

321

ETC

归档号:

国道321线碧江至桂林段雾山收费站ETC改造工程

施工图设计

勘察设计证书:

项目负责人: 李为臣

公司副总工程师: 衣昭光

项目审核:

李为臣

公路行业(公路、特大桥梁、特长隧道、大地上程)专业

甲级 A145001068

设计单位:

日期:

2020.08.08

设计阶段:

施工图设计(含初步设计、技术设计、施工图设计)

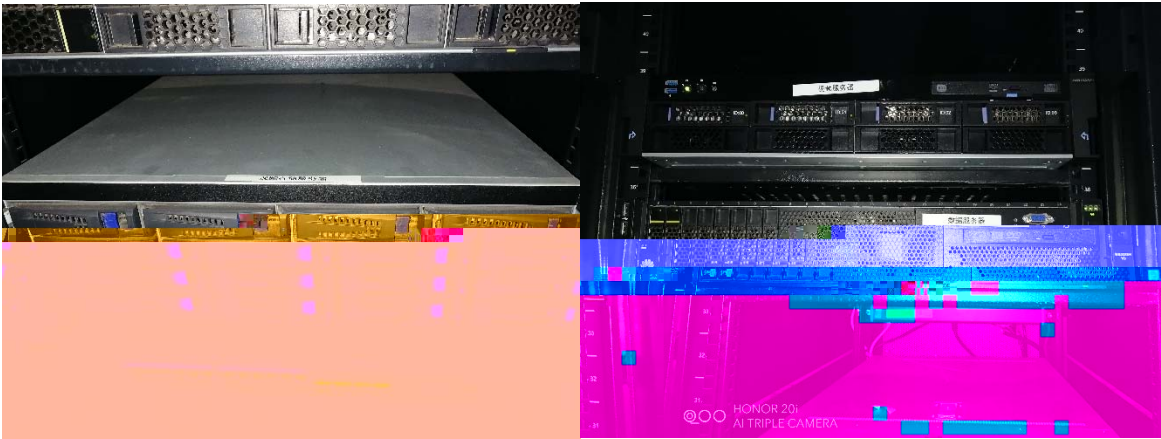
321		ETC		
1		S7-4-1	32	
2		S7-4-2	1	
3		S7-4-3	5	
4		S7-4-4	1	
5		S7-4-5	1	
6	ETC	S7-4-6	1	
7	ETC/MTC	S7-4-7	1	
8		S7-4-8	1	
9		S7-4-9	1	
10	ETC	S7-4-10	1	
11	ETC/MTC	S7-4-11	1	
12		S7-4-12	2	
13		S7-4-13	1	
14		S7-4-14	1	
15		S7-4-15	1	
16		S7-4-16	1	
17		S7-4-17	1	
18		S7-4-18	1	
19		S7-4-19	1	
20		S7-4-20	1	
21		S7-4-21	1	
22	ETC	S7-4-22	2	
23		S7-4-23	1	
24		S7-4-24	4	
25		S7-4-25	4	
26	ETC	S7-4-26	1	
27		S7-4-27	1	
28		S7-4-28	1	
29	ETC	S7-4-29	1	
30	ETC	S7-4-30	1	
31		S7-4-31	1	

		1	1
32		S7-4-32	2
33		S7-4-33	2
34		S7-4-34	1
35			
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																				2									
1																				1 Э Ю 2007									
321										ETC III										2 Э Ю JTG/T L80-2014									
7 7										1 1 ETC 6 6 MTC III2019										3 Э Ю 2011 13									
Э										ЮӨ										4 Э 2015 Ю									
Ю										2019 320 Ч										5 Э Ю 2018 1728									
Ю ж2019 з 387																				6 Э Ю 2019 320									
ETC										ETC Ч										7 Э Ю ж2019 з 387									
III																				8 Э Ю									
										III										9 Э Ю 2019 5									
ETC										600										10 Э Ю									
30										40%										11 Э ETC Ю 2020 3									
ETC										III										12 Э Э ETC ETCMTC Ю									
										11500 /										4 4 Ю									
ETC										8										MTC									
ETC										III										36									
4 3										III																			
ETC										7 7										1 1 ETC 6 6 MTC									
2 2 MTC										2 2 ETC/MTC										4 4 MTC									
4 4 ETC										1 1 ETC III																			
5 5 ETC										2 2 ETC/MTC										7 7 III									
										III																			
Ч										III										III									

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III



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3 1 III

III



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4.4

1 1 1Km 1 3 Ю ETC

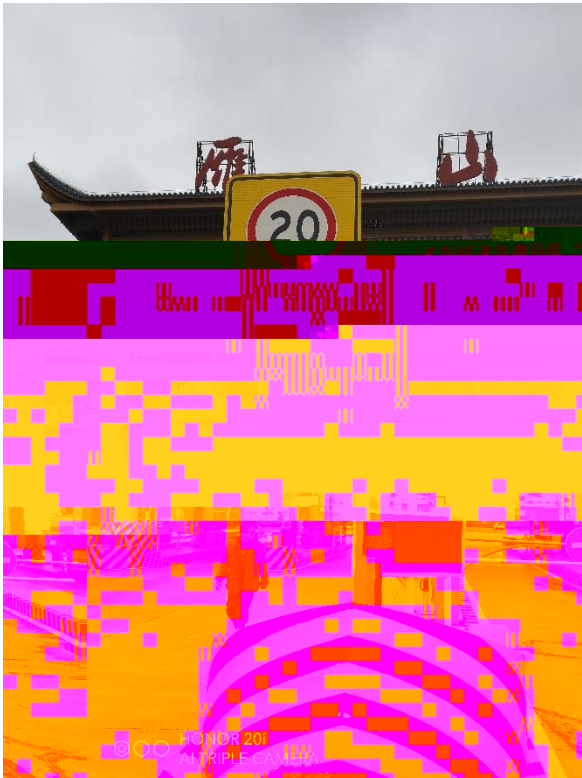
ETC

III



4-11

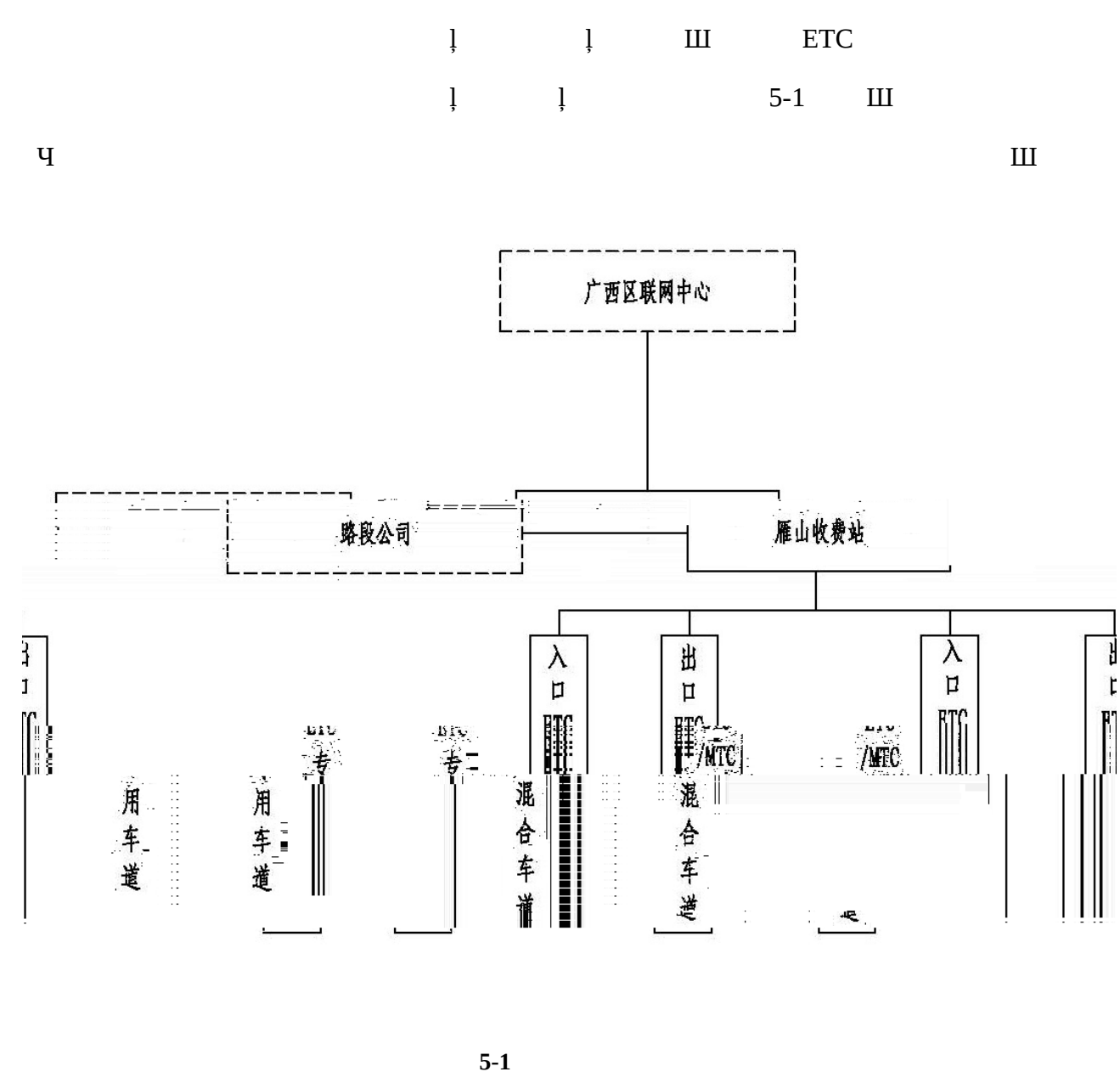
2 1 III 3 Ю III



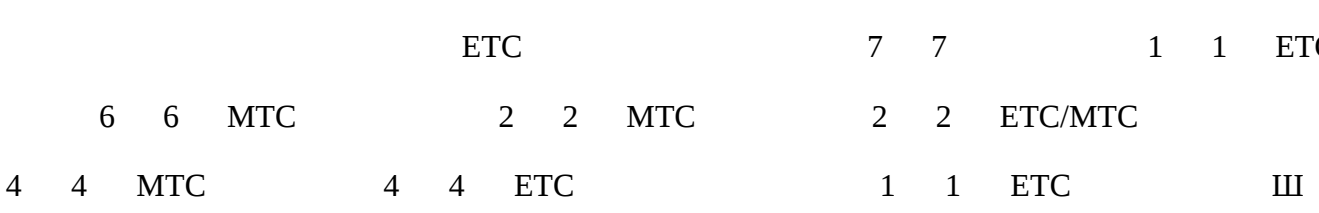
4-12

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5.1



5.2



III

5-1

				ETC	ETC/MTC	ETC	ETC/MTC	
1		7	7	5	2	5	2	
		7	7	5	2	5	2	

5.3

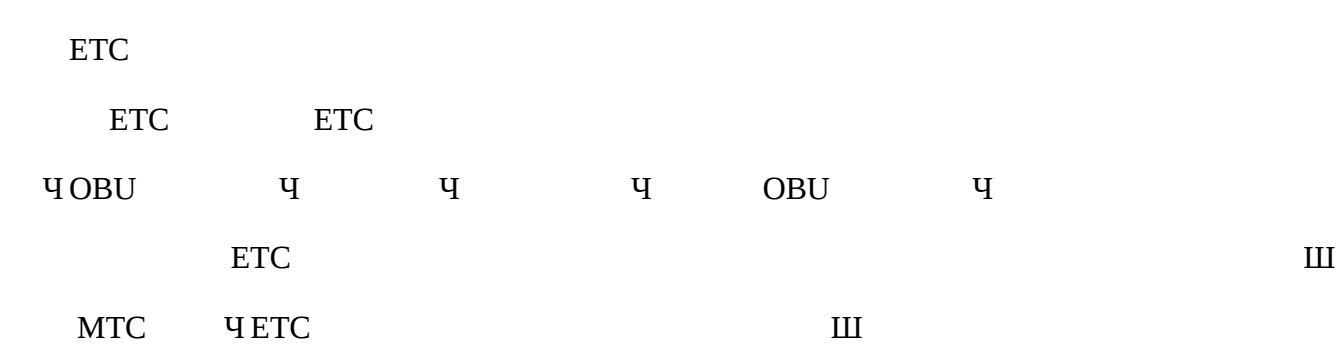
III

5.4

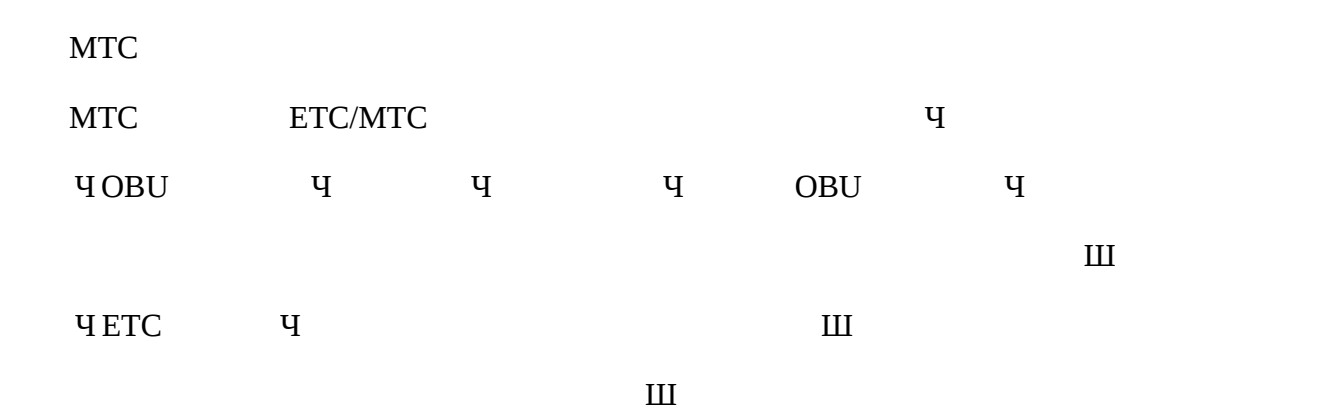
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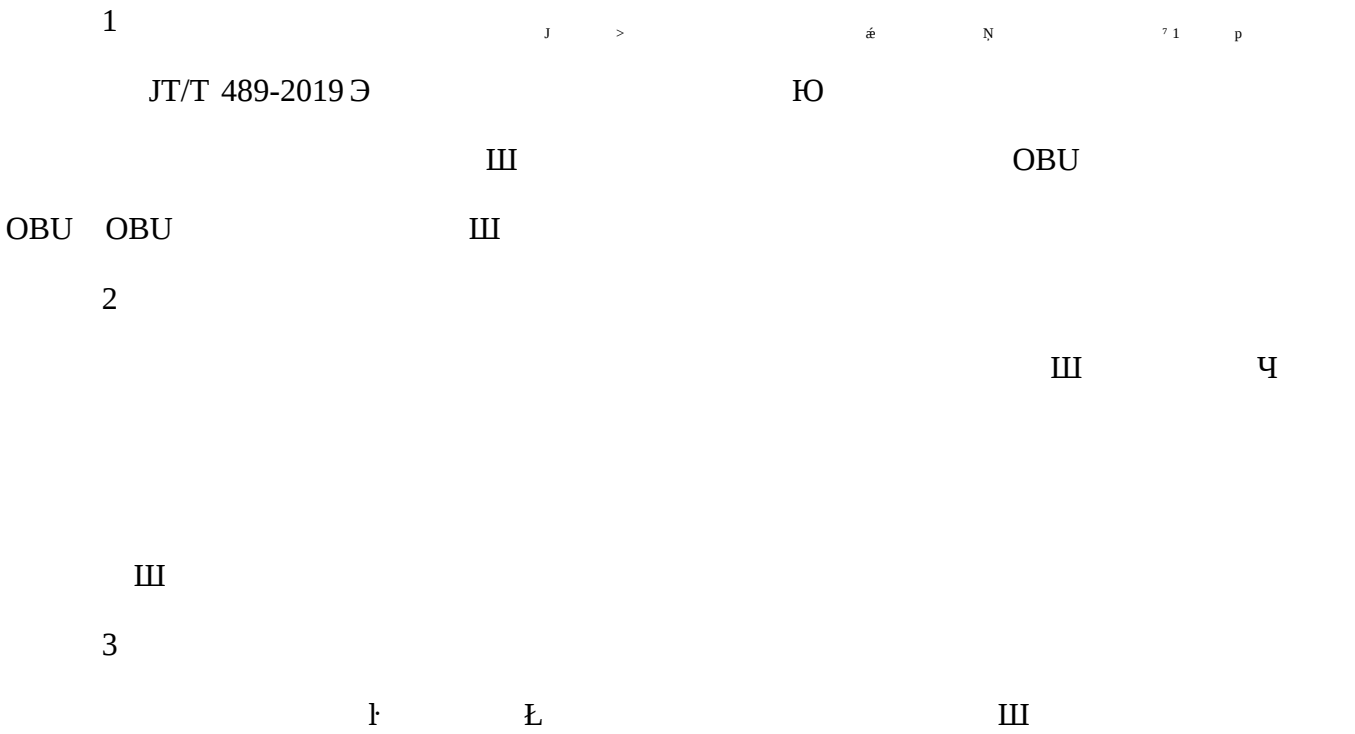
5.4.1 ETC



5.4.2 MTC



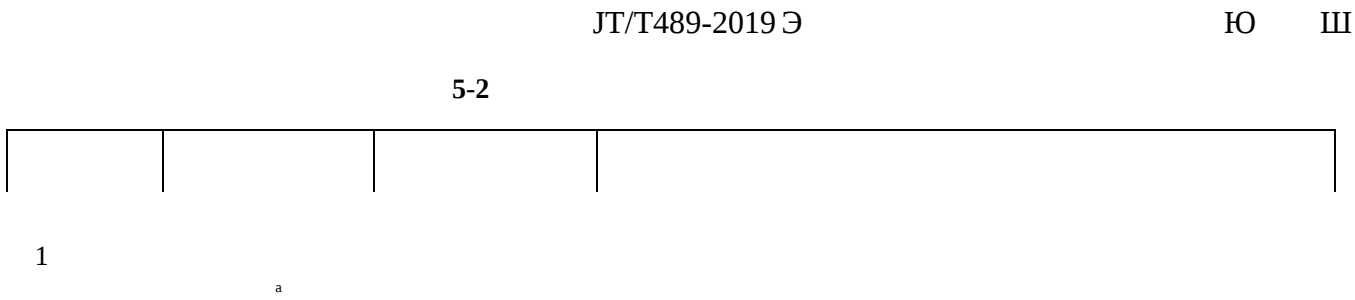
5.4.3

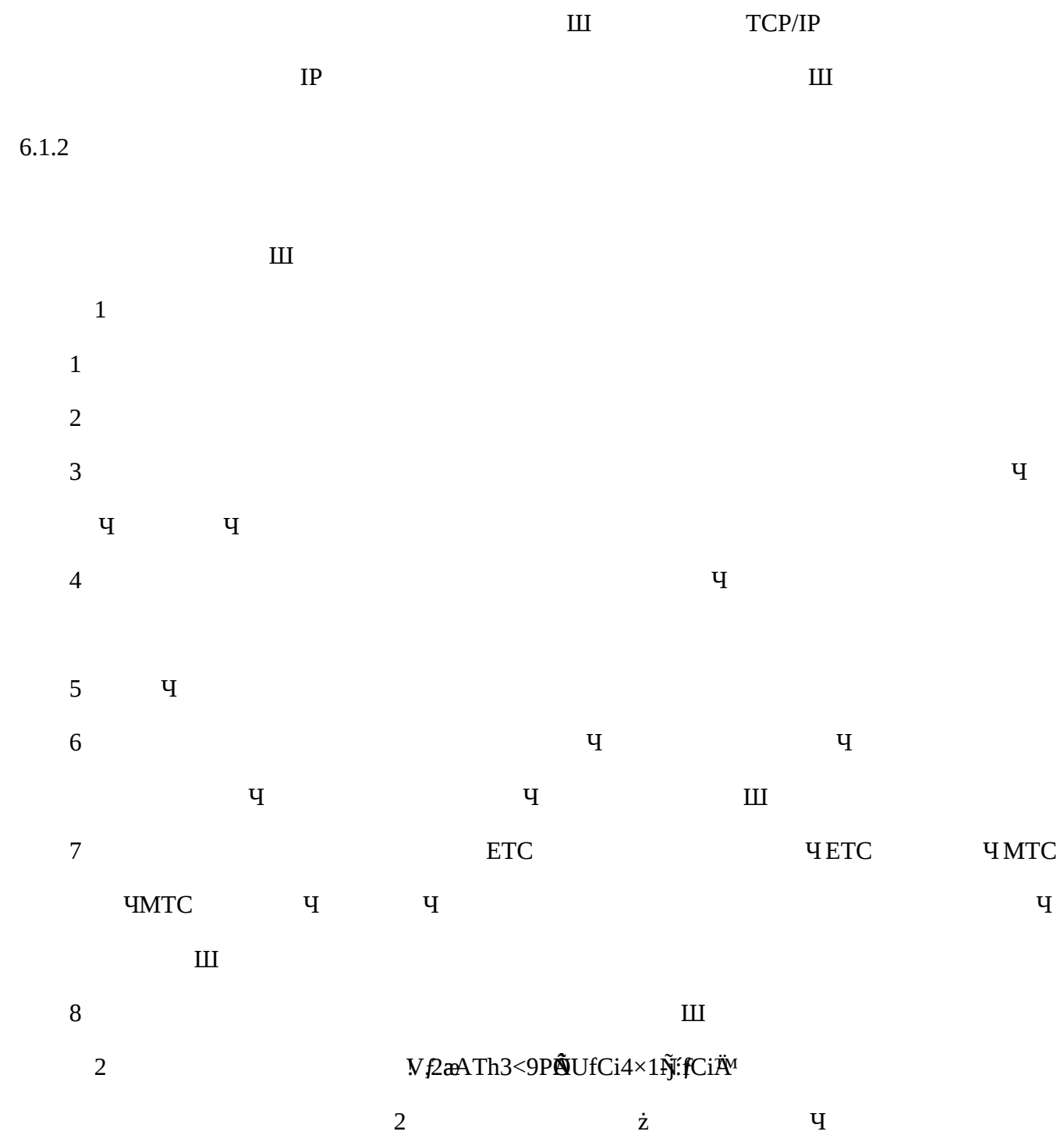


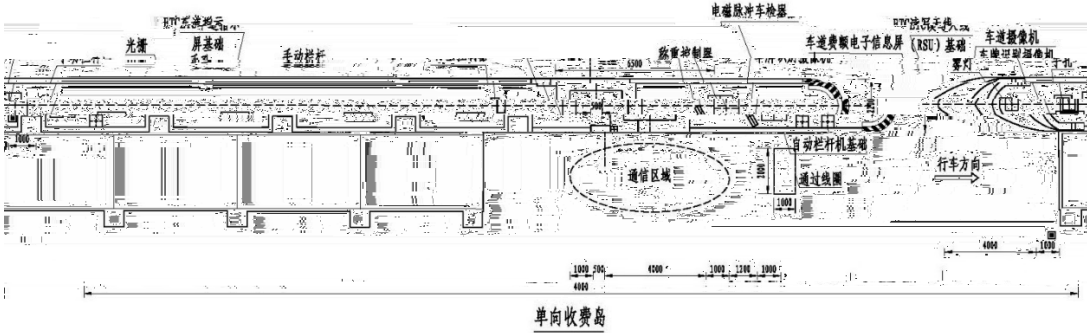
5.5

III

5.6





321	ETC										S7-4-1
2 ETC/MTC		Ч		Ш							
ETC	ETC		3	Ч		Ч		Ш			
Ш											
											
6-2											
6.3.4											
1 ETC		Ч		Ш		Ч		Ш			
Э		Ю		Э		Ю		Э			
ETC	MTC		Ш		Ч		Ш		Ч		
1	ETC	ETC	Ч	ETC	Ч	ETC	Ч	ETC	Ч		
ETC	Ч		L	Ч	Ч		Ч		Ч		
Ш											
2	MTC		Ч		Ч	Ч		Ш			
3	Ч		Ч		Ч		Ч		Ч		
Ч		Ш									
1 ETC/MTC		Ч		Ш		Ч		Ш			
Э		Ю		Э		Ю		Э			
ETC/MTC	MTC		Ш		Ч		Ш		Ч		
1	ETC/MTC	ETC		Ч		ETC	Ч	ETC	Ч		
Ч		ETC	Ч	L	Ч	Ч		Ч			
Ч		Ч		Ш							
2	MTC		Ч		Ч	Ч		Ч	Ч	Ч	

Ч		Ш									
3		Ч		Ч		Ш					
6.4		Э		Ч		Ч					
Э		Ю		Э		Ю					
ETC		Ш		Ч		Ш					
6.4.1		Ч		Ш		Ч					
Ч		APP		Ч		Ч					
1		1		2		Ч		2		Ч	
1		1		Ш		Ш					
6.4.2		Ч		Ш		Ч					
Ч		Ч		Ш		Ч					
2		APP		Ш		Ш					
3		Ч		Ш		Ч					

III

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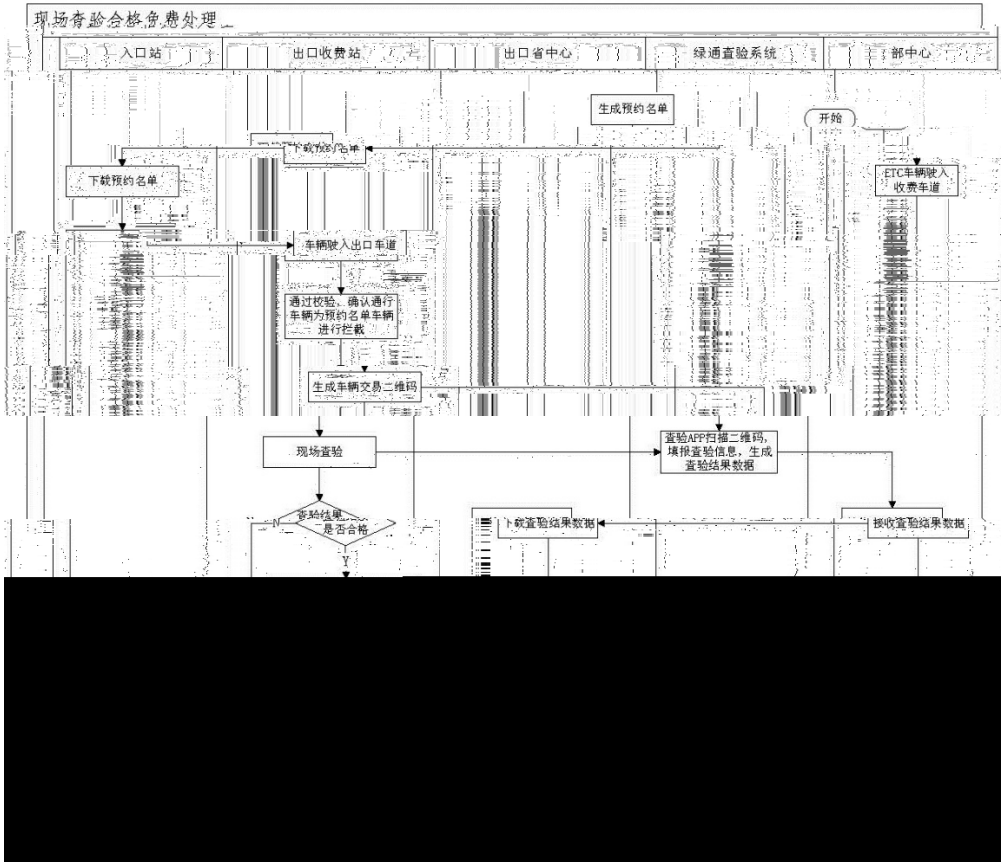
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6.4.3

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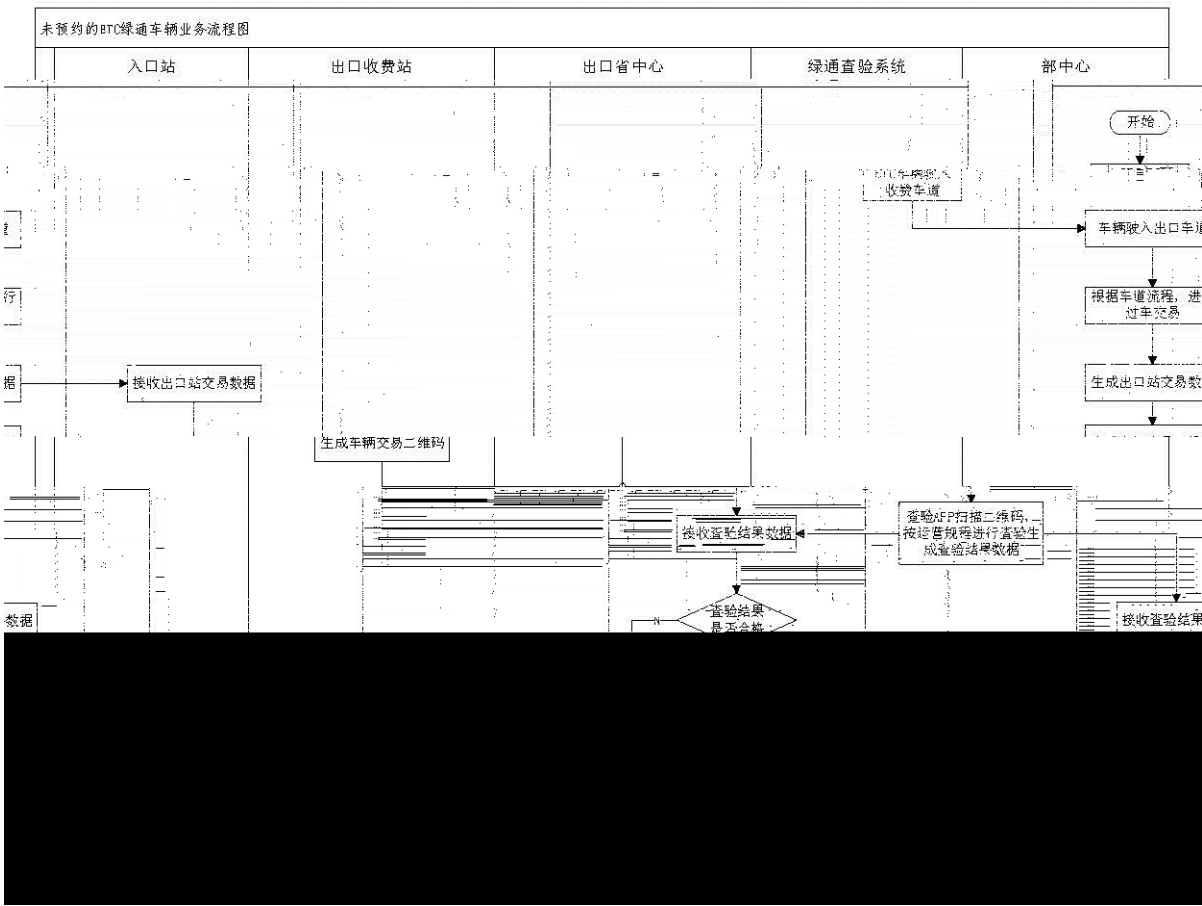


6-3

ETC

2

ETC



6-4

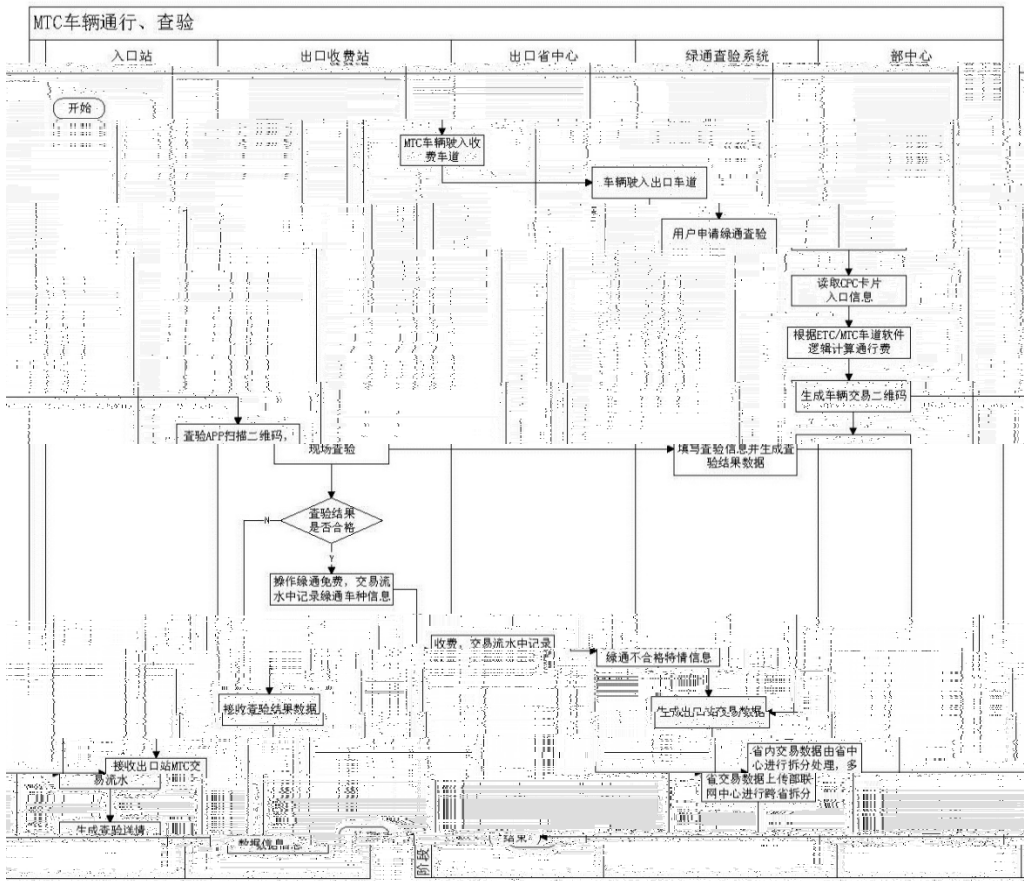
ETC

ETC

III

3

MTC



6-5 MTC

III

6.5.1

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III

6.5.2

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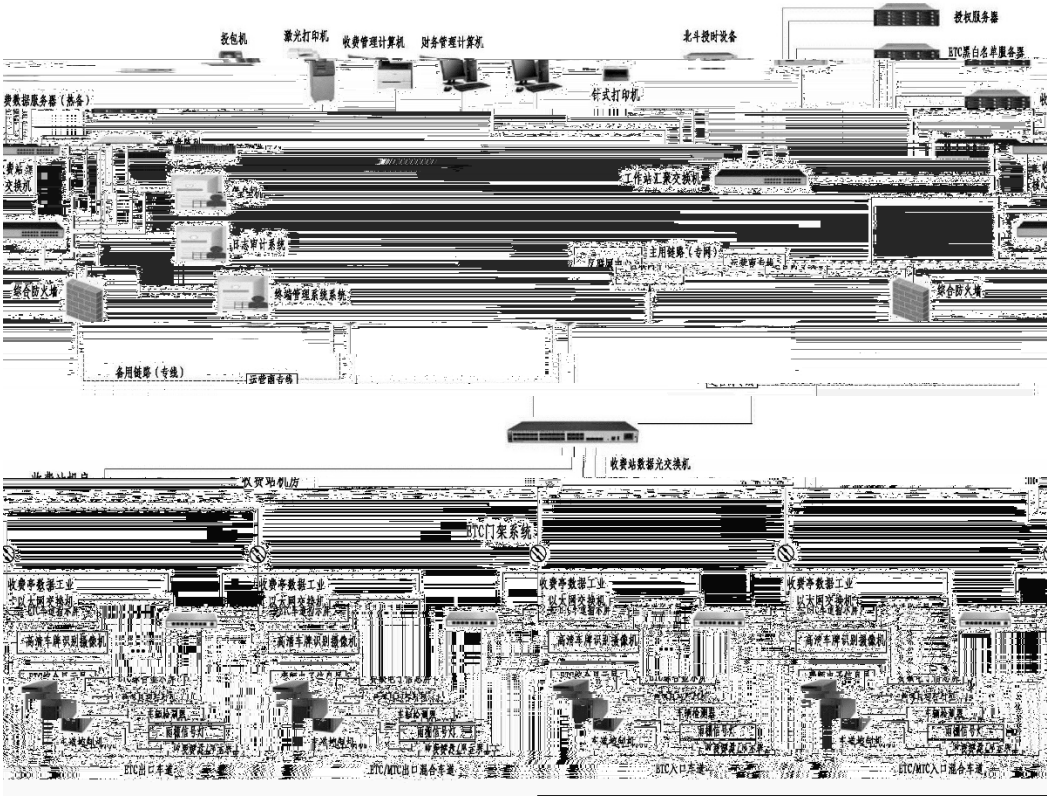
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III

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III

6-6



6-6

321		ETC										S7-4-1									
Ч		Ч		ō										Ч		Ч		Ч		IIIō	
ō		Ł		Ł												80%		Ō			
						A										70%		III			
						A:															
						cd/lux/m															
0.2		-4		580		435		87		58		26		17		460					
		+15		348		261		52		35		16		10		276					
		+30		220		165		33		22		10		7.0		180					
0.5		-4		420		315		63		42		19		13		340					
		+15		252		189		38		25		11		7.8		204					
		+30		150		110		23		15		7.0		5.0		120					
1.0		-4		120		90		18		12		5.0		4.0		96					
		+15		72		54		11		7.2		3.0		2.4		58					
		+30		45		34		7.0		5.0		2.0		1.0		36					
Ō		Ł		Ł																	
						B															
						B:															
						cd/lux/m															
0.2		-4		360		270		65		50		30		18							
		+15		265		202		48		38		22		13							
		+30		170		135		30		25		14		8.5							
0.5		-4		150		110		27		21		13		7.5							
		+15		111		82		20		16		9.5		5.5							
		+30		72		54		13		10		6.0		3.5							
1.0		-4		35		26		5.2		4.0		2.0		1.0							
		+15		28		20		4.1		3.0		1.5		0.8							
		+30		20		15		3.0		2.0		1.0		0.6							
						GB/T18833-2012										Œ		Ю			
1800																				III	
																ō		ЧŌ			

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- III

7.1.2

- 1
-
- 450mm
-
-
- III
- 2
- / 0.6s
-
- MTTR 0.5
- AC 220× 1 ¥ 10% V 50× 1 ¥ 4% Hz
- 500 10
- -20 +70 III

7.1.3 ETC

- 1
- Э ЮЧЭ
- Ж2019 з 387 Ю Э Ю

	RSUt ũ 15dB
	-3dB RSUt ũ 10dB
	ASK
	0.7 0.9
	FM0
	256kbps 512kbps
	¥ 100×10 ⁻⁶
	Ũ -70dBm
	15 17 14k
BER	10×10 ⁻⁶
	16 1 1 Ł 16 1 0 Ł
	8

7.1.4ETC

- 650*800*300mm (* *)
-
- 16 I/O I/O
- ґ
-

7.1.5

- 2 SFP SFP 8 10/100/1000M
- 6VDC
-
- MAC
-
- -3dBm—8dBm
- Ũ -24dBm
- ũ 9.375GbpsIII

7.1.6

- 1
- III
 - TTL
 - RS485
 - 7*24H
 - ґ ґ ґ ґ ґ
 -
 - DB9
 - 2
 -
 - ґ ґ 1
 - 905nm;≤1mW; GB7247.1-2001
 - ũ 99.99%
 - 99.99%
 - 0 120km/h
 - ¥ 0.25m
 - ґ ґ ґ ґ ґ
 - 1210mm
 - 0.5m 5m
 - 100mm
 - 10-200ms
 -
 -

321	ETC										S7-4-1										
●	IP67										●	200mm×200mm									
●	GB/T17626										●										
●											●	2A/220V AC									
											●	RS232/RS485									
●	1										●										
●											●	AC220V 350W									
●	Ч										●	688mm × 695mm									
●											●	-40 +85									
●	RS485 2										●	-20 +45									
●	220VAC										●	95%									
●	-40 Ě~+80 Ě										●	1.2mm + 5mm IP65									
●	MTBF Ě 20000										●										
●	12										●	750mm ×1650mm ×150mm III									
●	USB										7.1.8 ETC										
●											●	20mm									
●											●	2 R1G									
●	GB/T17626 /										●	3200mm § 640mm									
											●	3300mm § 720 mm § 200mm									
	IP67 / III										●	160 § 32 5 § 1 32									
7.1.7 ETC											●	(W § Hmm) 256*128 5*8=40									
●	2000cd/ m²										●	(dots) 8 § 16									
●	5000cd/ m² 8000cd/ m²										●										
●											●	1ms									
●	120										●	100000h									
●											●	B F/ 10000h/72h									
●	3A/5V DC										●										

321	ETC				S7-4-1			
●	Ч	Ч			●			
●	Ч	TCP/IP/RS232/RS485			●			
●	120	/			●	Ч		
●	120m				●	Э	Ю	III
●	AC220V	¥ 10%	50Hz		2			
●					●			
●	¥ 85	Ч	¥ 85		●	Ў 300		
●	100m-350m				●	Ў 0.1s		
●	≥7000cd/	Ч 16			●	0 220km/h	Ў 99.5%	
●	/	1mm						
●	1200W				●	0 220km/h	Ў 95%	
●	Ў 4Ω					Ч	Ч	
●	-20Њ - +70Њ	10%--95%RH			●		Ў 70%	
●					●		Ў 75%	
●		III			●	RJ45 100M/1000M	Ў 2	RTP/RTSP Ч
7.1.9	300W				TCP/IP Ч NTP			
1					●	MTBF Ў 30000h		
●	GA36-2014 Ч GA36-1-2001	02		Ч	●	Ч	Ч	IP65
04	2012	Ч	Ч	2013	Ч	Ч		
	Ч	Ч	Ч		Ч	Ч	Ч	Ч
●					●	-40Њ +70Њ		
●		Ч	Ч		●	95%		
●					●	MTTR Ў 10		
●	Ч RS-485	Ч	I/O	Ч	●	H.264/H265		
●					●	Ч	Ч	Ч
●					●	SD	32G	
●					●	Г GA36-2014 Л Ч Г GA35.1-2001 Л		Г 2012

321	ETC										S7-4-1
£	Ч 1 2012	£	Ч	Ч	Ч	Ч	●	500MΩ			
Ч							●	15 2000μH			
●							●	CH1 Ч CH2			
●							●				
●		Ч					●				
●		Ч					●	24V DC ±15% 150mA			
●			Ч		III		●				
							●	5000000 III			
	III	1	300			Ч 1		DC12V			
	III						2				
7.1.10							● 4	≤98%		≥99%	
●							●	1.5mm2			AC32V
●			Ч								
●		RS-232					●	500MΩ			
●							●	15 2000μH			
●							●	1		1	
●				Ч	Ч		●				
●		75mil		10cm	150cm		●				
●		80cm		40cm §	40cm		●				
●		AC 220V ¥ 10%					●	24V DC ±15% 150mA			
●	4G						●				
● MTBF	10000H	III					●	5000000			
								DC12V		III	
7.1.11											
1							7.2				
● 4			≤98%		≥99%		7.2.1				
●		1.5mm2				AC32V	●	2	Intel	CPU	ў 2.0GHz
											ў 12

321	ETC										S7-4-1
●	Linux										● , SSL SM2
●	64GB DDR4 DIMM										SM4 Ⅳ Ⅳ III
●	SAS Ⅳ SATA Ⅳ	SAS Ⅳ NVMe									2 Ⅳ
●	2 240G SSD			4	2TB SAS						●
SAS RAID		RAID 0/1/5									● CPU Intel Xeon-1225 8GB 500G
●	4										● 2 (RJ45)
●											● 4G VPDN
●		III									●
7.2.2 ETC											● PSAM PCI-Express 2.0 ExpressCardTM
●	7.2.1			III							1.0
7.2.3											● B/S IE10 Ⅳ Firefox
●	7.2.1			III							● SE ≥50TPS
7.2.4											● ≤50
1 Ⅳ											● ≤70 /
●											● SM2 ≤250 /
●		PSAM									● SM2 ≤120 /
●											● SM2 ≤80 /
●		SM2/SM3/SM4:	SM2	/		SM2	/		SM3		● SM4 ≥18KB/
		SM4	/	SM2		SM2					● ≥16
Ⅳ											● ≥200
●											● 0℃~+50℃
(MAC)											● -20℃~+60℃
●	PSAM			4G							● 8KV 6KV
●	4GVPDN										● 20%-85%RH ()III

- 7.2.5

≥32T
- 2

□
- □

FC □ iSCSI □ FCoE □
- SAS

Active-Active
- 32GB

Cache
- Cache

BBU

64GB Flash

Cache
- NAS
- 8

10Gb FCoE

() □ 4

iSCSI

2

SAS
- IOPS

50

4000MB/s

CNAS
- 12

4TB SAS

2
- □

42U

750
- RAID 0/1/5/6/10

4
- ,

RAID
- 2

USB

321	ETC										S7-4-1									
●										7.2.8										
● IPv6 III										● 24 24 SFP 4 1000Base-T										
7.2.7										● ũ 256Gbps ũ 130Mpps										
● 24 10/100/1000Base-T 4 1000Base-X SFP										● GE/10GE										
										● IEEE802.3x										
● ≥256Gbps;										PPS/BPS										
● ≥96Mpps										●										
● GE/10GE										● RIPv1/v2 ħ RIPng, OSPFv1/v2 OSPFv3, VRRP/VRRPv3										
● IEEE802.3x										● VLAN QinQ, VLAN Mapping										
PPS/BPS										● L2 Layer 2 L4(Layer4) MAC ħ MAC ħ										
● RIPv1/v2 ħ RIPng, OSPFv1/v2 OSPFv3, VRRP/VRRPv3										IP ħ IP ħ TCP/UDP ħ ħ VLAN Timc										
● L2 Layer 2 L4(Layer4) MAC ħ MAC ħ										Range ACL ACL										
IP ħ IP ħ TCP/UDP ħ ħ VLAN Timc										● SP ħ WRR ħ SP+WRR 802.lp DSCP										
Range ACL ACL										● DHCP Server DHCP Client DHCP Snooping DHCP										
Snooping option82										Snooping option82										
● STP/RSTP/MSTP/PVST;										● STP/RSTP/MSTP/PVST										
● 802.1ag 802.3ah										● 802.1ag 802.3ah										
● IP ARP IP+MAC+										● RSPAN										
● CLI Telnet Console SNMPv1/v2/v3 WEB										● 802.1X / MAS RADIUS										
										● IP ARP IP+MAC+										
● CPU ħ ħ BFD										● CLI ,Telnet,Console SNMPv1/v2/v3,WEB										
● EEE(802.3az), Power down down Schedule										● VCT DLDP Loopback-detection										
job																				
●										● CPU ħ ħ BFD										
● -40Ń +85ŃIII										● EEE(802.3az), Power down down Schedule										

321	ETC										S7-4-1															
●	HTTP/SMTP/POP3/FTP										●	B/S										☑	☑			
●	☎										HDMI										☑	☑	☑ IP			
4											●	IT														
●	1U																									
●	1 console 2 USB 6 10/100/1000BASE										●	III														
2 SFP	2	16G 1T III										7.2.10														
●	50	/ III										●	NTP Sntp										/			
●	RADIUS TACACS+																									
	Radius	TACACS VPN VPN										●	☑ ☑ GPS													
	III																									
●	enable unix su										●	1561.098MHz B1										<-				
	III										138 dBm <-153 dBm										4					
●											1										<2 min <5 min					
●	☎										HDMI										Ў 100ns (1pps UTC)					
5											●	BDS B1 ☑ GPS L1														
●	50										●	1PPS TTL										Ў 60ns				
●	150										Ў 1μ s 20ms 200ms															
●	1TB RAID1										●	PPS										Ў 50ns 1σ				
●	eps 1200III										●	Ў 100ms 24														
●	2U										●	NTP 1-10ms														
●	8G										●	-40Ń 85Ń "														
●	64GB minisata+1TB SATA*2										●	5% 95%														
●											●	AC 85V 264V/DC 85V 300V/DC 6V 24V														
●											●	☑ RS232														
●	6	III										●														
6											●	LED														

321	ETC										S7-4-1
	Ч					●	201 / 400 /				
●	1U					●	MTBF≥1000 MTTR<1 III				
●	35WIII					7.2.14					
7.2.11	Ч					●	48/96				
●	4 ѓ 3.2 GHZ					●	-10Ń +40Ń				
●	ѓ 8GB DDR4					●	-25Ń +55Ń				
●	ѓ 1TB SATA 7200rpm					●	85% +30Ń				
●	DVD					●	70Kpa 106Kp				
●	10M/100M/1000M					●	GB/T 12507.1-2000				
●	ѓ 2G					●	2000mm Ч 2200mm				
●	16					●	0.5dB 0.2dB				
●	Ч					●	FC/PC>40dB Ч FC/UPC>50dB Ч FC/APC>60dp >1000				
●	22 Ł III 1680×1050 400cd/m² ѓ 1000:1										
●	<8ms					15 III					
●	Windows 10 III					7.2.15					
7.2.12						1					
●	A3 Ч A4					●	Ч Ч Ч Ч Ч III				
●	A3≥22ppm					●	20Ń 2.5MpaIII				
●	48M					●	DC24VIII				
●	1200×1200dpi					●	1 1.5AIII				
●	RJ45					●	Ў10SIII				
●	MTBF 10000 MTTR 0.5 III					●	0Ń 50ŃIII				
7.2.13						2 70KG					
●	A4 24 300000000					●	ѓ 99.6				
●	1440×720dpi					●	/ mg/kg Ў10				
						●	HF / mg/kg Ў1				

321	ETC	S7-4-1
● / Ů0.01III		● 100-240VAC
3		● 12VDC
● AC220V ¥ 25% 50HZ 2.5A		● 4.17A
● 24V 2.3AH		● 50W
● 2A 200mA		● < 150mVpp
● 0~40Ň		● 11-14Vdc
● Ů95% 40Ň		3 2
● Ч Ч		● , DC12V, :280KG,
● 4		4 2
● Ч Ч Ч / Ч Ч Ч Ч Ч Ч		● Ч III
Ч Ч Ч III		5 RVV4*1.0 100 ЧPVC 30 Ч III
● III		7.2.17
4 1 Ч 2 Ч 1 Ч 2 Ч		1 1
2 Ч 1 Ч 1 Ч 1 Ч		● 40 8 Ч 485 40
III		40 433MHz LORA III
7.2.16		● 2 PGM III PGM
1		200mA PGM Ч Ч III
● Mifare ЧCPU Ч		● DC13.8V 1 500mA 1
● 5000 10 10 30		Ч III
● WiFi		● 485 40 III
● *1 Ч *1 Ч *1 Ч *1 Ч *2		● 6 III
● *1 Ч *1		● Ч Ч 8 III
● DC 12V		● Ч III
● 1A(max)		● 1 GPRS Ч 2 IP III
2		● 8 Ч Ч III
● 4.17A § 1		● 1 1 1 16

321	ETC										S7-4-1		
	Ч 40				III			III					
●	RS232	232				III			4	2			
●	10										● LCD	III	
	III										●	III	
●		Ч	Ч								●	III	
т	Ł + т	Ł + т	Ł	III	Ч			III					
III													
●				III								●	III
●				6000	Ч	III						●	III
●				Ч	Ч	Ч	Ч	Ч				●	Ч Ч Ч
GPRS	III										III		
●	LORA			Ч IP	Ч GPRS							●	DC12V -20 Ć ū 80 Ć 0 ū 99%rh
	III										●	¥ 0.3 Ć 0.1 Ć ¥ 3%rh 1rh	
●	16	433MHz	III								●	1	
●	Ч	Ч	Ч	III								●	10 ū 20 m2/
●												●	-40 ū +125 Ć (-40 257)
●	DC13.8V	DC12V500mA	300mA	Ѓ								●	8s tau63%
1000mA												5	12V/7AH 1 Ч DC-12V/5A
●	DC12V500mA	2.2KΩ	433MHz								1 Ч ;	Ѓ 108 ; Ѓ 200 2 Ч III	
1527	220KΩ										7.2.18		
●	-10 55 Ć										ETC	, ETC	
2	2	2								ETC	Ч		
●		+	+	EMI Ч RFI								●	Э IOGB/T20851 ЧЭ
		10	III								Ю	ISO/IEC14443Type-A	
3	2										● ETC/MTC	IC DSRC ETC/MTC	
●	DC9-16V	NC/NO	Ѓ 10Ua										

●	/4G	POS	●	Android 6.0					
			●	CPU	821	CPU		2.2GHz	
●	OBU	OBU	●	4G					
			●	64G		SD			
●	1300W	FHD	●	5.5		1920*1080			
			●		GPS				
			●	4000mA			III		
●	PSAM	4							
●		Android6.0							
●	CPU	8							
●		ROM: 32G,							
●									
●		RAM: 3G							
●		8							
●		1920*1200							
●		800							
●		200							
●		5100mAh							
●		3G/4G 4 WiFi/							
●		GPS/GLONASS/							
●		USBType-C							
		III							

7.3

7.3.1

●		APP							
●		4							
●	NFC								
●	4G/5G	4		WIFI					
●	1200	LED							

321	ETC										S7-4-1
●	WAV					●	& 64MB+8MB				
●	1280 x 720	720x480	CIF			●	1 x Reset	()			
● LCD	3.1	TFT LCD	WVGA			● LED	wifi	Power	System		
●	LED	Ч	5	10		●	2T2R	N			
●	/					●	DHCP Ч DHCP		Ч DHCP		
●	Mini USB	SIM	TF			●	DMZ		DDNS	UPNP	
●	3200						WEB		PING	III	
●	14	III									
7.3.3						8					
●						8.1					
● 23mm							Ч		Ч	III	
●						φ40	Ч				
● 4.3	8GB SD	III				ű 0.2m		III			
7.3.4						8.2					
●	IP56		Ч	ESD		1	Ч L	C25	III		
	Ч	Ч	Ч			2					
●	WAN	IEEE802.11n/g/b		300Mbps	2.4GHz	III					
11N	1000mw		150			3	2	φ40	ű 0.2mIII		
●						8.3					
●						1	Ч L	1ΩIII			
24V PoE						2					
●	64MB	+ 8MB				III					
●	PoE	60									
●											
●	1x RJ-45 10/100 Mbps (POE)										

321	ETC										S7-4-1
9									III		
								3	III		
9.1								4		Ч	
1		Ч	L					Ч	III		
		1 á		III							
								9.2.2			
					III			1		III	
2					50	100mm		2	0.5m	1.2mIII	
				III				3	1.2mIII		
						III		4	Ч	III	
				III				5	800A/mIII		
3				Ч		Ч		6	Ч	Ч	
							III			III	
4								7	Ч	Ч	
	2-3		III						Ч	III	
5		Ч						8	Ч	III	
							III	9		III	
			III		Ч			10	Ч	Ч	
						III					
6	Ч		Ч				III				
7			Ч	Ч		III		ŷ	ł ł		
8								Ÿ		III	
		III						ŷ	ł ł	III	
9.2								Ÿ	ł ł	Ч	
								Ž	ł ł	Ч	
9.2.1										III	
1				Ч	Ч		III				
2										III	
						III		9.2.3			
								1			

III

4

4

III

III

7

4

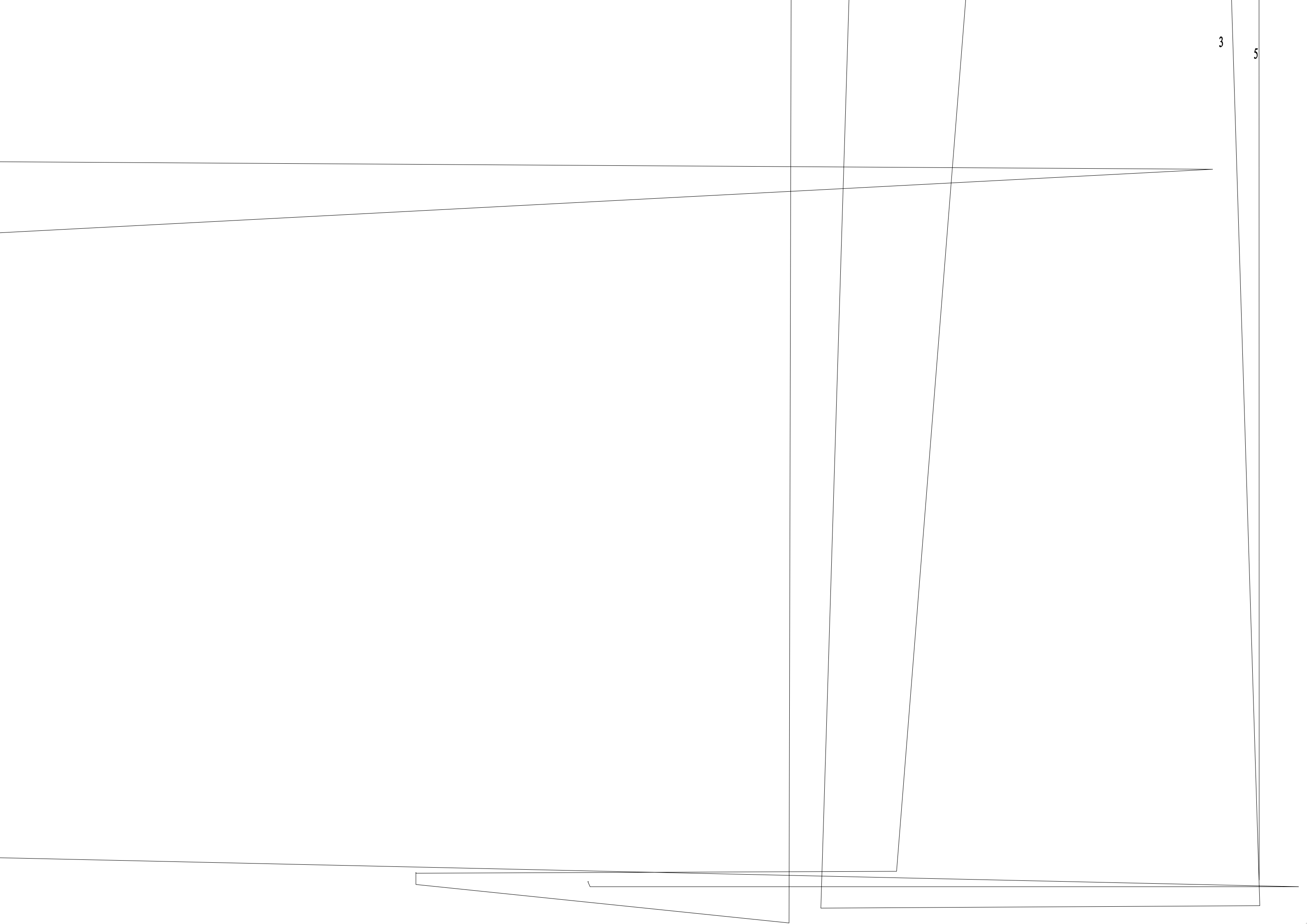
III

8

III

4

III



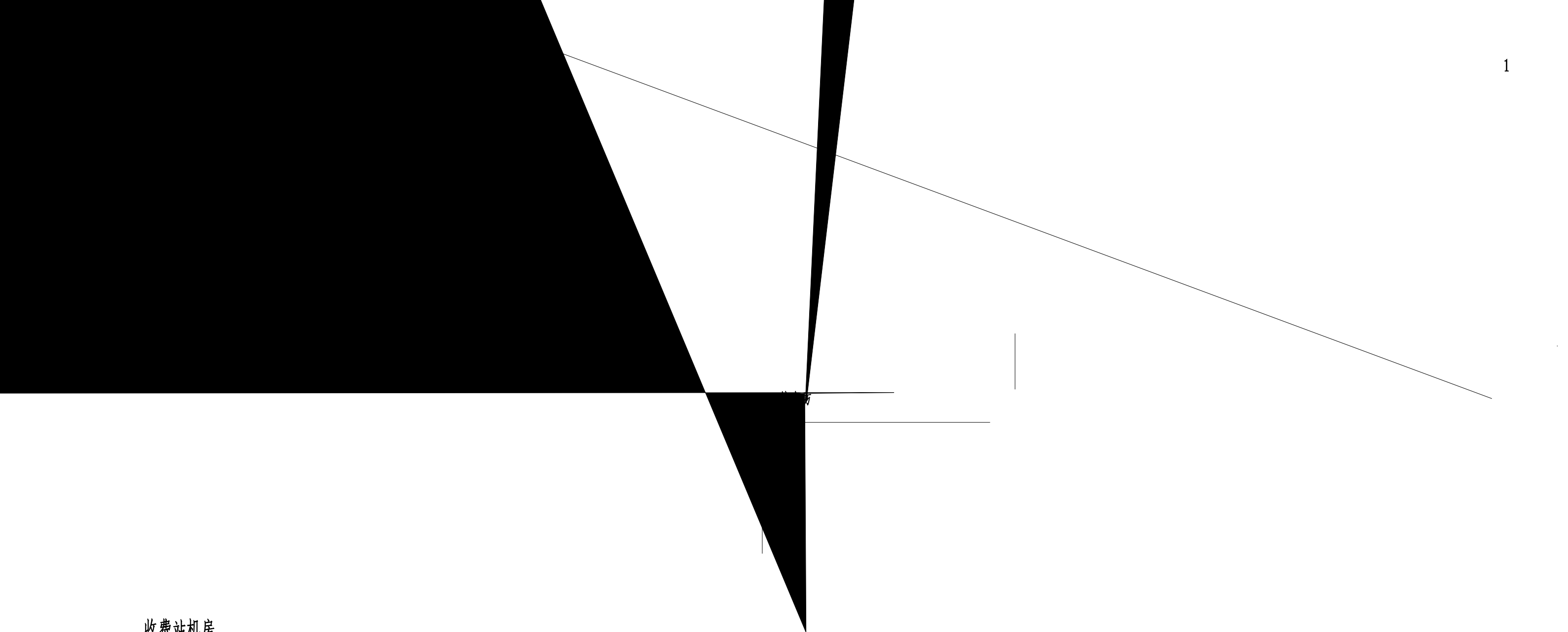
3

5

收费设备及

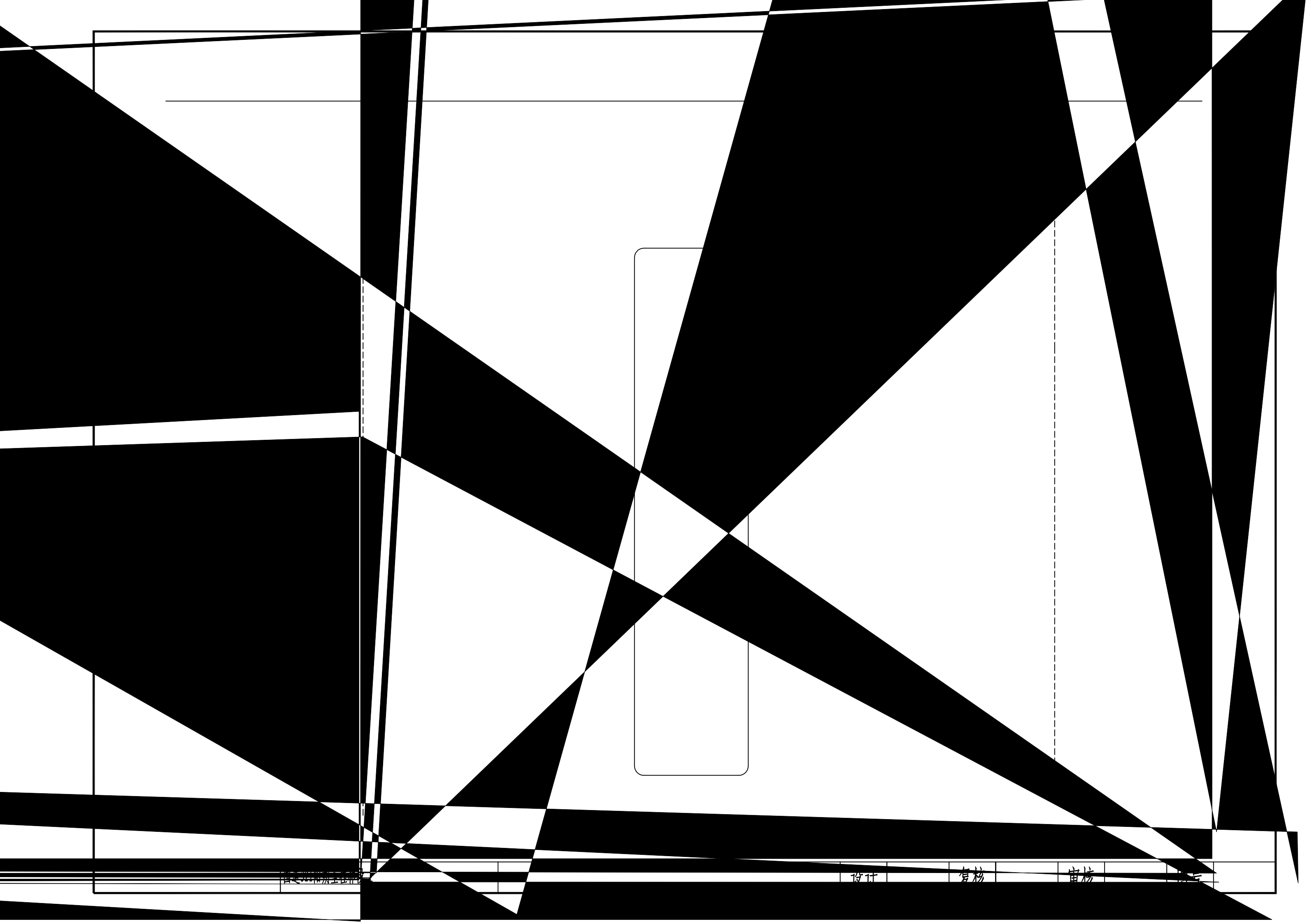
4

5



收费站机房

收费广场



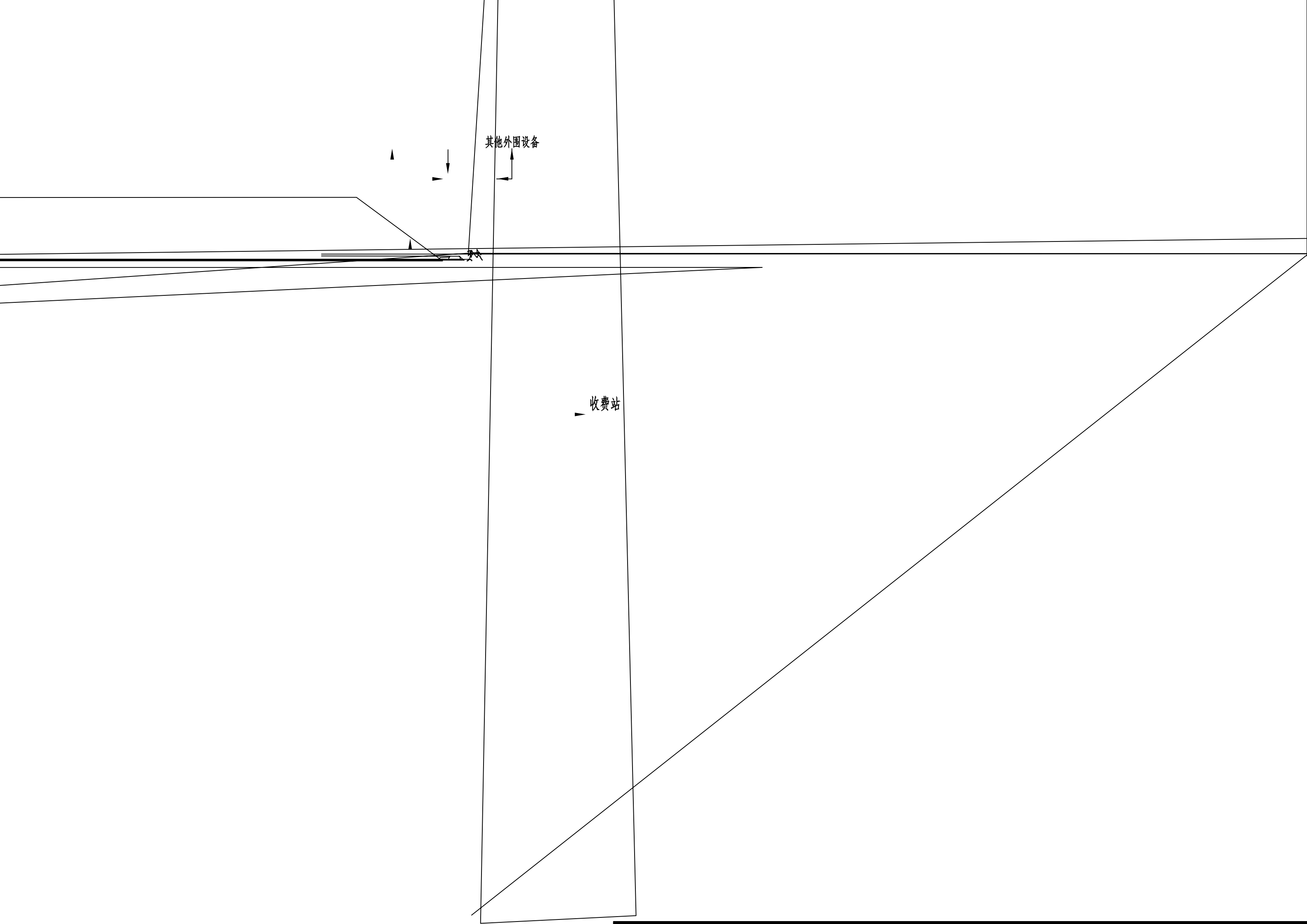
国道321阳朔至桂林段雁山收费站ETC改造工程施工

设计

复核

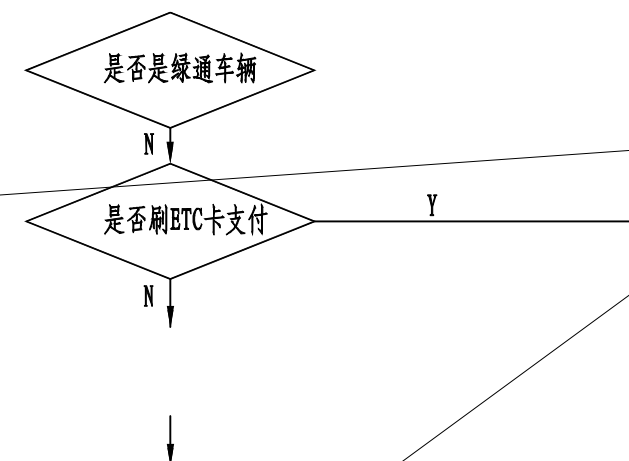
审核

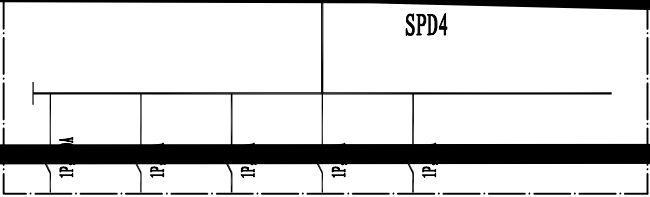
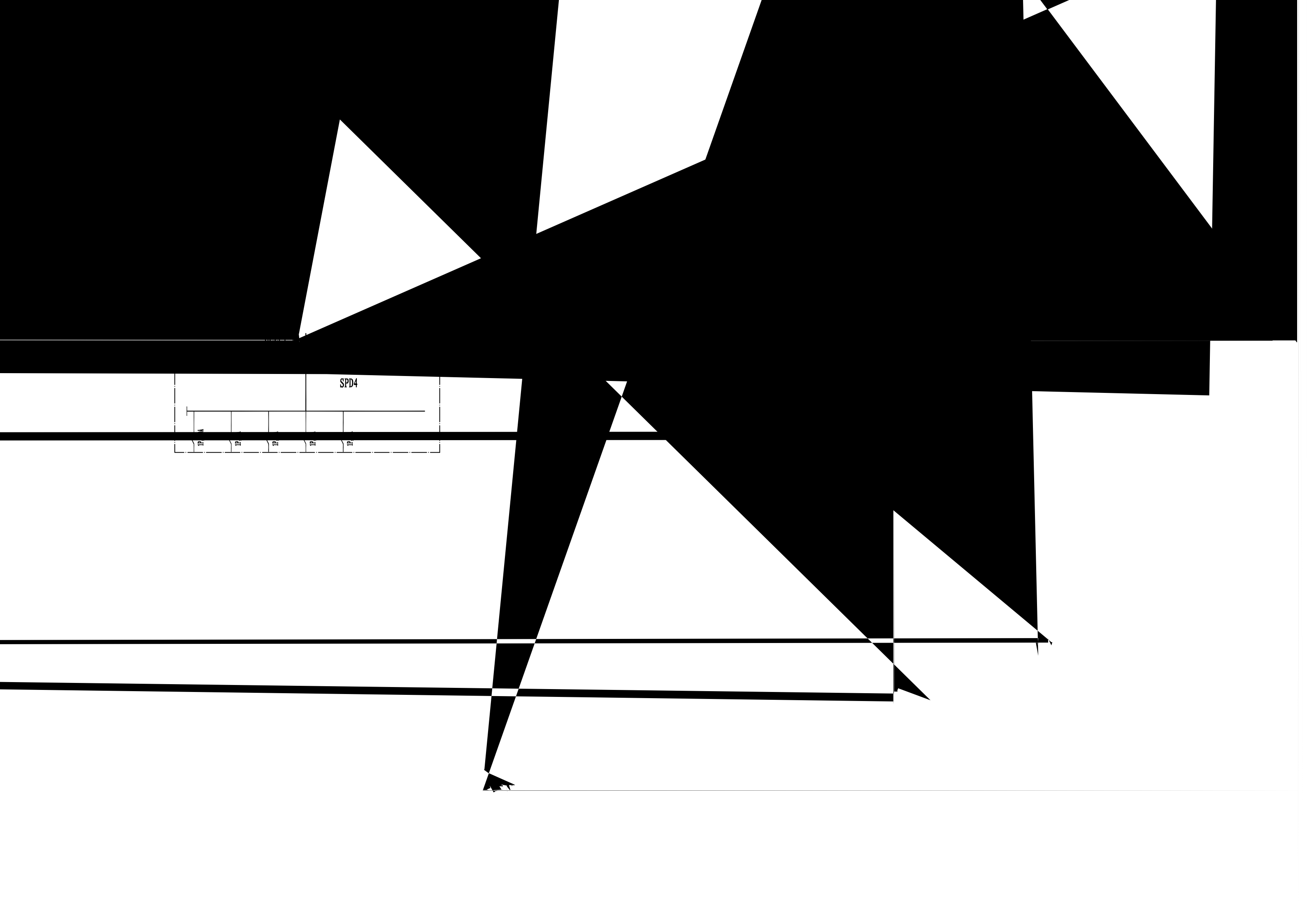
图号



其他外围设备

收费站





SPD4

A

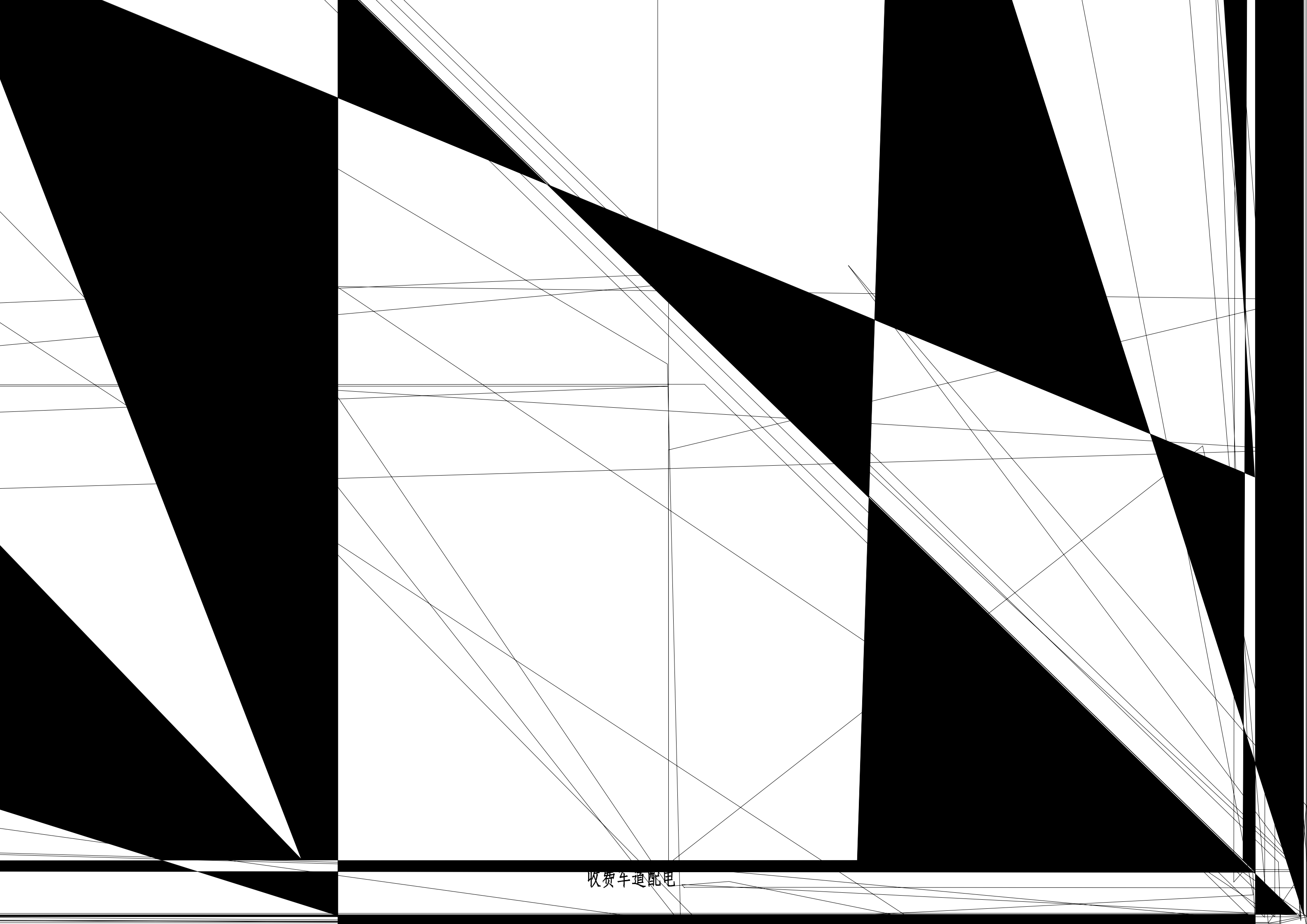
A

A

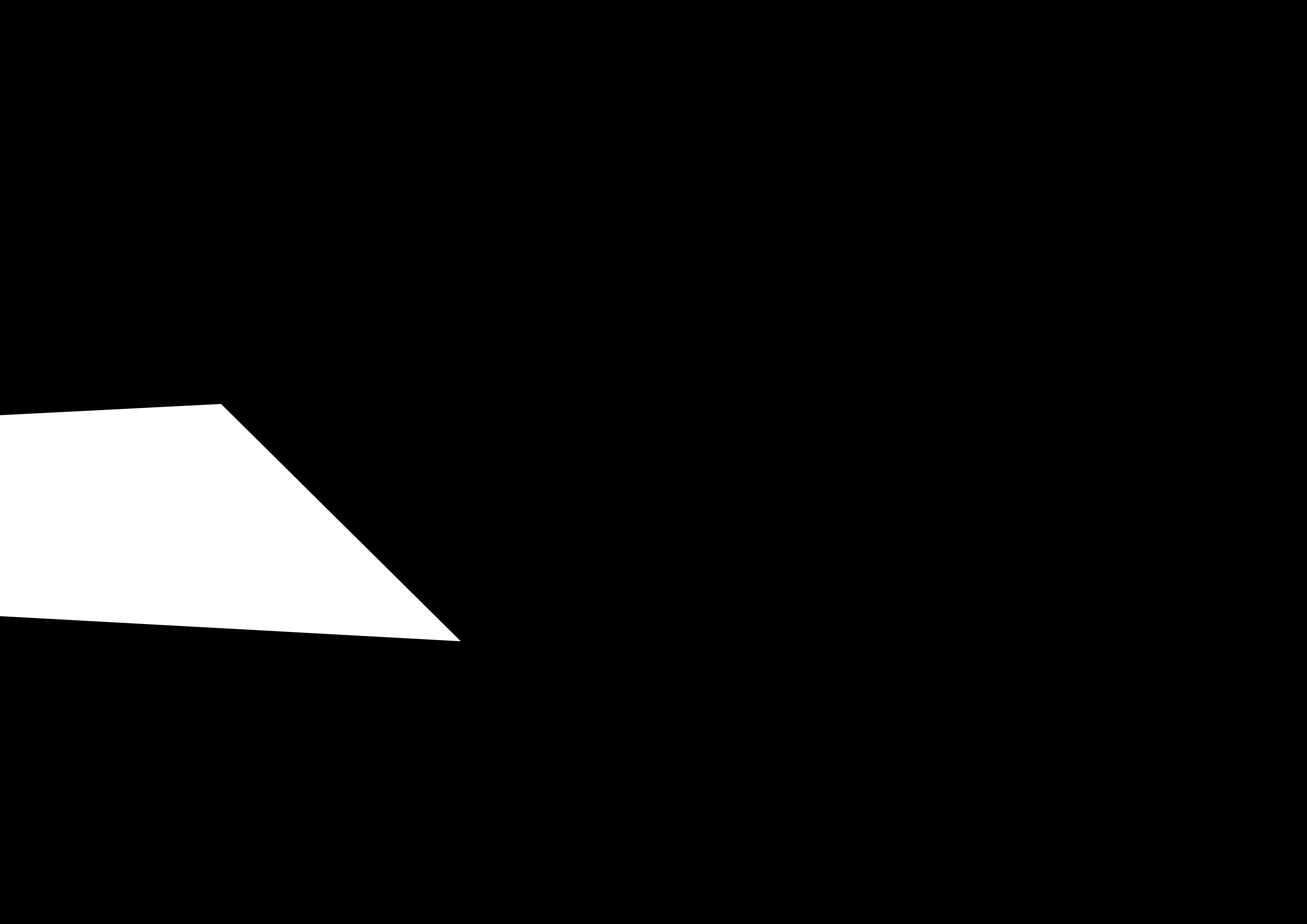
A

A

A



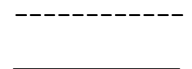
收费车道配电



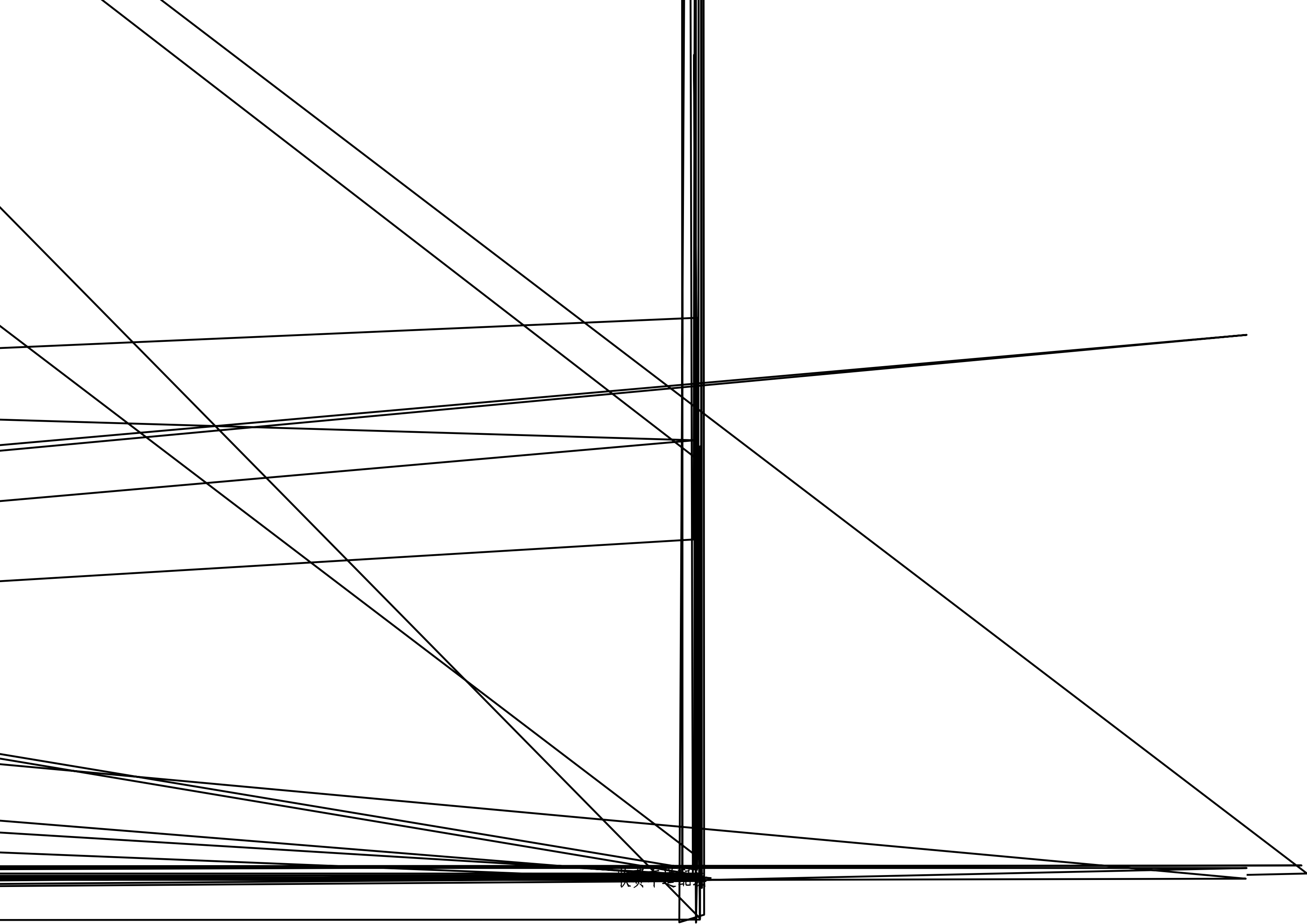
收费站机房设备

图例:

信号线



ETC车道设备				
		车道控制机	ETC车	车辆检测器

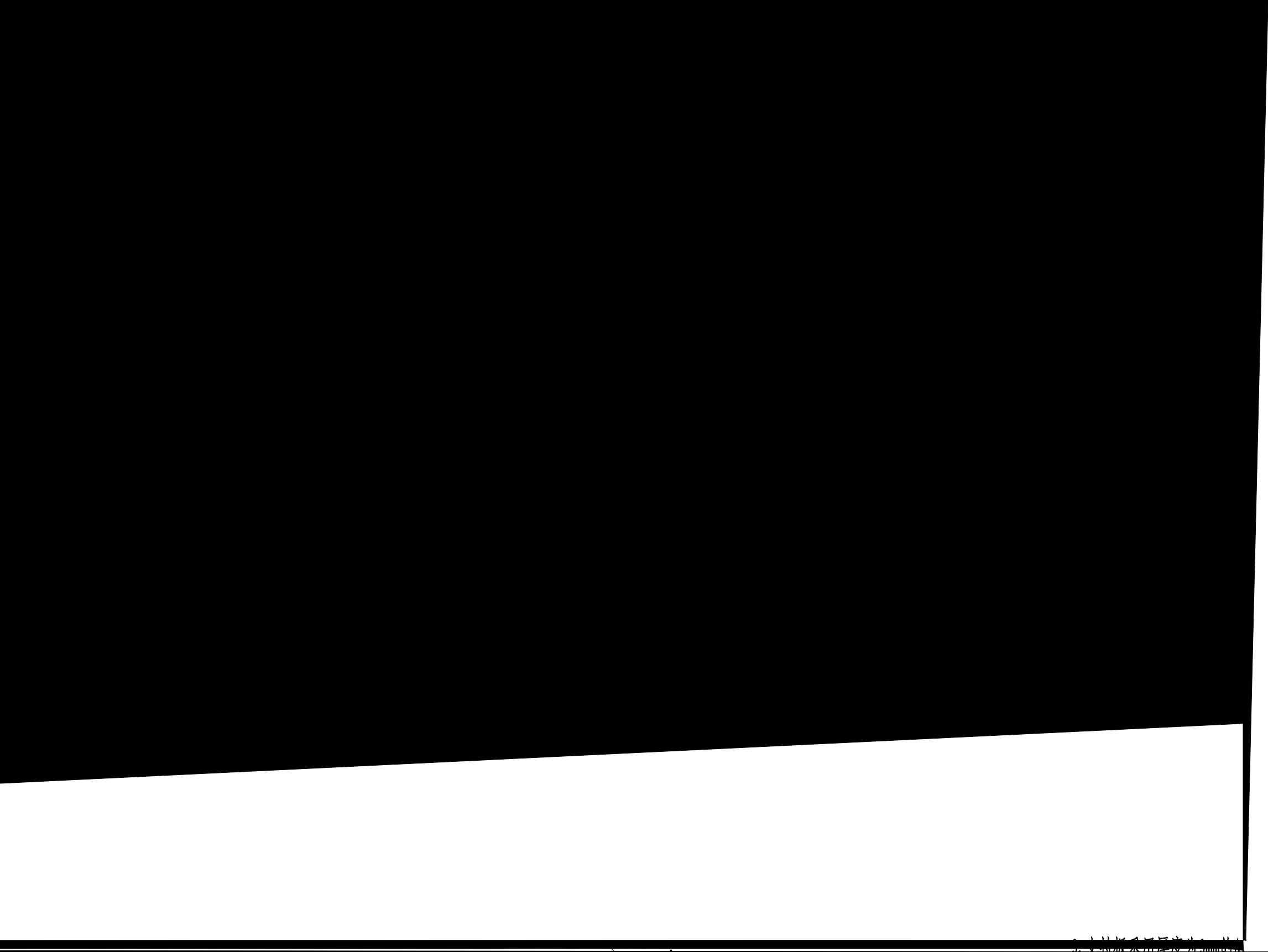


张其平 2014

注:

1.

74

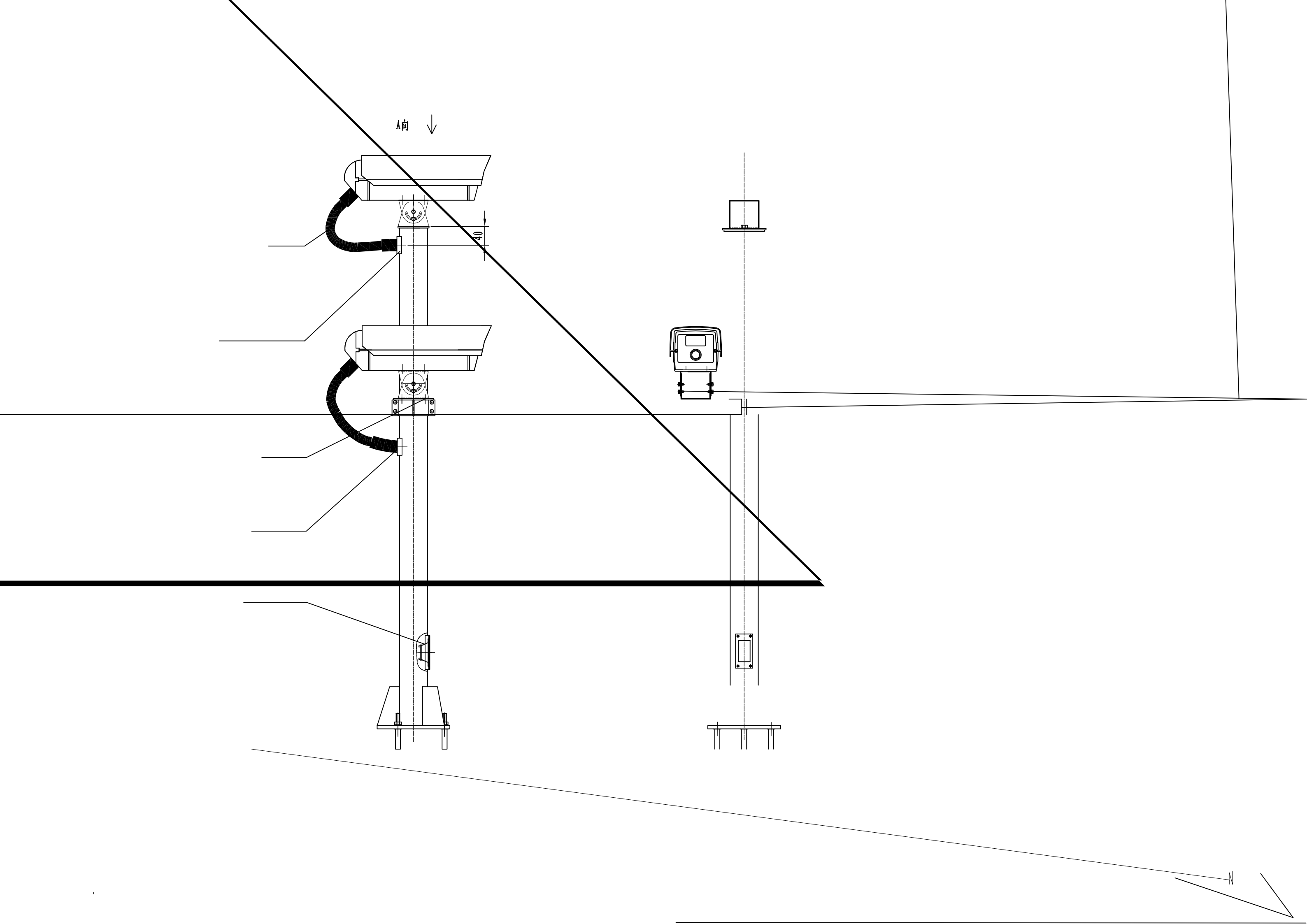


铜芯导线

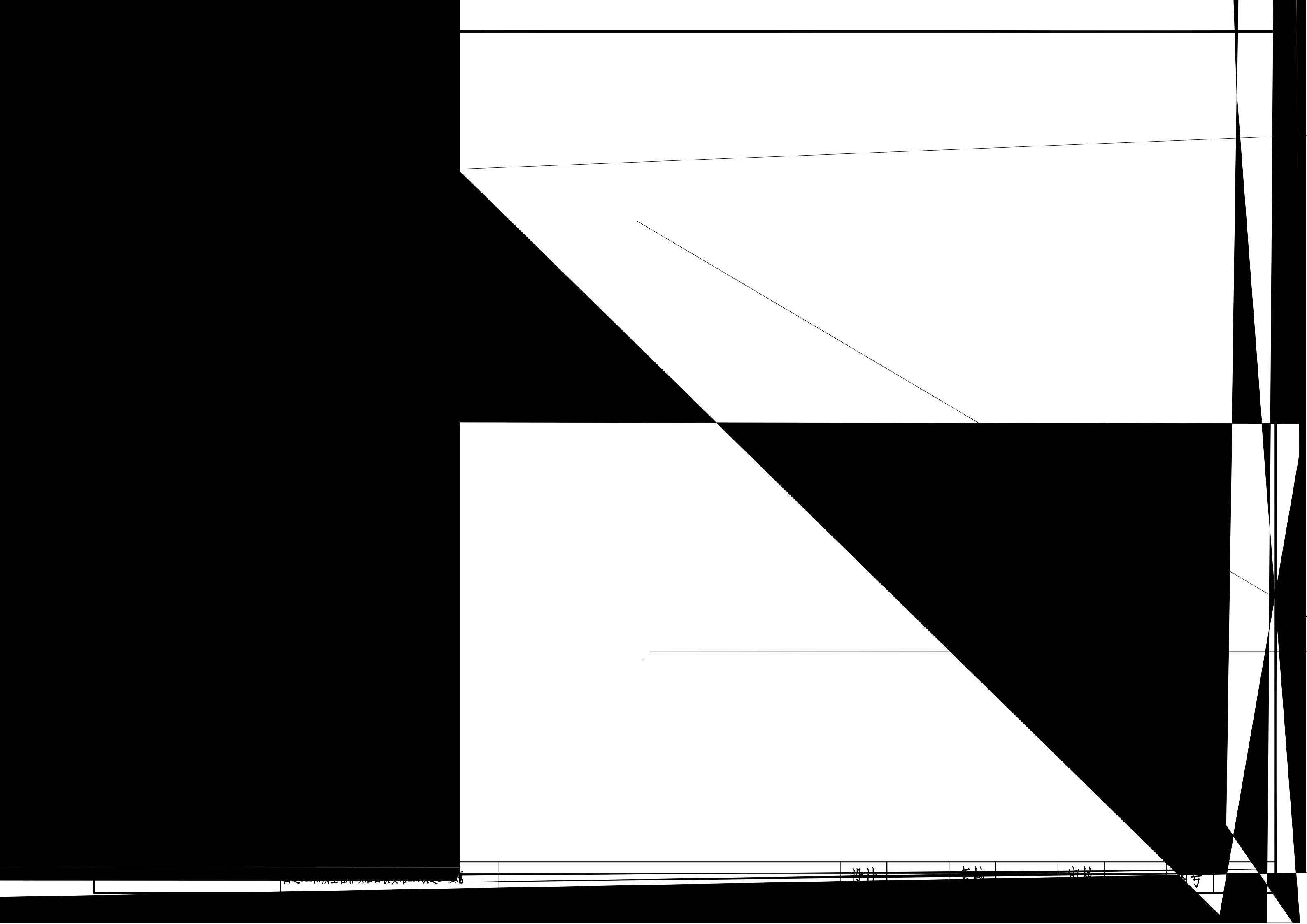
2

2

2



3. 本图为安装示意图，括号内栏杆臂长度适用于



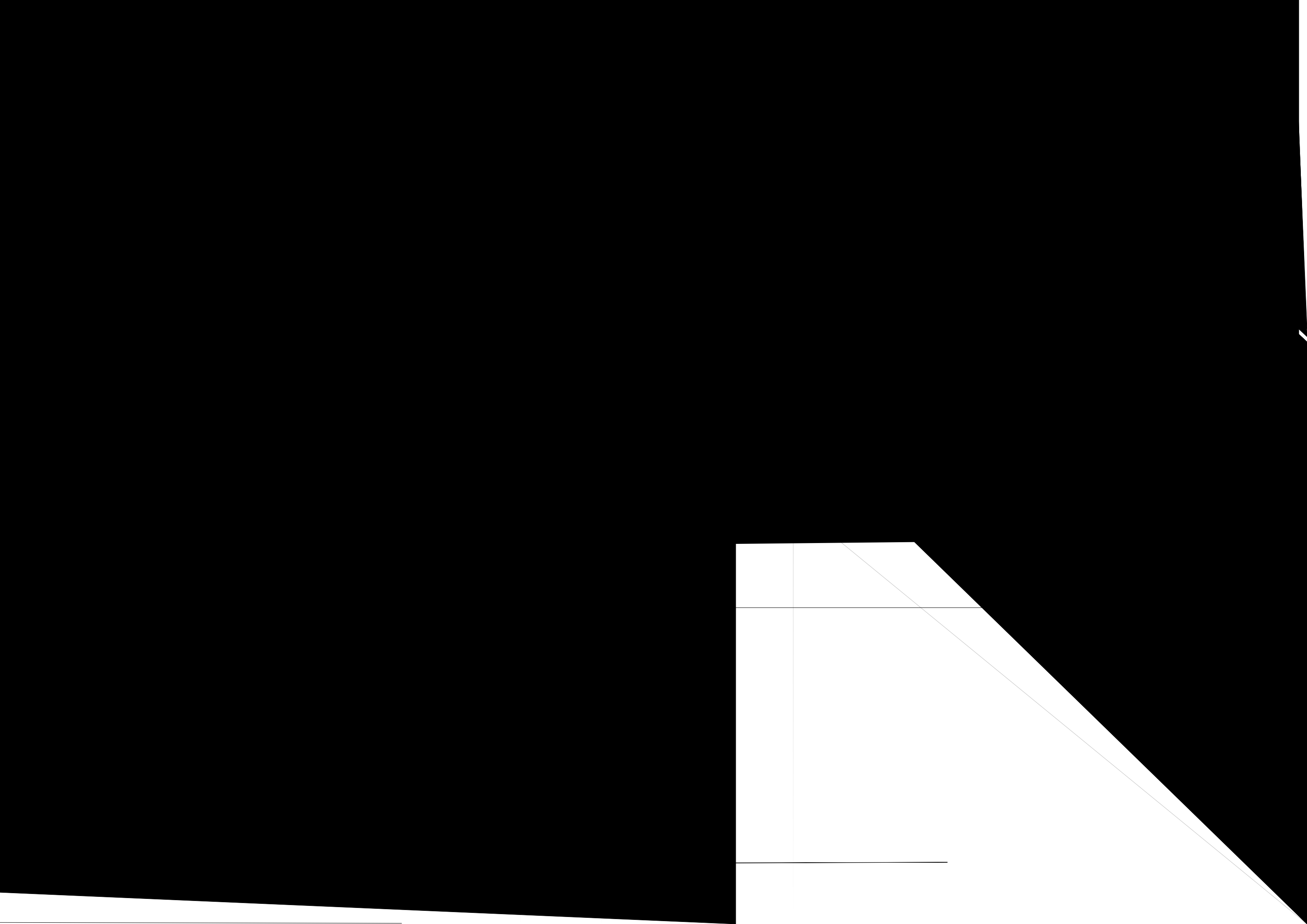
设计说明：本设计旨在通过几何图形的组合，探索空间感与视觉平衡。主要元素包括左侧的黑色块面、右侧的白色块面，以及贯穿两者的对角线。辅助线条在白色区域形成网格，增强结构的层次感。底部通过文字标注进一步明确设计意图。

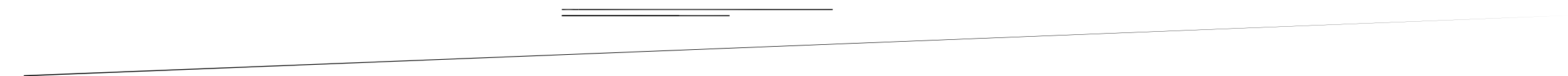
设计

名称

出处

序号



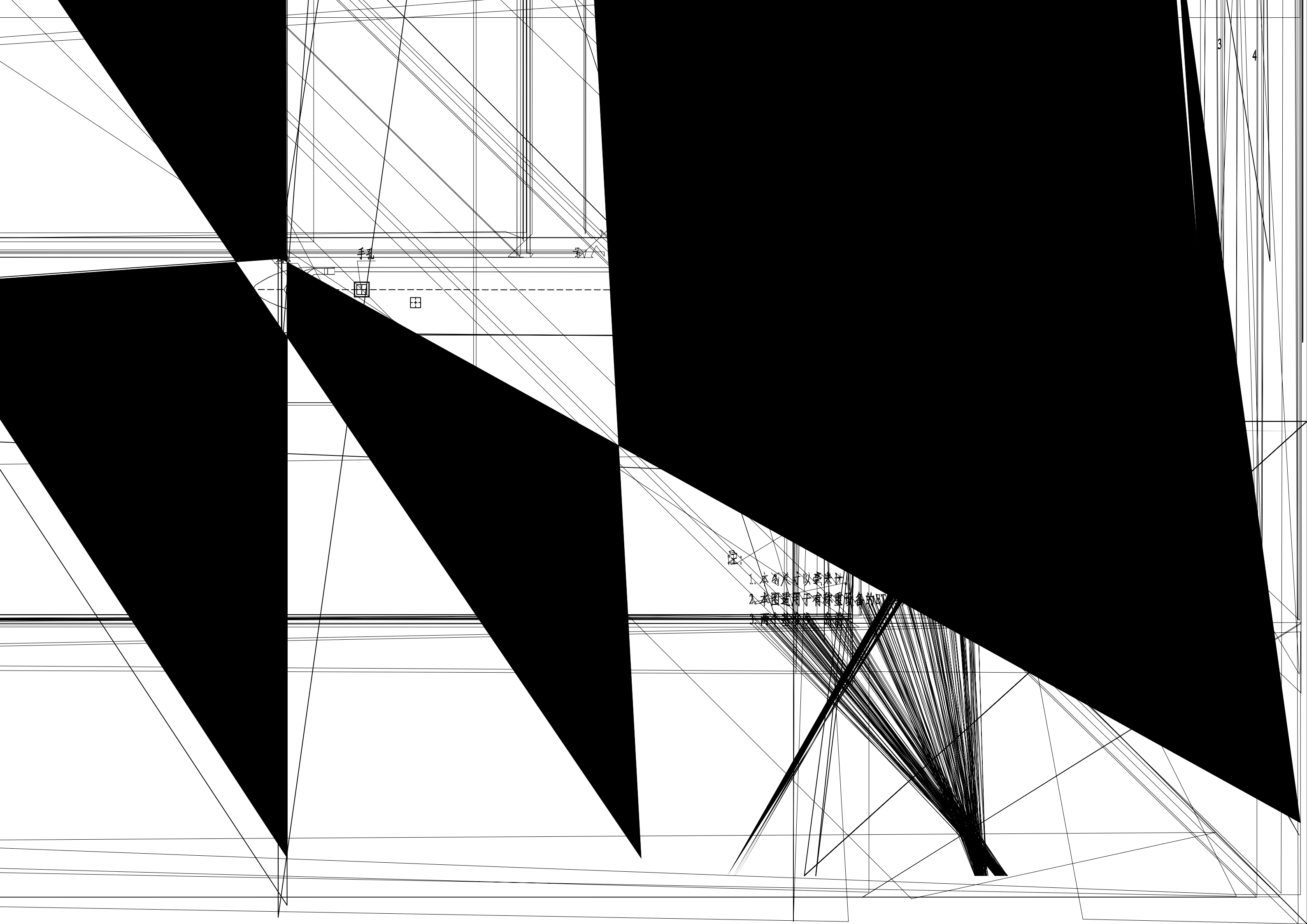




单向收费岛

注:

- 1. 本图尺寸以mm为单位。
- 2. 本图适用于没有称重设备的ETC专用车道的收费岛。
- 3. 两个基准线: 岛前、岛后。



3

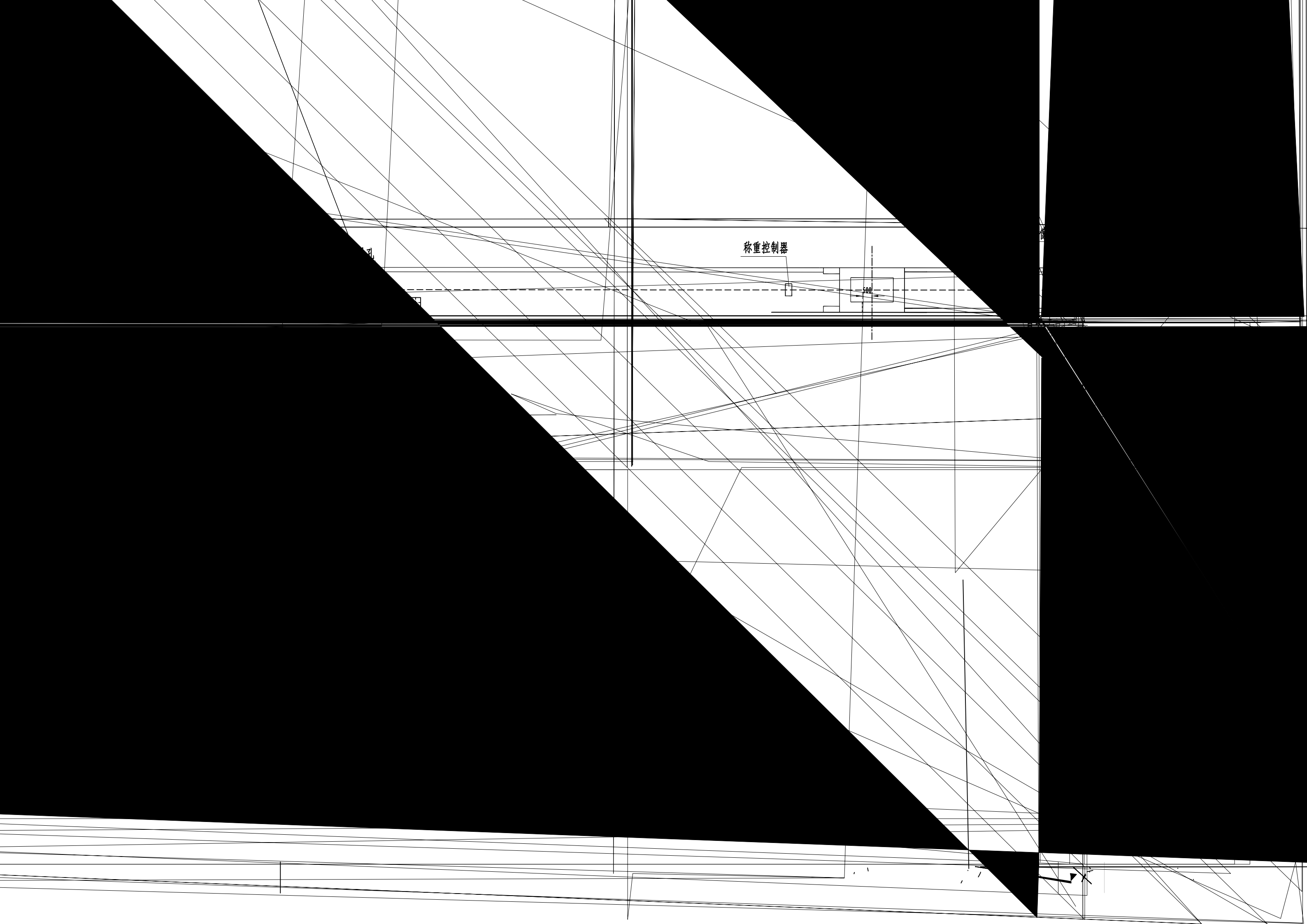
4

手孔

窰

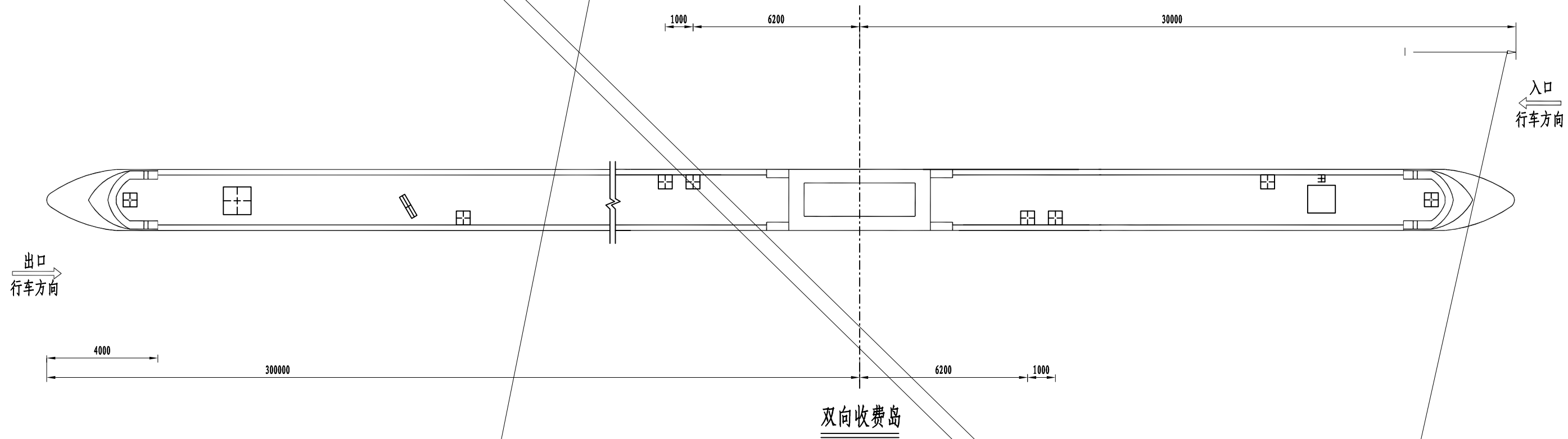


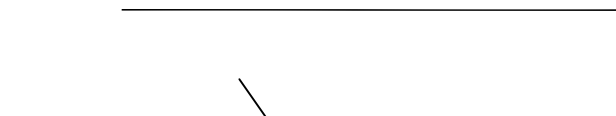
1. 本图关于以毫米计
2. 本图适用于有称重设备的
3. 本图适用于有称重设备的



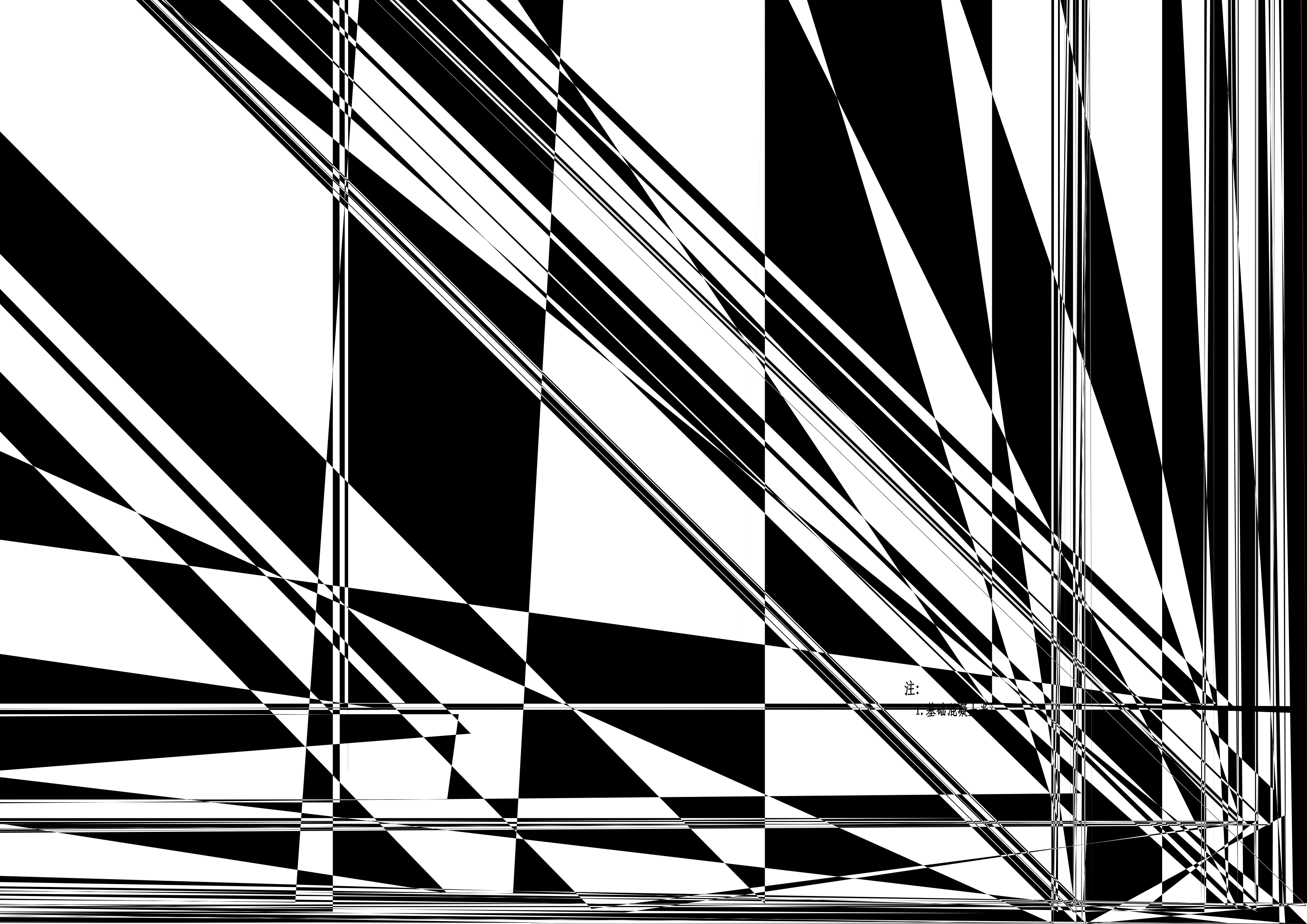
称重控制器

500



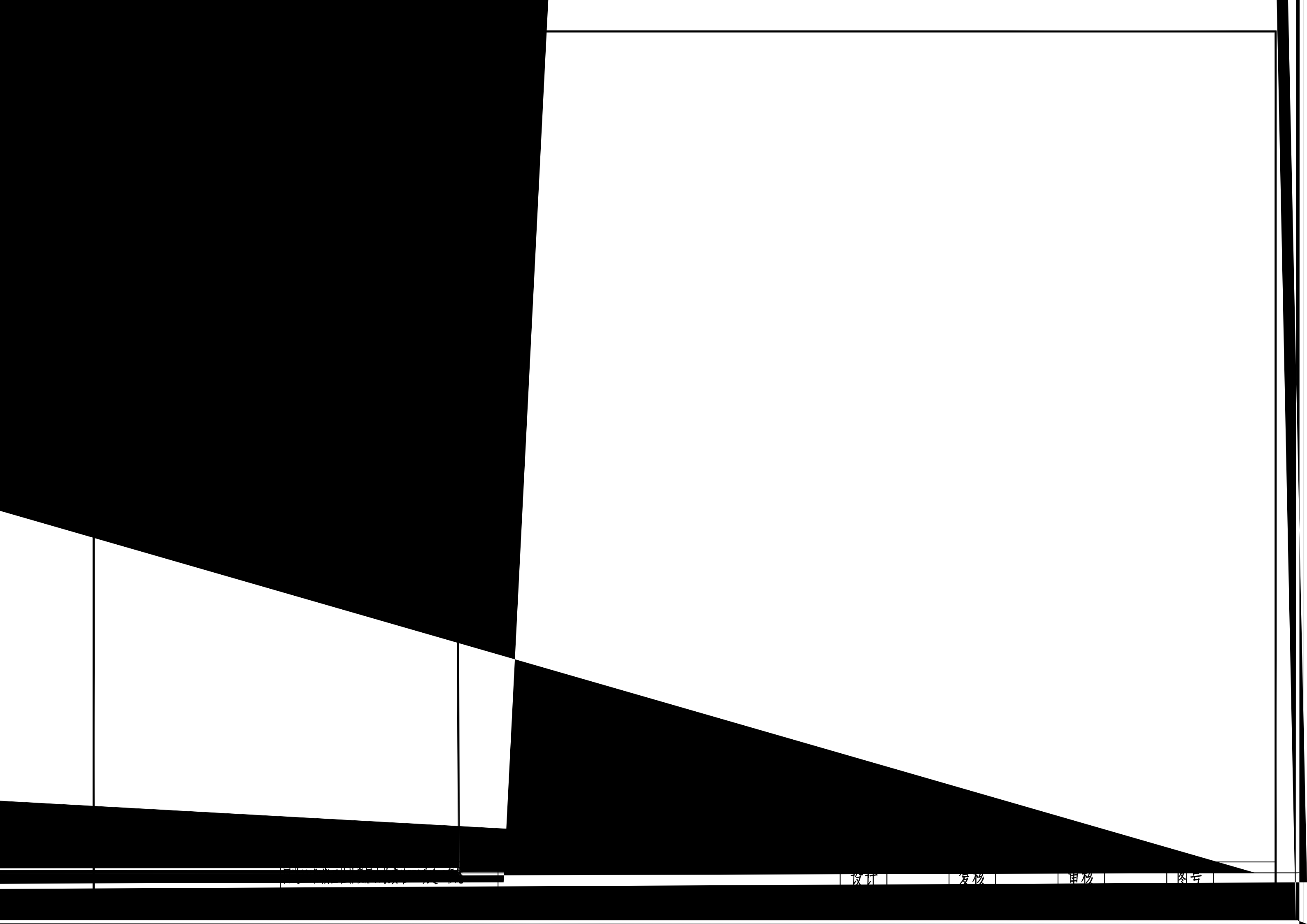


空白处



注:

1. 基础混凝土



图例

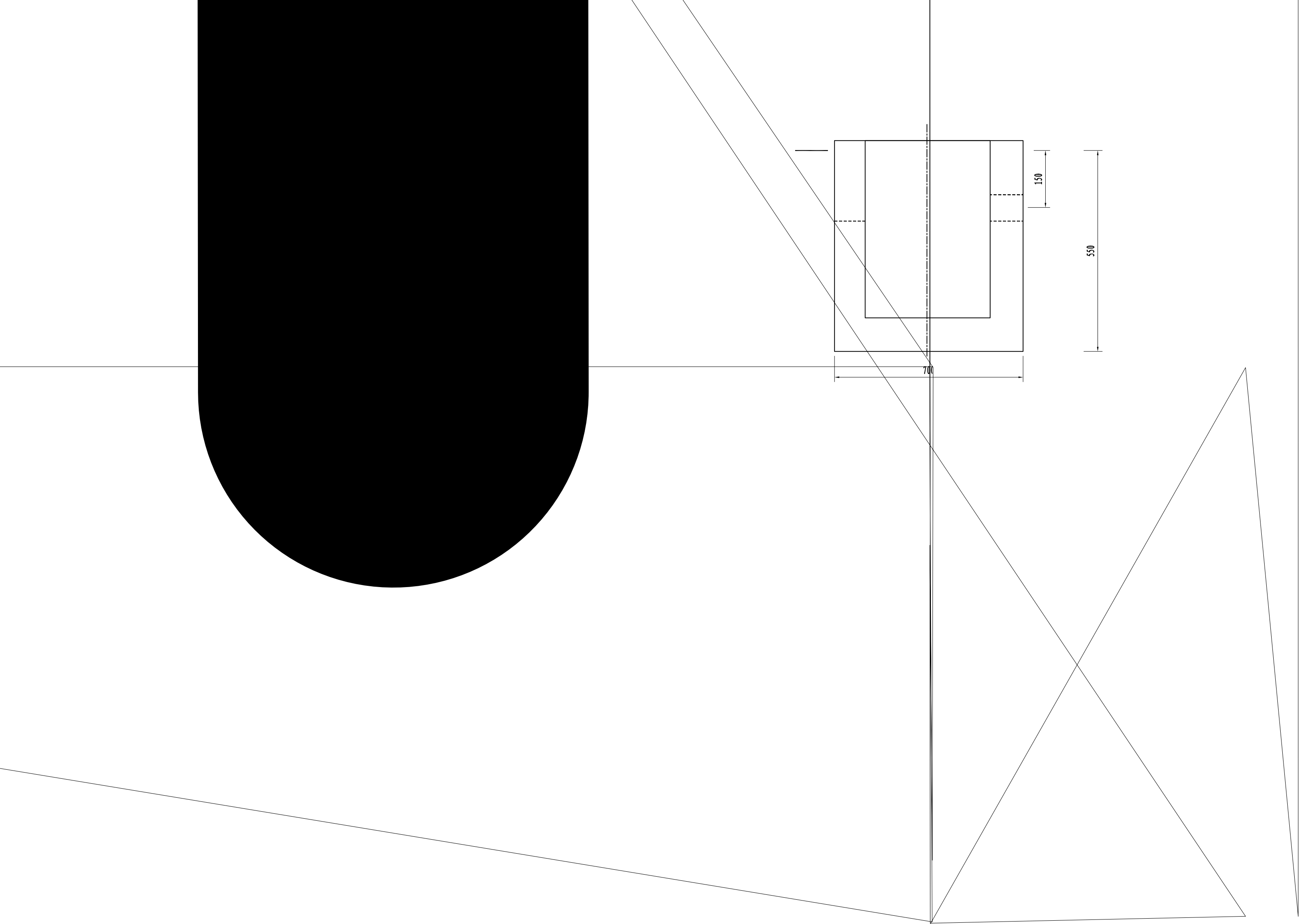
设计

复核

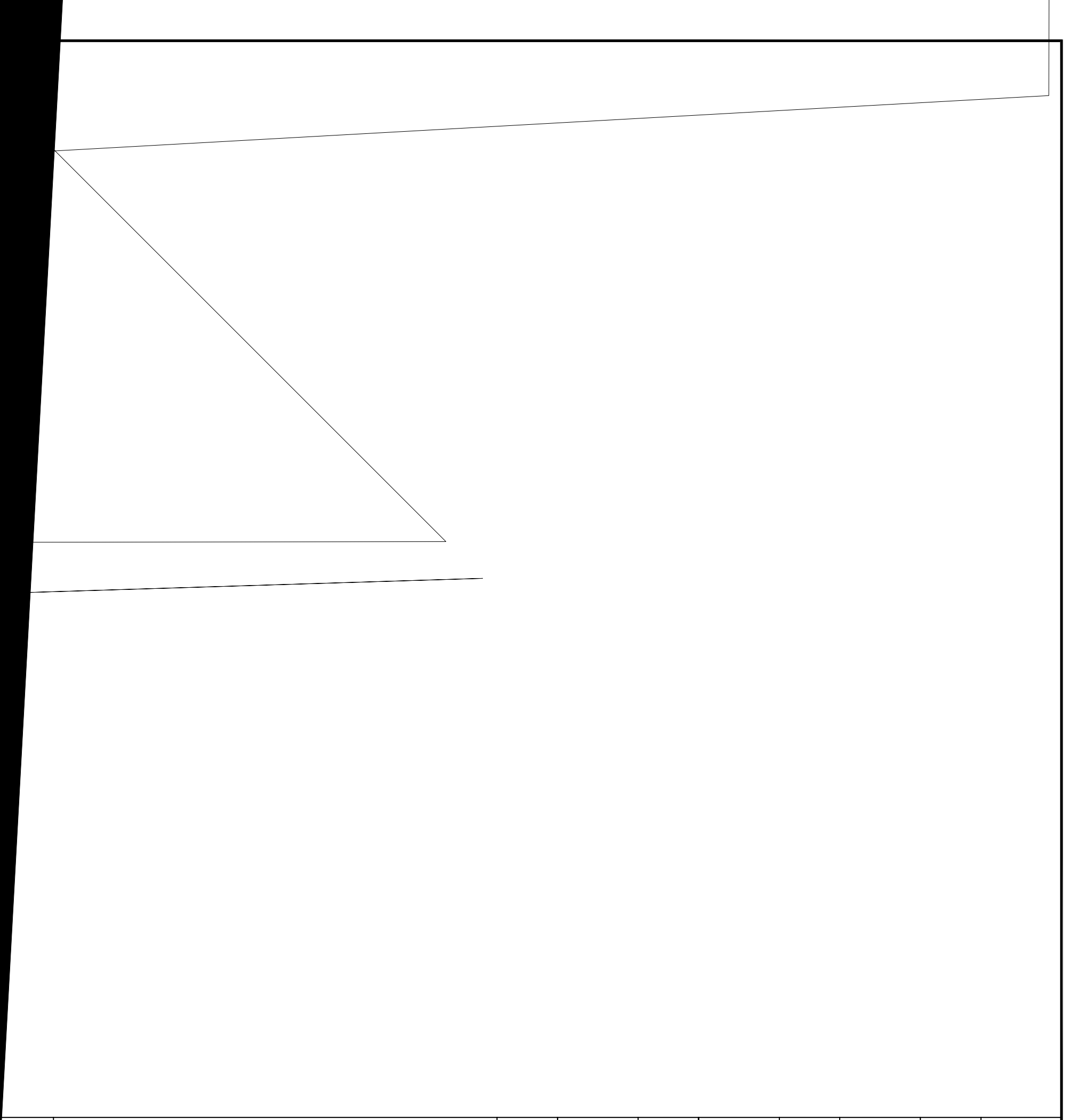
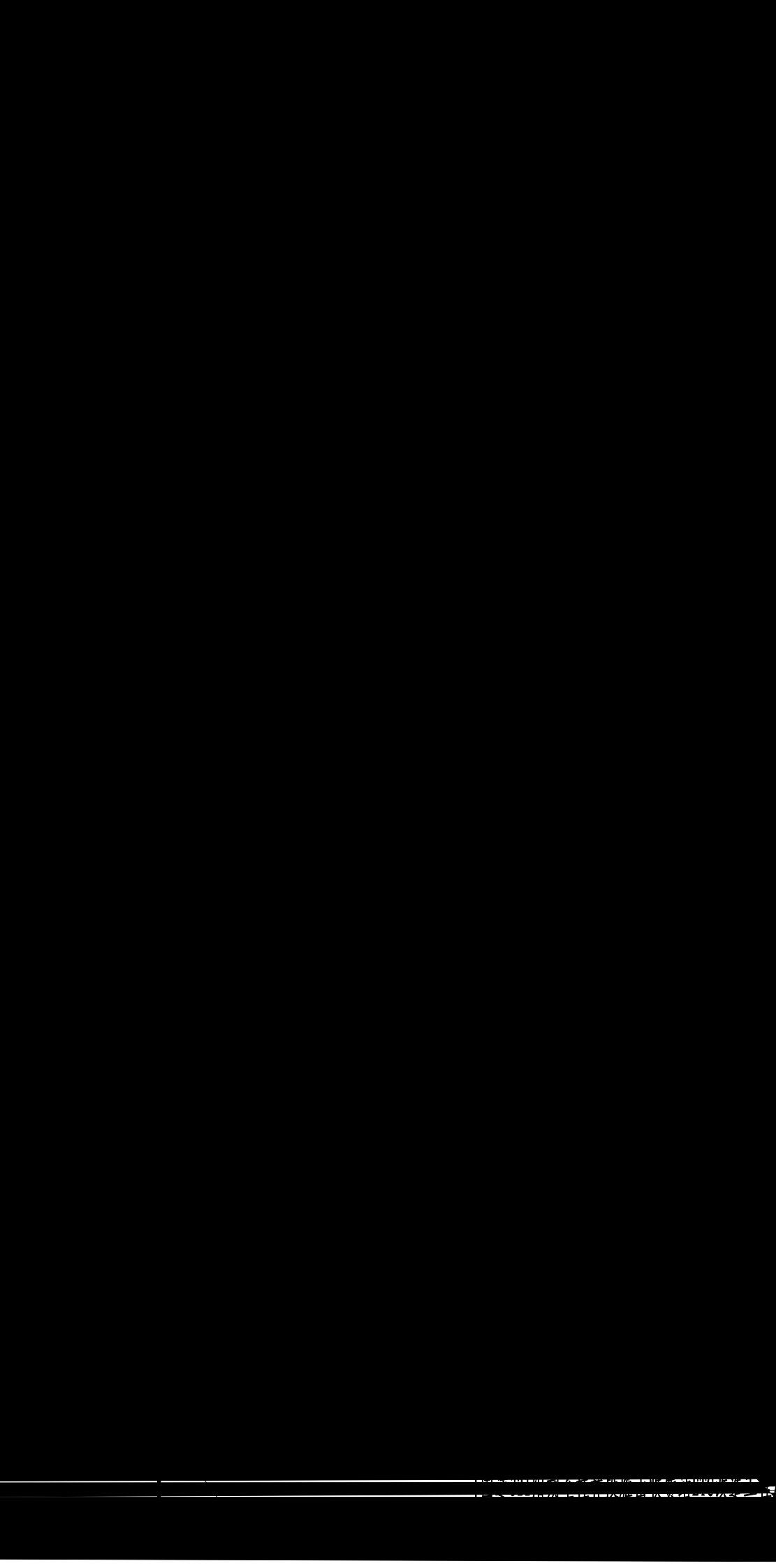
审核

图号

国道321阳朔至桂林段雁山收费站ETC改造工程施		设计		复核		审核		签字	
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国道321阳朔至桂林段雁山收费站ETC改造工程施工		设计				复核		审核	
								图号	

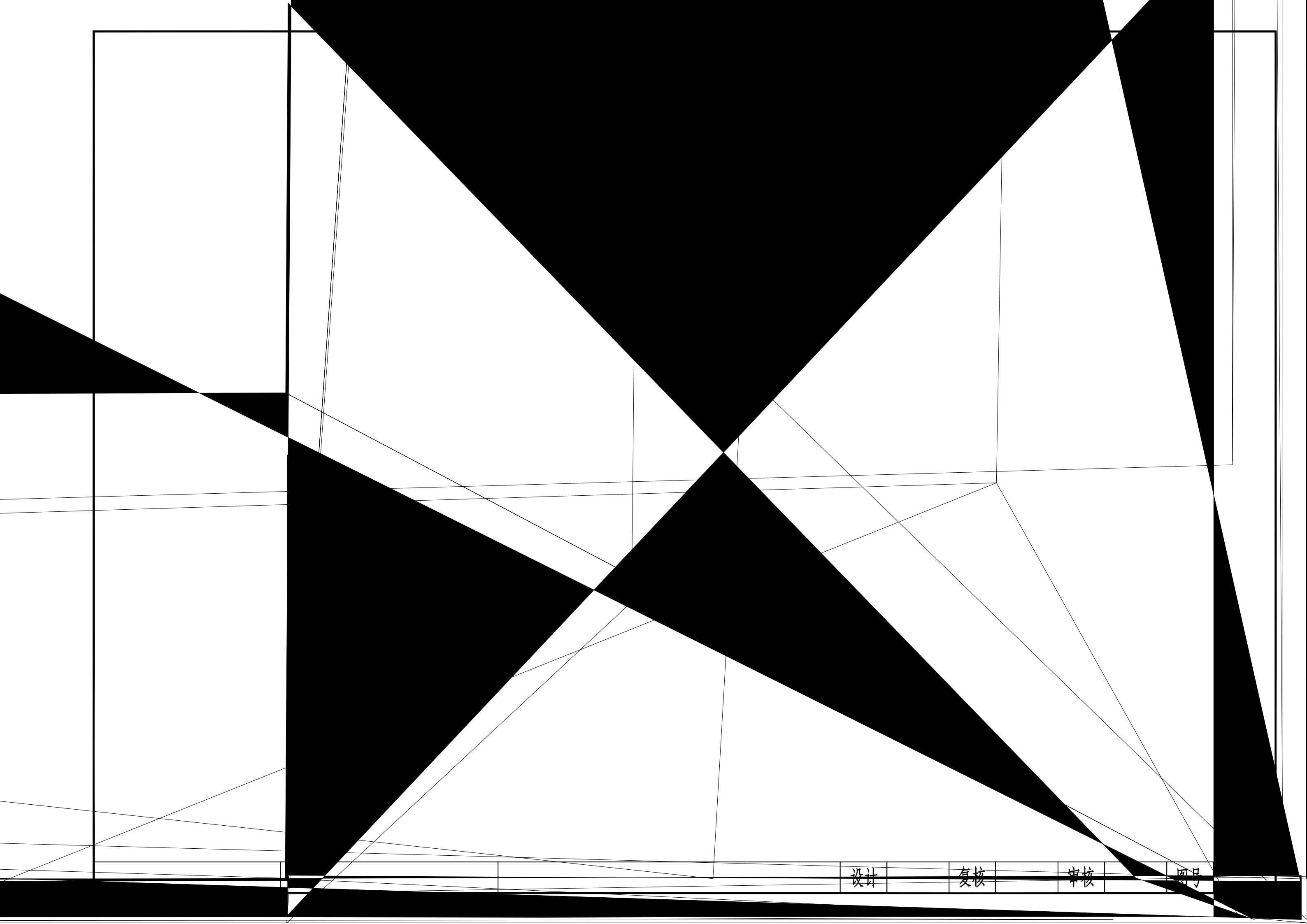


设计

复核

审核

图号



设计

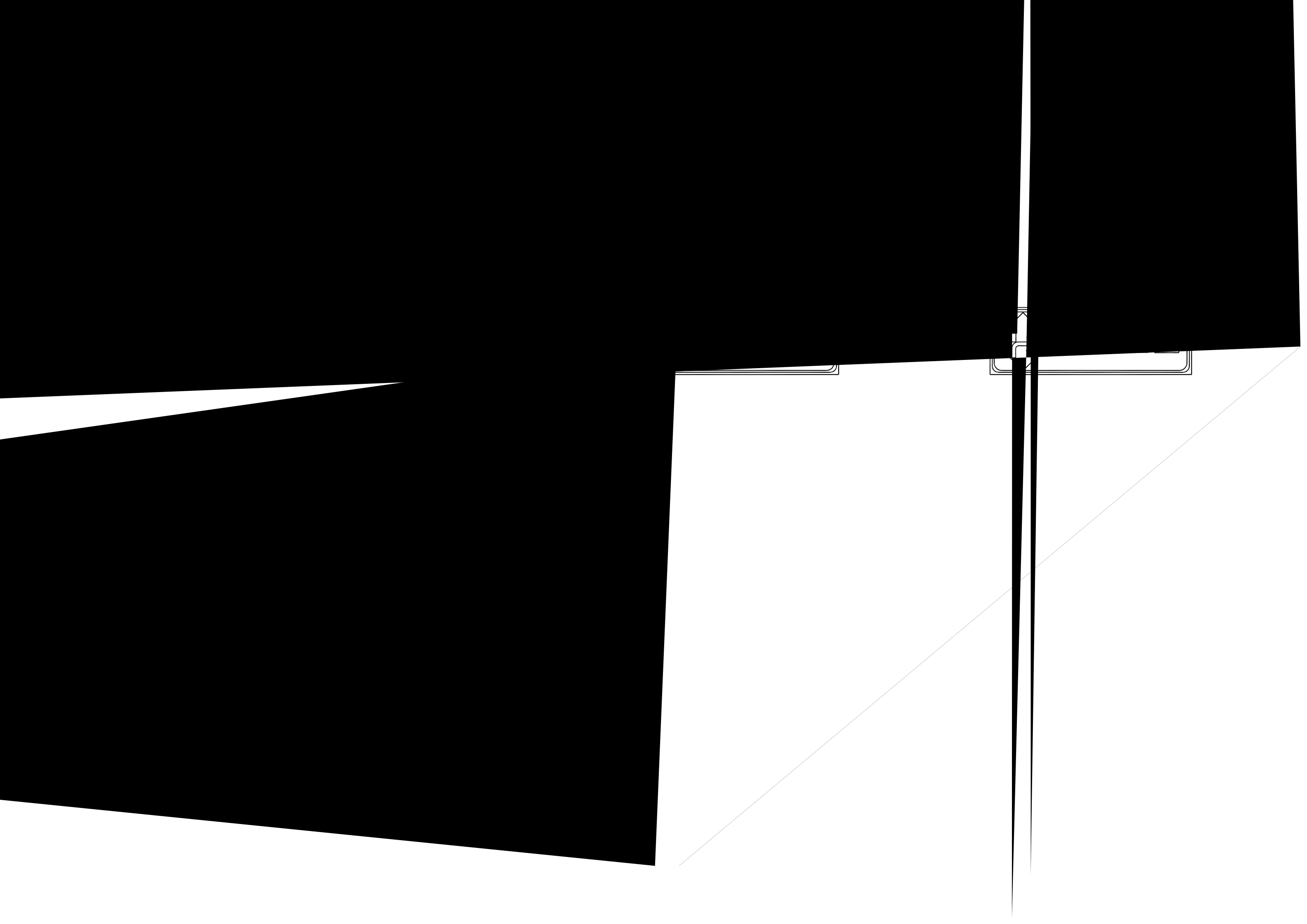
复核

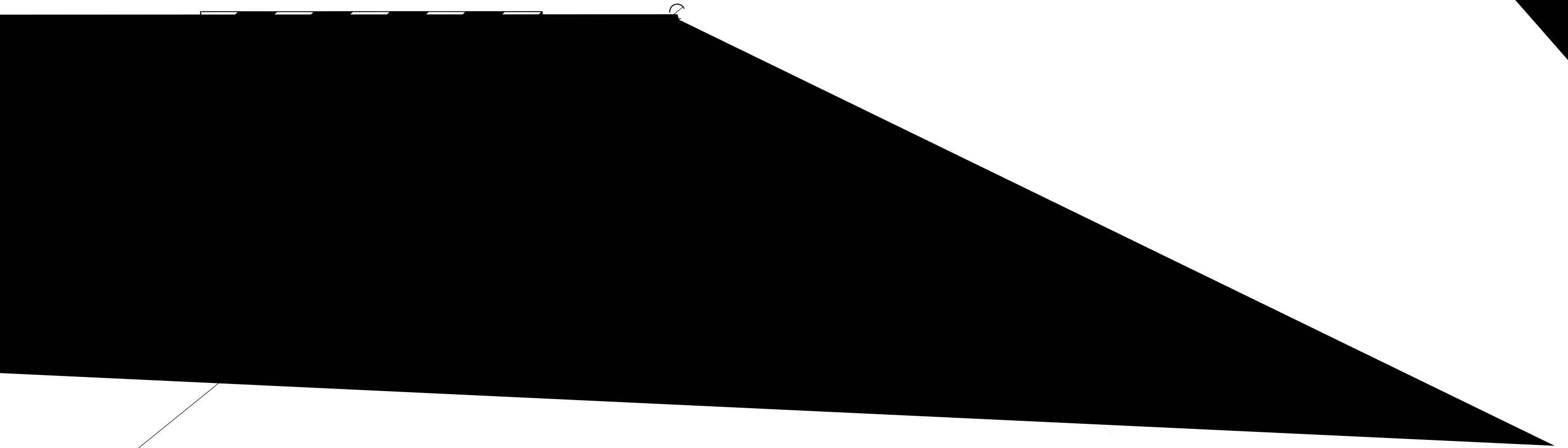
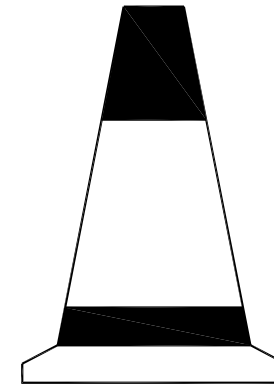
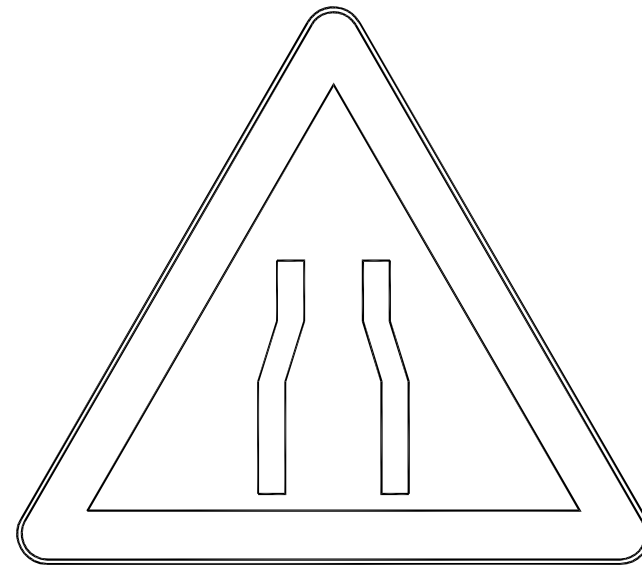
审核

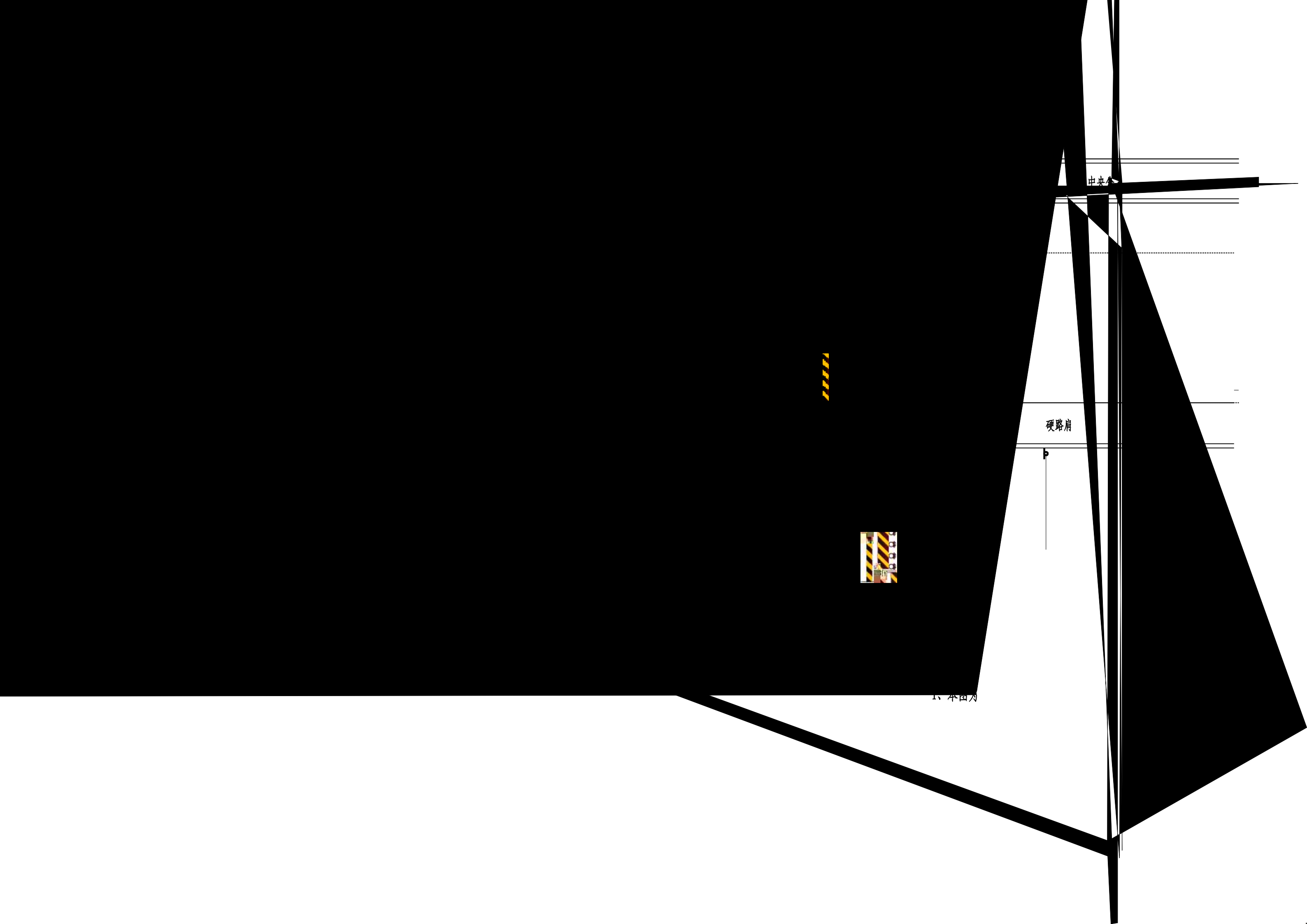
图号

白色振动热熔标线（实线段）

	设计		复核		审
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中央分

硬路肩

P

1、本图为