

INDIANA & MICHIGAN ELECTRIC COMPANY

P. O. BOX 18
BOWLING GREEN STATION
NEW YORK, N. Y. 10004

July 10, 1980
AEP:NRC:00418

Donald C. Cook Nuclear Plant Unit Nos. 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74

Mr. James G. Keppler, Regional Director
U.S. Nuclear Regulatory Commission
Office of the Inspection and Enforcement
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

REF.: NRC IE BULLETIN 80-11; MASONRY WALL DESIGN

Dear Mr. Keppler:

The attachment to this letter responds to the above referenced bulletin on Masonry Wall Design at the Donald C. Cook Nuclear Plant, Units 1 and 2. This is a partial response to Items 1, 2a, and 3 of the bulletin. The structural integrity evaluation of the masonry walls is underway and it is anticipated that the full evaluation as called for in the bulletin will be completed within the schedule outlined in the bulletin. After the final listing/evaluation is completed, a plant survey will be done to assure that all the masonry walls, whose failure may affect the performance of a safety-related system, are considered.

The responses in the attachment correspond to the items as cited in the bulletin.

Very truly yours,


G. P. Maloney
Vice President

GPM/emc
Attachment

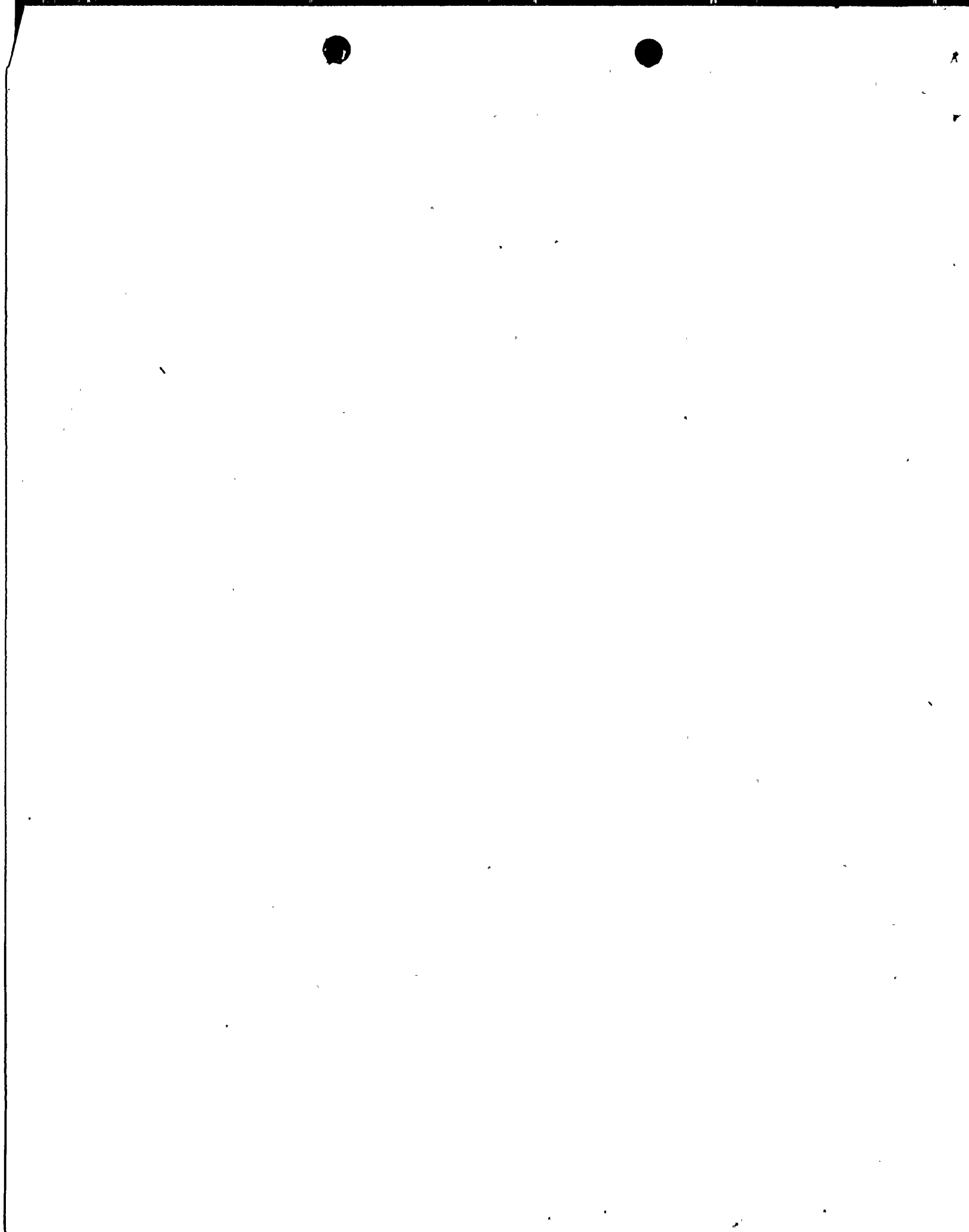
cc: R. C. Callen
G. Charnoff
John E. Dolan
R. S. Hunter
R. W. Jurgensen
D. V. Shallor - Bridgman

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ATTACHMENT TO
AEP:NRC:00418

ITEM 1

All masonry walls at the Donald C. Cook Nuclear Plant have been identified. At this time, we have identified one hundred and twenty-seven (127) of these walls as being in proximity to or as having attachments from safety-related piping or equipment. These walls were identified as per the criteria defined in Item 1 of the bulletin and are listed in Table 1. A preliminary review of these walls show that:

- There are no attachments from safety-related piping to any of the masonry block walls.
- There are no safety-related instruments attached to or supported from any of the masonry block walls.
- There are no electrical cable trays attached to or supported from the block walls.

However, a portion of the safety-related instrument tubing and switches or junction boxes for the safety-related conduits are attached to some of the masonry walls.

ITEM 2(a)

All of the block walls in proximity to safety-related piping or equipment and all of the block walls having attachment from safety-related items as stated above, will be re-analyzed considering the effects of seismic, missiles and jet forces from High Energy Lines.

Breaks in the High Energy Lines will be considered to occur at the most severe locations relative to the block walls. Breaks in the piping systems will be postulated in accordance with Appendix O of the FSAR.

The priority established for the re-evaluation of the walls is:

1. Analyze all block walls listed in Table 1 for seismic adequacy considering both OBE & DBE.
2. Analyze all block walls listed in Table 1 for response to possible jet forces from High Energy Lines if the direction of the jet would be to fail the wall or a segment of the wall in the direction of a safety-related item.

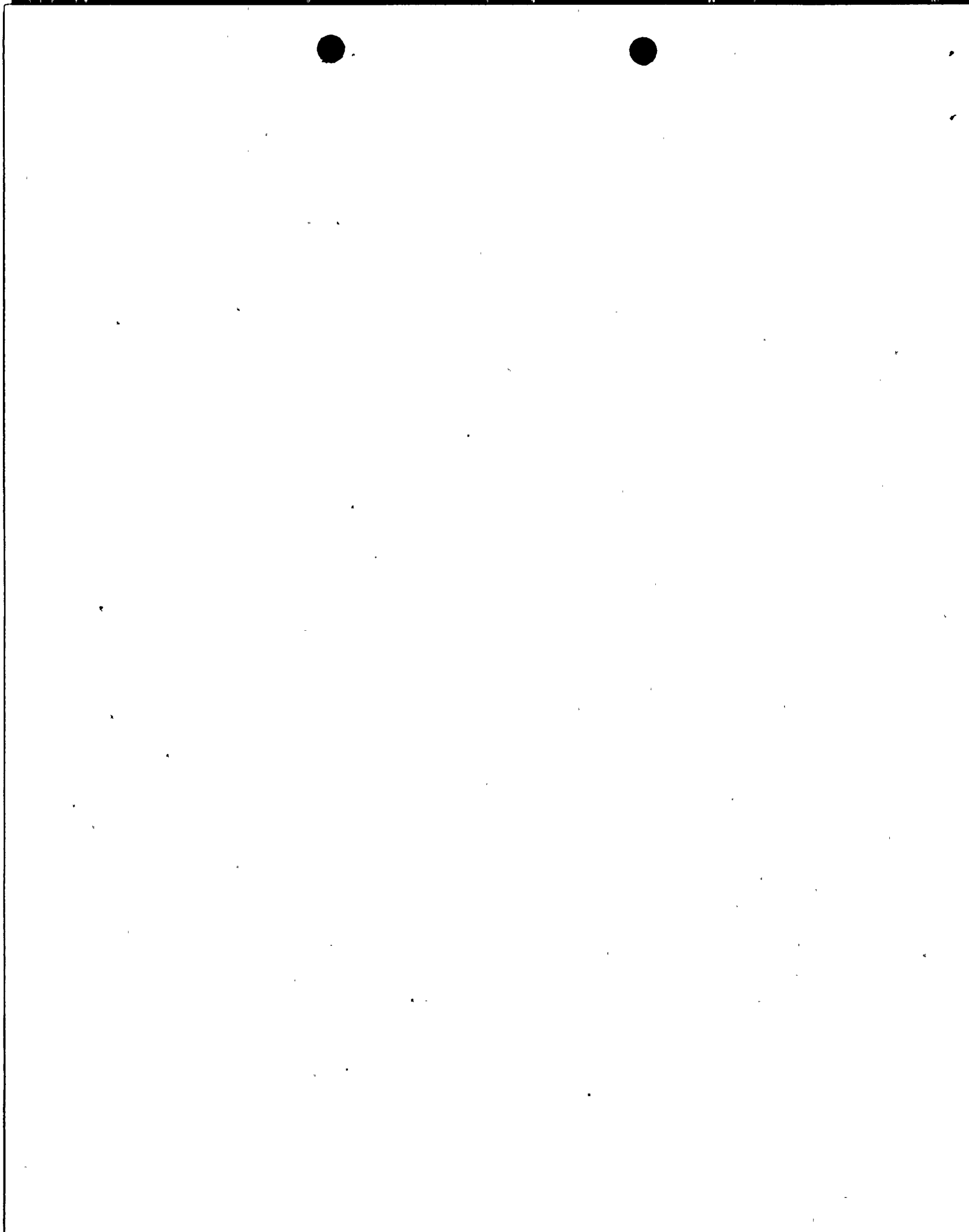
3. Analyze all block walls listed in Table 1 for ability to resist missile impact if the direction of the impacting force is such that it could cause failure of the wall or segment of the wall in the direction of a safety-related item.

ITEM 3

For the evaluation of the masonry block walls, the following preliminary criteria will be considered:

- a. Duro-wall* reinforcement placed in the horizontal joints is considered to resist moment and shear force for wall horizontal spans.
- b. Only the strength of mortar joints is considered to resist the loading for wall vertical spans.
- c. When walls have been constructed of multiple wythes:
 1. Where Duro-wall reinforcing has been used as a continuous bond between two wythes, then for horizontal spans the wall shall be considered to be two (2) wythes thick. For the vertical span the strength of the wall is considered to be a multiple of the strengths of single wythe walls.
 2. Where Duro-wall reinforcing has not been used, as in some of the knock-out panels, then for both horizontal and vertical directions of wall spans, the wall strength shall be considered to be that of a single wythe wall multiplied by the number of wythes composing the wall.
- d. Based on the criteria defined above, Items a, b, and c, the stresses in the wall will be determined for each loading condition as discussed in the bulletin. The evaluation will be based on low allowable stress value, such that this will result in a maximum number of possible problems under the most conservative criteria.

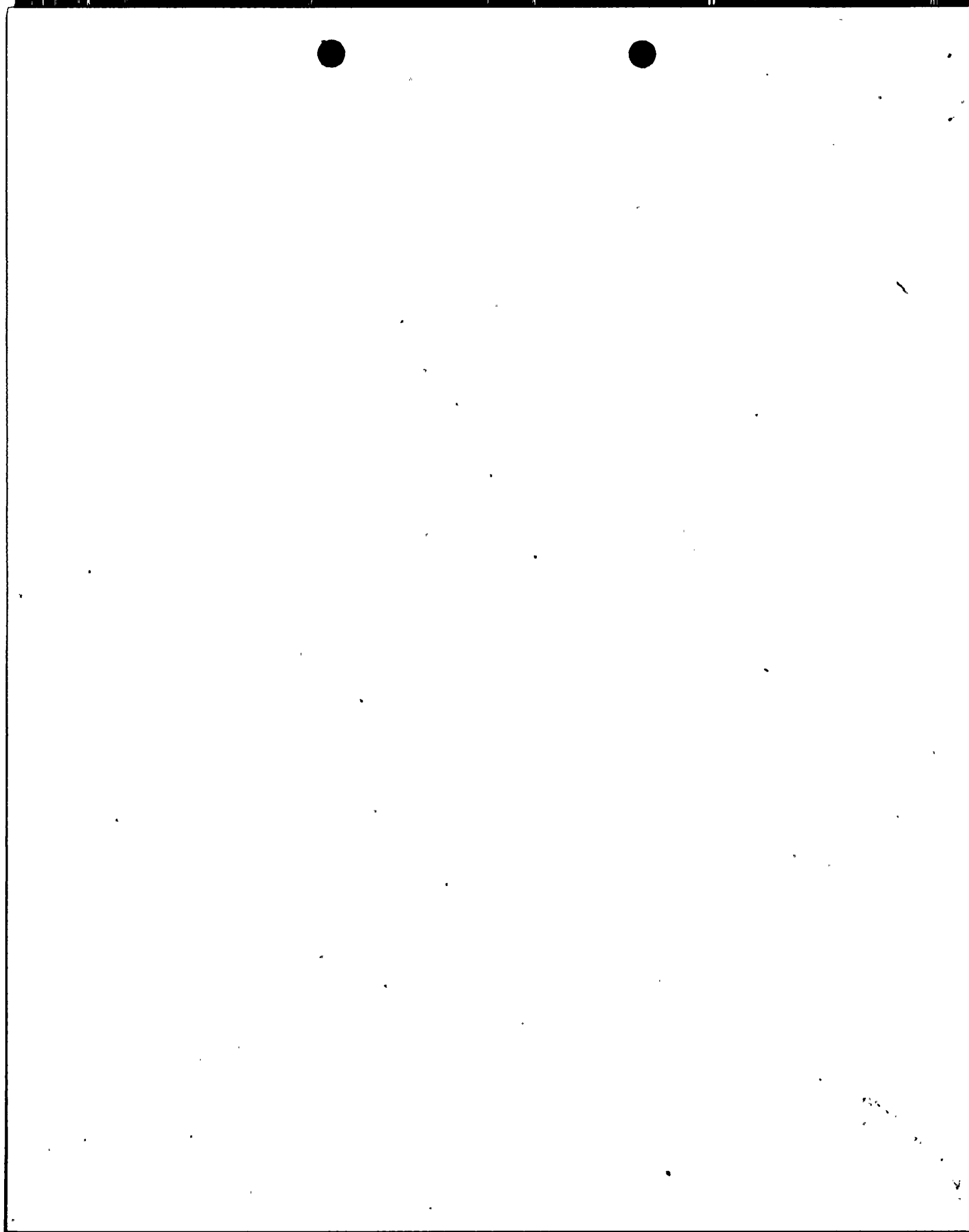
* Trade Name



ATTACHMENT TO

AEP:NRC:00418

TABLE 1



ENGINEERING DE
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2 BROADWAY
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PLANT

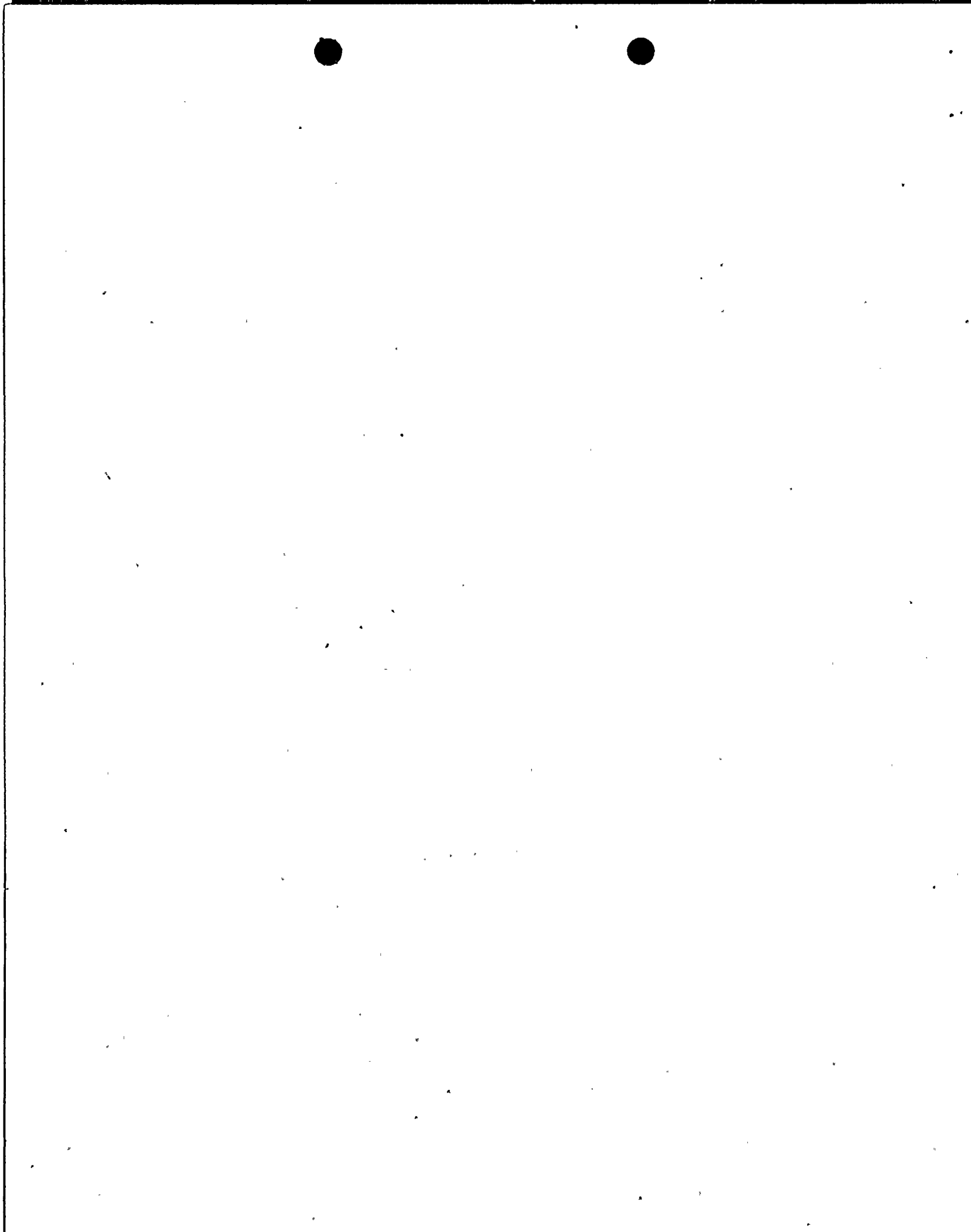
SUBJECT *Massapequa Block Mill - Rm 12-4025 - 28 WALLS*

WALL LOCATION		TYPE	ELECTRIC			MECH.				
DWG	AREA	TOP	DWG	CONDUIT	EQUIP	DWG	PIPING	EQUIP.	SYSTEM	DUCT WR
12-4025 West End EL. 573.0	E-3	HB	1-1403 J-1,2		IMO	1-5415	✓	Contain't Sp. Pmp	CTS SI	
	(W-1)	(581'-8)								
	E-4E	HB	1-1403 J-3,4,5		IMO	1-5415	✓		CTS SI	
	(W-2)	(581'-8)								
	E-4W	HB	1-1403 J-6		IMO	1-5415	✓	Residual ht Rmvl Pmp	CTS SI RH	
	(W-3)	(581'-8)								
	E-5	HB	1-1403 J-7		IMO	1-5415	✓		CTS SI RH	
	(W-4)	(581'-8)								
	F-3	HB				1-5415		CONTAIN'T. SP. PUMP		
	(W-5)	(584'-2)								
	F-4	HB				1-5415				
	(W-6)	(584'-2)								
	F-5E	HB				1-5415		RESIDUAL HT. RMYL. PMP.		
	(W-7)	(584'-2)								
	F-5W	HB				1-5415				

SUBJECT

DWG 12-4025

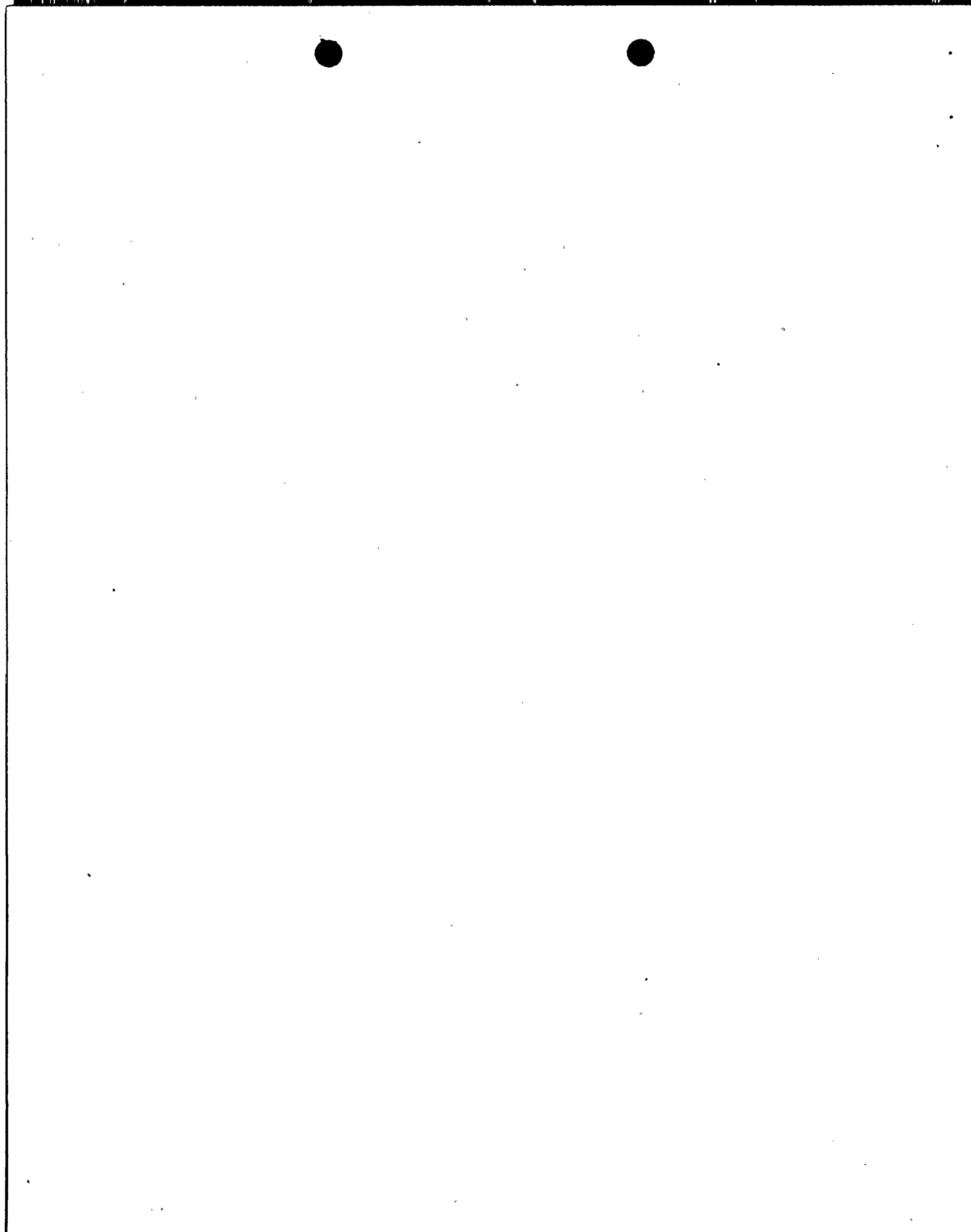
WALL LOCATION		TYPE FOUR ELEV	ELECTRICAL			MECHANICAL			
DWG	AREA		DWG	CONDUIT	EQUIP	DWG	PIPING	EQUIP	SYSTEM DUCTWK
12-4025	FS-2	HBF 12-3489				1-5415		CONTAIN'T SP. PUMP	
	(W-9)	(5841-2)							
	FS-4	HBF 12-3489	1-1403 N-5	✓		1-5415			
	(W-10)	(5841-2)							
	FS-5E	HBF 12-3489	1-1403 N-6	✓		1-5415		RESIDUAL HT. RMVL. PMP.	
	(W-11)	(5841-2)							
	FS-5W	HBF 12-3489	1-1403 N-7	✓		1-5415			
	(W-12)	(5841-2)							
	G-3	HBF 12-3489				1-5415		CONTAIN'T SP. PUMP	
	(W-13)	(5841-2)							
	G-4	HBF 12-3489	2-1403 E-5	✓		1-5415			
	(W-14)	(5841-2)							
	G-5E	HBF 12-3489	2-1403 E-6	✓		1-5415		RESIDUAL HT. RMVL PUMP	
	(W-15)	(5841-2)							
	G-5W	HBF 12-3489	2-1403 E-7	✓		1-5415			
	(W-16)	(5841-2)							



SUBJECT

12-4025

WALL LOCATION		TYPE (TOPELEV)	ELECTRICAL			MECHANICAL			
DWG	HEA		DWG	CONDUM	EQUIP	DWG	PIPING	EQUIP	SYSTEM
12-4025	GS-3	HB							
	(W-17)	(584-2)							
	GS-4	HA							
	(W-18)	(584-2)							
	GS-5	HB							
	(W-19)	(584-2)							
	GS-6	H/E							
	(W-20)	(584-2)							
	H-3	H/B	1-1403 H-1,2		IMO	2-5415	✓	Cont'd SP Pmp	CTS SI
	(W-21)	(581-8)							
	H-4	H/B	1-1403 H-3,4,5		IMO	2-5415	✓		CTS SI
	(W-22)	(581-8)							
	H-4W	H/B	1-1403 H-6		IMO	2-5415	✓	Residual ht Rmvl Pmp	CTS SI RH
	(W-23)	(581-8)							
	H-5	H/B	1-1403 H-7		IMO	2-5415	✓		CTS SI RH



SUBJECT

12-402-5

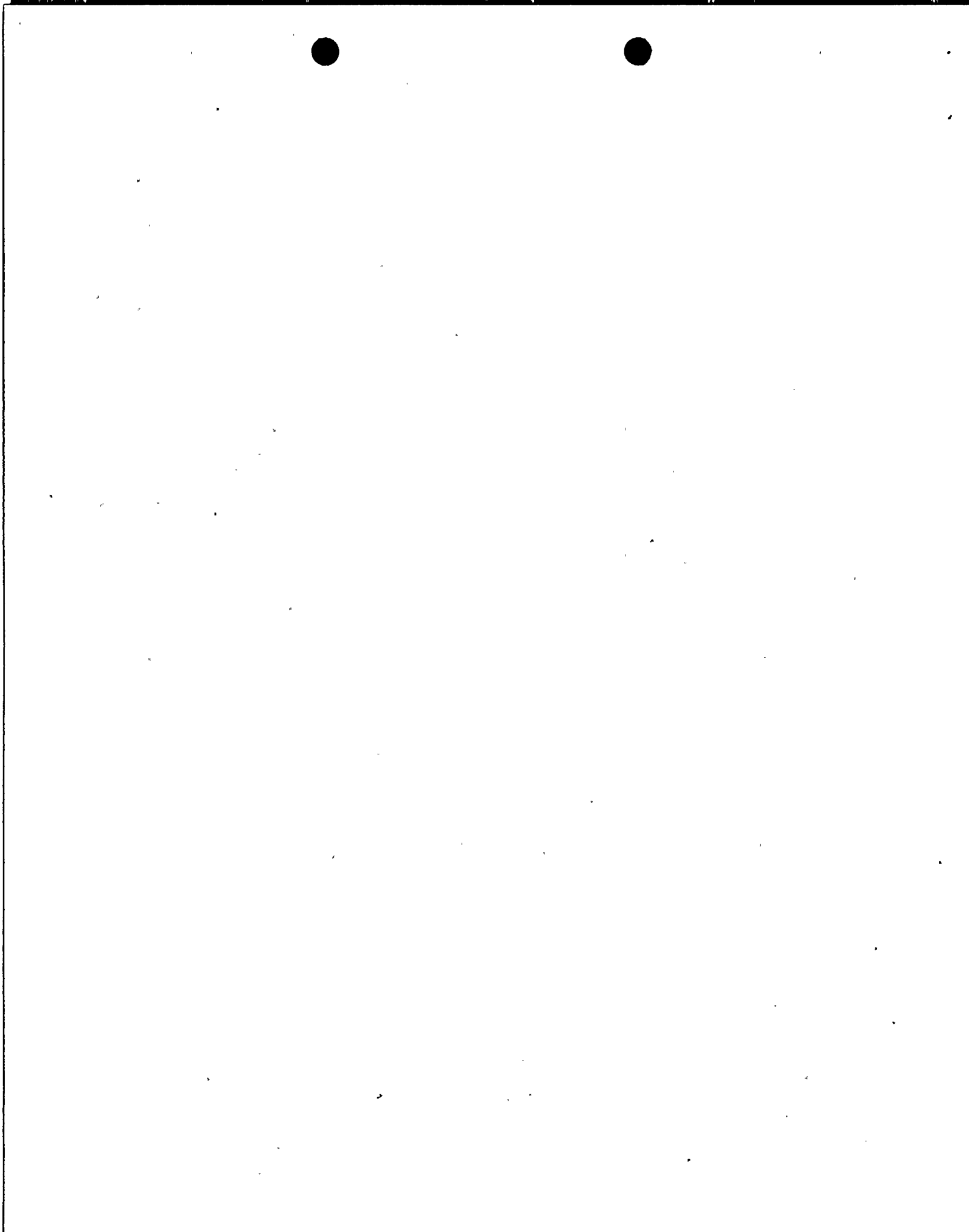
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SUBJECT DWG 12-6026 - 22 Block Walls

WALL LOCATION		TYPE (TOP FL)	ELECTRICAL			MECHANICAL				
DWG	REF		DWG	CONDUCT	EQUIP	DWG	PIPING	EQUIP	SYSTEM	DWG
12-4026	F-1E	H/BFG 12-3489				12-5482	✓	RECIP. Charg. Pmp.	CCW	
WEST END EL: 587'0	(W-1)	(599'0)								
	F-4W	H/BFG 12-3489				12-5484	✓	Centrif. Charg. Pmp.	CCW	
	(W-2)	(599'0)								
	F-5	H/BFG 12-3489				12-5485A	✓	"	CCW	
	(W-3)	(599'0)								
	G-4E	H/BFG 12-3489				12-5486	✓	Recip. Charg. Pmp.	CCW	
	(W-4)	(599'0)								
	G-4W	H/BFG 12-3489				12-5488B	✓	Centrif. Charg. Pmp.	CCW	
	(W-5)	(599'0)								
	G-5	H/BFG 12-3489				12-5489E	✓	"	CCW	
	(W-6)	(599'0)								
	F-2	H/B				12-5482C 12-5466	✓	REFUEL WATER FILTER	CCW SF	
	(W-7)	(593'0)								
	EA-7	H/BFG 12-3489				1-5415 12-5510	✓	SAFETY INJECTION	SI C	



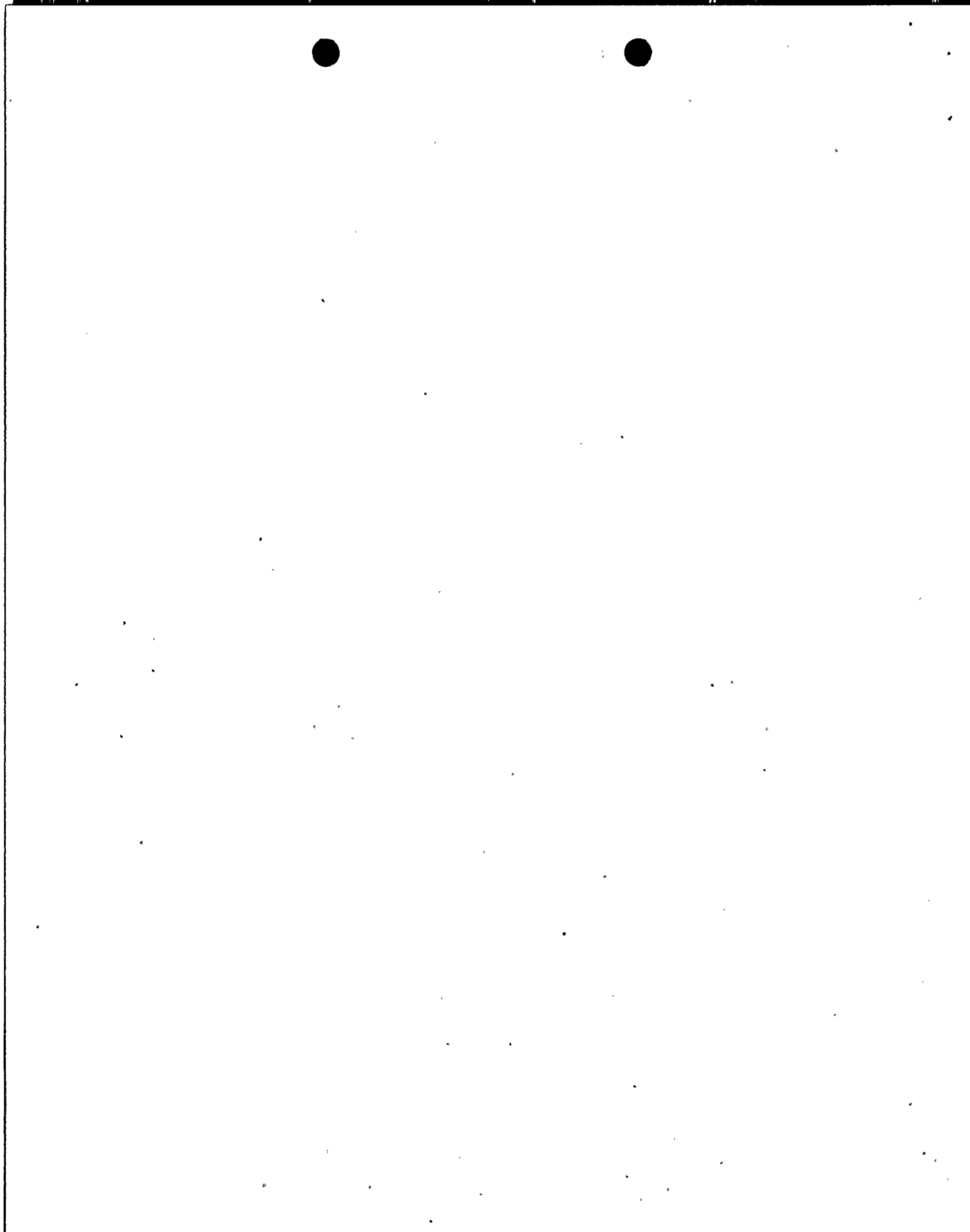
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SUBJECT

12-4026

WELL LOCATION		ELECTRICAL			MECHANICAL			
DWG	TYPE (TOP BLEV)	DWG	CONDUIT	EQUIP	DWG	PIPING	EQUIP	SYSTEM
12-4026	H-BFG 12-3489				1-5415 12-5510	✓	SAFETY INJECT. Pmp	SI C
(W-9)	(599'0)							
H-7	H-BFG 12-3489				2-5415	✓	"	SI
(W-10)	(599'0)							
J-7	H-BFG 12-3489				2-5415	✓	"	SI
(W-11)	(599'0)							
B-9	H-B	1-1420	✓		12-5461	✓	VALVE GALLERY	CS
(W-12)	(596'0)							
B-8	H-B	1-1420	✓		12-5570	✓	BORIC ACID EVAP.	—
(W-13)	(595'0)							
C-8	H-B				12-5488A 12-5461 12-5510	✓	BORIC ACID EVAP.	CCW AUX C
(W-14)	(601'0)							
C-9	H-B				12-5461 "	✓	"	AUX GS
(W-15)	(601'0 to 607')							
E-8	H-B				12-547A 12-5488A	✓	GAS DECAT	CCW C



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12-4026

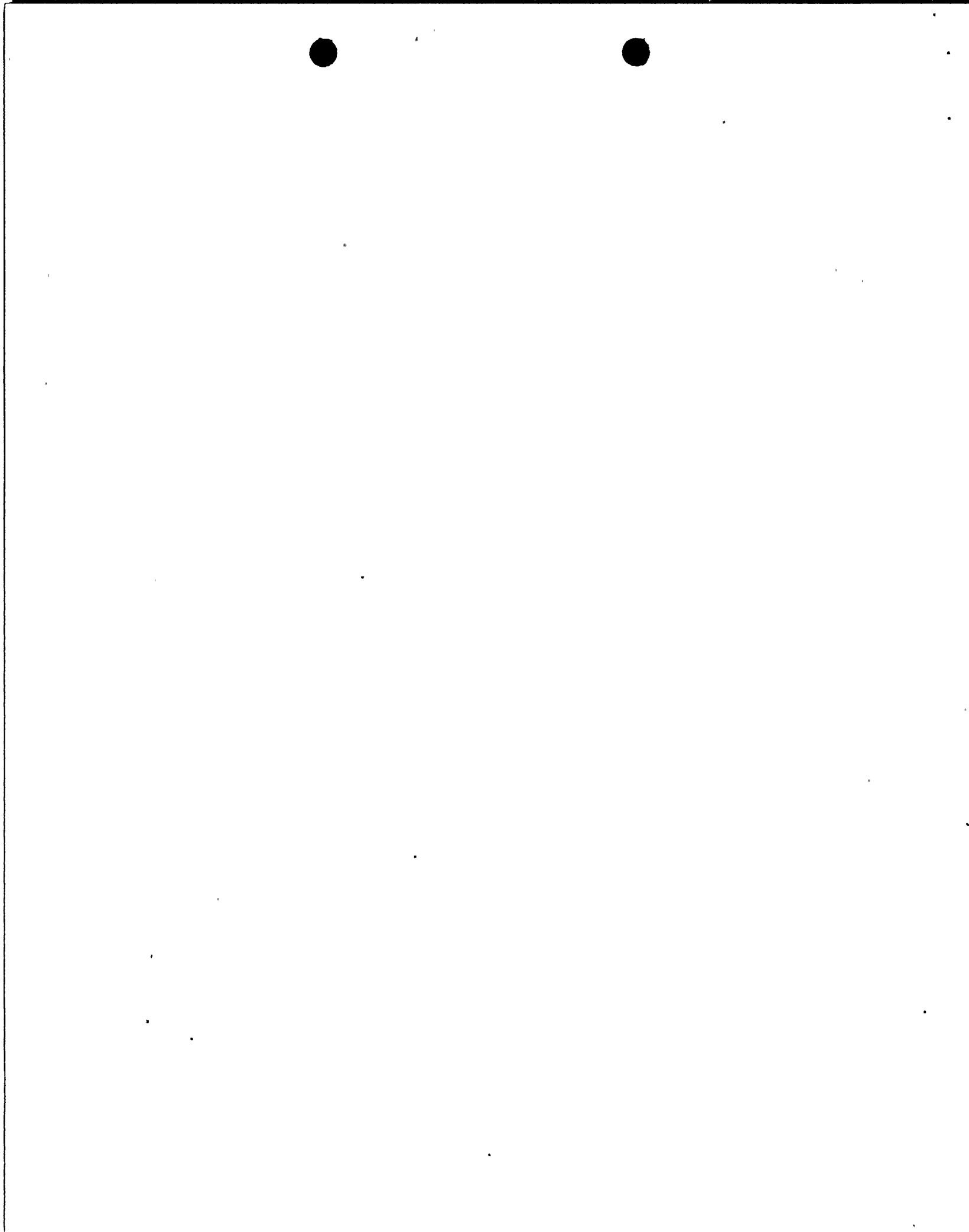
WALL LOCATION		TYPE	ELECTRICAL			MECHANICAL				
DWG	REF.	TOP ELEV.	DWG	CONDUIT	EQUIP	DWG	PIPING	EQUIP	SYSTEM	DRIVE
12-4026	F.G.H.	HB F 8.9 12-3493				12-5472	✓	Basic Acid Tanks, Pumps	CCW	
	(W-17)	(594'-4")								
	J. B	HB				2-5474 12-5488 B	✓	Gms Decom Tanks	CCW	
	(W-18)	(602'-0)								
	K-9	HB				12-5461	✓	Basic Acid Evap.	CS	
	(W-19)	(601' to 607')								
	L-8W	HB				12-5480 12-5461	✓	Basic Acid Evap.	CCW CCW } AUX }	
	(W-20)	(601'-0)								
	L-8E	HB				12-5488 B	✓	"	CCW	
	(W-21)	(595'-0)								
	M-9	HB				12-5461	✓	VALVE GALLERY	CS	
	(W-22)	(596'-0)								
	B-6	HB						Pipe Tunnel		
		(596'-0)								
	L-6	HB						"		



WALL LOCATION		TYPE (TOP ELEV)	ELECTRICAL			MECHANICAL				
DWG	REF		DWG	CONDUCT	EQUIP	DWG	PIPING	EQUIP	SYSTEM	DWG
12-4027 EL 5870	D-3	HBF 12-3494					—			
	(W-1)	(600'0)								
	E-3E	HBF 12-3494				12-5470A	—	WASTE EVAL STORAGE TANK	W.D.	
	(W-2)	(600'0)								
	E-3W	HBF 12-3494					—	DRAINS		
	(W-3)	(595'0)								
	E-3	HBF 12-3494					—	STOR. TANK PUMPS		
	(W-4)	(600'0)								
	D-4	HB				12-5473	✓	Sport Resin STOR. TK	W.D.	
	(W-5)	(606'6)								
	D-5	HBF 12-3495				12-5473C	✓	Flash TANK	AUX WD	
	(W-6)	(605'0)								
	E-5	HB	2-1415	✓				MIXING TANK		

SUBJECT

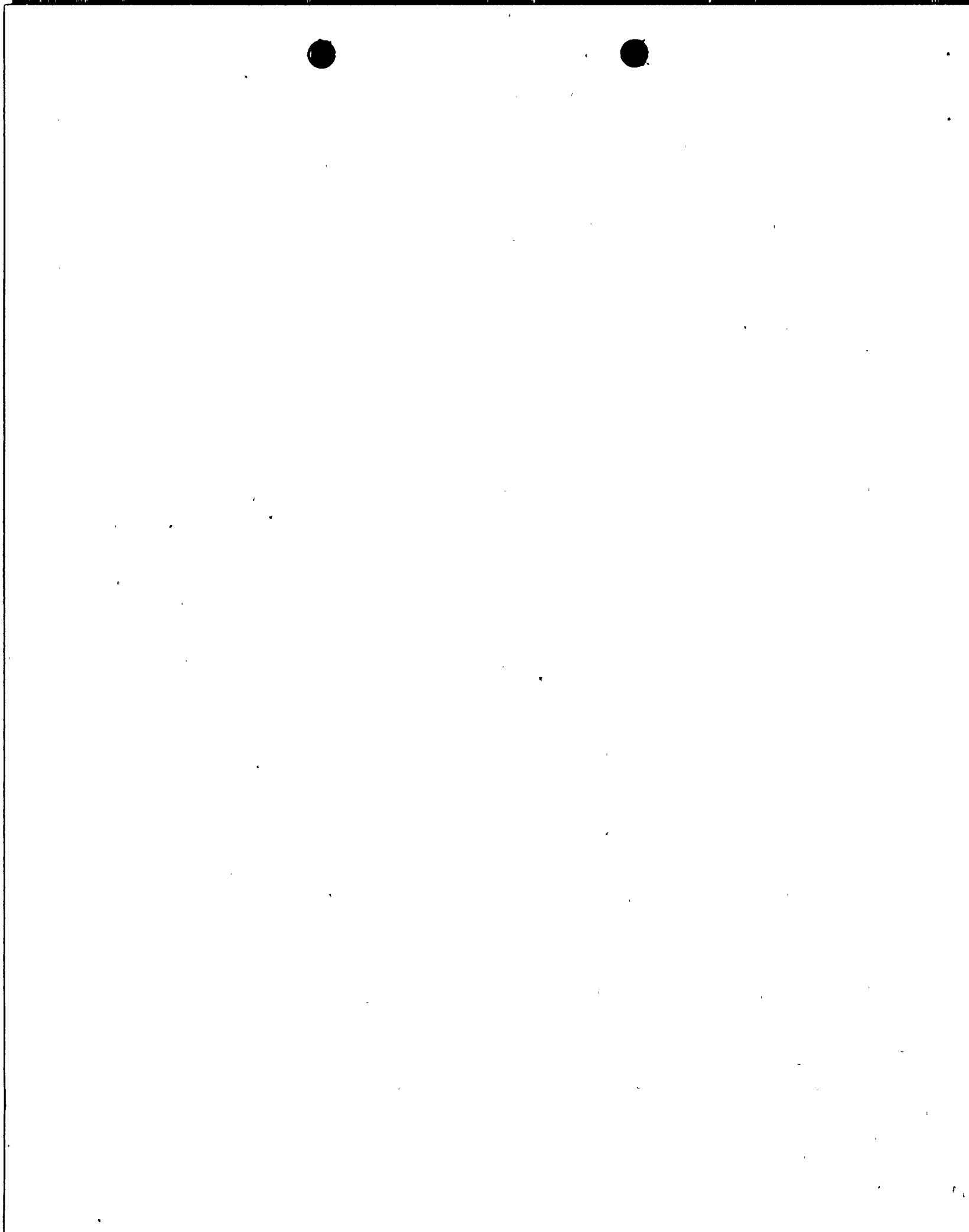
15 Block Walls - Jans 12-4027



WALL LOCATION		TYPE	ELECTRICAL			MECHANICAL				
DWG	REF		DWG	CONDUIT	EQUIP	DWG	PIPING	EQUIP	SYSTEM	DETAIL
12-4027 E587'-6	D-GE	HRF 12-3495				12-5472D	✓	Distillate Pump	W.D.	
	(W-8)									
	D-3VI	HRF 12-3495								
	(W-9)									
	D-3-C	HR				12-5473C " " D	✓	FEED Prehr. Concent. Cooler	W.D. Aux CCW	
	(W-10)									
EL. 597'-0	E-3W	HR	2-1A15	✓		12-5472A	✓		CCW	
	(W-11)	(fr. 597'-0 to 598'-8)								
EL. 601'-0	E-5-G	HR								
	(W-12)	(fr. 601'-0 to 603'-4)								
EL. 601'-0	L-4	HRF 12-3491						Spent Fuel Pit Filter		
	(W-13)									
	L-5E	HRF 12-3491						Spent Fuel Pit Filter		
	(W-14)									
	L-5W	HRF								

SUBJECT

DWG. 12-4027



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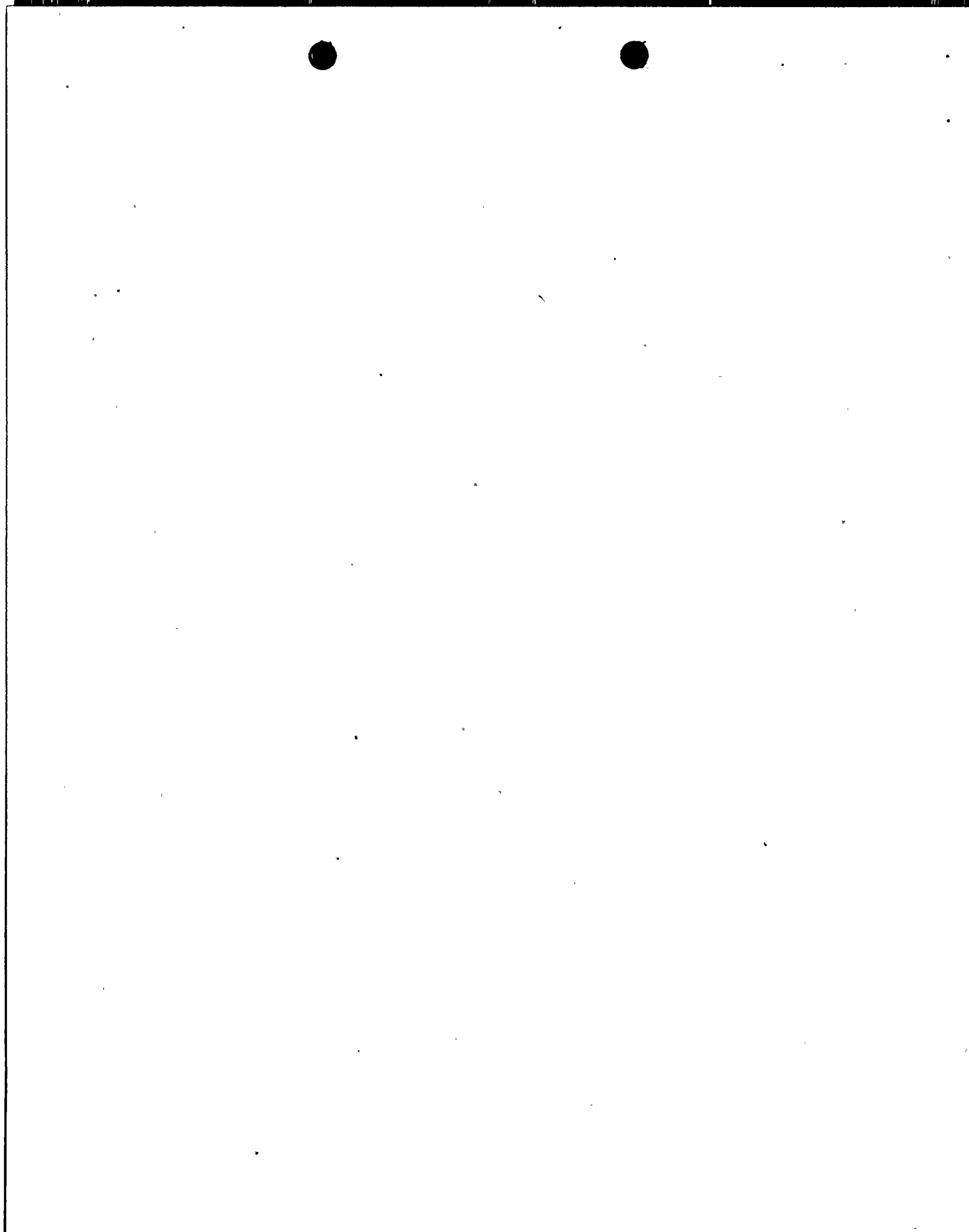
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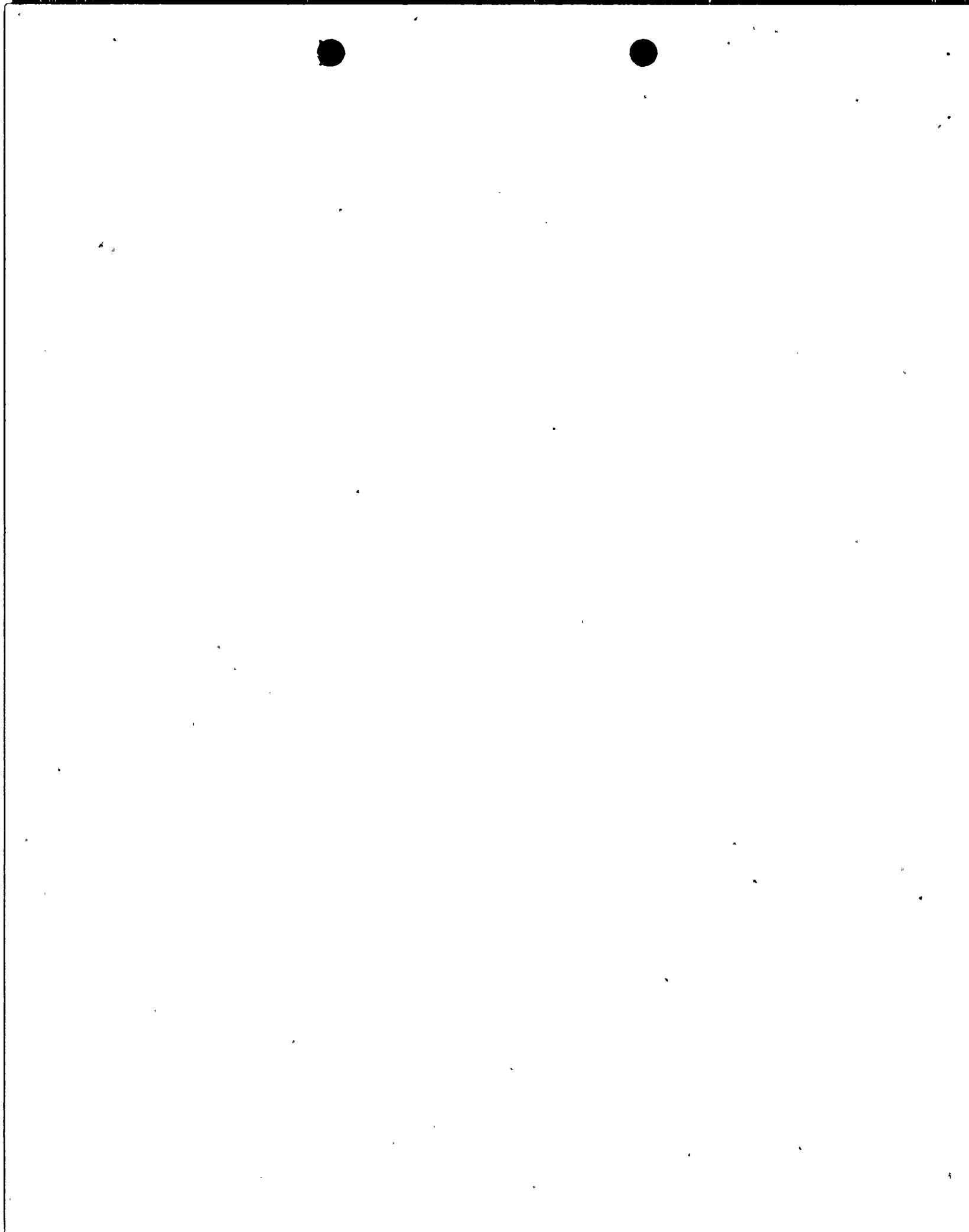
DLG 12-4027

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SUBJECT 11. Black Wires 11.12-4028

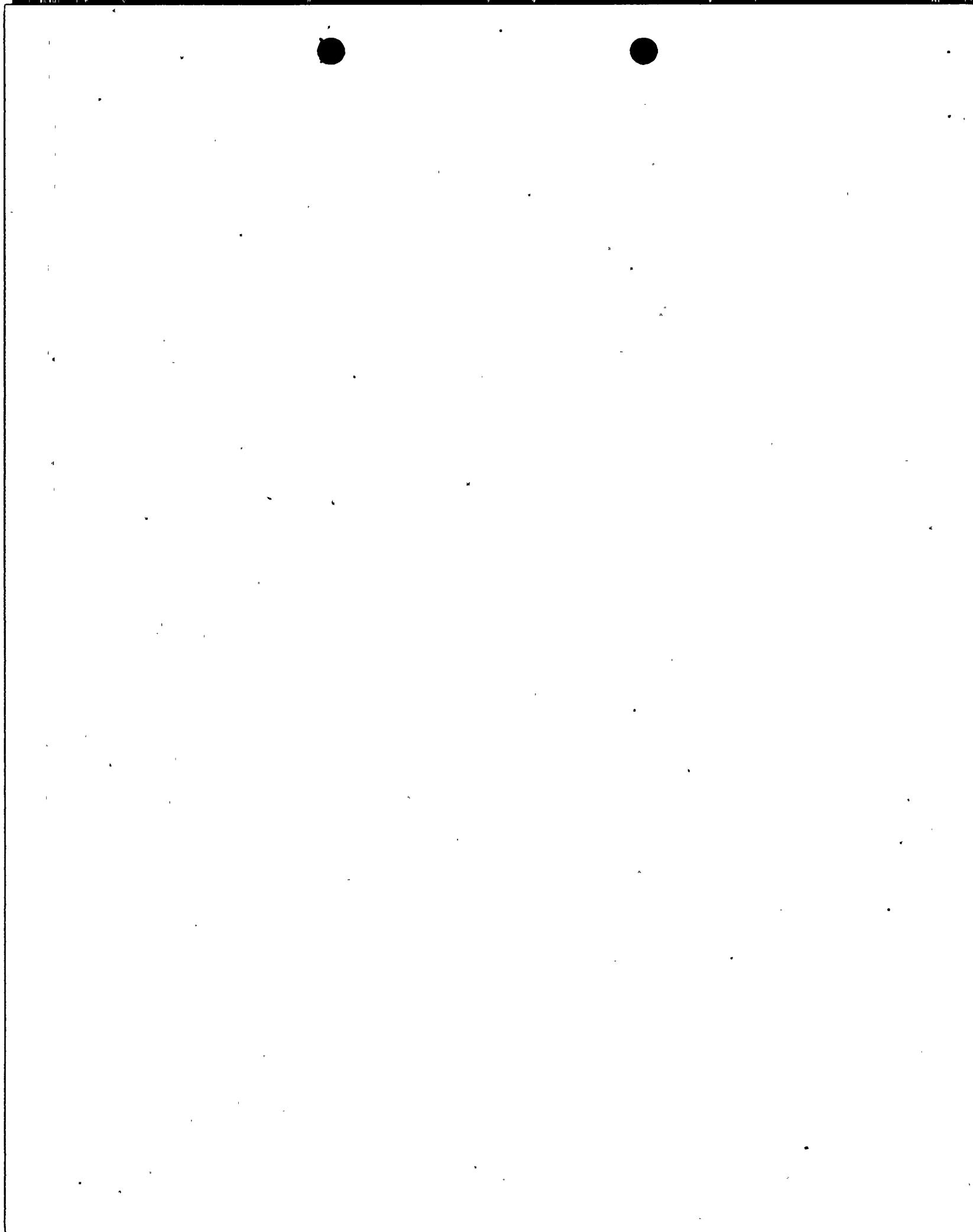
WALL LOCATION		TYPE (TOP ELEV)	ELECTRICAL			MECHANICAL				
DWG	AREA		DWG	CONDUIT	EQUIP.	DWG	PIPING	EQUIP.	SYSTEM	DUCT Wk.
12-4028 EL-609'D	D-4	HB				1-5350	—	Blowdown purifi- cation deminer.		
	(W-1)	(617'0)								
	D-5	HB				1-5350 1-5451 1-5508	✓ ✓	Boric ACID INJECT. TRAP	SI. BD	
	(W-2)	(625'0)								
	F-7	HB						VOLUME CONTROL TANK		
	(W-3)	(624'6)								
	D-8	HB				12-5486A	✓	WASTE CCW GAS COMPRESSOR		
	(W-4)	(615'6)								
	E-8	HB				12-5486A	✓	WASTE CCW GAS COMPRESSORS		
	(W-5)	(615'6)								
	F-8	HB				12-5486A	✓	Concentrate CCW Holding TANK		
	(W-6)	(620'6)								
	J-4	HB				2-5350	—	Blowdown purifi. Demin.		
	(W-7)	(617'0)								
	K-5	HB				2-5350 2-5508 2-1557	✓ ✓	Boric ACID INJECT.	BD SI	



SUBJECT

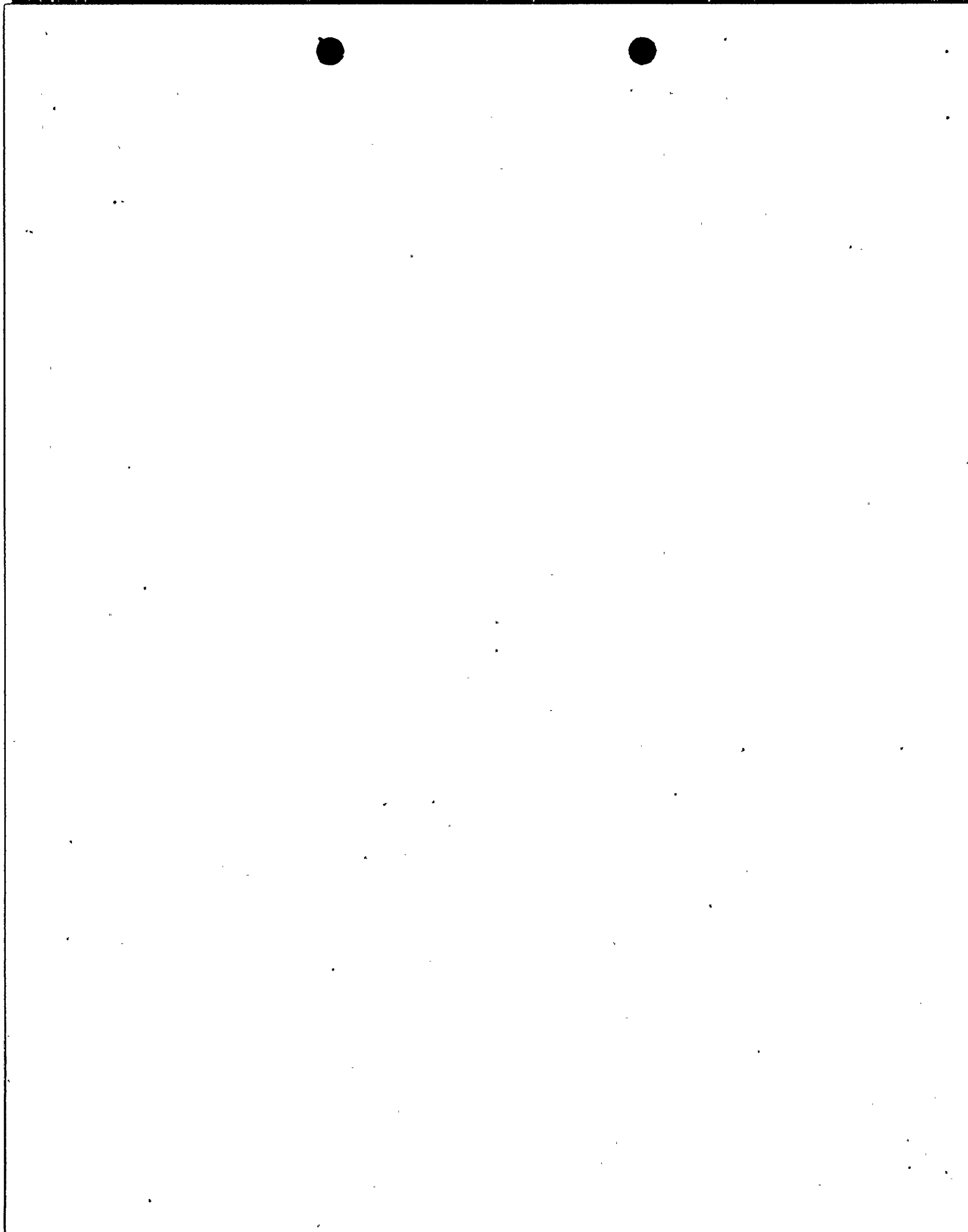
12-4028

WALL LOCATION		TYPE	ELECTRICAL			MECHANICAL			
DWG	AREA		DWG	CONDUIT	EQUIP	DWG	PIPING	EQUIP	SYSTEM
12-4028	H-7	HB				12-5486B 12-5502B	/	Volume Control TK	CCW ESW
	(W-9)	(G24'-6)							
	H-8	HBF 12-3491				12-5495B 12-5502B		Evap. Condensate Filter	—
	(W-10)	(G15'-8)							
	H-9	HBF 12-3491				12-5495B 12-5502B		" " "	—
	(W-11)	(G15'-8)							
	K-2	HB						Dem Mineralizer Area	
	(W-12)	(G15'-8)							
	K-3E	HB						"	
	(W-13)	"							
	K-3V	HB						"	
	(W-14)	"							
	B-6	SB						Hot Lab	
	C-7	SB						Control Office	



SUBJECT *Dwg 12-4028*

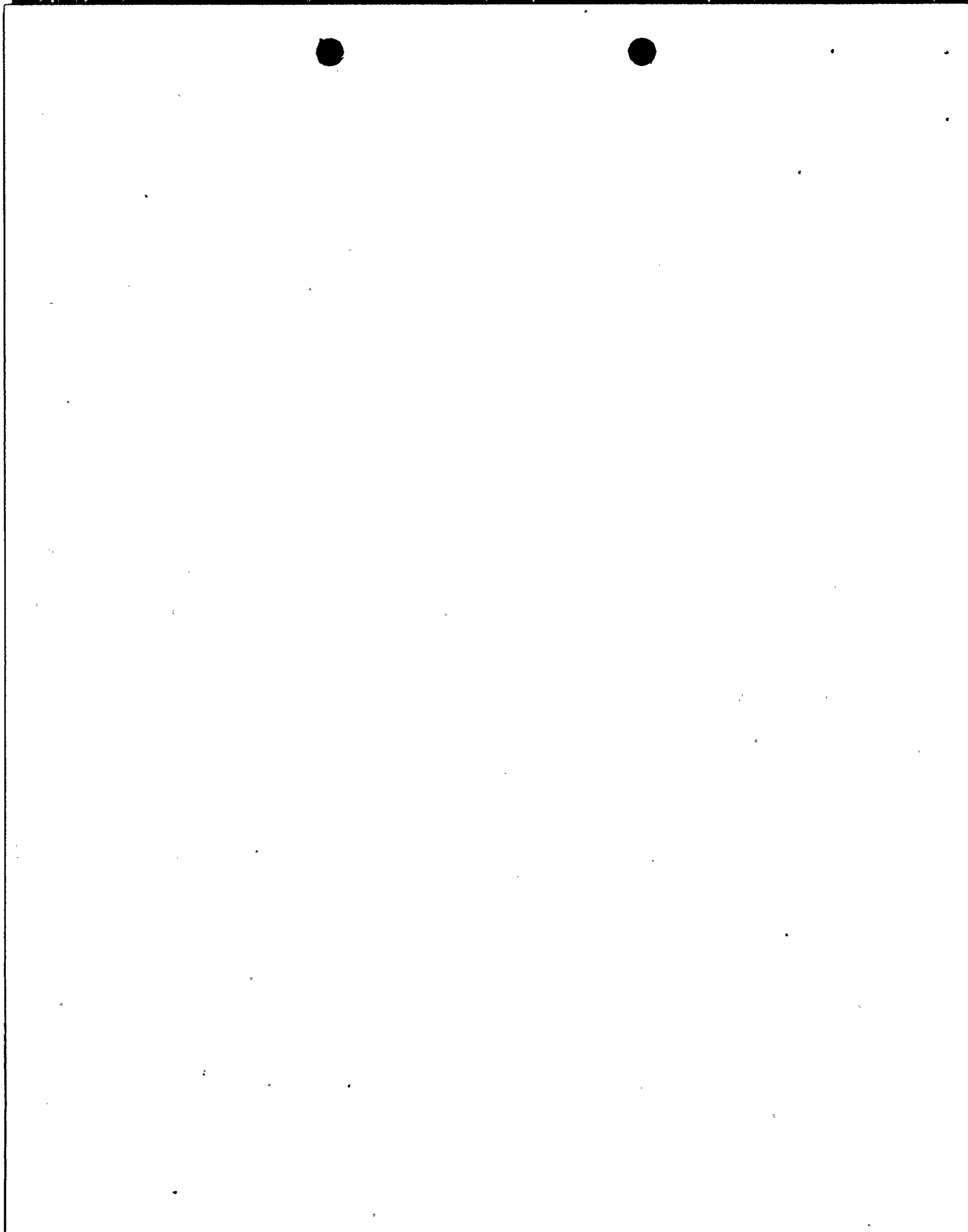
WALL LOCATION		TYPE	ELECTRICAL			MECHANICAL			
DWG	AREA		DWG	CONDUIT	EQUIP	DWG	PIPING	EQUIP	SYSTEM
12-4028	C-7S	SB						Counting Rm	
	D-7	CB						Vent	
	CN-8	SB						Decontamination Area	
	CS-8	SB						"	
	BC-89	SB						Locker Rm	
	D-89	CB						Radi Protect. Sample Analysis Rm	
	D-7	CB						VENT	
	D-8	CB						Equip. Decontamination Rm	



SUBJECT

12-0029 ~ 10 Block Mills

WALL LOCATION		TYPE (TOP ELEV)	ELECTRICAL			MECHANICAL				
DWG	AREA		DWG	CONDUIT	EQUIP	DWG	PIPING	EQUIP	SYSTEM	DR-WE
12-0029 E2.633'0	E-4.5	CB	1-1445	✓	Boxes X50				HVAC VENT ENCL SAFE GUARD,	✓
	(W-1)	(648'6)								
	E-6	HB								
	(W-2)	(637'0)								
	F-5E	HB						LET DOWN HEAT EXCHANGER		
	(W-3)	(641'0)								
	F-5W	HB				12-5487		LET DOWN HEAT EXCHANGER	CCW	
	(W-4)	(641'0)								
	H-5E	HBF & HBF G 12-3490						LET DOWN HEAT EXCHANGER		
	(W-5)	(641'0)								
	H-5W	CB				12-5487		LET DOWN HEAT EXCH	CCW	
	(W-6)	(641'0)								
	J-4.5	CB	2-1445	Y	Boxes X50				HVAC VENT ENCL	✓
	(W-7)	(648'6)								



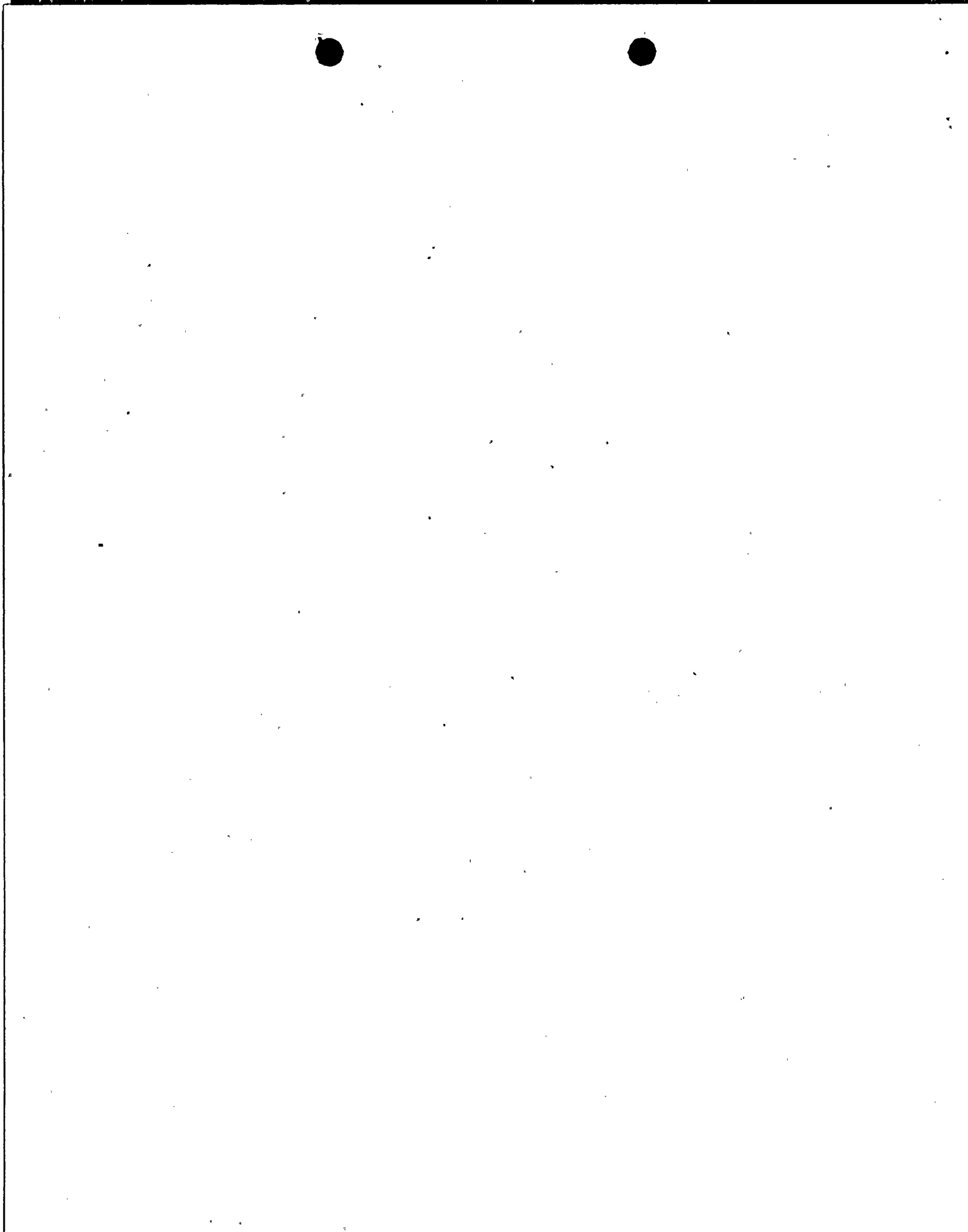
SUBJECT

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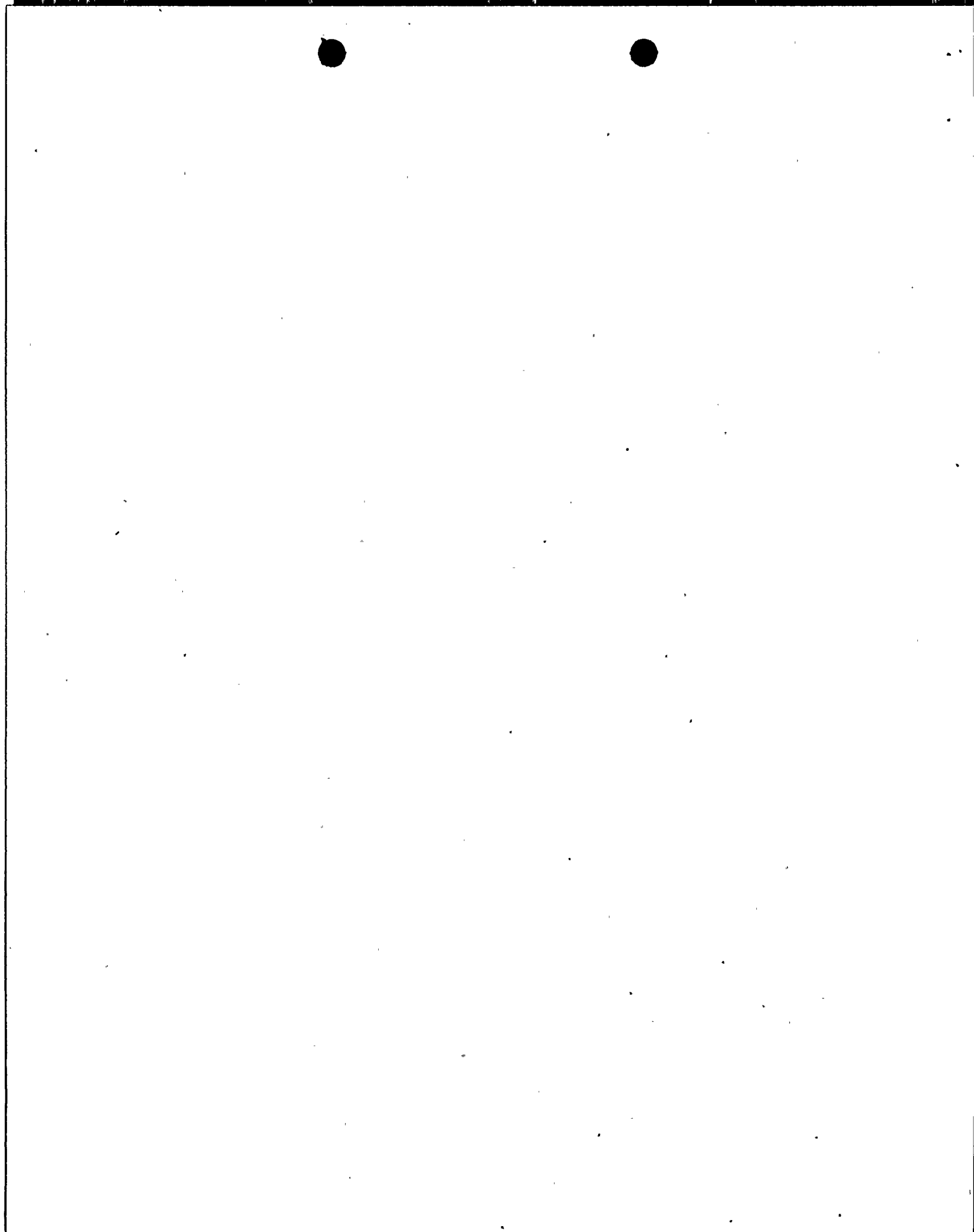
1-4 Bldg. 6/10/15

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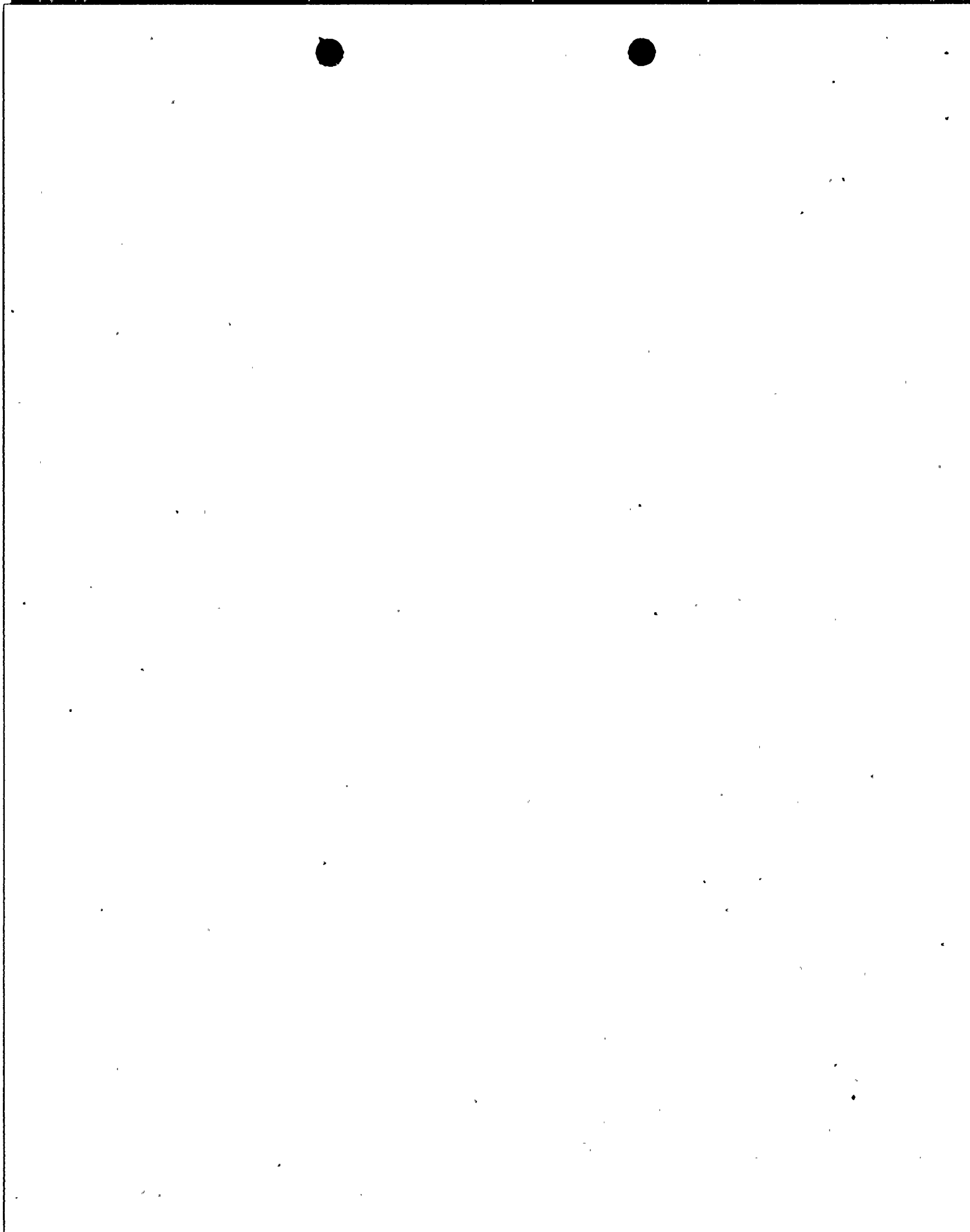
DWG 12-4033, J. Lock Willis

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SUBJECT DWG 1-4034 11 Block Walls

WALL LOCATION		TYPE (TOP ELEV)	ELECTRICAL			MECHANICAL				
DWG	AREA		DWG	CONDUIT	EQUIP	DWG	PIPING	EQUIP	SYSTEM	DUCTWK
1-4034 EL. 609'6"	C-6	FB			TRANSF.					
	(W-1)	(625'-10)								
	C-8	FB			TRANSF.					
	(W-2)	(625'-10)								
02540	A-1	FB	1-1442	✓		1		ROOF VENT OF SWITCH GEAR		
	(W-3)	(635'-0)								
	A-2	FB	"	✓				"		
	(W-4)	(635'-0)								
	A-3	FB	"	✓				"		
	(W-5)	(635'-0)								
	A-4	FB	"	✓				"		
	(W-6)	(635'-0)								
	C-1	FB	1-1441	✓				"		
	(W-7)	(635'-0)								
	C-4	FB	1-1442	✓				"		

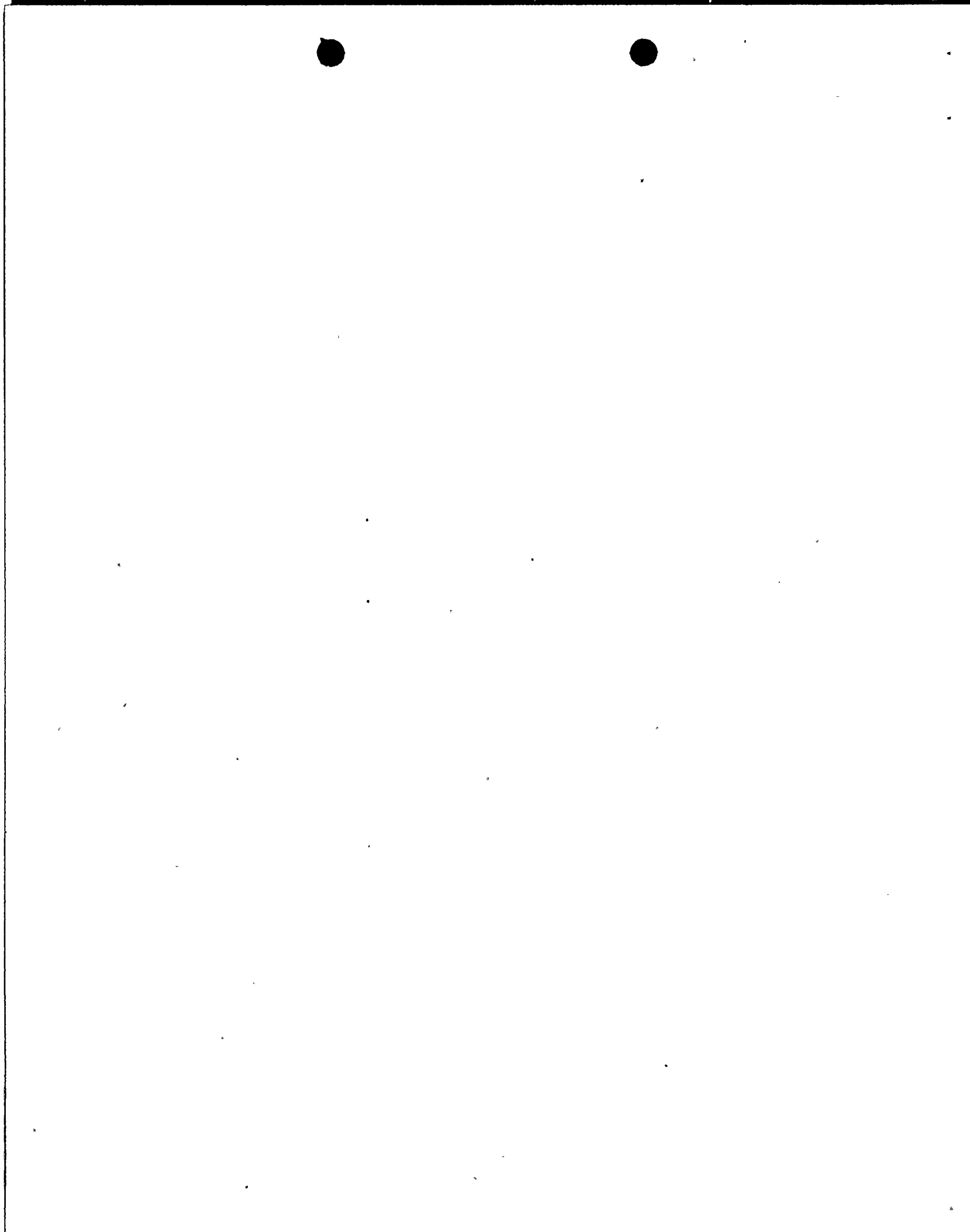


DATE BY CK.
COMPANY G.O.

PLANT The above ground, above-water portion of a plant is called the shoot system. The shoot system is composed of stems, leaves, flowers, and fruits. The shoot system is the part of the plant that is visible above the ground. The shoot system is the part of the plant that is visible above the ground.

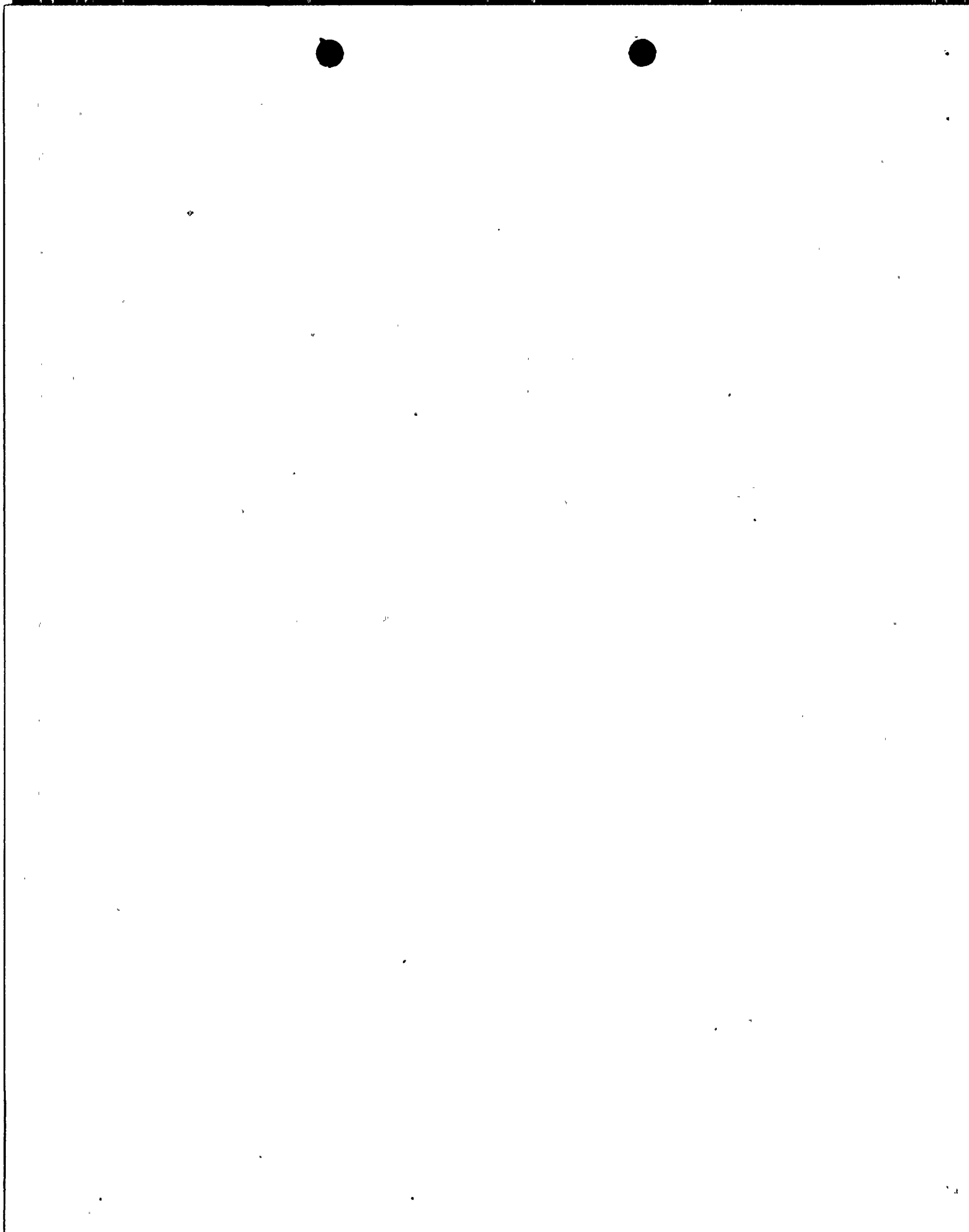
SUBJECT

[illegible]



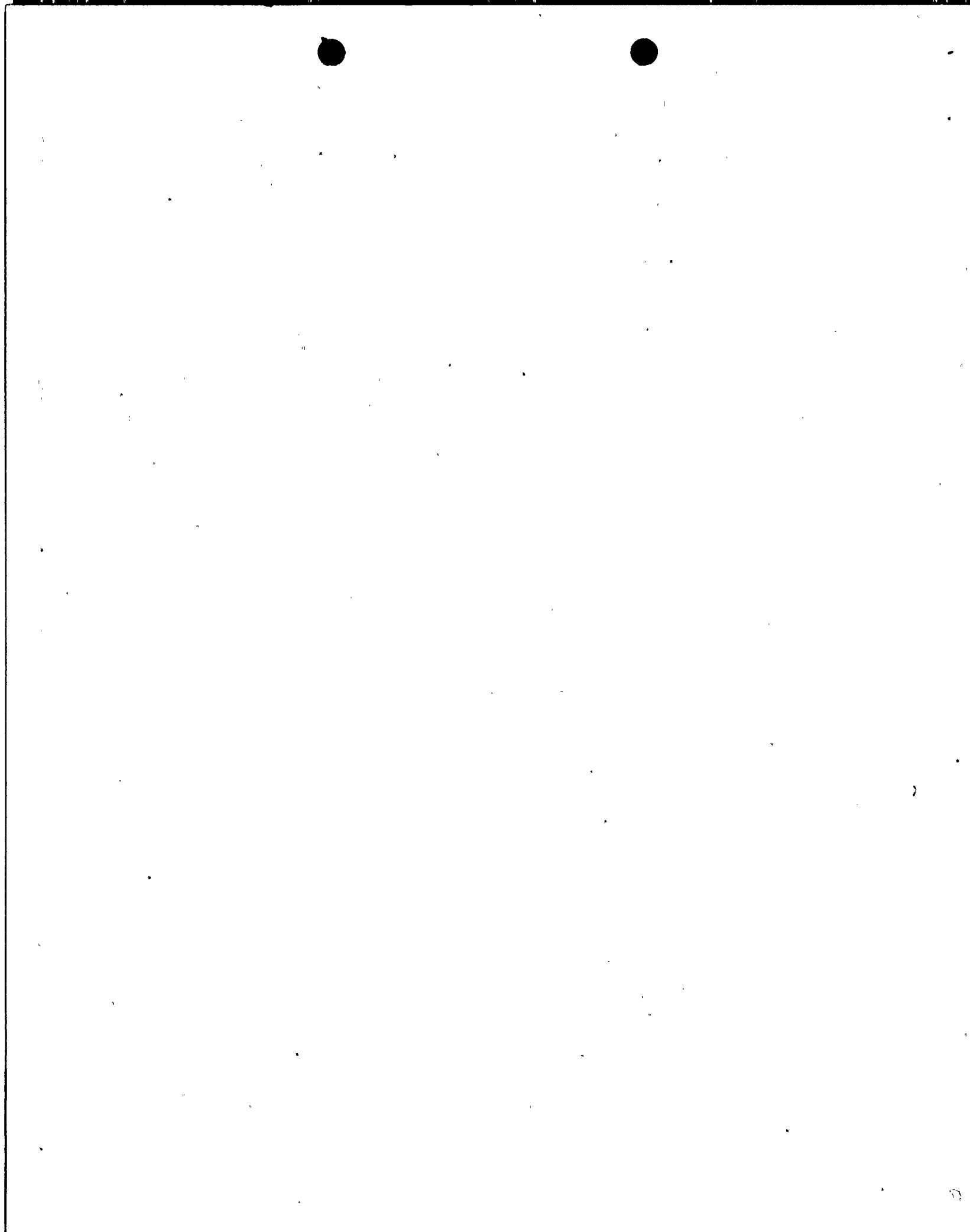
2- Black Hills

[illegible]



4. Block Miss

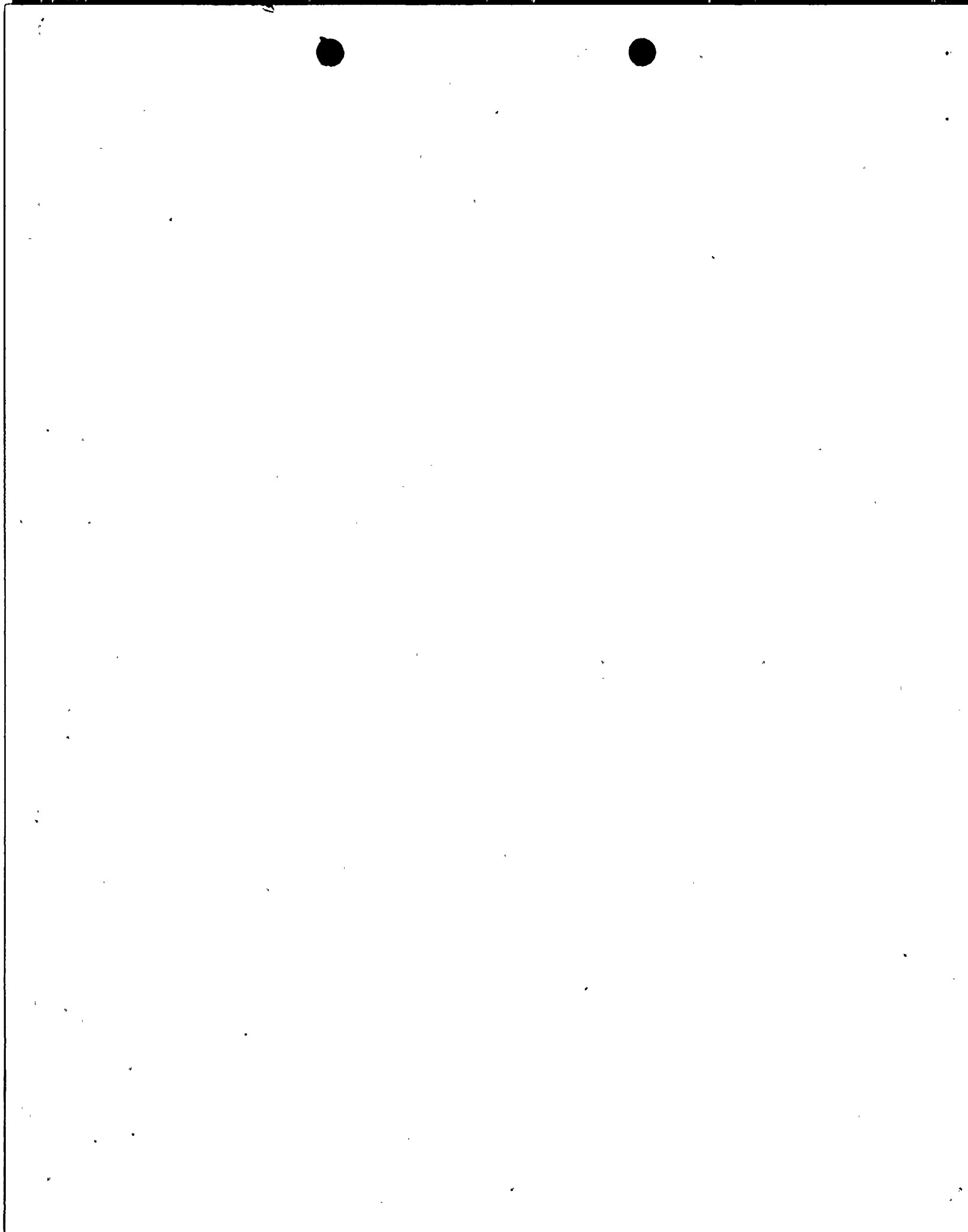
[illegible]



SUBJECT 2-4037

11-BLOCK WALLS

WALL LOCATION		TYPE	ELECTRICAL			MECHANICAL				
DWG	AREA		DWG	CONDUIT	EQUIP	DWG	PIPING	EQUIP	SYSTEM	DWG
2-4037 EL 609'0	L-6	FB			TRANS- FORMER					
	(W-1)	(625'10)								
	L-8	FB			TRANS.					
	(W-2)	(625'10)								
EL 625'10	J-2	FB	2-1441	✓				ROOF VENT OF SWITCH GEAR RM		
	(W-3)	(635'0)								
	J-4	FB	"	✓				"		
	(W-4)	(635'0)								
	K-2	FB	"	✓				"		
	(W-5)	(635'0)								
	K-4	FB	"	✓				"		
	(W-6)	(635'0)								
	L-4	FB	2-1442	✓				"		
	(W-7)	(635'0)								
	M-3	FB	"	✓				"		



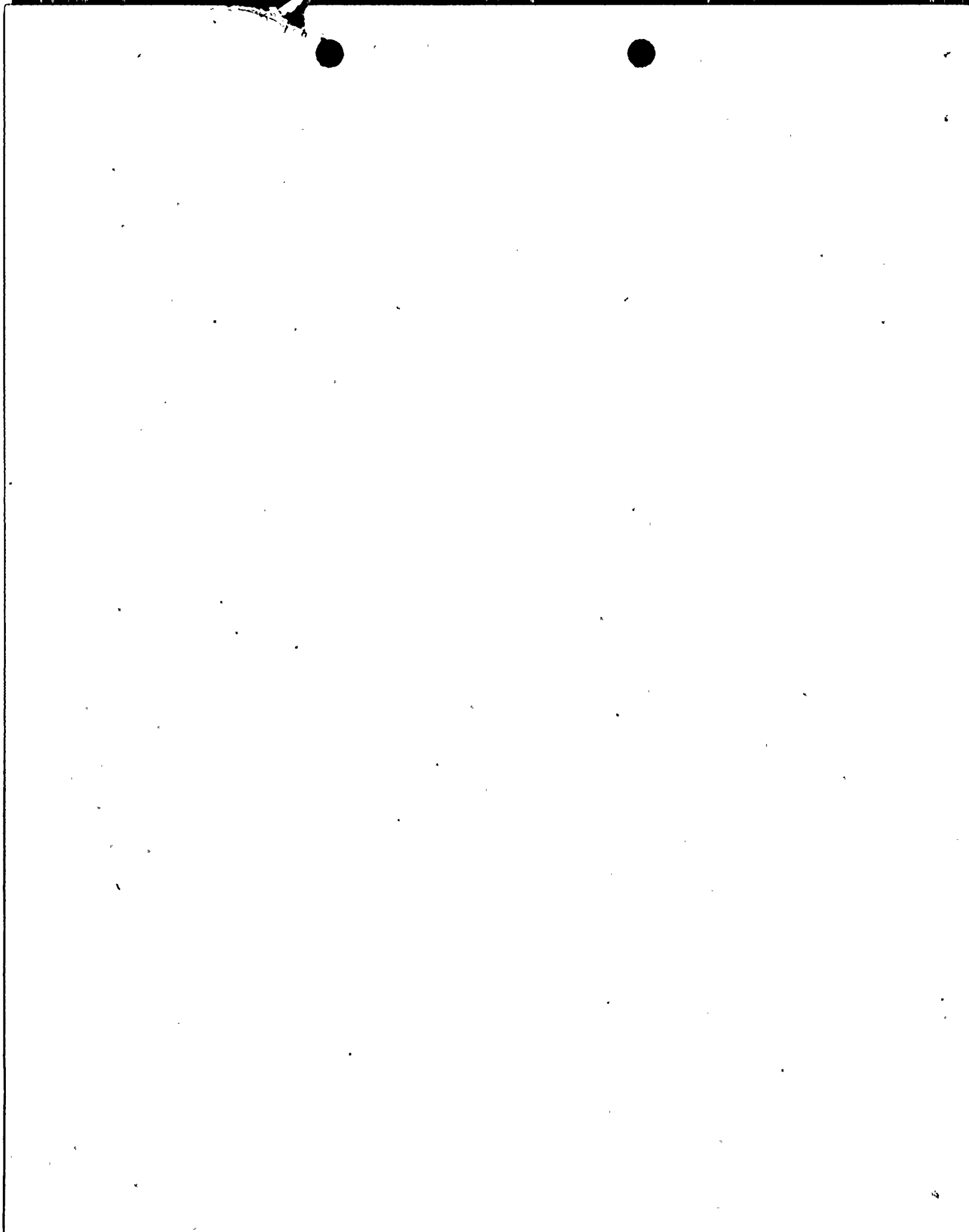
SUBJECT

2.437

[illegible]

SUBJECT 12-4046 1 Black Hall

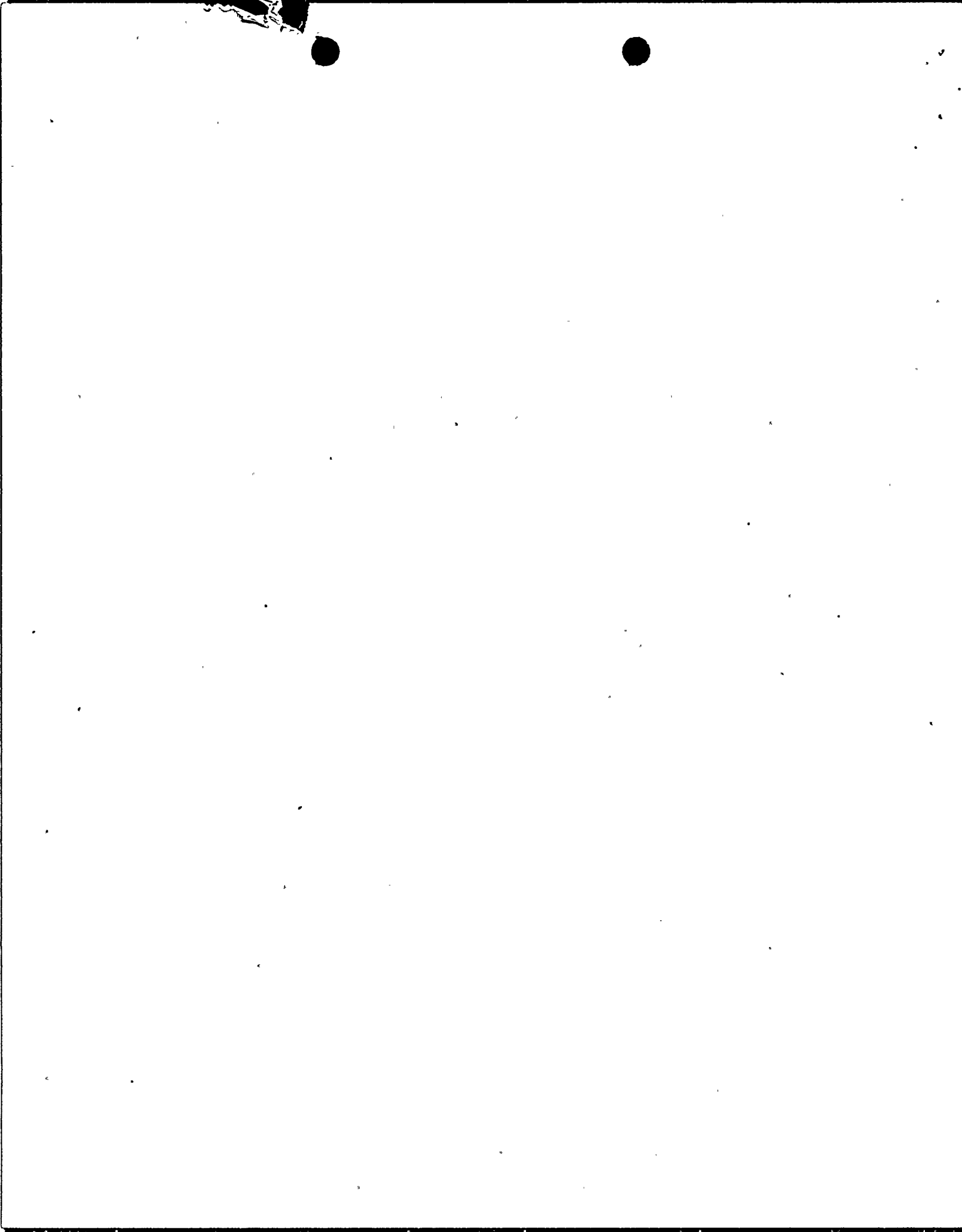
[illegible]



SUBJECT 100-40409

1 Block N/A

[illegible]



SUBJECT:

[illegible]

175