

ADDENDUM No. 1

RFP No. 22-14

WWTP TERTIARY FILTER PLC REPLACEMENT PROJECT

Bids Due: March 3, 2022 at 2:00 P.M. (Local Time)

The information contained herein shall take precedence over the original documents and all previous addenda (if any) and is appended thereto. **This Addendum includes forty-nine (49) pages.**

Offeror is to acknowledge receipt of this Addendum No. 1, including all attachments (if any) in its Proposal. Proposals submitted without acknowledgment of receipt of this addendum may be considered nonconforming.

The following forms provided within the RFP document should be included in submitted proposals:

- **Attachment C - City of Ann Arbor Non-Discrimination Declaration of Compliance**
- **Attachment D - City of Ann Arbor Living Wage Declaration of Compliance**
- **Attachment E - Vendor Conflict of Interest Disclosure Form of the RFP Document**

Proposals that fail to provide these forms listed above upon proposal opening may be rejected as non-responsive and may not be considered for award.

I. QUESTIONS AND ANSWERS

The following Questions have been received by the City. Responses are being provided in accordance with the terms of the RFP. Offerors are directed to take note in their review of the documents of the following questions and City responses as they affect work or details in other areas not specifically referenced here.

Question 1: Will the City accept conversion of the existing PLC program?

Answer 1: The City is requesting the new PLCs be programmed anew and conversion of the existing program will not be accepted.

Question 2: Is the City willing to accept removal of the existing PLC and insertion of the new PLC into the existing chassis?

Answer 2: Per the RFP, the City desires replacement of the PLC, IO modules, terminal blocks and cabling.

Question 3: Are control descriptions available to the bidders?

Answer 3: The City will provide filter building control descriptions and existing program information to the successful bidder.

Question 4: Bid package did not contain drawings for panels FPP-A, FPP-B, AND FPP-C. Can we get copies of these? If prints are not available, specifically need to know if analog input and outputs signals are voltage or current?

Answer 4: Drawings for FPP-A, B and C area attached.

Question 5: Can we get copies of the PLC programs? Need to know size/structure of programs for conversion.

Answer 5: PLC programs files are attached. They are RSLogix5 ladder Logix program files. There are three RSLogix5 program files (FPP-A, FPP-B, and FPP-C) each control four filters. RSLogix5 program file CP-70 controls all Tertiary Filter Building filtration equipment.

Question 6: If PLC programs are not made available, are all twelve filters tied into one PLC?

Answer 6: Please see answer 5.

Question 7: Can we get copy of Factory Talk View SE program? Need to know how many tags need converting for CLX upgrade.

Answer 7: It is not necessary to provide a copy of Factory Talk SE program files. The attached PLC-5 program files include all devices controlled and monitored by Factory Talk SE HMI. Vendors are welcome to visit the WWTP and see the HMI screens for the Tertiary Filter Building process screens. Copies of HMI screens were included in RFP 22-14.

Question 8: If all filters are tied into one PLC, need clarification on how plan to convert PLC and keep six of twelve operational at all times.

Answer 8: All filters are not tied into one PLC. It would be better to program PLC-CP70 first because it is main PLC for backwashing all filters.

Question 9: Has there been any consideration to expanding on “the final transition to the upgraded system shall be completed in one 8-hour workday” window?

Answer 9: The city recognizes that it may be difficult for final transition to be completed in one 8-hr workday. We understand that CP-70 changeover may require 12 hours or longer to complete. Include your assumptions and identify time needed to complete the transition work for each PLC in your work plan.

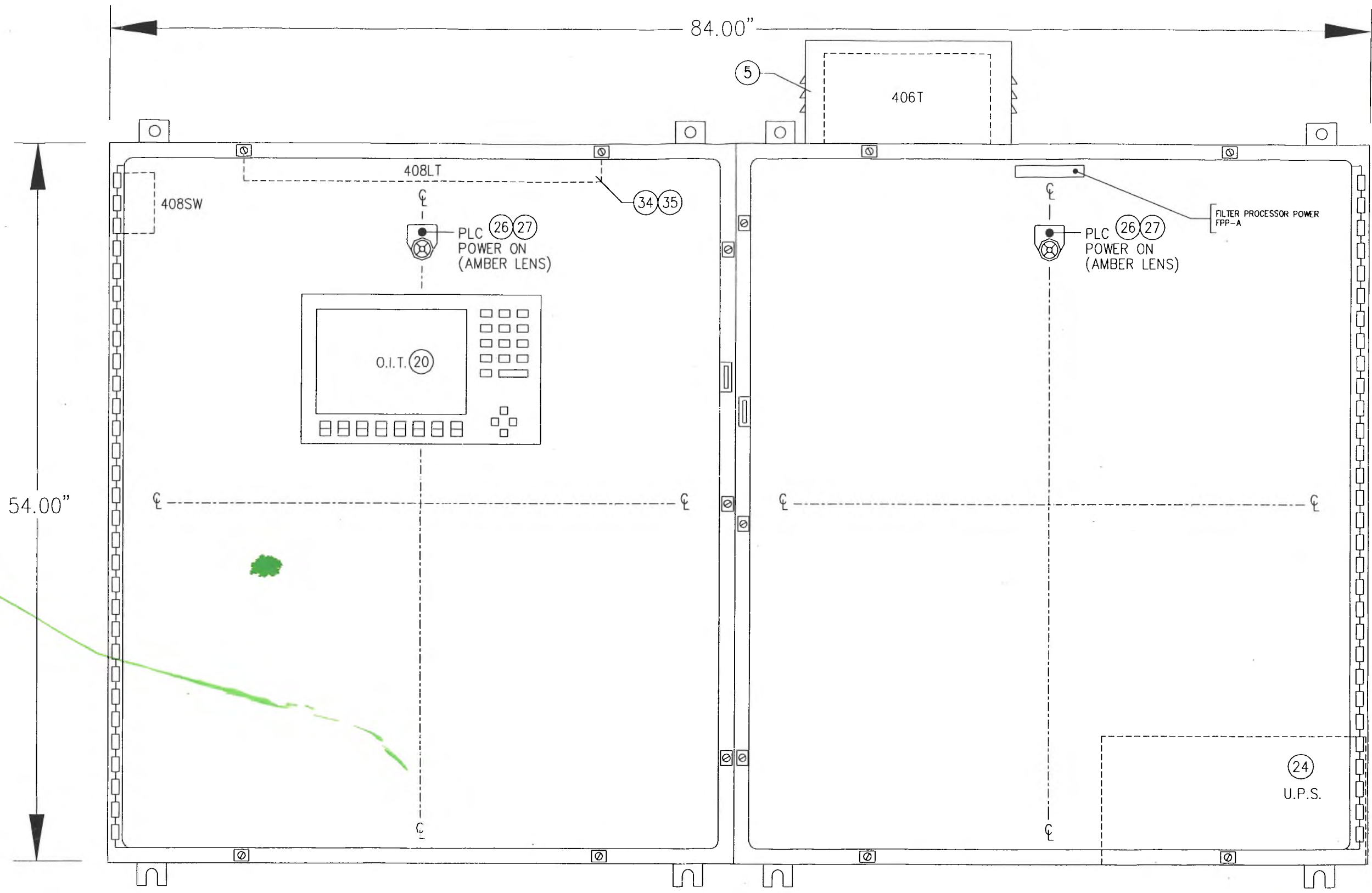
Question 10: There is another PLC panel (PLC-TF) that is next to the CP-70 panel. There is no mention of this in bid package, please confirm that this panel’s PLC is not to be upgraded.

Answer 10: PLC-TF is to remain. As-built drawings for PLC-TF are attached. To our knowledge PLC-TF has only two points remaining, which are UV 2A and UV 2B power readings and they are Ethernet IP devices. PLC-TF is reading these two data points by message block.

Question 11: Can the sign-in-sheet from the mandatory pre-proposal meeting be shared with bidders?

Answer 11: A copy of the meeting sign-in-sheet is attached.

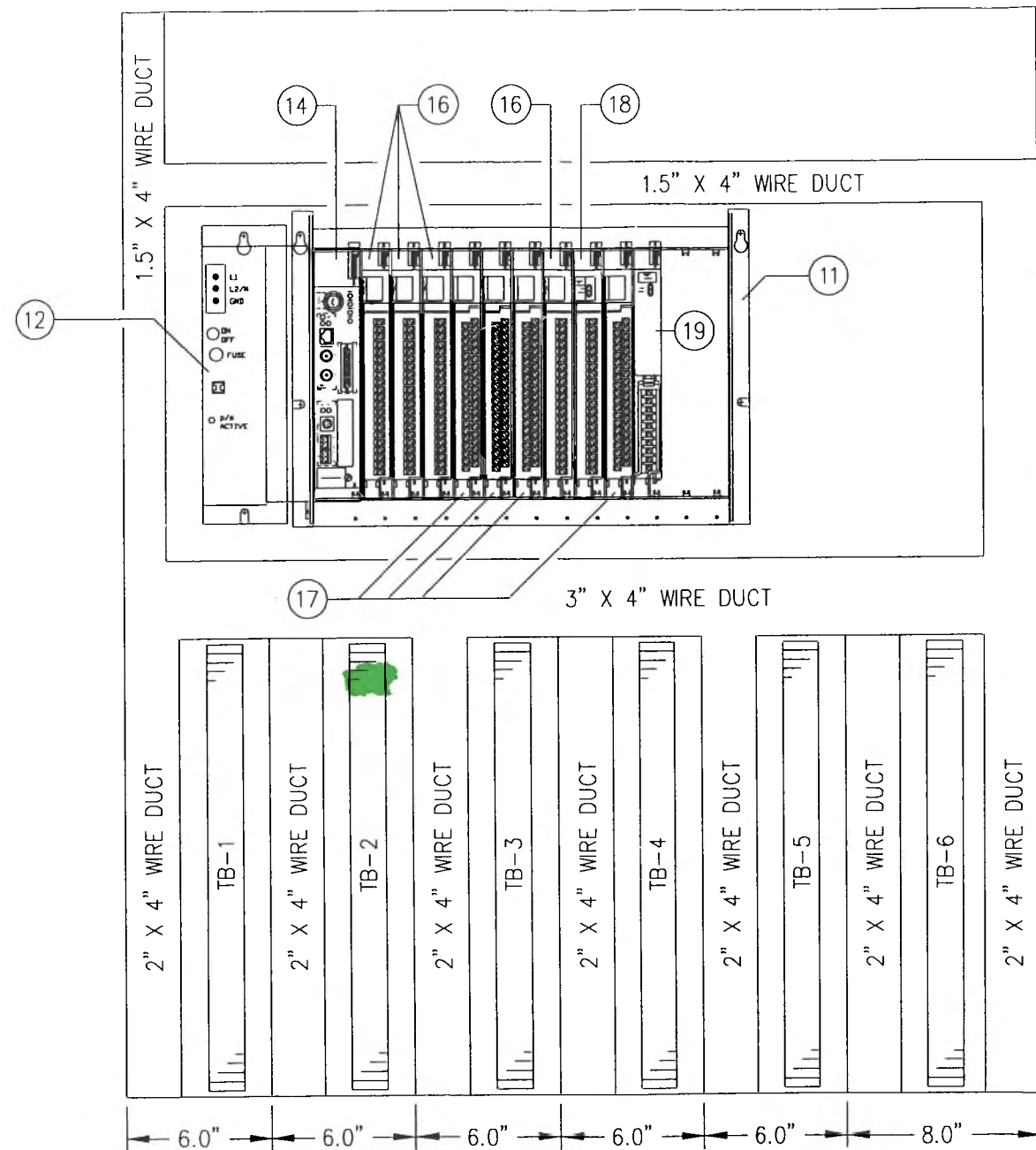
Offerors are responsible for any conclusions that they may draw from the information contained in the Addendum.



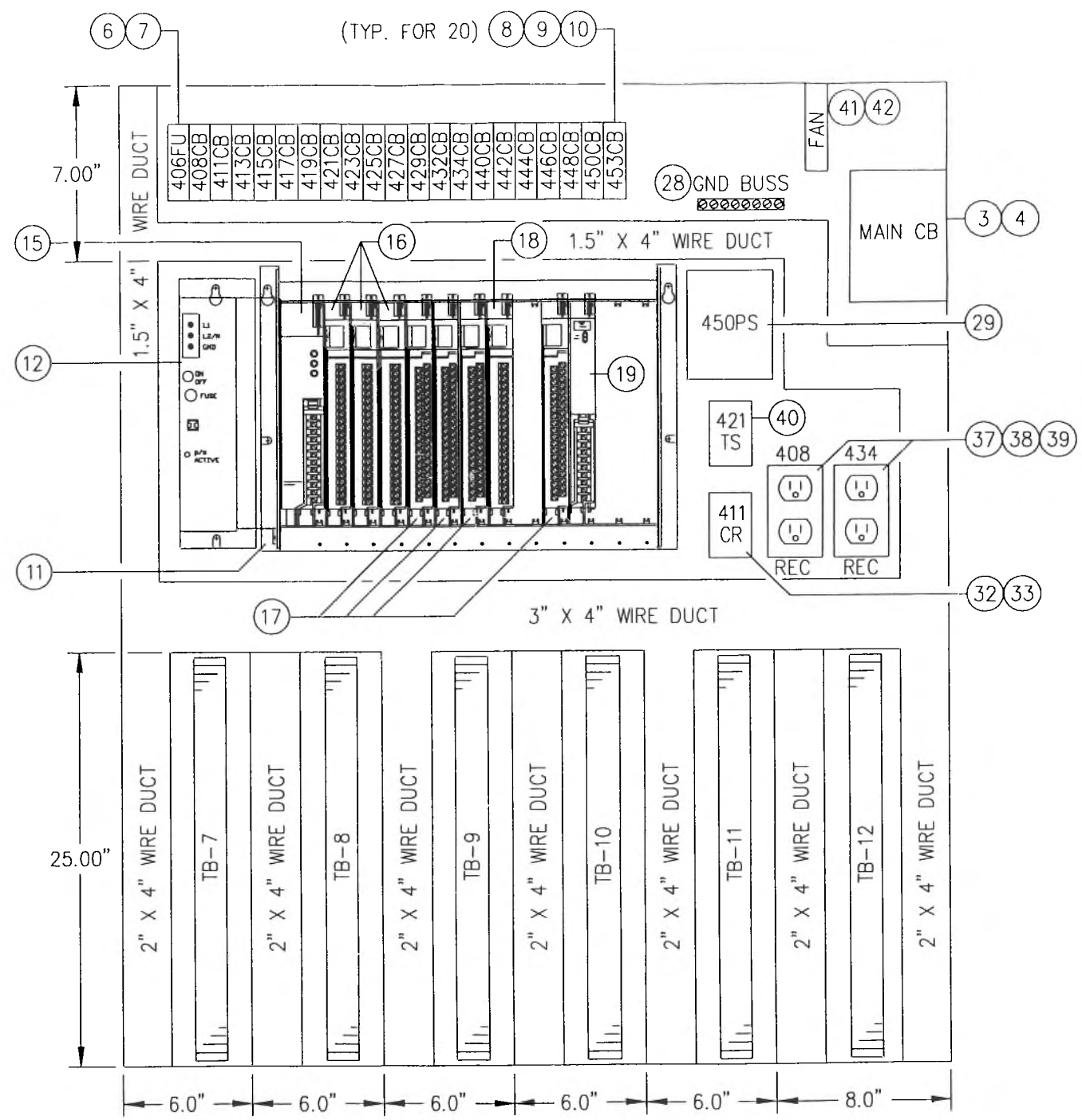
STAINLESS STEEL (1)
NEMA 4 ENCLOSURE
 54"H X 84"W X 16"D
 W/ (2) SUBPLATES 50"H X 38"W

AGGRESSIVE SYSTEMS, INC.
 Farmington Hills, Michigan 48335
 CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
 TERTIARY FILTER RENOVATIONS
 FPP-A CONTROL PANEL ENCLOSURE LAYOUT

9/98	AS-SHIPPED	CS	CUSTOMER WEBB ELECTRIC	P.O. NO. 38851030006
A	6/17/98	REMOVED PER APPROVAL	CJ	DRAWN CD
SYM	DATE	REVISIONS	BY	CHECKED BB
			DATE 3/24/98	SHEET NO. 01
			SCALE 5/16"	DWG NO. 7249B



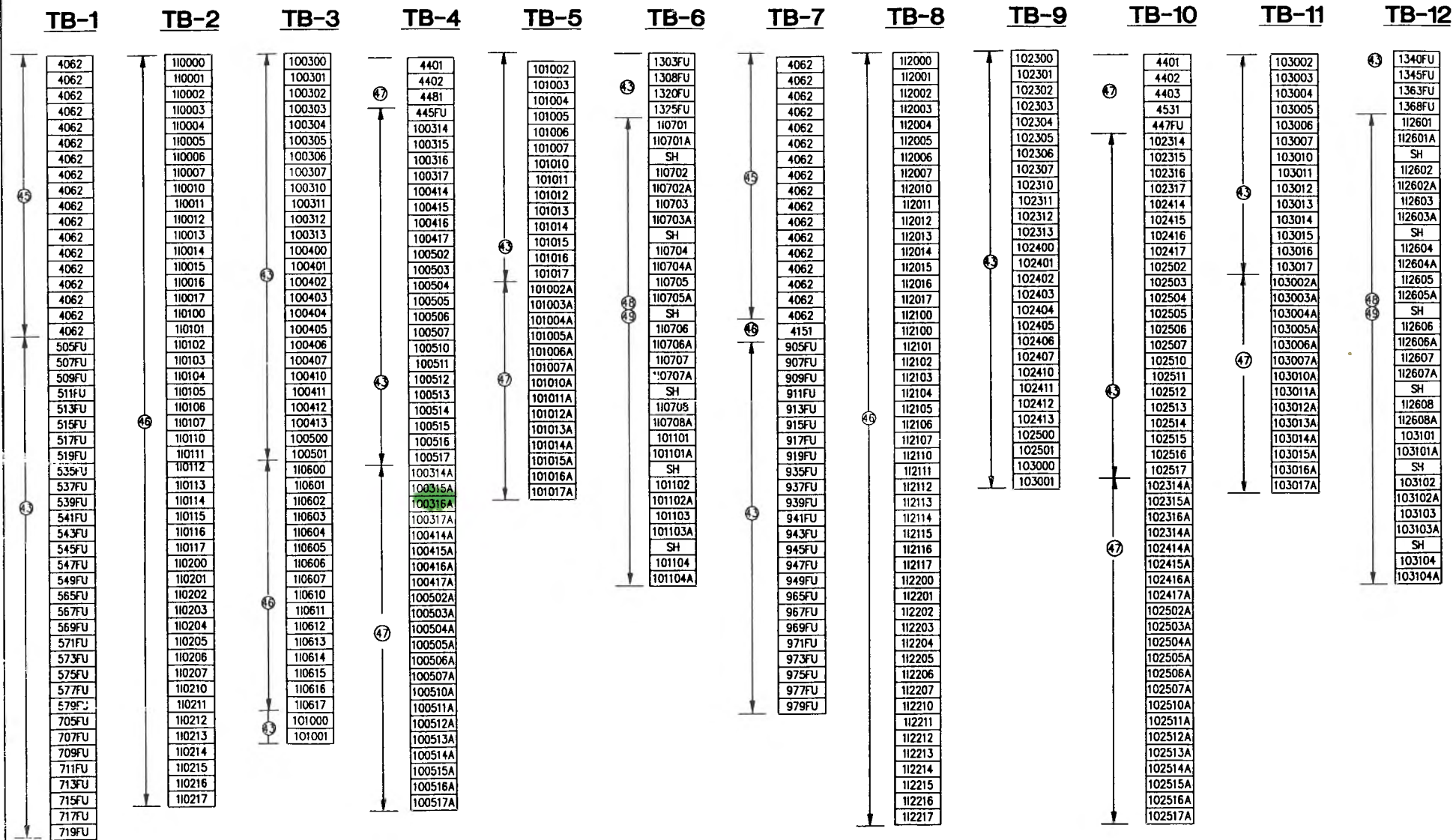
SUBPLATE B
 50"H X 38"W
 PAINT: GLOSS WHITE ENAMEL



SUBPLATE A
 50"H X 38"W
 PAINT: GLOSS WHITE ENAMEL

9/98		AS-SHIPPED	CS	CUSTOMER	WEBB ELECTRIC	P.O. NO. 38851030006	
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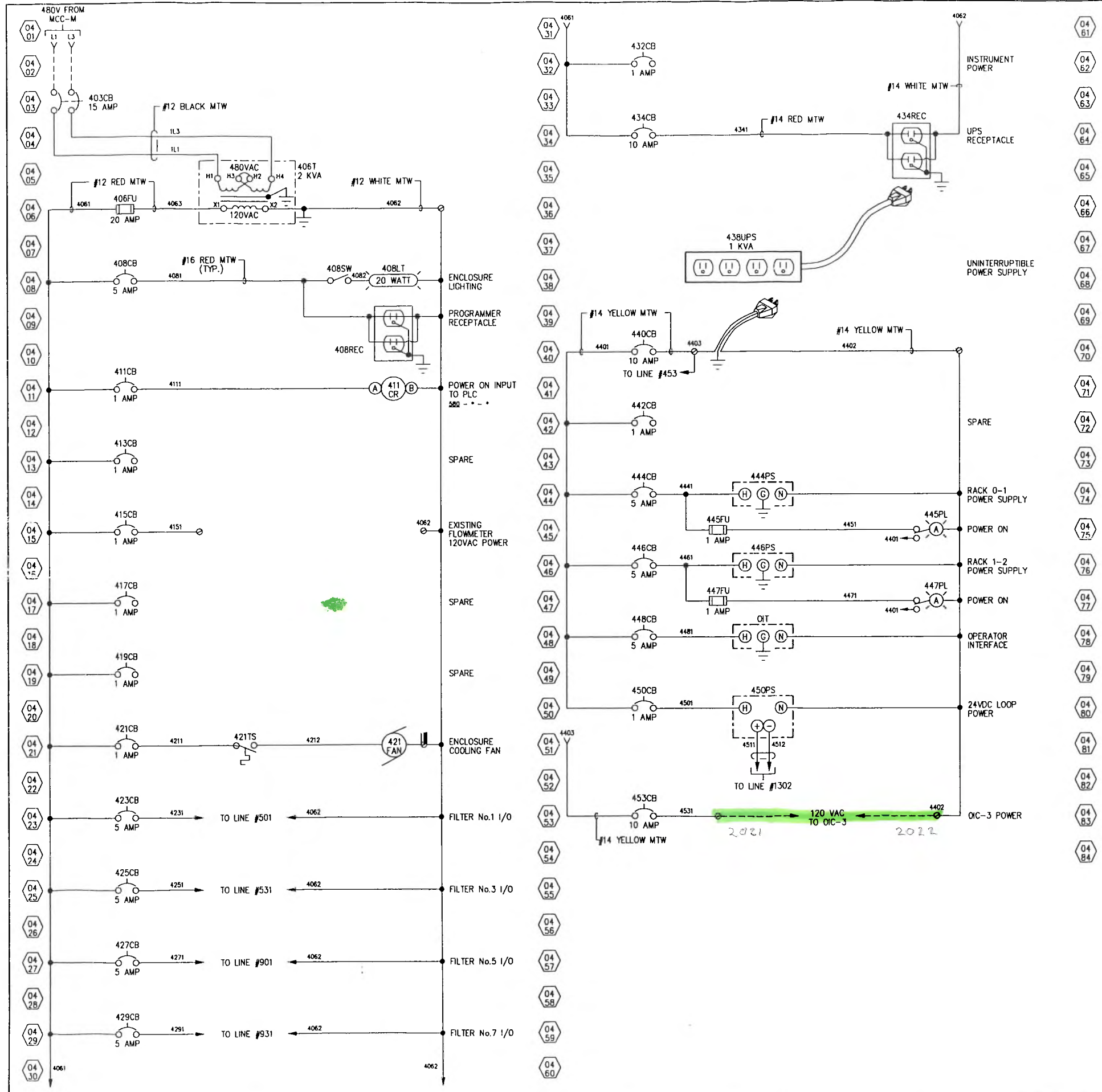
AGGRESSIVE SYSTEMS, INC.
 Farmington Hills, Michigan 48335
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 TERTIARY FILTER RENOVATIONS
 FPP-A CONTROL PANEL SUBPLATE LAYOUT



BILL OF MATERIAL				
SYMBOL	QTY.	MANUFACTURER	PART NUMBER	DESCRIPTION
1	2	CUSTOM	CUSTOM	NEMA-4X ENCLOSURE, 54"H X 42"W X 18"D
2	2	CUSTOM	CUSTOM	SUBPLATE, 51"H X 38"W
3	1	CUTLER-HAM.	EHD2015	CIRCUIT BREAKER, 2P - 480V - 15A
4	1	CUTLER-HAM.	3TA100FD	LUG KIT, LINE SIDE CKT. BRKR.
5	1	ACME	T2-53012-S	ISOLATION TRANSFORMER, 480/120V, 2KVA
6	1	GOULD	20326R	FUSEBLOCK, 1P - 250V - 30A
7	1	GOULD	TR20R	FUSE, 20A, 120VAC
8	8	ALLEN BRADLEY	1492-CB1G050	CIRCUIT BREAKER, 1P, 120VAC, 5A
9	3	ALLEN BRADLEY	1492-CB1G100	CIRCUIT BREAKER, 1P, 120VAC, 10A
10	9	ALLEN BRADLEY	1492-CB1G010	CIRCUIT BREAKER, 1P, 120VAC, 1A
11	2	ALLEN BRADLEY	1771-A3B	MODULE CHASSIS, 12-SLOT
12	2	ALLEN BRADLEY	1771-P7	CHASSIS POWER SUPPLY
13	2	ALLEN BRADLEY	1771-CP1	POWER CABLE
14	1	ALLEN BRADLEY	1785-L40E	ETHERNET PROCESSOR, PLC 5/40
15	1	ALLEN BRADLEY	1771-ASB	REMOTE I/O ADAPTER MODULE
16	7	ALLEN BRADLEY	1771-IAD	DIGITAL INPUT MODULE, 16-POINT
17	8	ALLEN BRADLEY	1771-OW16	DIGITAL OUTPUT MODULE, 16-POINT
18	2	ALLEN BRADLEY	1771-IFE	ANALOG INPUT MODULE, 8-POINT
19	2	ALLEN BRADLEY	1771-OFE2	ANALOG OUTPUT MODULE, 4-POINT
20	1	ALLEN BRADLEY	2711-K9C1	COLOR OPERATOR INTERFACE TERMINAL
21	1	ALLEN BRADLEY	2711-NM12	MEMORY CARD, 1MB
22	1	ALLEN BRADLEY	2711-NC13	DOWNLOAD CABLE, RS-232
23	1	ALLEN BRADLEY	2711-ND3	DEVELOPMENT SOFTWARE
24	1	A.P.C.	SU1000XL	UNINTERRUPTIBLE POWER SUPPLY, 120/120VAC, 1KVA
25	1	A.P.C.	AP9610	RELAY OUTPUT MODULE, UPS SMART SLOT
26	2	CUTLER-HAM.	E34TPB120	PILOT LIGHT, PRESS-TO-TEST, 120VAC
27	2	CUTLER-HAM.	E34V9	AMBER LENS
28	1	CUTLER-HAM.	GBK12	GROUND BAR, 12-CKT.
29	1	CONDOR	HB24-1.2	POWER SUPPLY, 24VDC, 1.2 AMP
30	58	GOULD	GSB-1	FUSE, 1 AMP, 120VAC
31	8	GOULD	GSB-1/10	FUSE, 1/10 AMP, 120VAC
32	1	SQUARE D	8501-KUI3MIP14V20	CONTROL RELAY, 120VAC, 3PDT
33	1	CUSTOM CONN.	ST11-PC	RELAY SOCKET, 11-BLADE
34	1	GRAINGER	2V811	SLIMLINE FLUORESCENT LIGHT FIXTURE, 20W
35	1	GRAINGER	2V896	FLUORESCENT BULB, 20W, 120VAC
36	1	EDWARDS	502-A	ENCLOSED SWITCH, SPST-NC
37	2	P & S	5250-S	DUPLEX RECPTACLE, 15A, 120VAC
38	2	RACO	660	BACKBOX, 2 X 4
39	2	MULBURY	10002	COVERPLATE, DUPLEX RECPT.
40	1	HOFFMAN	A-TEMNO	COOLING THERMOSTAT, SPST
41	1	GRAINGER	4C549	COOLING FAN, 120VAC
42	2	GRAINGER	4C551	WIRE GUARD
43	194	SQUARE D	9080-M4BSF	FUSIBLE TERMINAL W/ FUSE PULLER
44	12	SQUARE D	9080-MFEM8S	END BARRIER, LARGE
45	35	SQUARE D	9080-GR6	WIRING TERMINAL, WHITE
46	120	SQUARE D	9080-GRR6	WIRING TERMINAL, RED
47	90	SQUARE D	9080-GRY6	WIRING TERMINAL, YELLOW
48	60	SQUARE D	9080-GRL6	WIRING TERMINAL, BLUE
49	15	SQUARE D	9080-GRE6	WIRING TERMINAL, GREY
50				
51	128	GOULD	GSB-2	FUSE 2A-120V

AGGRESSIVE SYSTEMS, INC.
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 FPP-A POWER WIRING

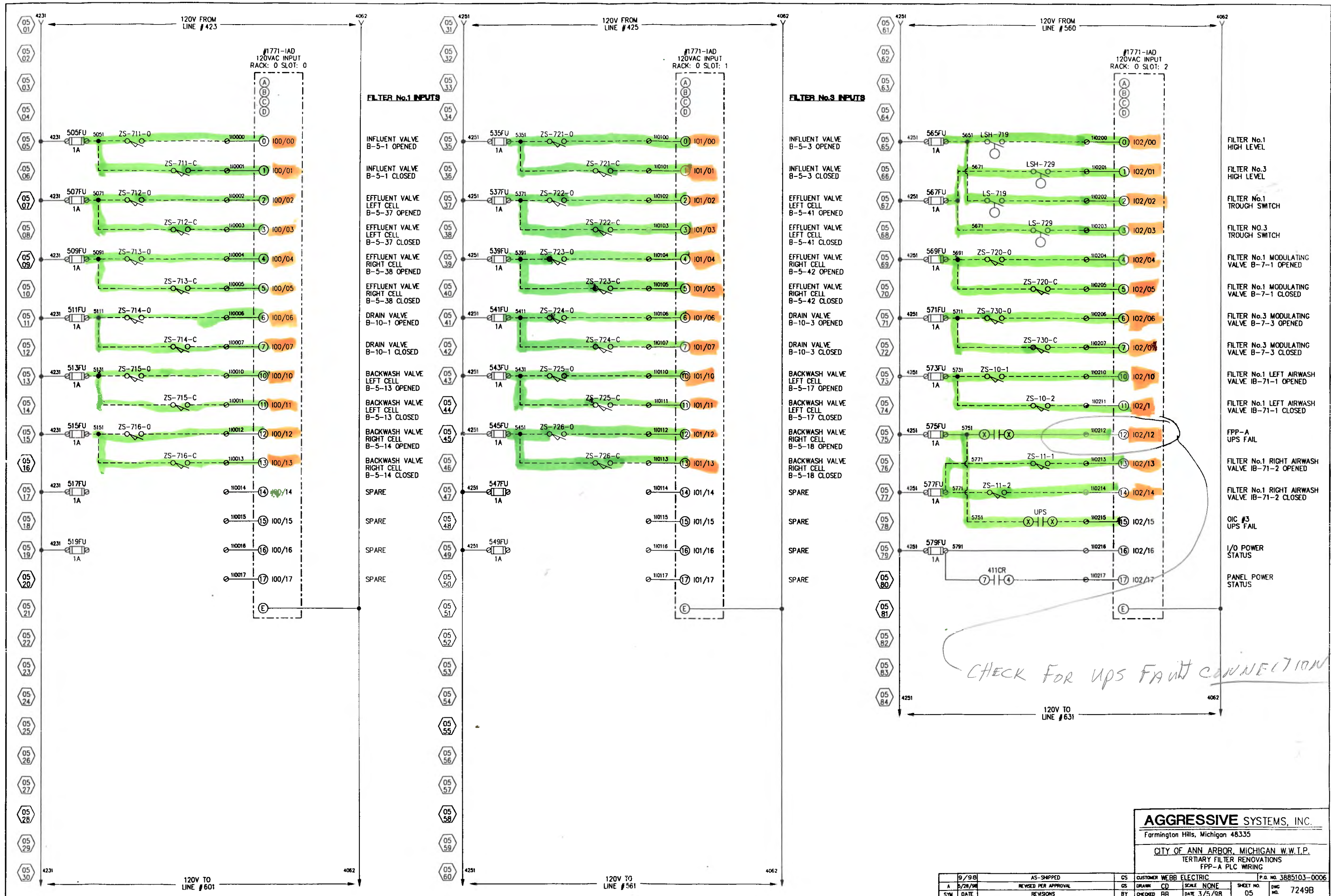
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AGGRESSIVE SYSTEMS, INC.
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 FPP - A POWER WIRING

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				DWG NO 7249B



FILTER No.1 INPUTS

- INFLUENT VALVE B-5-1 OPENED
- INFLUENT VALVE B-5-1 CLOSED
- EFFLUENT VALVE LEFT CELL B-5-37 OPENED
- EFFLUENT VALVE LEFT CELL B-5-37 CLOSED
- EFFLUENT VALVE RIGHT CELL B-5-38 OPENED
- EFFLUENT VALVE RIGHT CELL B-5-38 CLOSED
- DRAIN VALVE B-10-1 OPENED
- DRAIN VALVE B-10-1 CLOSED
- BACKWASH VALVE LEFT CELL B-5-13 OPENED
- BACKWASH VALVE LEFT CELL B-5-13 CLOSED
- BACKWASH VALVE RIGHT CELL B-5-14 OPENED
- BACKWASH VALVE RIGHT CELL B-5-14 CLOSED
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- SPARE

FILTER No.3 INPUTS

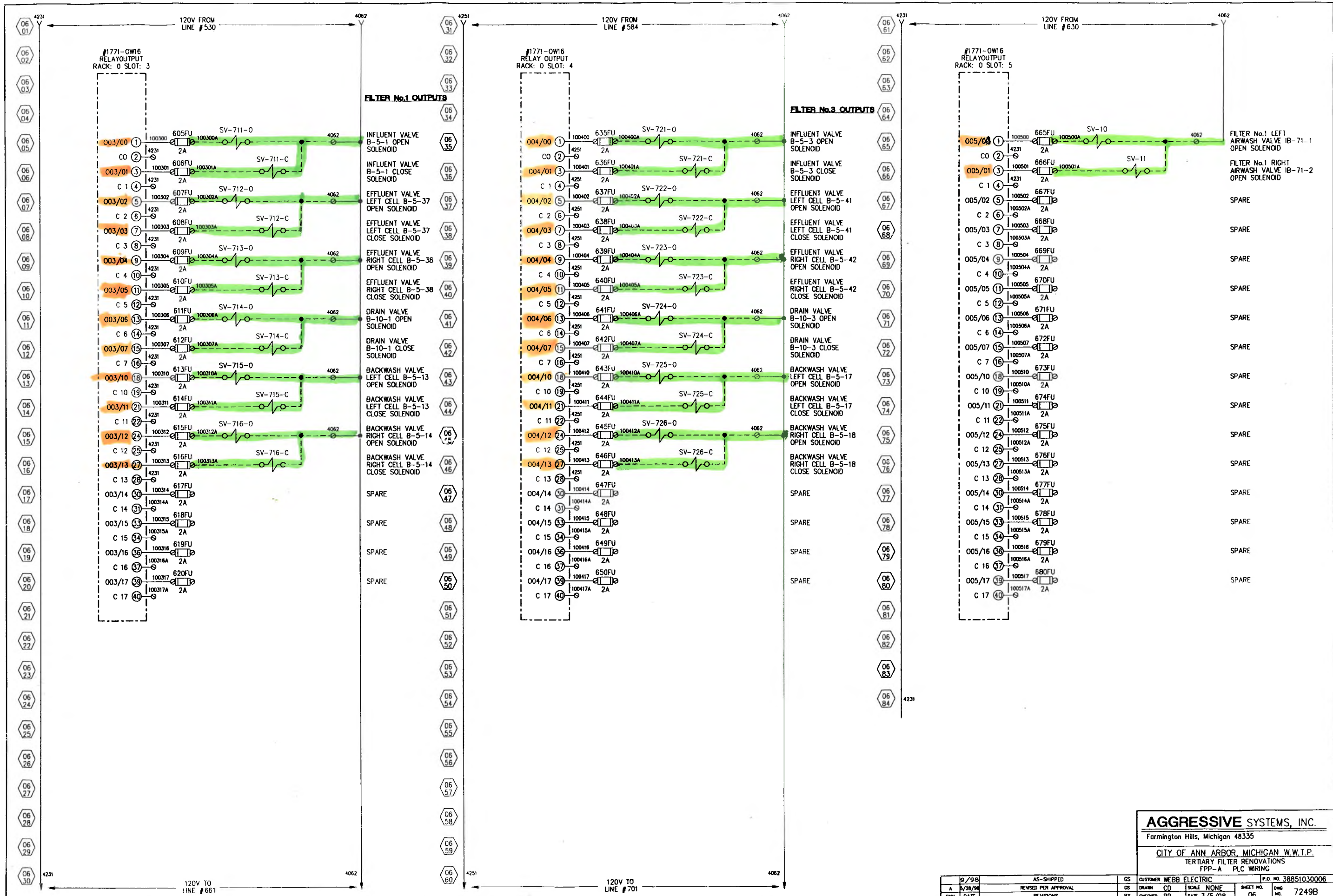
- INFLUENT VALVE B-5-3 OPENED
- INFLUENT VALVE B-5-3 CLOSED
- EFFLUENT VALVE LEFT CELL B-5-41 OPENED
- EFFLUENT VALVE LEFT CELL B-5-41 CLOSED
- EFFLUENT VALVE RIGHT CELL B-5-42 OPENED
- EFFLUENT VALVE RIGHT CELL B-5-42 CLOSED
- DRAIN VALVE B-10-3 OPENED
- DRAIN VALVE B-10-3 CLOSED
- BACKWASH VALVE LEFT CELL B-5-17 OPENED
- BACKWASH VALVE LEFT CELL B-5-17 CLOSED
- BACKWASH VALVE RIGHT CELL B-5-18 OPENED
- BACKWASH VALVE RIGHT CELL B-5-18 CLOSED
- SPARE
- SPARE
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- SPARE

- FILTER No.1 HIGH LEVEL
- FILTER No.3 HIGH LEVEL
- FILTER No.1 TROUGH SWITCH
- FILTER No.3 TROUGH SWITCH
- FILTER No.1 MODULATING VALVE B-7-1 OPENED
- FILTER No.1 MODULATING VALVE B-7-1 CLOSED
- FILTER No.3 MODULATING VALVE B-7-3 OPENED
- FILTER No.3 MODULATING VALVE B-7-3 CLOSED
- FILTER No.1 LEFT AIRWASH VALVE IB-71-1 OPENED
- FILTER No.1 LEFT AIRWASH VALVE IB-71-1 CLOSED
- FPP-A UPS FAIL
- FILTER No.1 RIGHT AIRWASH VALVE IB-71-2 OPENED
- FILTER No.1 RIGHT AIRWASH VALVE IB-71-2 CLOSED
- OIC #3 UPS FAIL
- I/O POWER STATUS
- PANEL POWER STATUS

CHECK FOR UPS FAULT CONNECTION

AGGRESSIVE SYSTEMS, INC.
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 FPP-A PLC WIRING

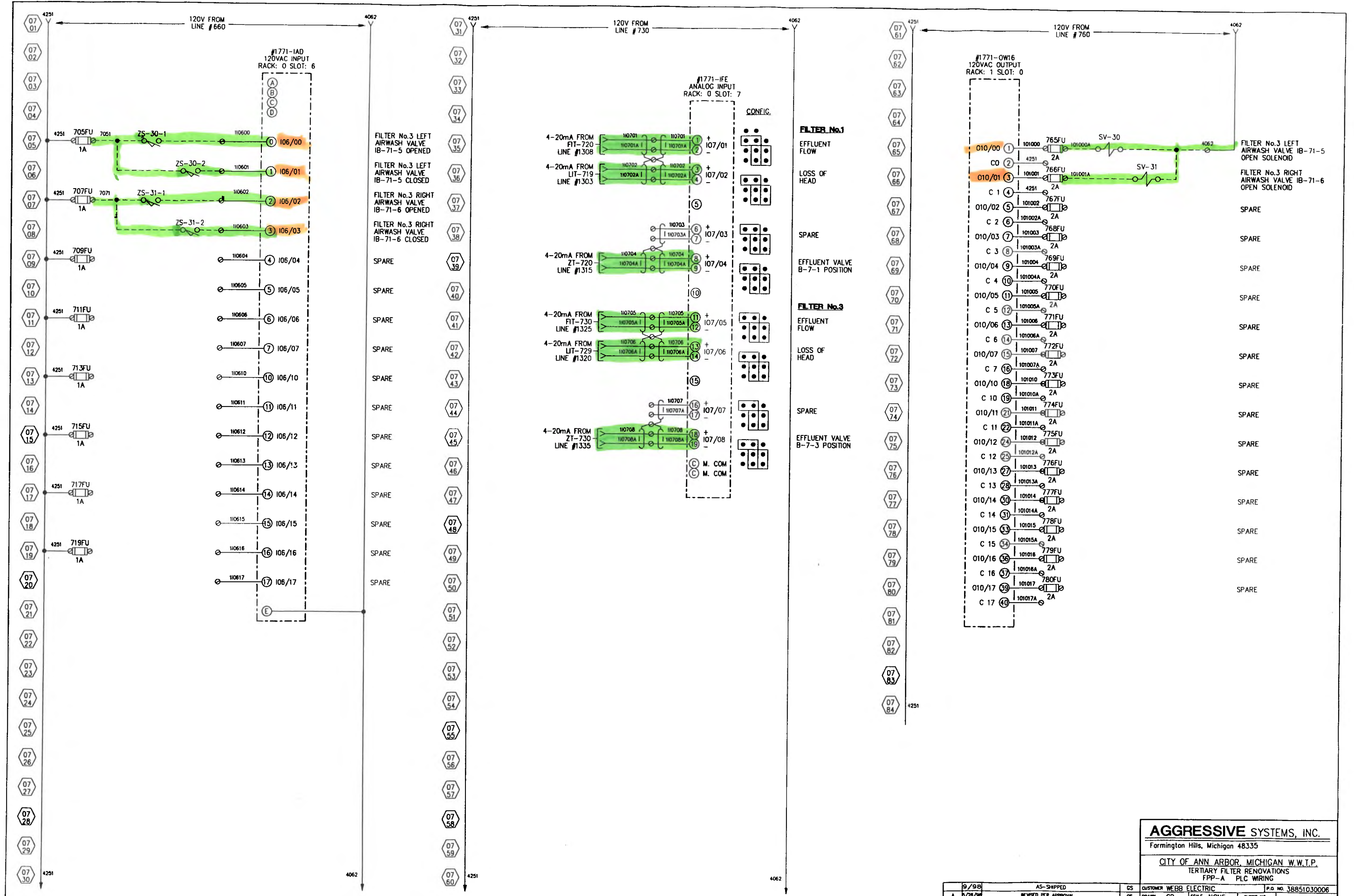
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SYN	DATE	REVISIONS	BY	DWG NO. 7249B
			DATE 3/5/98	



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CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
 TERTIARY FILTER RENOVATIONS
 FPP-A PLC WIRING

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SYM	DATE	BY	CHECKED BB	DATE 3/5/98
				SHEET NO. 06
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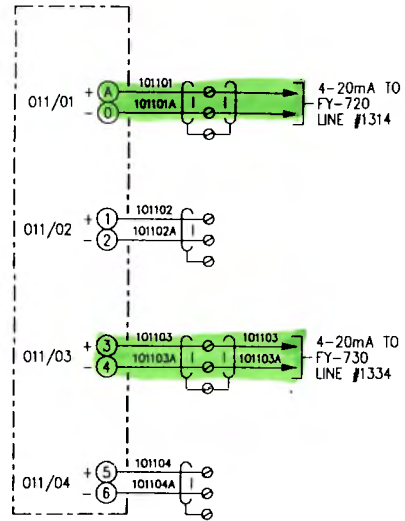
AGGRESSIVE SYSTEMS, INC.
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 FPP-A PLC WIRING

9/98	AS-SHIPPED	CS	CUSTOMER WEBB ELECTRIC	P.O. NO. 38851030006
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SYM	DATE	BY	CHECKED BB	DATE 3/5/99
				SHEET NO. 07
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#1771-OFE2
ANALOG OUTPUT
RACK: 1 SLOT: 1



FILTER No.1
FLOW CONTROL
VALVE B-7-1
POSITION CONTROL

SPARE

FILTER No.3
FLOW CONTROL
VALVE B-7-3
POSITION CONTROL

SPARE

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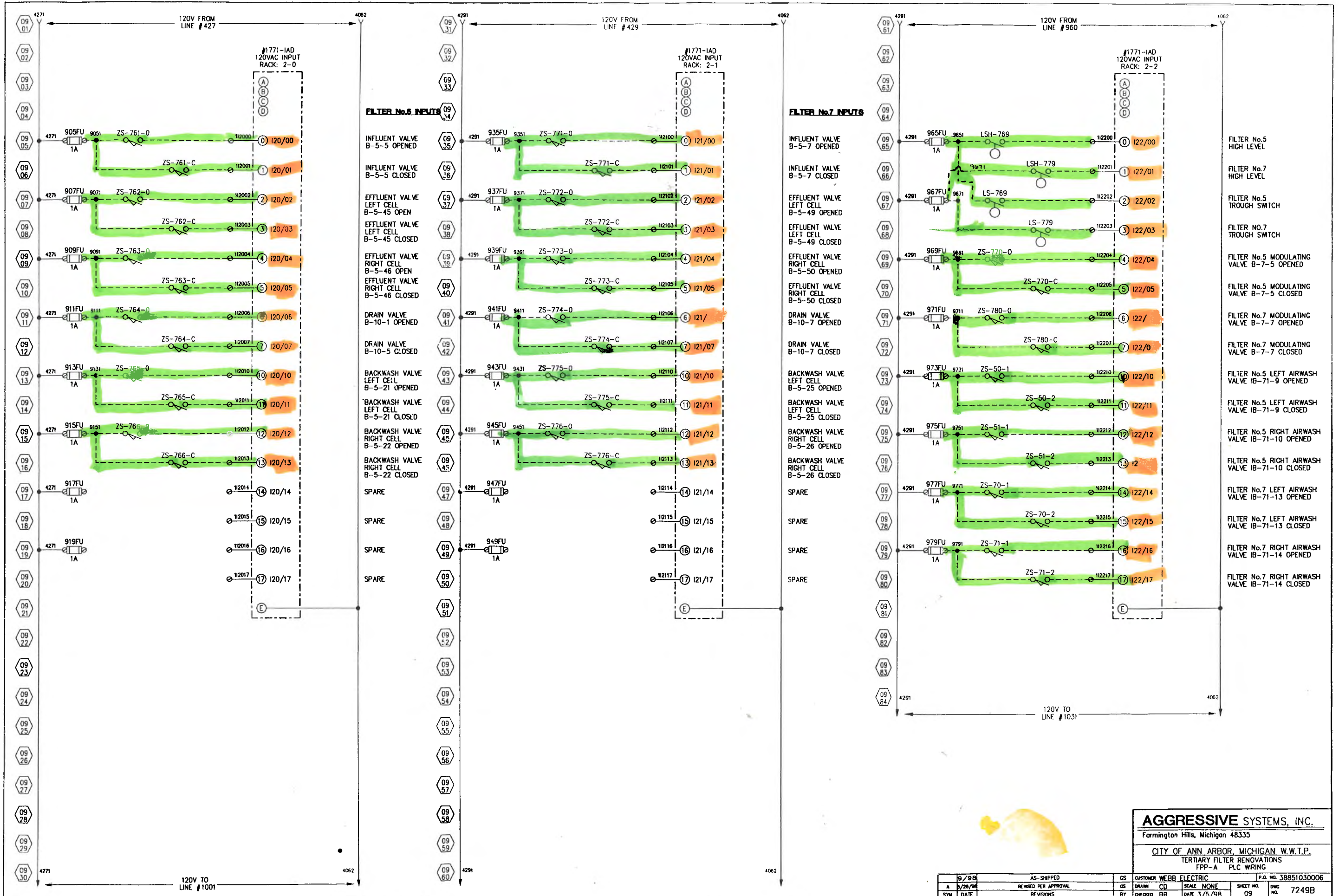
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SLOT: 2
SPARE SPACE

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RACK: 1
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SPARE SPACE

AGGRESSIVE SYSTEMS, INC.
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CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
TERTIARY FILTER RENOVATIONS
FPP-A PLC WIRING

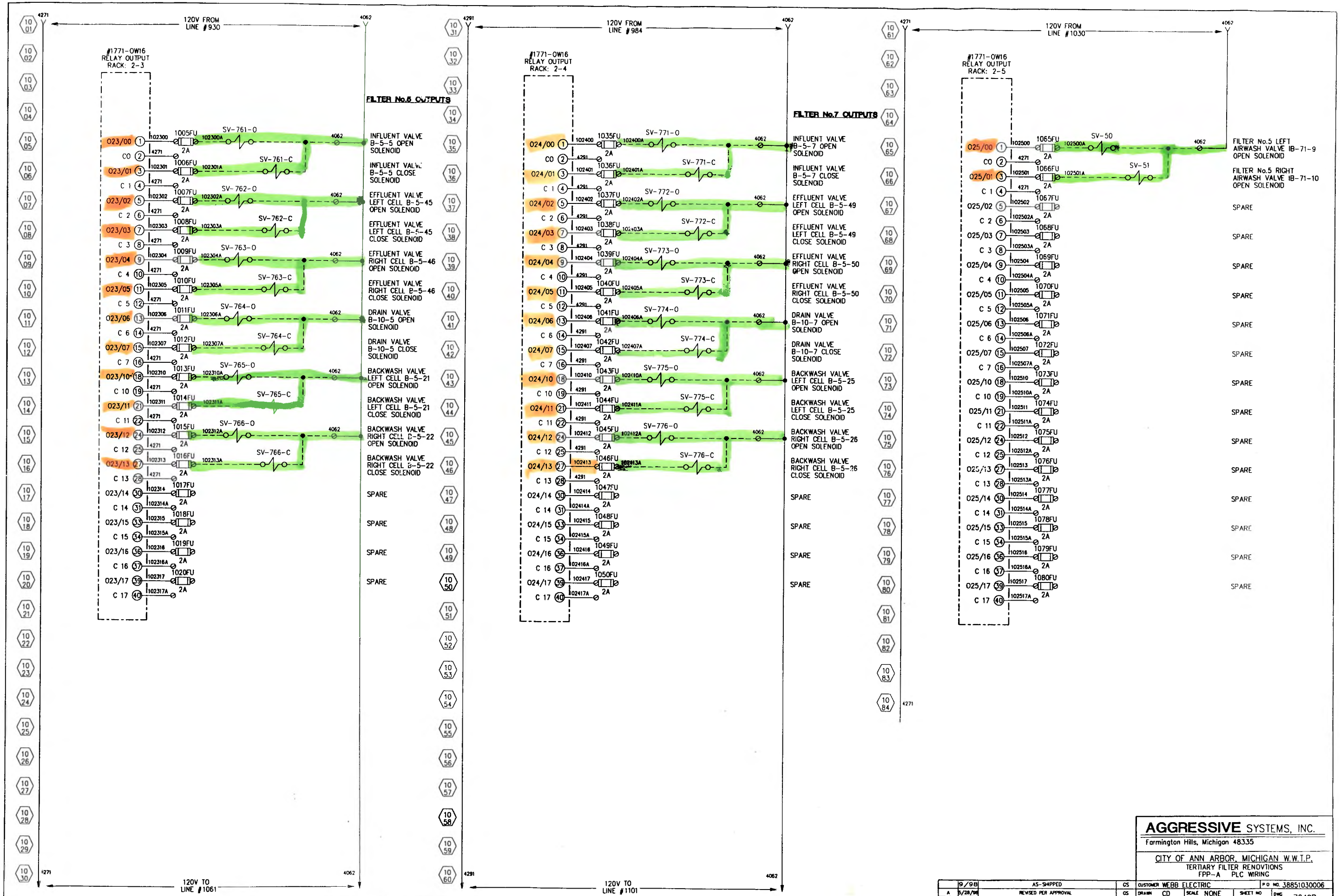
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SYM	DATE	REVISIONS	BY	CHECKED	BB	DATE	3/5/98				



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 FPP-A PLC WIRING

9/98	AS-SHIPED	CS	CUSTOMER WEBB ELECTRIC	P.O. NO. 38851030006
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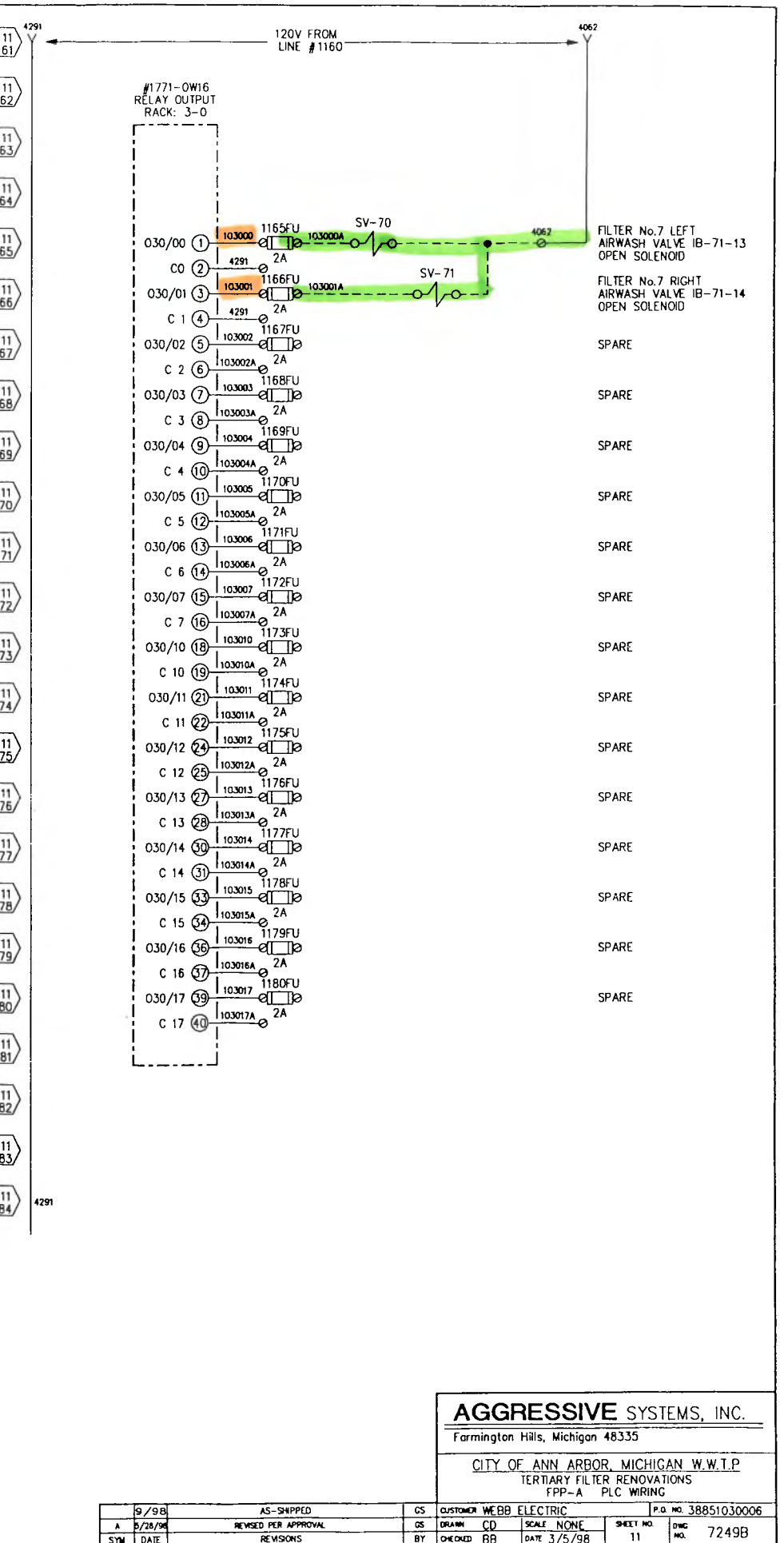
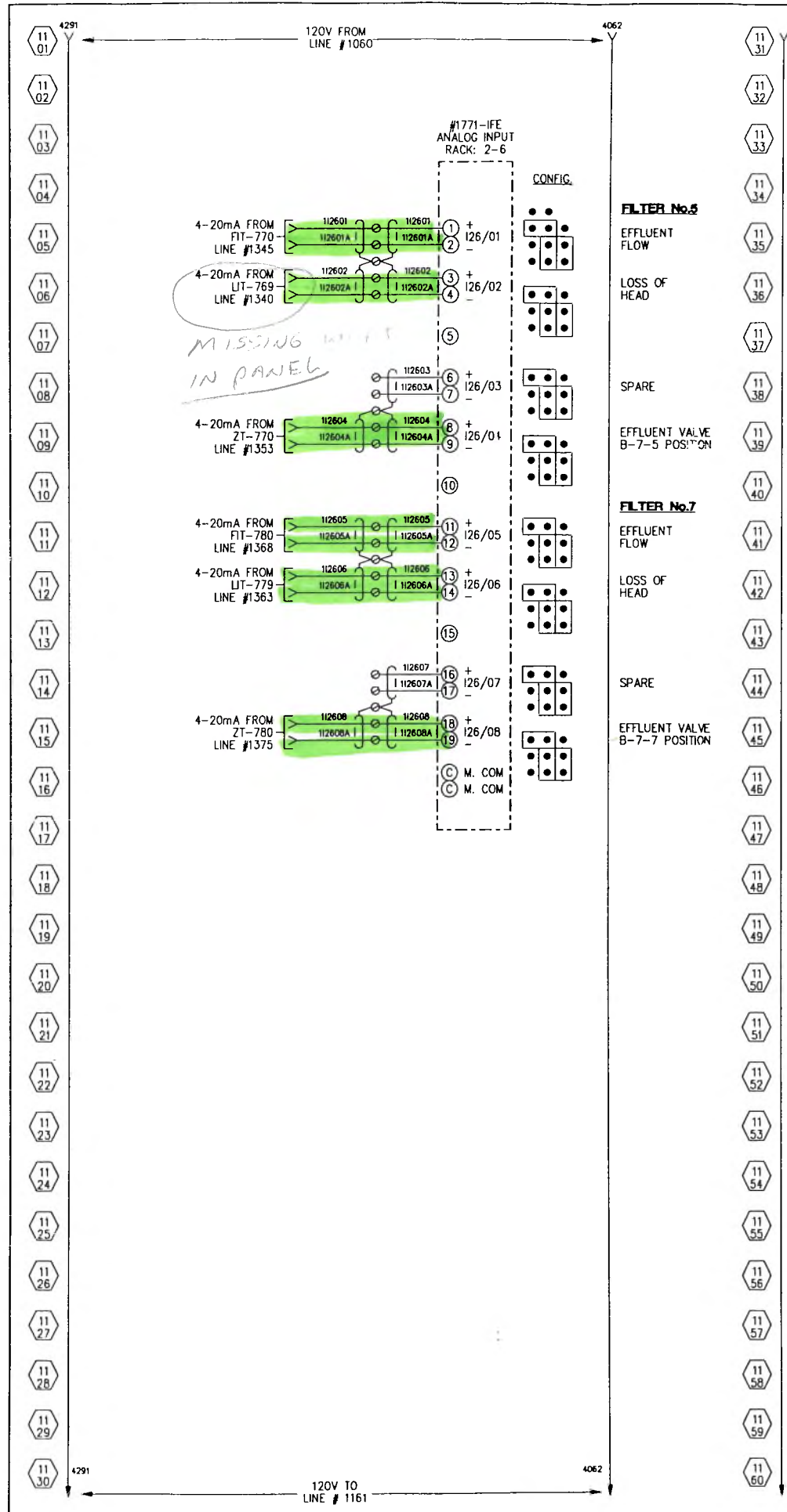


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 FPP-A PLC WIRING

19/98	AS-SHIPPED	CS	CUSTOMER WEBB ELECTRIC	PO NO. 38851030006
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SYM DATE	REVISIONS	BY	CHECKED BB	DATE 3/5/98

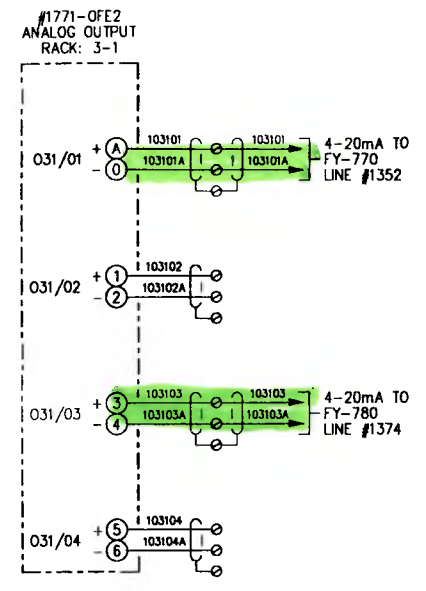
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9/98	AS-SHIPED	CS	CUSTOMER	WEBB ELECTRIC	P.O. NO. 38851030006
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SYN	DATE	REVISIONS	BY	ONE/RED BB	DATE 3/5/98
					SHEET NO. 11 DWG. NO. 7249B

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FILTER No.5
FLOW CONTROL
VALVE B-7-5
POSITION CONTROL

SPARE

FILTER No.7
FLOW CONTROL
VALVE B-7-7
POSITION CONTROL

SPARE

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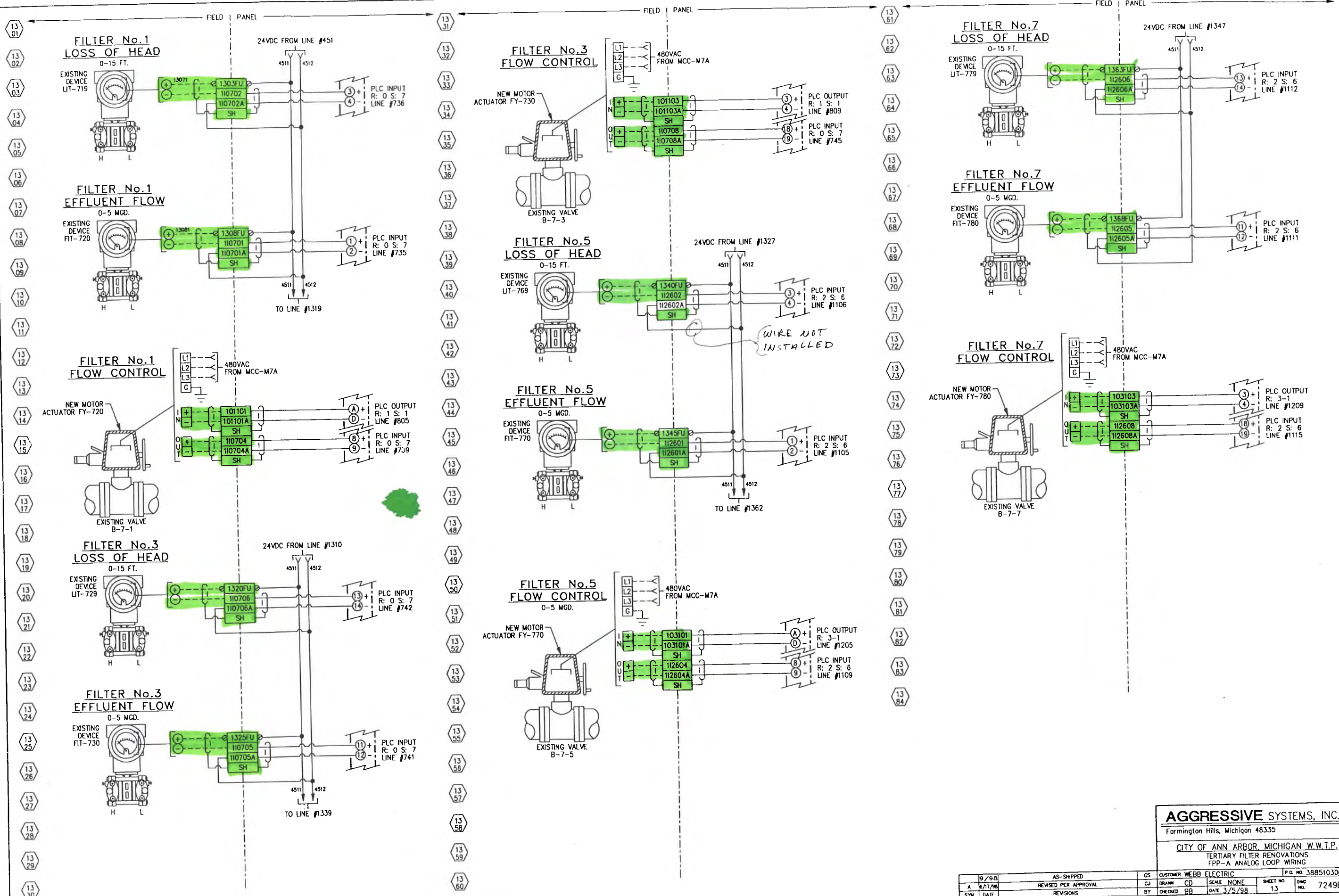
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RACK: 3-3
SPARE SPACE

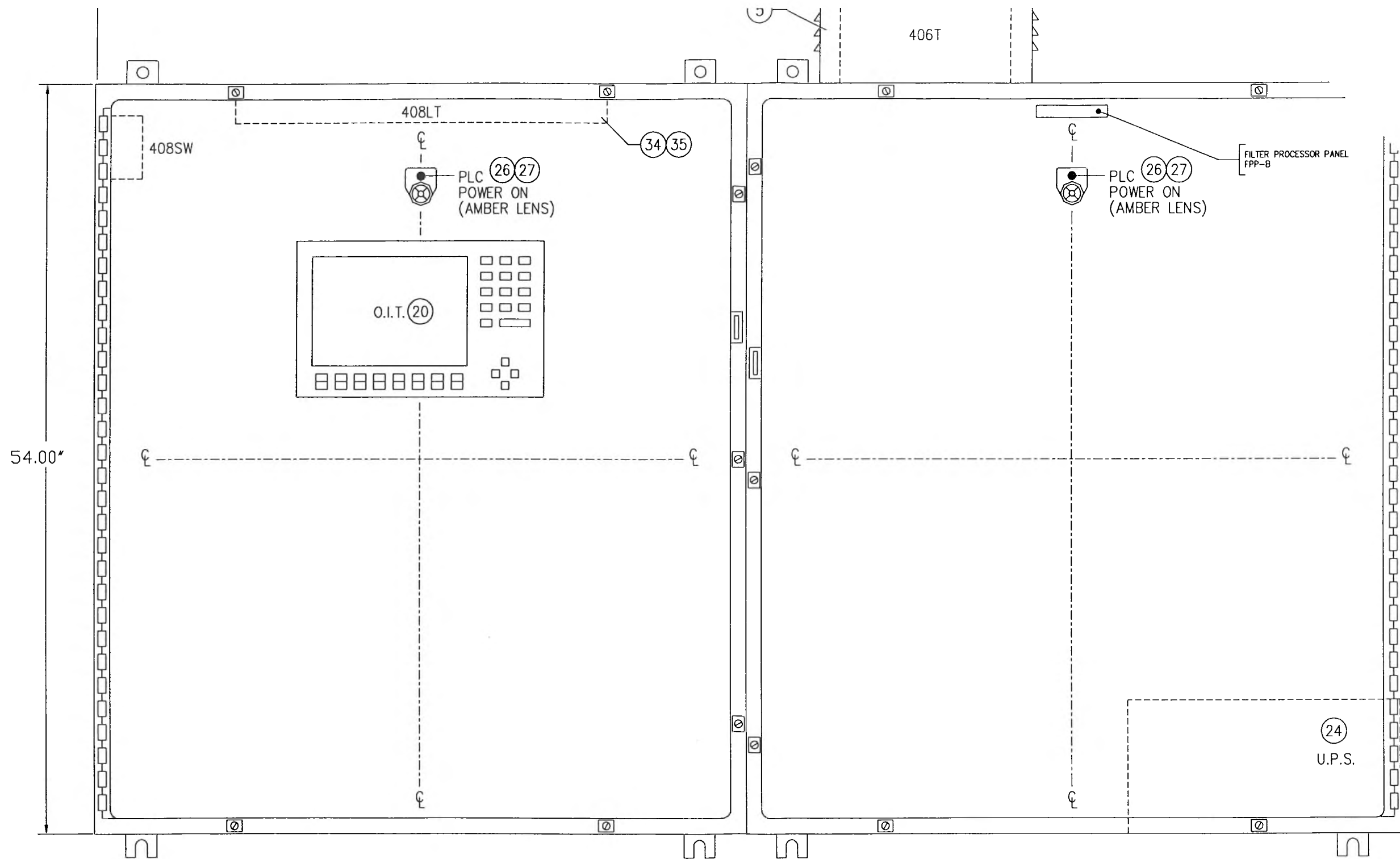
AGGRESSIVE SYSTEMS, INC.
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FPP-A PLC WIRING

9/96	AS-SHIPED	CS	CUSTOMER	WEBB ELECTRIC	P.O. NO.	38851030006
A	6/7/98	REVISION PER APPROVAL	CJ	DRAWN	CD	SCALE NONE
SYM	DATE	REVISIONS	BY	CHECKED	BB	DATE 3/5/98
						SHEET NO. 12
						DWG NO. 7249B



AGGRESSIVE SYSTEMS, INC.
 Farmington Hills, Michigan 48335
 CITY OF ANN ARBOR, MICHIGAN W.W.I.P.
 TERTIARY FILTER RENOVATIONS
 FPP-A ANALOG LOOP WIRING

9/98	AS-SHIPED	CS	CUSTOMER WEBB ELECTRIC	Pa. NO. 38851030006
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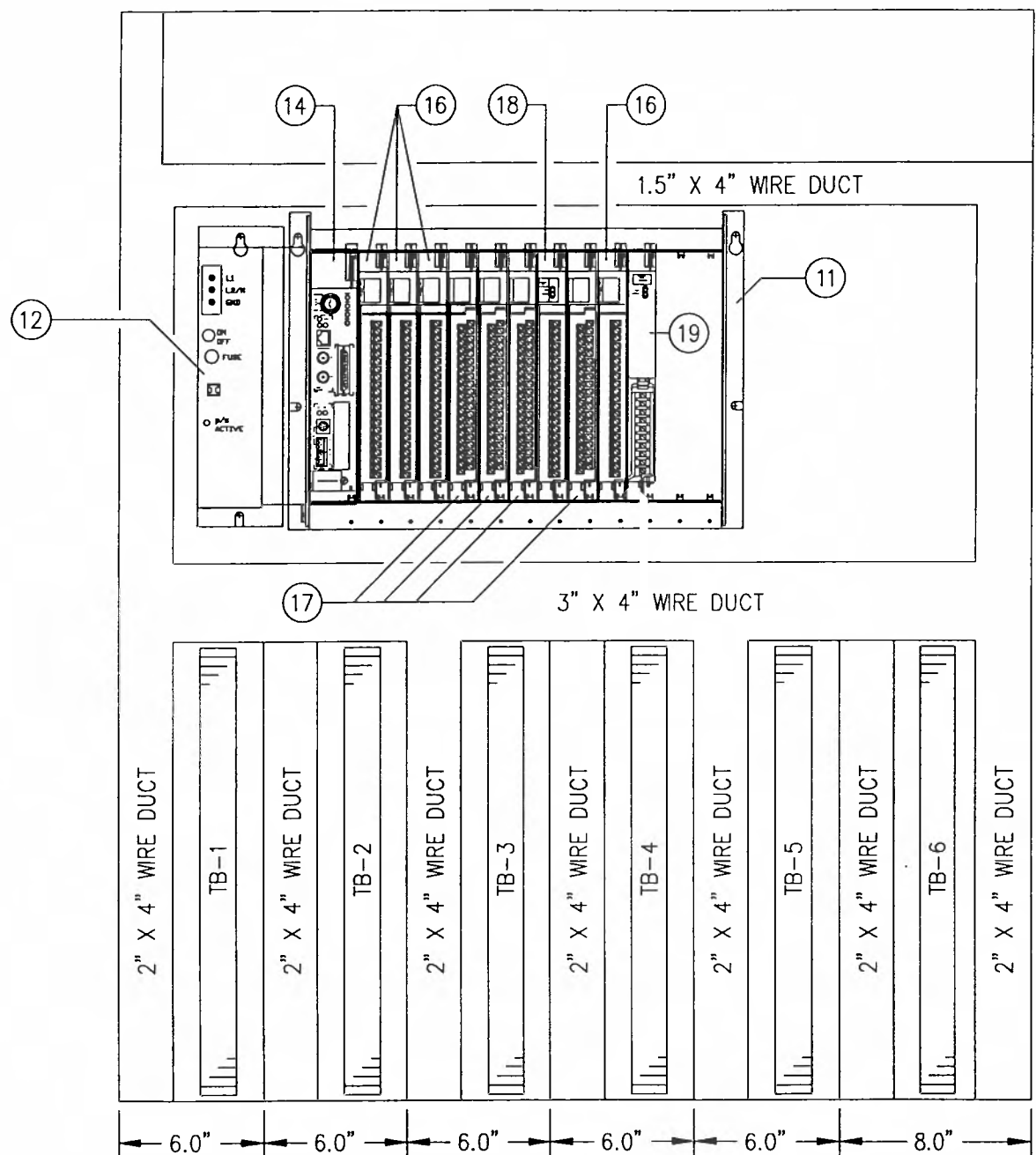
STAINLESS STEEL NEMA 4 ENCLOSURE ①

54"H X 84"W X 16"D
W/ (2) SUBPLATES 50"H X 38"W

AGGRESSIVE SYSTEMS, INC.
Farmington Hills, Michigan 48335

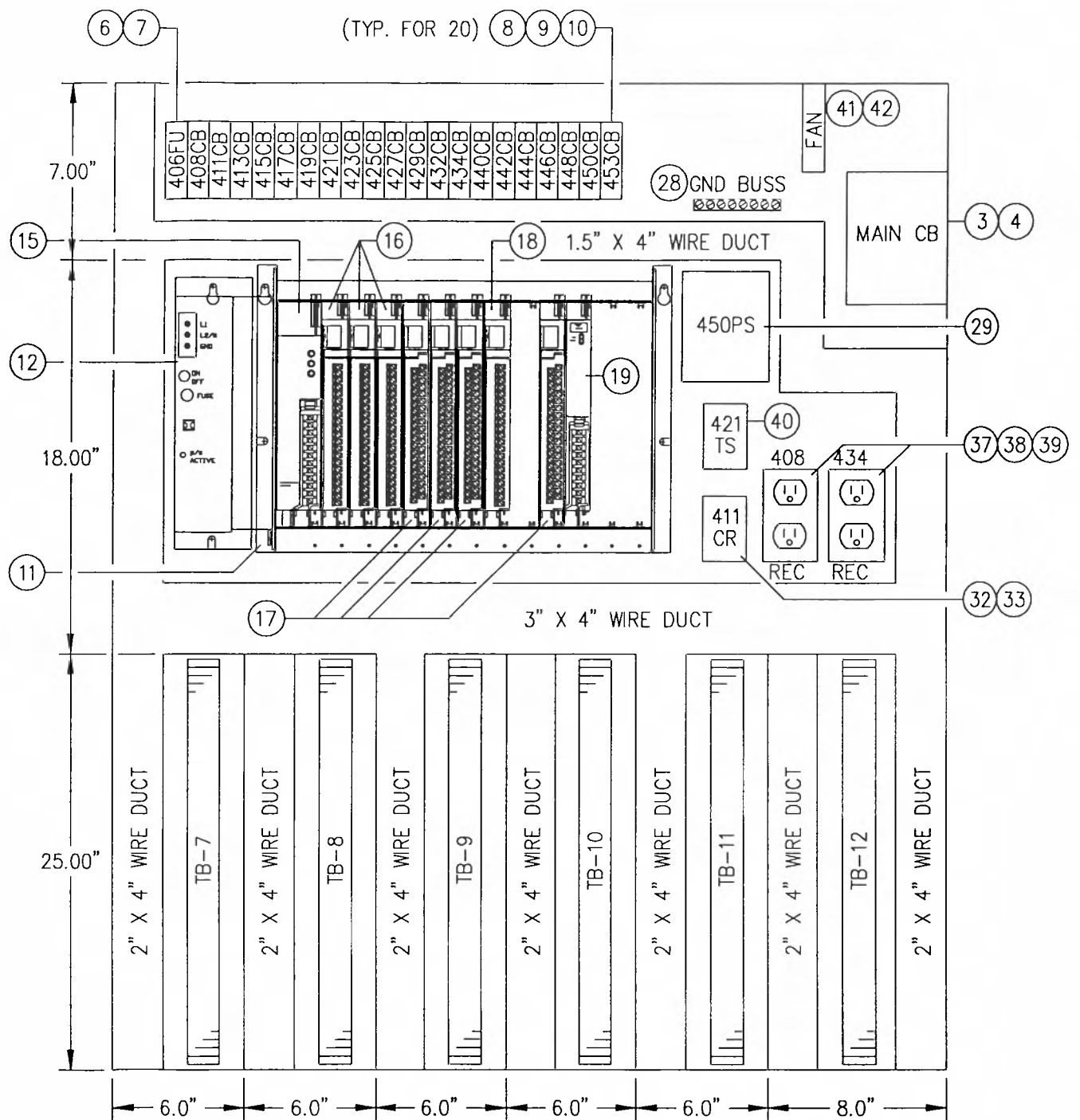
CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
TERTIARY FILTER RENOVATIONS
FPP-B CONTROL PANEL ENCLOSURE LAYOUT

DESIGNED BY	AS-SHIPPED	CS	CUSTOMER	WEBB ELECTRIC	P.O. NO.	38851030006
DATE	REVISED PER APPROVAL	CJ	DRAWN	CD	SCALE	5/16"
SYM	REVISIONS	BY	CHECKED	RR	DATE	3/24/98
					SHEET NO.	01
					DWG NO.	7249C



SUBPLATE B

50"H X 38"W
PAINT: GLOSS WHITE ENAMEL

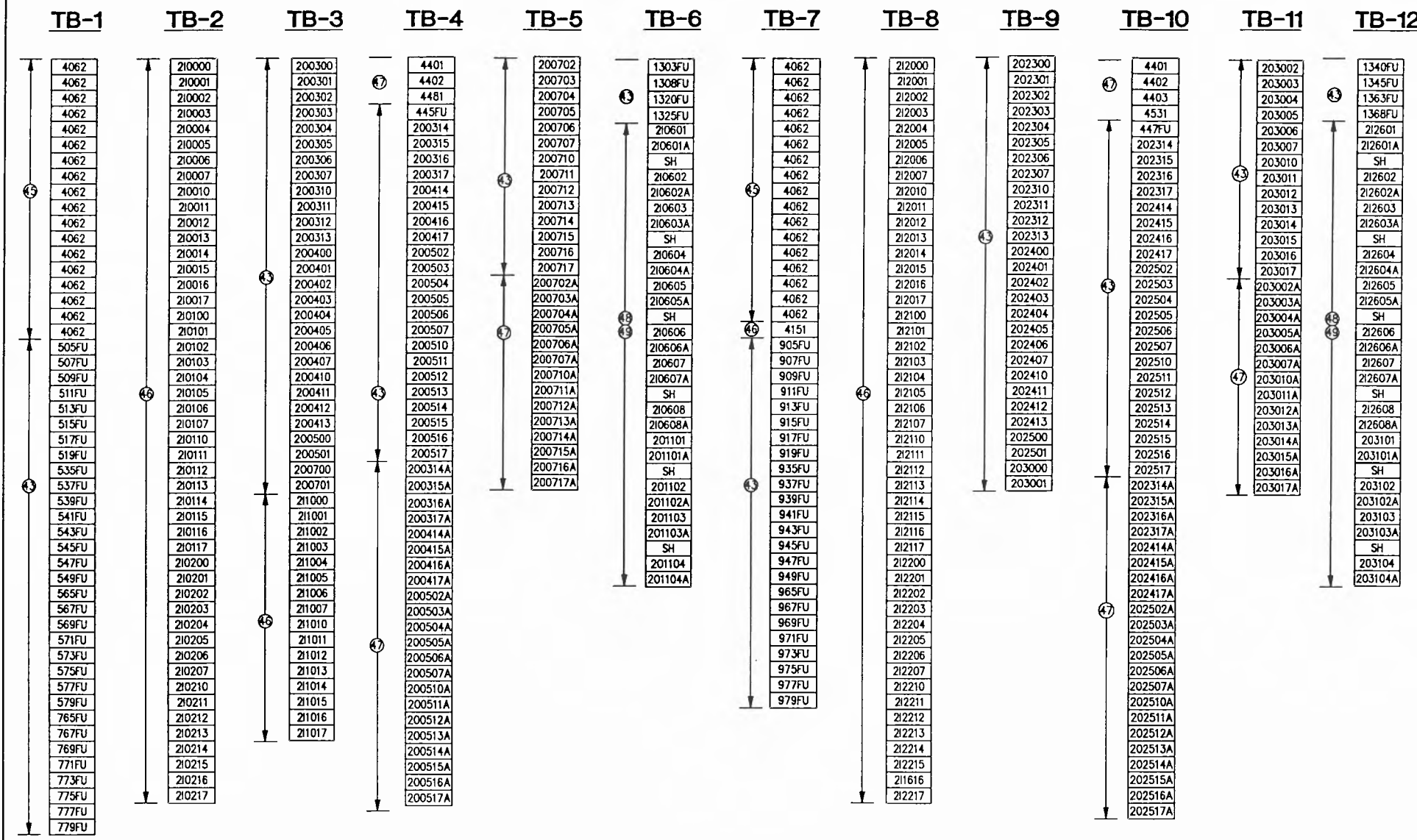


SUBPLATE A

50"H X 38"W
PAINT: GLOSS WHITE ENAMEL

AGGRESSIVE SYSTEMS, INC.
Farmington Hills, Michigan 48335
CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
TERTIARY FILTER RENOVATIONS
FPP-B CONTROL PANEL SUBPLATE LAYOUT

9/98	AS-SHIPPED	GS	CUSTOMER	WEBB ELECTRIC	P.O. NO.	38851030006
A	6/17/98	REMOVED PER APPROVAL	CJ	DRAWN	CD	SCALE 5/16"
SYM	DATE	REVISIONS	BY	CHECKED	BB	DATE 3/24/98
						SHEET NO. 02
						FIG. NO. 7249C



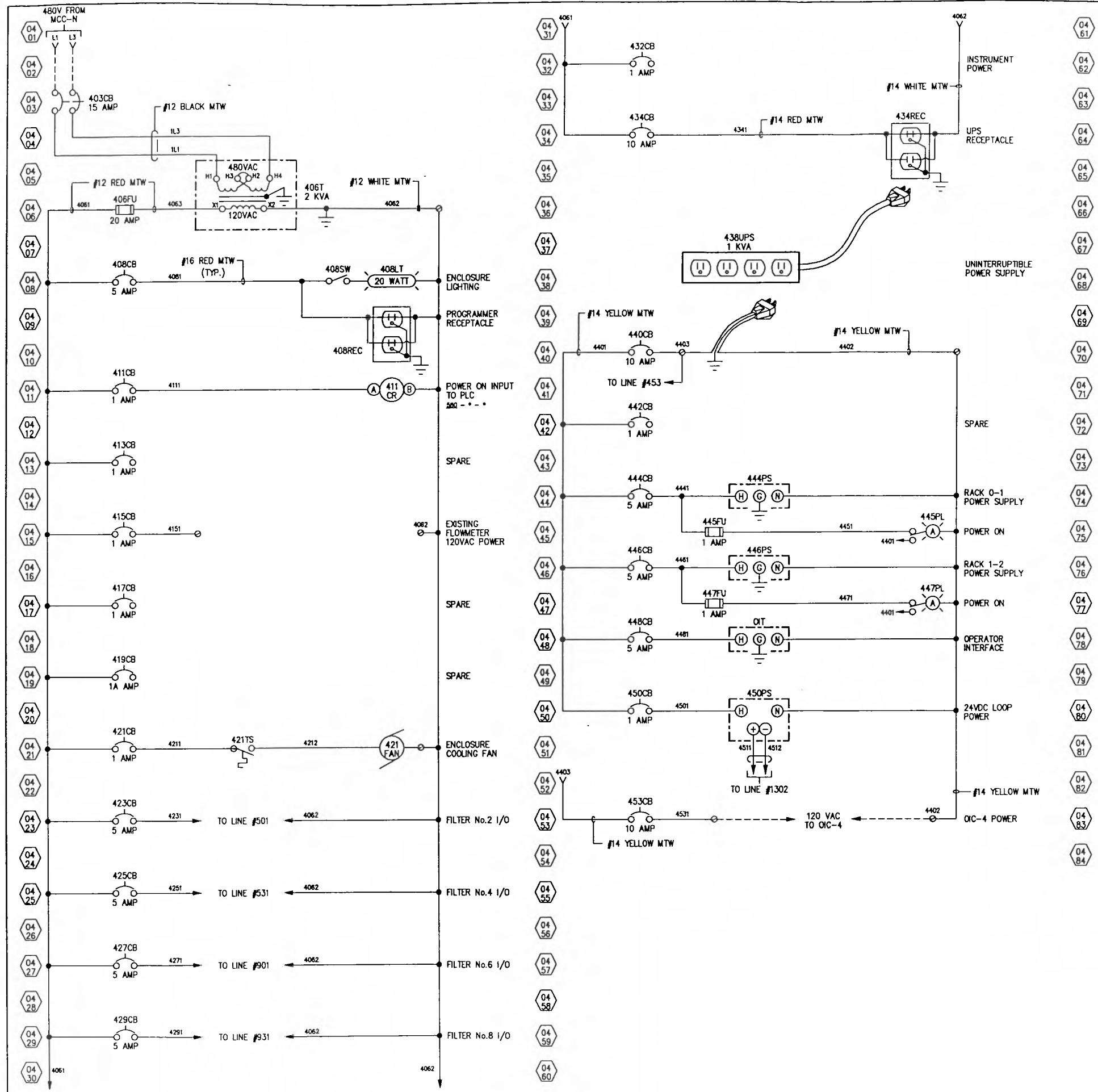
BILL OF MATERIAL

SYMBOL	QTY.	MANUFACTURER	PART NUMBER	DESCRIPTION
1	1	CUSTOM	CUSTOM	NEMA-4 ENCLOSURE, 48"H X 84"W X 16"D
2	2	CUSTOM	CUSTOM	SUBPLATE, 45"H X 38"W
3	1	CUTLER-HAM.	EHD2015	CIRCUIT BREAKER, 2P - 480V - 15A
4	1	CUTLER-HAM.	3TA100FD	LUG KIT, LINE SIDE CKT. BRKR.
5	1	ACME	T2-53012-S	ISOLATION TRANSFORMER, 480/120V, 2KVA
6	1	GOULD	20326R	FUSEBLOCK, 1P - 250V - 30A
7	1	GOULD	TR20R	FUSE, 20A, 120VAC
8	8	ALLEN BRADLEY	1492-CB1G050	CIRCUIT BREAKER, 1P, 120VAC, 5A
9	3	ALLEN BRADLEY	1492-CB1G100	CIRCUIT BREAKER, 1P, 120VAC, 10A
10	9	ALLEN BRADLEY	1492-CB1G010	CIRCUIT BREAKER, 1P, 120VAC, 1A
11	2	ALLEN BRADLEY	1771-A3B	MODULE CHASSIS, 12-SLOT
12	2	ALLEN BRADLEY	1771-P7	CHASSIS POWER SUPPLY
13	2	ALLEN BRADLEY	1771-CP1	POWER CABLE
14	1	ALLEN BRADLEY	1785-L40E	ETHERNET PROCESSOR, PLC 5/40
15	1	ALLEN BRADLEY	1771-ASB	REMOTE I/O ADAPTER MODULE
16	7	ALLEN BRADLEY	1771-IAD	DIGITAL INPUT MODULE, 16-POINT
17	8	ALLEN BRADLEY	1771-OW16	DIGITAL OUTPUT MODULE, 16-POINT
18	2	ALLEN BRADLEY	1771-IFE	ANALOG INPUT MODULE, 8-POINT
19	2	ALLEN BRADLEY	1771-OFE2	ANALOG OUTPUT MODULE, 4-POINT
20	1	ALLEN BRADLEY	2711-K9C1	COLOR OPERATOR INTERFACE TERMINAL
21	1	ALLEN BRADLEY	2711-NM12	MEMORY CARD, 1MB
22				
23				
24	1	A.P.C.	SU1000XL	UNINTERRUPTIBLE POWER SUPPLY, 120/120VAC, 1KVA
25	1	A.P.C.	AP9610	RELAY OUTPUT MODULE, UPS SMART SLOT
26	2	CUTLER-HAM.	E34TPB120	PILOT LIGHT, PRESS-TO-TEST, 120VAC
27	2	CUTLER-HAM.	E34V9	AMBER LENS
28	1	CUTLER-HAM.	GBK12	GROUND BAR, 12-CKT.
29	1	CONDOR	HB24-1.2	POWER SUPPLY, 24VDC, 1.2 AMP
30	58	GOULD	GSB-1	FUSE, 1 AMP, 120VAC
31	8	GOULD	GSB-1/10	FUSE, 1/10 AMP, 120VAC
32	1	SQUARE D	8501-KU13M1P14V20	CONTROL RELAY, 120VAC, 3PDT
33	1	CUSTOM CONN.	ST11-PC	RELAY SOCKET, 11-BLADE
34	1	GRAINGER	2V811	SLIMLINE FLUORESCENT LIGHT FIXTURE, 20W
35	1	GRAINGER	2V896	FLUORESCENT BULB, 20W, 120VAC
36	1	EDWARDS	502-A	ENCLOSED SWITCH, SPST-NC
37	2	P & S	5250-S	DUPLEX RECPTACLE, 15A, 120VAC
38	2	RACO	660	BACKBOX, 2 X 4
39	2	MULBURY	10002	COVERPLATE, DUPLEX RECPT.
40	1	HOFFMAN	A-TEMNO	COOLING THERMOSTAT, SPST
41	1	GRAINGER	4C549	COOLING FAN, 120VAC
42	2	GRAINGER	4C551	WIRE GUARD
43	194	SQUARE D	9080-M48SF	FUSIBLE TERMINAL W/ FUSE PULLER
44	12	SQUARE D	9080-MFEM8S	END BARRIER, LARGE
45	35	SQUARE D	9080-GR6	WRING TERMINAL, WHITE
46	120	SQUARE D	9080-GRR6	WRING TERMINAL, RED
47	90	SQUARE D	9080-GRY6	WRING TERMINAL, YELLOW
48	60	SQUARE D	9080-GRL6	WRING TERMINAL, BLUE
49	15	SQUARE D	9080-GRE6	WRING TERMINAL, GREY
50				
51	128	GOULD	GSB-2	FUSE, 2A-120V

AGGRESSIVE SYSTEMS, INC.
Farmington Hills, Michigan 48335

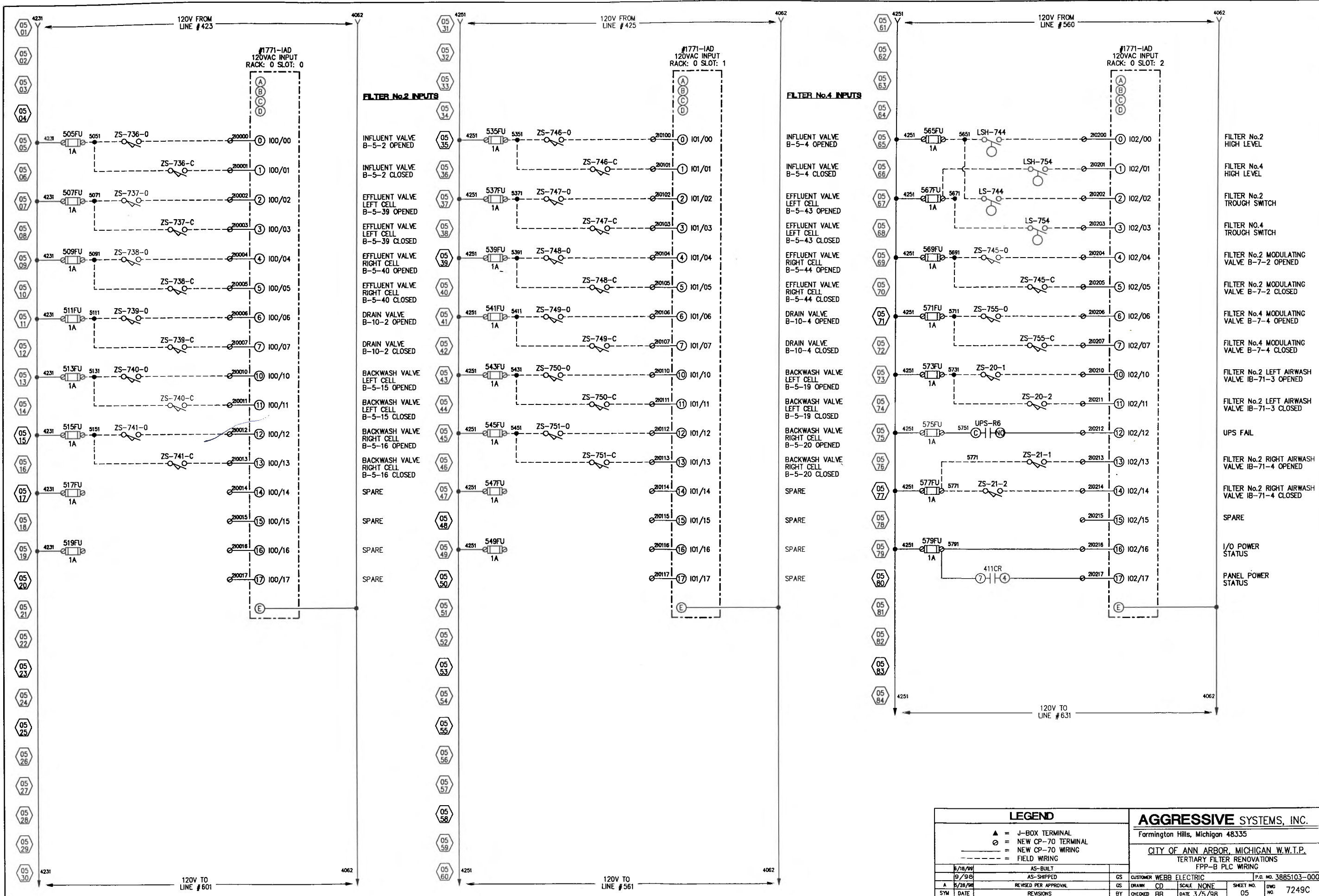
CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
TERTIARY FILTER RENOVATIONS
FPP-B CONTROL PANEL TERM. ROTATION & B.O.M.

19/98	AS-SHIPPED	CS	CUSTOMER WEBB ELECTRIC	P.O. NO. 3885103006
A	8/19/98	REVISED PER APPROVAL	CJ	SCALE NONE
SYM	DATE	REVISIONS	BY	CHECKED BB
				DATE 3/25/98
				SHEET NO. 03
				DWG NO. 7249C

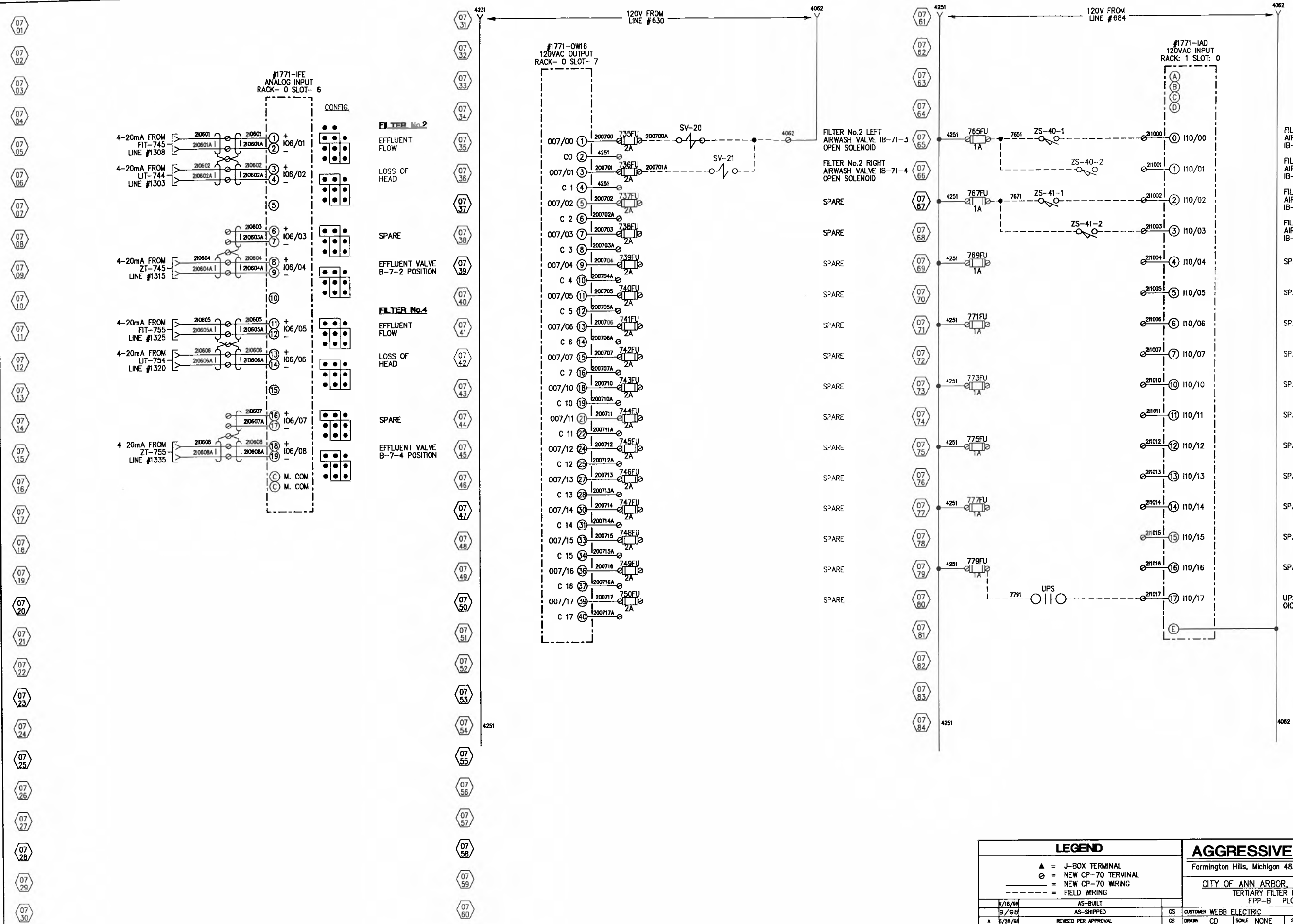


AGGRESSIVE SYSTEMS, INC.
 Farmington Hills, Michigan 48335
 CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
 TERTIARY FILTER RENOVATIONS
 FPP-B POWER WIRING

9/98	AS-SHIPED	GS	CUSTOMER WEBB ELECTRIC	P.O. NO. 3885103006
A 2/17/98	REVISED PER APPROVAL	CJ	DRAWN CD	SCALE NONE
SYM DATE	REVISIONS	BY	CHECKED BB	DATE 3/5/98
				SHEET NO. 04
				DWG NO. 7249C

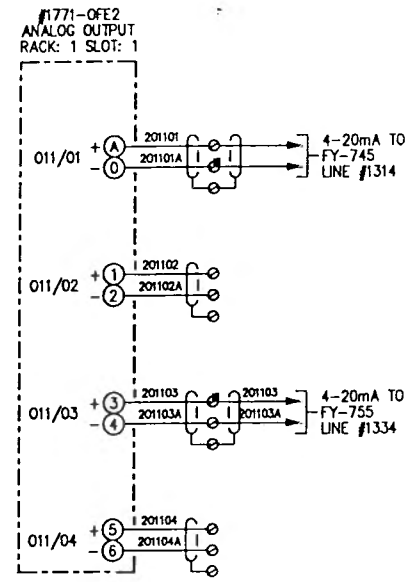


LEGEND		AGGRESSIVE SYSTEMS, INC.			
▲	J-BOX TERMINAL	Farmington Hills, Michigan 48335			
○	NEW CP-70 TERMINAL	CITY OF ANN ARBOR, MICHIGAN W.W.T.P.			
—	NEW CP-70 WIRING	TERTIARY FILTER RENOVATIONS			
- - -	FIELD WIRING	FPP-B PLC WIRING			
6/18/98	AS-BUILT	GS	CUSTOMER	WEBB	ELECTRIC
9/98	AS-SHIPED	GS	SCALE	NONE	SHEET NO. 05
A	REVISED PER APPROVAL	GS	DATE	3/5/98	P.W.C. NO. 7249C
SYM	DATE	BY	CHECKED	BR	



LEGEND		AGGRESSIVE SYSTEMS, INC.	
▲	J-BOX TERMINAL	Formington Hills, Michigan 48335	
○	NEW CP-70 TERMINAL	CITY OF ANN ARBOR, MICHIGAN W.W.T.P.	
—	NEW CP-70 WIRING	TERTIARY FILTER RENOVATIONS	
- - -	FIELD WIRING	FPP-B PLC WIRING	
5/18/99	AS-BUILT	CS	CUSTOMER WEBB ELECTRIC
9/98	AS-SHIPPED	GS	P.O. NO. 38851030006
A	REVISED PER APPROVAL	CS	DRAWN CD
SYM	DATE	BY	CHECKED BB
			DATE 3/5/98
			SHEET NO. 07
			DWG NO. 7249C

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FILTER No2
FLOW CONTROL
VALVE B-7-2
POSITION CONTROL

SPARE

FILTER No4
FLOW CONTROL
VALVE B-7-4
POSITION CONTROL

SPARE

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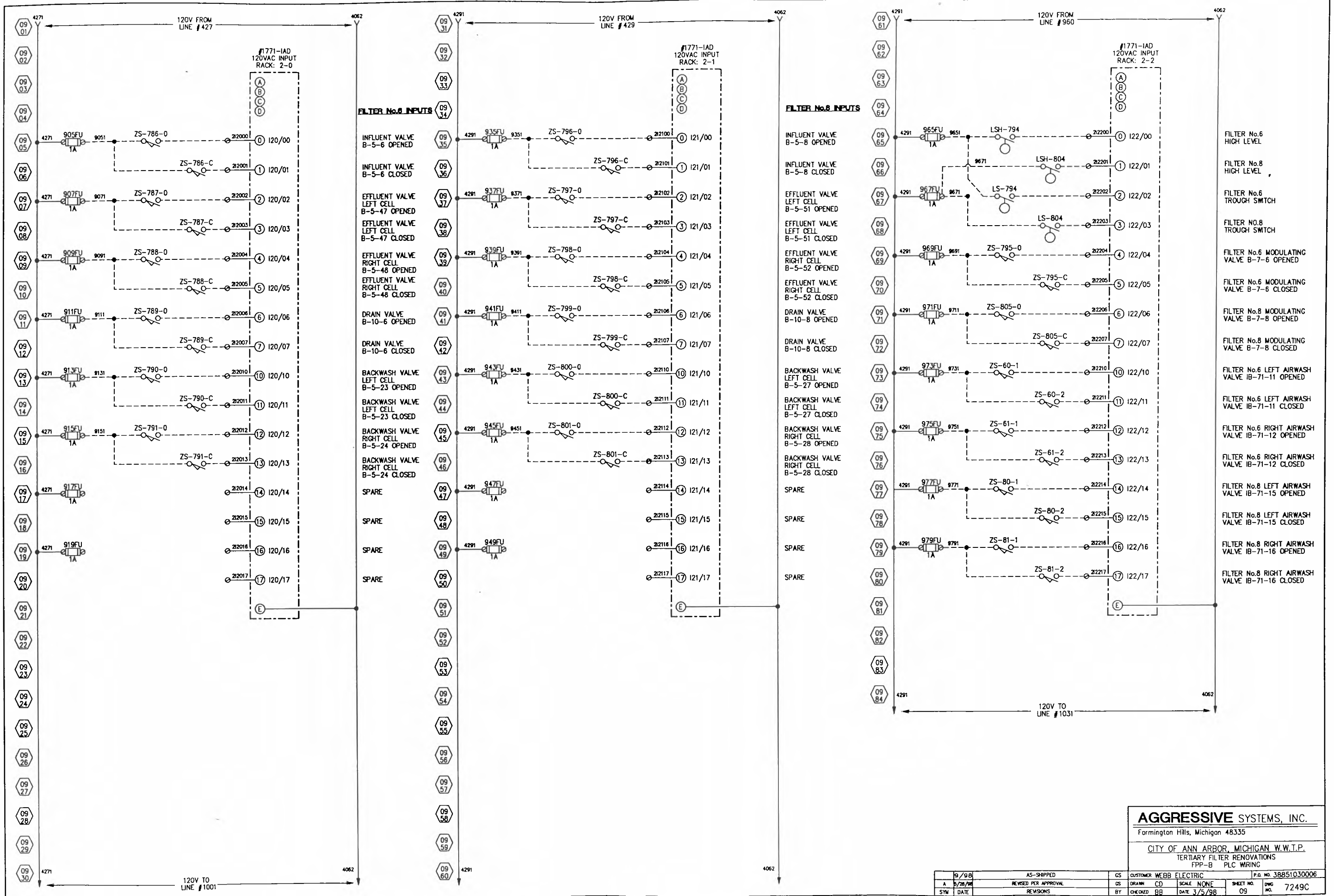
RACK: 1
SLOT: 2
SPARE SPACE

RACK: 1
SLOT: 3
SPARE SPACE

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AGGRESSIVE SYSTEMS, INC.
Farmington Hills, Michigan 48335
CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
TERTIARY FILTER RENOVATIONS
FPP-B PLC WIRING

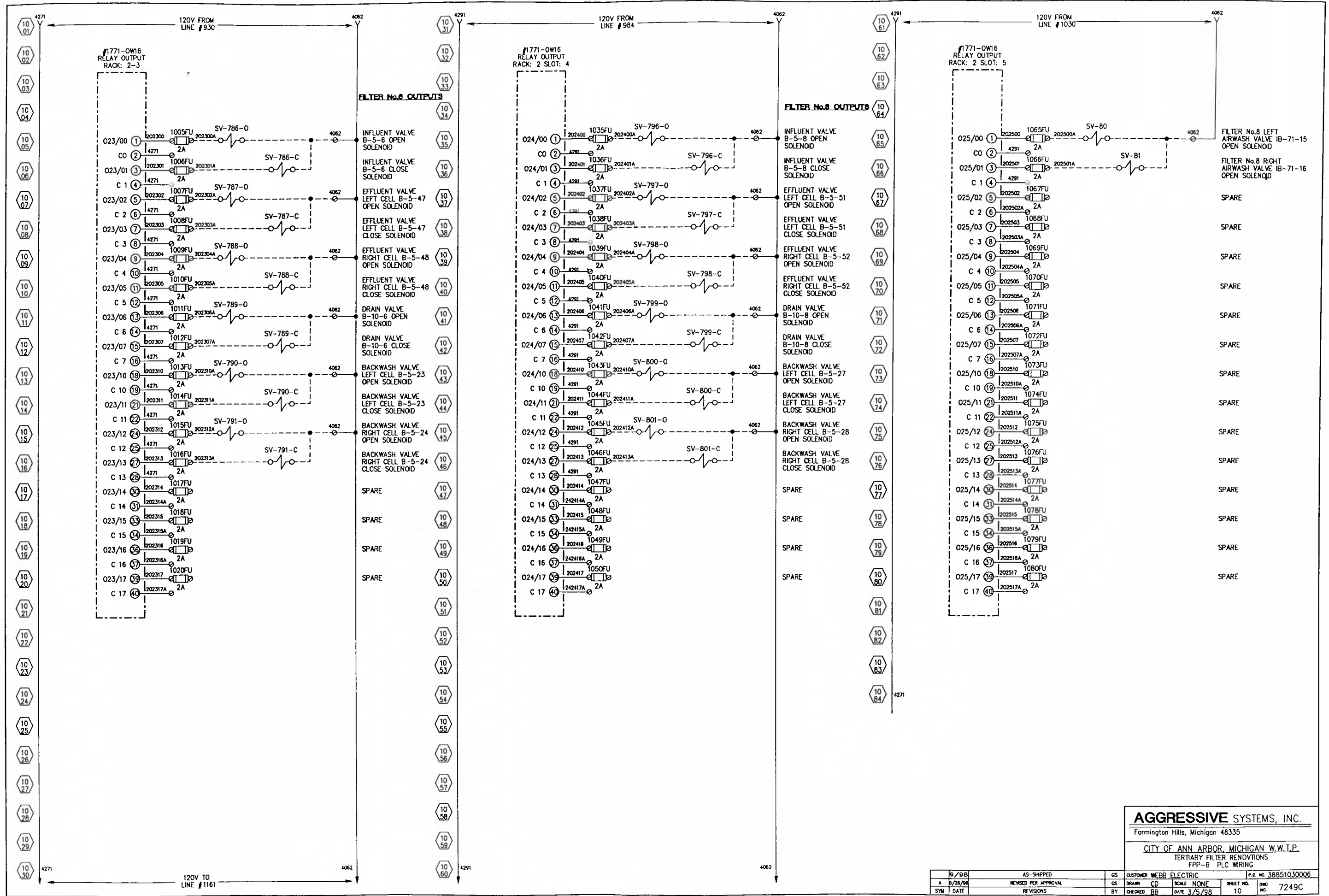
9/98	AS-SHIPED	CS	CUSTOMER	WEBB ELECTRIC	P.O. NO.	38851030006
A	6/17/98	REMOVED PER APPROVAL	CJ	DRAWN	CD	SCALE NONE
SYM	DATE	REVISIONS	BY	CHECKED	BR	DATE 3/5/98
						SHEET NO. 08
						DWG. NO. 7249C



AGGRESSIVE SYSTEMS, INC.
Farmington Hills, Michigan 48335

CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
TERTIARY FILTER RENOVATIONS
FPP-B PLC WIRING

9/98	AS-SHIPPED	CS	CUSTOMER WEBB ELECTRIC	P.O. NO. 38851030006
5/28/98	REVISED PER APPROVAL	CS	DRAWN CD	SCALE NONE
SYM	DATE	REVISIONS	BY	CHECKED BR
				DATE 3/5/98
				SHEET NO. 09
				FIG. NO. 7249C

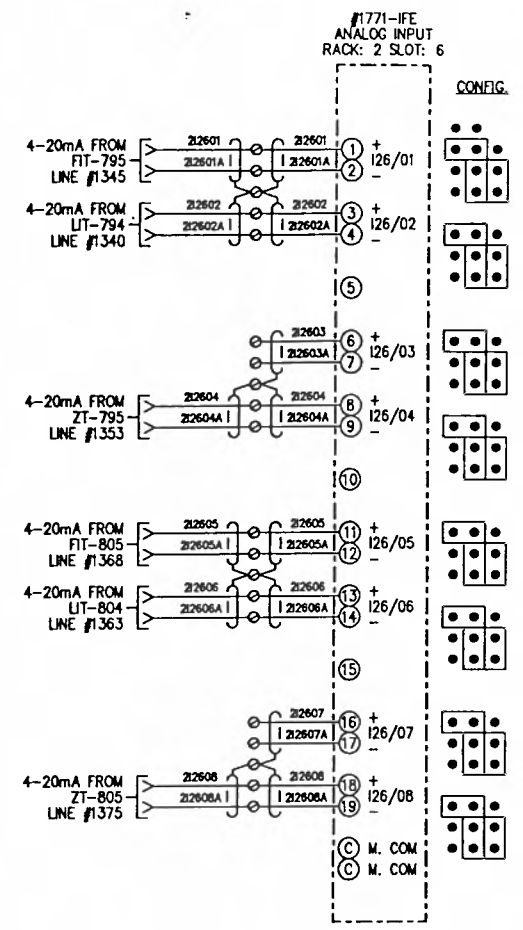


AGGRESSIVE SYSTEMS, INC.
 Farmington Hills, Michigan 48335

CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
 TERTIARY FILTER RENOVATIONS
 FPP-B PLC WIRING

9/98	AS-SHIPPED	CS	CUSTOMER WEBB ELECTRIC	P.O. NO. 38851030006
A	5/28/04	REVISED PER APPROVAL	CS	DRAWN CD
SYM	DATE	REVISIONS	BY	CHECKED BR
				DATE 3/5/98
				SHEET NO. 10
				DWG NO. 7249C

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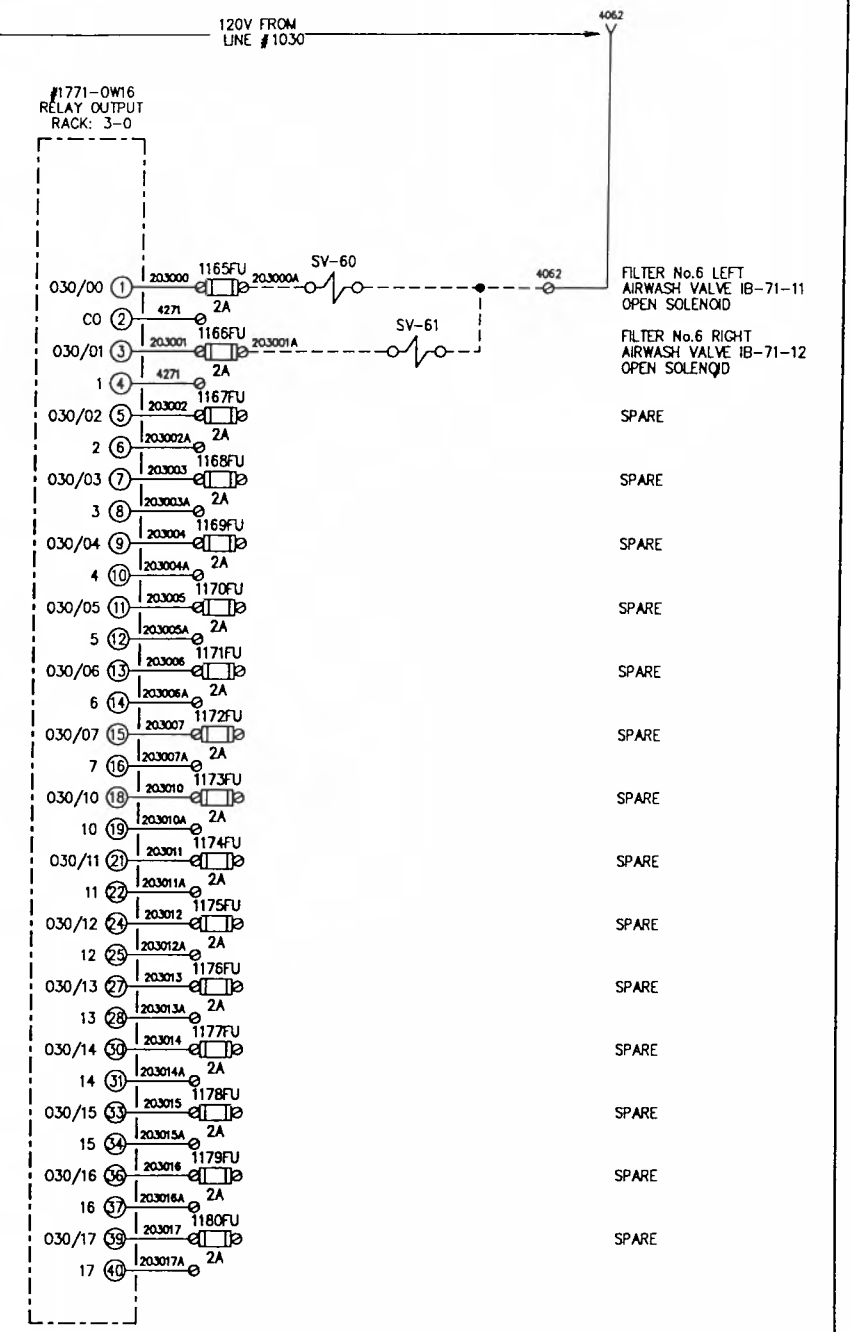
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RACK: 2 SLOT: 7
SPARE SPACE

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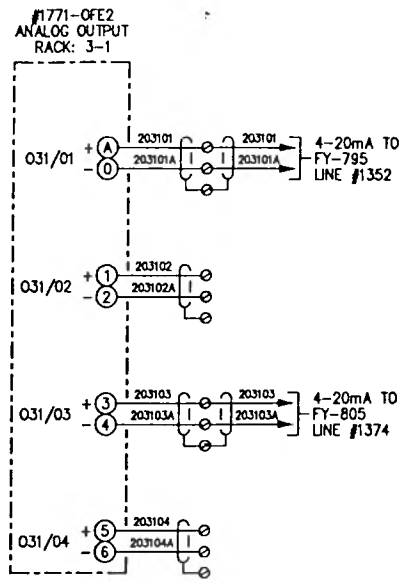


AGGRESSIVE SYSTEMS, INC.
Farmington Hills, Michigan 48335

CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
TERTIARY FILTER RENOVATIONS
FPP-B PLC WIRING

9/98	AS-SHIPPED	CS	CUSTOMER	WEBB ELECTRIC	P.O. NO.	38851030006				
A	5/28/98	REVISED PER APPROVAL	GS	DRAWN	CD	SHEET NO.				
SYM	DATE	REVISIONS	BY	CHECKED	BB	DATE	3/5/98	11	DWG NO.	7249C

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FILTER No.6
FLOW CONTROL
VALVE B-7-6
POSITION CONTROL

SPARE

FILTER No.8
FLOW CONTROL
VALVE B-7-8
POSITION CONTROL

SPARE

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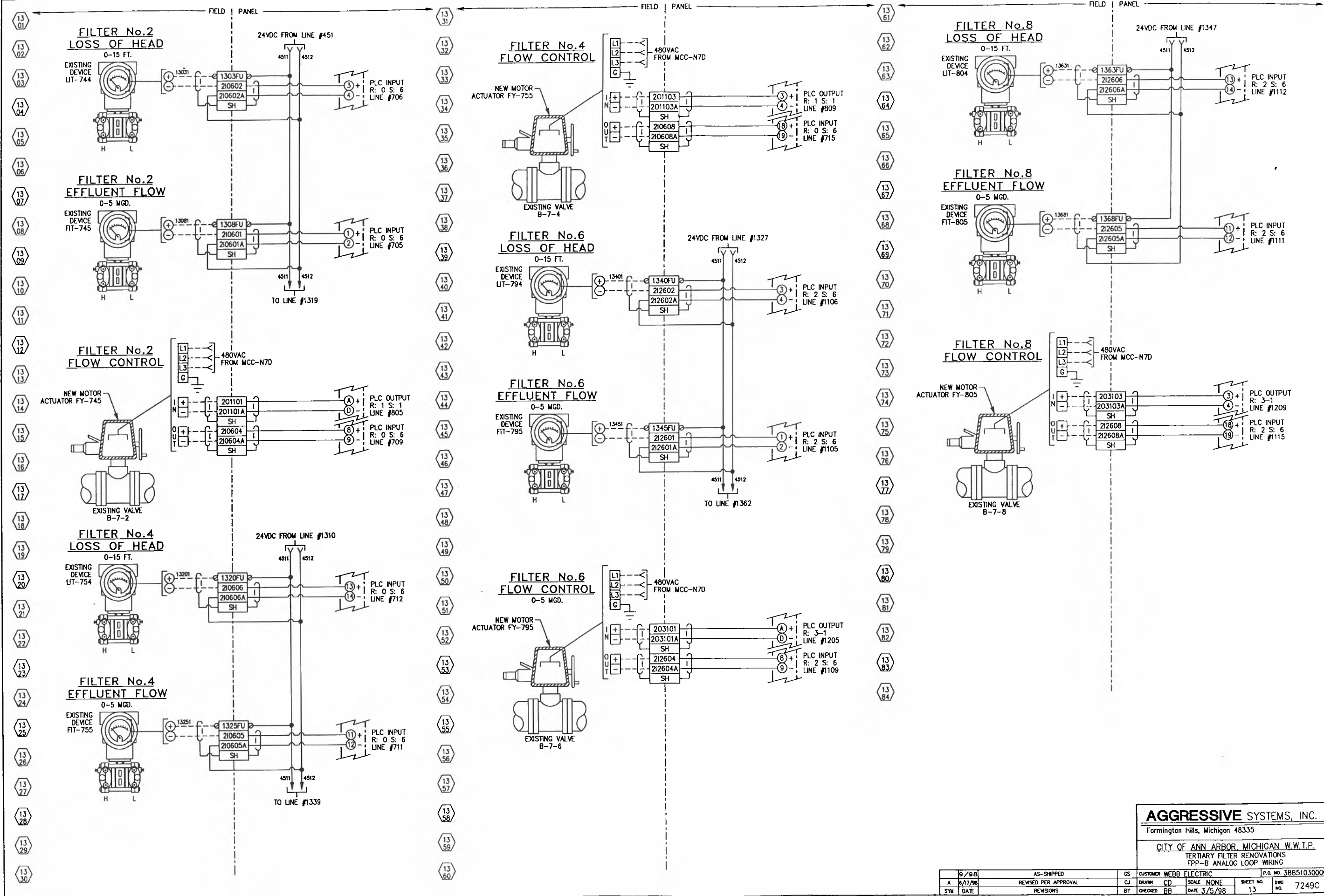
RACK-3
SLOT-2
SPARE SPACE

RACK-3
SLOT-3
SPARE SPACE

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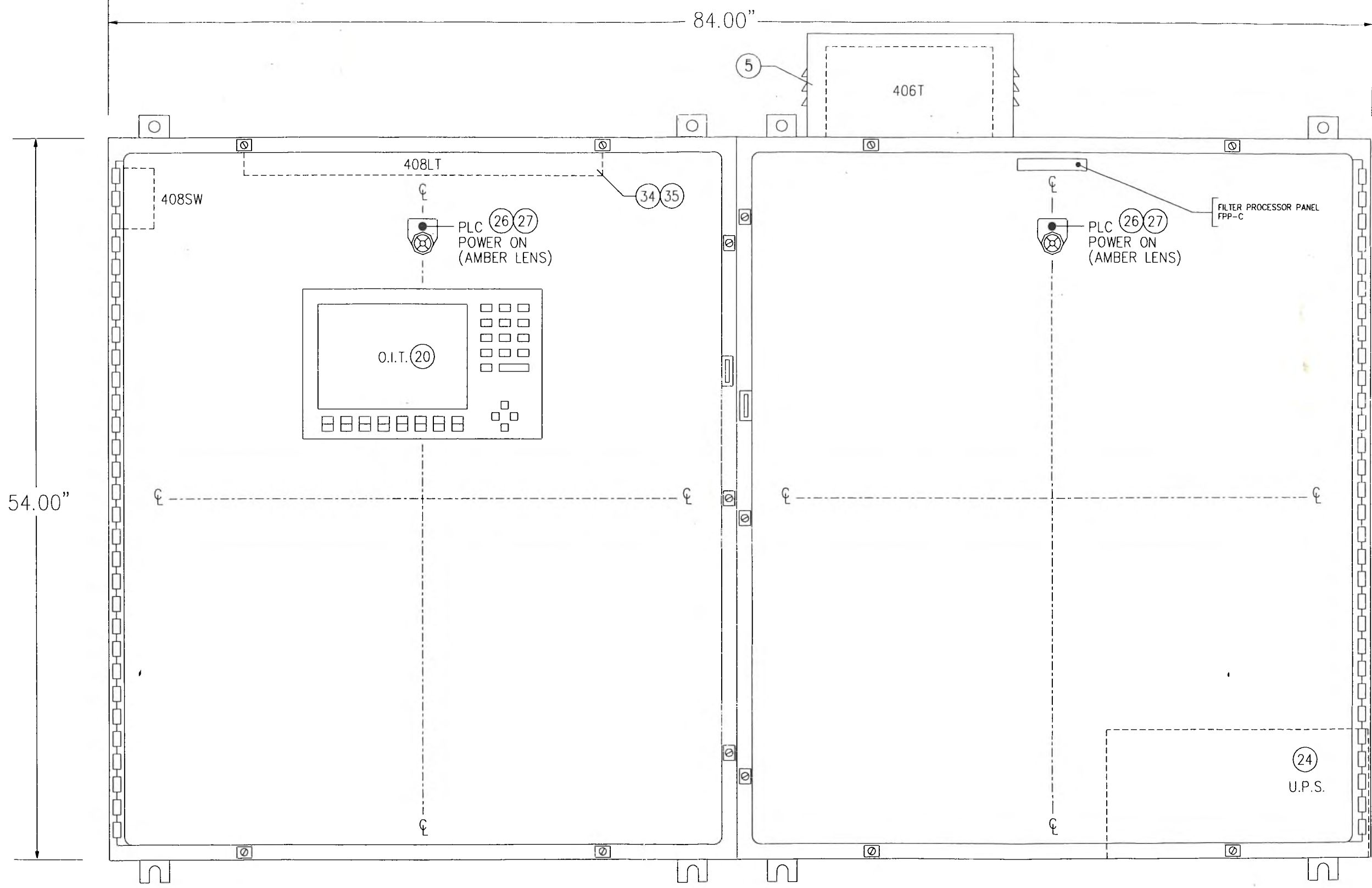
AGGRESSIVE SYSTEMS, INC.
Farmington Hills, Michigan 48335
CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
TERTIARY FILTER RENOVATIONS
FPP-B PLC WIRING

NO	DATE	DESCRIPTION	BY	CHECKED	DATE	SHEET NO.	DWG NO.
A	6/17/98	REVISED PER APPROVAL	CJ	CD	3/5/98	12	7249C
SYM		REVISIONS		BB			



AGGRESSIVE SYSTEMS, INC.
 Farmington Hills, Michigan 48335
 CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
 TERTIARY FILTER RENOVATIONS
 FPP-B ANALOG LOOP WIRING

9/98	AS-SHIPED	GS	CUSTOMER WEBB ELECTRIC	P.O. NO. 38851030006
8/17/98	REVISED PER APPROVAL	CJ	DRAM CD	SCALE NONE
DATE	REVISIONS	BY	CHECKED BB	DATE 3/5/98
				SHEET NO. 13
				DWG NO. 7249C



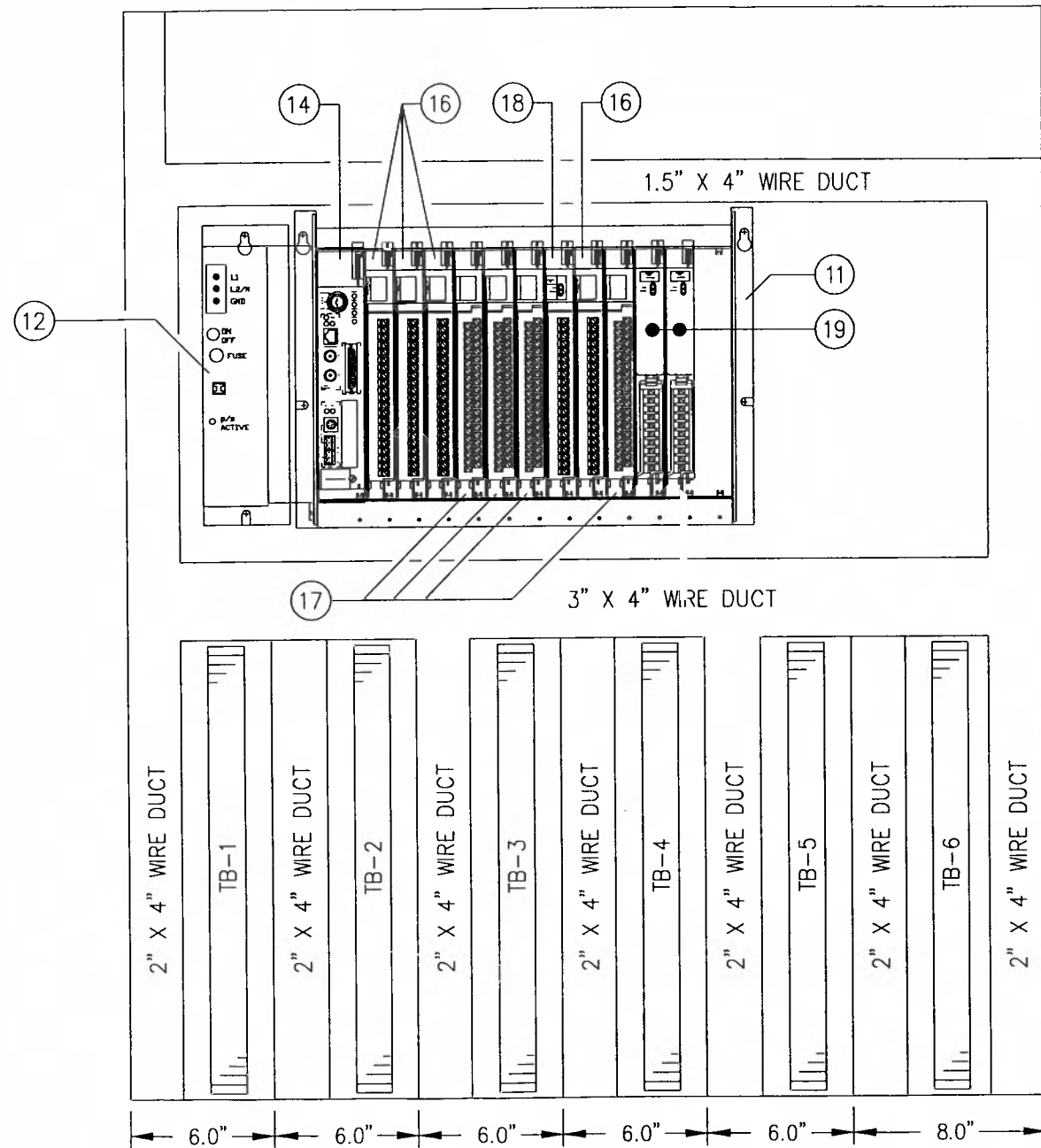
**STAINLESS STEEL (1)
NEMA 4 ENCLOSURE**

54"H X 84"W X 16"D
W/ (2) SUBPLATES 50"H X 38"W

AGGRESSIVE SYSTEMS, INC.
Farmington Hills, Michigan 48335

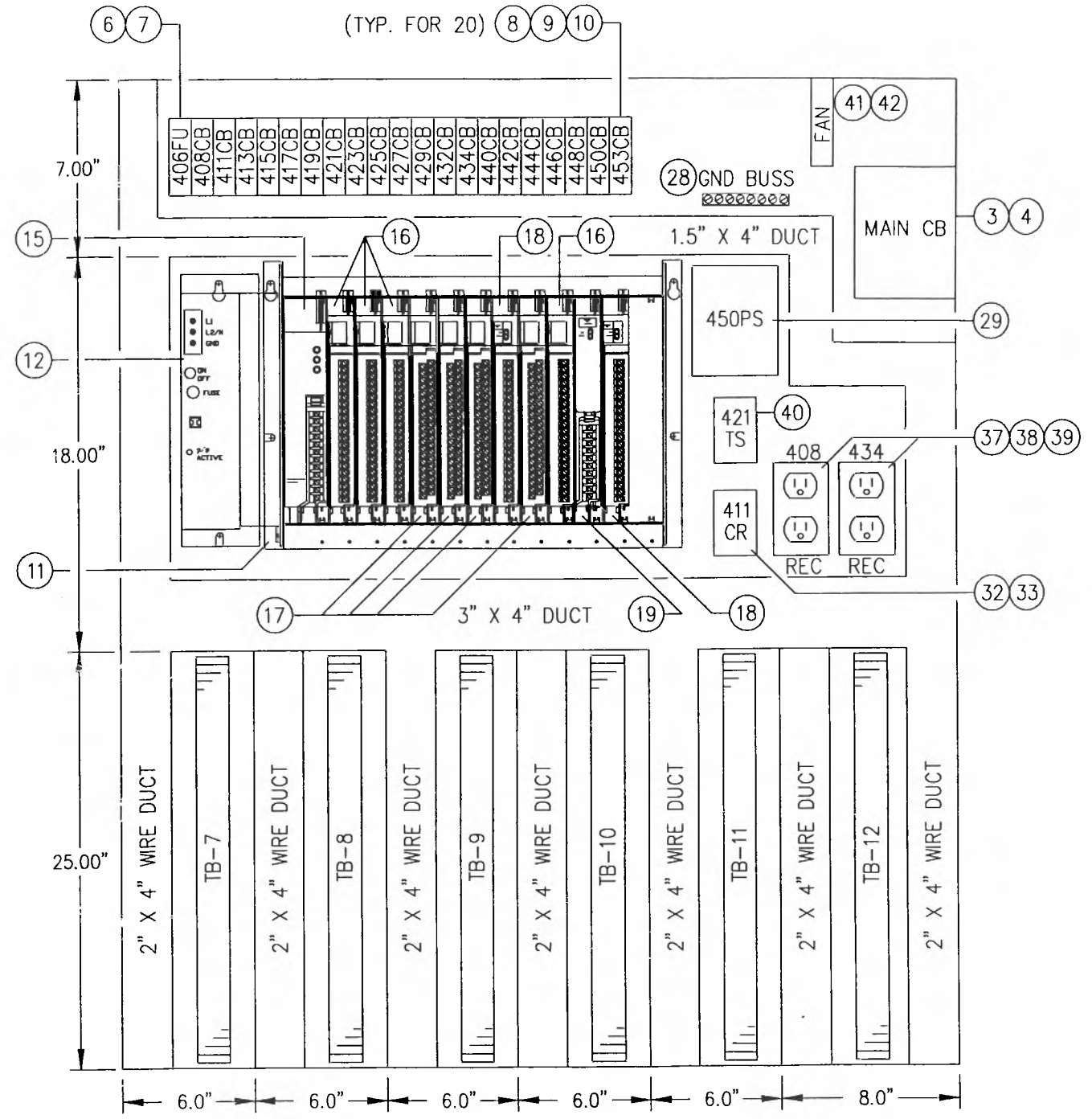
CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
TERTIARY FILTER RENOVATIONS
FPP-C CONTROL PANEL ENCLOSURE LAYOUT

9/98	AS-SHIPPED	CS	CUSTOMER WEBB ELECTRIC	P.O. NO. 38851030006
A	REVISED PER APPROVAL	CJ	SCALE 5/16"	SHEET NO.
SYM	DATE	BY	CHECKED BB	DATE 3/24/98
				01
				DWG. NO. 7249D



SUBPLATE B

50"H X 38"W
PAINT: GLOSS WHITE ENAMEL



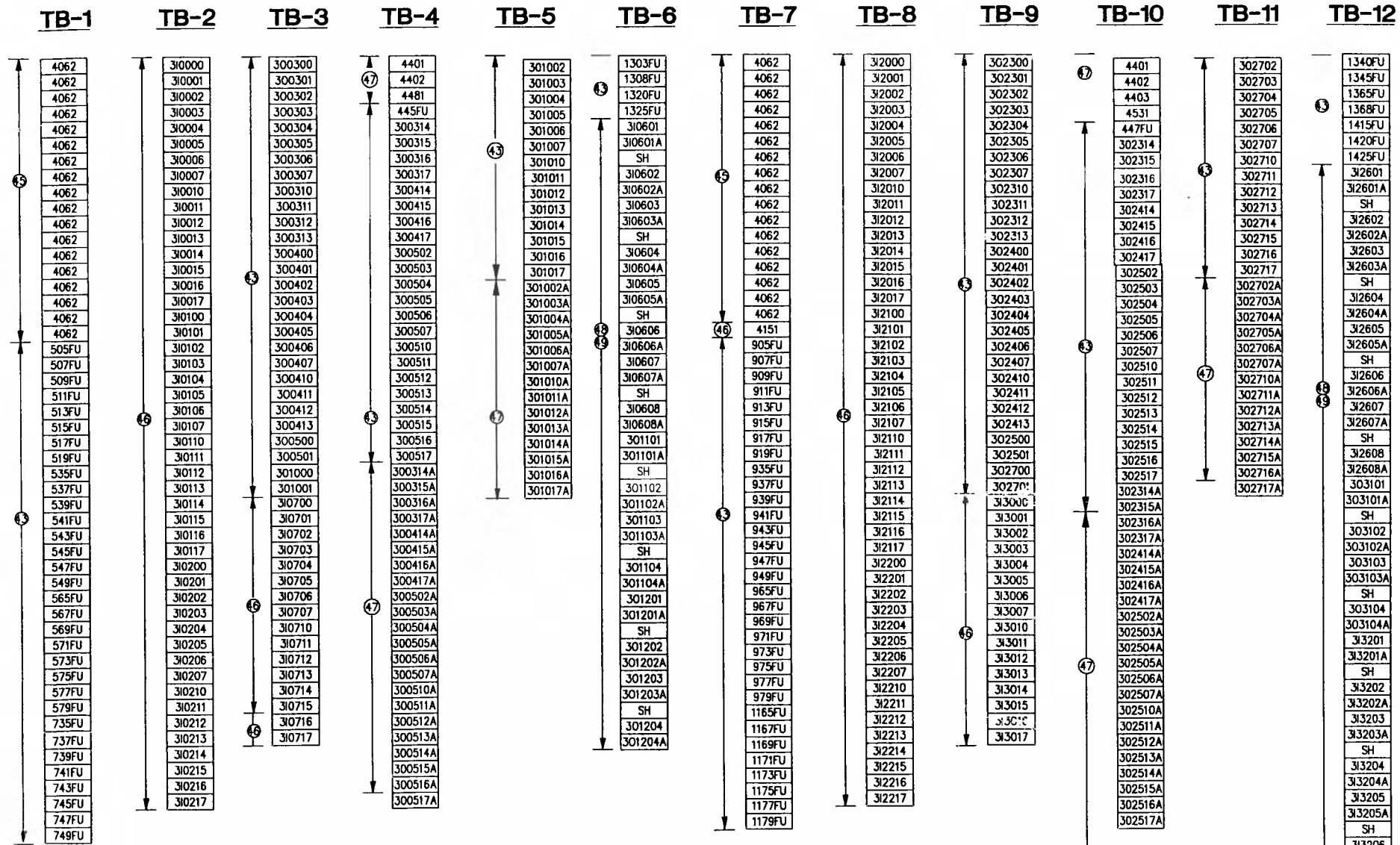
SUBPLATE A

50"H X 38"W
PAINT: GLOSS WHITE ENAMEL

AGGRESSIVE SYSTEMS, INC.
Farmington Hills, Michigan 48335

CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
TERTIARY FILTER RENOVATIONS
FPP-C CONTROL PANEL SUBPLATE LAYOUT

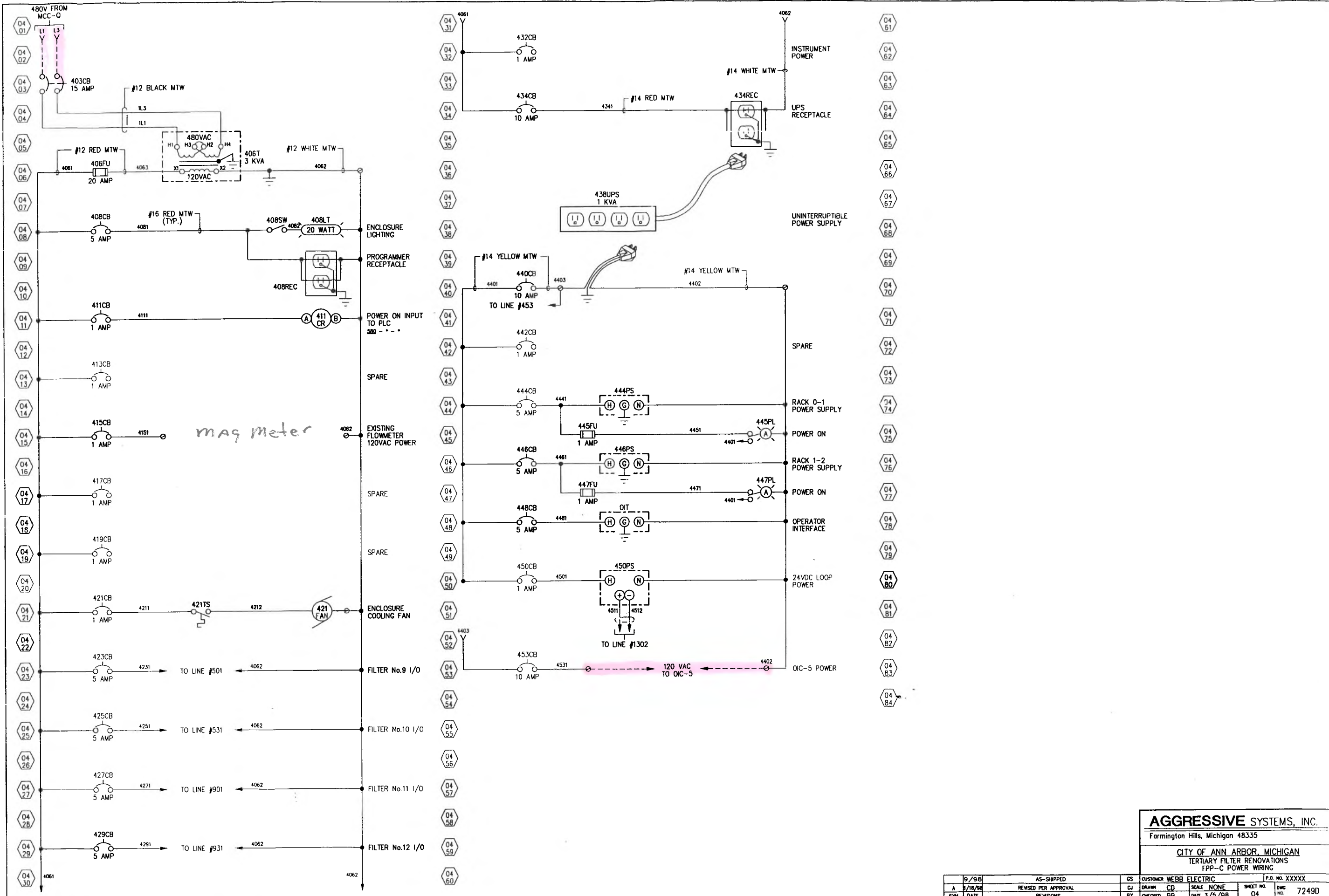
9/98	AS-SHIPED	CS	CUSTOMER	WEBB ELECTRIC	Pa. No.	38851030006
A	8/17/98	REVISED PER APPROVAL	CJ	DRAWN	CD	SCALE 5/16"
SYM	DATE	REVISIONS	BY	CHECKED	BB	DATE 3/24/98
						SHEET NO. 02
						DWG. NO. 7249D



BILL OF MATERIAL				
SYMBOL	QTY.	MANUFACTURER	PART NUMBER	DESCRIPTION
1	1	CUSTOM	CUSTOM	NEMA-4X ENCLOSURE, 54"H X 84"W X 16"D
2	2	CUSTOM	CUSTOM	SUBPLATE, 51"H X 38"W
3	1	CUTLER-HAM.	EHD2015	CIRCUIT BREAKER, 2P - 480V - 15A
4	1	CUTLER-HAM.	3TA100FD	LUG KIT, LINE SIDE CKT. BRKR.
5	1	ACME	T2-53012-S	ISOLATION TRANSFORMER, 480/120V, 2KVA
6	1	GOULD	20326R	FUSEBLOCK, 1P - 250V - 30A
7	1	GOULD	TR20R	FUSE, 20A, 120VAC
8	8	ALLEN BRADLEY	1492-CB1G050	CIRCUIT BREAKER, 1P, 120VAC, 5A
9	3	ALLEN BRADLEY	1492-CB1G100	CIRCUIT BREAKER, 1P, 120VAC, 10A
10	9	ALLEN BRADLEY	1492-CB1G010	CIRCUIT BREAKER, 1P, 120VAC, 1A
11	2	ALLEN BRADLEY	1771-A3B	MODULE CHASSIS, 12-SLOT
12	2	ALLEN BRADLEY	1771-P7	CHASSIS POWER SUPPLY
13	2	ALLEN BRADLEY	1771-CP1	POWER CABLE
14	1	ALLEN BRADLEY	1785-L40E	ETHERNET PROCESSOR, PLC 5/40
15	1	ALLEN BRADLEY	1771-ASB	REMOTE I/O ADAPTER MODULE
16	8	ALLEN BRADLEY	1771-IAD	DIGITAL INPUT MODULE, 16-POINT
17	8	ALLEN BRADLEY	1771-OW16	DIGITAL OUTPUT MODULE, 16-POINT
18	3	ALLEN BRADLEY	1771-IFE	ANALOG INPUT MODULE, 8-POINT
19	3	ALLEN BRADLEY	1771-OFE2	ANALOG OUTPUT MODULE, 4-POINT
20	1	ALLEN BRADLEY	2711-K9C1	COLOR OPERATOR INTERFACE TERMINAL
21	1	ALLEN BRADLEY	2711-NM12	MEMORY CARD, 1MB
22				
23				
24	1	A.P.C.	SU1000XL	UNINTERRUPTIBLE POWER SUPPLY, 120/120VAC, 1KVA
25	1	A.P.C.	AP9610	RELAY OUTPUT MODULE, UPS SMART SLOT
26	2	CUTLER-HAM.	E34TPB120	PILOT LIGHT, PRESS-TO-TEST, 120VAC
27	2	CUTLER-HAM.	E34V9	AMBER LENS
28	1	CUTLER-HAM.	GBK12	GROUND BAR, 12-CKT.
29	1	CONDOR	HB24-1.2	POWER SUPPLY, 24VDC, 1.2 AMP
30	66	GOULD	GSB-1	FUSE, 1 AMP, 120VAC
31	11	GOULD	GSB-1/10	FUSE, 1/10 AMP, 120VAC
32	1	SQUARE D	8501-KU13MIP14V20	CONTROL RELAY, 120VAC, 3PDT
33	1	CUSTOM CONN.	ST11-PC	RELAY SOCKET, 11-BLADE
34	1	GRAINGER	2V811	SLIMLINE FLUORESCENT LIGHT FIXTURE, 20W
35	1	GRAINGER	2V896	FLUORESCENT BULB, 20W, 120VAC
36	1	EDWARDS	502-A	ENCLOSED SWITCH, SPST-NC
37	2	P & S	5250-S	DUPLEX RECPTACLE, 15A, 120VAC
38	2	RACO	660	BACKBOX, 2 X 4
39	2	MULBURY	10002	COVERPLATE, DUPLEX RECPT.
40	1	HOFFMAN	A-TEMNO	COOLING THERMOSTAT, SPST
41	1	GRAINGER	4C549	COOLING FAN, 120VAC
42	2	GRAINGER	4C551	WIRE GUARD
43	205	SQUARE D	9080-M48SF	FUSIBLE TERMINAL W/ FUSE PULLER
44	10	SQUARE D	9080-MFEMBS	END BARRIER, LARGE
45	40	SQUARE D	9080-GR6	WRING TERMINAL, WHITE
46	130	SQUARE D	9080-GRR6	WRING TERMINAL, RED
47	80	SQUARE D	9080-GRY6	WRING TERMINAL, YELLOW
48	90	SQUARE D	9080-GRL6	WRING TERMINAL, BLUE
49	30	SQUARE D	9080-GRE6	WRING TERMINAL, GREY
50				
51	128	GOULD	GSB-2	FUSE, 2A-120V

AGGRESSIVE SYSTEMS, INC.
Farmington Hills, Michigan 48335
CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
TERTIARY FILTER RENOVATIONS
FPP-C CONTROL PANNEL TERM. ROTATION & B.O.M.

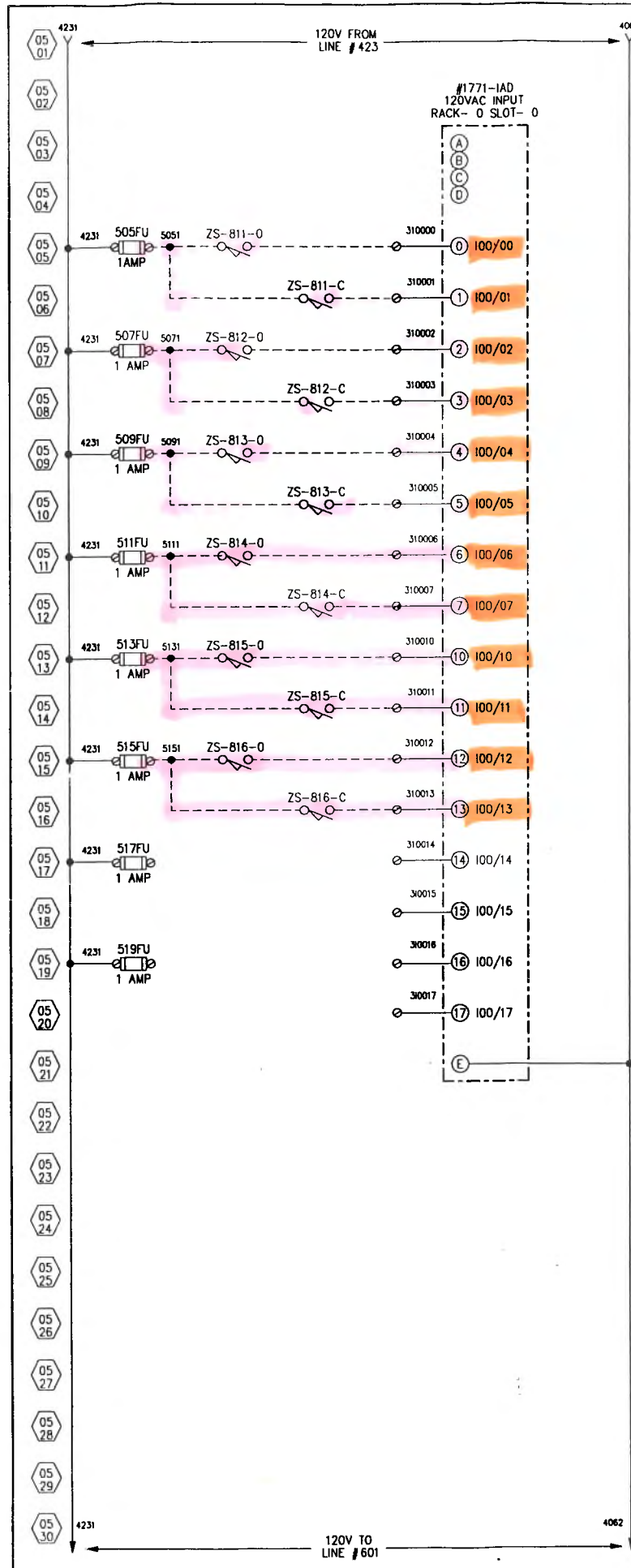
9/98	AS-SHIPED	CS	CUSTOMER WEBB ELECTRIC	P.O. NO. 38851030006
A	8/18/98	CJ	REVISOR PER APPROVAL	DWG. NO. 7249D
SYM	DATE	BY	CHECKED BB	DATE 3/24/98



AGGRESSIVE SYSTEMS, INC.
 Farmington Hills, Michigan 48335

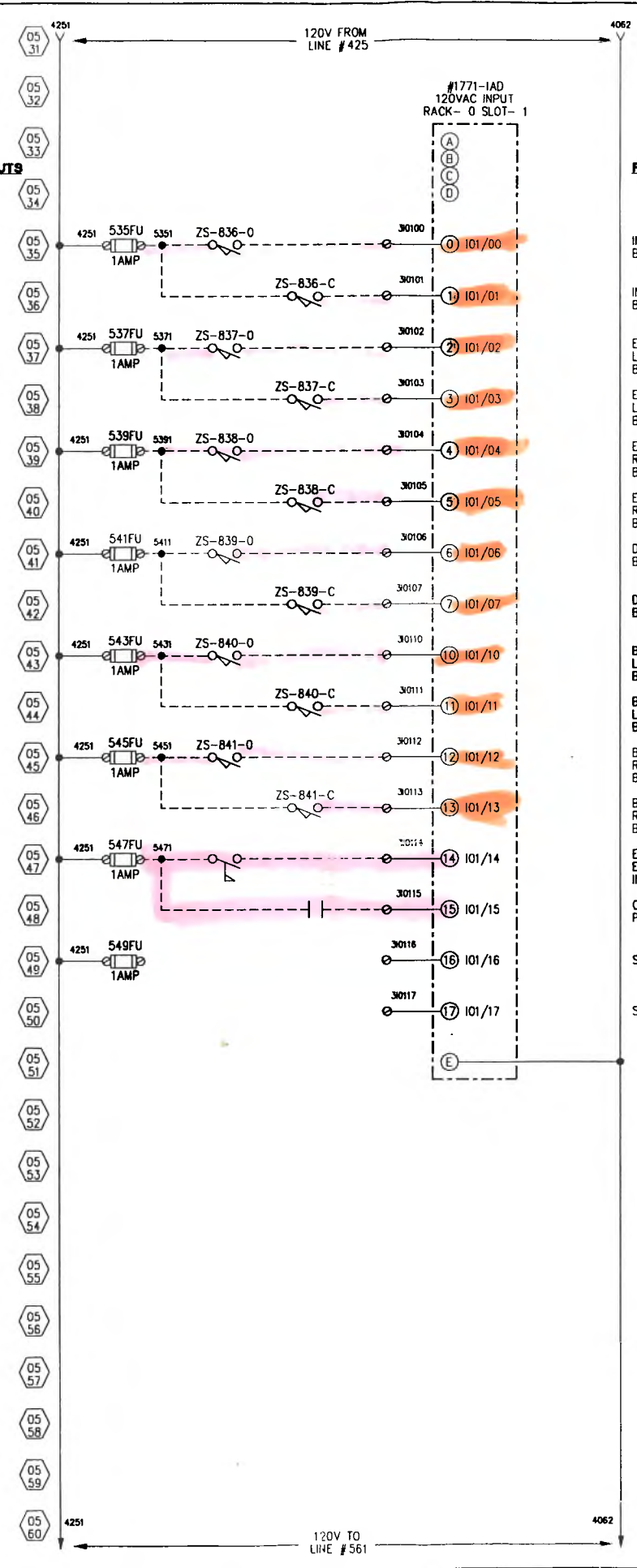
CITY OF ANN ARBOR, MICHIGAN
 TERTIARY FILTER RENOVATIONS
 FPP-C POWER WIRING

9/98	AS-SHIPPED	CS	CUSTOMER	WEBB ELECTRIC	P.O. NO. XXXXX
A	5/18/98	REVISOR	CJ	DRAWN	CD
SYM	DATE	REVISIONS	BY	CHECKED	BB
				SCALE	NONE
				DATE	3/5/98
				SHEET NO.	04
				DWG NO.	7249D



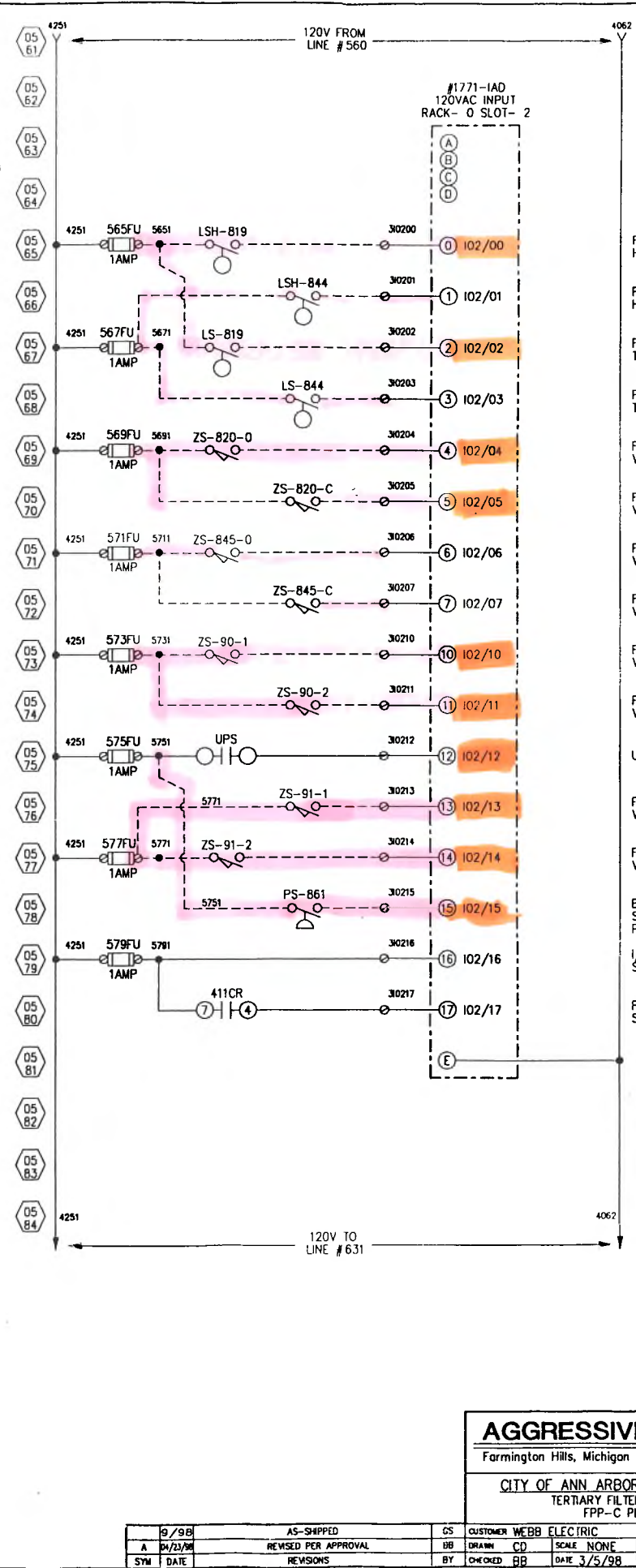
FILTER No.9 INPUTS

- INFLUENT VALVE B-5-9 OPENED
- INFLUENT VALVE B-5-9 CLOSED
- EFFLUENT VALVE LEFT CELL B-5-53 OPENED
- EFFLUENT VALVE LEFT CELL B-5-53 CLOSED
- EFFLUENT VALVE RIGHT CELL B-5-54 OPENED
- EFFLUENT VALVE RIGHT CELL B-5-54 CLOSED
- DRAIN VALVE B-10-9 OPENED
- DRAIN VALVE B-10-9 CLOSED
- BACKWASH VALVE LEFT CELL B-5-29 OPENED
- BACKWASH VALVE LEFT CELL B-5-29 CLOSED
- BACKWASH VALVE RIGHT CELL B-5-30 OPENED
- BACKWASH VALVE RIGHT CELL B-5-30 CLOSED
- SPARE
- SPARE
- SPARE
- SPARE



FILTER No.10 INPUTS

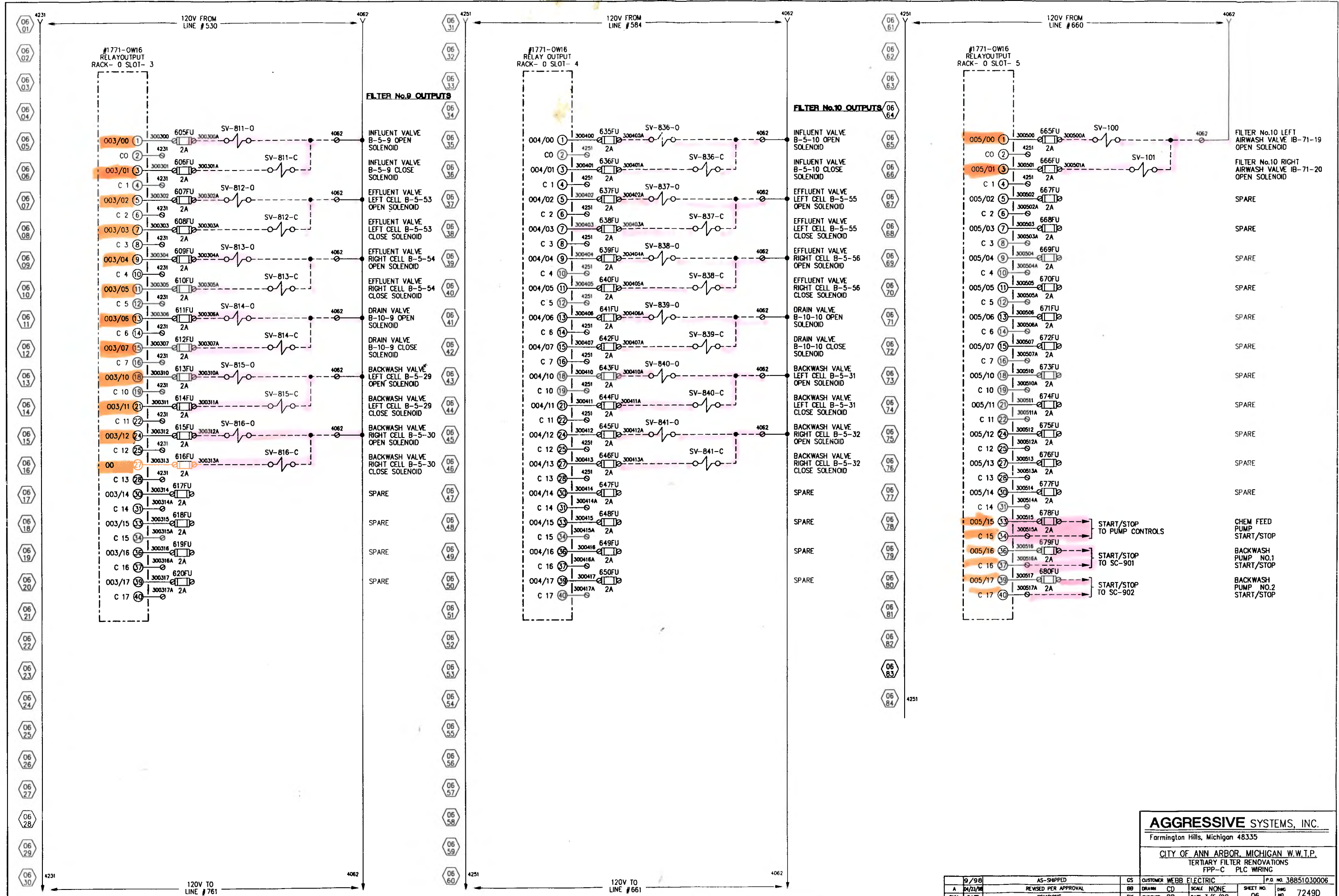
- INFLUENT VALVE B-5-10 OPENED
- INFLUENT VALVE B-5-10 CLOSED
- EFFLUENT VALVE LEFT CELL B-5-55 OPENED
- EFFLUENT VALVE LEFT CELL B-5-55 CLOSED
- EFFLUENT VALVE RIGHT CELL B-5-56 OPENED
- EFFLUENT VALVE RIGHT CELL B-5-56 CLOSED
- DRAIN VALVE B-10-10 OPENED
- DRAIN VALVE B-10-10 CLOSED
- BACKWASH VALVE LEFT CELL B-5-31 OPENED
- BACKWASH VALVE LEFT CELL B-5-31 CLOSED
- BACKWASH VALVE RIGHT CELL B-5-32 OPENED
- BACKWASH VALVE RIGHT CELL B-5-32 CLOSED
- EMERGENCY EYEWASH IN USE
- CHEM FEED PUMP RUNNING
- SPARE
- SPARE



- FILTER No.9 HIGH LEVEL
- FILTER No.10 HIGH LEVEL
- FILTER No.9 TROUGH SWITCH
- FILTER No.10 TROUGH SWITCH
- FILTER No.9 MODULATING VALVE B-7-9 OPENED
- FILTER No.9 MODULATING VALVE B-7-9 CLOSED
- FILTER No.10 MODULATING VALVE B-7-10 OPENED
- FILTER No.10 MODULATING VALVE B-7-10 CLOSED
- FILTER No.9 LEFT AIRWASH VALVE IB-71-17 OPENED
- FILTER No.9 LEFT AIRWASH VALVE IB-71-17 CLOSED
- UPS FAIL
- FILTER No.9 RIGHT AIRWASH VALVE IB-71-18 OPENED
- FILTER No.9 RIGHT AIRWASH VALVE IB-71-2 CLOSED
- BACKWASH SUPPLY PRESSURE
- I/O POWER STATUS
- PANEL POWER STATUS

AGGRESSIVE SYSTEMS, INC.
 Farmington Hills, Michigan 48335
 CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
 TERTIARY FILTER RENOVATIONS
 FPP-C PLC WIRING

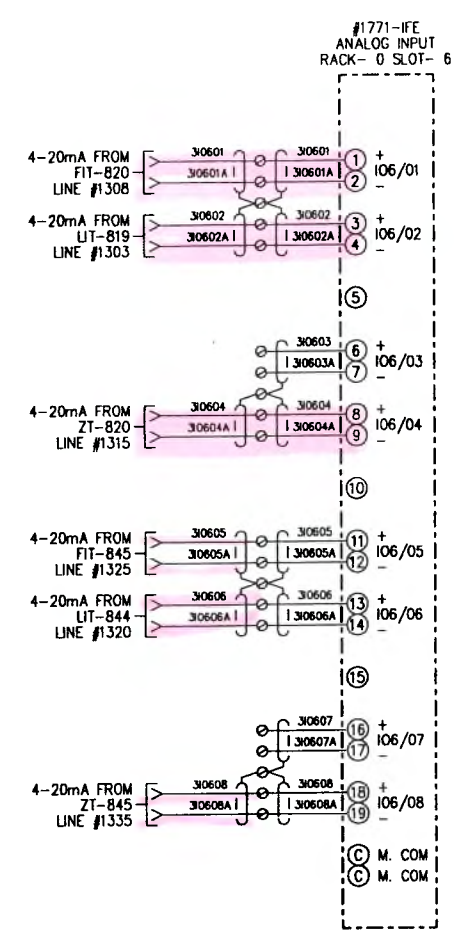
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A	04/23/98	REUSED PER APPROVAL	BB	DRAWN	CD	SCALE NONE
SYM	DATE	REVISIONS	BY	CHECKED	BB	DATE 3/5/98
						SHEET NO. 05
						DWG NO. 7249D



AGGRESSIVE SYSTEMS, INC.
 Farmington Hills, Michigan 48335
 CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
 TERTIARY FILTER RENOVATIONS
 FPP-C PLC WIRING

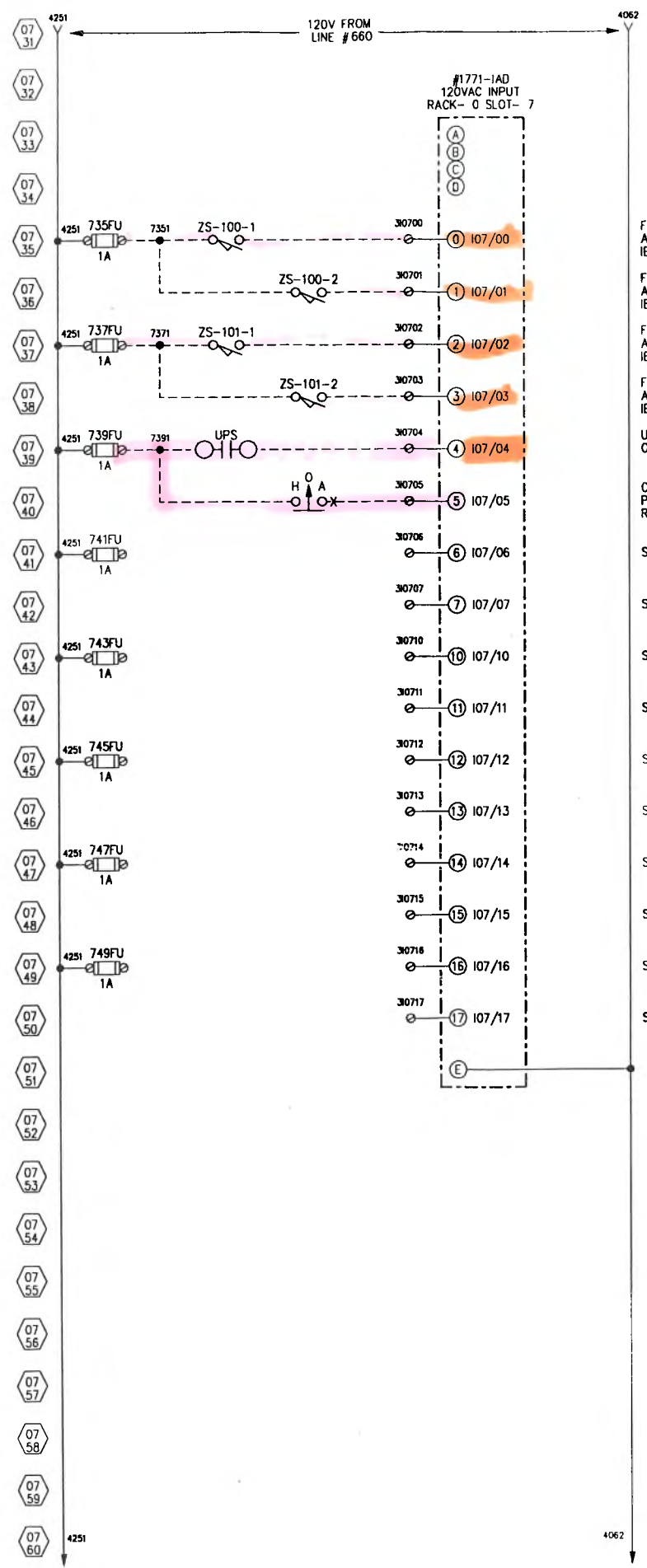
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A 10/23/98	REVISED PER APPROVAL	DB	DRAWN CD	SHEET NO. 06
SYM	DATE	REVISIONS	BY	DATE 3/5/98
			CHECKED BB	DWG NO. 7249D

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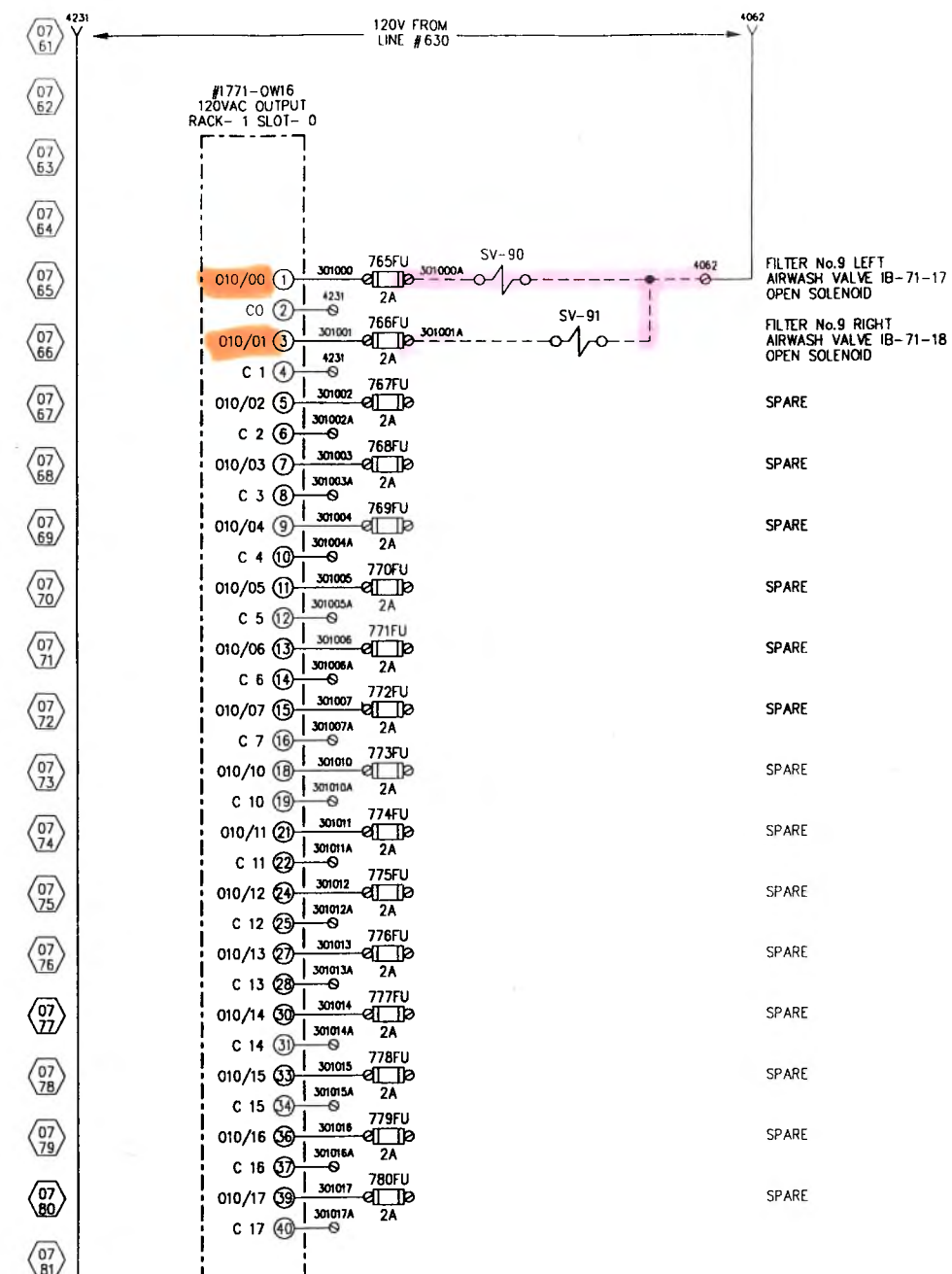


FILTER No.9
EFFLUENT FLOW
LOSS OF HEAD
SPARE
EFFLUENT VALVE B-7-9 POSITION

FILTER No.10
EFFLUENT FLOW
LOSS OF HEAD
SPARE
EFFLUENT VALVE B-7-10 POSITION



west
FILTER No.10 LEFT AIRWASH VALVE IB-71-19 OPENED
FILTER No.10 LEFT AIRWASH VALVE IB-71-19 CLOSED
FILTER No.10 RIGHT AIRWASH VALVE IB-71-20 OPENED
FILTER No.10 RIGHT AIRWASH VALVE IB-71-20 CLOSED
U.P.S. FAIL OIC NO.5
CHEM FEED PUMP IN REMOTE
SPARE
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SPARE

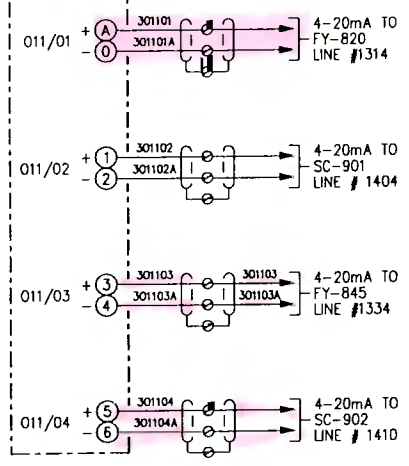


AGGRESSIVE SYSTEMS, INC.
Farmington Hills, Michigan 48335
CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
TERTIARY FILTER RENOVATIONS
FPP-C PLC WIRING

9/98	AS-SHIPED	CS	CUSTOMER	WEBB ELECTRIC	P.O. NO.	38851030006
A	04/22/98	REMOVED PER APPROVAL	BB	DRAWN	CD	SCALE NONE
SYN	DATE	REVISIONS	BY	CHECKED	BB	DATE 3/5/98
						SHEET NO 07
						DWG NO. 7249D

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#1771-OFE2
ANALOG OUTPUT
RACK- 1 SLOT- 1



FILTER No.9
FLOW CONTROL
VALVE B-7-9
POSITION CONTROL

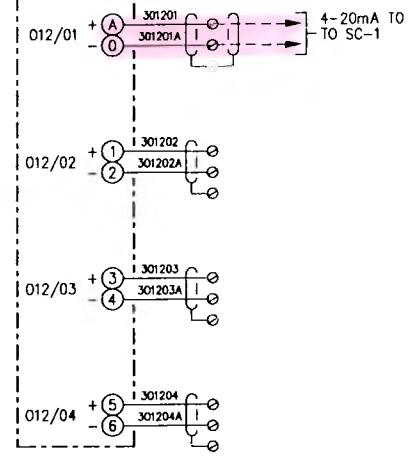
BACKWASH PUMP
NO.1
SPEED CONTROL

FILTER No.10
FLOW CONTROL
VALVE B-7-10
POSITION CONTROL

BACKWASH PUMP
NO. 2
SPEED CONTROL

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#1771-OFE2
ANALOG OUTPUT
RACK- 1 SLOT- 2



CHEM FEED PUMP
SPEED CONTROL

SPARE

SPARE

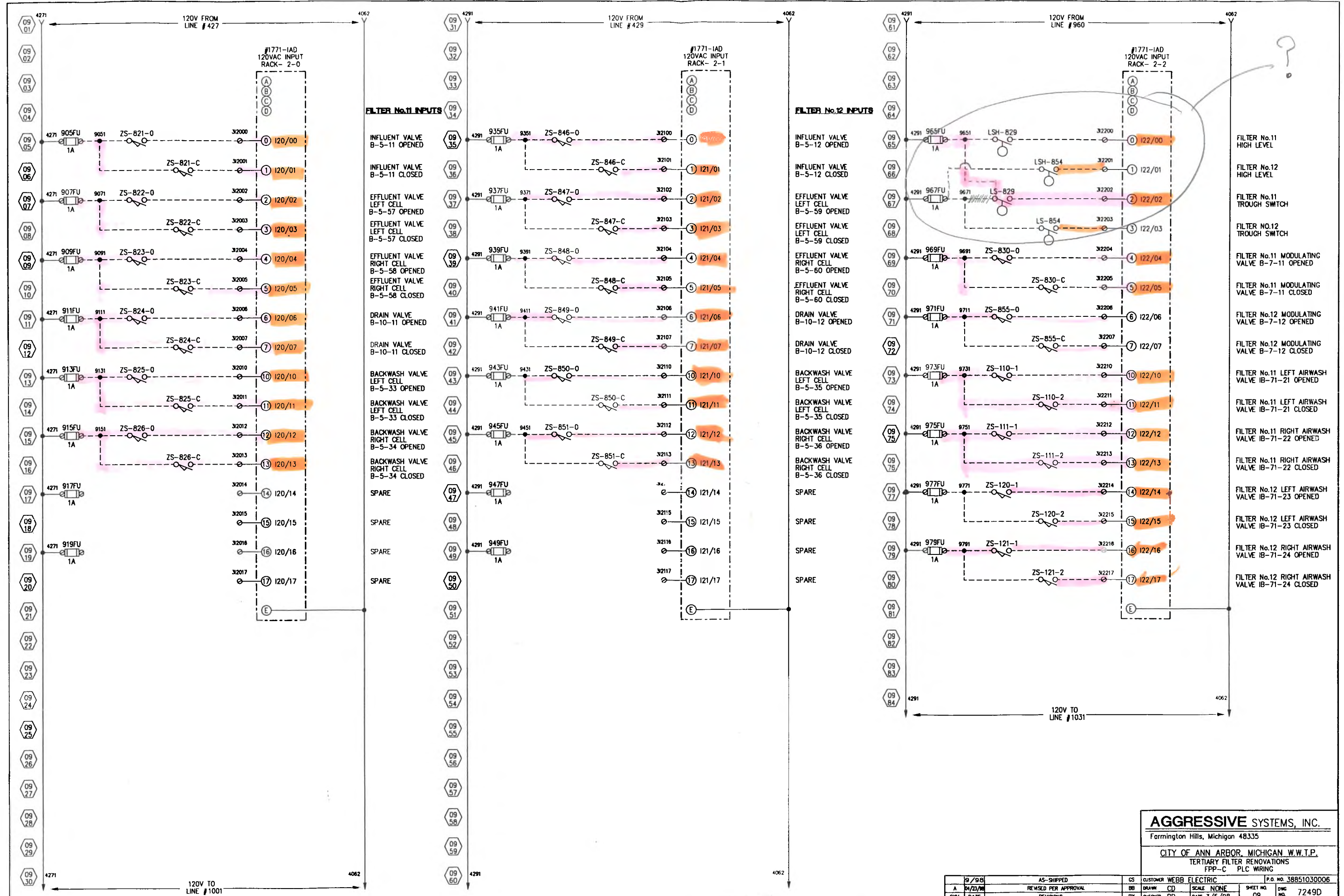
SPARE

08 61
08 62
08 63
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08 84

RACK- 1
SLOT- 3
SPARE SPACE

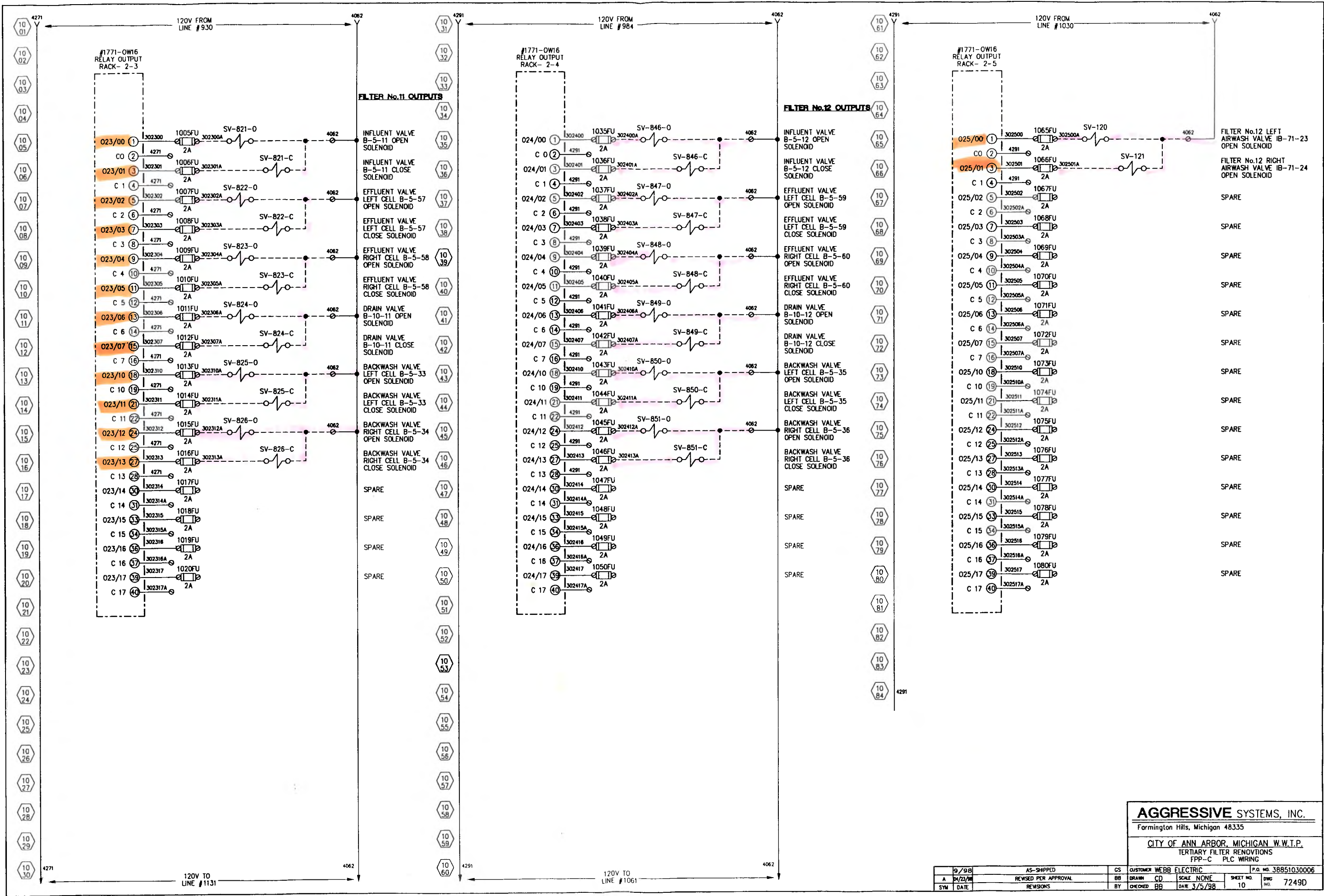
AGGRESSIVE SYSTEMS, INC.
Farmington Hills, Michigan 48335
CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
TERTIARY FILTER RENOVATIONS
FPP-C PLC WIRING

9/98	AS-SHIPPED	CS	CUSTOMER	WEBB ELECTRIC	P.O. NO.	38851030006
A	6/17/98	REVISOR	CJ	CD	SCALE	NONE
SYN	DATE	REVISIONS	BY	CHECKED	BB	DATE 3/5/98
						SHEET NO. 08
						DWG. NO. 7249D



AGGRESSIVE SYSTEMS, INC.
 Farmington Hills, Michigan 48335
 CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
 TERTIARY FILTER RENOVATIONS
 FPP-C PLC WIRING

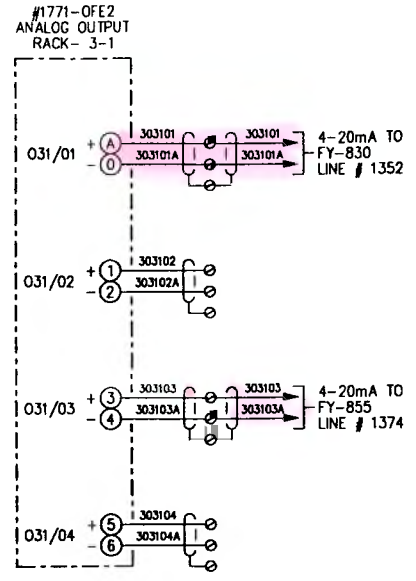
09/98	AS-SHIPED	CS	CUSTOMER	WEBB ELECTRIC	P.O. NO. 38851030006
A 04/23/98	REVISED PER APPROVAL	BB	DRAWN	CD	SCALE NONE
SYM	DATE	REVISED	BY	CHECKED	BB
					DATE 3/5/98
					SHEET NO. 09
					DWG NO. 7249D



AGGRESSIVE SYSTEMS, INC.
 Farmington Hills, Michigan 48335
 CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
 TERTIARY FILTER RENOVATIONS
 FPP-C PLC WIRING

9/98	AS-SHIPPED	CS	CUSTOMER	WEBB ELECTRIC	P.O. NO.	38851030006
A 04/23/98	REVISED PER APPROVAL	BB	DRAWN	CD	SCALE	NONE
SYM	DATE	BY	CHECKED	BB	DATE	3/5/98
					SHEET NO.	10
					DWG NO.	7249D

RACK-3
SLOT-3
SPARE SPACE

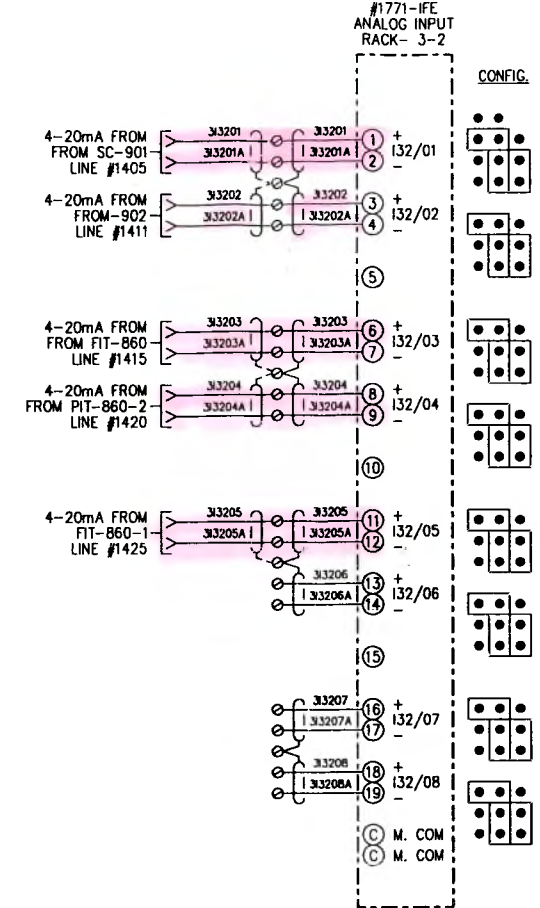


FILTER No.11
FLOW CONTROL
VALVE B-7-11
POSITION CONTROL

SPARE

FILTER No.12
FLOW CONTROL
VALVE B-7-12
POSITION CONTROL

SPARE



BACKWASH PUMP NO.1
SPEED INDICATION

BACKWASH PUMP NO.2
SPEED INDICATION

BACKWASH SUPPLY
FLOW

BACKWASH SUPPLY
PRESSURE

BACKWASH SUPPLY
PRESSURE

SPARE

SPARE

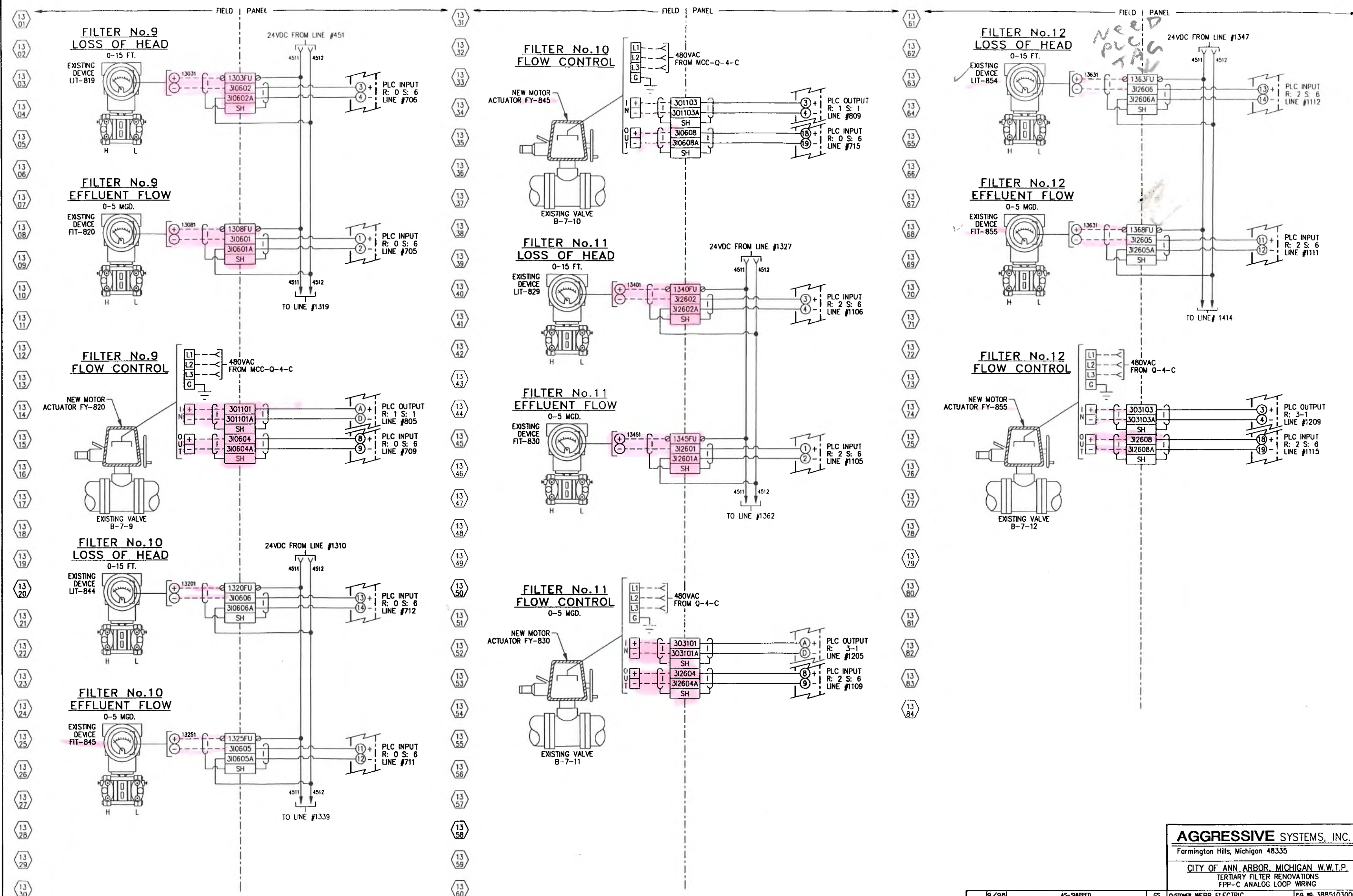
SPARE

M. COM

M. COM

AGGRESSIVE SYSTEMS, INC.
Farmington Hills, Michigan 48335
CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
TERTIARY FILTER RENOVATIONS
FPP-C PLC WIRING

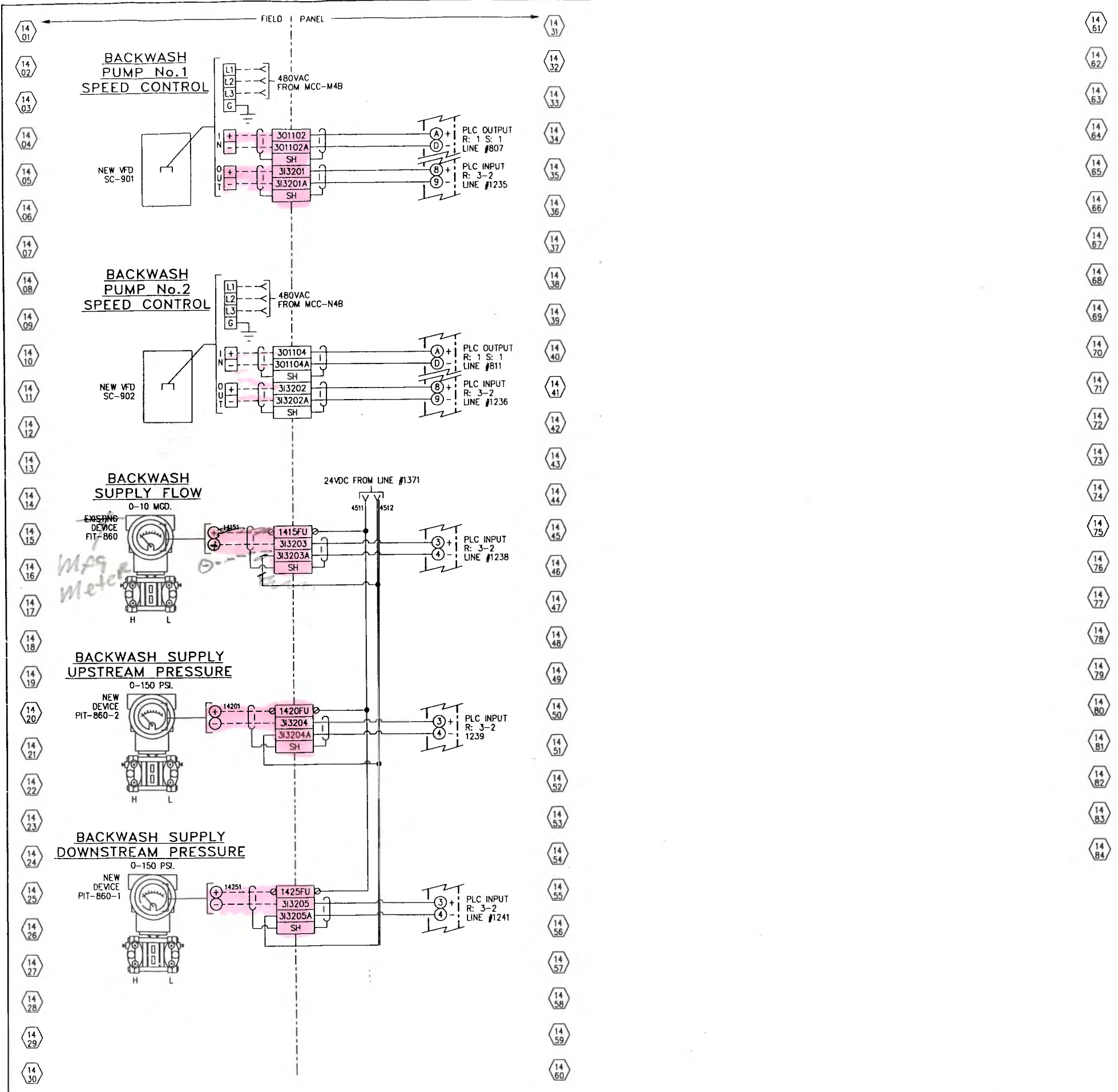
9/98	AS-SHIPED	CS	CUSTOMER WEBB ELECTRIC	P.O. NO. 3881030006
A	04/23/98	REUSED PER APPROVAL	BB	SCALE NONE
SYM	DATE	REVISIONS	BY	CHECKED BB DATE 3/5/98
				SHEET NO. 12 DWG NO. 7249D



AGGRESSIVE SYSTEMS, INC.
 Farmington Hills, Michigan 48335
 CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
 TERTIARY FILTER RENOVATIONS
 FPP-C ANALOG LOOP WIRING

9/98	AS-SHIPPED	CS	CUSTOMER WEBB ELECTRIC	P.O. NO. 38851030006
A 6/17/98	REVISED PER APPROVAL	CJ	DRAWN CD SCALE NONE	SHEET NO. 13
SYM	DATE	REVISIONS	BY	CHECKED BB DATE 3/5/98

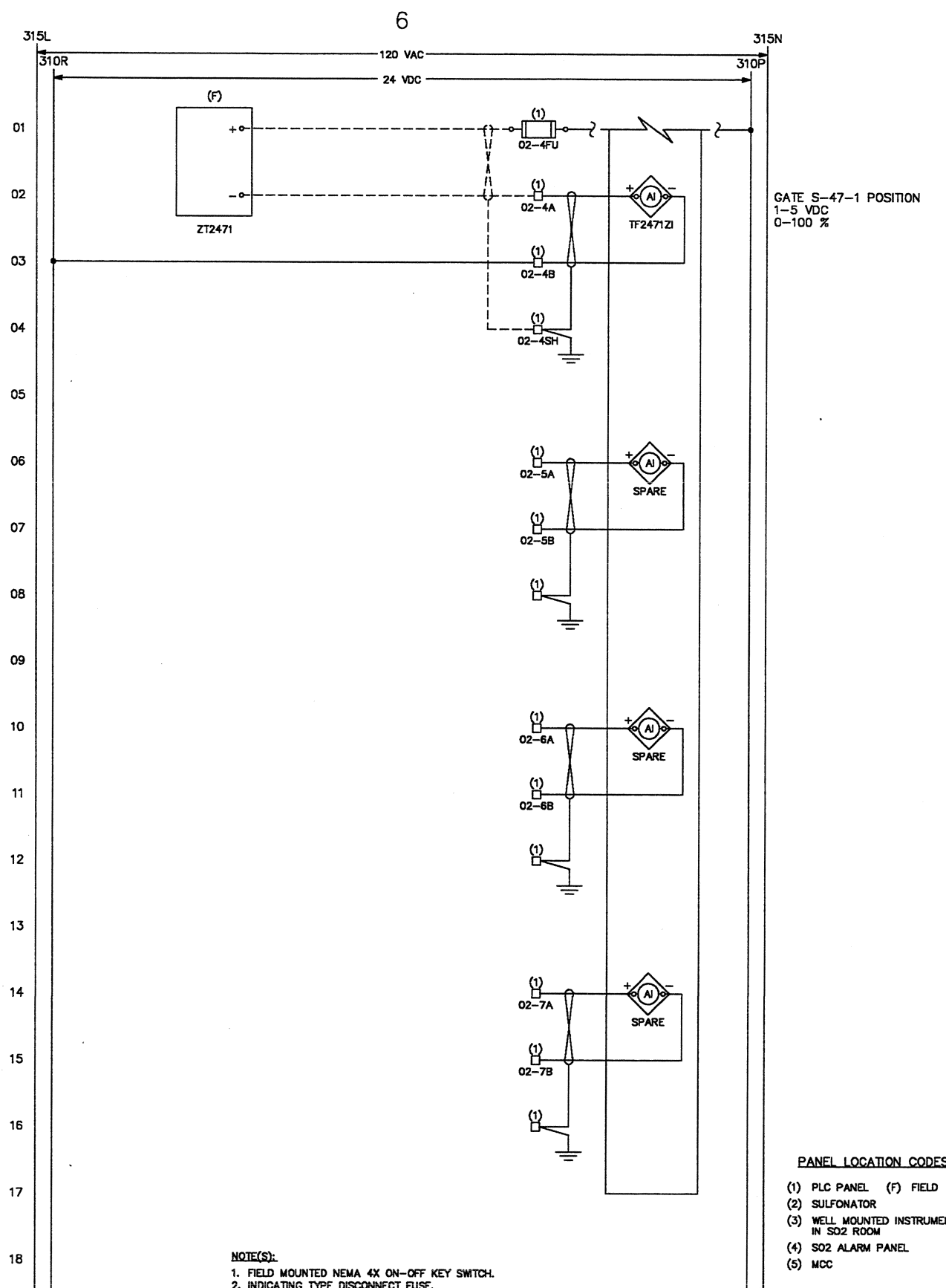
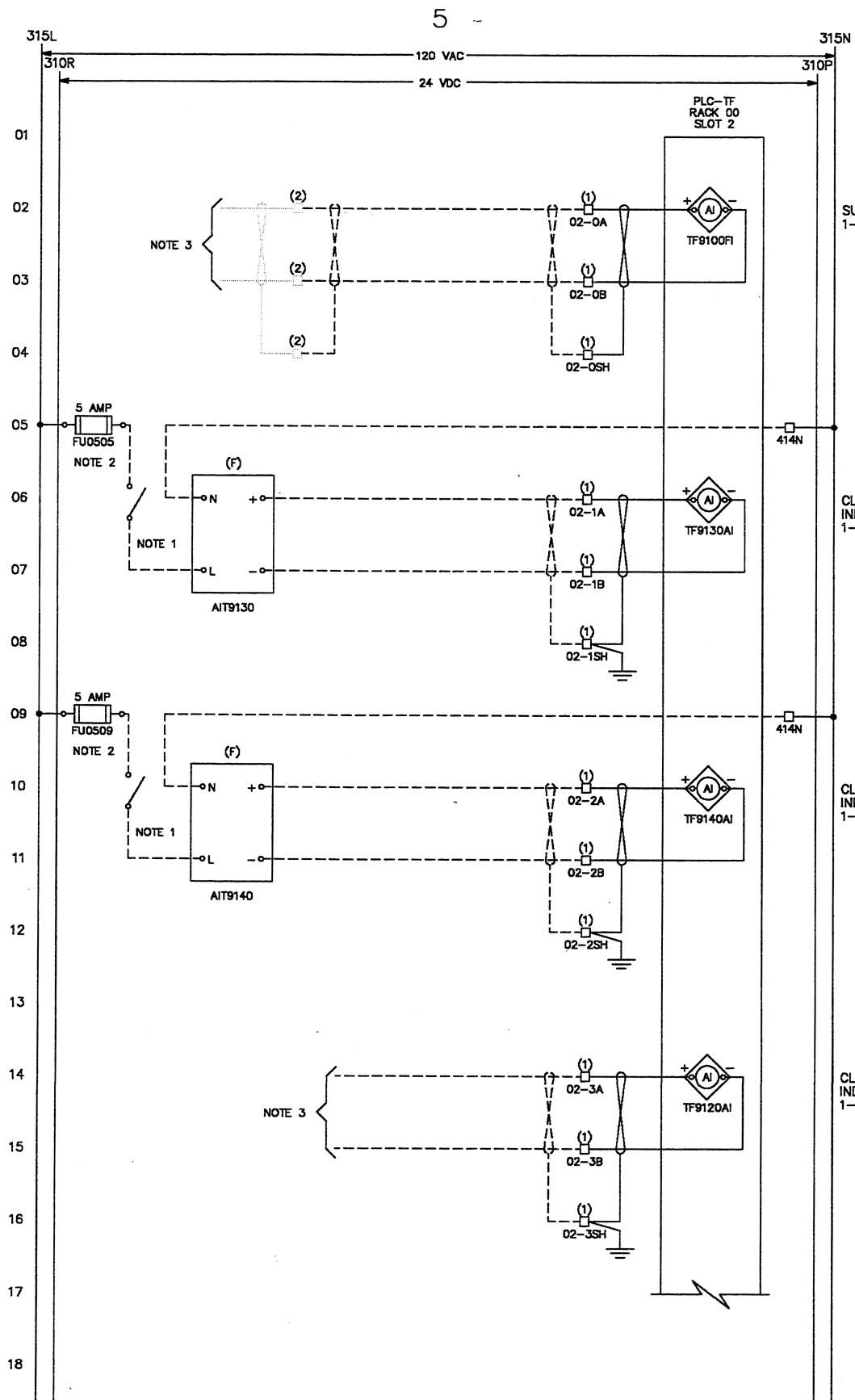
DWG NO. 72490



AGGRESSIVE SYSTEMS, INC.
 Farmington Hills, Michigan 48335

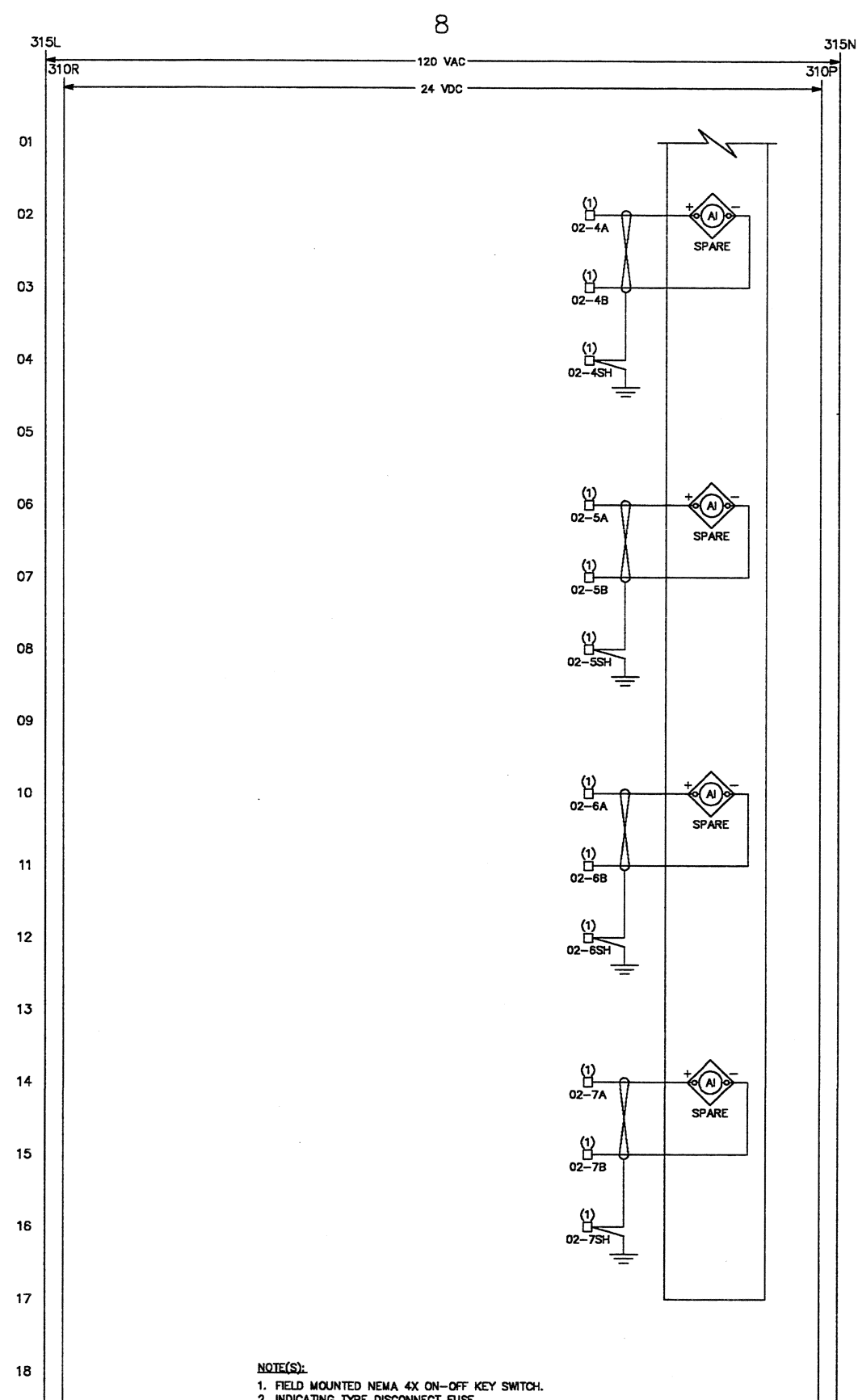
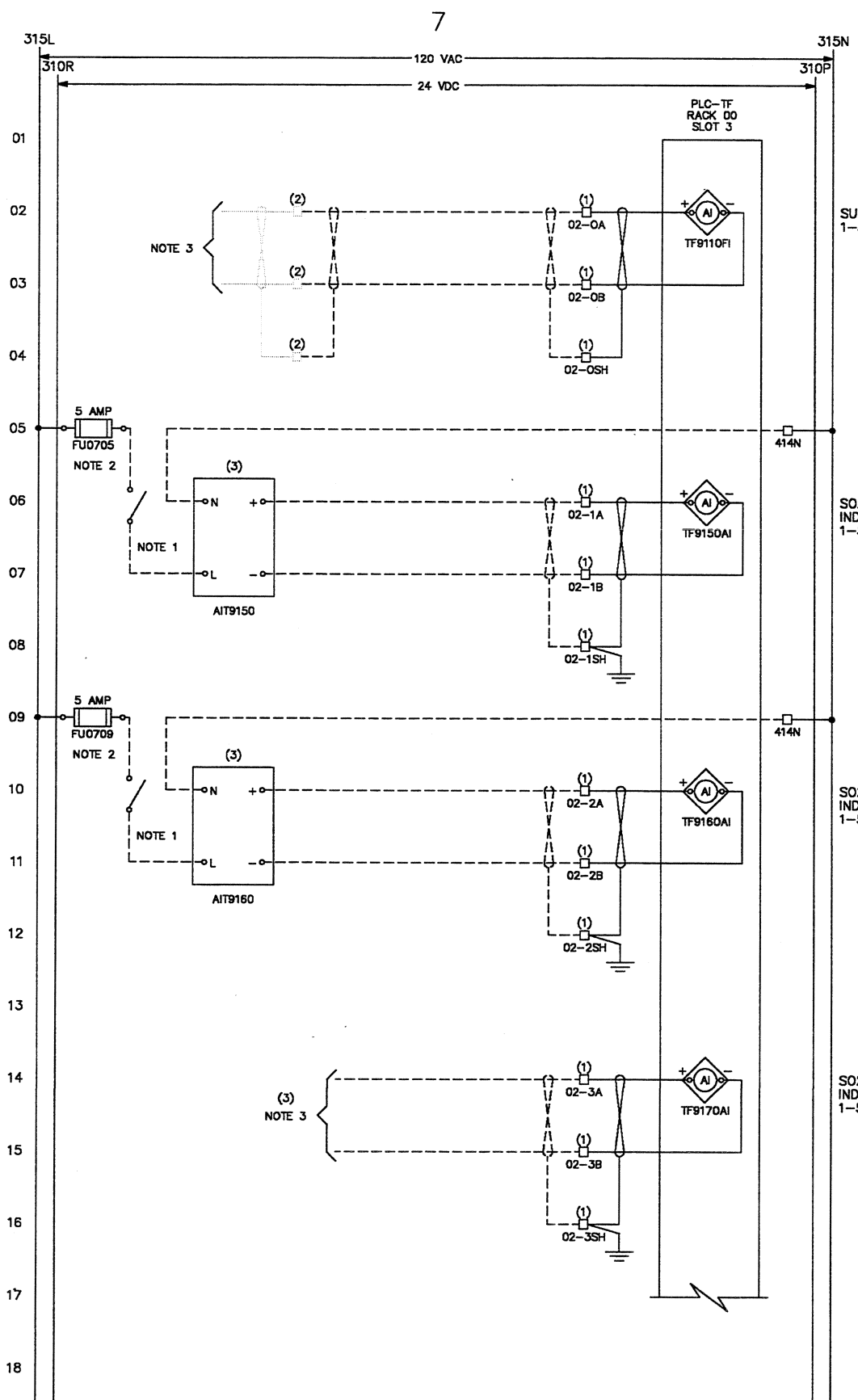
CITY OF ANN ARBOR, MICHIGAN W.W.T.P.
 TERTIARY FILTER RENOVATIONS
 FPP-C ANALOG LOOP WIRING

9/98	AS-SHIPED	CS	CUSTOMER WEBB ELECTRIC	P.O. NO. 38851030006
A 01/23/98	REVISED PER APPROVAL	BB	DRAWN CD SCALE NONE	SHEET NO 14 DWG NO. 7249D
SYM DATE	REVISIONS	BY	CHECKED BB DATE 3/18/98	



PANEL LOCATION CODES

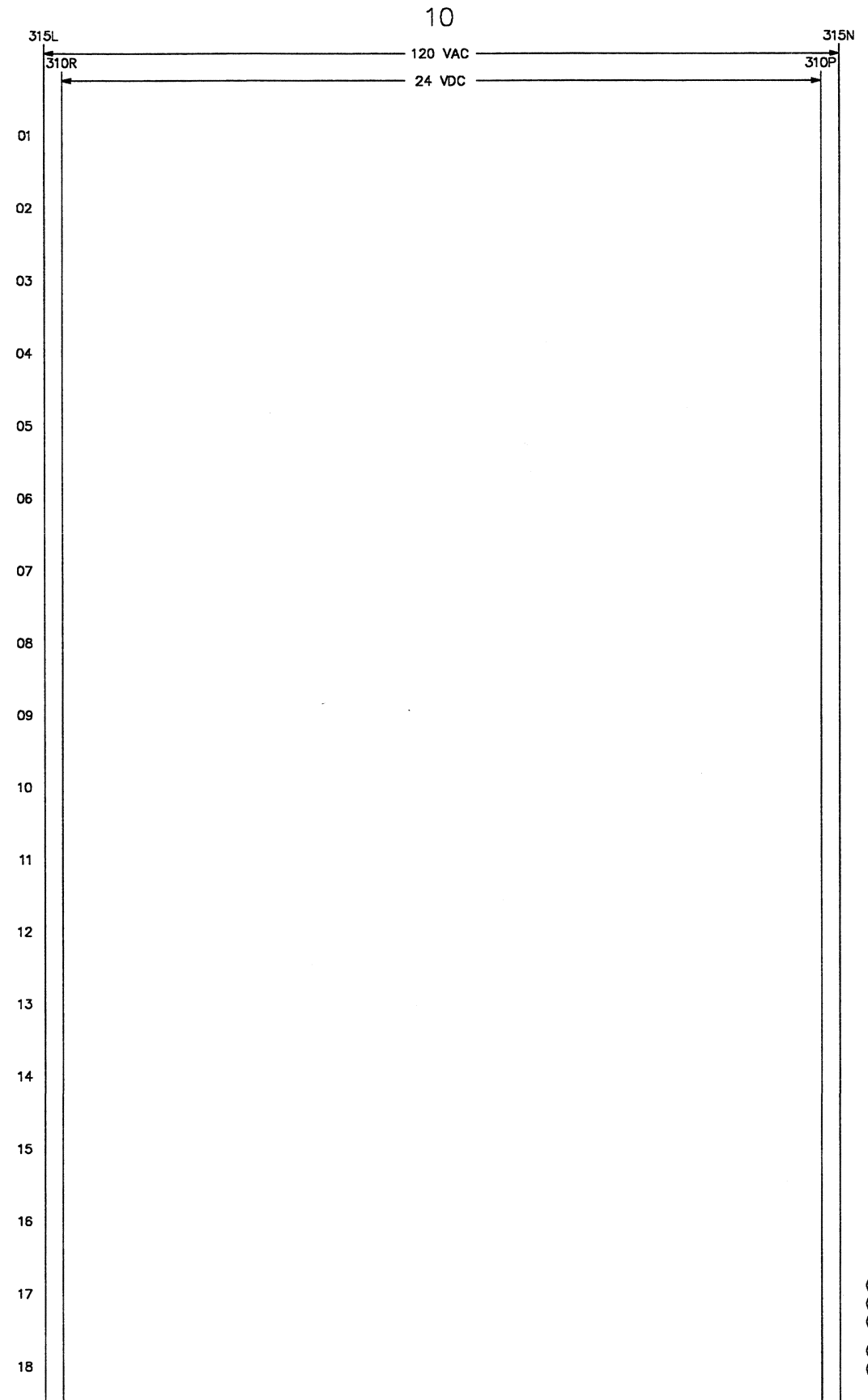
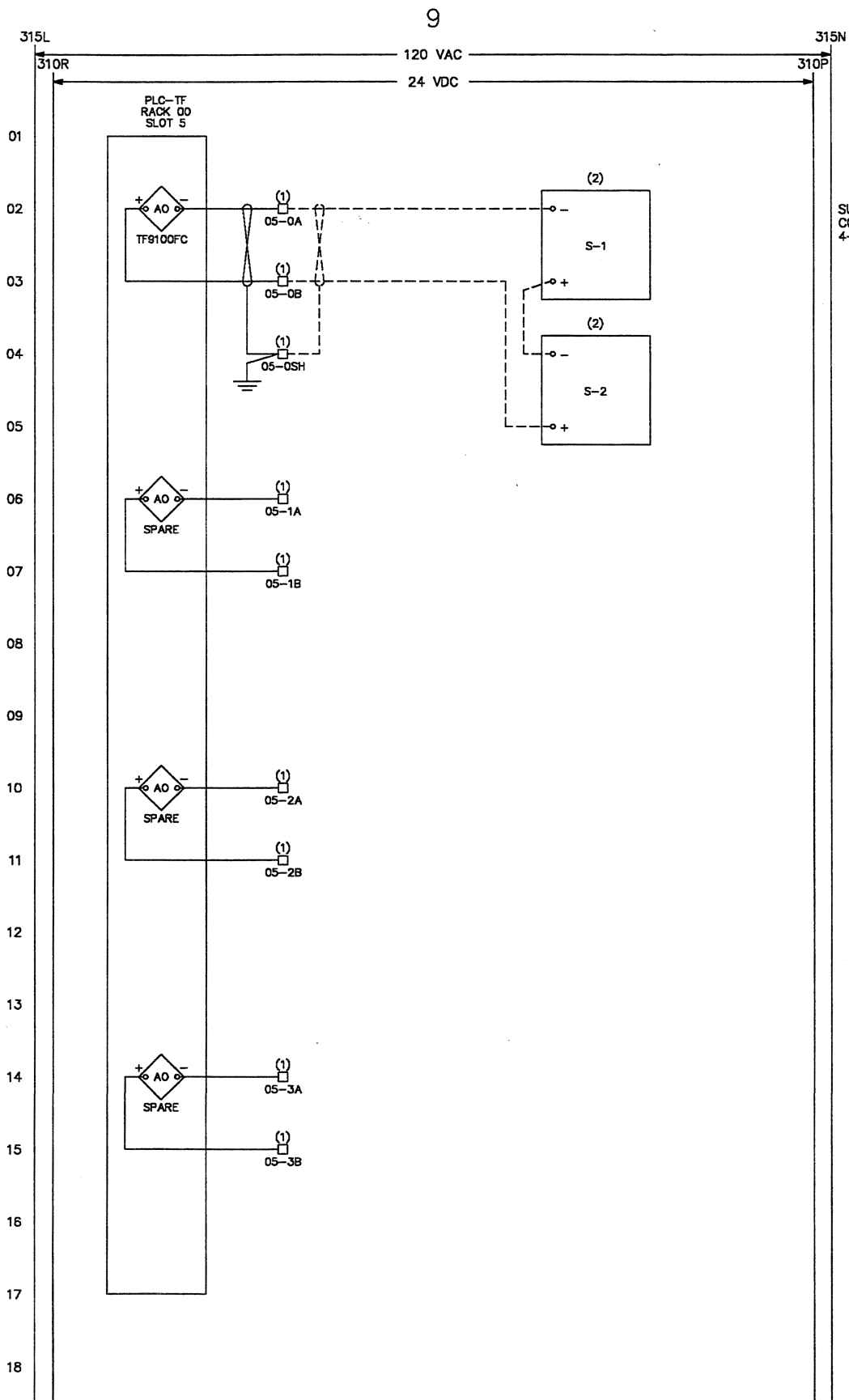
- (1) PLC PANEL (F) FIELD
- (2) SULFONATOR
- (3) WELL MOUNTED INSTRUMENT IN SO2 ROOM
- (4) SO2 ALARM PANEL
- (5) MCC



NOTE(S):
 1. FIELD MOUNTED NEMA 4X ON-OFF KEY SWITCH.
 2. INDICATING TYPE DISCONNECT FUSE.
 3. CONNECT TO EXISTING SIGNAL WIRING.

PANEL LOCATION CODES
 (1) PLC PANEL (F) FIELD
 (2) SULFONATOR
 (3) WELL MOUNTED INSTRUMENT IN SO2 ROOM
 (4) SO2 ALARM PANEL
 (5) MCC

REVISED	VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.		NO. DATE BY DESCRIPTION	EMA	DES. C.S.B. 11-1-95	CLIENT NO. 5229	JOB NO. 030	ANN ARBOR, MICHIGAN UTILITIES DEPARTMENT	PROJECT PROCESS AND INFORMATION CONTROL SYSTEM WASTEWATER TREATMENT	TITLE PLC-TF ANALOG INPUTS	DWG. NO. WWT- E-137
	DRN. T.J.K. 11-6-95	SCALE			CADD NO.						
	CKD. B.L.F. 1-31-97	DATE			NONE						



PANEL LOCATION CODES

- (1) PLC PANEL (F) FIELD
- (2) SULFONATOR
- (3) WELL MOUNTED INSTRUMENT IN SO2 ROOM
- (4) SO2 ALARM PANEL
- (5) MCC

10/12/97 REV.0

VERIFY SCALES
BAR IS ONE INCH ON
ORIGINAL DRAWING
IF NOT ONE INCH ON
THIS SHEET, ADJUST
SCALES ACCORDINGLY.

NO.	DATE	BY	DESCRIPTION



DES.	C.S.B.	DATE	11-1-96
DRN.	T.J.K.	DATE	11-6-95
CKD.	B.L.F.	DATE	1-31-97

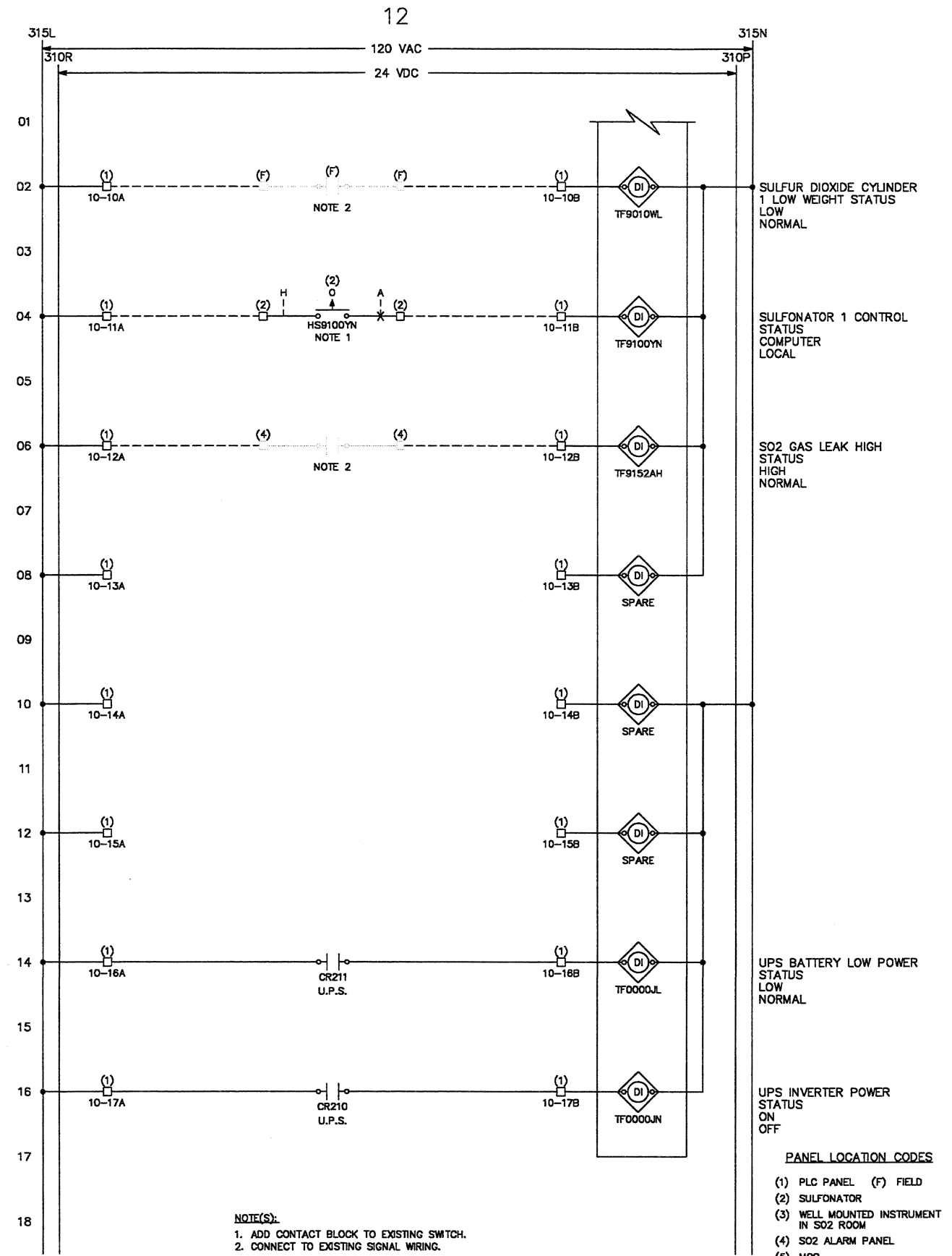
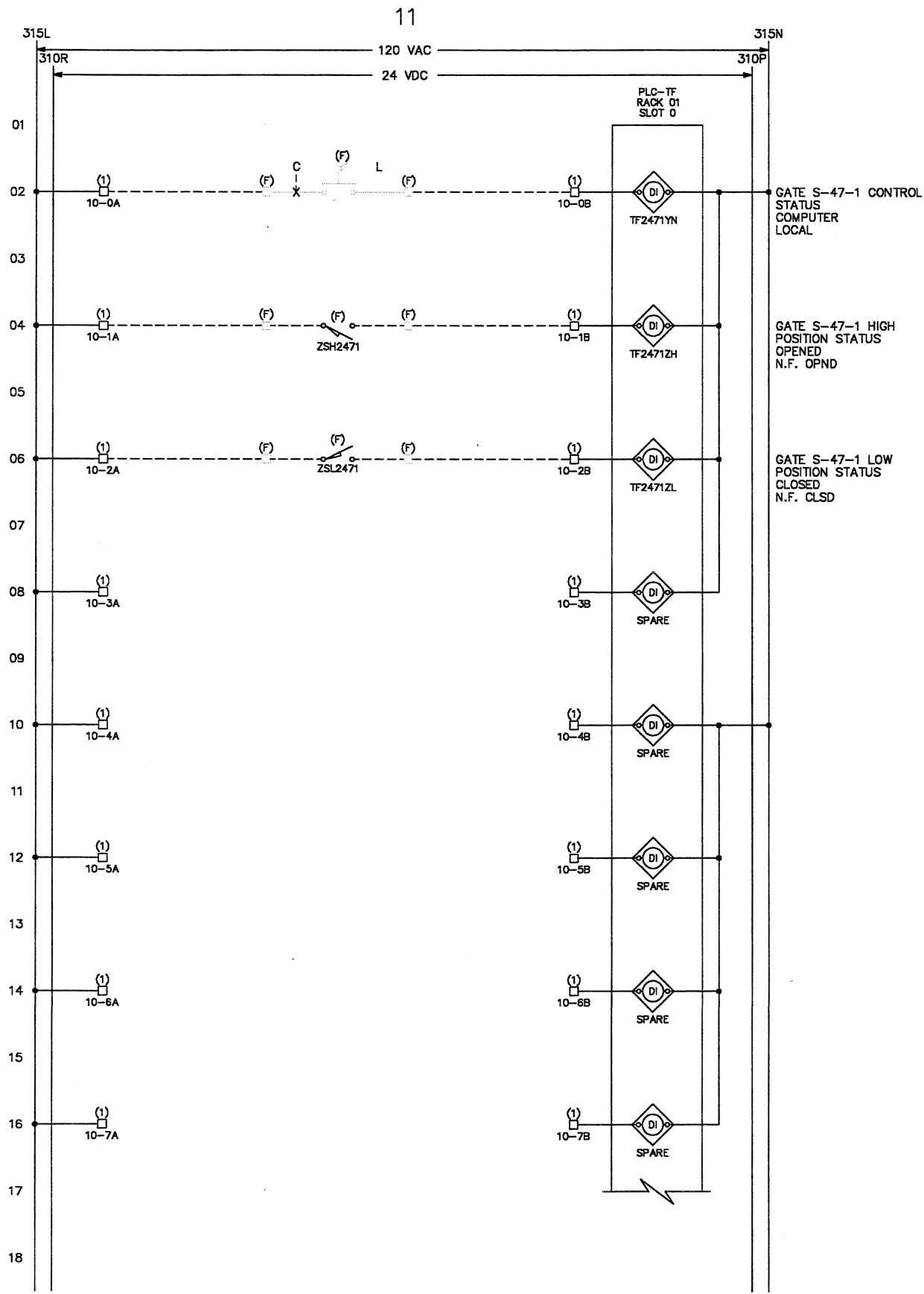
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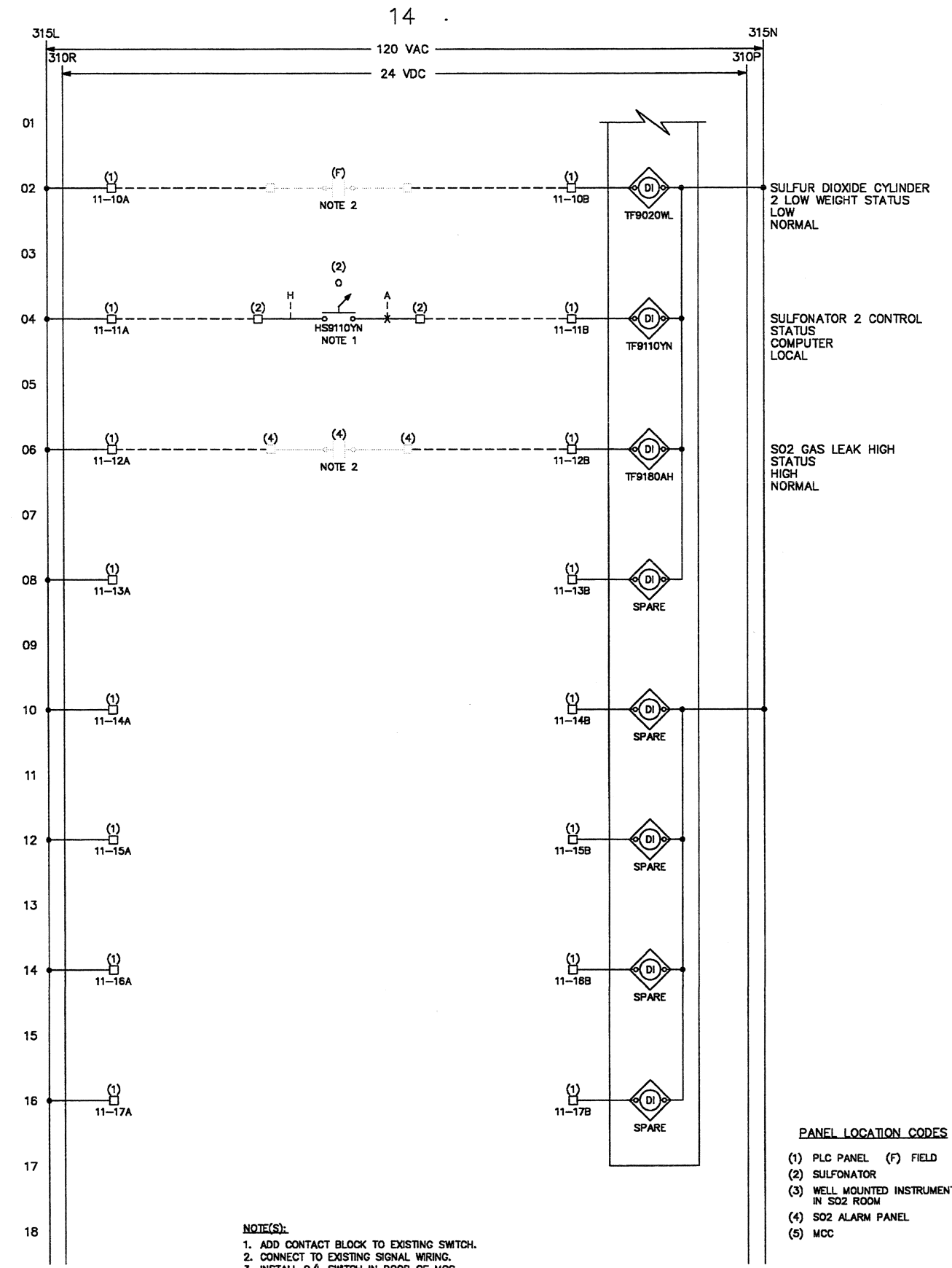
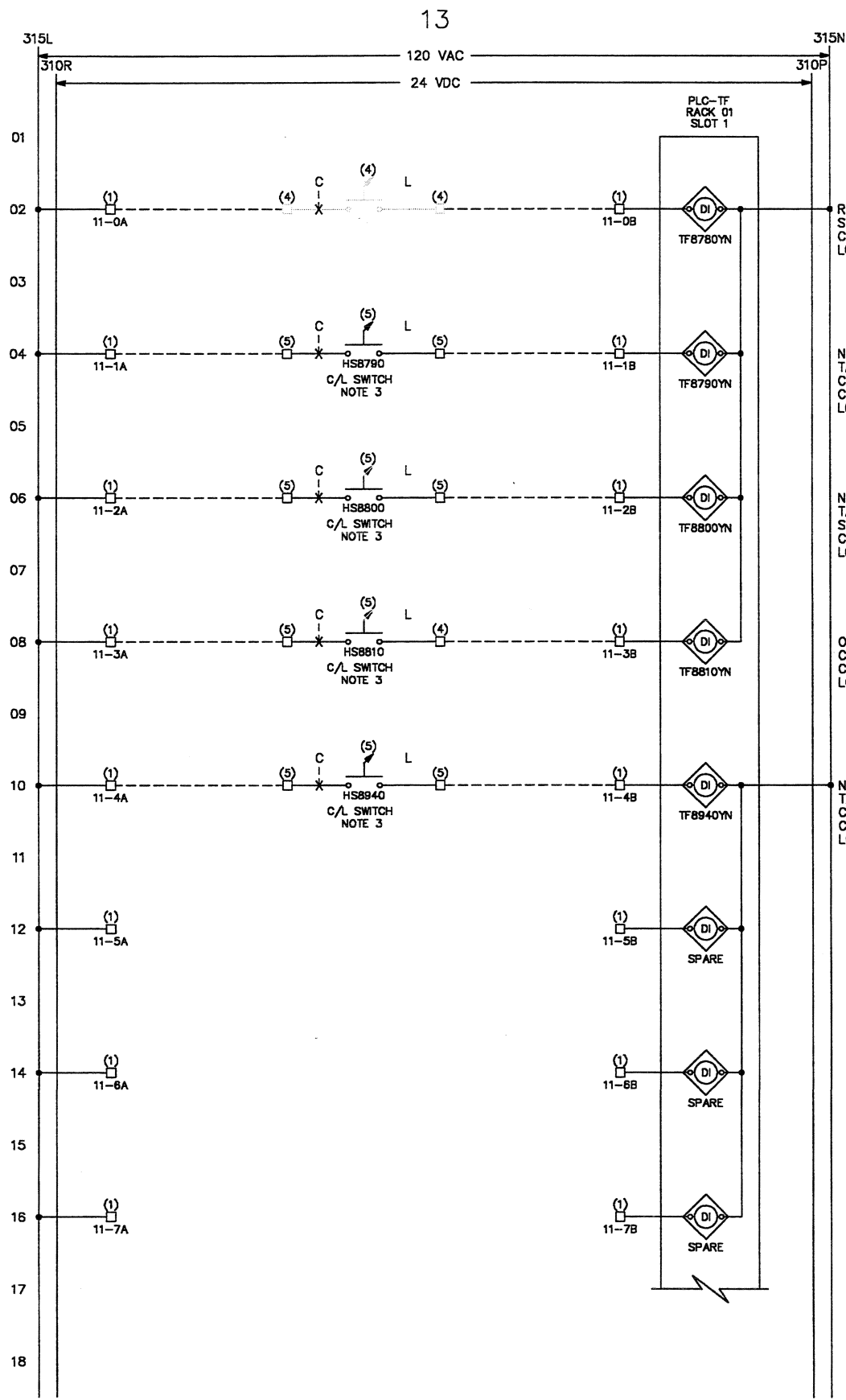
ANN ARBOR, MICHIGAN
UTILITIES DEPARTMENT

PROJECT
PROCESS AND INFORMATION
CONTROL SYSTEM
WASTEWATER TREATMENT

TITLE
PLC-TF
ANALOG OUTPUTS

DWG. NO.
WWT-
E-138





NOTE(S):
 1. ADD CONTACT BLOCK TO EXISTING SWITCH.
 2. CONNECT TO EXISTING SIGNAL WIRING.
 3. INSTALL C/L SWITCH IN DOOR OF MCC.

PANEL LOCATION CODES
 (1) PLC PANEL (F) FIELD
 (2) SULFONATOR
 (3) WELL MOUNTED INSTRUMENT IN SO2 ROOM
 (4) SO2 ALARM PANEL
 (5) MCC

11/27/97 REV 0

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.			
NO.	DATE	BY	DESCRIPTION



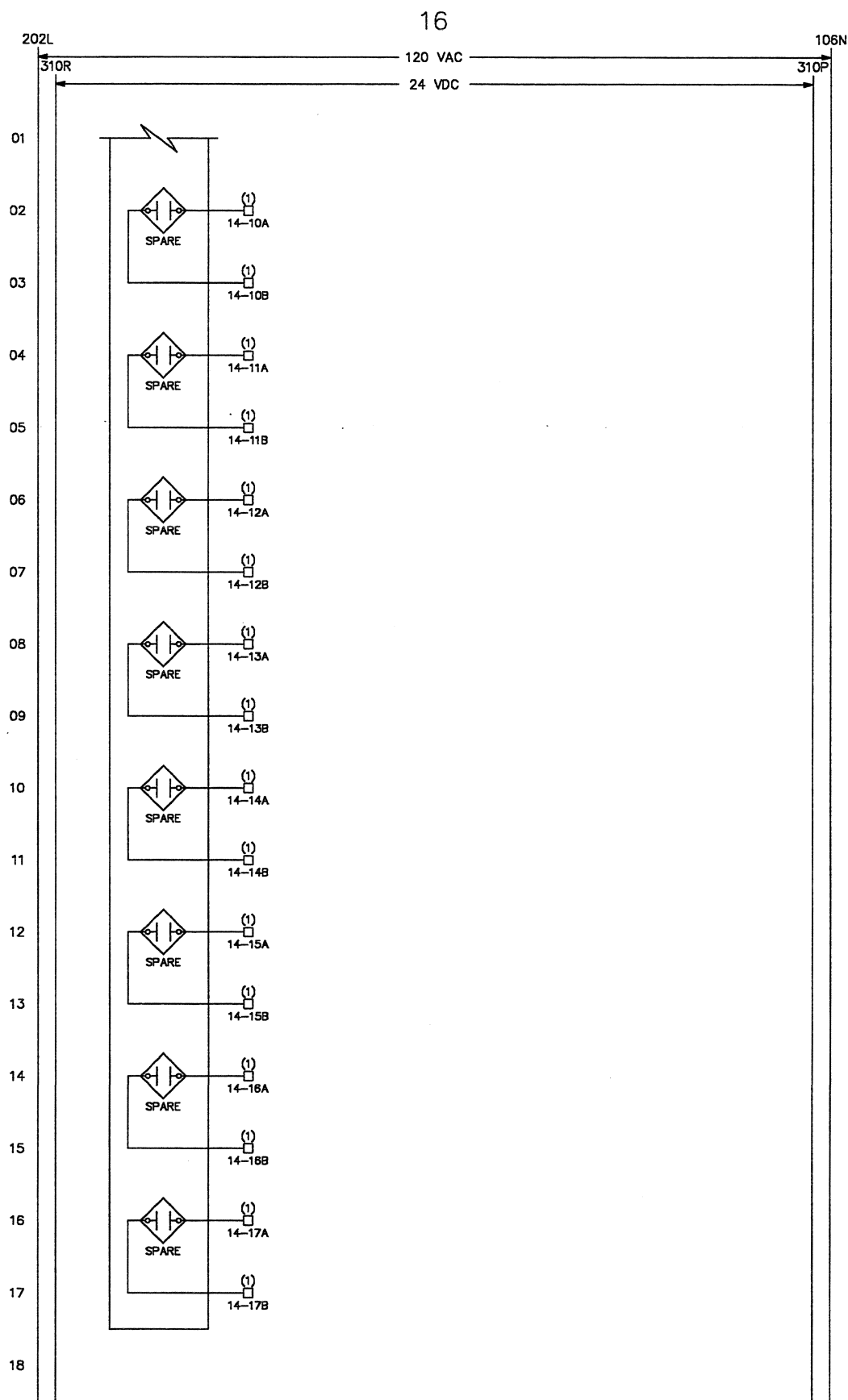
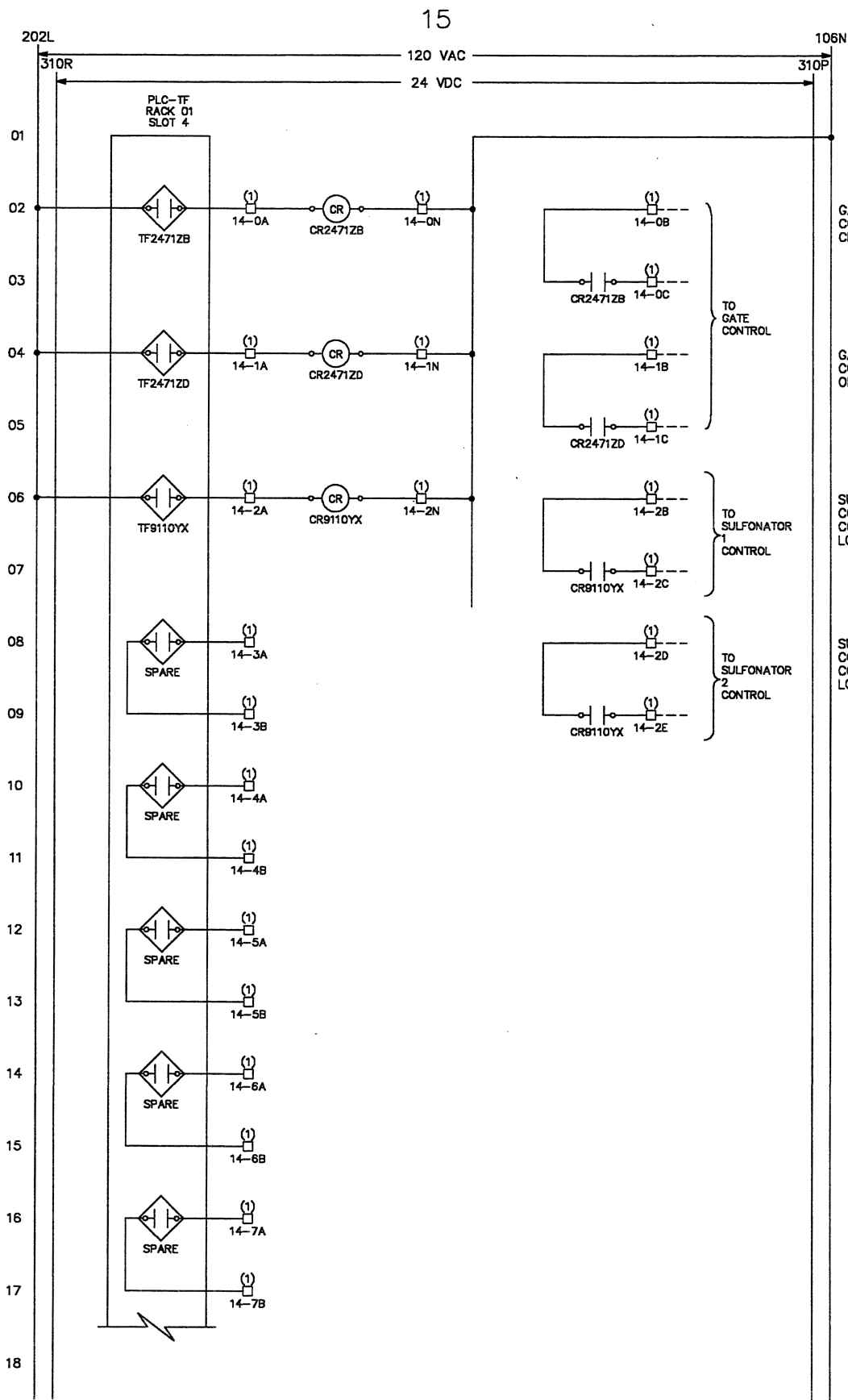
DES. C.S.B.	DATE 11-1-96	CLIENT NO. 5229	JOB NO. 030
DRW. T.J.K.	DATE 11-6-95	SCALE	CADD NO.
CKD. B.L.F.	DATE 1-31-97	NONE	TFDIO11

ANN ARBOR, MICHIGAN
 UTILITIES DEPARTMENT

PROJECT
 PROCESS AND INFORMATION
 CONTROL SYSTEM
 WASTEWATER TREATMENT

TITLE
 PLC-TF
 DIGITAL INPUTS

DWG. NO.
 WWT-
 E-140



- PANEL LOCATION CODES**
- (1) PLC PANEL (F) FIELD
 - (2) SULFONATOR
 - (3) WELL MOUNTED INSTRUMENT IN SO2 ROOM
 - (4) SO2 ALARM PANEL
 - (5) MCC

REVISED

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

NO.	DATE	BY	DESCRIPTION



DES. C.S.B.	DATE 11-1-96	CLIENT NO. 5229	JOB NO. 030
DRN. T.J.K.	DATE 11-6-95	SCALE	CADD NO.
CKD. B.L.F.	DATE 1-31-97	NONE	TFDO014

ANN ARBOR, MICHIGAN
 UTILITIES DEPARTMENT

PROJECT
 PROCESS AND INFORMATION
 CONTROL SYSTEM
 WASTEWATER TREATMENT

TITLE
 PLC-TF
 DIGITAL OUTPUTS

DWG. NO.
 WWT-
 E-141

TERTIARY FILTER PLC REPLACEMENT PROJECT


Mandatory Pre-Proposal Meeting

February 10, 2022 - 11:00 am

Sign In Sheet

~~1/1~~

1/1

Name	Company	Phone / Email
KEVEN KNOTT	PERCEPTIVE CONTROLS	269-685-3040 269-665-6655 KKNOTT@PERCEPTIVECONTROLS.COM
CRAIG LANGRISH	PERCEPTIVE CONTROLS	248-760-1792 CLANGRISH@PERCEPTIVECONTROLS.COM
SOHAIB AYUB	SOAP Engineering	512-354-605 Sohaib.AYUB@SOAPENG.COM
ERIC HINE	Commerce Controls	734-757-2593 ehine@commercecontrols.com
STEVE SHENWOOD	CCI	248-310-8366 SSHENWOOD@COMMERCECONTROLS.COM
JAMES FOSTER	WINDMULLER	616-437-9387 JFOSTER@WINDMULLER.US
Math Burns	MCE-T	313-516-2990 mburns@mce-tech.com mburns@mce-tech.com rmaectle@mce-tech.com
Alex Baloch	Decima LLC	260-243-0591 alex.baloch@decimainc.com
KEVIN SANDERSON	A ² WWTP	734-794-6450 ksanders@AZgov.org
Kyle Weinman	AZ WWTP	
	A ² WWTP	

RAJESH

A² WWTP

CHRIS ENGLETT

A² WWTP