PE14-033

HONDA

1/23/2015

Q10

13m Accord EPS PE14-033

Information to address question 10

Accord V6 Gearbox comes from SHOWA Japan Gotemba Factory

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Accord L4 Gearbox comes from SHOWA Blanchester US

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[redacted]

PE14-033

Q10
PARTS DEMAND HISTORY
AS OF 1/19/2015

	24-MONTH HISTORY						
	53601-T2F-A04	53601-T2F-A94	53601-T2G-A02	53601-T2G-A92	53601-T3Z-A01	53601-T3V-A02	53601-T2A-A04
JANUARY 2013	13	2	6	1	0	0	0
FEBRUARY 2013	9	3	0	0	0	0	0
MARCH 2013	8	9	4	1	0	0	0
APRIL 2013	19	2	7	2	0	0	0
MAY 2013	29	5	7	0	0	0	1
JUNE 2013	24	5	3	2	0	0	0
JULY 2013	40	11	11	2	0	0	0
AUGUST 2013	46	11	7	1	0	0	0
SEPTEMBER 2013	45	21	16	1	0	0	1
OCTOBER 2013	26	5	12	5	0	0	0
NOVEMBER 2013	41	7	8	2	0	0	0
DECEMBER 2013	33	10	8	6	0	0	0
JANUARY 2014	54	16	14	7	0	0	0
FEBRUARY 2014	57	20	18	6	0	0	2
MARCH 2014	61	12	11	4	1	0	1
APRIL 2014	31	10	10	7	0	0	1
MAY 2014	51	17	19	7	0	0	0
JUNE 2014	66	14	22	9	1	0	0
JULY 2014	59	17	27	9	2	1	1
AUGUST 2014	87	21	32	7	4	0	0
SEPTEMBER 2014	81	20	30	8	1	0	0
OCTOBER 2014	81	24	21	12	0	0	0
NOVEMBER 2014	48	14	16	3	1	0	0
DECEMBER 2014	67	22	17	10	2	0	0
JANUARY 2015*	64	10	11	2	1	0	0

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PARTS DEMAND HISTORY
AS OF 1/19/2015

PART DESCRIPTION	SERVICE PART NO.	MODEL APPLICATION	PART RELEASE DATE	CALENDAR YEAR					
				2010	2011	2012	2013	2014	2015
RACK, POWER STEERING	53601-T2F-A04	2013-2014 ACCORD L4	8/23/2012	0	0	21	333	743	64
RACK, POWER STEERING	53601-T2F-A94	2013-2015 ACCORD L4	8/23/2012	0	0	2	91	207	10
RACK, POWER STEERING	53601-T2A-A04	2013 ACCORD L4	10/5/2012	0	0	0	2	5	0
BOX SUB, POWER STEERING GEAR	53601-T2G-A02	2013-2015 ACCORD V6	10/9/2012	0	0	14	89	237	11
BOX SUB, POWER STEERING GEAR	53601-T2G-A92	2013-2015 ACCORD V6	10/9/2012	0	0	2	23	89	2
BOX SUB, POWER STEERING GEAR	53601-T3V-A02	2014 ACCORD PHEV	1/14/2013	0	0	0	0	1	0
BOX SUB, POWER STEERING GEAR	53601-T3Z-A01	2014-2015 ACCORD HYBRID	10/7/2013	0	0	0	0	12	1

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Q11

Q11-abcd_REDACTED

11-a

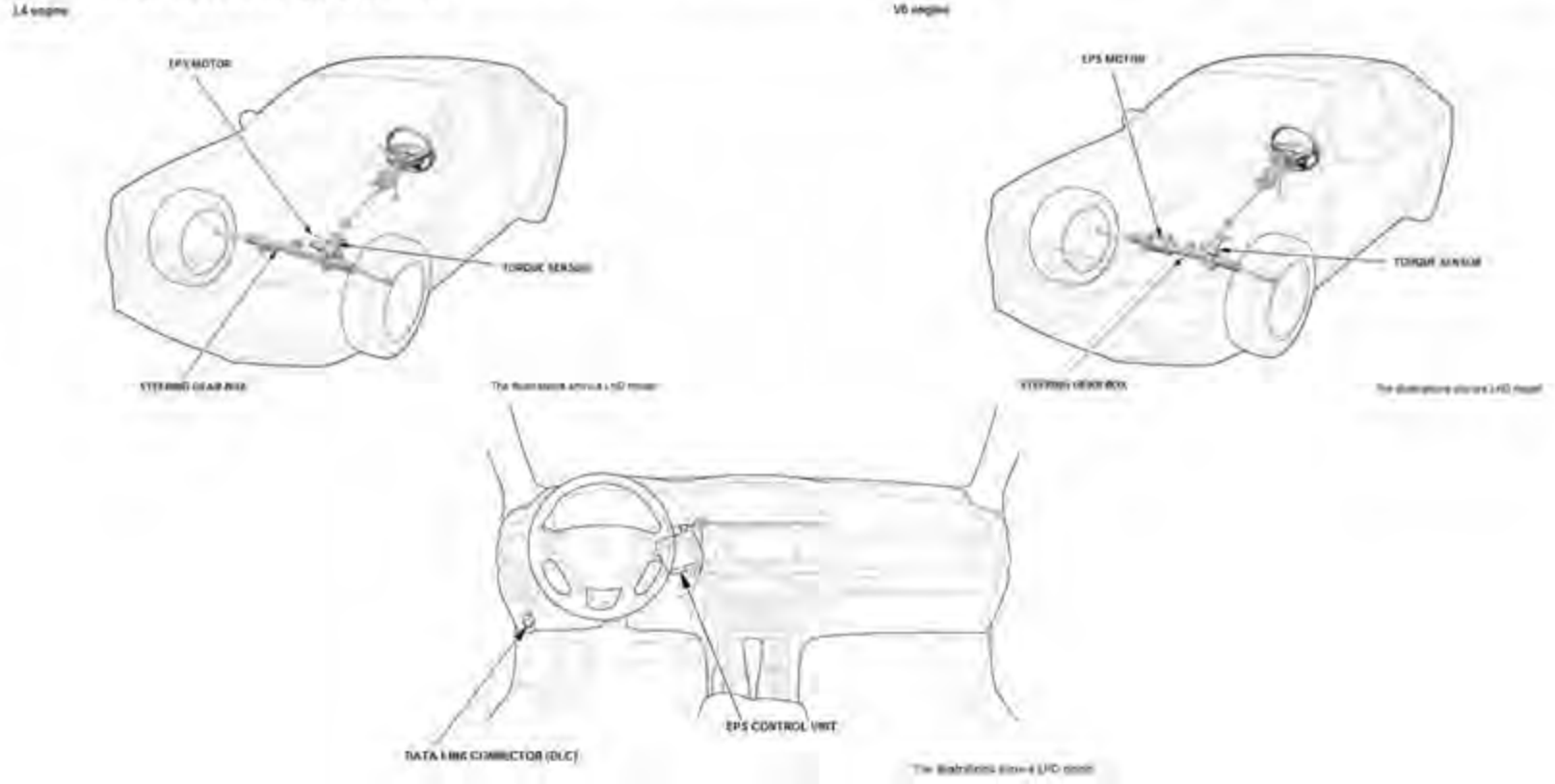
Describe the subject system and provide diagrams of the complete steering system:

This vehicle is equipped with electrical power steering (EPS). The driver's steering force is assisted by an electric motor at the steering gear box, instead of an engine-driven oil pump to generate oil pressure, so the EPS system improves engine efficiency.

The EPS control unit monitors and controls the EPS motor's assisting force to match driving conditions.

- Low vehicle speeds: High power assist (for easy handling)
- High speed driving: Low power assist (for stable driving)
- Low speed to high speed driving: Change smoothly from high assist to low assist

The steering force from the steering wheel is sent to the pinion shaft. The torque sensor measures the difference in torque between the applied force to the pinion shaft and the resistance on the wheels due to road friction. The torque sensor will then sends a voltage signal to the EPS control unit. Based on this signal, the EPS control unit controls the current to the EPS motor.



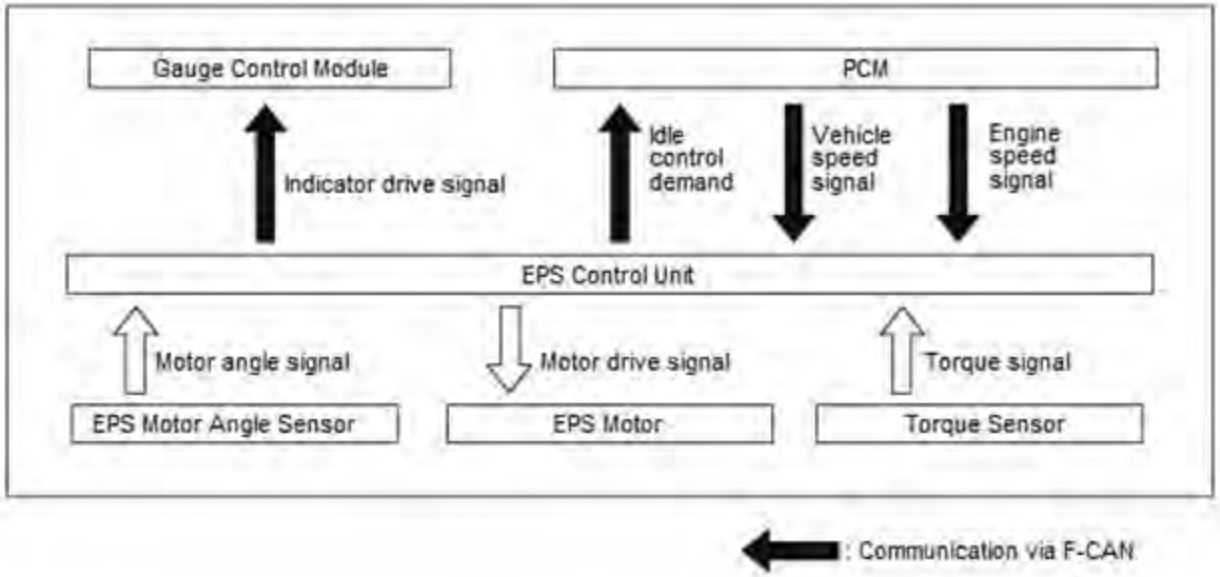
11-b

Provide a functional block diagram of the subject system showing all EPS controllers, sensor inputs and actuator outputs;

The EPS control unit controls the EPS motor by these signals:

- Vehicle speed signal (from PCM)
- Engine speed signal (from PCM)
- EPS motor angle sensor signal
- Torque sensor signal

At idle or low vehicle speeds, the EPS control unit sends a signal to the PCM to increase the engine idle speed, keeping the engine from stalling. When the EPS control unit detects a failure in the system, it stores a DTC and sends a signal to the gauge control module to turn the EPS indicator on.



11-c

Describe the subject system diagnostics, including a list of all associated diagnostic trouble codes, the name/description of each, a detailed description of the conditions necessary to set the code, and the conditions necessary to clear the code;

DTC	Detection Item
11-01	Low/High IG1-Terminal Voltage
11-02	Control Unit Power Supply Voltage
12-01	Motor Power Supply Voltage
21-01	Excessive Change of the Vehicle Speed Signal
21-02	Comparison between the Vehicle Speed and the Engine Speed Signal
22-01	Engine Speed Signal
30-01	ECU Software Reprogramming Failure
31-01	Torque Sensor Neutral Position Not Written
32-01	EPS Control Unit Internal Circuit (Current Sensor)
32-02	EPS Control Unit Internal Circuit (Current Sensor Offset)
32-07	EPS Control Unit Internal Circuit (Current Sensor)
32-08	EPS Control Unit Internal Circuit (Current Sensor)
32-09	Motor Current Correlation
33-01	Lower FET Stuck ON
33-02	Upper FET Stuck ON
33-06	Lower FET Stuck ON
33-07	Upper FET Stuck ON
34-01	Power Relay
34-02	Fail-Safe Relay
34-03	Short in EPS Motor Harness
34-04	Short in EPS Motor Harness
34-05	Power Relay Stuck OFF

DTC	Detection Item
35-01	EPS Control Unit Internal Circuit (CPU)
35-02	EPS Control Unit Internal Circuit (EEPROM1)
35-04	EPS Control Unit Internal Circuit (CPU Communication)
35-05	EPS Control Unit Internal Circuit (A/D Conversion)
35-07	EPS Control Unit Internal Circuit (INHL/INHR Ports)
36-02	EPS Control Unit Internal Circuit (INH Output Circuit)
37-01	EPS Control Unit Internal Circuit (Step-up Circuit)
37-02	EPS Control Unit Internal Circuit (Step-up Circuit)
53-01	Torque Sensor (VS1, VS2 Low/High Check)
53-02	Torque Sensor (Average Check)
53-03	Torque Sensor (Power Supply Check)
61-04	Motor Harness Malfunction
71-01	Motor Angle Sensor (SIN/COS Signals)
71-02	Motor Angle Sensor (Neutral Position Learning of SIN/COS)
71-03	Motor Angle Sensor (SIN/COS Signals)
71-07	Motor Angle Sensor (SIN/COS Signals)
81-03	Yaw Rate Sensor Malfunction
83-01	CAN Communication Failure
83-07	CAN Communication Timeout Error
84-01	Steering Angle Sensor Malfunction
85-01	VSA System Malfunction

- the conditions necessary to clear the code : When the vehicle speed is 0 km/h and engine speed is 0 rpm, failure codes can be cleared via a external diagnosis unit command.
- the conditions necessary to set the code : Please see nex pages.

1-1.F/S No. #11-1 :IG1 failure (Initial)

Detection method: [redacted]

Detection timing : [redacted]

1-2.F/S No. #11-2 :IG1 failure (In progress of control)

Detection method: [redacted]

Detection timing : [redacted]

1-3.F/S No. #12-1 :VBU failure

Detection method: [redacted]

Detection timing : [redacted]

2-1.F/S No. #21-1 : VSP failure (Sudden change of vehicle speed)

Detection method: [redacted]

Detection timing [redacted]

2-2.F/S No. #21-2 : VSP failure (NE comparison)

Detection method : [redacted]

Detection timing : [redacted]

2-3.F/S No. #22-1 :NE failure

Detection method : [redacted]

Detection timing : [redacted]

2-2.F/S No. #21-2 : VSP failure (NE comparison)

Detection method : [redacted]

Detection timing : [redacted]

2-3.F/S No. #22-1 :NE failure

Detection method : [redacted]

Detection timing : [redacted]

3-1.F/S No. #30-1 :Reprograming failure

Detection method : [redacted]

Detection timing : [redacted]

3-2.F/S No. #31-1 :Not-yet writing of torque sensor neutral point value

Detection method : [redacted]

Detection timing : [redacted]

3-3.F/S No. #32-1 :Current sensor offset failure (Initial)

Detection method : [redacted]

Detection timing : [redacted]

3-4.F/S No. #32-2 :Current sensor offset failure (In progress of control)

Detection method : [redacted]

Detection timing : [redacted]

3-5.F/S No. #32-7 :Current sensor failure check 1 for U and W phase (In progress of control)

Detection method : [redacted]

Detection timing : [redacted]

3-6.F/S No. #32-8 :Current sensor failure check 2 for U and W phase (In progress of control)

Detection method : [redacted]

Detection timing : [redacted]

3-7.F/S No. #32-9 :Current sensor failure check (Initial)

Detection method : Diagnose as follows under the condition of P/W relay-ON and F/S relay-ON.

[redacted]

Detection timing : [redacted]

3-8.F/S No. #33-1 :Lower FET ON failure (Initial)

Detection method : [redacted]

Detection timing : [redacted]

3-9.F/S No. #33-2 :Upper FET ON failure (Initial)

Detection method : [redacted]

Detection timing : [redacted]

3-10.F/S No. #33-6 :Lower FET ON failure (In progress of control)

Detection method [redacted]

Detection timing : [redacted]

3-11.F/S No. #33-7 :Upper FET ON failure (In progress of control)

Detection method : [redacted]

Detection timing : [redacted]

3-12.F/S No. #34-1 :Power relay failure

Detection method : [redacted]

Detection timing : [redacted]

3-13.F/S No. #34-2 :F/S relay failure

Detection method : [redacted]

Detection timing :[redacted]

3-14.F/S No. #34-3 : Interphase short (Initial)

Detection method : [redacted]

Detection timing : [redacted]

3-15.F/S No. #34-4 :Interphase short (In progress of control)

Detection method : [redacted]

Detection timing : [redacted]

3-16.F/S No. #34-5 :Power system off failure

Detection method: [redacted]

Detection timing : [redacted]

3-17-(1).F/S No. #35-1 :ROM failure

Detection method : [redacted]

Detection timing : [redacted]

3-17-(2).F/S No. #35-1 :A/D converter check

Detection method : [redacted]

Detection timing [redacted]

3-17-(3).F/S No. #35-1 :Interruption circuit failure check

Detection method : [redacted]

Detection timing [redacted]

3-17-(4).F/S No. #35-1 :RAM failure check

Detection method : [redacted]

Detection timing [redacted]

3-17-(5). F/S No. #35-1 :Timer failure check

Detection method : [redacted]

Detection timing [redacted]

3-17-(6). F/S No. #35-1 :Main timer failure check

Detection method : [redacted]

MAIN: [redacted]

SUB : [redacted]

Detection timing : [redacted]

3-17-(7). F/S No. #35-1 : Inner WDT OVF check

Detection method : [redacted]

Detection timing : [redacted]

3-17-(8). F/S No. #35-1 :TRAPA check

Detection method : [redacted]

Detection timing : [redacted]

3-17-(9). F/S No. #35-1 : Stack failure check

Detection method : [redacted]

Detection timing : [redacted]

3-17-(10). F/S No. #35-1 : Register failure check

Detection method : [redacted]

Detection timing : [redacted]

3-17-(11). F/S No. #35-1 : Timer register failure check

Detection method : [redacted]

Detection timing : [redacted]

3-17-(12). F/S No. #35-1 :CAN failure check

Detection method : [redacted]

Detection timing : [redacted]

3-17-(13). F/S No. #35-1 :Interruption check of A/D conversion completion

Detection method : [redacted]

Detection timing : [redacted]

3-17-(14). F/S No. #35-1 :Link map file check

Detection method : [redacted]

Detection timing : [redacted]

3-18-(1). F/S No. #35-2 :EEPROM failure check

Detection method : [redacted]

Detection timing [redacted]

3-18-(2). F/S No. #35-2 : Resolver neutral-point failure check

Detection method : [redacted]

Detection timing : [redacted]

3-18-(3). F/S No. #35-2 : E2PSW data failure check

Detection method : [redacted]

Detection timing : [redacted]

3-19. F/S No. #35-4 :MAIN SUB CPU communication check

Detection method : [redacted]

Detection timing : [redacted]

3-20.F/S No. #35-5 :MAIN SUB A/D check

Detection method : [redacted]

Detection timing : [redacted]

3-21-(1).F/S No. #35-7 :Initial INHF port failure check

Detection method : [redacted]

Detection timing : [redacted]

3-21-(2).F/S No. #35-7 :Main-Sub communication port failure check F_ARCMODE

Detection method : [redacted]

Detection timing : [redacted]

3-22.F/S No. #36-2 :/INH output circuit failure

Detection method : [redacted]

Detection timing [redacted]

PAGE CONTAINS BUSINESS CONFIDENTIAL INFORMATION

3-23-(1).F/S No. #37-1 Booster voltage check (initial) Detection method [redacted] Detection timing : [redacted]
3-23-(1).F/S No. #37-2 Booster voltage check (In progress of control) Detection method [redacted] Detection timing : [redacted]

4-1.F/S No. #53-01 Torque sensor Hi/Low check

Detection method: [redacted]

Detection timing : [redacted]

4-2.F/S No. #53-02 Torque sensor Average check

Detection method: [redacted]

Detection timing : [redacted]

4-3.F/S No. #53-03 Torque sensor VDD check

Detection method: [redacted]

Detection timing : [redacted]

4-6.F/S No. #61-4 :Three-phase harness open failure

Detection method: [redacted]

Detection timing : [redacted]

4-7.F/S No. #71-1 : Square sum check

Detection method : [redacted]

Detection timing [redacted]

4-8.F/S No. #71-2 :REF voltage check

Detection method : [redacted]

Detection timing [redacted]

4-9.F/S No. #71-3 : Stick check of Sin and Cos

Detection method: [redacted]

Detection timing [redacted]

4-7.F/S No. #71-7 : Square sum check (Initial)

Detection method : [redacted]

Detection timing [redacted]

5-1.F/S No. #81-03 :Yaw rate sensor failure check

Detection method : [redacted]

Detection timing : [redacted]

5-2.F/S No. #83-01 :CAN communication error check

Detection method: [redacted]

Detection timing : [redacted]

5-3.F/S No. #83-02 :CAN communication time out check

Detection method: [redacted]

Detection timing : [redacted]

5-4.F/S No. #84-01 :Absolute angle sensor failure check

Detection method: [redacted]

Detection timing : [redacted]

PAGE CONTAINS BUSINESS CONFIDENTIAL INFORMATION

5-1.F/S No. #85-01 :VSA system failure check

Detection method :

Detection timing :

11-d

Provide a video file showing all driver visual and audible chimes, message, and/or warning lamps associated with each of the faults identified in 11.c;

When abnormality occurs in the system, It lets the warning light in the meter turn on and inform abnormality.

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Q11-e_REDACTED

11-e.

PAGE CONTAINS BUSINESS CONFIDENTIAL INFORMATION

Describe failsafe operation for the subject system for each of the faults/conditions identified in 11-c, including the transition times from normal to failsafe mode and any restrictions on when the transition can occur (e.g., maximum steering torque at which change can be made from normal to failsafe mode):

8. Resolver Assist Control

<Purpose>

Target current is faded out (changed gradually) to reduce the rapid assist force change when failure of the torque sensor is detected.

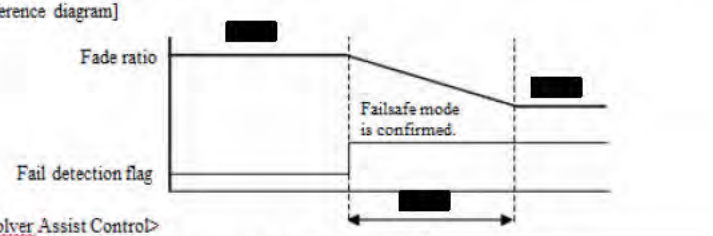
Thereafter, the assist operation can be performed from the steering angle estimated from the motor electrical angle.

Also, direction judgment and latch for direction judgment are not processed during the assist control of resolver.

<Gradual Change Process of Target Current>

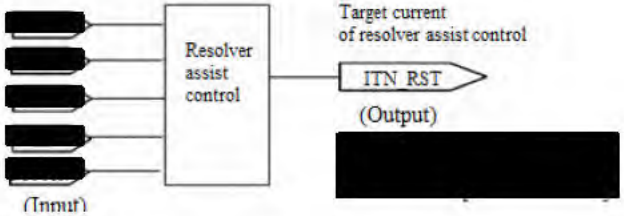
While the target current immediately before failure of torque sensor is kept, the kept target current is faded out after failsafe mode is confirmed.

[Reference diagram]



<Resolver Assist Control>

Target current of the resolver assist control is calculated from [redacted]



[redacted]

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Q11-f_REDACTED

13M ACC NA Models List of Specification

PAGE CONTAINS BUSINESS CONFIDENTIAL INFORMATION

		L4			V6		F-HEV	P-HEV
		LX	EX	SPORT	EXL	(2DR)EXL-V6	HYBRID	P-HYB
Sttering Dia.	【mm】	370	370	370	370	370	370	370
Stroke Rate	【mm/rev】	61.07	61.07	61.07	60.74	60.74	60.74	60.74
LtoL	—	2.54	2.54	2.46	2.55	2.47	2.55	2.55
Tire Size	—	205/60/R16	215/55R17	235/45R18	215/55R17	235/45R18	225/50R17	225/50R17
Vehicle Ratio	0-45deg							
	0-90deg							
	0-135deg							
	0-180deg							
	0-225deg							
	0-270deg							
	0-315deg							
	0-360deg							
	0-405deg							
	0-450deg							
	Overall	13.234	13.234	13.413	13.305	13.485	13.365	13.365
Steer/Angle (IN/OUT)	【deg】	38.158/ 30.883	38.158/ 30.883	36.167/ 29.754	38.158/ 30.883	36.167/ 29.754	37.971/ 30.763	37.971/ 30.763
Vehicle Wt	【kgf】	1905	1960	1960	2060	2030	2060	2130
Fr Wt	【kgf】	1020	1050	1050	1130	1140	1095	1080

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Q11-gh_REDACTED

Summary of Test Result (Steering Force N)

NHTSA No	Situation	Representative Mode	Normal	@F/S	Failed
g.(1)	Parking Lot	[redacted]			
g.(2)	Intersection				
g.(3)	Highway Exist				
g.(4)	Curve below 25mph				
g.(5)	Curve 30～45mph				
g.(6)	High speed driving over 60mph				

NHTSA No	Situation	Representative Mode	Normal	@F/S	Failed
h.(1)	Stop Static Steering	Stationary@180deg S/Force	[redacted]		
h.(2)	5mph, 0.1G Steering	10kph, 0.1G S/Force			
h.(3)	20mph, 0.25G Steering	32kph, 0.25G S/Force			
h.(4)	30mph, 0.4G Steering	48kph, 0.4G S/Force			

[redacted]

Test Condition

Vehicle: 13M Accord F. No : LHGCR464XE8000008

Tire: MI PRIMACY 235/45R18 Weight Condition: Fr1130 Rr940Kg

[redacted]

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Q11

Q11-i_REDACTED

AA13A0280184

Requirement Sheet A

Model	T2GA	Require ment [redacted]	STRG [EPS] Performance, function

No.	Requirement A	Test timing
[redacted]	[redacted] 1. Power off	[redacted]

No.	Test Method	No.	Judgment criteria
	Steering & Self-alignment effort test at the time of power off to be conducted in accordance with Test Procedures "Power Off".	1-(1)	Turning self-alignment effort at body lateral G [redacted] : [redacted] or less : [redacted] or less
1	Turning self-alignment effort [redacted] <Conditions> 1) Place: HGP General Course or its equivalent 2) Weight: Gross vehicle weight 3) Turning radius: [redacted]	1-(2)	Turning self-alignment effort at body lateral G [redacted] : [redacted] or less : [redacted] or less
2	Slalom steering effort <Conditions> 1) Place: HGP General Course or its equivalent 2) Weight: Gross vehicle weight 3) Speed: [redacted] 4) Steering frequency: [redacted]	2-(1)	Slalom steering effort at vehicle speed [redacted] h, body lateral G [redacted] : [redacted] : [redacted]
		2-(2)	Slalom steering effort at vehicle speed [redacted] h, body lateral G [redacted] : [redacted] : [redacted]

Results

The results satisfied the judgment criteria with OK judgment

No.	Item	Result [N]	Judgment criteria	Judgment	Note
1-(1)	Turning self-alignment effort	[redacted]	[redacted] or less ([redacted] or less	OK	
1-(2)	↑	[redacted]	[redacted] or less ([redacted] or less	OK	
2-(1)	Slalom steering effort	[redacted]	[redacted] or less ([redacted] or less	OK	
2-(2)	↑	[redacted]	[redacted] or less ([redacted] or less	OK	

Date of measurement	2011/10/5
Place of measurement	HGP-T General course
Measured by	Hayakawa, Suzuki
Test vehicle, F/No.	T2GA D11 V6 1026号車、F/No:T2GA-1026
G/BOX	53600-T2GA-A020-M1 (1-0616-69/characteristics medium)
ECU・MAP	39980-T2GA-A010-M1 (2T2GS1-0143) MAP:T2BFJ0002_0621_D.hex
Tires	MI PRIMACY MXM4 235/45R18 94V M+S (LP:=Fr225 /Rr220 kPa)
Weight	FL:583+FR:585=1168(gross vehicle weight)

Decisions

Rating	Rating criteria	Rating	Rating criteria	Preparation	Judgment	Approval
◎	Requirement/target value were met with OK	A	OK, but off-tool part must be checked	Hayakawa	Yaginuma	Tatsuishi
○	The results did not reach requirement/target value, but were at acceptable level.	B	Requirement/target value not satisfied. Testing to be continued.			

Requirement Sheet A: Appendix	Model	T2GA	Requirement No.	[redacted]	2/4

Power off slalom steering effort test results

Date : 2011/10/5 Place of measurement: HGP-T General course
PIC : Masato SUZUKI Road condition: Dry
Vehicle name : T2GA 011 V6 1026号車
Frame No. : T2GA-1026
Fr. axle load : FL:583+FR:585=1168kg(gross vehicle weight)
Rr. axle load : RL:483+RR:447=930kg
Tire : MI PRIMACY MXM4
Tire size : 235/45R18 94V M+S (I.P=Fr225 / Rr220 kPa)
Q/BOXNo. 53600-T2GA-A020-M1 (11-0616-69/Characteristic median)
ECU: 30980-T2GA-A010-M1 (2T2GSJ-0143)
MAP: T2BFJ0002_0621_D.hex

Slalom steering effort

Vehicle speed	Lateral G	Test results	Judgment criteria	Judgment	Note
[redacted]		[redacted] N	[redacted] or less	OK	
		[redacted] N	[redacted] or less	OK	

(Reference)

Slalom axial force

Power off slalom self-alignment effort test results

Date : 2011/10/5 Place of measurement : HGP-T General course
P/C : Masato SUZUKI Road condition: Dry
Vehicle name : T2GA D11 V8 1026号車
Frame No. : T2GA-1026
Fr. axle load : FL:583+FR:585=116(gross vehicle weight)
Rr. axle load : RL:483+RR:447=930kg
Tire : MI PRIMACY MXM4
Tire size : 235/45R18 94V M+S (I.P.=F:225 /R:220 kPa)
G/BOXNo. : 53600-T2GA-A020-M1(11-0616-6Characteristic median)
ECU : 38980-T2GA-A010-M1 (2T2GS1-0143)
MAP : T2BFJ0002_0821_D.hex

Turning self-alignment effort

Lateral G	Turn direction	Results	Criteria	Judgment	Note
[redacted]	R turn	[redacted] N	[redacted] or less	OK	
	L turn	N	T	OK	
	R turn	N	[redacted] or less	OK	
	L turn	N	T	OK	

(Reference)

Turning self-alignment effort

Requirement Sheet A: Appendix

Model	T2GA	Requirement No.	[redacted]	4/4

G/BOX Characteristics

Characteristics	Item	Unit	Standard	53600-T2GA-A020-M1 11-0616-69 Characteristic median
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Requirement Sheet A

Model	T2AA,T2FA	Requirement [redacted]	STRG [EPS] Performance, function

No.	Requirement A	Test timing
[redacted]	[redacted] 1. Power off	[redacted]

No.	Test Method	No.	Judgment criteria
	Steering & Self-alignment effort test at the time of power off to be conducted in accordance with Test Procedures "Power Off".	1-(1)	Turning self-alignment effort at body lateral G [redacted] : [redacted] or less [redacted] : [redacted] or less [redacted]
1	Turning self-alignment effort [redacted] <Conditions> 1) Place: HGP General Course or its equivalent 2) Weight: Gross vehicle weight 3) Turning radius: [redacted]	1-(2)	Turning self-alignment effort at body lateral G [redacted] : [redacted] or less [redacted] : [redacted] or less [redacted]
2	Slalom steering effort <Conditions> 1) Place: HGP General Course or its equivalent 2) Weight: Gross vehicle weight 3) Speed: [redacted] 4) Steering frequency: [redacted]	2-(1)	Slalom steering effort at vehicle speed [redacted], body lateral G [redacted] : [redacted] or less [redacted] : [redacted] or less [redacted]
		2-(2)	Slalom steering effort at vehicle speed V=60Km/h, body lateral G 5.9m/s^2 (0.6G) : [redacted] or less [redacted] : [redacted] or less [redacted]

Results

The results satisfied the judgment criteria with OK judgment

No.	Item	Result (N)	Judgment criteria	Judgment	Note
1—(1)	Turning self-alignment effort	[redacted]	[redacted] or less [redacted]	OK	
1—(2)	↑	[redacted]	[redacted] or less [redacted]	OK	
2—(1)	Slalom steering effort	[redacted]	[redacted] or less [redacted]	OK	
2—(2)	↑	[redacted]	[redacted] or less [redacted]	OK	

Date of measurement	2011/10/17
Place of measurement	HGP-T General course
PIC	Hayakawa, Suzuki
Test vehicle, F/No	T2FA DII L4 1010号車, F/No:T2FA-1010
G/BOX	53600-T2FA-A020-M1 (11-0525-129/characteristics median)
ECU・MAP	39980-T2FA-A010-M1 (2T2FS1-0265) MAP: T2AFA0001_1217_Ahex
Tires	MI PRIMACY MXM4 235/45R18 94V M+S (I.P.=Fr225 /Rr220 kPa)
Weight	FL:541+FR:538=1079kg(gross vehicle weight)

Decisions

Rating	Rating criteria	Rating	Rating criteria	Preparation	Judgment	Approval
◎	Requirement/target value were met with OK	A	OK, but off-tool part must be checked	Hayakawa	Yaginuma	Tatsuishi
(○)	The results did not reach requirement/target value, but were at acceptable level.	B	Requirement/target value not satisfied. Testing to be continued.			

Power off slalom steering effort test results

Date : 2011/10/17 Place of measurement: HGP-T General course
PIC : Masato SUZUKI Road condition: Dry
Vehicle name : T2FA D11 L4 1010号車
Frame No. : T2FA-1010
Fr. axle load :541+FR 538=107(gross vehicle weight)
Rr. axle load :482+RR 467=949kg
Tire : MI PRIMACY MXM4
Tire size : 235/45R18 94V M+S (LP=Fr225 /Rr220 kPa)
G/BOXNo. 53600-T2FA-A020-M1 (11-0525-12 Characteristic median)
ECU : 39980-T2FA-A010-M1 (2T2FS1-0255)
MAP : T2AFA0001_1217_A.hex

Slalom steering effort

Vehicle speed	Lateral G	Test results		Judgment criteria	Judgment	Note
[redacted]			N	[redacted] or less	OK	
			N	[redacted] or less	OK	

(Reference)

Slalom axial force

Power off slalom self-alignment effort test results

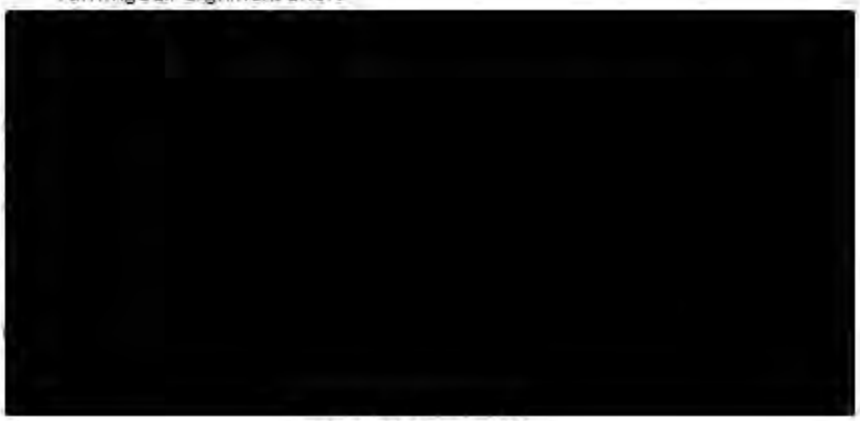
Date : 2011/10/17 Place of measurement: HGP-T General course
PIC : Masato SUZUKI Road condition: Dry
Vehicle name : T2FA D11 L4 1010号車
Frame No. : T2FA-1010
Fr. axle load : FL:541+FR:538=1079kg (gross vehicle weight)
Rr. axle load : RL:482+RR:467=949kg
Tire : MI PRIMACY MXM4
Tire size : 235/45R18 94V M+S (I.P.=Fr:225 /Rr:220 kPa)
G/BOXNo: 53600-T2FA-A020-M1(11-0525-129/Characteristic median)
ECU : 39980-T2FA-A010-M1 (2T2FS1-0255)
MAP : T2AFA0001_1211_A.fmx

Turning self-alignment effort

Lateral G	Direction	Results	Criteria	Judgment	Note
[redacted]	R Turn	[redacted] N	[redacted] or less	OK	
	L Turn	N	1	OK	
	R Turn	N	[redacted] or less	OK	
	L Turn	N	1	OK	

(Reference)

Turning self-alignment effort



Requirement Sheet A: Appendix

Model	T2AA,T2FA	Requirement No.	[redacted]	4/4

G/BOX Characteristics

Characteristics	Item	Unit	Standard	53600-T2FA-A020-M1 11-0525-129 Characteristic median
[redacted]	[redacted]			[redacted]

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Requirements when powered off

Requirement Sheet A

Model	T2GA	Requirement	Ao28−4	STRG [EPS]	Performance, function

No.	Requirement A	Test timing
1−6−1	1. CBU function 6. Marginal performance 1. Power off	D1

No.	Test Method	No.	Judgment criteria
	Steering & Self-alignment effort test at the time of power off to be conducted in accordance with Test Procedures "Power Off".	1-(1)	Turning self-alignment effort at body lateral G 2.9m/s^2(0.3G) : 47N or less (mini vehicles) : 106N or less (excluding mini vehicles)
1	Turning self-alignment effort (30R) <Conditions> 1) Place: HGP General Course or its equivalent 2) Weight: Gross vehicle weight 3) Turning radius: 30R	1-(2)	Turning self-alignment effort at body lateral G 5.9m/s^2(0.6G) : 79N or less (mini vehicles) : 164N or less (excluding mini vehicles)
2	Slalom steering effort <Conditions> 1) Place: HGP General Course or its equivalent 2) Weight: Gross vehicle weight 3) Steering frequency: 0.25Hz	2-(1)	Slalom steering effort at vehicle speed V=10Km/h, body lateral G 1.0m/s^2 (0.1G) : 51N or less (mini vehicles) : 158N or less (excluding mini vehicles)
		2-(2)	Slalom steering effort at vehicle speed V=60Km/h, body lateral G 5.9m/s^2 (0.6G) : 96N or less (mini vehicles) : 195N or less (excluding mini vehicles)

Results

The results satisfied the judgment criteria with OK judgment

No.	Item		Result [N]	Judgment criteria	Judgment	Note
1−(1)	Turning self-alignment effort	2.9m/s^2 (0.3G)	105	47N or less (mini vehicles) 106N or less (excl. mini vehicles)	OK	
1−(2)	↑	5.9m/s^2 (0.6G)	158	79N or less (mini vehicles) 164N or less (excl. mini vehicles)	OK	
2−(1)	Slalom steering effort	10km/h 1.0m/s^2(0.1G)	119	51N or less (mini vehicles) 158N or less (excl. mini vehicles)	OK	
2−(2)	↑	60km/h 5.9m/s^2 (0.6G)	192	96N or less (mini vehicles) 195N or less (excl. mini vehicles)	OK	

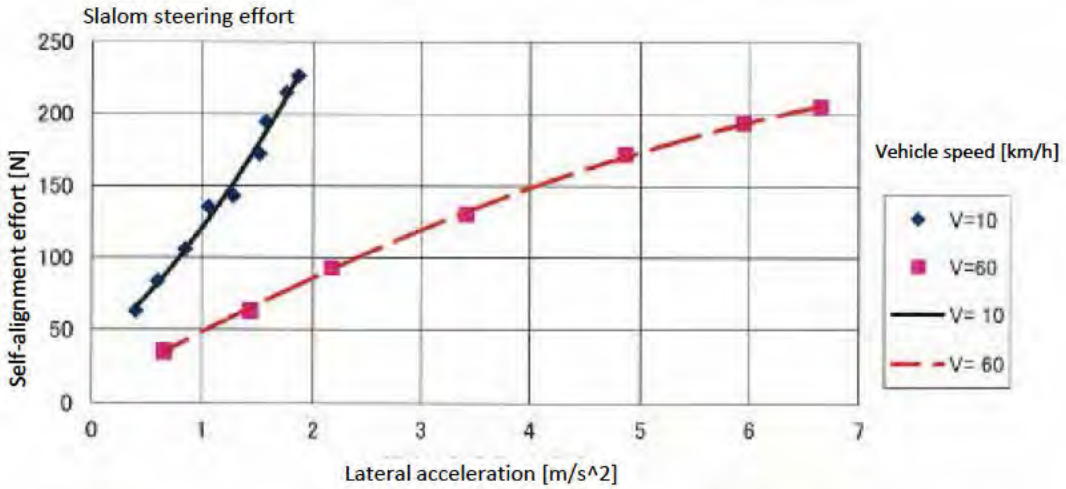
Date of measurement	2011/10/5
Place of measurement	HGP-T General course
Measured by	Hayakawa, Suzuki
Test vehicle, F/No.	T2GA D11 V6 1026号車、F/No:T2GA-1026
G/BOX	53600-T2GA-A020-M1 (11-0616-69/characteristics medium)
ECU・MAP	39980-T2GA-A010-M1 (2T2GS1-0143) MAP:T2BFJ0002_0621_D.hex
Tires	MI PRIMACY MXM4 235/45R18 94V M+S (I.P.=Fr225 /Rr220 kPa)
Weight	FL:583+FR:585=1168 (gross vehicle weight)

Decisions

Rating	Rating criteria	Rating	Rating criteria	Preparation	Judgment	Approval
◎	Requirement/target value were met with OK	A	OK, but off-tool part must be checked	Hayakawa	Yaginuma	Tatsuishi
(○)	The results did not reach requirement/target value, but were at acceptable level.	B	Requirement/target value not satisfied. Testing to be continued.			

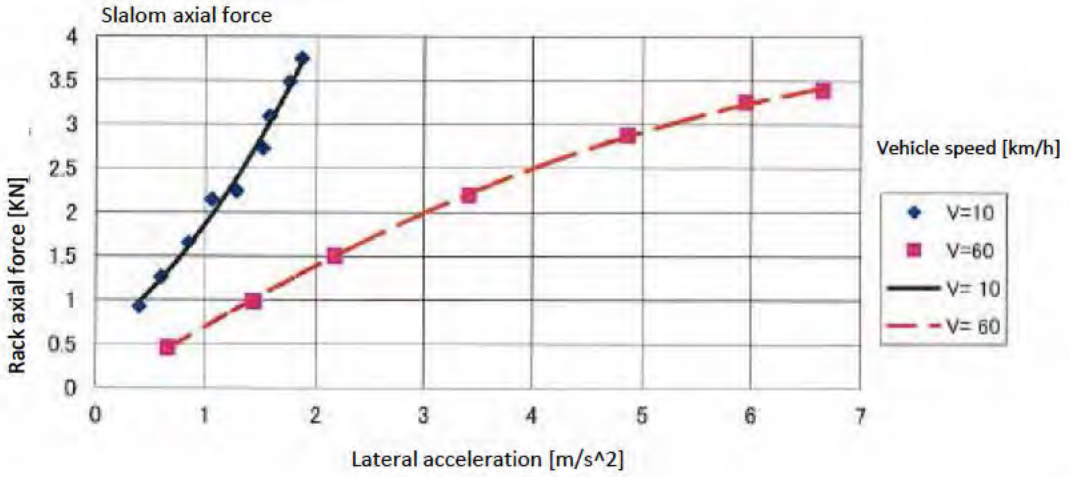
Power off slalom steering effort test results

Date : 2011/10/5 Place of measurement: HGP-T General course
PIC : Masato SUZUKI Road condition: Dry
Vehicle name : T2GA D11 V6 1026号車
Frame No. : T2GA-1026
Fr. axle load : FL:583+FR:585=1168kg(gross vehicle weight)
Rr. axle load : RL:483+RR:447=930kg
Tire : M1 PRIMACY MXM4
Tire size : 235/45R18 94V M+S (I.P.=Fr225 /Rr220 kPa)
G/BOXNo. 53600-T2GA-A020-M1(11-0616-69/Characteristic median)
ECU: 39980-T2GA-A010-M1 (2T2GS1-0143)
MAP: T2BFJ0002_0621_D.hex



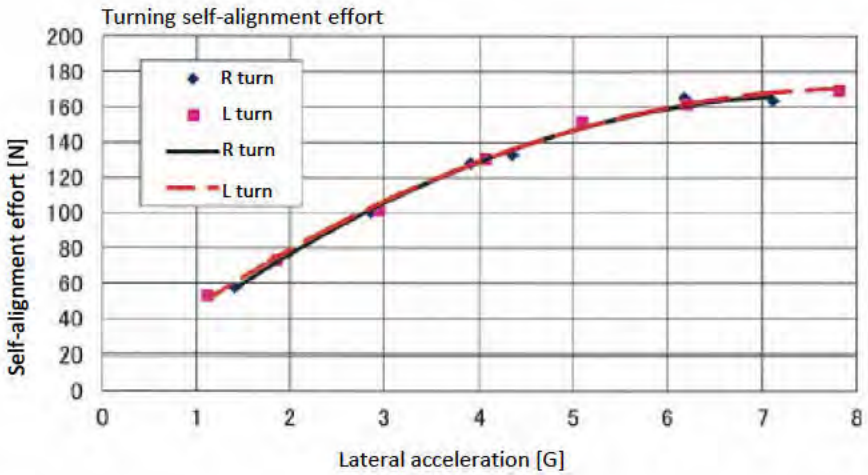
Vehicle speed	Lateral G	Test results	Judgment criteria	Judgment	Note
V=10Km/h	1.0m/s^2	119 N	158N or less	OK	
V=60Km/h	5.9m/s^2	192 N	195N or less	OK	

(Reference)



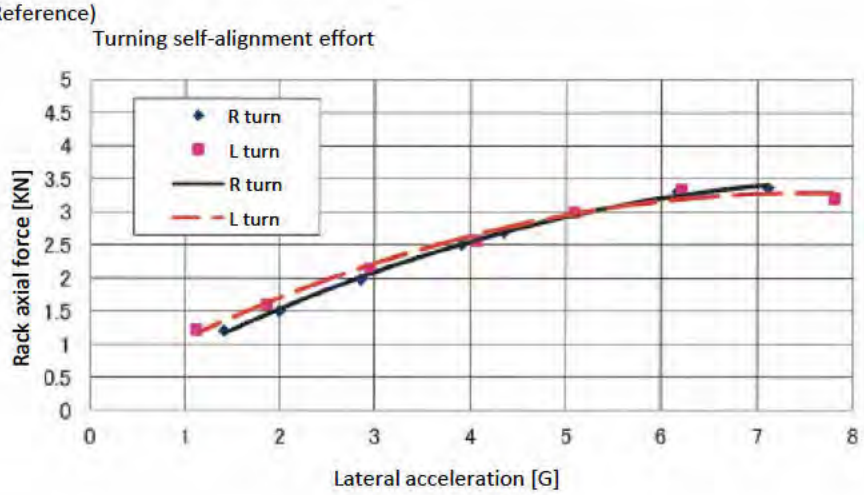
Power off slalom self-alignment effort test results

Date : 2011/10/5 Place of measurement: HGP-T General course
PIC : Masato SUZUKI Road condition: Dry
Vehicle name : T2GA D11 V6 1026号車
Frame No. : T2GA-1026
Fr. axle load : FL:583+FR:585=116(gross vehicle weight)
Rr. axle load : RL:483+RR:447=930kg
Tire : MI PRIMACY MXM4
Tire size : 235/45R18 94V M+S (I.P.=Fr225 /Rr220 kPa)
G/BOXNo: 53600-T2GA-A020-M1(11-0616-6Characteristic median)
ECU: 39980-T2GA-A010-M1 (2T2GS1-0143)
MAP: T2BFJ0002_0621_D.hex



Lateral G	Turn direction	Results	Criteria	Judgment	Note
2.9m/s^2 (0.3G)	R turn	103.95 N	106Nor less	OK	
	L turn	105.09 N	↑	OK	
5.9m/s^2 (0.6G)	R turn	157.85 N	164Nor less	OK	
	L turn	158.45 N	↑	OK	

(Reference)



Requirement Sheet A: Appendix

Model	T2GA	Requirement No.	Ao28-4-1-6-1	4/4

G/BOX Characteristics

Characteristics	Item		Unit	Standard		53600-T2GA-A020-M1 11-0616-69 Characteristic median
Normal-rotation total rotational torque (12 deg/sec OFF)	Torque within(+/-180 deg)		N·m	1.73±0.35	Turn L	1.82
					Turn R	1.84
	Torque outside (+/-180 deg)				Turn L	1.87
					Turn R	1.81
	Spike within (+/-180 deg)			1.96 or less	Turn L	0.23
					Turn R	0.23
	Spike outside (+/-180 deg)				Turn L	0.24
					Turn R	0.32
	Peak-to-trough fluctuation within (+/-180 deg)			0.40 or less		0.24
	Peak-to-trough fluctuation outside(+/-180 deg)			0.50 or less		0.22
	Torque peak within(+/-180 deg)			2.28 or less		2.05
	Surge fluctuation outside (+/-180 deg)			0.37 or less		0.31
Inverted sliding load	Average (0.5mm/sec)		N	160±40	Turn L	181
					Turn R	179
	Load shift (0.5mm/sec)			50 or less	Turn L	22
					Turn R	12
	Average(5mm/sec)			182±40	Turn L	201
					Turn R	208
	Load shift (5mm/sec)			50 or less	Turn L	20
					Turn R	14
	Average(25mm/sec)			246±60	Turn L	235
					Turn R	221
	Load shift (25mm/sec)			50 or less	Turn L	30
					Turn R	32
	Average(50mm/sec)			312±70	Turn L	283
					Turn R	271
	Load shift (50mm/sec)			50 or less	Turn L	32
					Turn R	20
Input/output characteristics (0km/h)	At 6.5kN of Rack load	Pinion torque	N·m	3.58±0.49	Turn L	3.72
					Turn R	3.78
		Difference R&L		0.49 or less		0.06
	At 1.50kN of Rack load	Pinion torque		1.86±0.49	Turn L	1.89
					Turn R	1.98
		Difference R&L		0.49 or less		0.09
		Hysteresis range		0.77±0.49	Turn L	0.88
					Turn R	0.84
	Starting assist	Pinion torque		0.84±0.49	Turn L	0.90
					Turn R	1.07
		Difference R&L		0.49 or less		0.17
Torque sensor Voltage characteristics	Neutral point vol.		V	2.50±0.06		2.53
	VR gain		-	1.60~1.85		1.77
	VL gain		-	1.60~1.85		1.79
	Hysteresis		V	0.10 or less		0.06
	Linearity		%	Within 7.0		2.16

Requirement Sheet A

Model	T2AA,T2FA	Requirement	Ao28−4	STRG [EPS]	Performance, function

No.	Requirement A	Test timing
1−6−1	1. CBU function 6. Marginal performance 1. Power off	D1

No.	Test Method	No.	Judgment criteria
	Steering & Self-alignment effort test at the time of power off to be conducted in accordance with Test Procedures "Power Off".	1-(1)	Turning self-alignment effort at body lateral G 2.9m/s^2(0.3G) : 47N or less (mini vehicles) : 106N or less (excluding mini vehicles)
1	Turning self-alignment effort (30R) <Conditions> 1) Place: HGP General Course or its equivalent 2) Weight: Gross vehicle weight 3) Turning radius: 30R	1-(2)	Turning self-alignment effort at body lateral G 5.9m/s^2(0.6G) : 79N or less (mini vehicles) : 164N or less (excluding mini vehicles)
2	Slalom steering effort <Conditions> 1) Place: HGP General Course or its equivalent 2) Weight: Gross vehicle weight 3) Steering frequency: 0.25Hz	2-(1)	Slalom steering effort at vehicle speed V=10Km/h, body lateral G 1.0m/s^2 (0.1G) : 51N or less (mini vehicles) : 158N or less (excluding mini vehicles)
		2-(2)	Slalom steering effort at vehicle speed V=60Km/h, body lateral G 5.9m/s^2 (0.6G) : 96N or less (mini vehicles) : 195N or less (excluding mini vehicles)

Results

The results satisfied the judgment criteria with OK judgment

No.	Item		Result [N]	Judgment criteria	Judgment	Note
1−(1)	Turning self-alignment effort	2.9m/s^2 (0.3G)	95	47N or less (mini vehicles) 106N or less (excl. mini vehicles)	OK	
1−(2)	↑	5.9m/s^2 (0.6G)	143	79N or less (mini vehicles) 164N or less (excl. mini vehicles)	OK	
2−(1)	Slalom steering effort	10km/h 1.0m/s^2(0.1G)	107	51N or less (mini vehicles) 158N or less (excl. mini vehicles)	OK	
2−(2)	↑	60km/h 5.9m/s^2 (0.6G)	174	96N or less (mini vehicles) 195N or less (excl. mini vehicles)	OK	

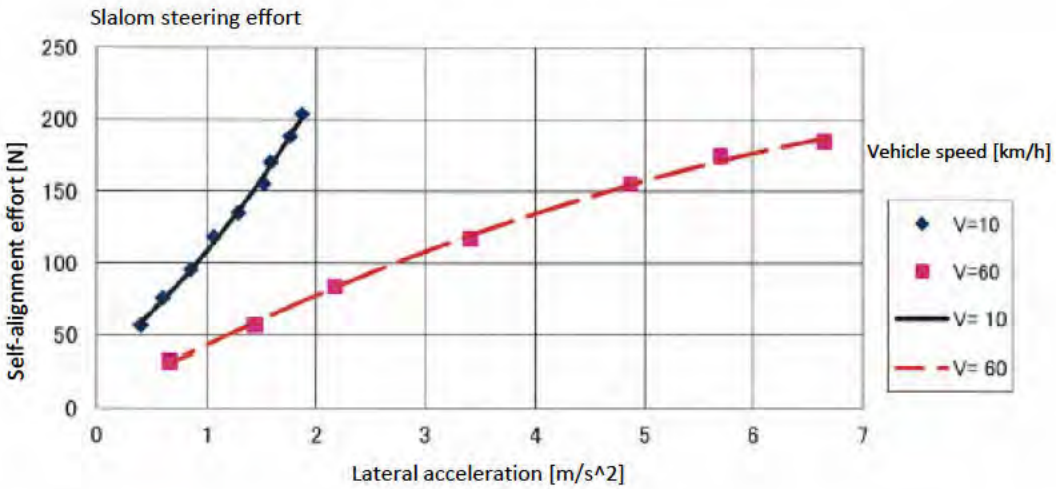
Date of measurement	2011/10/17
Place of measurement	HGP-T General course
PIC	Hayakawa, Suzuki
Test vehicle, F/No.	T2FA D11 L4 1010号車、F/No:T2FA-1010
G/BOX	53600-T2FA-A020-M1 (11-0525-129/ characteristics median)
ECU・MAP	39980-T2FA-A010-M1 (2T2FS1-0255) MAP:T2AFA0001_1217_A.hex
Tires	MI PRIMACY MXM4 235/45R18 94V M+S (I.P.=Fr225 /Rr220 kPa)
Weight	FL:541+FR:538=1079kg(gross vehicle weight)

Decisions

Rating	Rating criteria	Rating	Rating criteria	Preparation	Judgment	Approval
◎	Requirement/target value were met with OK	▪ A	OK, but off-tool part must be checked	Hayakawa	Yaginuma	Tatsuishi
(○)	The results did not reach requirement/target value, but were at acceptable level.	B	Requirement/target value not satisfied. Testing to be continued.			

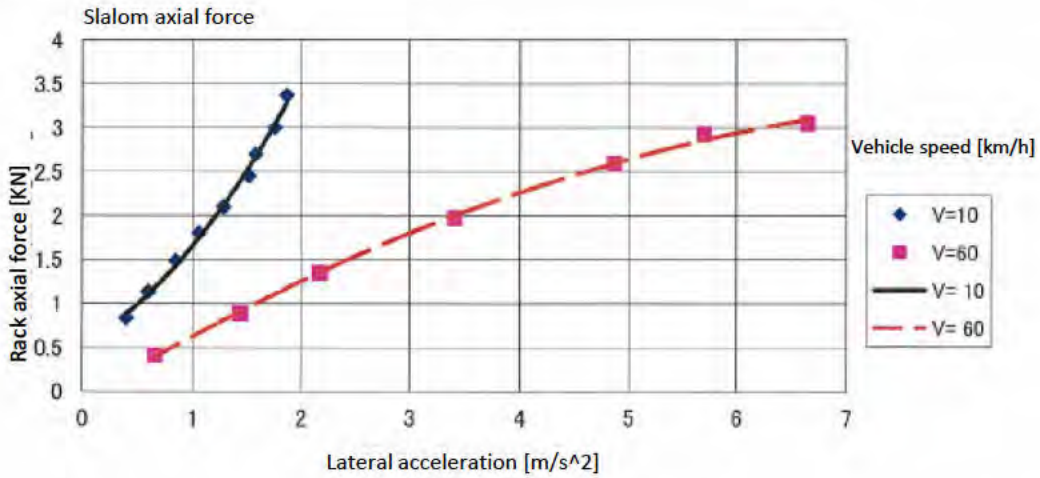
Power off slalom steering effort test results

Date : 2011/10/17 Place of measurement: HGP-T General course
PIC : Masato SUZUKI Road condition: Dry
Vehicle name : T2FA D11 L4 1010号車
Frame No. : T2FA-1010
Fr. axle load :541+FR:538=107(gross vehicle weight)
Rr. axle load :482+RR:467=949kg
Tire : MI PRIMACY MXM4
Tire size : 235/45R18 94V M+S (I.P.=Fr225 /Rr220 kPa)
G/BOXNo. 53600-T2FA-A020-M1 (11-0525-12 Characteristic median)
ECU : 39980-T2FA-A010-M1 (2T2FS1-0255)
MAP : T2AFA0001_1217_A.hex



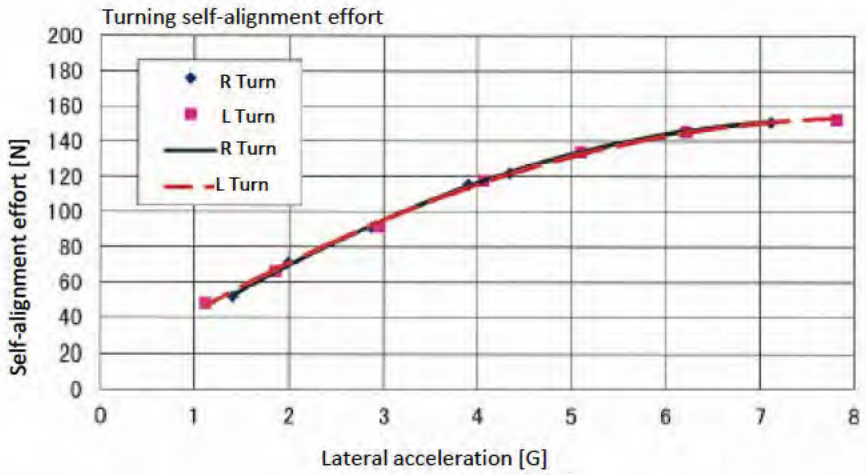
Vehicle speed	Lateral G	Test results	Judgment criteria	Judgment	Note
V=10Km/h	1.0m/s^2	107 N	158N or less	OK	
V=60Km/h	5.9m/s^2	174 N	195N or less	OK	

(Reference)



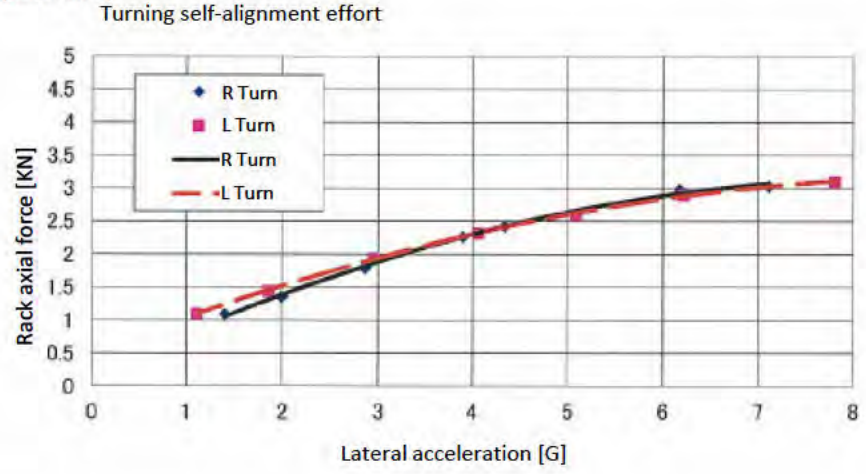
Power off slalom self-alignment effort test results

Date : 2011/10/17 Place of measurement: HGP-T General course
PIC : Masato SUZUKI Road condition: Dry
Vehicle name : T2FA D11 L4 1010号車
Frame No. : T2FA-1010
Fr. axle load : FL:541+FR:538=107[illegible] (gross vehicle weight)
Rr. axle load : RL:482+RR:467=949kg
Tire : MI PRIMACY MXM4
Tire size : 235/45R18 94V M+S (I.P.=Fr225 /Rr220 kPa)
G/BOXNo: 53600-T2FA-A020-M1 (11-0525-129/Characteristic median)
ECU : 39980-T2FA-A010-M1 (2T2FS1-0255)
MAP : T2AFA0001_1217_A.hex



Lateral G	Direction	Results	Criteria	Judgment	Note
2.9m/s^2 (0.3G)	R Turn	93.81 N	106Nor less	OK	
	L Turn	94.85 N	〃	OK	
5.9m/s^2 (0.6G)	R Turn	142.46 N	164Nor less	OK	
	L Turn	143.00 N	〃	OK	

(Reference)



Requirement Sheet A: Appendix

Model	T2AA,T2FA	Requirement No.	Ao28-4-1-6-1	4/4

G/BOX Characteristics

Characteristics	Item		Unit	Standard		53600-T2FA-A020-M1 11-0525-129 Characteristic median
Normal-rotation total rotational torque (12 deg/sec OFF)	Torque within (+/-180 deg)		N·m	1.65±0.35	Turn L	1.62
					Turn R	1.59
	Torque outside (+/-180 deg)			2.25 or less	Turn L	1.56
					Turn R	1.57
	Torque fluctuation range within(+/-180 deg)			0.39 or less		0.26
	Torque fluctuation range outside(+/-180 deg)			0.49 or less		0.26
Inverted sliding load	Average(0.5mm/sec)		N	165±50	Turn L	162
					Turn R	158
	Average(5mm/sec)			175±55	Turn L	160
					Turn R	158
	Peak Load value (5mm/sec)			288 or less	Turn L	179
					Turn R	170
	Load shift value(5mm/sec)			115 or less	Turn L	20
					Turn R	14
	Average(25mm/sec)			205±70	Turn L	194
					Turn R	188
	Average(50mm/sec)			235±80	Turn L	228
					Turn R	221
Input/output characteristics (0km/h)	At 6.5kN of rack load	Pinion torque	N·m	4.15±0.50	Turn L	3.92
					Turn R	4.22
		Difference R&L		0.50 or less		0.31
	At 1.50kN of rack load	Pinion torque		2.05±0.50	Turn L	2.21
					Turn R	2.43
		Difference R&L		0.50 or less		0.21
		Hysteresis range		0.75±0.50	Turn L	1.41
					Turn R	1.36
	Starting assist	Pinion torque		0.65±0.50	Turn L	0.79
					Turn R	0.96
		Difference R&L		0.50 or less		0.17
Torque sensor Voltage characteristics	Neutral point voltage		V	2.50±0.06		2.56
	VR gain		–	1.60~1.85		1.69
	VL gain		–	1.60~1.85		1.70
	Hysteresis		V	0.10 or less		0.01
	Linearity		%	Within 7.0		3.45

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Q12

Q12-a,b_REDACTED

Question 12a

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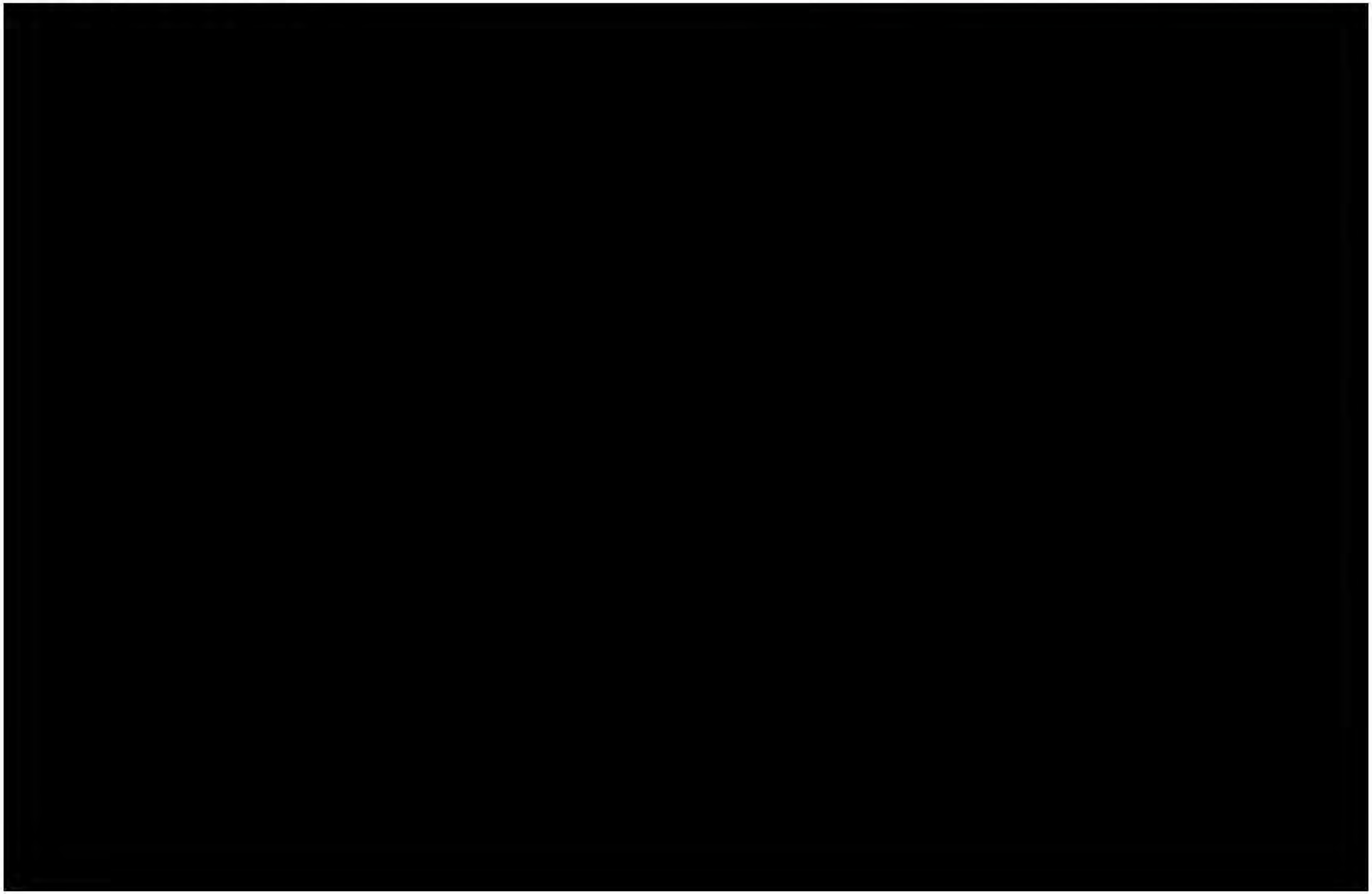
Question 12b

ENTIRE PAGE CONTAINS BUSINESS CONFIDENTIAL INFORMATION



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Q12

Q12-c,d,e

Question 12c

The failure mode:

When the 13m Accord EPS System recognizes a mismatch between the Torque Sensor Main and Torque Sensor Sub signals a Diagnostic Trouble Code (DTC) will be assigned. The action assigned to DTC 53 Series Codes is to turn the warning lamp on, provide reduced assist or stop EPS function until the next key cycle.

When a DTC 53 series code is detected, the warning lamp illuminates and the EPS transitions to failsafe mode (resolver assistance control) by decreasing the steering assistance force for one second. At that moment, the driver may not be able to operate the steering wheel on the intended route because of the increased force necessary to turn the wheel.

Also, when a DTC 53 series code is detected soon after starting the engine and driving (driving straight forward < 3 seconds at a speed of < 30km/h), the EPS assistance cuts off and the warning lamp illuminates. At that moment, the driver may not be able to operate the steering wheel on the intended route because of the increased force necessary to turn the wheel.

Question 12d

Honda assessment of the risk to motor vehicle safety:

In the event of an EPS failure, the 2013 Honda Accord satisfies all internal Honda requirements for the transition from normal assisted steering mode to the failsafe condition of reduced assist while in motion, or no assist if a failure is detected while the vehicle is stopped. The failsafe settings were selected to serve as additional warnings to the driver that the vehicle requires repair, while still providing partial power steering assist.
(please see attachment 11-i).

Historically, Honda has judged the loss of power steering assist by calculating the weight and carrying capacity of the vehicle, the steering ratio and the friction at the tire/road interface, as well as dynamic testing to assure an acceptable level of vehicle control during specified tests. At this time, while the 2013 Accord experiencing an EPS failure does satisfy the company criteria in place during development of that model, Honda is continuing to investigate the risk that an EPS failure poses to motor vehicle safety.

Question 12e

What warnings, if any, the operator and the other persons both inside and outside the vehicle would have that the alleged defect was occurring or subject component was malfunctioning.

When the abnormality occurs in the system, the warning light illuminates on the meter.

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Q4

FIELD REPORTS

Field Quality Report online

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Report Information

Attached Files

Report ID	27735
Brief Description*	Power steering is not working.
Reported By	Field User
Offline Report Date	
Online Created Date	7/10/2013 10:45:00 AM
Last Updated Date	11/25/2013 1:07:16 PM

NONE

User Information

Zone	Zone 06
District	06E

Customer Information

City of Customer*	Linthicum
State*	MD
Delivery Date	12/10/2012 (MM/DD/YYYY)

Vehicle Information

Non-US VIN	☐		
VIN*	1HGCT2B86DA[redacted] Check VIN		
Unit Status	Sold to Customer		
Date of Occurrence*	7/1/2013 (MM/DD/YYYY)		
Mileage*	3,524		
Engine No.			
Model Year	2013	Model	ACCORD
Style*	V6	Body*	2 Door
Transmission*	AT	Engine Type	

Dealer Information

Dealer Number	207479
Phone Number (999-999-9999)	[redacted]

Claim Information

Claim Number		CR/Techline #	3449972
Labor Operation *	Pwr steer gearbo - 513		
Labor Op Full Codes *			
Causal Code			

5131H2 STEERING GEARBOX (EPS) - REPLACE. FOR ELECTRIC POWER

Failed Part No. *Please provide Part No if available

1. 53601-T2G-A92
2.
3.
4.

Complaint / Symptom

No power steering.

Probable Cause

Faulty torque sensor in PS rack.

Corrective Action

Replaced PS rack.

Fire Report Information

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Report Information

Attached Files

Report ID	28236
Brief Description*	EPS Failure 2013 Accord Coupe
Reported By	Field User
Offline Report Date	
Online Created Date	8/28/2013 3:51:00 AM
Last Updated Date	11/25/2013 1:07:16 PM

NONE

User Information

Zone	Zone 06
District	06B

Customer Information

City of Customer*	Fredericksburg
State*	VA
Delivery Date	12/22/2012 (MM/DD/YYYY)

Vehicle Information

Non-US VIN			
VIN*	1HGCT2B80DA[redacted] Check VIN		
Unit Status	Sold to Customer		
Date of Occurrence*	8/14/2013 (MM/DD/YYYY)		
Mileage*	10,195		
Engine No.			
Model Year	2013	Model	ACCORD
Style*	EX	Body*	2 Door
Transmission*	AT	Engine Type	VTEC

Dealer Information

Dealer Number	208168
Phone Number (999-999-9999)	540-735-9150 Ext.

Claim Information

Claim Number	438410 CR/Techline #
Labor Operation *	Pwr steer gearbo - 513
Labor Op Full Codes *	
Causal Code	

5131B0 ELECTRIC POWER STEERING TORQUE SENSOR - REPLACE.

Other 513X

Failed Part No. *Please provide Part No if available

1.
2.
3.
4.

Complaint / Symptom

Customer states that on multiple occasions the EPS light comes on and power steering assist fails at random intervals. C/S vehicle is unsafe to drive when steering fails as wife is small and cannot control/steer vehicle without steering assist. C/S car must be shut off and restarted to remedy condition which is unsafe as it has happened on interstates and curvy surface roads as well.

Probable Cause

EPS failure of unknown origin. EPS DTC were set but not conclusive as to specific problem.

Corrective Action

Dealer has replaced EPS control unit, engine cabin harness and power steering rack as directed by techLine. No soft set connections have been found at this time. Problem has been duplicated by one technician on one occasion but no freeze data was captured. Problem seems to occur about every 1,000-2,000 miles and repeats itself in the customers posession but that has not happened at dealership. Customer does not want to drive vehicle and wants it replaced ASAP as it is a safety hazard. DPSM drove vehicle over 60 miles after harness repalcement - vehicle did not malfunction.

Fire Report Information

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Report Information

Attached Files

Report ID	27098
Brief Description*	Power steering failed-car towed
Reported By	Field User
Offline Report Date	
Online Created Date	5/7/2013 9:07:00 AM
Last Updated Date	8/26/2013 11:56:54 AM

NONE

User Information

Zone	Zone 05
District	05D

Customer Information

City of Customer*	New Rochelle
State*	NY
Delivery Date	2/11/2013 (MM/DD/YYYY)

Vehicle Information

Non-US VIN	☐		
VIN*	1HGCR3F82DA[redacted] Check VIN		
Unit Status	Sold to Customer		
Date of Occurrence*	5/3/2013 (MM/DD/YYYY)		
Mileage*	1,302		
Engine No.			
Model Year	2013	Model	ACCORD
Style*	V6	Body*	4 Door
Transmission*	AT	Engine Type	

Dealer Information

Dealer Number	208316		
Phone Numbe (999-999-9999)	[redacted]	Ext.	

Claim Information

Claim Number		CR/Techline #	
Labor Operation *	Pwr steer gearbo - 513		
Labor Op Full Codes *			
Causal Code			

5131C6D FOR V6 ADD.

Failed Part No. *Please provide Part No if available

1. 53601-T2G-A01
2.
3.
4.

Complaint / Symptom

Customer states power steering does not work

Probable Cause

Power steering torque sensor failed

Corrective Action

Replace Power steering gearbox rack

Fire Report Information

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VIEW AUTO REPORT

Report Information

Attached Files

Report ID	26979
Brief Description*	Steering popped on test ride lost power assist EF
Reported By	Field User
Offline Report Date	
Online Created Date	4/25/2013 1:03:00 PM
Last Updated Date	8/26/2013 11:56:54 AM

NONE

User Information

Zone	Zone 06
District	06M

Customer Information

City of Customer*	Columbia
State*	SC
Delivery Date	(MM/DD/YYYY)

Vehicle Information

Non-US VIN			
VIN*	1HGCR2F35DA[redacted] Check VIN		
Unit Status	In-Stock		
Mileage*	34		
Engine No.			
Model Year	2013	Model	ACCORD
Style*	LX	Body*	4 Door
Transmission*	AT	Engine Type	Fuel Inj

Dealer Information

Dealer Number	207287
Phone Number (999-999-9999)	[redacted] Ext.

Claim Information

Claim Number	305383	CR/Techline #	
Labor Operation *	Pwr steer gearbo - 513		
Labor Op Full Codes *			
Causal Code			

5131B0 ELECTRIC POWER STEERING TORQUE SENSOR - REPLACE.

Other 513X

Failed Part No. *Please provide Part No if available

1. 53601-T2F-A04
2.
3.
4.

Complaint / Symptom

Steering Lost Power Assist

Probable Cause

Test Steering Felt fine then popped and got tight Lostr Power Assist
DTC TROUBLE CODE 53-02

Corrective Action

Replace Steering Gear Box

Fire Report Information

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VIEW AUTO REPORT

Report Information

Attached Files

Report ID	30686
Brief Description*	Car must be restarted for Power Steering to work
Reported By	Field User
Offline Report Date	
Online Created Date	5/24/2014 5:10:00 AM
Last Updated Date	8/21/2014 9:08:57 AM

NONE

User Information

Zone	Zone 05
District	05G

Customer Information

City of Customer*	Ridley Park
State*	PA
Delivery Date	9/24/2013 (MM/DD/YYYY)

Vehicle Information

Non-US VIN	☐		
VIN*	1HGCR2F50DA[redacted] Check VIN		
Unit Status	Sold to Customer		
Date of Occurrence*	5/20/2014 (MM/DD/YYYY)		
Mileage*	14,985		
Engine No.			
Model Year	2013	Model	ACCORD
Style*	LX	Body*	4 Door
Transmission*	AT	Engine Type	Fuel Inj

Dealer Information

Dealer Number	207537
Phone Number (999-999-9999)	[redacted] Ext.

Claim Information

Claim Number	CR/Techline # 3580335
Labor Operation *	Pwr steer gearbo - 513
Labor Op Full Codes *	
Causal Code	

5131C0 STEERING GEARBOX, ELECTRIC POWER STEERING - REPLACE.

Failed Part No. *Please provide Part No if available

1. 53601-T2F-A94
2.
3.
4.

Complaint / Symptom

customer states the car must be put into nuetral and car shut off and restarted for power steering to work

Probable Cause

dealership duplicated condition and called techline

Corrective Action

replace EPS Rack as per tech line and roadtest
vehicle repaired

Fire Report Information

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Q4

LAWSUITS

Matter Name	Matter No	Stage	Model Year	Category	Model Description	Vin	Prod Full Allegations
Graves, Niya	096403	Litigation	2013	Product Liability	Accord Unknown	1HGCR3F85DA009232	Product->Steering->Unspecific
Greene, Robyn S.	094708	Litigation	2013	Warranty	Accord Sedan-EX	1HGCR2F85DA[redacted]	Engine->Upper Engine-110->No Start/Diff-1107
Lassalle, Kyli	101374	Litigation	2013	Warranty	Accord Sedan-EX	1HGCR2F80DA[redacted]	Power steering gearbox-513

Narr Category	Narr Description
Plaintiff Contention Analysis	Defective steering wheel and unreasonably dangerous
Plaintiff Contention Analysis	Plaintiff allges by way of example, and not by way of limitation, the defects, malfunctions, misadjustments, and/or nonconformities with Plaintiff's Vehicle include power steering sytem failures and EPS system failures.
Plaintiff Contention Analysis	10/31/2012 plaintiff purchased a new 2013 Accord EX-L sedan from Team Honda. Alleges Loss of power and steering defects Louisiana Redhibition law, Lender Liability, Mag-Moss, Negligent Repair, Request for Rescission pled

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Q6 - PE14-033 LABOR OP AND DEFECT CODES

Labor	Description
123099	emission test, fuel injection
423501	retrieve ABD/TCS/VSA diagnostic codes
510096	repair steering column
510099	steering column - repair
511099	manual steering gearbox - repair
511102	manual steering gearbox - replace
511199	manual steering gearbox - replace
512096	power steering pump - repair
512099	power steering pump - repair
512100	power steering pump - replace
512500	power steering assist or pump pressure - test
513092	electric power steering control unit (EPS) - repair
513096	electric power steering control unit (EPS) - repair
513097	electric power steering control unit (EPS) - repair
513099	electric power steering control unit (EPS) - repair
513100	electric power steering control unit (EPS) - replace
513130	electric power steering control unit (EPS) - replace
513199	electric power steering control unit (EPS) - replace
523505	retrieve power steering diagnostic codes w/test drive
723507	DTC SRS system - retrieve codes with SRS light, read data, troubleshoot and clear DTC, initialize SRS
737099	repair wire harness
737199	replace wire harness
4131R2	modulator, VSA
5101A0	steering angle sensor - replace
512100A	power steering pump pressure - test
5131A9	tie rod ends, both inner - replace
5131C0	steering gearbox, electric power steering - replace, includes alignment
5131H1	power steering gearbox assembly, HPS (hydraulic power steering) - replace, includes alignment
5131H1G	power steering gearbox assembly, HPS (hydraulic power steering) - replace, includes alignment (for V6)
5131H2	steering gearbox (EPS) - replace, includes wheel alignment
5131H6	box, power steering gear (TF3)
5805G1	DTC power steering (EPS) - retrieve codes, read data, troubleshoot, and clear DTC.
7371A0	cabin wire harness, left - replace, includes AC system evacuate and recharge
7371A0C	for recovery of refrigerant
7371J8	under hood/engine harness - replace

Defect	Category	Sub-category
00401	Broken, Worn, Distorted, Cut, and Deteriorated	Distorted
00504	Broken, Worn, Distorted, Cut, and Deteriorated	Premature wear and tear
02101	Broken, Worn, Distorted, Cut, and Deteriorated	Torn or Split
02301	Others	Seized
02602	Broken, Worn, Distorted, Cut, and Deteriorated	Cut
03214	Improper Operation	Erroneous operation
03217	Improper Operation	Not working properly or at all
06401	Short Circuit/Open Circuit	Short circuit
06601	Short Circuit/Open Circuit	Poor/no electrical contact
06801	Short Circuit/Open Circuit	Open circuit
07406	Assembling, Welding, Adjustment and Machining	Improperly adjusted
07408	Assembling, Welding, Adjustment and Machining	Improperly sealed
09999	Others	Other

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Q8

Epoxy splatter

Q8-8 -
5P_Bourns_Silver_Epoxy_Torque_Sensor_REDACTED

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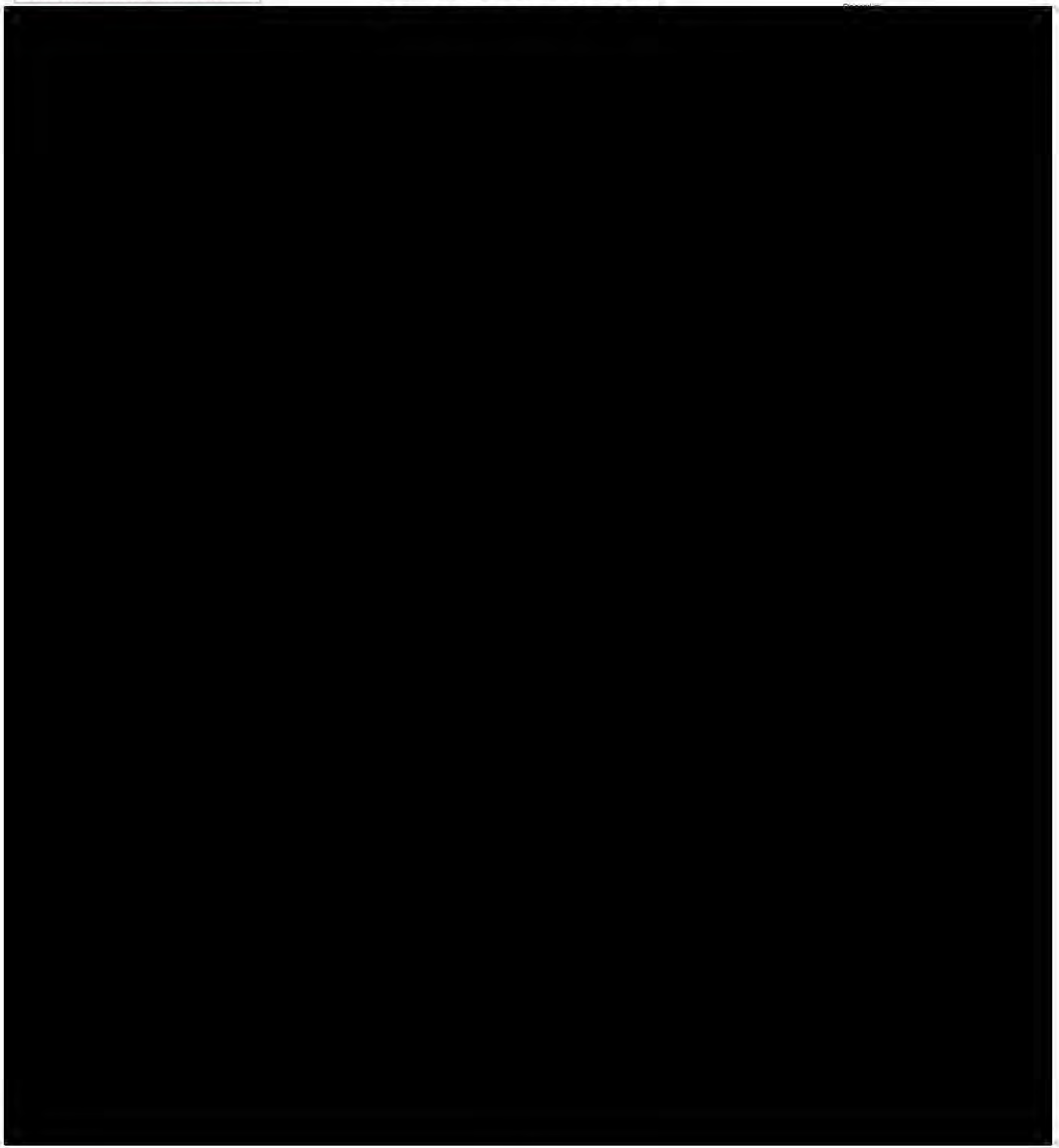
5 Principles for Problem Solving Sheet



PE14-033

HONDA

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Q8

ASIC analysis

Q8-1 - 5P_Bourns_ASIC_Failure_REDACTED

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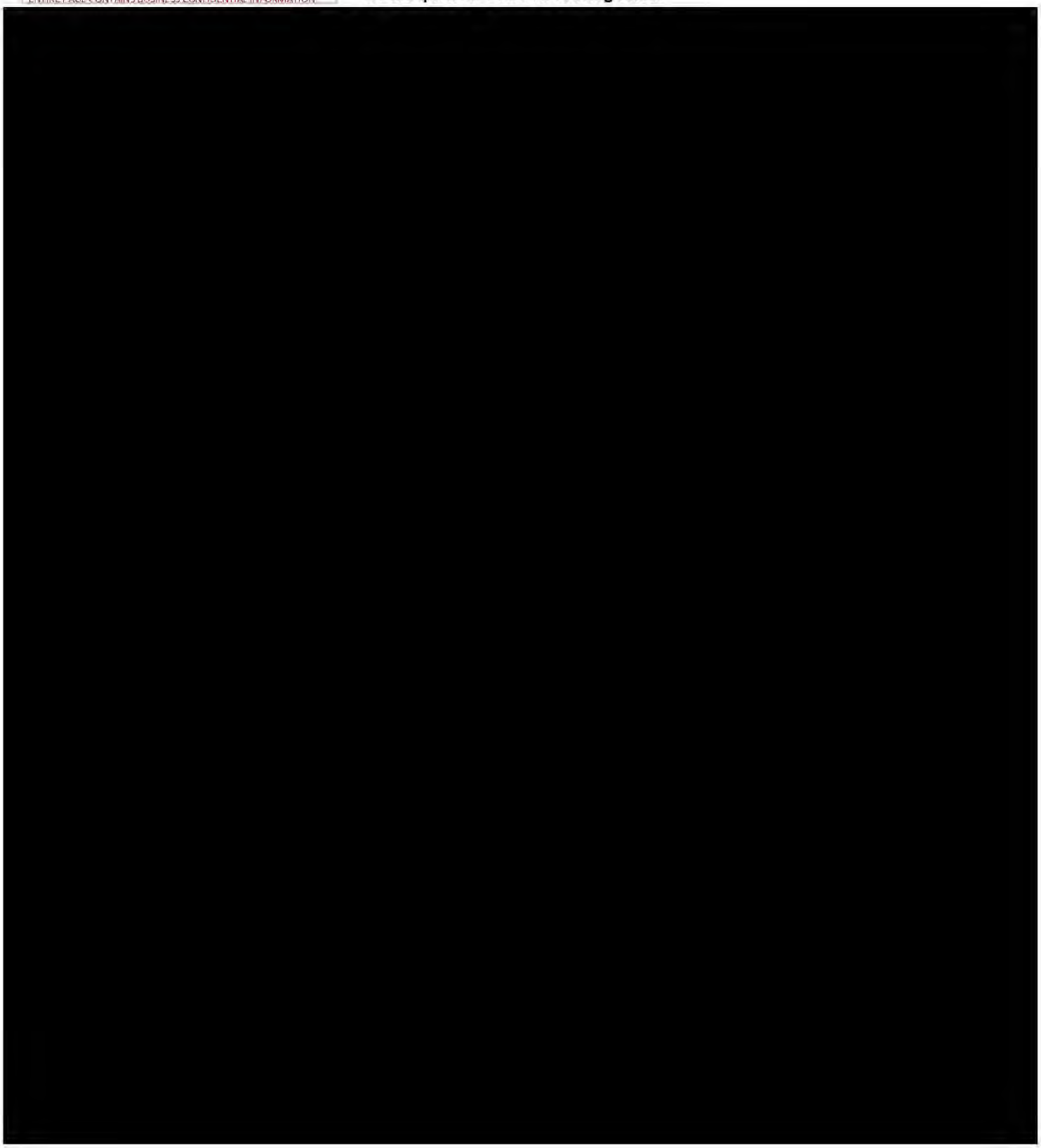

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Q8

ASIC analysis

Q8-1 - Q8-2 - ASIC Improvements 6in vs 8in_REDACTED

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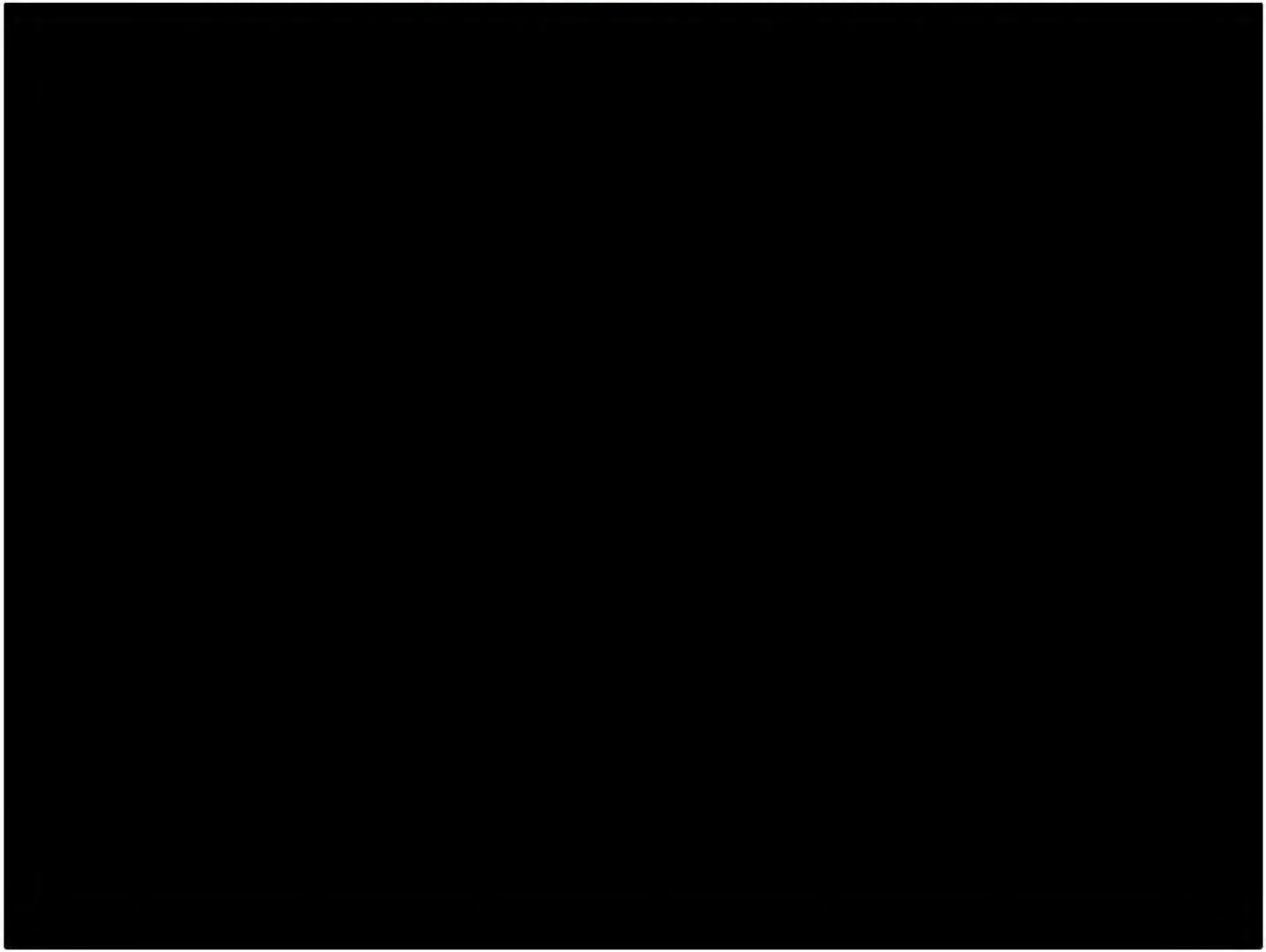

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HONDA

1/23/2015

Q8

Q8-0 - Gearbox DTC 53 MQ update to AHM_REDACTED

1.0 Subject Overview (Layout)

1.1 Subject Overview (Part layout)

2.0 Market Situation (US Market)

2.1 Market Situation (US Market)

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A.) Loose Bond Wire at the ASIC (148 confirmed failures)

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A.) Loose Bond Wire at the ASIC (148 confirmed failures) cont.

[redacted]

8.) Visually check for gold remnant after shear test.

B.) MR Failure (46 confirmed failures)

C.) Smashed Bonding wire (9 failures)

D.) Capacitor failures (6 cracked & 1 tape defect)

F.) ASIC NG (4 confirmed failures)

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Q8

Capacitor

Q8-3 -
5P_Bourns_Capacitor_Internal_
Crack_REDACTED

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5 Principles for Problem Solving Sheet

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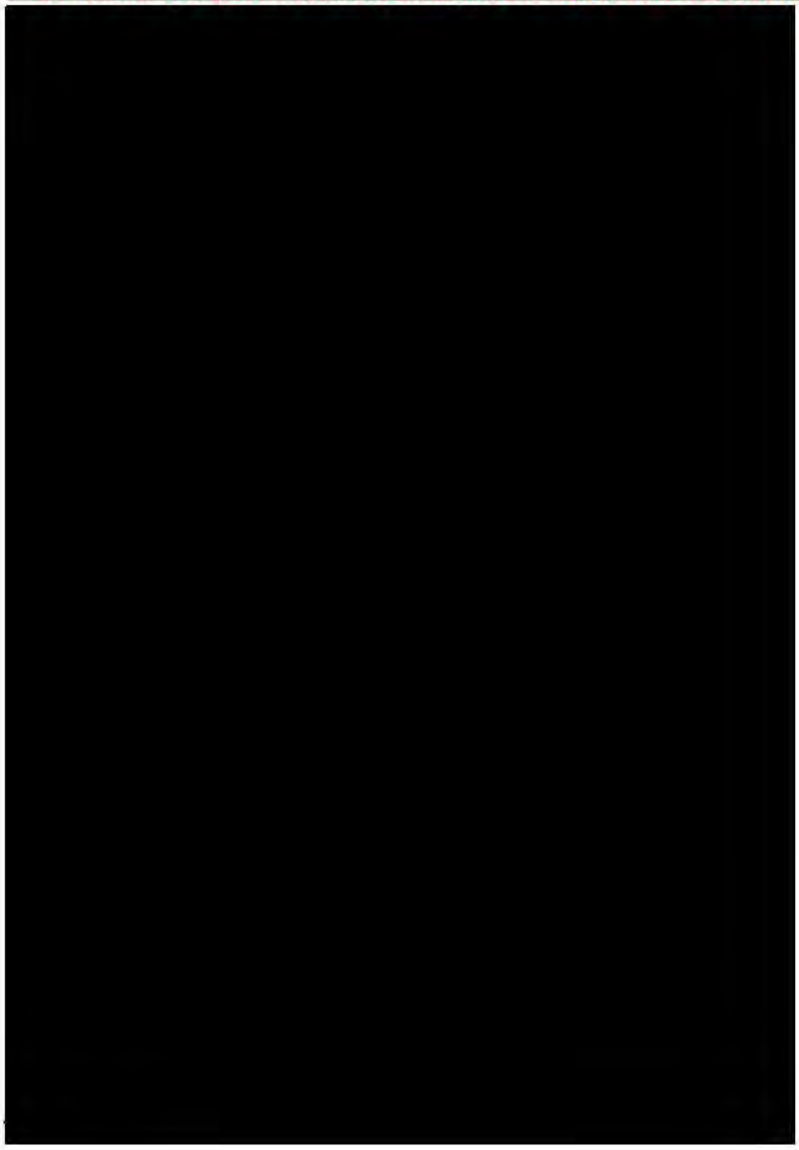

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Q8

Capacitor

Q8-4 -
5P_Bourns_Capacitor_Torque_
Sensor_REDACTED

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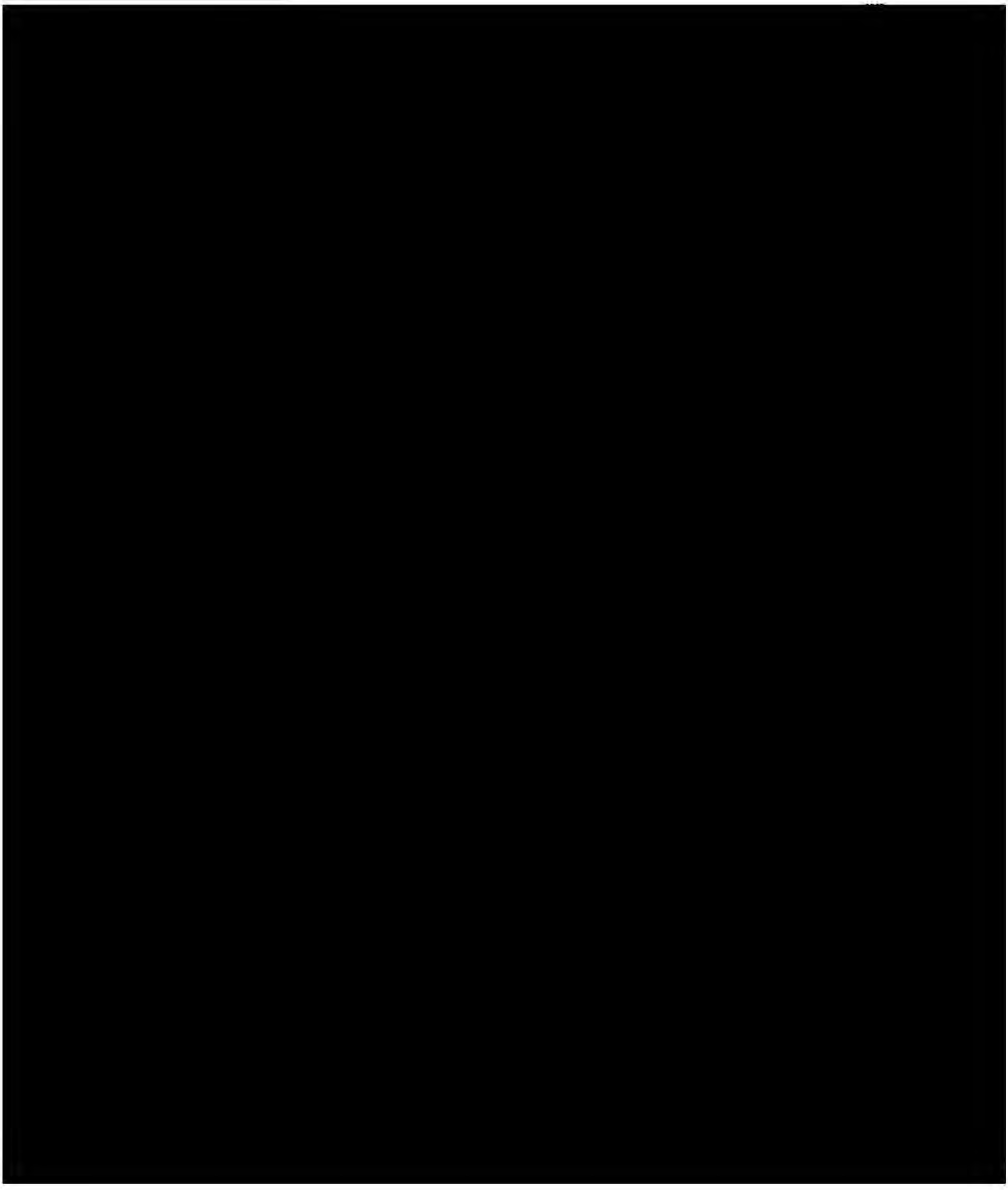

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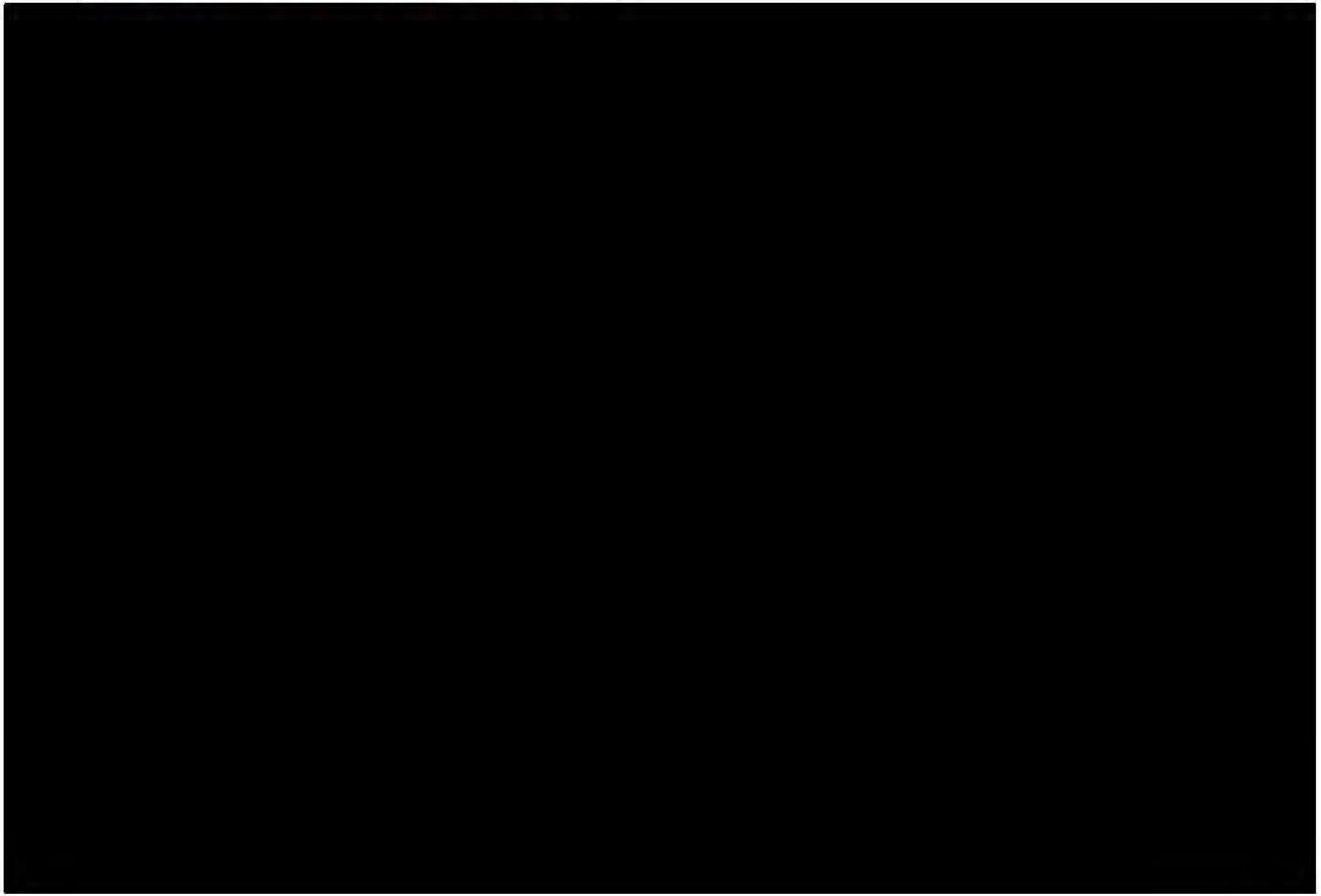

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Q8

Capacitor

Q8-5 - Johanson Visit Report - Capacitor August 2013_REDACTED

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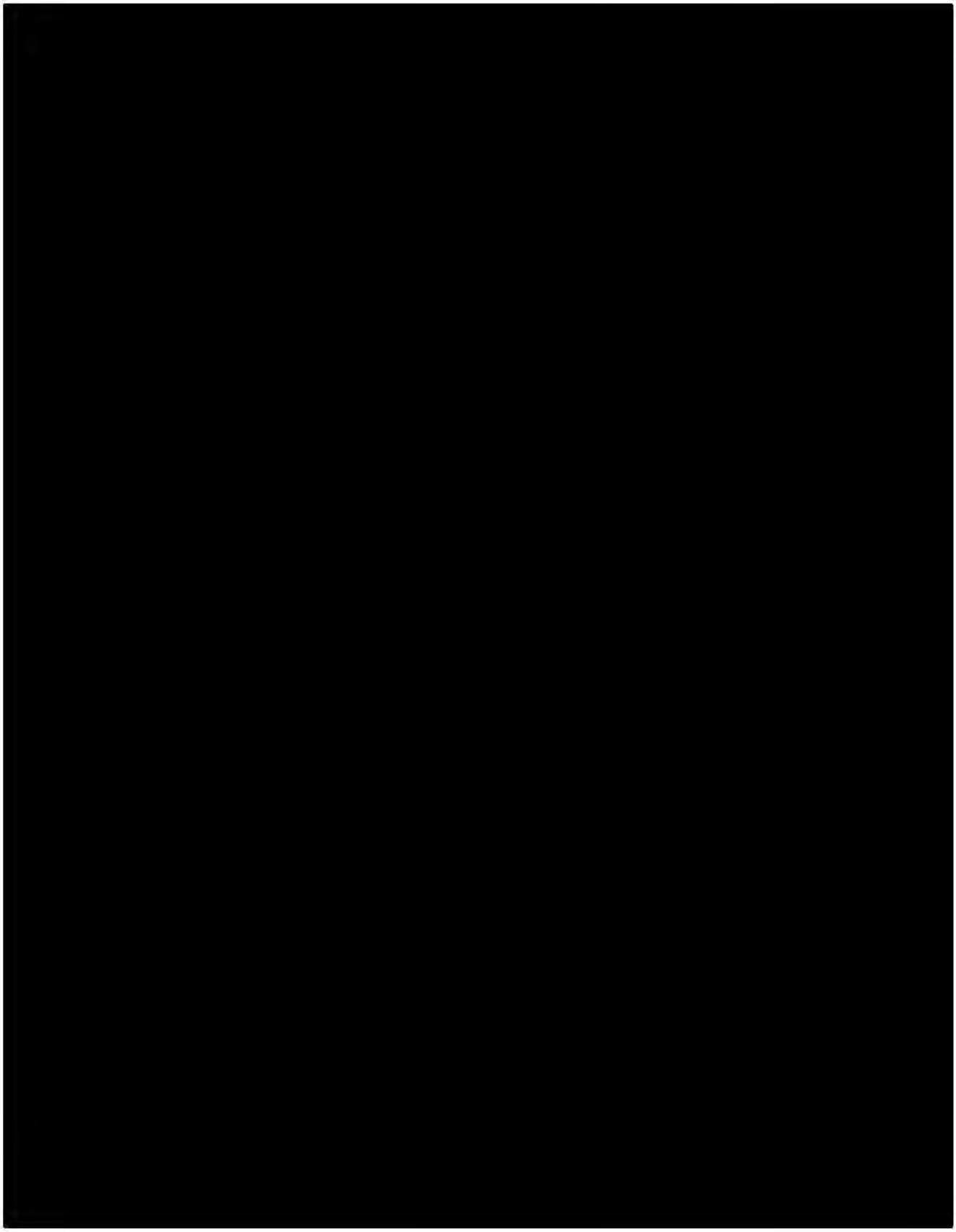

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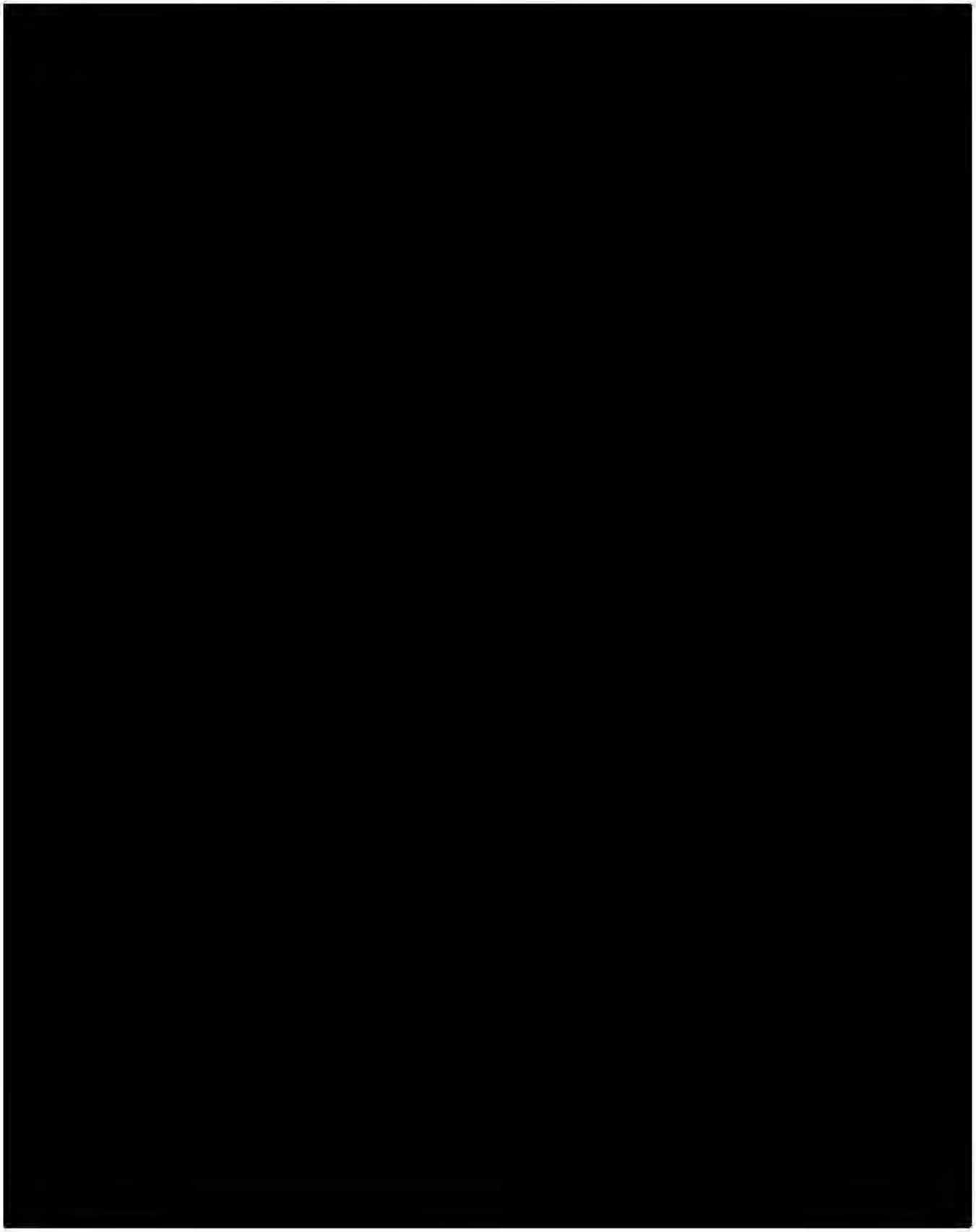

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HONDA

1/23/2015

Q8

Clock spring

Q8-6 - 5P_Bourns_Lifted Wire_REDACTED

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5 Principles for Problem Solving Sheet

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Quality Alert

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HONDA

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Q8

Clock spring

Q8-7 - DTC-148 SHOWA Customer Return_Jul-23-2014_Final FA Report_REDACTED

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Q8

QIS sheets

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HONDA QIC REPORT

No 4AHE2013036-01

[redacted]

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HONDA QIC REPORT

No 4AHE2014019-00

[redacted]

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HONDA QIC REPORT

No 4HDM2014048-00

[redacted]

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HONDA QIC REPORT

No 4OMC2014009-00

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No 4UAE2014006-00

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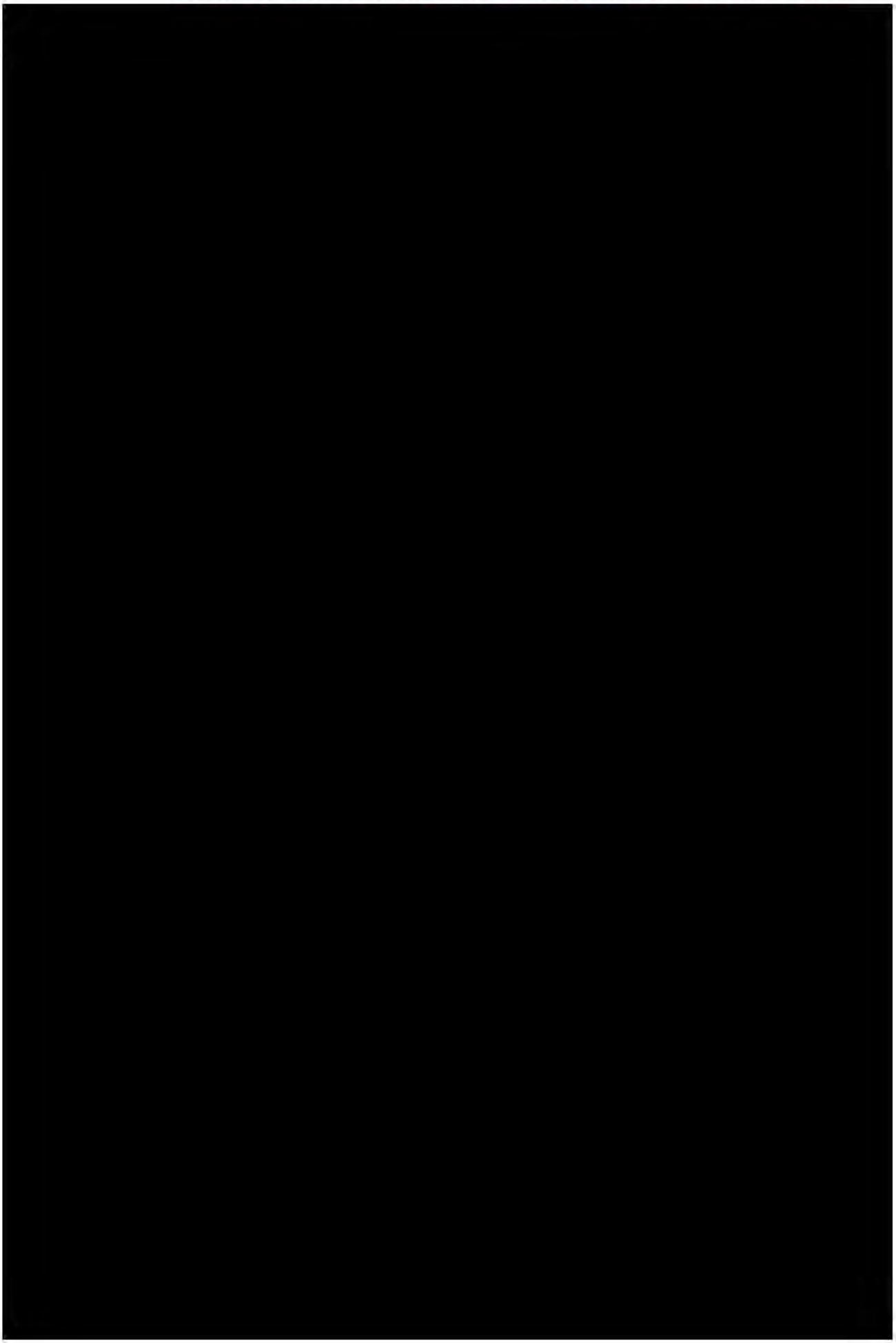

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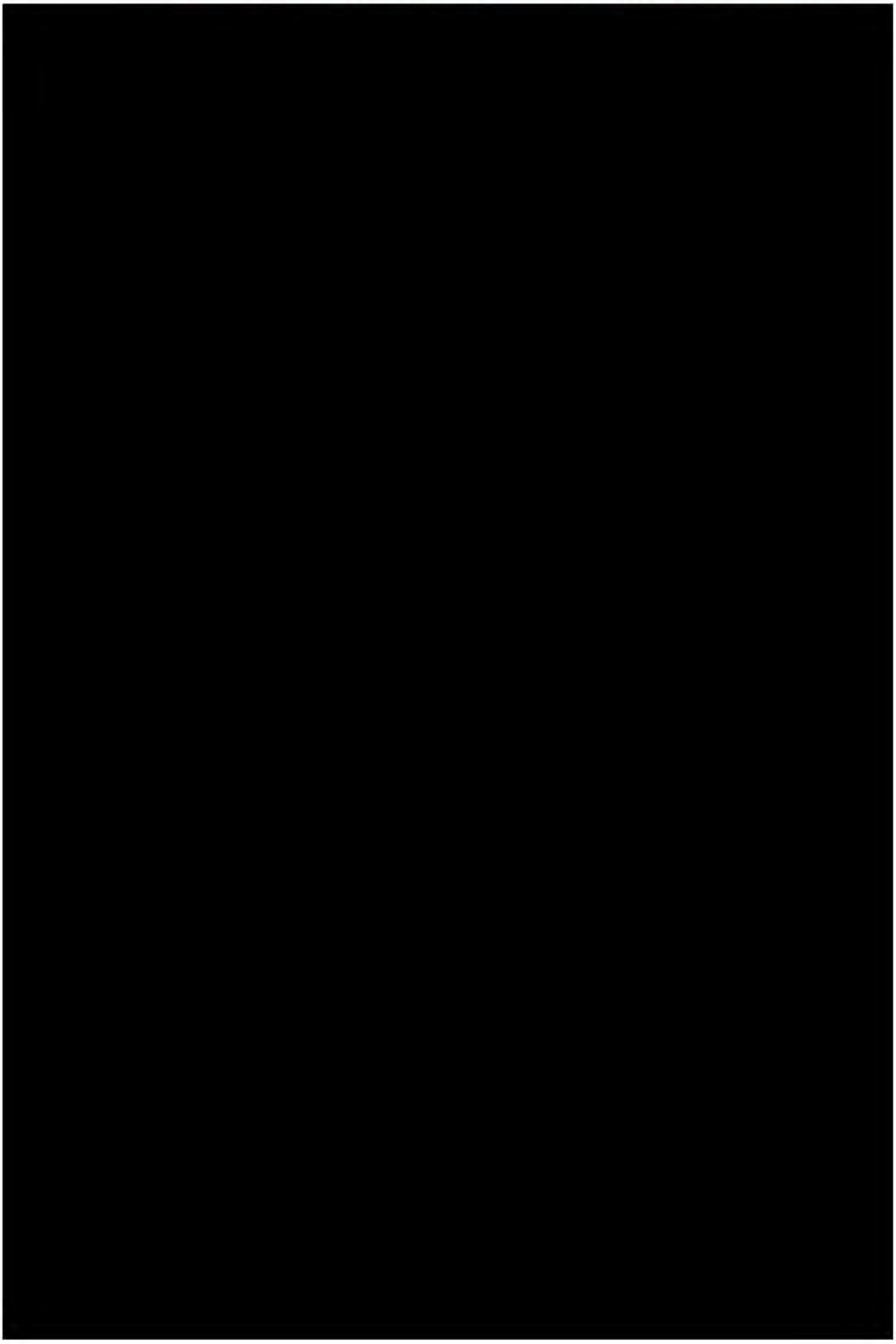

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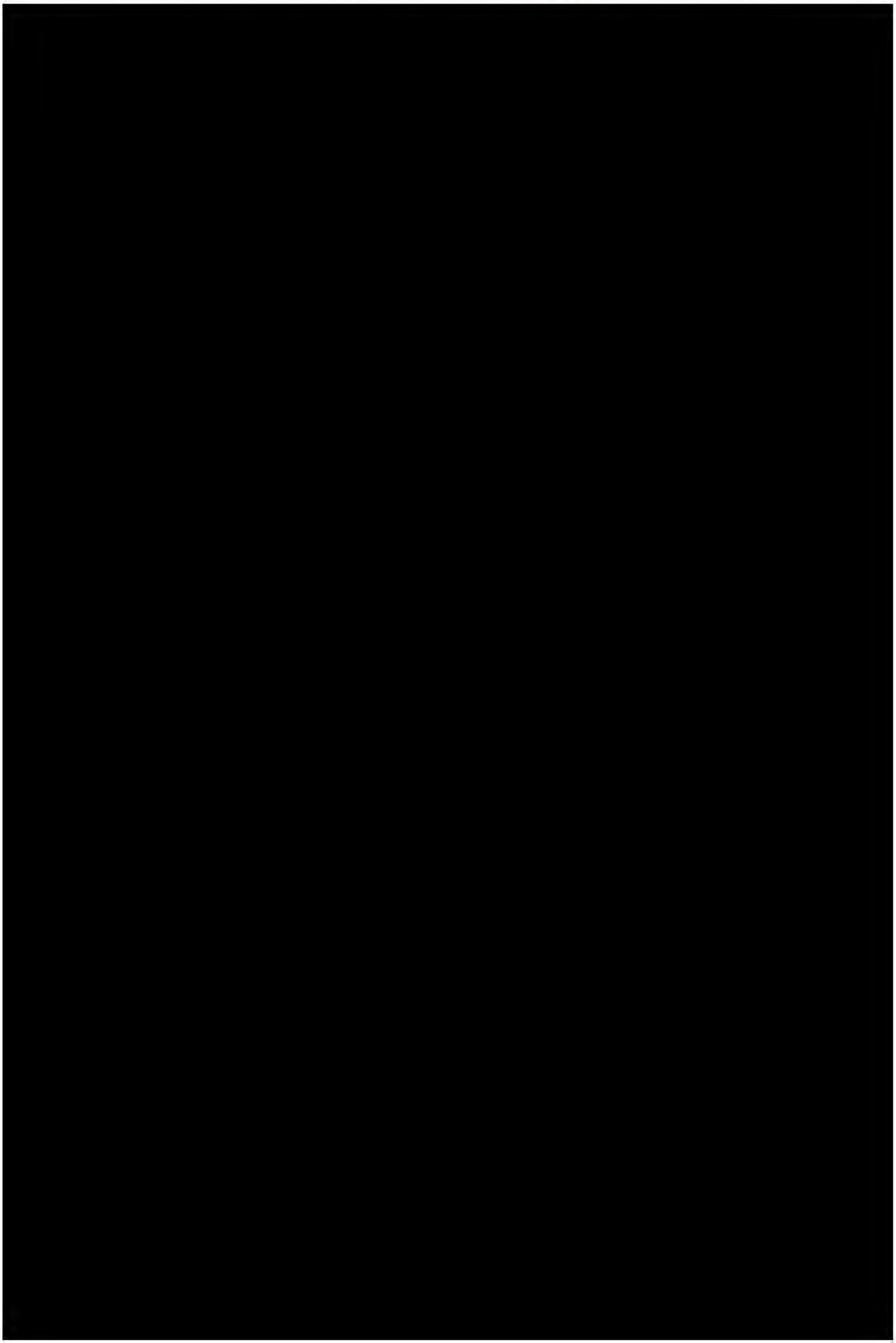

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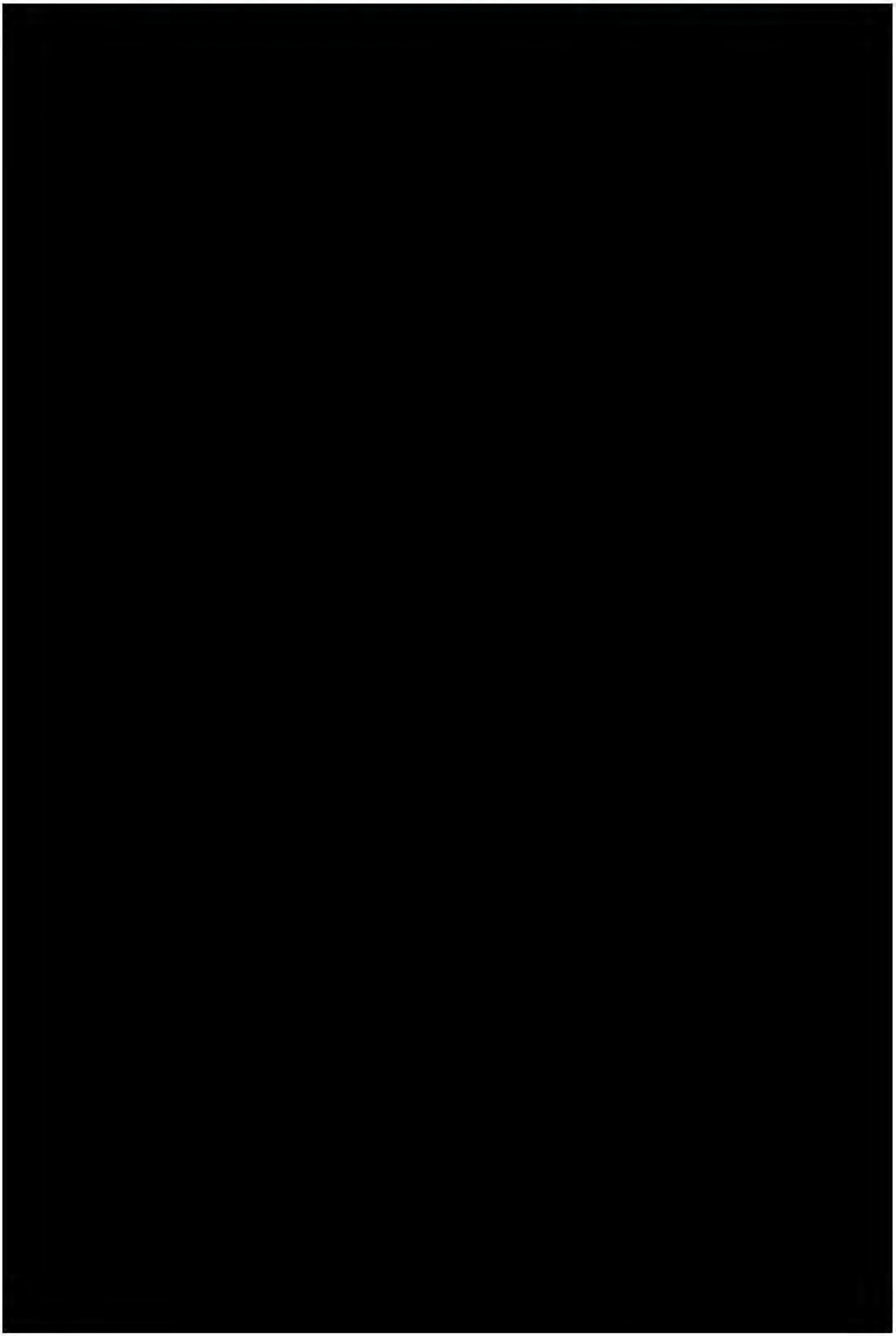

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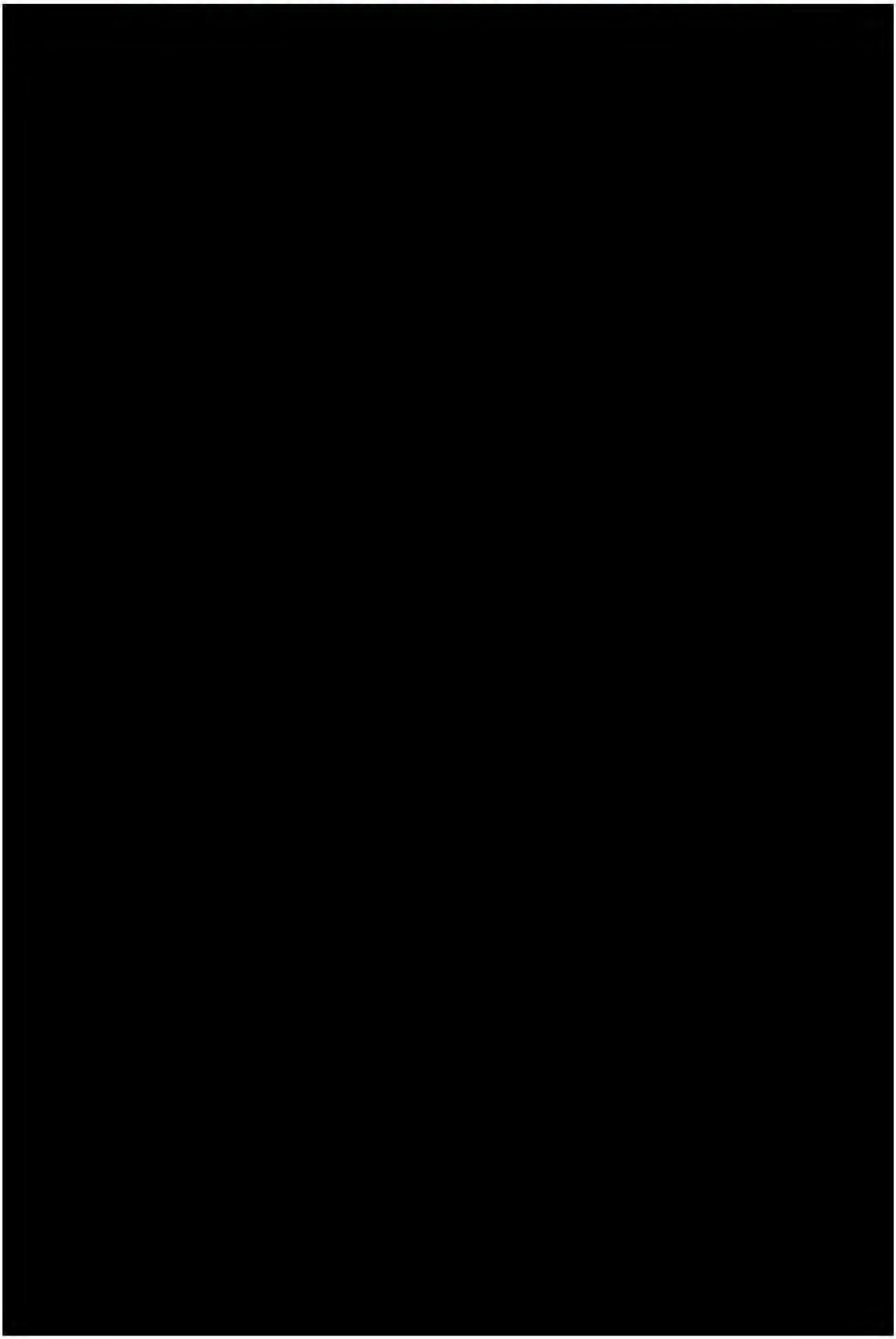

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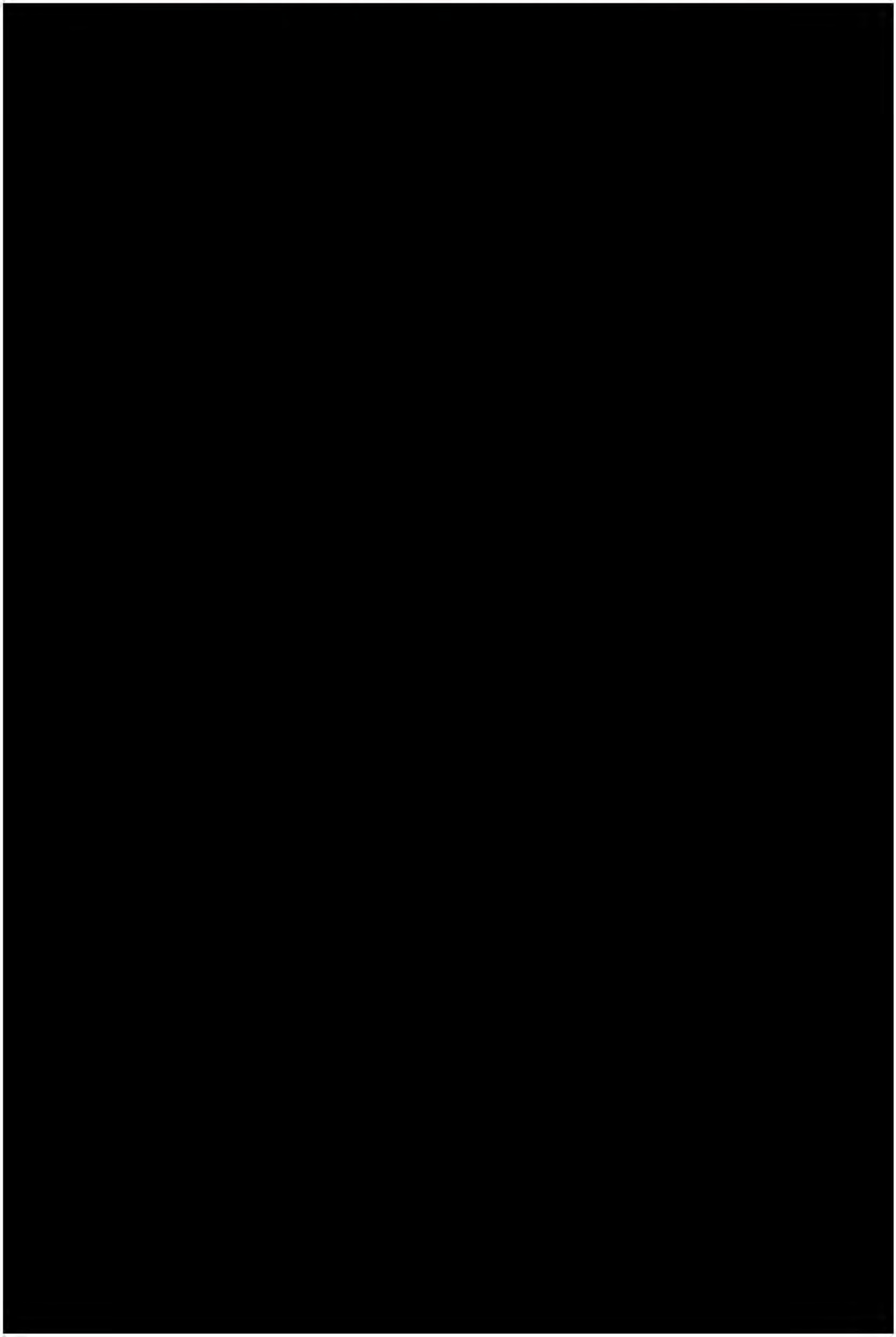

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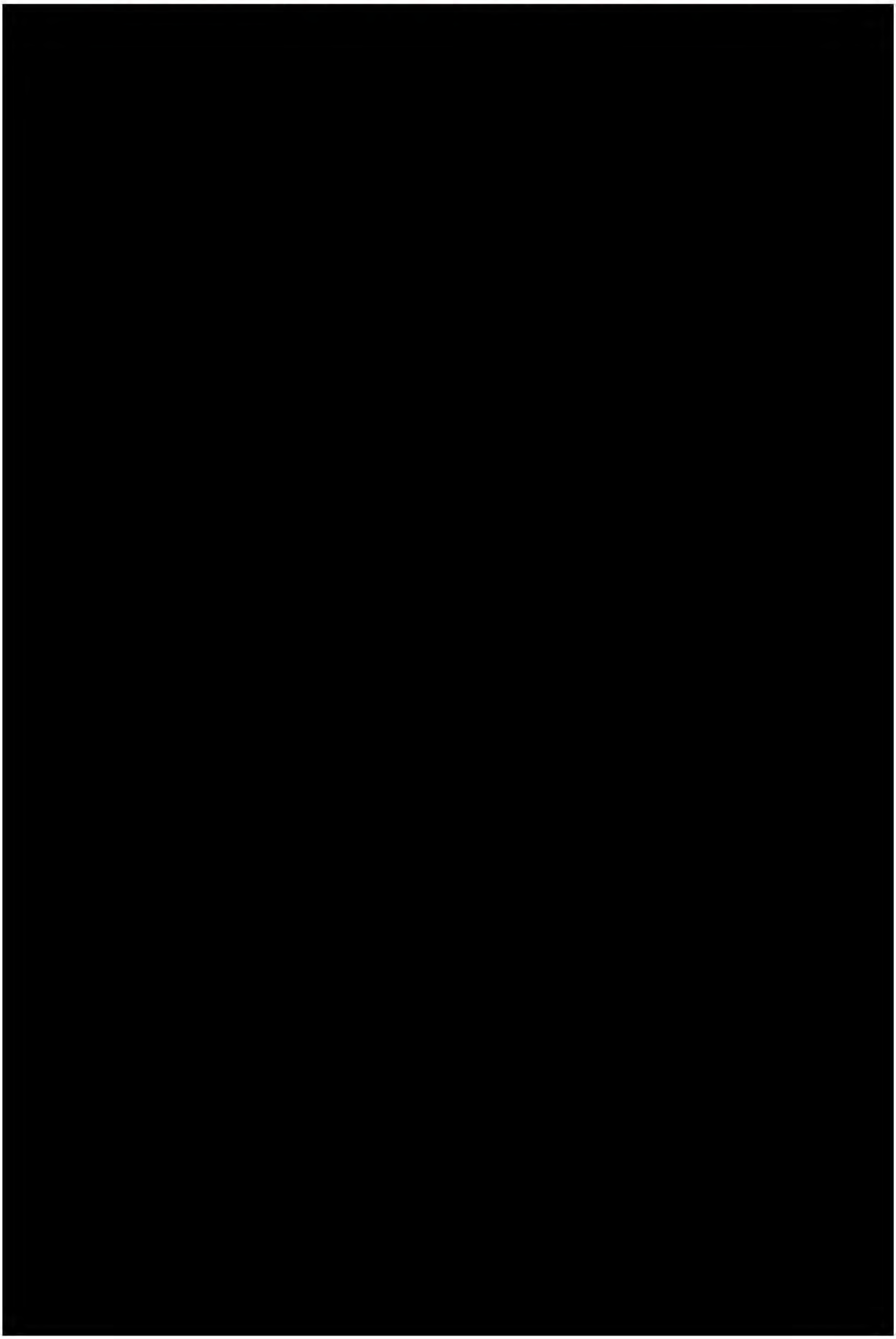

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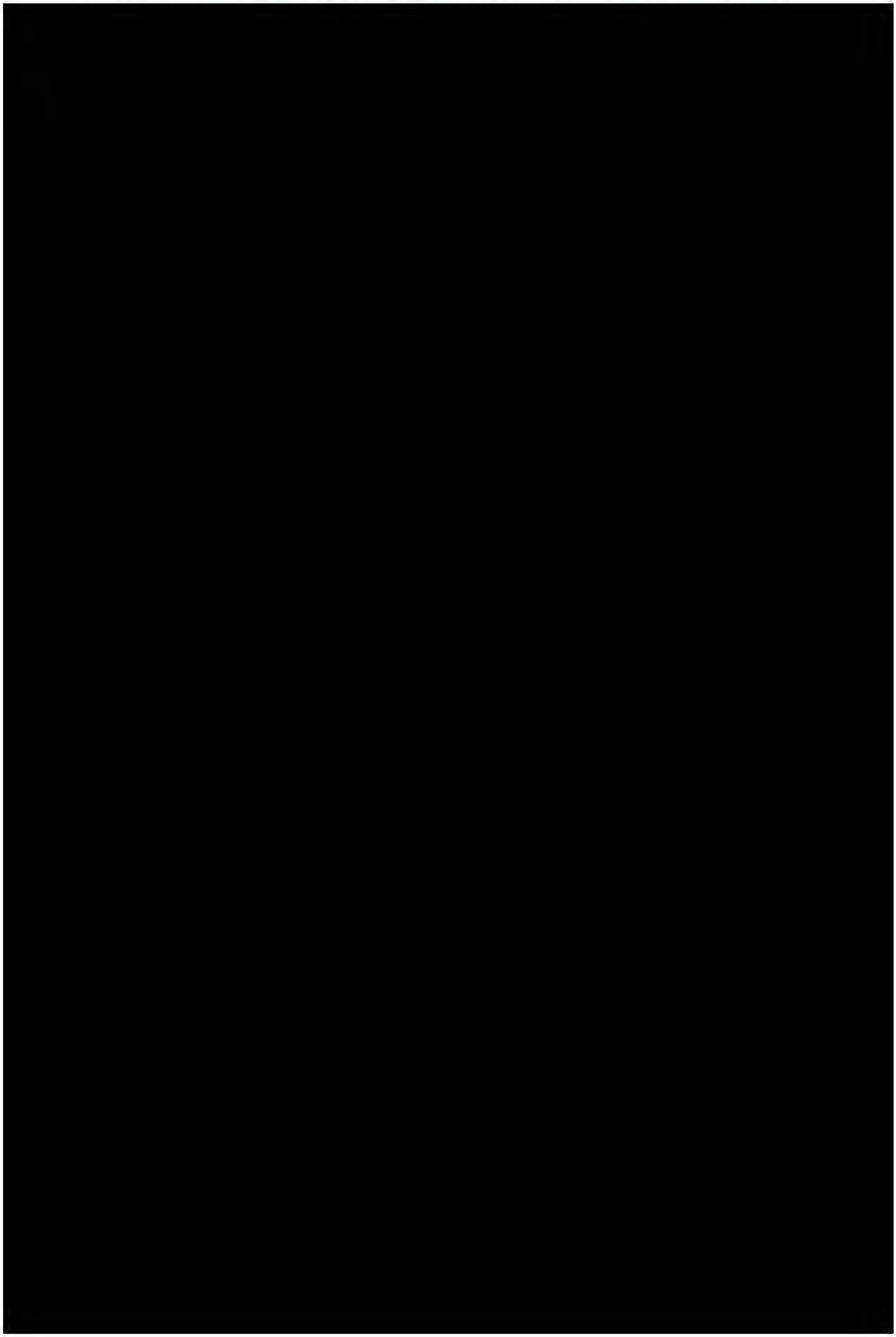

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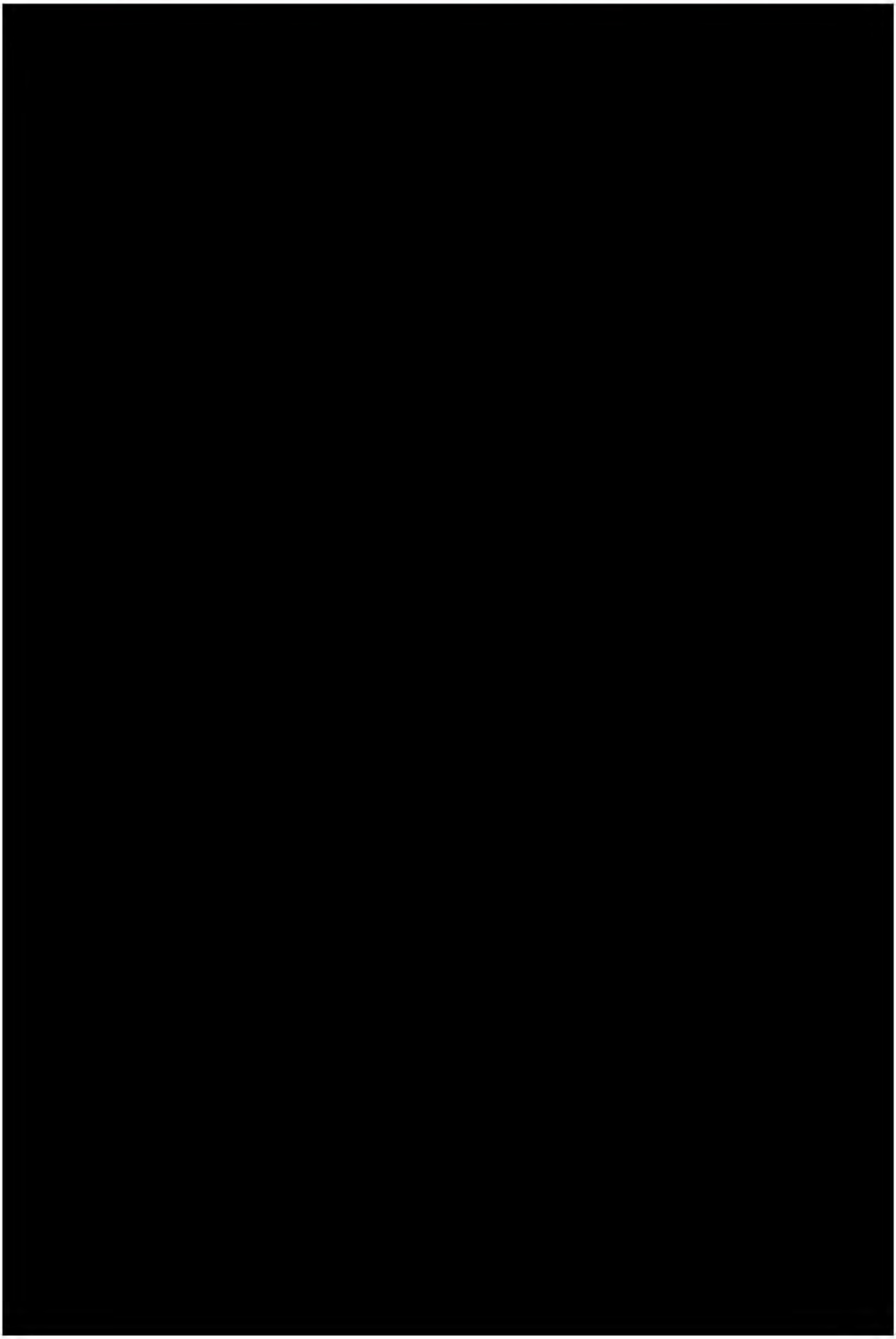

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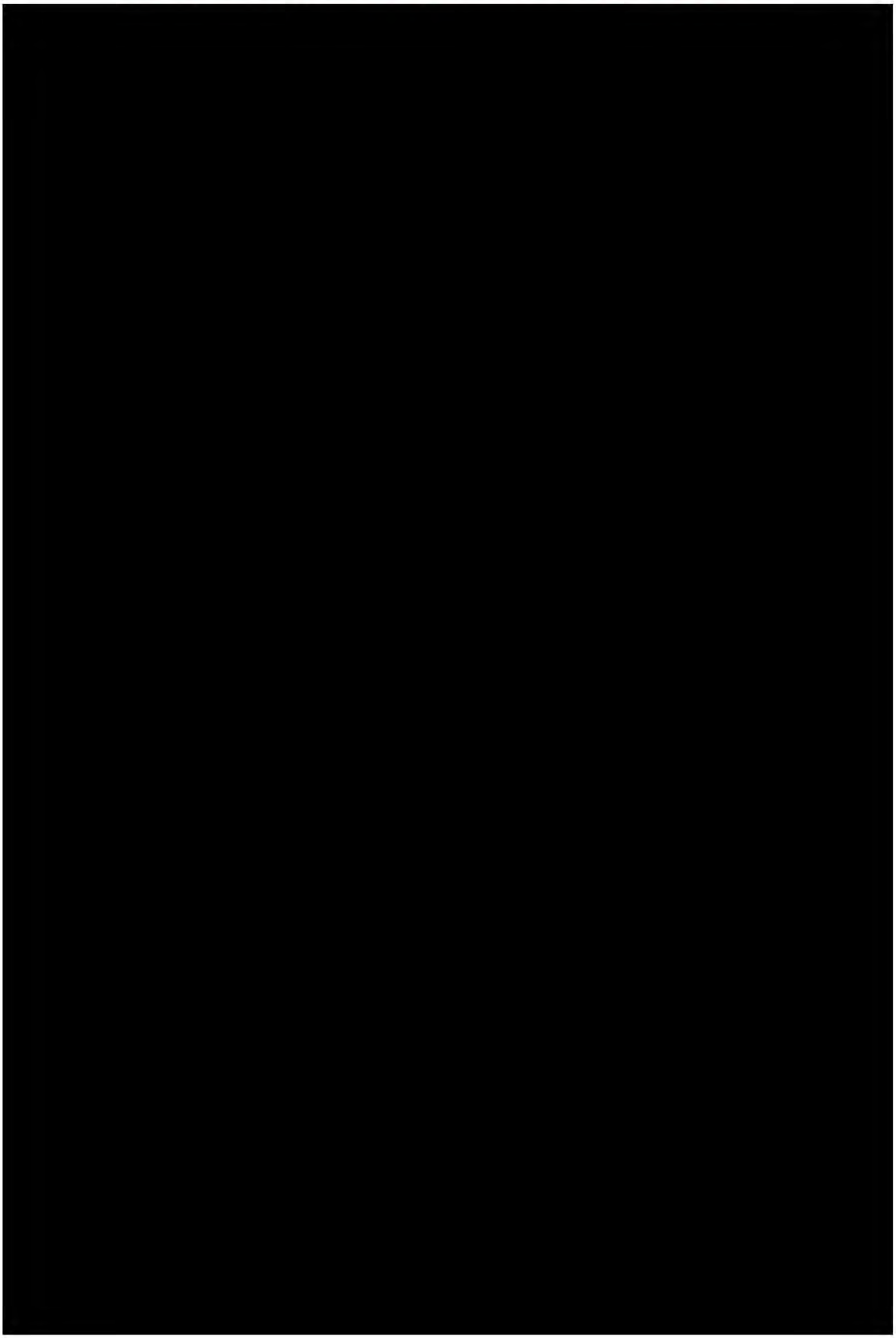

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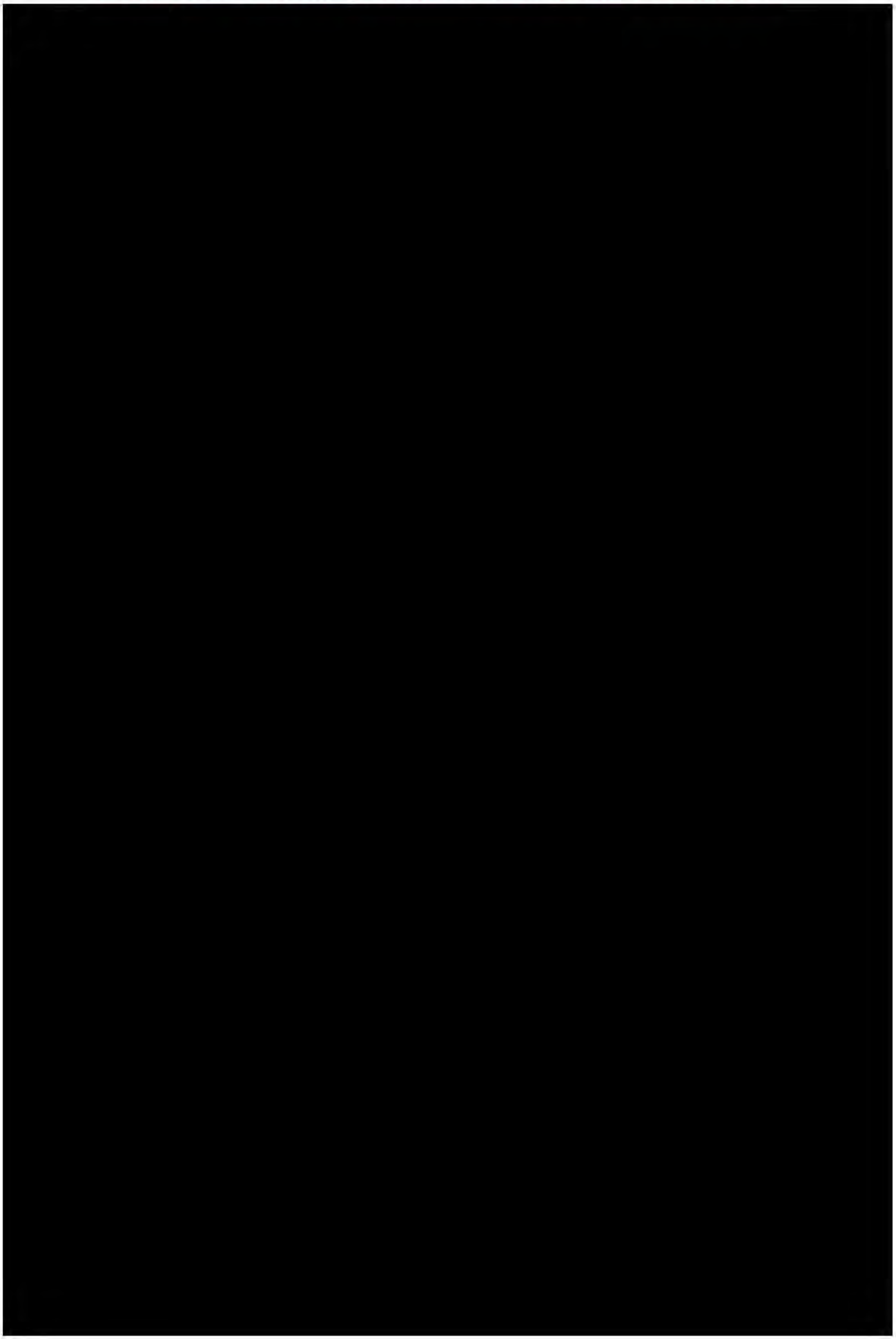

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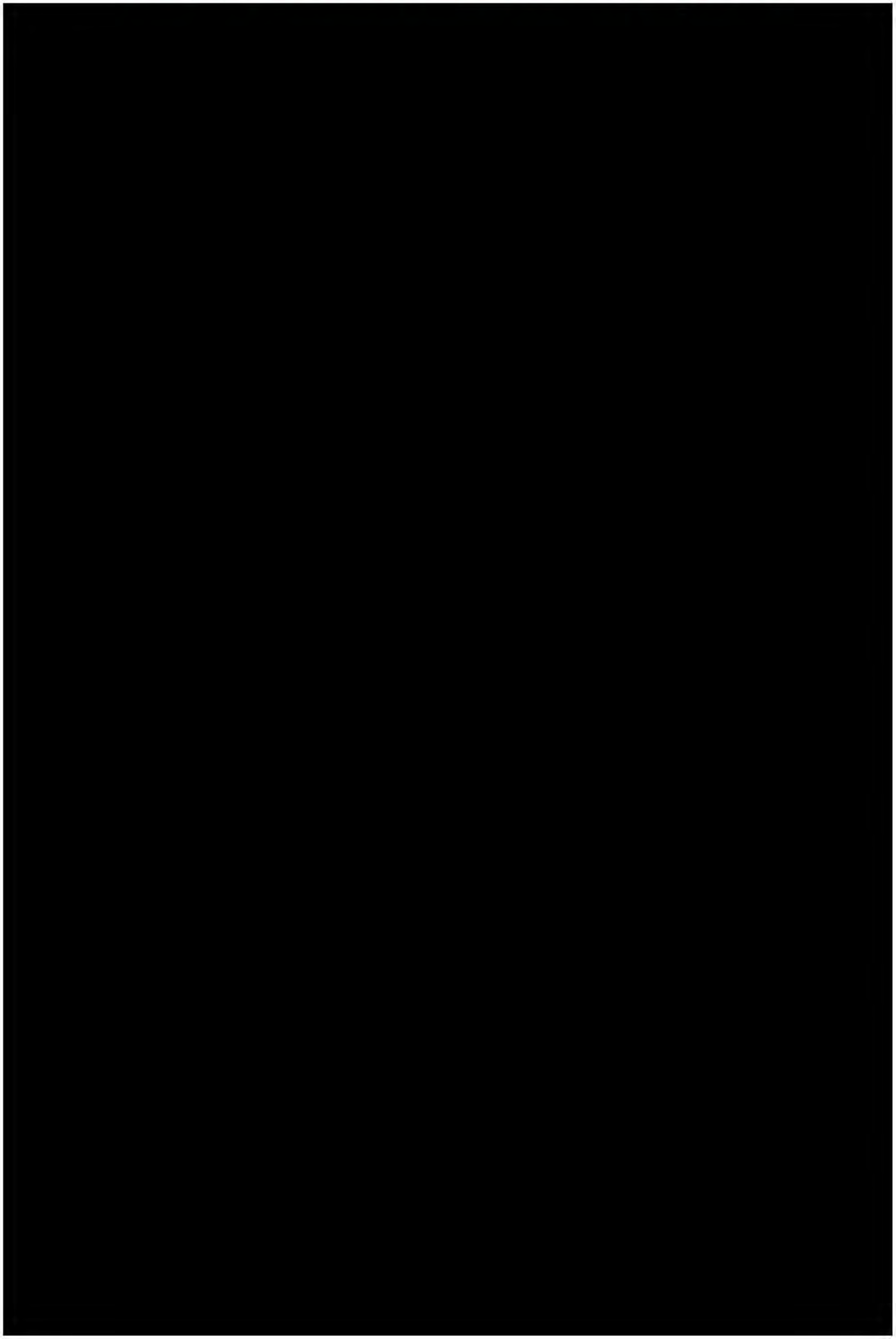

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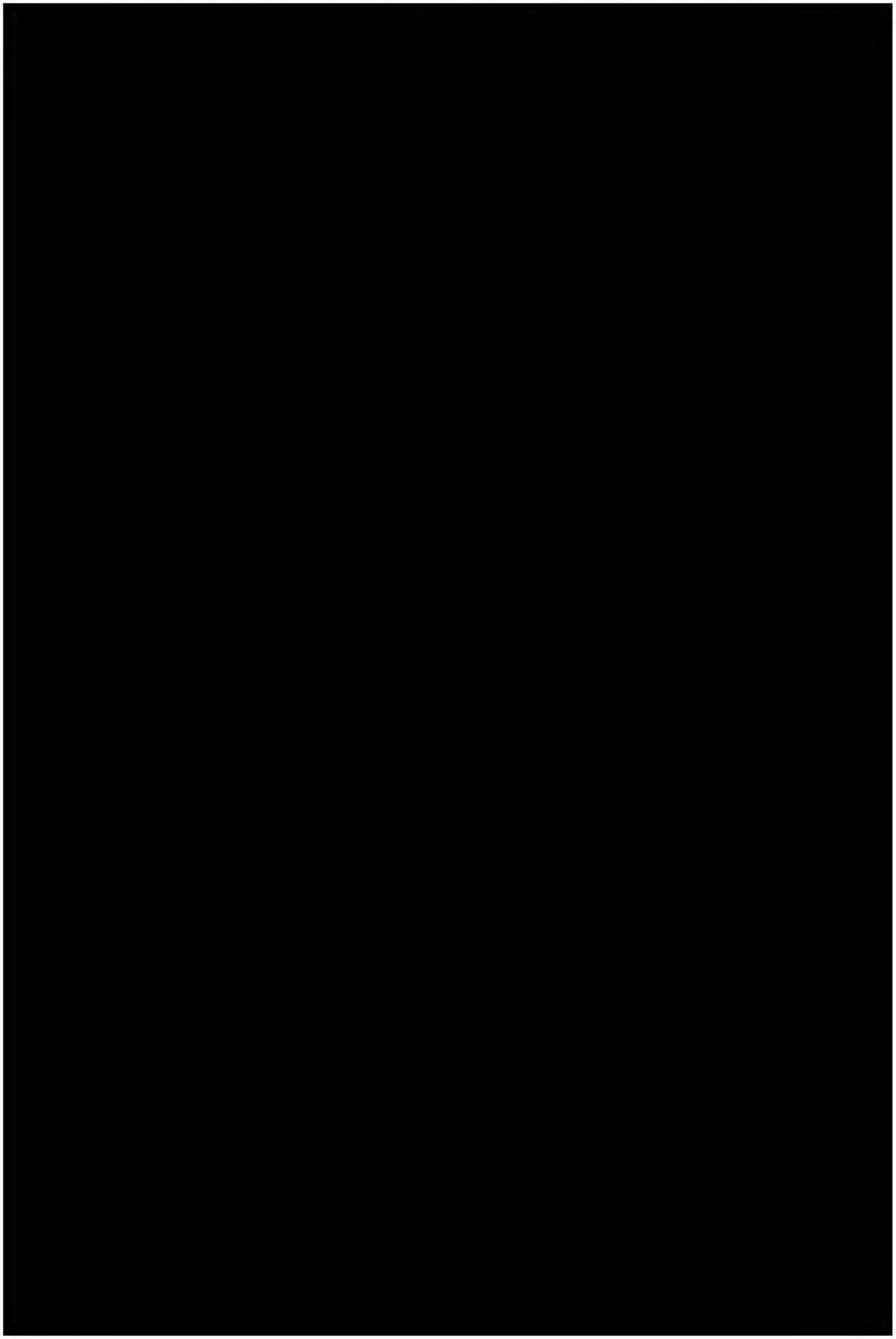

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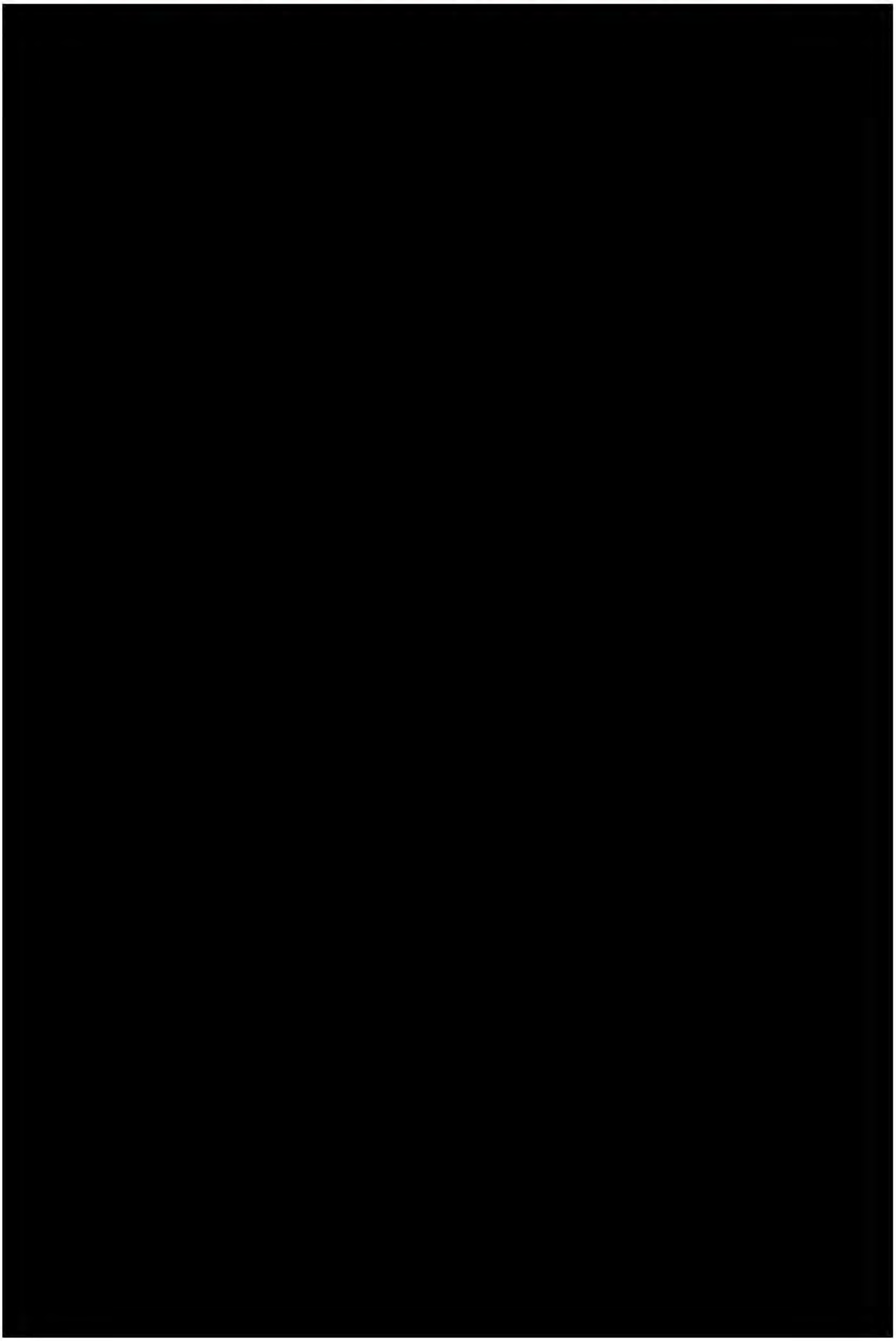

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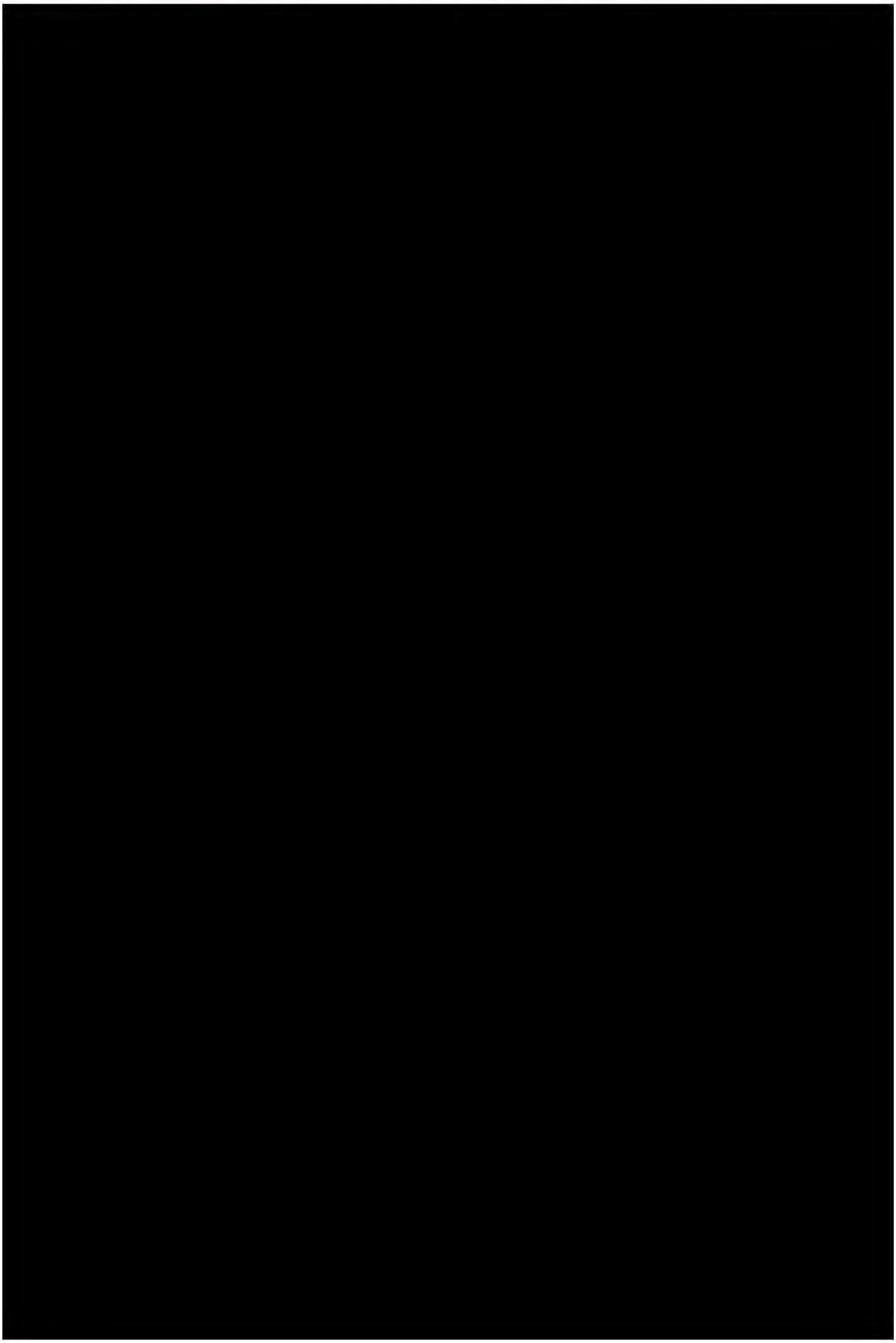

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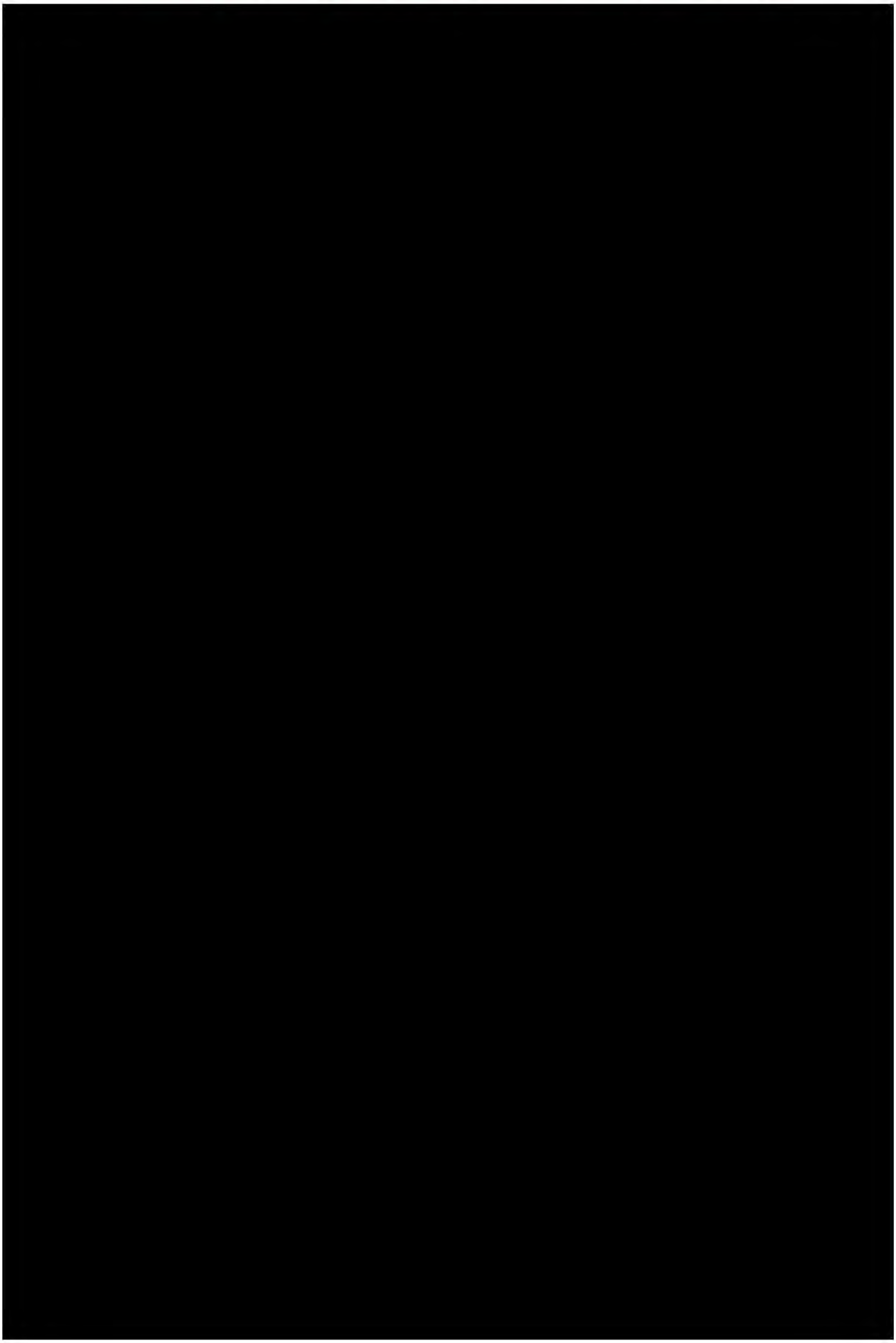

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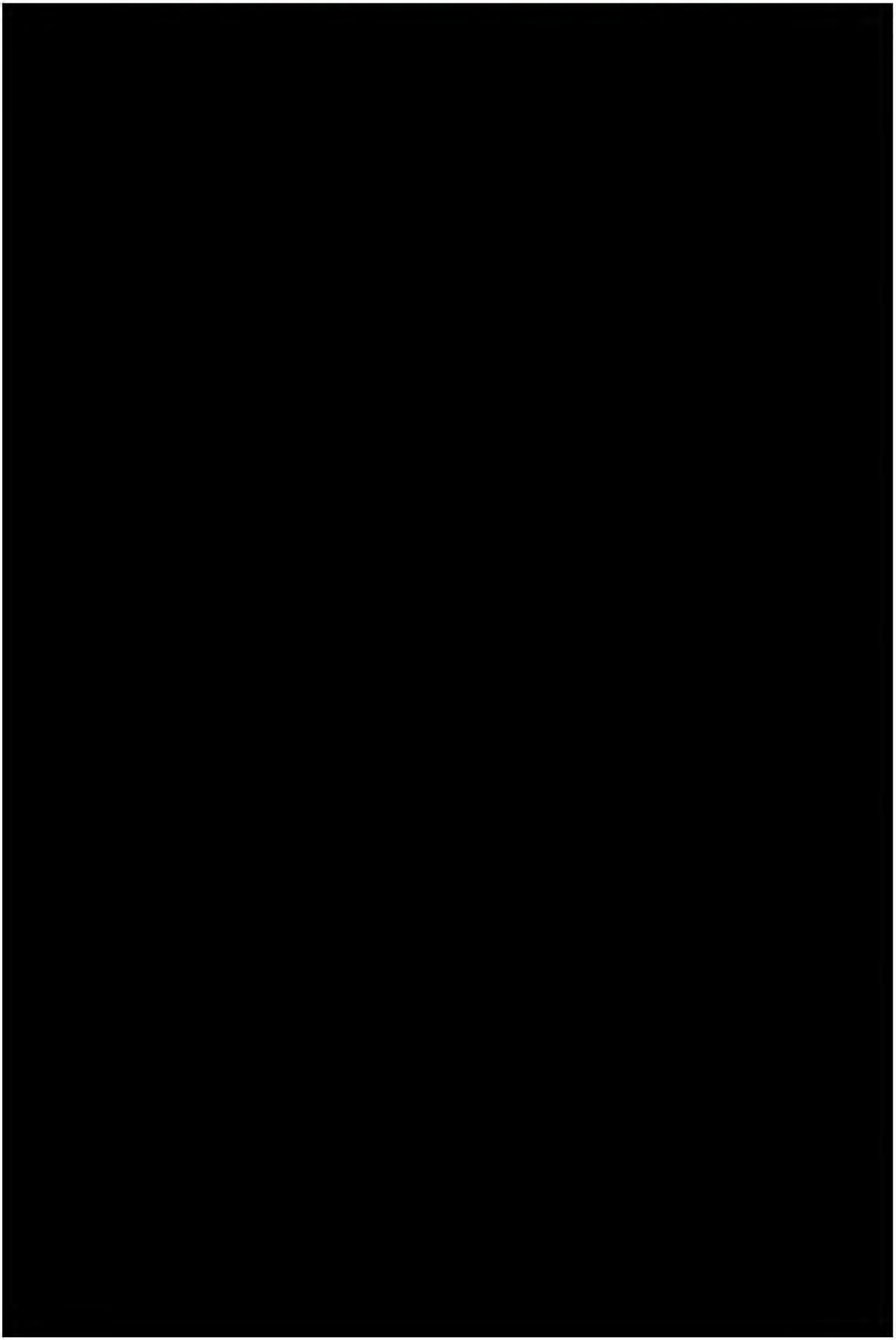

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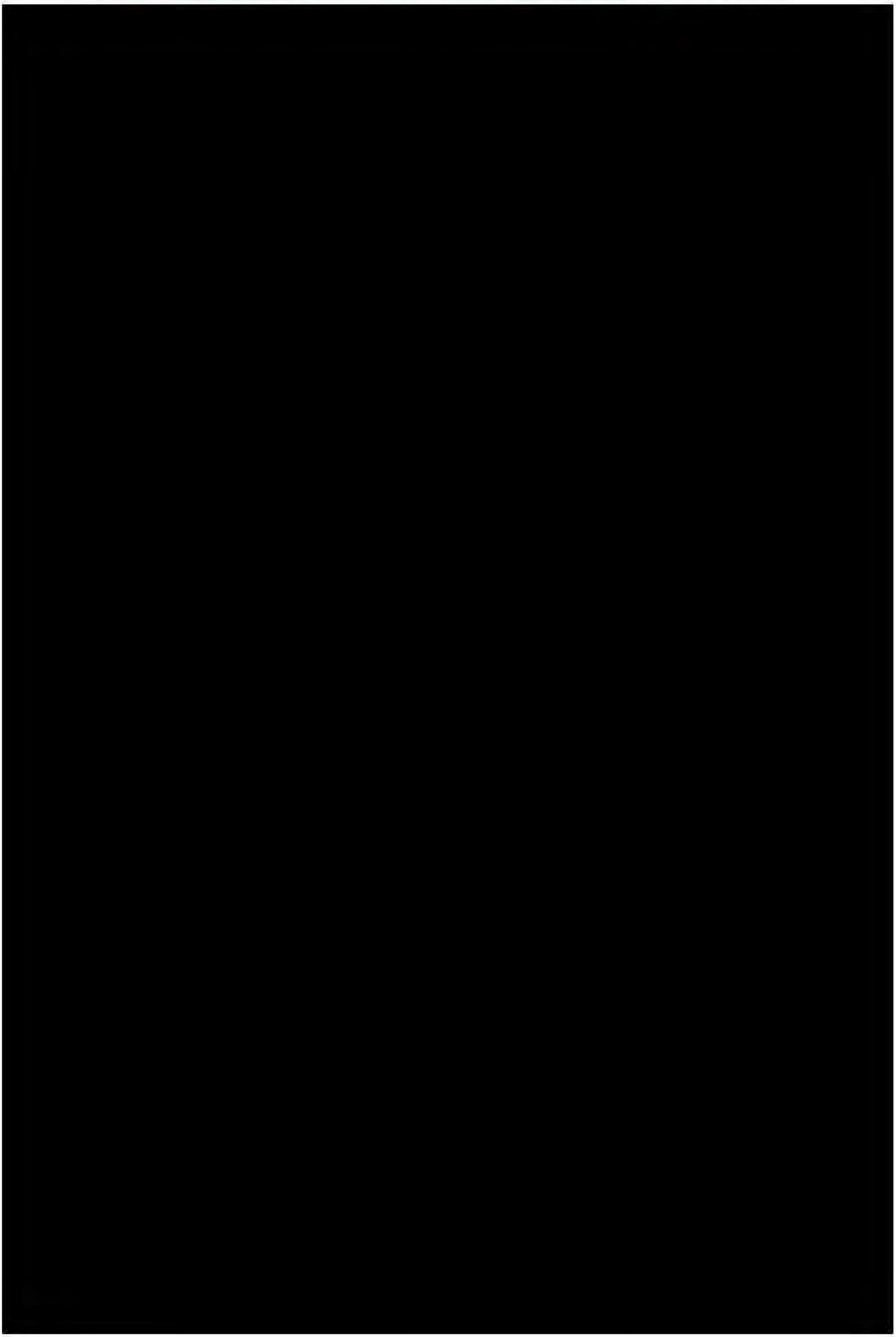

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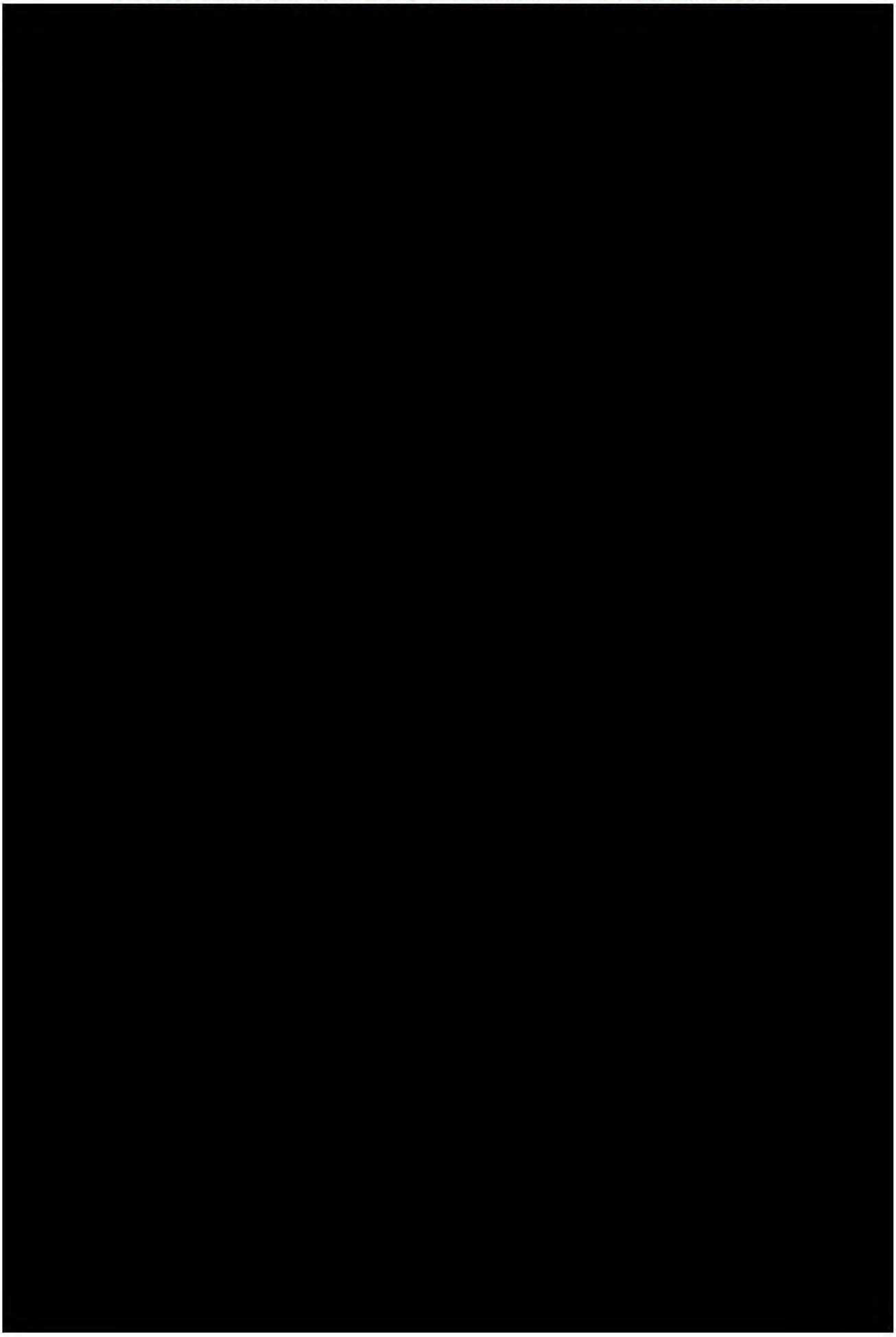

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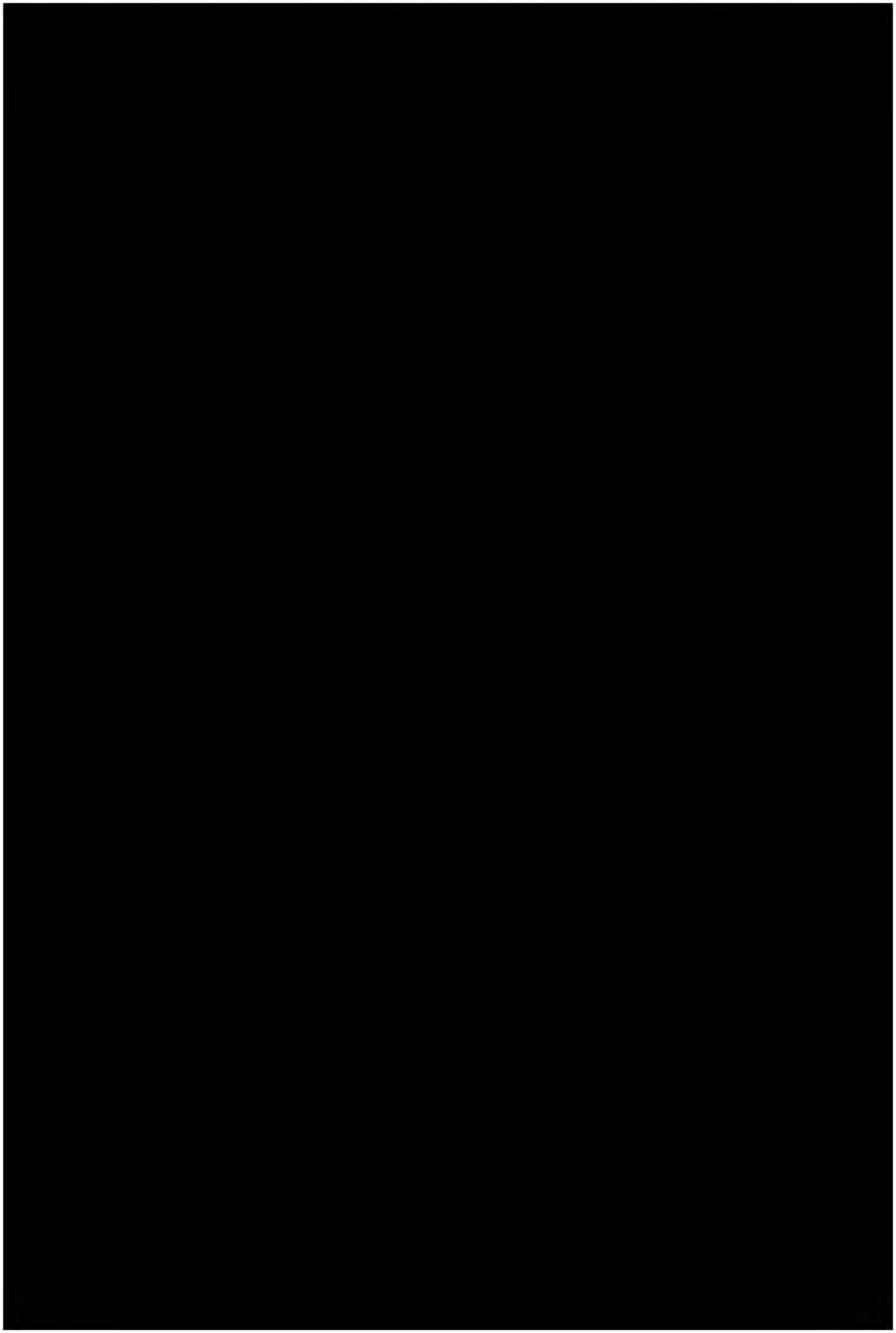

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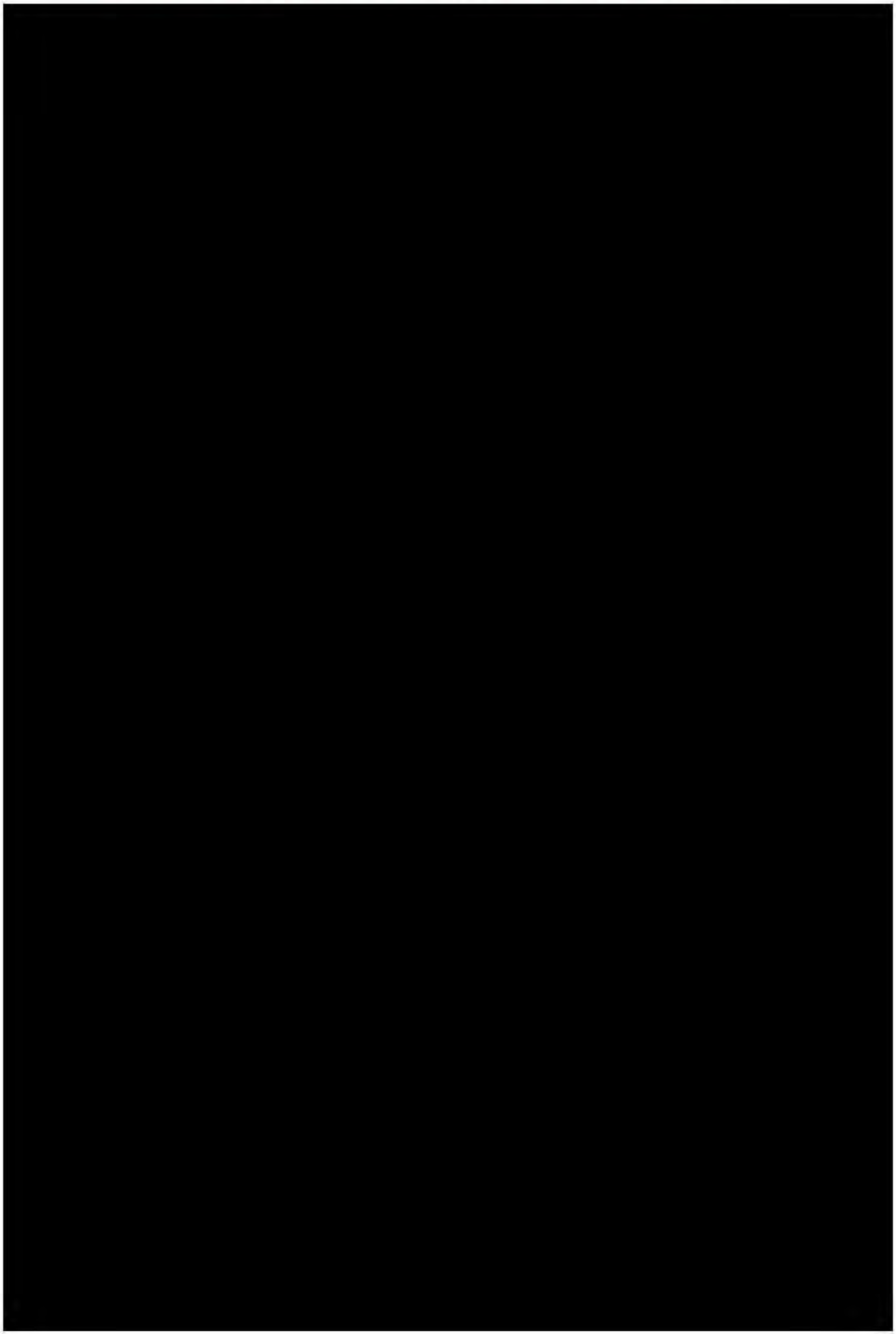

PE14-033

HONDA

1/23/2015

Q8

Smashed bond wire

Q8-13 - Feed Forward Process or Look Across_REDACTED

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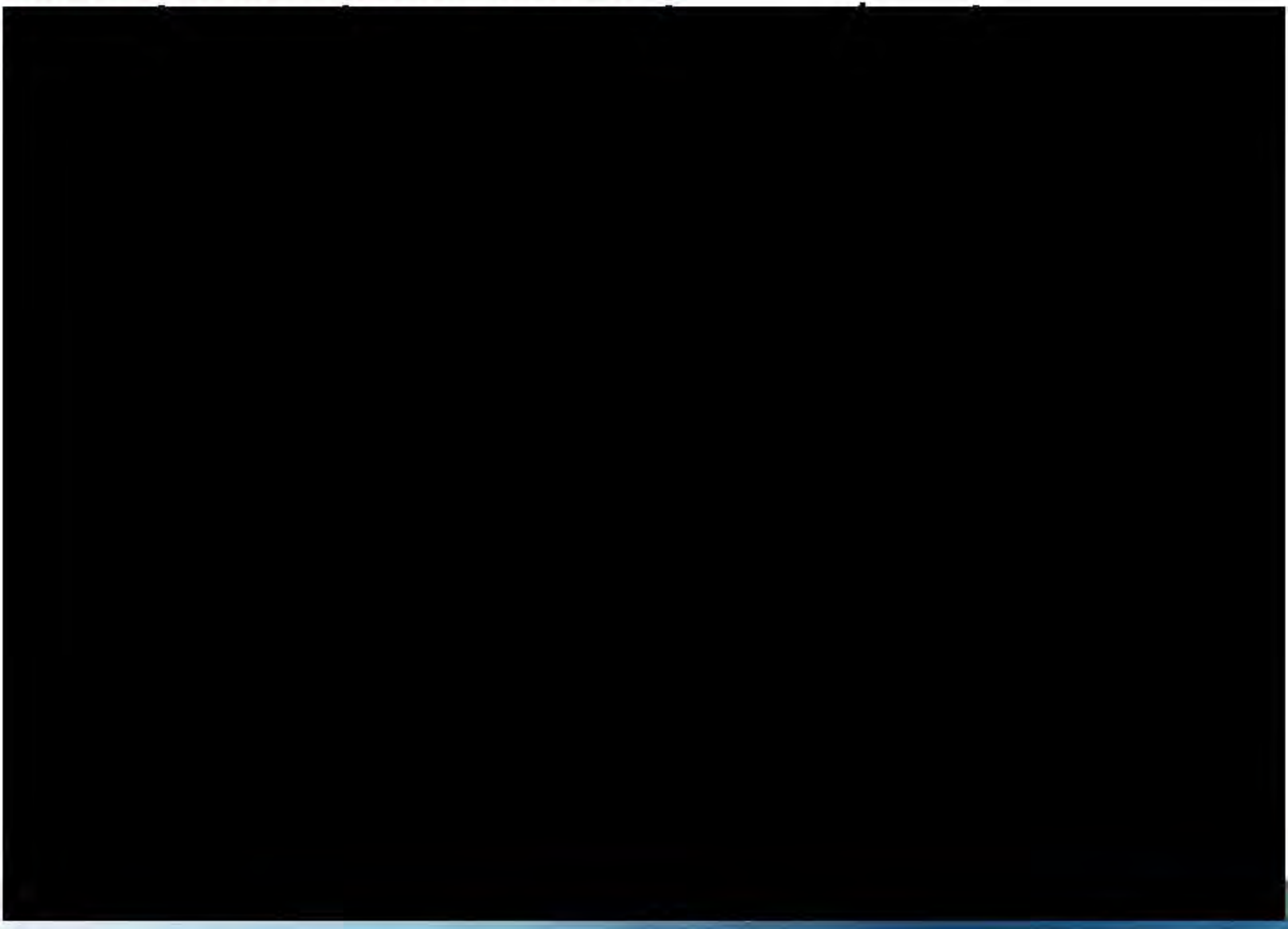

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Continuous improvement activities

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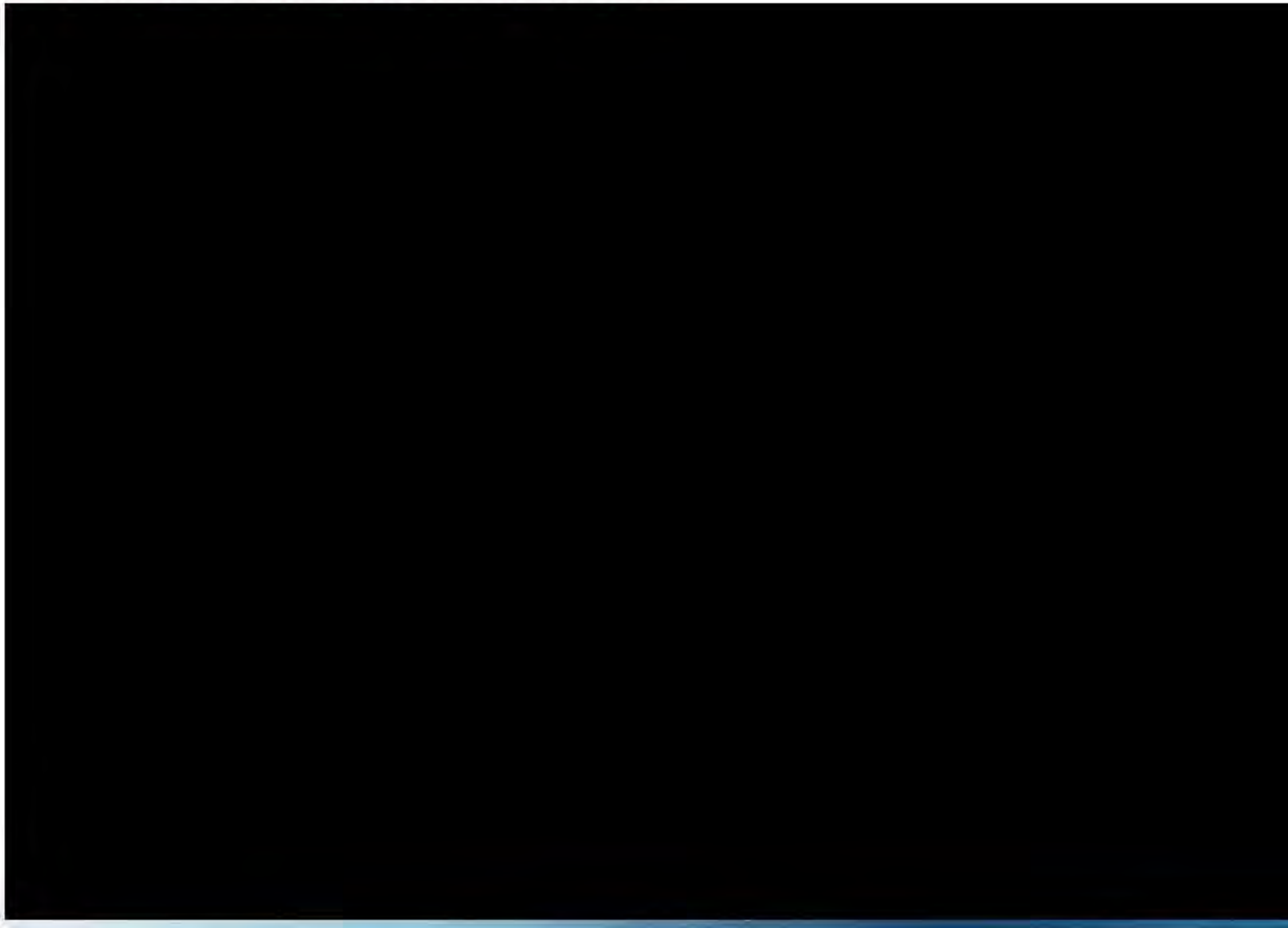

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Continuous improvement activities

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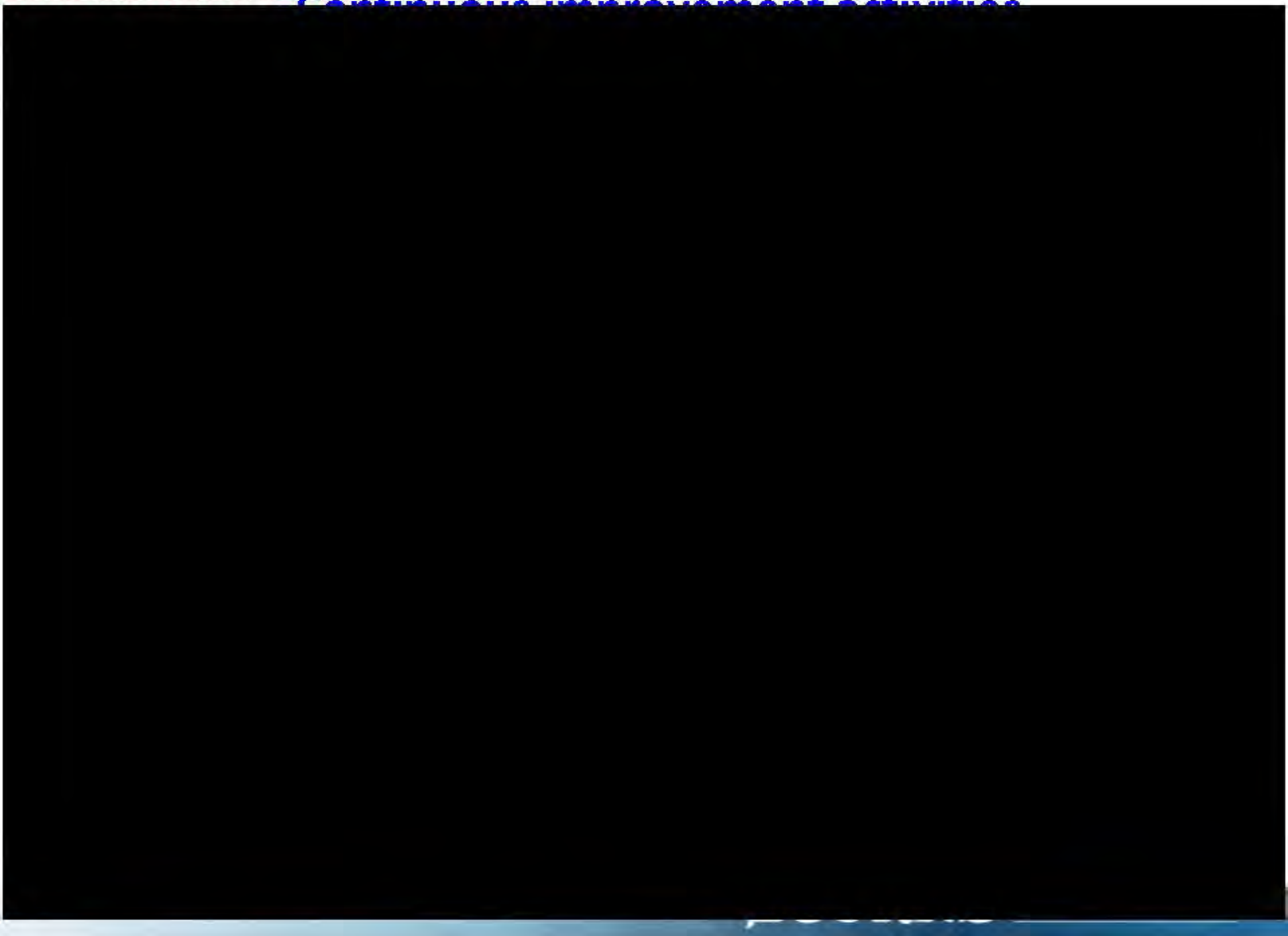

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Continuous improvement activities

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Continuous improvement activities

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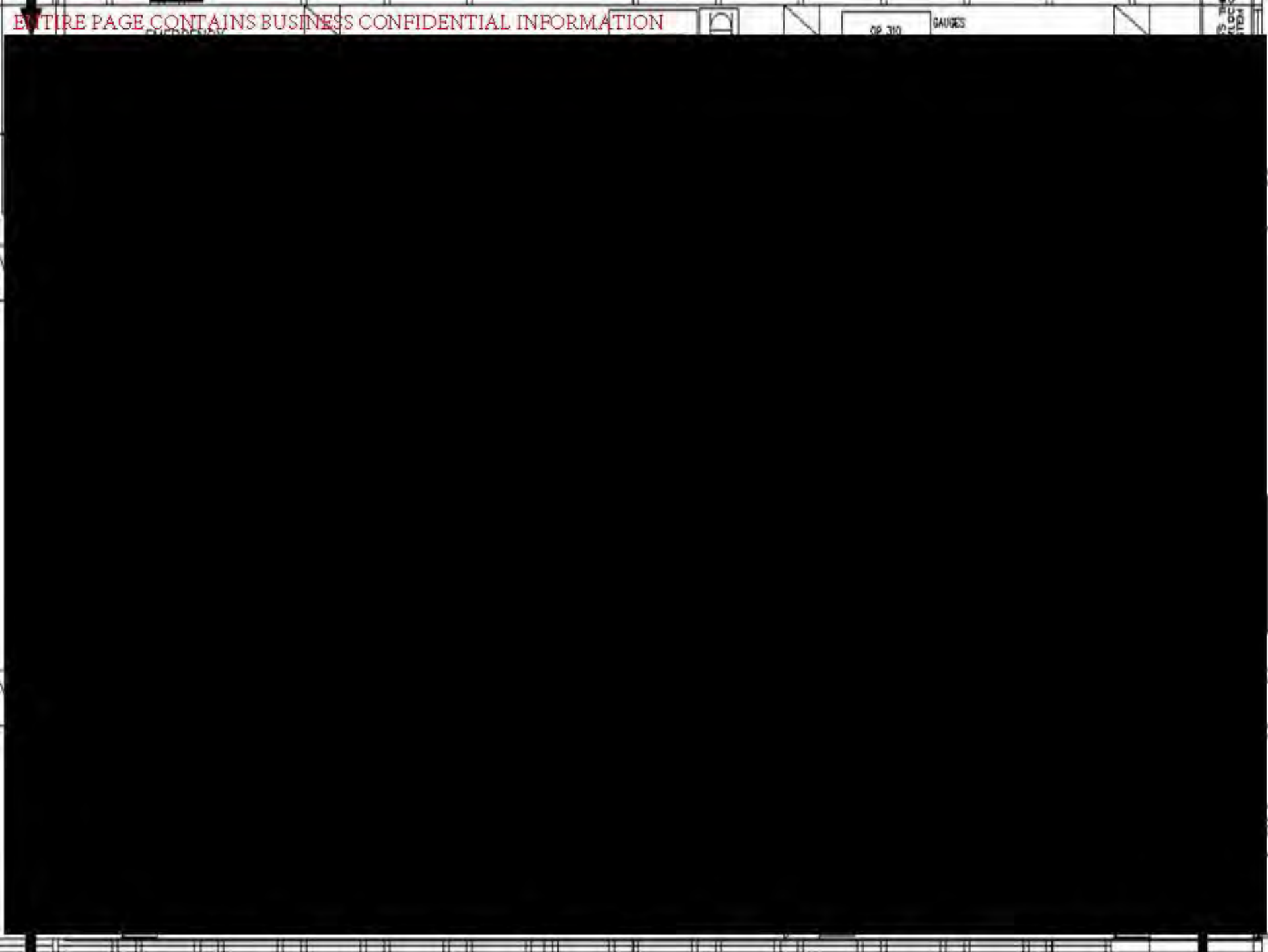

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Continuous improvement activities

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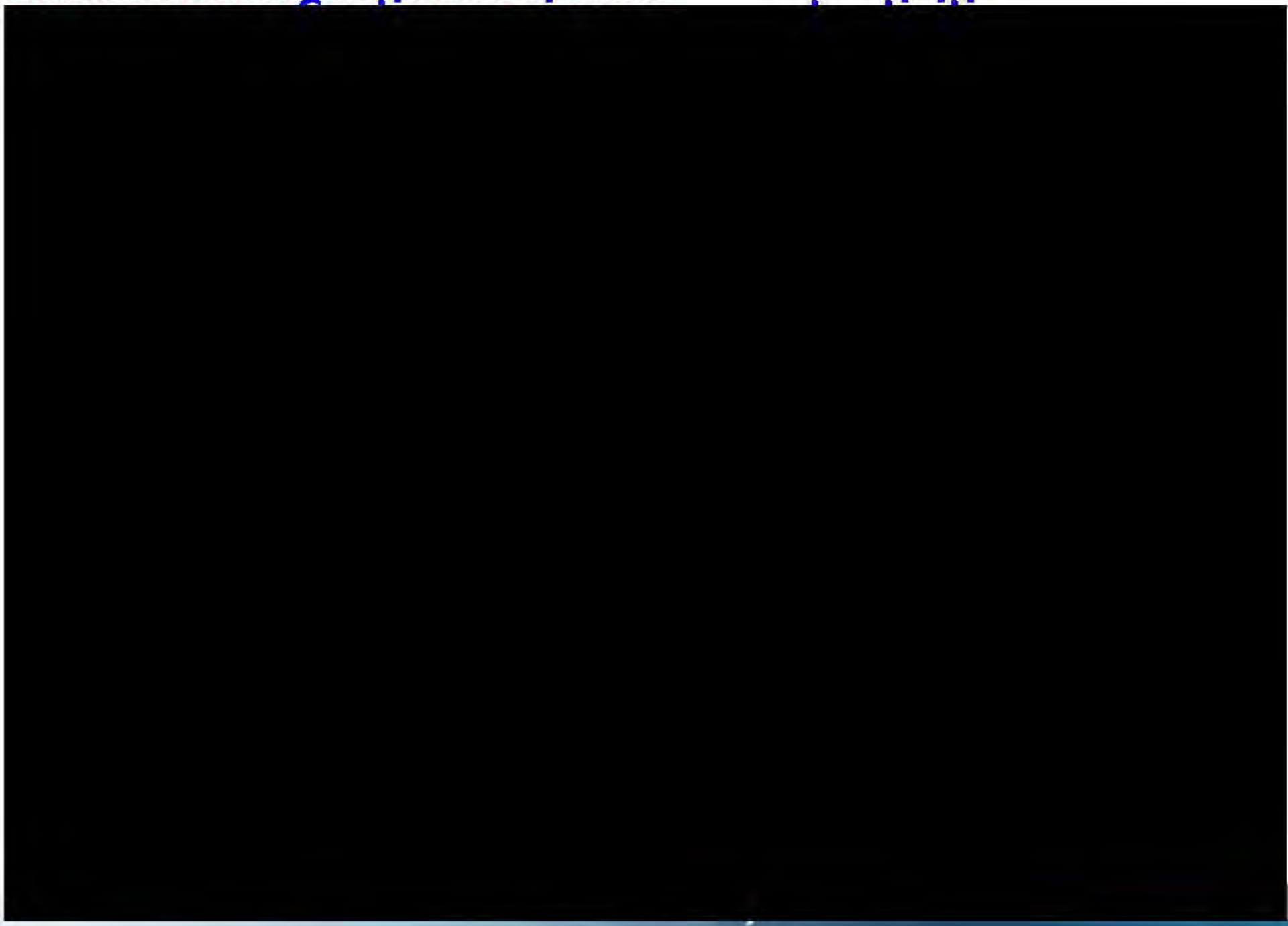

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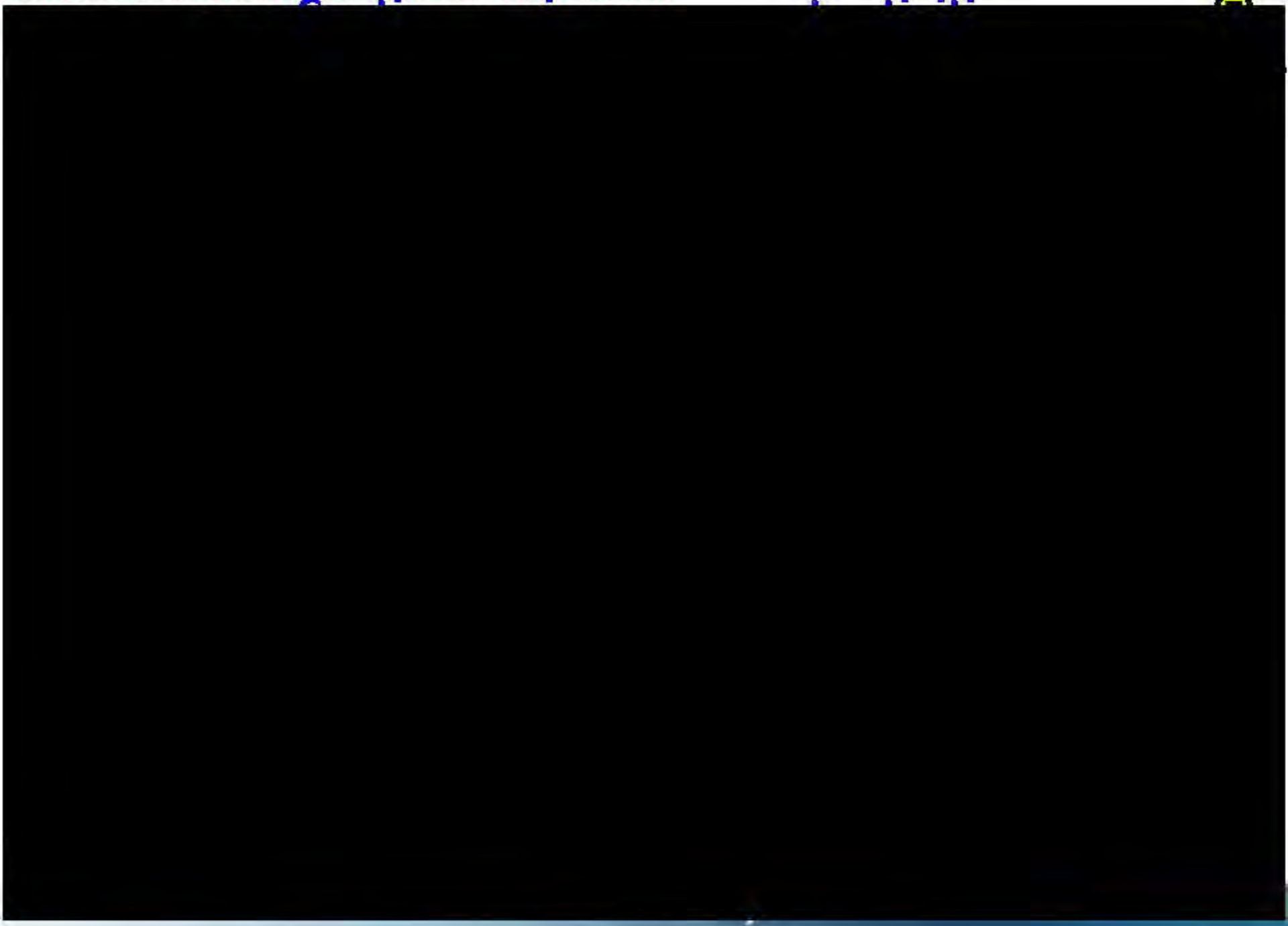

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Continuous improvement activities

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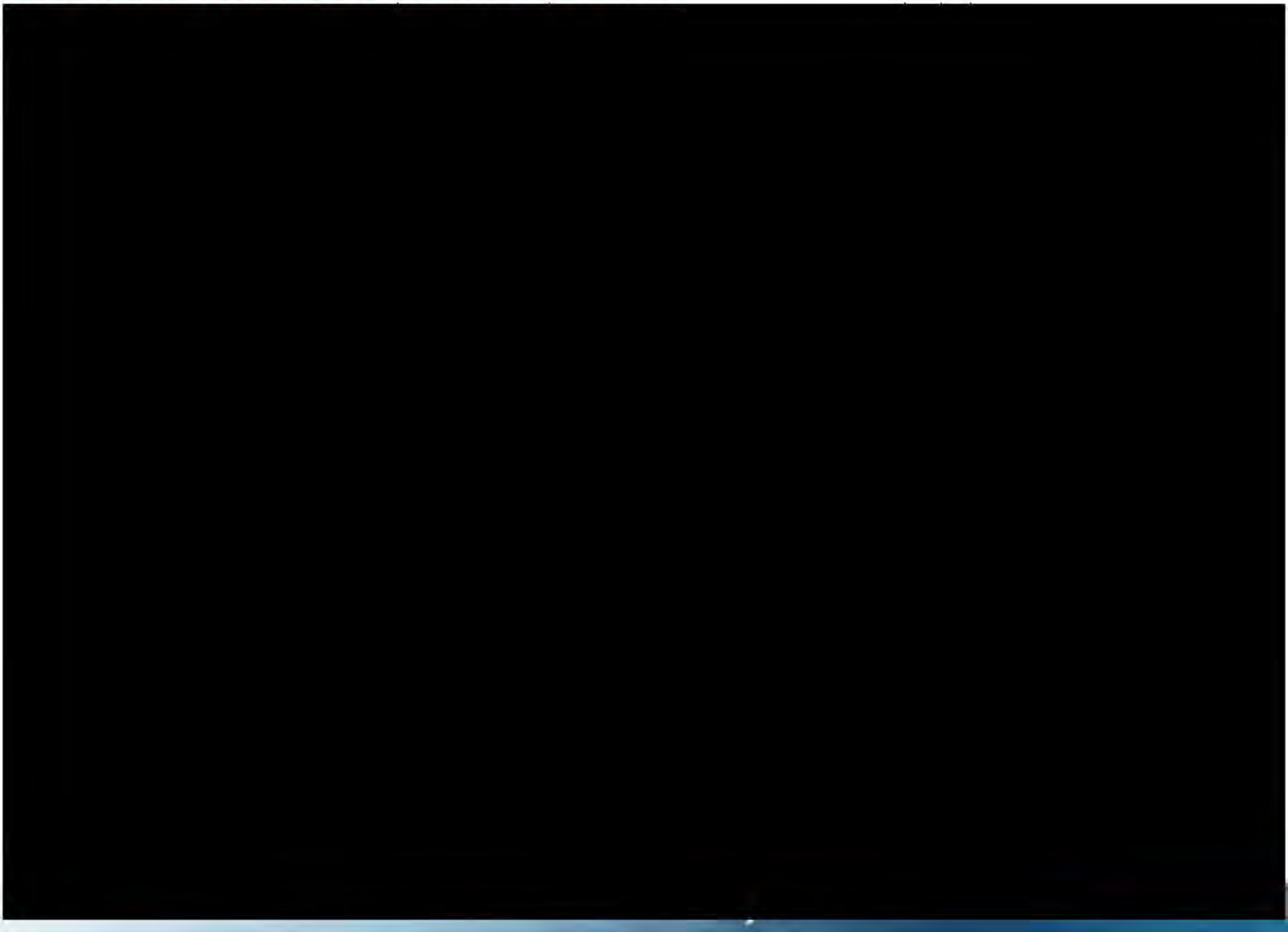

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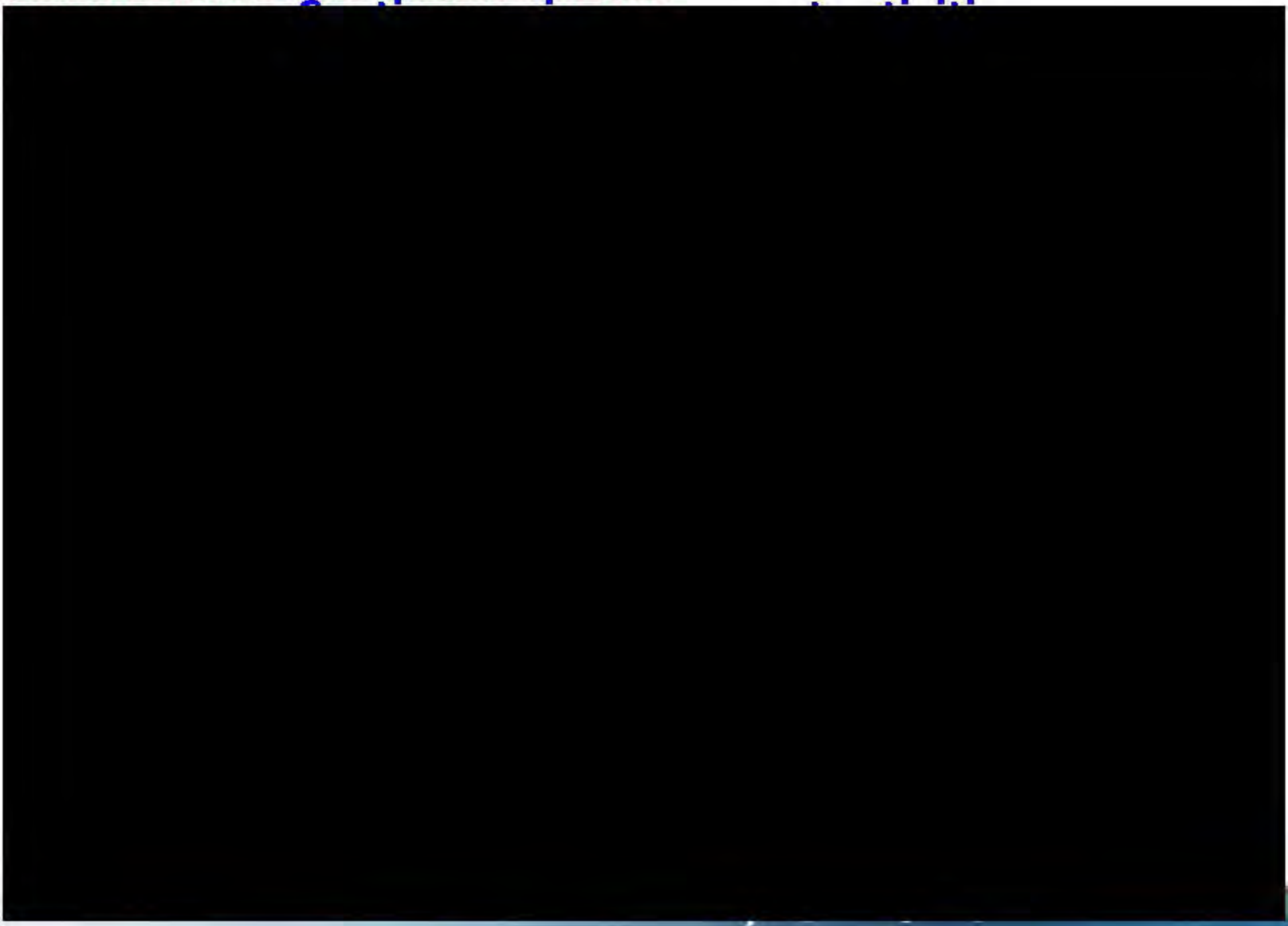

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PE14-033

HONDA

1/23/2015

Q8

Q8-14 - Layout move delivery plan first sensor 1st cm sensor_REDACTED

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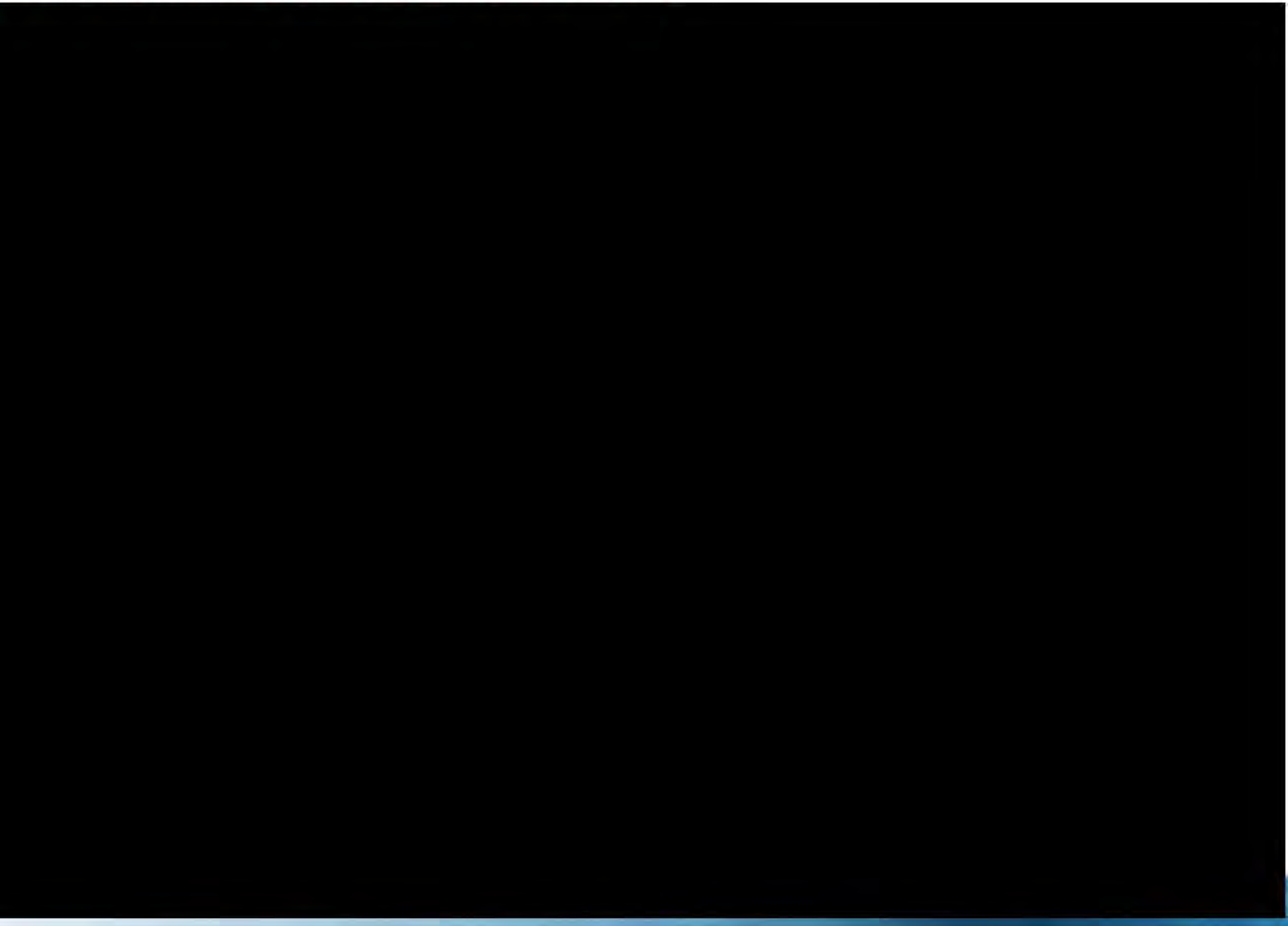

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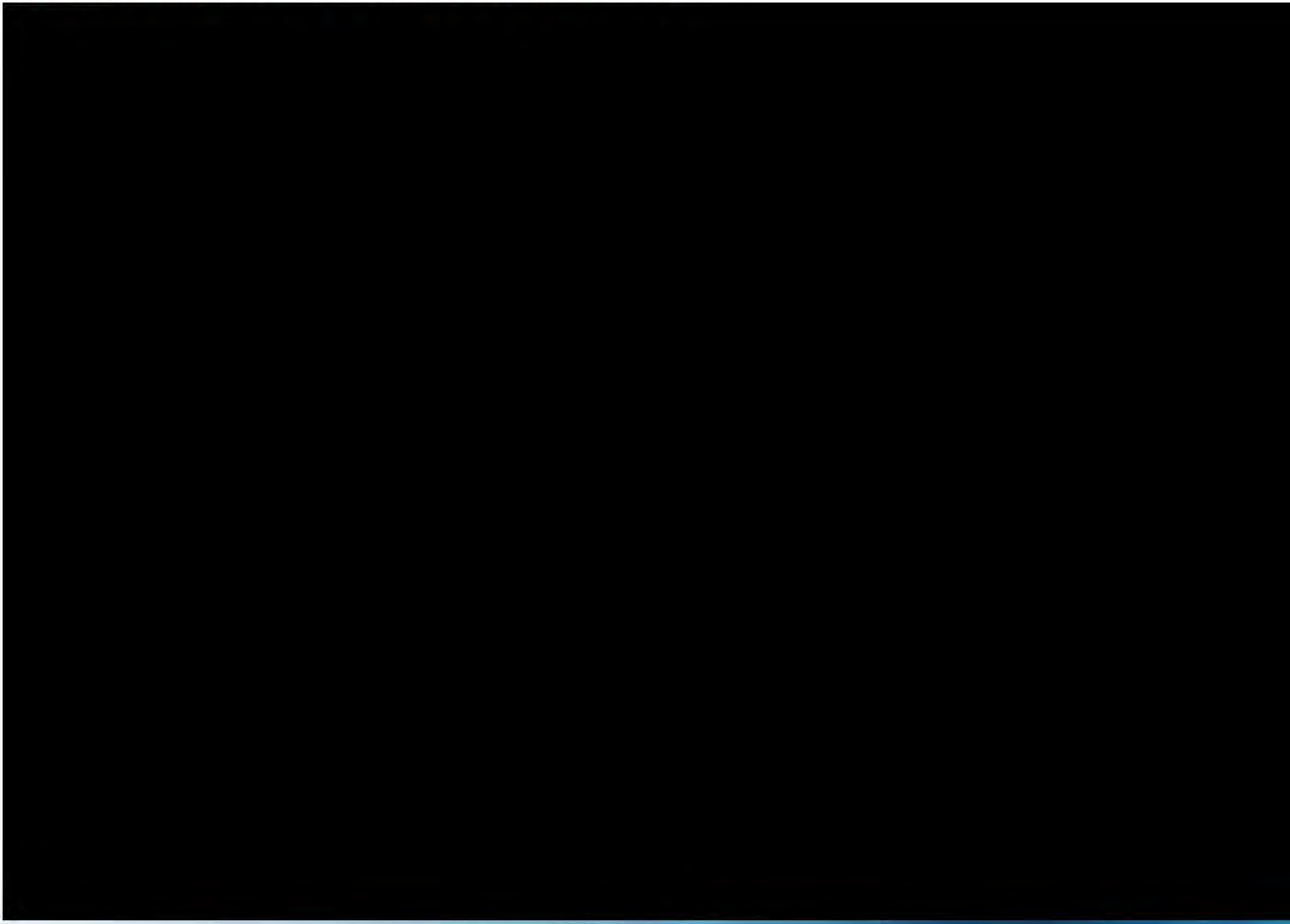

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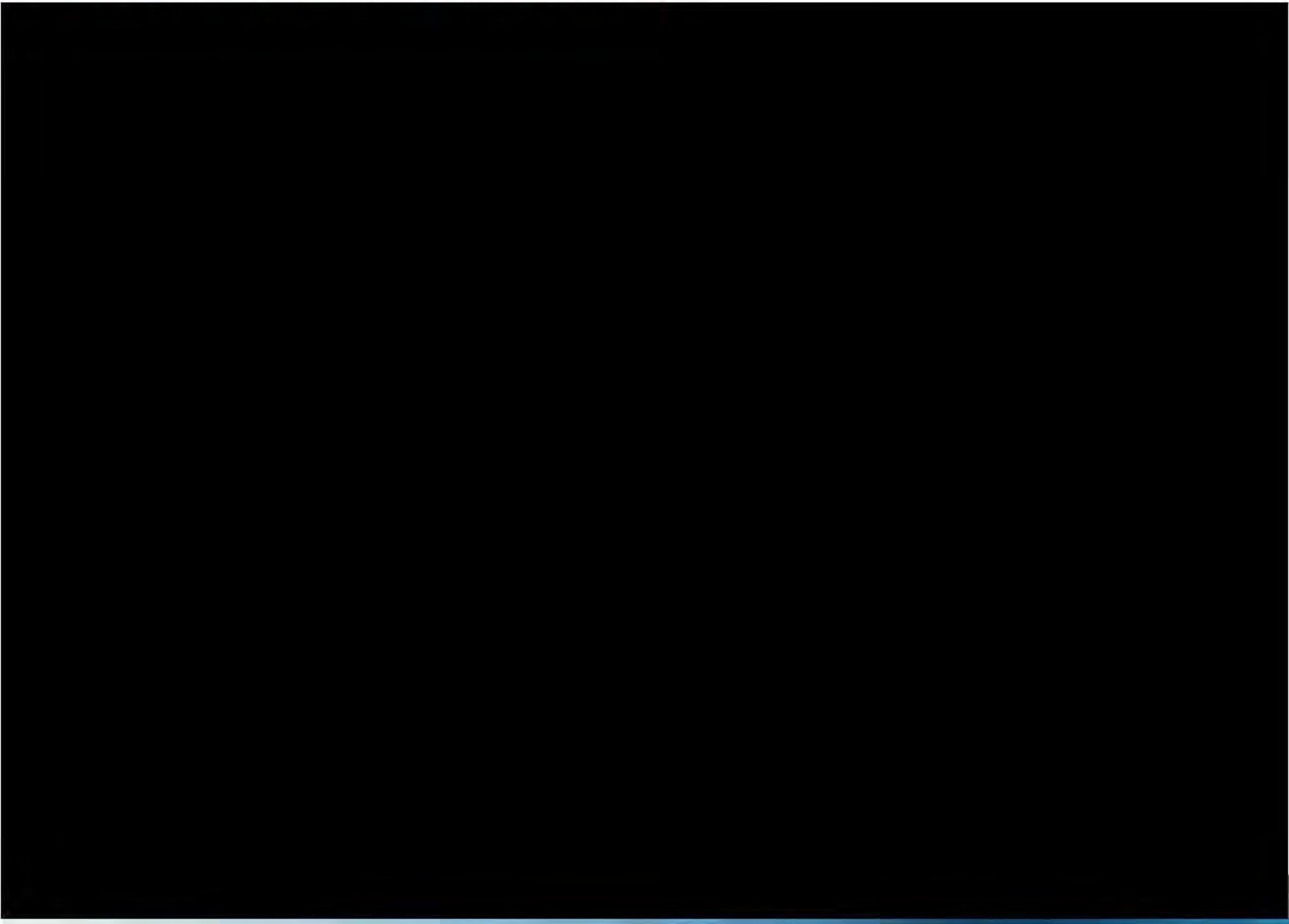

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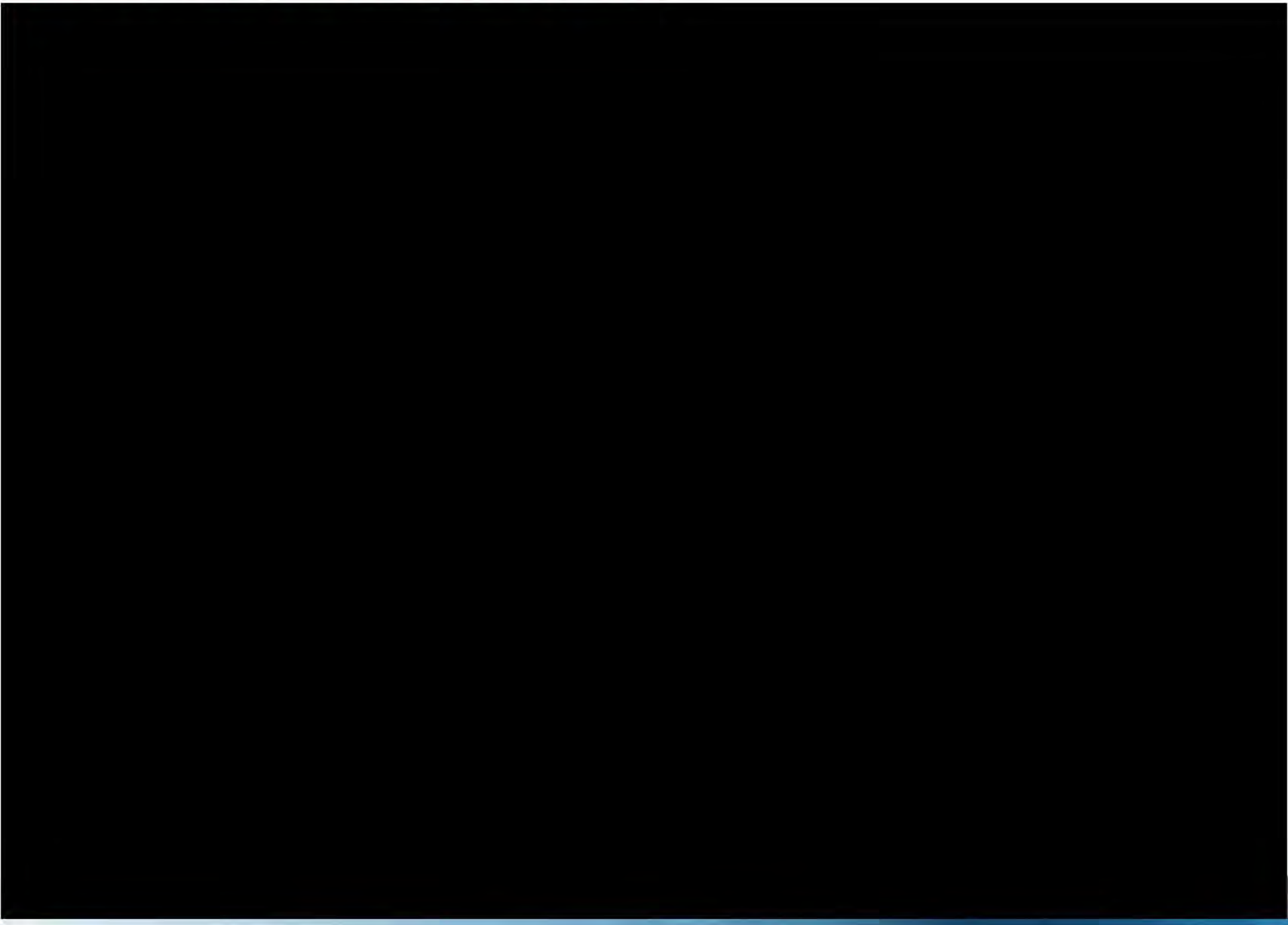

PE14-033

HONDA

1/23/2015

Q8

Loose bond wire

Q8-10 - Showa Quality Issues Report Loose Bond Wire_REDACTED

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Quality Report Contents

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5 Principles for Problem Solving Sheet

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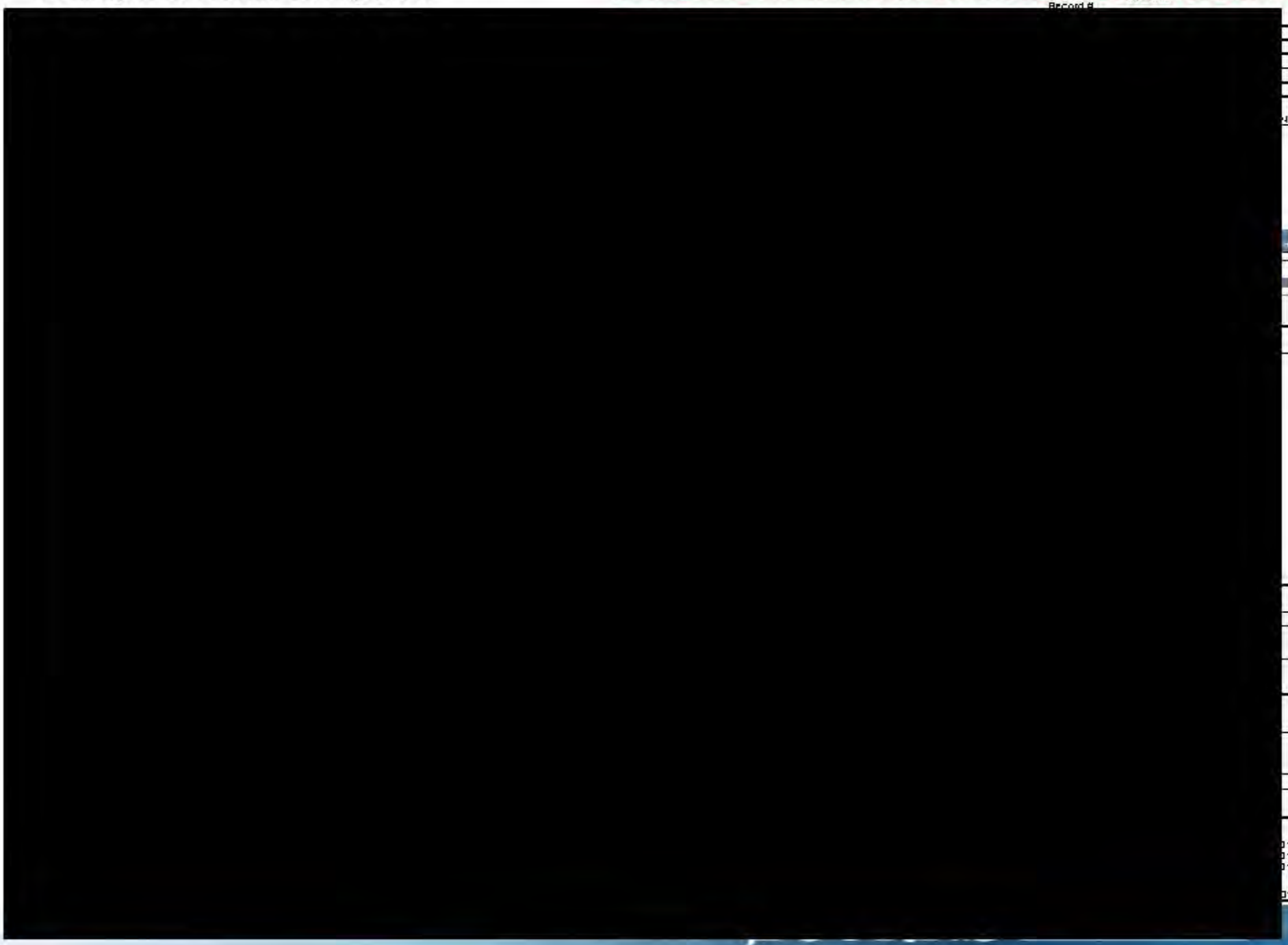

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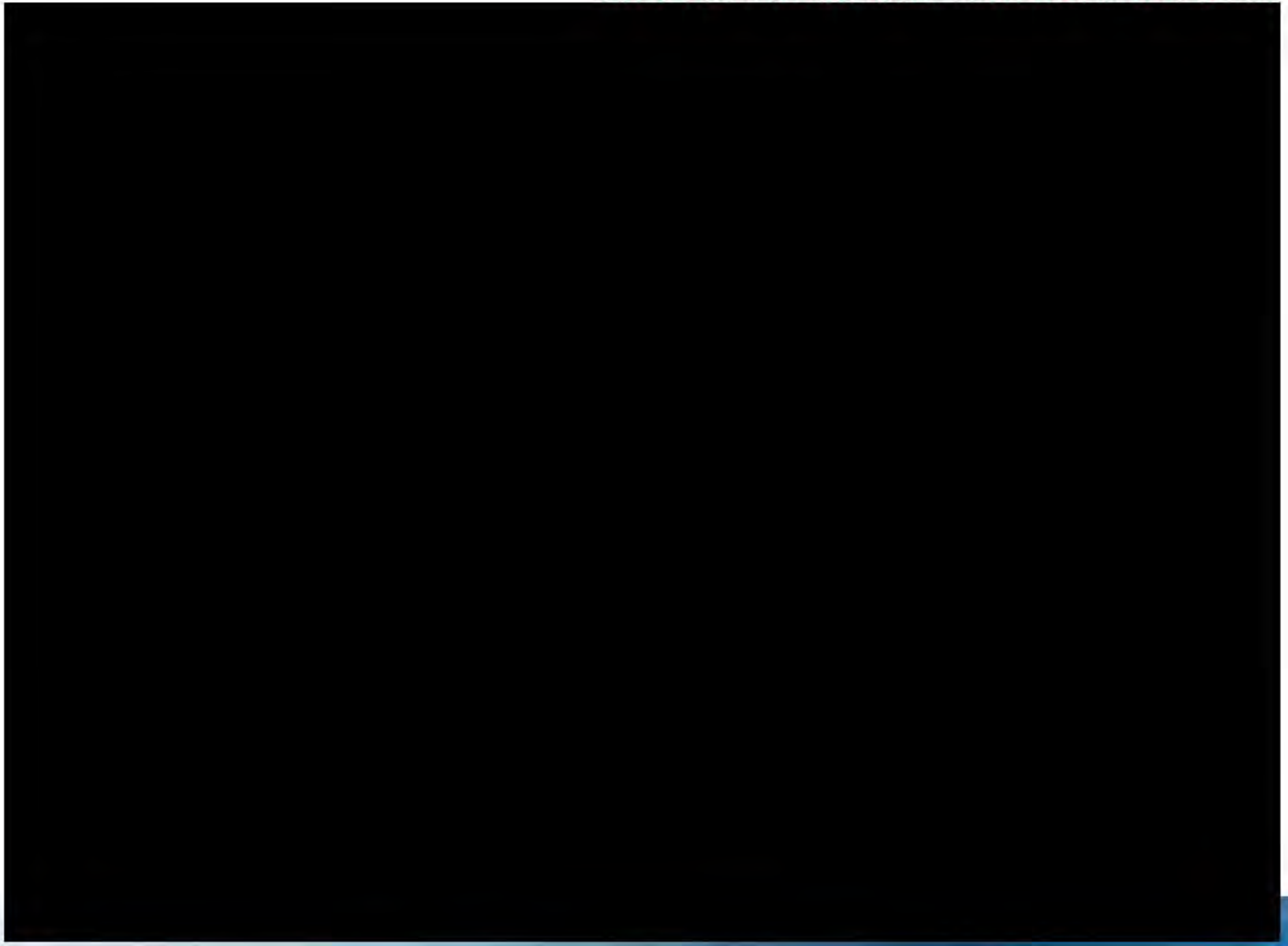

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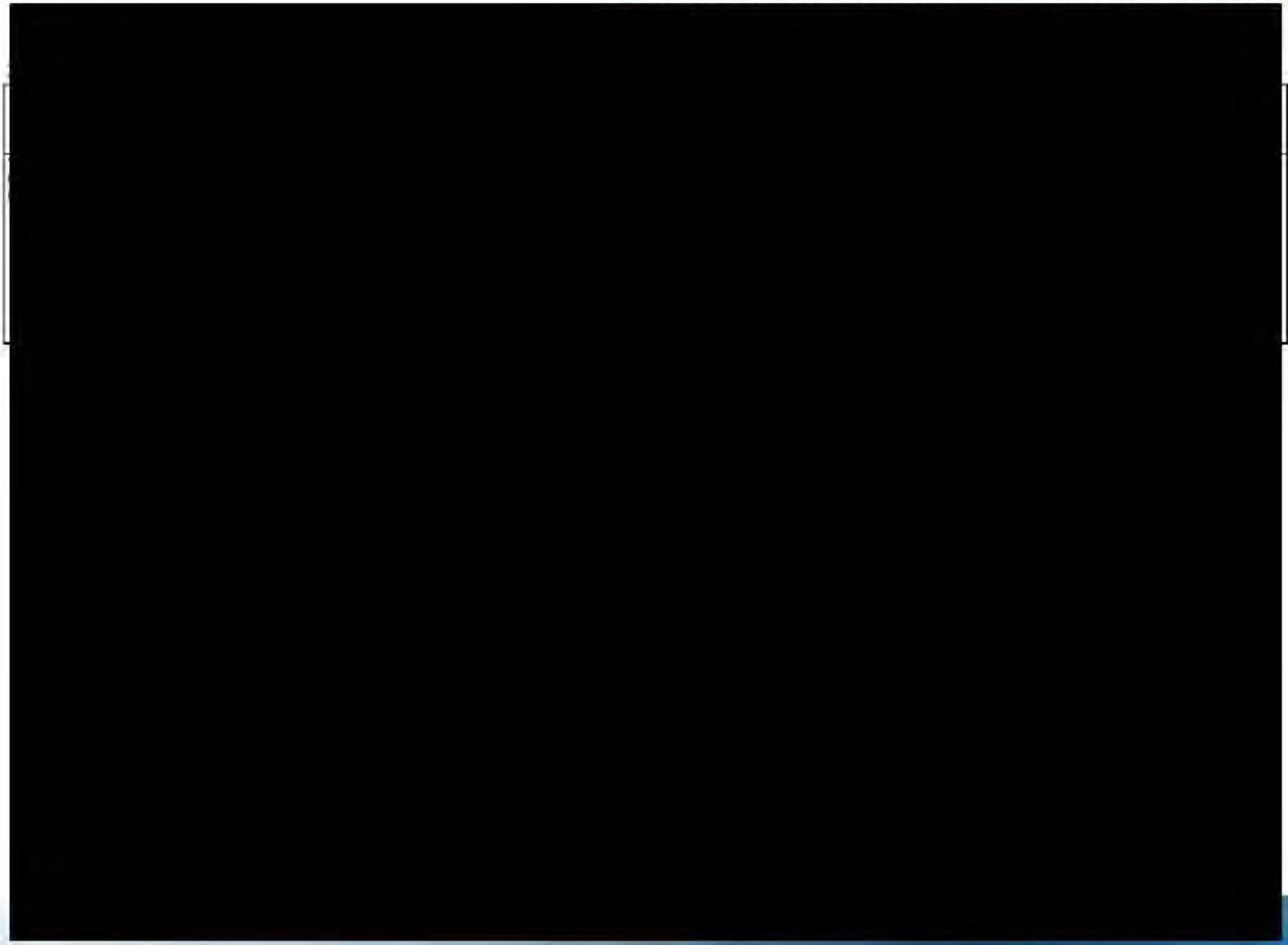

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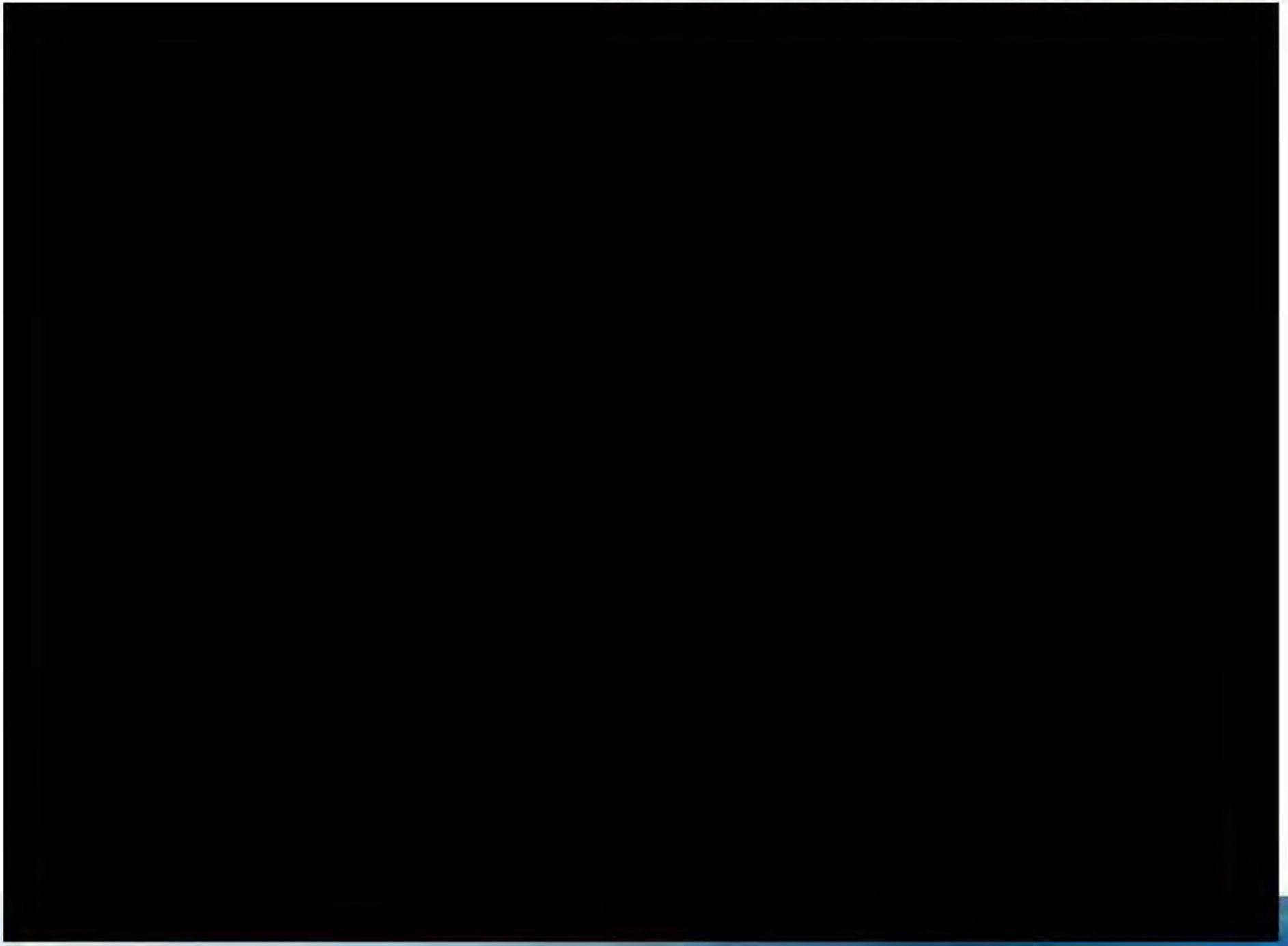

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Quality Report Contents

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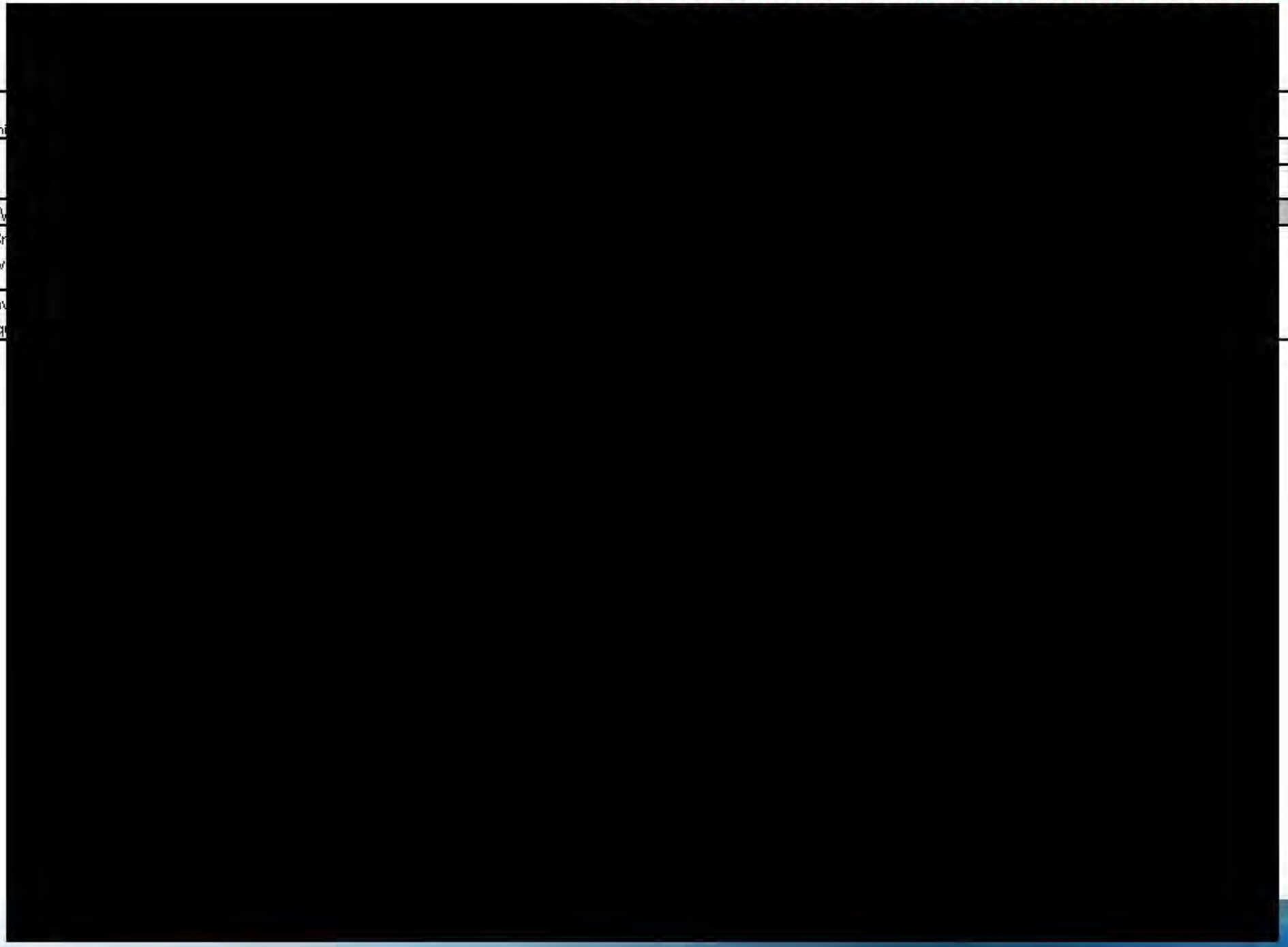

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PE14-033

HONDA

1/23/2015

Q8

Loose bond wire

Q8-9 -
5P_Bourns_Loose_Bond_Wire
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5 Principles for Problem Solving Sheet

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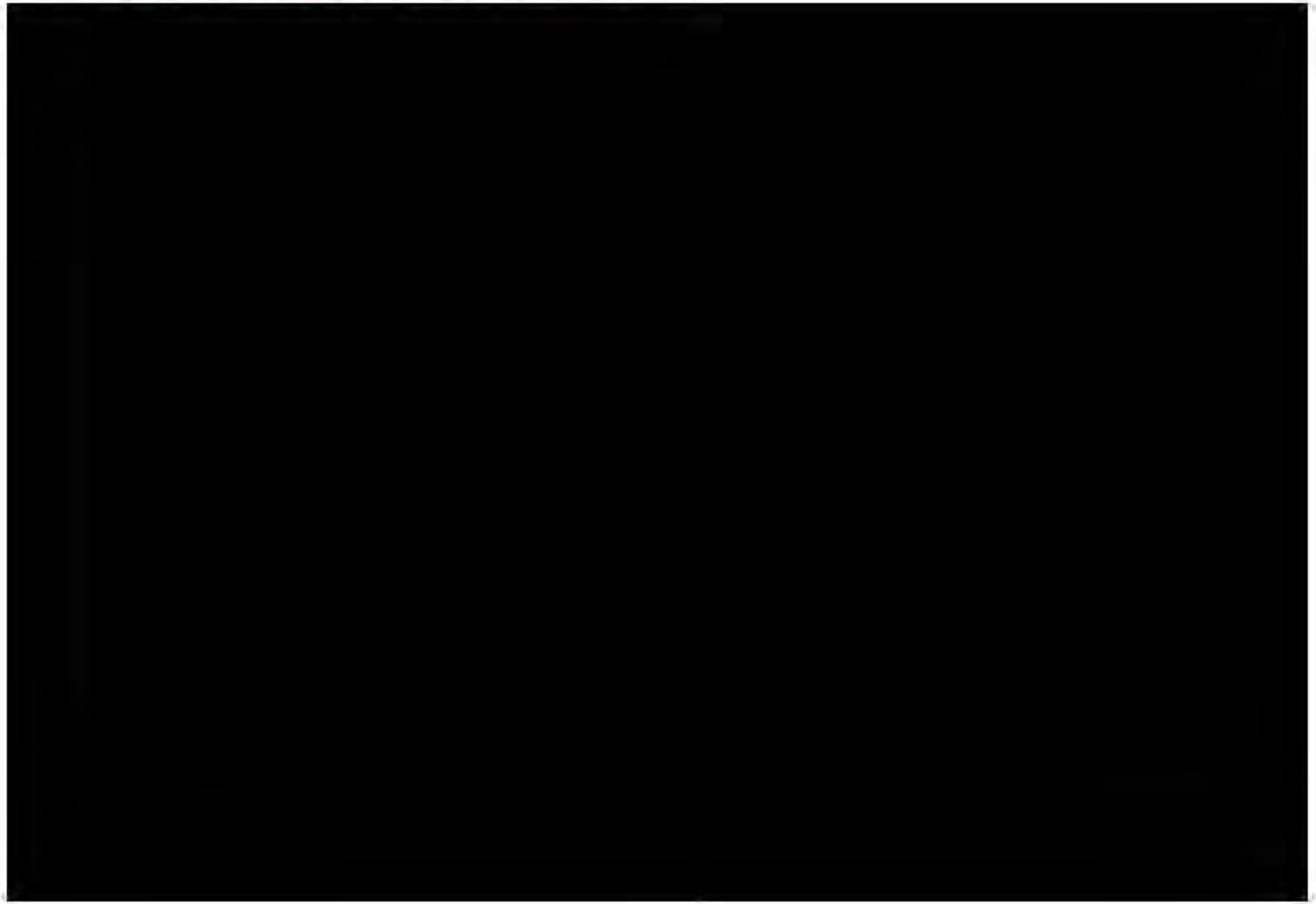

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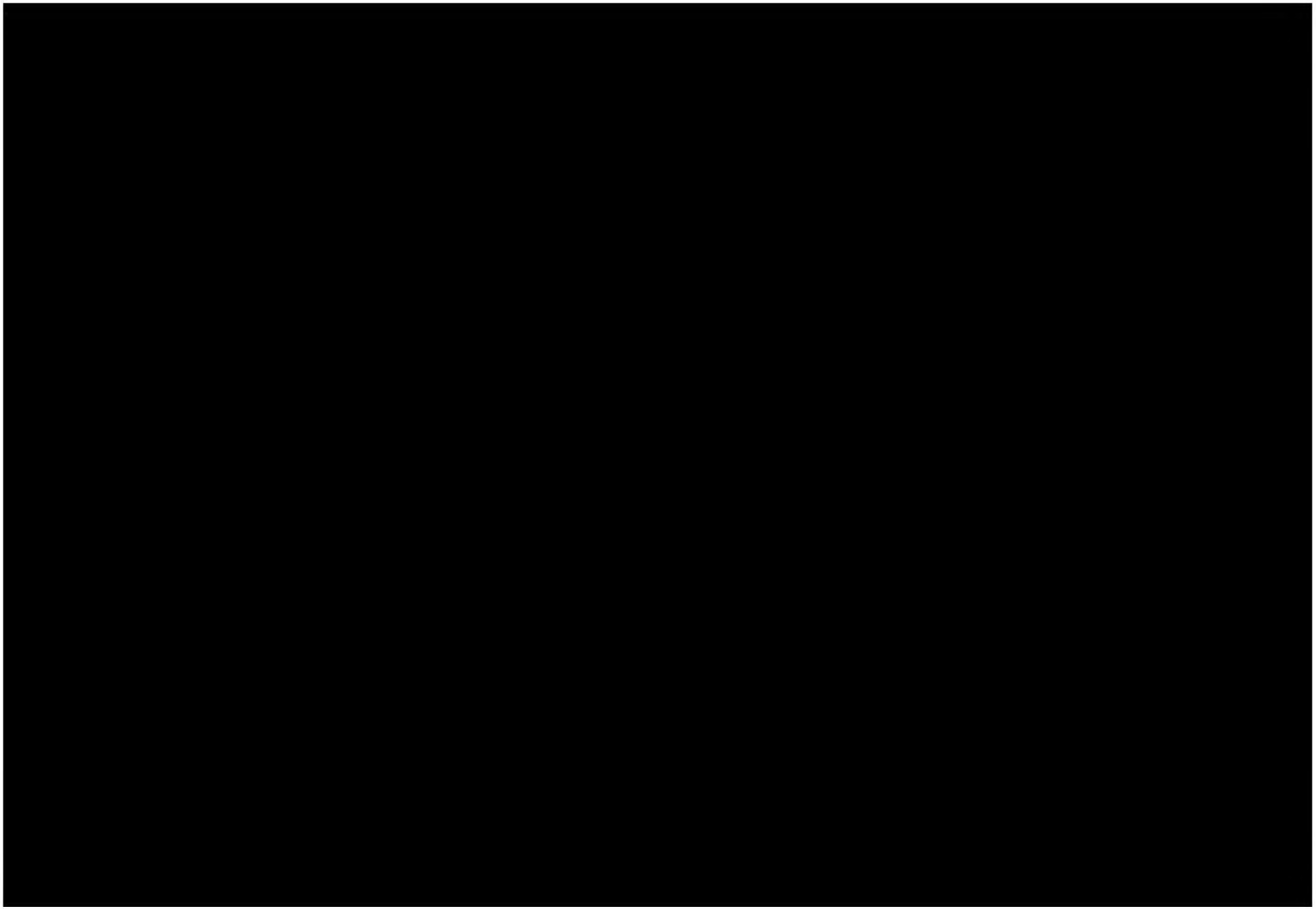

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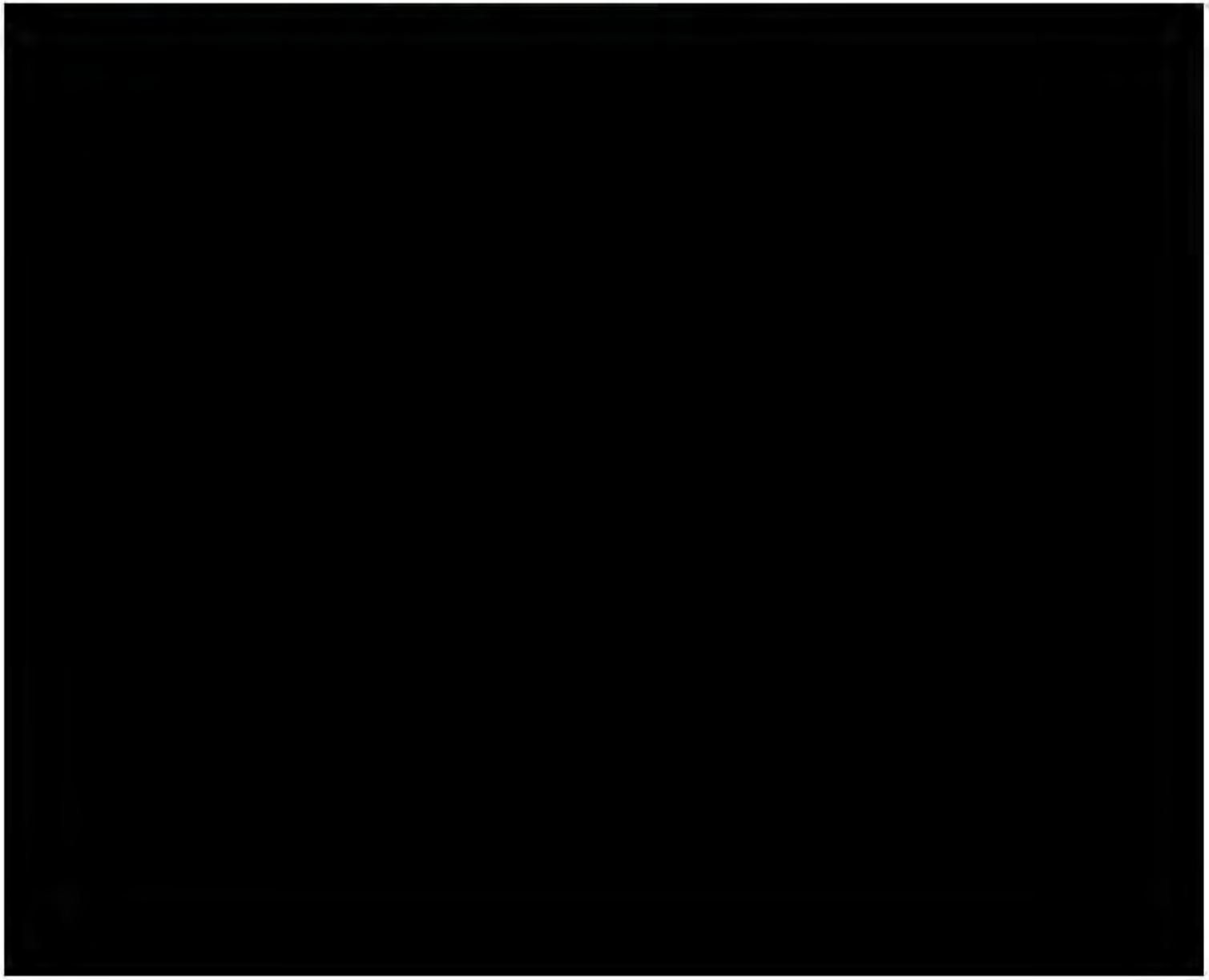

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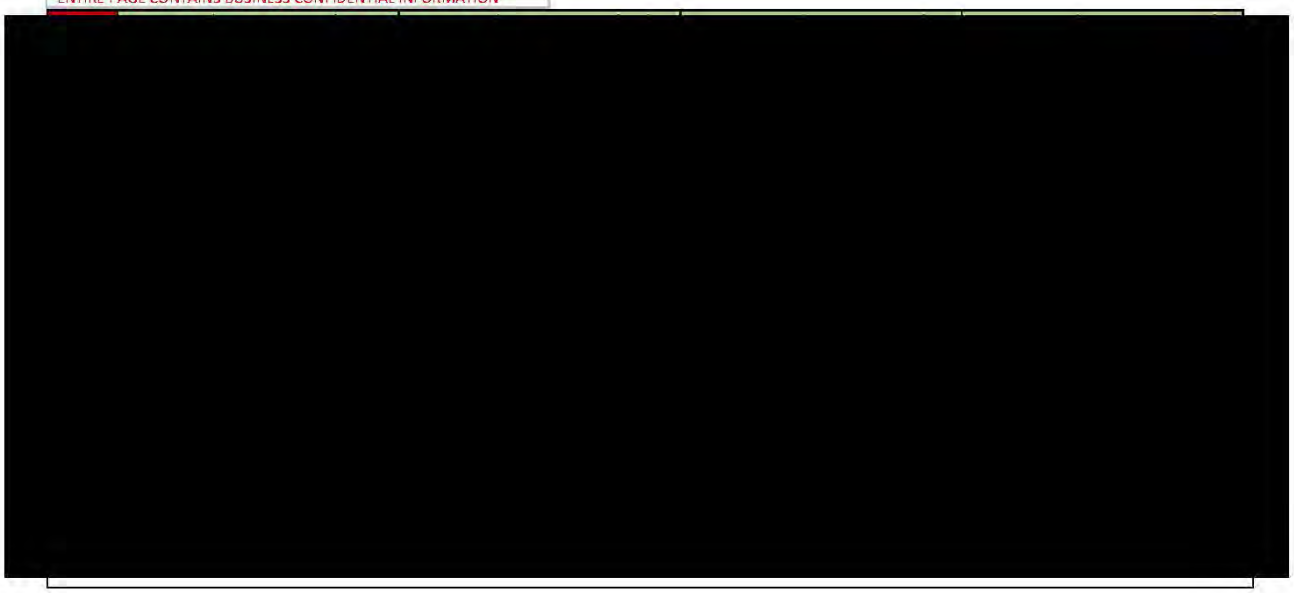

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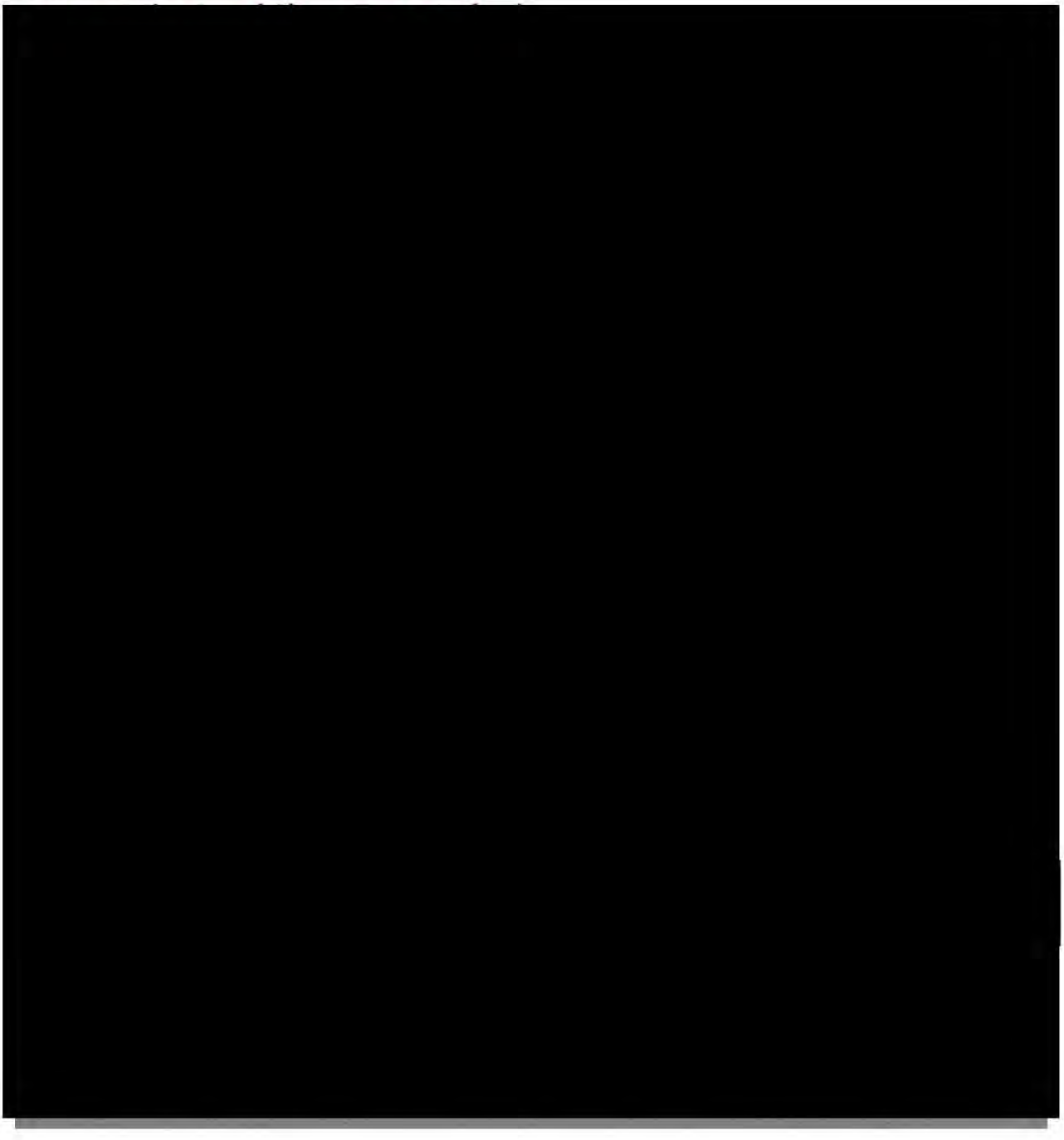

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PE14-033

HONDA

1/23/2015

Q8

MR analysis

Q8-11 - 5P_Bourns_MR_Torque_Sensor_REDACTED

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5 Principles for Problem Solving Sheet

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PE14-033

HONDA

1/23/2015

Q8

MR analysis

Q8-12 - Showa Quality Issues Report_Template for MR Issue_20130617_REDACTED

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5 Principles for Problem Solving Sheet

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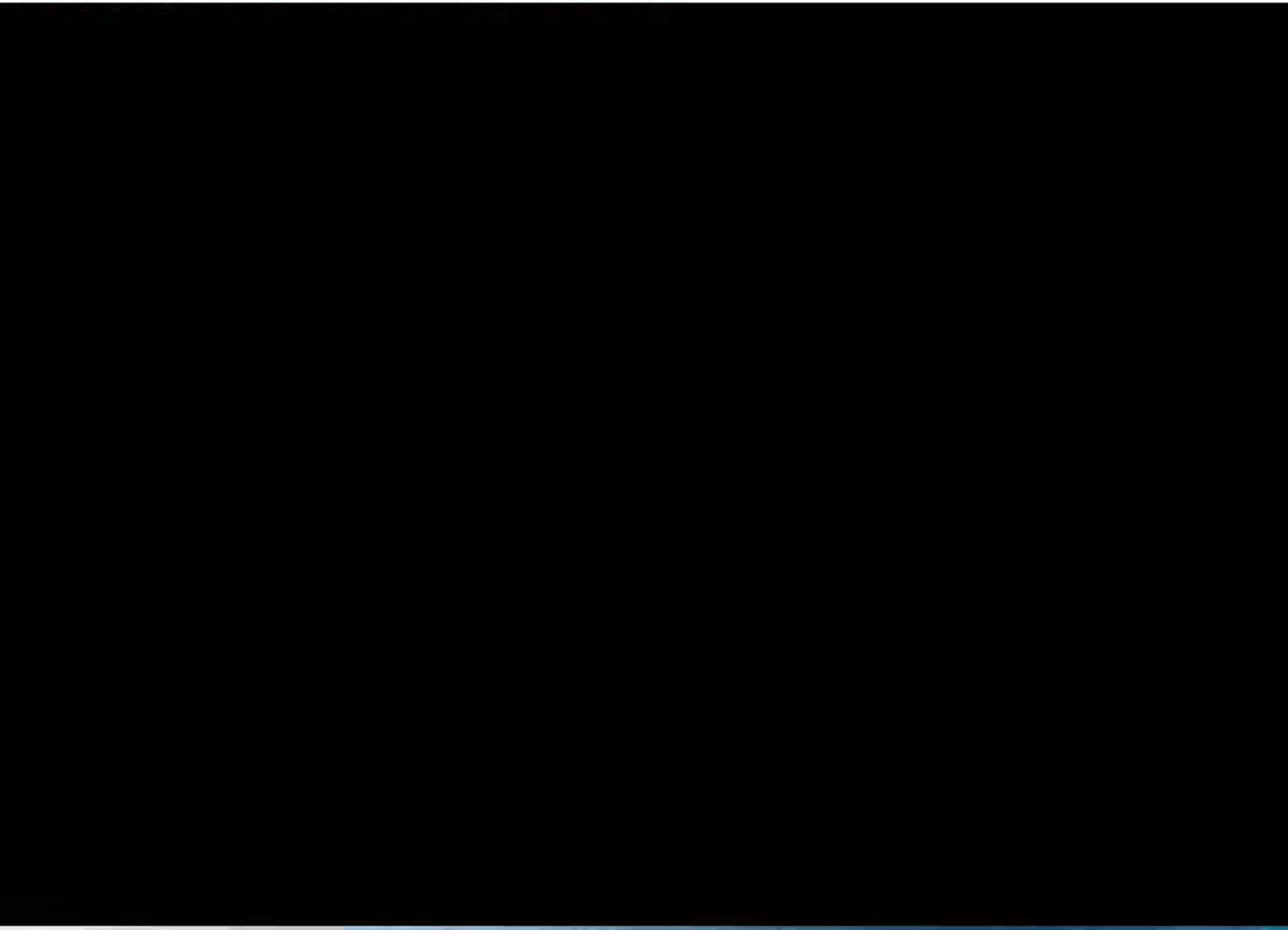

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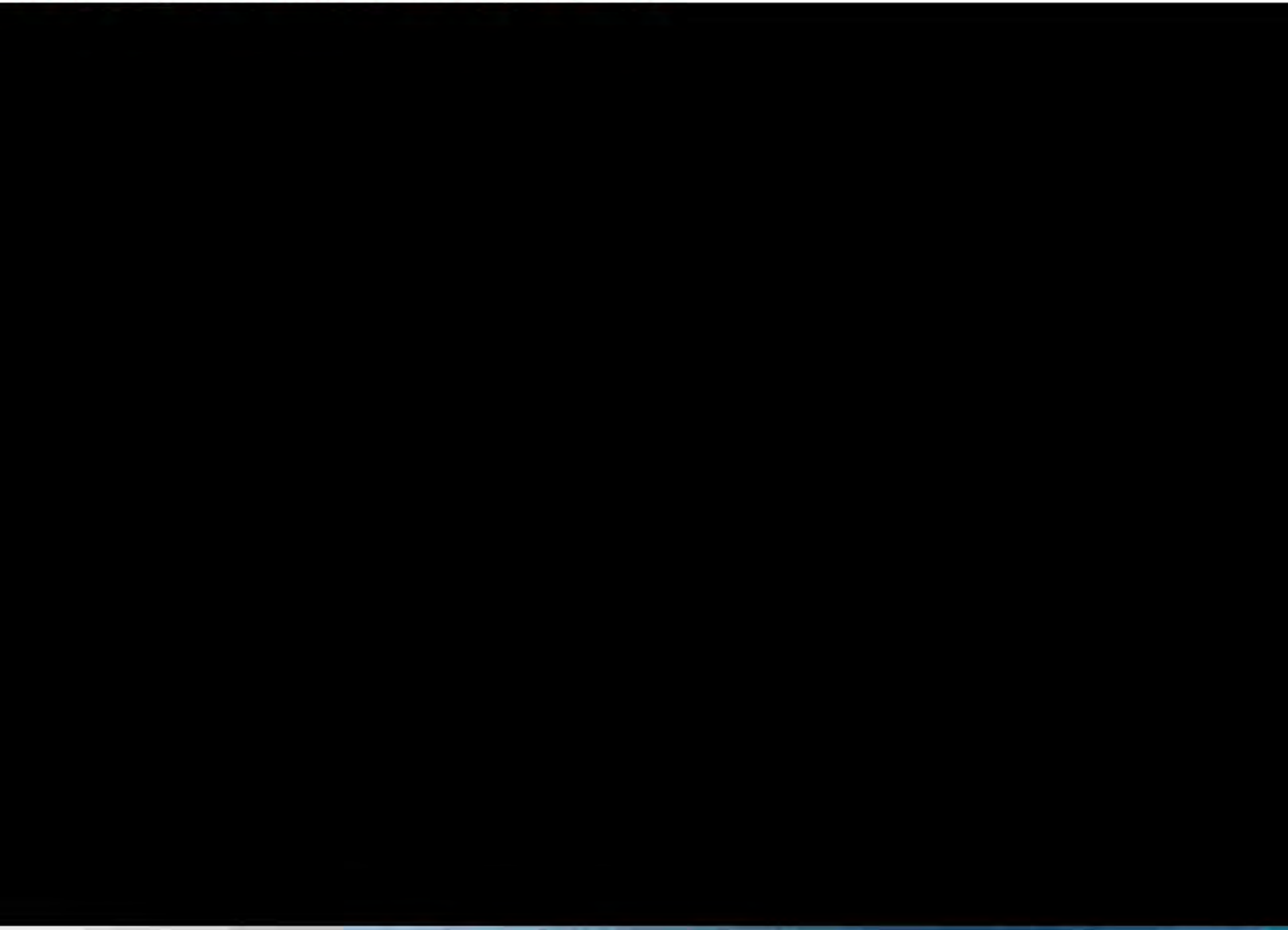

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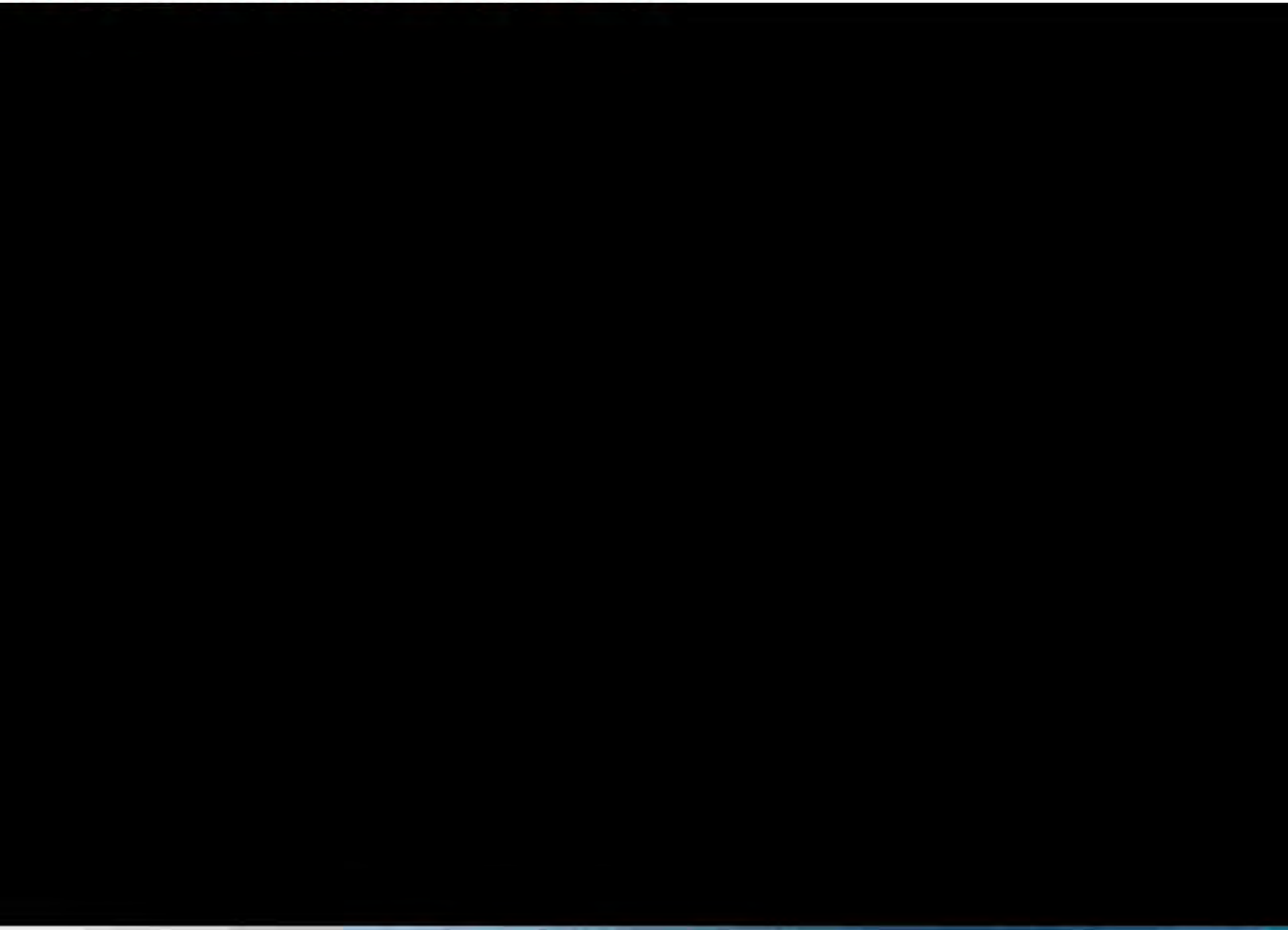

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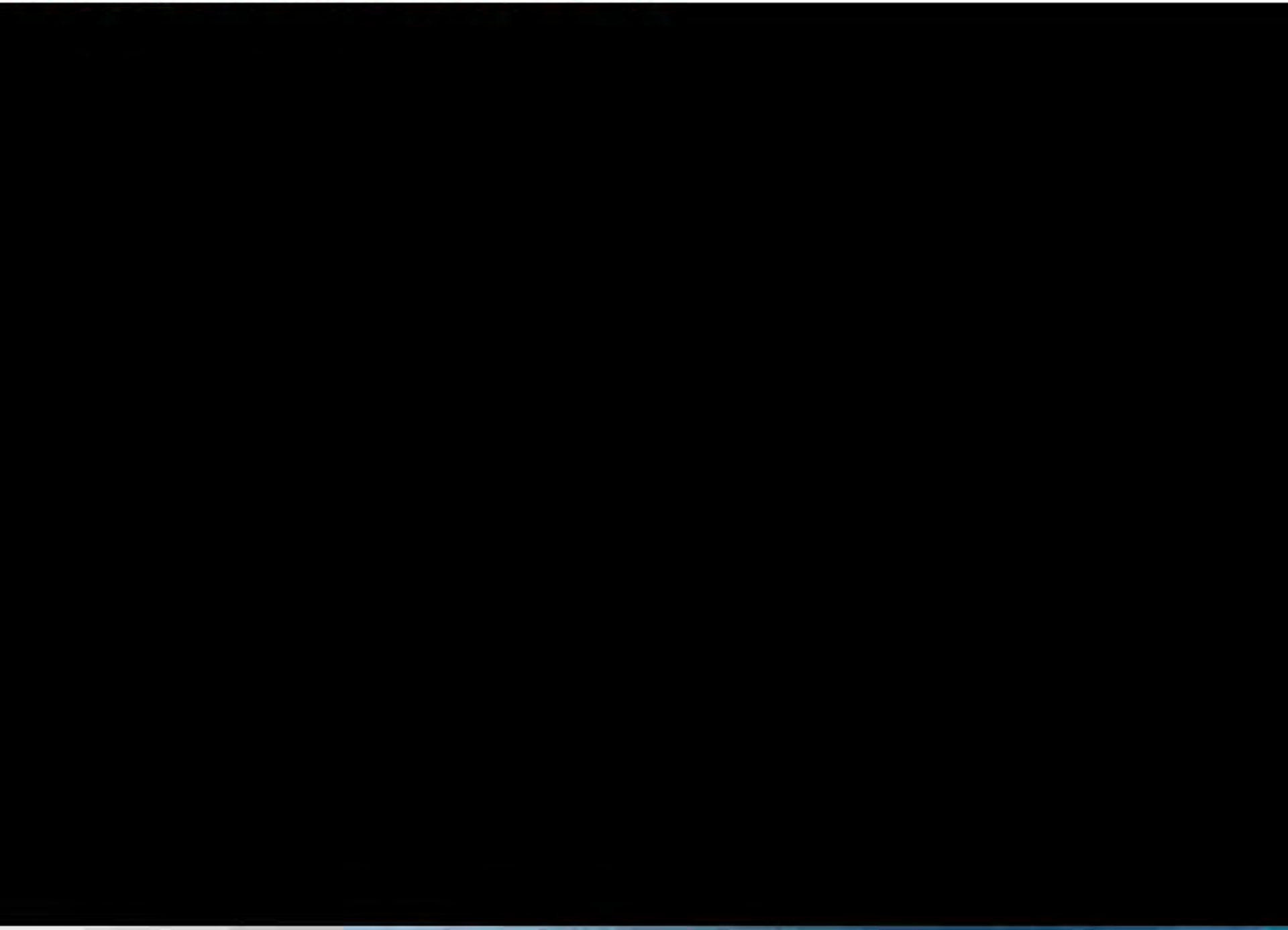

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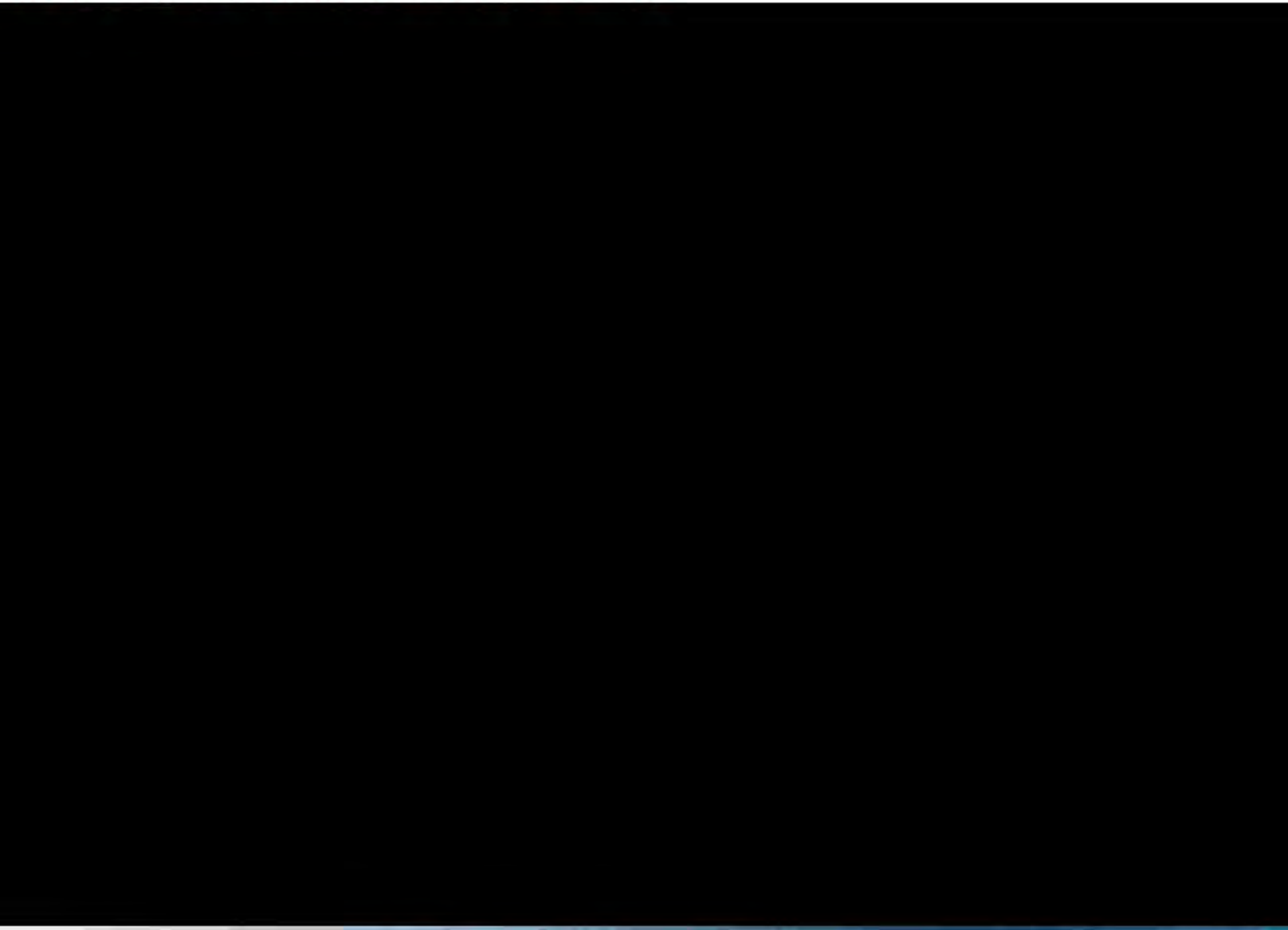

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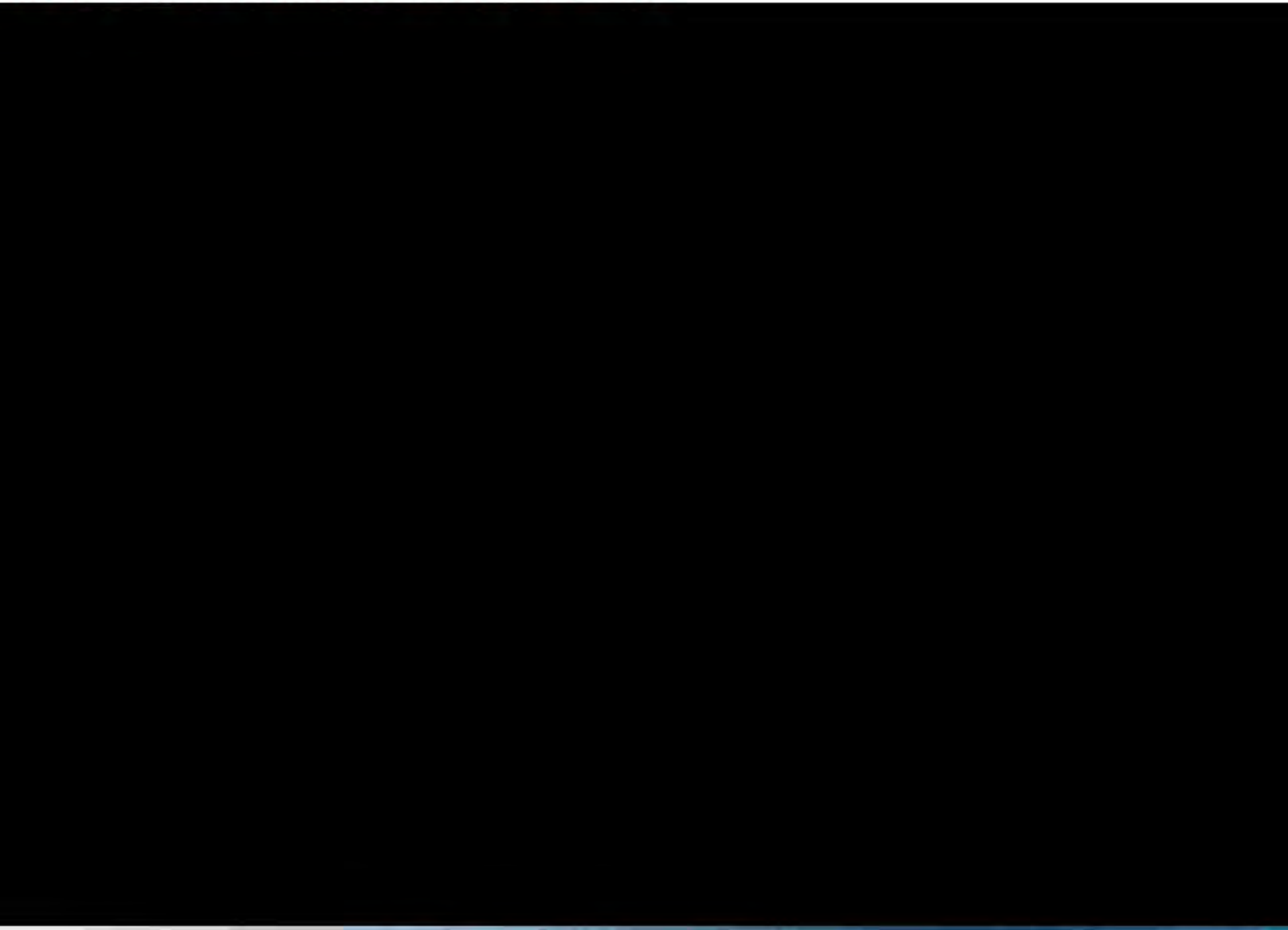

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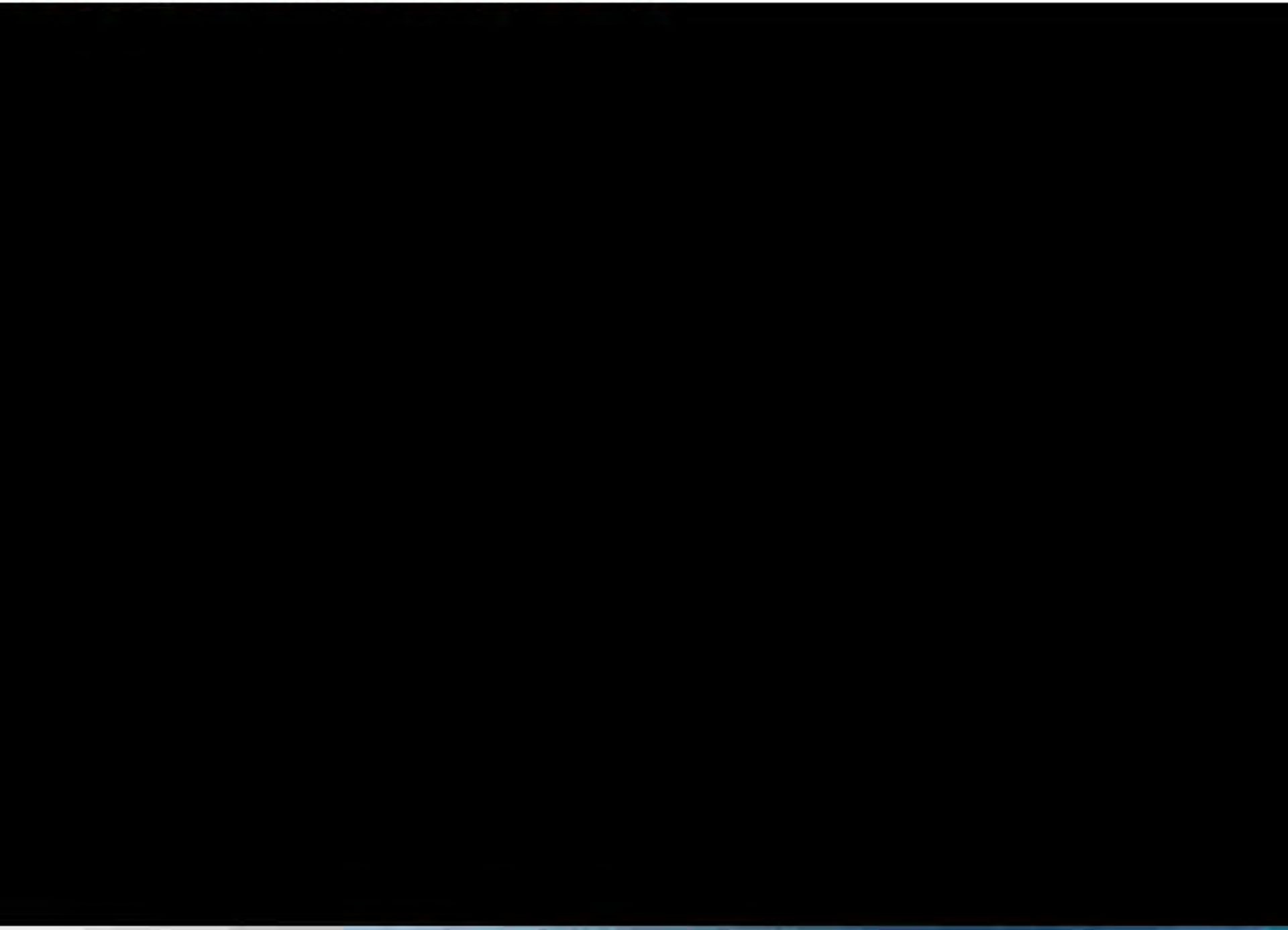

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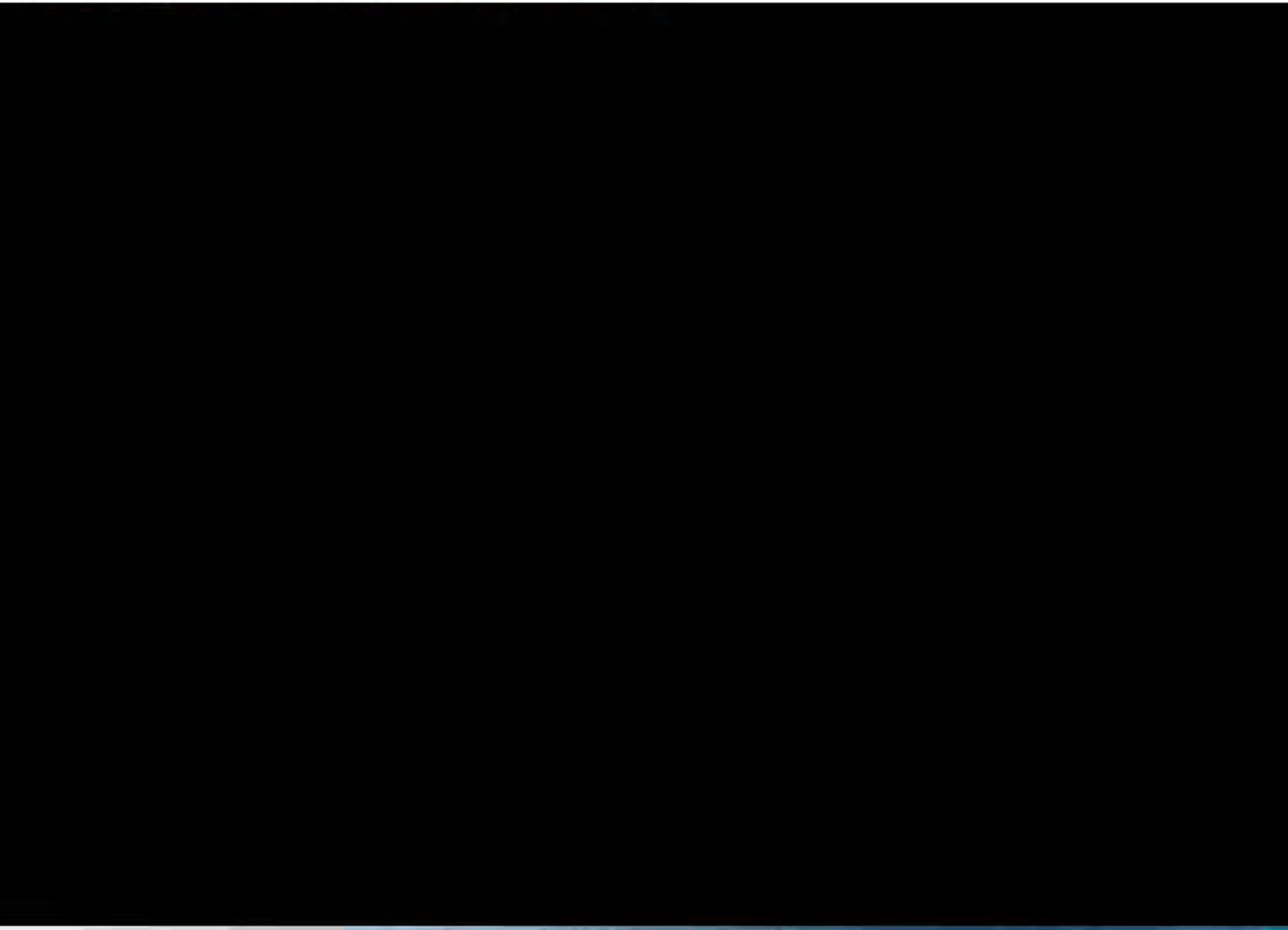

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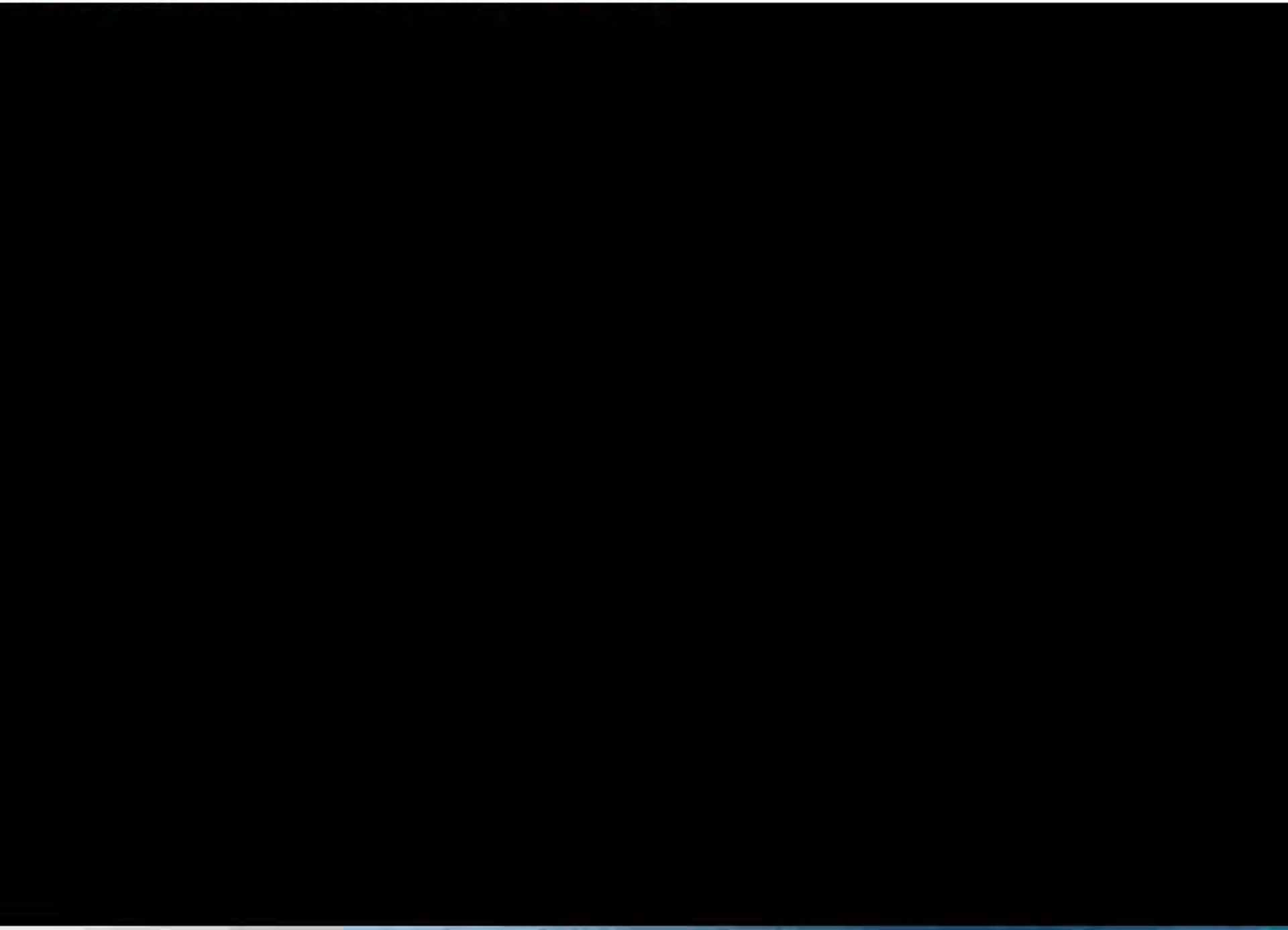

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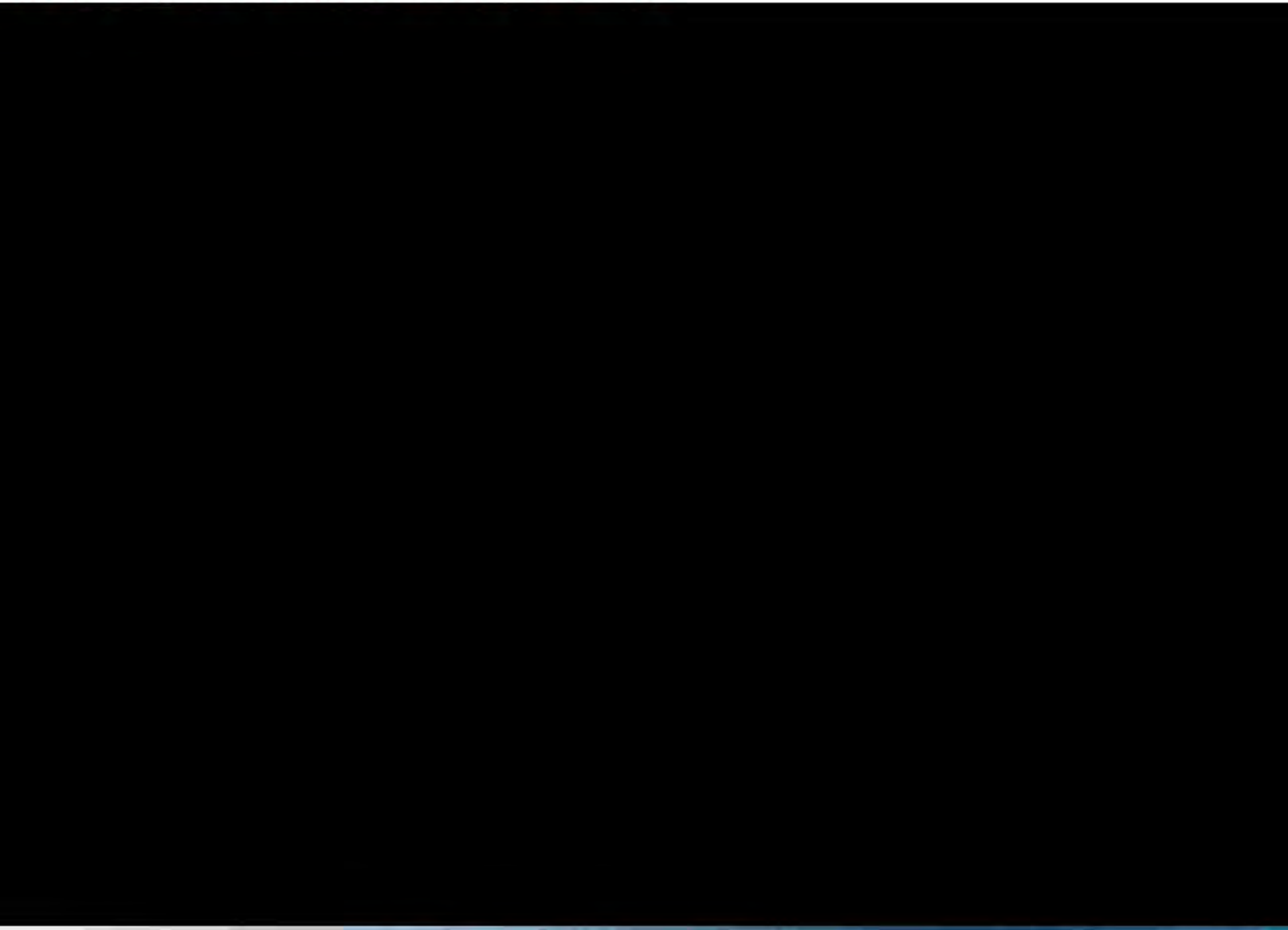

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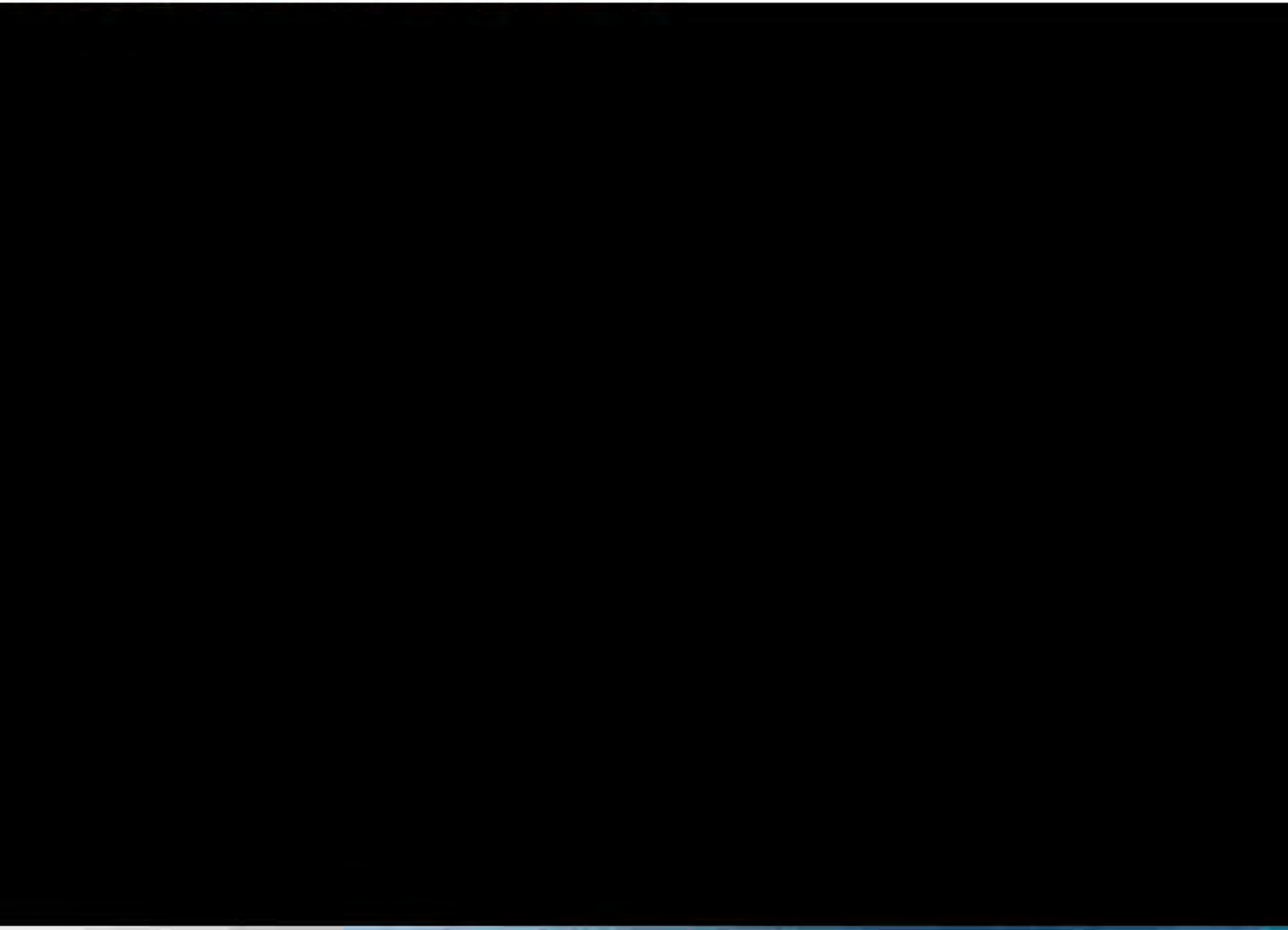

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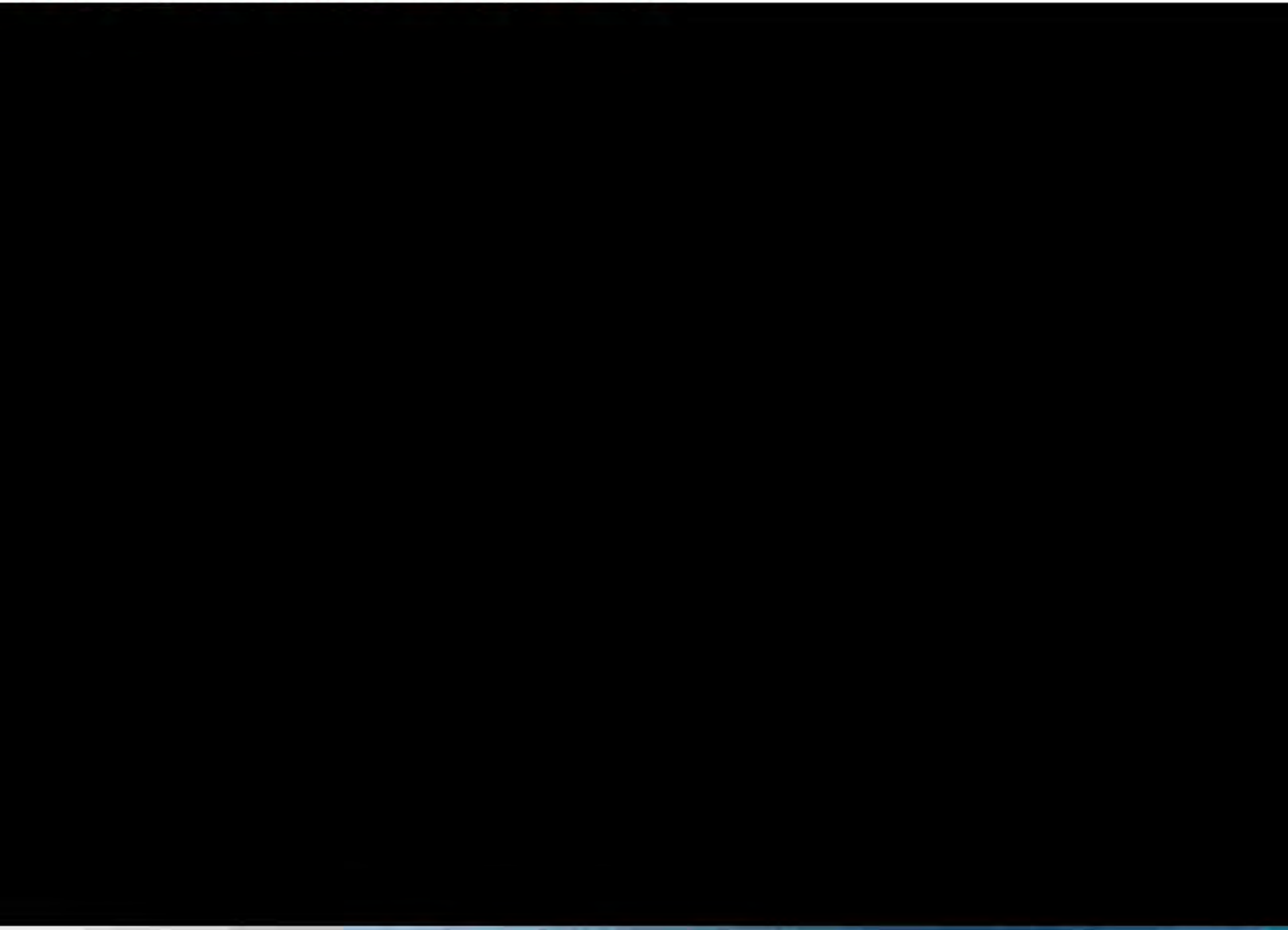

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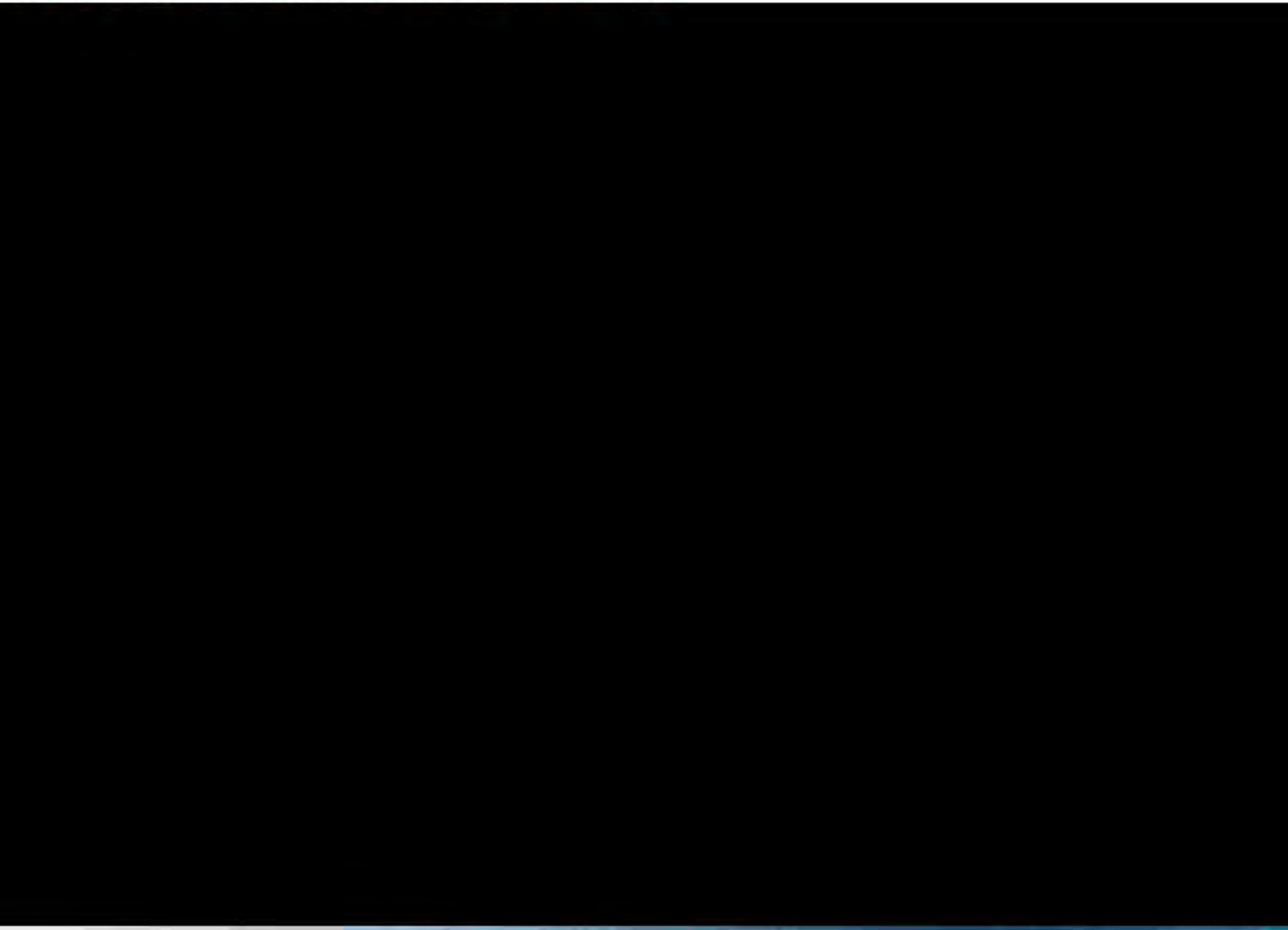

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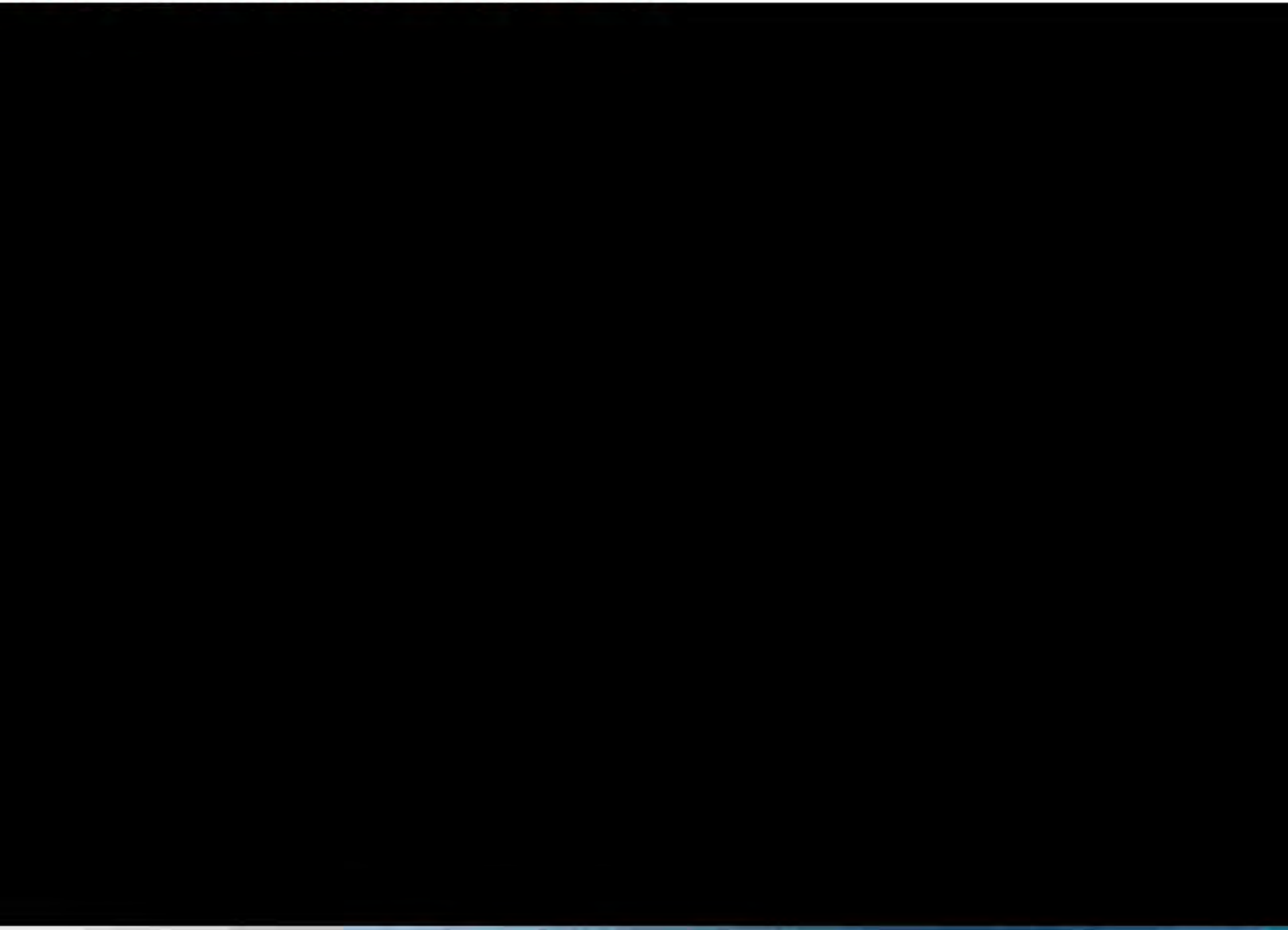

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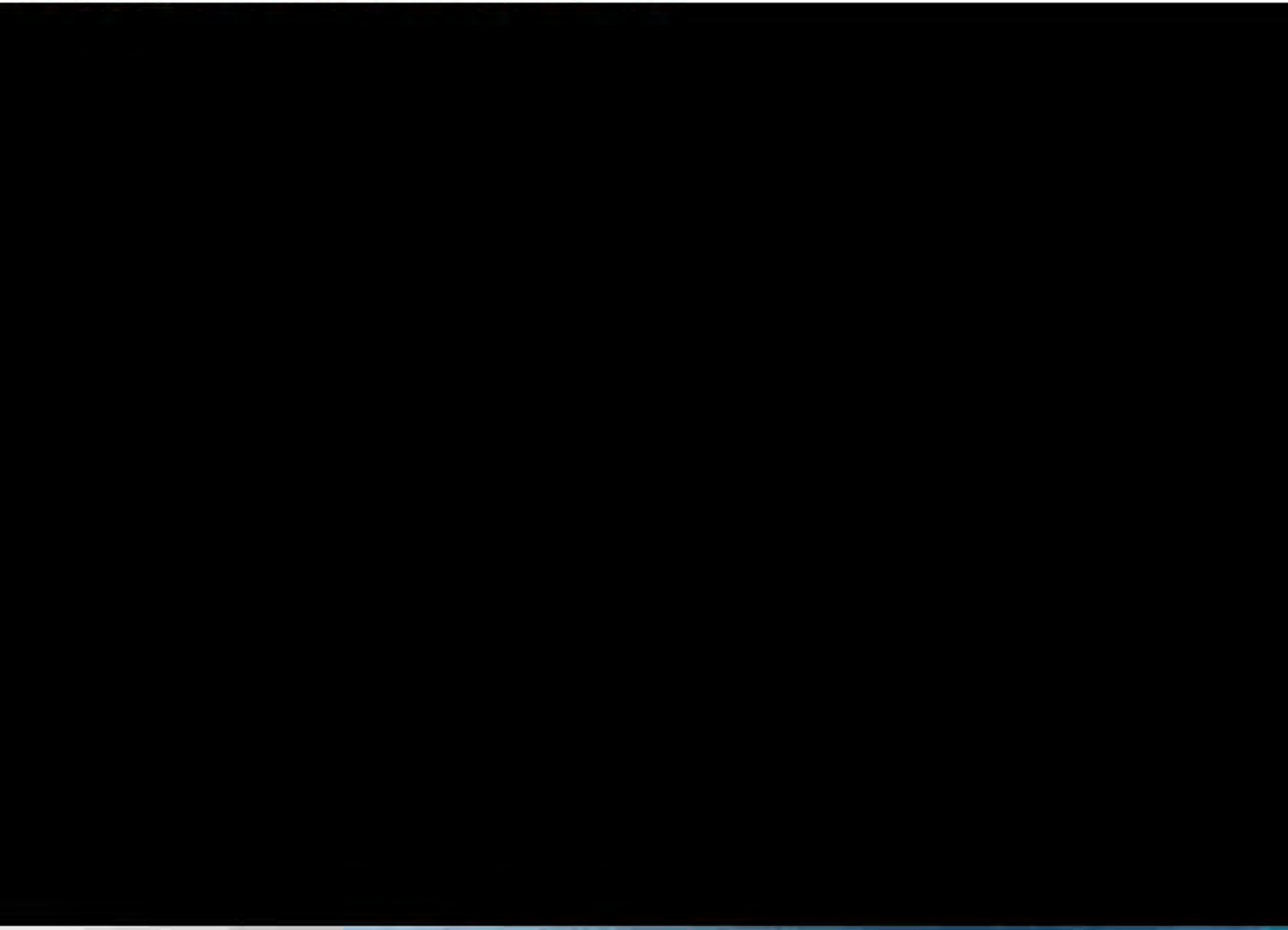

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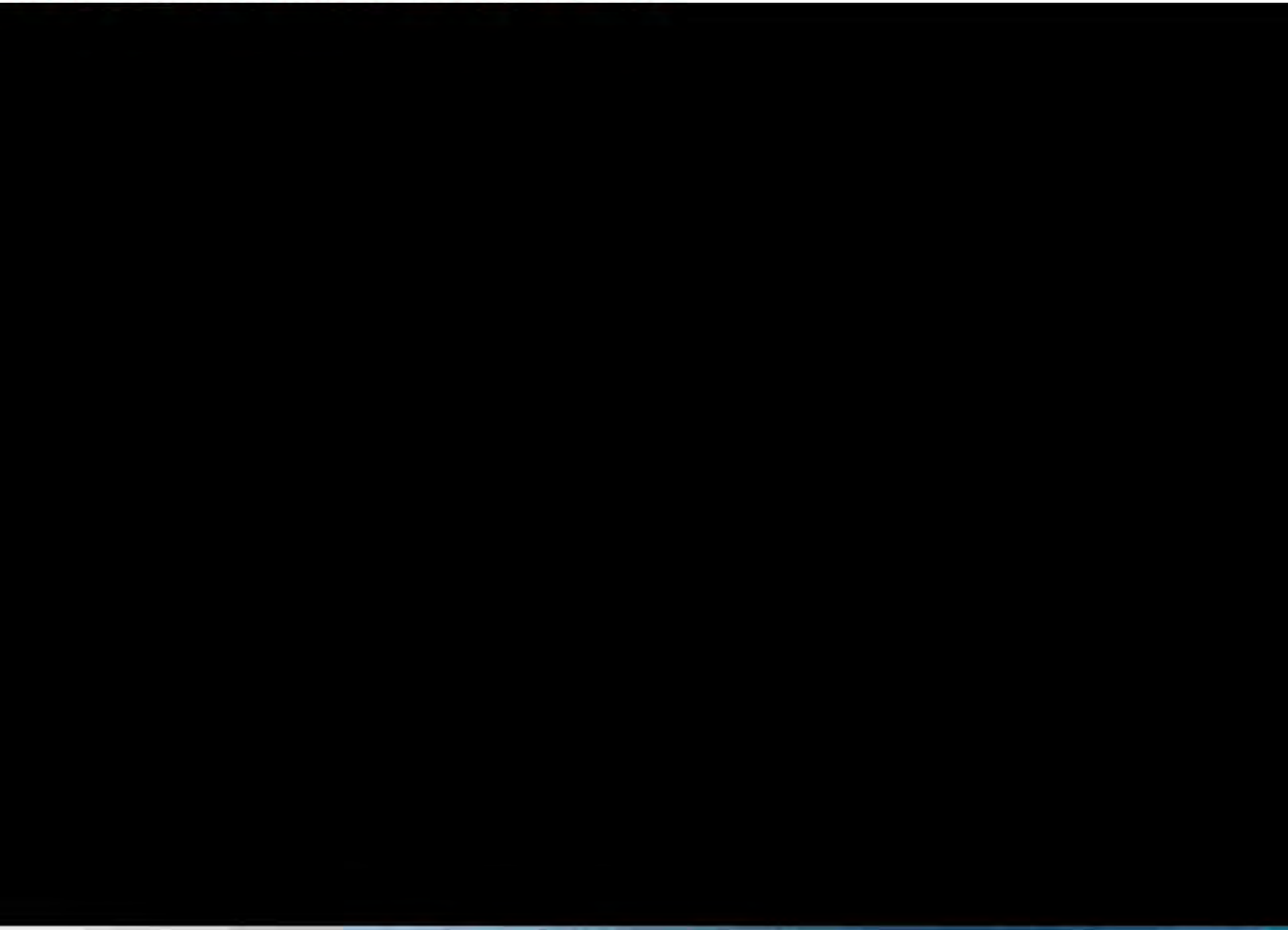

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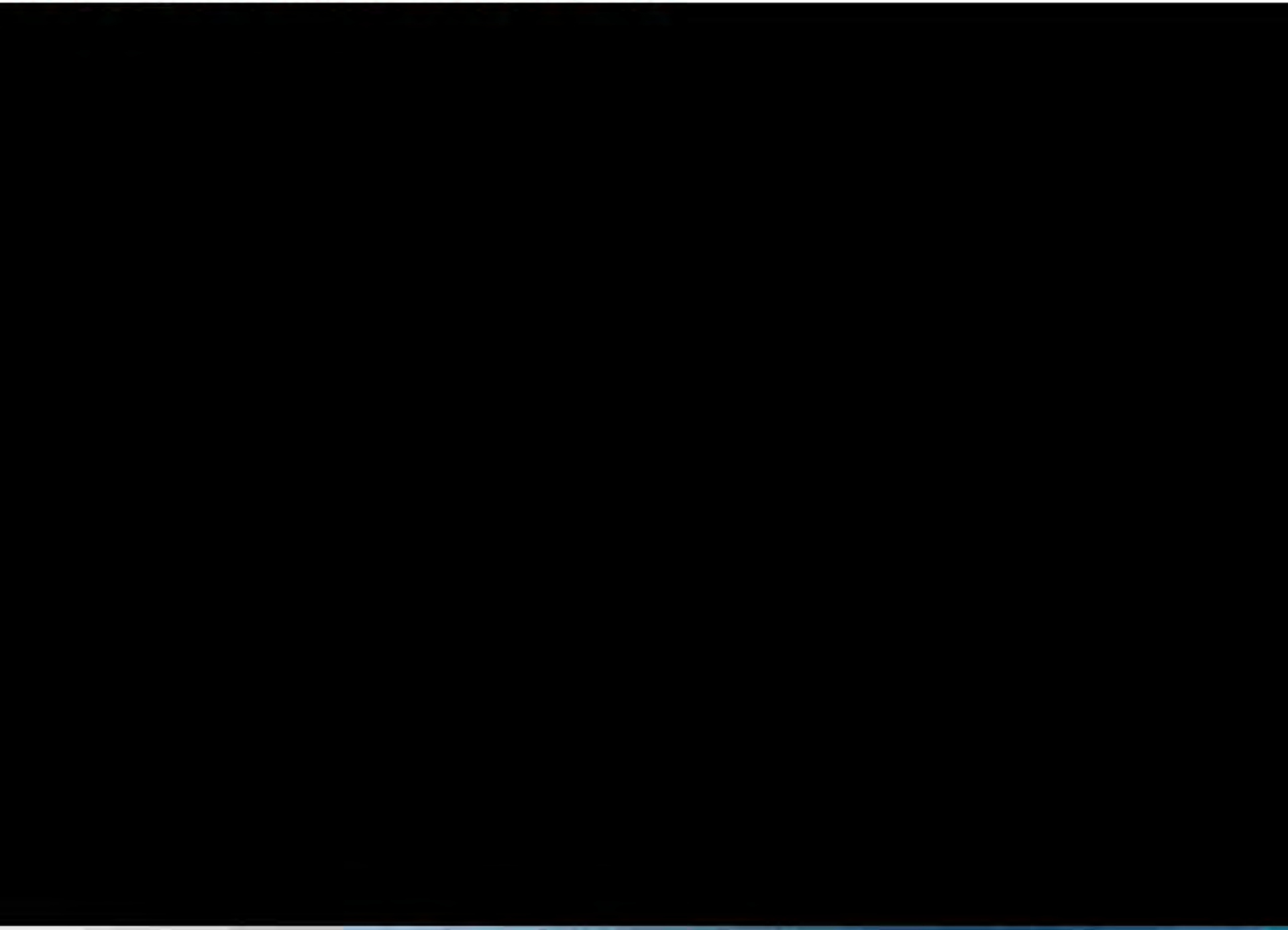

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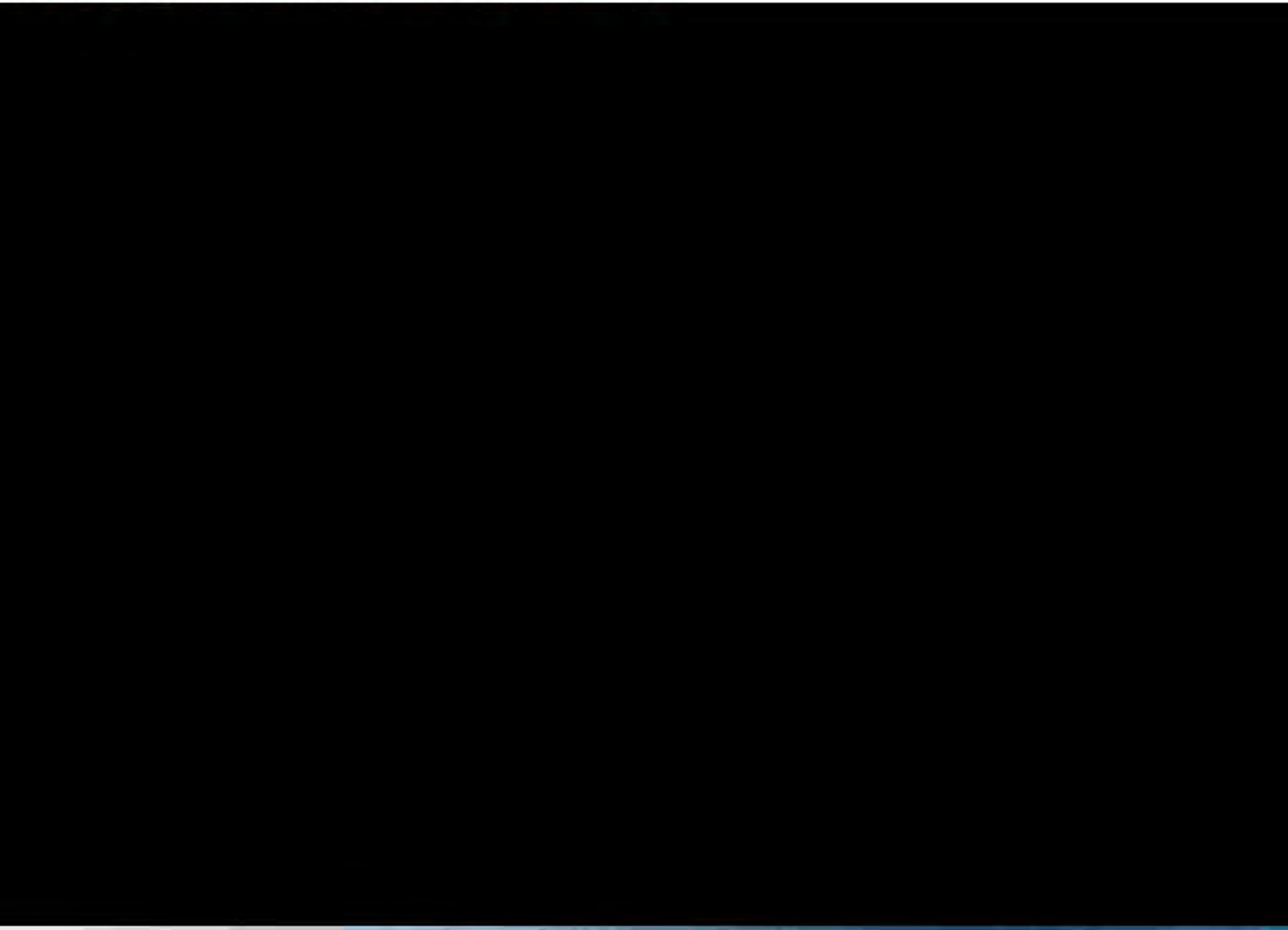

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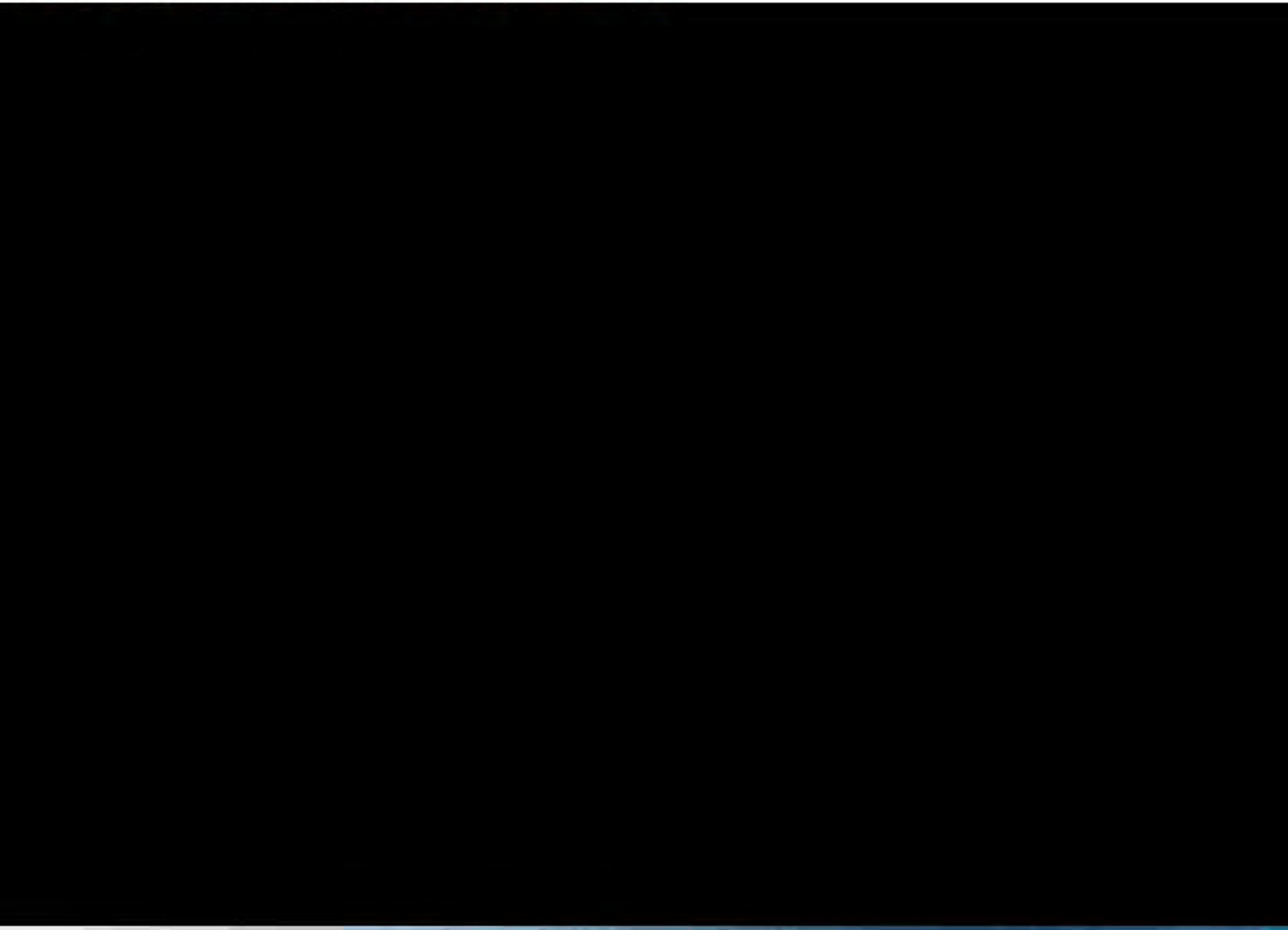

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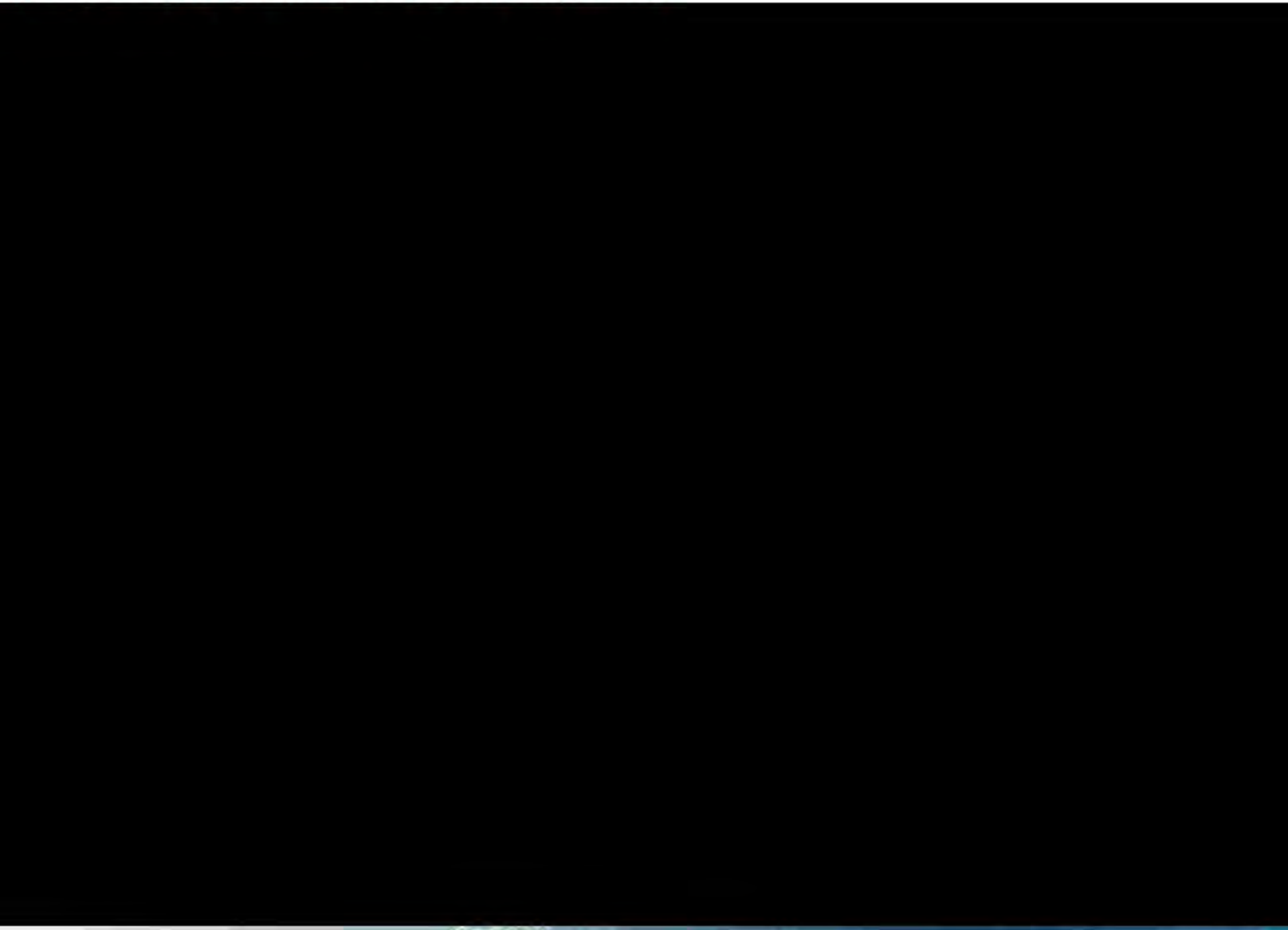

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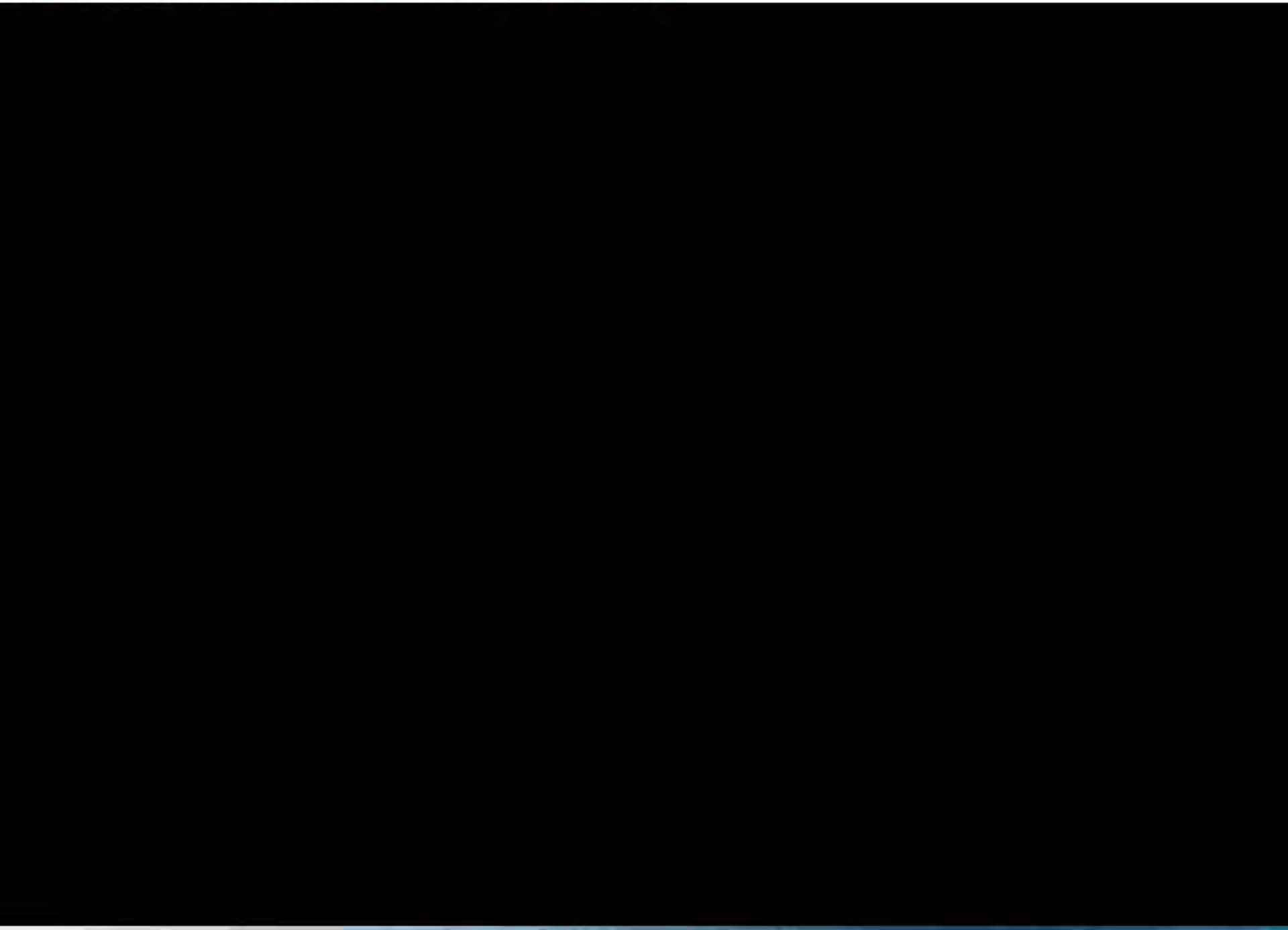

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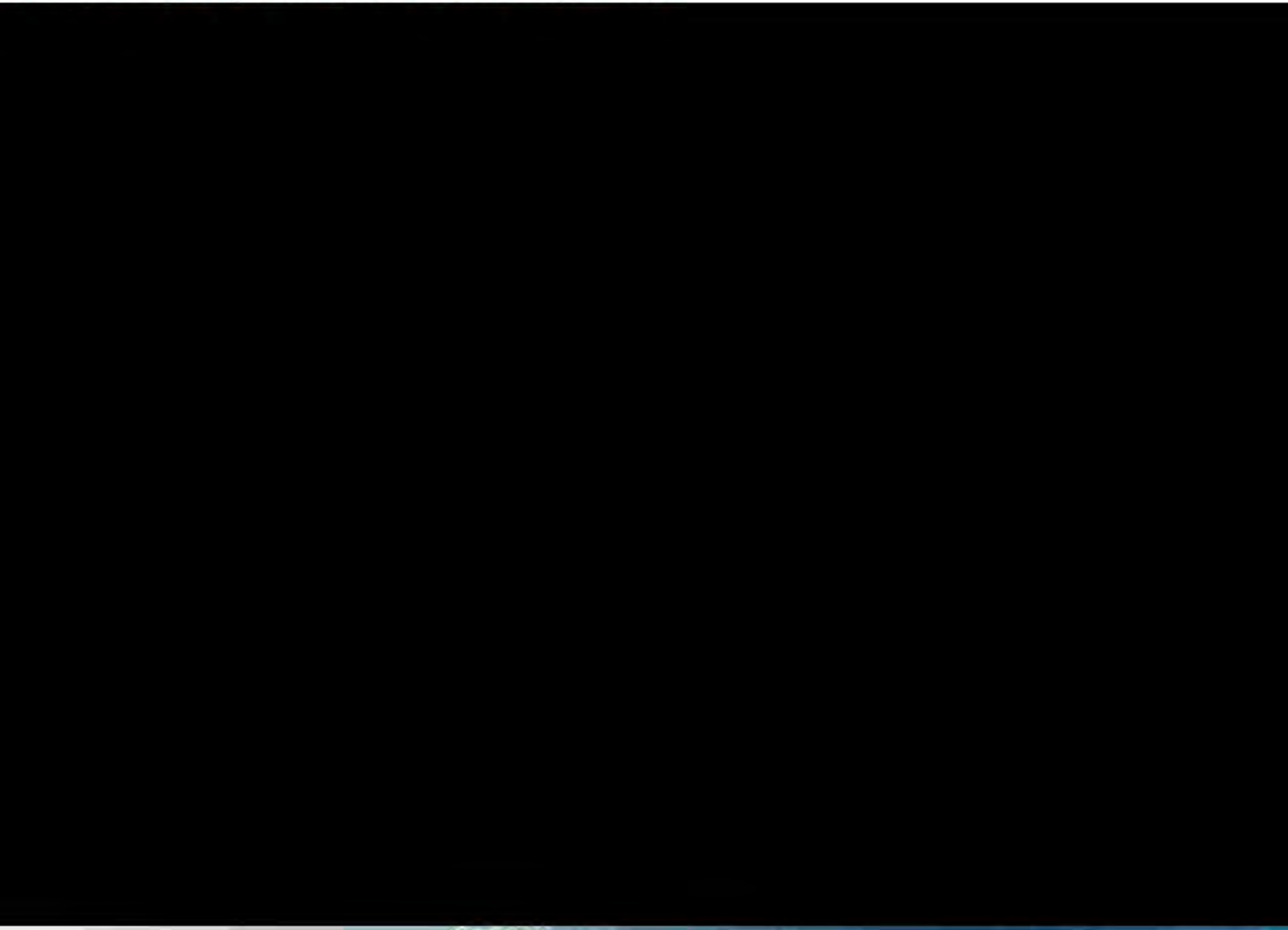

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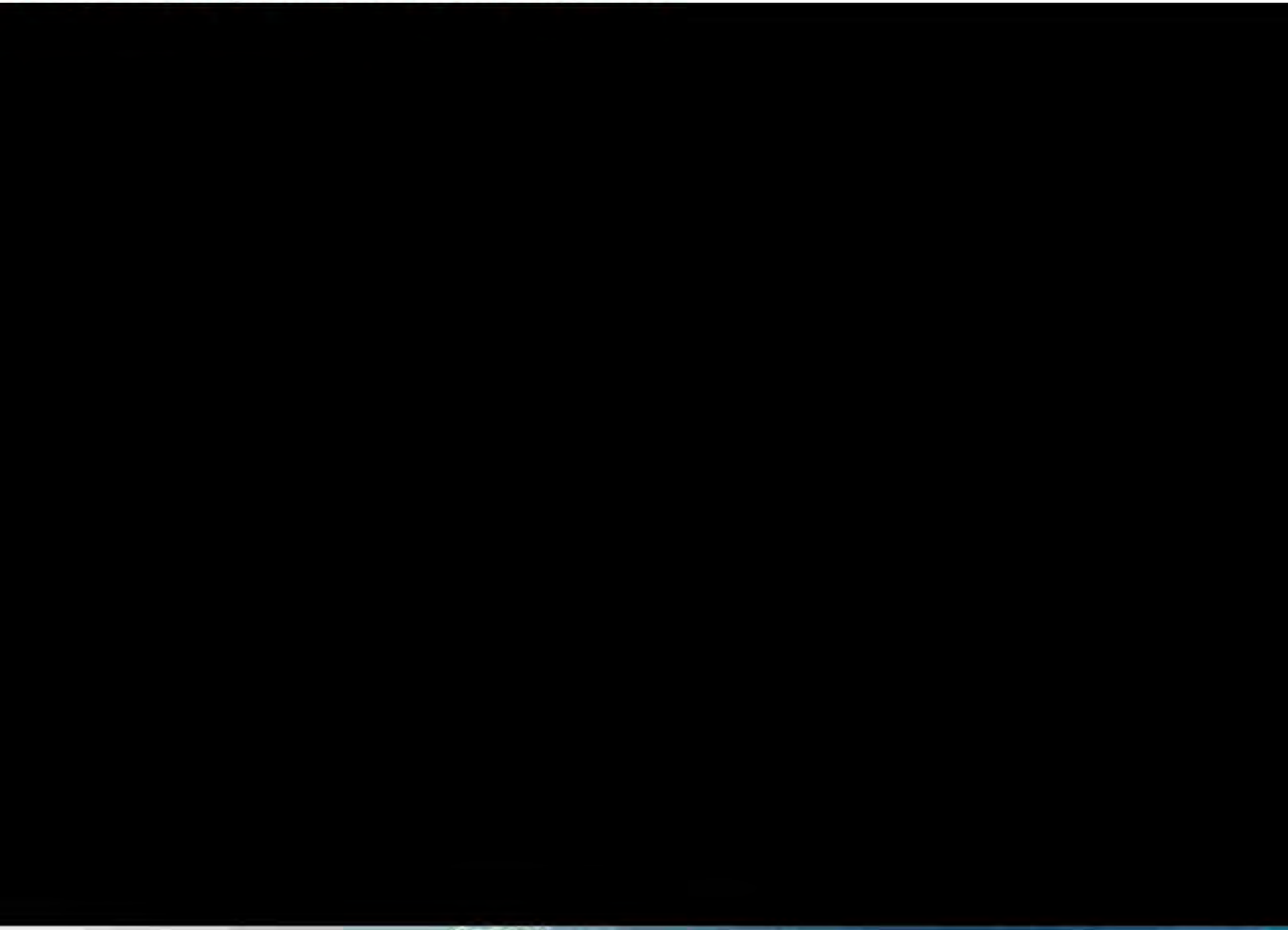

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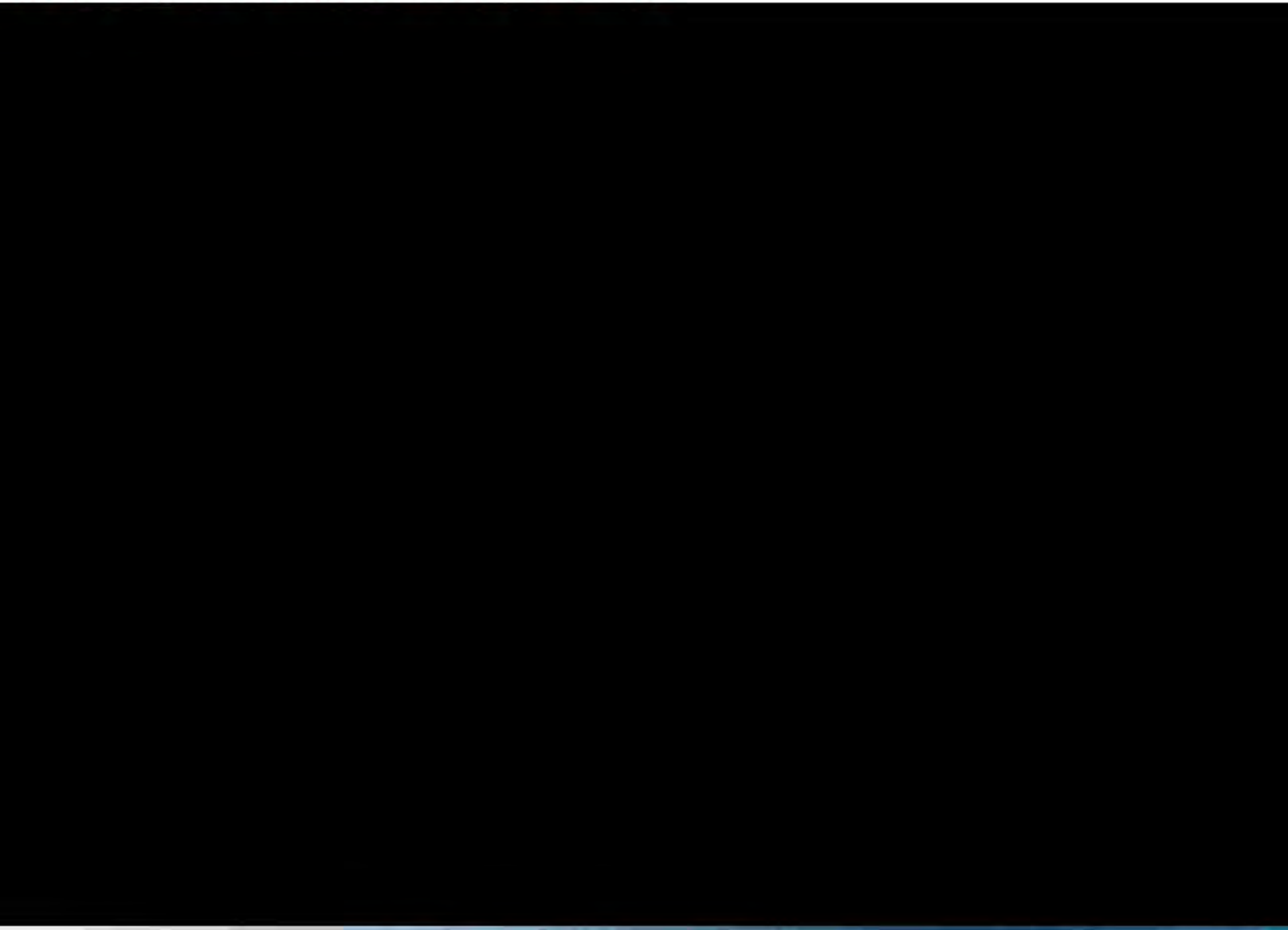

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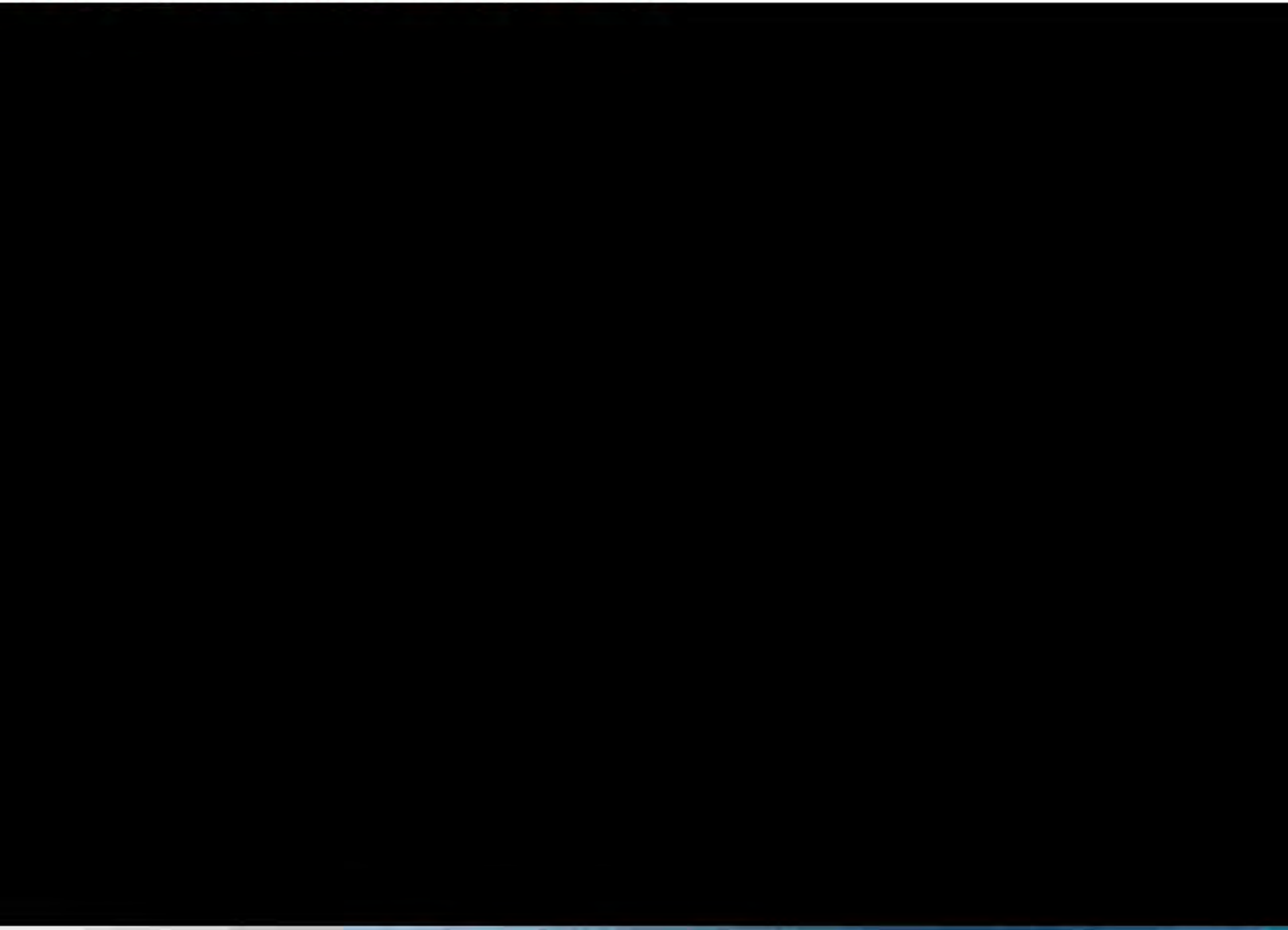

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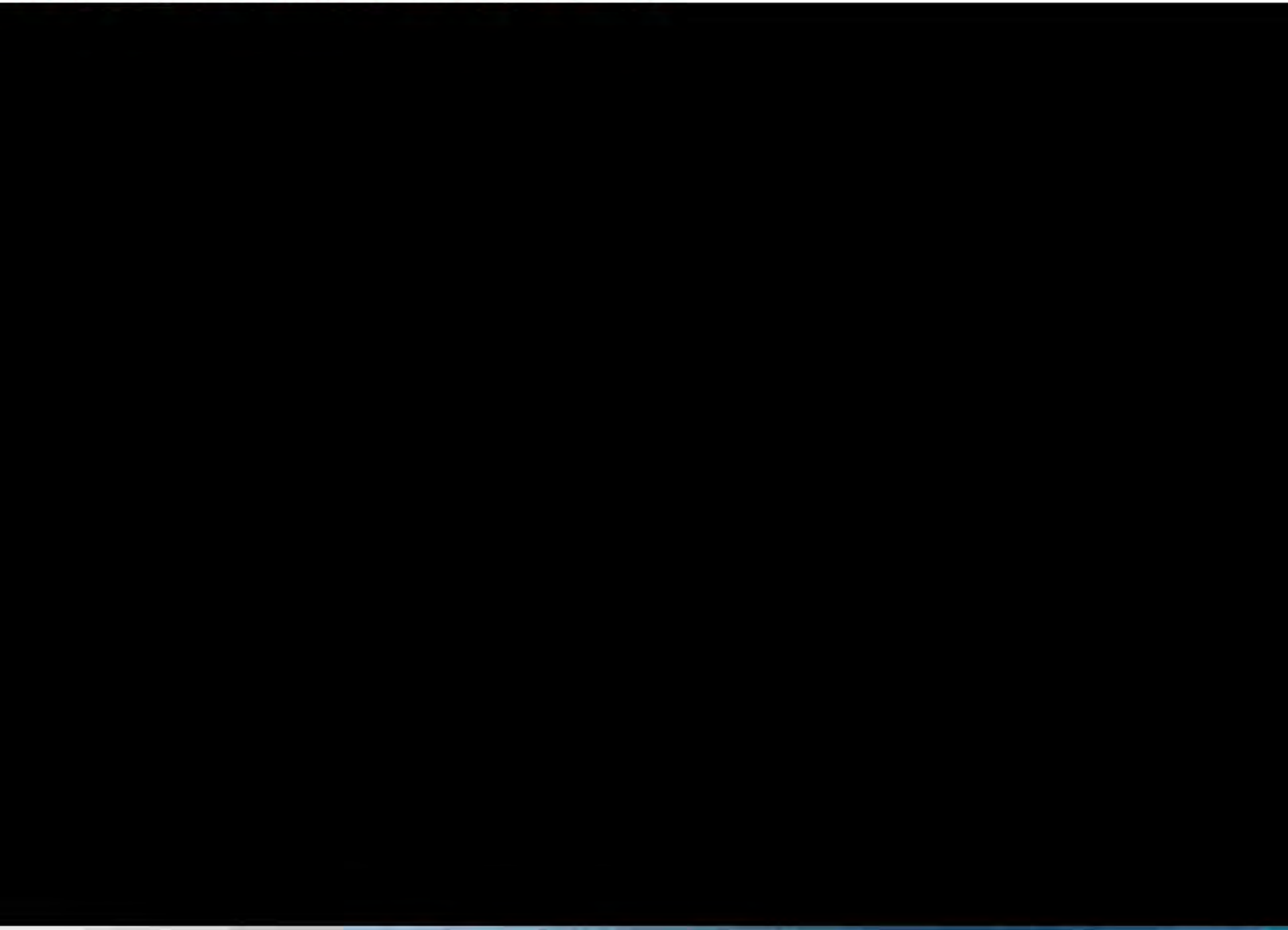

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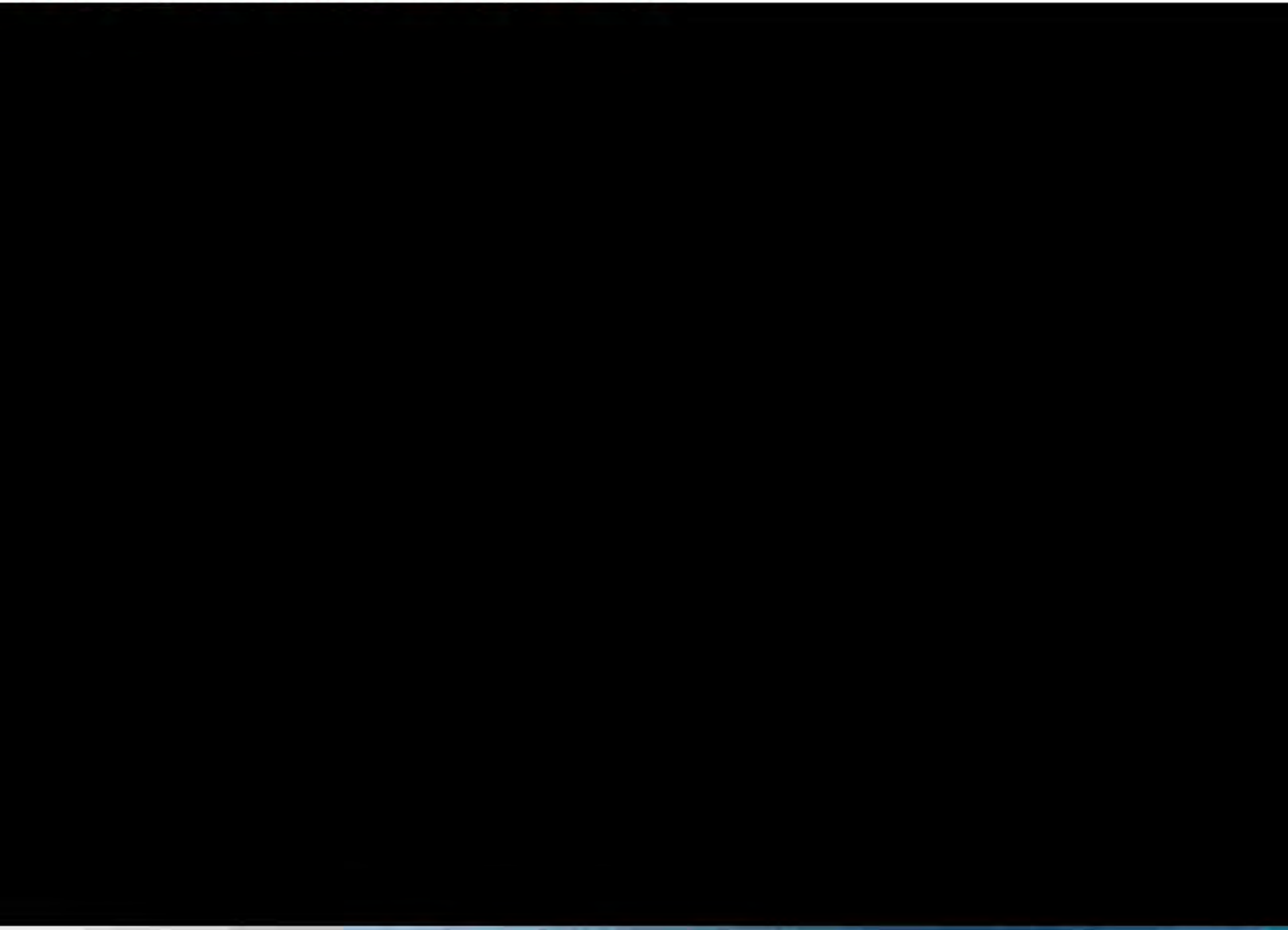

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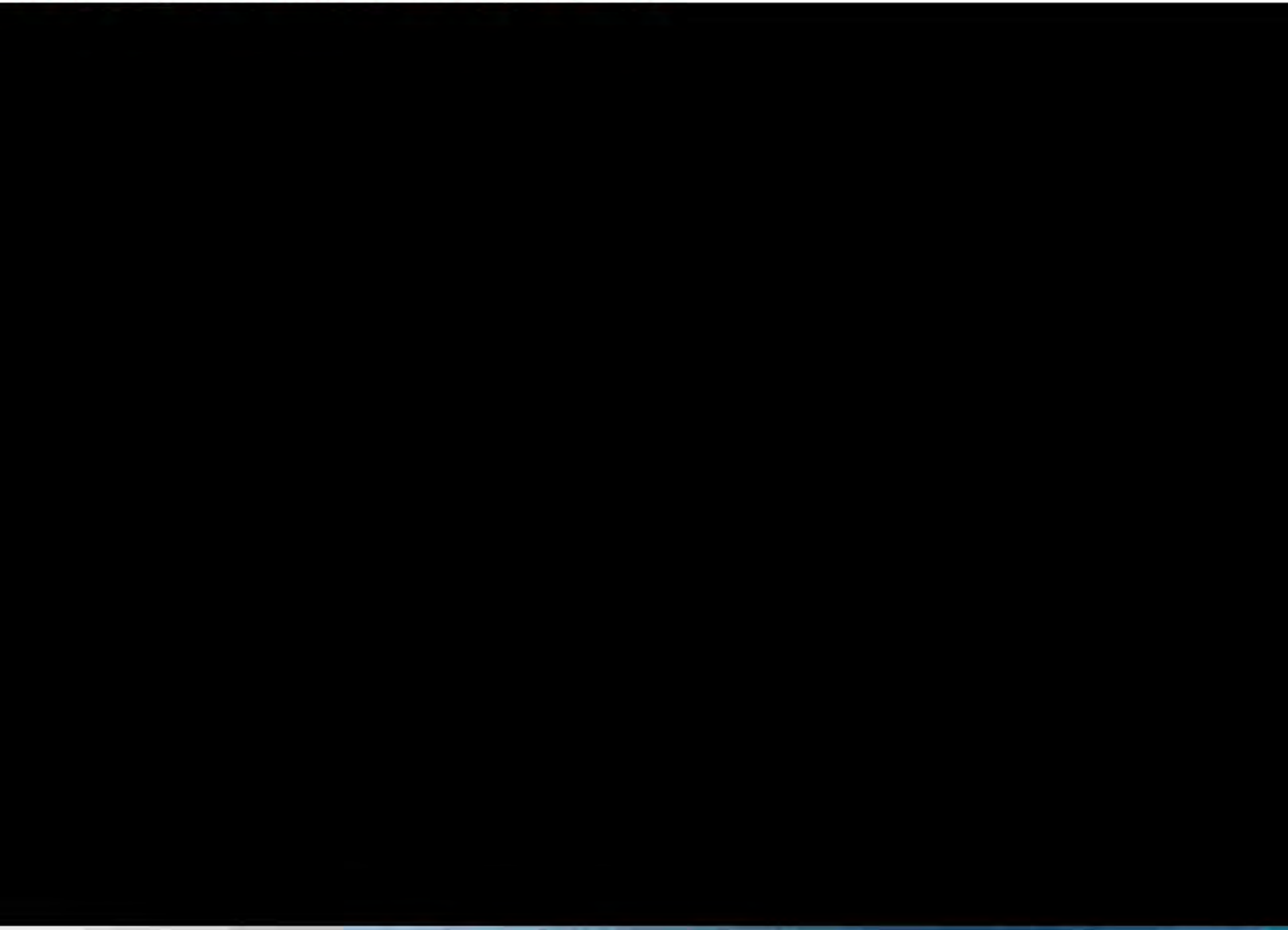

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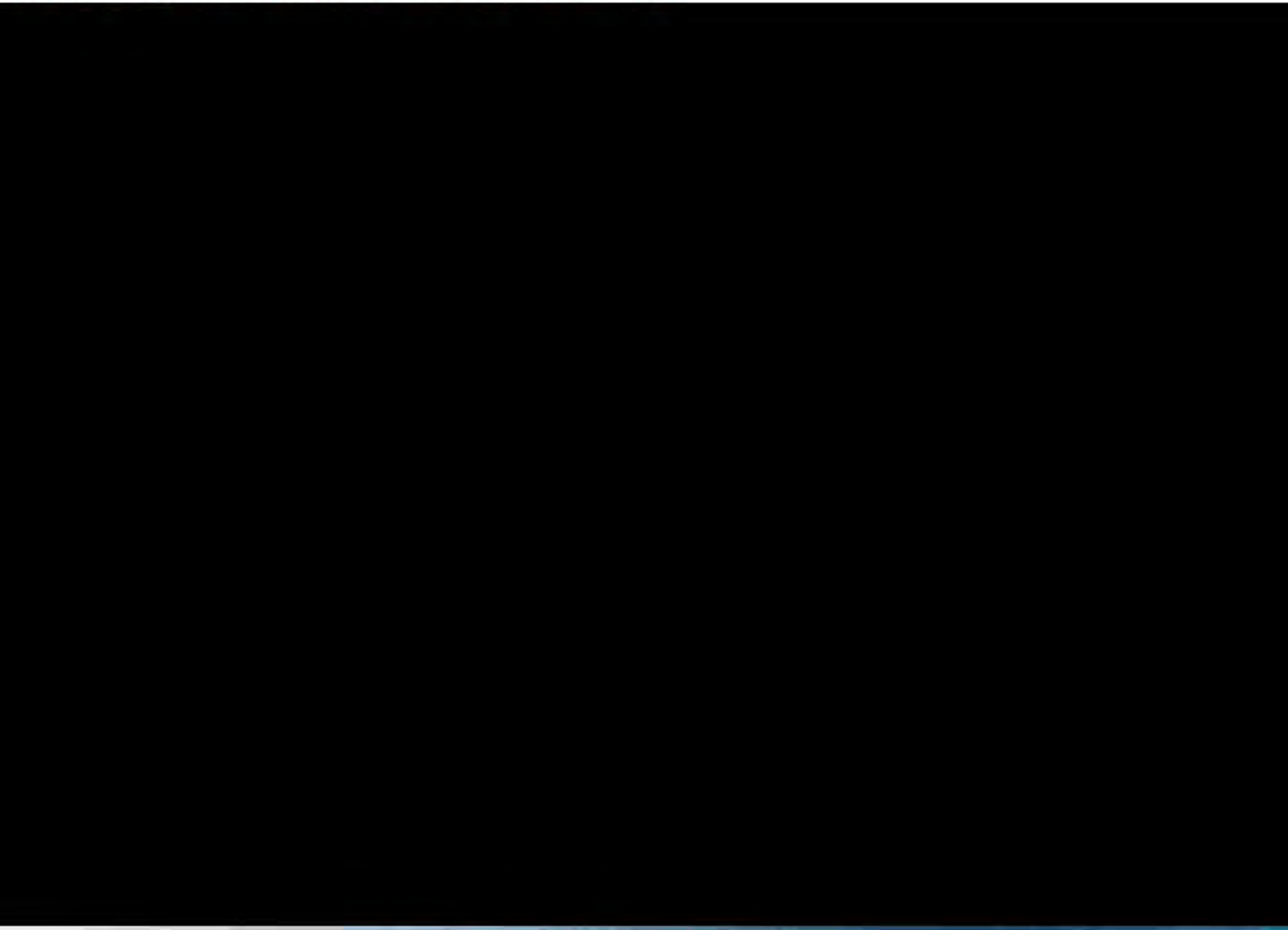

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Cause Analysis – How can this happen? / ETA

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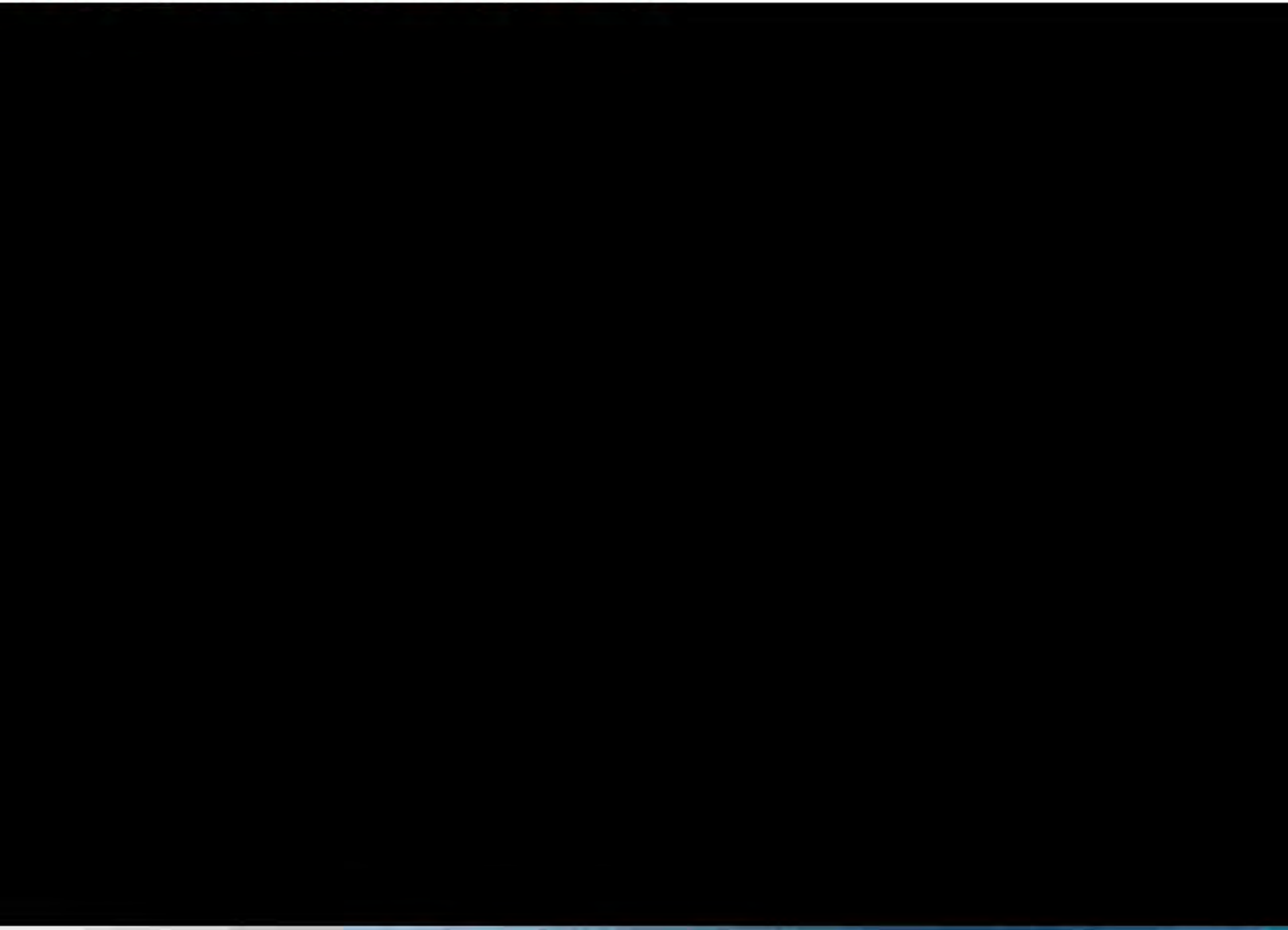

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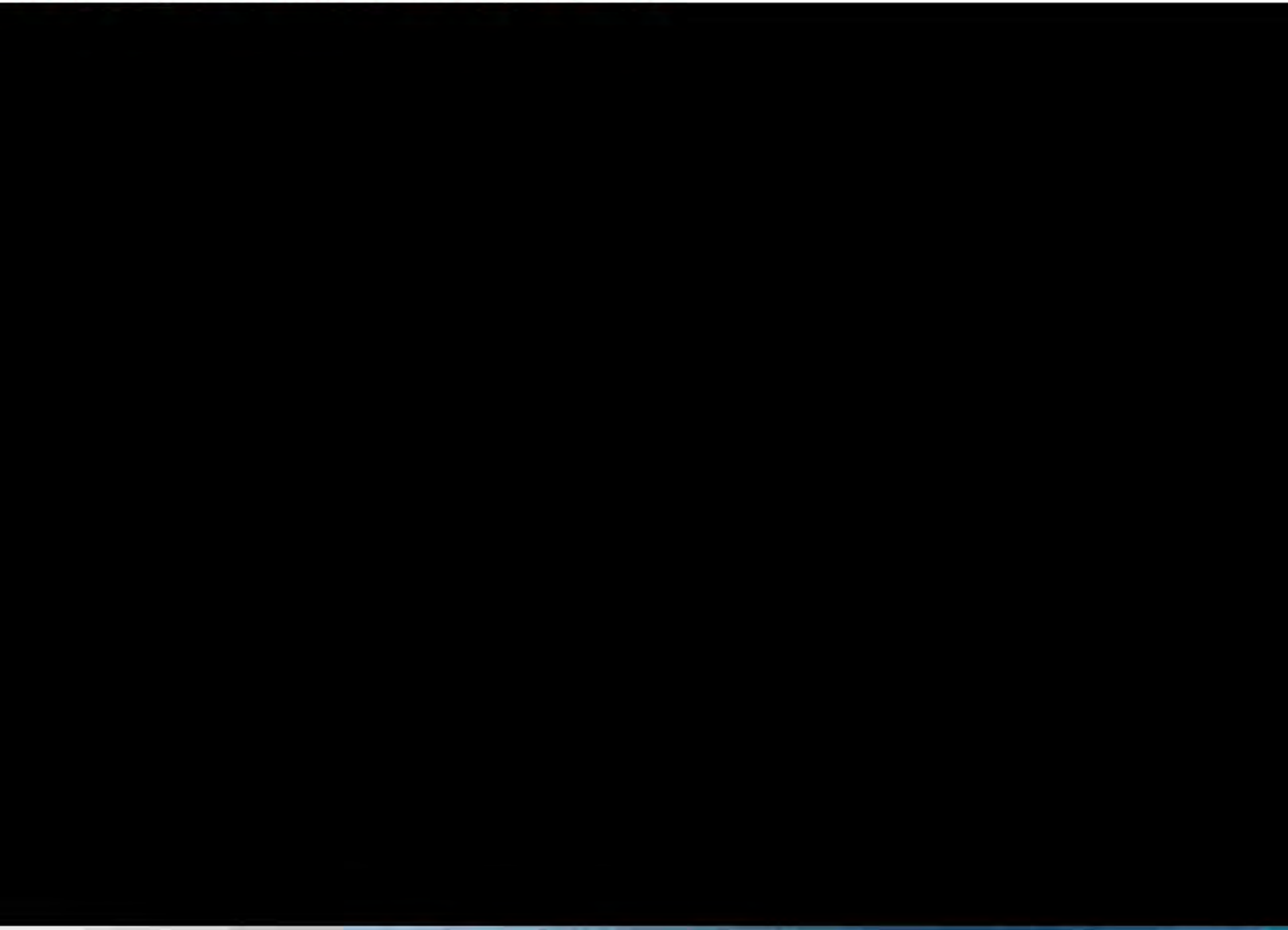

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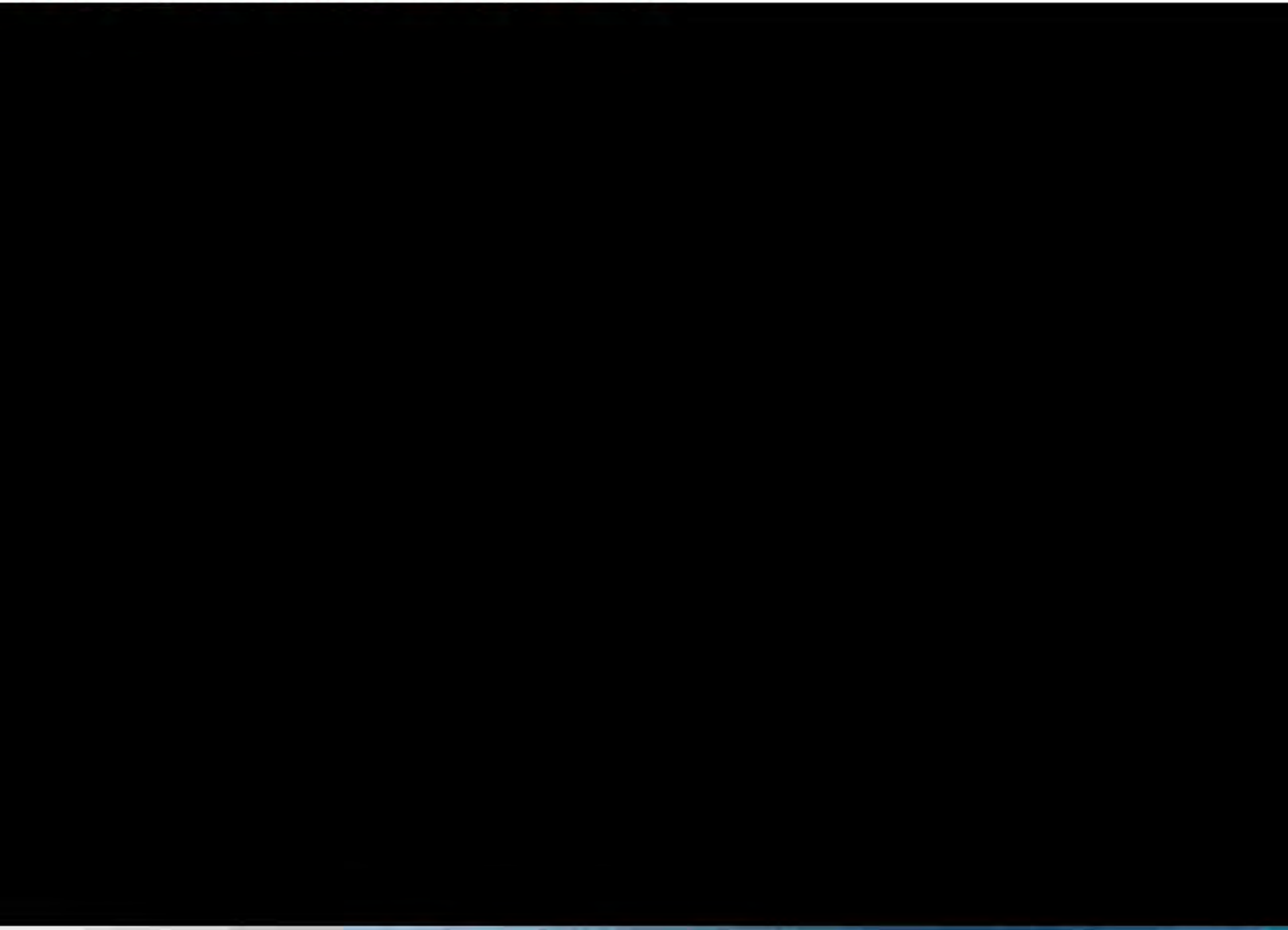

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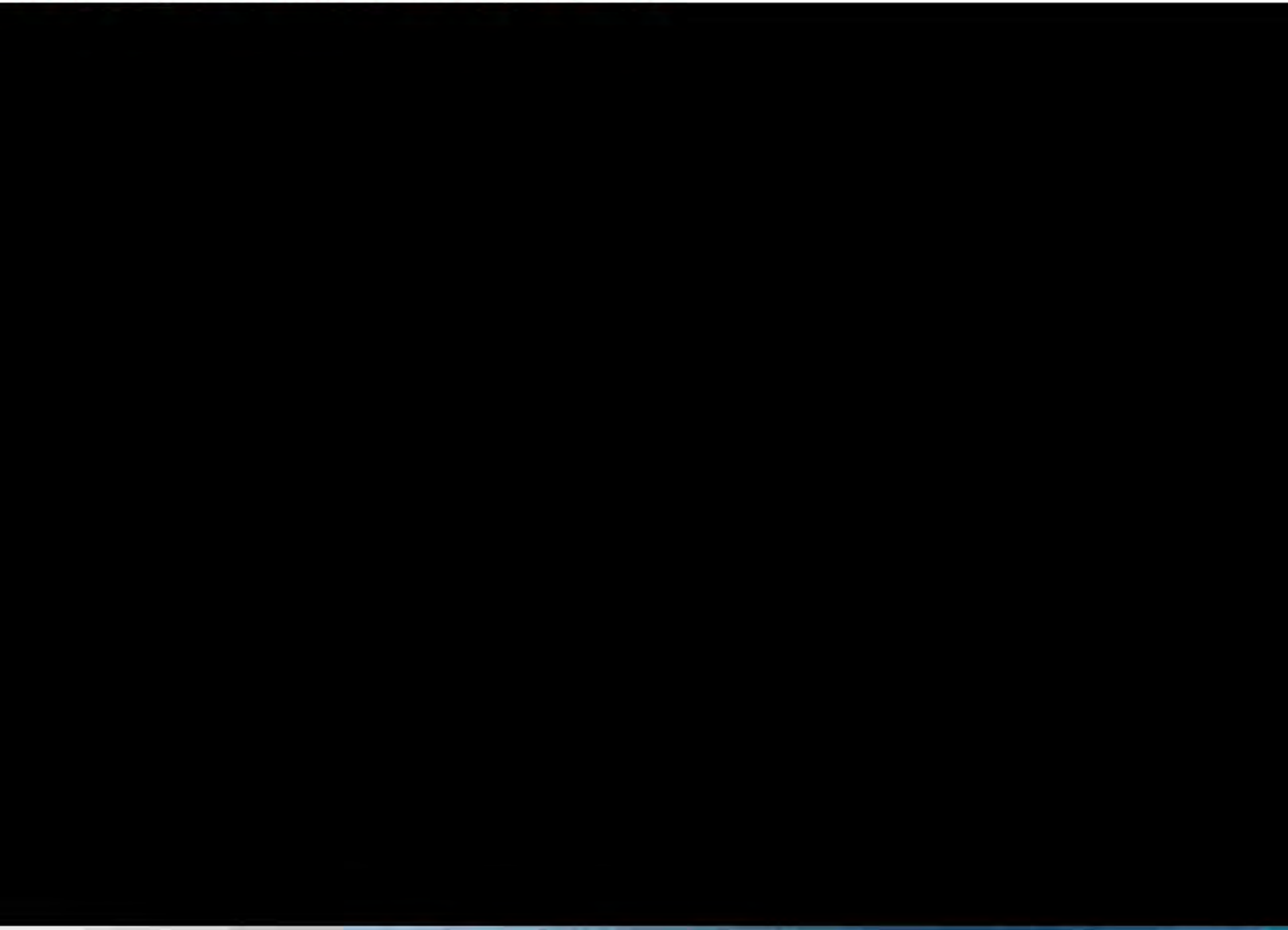

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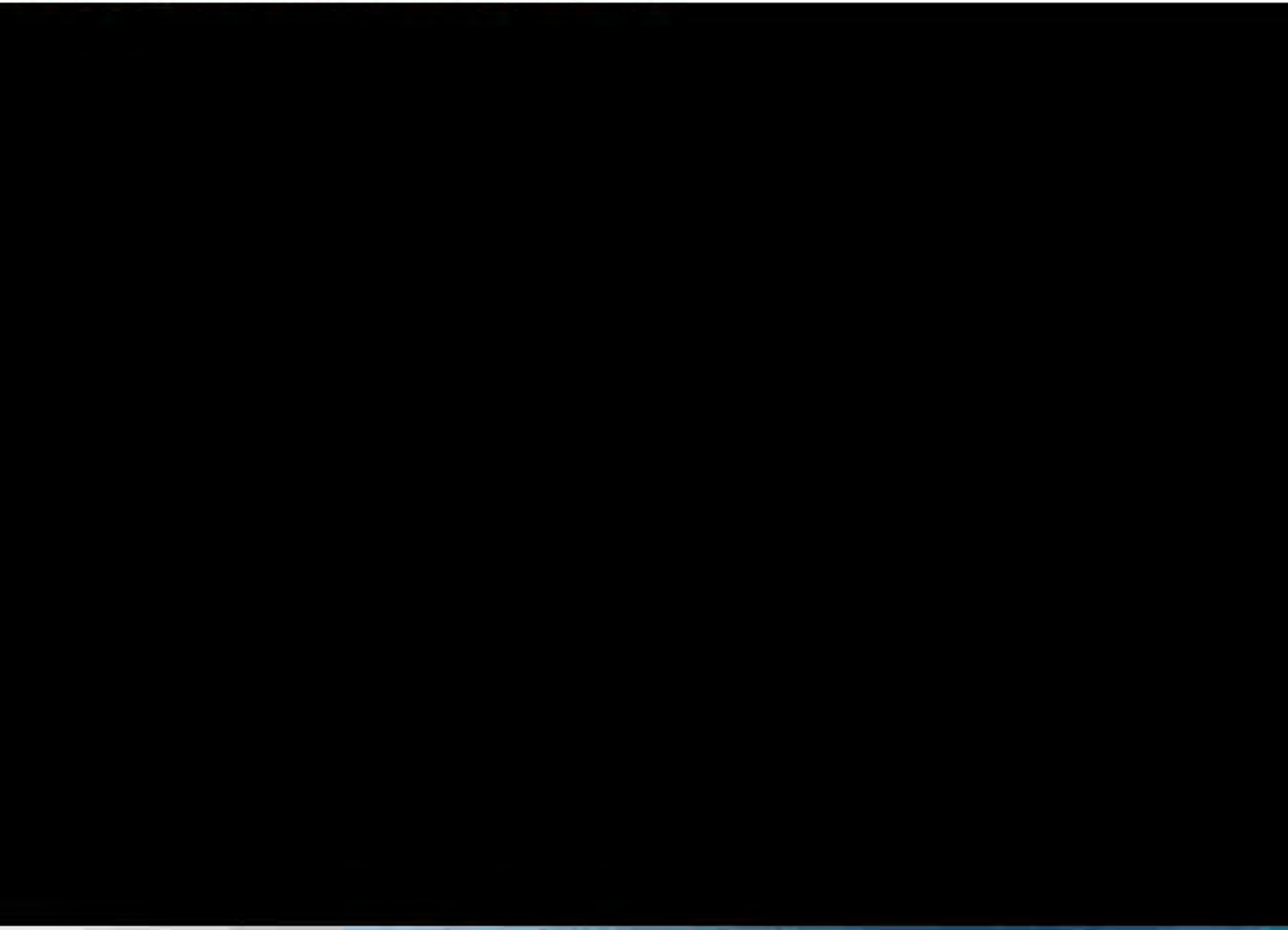

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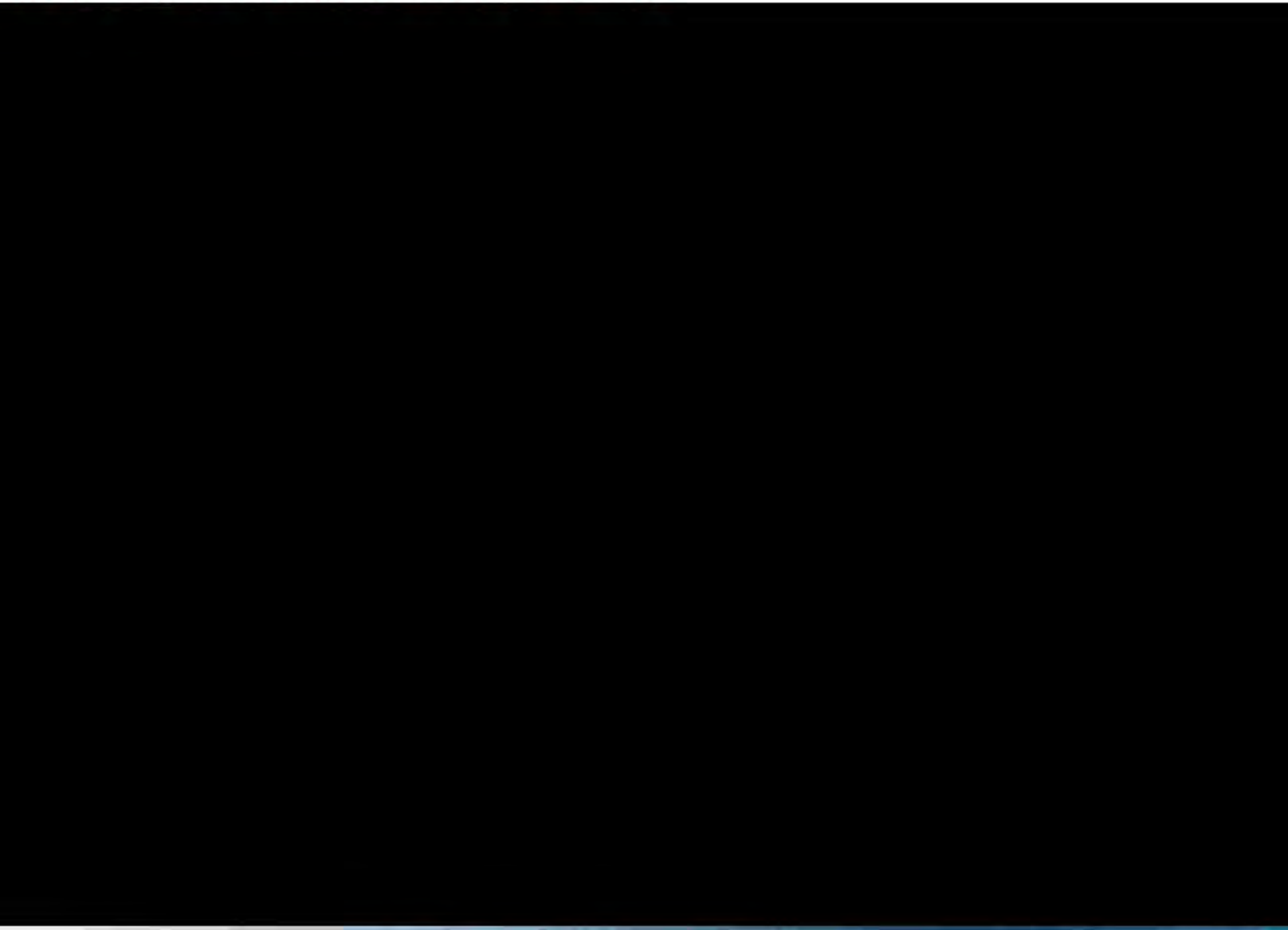

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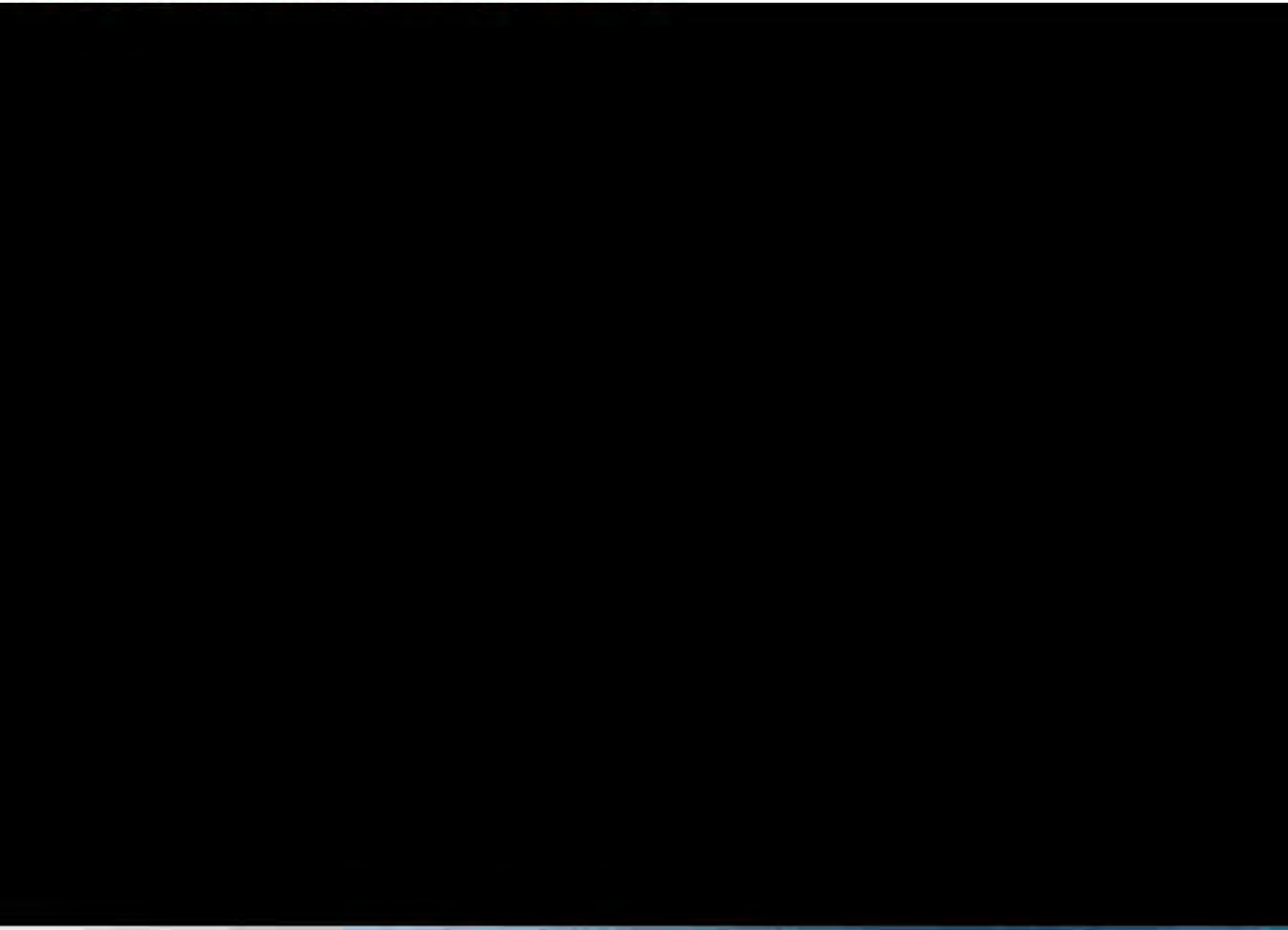

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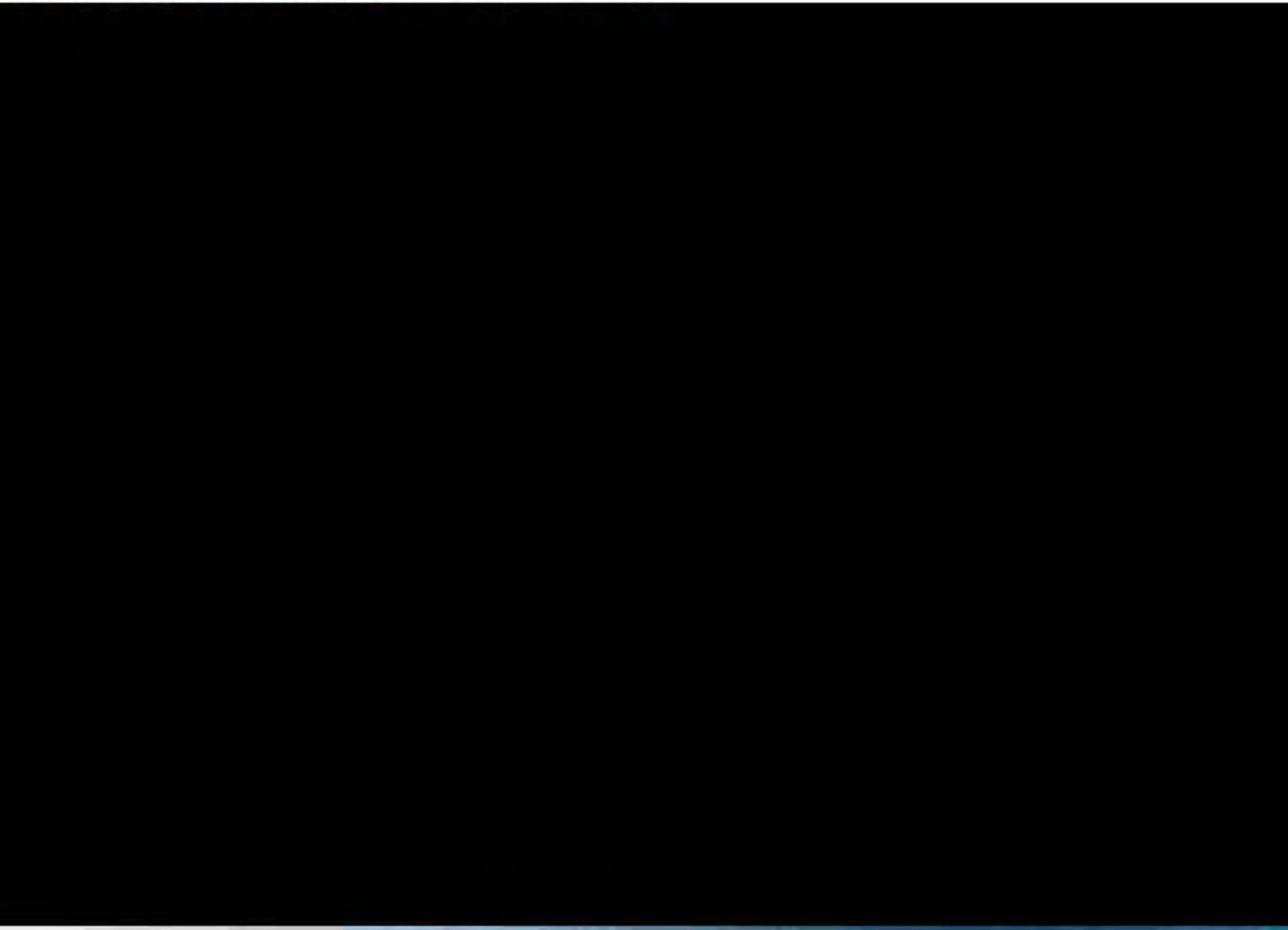

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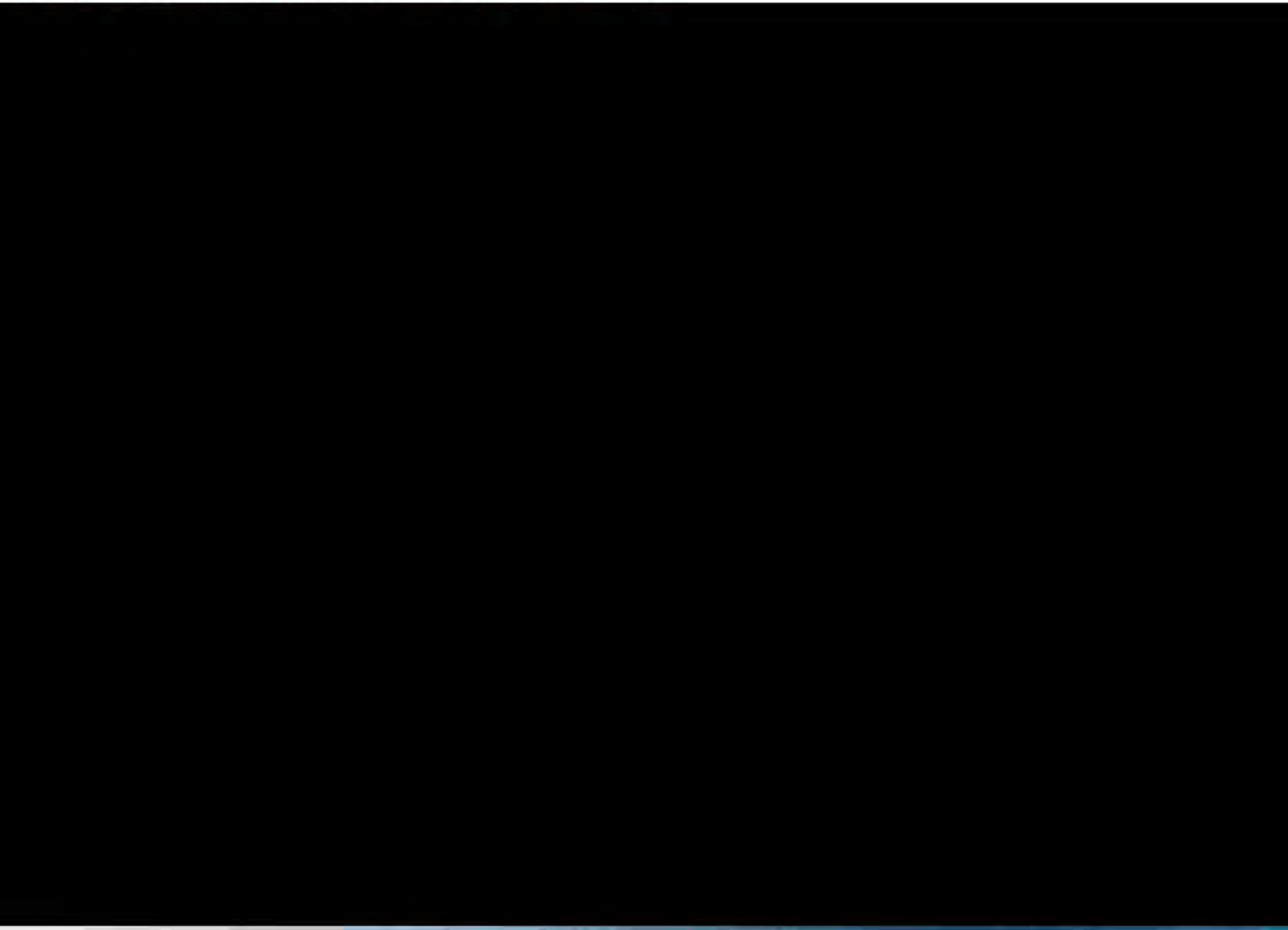

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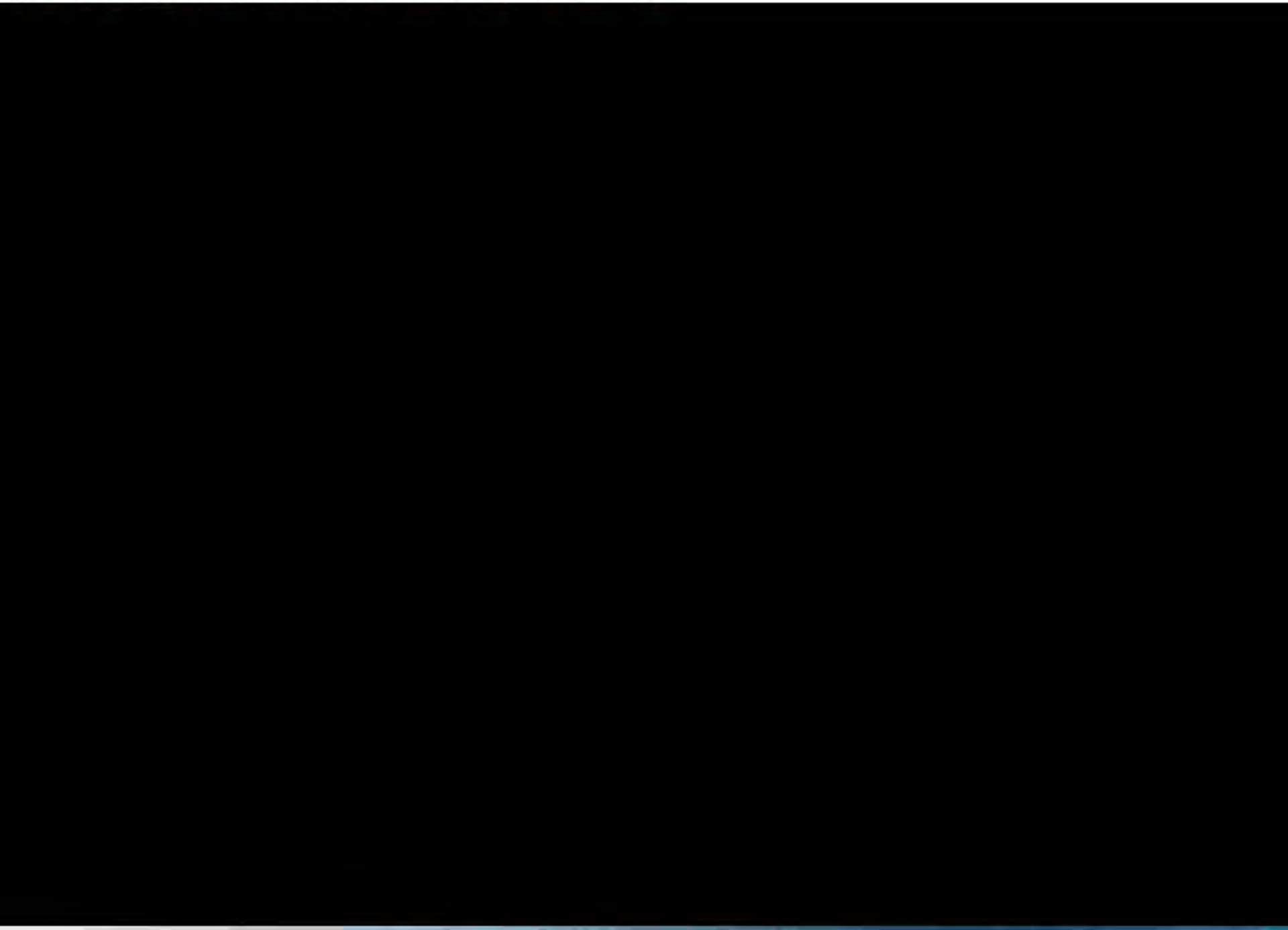

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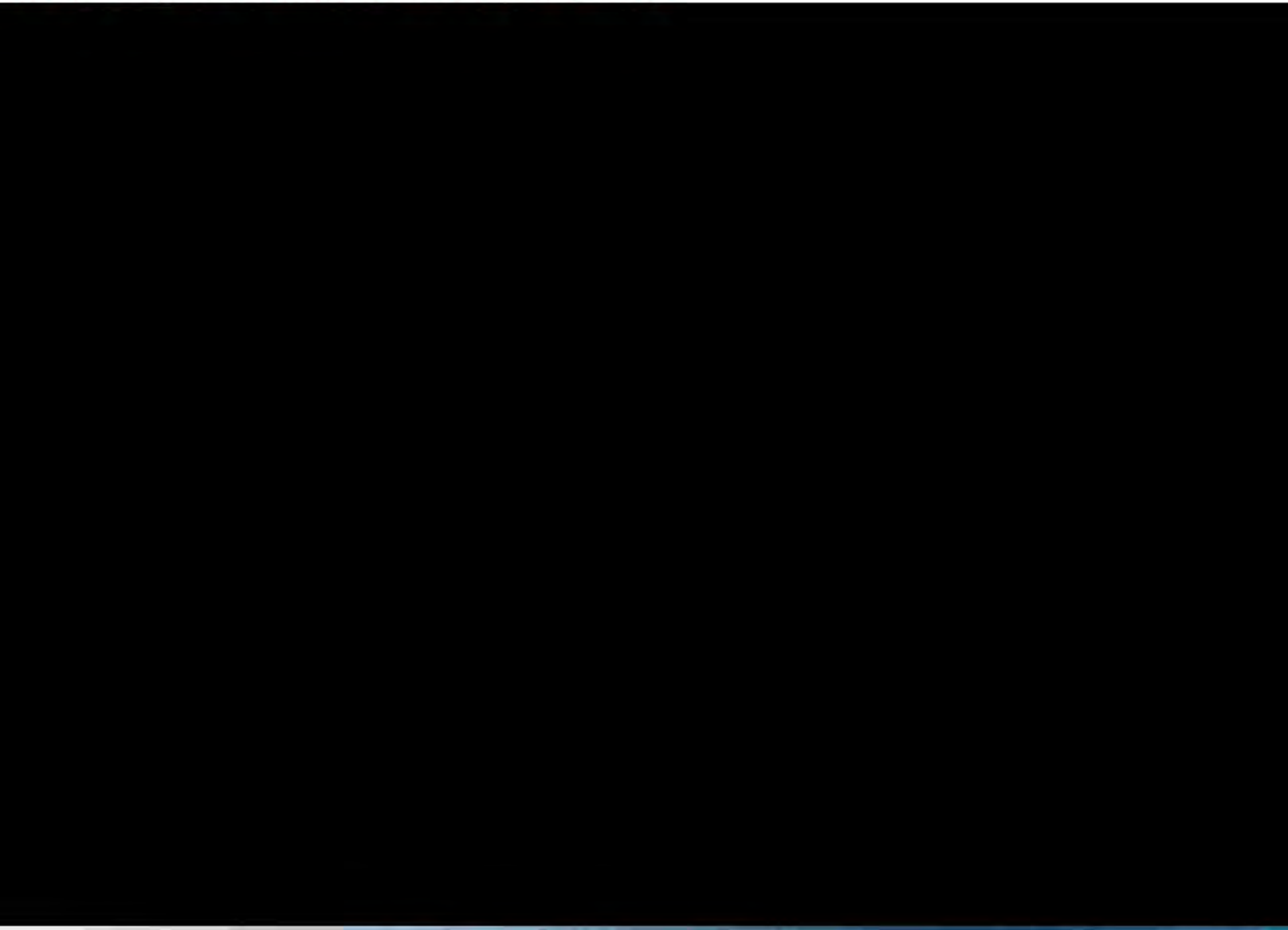

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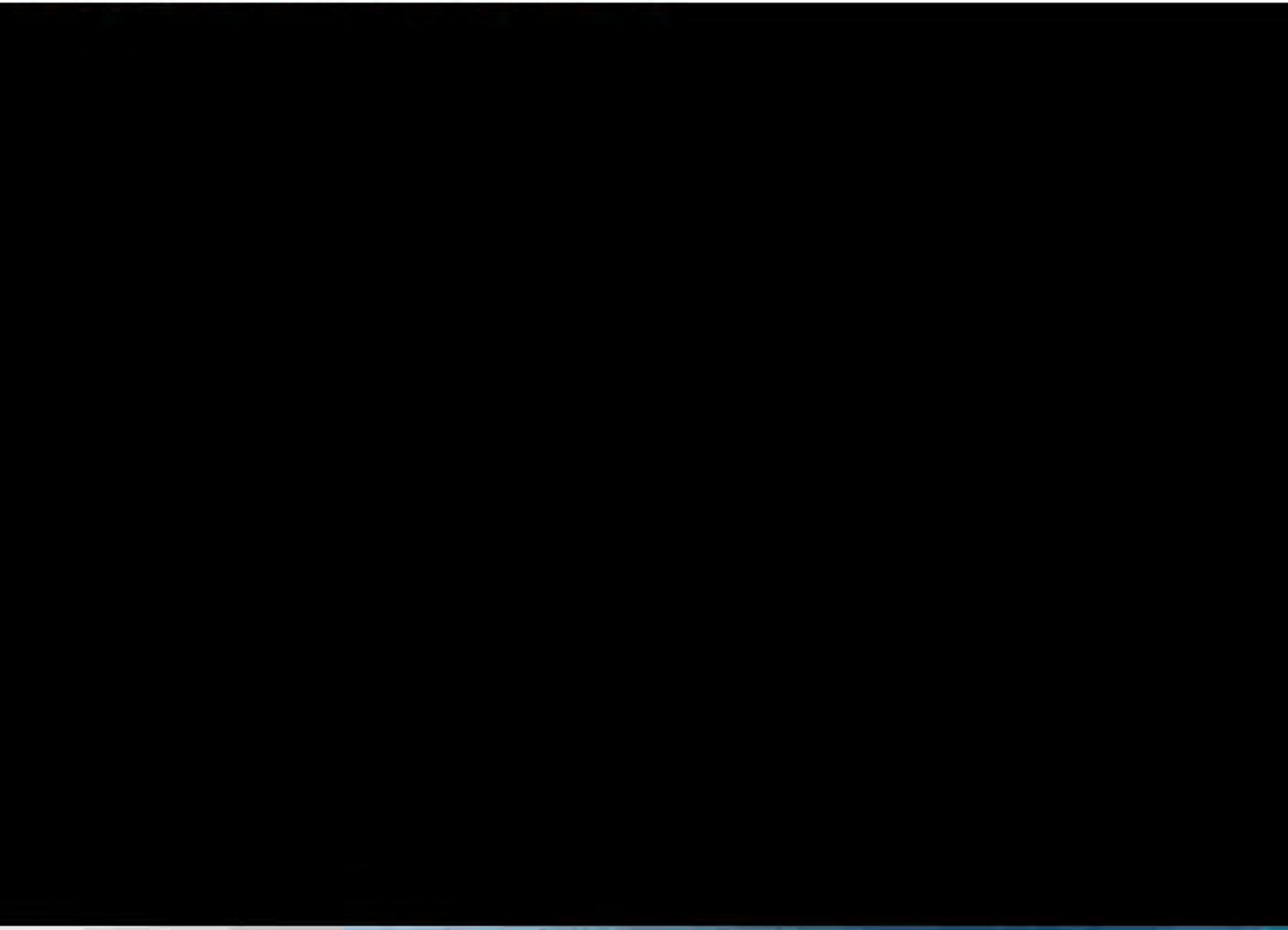

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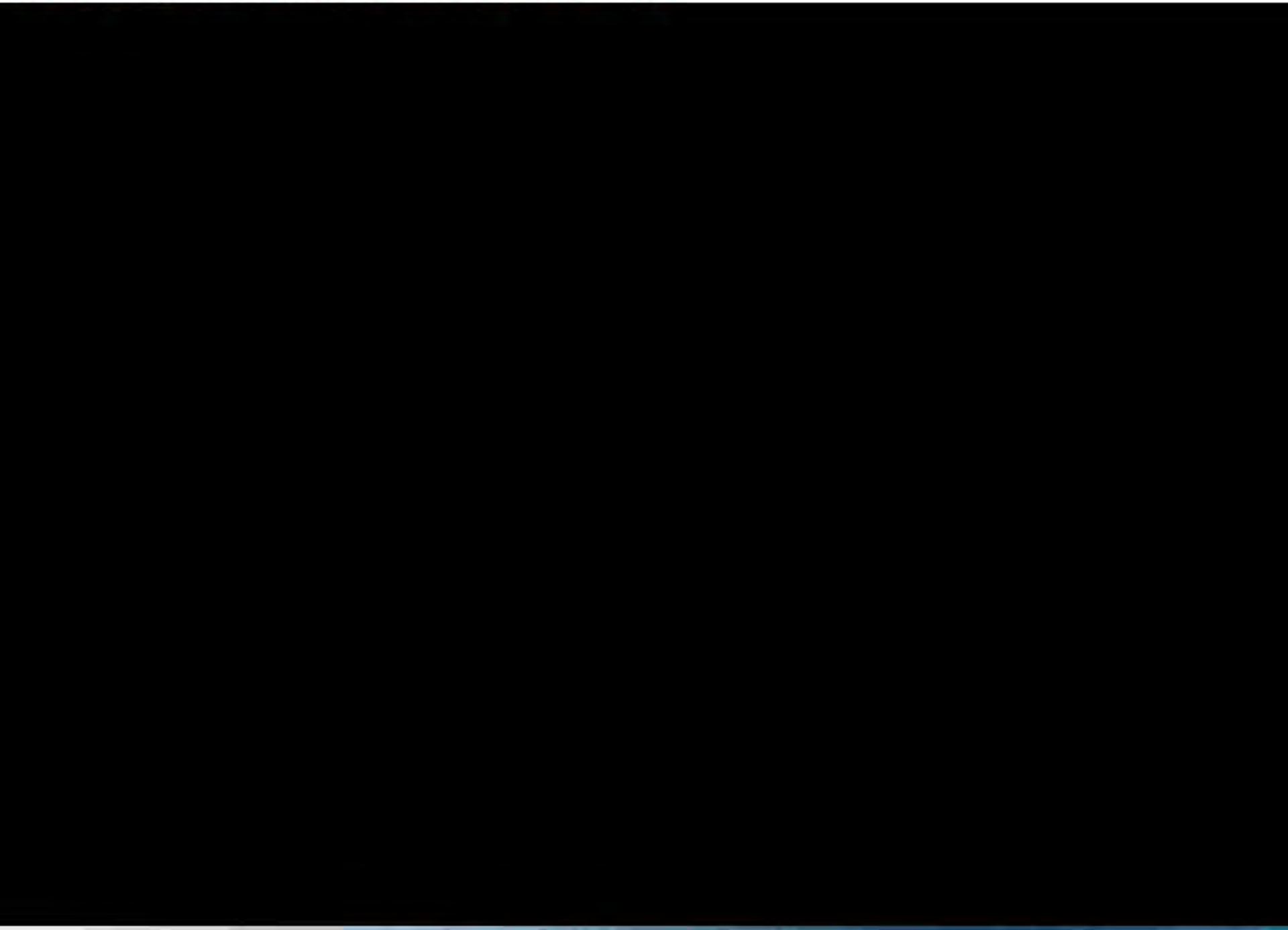

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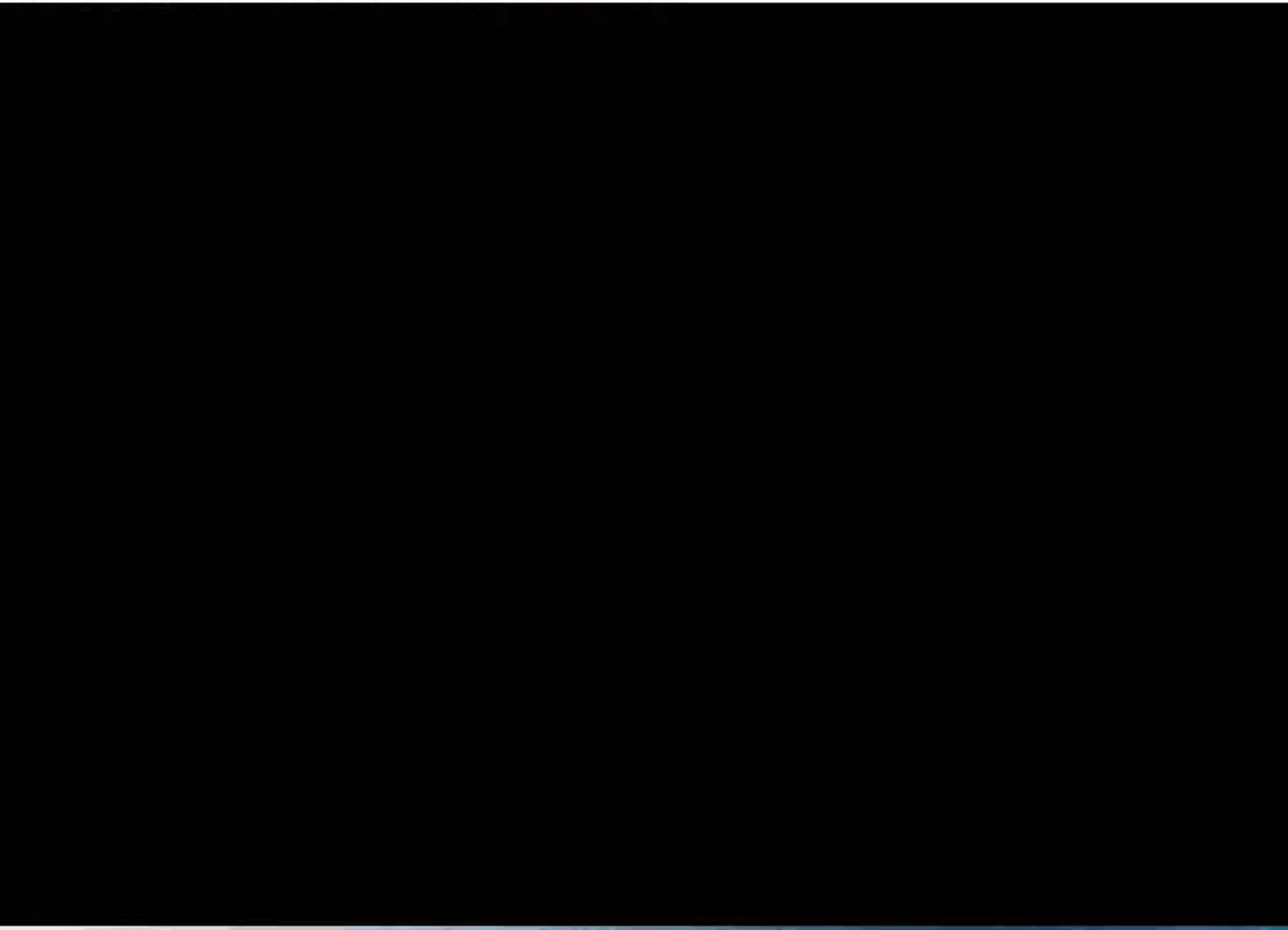

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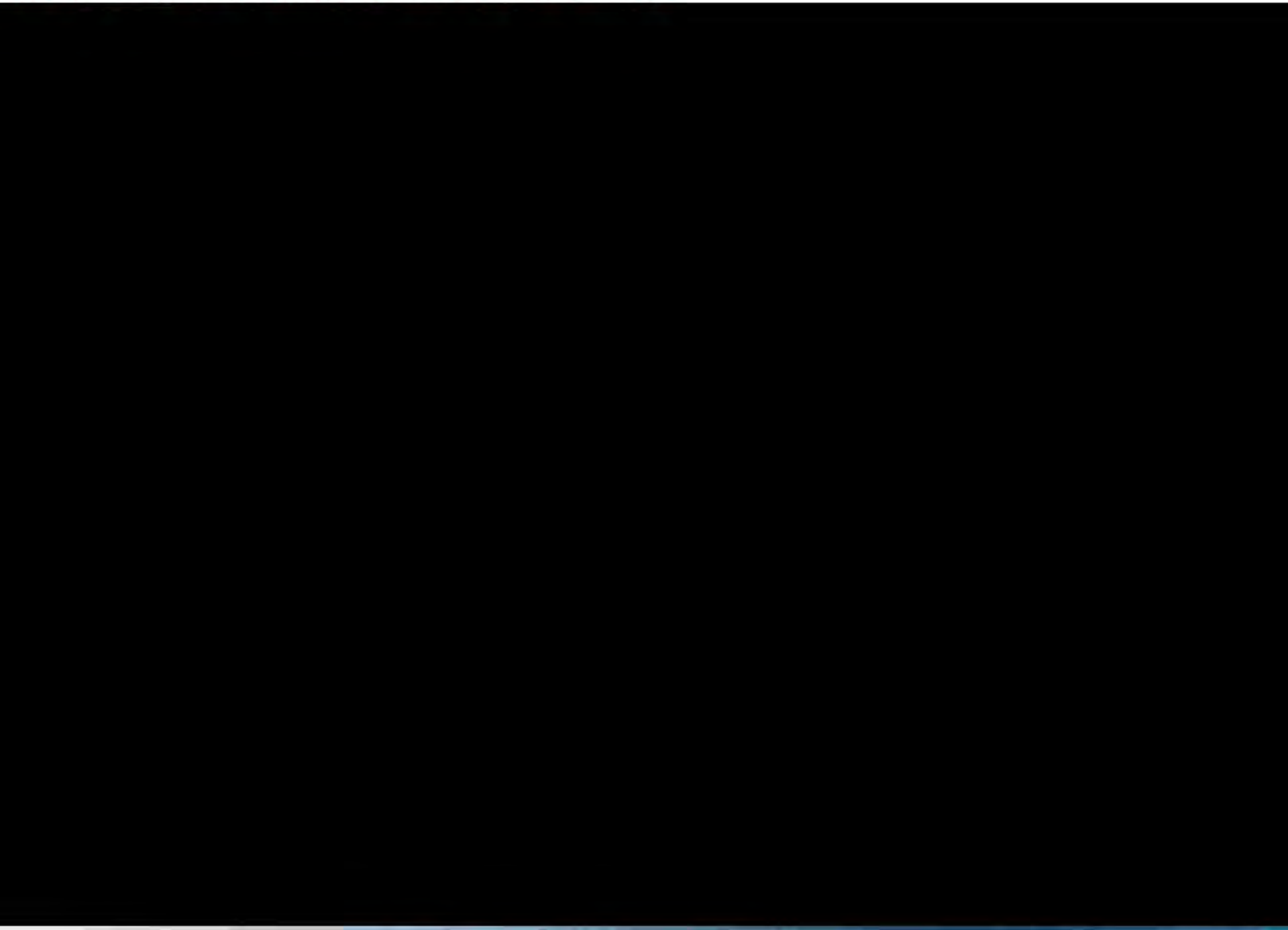

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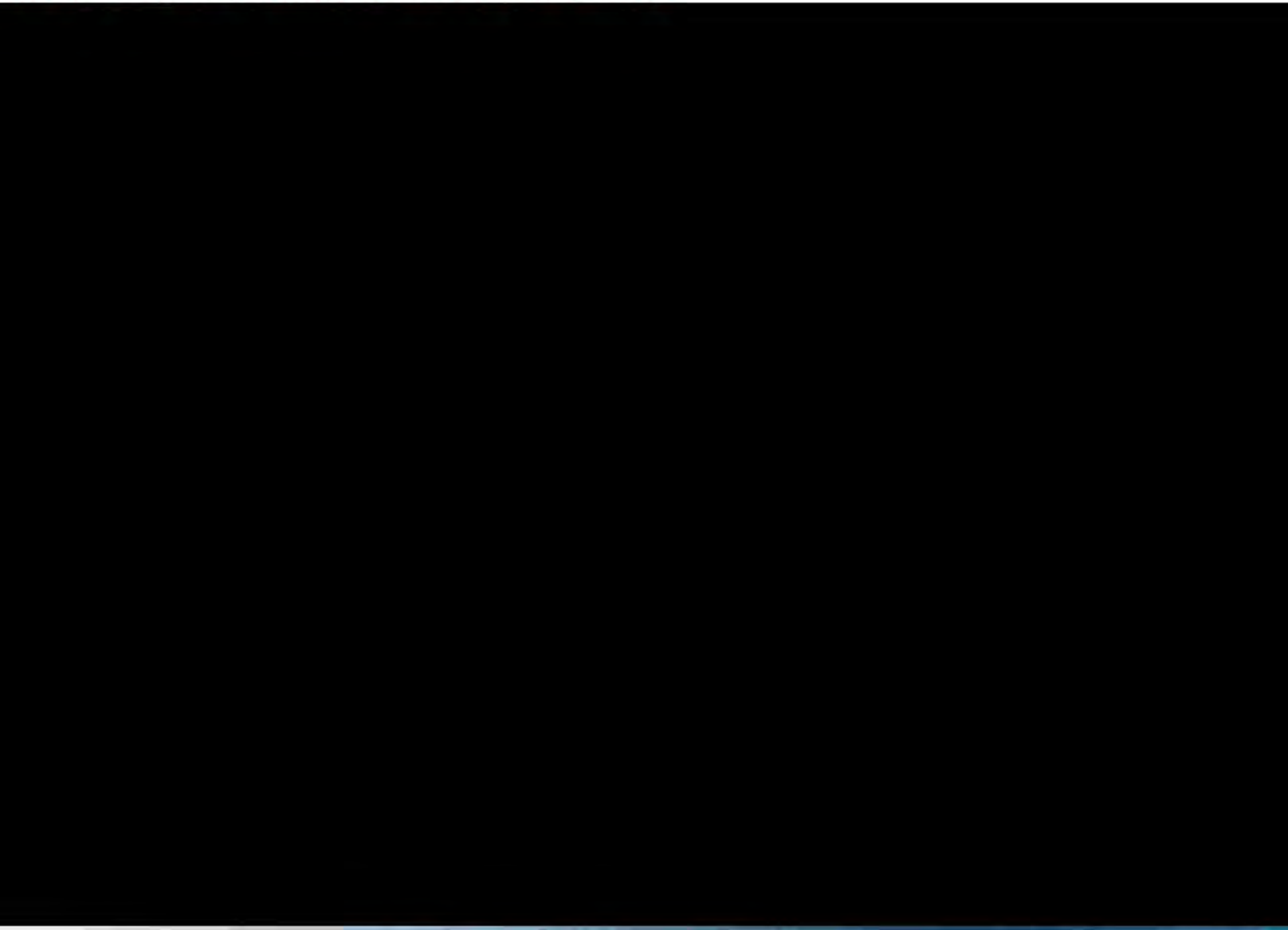

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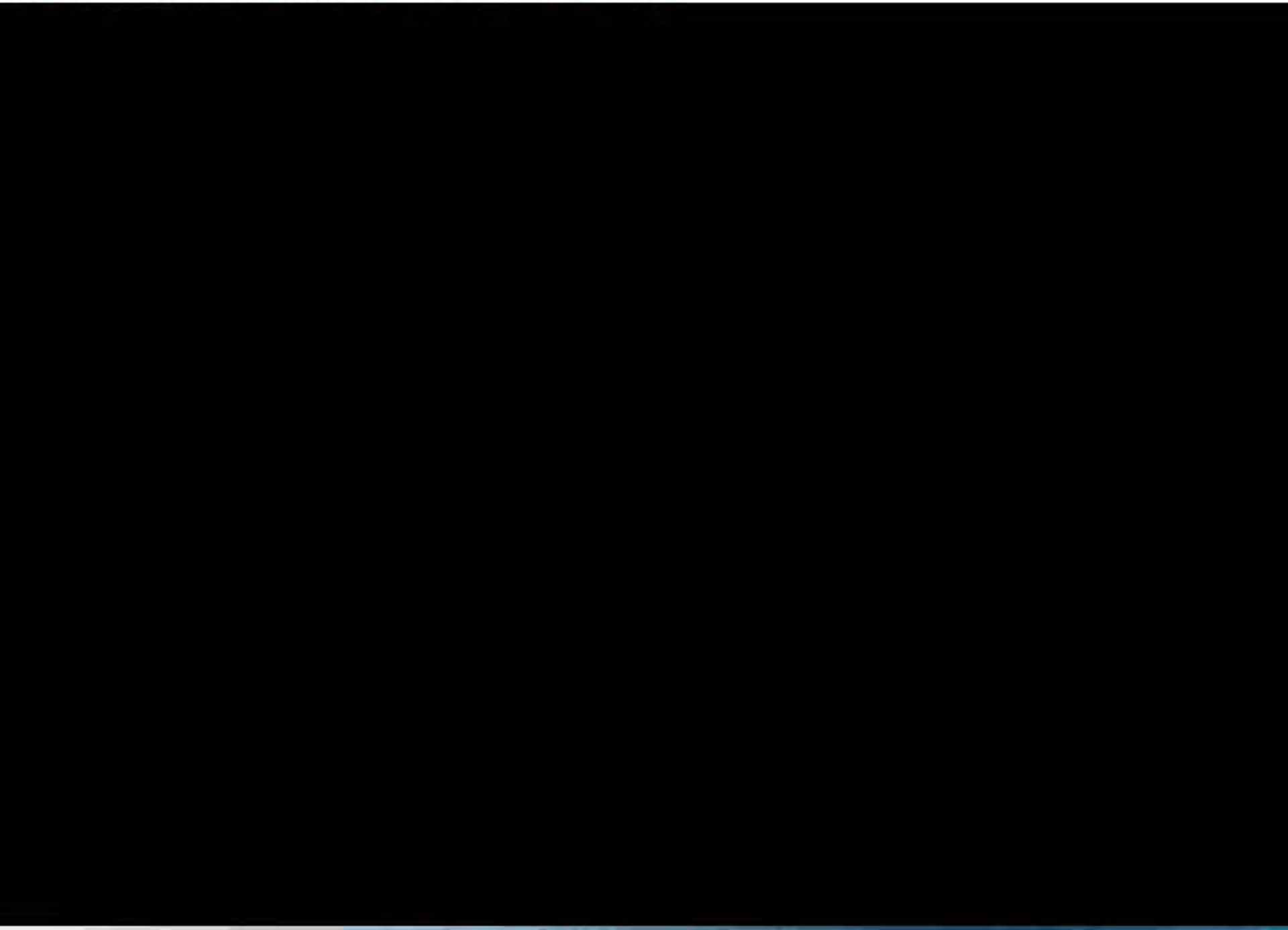

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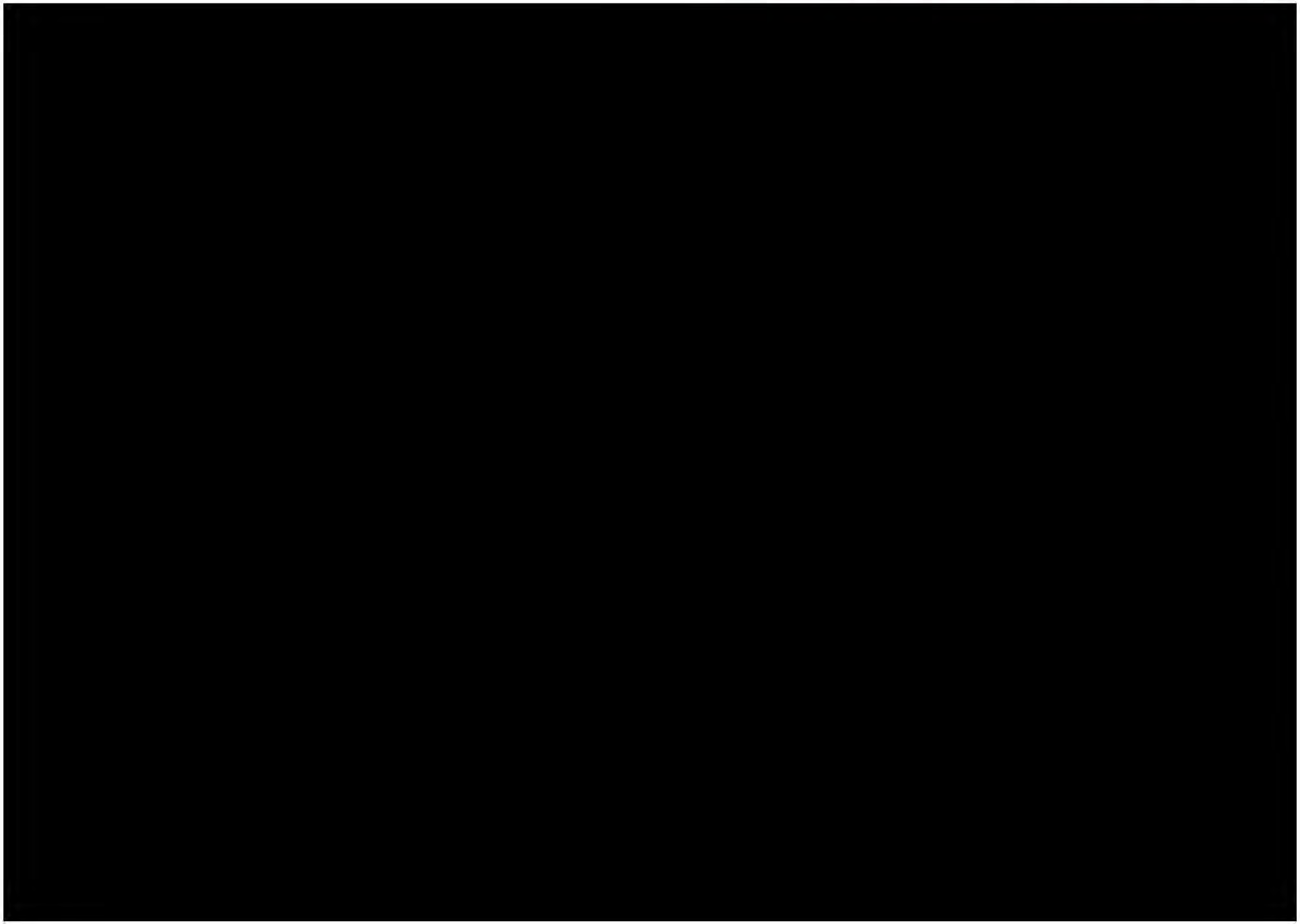

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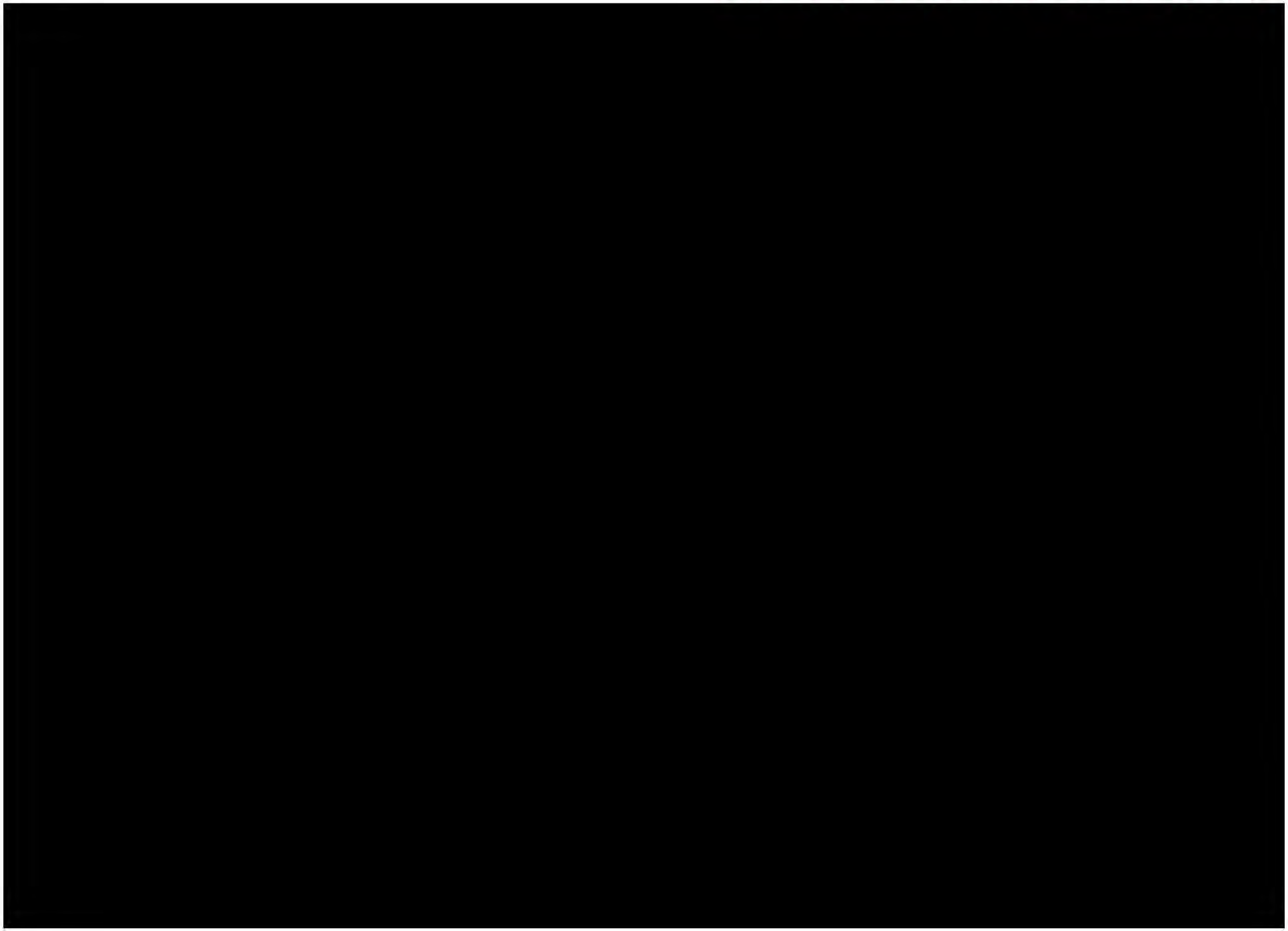

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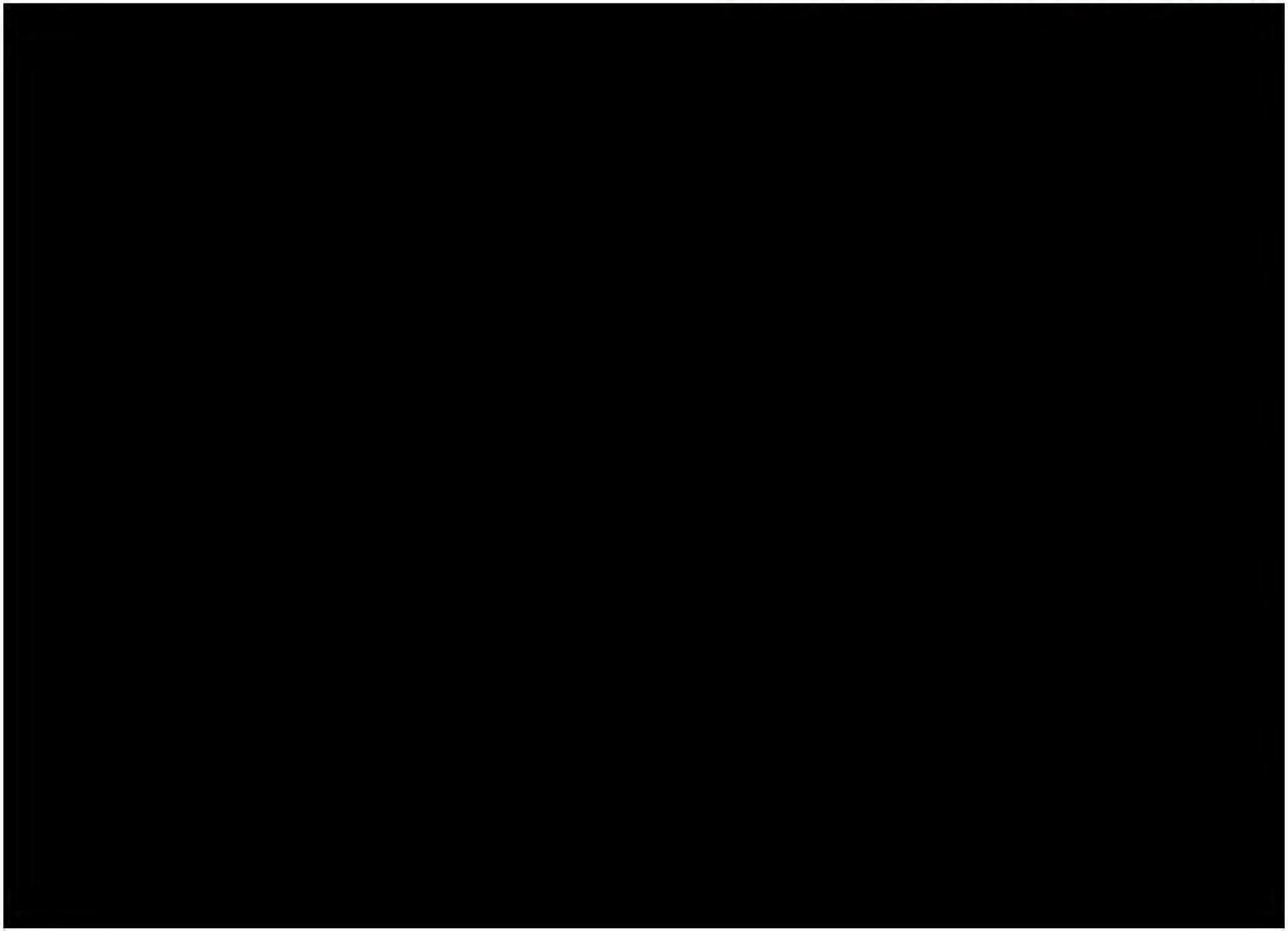

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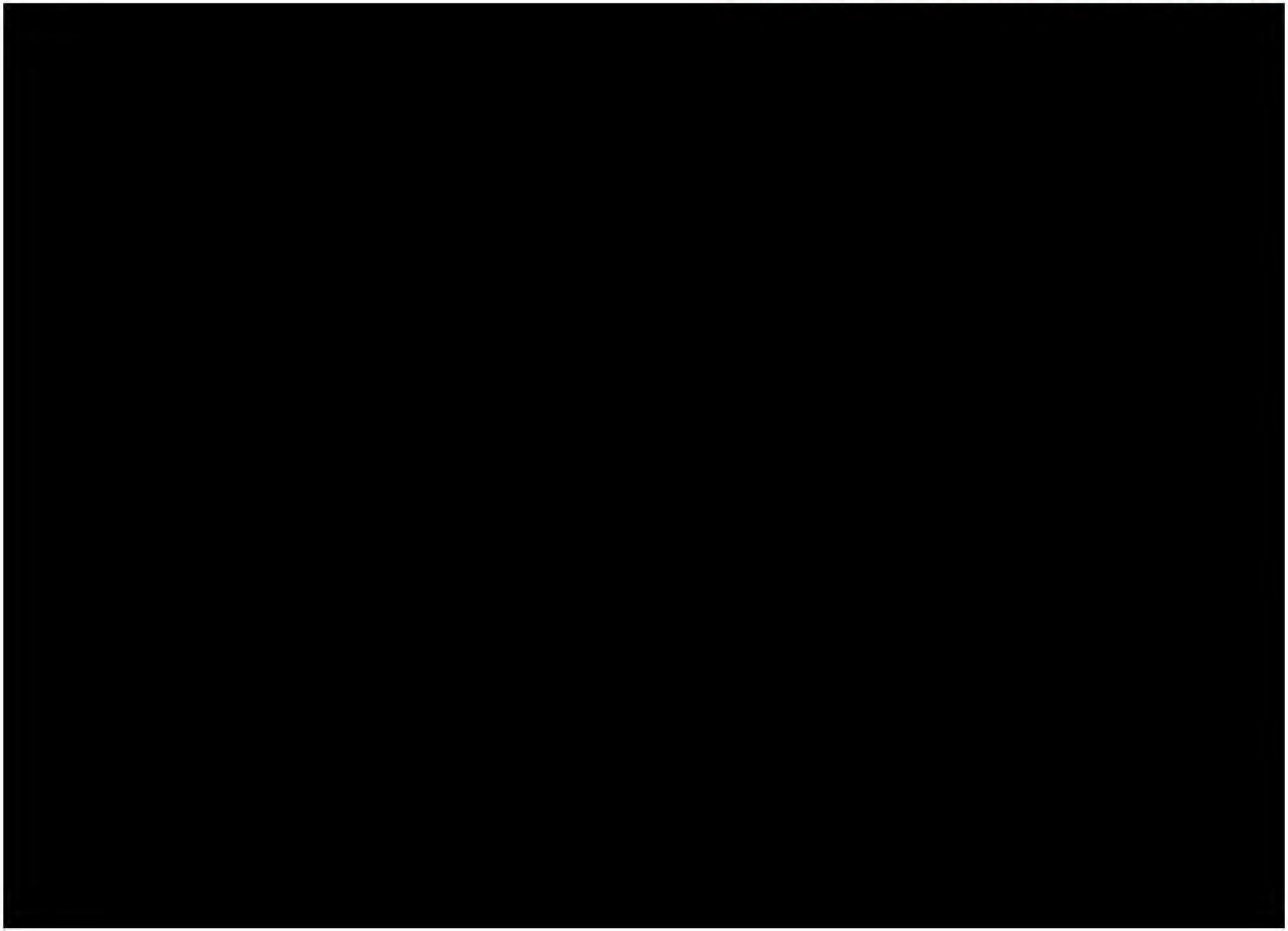

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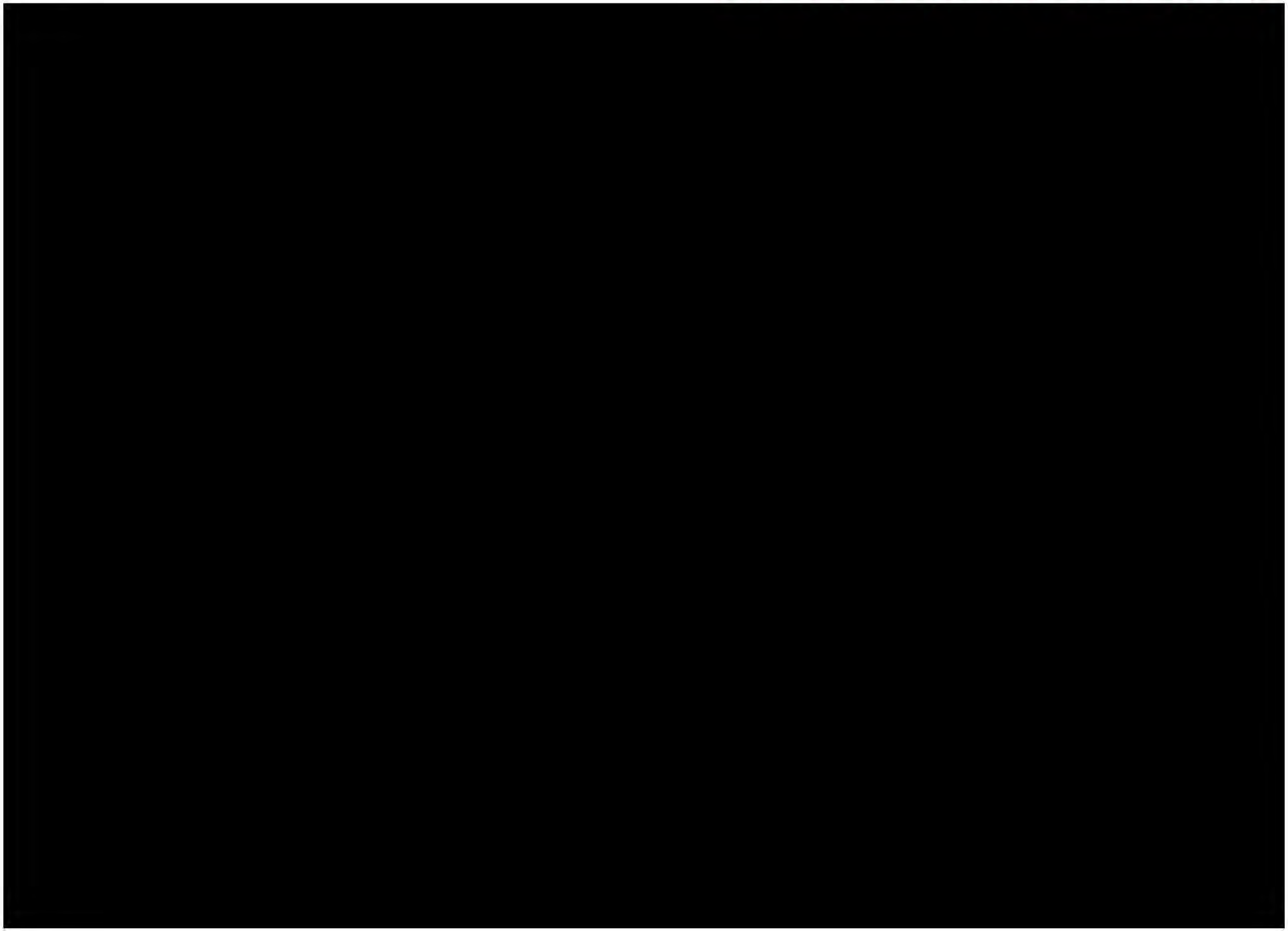

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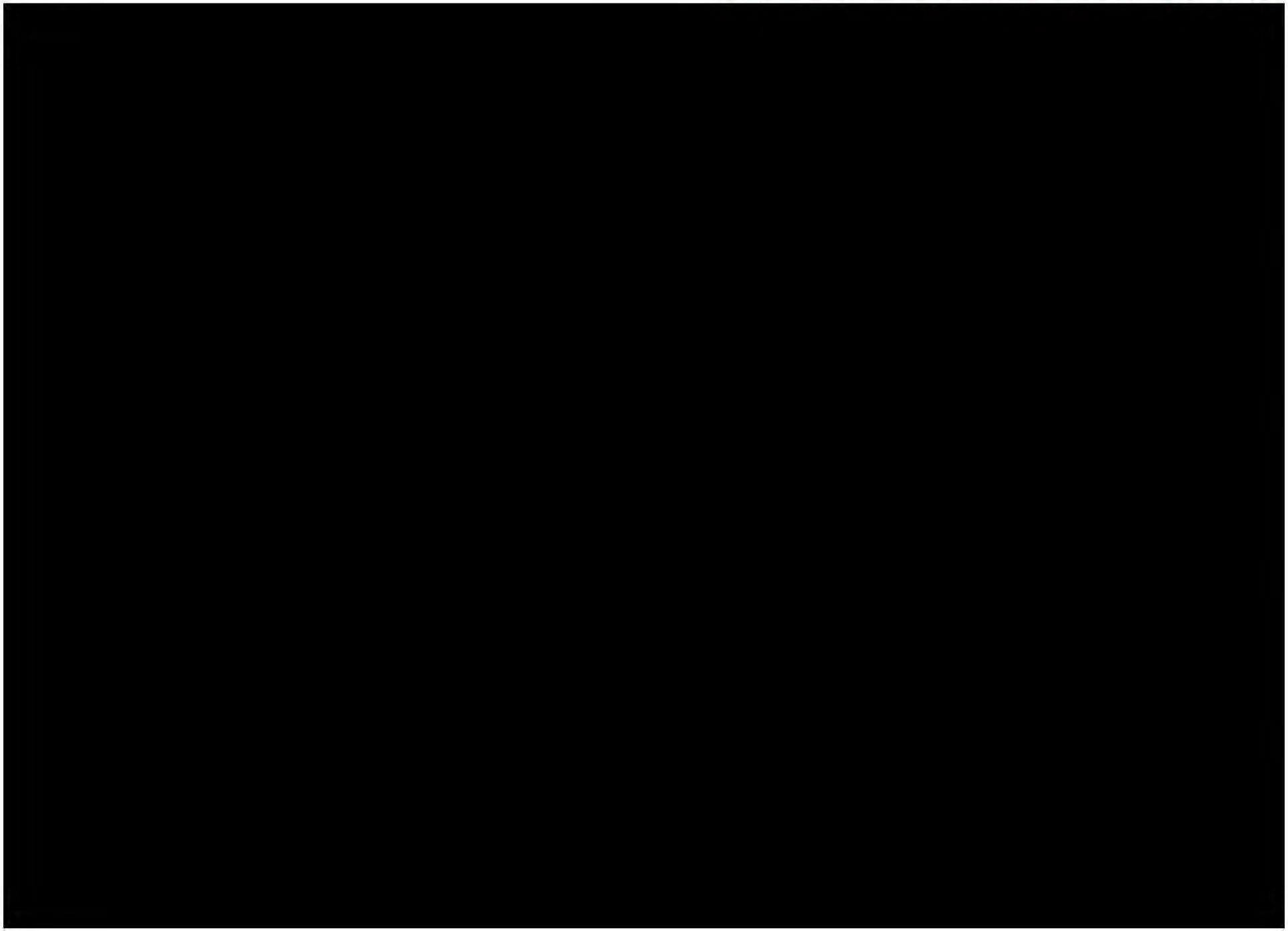

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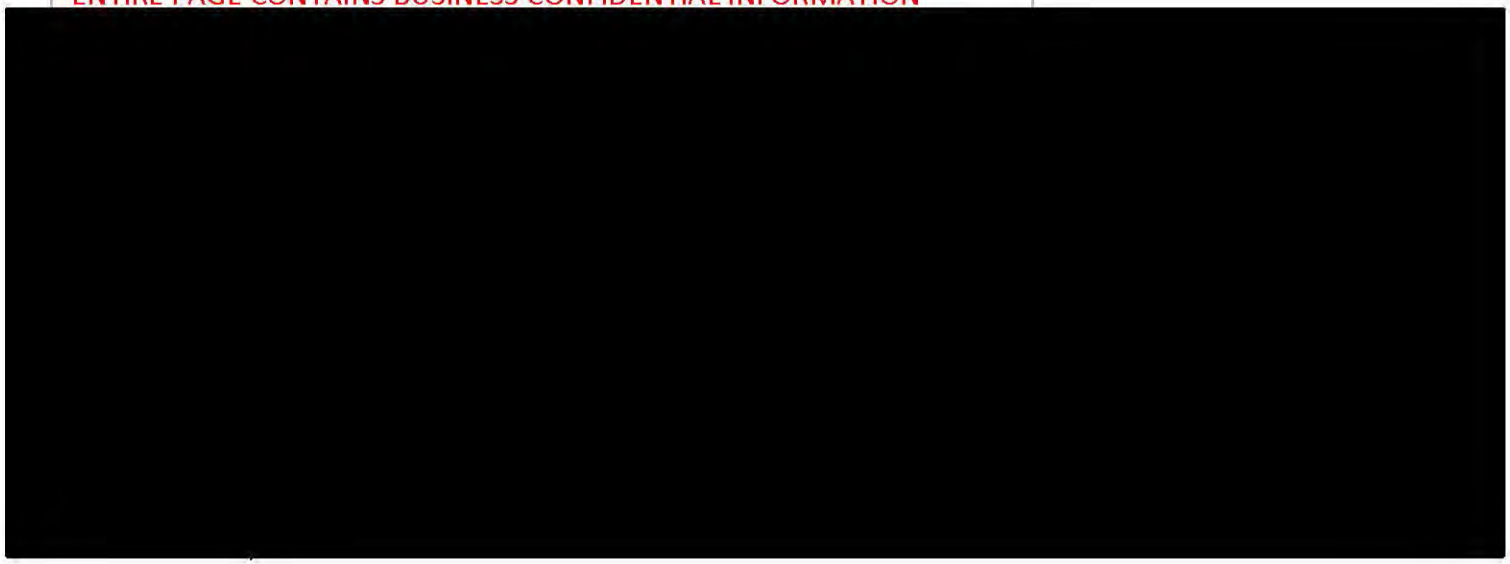

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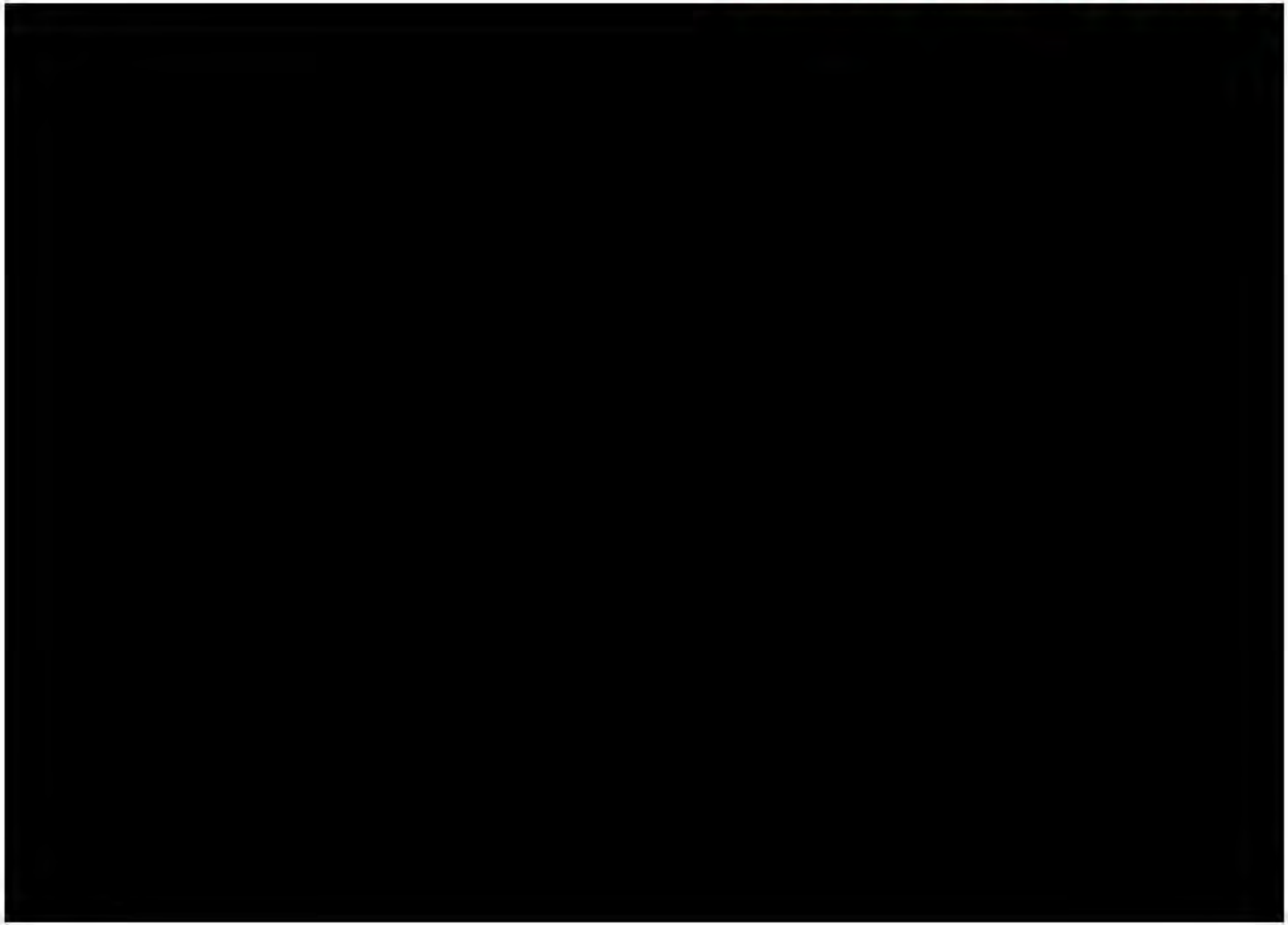

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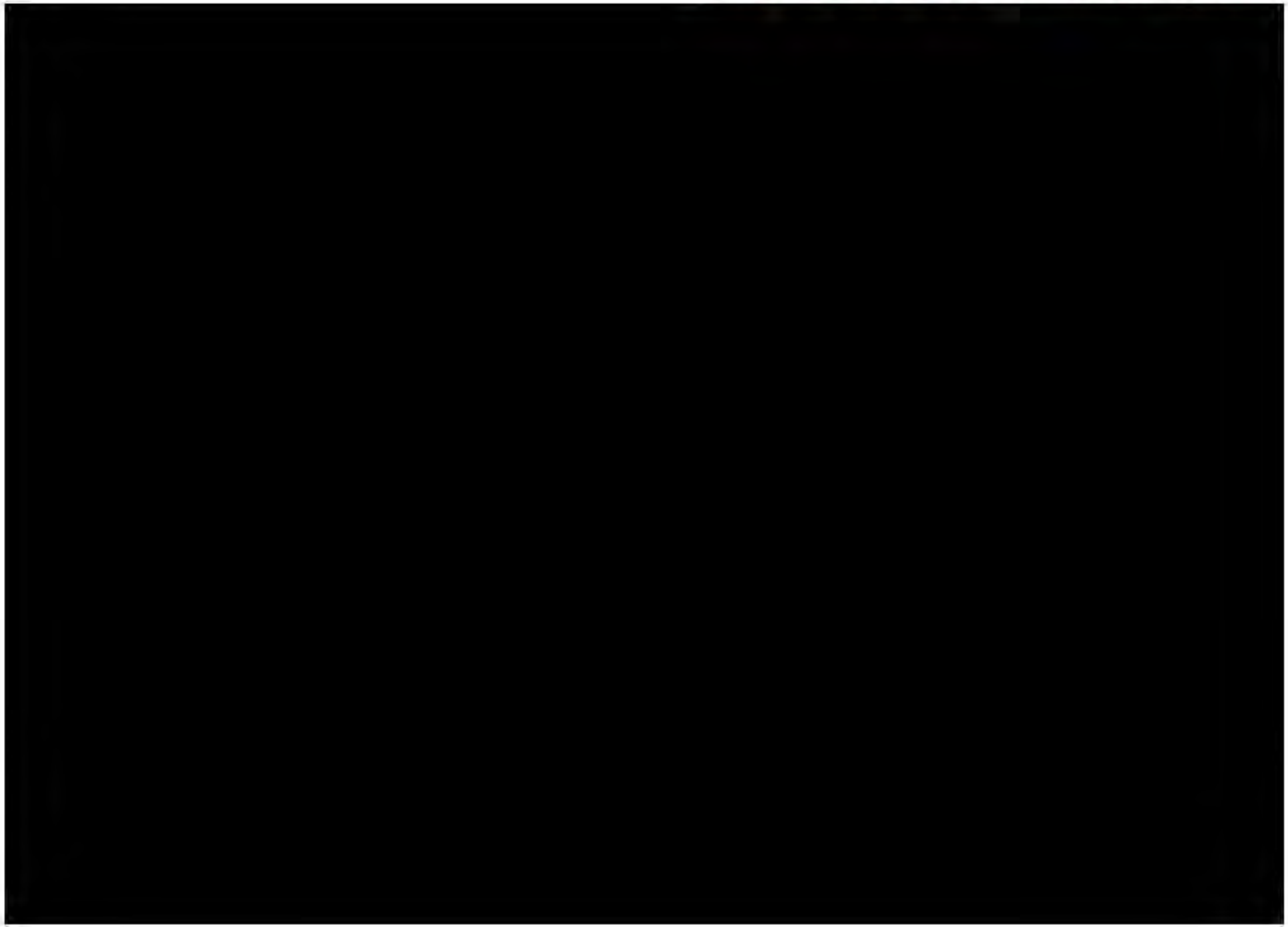

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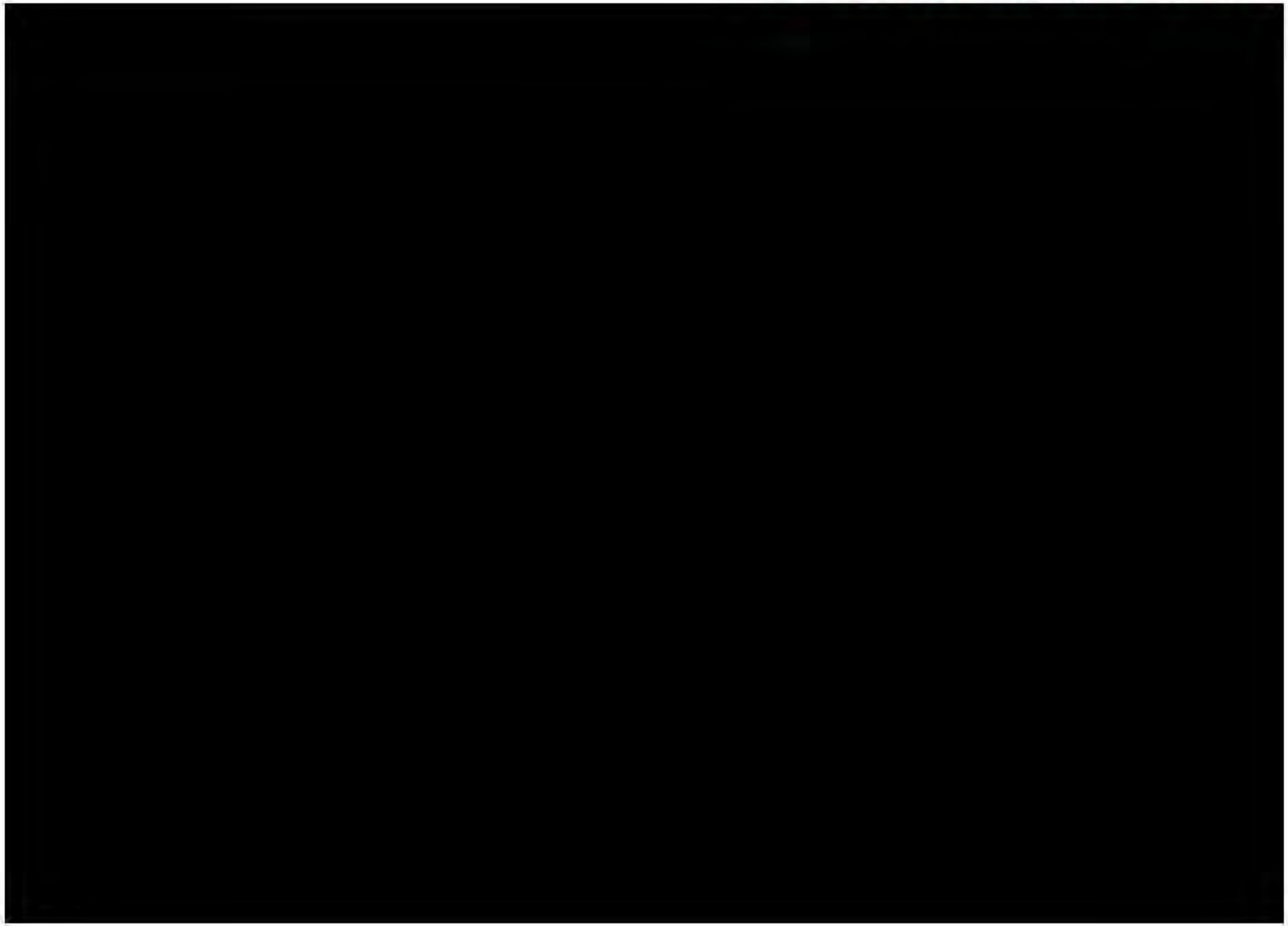

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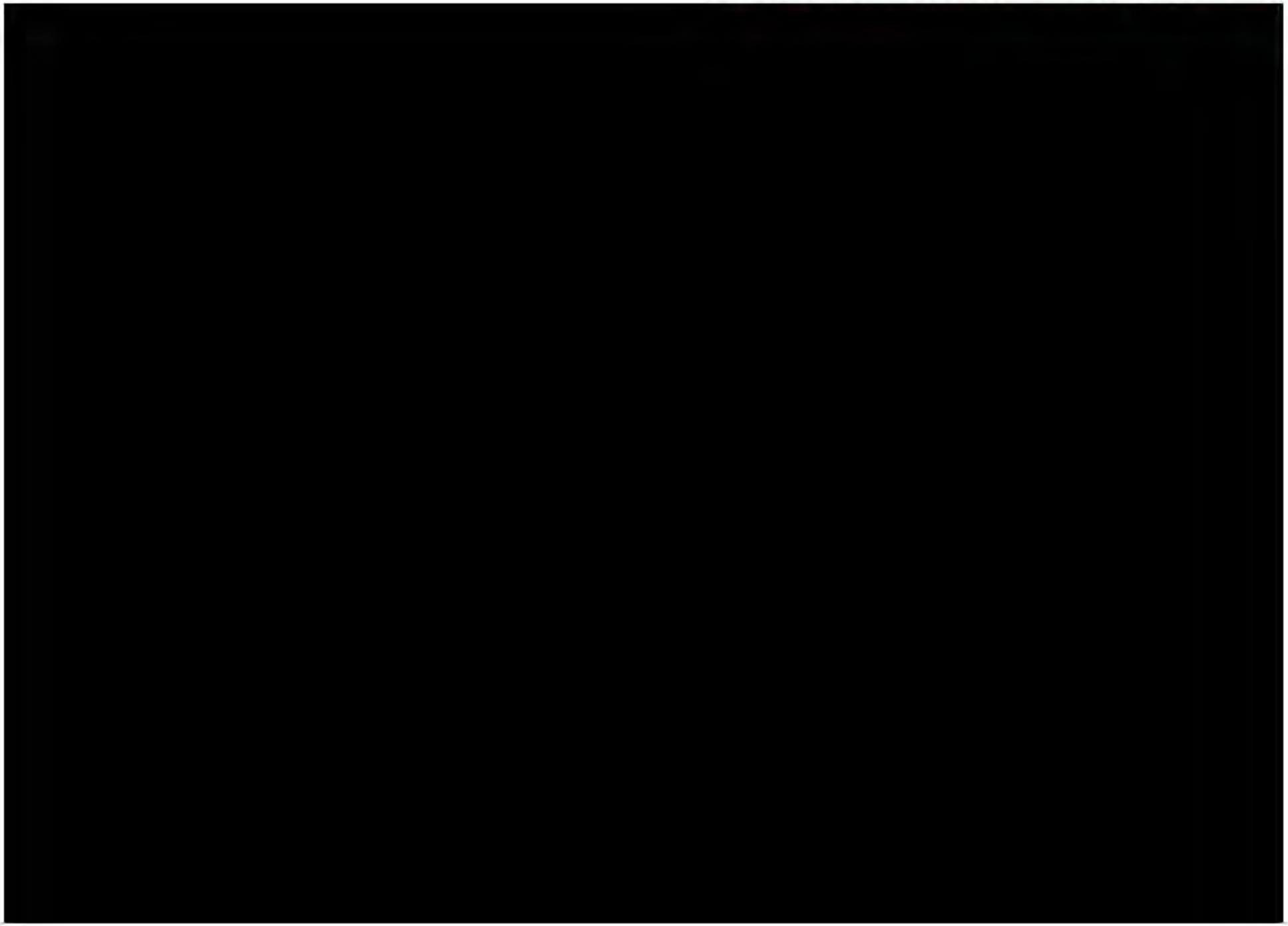

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