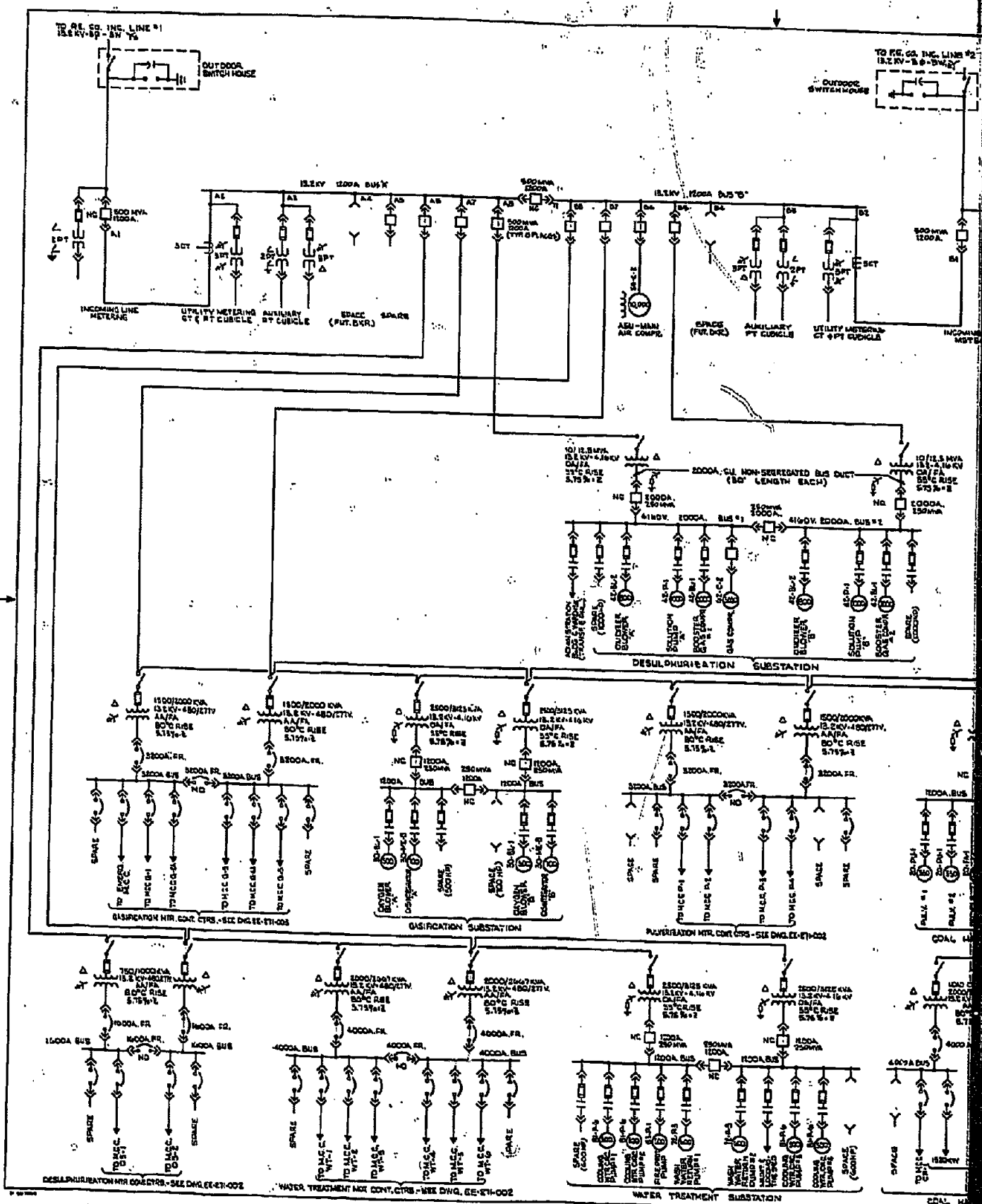


APPENDIX F  
ELECTRICAL DRAWINGS

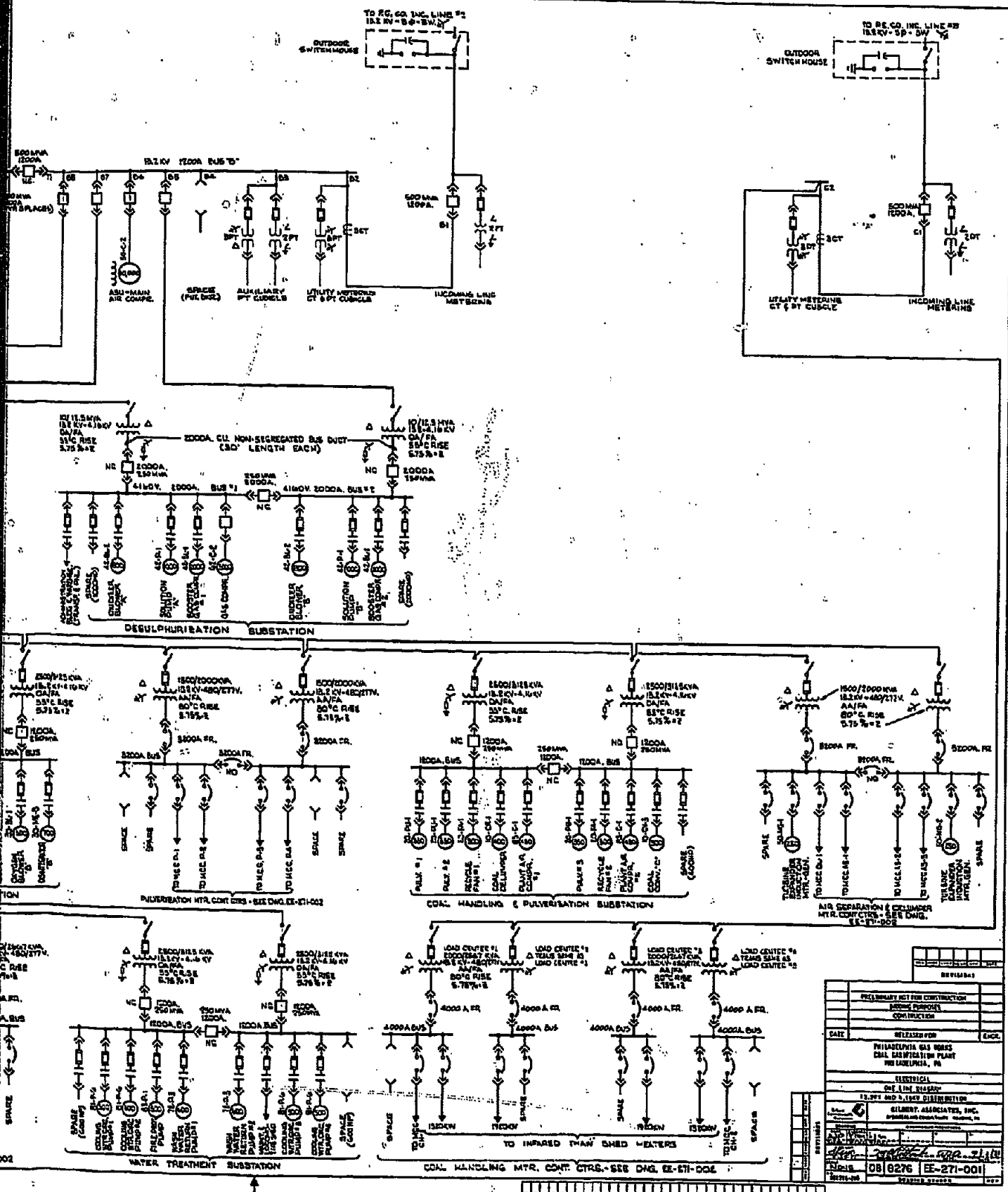


DESULPHURATION MTR. CONT. CTRS. - SEE DWG. EE-671-002

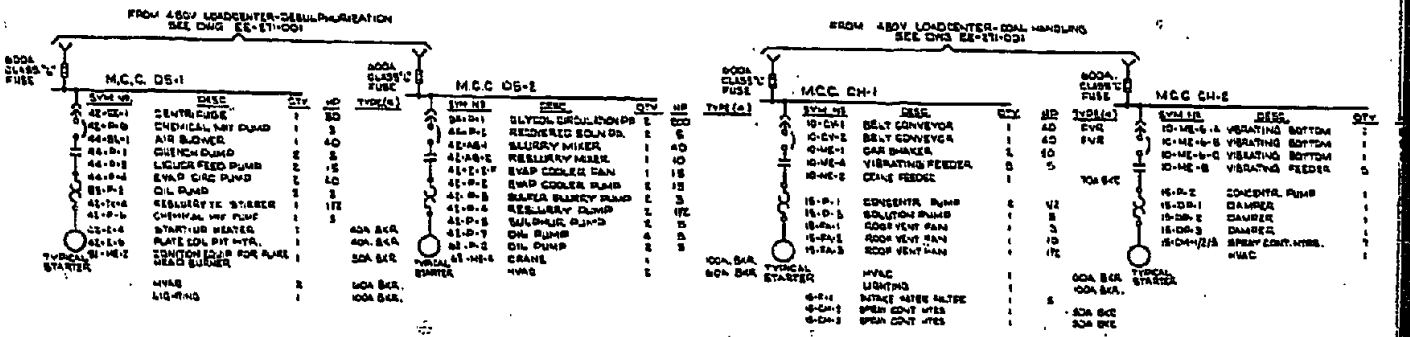
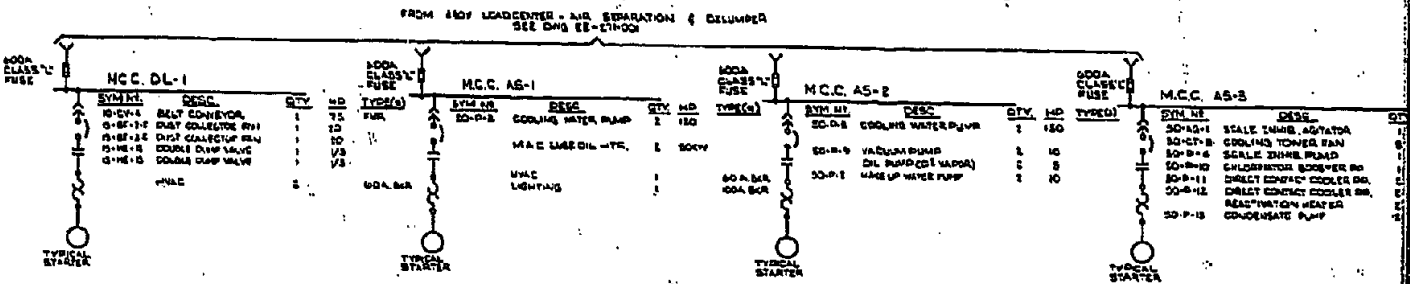
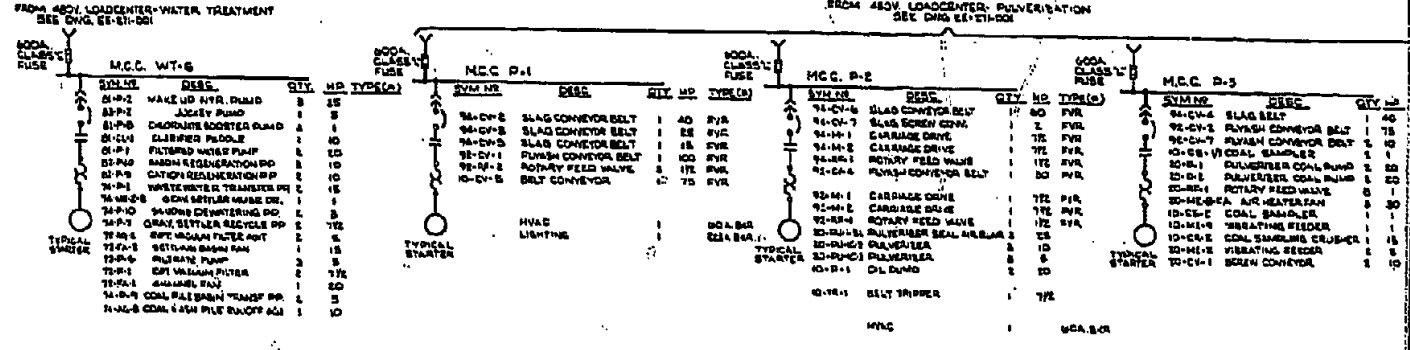
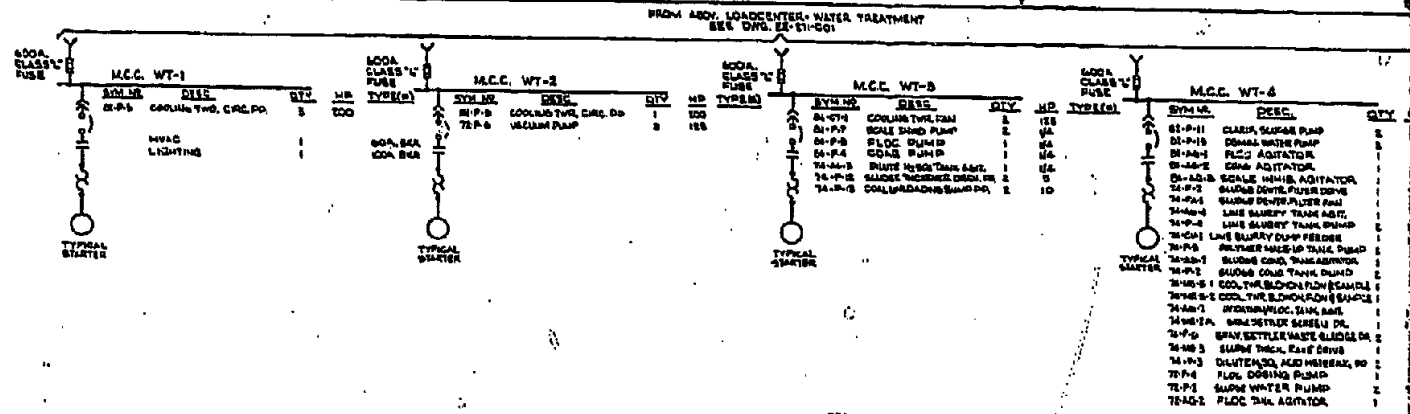
WATER TREATMENT MTR. CONT. CTRS. - SEE DWG. EE-671-002

WATER TREATMENT SUBSTATION

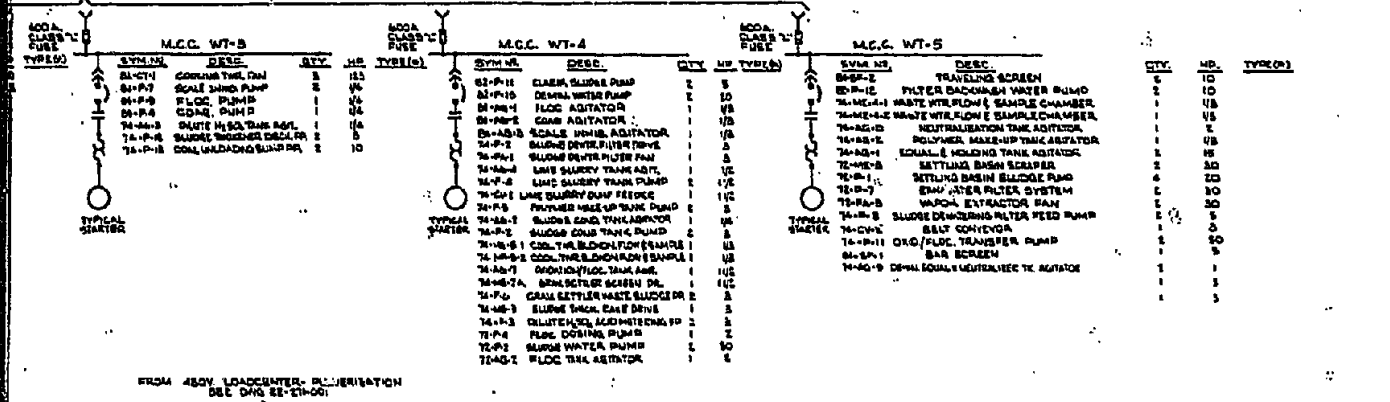
COAL. MTR.



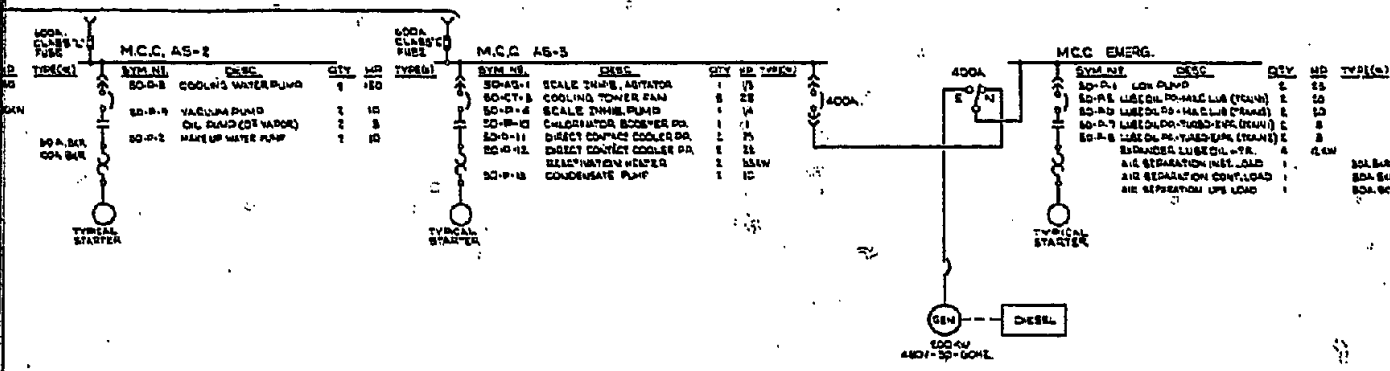
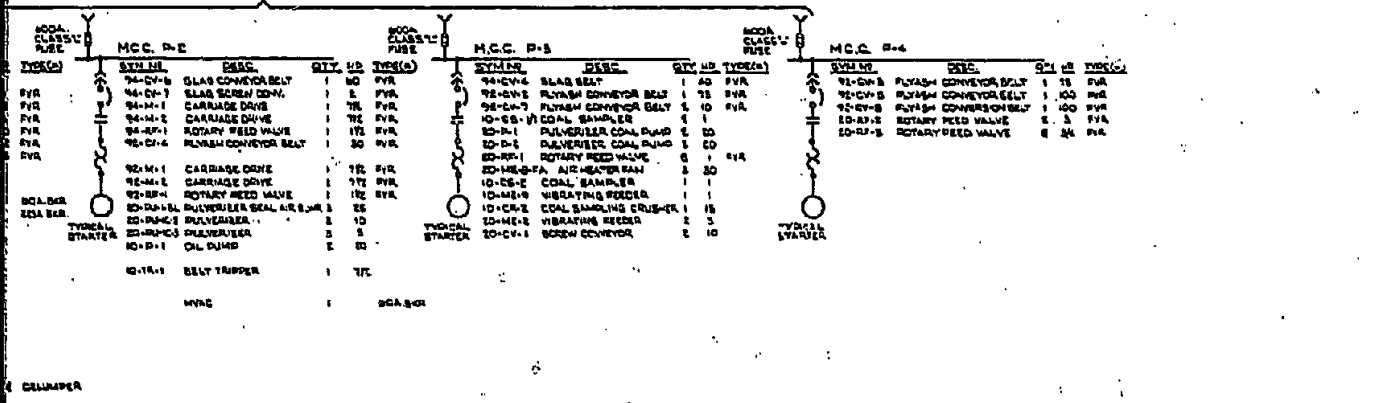
DATE	REVISION
PRELIMINARY NOT FOR CONSTRUCTION	
DESIGN PURPOSE	
CONSTRUCTION	
DATE	RELEASED FOR
	ENG.
PHILADELPHIA GAS WORKS COAL GASIFICATION PLANT PHILADELPHIA, PA.	
ELECTRICAL SINGLE LINE DIAGRAM 12,000 AND 5,000 VOLT DISTRIBUTION	
GILBERT ASSOCIATES, INC. PHILADELPHIA, PA.	
PROJECT NO. 08 6276	
DRAWING NO. EE-271-001	
SHEET NO. 001 OF 002	



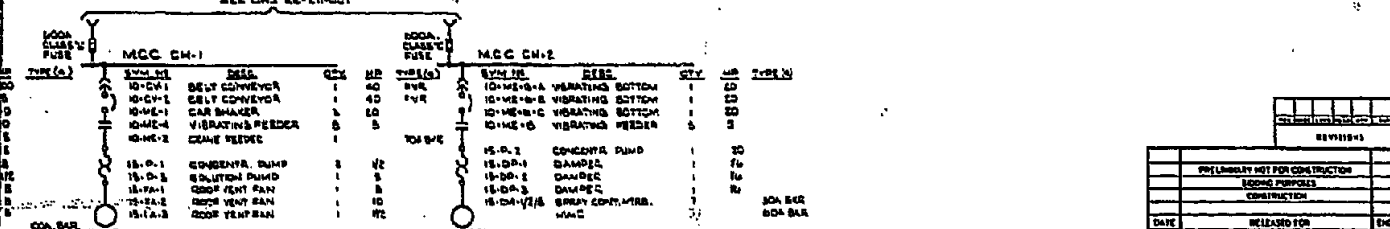
400A LOADCENTER WATER TREATMENT  
SEE CHS. 15-21001



FROM 400V LOADCENTER POLYMERIZATION  
SEE CHS. 15-21001



FROM 400V LOADCENTER COAL HANDLING  
SEE CHS. 15-21001



NOTE: ALL MOTOR STARTERS COMPLETE WITH STOP, DOWNS, TRANSFORMERS, AIR AND VOLTAGE NON-REVERSING UNLESS OTHERWISE NOTED.

REVISIONS

NO.	DESCRIPTION	DATE	BY

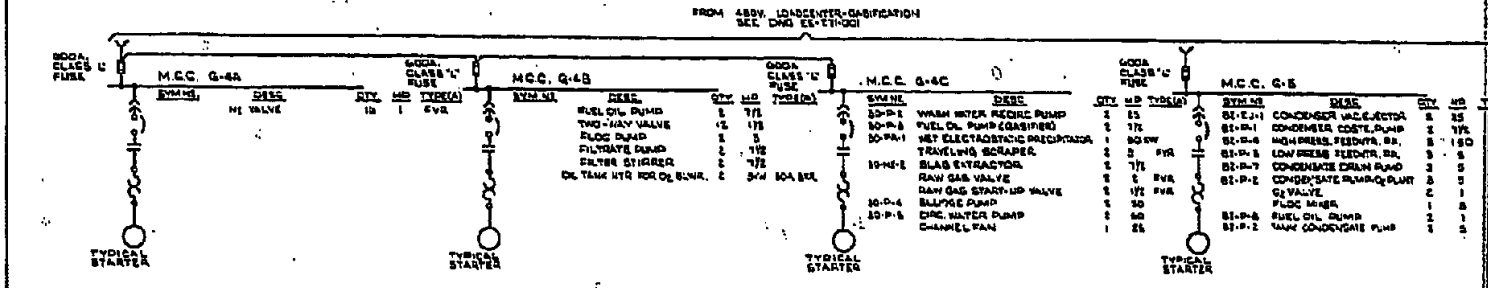
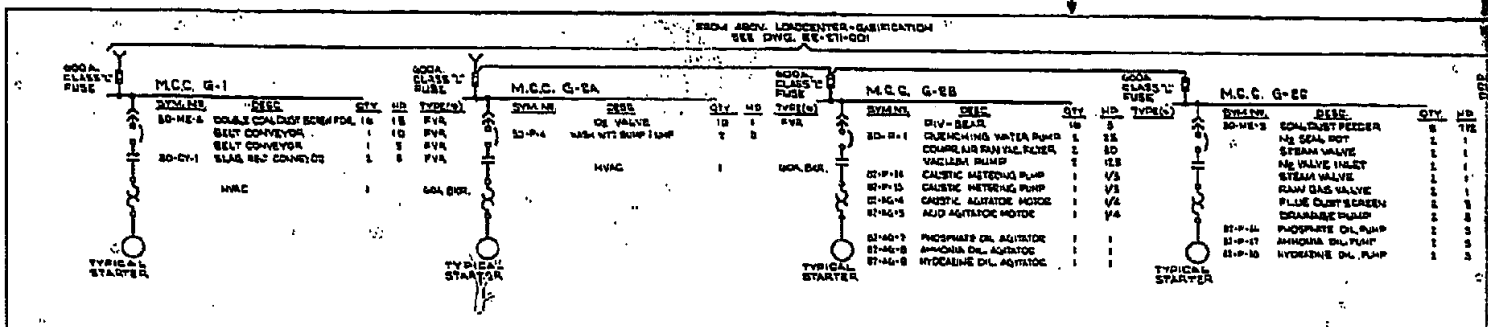
PHILADELPHIA GAS WORKS  
COAL GASIFICATION PLANT  
PHILADELPHIA, PA

ELECTRICAL  
ONE LINE DIAGRAM  
400V MOTOR CONTROL CENTERS

DESIGNED BY: G. H. HARRIS  
CHECKED BY: J. J. HARRIS  
DATE: 08/12/76

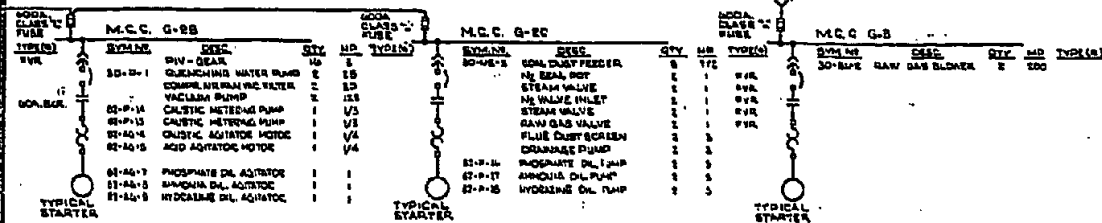
PHILADELPHIA GAS WORKS  
COAL GASIFICATION PLANT  
PHILADELPHIA, PA

DESIGNED BY: G. H. HARRIS  
CHECKED BY: J. J. HARRIS  
DATE: 08/12/76

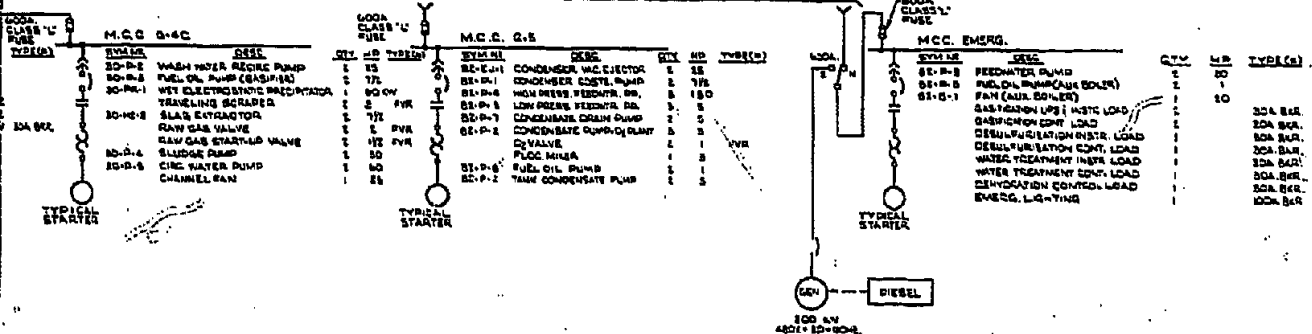


NOTES  
(1) A  
B  
C  
D

LOADCENTER-SABINATION  
DWG. EE-27-001

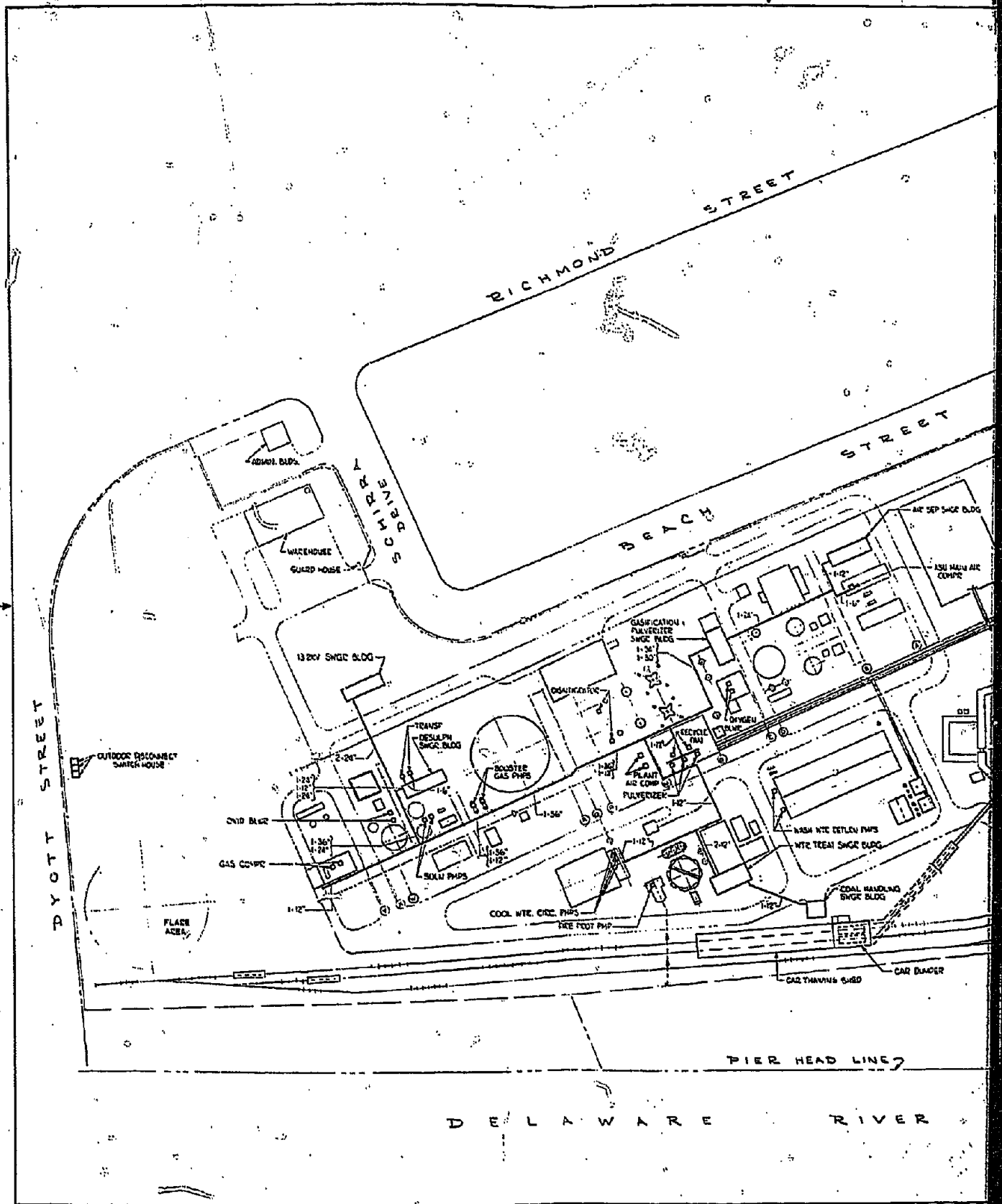


LOADCENTER-SABINATION  
DWG. EE-27-001

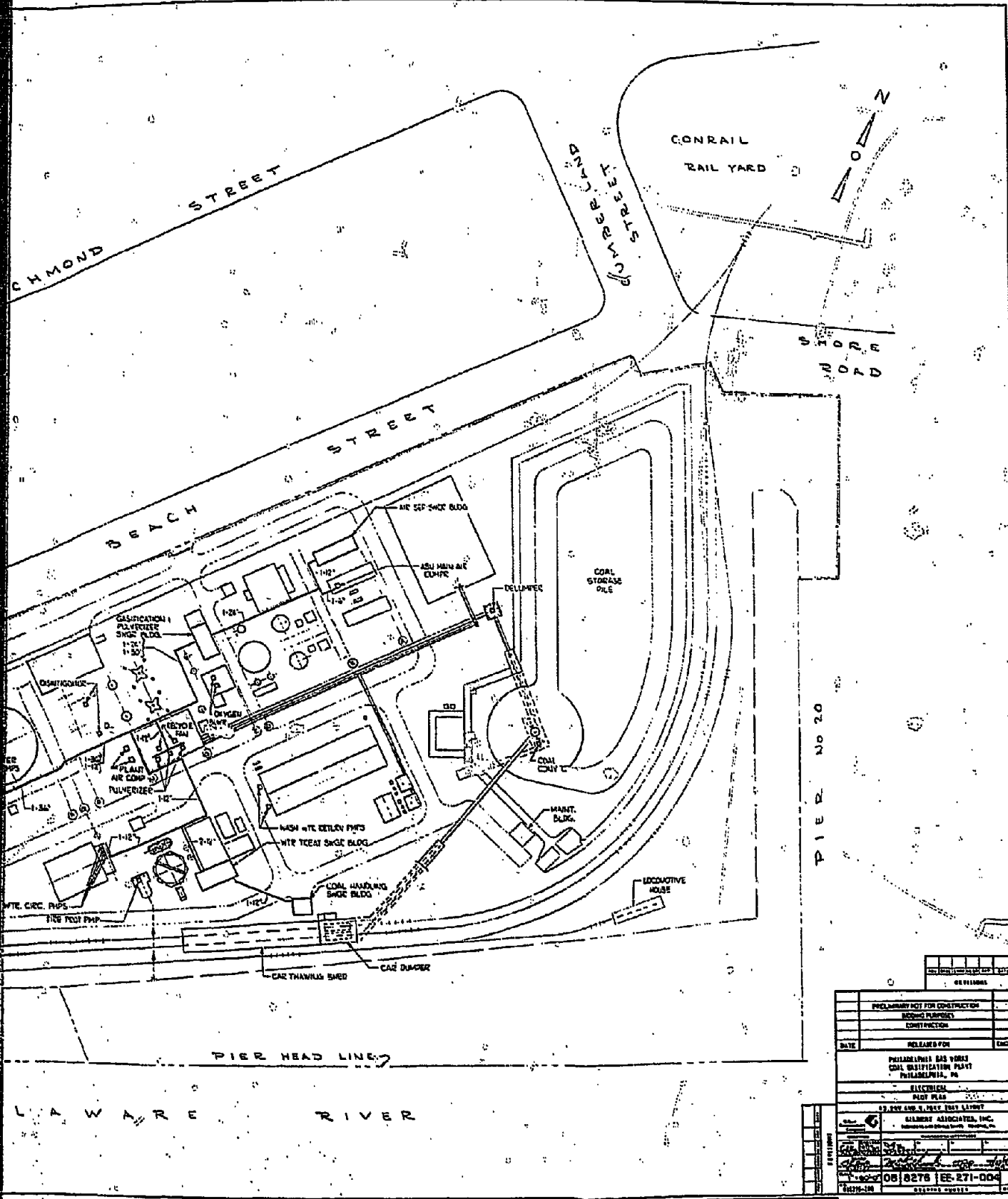


NOTES  
1. ALL MOTOR STARTERS COMPLETE WITH CONTROL POWER TRANSFORMER AND FULL RANGE NON-REVERSING UNLESS OTHERWISE NOTED.

REVISIONS	
DATE	RELEASED FOR CONSTRUCTION
DATE	RELEASED FOR CONSTRUCTION
PHILADELPHIA GAS WORKS GASIFICATION PLANT PHILADELPHIA, PA.	
ELECTRICAL ONE LINE DIAGRAM MOTOR CONTROL CENTER	
GILBERT ASSOCIATES, INC. PHILADELPHIA, PA.	
08 8278 EE-27-003	





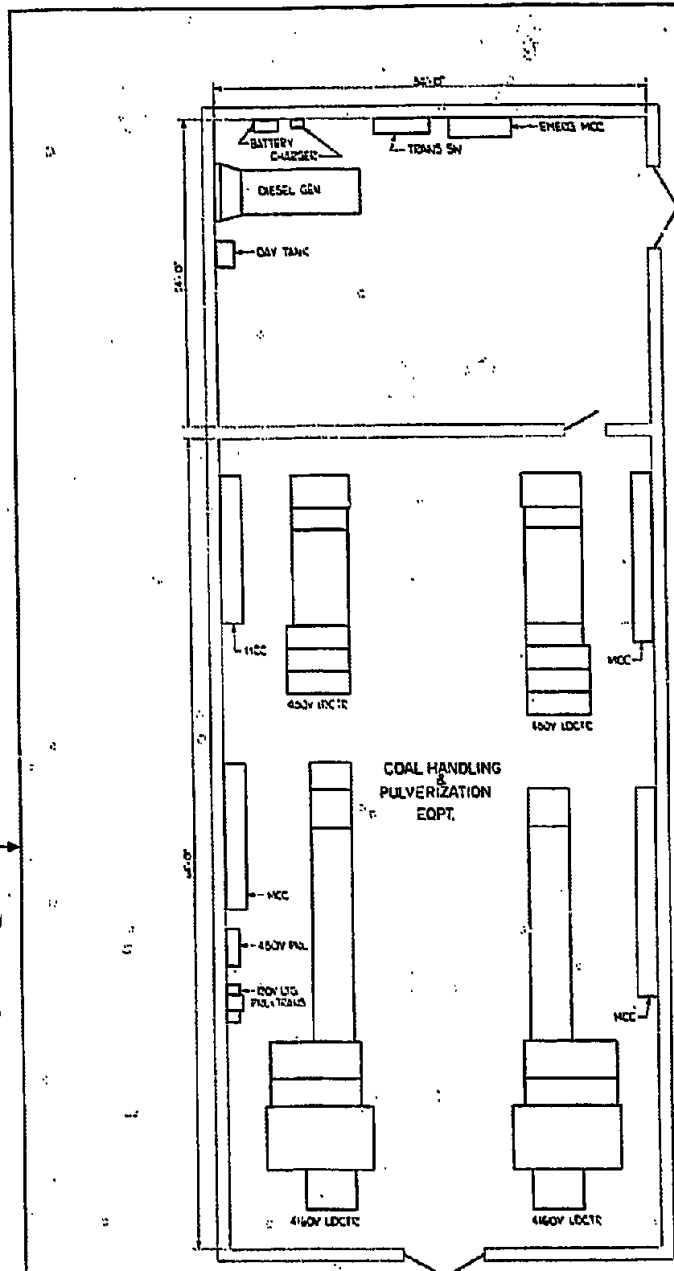


PIER NO 20

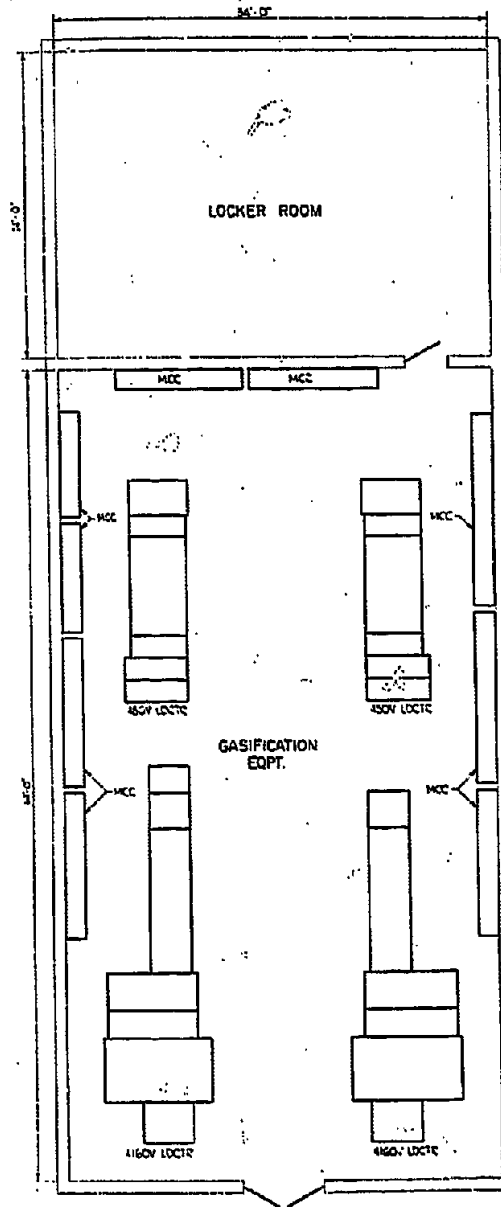
68 011000	
PRELIMINARY NOT FOR CONSTRUCTION	
ISSUING PURPOSES	
CONSTRUCTION	
DATE	RELEASED FOR
PHILLADELPHIA GAS WORKS	
COAL GASIFICATION PLANT	
PHILLADELPHIA, PA	
ELECTRICAL	
PLANT PLAN	
BY: JAY AND JIMMY TAYLOR	
GILBERT ASSOCIATES, INC.	
PHILLADELPHIA, PA	
08/27/68 EE-271-004	
68078-10	





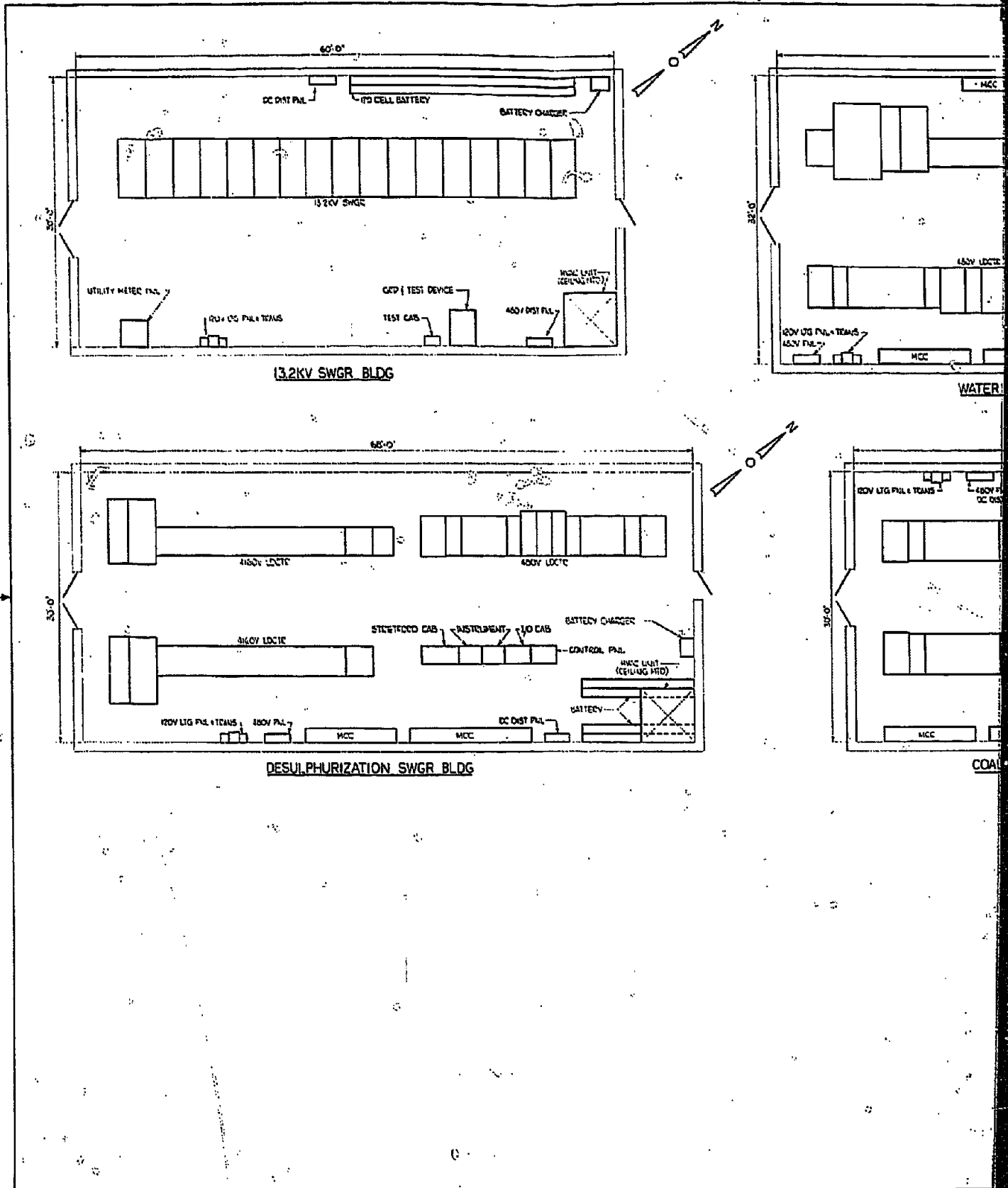


1<sup>ST</sup> FLOOR



2<sup>ND</sup> FLOOR





13.2KV SWGR BLDG

DESULPHURIZATION SWGR BLDG

WATER

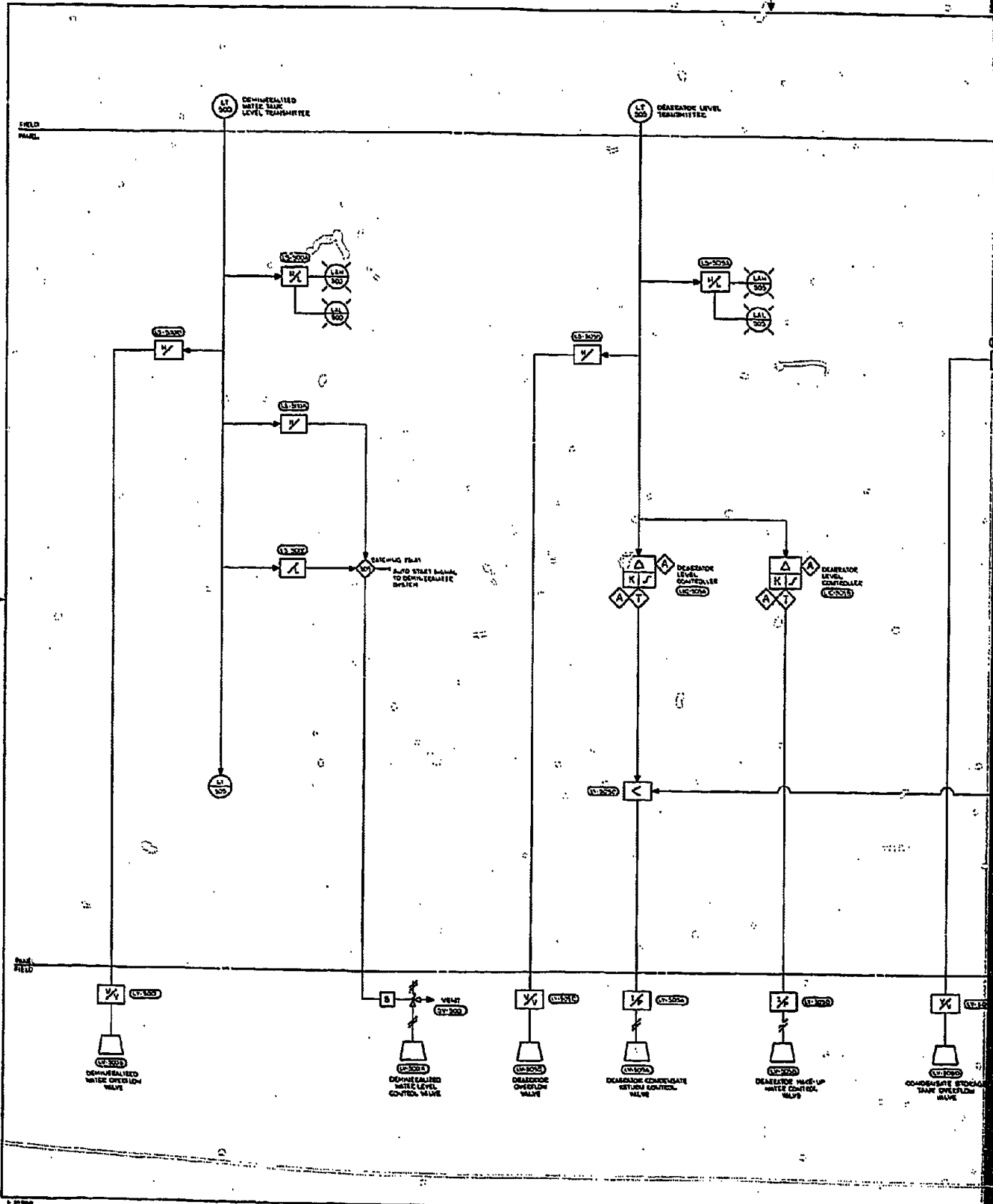
COAL

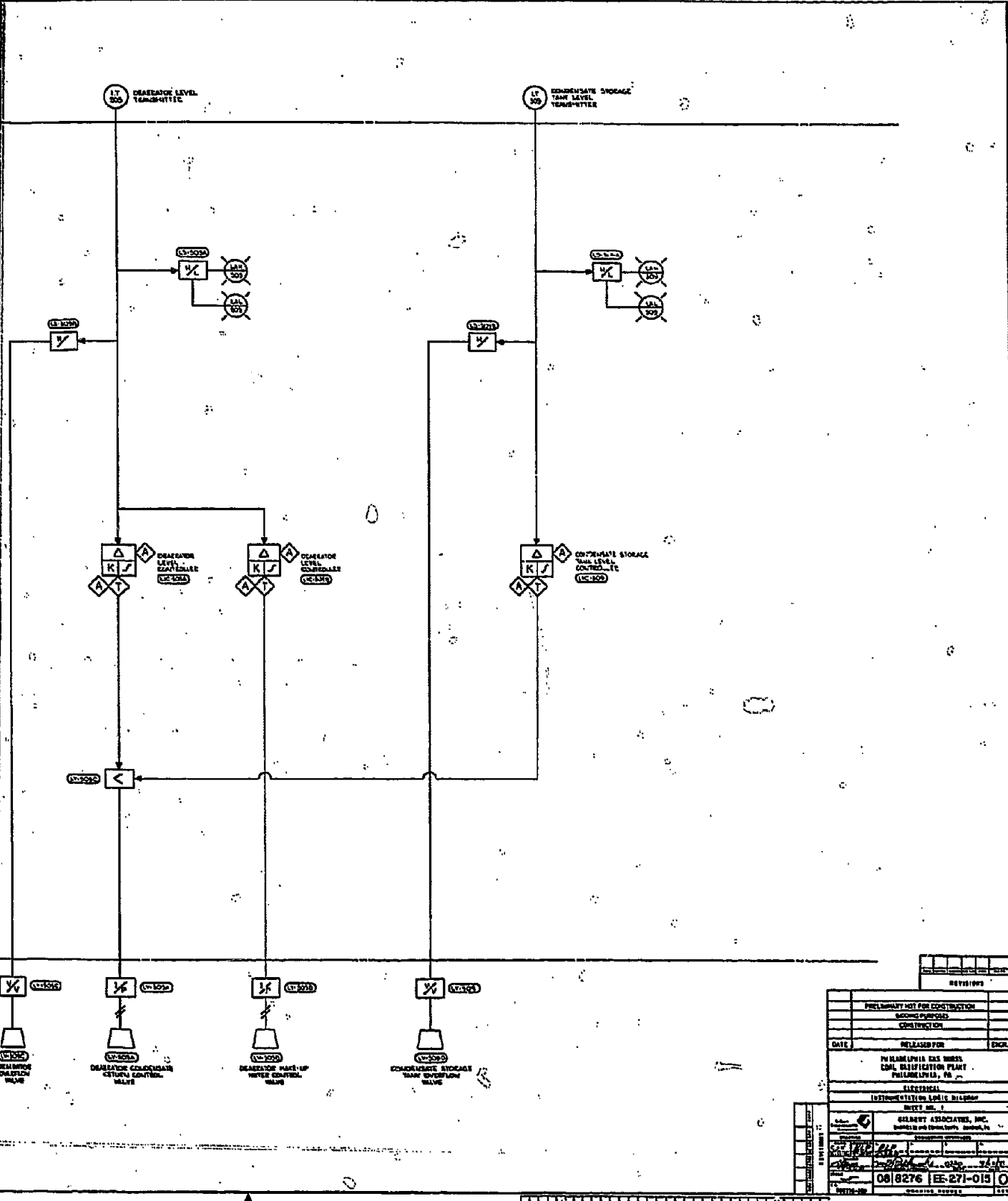


APPENDIX G

INSTRUMENT AND CONTROL LOGIC DIAGRAMS

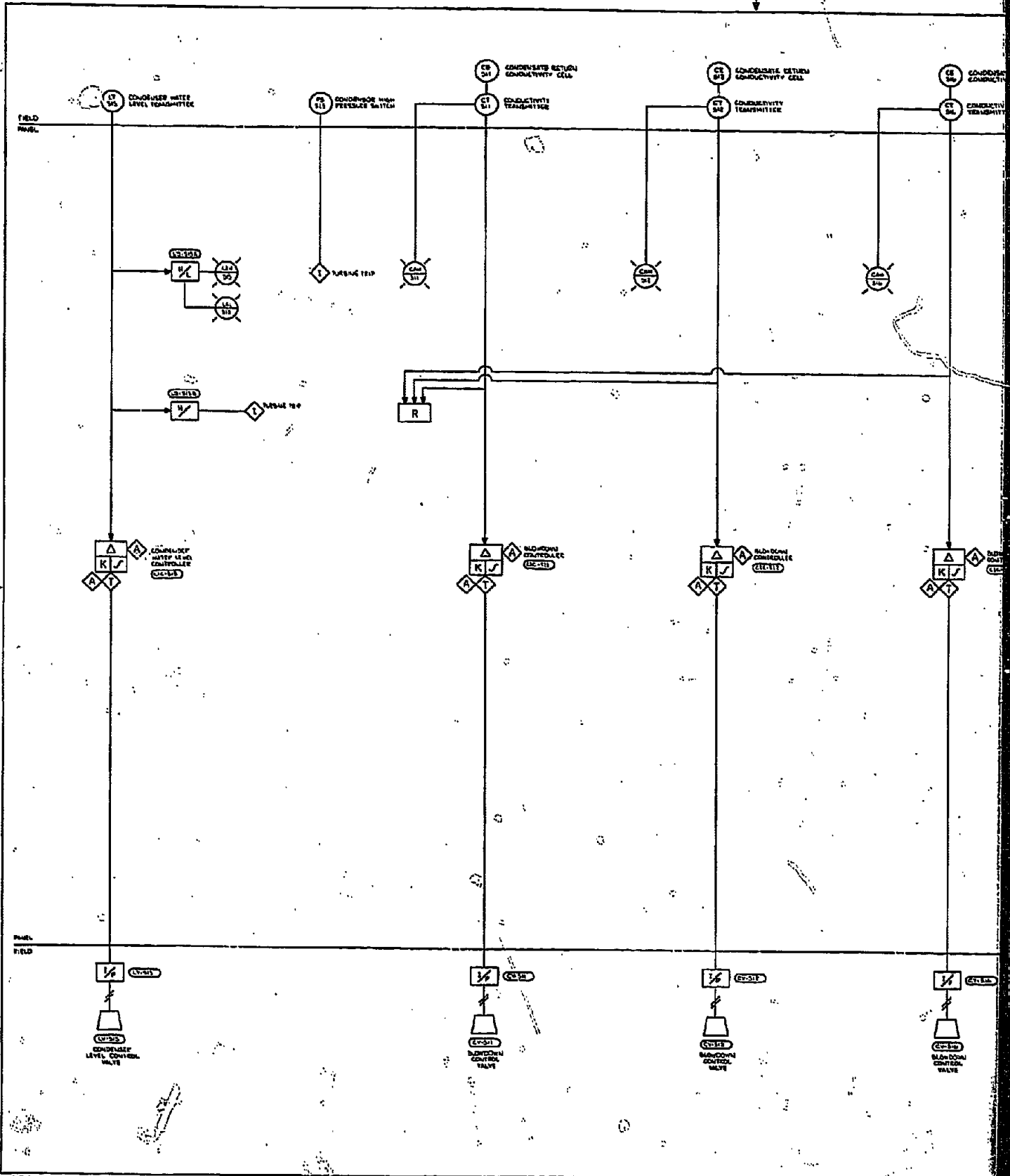


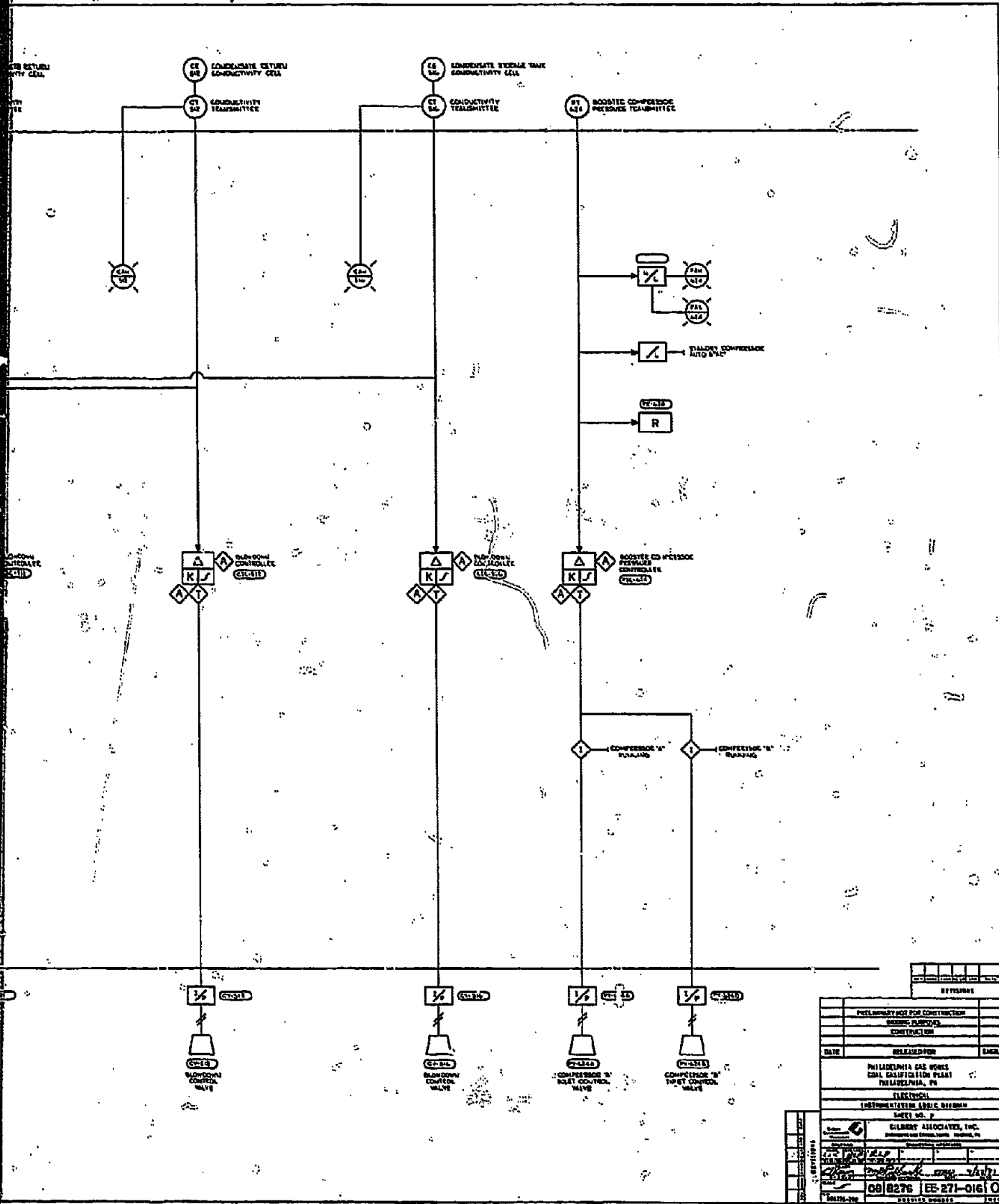




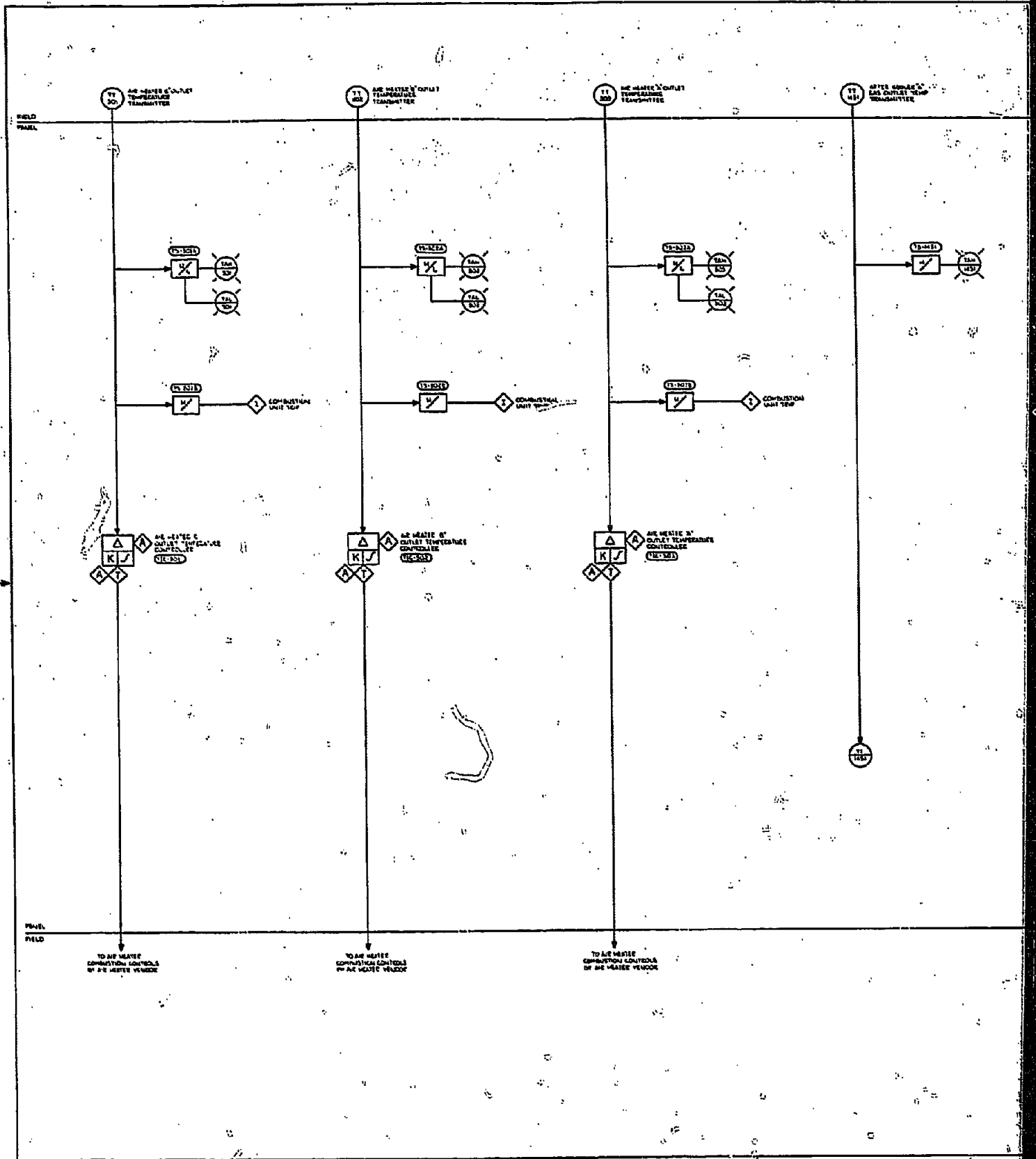
REVISIONS	

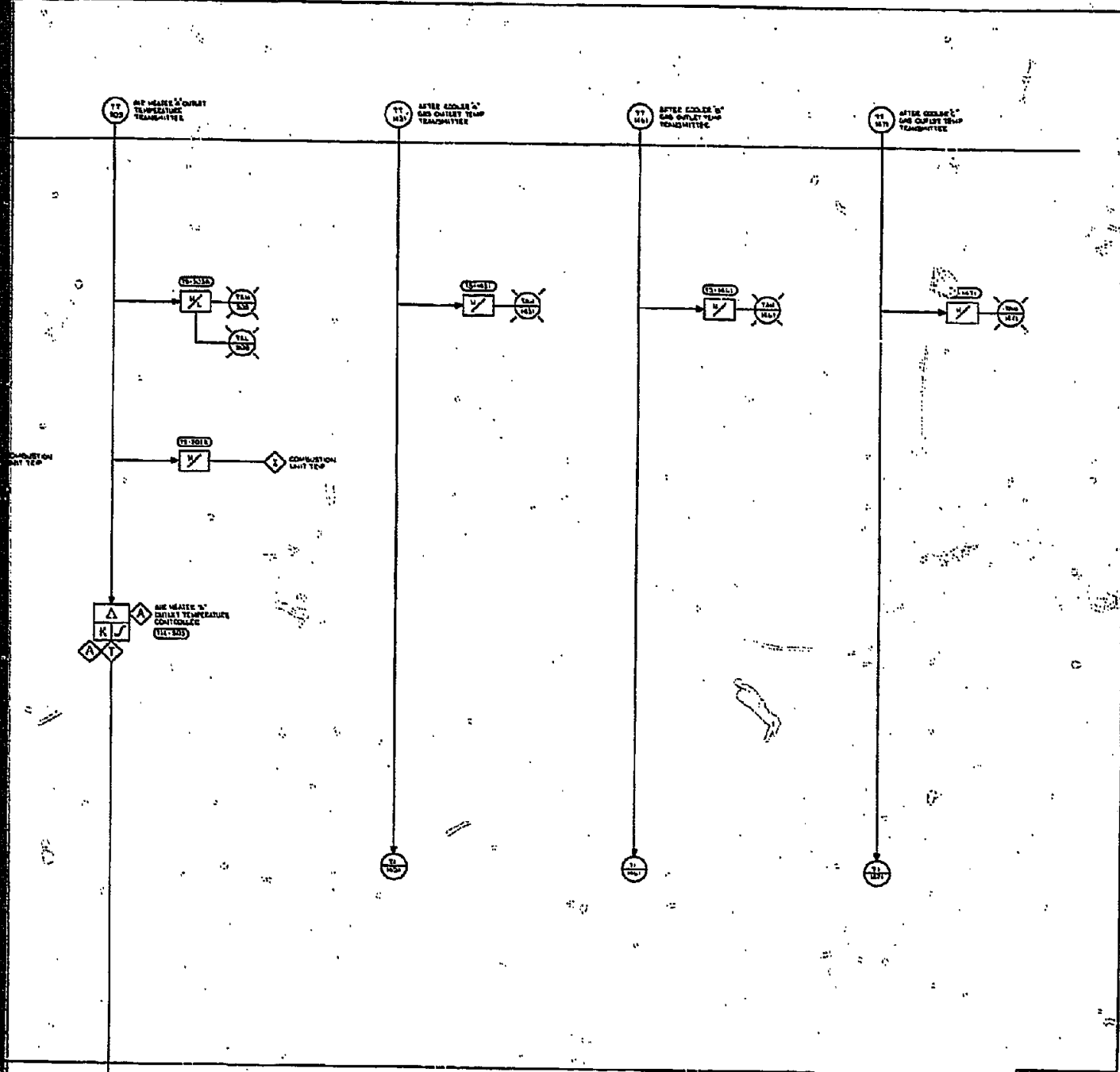
PRELIMINARY NOT FOR CONSTRUCTION	
BOOKING PURPOSES	
CONSTRUCTION	
DATE	RELEASED FOR
PHILADELPHIA GAS WORKS COAL GASIFICATION PLANT PHILADELPHIA, PA	
ELECTRICAL	
INSTRUMENTATION SYMBOLS	
SHEET NO. 1	
GILBERT ASSOCIATES, INC. ENGINEERS AND ARCHITECTS PHILADELPHIA, PA	
08 8276	EE-271-015





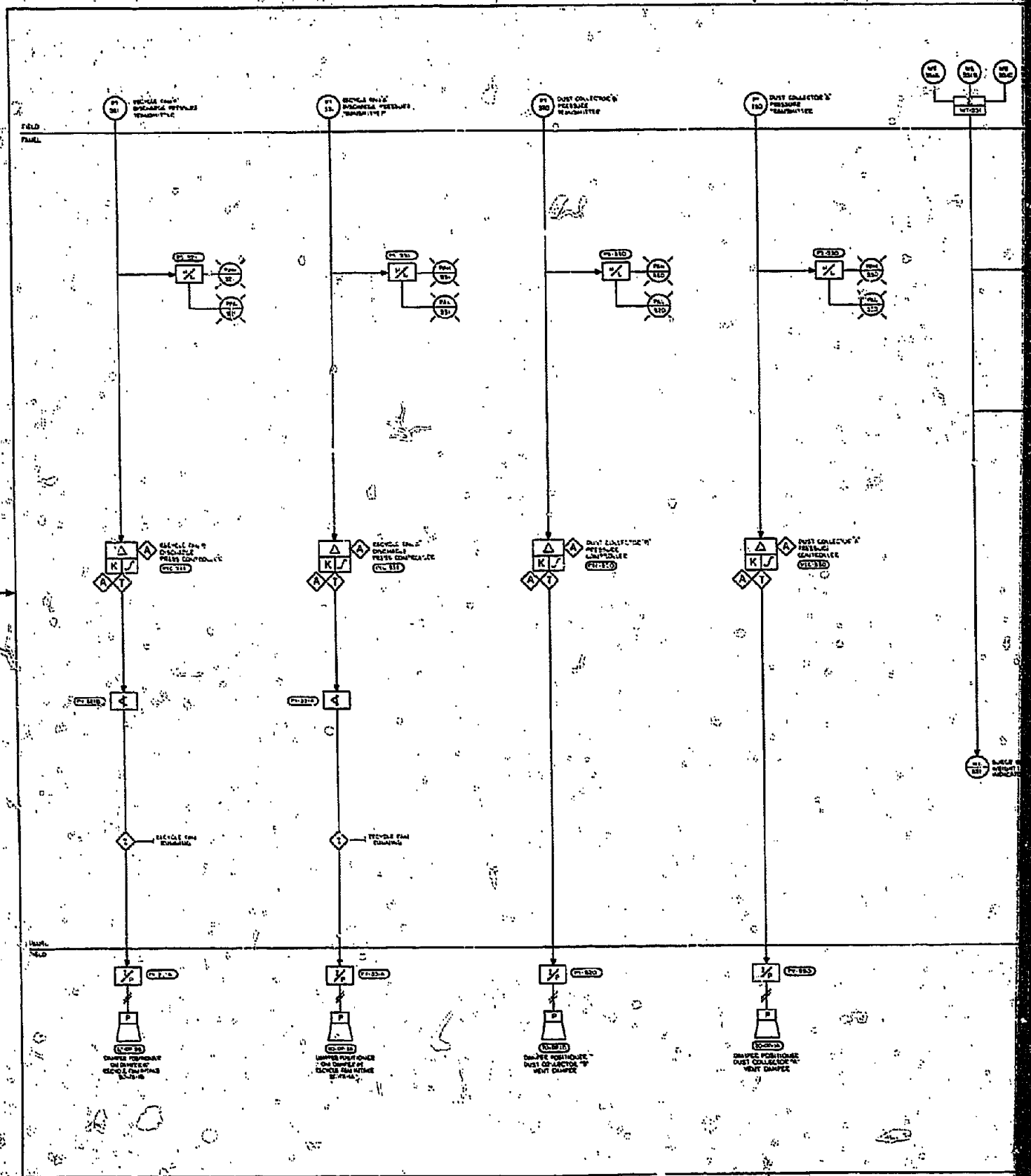
REVISIONS	
NO.	DESCRIPTION
1	AS SHOWN
DATE: 08/22/76	
DRAWN BY: [Signature]	
CHECKED BY: [Signature]	
PROJECT: PHILADELPHIA GAS WORKS	
SHEET NO. P	
ELECTRICAL	
CONTRACT NO. 08/8276	
SHEET NO. ES 271-0161 O	

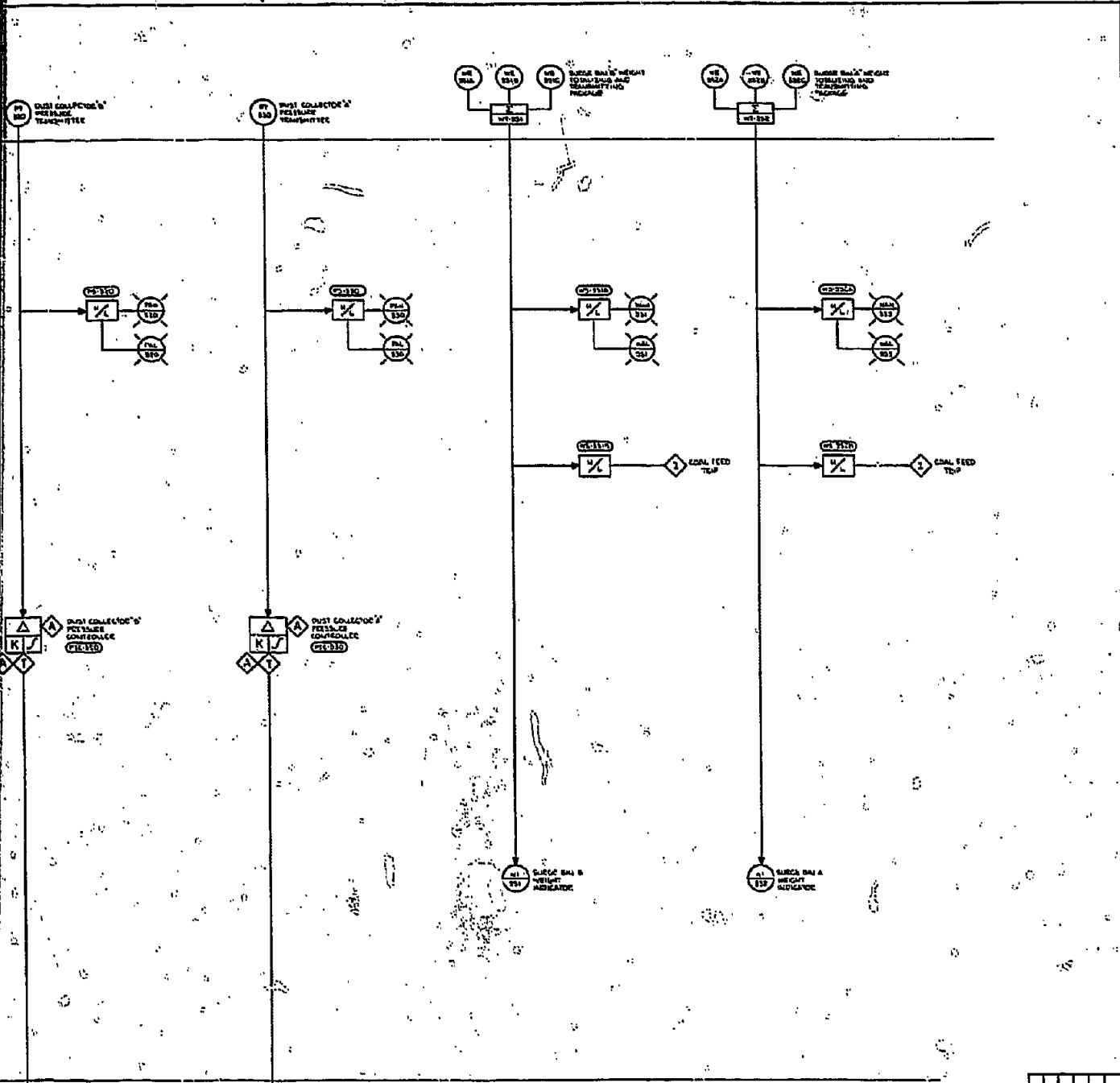




TO AIR HEATER COMBUSTION CONTROLS BY GAS HEATER VENDOR

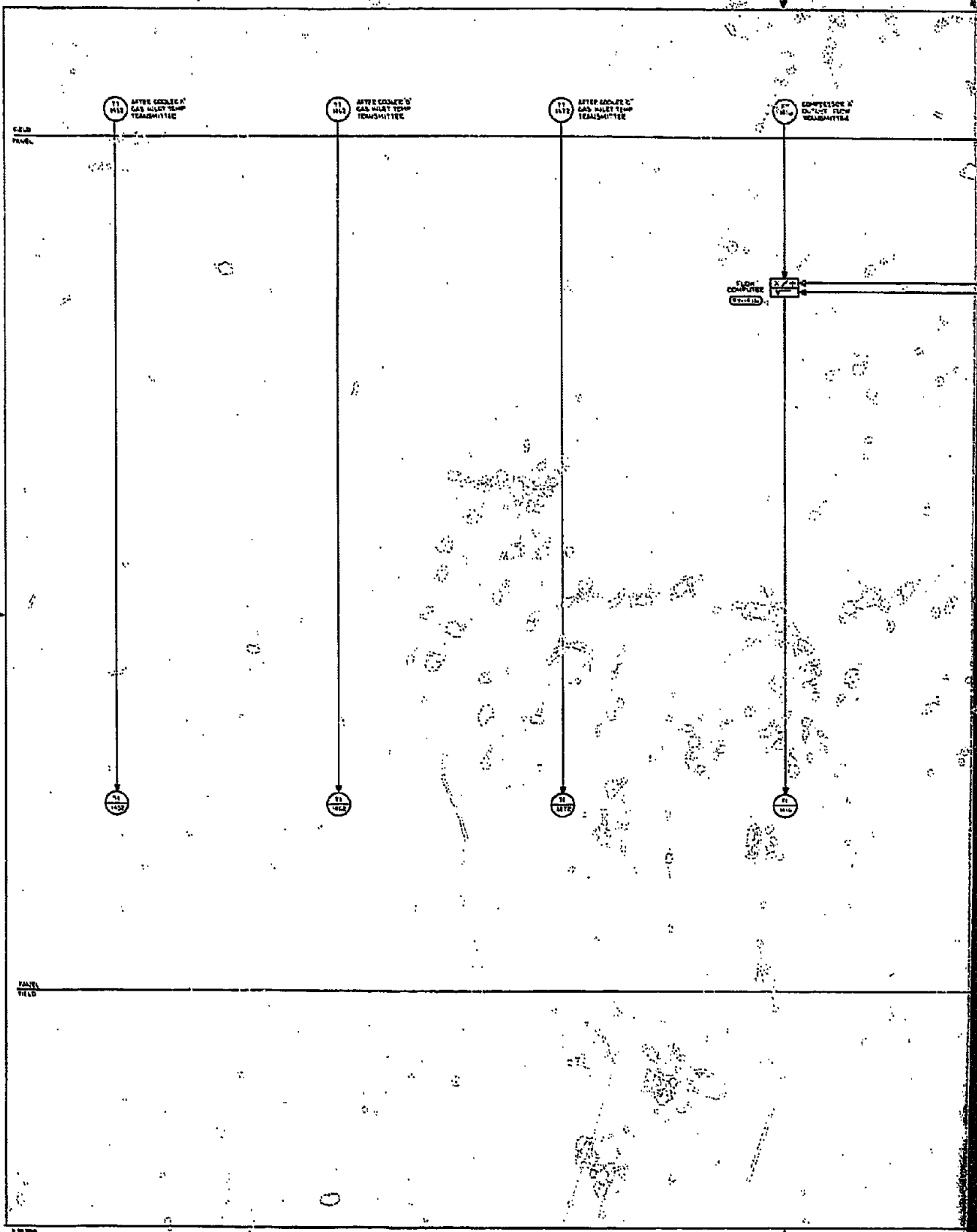
DATE		RELEASED FOR	TIME
PHILADELPHIA GAS WORKS GAS DISTRIBUTION DEPT. PHILADELPHIA, PA.			
ELECTRICAL			
INSTALLATION - SEE DIAGRAM			
GILBERT ASSOCIATES, INC. ENGINEERS AND CONSULTANTS, PHILADELPHIA, PA.			
08/28/76 1E5-27-017			

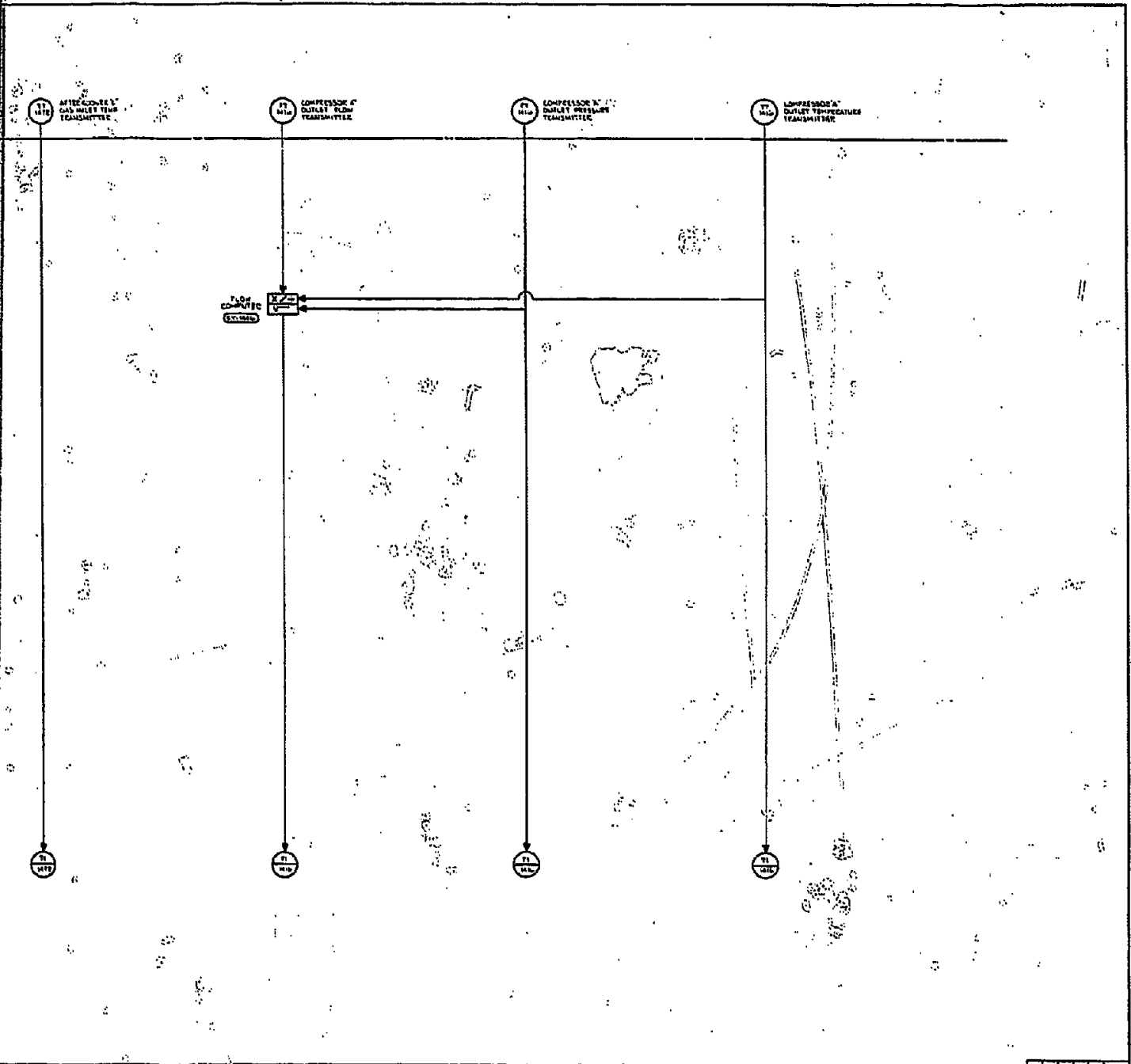




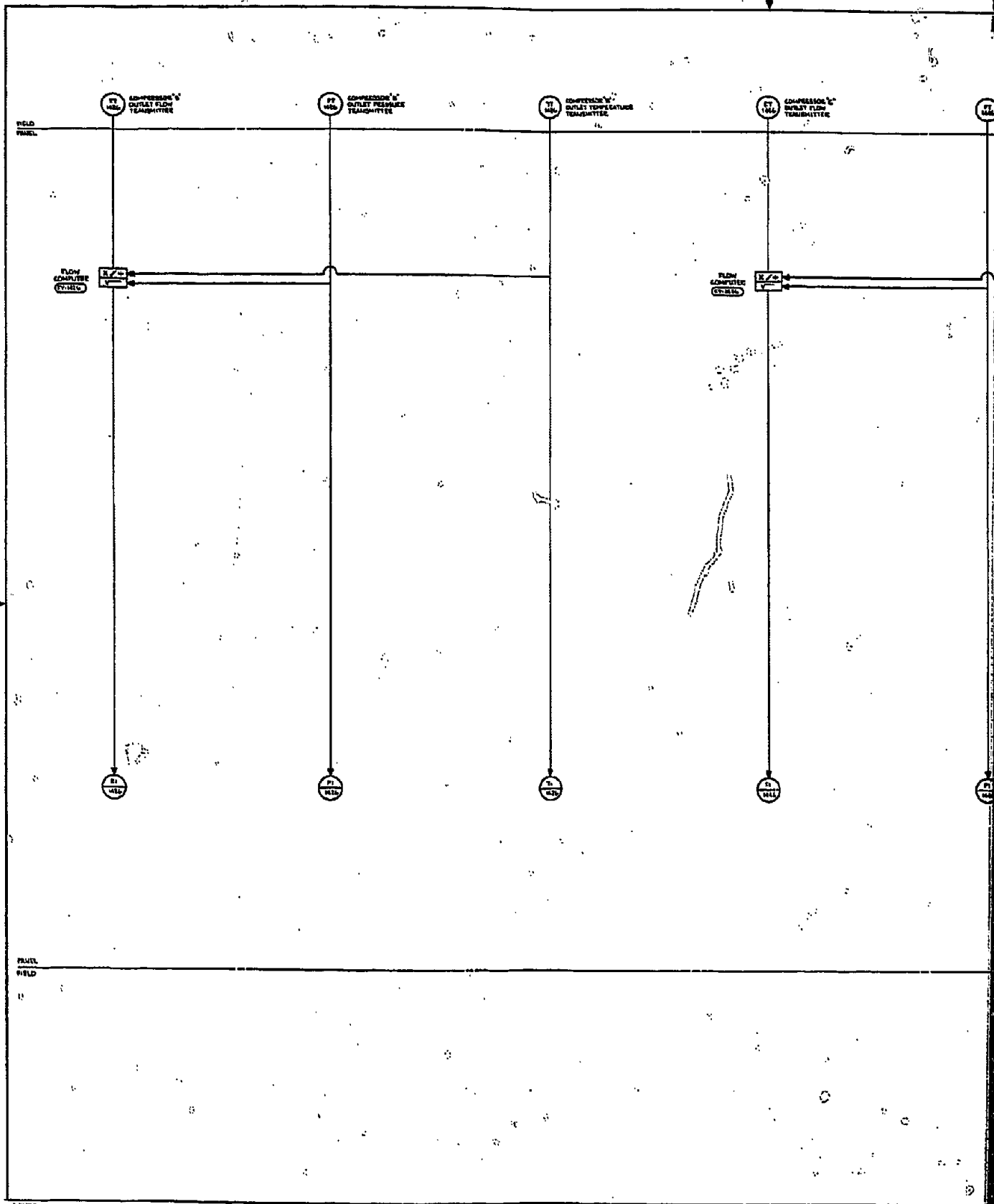
INSTRUMENTATION & WIRING	
PRELIMINARY NOT FOR CONSTRUCTION	
DESIGNED BY	
CONSIDERED	
DATE	RELEASED FOR _____ DSCR
PHILADELPHIA GAS WORKS COAL GASIFICATION PLANT PHILADELPHIA, PA ELECTRICAL	
INSTRUMENTATION & WIRING	
BY: [Signature]	
DATE: 05/27/68	
05 8276 ES-271-018	



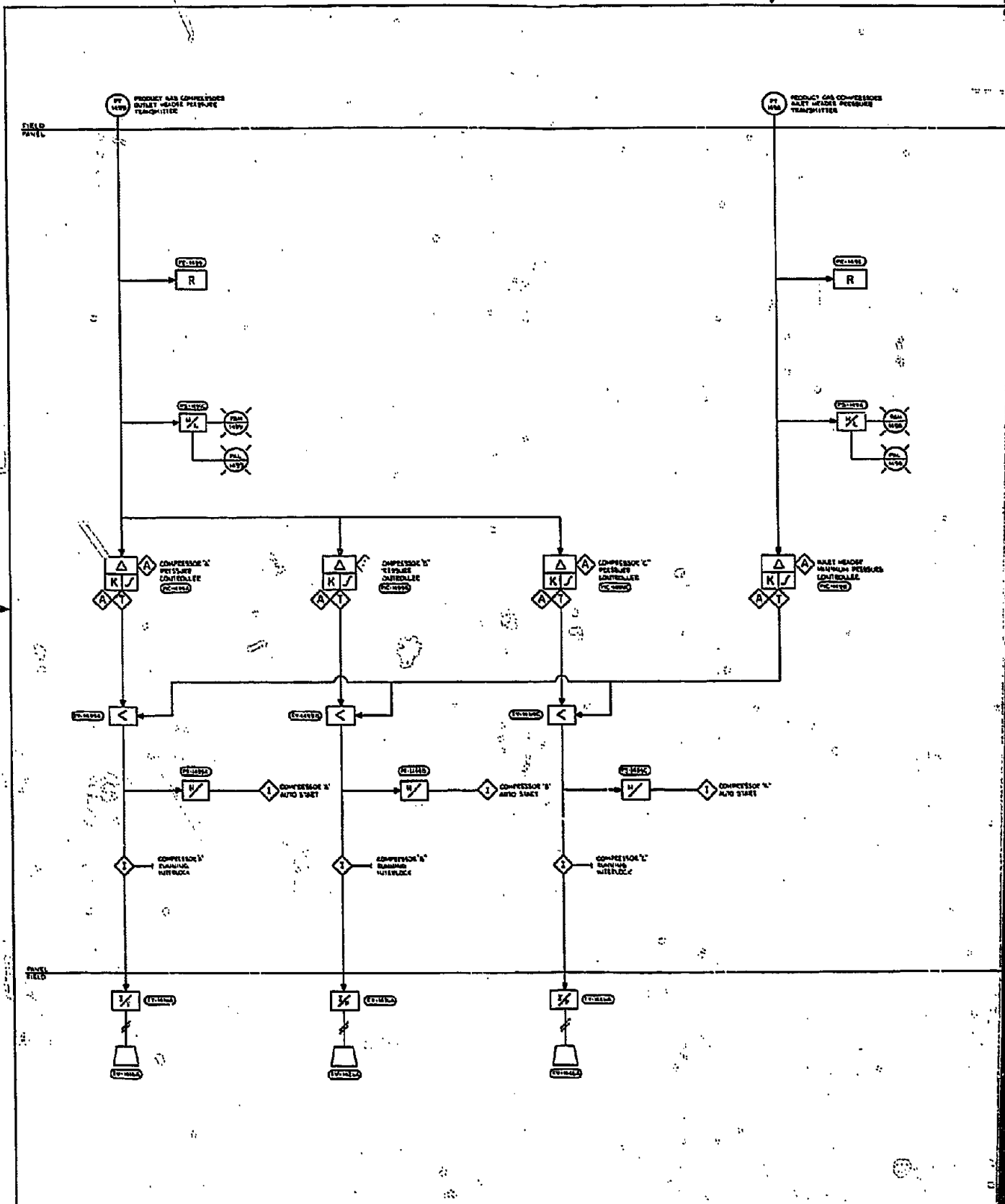


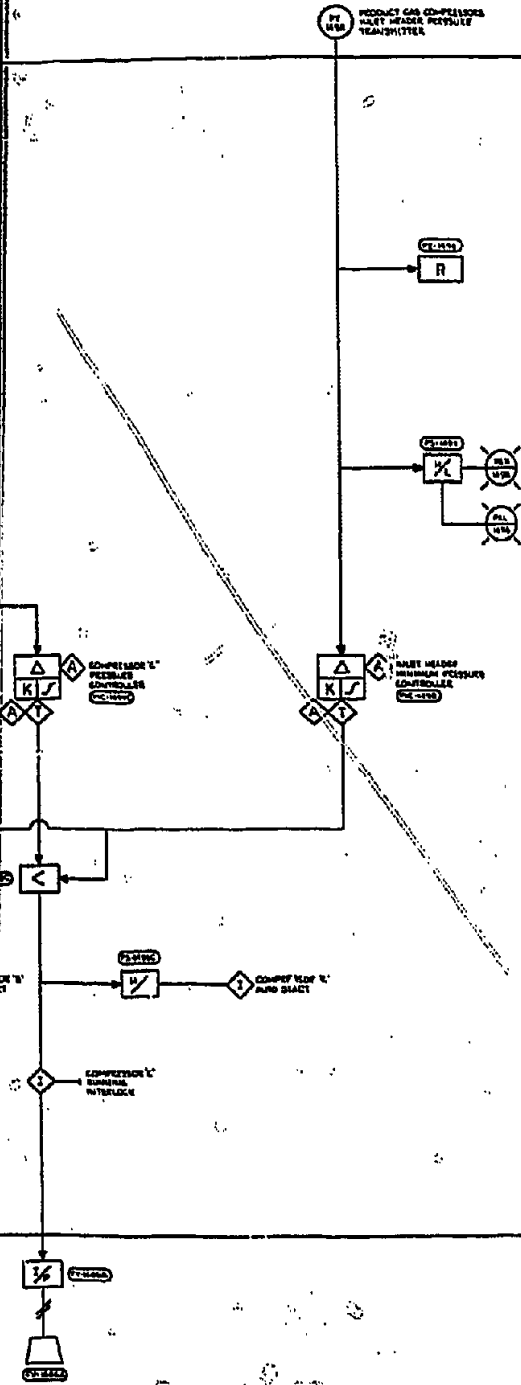


REVISIONS	
NO.	DATE
PURPOSE / NOT FOR CONSTRUCTION	
DESIGNED BY	
CHECKED BY	
DATE	SCALE FOR
PHILADELPHIA GAS WORKS 2344 CHESTNUT STREET PHILADELPHIA, PA.	
ELECTRICAL	
INTERNATIONAL UNION OF ELECTRICAL WORKERS	
LIBERTY ASSOCIATES, INC.	
1000 MARKET STREET, PHILADELPHIA, PA.	
DATE	BY
DATE	BY
DATE	BY
08 8276 EE-271-019 10	
STANDARD SYMBOLS	

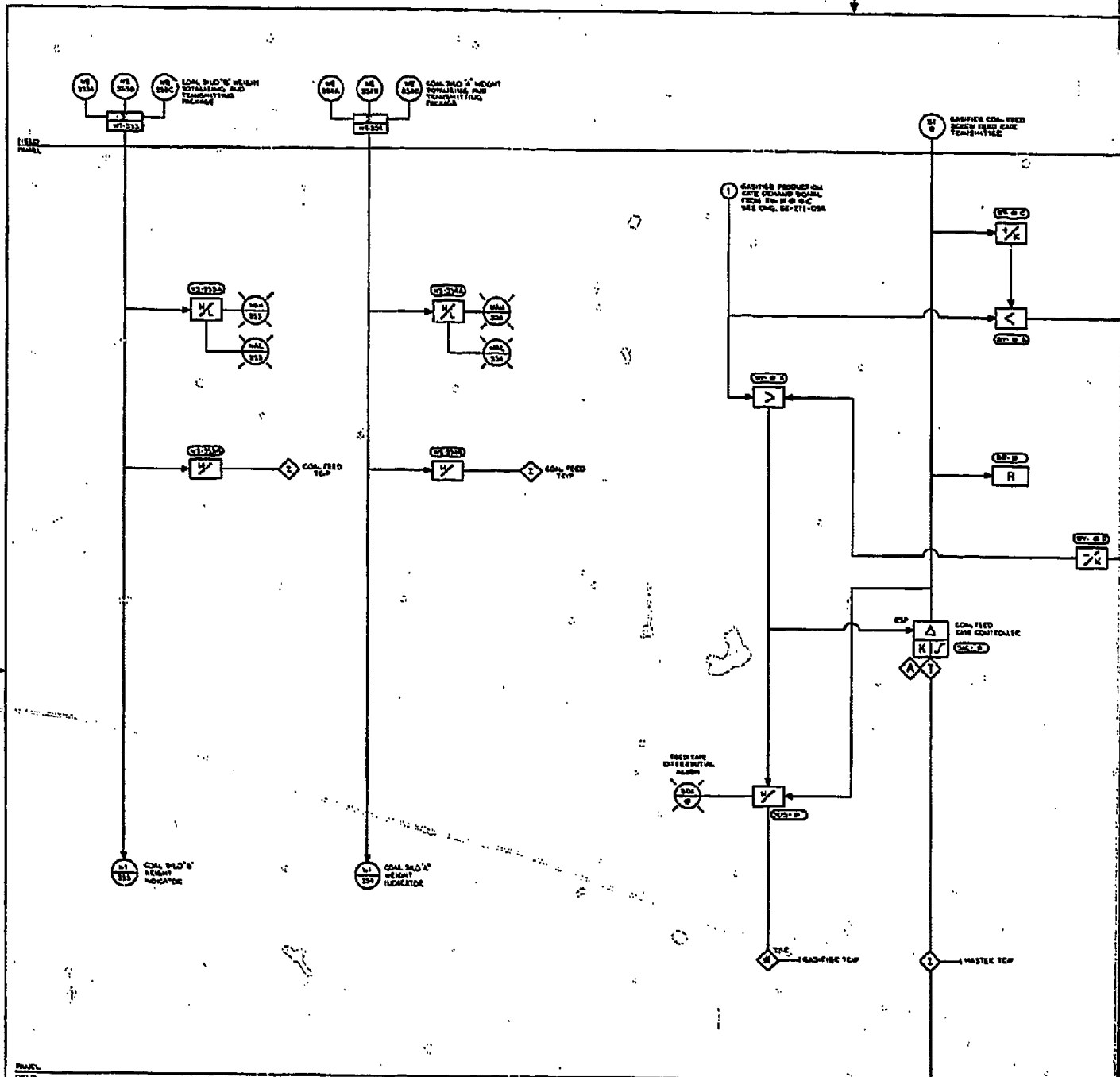






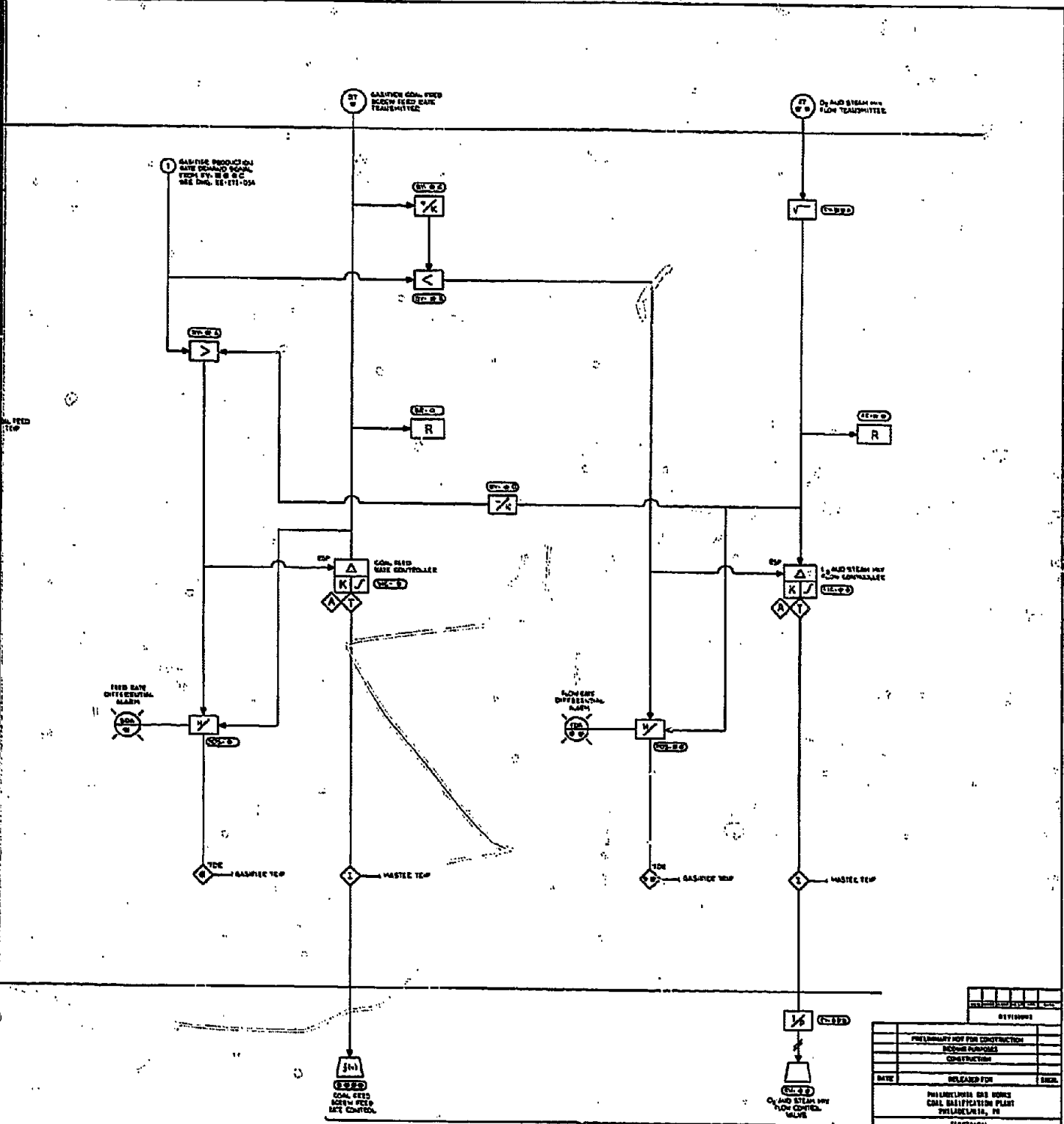


REVISIONS	
PRELIMINARY AND FOR CONSTRUCTION SUBJECT SUBJECT OR INTENTION	
DATE	RELEASED FOR
PHILADELPHIA GAS WORKS EXHAUST GASIFICATION PLANT PHILADELPHIA, PA	
ELECTRICAL	
INSTRUMENTATION AND ELECTRICAL	
PROJECT NO. 7 COLBERT ASSOCIATES, INC. 1000 MARKET STREET, PHILADELPHIA, PA	
DRAWING NO. 9437	
08/27/76 15-271-021 O	
DESIGNER	



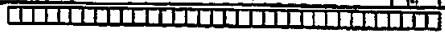
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			NO.	TYPE	FUNCTION	DESCRIPTION	STATUS
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	122		120	WT-231	WEIGHT	COAL #20 WEIGHT REGULATING AND TRANSMITTING MODULE	
	123		130	SI	INDICATOR	COAL #10 WEIGHT INDICATOR	
	124		140	SI	INDICATOR	COAL #20 WEIGHT INDICATOR	
	125		150	SI	ALARM	COAL FEED RATE DIFFERENTIAL ALARM	
	126		160	SI	INDICATOR	MASTER TAP	
	127		170	SI	INDICATOR	COAL FEED RATE CONTROL	
	128		180	SI	INDICATOR	COAL FEED RATE CONTROL	
	129		190	SI	INDICATOR	COAL FEED RATE CONTROL	
	130		200	SI	INDICATOR	COAL FEED RATE CONTROL	
	131		210	SI	INDICATOR	COAL FEED RATE CONTROL	
	132		220	SI	INDICATOR	COAL FEED RATE CONTROL	
	133		230	SI	INDICATOR	COAL FEED RATE CONTROL	
	134		240	SI	INDICATOR	COAL FEED RATE CONTROL	
	135		250	SI	INDICATOR	COAL FEED RATE CONTROL	
	136		260	SI	INDICATOR	COAL FEED RATE CONTROL	
	137		270	SI	INDICATOR	COAL FEED RATE CONTROL	
	138		280	SI	INDICATOR	COAL FEED RATE CONTROL	
	139		290	SI	INDICATOR	COAL FEED RATE CONTROL	
	140		300	SI	INDICATOR	COAL FEED RATE CONTROL	
	141		310	SI	INDICATOR	COAL FEED RATE CONTROL	
	142		320	SI	INDICATOR	COAL FEED RATE CONTROL	
	143		330	SI	INDICATOR	COAL FEED RATE CONTROL	
	144		340	SI	INDICATOR	COAL FEED RATE CONTROL	
	145		350	SI	INDICATOR	COAL FEED RATE CONTROL	
	146		360	SI	INDICATOR	COAL FEED RATE CONTROL	
	147		370	SI	INDICATOR	COAL FEED RATE CONTROL	
	148		380	SI	INDICATOR	COAL FEED RATE CONTROL	
	149		390	SI	INDICATOR	COAL FEED RATE CONTROL	
	150		400	SI	INDICATOR	COAL FEED RATE CONTROL	

COAL FEED RATE CONTROL

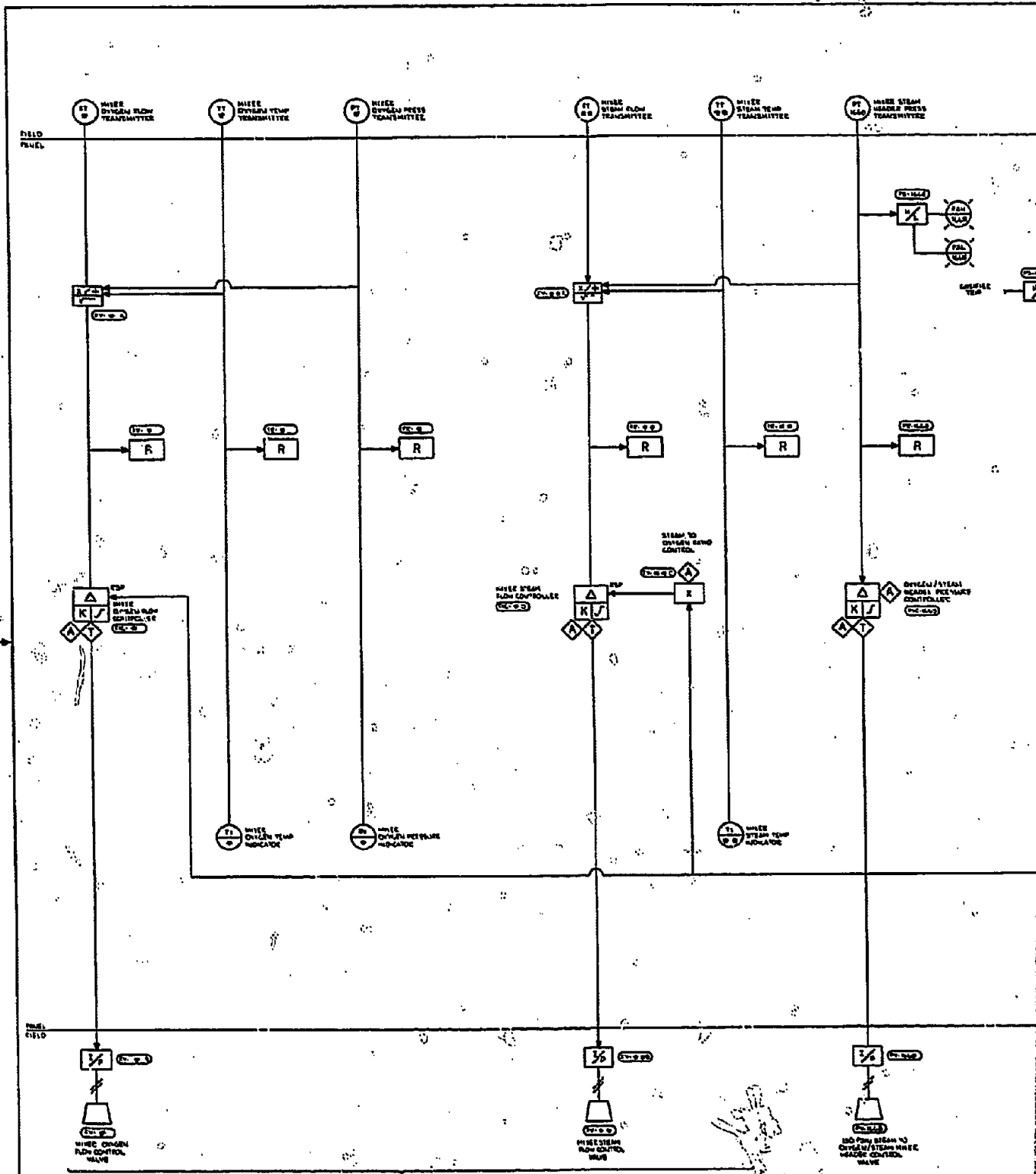


TYPICAL P&ID BURNER FEED CONTROL LOOP  
(SEE DRAWING FOR ALTERNATE POWER LOGS)

REVISIONS			
NO.	DATE	DESCRIPTION	BY
<b>PHILADELPHIA GAS WORKS</b> GASIFICATION PLANT PHILADELPHIA, PA			
PROJECT: <b>PHILADELPHIA GAS WORKS</b> GASIFICATION PLANT PHILADELPHIA, PA			
SHEET NO. <b>8</b> <b>DELMET ASSOCIATES, INC.</b> CONSULTING ENGINEERS, CHEMICALS DIVISION PHILADELPHIA, PA			
DRAWING NO. <b>OB-8278</b>		SHEET NO. <b>EE-271-021</b>	
DATE: <b>10/20/71</b>			
SCALE:			

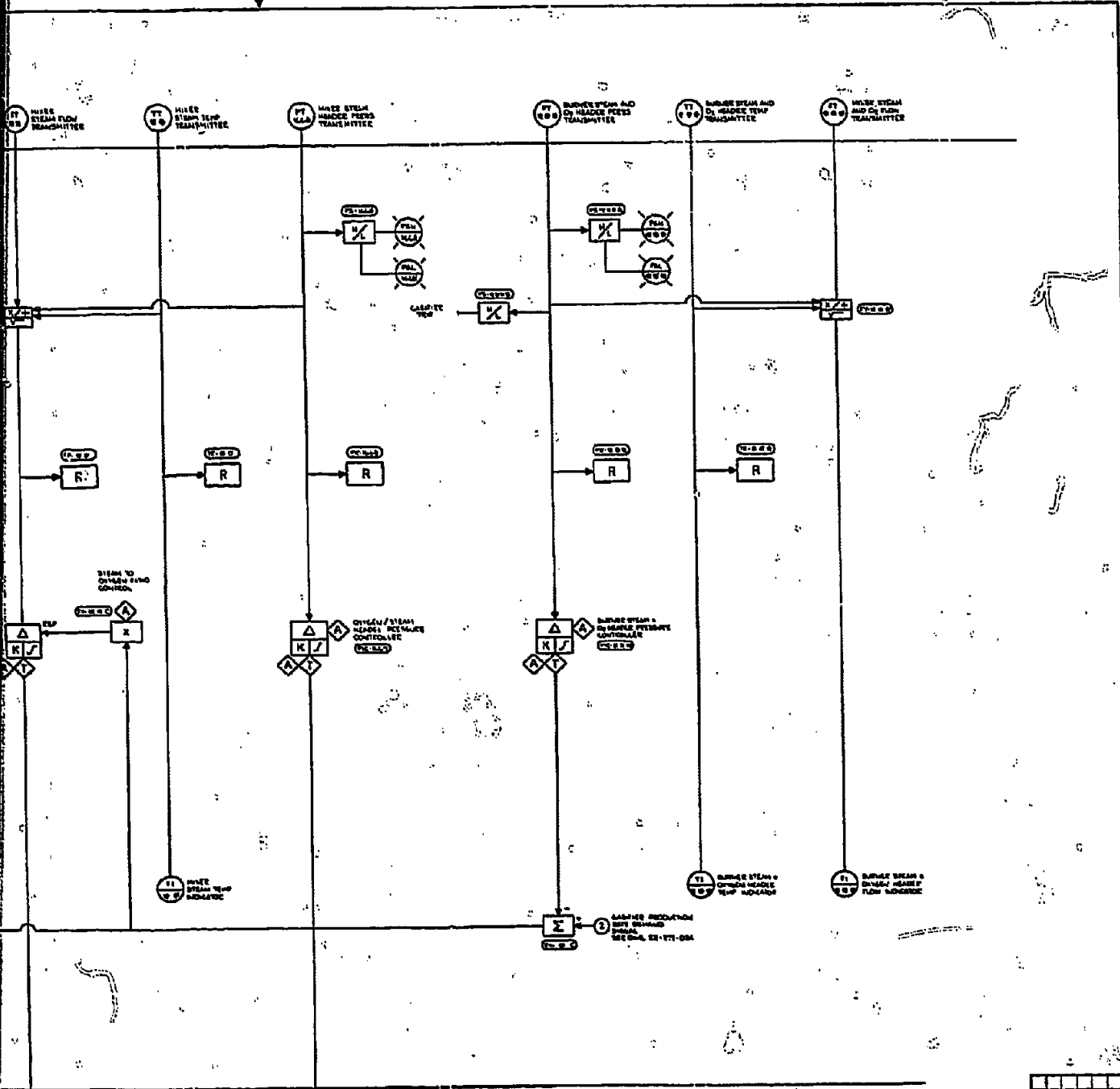






TYPICAL FOR STEAM AND DIESEL WATER FLOW CONTROLS - (SEE CHART FOR INDIVIDUAL DEVICE TAGS)

DEVICE TAG	FUNCTION			APPLICAT. NO.
	0	1	2	
TT 0	0	0	0	OPERATIONS SECTION 20-11
TT 1	0	0	0	
TT 2	0	0	0	20-11
TT 40	0	0	0	
TT 48	0	0	0	2
TT 100	0	0	0	2



STEAM TO OVERHEAD FLOW CONTROL

OVERHEAD/STEAM HEADERS RECULATOR CONTROLLER

OVERHEAD/STEAM HEADERS RECULATOR CONTROLLER

GASIFIED PRODUCTION RATE DEMAND SIGNAL SET POINT 22-171-004

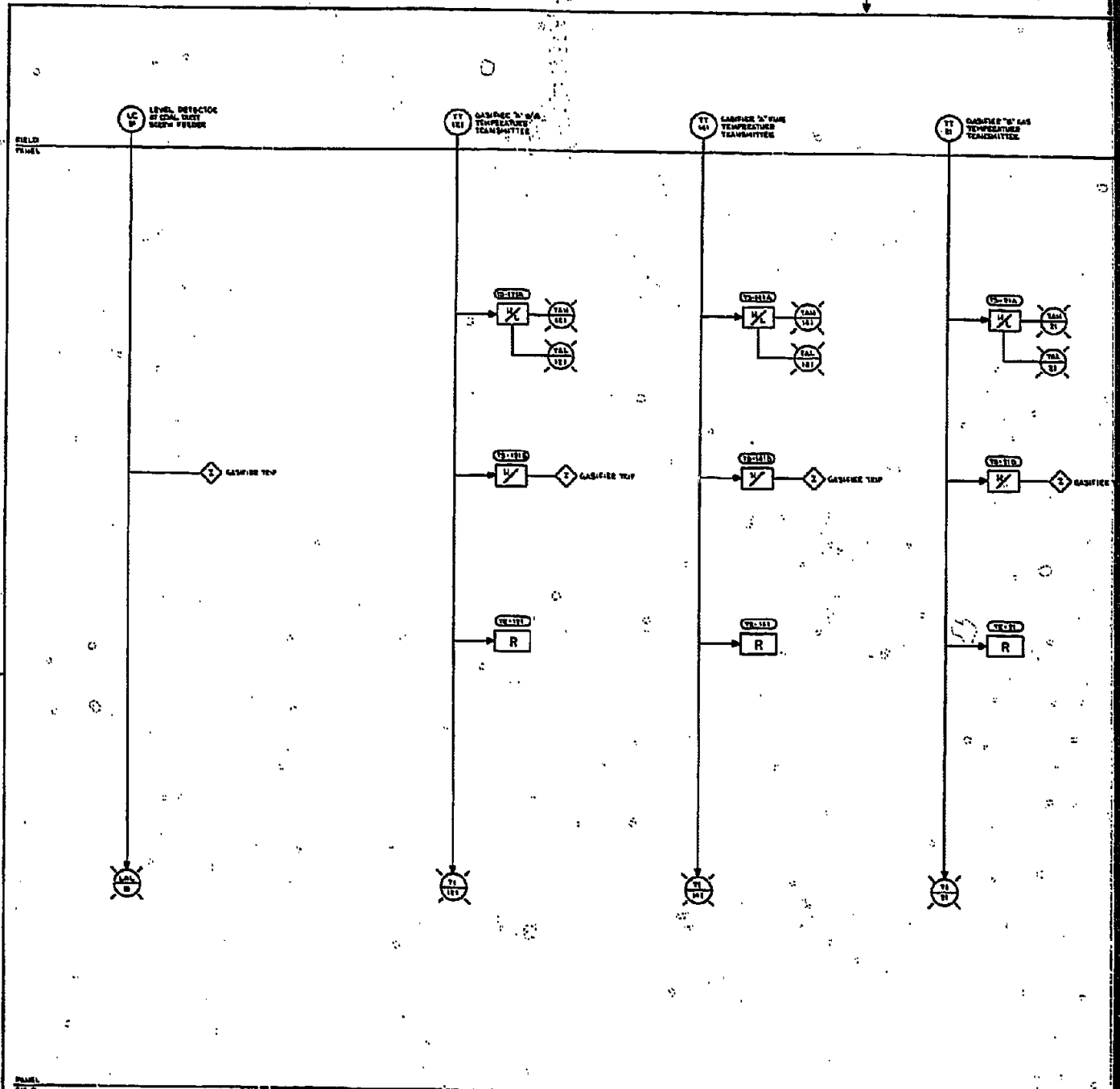
TYPICAL FOR STEAM AND OVERHEAD WATER FLOW CONTROL (SEE LEGEND FOR ADDITIONAL DETAILS 'M', 'W')

WATER STEAM FLOW CONTROL VALVE

100 PERCENT STEAM TO OVERHEAD/STEAM HEADERS HEADERS CONTROL VALVE

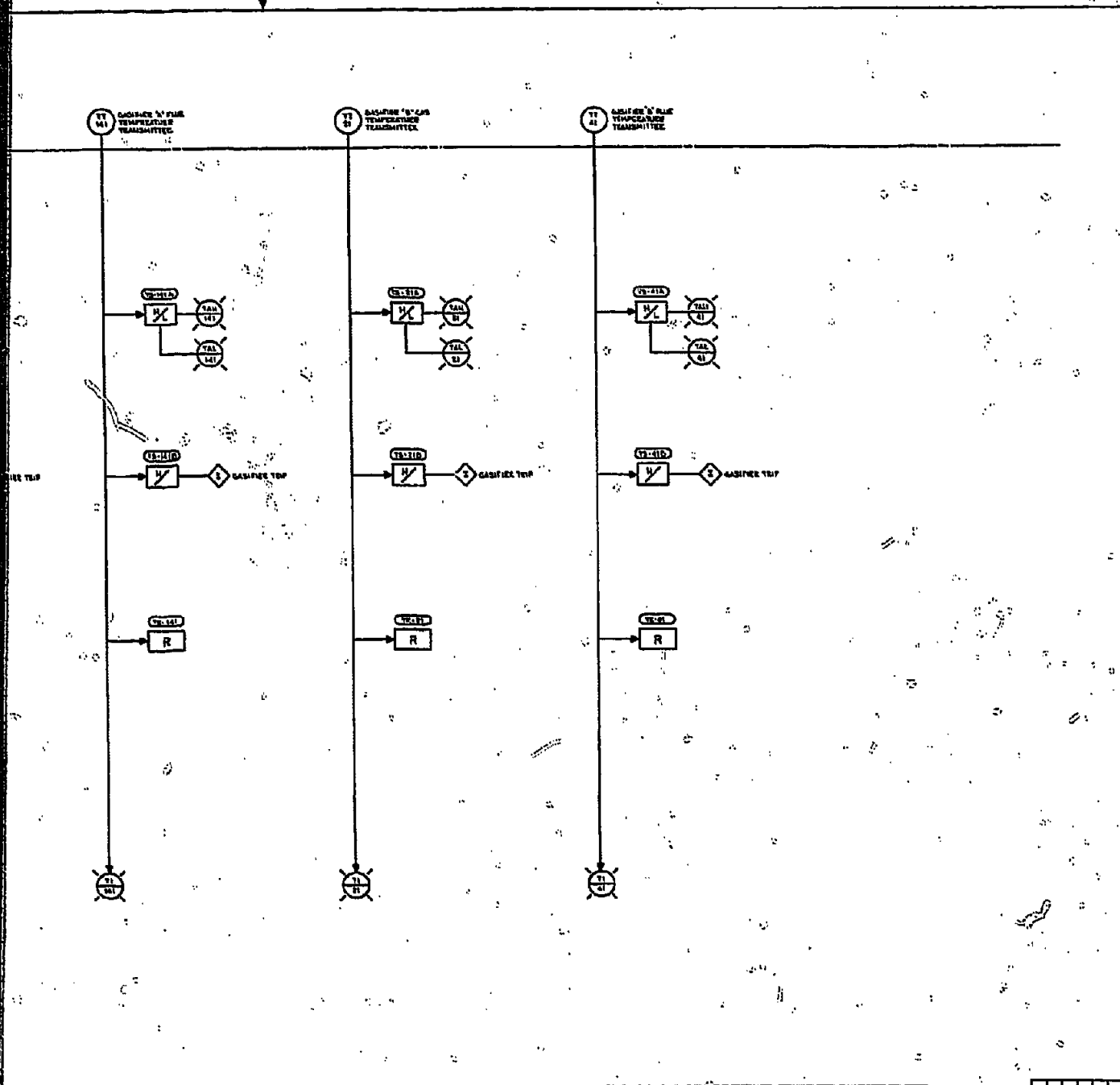
INSTRUMENT NO.	TYPE	VALUES	APPLICATION
100	TI	100	QUALIFICATION BEYOND 20-214
101	TI	100	
102	TI	100	
103	TI	100	
104	TI	100	

REVISED	
DATE	RELEASED FOR
PHILADELPHIA GAS WORKS GAS GASIFICATION PLANT PHILADELPHIA, PA	
ELECTRICIAN	
INSTRUMENTATION LOGIC DIAGRAM	
SHELL CO. & SHELLCO ASSOCIATES, INC. PHILADELPHIA, PA	
0818276	ES-271-022

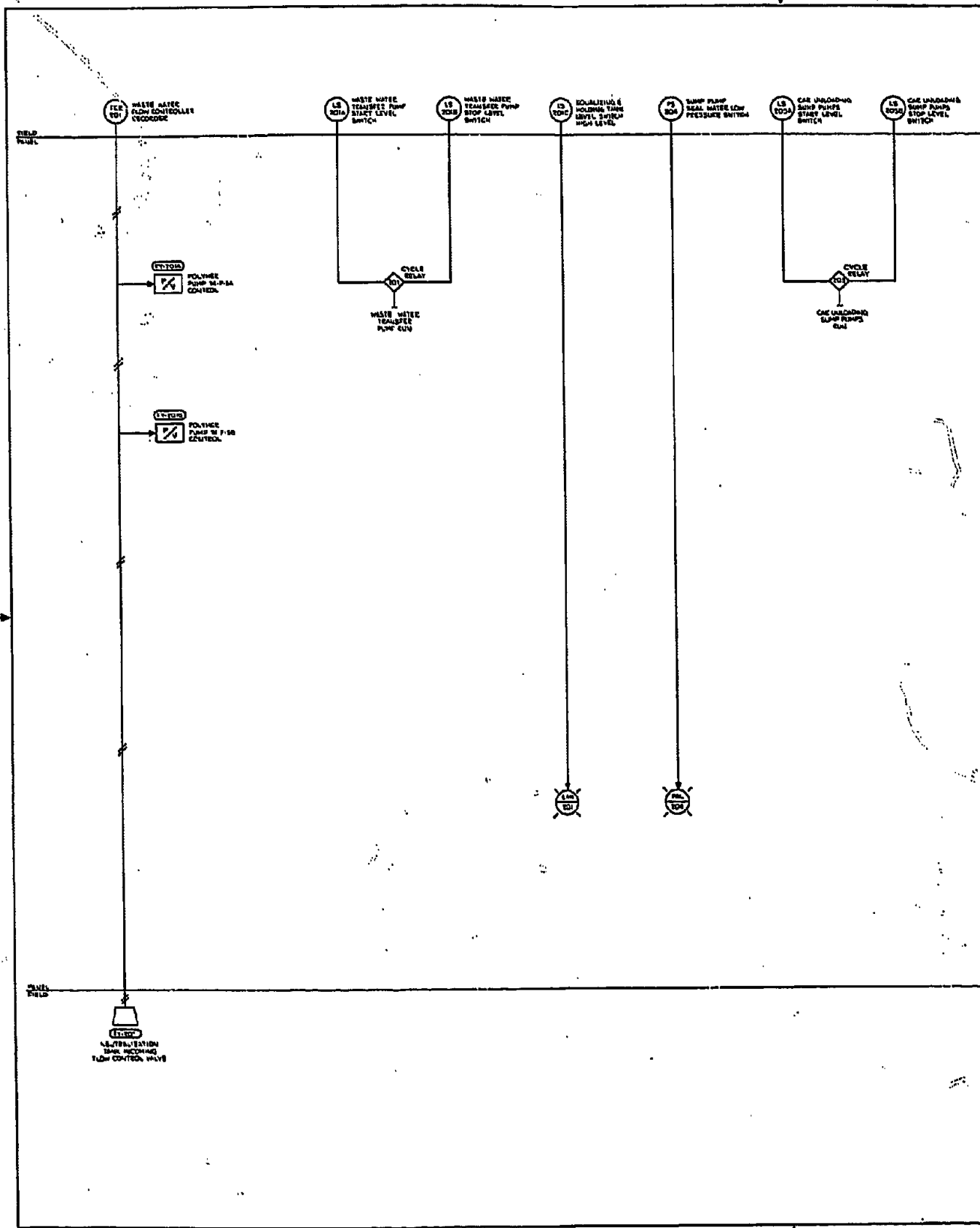


TYPICAL FOR G2500 PLANT  
SEE SHEET FOR INTERLOCKING (VOLTAGE UP)

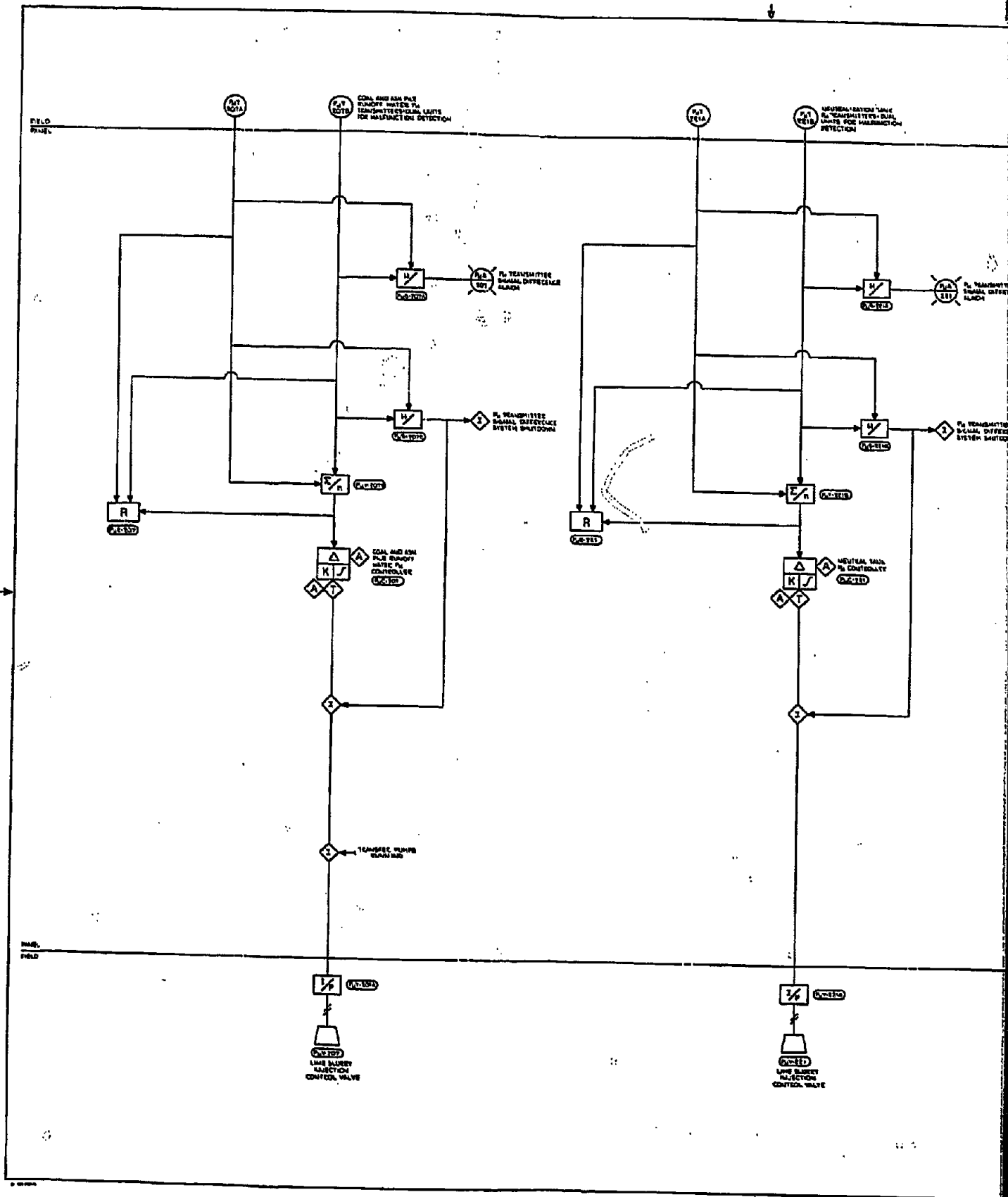
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122		
123		
124		
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126		
127		
128		
129		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		



DESIGNATION		
PRELIMINARY NOT FOR CONSTRUCTION		
ENGINE PURPOSE		
CONSTRUCTION		
DATE	RELEASED FOR	EMD
PHILADELPHIA GAS WORKS COAL GASIFICATION PLANT PHILADELPHIA, PA		
ELECTRICAL		
INSTALLATION LOGIC DIAGRAM		
PROJECT NO. 12 SHEET NO. 12		
HELIX ASSOCIATES, INC. ENGINEERS AND ARCHITECTS, PHILADELPHIA, PA.		
08/22/78		EE-271-024 0
DESIGN CHECKED		

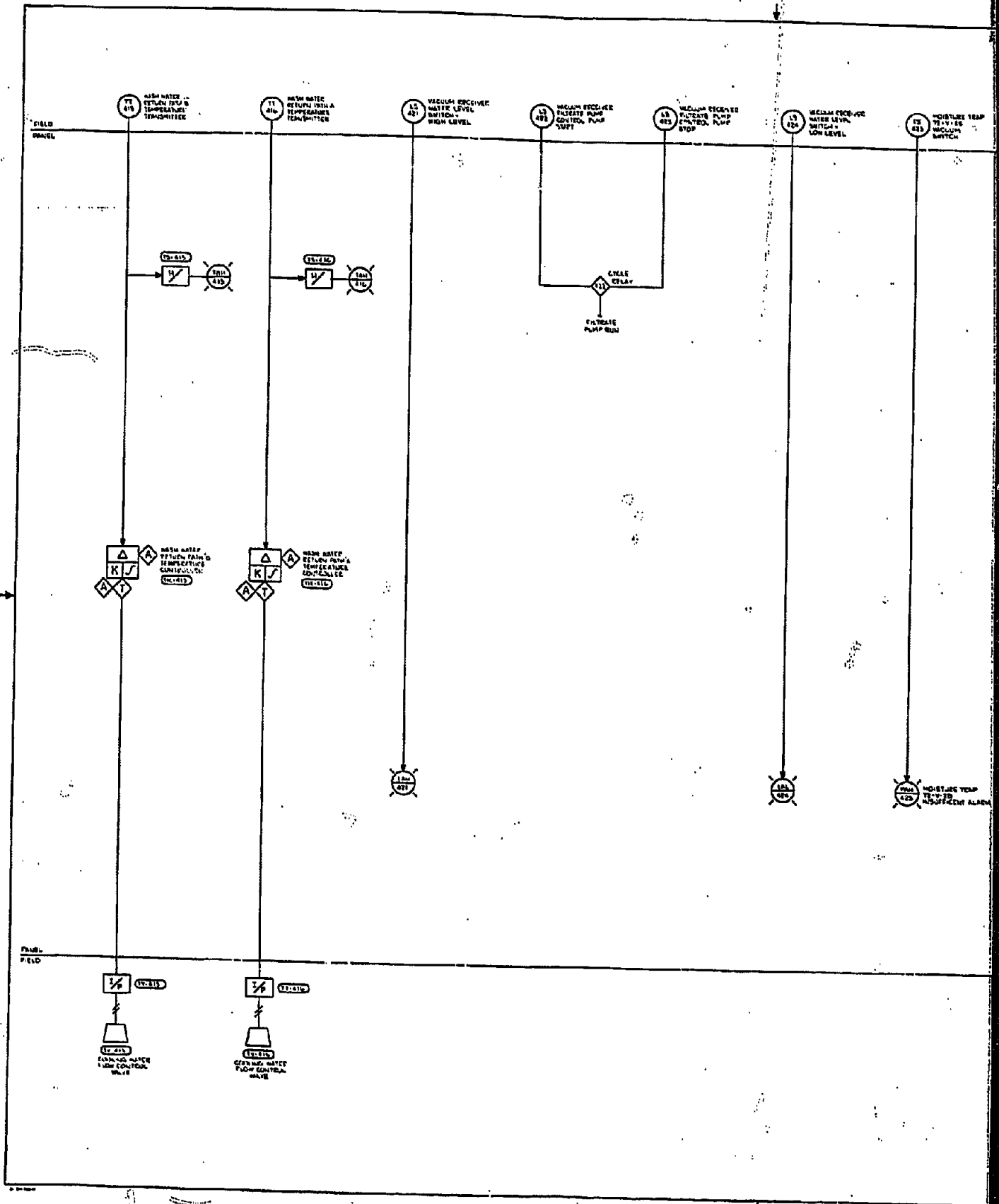


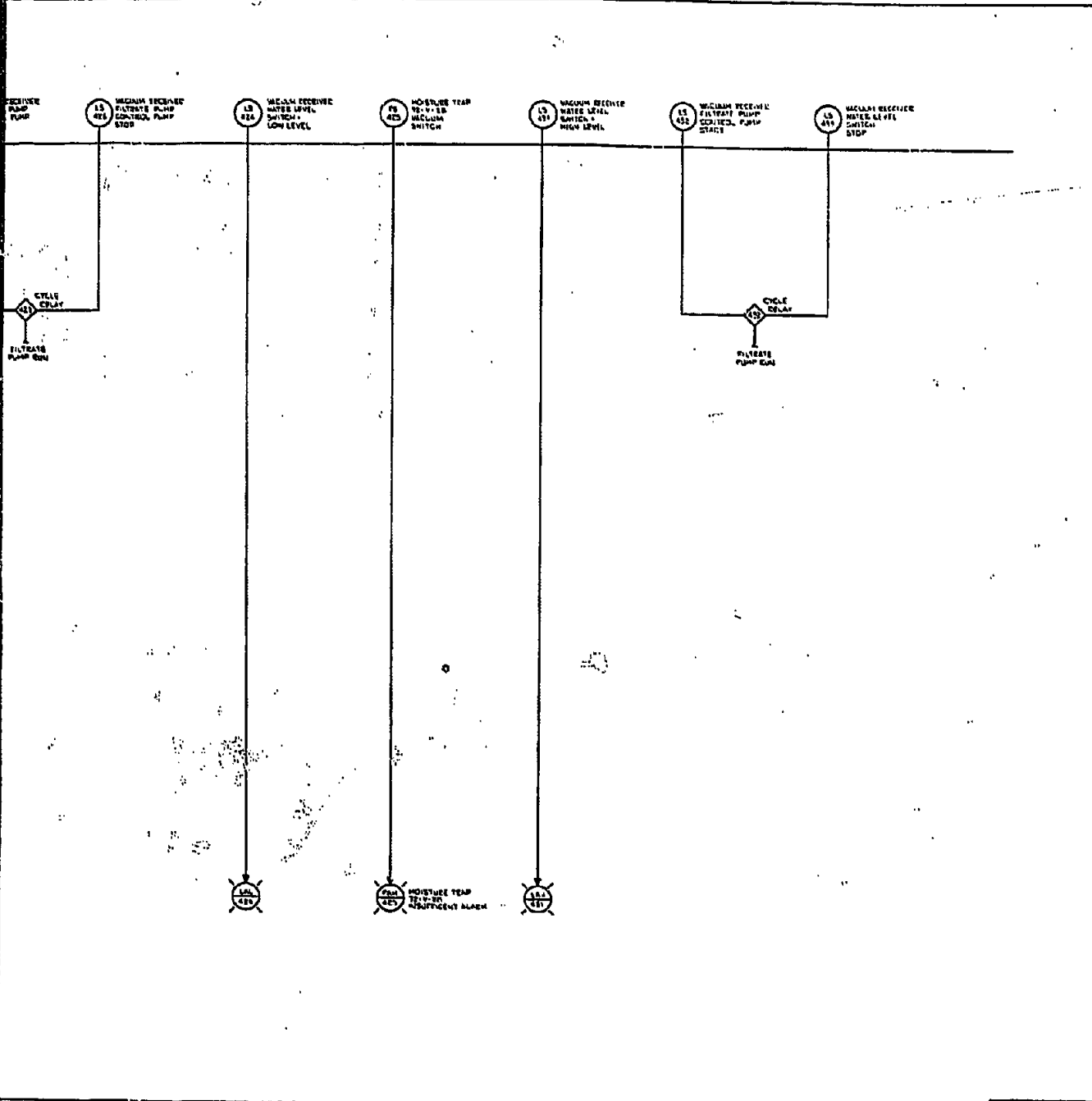




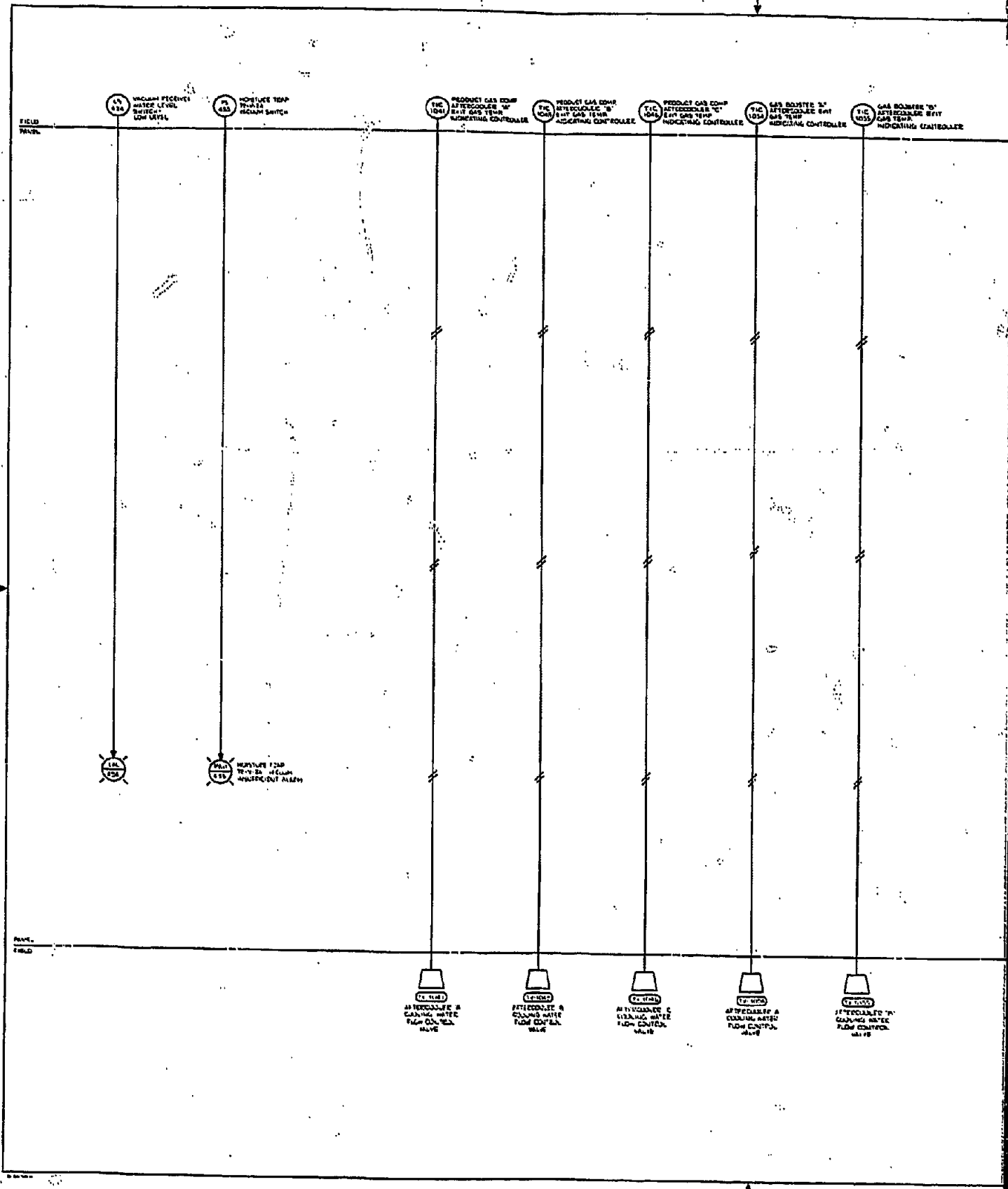








# Revision	
PANEL SHOWN NOT FOR CONSTRUCTION	
BASED ON PLUMBING	
CONSTRUCTION	
DATE	RELEASED FOR
	CHG.
PHILADELPHIA GAS WORKS	
COAL GASIFICATION PLANT	
PHILADELPHIA, PA.	
ELECTRICAL	
INST. BY: G. J. J. / J. J. J.	
SHEET NO. 13	
SILSBY ASSOCIATES, INC.	
1000 MARKET STREET, PHILADELPHIA, PA.	
DATE: 10/10/66	
BY: [Signature]	
OR 8276 EE-271-027 Q	

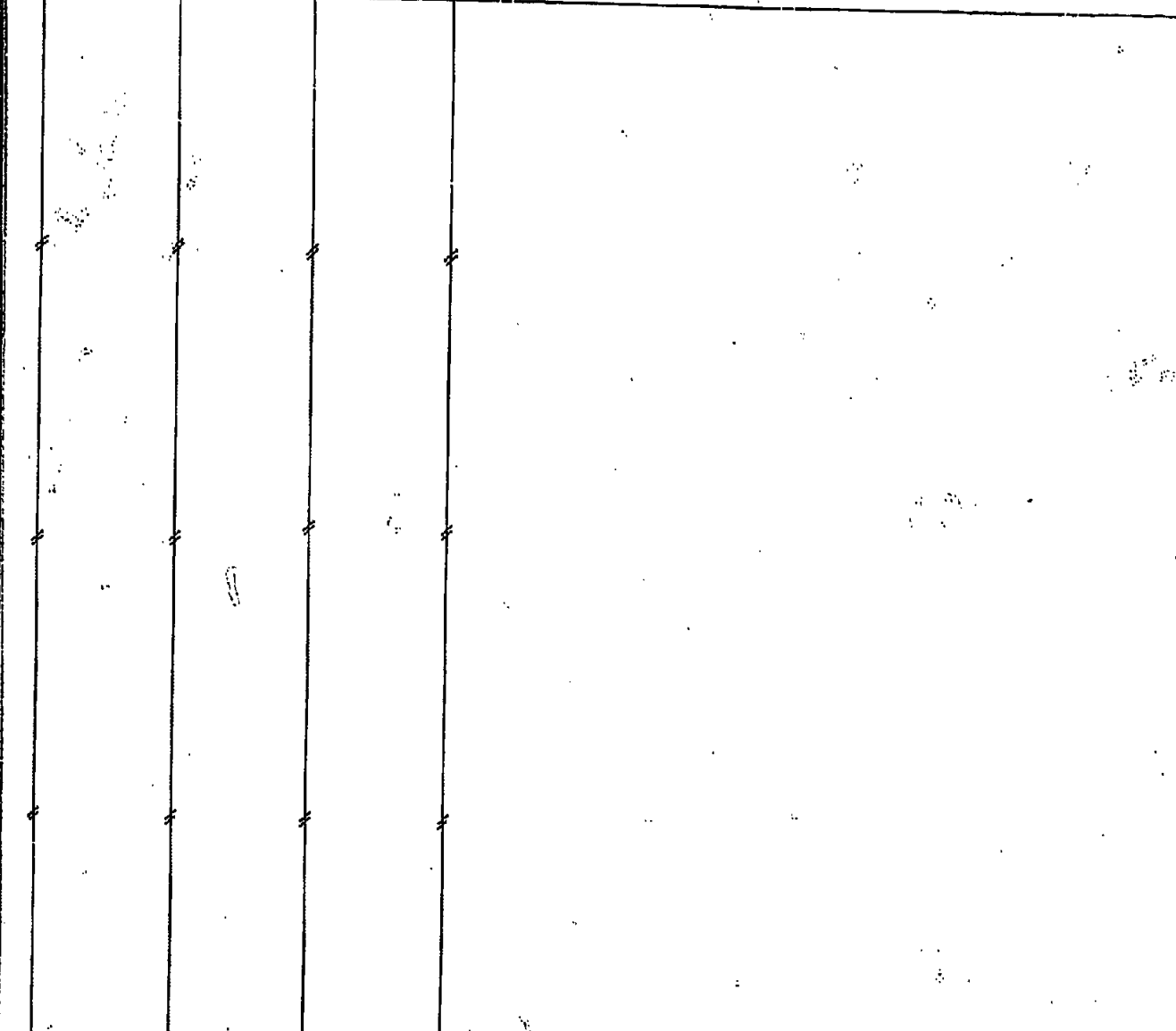


TIC 1001 PRODUCT GAS COMP AFTERCOOLER 'B' EXIT GAS TEMP INDICATING CONTROLLER

TIC 1002 PRODUCT GAS COMP AFTERCOOLER 'C' EXIT GAS TEMP INDICATING CONTROLLER

TIC 1003 GAS BOILER 'B' AFTERCOOLER EXIT GAS TEMP INDICATING CONTROLLER

TIC 1004 GAS BOILER 'B' AFTERCOOLER EXIT GAS TEMP INDICATING CONTROLLER



TIC 1005 AFTERCOOLER 'B' COOLING WATER FLOW CONTROL VALVE

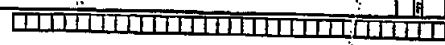
TIC 1006 AFTERCOOLER 'C' COOLING WATER FLOW CONTROL VALVE

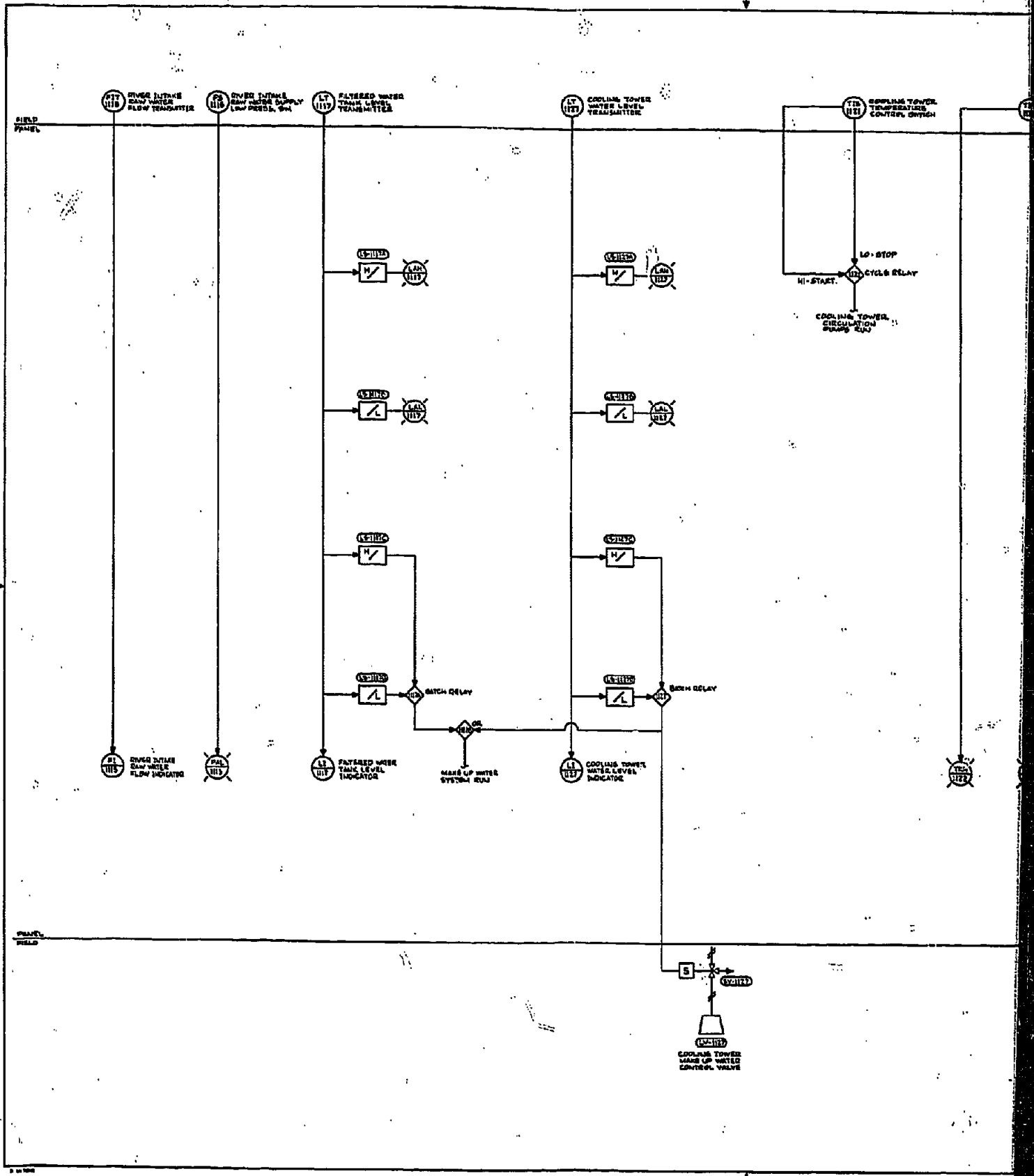
TIC 1007 AFTERCOOLER 'B' COOLING WATER FLOW CONTROL VALVE

TIC 1008 AFTERCOOLER 'C' COOLING WATER FLOW CONTROL VALVE

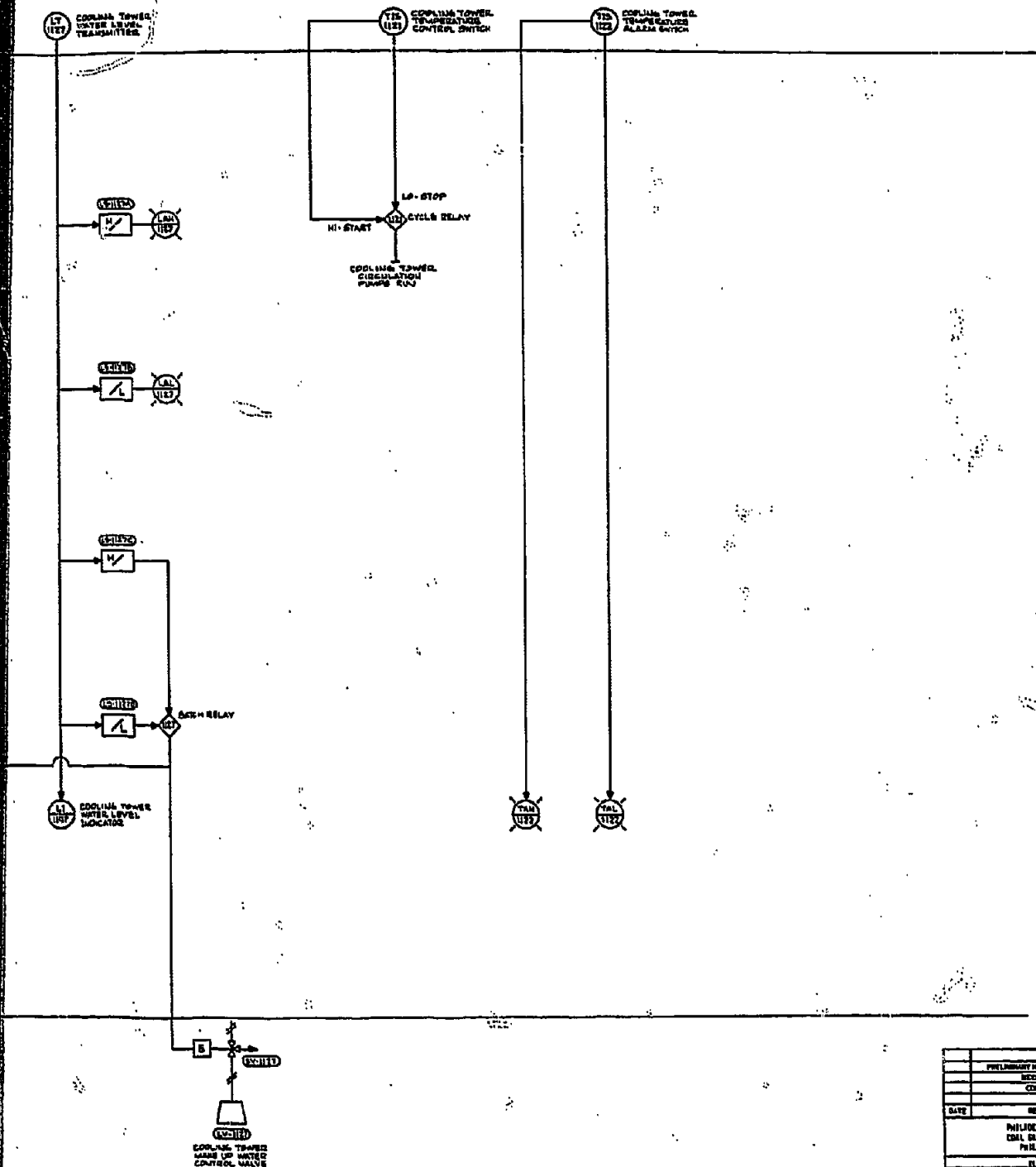
REVISIONS	
NO.	DESCRIPTION

PRELIMINARY NOT FOR CONSTRUCTION	
CONSTRUCTION	
DATE	DESIGNER
PHILADELPHIA GAS BOND CORN BATHIFICATION PUMP PHILADELPHIA, PA	
ELECTRICAL	
INSTALLATION LOGIC DIAGRAM	
SHEET NO. 11	
SILBERT ASSOCIATES, INC.	
1234 5th St. Philadelphia, Pa.	
215-527-0280	
OB 18276   EC-271-028   0	





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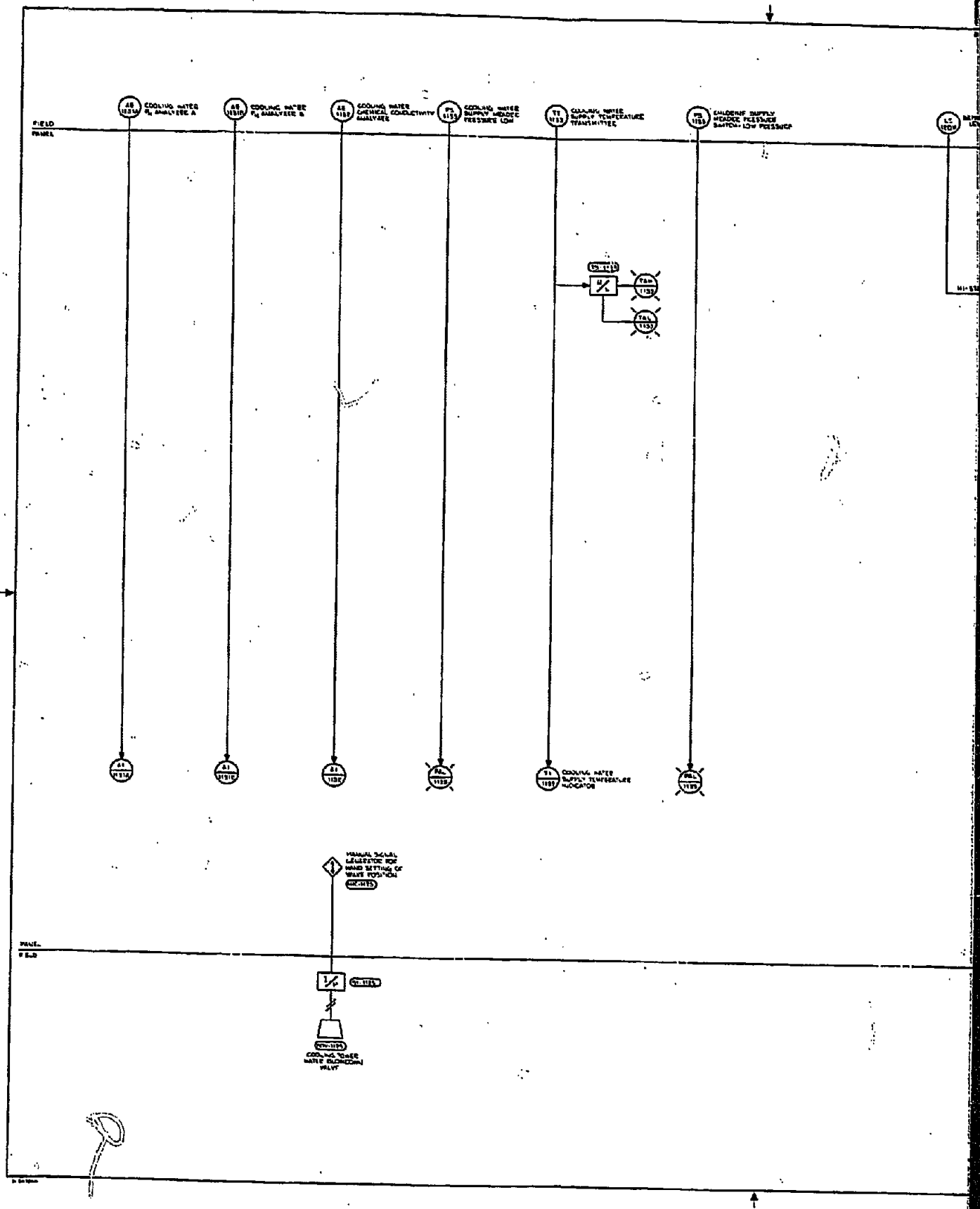
REVISIONS	

REVISIONS		

PRELIMINARY NOT FOR CONSTRUCTION		
DESIGN PURPOSE		
CONSTRUCTION		
DATE	RELEASED FOR	INCH.
PHILADELPHIA GAS WORKS COAL GASIFICATION PLANT PHILADELPHIA, PA		
ELECTRICAL		
INSTRUMENTATION LOGIC DIAGRAM		
SHEET NO. 19		
SILBERY ASSOCIATES, INC.		
PHILADELPHIA, PA		
DATE: 08/8276	EE-271-029	0
REVISIONS		



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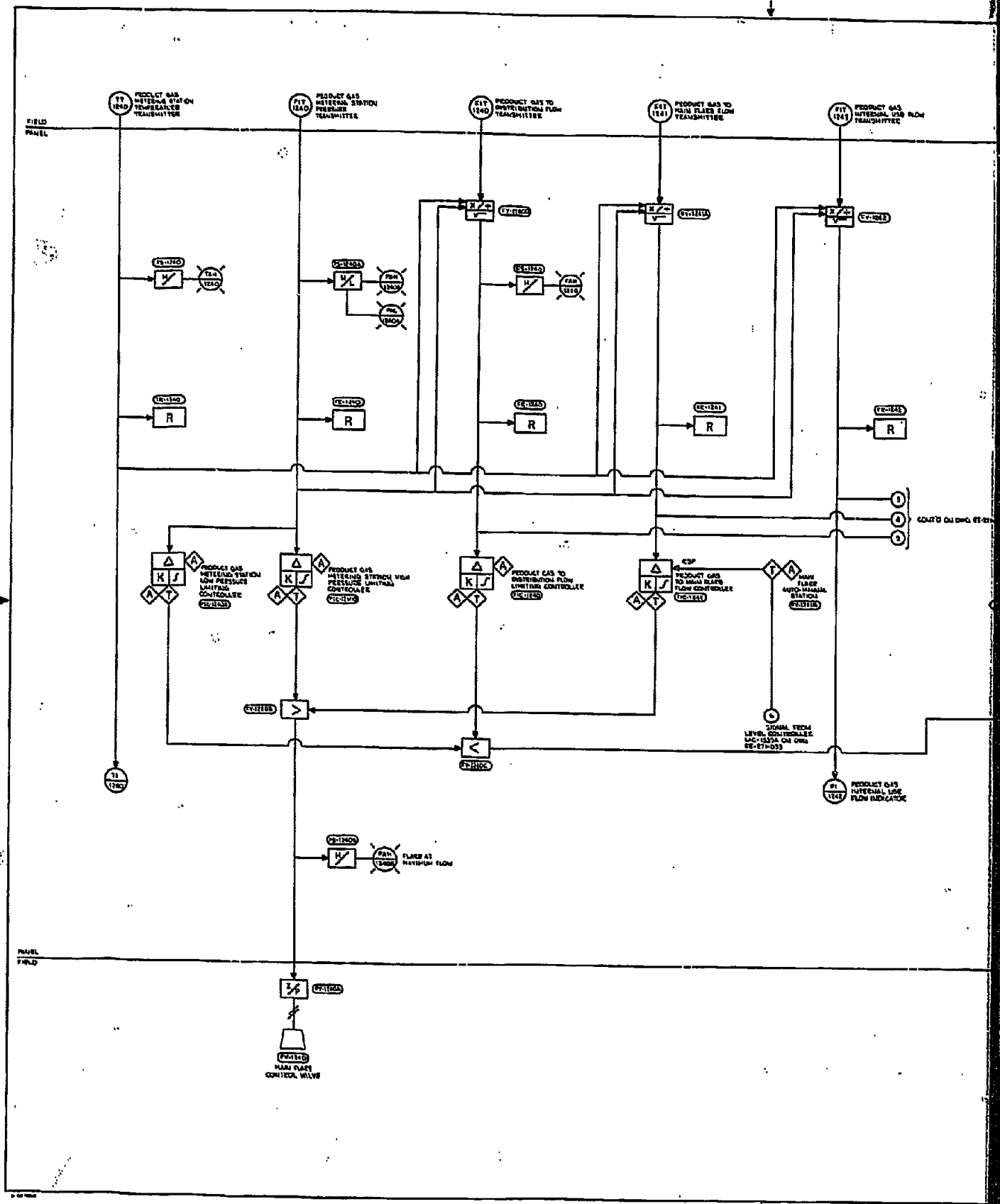




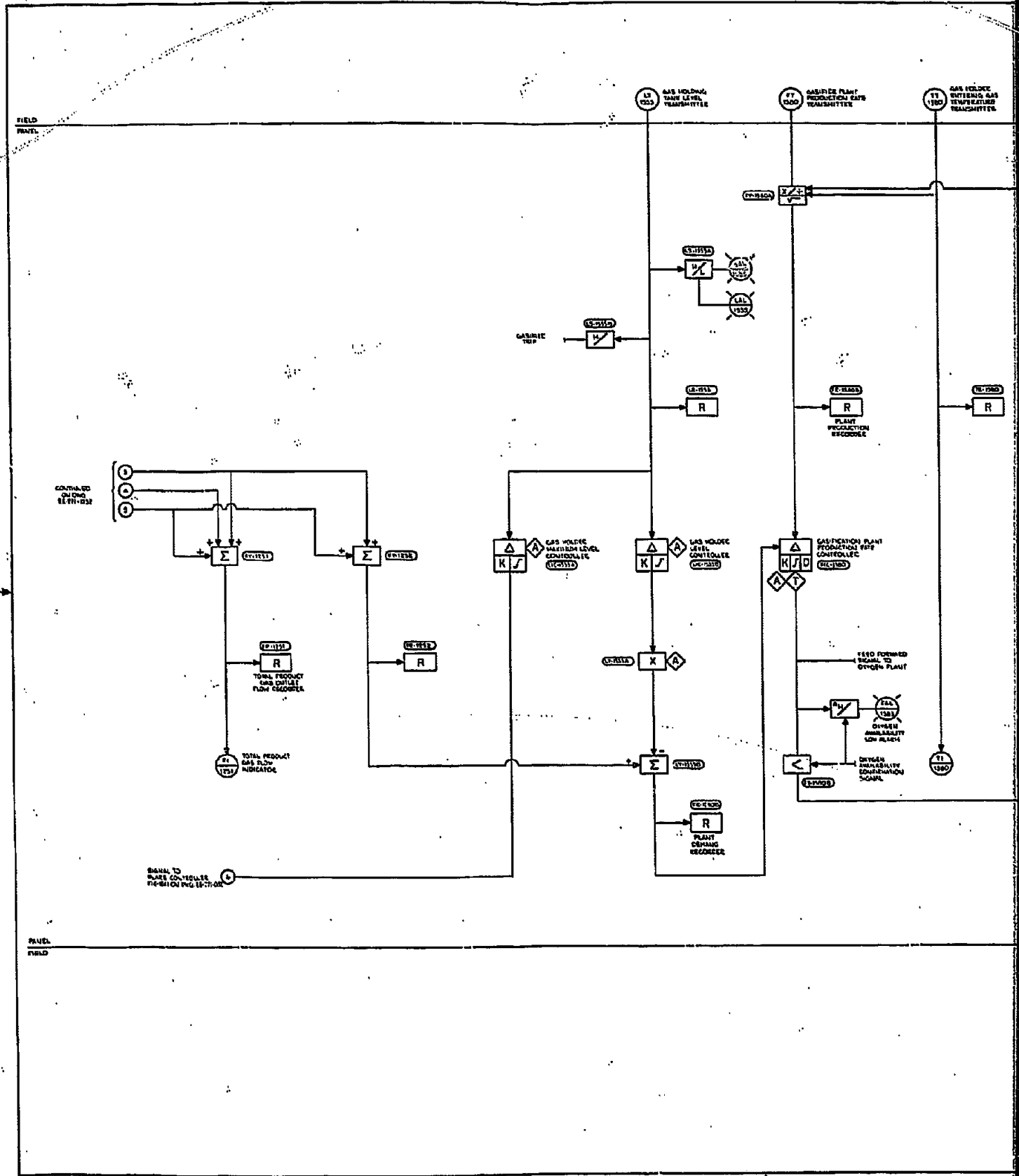




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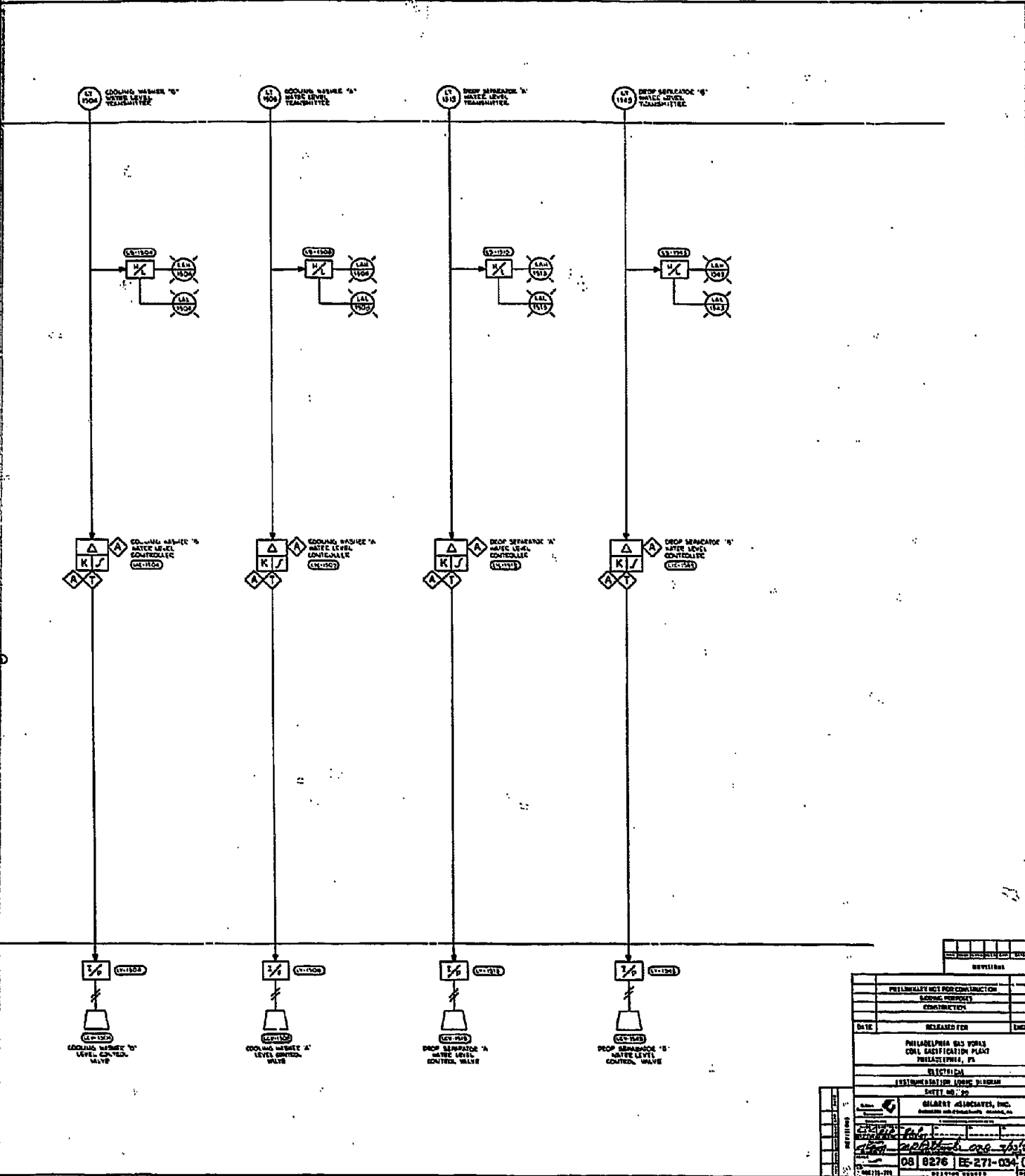






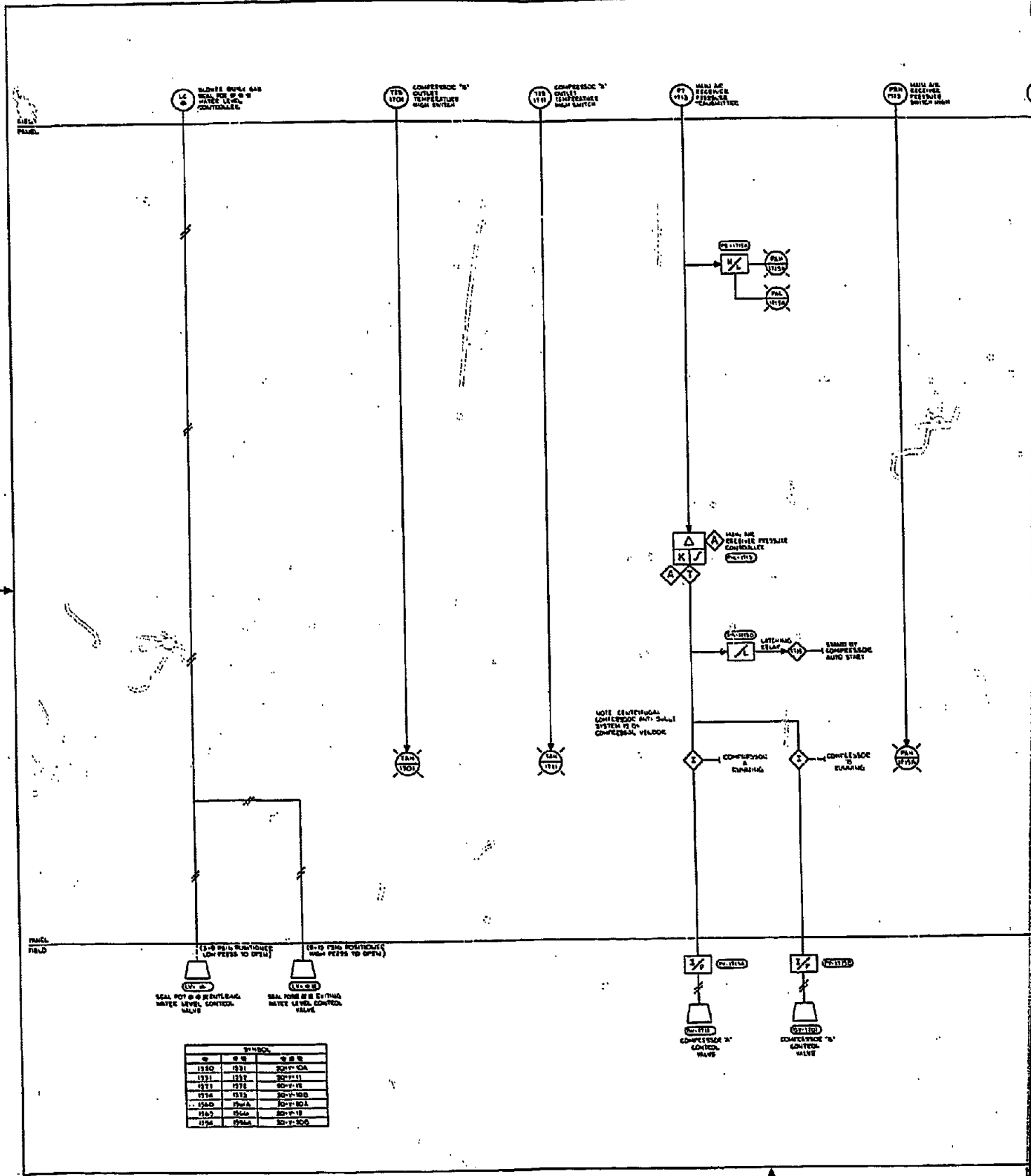


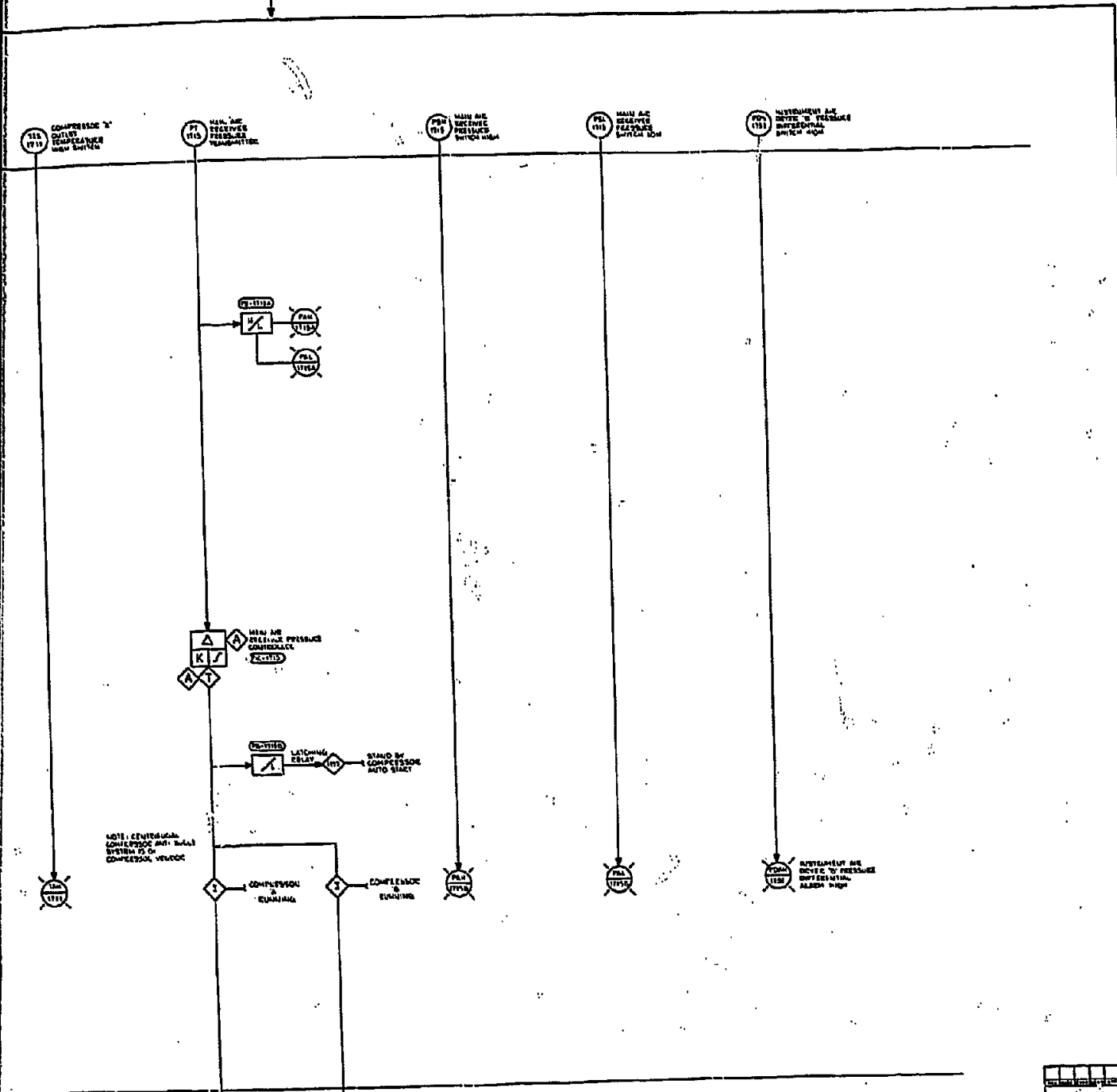




REVISIONS	
PHILADELPHIA GAS WORKS CON. GASIFICATION PLANT PHILADELPHIA, PA.	
DATE	RELEASED FOR
PHILADELPHIA GAS WORKS CON. GASIFICATION PLANT PHILADELPHIA, PA.	
ELECTRICAL	
ESTIMATED BY: LOUIS DI BERARDI	
SHEET NO. 20	
GILBERT GILCHRIST, INC. ENGINEERS AND ARCHITECTS, PHILADELPHIA, PA.	
08 8276   E-271-034   0	

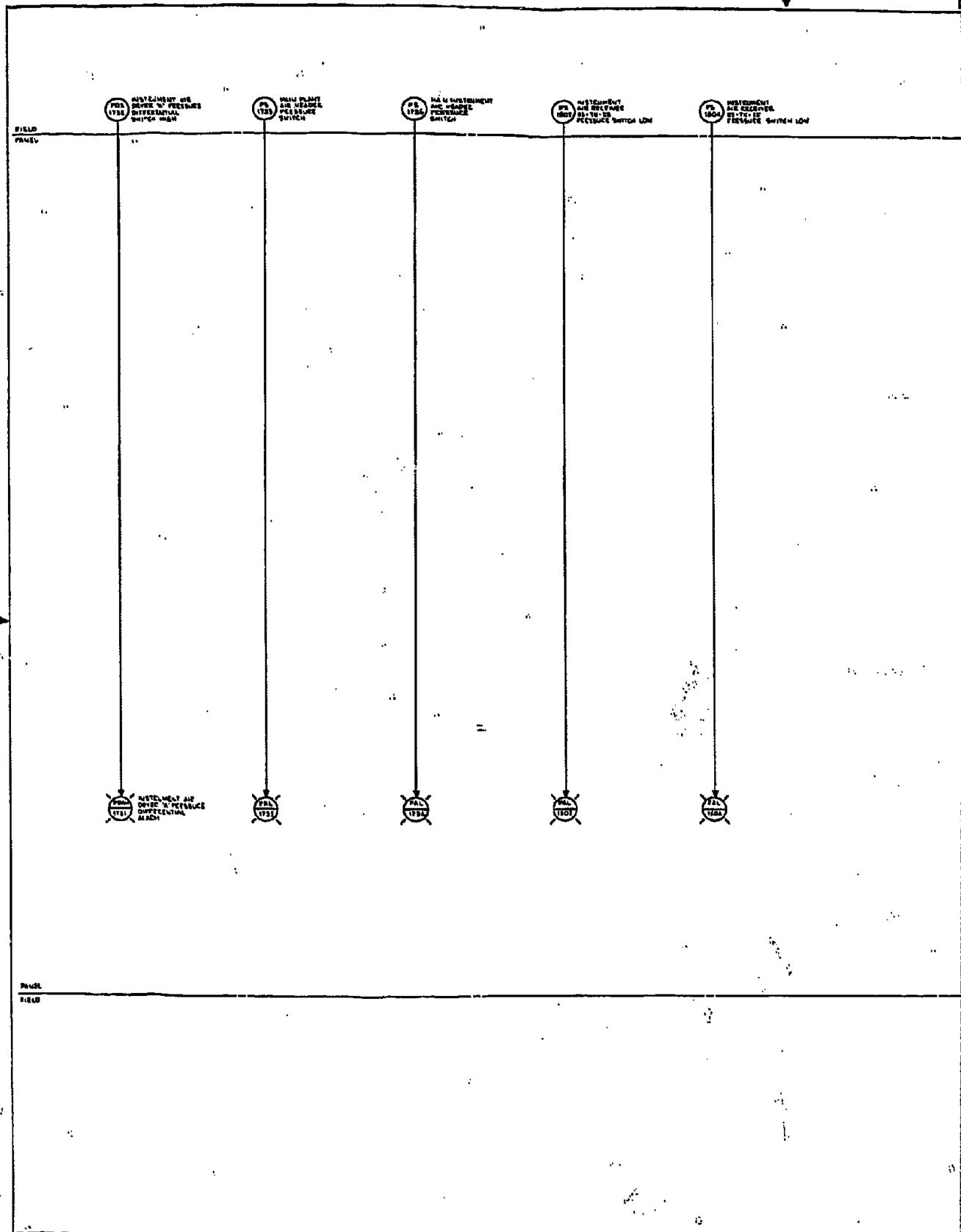


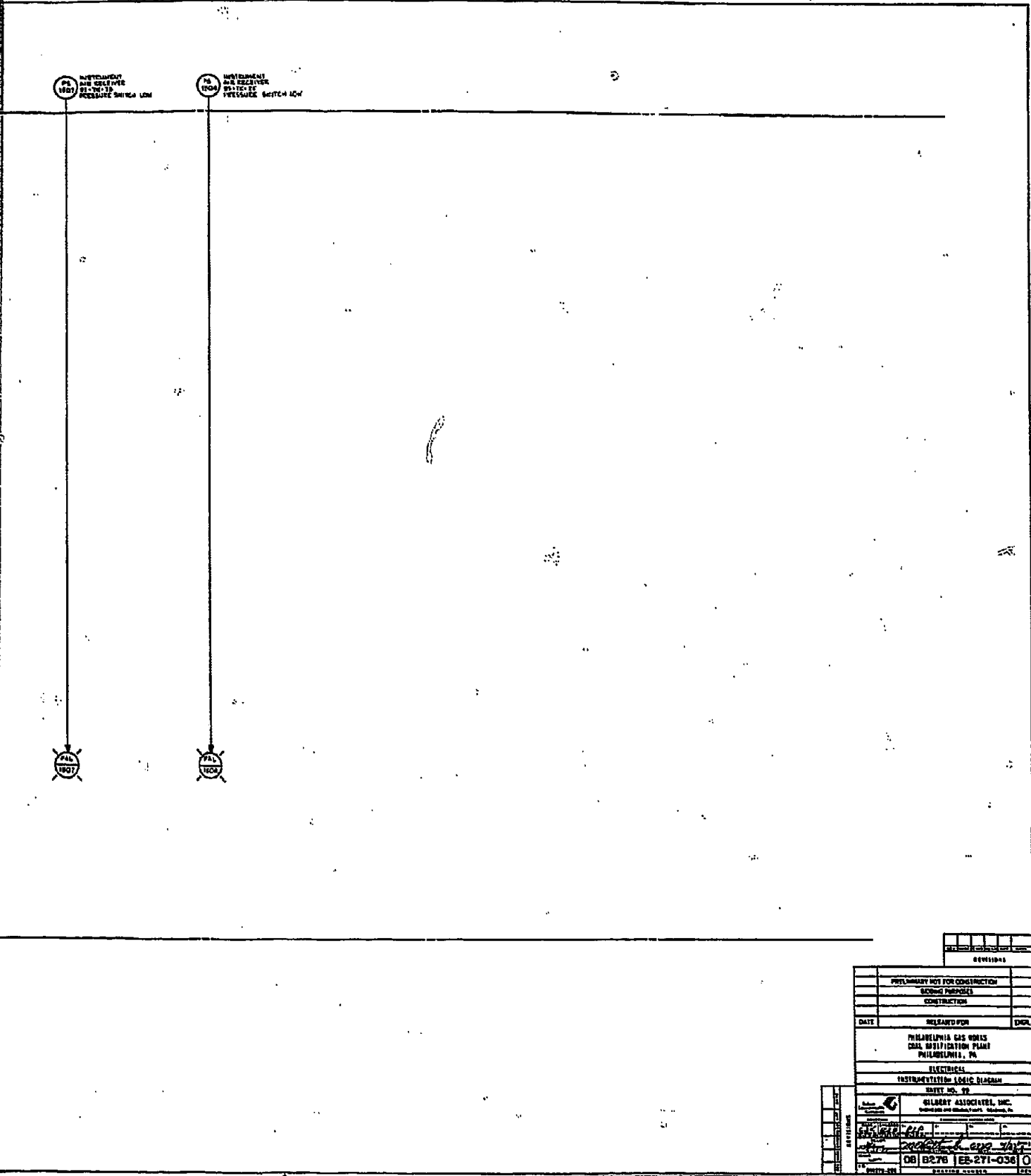




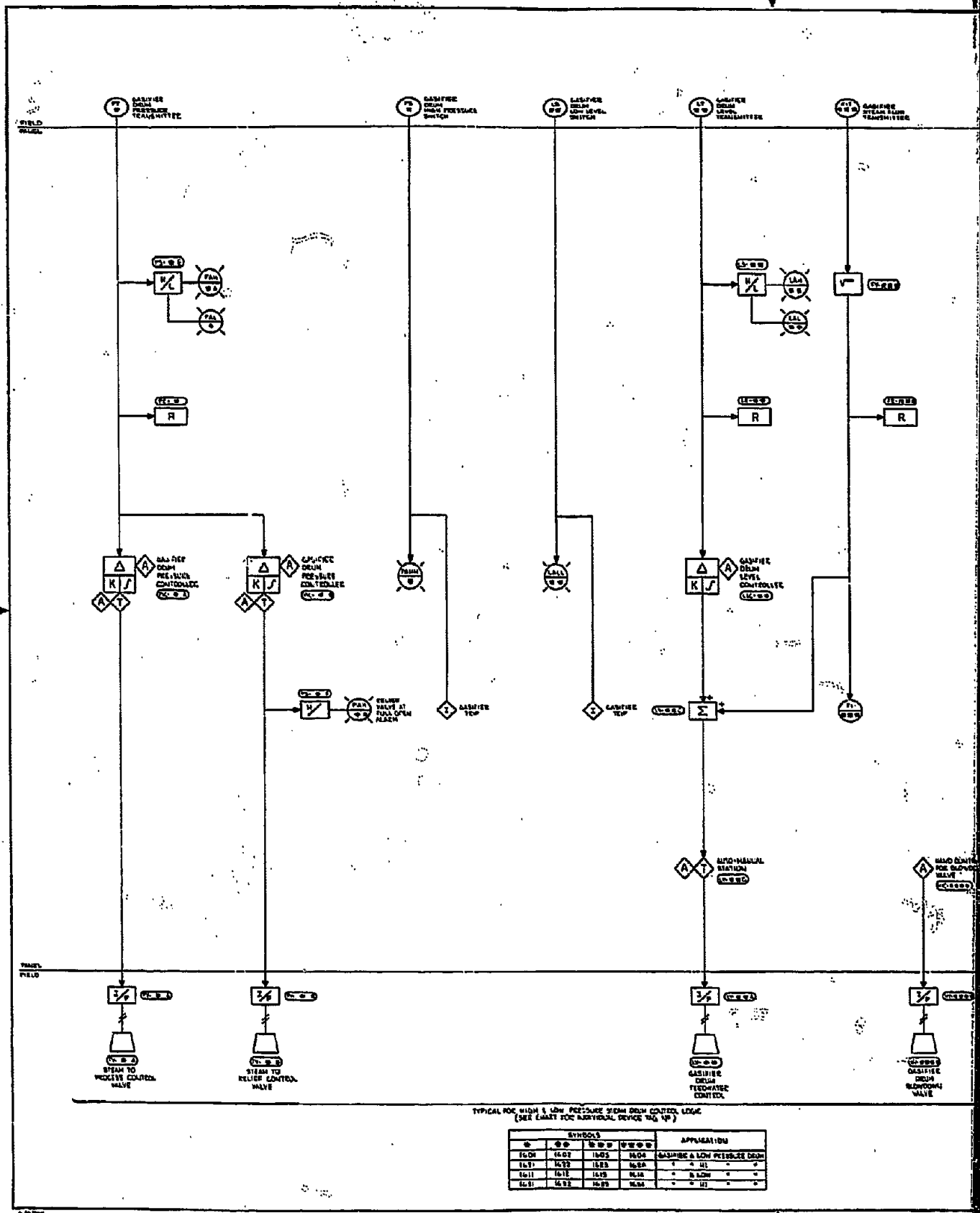
PRELIMINARY FOR USE FOR CONSTRUCTION	
DATE	RELEASED FOR
PHILADELPHIA GAS WORKS GAS DISTRIBUTION PLANT PHILADELPHIA, PA.	
ELECTRICAL	
PHILADELPHIA GAS WORKS	
DIVISION OF	
GILBERT ASSOCIATES, INC.	
ENGINEERS AND ARCHITECTS	
PHILADELPHIA, PA.	
PROJECT NO. 276	
DATE 11-15-54	
BY [Signature]	
CHECKED BY [Signature]	
APPROVED BY [Signature]	
DB 8276	EE-271-035

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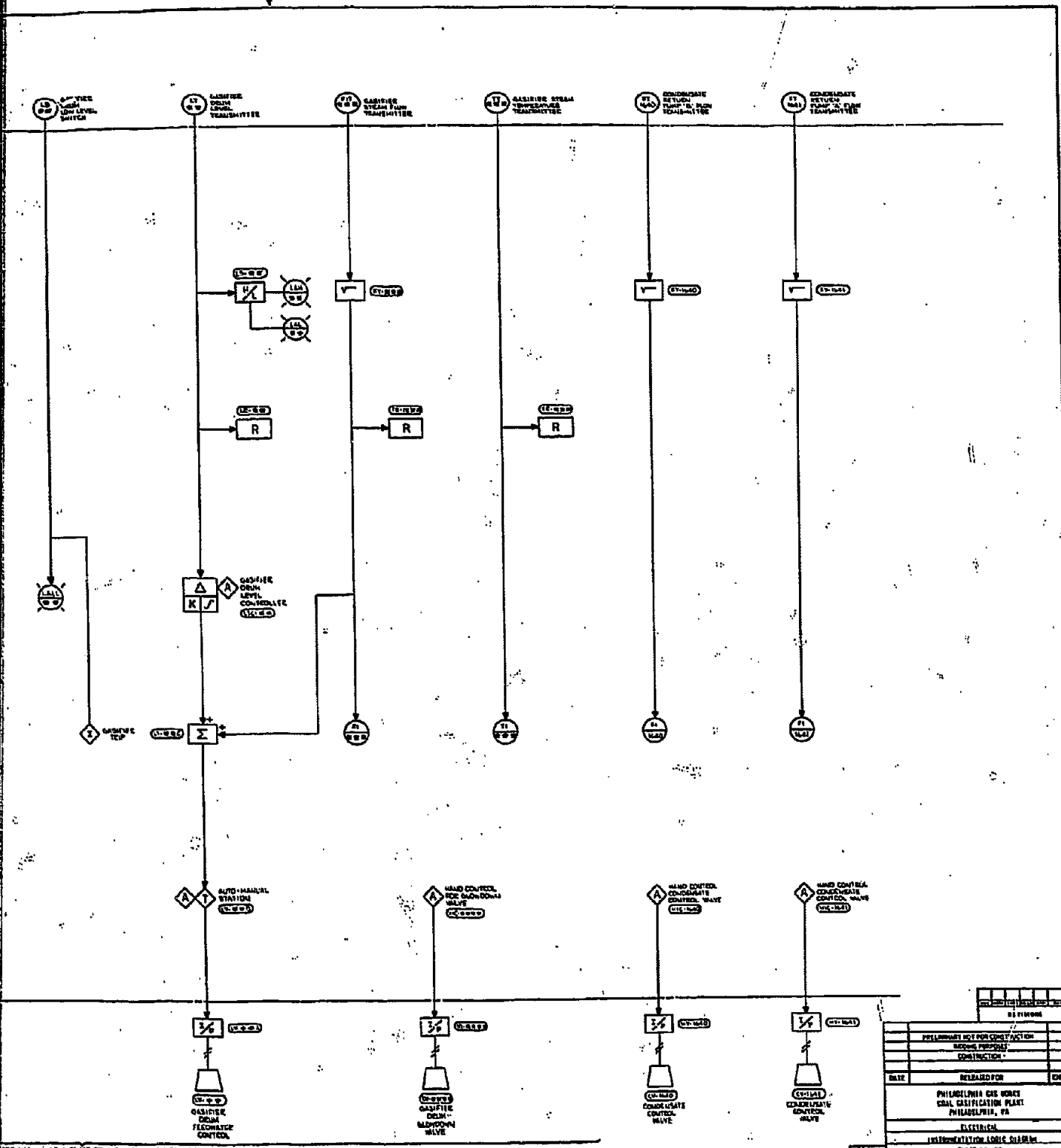


REVISIONS	
PRELIMINARY NOT FOR CONSTRUCTION	
DRAWING PURPOSES	
CONSTRUCTION	
DATE	ISSUED FOR
PENNSYLVANIA GAS WORKS COAL GASIFICATION PLANT PHILADELPHIA, PA.	
ELECTRICAL	
INSTRUMENTATION LOGIC DIAGRAM	
SHEET NO. 79	
GILBERT ASSOCIATES, INC. INSTRUMENTATION ENGINEERS, PHILADELPHIA, PA.	
DRAWN BY CHECKED BY DATE	PROJECT NO. SHEET NO.
08   B276   EE-271-036   O	DRAWING NUMBER



TYPICAL FOR HIGH & LOW PRESSURE STEAM DRUM CONTROL LOGIC  
(SEE LIAISON FOR AIR/DRUM DEVICE TAG NO.)

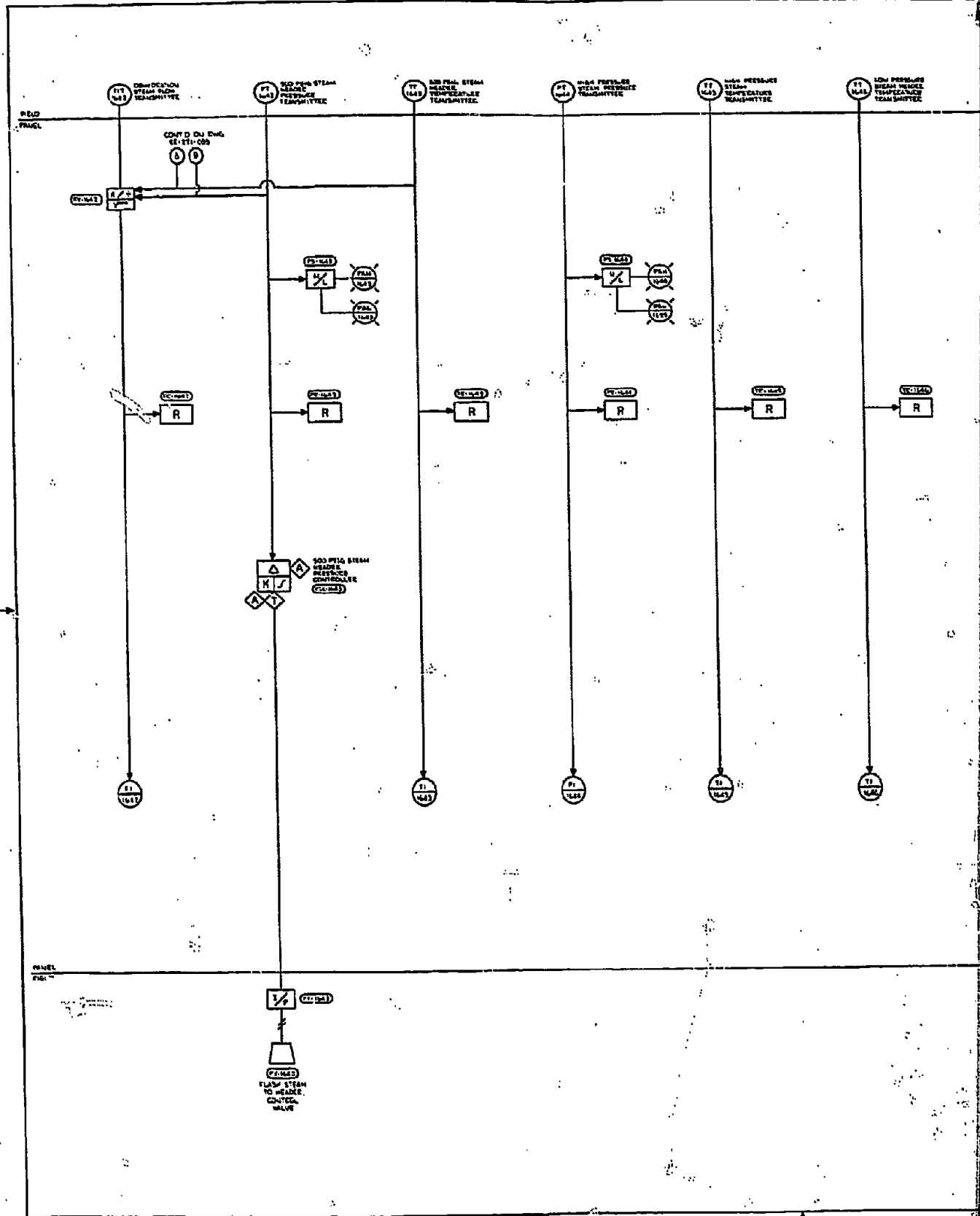
SYMBOLS				APPLICATION
1601	1602	1603	1604	GASIFIER & LOW PRESSURE DRUM
1605	1606	1607	1608	" " " " " "
1609	1610	1611	1612	" " " " " "
1613	1614	1615	1616	" " " " " "
1617	1618	1619	1620	" " " " " "

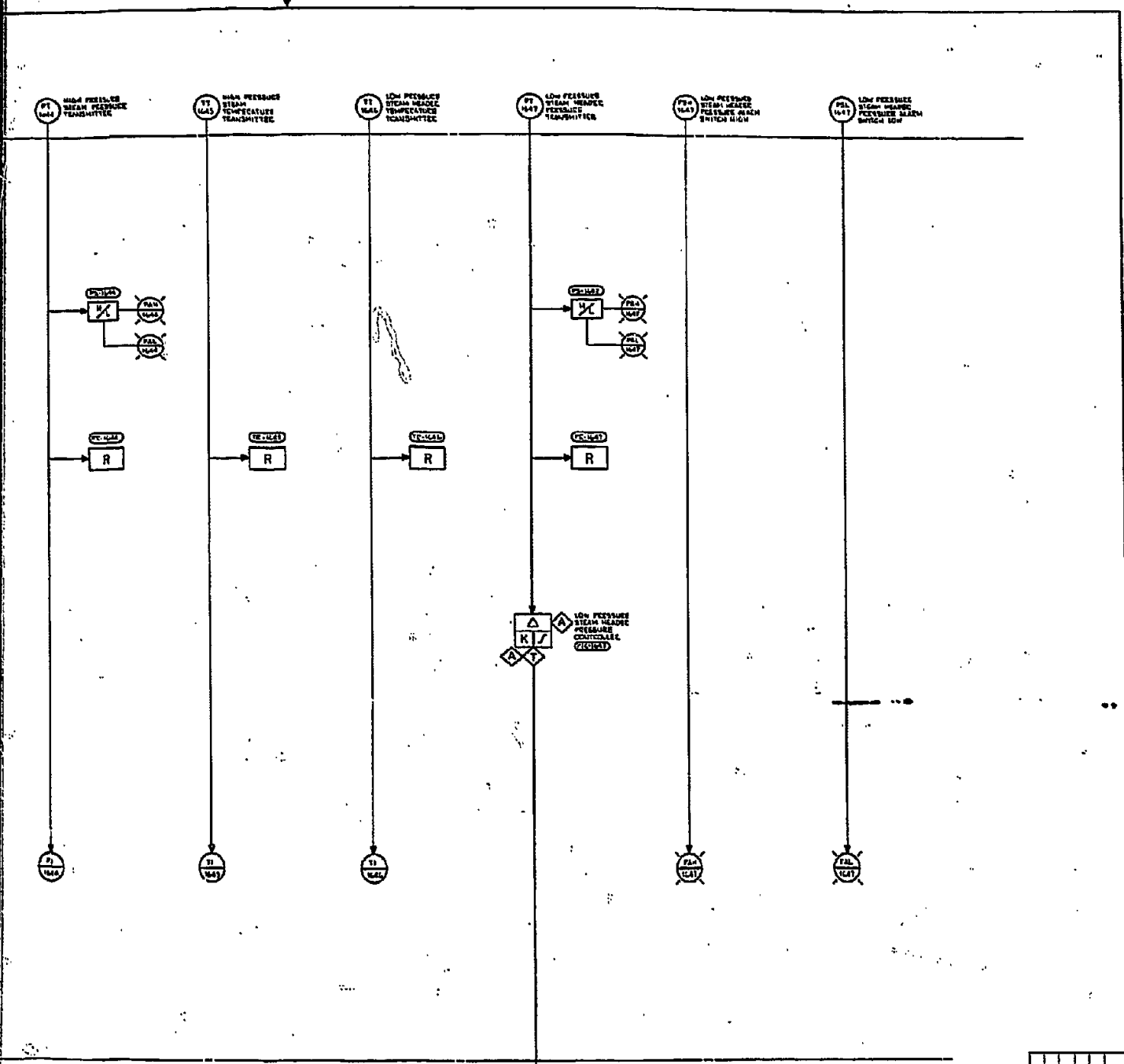


FOR HIGH & LOW PRESSURE WITH LOW CENTER LOSS  
(SEE CHART FOR INDIVIDUAL DEVICE TAG NO.)

STRONG				APPLICATION
1601	1602	1603	1604	(GASIFIER & LOW PRESSURE DEAM)
1601	1602	1603	1604	" H "
1601	1602	1603	1604	" S LOW "
1601	1602	1603	1604	" H "

DATE		RELEASED FOR	CHK.
PHILADELPHIA GAS WORKS 28th & Locust Streets PHILADELPHIA, PA.			
ELECTRICAL INSTRUMENTATION LOGIC SYSTEM			
SHEET NO. 27			
SILSBY ASSOCIATES, INC. 1000 Locust Street, Room 200 Philadelphia, Pa.			
0818276		EE-27-037	

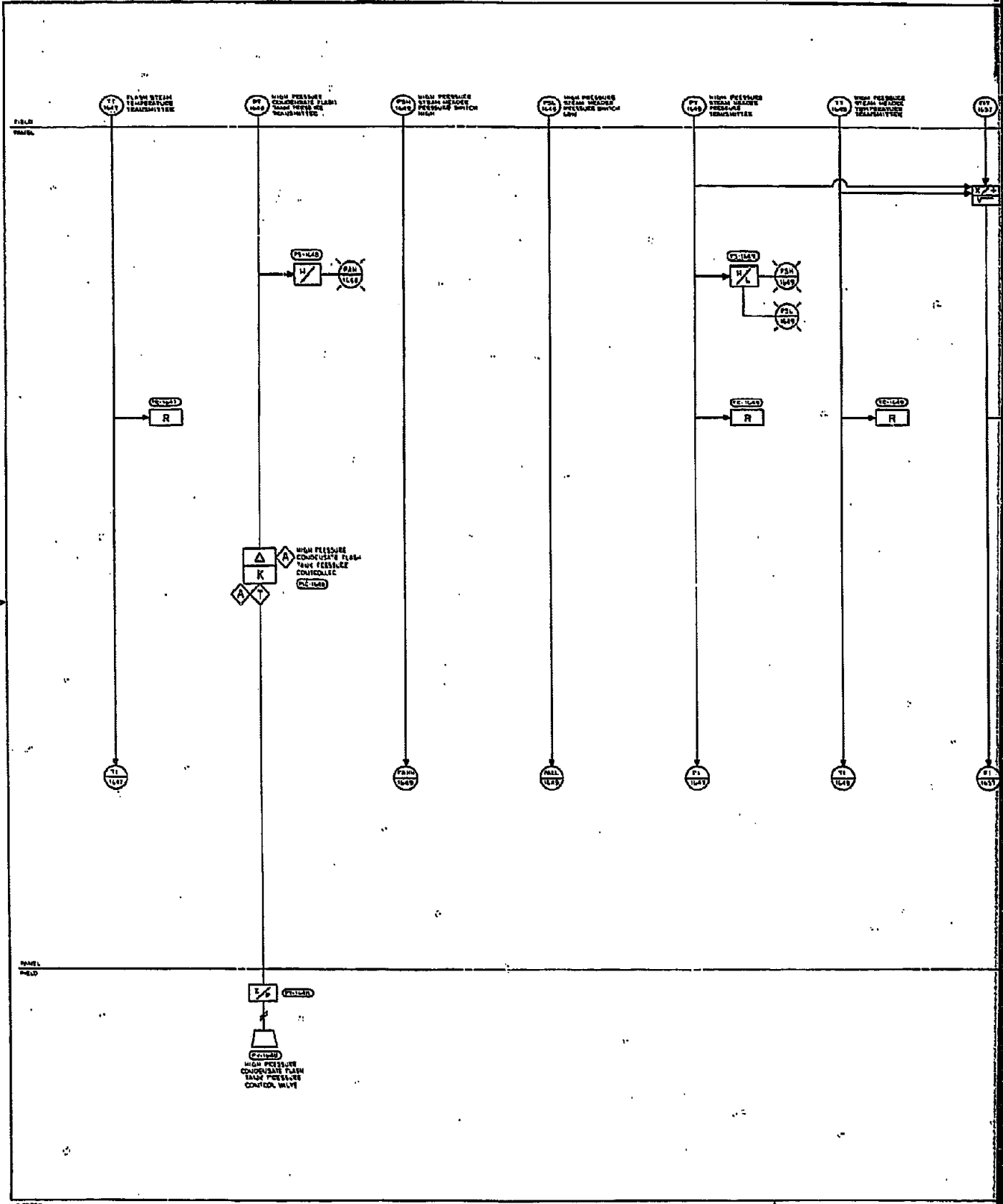


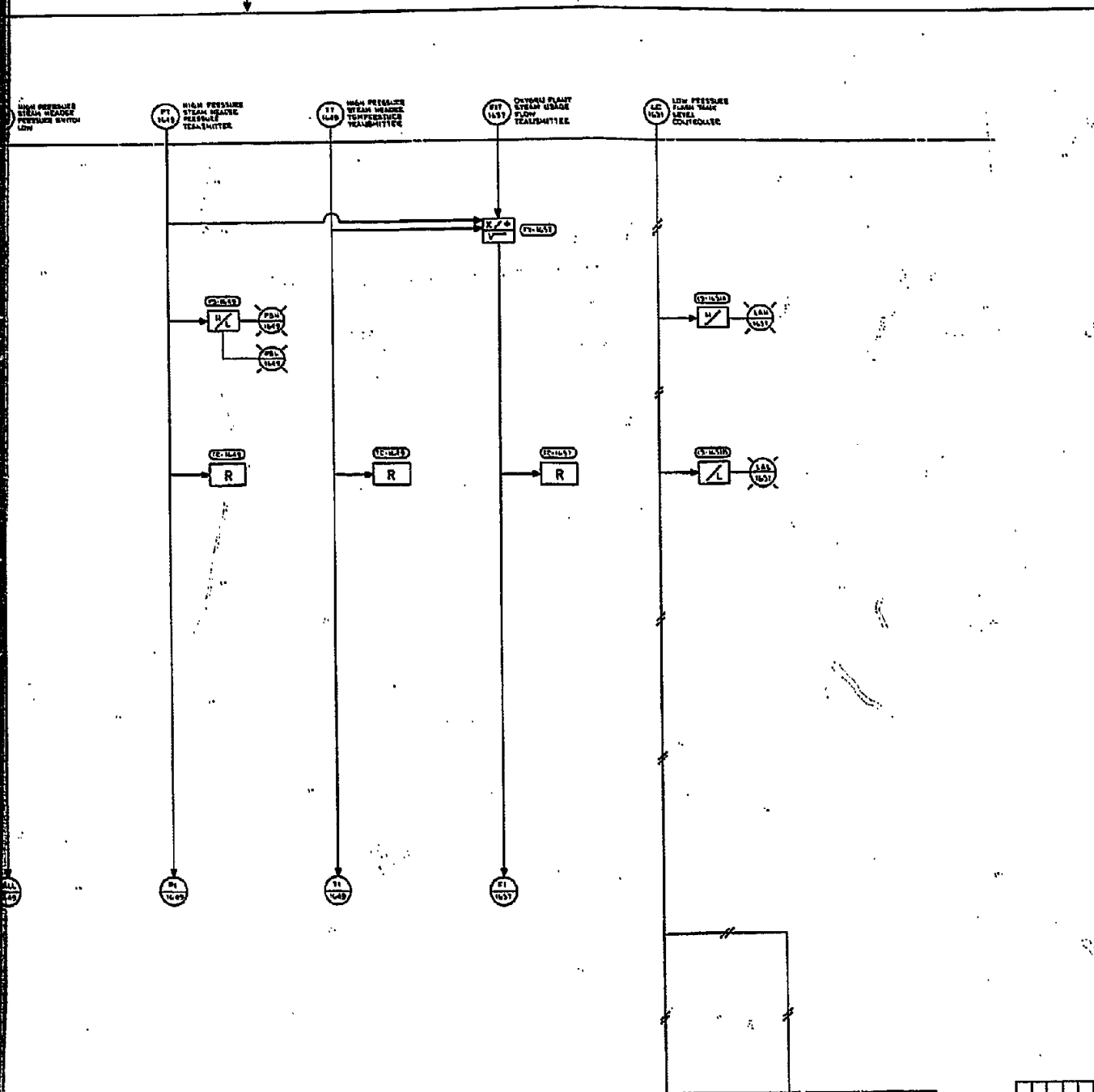


PHILADELPHIA GAS WORKS COAL GASIFICATION PLANT PHILADELPHIA, PA	
ELECTRICAL	
INSTRUMENTATION LEGEND DIAGRAM	
SHEET NO. 30	
SILBERMAN ASSOCIATES, INC. PHILADELPHIA, PA	
DATE	RELEASED FOR
CONSTRUCTION	DATE
REVISIONS	DATE
05 8276 ES-271-038 GEORGE PERDUE	

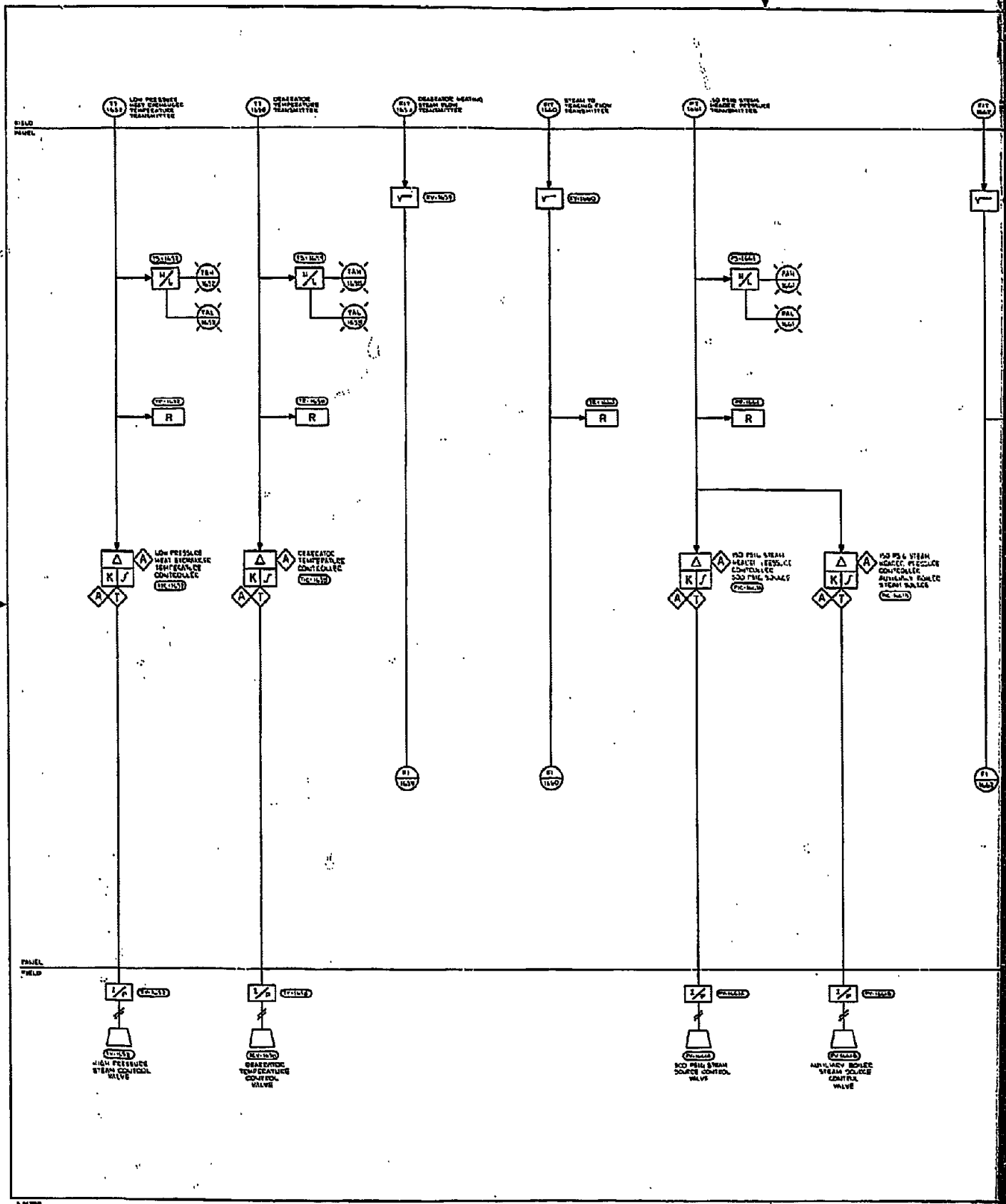


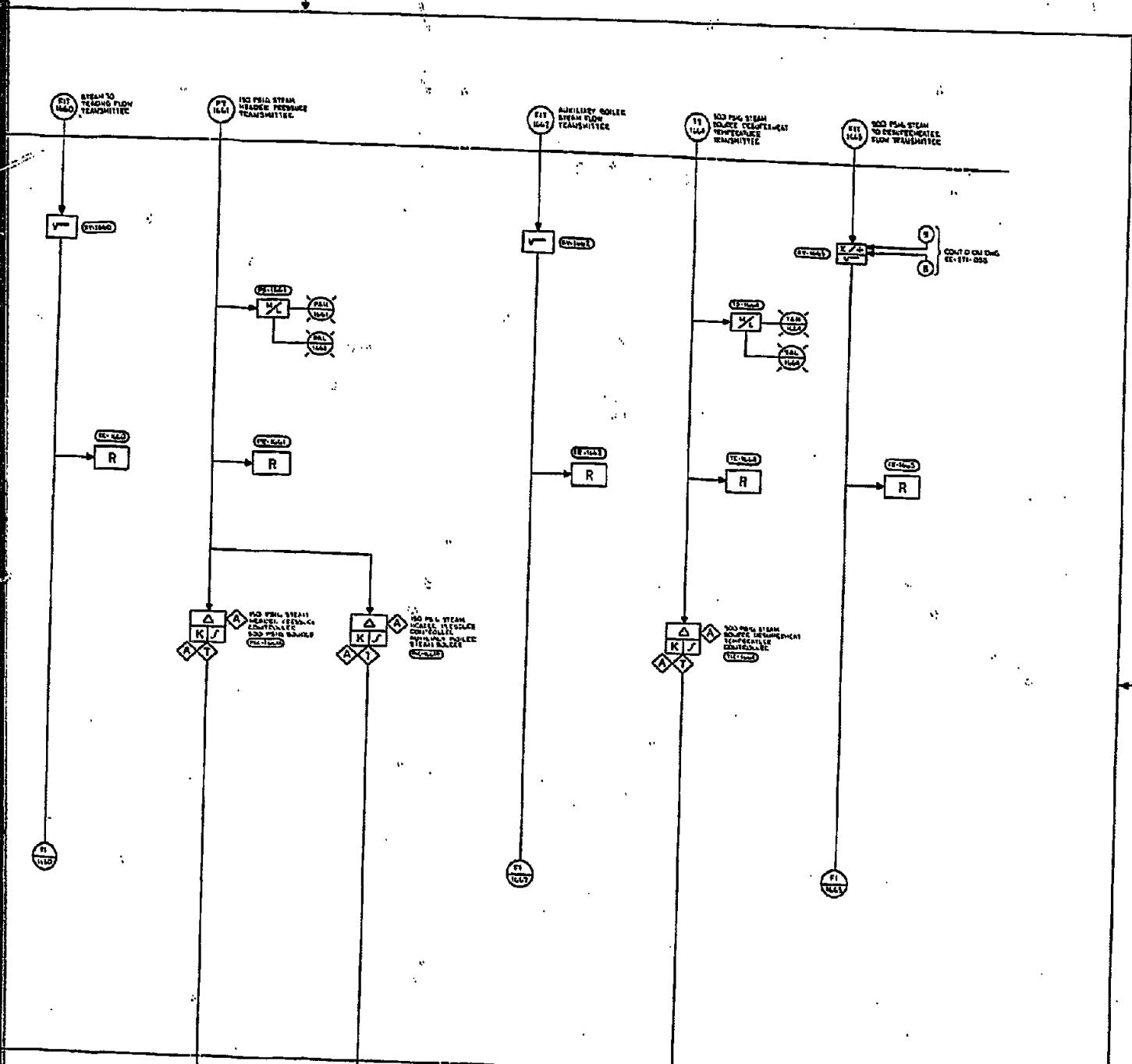
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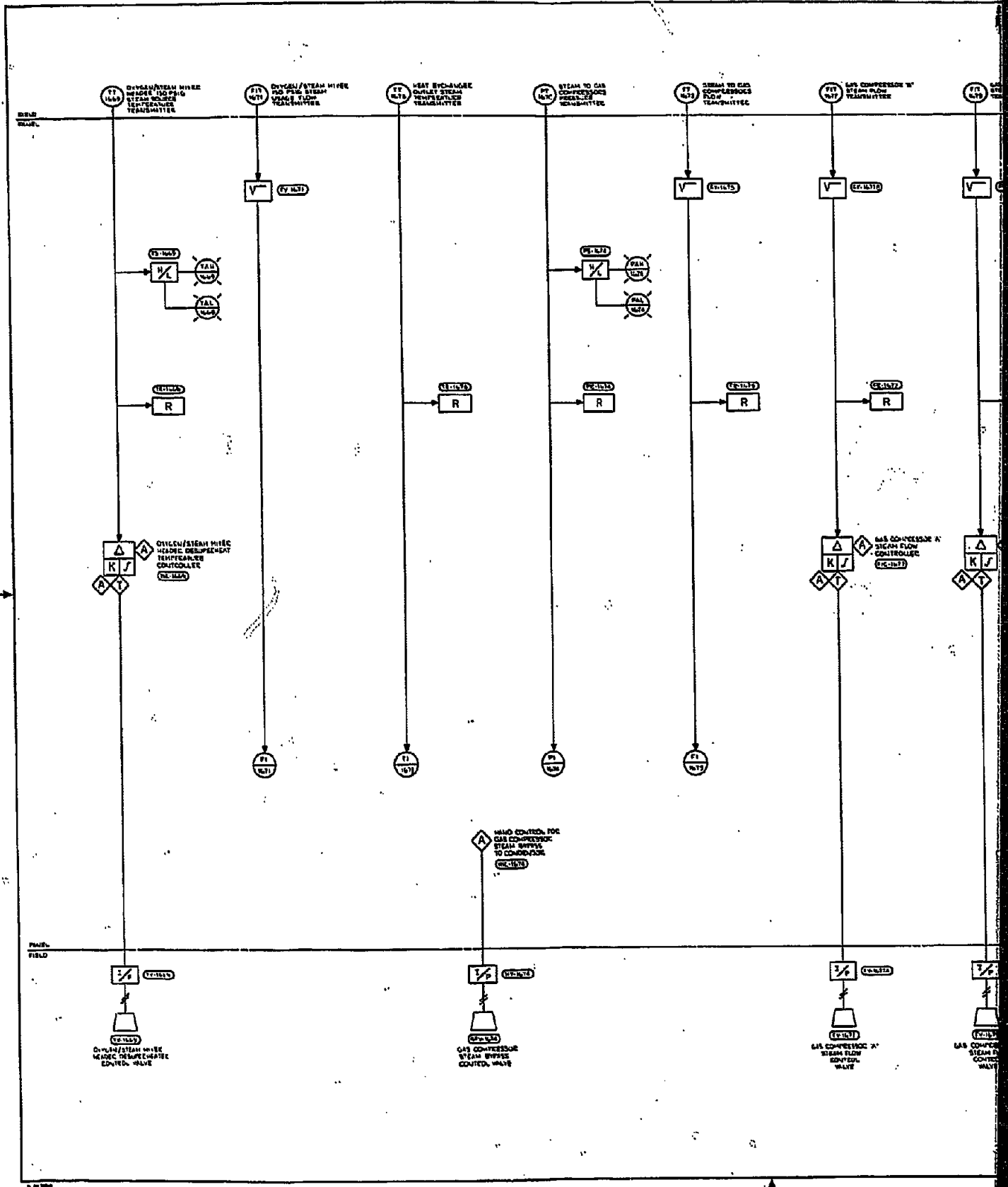


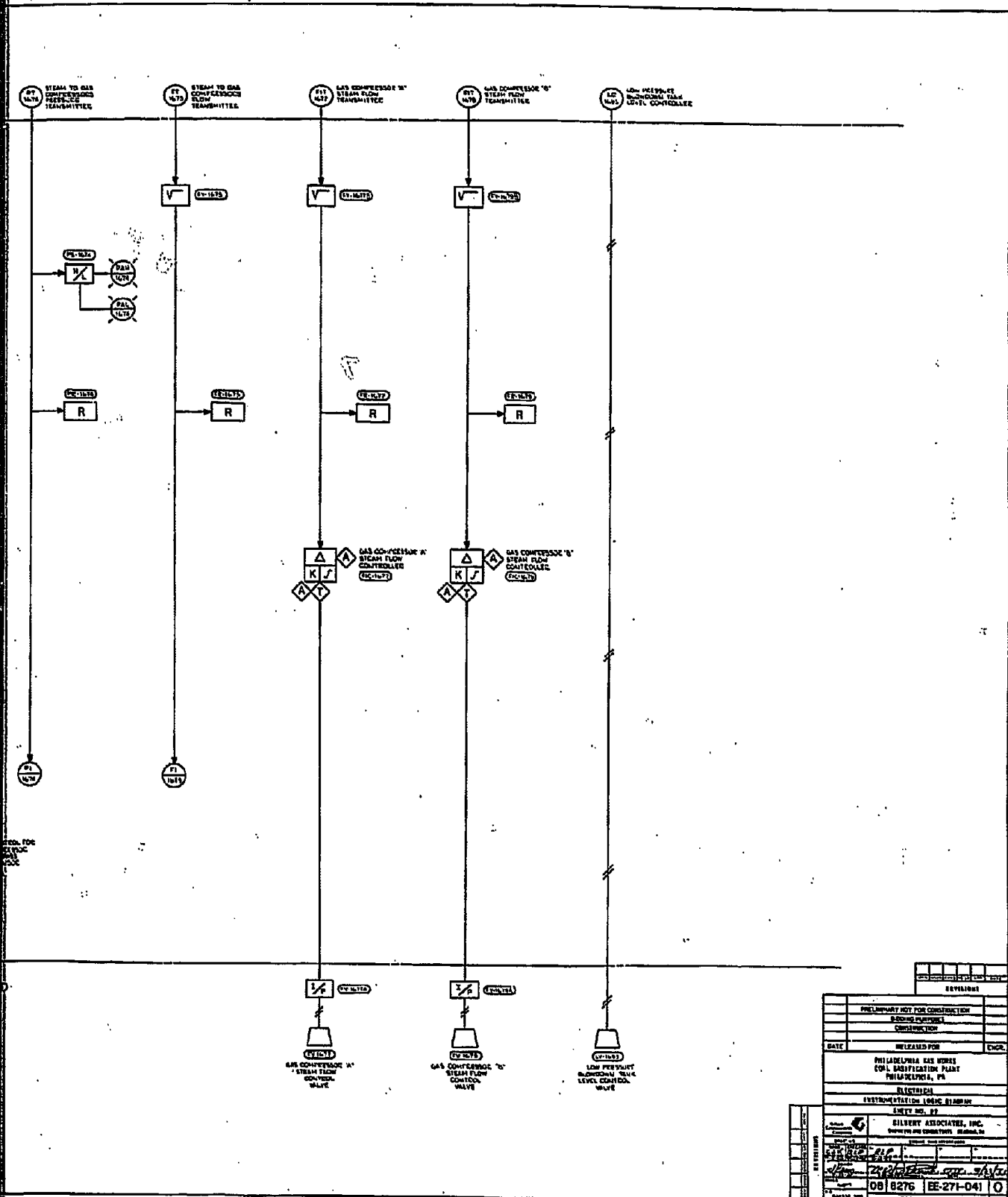
PRELIMINARY FOR CONSTRUCTION		
ISSUE	DATE	BY
DATE	RELEASED FOR	BY
PHILADELPHIA GAS WORKS GASIFICATION PLANT PHILADELPHIA, PA.		
ELECTRICAL		
DISTRIBUTION LOGIC DIAGRAM		
SHEET NO. 18		
GILBERT ASSOCIATES, INC.		
PHILADELPHIA, PA.		
1-28-55		
DATE	BY	
08	0276	EE-271-035
DRAWING NUMBER		





DATE	RELEASED FOR	ENGR.
PHILADELPHIA GAS WORKS COAL GASIFICATION PLANT PHILADELPHIA, PA		
INSTRUMENTATION LEVEL DIAGRAM SHEET NO. 76		
SILBERT ASSOCIATES, INC. 500 Broad Street, Newark, NJ		
DATE	BY	CHKD BY
08/22/76	[Signature]	[Signature]
08/22/76		EE-27-040





REVISIONS			
PRELIMINARY NOT FOR CONSTRUCTION			
ISSUED FOR CONSTRUCTION			
DATE	RELEASED FOR	ENGR.	
PHILADELPHIA GAS WORKS COAL GASIFICATION PLANT PHILADELPHIA, PA			
ELECTRICAL SYMBOLS AND LOGIC DIAGRAM			
SHEET NO. 22			
SILBERT ASSOCIATES, INC. ENGINEERS AND CONSULTANTS, PHILADELPHIA, PA			
DATE	BY	CHECKED	APPROVED
08/27/76	EE-271-041		
DRAWING NUMBER			