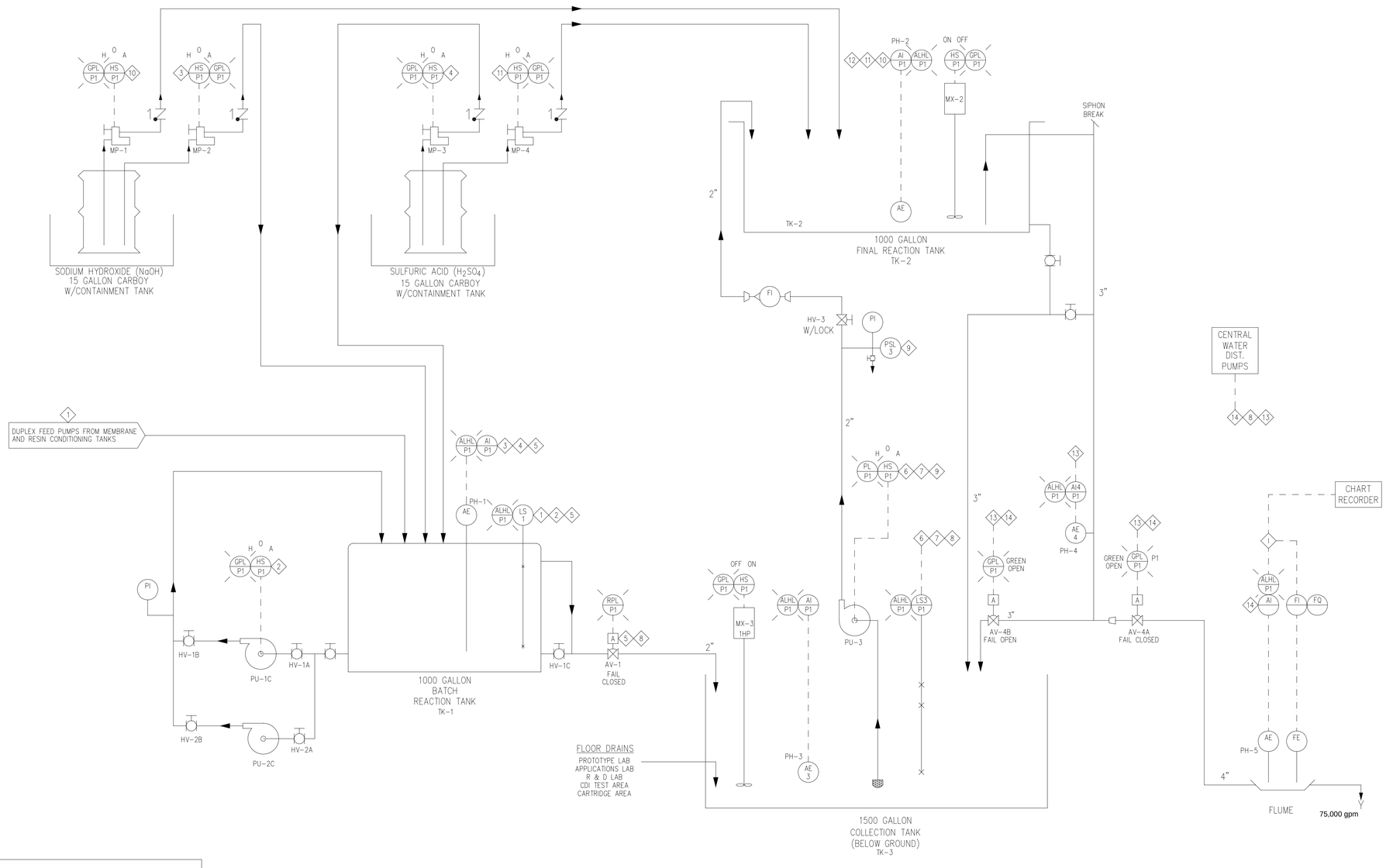
REVISIONS					
REV	DCO	REVISION DESCRIPTION	DATE	DWG BY	APPD
A	NA	INITIAL RELEASE	12/19/97	JWC	
B	2570	AS INSTALLED	5/6/98	JWC	
C	4248	COMBINED FINAL EFFLUENT TANK W/REACTION TANK #2 (NOW FINAL REACTION TANK)	2/25/03	NFP	

1. FEED PUMPS FROM MEMBRANE CONDITIONING TANKS ARE INTERLOCKED NOT TO RUN WHEN LS-1 IS AT HIGH LEVEL.
2. PUMPS PU-1C INTERLOCKED NOT TO RUN WHEN LS-1 IS AT LOW LEVEL.
3. NaOH PUMP MP-2 INTERLOCKED TO RUN WHEN PH-1 < 7.0 AND TO STOP RUNNING WHEN PH-1 > 7.0
4. ACID PUMP MP-3 INTERLOCKED TO RUN WHEN PH-1 > 8.0 AND TO STOP RUNNING WHEN PH-1 < 8.0
5. AV-1 OPENS AT COMPLETION OF NEUTRALIZATION BATCH IN BATCH REACTION TANK TK-1.
6. PUMP PU-3 STOPS WHEN LS-3 IS AT LOW LEVEL.
7. PUMP PU-3 STARTS WHEN LS-3 IS AT MID LEVEL.
8. CENTRAL WATER DISTRIBUTION PUMPS STOP, AV-1 CLOSES, AND LEVEL ALARM SOUNDS WHEN LS-3 IS AT HIGH LEVEL.
9. PUMP PU-3 STOPS AND ALARM SOUNDS IF PSL-3 SENSES LOW PRESSURE.
10. NaOH PUMP MP-1 INTERLOCKED TO RUN WHEN PH-2 < 7.0 AND STOPS RUNNING WHEN PH-2 > 7.0
11. ACID PUMP MP-4 INTERLOCKED TO RUN WHEN PH-2 = > 8.0 AND STOP RUNNING WHEN PH-2 < 8.0
12. PH-2 OUT OF SPEC. WHEN PH-2 > 8.0 OR < 7.0
13. PH-4 OUT OF SPEC ALARM SOUNDS; AV-4A CLOSES AND AV-4B OPENS WHEN PH-4 > 8.5 OR < 6.5
14. PH-5 OUT OF SPEC ALARM SOUNDS; AV-4A CLOSES AND AV-4B OPENS WHEN PH-5 > 8.7 OR < 6.3



LEGEND

- BALL VALVE
- CHECK VALVE
- AUTOMATED VALVE
- HAND SWITCH
- LIGHT
  PL – PILOT LIGHT
  ALHL – ALARM HIGH/LOW
- INSTRUMENT/SENSOR
- METERING PUMP
- CONTROL INTERLOCK
- DRAIN
- EDUCTOR
- MAIN PROCESS FLOW
- SECONDARY FLOW
- INSTRUMENT LOGIC
- COLLECTION TANK (TK-3) COVER

AE = ANALYSIS ELELMENT
AI = ANALYSIS INDICATOR
PS = PRESSURE SWITCH
FE = FLOW ELEMENT
FI = FLOW INDICATOR
FQ = FLOW QUANTITY
HS = HAND SWITCH
LS = LEVEL SWITCH
HV = HAND VALVE
MV = MOTORIZED VALVE
MP = METERING PUMP
TK = TANK
MX = MIXER
PU = PUMP

UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONS ARE IN INCHES REMOVE ALL BURRS BREAK SHARP EDGES
FRACTIONAL TOLERANCE: NA
DECIMALS PLACES: .XX NA .XXX NA
ANGLES: NA
SURFACE ROUGHNESS: NA
DO NOT SCALE PRINT

MATERIAL: NA
SURFACE TREATMENT: NA

APPD BY DATE
APPD BY DATE
APPD BY DATE
APPD BY DATE

NOTES:

COMPANY CONFIDENTIAL
THIS DRAWING OR PRINT IS THE PROPERTY OF UNITED STATES FILTER CORPORATION AND IS SUBJECT TO THE RETURN ON REQUEST. THE DESIGN CONCEPTS AND INFORMATION CONTAINED HEREIN ARE PROPRIETARY TO THAT CORPORATION AND ITS SUBSIDIARIES AND ARE SUBMITTED IN CONFIDENCE. THEY ARE NOT TRANSFERABLE AND MUST BE USED ONLY FOR THE PURPOSE FOR WHICH THE PRINT IS EXPRESSLY LOANED. THEY MUST NOT BE DISCLOSED, REPRODUCED OR OTHERWISE USED IN ANY MANNER DETRIMENTAL TO THE INTEREST OF UNITED STATES FILTER CORPORATION. ALL PATENT RIGHTS ARE RESERVED UNLESS THEY ARE SPECIFICALLY ASSIGNED IN WRITING.

DRAWN	DATE
JWC	12/19/97
CHECKED	
ENGINEER	
DESIGN REVIEW	
SCALE 1=1.125	

INTERNAL DRAWING NO. 5595101C.DWG

TITLE: PROCESS AND INSTRUMENTATION DIAGRAM IN-HOUSE NEUTRALIZATION SYSTEM

CLIENT: USFILTER CORP. LOWELL, MA.

U.S. FILTER — PROCESS WATER GROUP, LOWELL, MASSACHUSETTS FACILITY

PROJECT NO.	DRAWING NO.	SIZE	SHT NO.	REV
5595	5595-101	D	1 OF 1	C