				0.40s					
		462.80m~468.40m				5.60m			
		70km ²							
13									
1.60km				1.0km					
						16.5℃		280	
		10℃						1278.3	
		990mm		6~9		20		24h 6h 1h	
264.0mm	156.4mm	75.2mm	10	24h	6h	1h			212.4mm
128.0mm	66.2mm	5	24h	6h	1h			162.0mm	104.8mm
56.7mm									

1.2

1.2.1

1				1991	6	29		2010	12
25		2011	3	1					
2						1993	8	1	
		120		2011					

1.3

2012 2 2013 5

GB50433-2018

2021

1.4

2.44hm²

0.59hm² 0.90hm² 0.95hm² 3

1.5

1.5.1

GB50434-2018

- 1
- 2
- 3
- 4

GB50434

1.5.2

[2013]188 [2017]482

GB50434-2018

1.5.3

GB/T50434-2018

1-1

%	-	97
	-	0.85
%	90	92
%	92	92
%	-	97
%	-	23

GB50434-2018 4.0.7

1 4.0.9

1%~2%

1

2%

1-2

%	-	97		-	97
	-	0.85	+0.15	-	1
%	90	92	+2	92	94
%	92	92		92	92
%	-	97		-	97
%	-	23	+2	-	25

1.6

GB50433 2018

GB50433 2018

GB50433 2018

1.7

13.26t 187.56t
155.48t 32.08t
174.30t 148.16t 26.14t
85%
25%
18% 35%
47%

1.8

1.8.1

1
0.35hm² 30cm 0.11 m³
2
6500m²

1.8.2

1
1000m 0.25m
0.25m 240mm M5 100
0.5%
P=3 HDPE 500m
DN300mm 0.70m
20
25 700
0.54hm² 30cm 0.16 m³
2
4.0m 8.0m

=====

					200m	
		0.20m	0.30m		M7.5	
					1.50m	
1.0m	1.0m				12cm	M7.5
	3					
			8			
	400m ²					
1.8.3						
	1					
		0.57hm ²		30cm	0.17	m ³
			0.95hm ²		46cm	0.44
	m ³					
	2					
		9500m ²	587	800m ²		28000
	2800m ²	8~12	/m ²		5900m ²	
	100kg/hm ²	59kg				
	3					
			3000m ²			

1.9

[2019]160

1.10

		220.25		214.08	
		6.17		93.60	
106.56			13.92	3.00	
		3.166			
		2.44hm ²		2.44hm ²	
0.99hm ²					
175.49t			99.59%	97%	
1.83	1.0		100%	94%	100%
92%			98.99%	97%	
40.16%	25%				

1.11

GB50433 2018

1

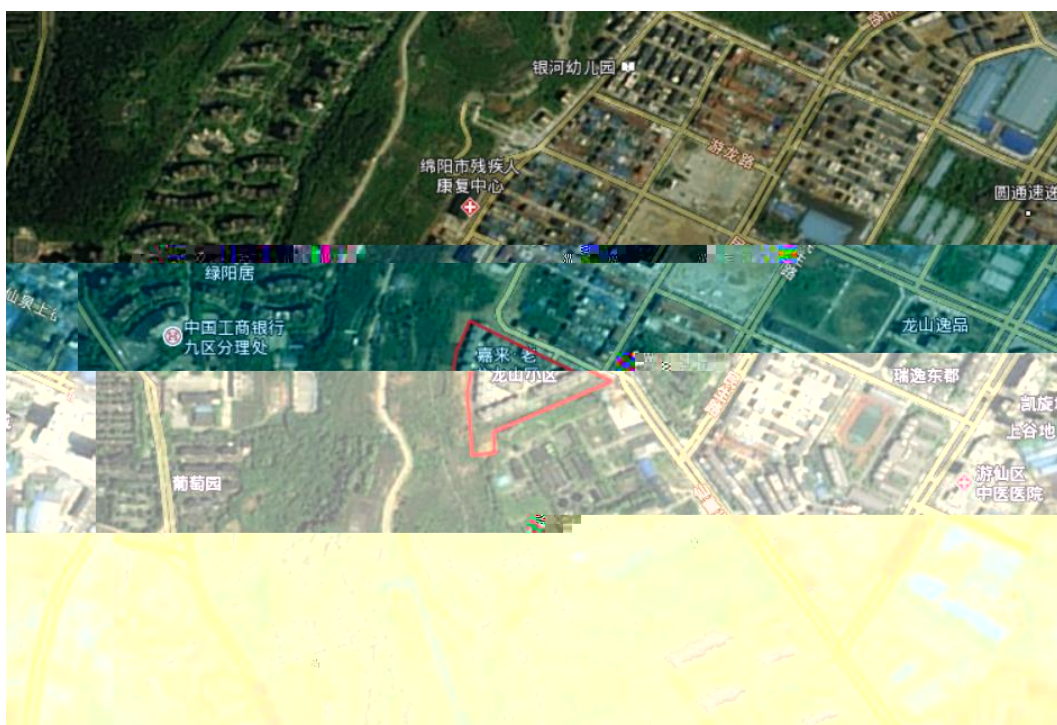
2

2019 160

2

2.1

1



2-1

2

=====

[2009]349

[2011]306

651

33560m²

6565.4

10

1#~10#

33474.65m²

6357.80

2.44hm²

2012

2

2013

5

15

6357.80

10 3 0.70m
1%~2%

2.2.2

2.2.2.1

10 1#~10#
6 33474.65m² 5481.95m²
CFG
350-400mm 2.5-7.5m

2.2.2.2

1
2 1#
4#
2
600m 4m 0.24hm²
120 C25 6m×6m
30
100
3
18 400m² 285 600m²
0.10hm² 8
8 80mm 1:2.5
100mm C10 200mm

0.56hm²

5~12m 1 3~1 4

5~12m 1 3~1 4

1

1

1# 4# DN200 0.20MPa

2

PE DN50~DN150 1250m 0.70m

86 700

2

æ s À V

1

2

HDPE 8.0KN/m² 6.3KN/m² DN300mm

0.70m 1500m

3 Z13-100SQF Z11-50SQF

12h

1

10

3

2

1000m

0.25m

0.25m

240mm

M5

100

0.5%

HDPE

8.0KN/m²

6.3KN/m²

DN300mm

0.70m

0.1%~0.3%

500m

20m~30m

25

700

30m

20

3

VV22-0.6×1KV

-800mm

-0.8m

100mm

,

60m

10m

2.2.3

2012	2	2013	5	15
------	---	------	---	----

1

2012	2	~2012	11	10
------	---	-------	----	----

2

2012	6	~2013	2
------	---	-------	---

4

2013	3	~2013	4
------	---	-------	---

5

2.3

2.3.1

2.3.2

2.4

0.59hm²

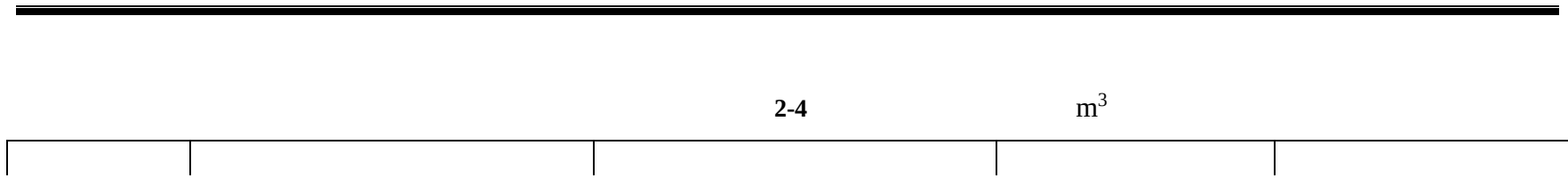
0.90m²

2.44hm²

0.95hm²

2.44hm²

2-



2

CFG

350-400mm

2.5-7.5m

1.12 m³

3

1250m

500m

1500m

DN50~DN150

DN300mm

DN300mm

0.70m

1000m

0.25m

0.25m

0.36 m³

0.10 m³

0.26 m³

4

209m

6m

0.50m

0.50m

1:0.25

0.02

m³

2.5.2

0.44 m³

0.58 m³

2.5m

0.23hm²

3000m²

2-5				m ³							
		0.11	0.00			0.11					
		1.12	1.12								
		0.16	0.00			0.16					
		0.36	0.10			0.26					
		0.02	0.02								
		0.17	0.44	0.27							
		0.00	0.26	0.26							
		1.94	1.94	0.53		0.53					

2.8

1989

1 5

GB 18306 2001

1

7

0.10g

0.40s

462.80m~468.40m

5.60m

70km²

13

1.60km

1.0km

16.5°C

280

10°C

1278.3

990mm

300t/km²·a

500t/km²·a

3

3.1

3.1.1

GB50433 2018

3-1

GB50433 2018

1			
2		1.60km 1.0km	
3			

3.1.2

3-2

1			
2			

3			

3.1.3

2007 184

[2014]282

3-3

3-3

		/	/
1	25		/
2			
3			/
4			
5			/

[2013]188

[2017]482

GB50433 2018

3.2

[2009]082

2.44hm²

1.94 m³ 1.94 m³

1.46hm² 30cm 0.44 m³

GB50433 2018

3.3

3.3.1

1					
	0.35hm ²	30cm	0.11 m ³		
2					
1.12 m ³		1.50 m ³	2.5m	0.60hm ²	
	6500m ²				

3.3.2

1					
		1000m		0.25m	
0.25m	240mm	M5		100	
	0.5%				
2					
			HDPE		
	8.0KN/m ²		6.3KN/m ²	DN300mm	
	0.70m	0.1%~0.3%	500m	20m~30m	
	25		700		
		30m	20		
3					

		0.54hm ²	30cm	0.16	m ³	
4						
		8				400m ²
5						
				4.0m	8.0m	
		50cm		C20		
10cm						
6						
				200m		
	0.20m	0.30m		M7.5		
7						
					1.50m	
1.0m	1.0m			12cm	M7.5	

3.3.3

1						
		0.57hm ²	30cm	0.17	m ³	
2						
		0.95hm ²		46cm	0.44	m ³
3						
				0.95hm ²		
	16m	0.47hm ²				
	0.48hm ²				587	

800m ²	28000	2800m ²	8~12 /m ²
	5900m ²	100kg/hm ²	59kg
4			
	0.44 m ³		0.58 m ³
		2.5m	0.23hm ²
		3000m ²	

3.4

3-4

							(
			m ³	1100	m ³	20.31	2.23
			m ²	6500	m ²	11.50	7.48
			m ³	1600	m ³	20.31	3.25
		M5M5	m	1000	m	249.94	24.99
		dn300	m	500	m	1029.29	51.46
				25		810.22	2.03
				20		552.42	1.10
				1		2688.97	0.27
			m	200	m	132.16	2.64
				1		813.67	0.08
			m ²	400	m ²	98.21	3.93

4

4.1

			2019
21		2019	240.23km ²
	147.72km ²	62.69km ²	22.52km ²
	5.81km ²	1.49km ²	
	462.80m~468.40m		5.60m
		300t/km ² ·a	

4.2

2.44hm²

4.3

4.3.1

GB50433-2018

2.44hm²

3

4-1

	hm ²	
	0.59	0.00
	0.90	0.04
	0.95	0.95
	2.44	0.99

4.3.2

GB50433 2018

2

1

12

12

20122201351

2

2

4.3.3

1

SL190 2007

4-2

		hm ²	。	%		t/km ² ·a	t/a
		0.35	5~8	/		300	1
		0.24	5	/		300	1
		0.59				300	2
		0.54	5	/		300	2
		0.36	5~8	/		300	1
		0.90				300	3
		0.57	5~8	/		300	2
		0.38	5	/		300	1
		0.95				300	3
		2.44				300	8

2

1

SL773-2018

$M_{kw} = RG_{kw}L_{kw}S_{kw}A$

M_{kw}

t

R

MJ. mm/ (hm²

G_{kw}

/

mm)

L_{kw}

=====

S_{kw}

A

hm²

4-3

		R	G _{kw}	L _{kw}	S _{kw}	A	Myz	t/km ² ·a

4-5

		hm ²	a	t/(km ² a)	t/(km ² a)	t	t	t
		0.59	1.00	300	5749	1.77	33.92	32.15
		0.90	1.00	300	6993	2.70	62.94	60.24
		0.04	2.00	300	1250	0.24	1.00	0.76
		0.95	1.00	300	6171	2.85	58.62	55.77
		0.95	2.00	300	1636	5.70	31.08	25.38
		2.44				7.32	155.48	148.16
		0.99				5.94	32.08	26.14
						13.26	187.56	174.30

13.26t

187.56t

155.48t

32.08t

174.30t

148.16t

26.14t

4.4

1

2

3

4.5

13.26t

187.56t

5

5.1

2.44hm²

5-1

	hm ²	
0.59	10 6 , 33474.65m ²	
0.90	600m 0.10hm ² 0.56hm ² 209m	
0.95		
2.44		

				,
				,
				,
				,
				,
				,
				,
				,
				,

1.12 m³ 1.50 m³ 2.5m 0.60hm²
6500m²

5-3

			m ³	1100	
			m ²	6500	

5.3.2

5.3.2.1

1

10 3

HDPE

8.0KN/m² 6.3KN/m² DN300mm
0.70m 0.1%~0.3% 500m 20m~30m
25 700
30m 20

2

1000m 0.25m
0.25m 240mm M5 100
0.5%

4

0.54hm² 30cm 0.16 m³

5.3.2.2

Diagram illustrating the cross-section of a bridge deck with the following dimensions and specifications:

- Top width: 4.0m
- Top width: 8.0m
- Top width: 50cm
- Top width: C20
- Top width: 10cm
- Top width: 2
- Top width: 0.20m
- Top width: 0.30m
- Top width: 200m
- Top width: M7.5
- Top width: 3
- Top width: 1.50m
- Top width: 1.0m
- Top width: 1.0m
- Top width: 12cm
- Top width: M7.5

8 400m²

			m ³	1600	
			m	1000	
			m	500	
				25	
				20	
				1	
			m ²	2200	
			m	200	

--	--	--	--	--

0.57hm²

30cm

0.17 m³

2

0.95hm²

46cm

0.44 m³

5.3.3.2

0.95hm²

16m

0.47hm²

0.48hm²

			m ²	6800		m ²	6800
						m ²	6800
			m ³	1600		m ³	1600
			m	1000		m ³	353
						m ³	290
						m ²	750
			m	500		m ³	600
						m	500
				25			25
				20			20
				1		m ³	16
						m ³	3
			m	200		m ³	18
						m ³	35
						m ²	140
				1		m ³	2
						m ³	1
						m ²	4
			m ²	400		m ²	400

6

[2019]160

7

7.1

7.1.1

- 1
- 1
- GB50433-2018
- 2 [2003]67
- [2003]67
- [2015]9
- 3
- 4
- 5 2021 2
- 2
- 1 () [2003]67
- 2 [2007]670
- 3
- [2015]9
- 4 22 2015
- [2020]6
- 5
- [2017]347
- 6
- [2019]448
- 7 <

> 2019 610

7.1.2

1

1 4
2
3
4
2
1

22 2015
[2020]6

7-1

7-1

		/	/	
1		120	15	
2		89	11.12	

2

3

= + × 1+

2.3%

4

5

7-2

7-3 7-4

7-2

		+
1		+ +
1		× /
2		×
3		× /
2		×
		×
		+ ×
		+ + ×
		+ + +

7-3

		(%)	(%)
1		2.0	2.0
2		7.0	7.0
3		9.0	9.0

7-4

			%
1			3.3 5.5
2			4.3
3			6.5
4			4.4
			3.3

3

1

×

2

×

3

×

1.5%

4

①

1

②

③

a

b

④

2019 160

1

⑤

⑥

6

4

[2017]347

1.3

/m²

24352.00m²

							(
			m ²	650 0	m ²	11.50	7.48
			m ³	160 0	m ³	20.31	3.25
		M5M5	m	100 0	m	249.94	24.99
		dn300	m	500	m	1029.29	51.46
				25		810.22	2.03
				20		552.42	1.10
				1		2688.97	0.27
			m	200	m	132.16	2.64
				1		813.67	0.08
			m ²	400	m ²	98.21	3.93
			m ³	170 0	m ³	20.31	3.45
			m ³	440 0	m ³	11.56	5.09
			m ²	300 0	m ²	11.50	3.45
			m ²	950 0	m ²	108.03	

7-8

(a-5

9	6~8m ³ -	m ³	11.56	2.4	0.01	6.9	0.19	0.42	0.69	0.95
---	------------------------	----------------	-------	-----	------	-----	------	------	------	------

7-11

1	1m ³	200.63	35.63	25.46	2.18	41.85	95.51
2	5t	94.58	10.73	5.37	0.00	20.15	58.33
3	59kw	115.35	10.8	13.02	0.49	37.20	53.84
4	74kw	122.23	9.65	11.38	0.54	37.20	63.46
5	6~8m ³	16.69	7.13	8.76	0.80	0.00	0.00
6	0.4m ³	84.98	3.29	5.34	1.07	20.15	55.13
7		0.90	0.26	0.64	0.00	0.00	0.00
8	1.1kw	2.34	0.32	1.22	0.00	0.00	5.13
9	() 6m ³ /min	47.39	0.24	0.42	0.00	0.00	26.28

7-12

1		/m ³	3.00	3.00		
2		/kw.h	1.00	1.00		
3		/m ³	0.17	0.17		
4	0#	/kg	6.41	6.15	0.12	0.14
5	93#	/kg	7.94	7.61	0.15	0.18
6		/m ²	6.14	5.00	1.00	0.14
7		/	0.98	0.80	0.16	0.02
8		/	613.80	500.00	100.00	13.80
9		/m ³	368.28	300.00	60.00	8.28
10		/m ³	1104.84	900.00	180.00	24.84
11		/kg	3.56	2.90	0.58	0.08
12		/kg	4.30	3.50	0.70	0.10
13		/m ³	368.28	300.00	60.00	8.28
14		/m	982.08	800.00	160.00	22.08
15		/	810.22	660.00	132.00	18.22

16		/	552.42	450.00	90.00	12.42
17		/m²	98.21	80.00	16.00	2.21
18		/m²	108.03	88.00	17.60	2.43

7.2

 2.44hm^2

7-13

	hm ²	hm ²	hm ²
	0.59	0.59	0.59
	0.90	0.90	0.90
	0.95	0.95	0.95
	2.44	2.44	2.44

100%

 0.94hm^2

7-14

	hm ²	hm ² hm ²	hm ² hm ²
	0.00	0.59	0.59
	0.04	0.86	0.90
	0.94	0.00	0.94
	0.98	1.45	2.43

1

$$= (\frac{\text{ } \quad \quad}{\text{ } \quad \quad}) \times 100\%$$

2

/

500t/km²·a

3

$$= \left(\frac{\text{ } }{\text{ }} + \text{ } \right) \times 100\%$$

4

$$= \frac{\quad}{\quad} \times 100\%$$

5

$$=(\quad / \quad) \times 100\%$$

6

$$=(\quad / \quad) \times 100\%$$

1

7-15

	hm ²	hm ²	%
	a	b	a/b
	0.59	0.59	99.59
	0.90	0.90	
	0.94	0.95	
	2.43	2.44	

2

$$\frac{1.94 \text{ m}^3}{0.44 \text{ m}^3} = \frac{0.44 \text{ m}^3}{1.58 \text{ m}^3} = \frac{1.94 \text{ m}^3}{1.58 \text{ m}^3} \times 100\%$$

3

7-16

	hm ²	(t/km ² .a)	(t/km ² .a)	
	0.59	500	265	1.89
	0.90	500	260	1.92
	0.95	500	290	1.72
	2.44	500	273	1.83

4

7-17

m ³	m ³	%
0.44	0.44	100

5

	hm ²	(hm ²)	hm ²	%	%
	0.59	0.00	0.00	98.99	40.16
	0.90	0.04	0.04		
	0.95	0.95	0.94		
	2.44	0.99	0.98		

6

187.56t

 $273\text{t/km}^2.\text{a}$

12.07t

175.49t

7

 2.44hm^2 2.44hm^2 0.99hm^2

175.49t

99.59%

97%

1.83

1.0

100%

94%

100%

92%

98.99%

97%

40.16%

25%

8

1

2

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