

BRINE PRODC
CAPITAL AUTHOR.

DO 005921

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DOW CHEMICAL U.S.A.

SEPTEMBER 3, 1986

BRINE PRODUCTION DEPT
RT. 1, BOX 200-A
BELLE ROSE, LOUISIANA 70341
804 389-8990, 6639
804 389-7111

J. Y. PENNINGTON
REACTIVE CHEMICALS COMMITTEE

CC. TOM AUSTIN
JIM LANDRY

NORMAN MAXILE
RONNIE MILLS

RESPONSE TO THE REACTIVE CHEMICALS REVIEW OF JULY 10, 1986

1. DRILLING OF NEW BRINE WELL NO. 18

NO REACTIVE CHEMICAL CONCERNS

2. UPGRADE AND CONVERSION OF WELL #8 (ETHYLENE)

CONCERNS: DETERMINE OPTIMUM CONFIGURATION OF TEMPERATURE
SENSOR, EBV AND DECOMP SUPPRESSOR IN THE ETHYLENE LINE
TO THE WELL.

RESPONSE: THE SALT MINING/STORAGE TECHNOLOGY CENTER
RECOMMENDS THAT THE EBV BE PLACED ON THE WELLHEAD
IMMEDIATELY AFTER THE WING VALVE WITH NO CONNECTIONS
IN BETWEEN. THIS IS PLANNED.

THE SALT MINING/STORAGE TECHNOLOGY CENTER RECOMMENDS
THAT THE DECOMPOSITION SUPPRESSOR BE PLACED BETWEEN THE
WELL AND ALL ETHYLENE EQUIPMENT SUCH AS METER RUNS,
SAMPLE SYSTEMS, PIG TRAPS, COMPRESSORS, AND ETHYLENE
DRYING AND PROCESSING EQUIPMENT. THE PURPOSE IS TO
SNUFF OUT A DECOMPOSITION THAT MAY HAVE STARTED AT THIS
EQUIPMENT BEFORE IT ENTERS THE WELL. FOR WELL NO. 8
THERE WILL BE NO ETHYLENE EQUIPMENT BETWEEN THE DECOMP
SUPPRESSOR AND THE WELLHEAD.

THE TECH CENTER RECOMMENDS THAT THE TEMPERATURE
SENSOR BE LOCATED UPSTREAM OF THE ETHYLENE EBV FAR
ENOUGH TO ALLOW THE EBV SUFFICIENT TIME TO CLOSE.
FOR WELL NO. 8 TWO TEMPERATURE SENSORS ARE PLANNED.
ONE WILL BE 175 FEET AWAY AND THE OTHER 1000 FEET AWAY.
THE TEMPERATURE SENSOR THAT IS 175 FEET AWAY IS ON
THE WELL NO. 8 METER RUN AND IS DESIGNED TO SENSE A
DECOMP THAT HAS GOTTEN TO WELL NO. 8 PAD OR STARTED
AT WELL NO. 8 PAD. THE SENSOR 1000 FEET AWAY IS
DESIGNED TO SENSE A DECOMP THAT HAS COME DOWN THE
LINE FROM PLAQUEMINE OR HAS ORIGINATED IN THE MASTER
ETHYLENE METER RUN OR PIG TRAP AREA AT THE PIPELINE
ENTRANCE TO BRINE PRODUCTION. AN ETHYLENE DECOMPO-
SITION MOVES AT A RATE OF 1-2 FEET/SECOND. ASSUMING
PIPELINE FLOW OF 8 FEET/SECOND, IT WILL TAKE 17.5

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DO 005922

SECONDS OR 100 SECONDS FOR THE DECOMPOSITION TO MOVE FROM THE TEMPERATURE SENSORS TO THE WELLHEAD. THE EBV WHICH IS DESIGNED TO CLOSE WITHIN 10 SECONDS WILL STOP A DECOMPOSITION IF THE DECOMPOSITION SUPPRESSOR DOES NOT. THE DECOMPOSITION SUPPRESSOR IS POSITIONED BETWEEN THE TEMPERATURE SENSORS AND THE WELL AT A DISTANCE OF 110 FEET FROM THE WELLHEAD.

3. PROMIX WELL NO. 2 CONVERSION TO BRINE MINING

CONCERN: ESTABLISH ADEQUATE OPERATING DISCIPLINE TO ASSURE THAT DOWNSTREAM VALVES AND EBV'S ARE BLOCKED IN PROPER SEQUENCE TO AVOID BLOCKING IN HIGH PRESSURES.

RESPONSE: WELLHEAD EBV'S ARE CLOSED ON A HIGH PRESSURE TRIP SET AT 600 PSIG ON THE BRINE AND SAFETY STRINGS. THE SAFETY STRING AND BRINE STRING FLOWLINES TO THE WELL ARE 300 LBS. PIPING SYSTEMS WHICH ARE GOOD FOR 720 PSIG AT AMBIENT TEMPERATURE. THE TRIP AT 600 PSIG PROTECTS THESE 300 LB. PIPING SYSTEMS FROM HIGH WELLHEAD PRESSURES. EBV TRIPS ARE INVESTIGATED IMMEDIATELY, THEREBY NOT ALLOWING THE LINE TO STAY BLOCKED IN AND TO PRESSURE UP.

THE BRINE PRODUCTION AND HYDROCARBON STORAGE PROCEDURE FOR BLOCKING IN HYDROCARBON LINES, REQUIRES THAT THE BLOCKED IN SECTION MUST BE VENTED OR FLARED TO PREVENT OVERPRESSURE DUE TO HYDRAULIC EXPANSION.

CONCERN: REVIEW EBV MANUAL OVERRIDE SYSTEM CONFIGURATION AND PROCEDURES.

RESPONSE: PRESENTLY, BRINE PRODUCTION USES REVERSE ACTING FIRE SAFE GATE VALVES WITH AXELSON MANUMATIC ACTUATORS. THESE VALVES ARE FAILSAFE CLOSED VALVES THAT REQUIRE AIR TO OPEN. THE VALVE STEM HAS A MANUAL OVERRIDE HANDWHEEL THAT ALLOWS THE VALVE TO BE OPERATED WHEN THE VALVE IS IN THE AUTOMATIC CLOSED POSITION. LIMIT SWITCHES MONITOR THE POSITION OF THE VALVE ACTUATOR PISTON. THE FULLY UP OR THE FULLY DOWN POSITIONS ARE THE ONLY ONES RECOGNIZED. IN THE AUTOMATIC OPEN POSITION THE VALVE ACTUATOR PISTON IS DOWN. WHEN THE VALVE ACTUATOR PISTON IS UP THE VALVE IS IN ONE OF THREE POSITIONS, AUTOMATIC CLOSED, MANUAL OPEN OR MANUAL CLOSED.

THEREFORE, ANY TIME THE VALVE DOES NOT INDICATE AUTOMATIC OPEN (ACTUATOR PISTON FULLY DOWN), THE VALVE IS NOT READY TO ACT AS AN EBV AND TO CLOSE ON EMERGENCY. THE OPERATING PROCEDURES DETAIL THESE CONDITIONS, AND WHAT MUST BE DONE TO CHECKOUT AND READY AN EBV.

Gail Braden

GAIL BRADEN
BRINE PRODUCTION AND HYDROCARBON STORAGE

DO 005923



DOW CHEMICAL U.S.A.

July 14, 1986

LOUISIANA DIVISION
P. O. BOX 18
PLAQUEMINE, LOUISIANA 70766-0180
804 388-8000

Gail Braden
Bldg. 2901

cc: Mark Mitchell - 3701
Tom Austin - 3601
Ray Gaska - 3701
Henry Bell - 4701T

8/25/86

PLEASE SUBMIT RESPONSES FOR
CONCERNS #2 & #3.

Thanks
JYP

REACTIVE CHEMICALS REVIEW - BRINE PRODUCTION; THREE CAPITAL PROJECTS

A review was held July 10, 1986, with the following project representatives present: Gail Braden, Tom Austin, Norman Mabile, Jim Landry, and Mark Mitchell. Bob Brady was present representing LAS&TL.

Committee members present: Rex Cochran, John Monroe, David Gustafson, Jack Gathers, Gerald Wagener, Mike Nevill, Joan Pennington.

1. Drilling of New Brine Well #18

No reactive chemical concerns.

2. Upgrade and Conversion of Well #8 (Ethylene Storage Well to Brine Mining)

Concerns: Determine with Process Engineering optimum configuration of temperature sensor, EBV and decomp suppressor in the ethylene line to the well.

3. Promix Well #2 Conversion to Brine Mining

Concerns: 1) Establish adequate operating discipline to assure that downstream valves and EBV's are blocked in proper sequence to avoid blocking in high pressure. 2) Review EBV manual override system configuration and procedures.

Please repond in writing to the Committee Chairman within two weeks as to action taken or planned in regard to these considerations.

J. Y. Pennington, Chairman
REACTIVE CHEMICALS COMMITTEE

DO 005924



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*Roblin pls file /
Rv Chen*

July 14, 1986

LOUISIANA DIVISI N
P. O. BOX 150
PLAQUEMINE, LOUISIANA 70765-0150
504 389-8000

JULY 18, 1986

Gail Braden
Bldg. 2901

JOAN

I WILL BE OUT OF TOWN JULY 19 -

AUGUST 4. I WOULD LIKE UNTIL AUGUST 8th

TO GET A RESPONSE BACK TO YOU.

THANKS

Joel Braden

cc: Mark Mitchell - 3701
Tom Austin - 3601
Ray Gaska - 3701
Henry Bell - 4701T

REACTIVE CHEMICALS REVIEW - BRINE PRODUCTION; THREE CAPITAL PROJECTS

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Joan Pennington
J. Y. Pennington, Chairman
REACTIVE CHEMICALS COMMITTEE

rcb

DO 005925



DOW CHEMICAL U.S.A.

July 14, 1986

LOUISIANA DIVISION
P. O. BOX 150
PLAQUEMINE, LOUISIANA 70765-0150
504 389-8000

Gail Braden
Bldg. 2901

cc: Mark Mitchell - 3701
Tom Austin - 3601
Ray Gaska - 3701
Henry Bell - 4701T

REACTIVE CHEMICALS REVIEW - BRINE PRODUCTION; THREE CAPITAL PROJECTS

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Please respond in writing to the Committee Chairman within two weeks as to action taken or planned in regard to these considerations.

J. Y. Pennington, Chairman
REACTIVE CHEMICALS COMMITTEE

DO 005926

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DOW CHEMICAL U.S.A.

July 1, 1986

LOUISIANA DIVISION
P. O. BOX 150
PLAQUEMINE, LOUISIANA 70756-0150
804 389-800

Henry Bell - 4701T
Rex Cochran - 4701T
Jack Gathers - 2511
John Henley - 2514
Jim Shelton - 3301
Mike Nevill - 3502E
Gerald Wagener - 2503
Ken Zezulka - 3801

REACTIVE CHEMICALS COMMITTEE REVIEW - BRINE PRODUCTION

There will be a review meeting Thursday, July 10, 1986. The meeting will be held in 2510 Building Conference Room at 8:30 a.m. (R&D C-complex; 3rd of 3 R&D buildings facing canal. Enter from front parking lot through double red doors.) Three capital projects for the Brine Production Plant will be reviewed.

If you are unable to attend, please arrange for someone to substitute for you, and advise me (6283) or Robbie Bagaley (1805) of your replacement.

J. Y. Pennington, Chairman
REACTIVE CHEMICALS COMMITTEE

rcb

cc: Plant Supt: Tom Austin
Plant Repr: Gail Braden
Ronnie Mills
Jim Landry
Norman Mabile
Major Mgr: Ray Gaska

AS&TL Repr: John Gross/
Bob Brady

DO 005927

16
JUNE 1986

R. W. GALLANT
GENERAL MANAGER

APPROVED _____
R. A. GASKA
C-A/P&U MANAGER

AUTHORIZATION REQUEST - PROMIX NO. 2 WELL CONVERSION TO MINING

THIS IS A REQUEST FOR \$310 M CAPITAL TO CONVERT PROMIX NO. 2 WELL TO BRINE MINING IN ORDER TO INCREASE BRINE PRODUCTION CAPACITY BY 350 GPM. PROMIX NO. 2 IS AN IDLE HYDROCARBON STORAGE CAVERN WITH A PRESENT CAVERN SIZE OF 0.64 MM BBLs. IT HAS RECOVERABLE SALT RESERVES OF 750,000 TONS OF SALT (2.5 MM BBL. CAVITY) BETWEEN 3300 FEET AND 2700 FEET. A BRINE CAPACITY OF 350 GPM CAN BE IMMEDIATELY REALIZED ON START-UP SINCE A 50 FEET DIAMETER CAVERN ALREADY EXISTS. AT 350 GPM THE CAVERN CAN BE MINED FOR TWO (2) YEARS BEFORE DEPLETING THE RESERVES.

PROJECT SCOPE

THE PROJECT INCLUDES VALVES, PIPING, INSTRUMENTATION AND CONTROLS FOR A MINING WATER LINE, A BRINE LINE AND A PROPANE LINE. THE WELL WILL USE PROPANE AS A HYDROCARBON PAD AND IT WILL BE INSTRUMENTED WITH TRIPS AND EMERGENCY BLOCK VALVES AS IF IT WERE A STORAGE WELL DUE TO THE PROPANE PAD. A WELLHEAD SPOOL WILL BE PURCHASED AND INSTALLED SINCE THE PRESENT WELLHEAD IS INCOMPLETE.

BENEFITS AND JUSTIFICATION

THE DEMAND FOR BRINE ON THE BRINE PRODUCTION PLANT IS 5720 GPM. THIS DEMAND IS BASED ON THE CHLORINE PLANTS AT CAPACITY (6.4 MM LBS/DAY CHLORINE) AND THE HYDROCARBON STORAGE WELLS (PROMIX AND HYDROCARBONS) BRINE REQUIREMENTS. BRINE PRODUCTION PRESENTLY HAS A CAPACITY OF 4500 GPM. THIS 1220 GPM SHORTFALL BETWEEN BRINE CAPACITY AND DEMAND IS THE JUSTIFICATION FOR THE IMMEDIATE CONVERSION OF PROMIX NO. 2 TO MINING.

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THE BRINE CAPACITY OF BRINE PRODUCTION WAS UNEXPECTEDLY REDUCED BY 400 GPM DURING THE SECOND HALF OF 1985 BY 400 GPM DUE TO A CASING LEAK IN WELL NO. 4 AND A POTASH SEAM IN WELL NO. 16. DOW NO. 12 WITH 425 GPM BRINE CAPACITY IS SCHEDULED TO BE TAKEN OUT OF MINING IN JULY, 1986 AND CONVERTED TO HYDROCARBON STORAGE (LPG BACK-UP). BRINE WELL NO. 18 CAPITAL WAS DELAYED FROM 1984 TO 1985. THIS DELAY MEANS THAT WELL NO. 18 WILL NOT BE UP TO ITS 850 GPM BRINE CAPACITY UNTIL SECOND QUARTER 1987 RATHER THAN SECOND QUARTER 1986.

WHEN THE CHLORINE PLANTS RUN AT CAPACITY, BRINE PRODUCTION CAPACITY IS EQUAL TO THE CHLORINE CELL DEMAND. THIS LEAVES NO SUPPLEMENTAL BRINE CAPACITY FOR HYDROCARBON STORAGE WELLS, WELL WORK OVERS, BRINE POWER CURTAILMENTS, OR CHLORINE CELL START-UPS.

PRESENT BRINE DEMAND IS SUMMARIZED AS FOLLOWS:

CHLORINE MANUFACTURE (6.4 MM LBS/DAY)	4445 GPM BRINE
27% SUPPLEMENTAL DEMAND	1275 GPM BRINE
TOTAL DEMAND	<u>5720 GPM</u>

SUPPLEMENTAL BRINE DEMAND AND CAPACITY ARE AS FOLLOWS:

SUPPLEMENTAL DEMAND

WELL WORK OVERS (CLIFTON 1 AND CLIFTON 6 CAVERN)	1700 GPM
HYDROCARBON STORAGE WELLS	1500 GPM
BRINE MAKE-UP, POWER CURTAILMENT	750 GPM
CHLORINE CELL START-UPS	750 GPM
TOTAL SUPPLEMENTAL DEMAND	<u>4700 GPM</u>

SUPPLEMENTAL CAPACITY (27% OF DEMAND)	1275 GPM
---------------------------------------	----------

IT IS FELT THAT A SUPPLEMENTAL CAPACITY OF ONLY 27% OF THE TOTAL SUPPLEMENTAL DEMAND IS NEEDED DUE TO THE SURGE CAPACITY OF THE NORTH AND SOUTH BRINE PONDS.

PROMIX NO. 2 CONVERSION TO MINING IS NEEDED AS SOON AS POSSIBLE IN 1986 TO BOOST PRESENT BRINE CAPACITY AND TO ALLOW DOW NO. 12 TO BE TAKEN OUT OF MINING AND CONVERTED TO STORAGE.

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SAFETY AND LOSS PREVENTION AND TECHNOLOGY

PROMIX NO. 2 WILL BE SET UP WITH HIGH PRESSURE TRIPS ON ALL THREE STRINGS (BRINE, MINING WATER, AND PROPANE). THE PROPANE STRING WILL ALSO HAVE A LOW PRESSURE TRIP. EACH STRING WILL HAVE A WELLHEAD WING VALVE (MANUAL) AND AN EBV (AUTOMATIC). ALL EBVS WILL CLOSE IF ANY OF THE TRIP SETPOINTS ARE EXCEEDED.

PROMIX NO. 2 IS COMMUNICATED WITH GRACE NO. 1. PROPANE WAS CHOSEN AS THE PAD FOR PROMIX NO. 2 SINCE GRACE NO. 1 STORES PROPANE. GRACE NO. 1 HAS BEEN IN PROPANE STORAGE FOR 3-1/2 YEARS. THERE HAS NEVER BEEN A PROBLEM WITH PROPANE MOVING FROM GRACE NO. 1 TO PROMIX NO. 2. PROMIX NO. 2 WILL BE MINED USING THE 3/4 POINT TECHNIQUE AS A SAFETY PRECAUTION. WITH THIS MINING TECHNIQUE THE BRINE WITHDRAWAL POINT WILL BE AT 3300 FEET, DEEPER THAN ANY PART OF GRACE NO. 1 CAVERN. THIS WILL INSURE PROPANE WILL NOT EXIT WITH THE BRINE.

AN ELECTRICAL CLASSIFICATION OF CLASS I, DIVISION II WILL BE ESTABLISHED WITHIN 25 FEET OF THE WELLHEAD IN COMPLIANCE WITH SAFETY AND LOSS PREVENTION GUIDELINES. THE WELL WILL HAVE A F&E INDEX OF 90 WITH A MAXIMUM PROBABLE LOSS OF \$567 M BASED ON A MAXIMUM PROPANE INVENTORY OF 50,000 BBLs. THIS PROJECT HAS BEEN REVIEWED WITH THE SAFETY DEPARTMENT, ~~THE REACTIVE CHEMICALS COMMITTEE~~ AND THE SALT MINING/STORAGE TECH CENTER. ~~ALL~~ GROUPS SUPPORT THIS PROJECT.

BOTH

ENVIRONMENTAL

THERE WILL BE NO NEW SOURCES OF HYDROCARBON EMISSIONS TO THE ATMOSPHERE AS A RESULT OF THIS INSTALLATION OTHER THAN ~~FUGITIVE~~ ^{FLARE} EMISSIONS IF EQUIPMENT FAILURE WERE TO RESULT. ALL BRINE THAT LEAVES THE WELL WILL NORMALLY PASS THROUGH THE SOUTH ~~SEPARATOR~~ ^{SEPARATOR} AND STACK ~~AND SEPARATOR~~ SYSTEM. THE BRINE CAN ALSO BE ROUTED TO THE NORTH FLARE STACK. BOTH OF THESE SYSTEMS HAVE ~~BEEN~~ ^{RECENTLY} BEEN UPGRADED AND BOTH MEET S&LP GUIDELINES. THE PAD AROUND PROMIX NO. 2 WILL BE DIKED, WITH THE COLLECTED WATER BEING RETURNED TO THE MINING WATER SYSTEM. THIS PROJECT HAS BEEN ~~REVIEWED~~ ^{REVIEWED} WITH ENVIRONMENTAL ~~CONTROL~~ ^{SERVICES} AND THEY SUPPORT IT.

FLARE

WHICH CONTAINS A CURRENT OPEN AND FLARE

INDUSTRIAL HYGIENE

THERE WILL BE NO NEW CHEMICALS INTRODUCED TO BRINE PRODUCTION AS A RESULT OF THIS OPERATION. THERE WILL BE NO INDUSTRIAL HYGIENE PROBLEMS AS A RESULT OF THIS PROJECT. THIS PROJECT HAS BEEN REVIEWED WITH LOUISIANA DIVISION INDUSTRIAL HYGIENE AND THEY SUPPORT IT.

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PROJECT TEAM AND MANPOWER

MANUFACTURING REPRESENTATIVE - GAIL E. BRADEN
PROJECT ENGINEER - GERARD J. BECNEL
INSTRUMENT ENGINEER - JOHN HOLLIDAY

NO ADDITIONAL MANPOWER WILL BE REQUIRED AT BRINE PRODUCTION TO
OPERATE/MAINTAIN THIS FACILITY.

SPENDING SCHEDULE, ACCOUNTING AND RELATED EXPENSES

THIS CAPITAL WILL BE DEPRECIATED AGAINST ACCOUNT 20.

THERE WILL BE RELATED EXPENSES OF \$50,000 FOR WORK OVER (CAVITY
SONAR) OF PROMIX NO. 2 AND \$15,000 FOR STORAGE OF PROPANE FROM
GRACE NO. 1 IN PROMIX NO. 4 DURING THE WORK OVER TIME. THE
COMMUNICATION OF GRACE NO. 1 AND PROMIX NO. 2 REQUIRES THAT
GRACE NO. 1 BE EMPTIED AND DEPRESSURIZED IN ORDER TO SONAR
PROMIX NO. 2.

SPENDING SCHEDULE:	3RD QUARTER, 1986	\$200 M
	4TH QUARTER, 1986	\$110 M
R-T-O DATE:	4TH QUARTER, 1986	
COMPLETION DATE:	4TH QUARTER, 1986	

GAIL BRADEN
MANUFACTURING REPRESENTATIVE

TIM HOLDER
BRINE PRODUCTION SUPERINTENDENT

MG

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BRINE WELL NO. 18 (NO 19)

- ① 3000 # WELLHEAD / 900 # WING VALVES
(API) (ANSI)
- ② 300 # ON M.W. AND BRINE
AFTER WING VALVE.
PROTECT AGAINST NATURAL GAS.
- ③ 2 STRINGS INTO SALT
2 STRINGS PROTECTING DIESEL PAD
- ④ DIESEL OIL SYSTEM
600 # PIPING
WELDS 100% X-RAY
FIRST VALVE OFF SOCKET WELDED.
- ⑤ BRINE GOES TO SOUTH PIT OR NORTH
PIT.
GAS SEPARATOR & FLARE STACK.
- ⑥ FLARE POINTS ON ALL 3 STRINGS
- ⑦ CASING / CEMENTING PROGRAM.
- ⑧ CATHODIC PROTECTION PROGRAM

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PROMIX NO. 2

GOAL - CONVERT TO MINING

PRESENT - IDLE STORAGE WELL

DESIGN FEATURES -

- ① PROPANE PAD
- ① WING VALVES ON ALL W.H. NOZZLES
CLOSE COUPLED.
- ② EBV'S ON ALL 3 FLOWING STRINGS
- ③ NO CONNECTIONS BETWEEN
WING VALVE AND EBV.
- ④ PRESSURE TRIPS ALL 3 STRINGS
PROPANE - HIGH & LOW
MINING WATER - HIGH
BRINE - HIGH
- ⑤ LOCAL PILOT TRIPS ON ALL 3 STRINGS
- ⑥ BACK-UP CYLINDER AIR
- ⑦ FAIL CLOSED EBV'S WITH MANUAL
OVERRIDE.

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7/86
GEB

PROMIX NO 2 (CONT.)

⑧ FIRST VALVE OFF HEADER SOCKET
WELDED.

⑨ BRINE STRING IS DEEP STRING - 3300'
- PREVENT PROPANE FROM GETTING
INTO BRINE

⑩ PROMIX 2 COMMUNICATED WITH
GRACE NO. 1.

GRACE NO 1 STORES PROPANE.

⑪ SAFETY STRING = MINING WATER
STRING

⑫ BRINE OUT GOES TO GAS SEPARATOR
AND FLARE STACK.

NORTH PIT

OR

SOUTH PIT

⑬ WILL ADD 2ND LINER AT GROUND
SURFACE.

THERWISE 2 STRINGS
PROTECTING PROPANE

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7/86
HEB

(ETHYLENE STG.)
LOW NO 8 UPGRADE

GOAL - UPGRADE EBV & TRIP SYSTEM

- SET UP FOR MINING
- ADD METER RUNS FOR ACCOUNTABILITY.

DESIGN FEATURES

- ① EBV'S ON ALL 3 STRINGS
- ② WING VALVES ON ALL WELLHEAD NOZZLES.
- ③ 3000 # / 900 # SYSTEM
- ④ PRESSURE TRANSMITTER TRIPS WITH LOCAL BACK-UP, ON EACH STRING. BACK-UP AIR CYLINDER SUPPLY.
- ⑤ FAIL-CLOSED EBV'S WITH MANUAL OVERRIDE (FIELD).
- ⑥ DECOMPOSITION SUPPRESSOR WITH TEMPERATURE TRIPS ON THE EBV'S (W.H. & PIPELINE)
- ⑦ 3/4 POINT MINING METHOD WITH ETHYLENE PAD.
- ⑧ NEED TO UNDERSTAND AND SOLVE CO₂ PROBLEM - QUALITY
- ⑨ CASING PROGRAM / CEMENTING PROGRAM.

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7/86
GEB

CLASS	NO. OF STATIONS	PERCENT OF TOTAL
1. TV STATIONS	1,000	100%
2. RADIO STATIONS	1,000	100%
3. CABLE STATIONS	1,000	100%
4. SATELLITE STATIONS	1,000	100%
5. OTHER STATIONS	1,000	100%

10 FIRE PROTECTION SYSTEM.

- ⑪ f) W. H. SPRINKLER SYSTEM

⑪ DEDICATED ETHYLENE PIPING.

"COMMON" BRINE PIPING

⑫ WELL RELIEF SYSTEM.

- a) NEVER ALLOW WELL TO FILL COMPLETELY WITH ETHYLENE

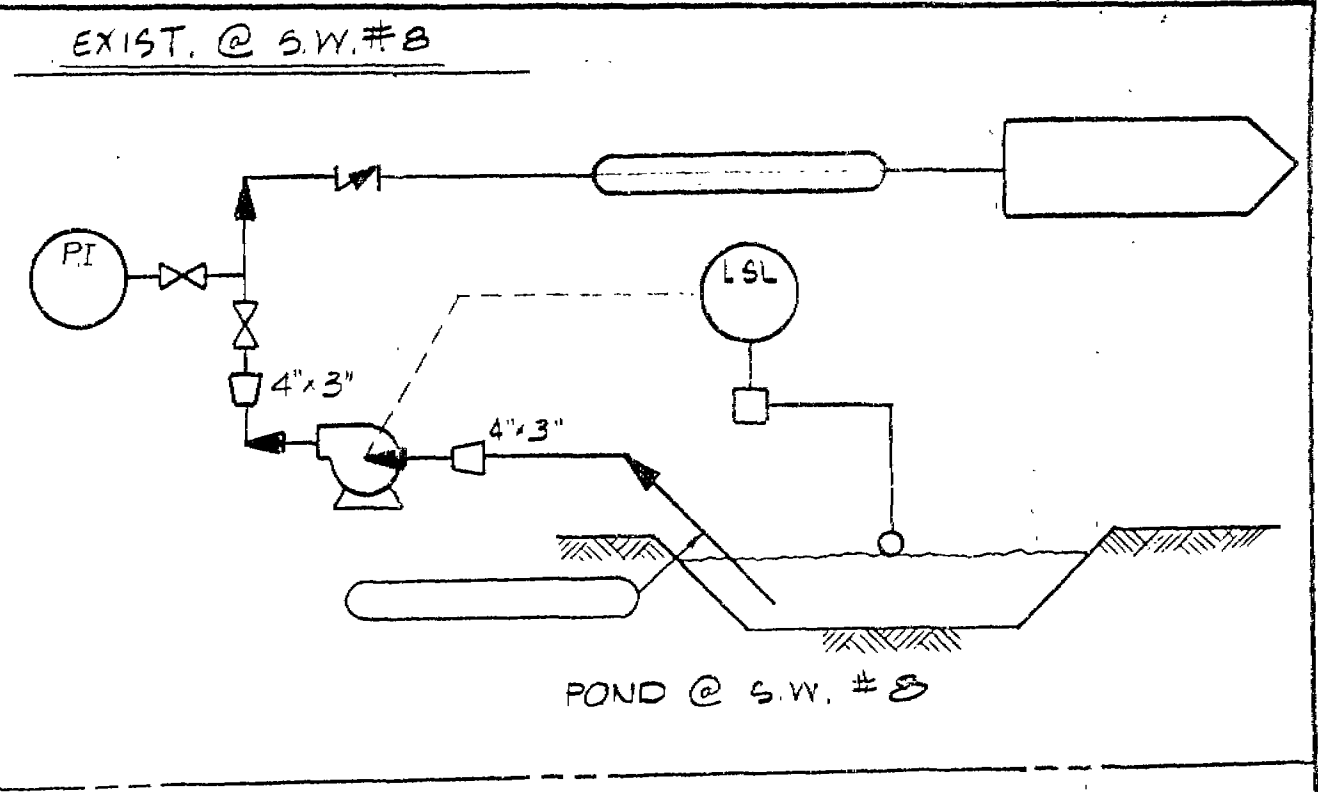
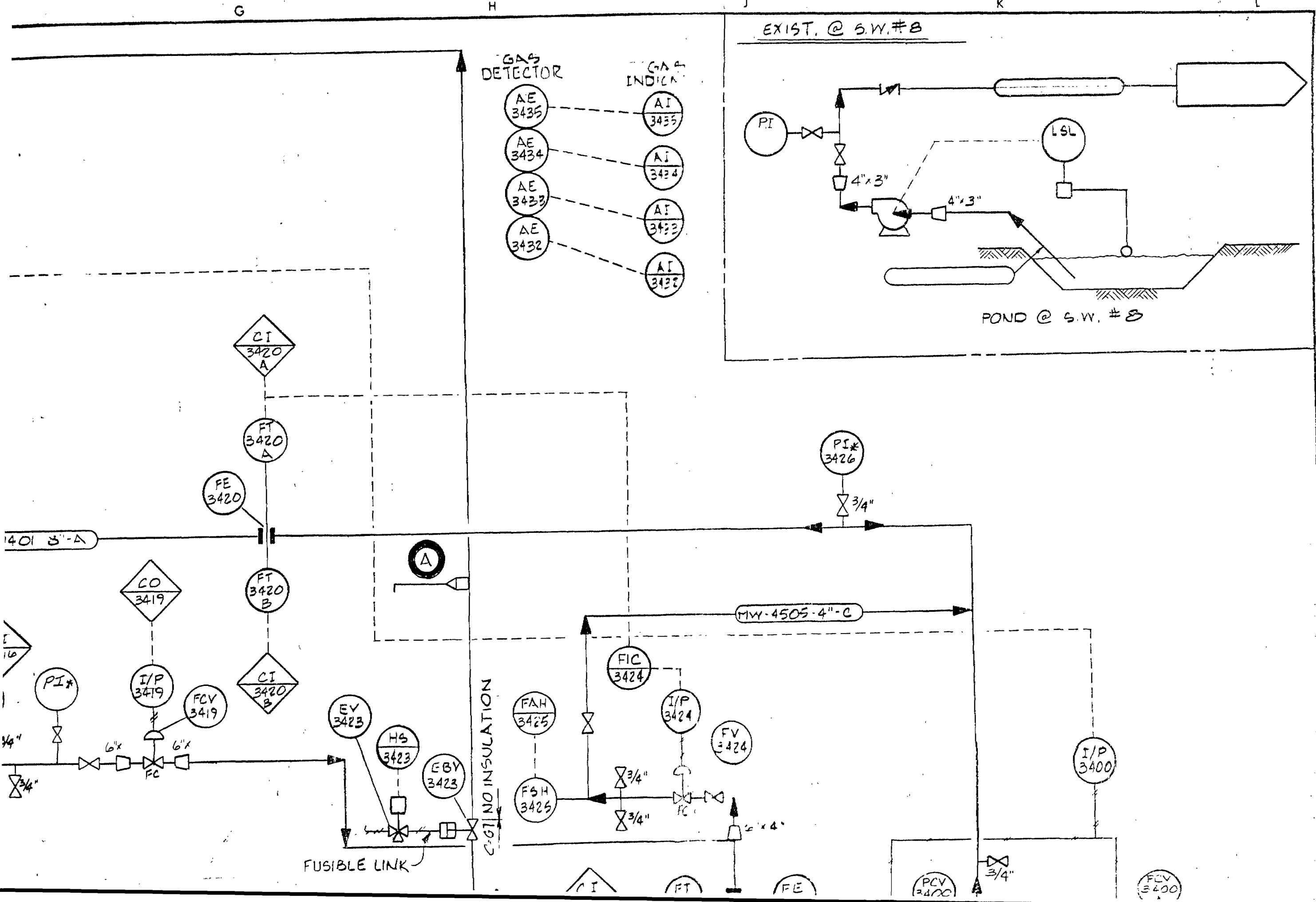
B) REMOVE BRINE TO DEPRESSURIZE.

c) BRINE SEPARATOR DESIGNED FOR "SOLUBLE HYDROCARBONS" ONLY - NOT HYDROCARBON PHASE.

d) HYDROCARBON TO BACK-UP WELL - Dow #7.

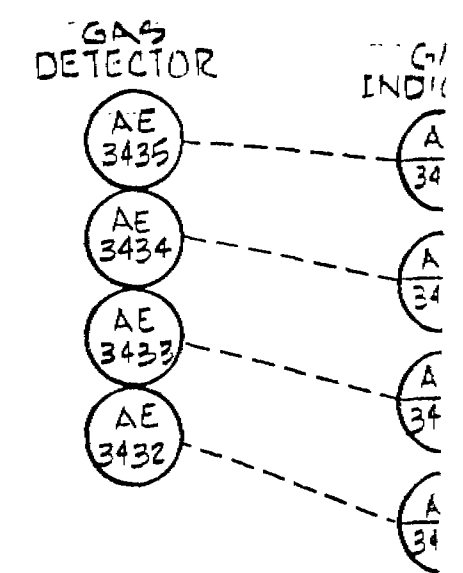
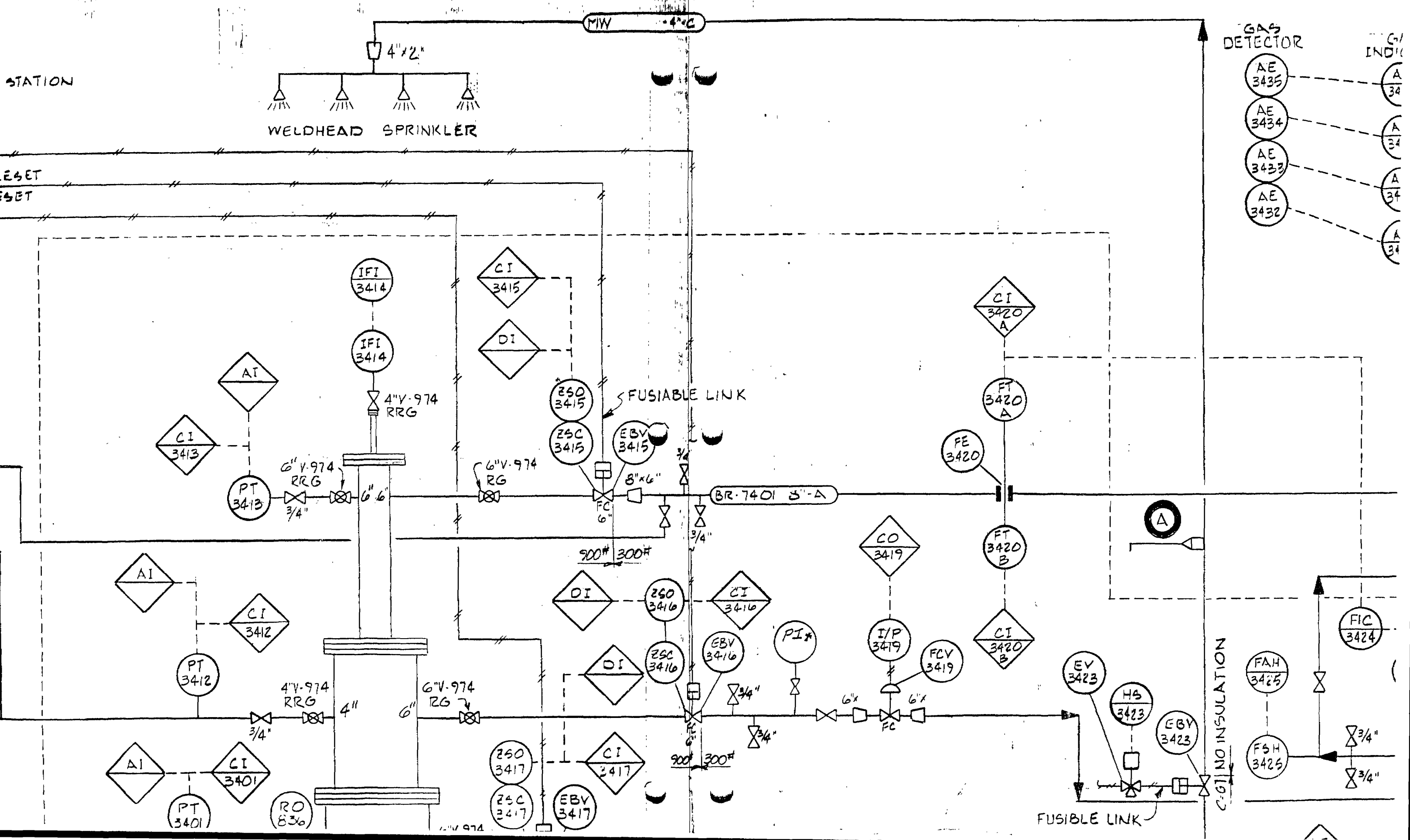
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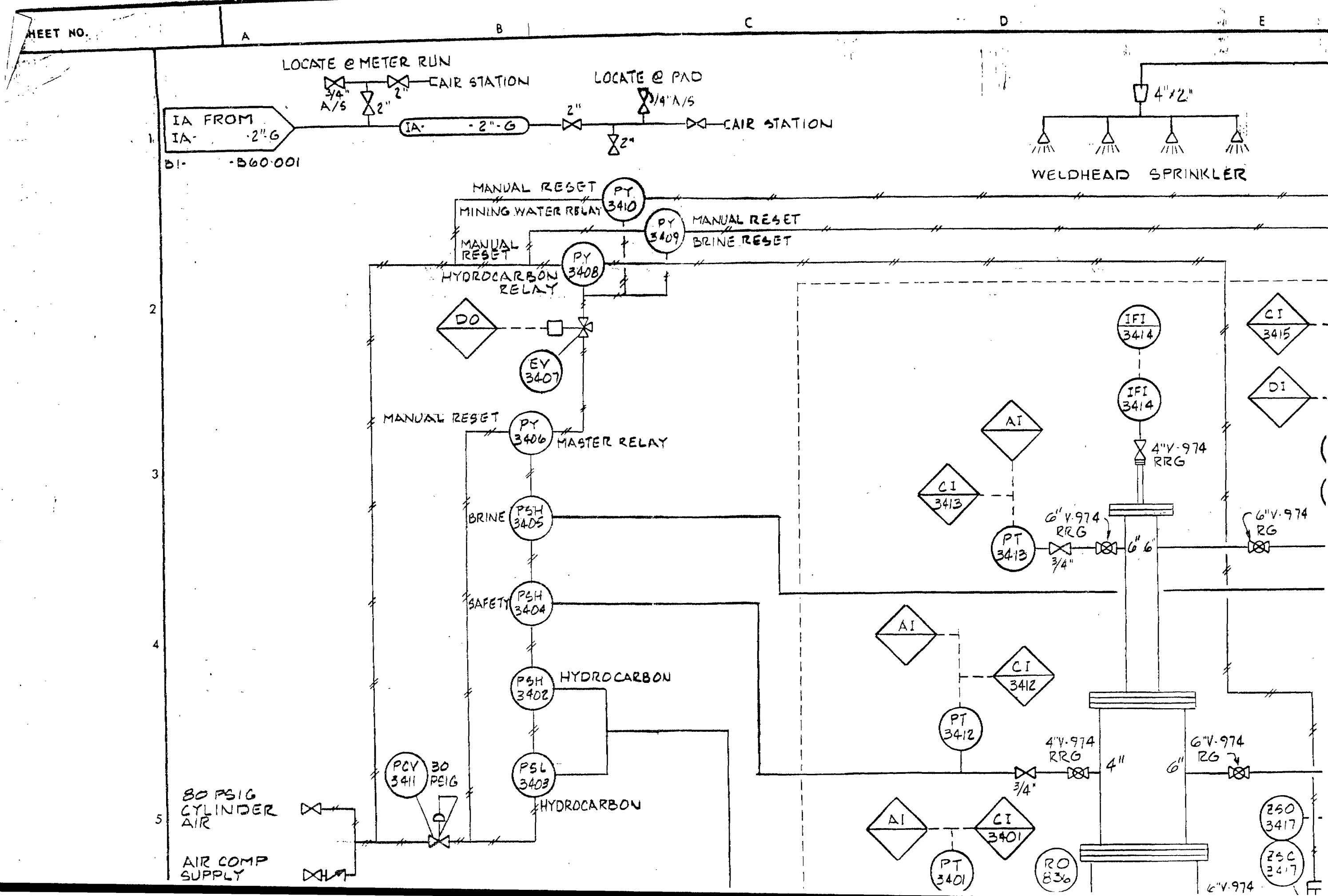
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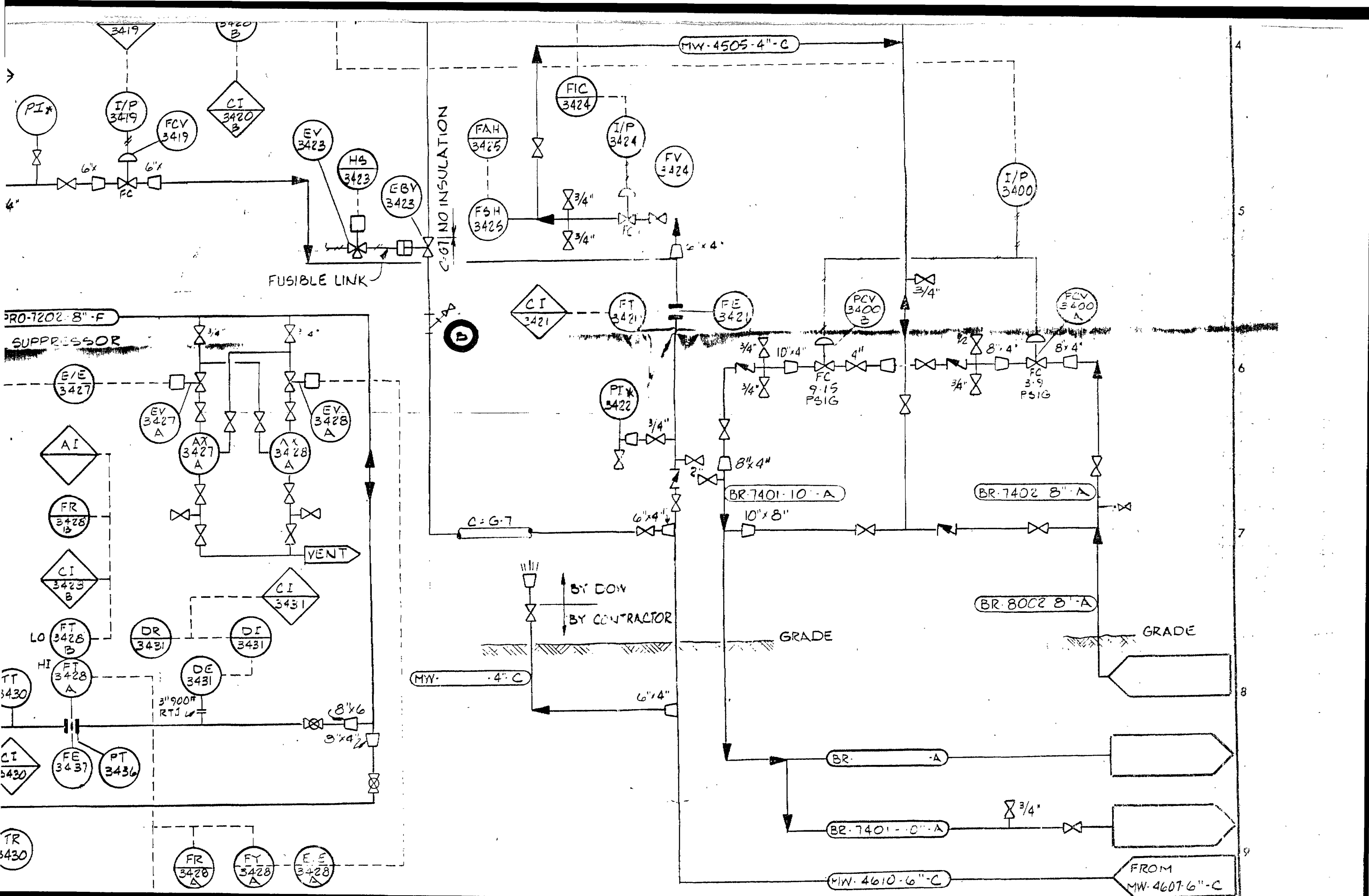


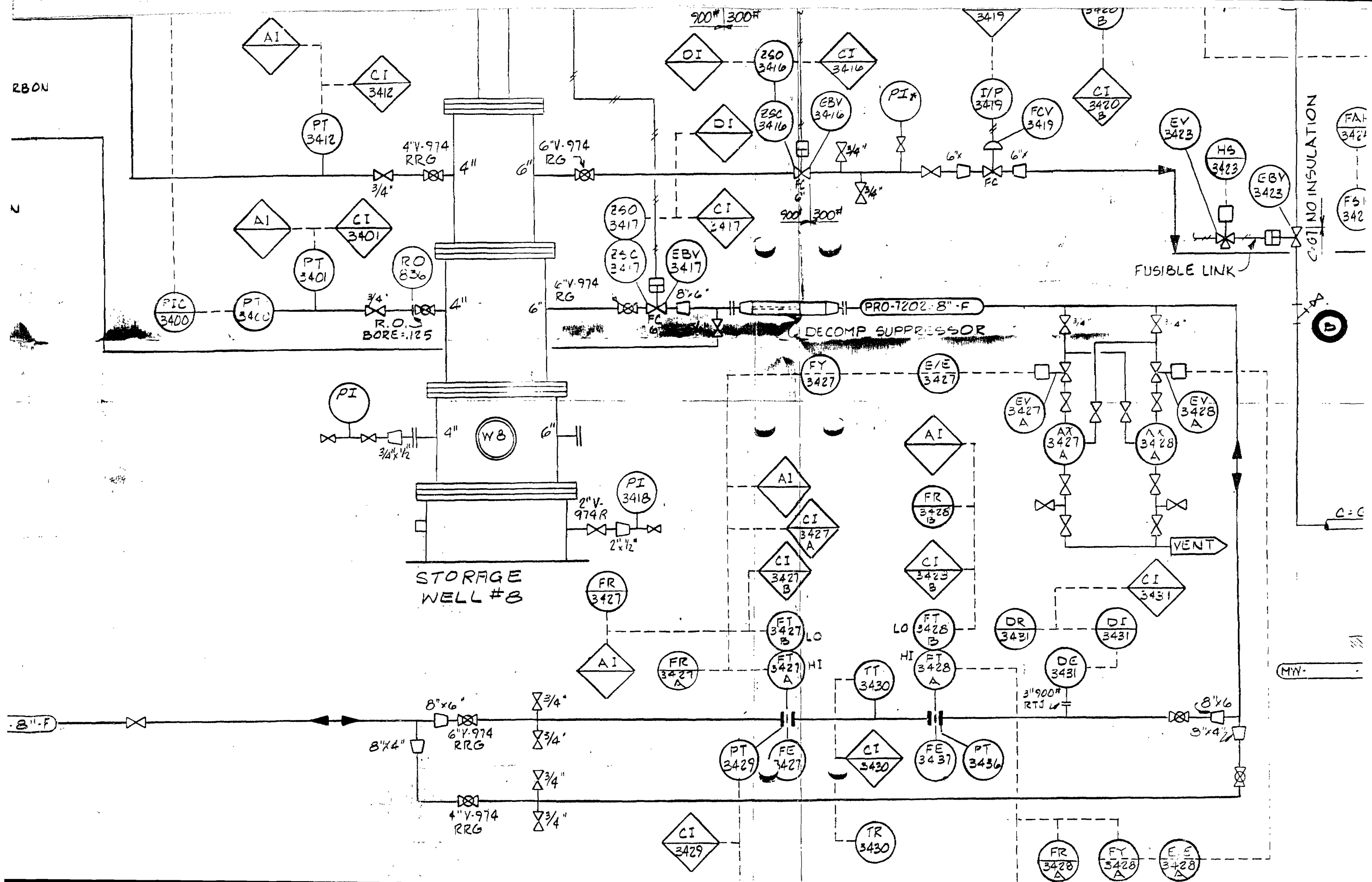
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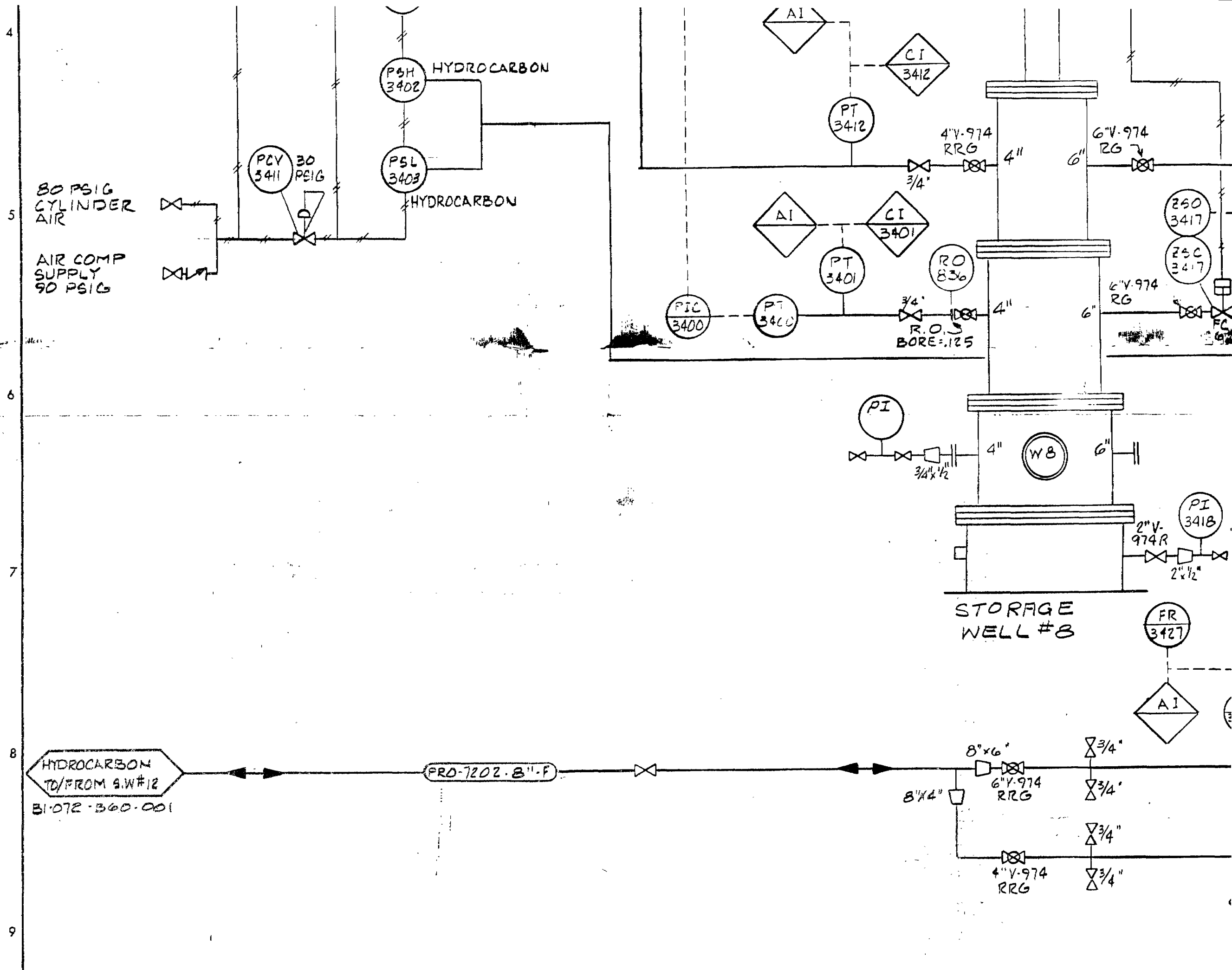
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RESET

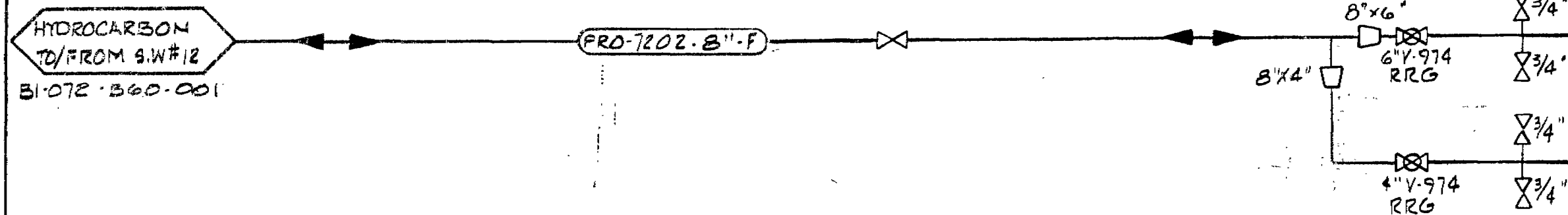






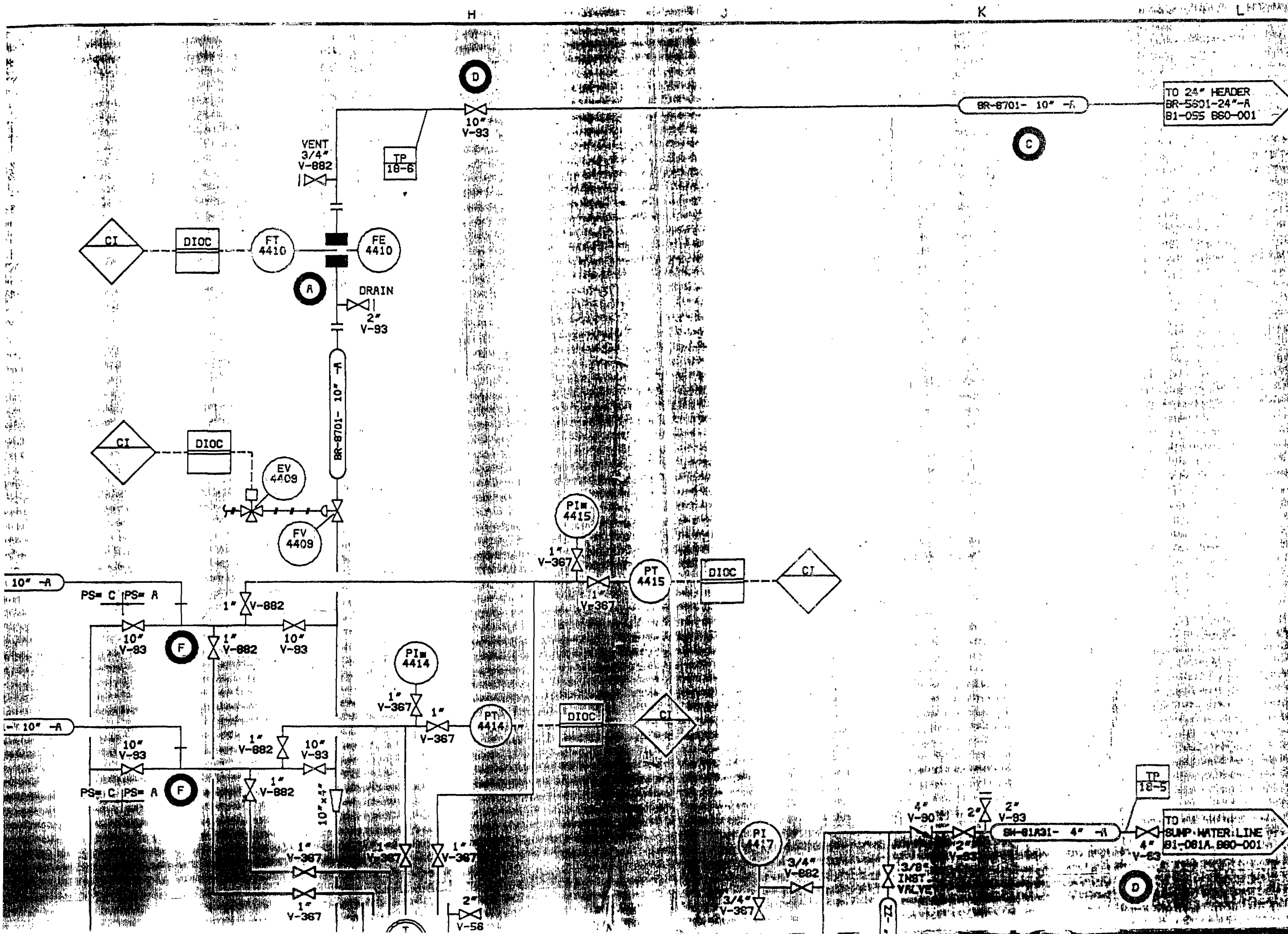






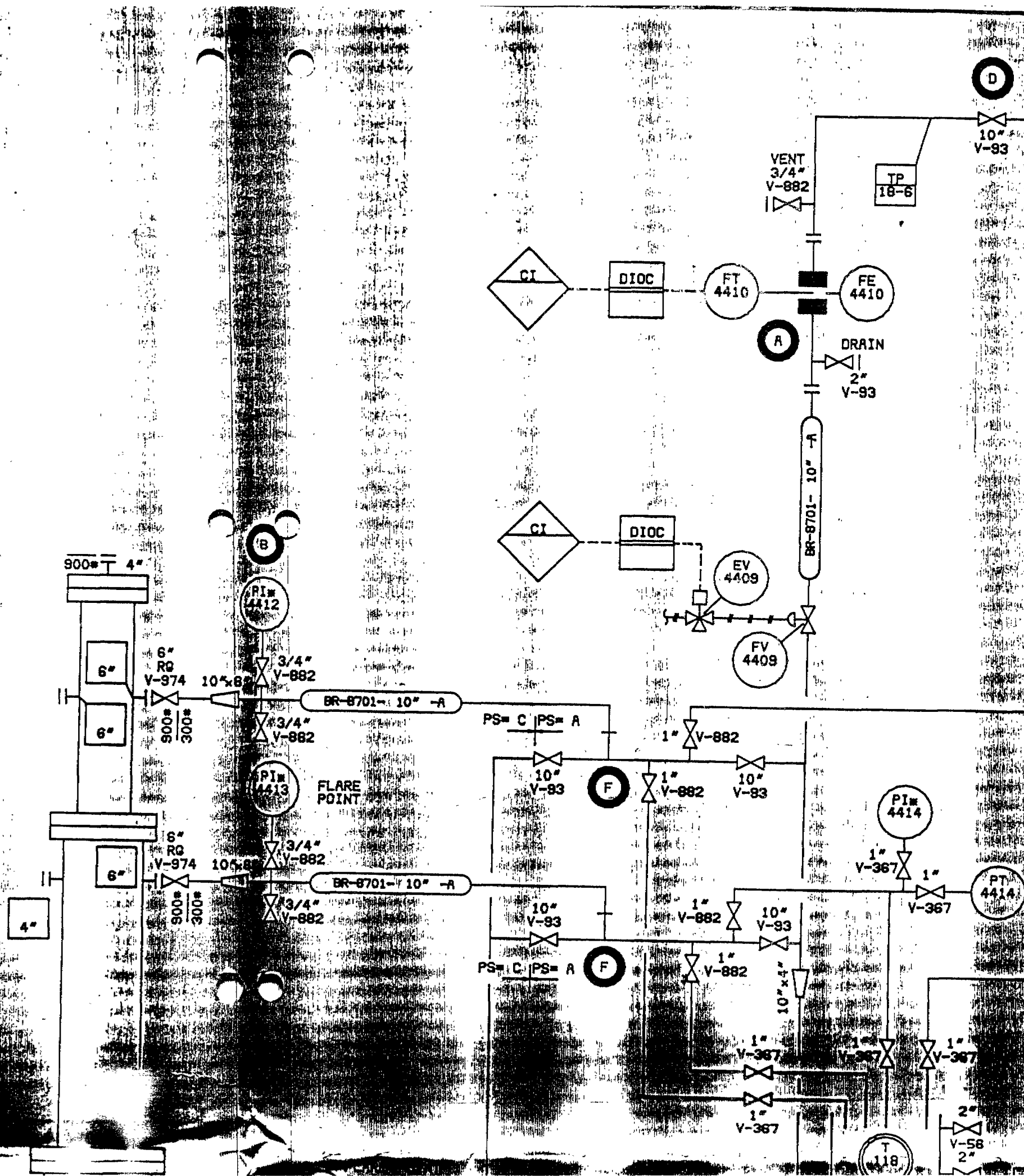
- A 1/4" NON-BLOCKING DRAIN TO ALLOW FOR DRY SPRINKLER HEADER. 3/4" T.O.L. w/ 3/4" x 1/4" SWAGE & 1/4" TUBING.
- B STRAINER WITH HEAVY DUTY SCREEN FOR ΔP-350 PSIG.

A							
REV. DWG. MARK COORD.	REVISION	BY DATE APP.	REV. DWG. MARK COORD.	REVISION		BY DATE	E
A	B	C	D				E

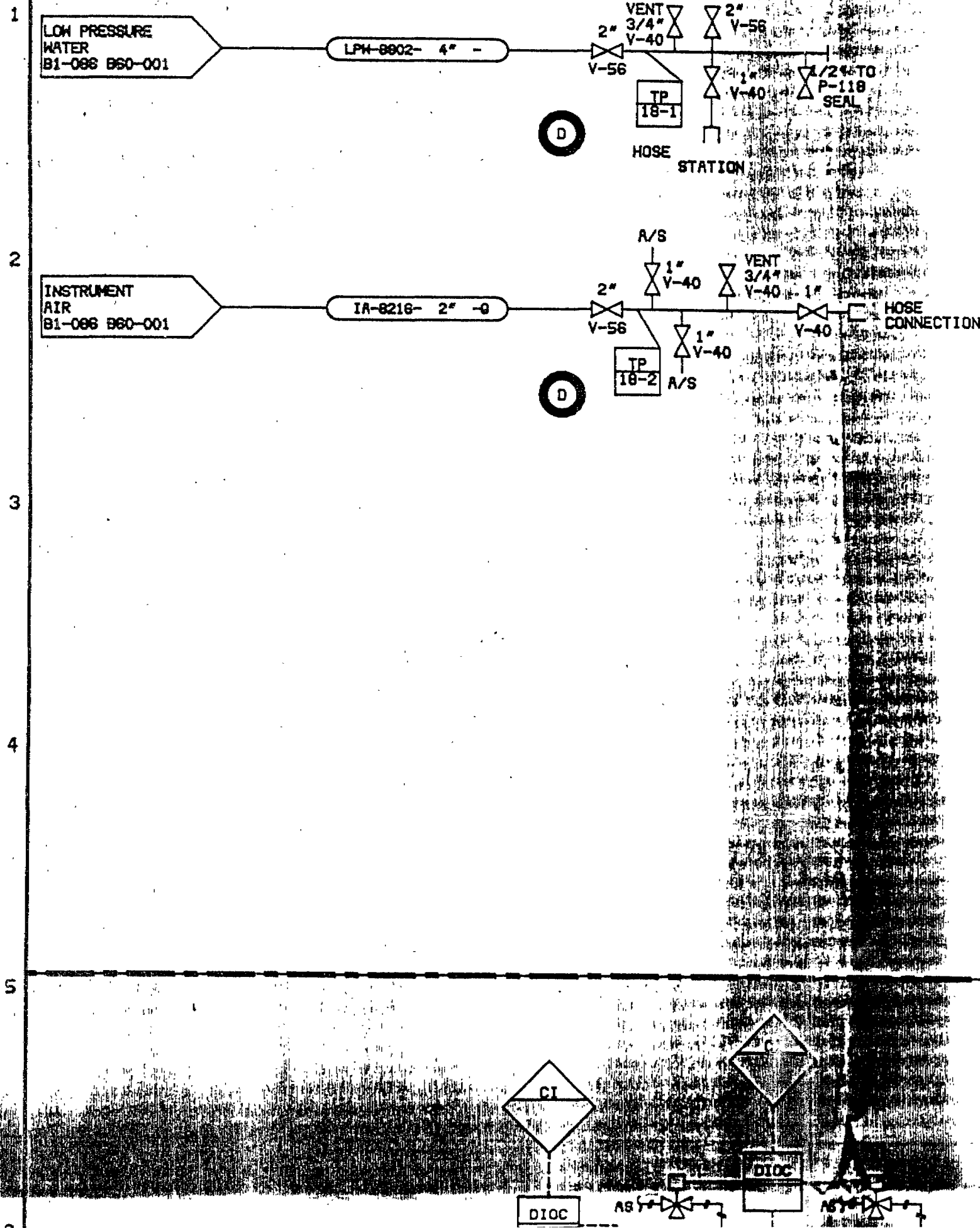


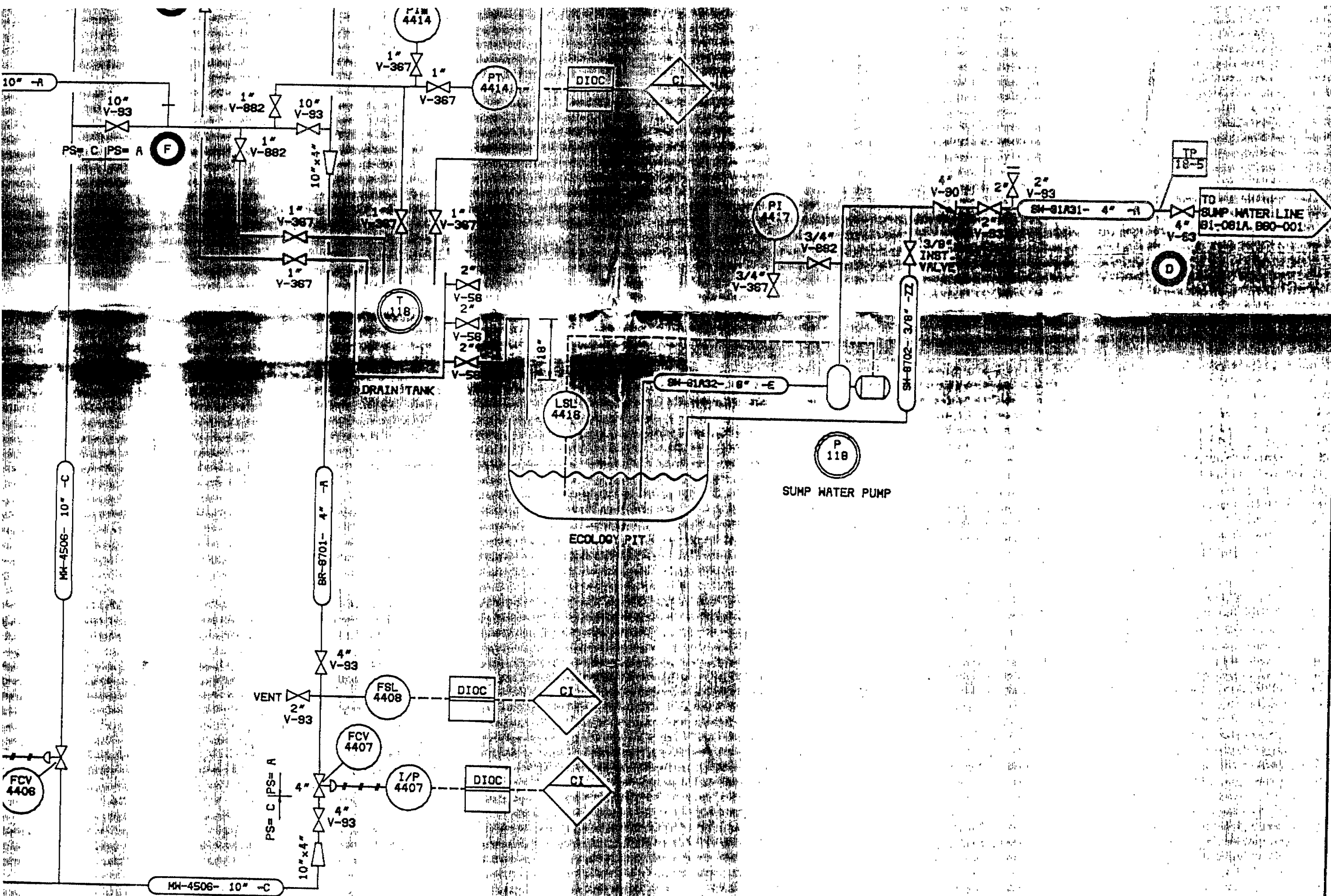
TO 24" HEADER
BR-5601-24"-A
B1-055 B60-001

TO SUMP WATER LINE
81-081A B60-001

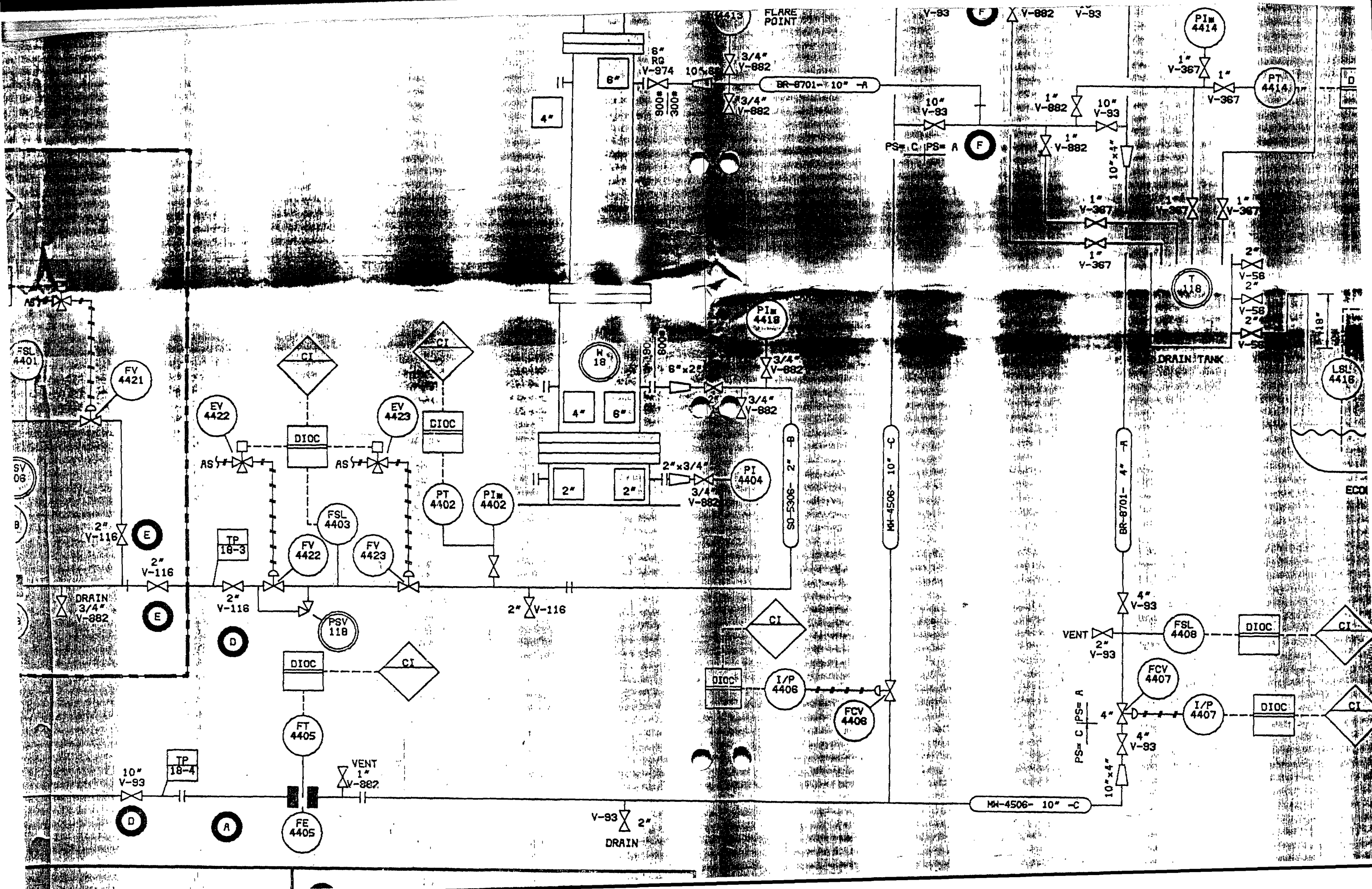


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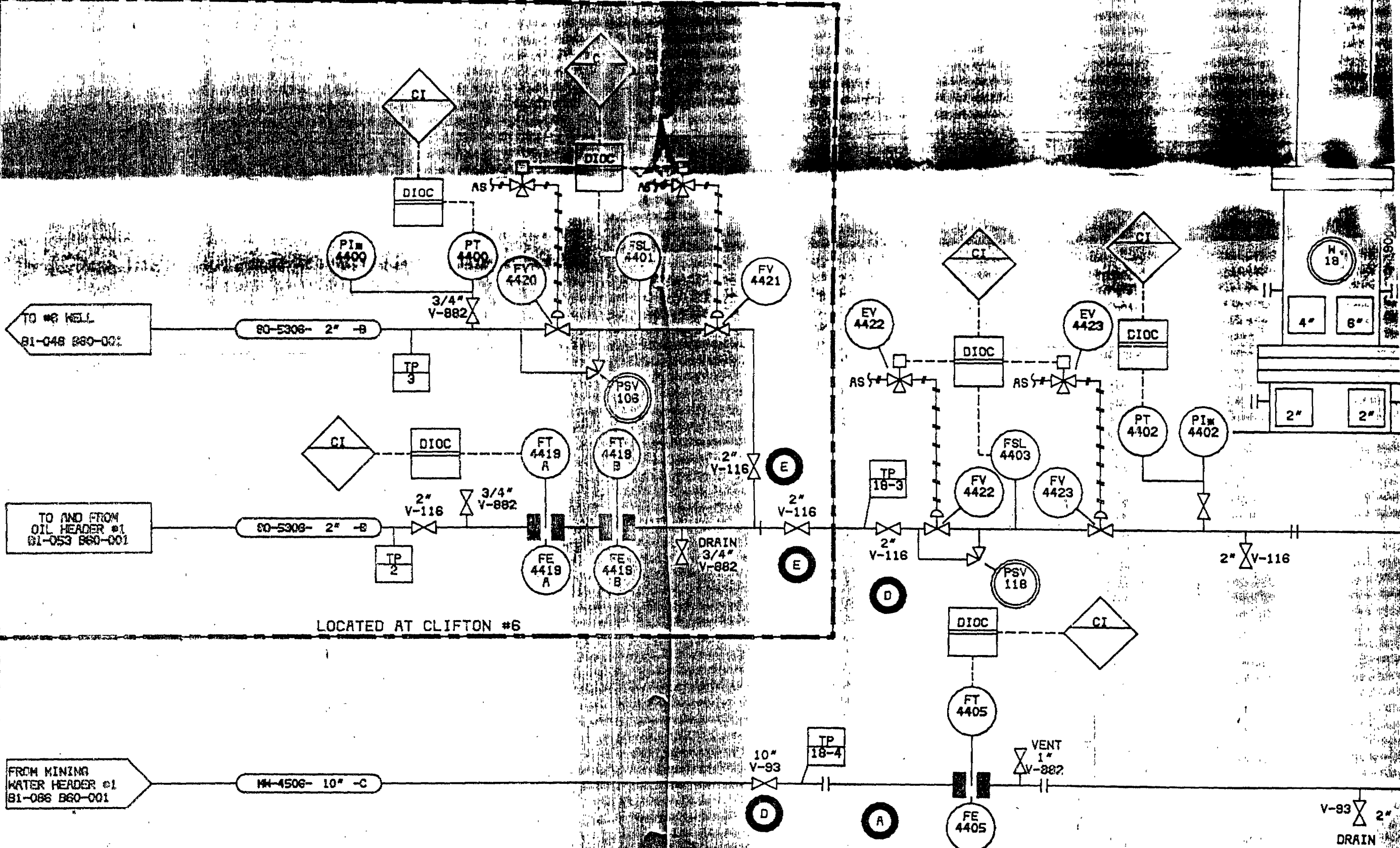


ALL REMOTE INSTRUMENTATION
TIED TO PROCESS COMPUTER
SYSTEM.



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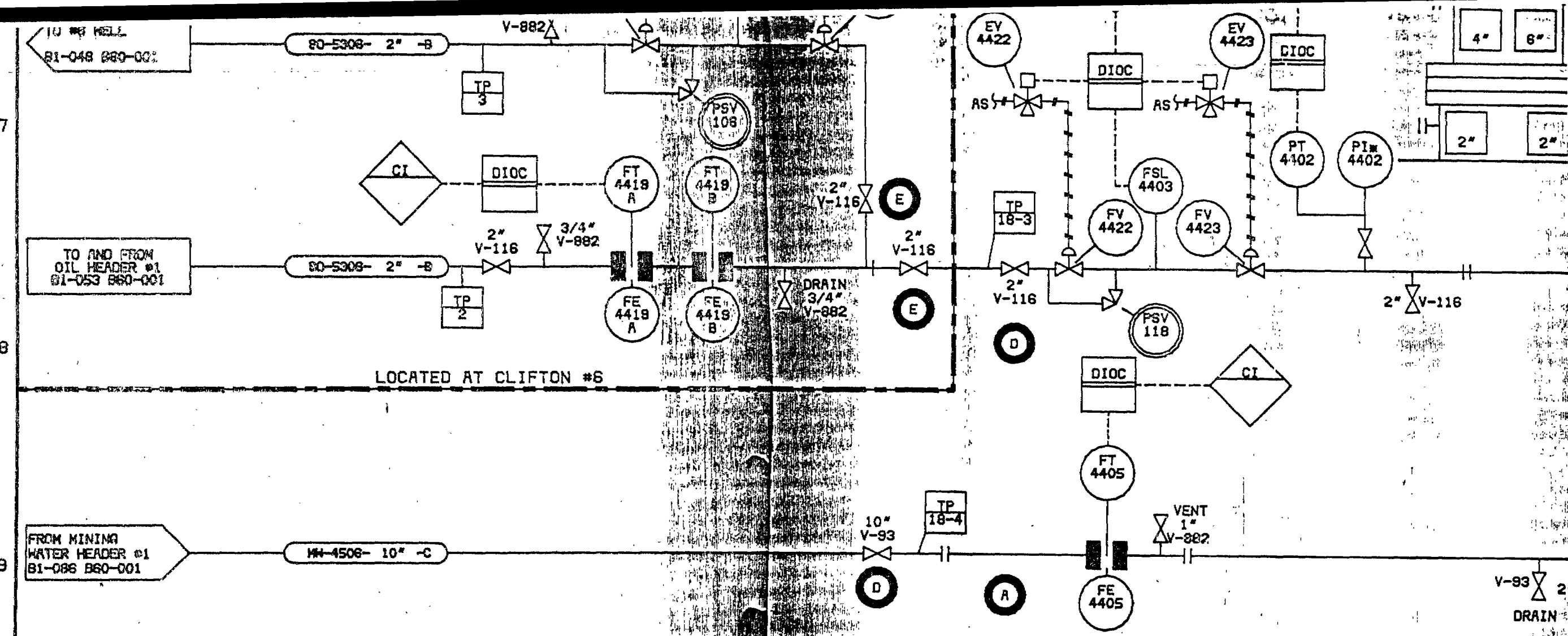


(A) METER RUN SPEC - SEE SPEC SHEET

(C) BR-8701-10-A HAVE CATHODIC PROTECTION

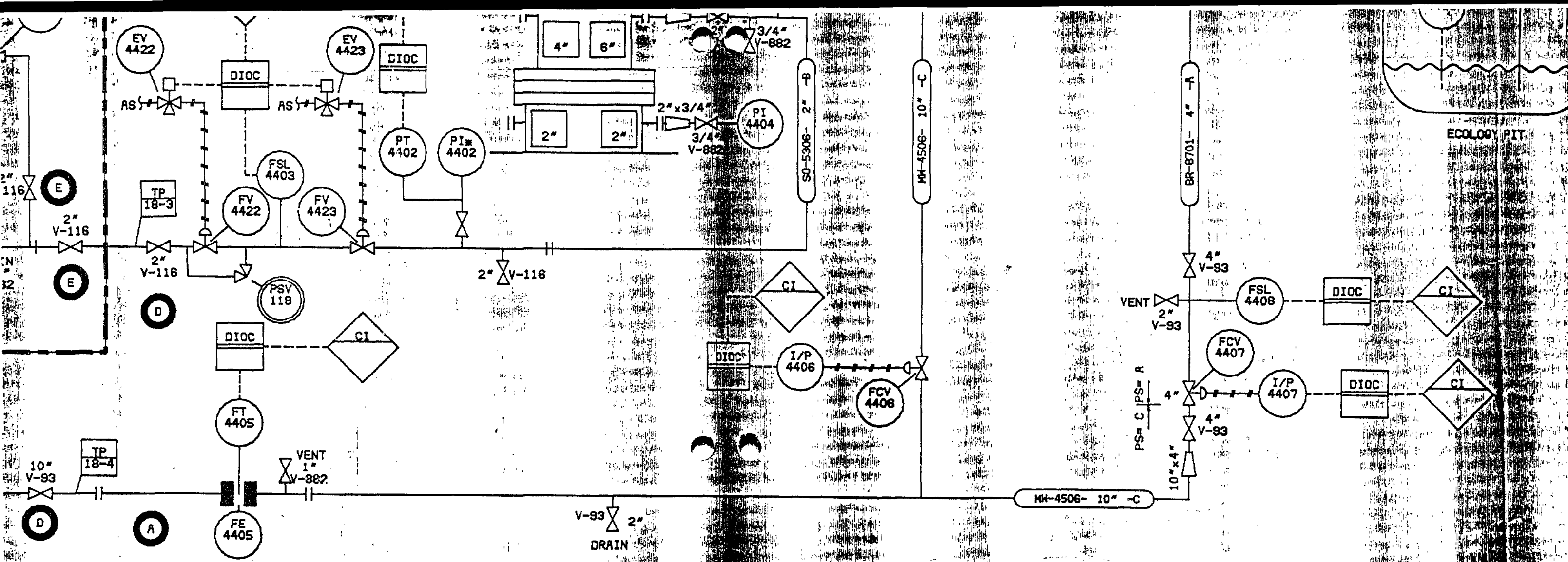
(E) DRAIN

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A METER RUN SPEC - SEE SPEC SHEET	C BR-8701-10"-A HAVE CATHODIC PROTECTION FOR CORROSION	E BLOCK VALVE AT TIE POINT
B PRESSURE SPIGOT PI	D BLOCK VALVE	F SEE PIPING DETAILS FOR EXACT LOCATION

REV. DNG. MARK COORD.	REVISION	BY DATE APP.	REV. DNG. MARK COORD.	REVISION	BY DATE APP.	REV. DNG. MARK COORD.
A	A		D	D	E	

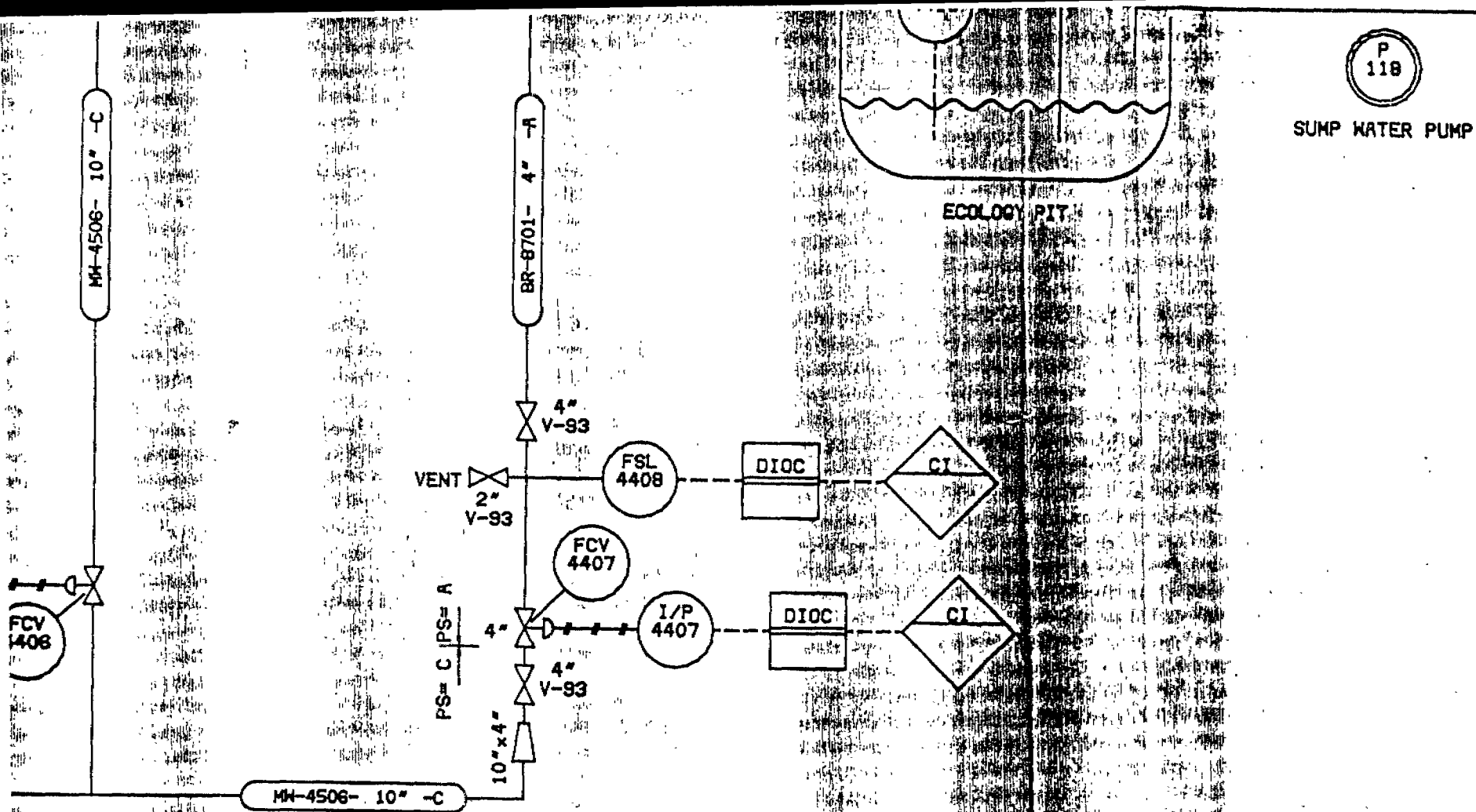


ANODIC PROTECTION	E BLOCK VALVE AT TIE POINT
	F SEE PIPING DETAILS FOR EXACT LOCATION

DOW CONF
ORIGINAL B/M NO.

								DESIGNED		ORIGINAL Dwg. ISSUED
								DRAWN		
								TONY ZUMO	2/85	
								CHECKED		
								APPROVED		
								NOTED		
								FOR BID PURPOSES ONLY		
								FOR CONSTRUCTION		
								FOR REFERENCE ONLY		

REVISION		BY DATE APP.	REV. Dwg.	REVISION		BY DATE APP.	MFG. REP.
D				E			
				F			
				G			
				H			



P
119
SUMP WATER PUMP

DOW CONFIDENTIAL

ORIGINAL B/M/NO

ALL REMOTE INSTRUMENTATION
TIED TO PROCESS COMPUTER
SYSTEM.

INST. NO.'S:
4400-4449
4419

LAST LINE
NO. USED:
8702

UNLESS OTHERWISE NOTED, ALL
ITEMS ON THIS DRAWING ARE:
NEW

UNLESS OTHERWISE NOTED, ALL
BRANCH CONNECTIONS ON THIS
DRAWING ARE: 1"

DESIGNED	DATE	ORIGINAL DWD ISSUED WITH	DOW CHEMICAL U.S.A. LOUISIANA DIVISION PLAQUEMINE, LA. BRINE PRODUCTION WELL 18
DRAWN			
TONY ZUMO	2/85		
CHECKED			
APPROVED			
NOTED			
BY DATE APP.		FOR BID PURPOSES ONLY	☐
MFG. REP.		FOR CONSTRUCTION	☐
		FOR REFERENCE ONLY	☐
		JOB NUMBER	80020-70918
		SCALE	
		B1-087 B60-001	

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