

NRRWA TREATMENT TRAIN 1

<u>SHEET</u>	<u>DESCRIPTION</u>
200	COVER SHEET
201	120 VAC CONTROL PANEL
202	PLC LAYOUT AND COMMUNICATION
203	DIGITAL INPUTS 1
204	DIGITAL INPUTS 2
205	DIGITAL INPUTS 3
206	RELAY OUTPUTS 1
207	RELAY OUTPUTS 2
208	ANALOG INPUTS 1
209	ANALOG INPUTS 2
210	ANALOG OUTPUTS 1
211	ANALOG OUTPUTS 2
212	ANALOG OUTPUTS 3
213	PANEL LAYOUT
214	CABINET LAYOUT
215	LEGEND



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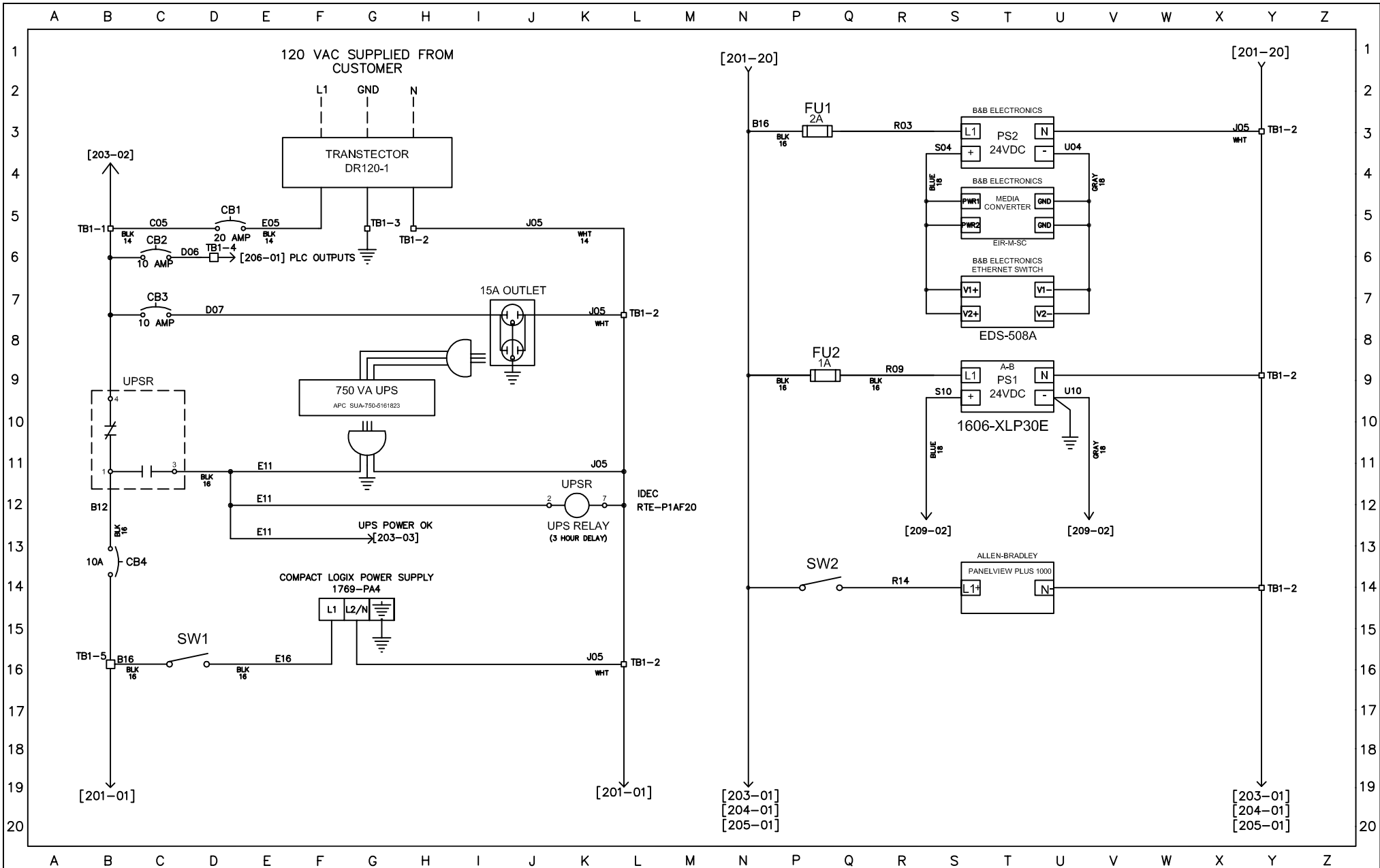
J3362 NRRWA

DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO.: 200	NEXT SHEET: 201
PROJECT ENGR: JRC			

TITLE: COVER SHEET
WTP - TREATMENT TRAIN 1

REVISION #: 0

REVISION DATE:



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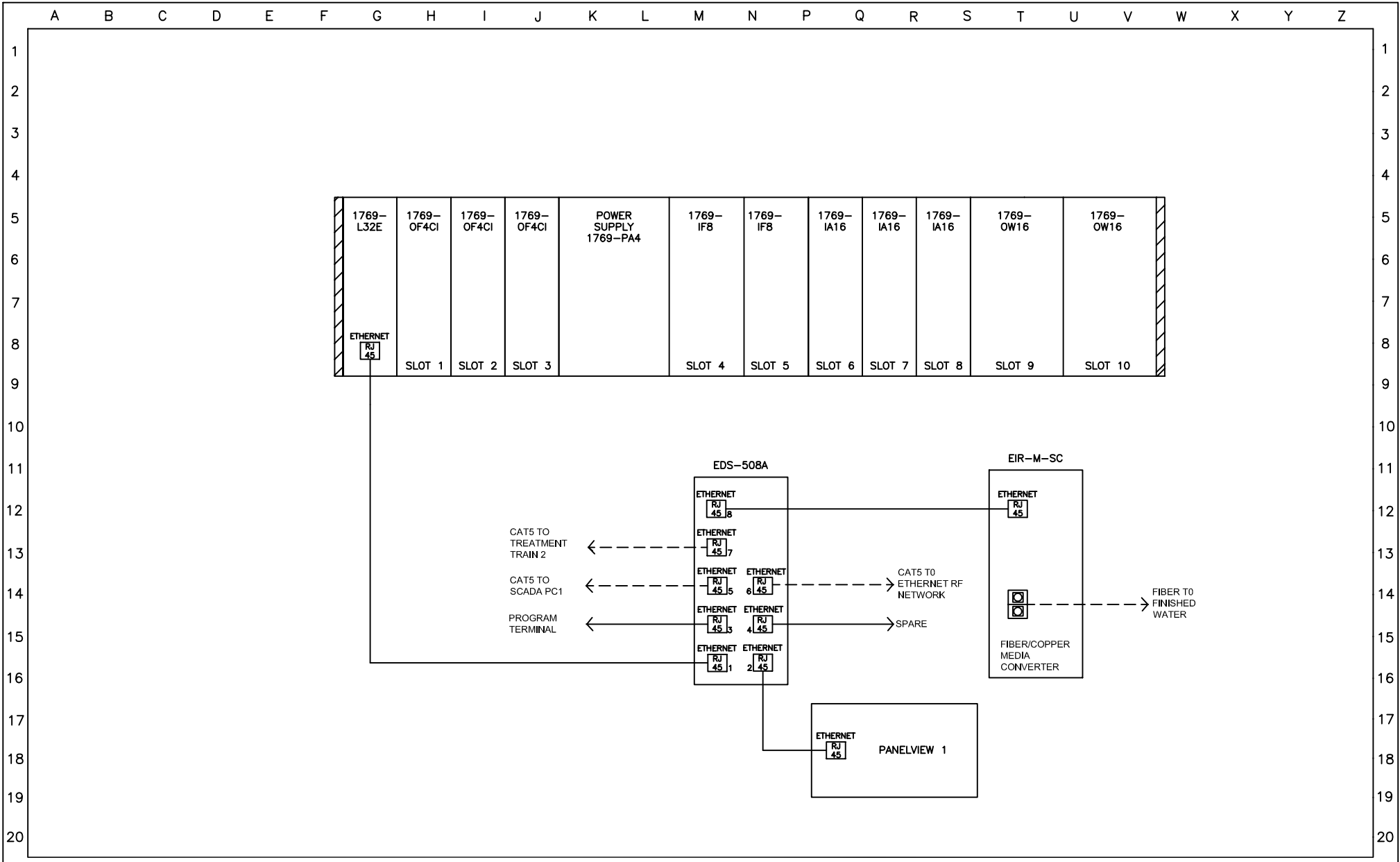
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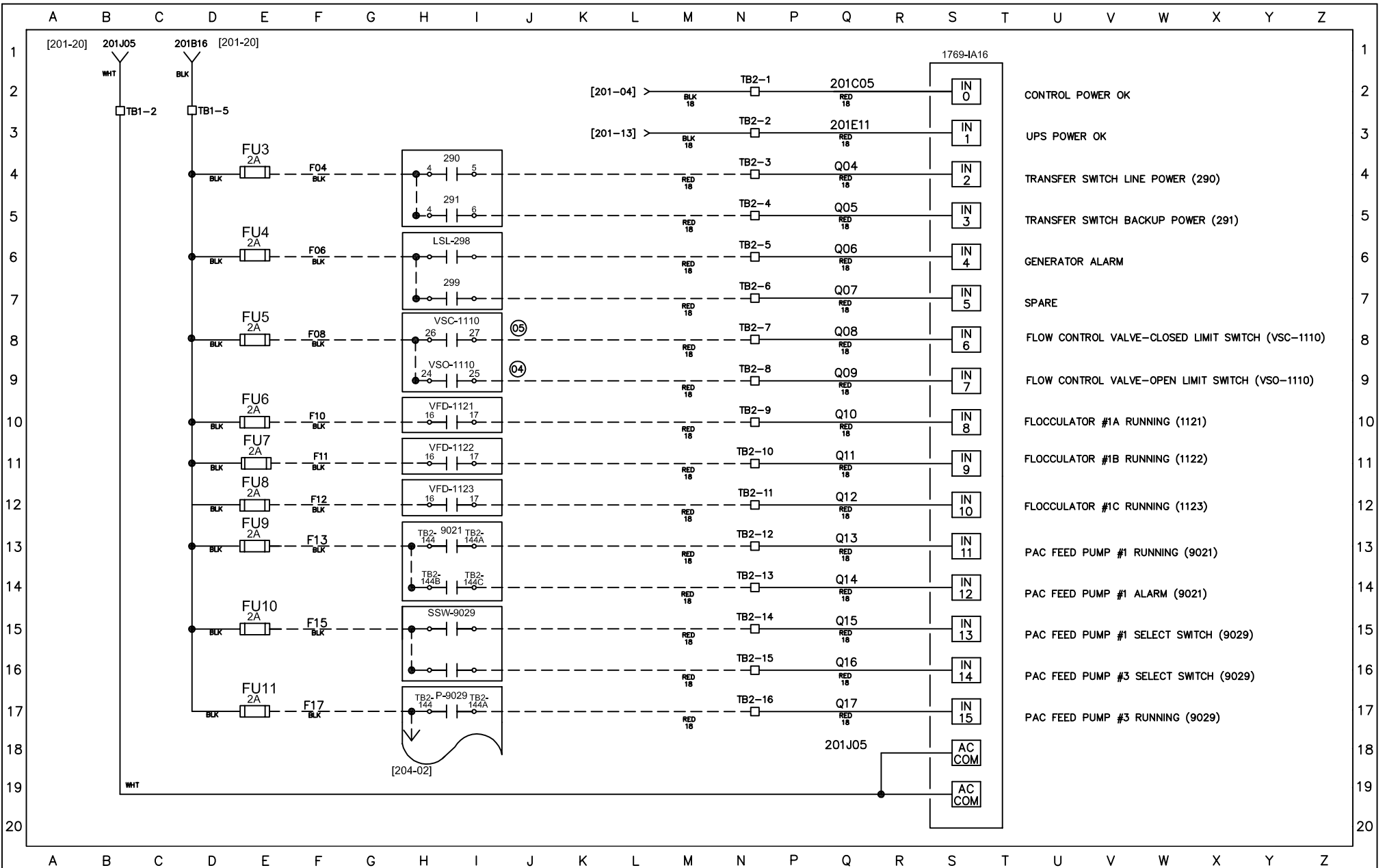
DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO. 201	NEXT SHEET 202
PROJECT ENGR: JRC			

TITLE: 120 VAC CONTROL POWER
WTP - TREATMENT TRAIN 1

REVISION #: REVISION DATE:



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	DRAWN BY: SAH PROJECT ENGR: JRC	DATE: 1/25/2008	SHEET NO. 202	NEXT SHEET 203	REVISION #: 0	REVISION DATE:						



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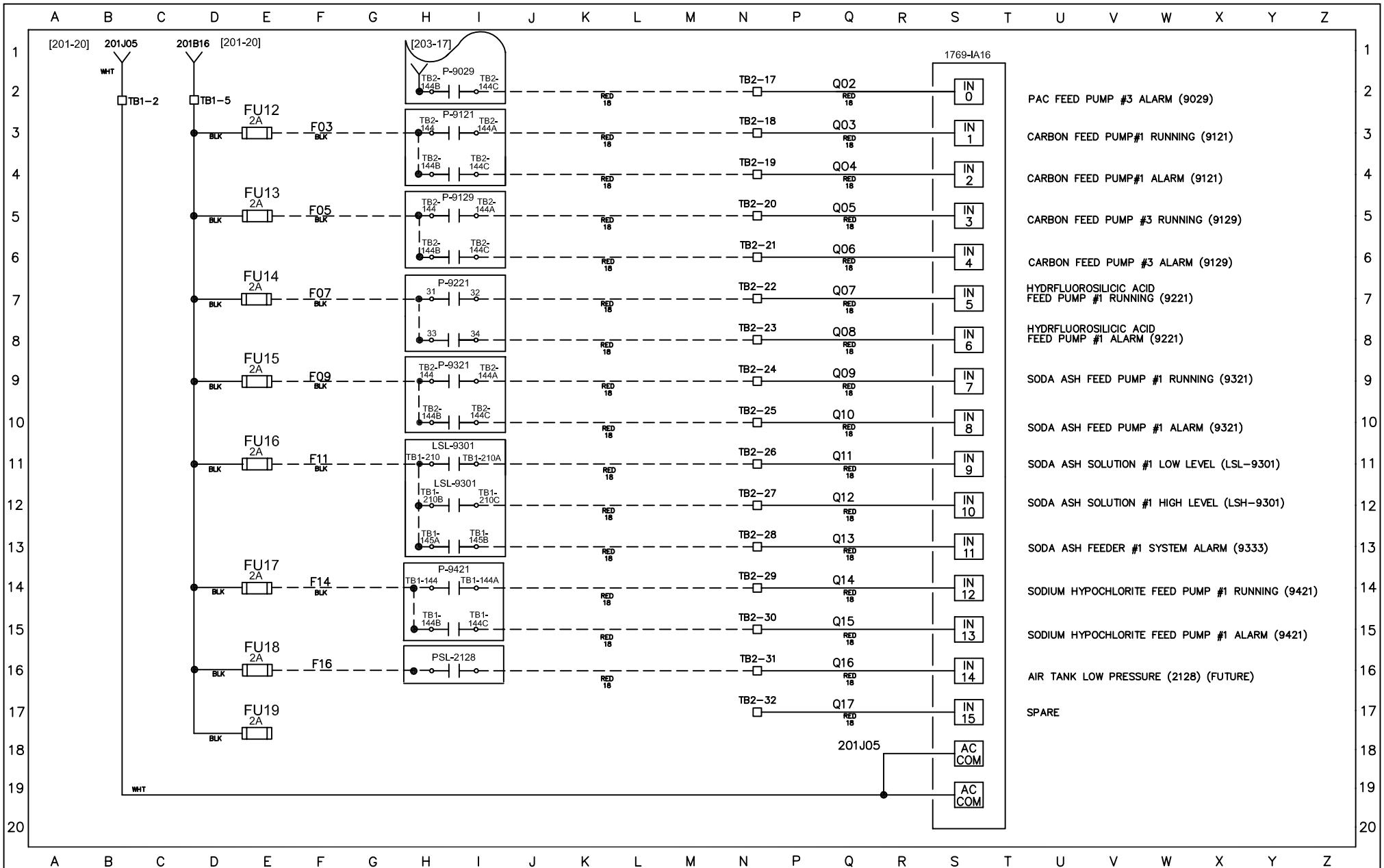
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DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO.: 203	NEXT SHEET: 204
PROJECT ENGR: JRC			

TITLE: DIGITAL INPUTS 1
WTP - TREATMENT TRAIN 1

REVISION #: 1	REVISION DATE: 3/03/2009
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- IN 0 PAC FEED PUMP #3 ALARM (9029)
- IN 1 CARBON FEED PUMP #1 RUNNING (9121)
- IN 2 CARBON FEED PUMP #1 ALARM (9121)
- IN 3 CARBON FEED PUMP #3 RUNNING (9129)
- IN 4 CARBON FEED PUMP #3 ALARM (9129)
- IN 5 HYDRFLUOROSILICIC ACID FEED PUMP #1 RUNNING (9221)
- IN 6 HYDRFLUOROSILICIC ACID FEED PUMP #1 ALARM (9221)
- IN 7 SODA ASH FEED PUMP #1 RUNNING (9321)
- IN 8 SODA ASH FEED PUMP #1 ALARM (9321)
- IN 9 SODA ASH SOLUTION #1 LOW LEVEL (LSL-9301)
- IN 10 SODA ASH SOLUTION #1 HIGH LEVEL (LSH-9301)
- IN 11 SODA ASH FEEDER #1 SYSTEM ALARM (9333)
- IN 12 SODIUM HYPOCHLORITE FEED PUMP #1 RUNNING (9421)
- IN 13 SODIUM HYPOCHLORITE FEED PUMP #1 ALARM (9421)
- IN 14 AIR TANK LOW PRESSURE (2128) (FUTURE)
- IN 15 SPARE



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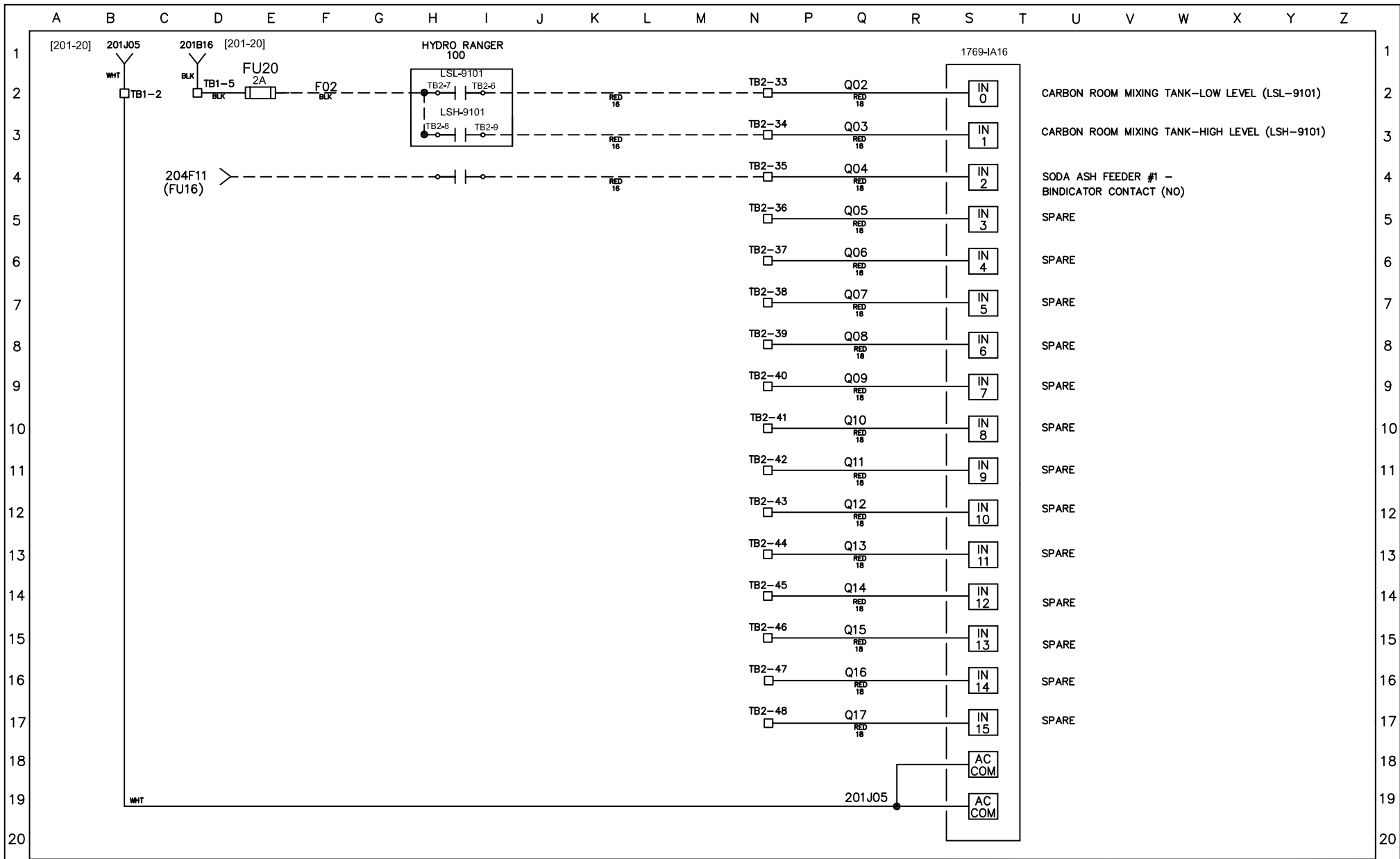
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DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO. 204	NEXT SHEET 205
PROJECT ENGR: JRC			

TITLE: DIGITAL INPUTS 2
WTP - TREATMENT TRAIN 1

REVISION #: 1	REVISION DATE: 3/03/2009
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A B C D E F G H I J K L M N P Q R S T U V W X Y Z



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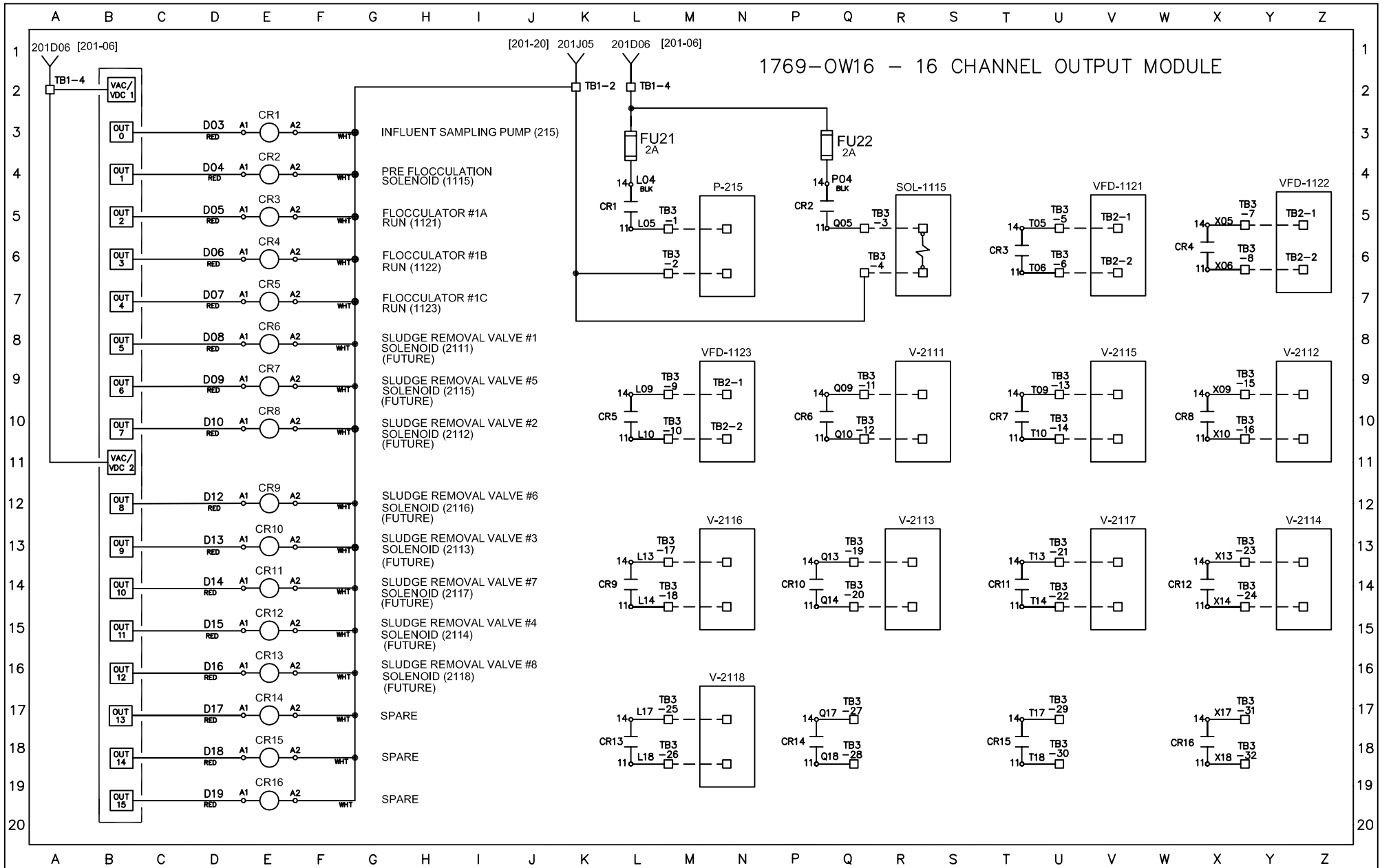
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PROJECT ENGR: JRC			

TITLE: DIGITAL INPUTS 3
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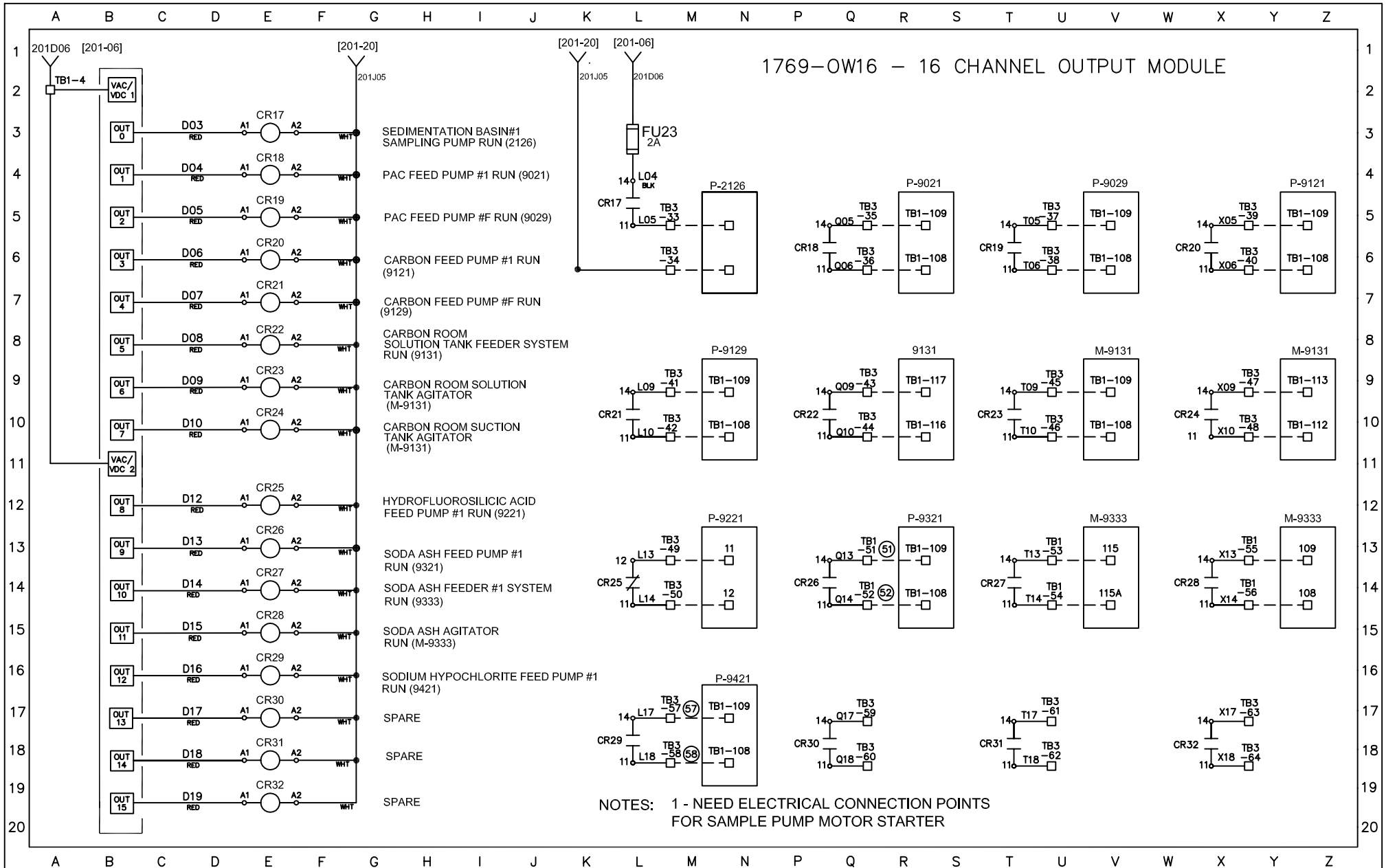
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DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO. 206	NEXT SHEET 207
PROJECT ENGR: JRC			

TITLE: RELAY OUTPUTS 1
WTP - TREATMENT TRAIN 1

REVISION #: 0
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PROJECT ENG: JRC

DATE: 1/25/2008

SHEET NO. 207

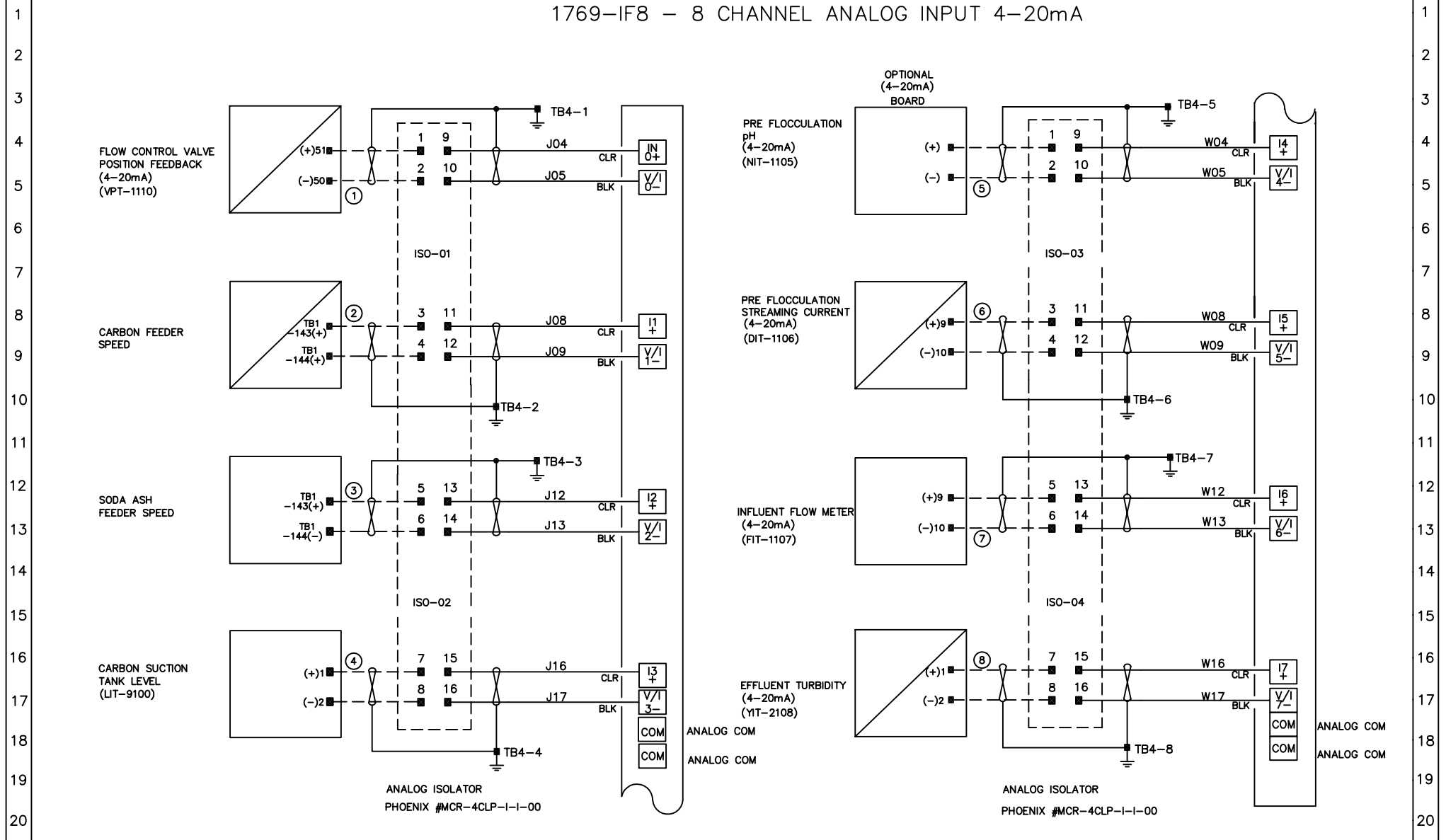
NEXT SHEET 208

TITLE: RELAY OUTPUTS 2
WTP - TREATMENT TRAIN 1

REVISION #: 1

REVISION DATE: 3/03/2009

1769-IF8 - 8 CHANNEL ANALOG INPUT 4-20mA



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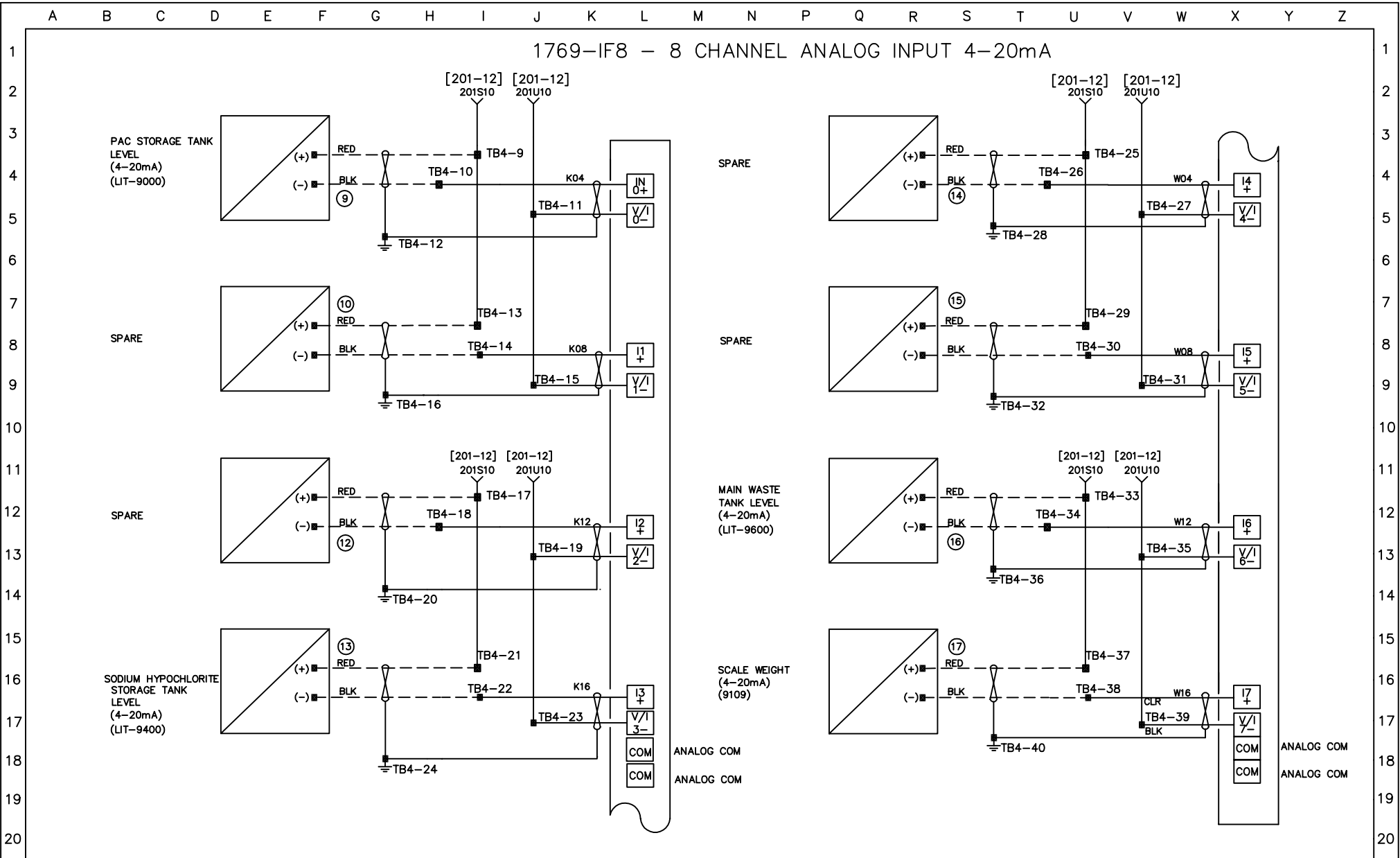
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DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO. 208	NEXT SHEET 209
PROJECT ENGR: JRC			

TITLE: ANALOG INPUTS 1
WTP - TREATMENT TRAIN 1

REVISION #: 1
REVISION DATE: 3/03/2009

1769-IF8 - 8 CHANNEL ANALOG INPUT 4-20mA



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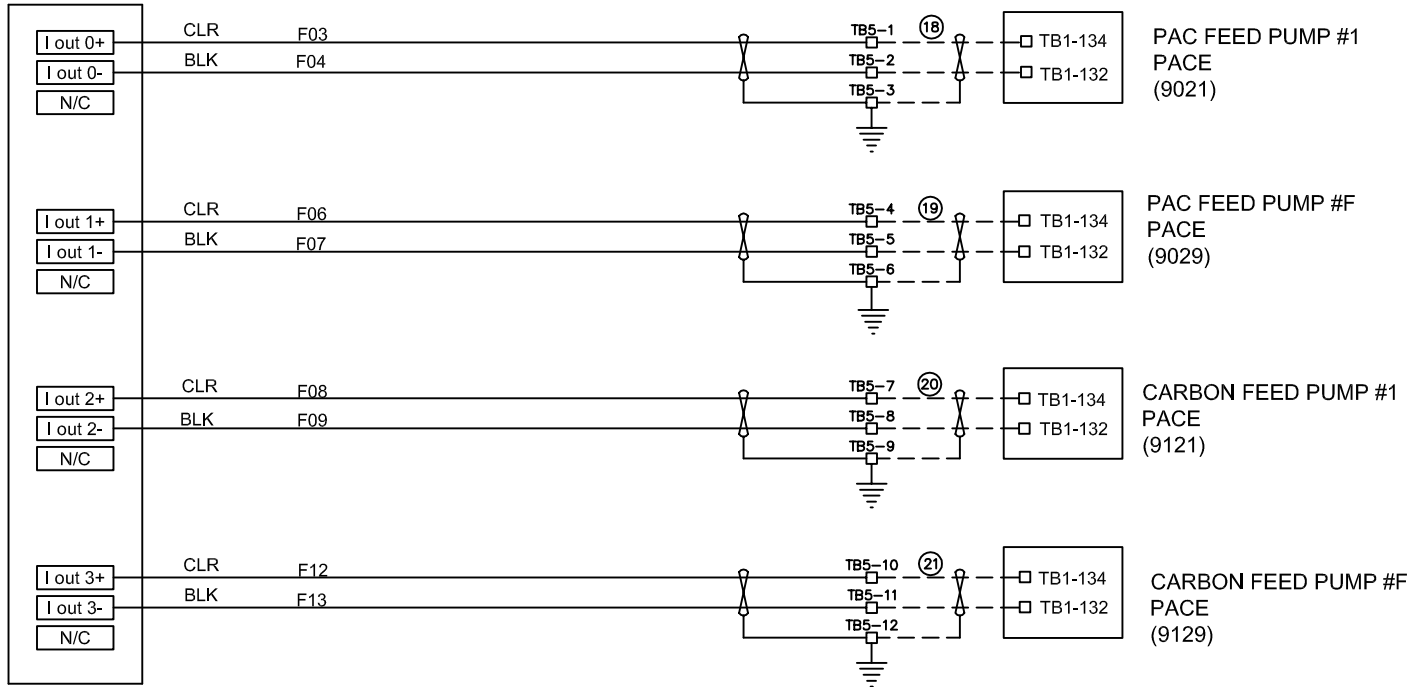
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DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO. 209	NEXT SHEET 210
PROJECT ENGR: JRC			

TITLE: ANALOG INPUTS 2
WTP - TREATMENT TRAIN 1

REVISION #: 1 REVISION DATE: 3/03/2009

1769-OF4CI - ANALOG OUTPUT 4-20mA



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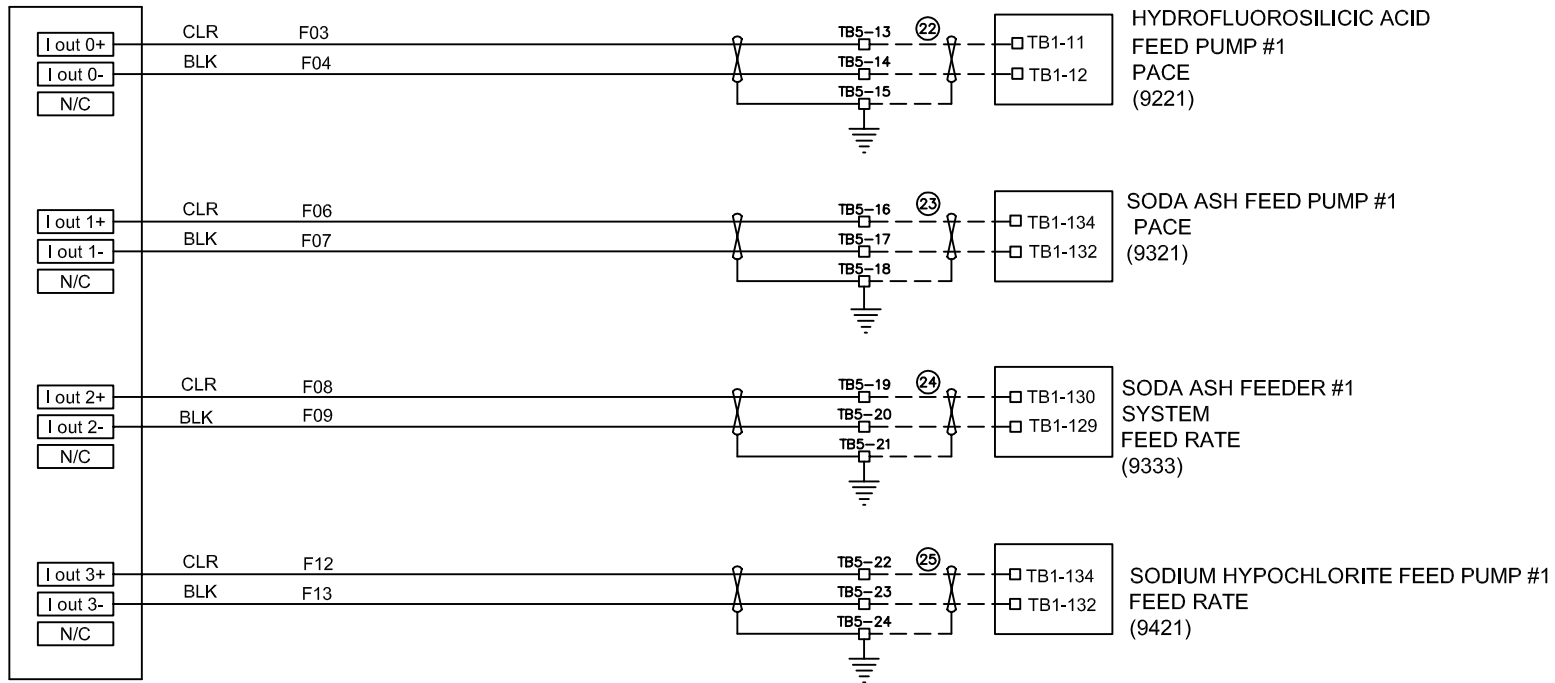
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DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO: 210	NEXT SHEET: 211
PROJECT ENGR: JRC			

TITLE: ANALOG OUTPUTS 1
WTP - TREATMENT TRAIN 1

REVISION #: 1 REVISION DATE: 3/30/2009

1769-OF4CI - ANALOG OUTPUT 4-20mA



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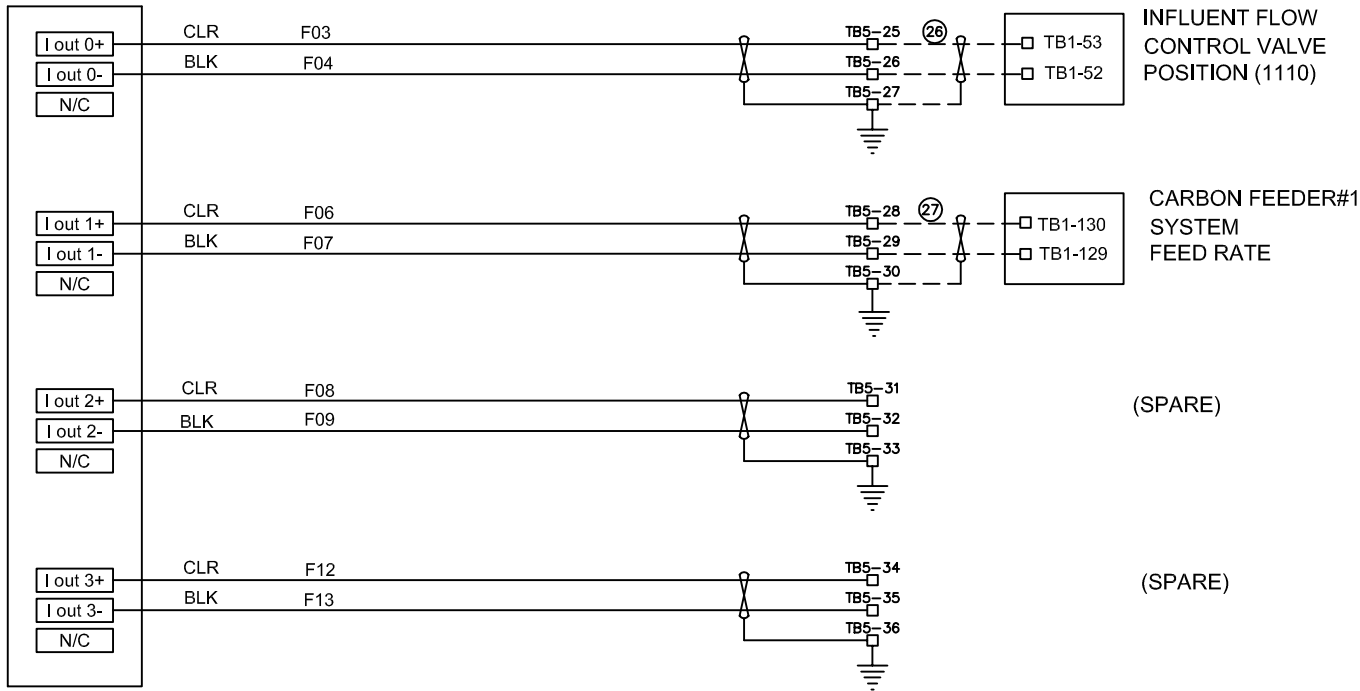
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DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO: 211	NEXT SHEET: 212
PROJECT ENGR: JRC			

TITLE: ANALOG OUTPUTS 2
WTP - TREATMENT TRAIN 1

REVISION #: 1 REVISION DATE: 3/03/2009

1769-OF4CI - ANALOG OUTPUT 4-20mA



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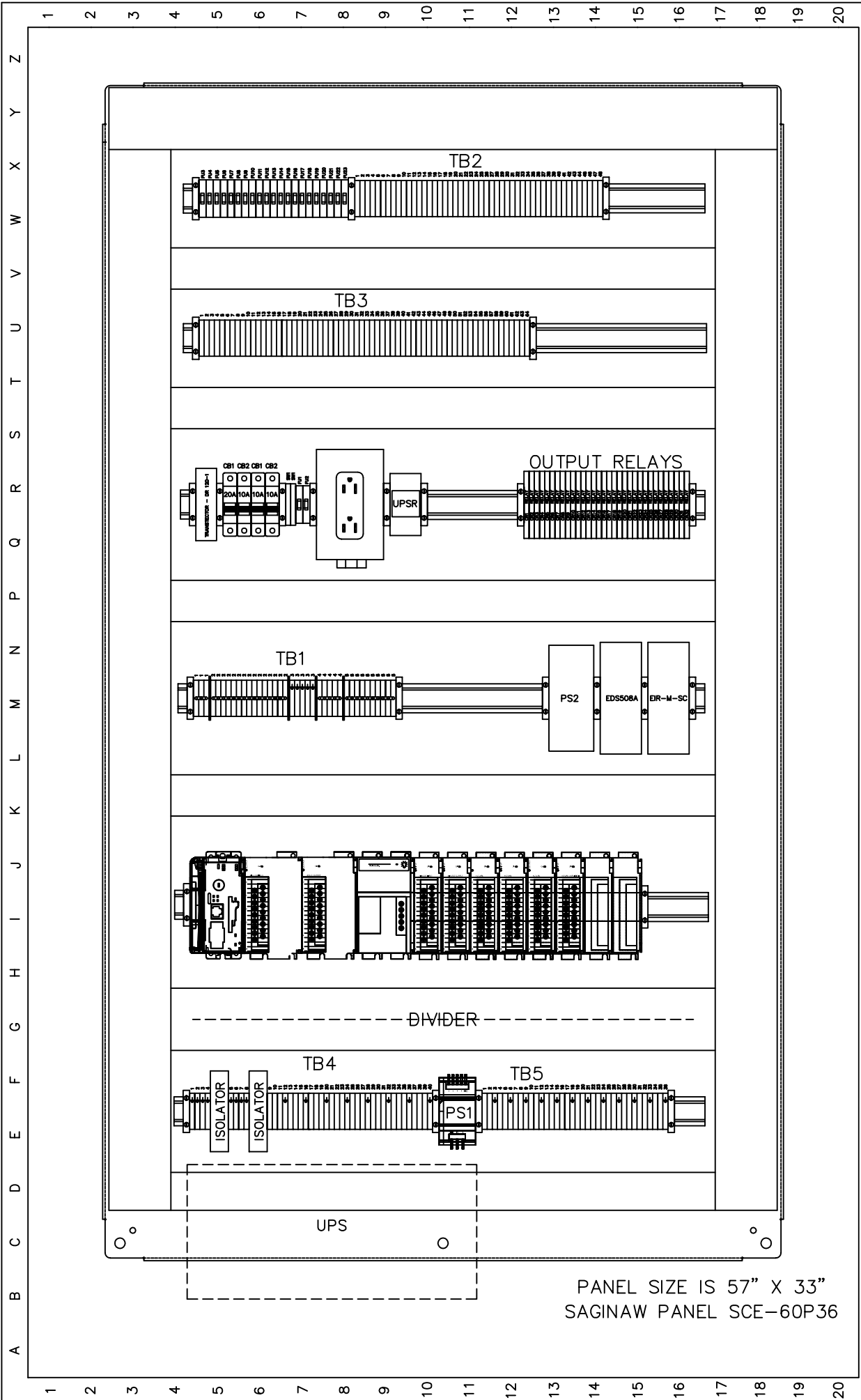
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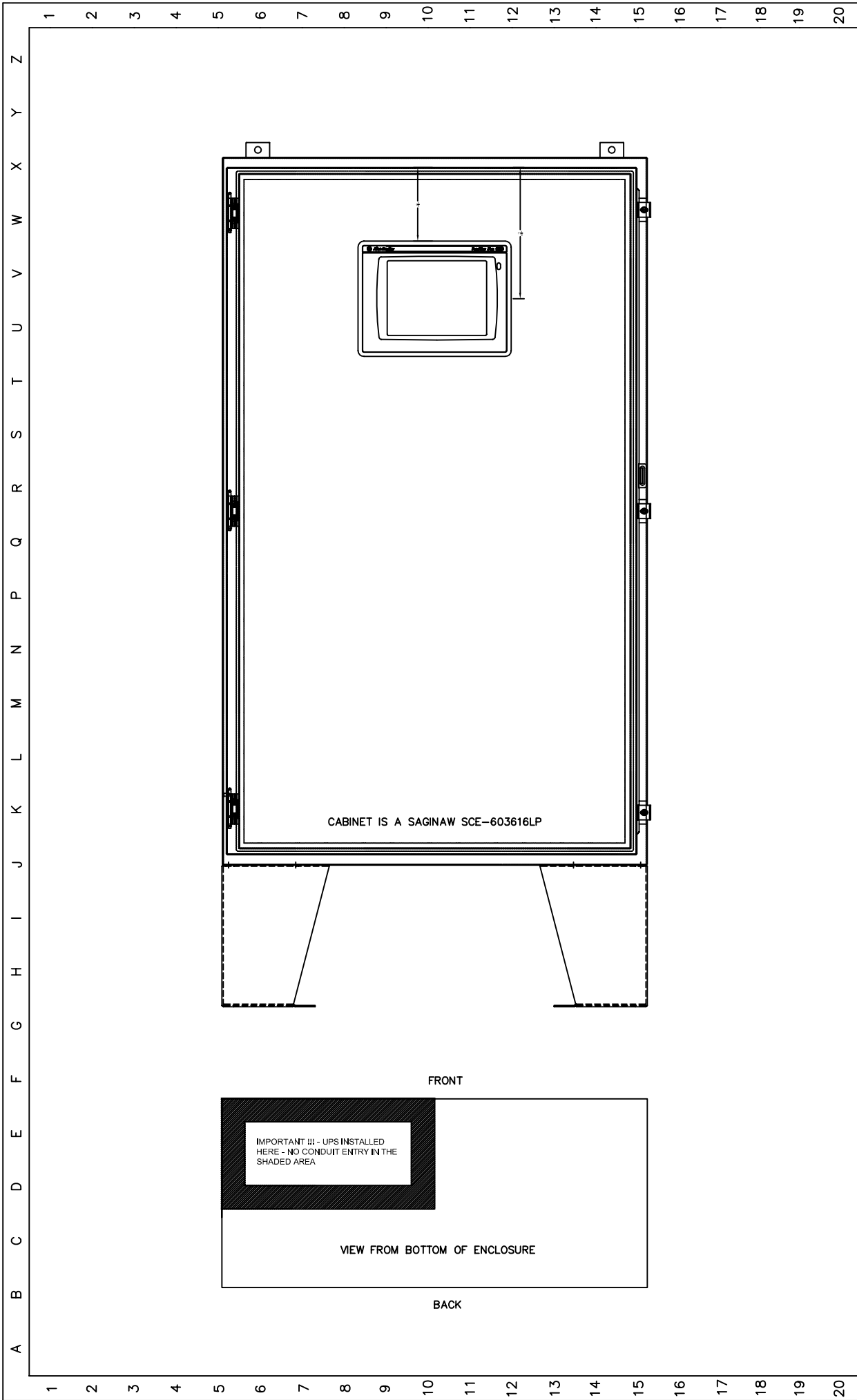
DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO: 212	NEXT SHEET: 213
PROJECT ENGR: JRC			

TITLE: ANALOG OUTPUTS 3
WTP - TREATMENT TRAIN 1

REVISION #: 0 REVISION DATE:



<p>SUNAPSYS Leader in Controls and Information 850 Third Street Vinton, VA 24179-3300</p>		<p>J3362 NRRWA</p>		<p>TITLE: PANEL LAYOUT TREATMENT TRAIN 1</p>	
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<p>DRAWN BY: DEF PROJECT ENGR: RED</p>		<p>SHEET NO. 213</p>		<p>NEXT SHEET 214</p>	



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<p>DATE: 12/20/2007</p>	<p>SHEET NO. 214</p>	<p>NEXT SHEET 215</p>	<p>REVISION #: 0</p>	<p>REVISION DATE:</p>			
<p>DRAWN BY: BEF</p>	<p>PROJECT ENG: RED</p>						

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R	S	T	U	V	W	X	Y	Z		
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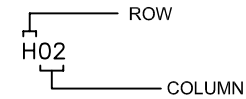
SYMBOLS

WIRE COLOR CODES

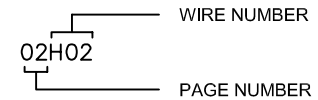
RED	120 VAC SINGLE PHASE CONTROL POWER
WHITE	120 VAC GROUNDED NEUTRAL
GREEN	EARTH GROUND
BLUE	24 VOLTS DIRECT CURRENT
BLACK	POWER WIRE (ABOVE 120 VOLTS)

WIRE NUMBERS

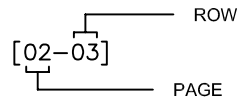
AS SHOWN WHERE WIRE ORIGINATES



WIRE NUMBER SHOWN ON SHEETS OTHER THAN WHERE IT ORIGINATES



MAPPING



[BRACKETS] ARE ONLY USED IN MAPPING

A B C D E F G H I J K L M N P Q R S T U V W X Y Z



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TITLE: LEGEND

DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO. 215	NEXT SHEET FNL
PROJECT ENGR: JRC			

REVISION #: 1 REVISION DATE: 3/03/2009

NRRWA TREATMENT TRAIN 2

<u>SHEET</u>	<u>DESCRIPTION</u>
300	COVER SHEET
301	120 VAC CONTROL PANEL
302	PLC LAYOUT AND COMMUNICATION
303	DIGITAL INPUTS 1
304	DIGITAL INPUTS 2
305	DIGITAL INPUTS 3
306	RELAY OUTPUTS 1
307	RELAY OUTPUTS 2
308	ANALOG INPUTS 1
309	ANALOG INPUTS 2
310	ANALOG OUTPUTS 1
311	ANALOG OUTPUTS 2
312	ANALOG OUTPUTS 3
313	PANEL LAYOUT
314	CABINET LAYOUT
315	LEGEND



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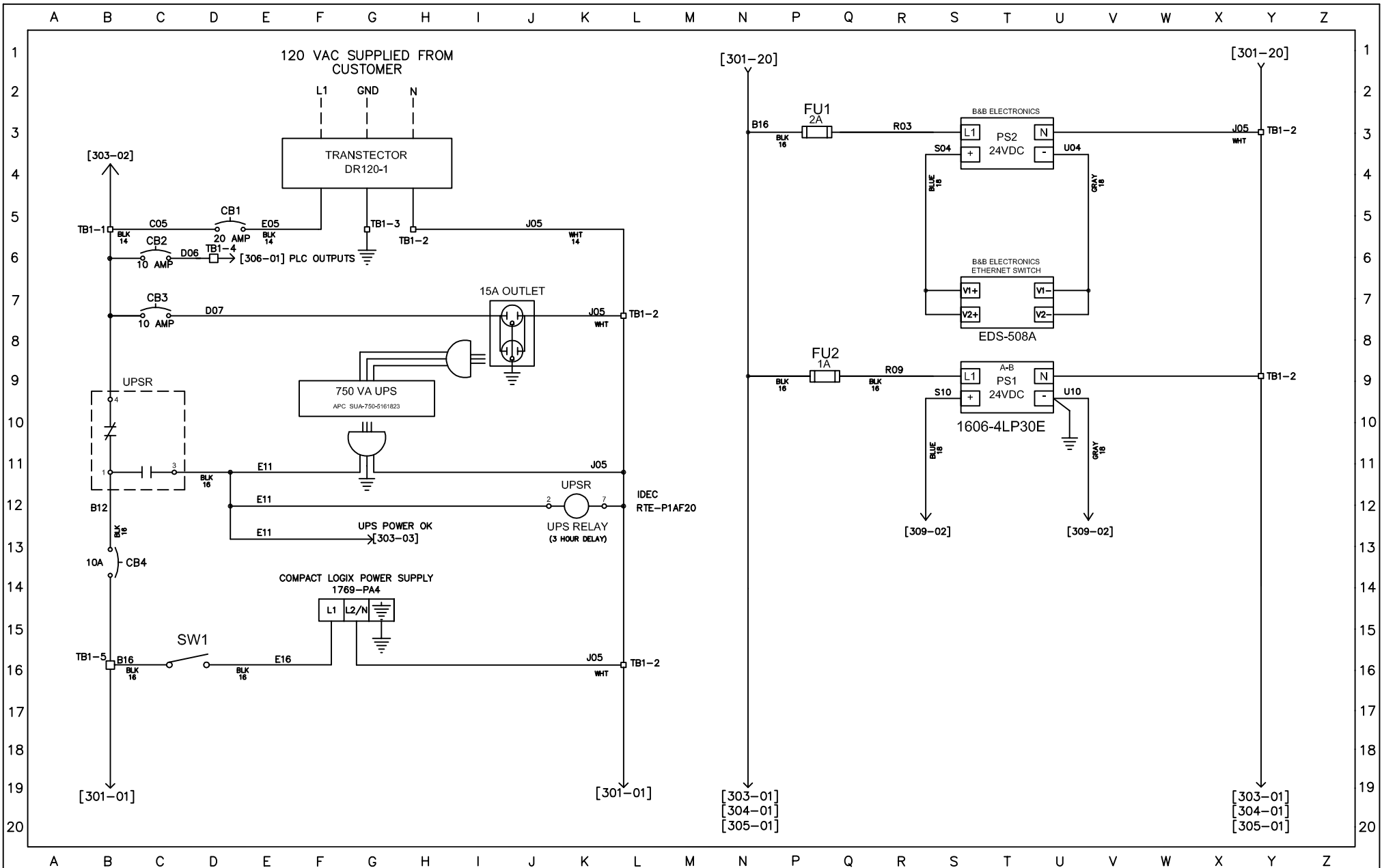
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DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO.: 300	NEXT SHEET: 301
PROJECT ENGR: JRC			

TITLE: COVER SHEET
WTP - TREATMENT TRAIN 2

REVISION #: 0 **REVISION DATE:**



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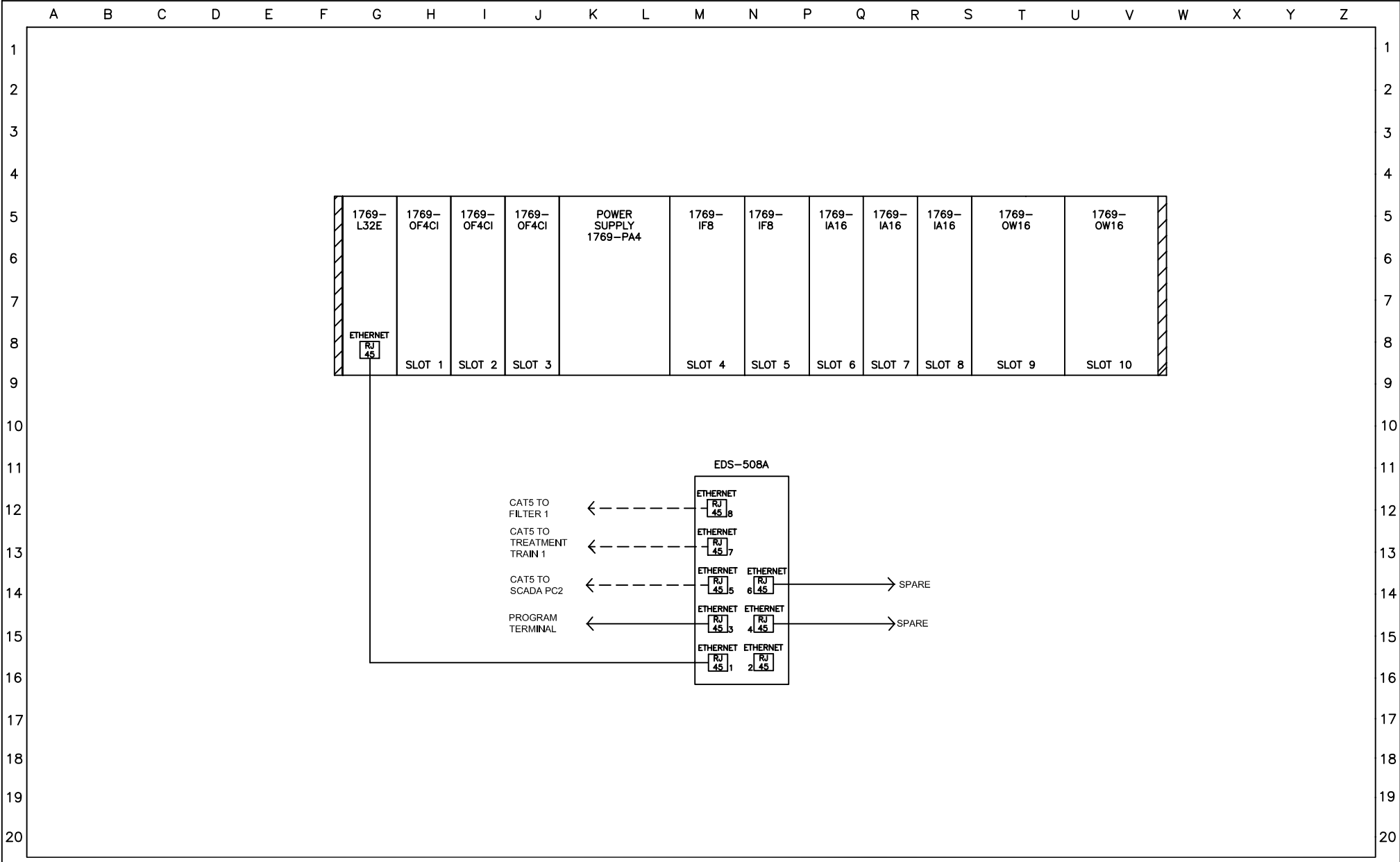
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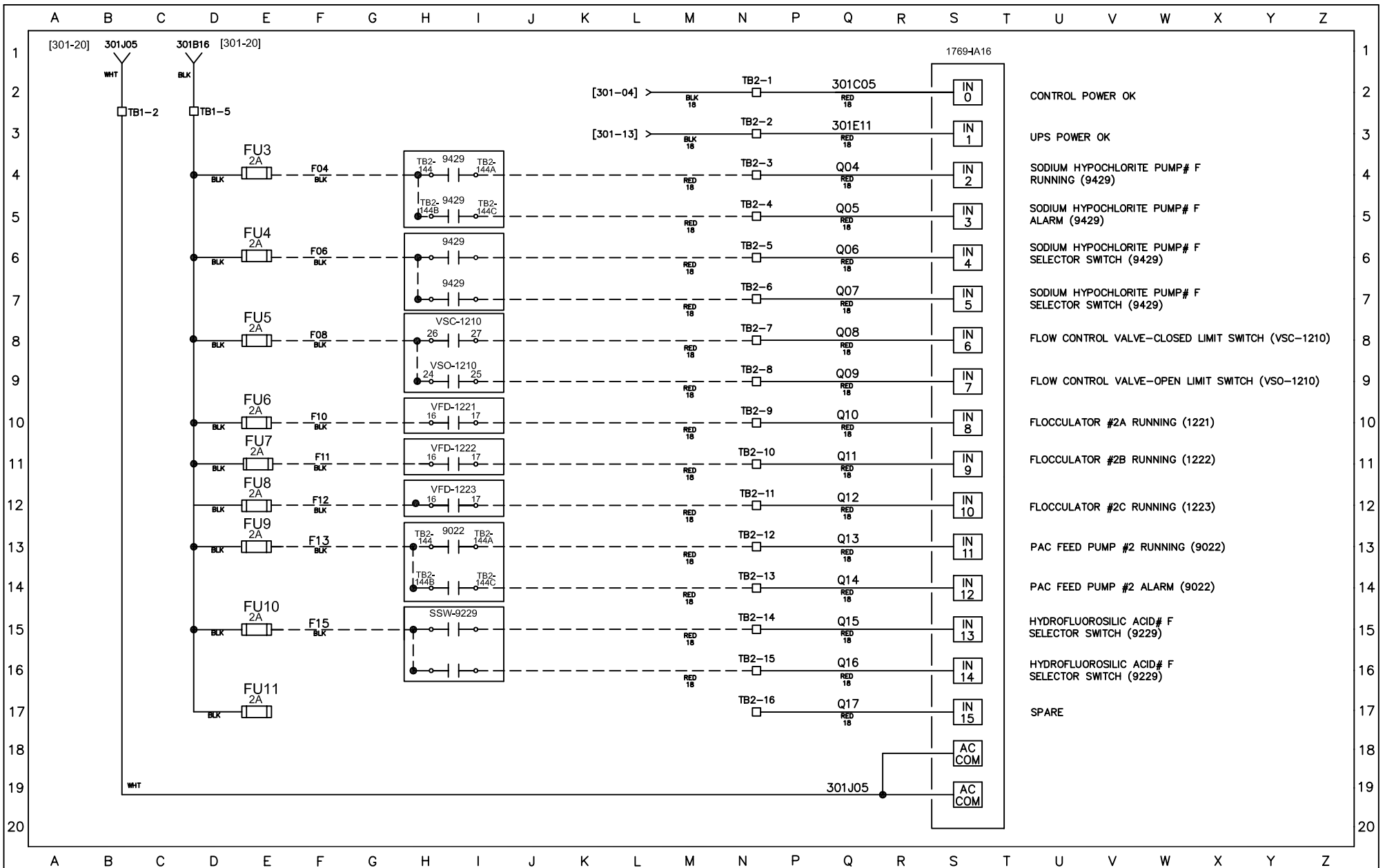
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DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO. 301	NEXT SHEET 302
PROJECT ENGR: JRC			

TITLE: 120 VAC CONTROL POWER
WTP - TREATMENT TRAIN 2

REVISION #: 0 REVISION DATE:





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DATE: 1/25/2008

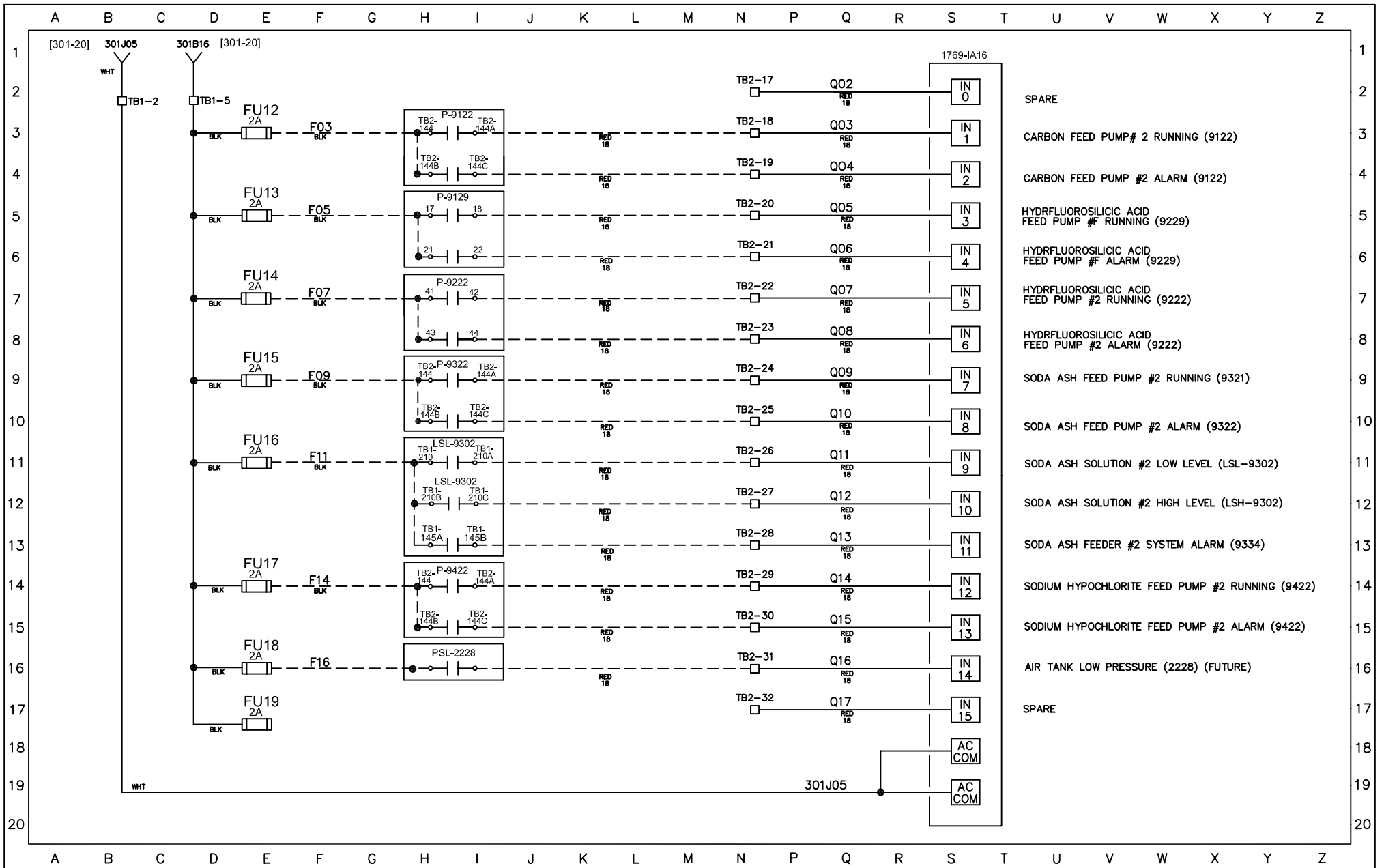
SHEET NO: 303

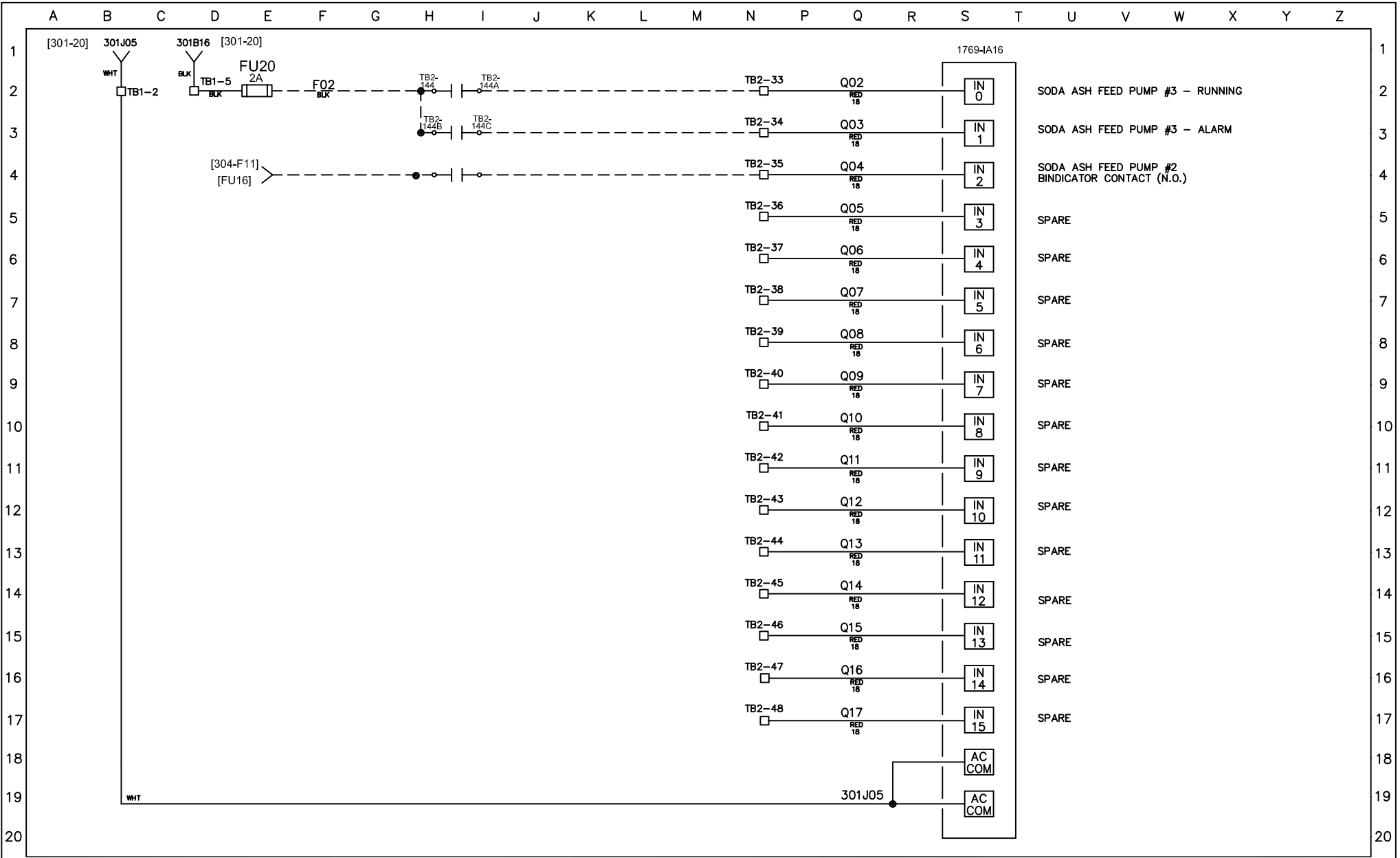
NEXT SHEET: 304

TITLE: DIGITAL INPUTS 1
WTP - TREATMENT TRAIN 2

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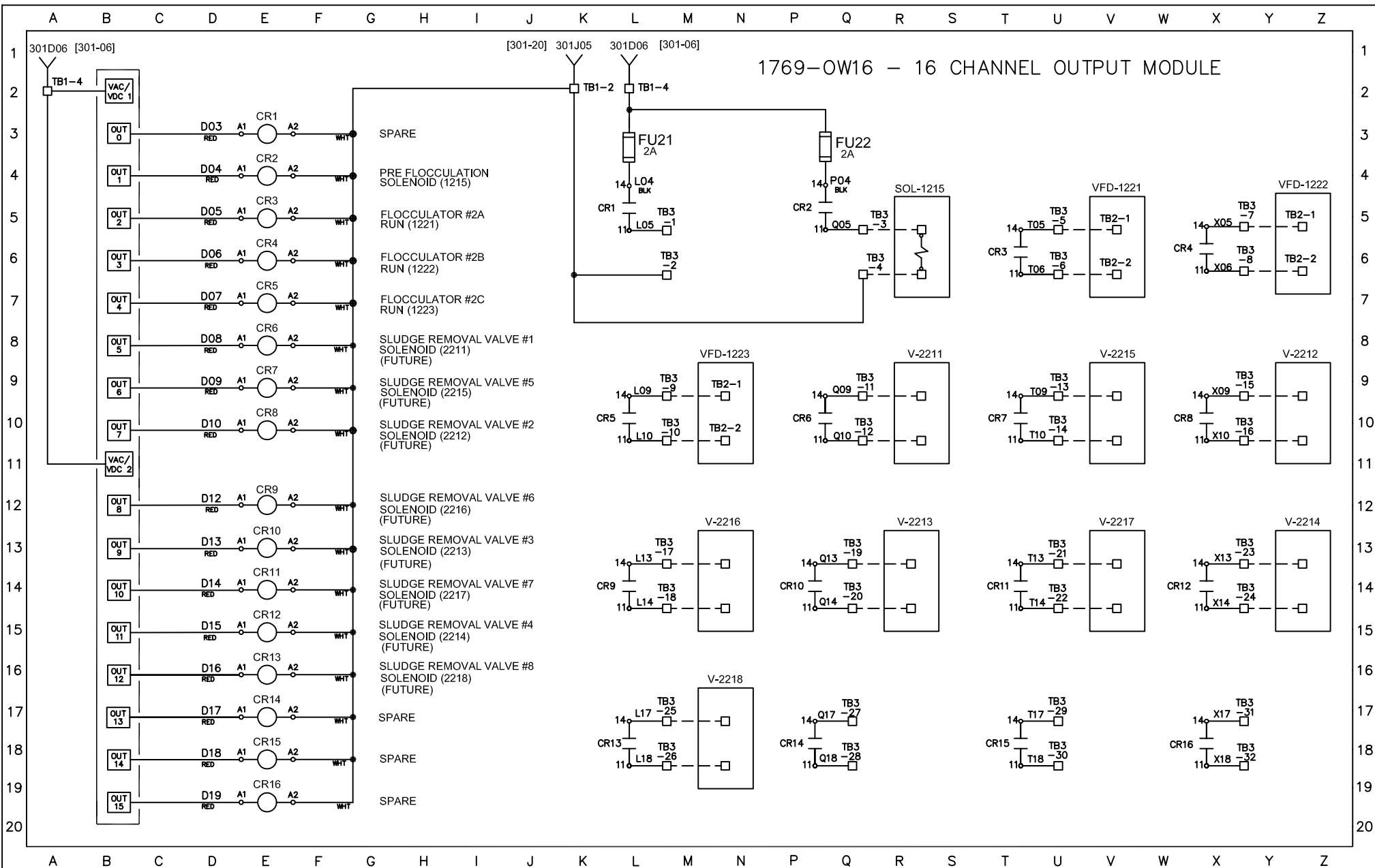
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DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO. 305	NEXT SHEET 306
PROJECT ENGR: JRC			

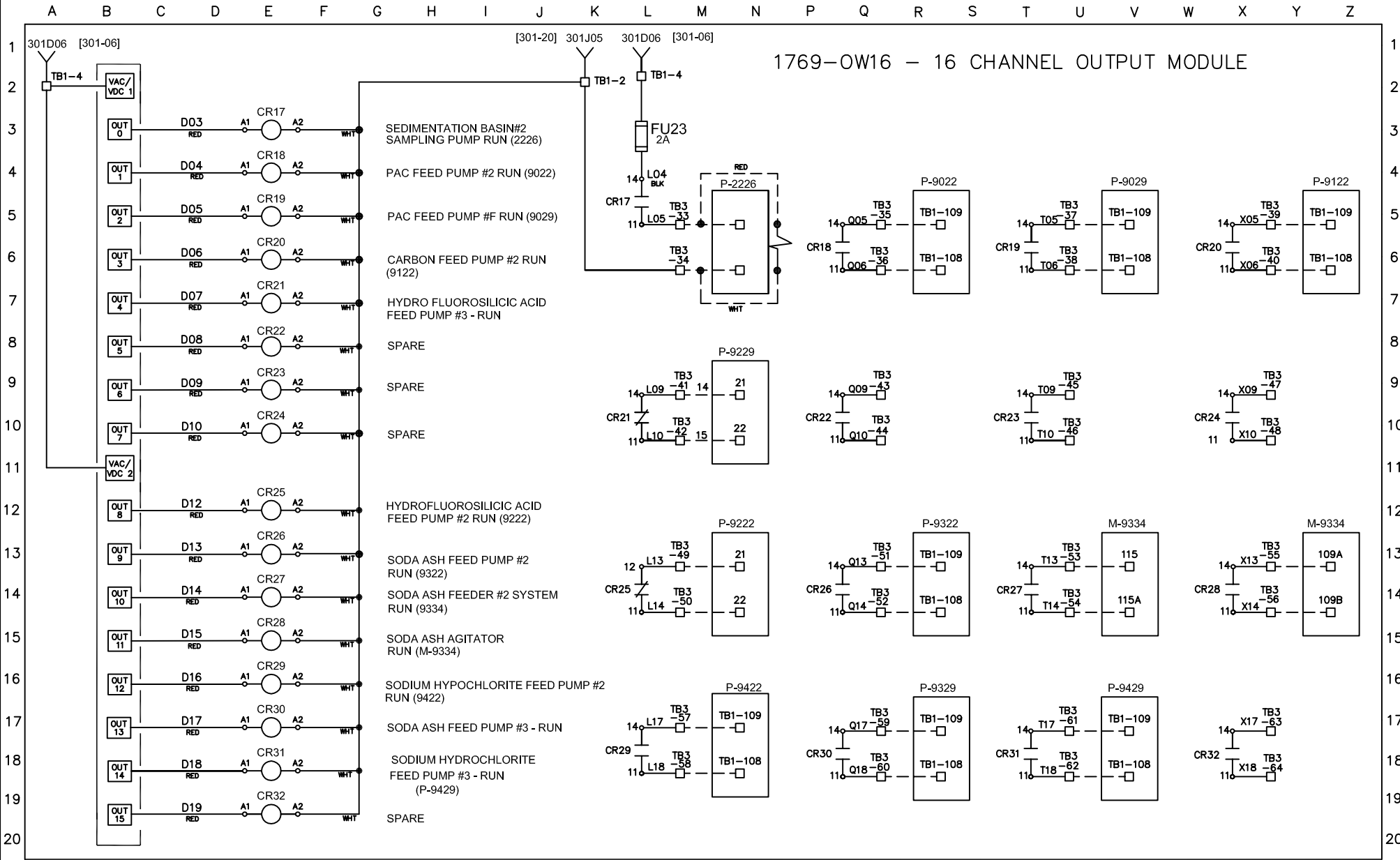
TITLE: DIGITAL INPUTS 3
WTP - TREATMENT TRAIN 2

REVISION #: 1 REVISION DATE: 3/3/2009

1769-OW16 - 16 CHANNEL OUTPUT MODULE



1769-OW16 - 16 CHANNEL OUTPUT MODULE



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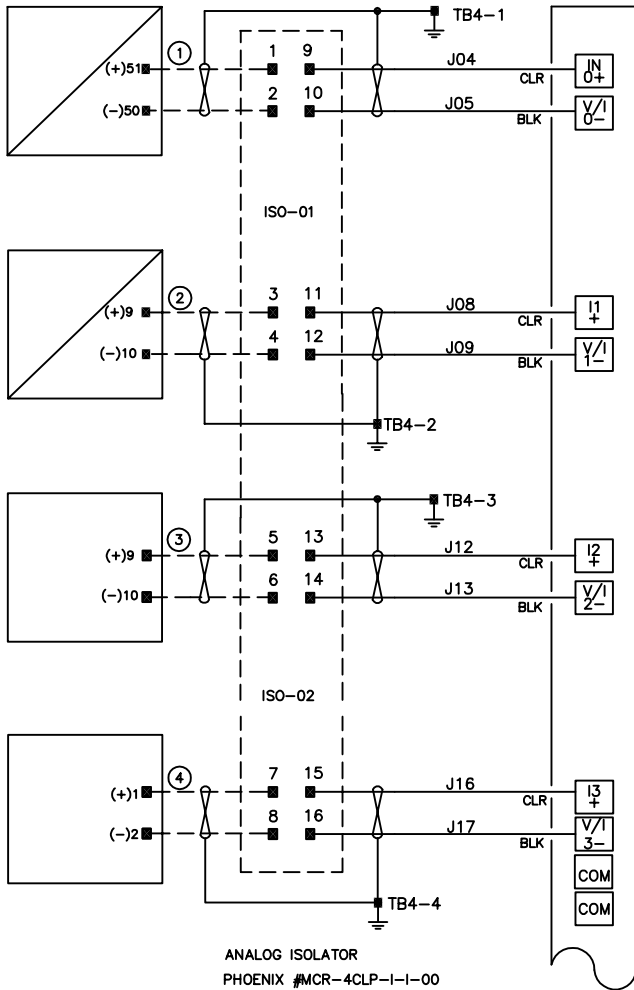
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PROJECT ENGR: JRC			

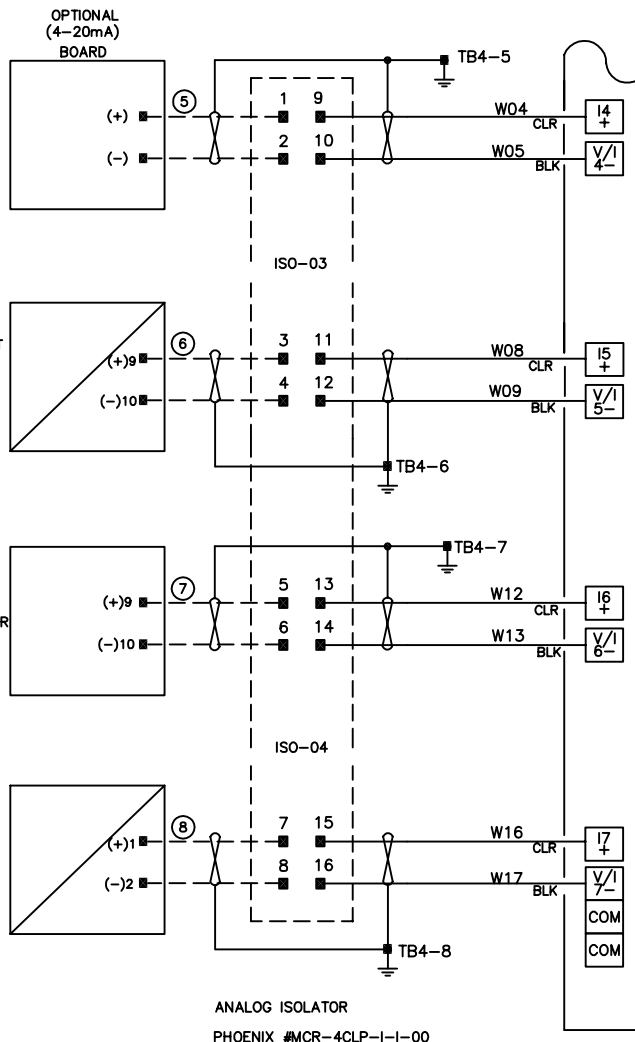
TITLE: RELAY OUTPUTS 2 WTP - TREATMENT TRAIN 2	
REVISION #: 1	REVISION DATE: 3/03/2009

1769-IF8 - 8 CHANNEL ANALOG INPUT 4-20mA

FLOW CONTROL VALVE
POSITION FEEDBACK
(4-20mA)
(VPT-1210)



PRE FLOCCULATION
pH
(4-20mA)
(NIT-1205)



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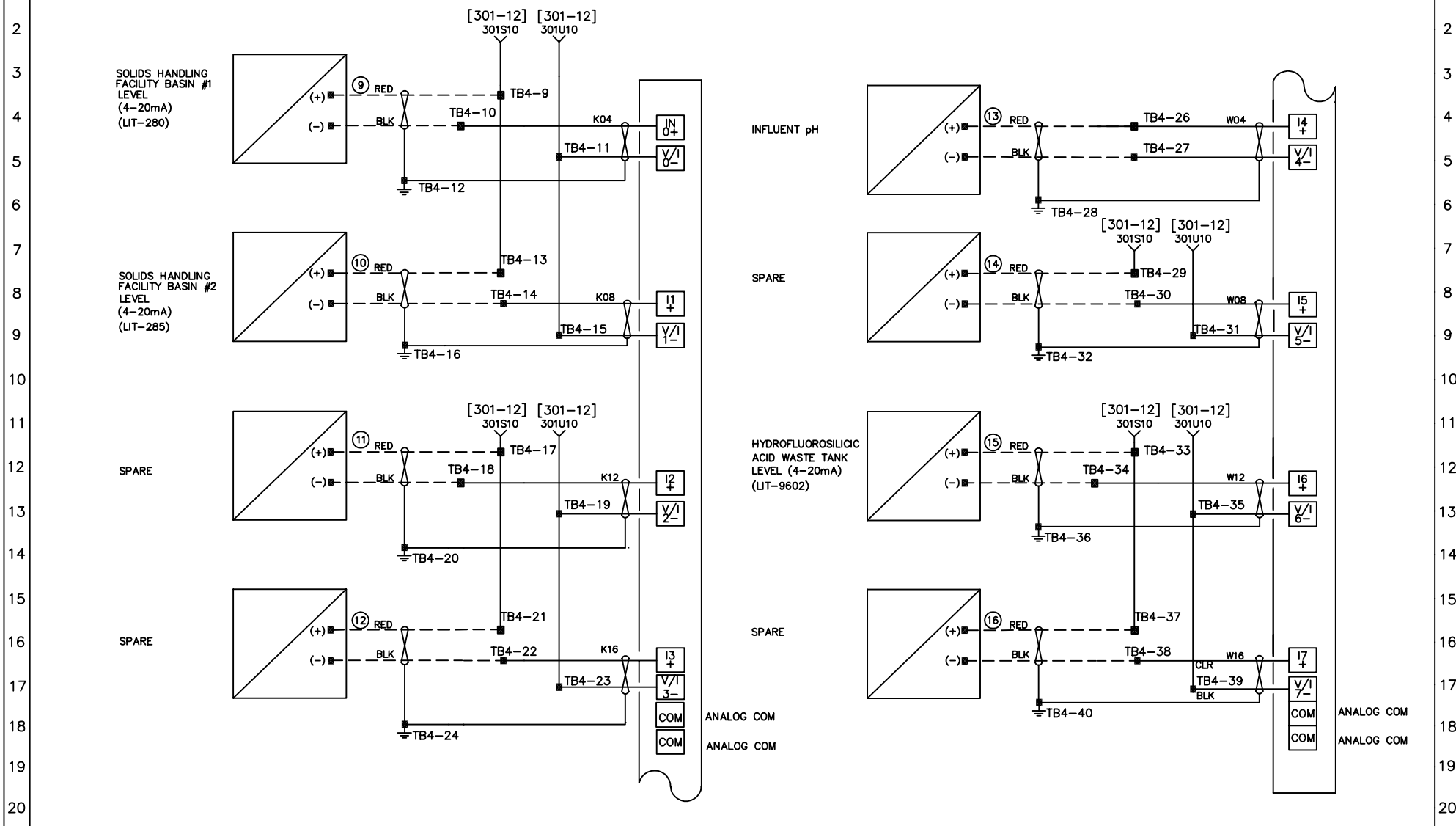
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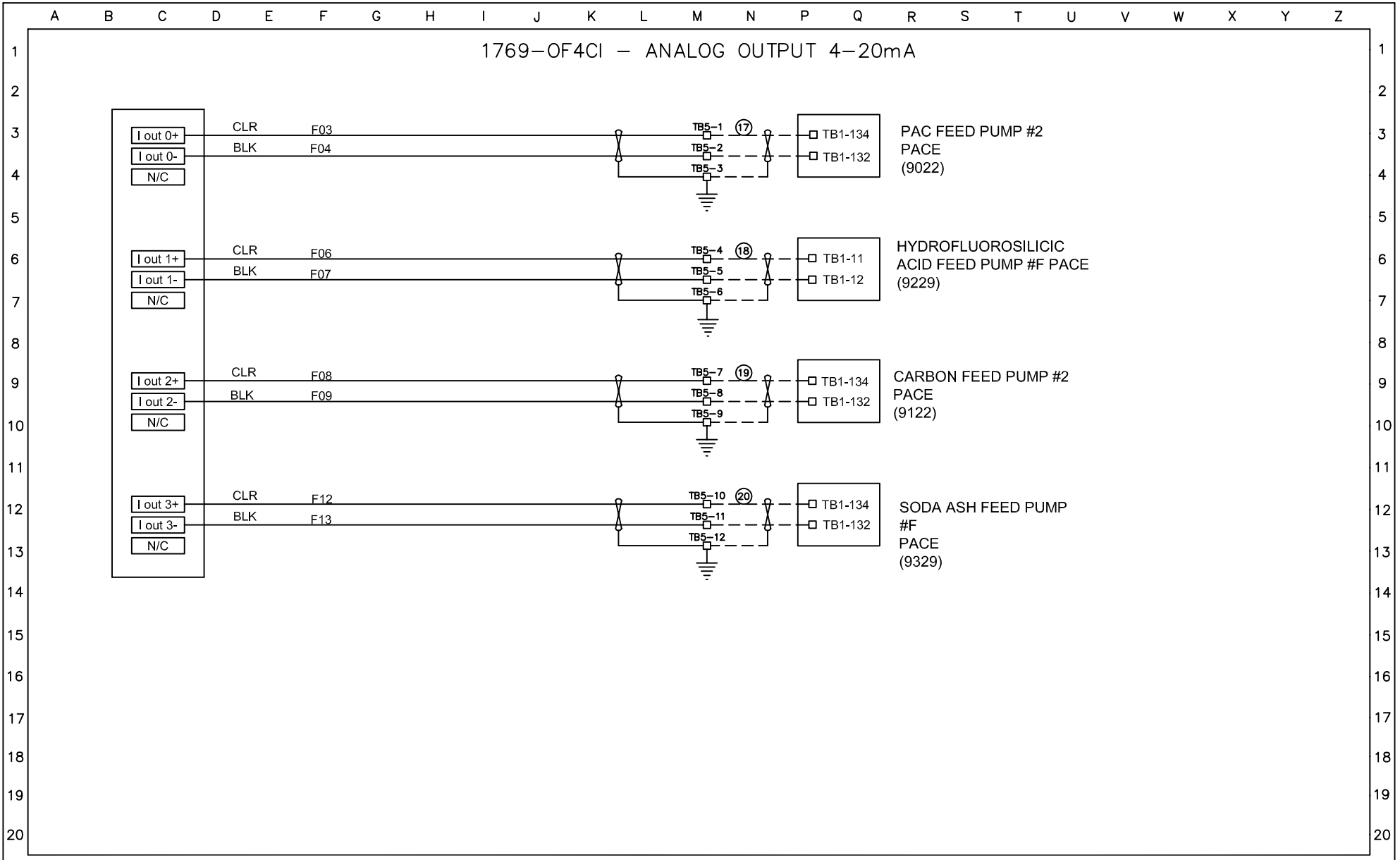
DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO. 308	NEXT SHEET 309
PROJECT ENGR: JRC			


TITLE: ANALOG INPUTS 1
WTP - TREATMENT TRAIN 2

REVISION #: 1 REVISION DATE: 3/03/2009

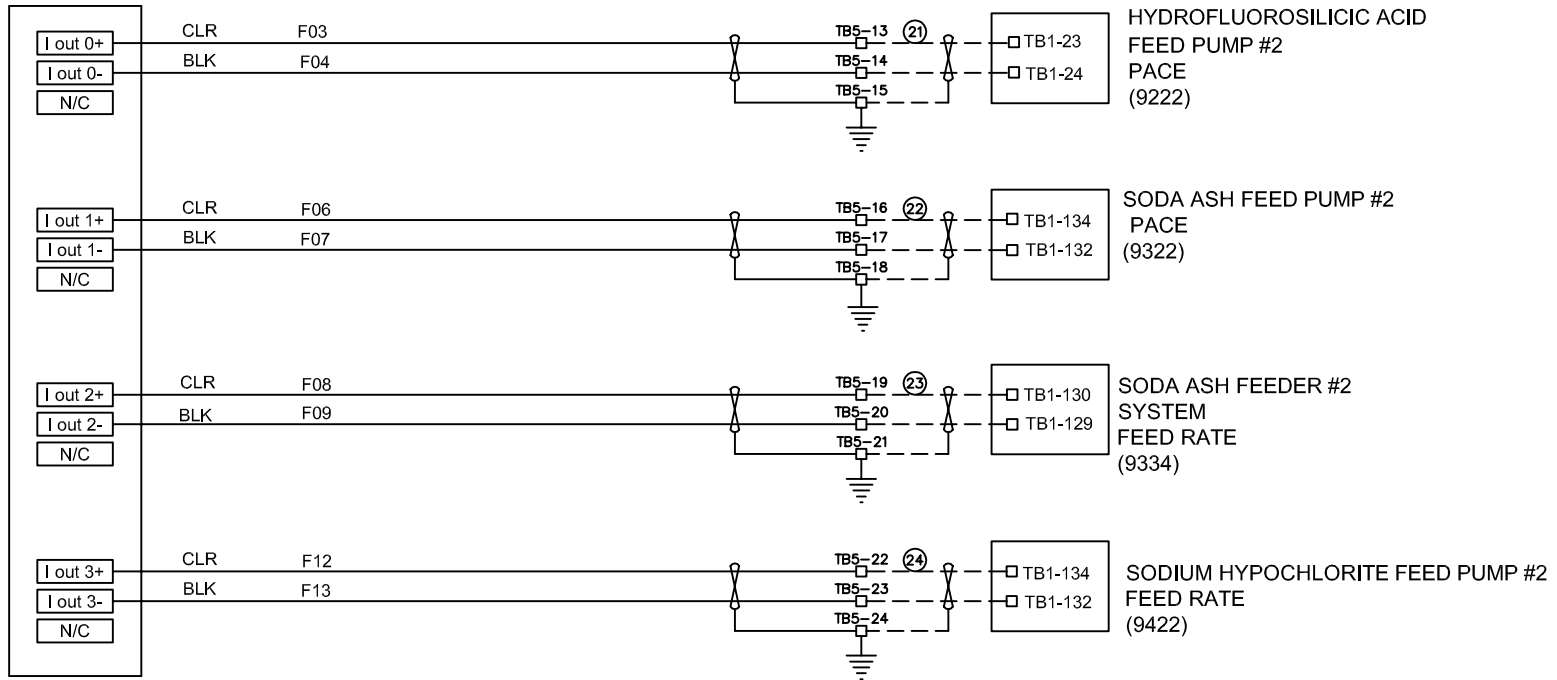
1769-IF8 - 8 CHANNEL ANALOG INPUT 4-20mA





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DRAWN BY: SAH PROJECT ENGR: JRC	DATE: 1/25/2008	SHEET NO. 310 NEXT SHEET 311	REVISION #: 1 REVISION DATE: 3/03/2009

1769-OF4CI - ANALOG OUTPUT 4-20mA



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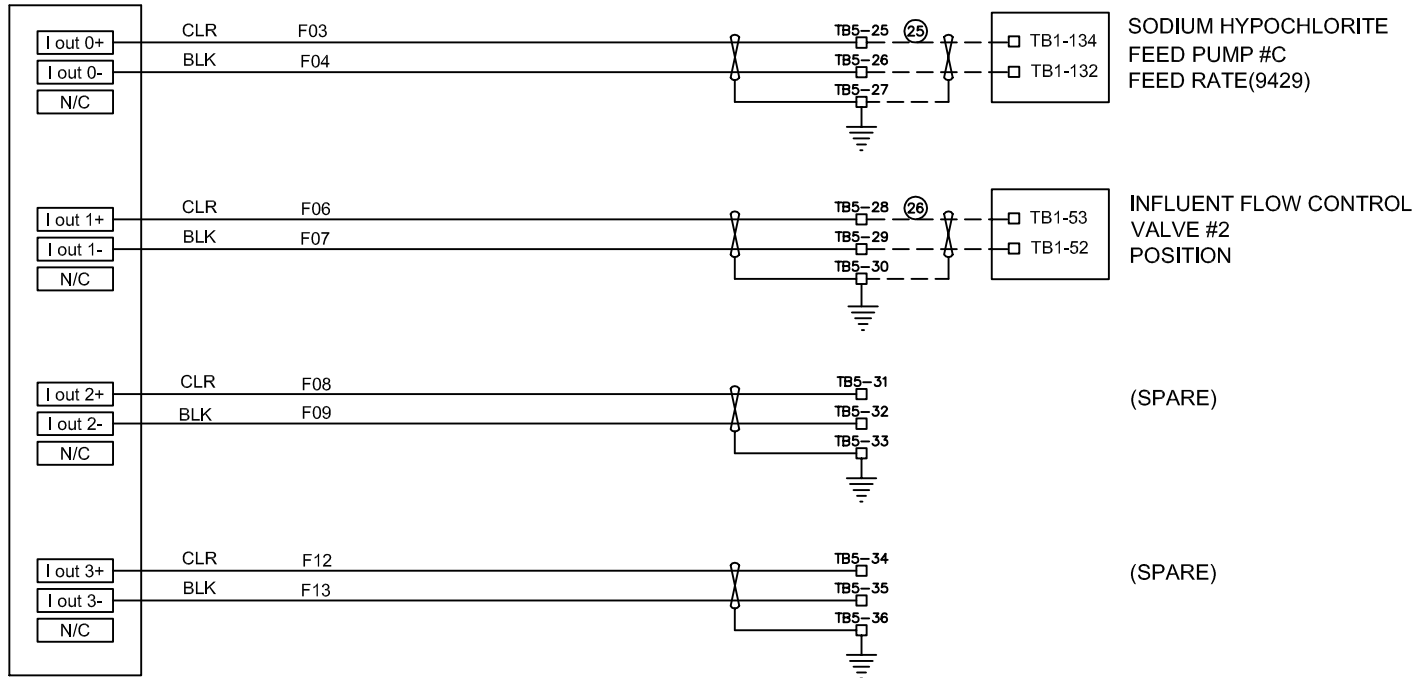
DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO. 311	NEXT SHEET 312
PROJECT ENGR: JRC			

TITLE: ANALOG OUTPUTS 2
WTP - TREATMENT TRAIN 2

REVISION #: 1

REVISION DATE: 3/03/2009

1769-OF4CI - ANALOG OUTPUT 4-20mA



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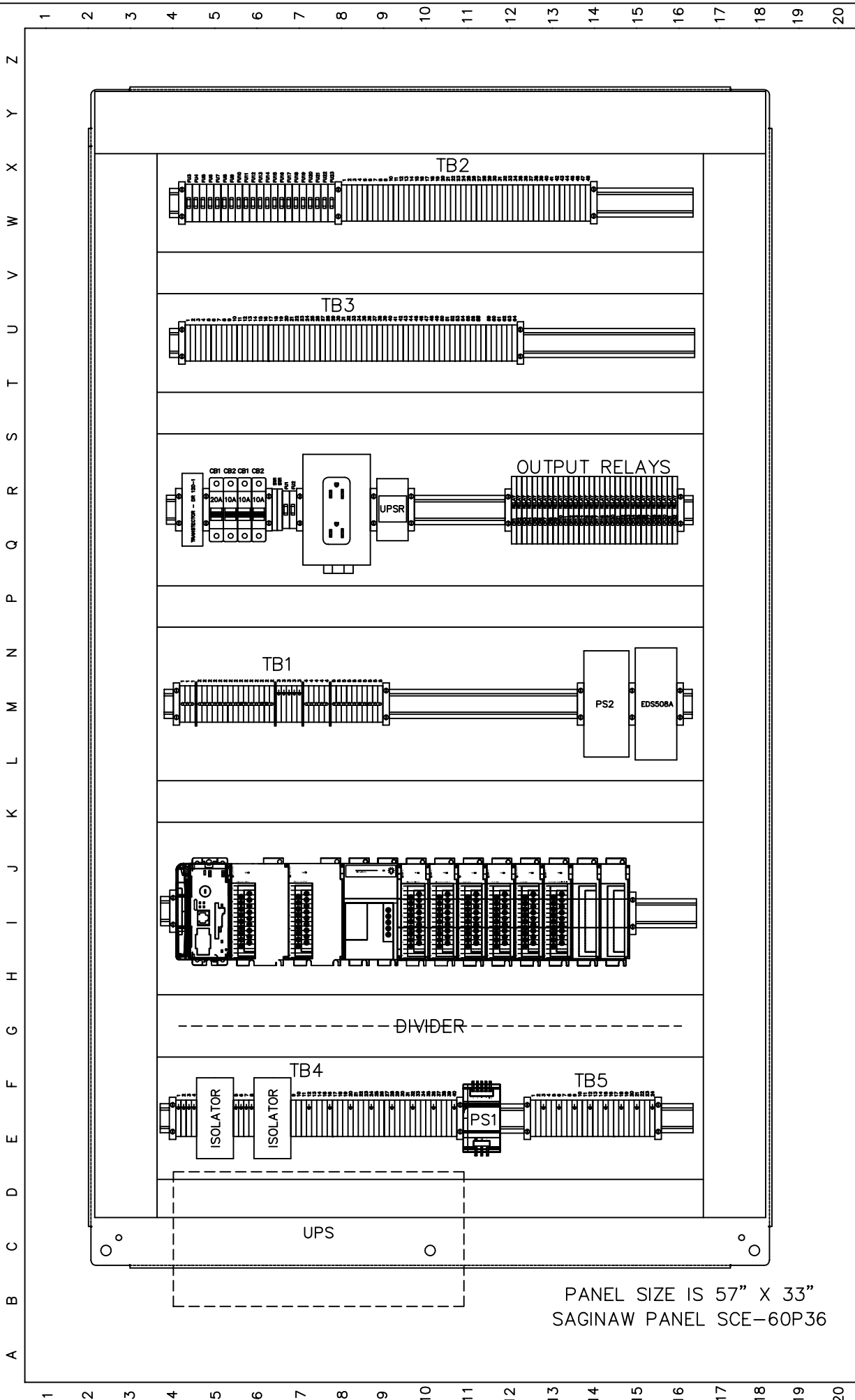
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DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO. 312	NEXT SHEET 313
PROJECT ENGR: JRC			

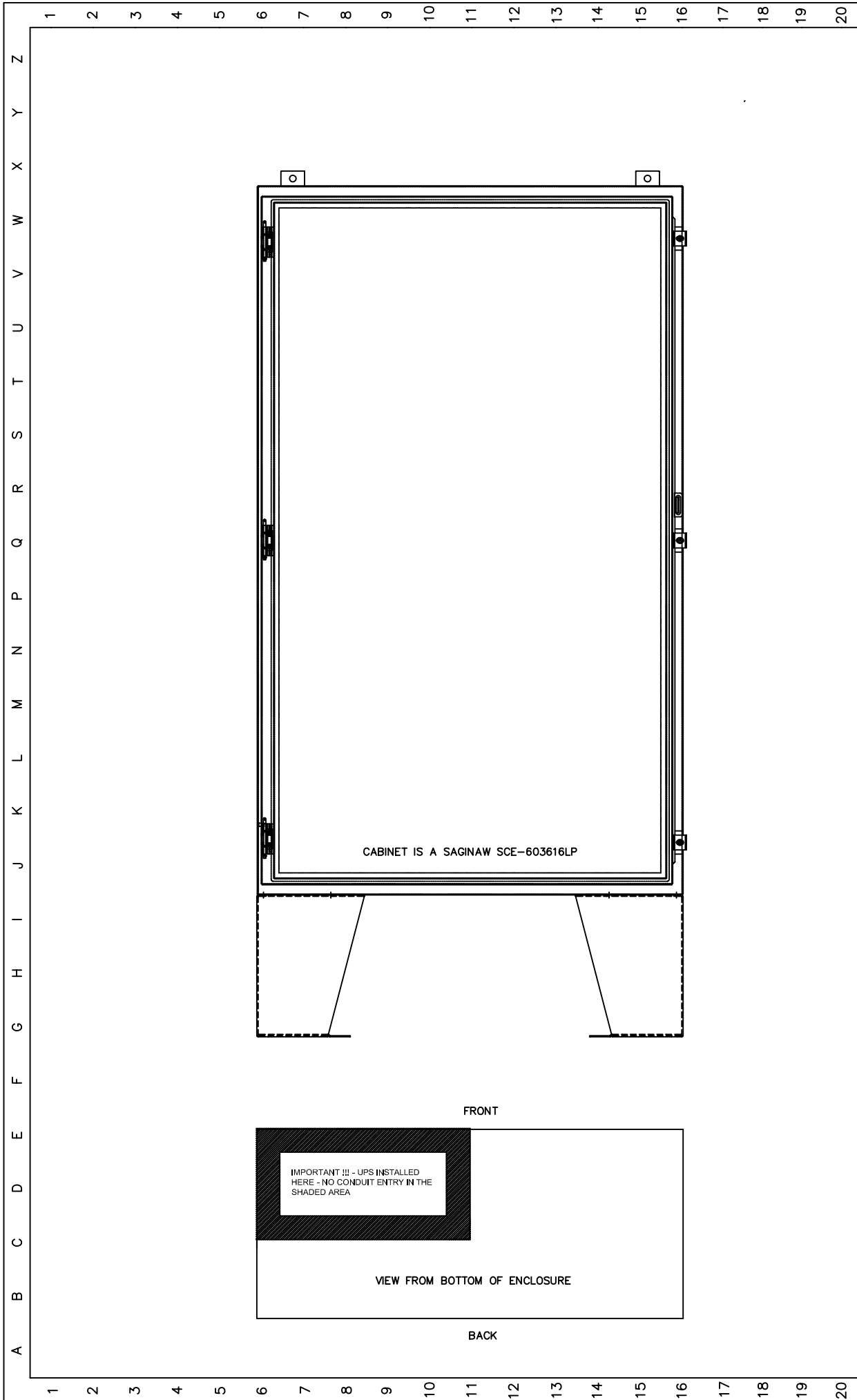
TITLE: ANALOG OUTPUTS 3
WTP - TREATMENT TRAIN 2

REVISION #: 1 REVISION DATE: 3/03/2009



PANEL SIZE IS 57" X 33"
SAGINAW PANEL SCE-60P36

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<p>CRANK BY: BEF</p>	<p>PROJECT ENGR: RED</p>	<p>DATE: 1/25/2008</p>	<p>SHEET NO: 313</p>	<p>NEXT SHEET: 314</p>	<p>REVISION #: 0</p>	<p>REVISION DATE:</p>	



CABINET IS A SAGINAW SCE-603616LP

IMPORTANT !!! - UPS INSTALLED
HERE - NO CONDUIT ENTRY IN THE
SHADED AREA

VIEW FROM BOTTOM OF ENCLOSURE

FRONT

BACK

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<p>DATE: 1/25/2008</p>	<p>SHEET NO. 314</p>	<p>NEXT SHEET 315</p>	<p>REVISION # 0</p>	<p>REVISION DATE:</p>	

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R	S	T	U	V	W	X	Y	Z	
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SYMBOLS

WIRE COLOR CODES

TB □ NON-FUSED DIN RAIL MOUNTED TERMINALS

⏏ GROUND

RED 120 VAC SINGLE PHASE CONTROL POWER

○ TERMINALS ON INDIVIDUAL COMPONENTS

WHITE 120 VAC GROUNDED NEUTRAL

TB □ FUSED DIN-RAIL MOUNTED TERMINAL BLOCKS

⏏ TWISTED PAIR SHIELD

GREEN EARTH GROUND

CR ⏏ ELECTRO-MECHANICAL CONTROL RELAY N.O. CONTACT

⏏

BLUE 24 VOLTS DIRECT CURRENT

CR ⏏ ELECTRO-MECHANICAL CONTROL RELAY N.C. CONTACT

⏏ SHIELDED PAIR

BLACK POWER WIRE (ABOVE 120 VOLTS)

CR ○ ELECTRO-MECHANICAL CONTROL RELAY COIL

WIRE NUMBERS

IL ○ PILOT LIGHT

--- FIELD WIRING

AS SHOWN WHERE WIRE ORIGINATES

H O A
○ X00
|
○ X00
|
○ 00X

HAND-OFF-AUTO SELECTOR SWITCH -
"X" correlates closed contacts
with switch position X

⏏ CUSTOMER POWER WIRING



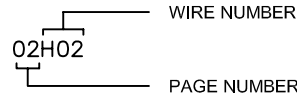
○ NORMALLY OPEN FLOAT SWITCH

○ SUPPLIED BY OTHERS

WIRE NUMBER SHOWN ON SHEETS
OTHER THAN WHERE IT ORIGINATES

○ NORMALLY OPEN MOTOR THERMAL SWITCH

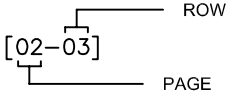
⊕ FIELD ELECTRICAL WIRING NUMBER



○ NORMALLY OPEN PUSHBUTTON

MAPPING

○ NORMALLY CLOSED PUSHBUTTON



○ E-STOP PUSHBUTTON

[BRACKETS] ARE ONLY USED IN MAPPING

○ CIRCUIT BREAKER



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TITLE: LEGEND

DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO: 315	NEXT SHEET: FNL
PROJECT ENGR: JRC			

REVISION #: 0

REVISION DATE:

NRRWA FILTER 1

<u>SHEET</u>	<u>DESCRIPTION</u>
400	COVER SHEET
401	120 VAC CONTROL POWER
402	PLC LAYOUT AND COMMUNICATION
403	DIGITAL INPUTS 1
404	DIGITAL INPUTS 2
405	RELAY OUTPUTS
406	ANALOG INPUTS
407	ANALOG OUTPUTS
408	PANEL LAYOUT
409	LEGEND

A B C D E F G H I J K L M N P Q R S T U V W X Y Z



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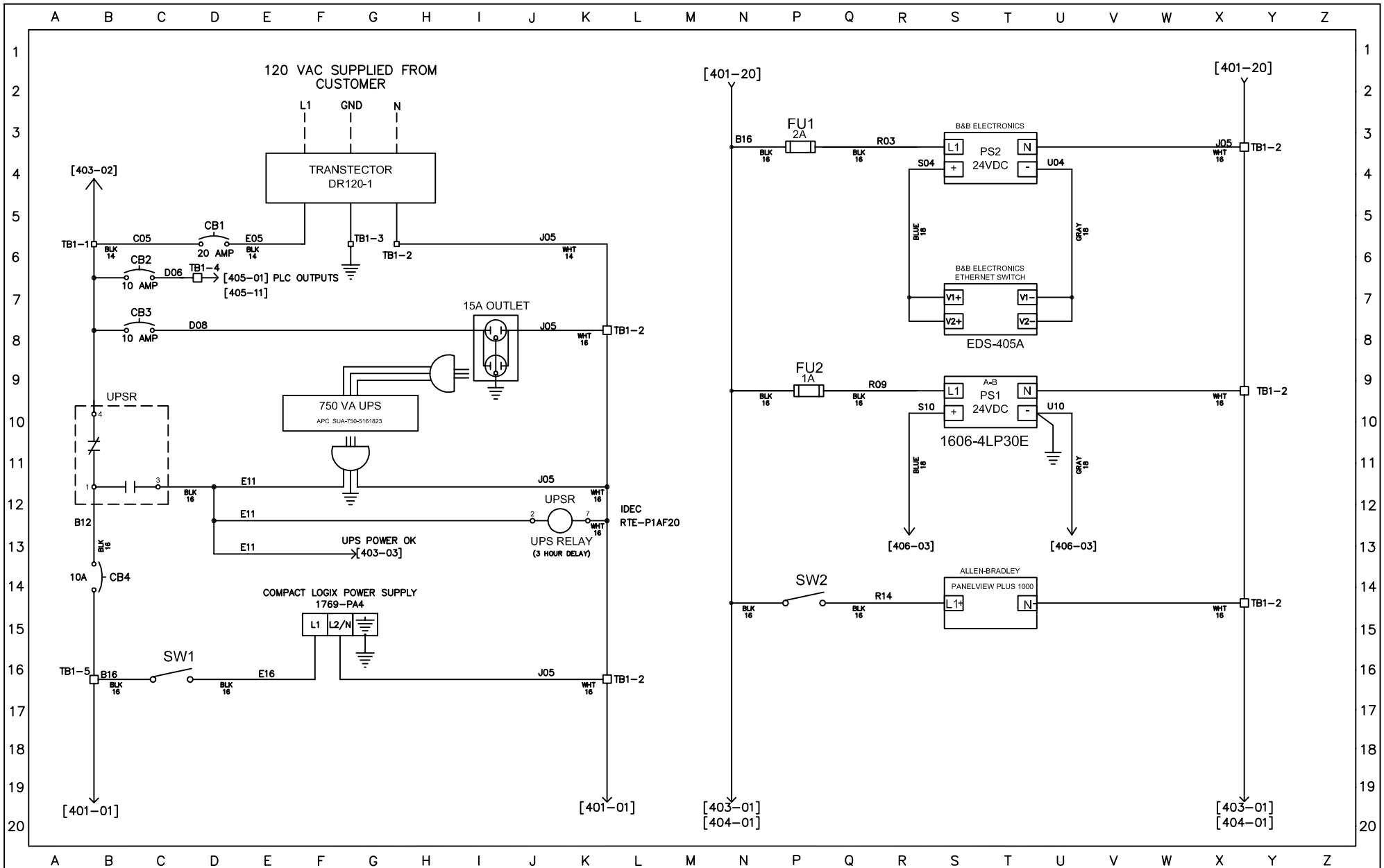
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J3362 NRRWA

DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO.: 400	NEXT SHEET: 401
PROJECT ENGR: JRC			

TITLE: COVER SHEET
WTP - FILTER 1

REVISION #: 0 **REVISION DATE:**



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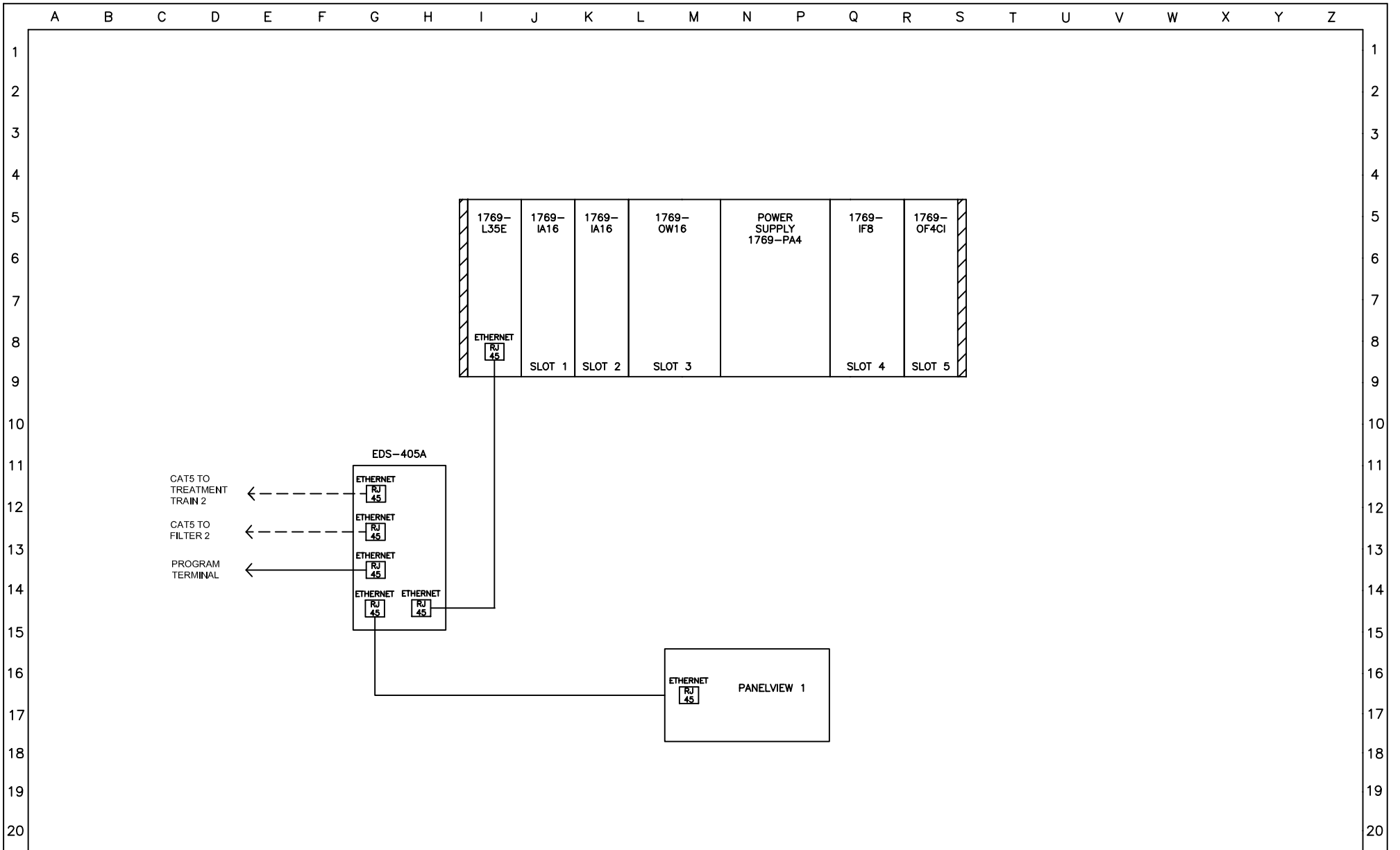
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J3362 NRRWA

DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO. 401	NEXT SHEET 402
PROJECT ENGR: JRC			

TITLE: 120VAC CONTROL POWER
 WTP - FILTER 1

REVISION #: 1
 REVISION DATE:



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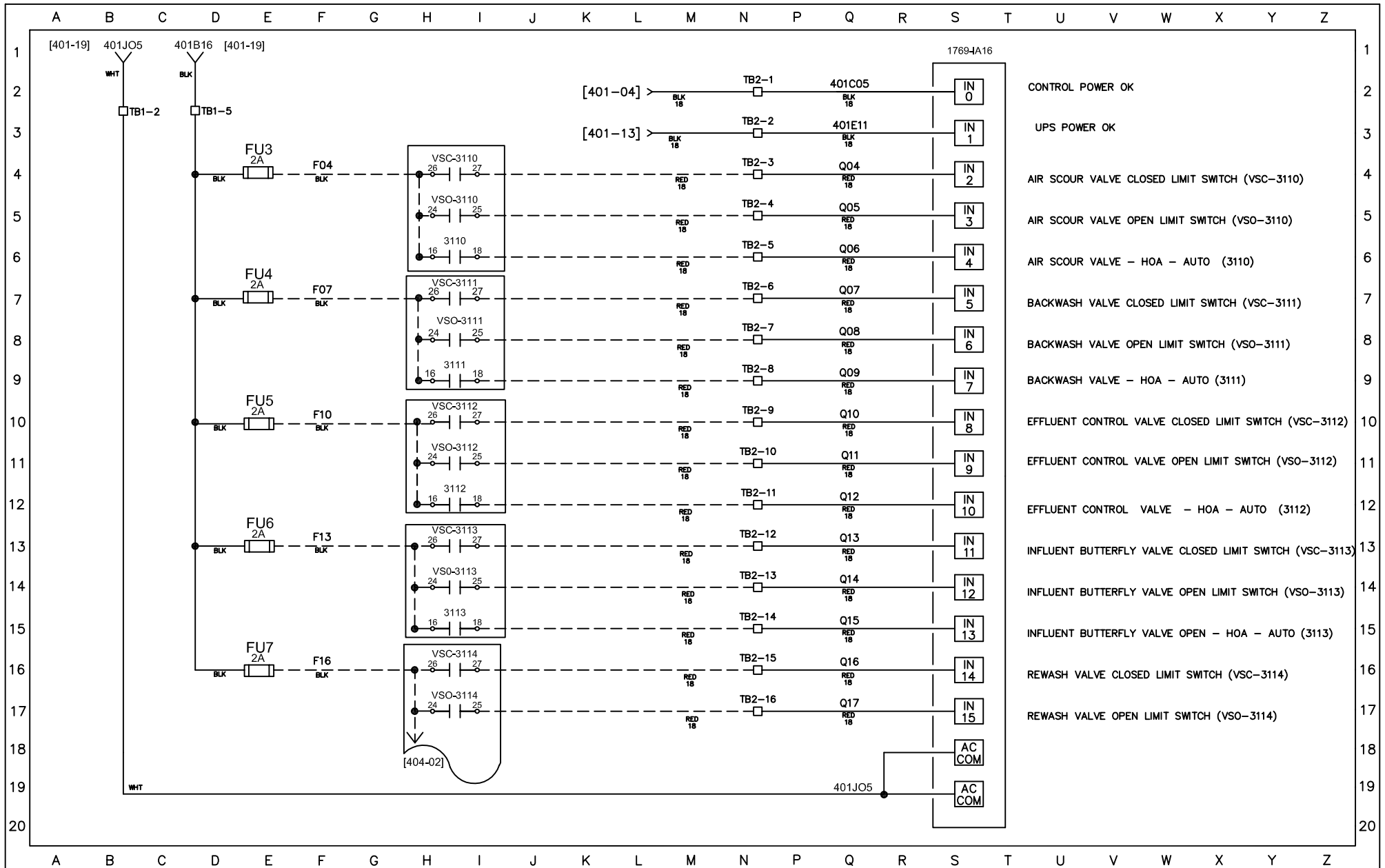
J3362 NRRWA

DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO: 402	NEXT SHEET: 403
PROJECT ENGR: JRC			

TITLE: PLC LAYOUT AND COMMUNICATION
WTP - FILTER 1

REVISION #: 0

REVISION DATE:



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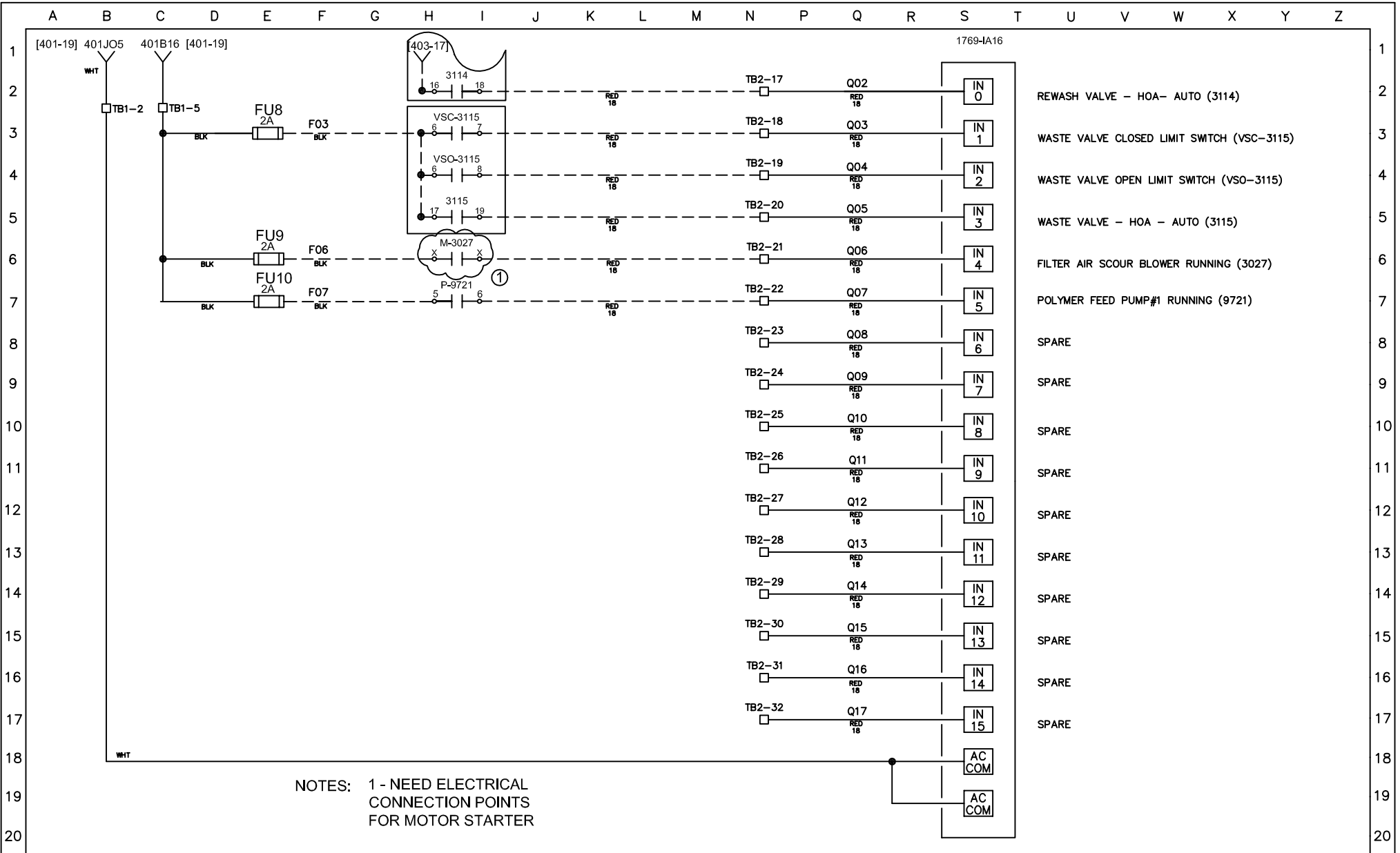
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DRAWN BY: SAH
PROJECT ENGR: JRC
DATE: 1/25/2008
SHEET NO: 403
NEXT SHEET: 404

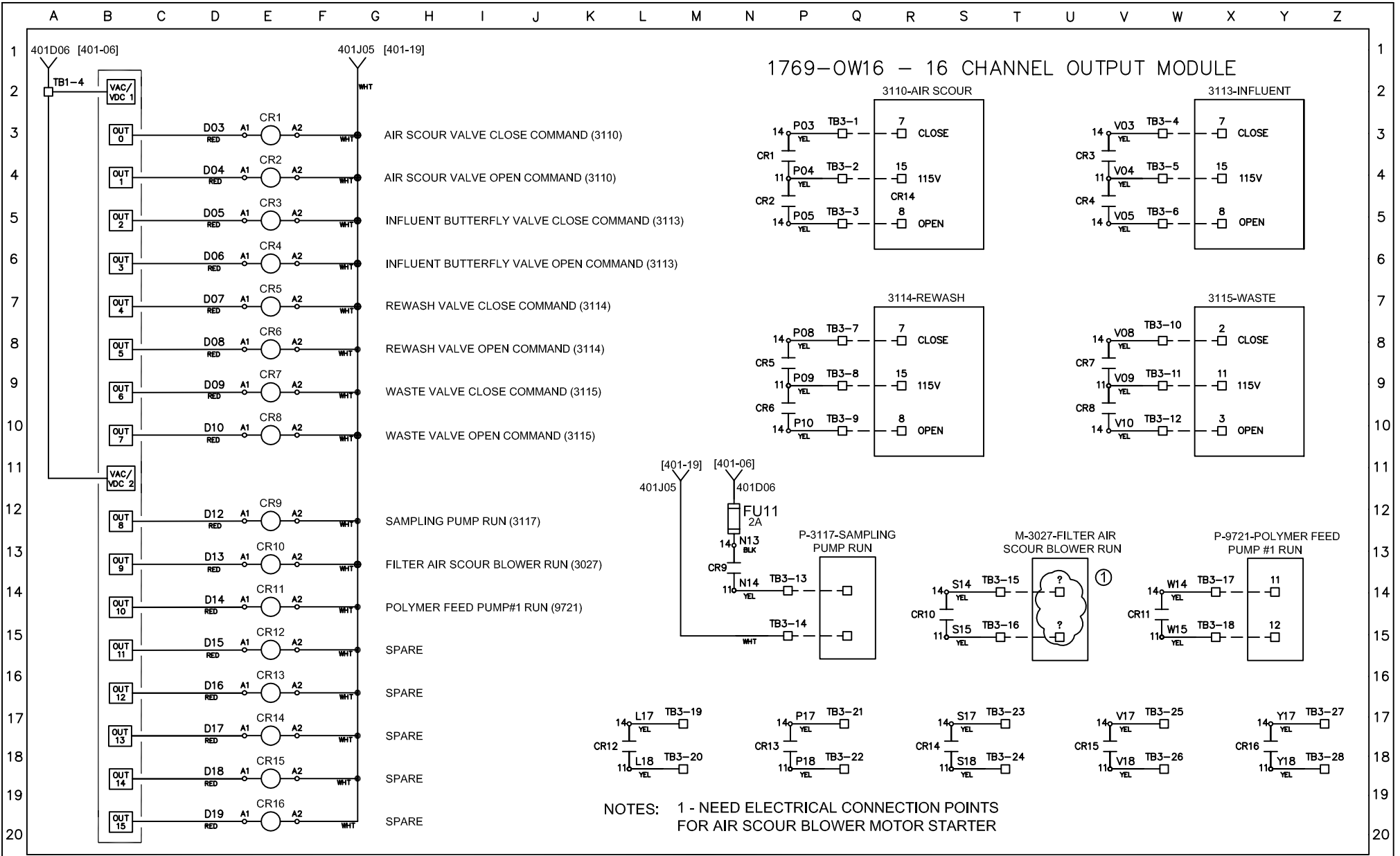
TITLE: DIGITAL INPUTS 1
WTP - FILTER 1

REVISION #: 1
REVISION DATE: 12/13/07 BEF



- IN 0 REWASH VALVE - HOA- AUTO (3114)
- IN 1 WASTE VALVE CLOSED LIMIT SWITCH (VSC-3115)
- IN 2 WASTE VALVE OPEN LIMIT SWITCH (VSO-3115)
- IN 3 WASTE VALVE - HOA - AUTO (3115)
- IN 4 FILTER AIR SCOUR BLOWER RUNNING (3027)
- IN 5 POLYMER FEED PUMP#1 RUNNING (9721)
- IN 6 SPARE
- IN 7 SPARE
- IN 8 SPARE
- IN 9 SPARE
- IN 10 SPARE
- IN 11 SPARE
- IN 12 SPARE
- IN 13 SPARE
- IN 14 SPARE
- IN 15 SPARE

NOTES: 1 - NEED ELECTRICAL CONNECTION POINTS FOR MOTOR STARTER



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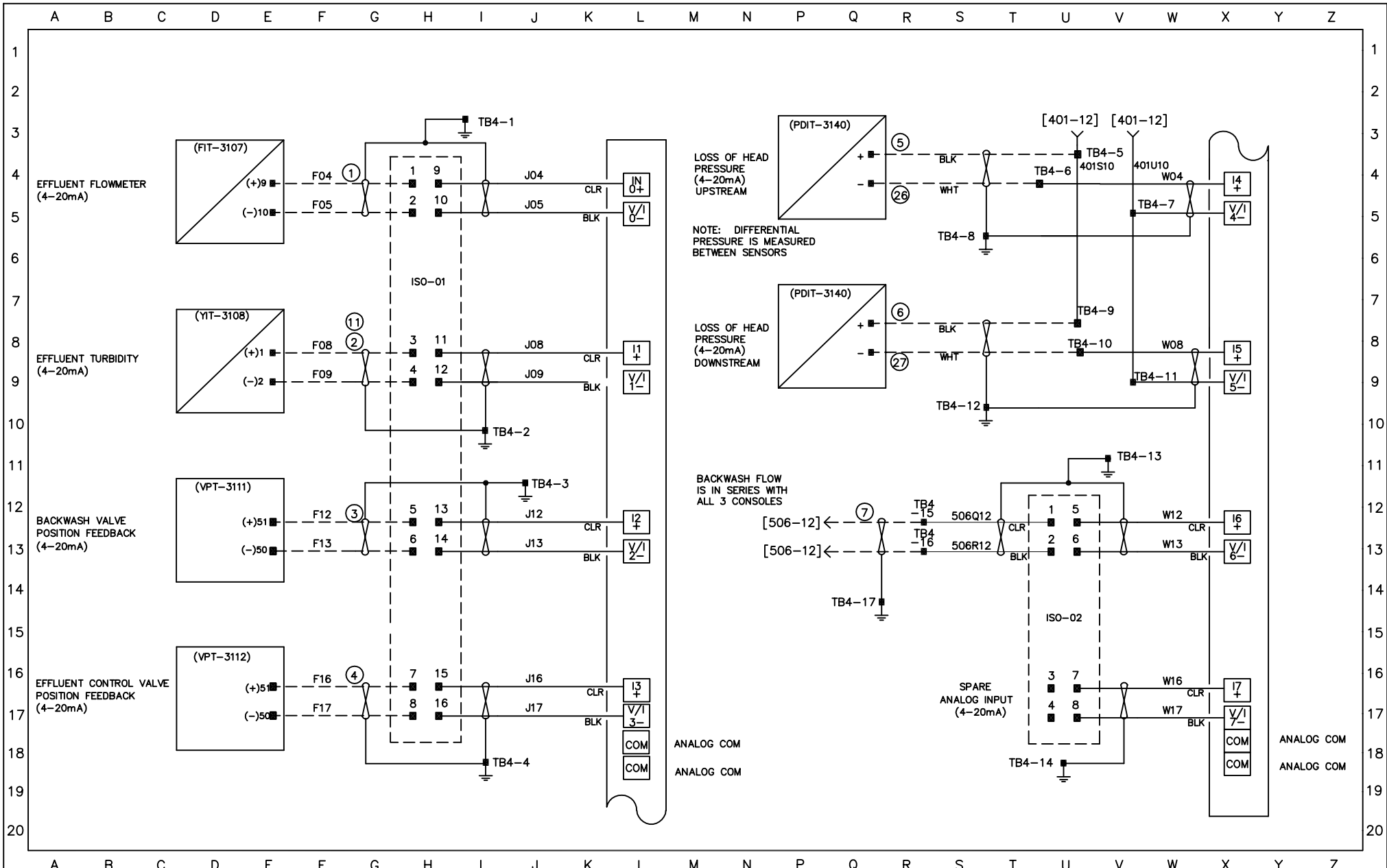
J3362 NRRWA

DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO: 405	NEXT SHEET: 406
PROJECT ENGR: JRC			

TITLE: RELAY OUTPUTS
WTP - FILTER 1

REVISION #: 0

REVISION DATE:



LOSS OF HEAD PRESSURE (4-20mA) UPSTREAM

NOTE: DIFFERENTIAL PRESSURE IS MEASURED BETWEEN SENSORS

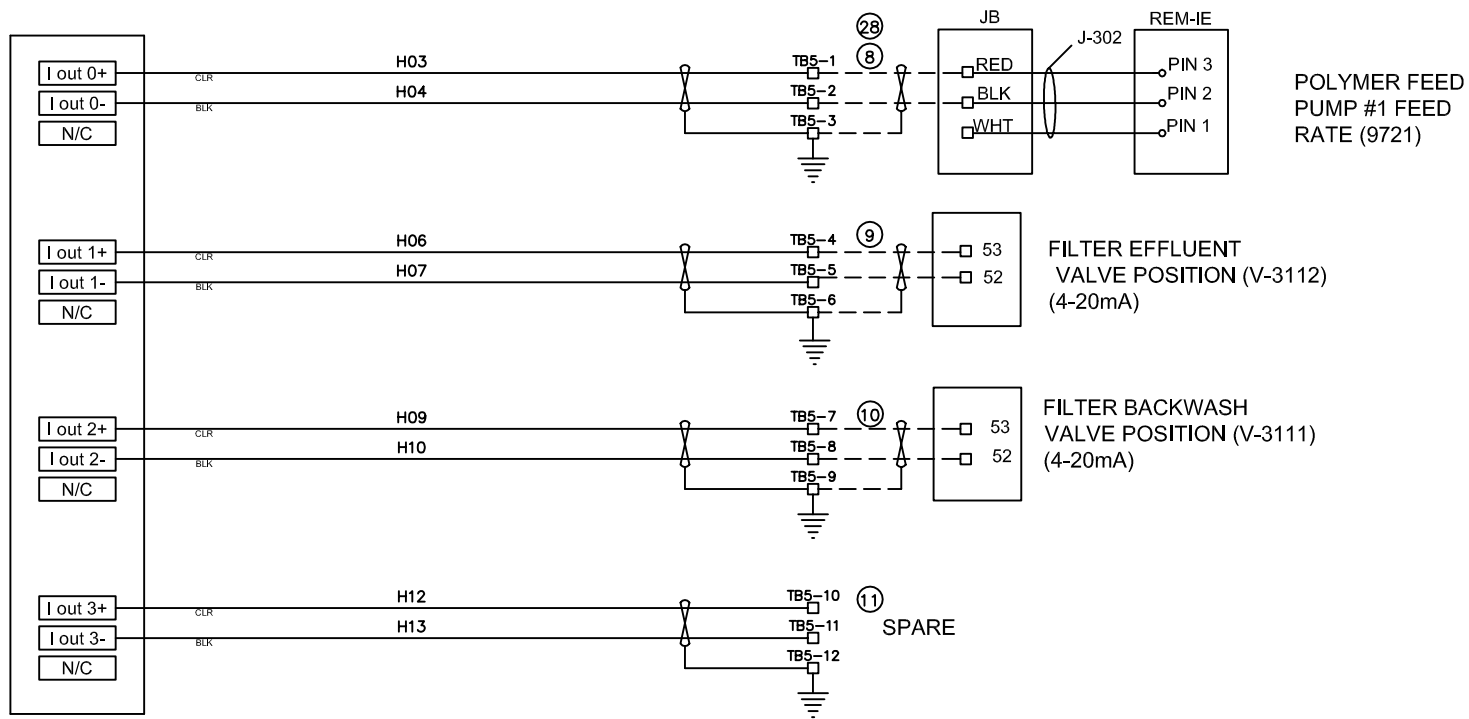
LOSS OF HEAD PRESSURE (4-20mA) DOWNSTREAM

BACKWASH FLOW IS IN SERIES WITH ALL 3 CONSOLES

ANALOG COM
ANALOG COM

ANALOG COM
ANALOG COM

1769-OF4CI - ANALOG OUTPUT 4-20mA



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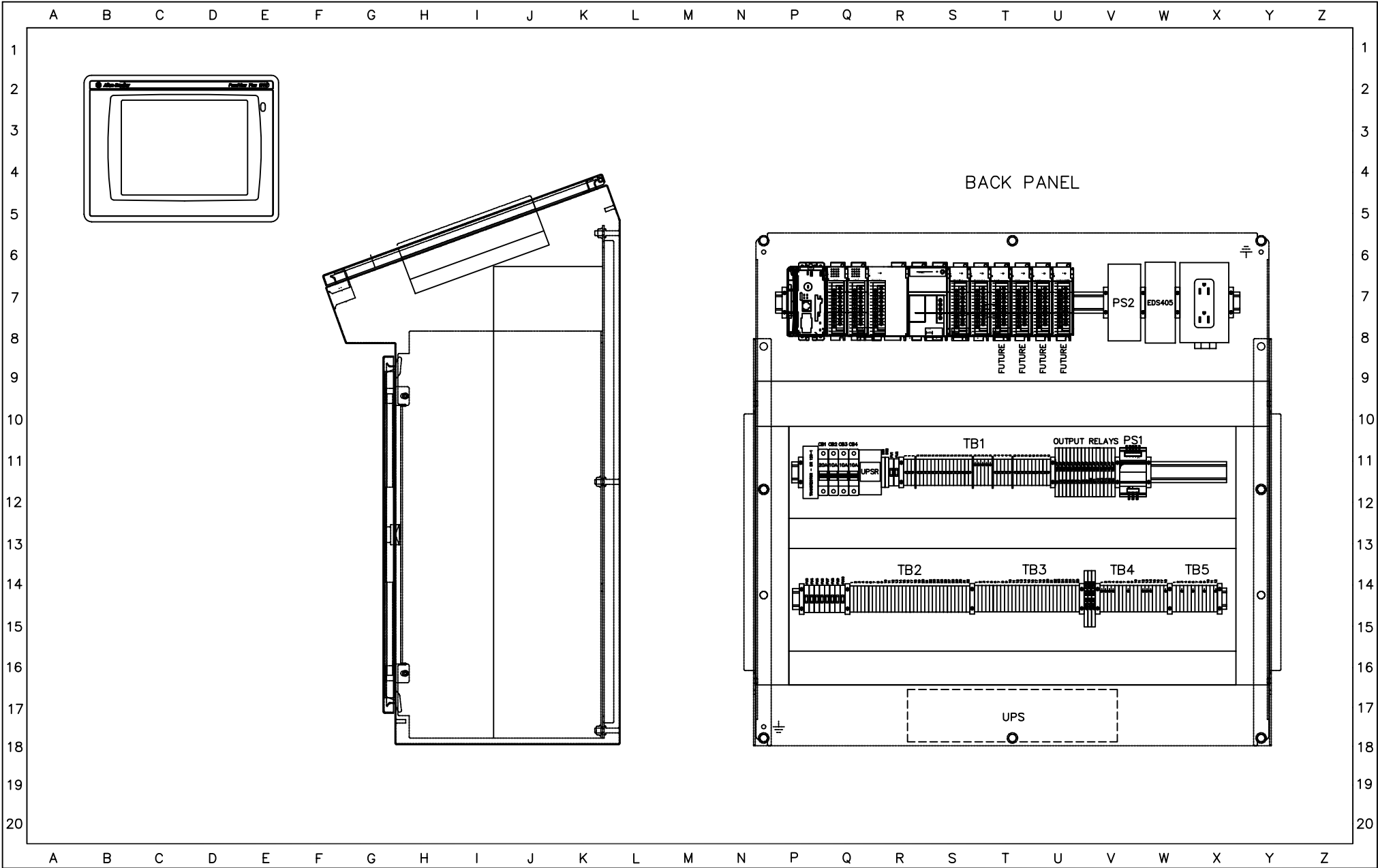
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DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO. 407	NEXT SHEET 408
PROJECT ENGR: JRC			

TITLE: ANALOG OUTPUTS
WTP - FILTER 1

REVISION #: 1 REVISION DATE: 3/03/2009



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










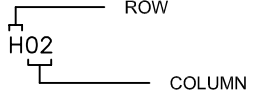


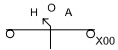

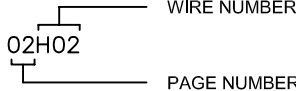

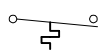
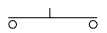

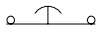
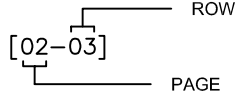
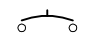
J3362 NRRWA

DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO. 408	NEXT SHEET 409
PROJECT ENGR: JRC			

TITLE: PANEL LAYOUT
WTP - FILTER 1

REVISION #: 0

REVISION DATE:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R	S	T	U	V	W	X	Y	Z
1	<u>SYMBOLS</u>												<u>WIRE COLOR CODES</u>												
2	 NON-FUSED DIN RAIL MOUNTED TERMINALS											 GROUND											RED 120 VAC SINGLE PHASE CONTROL POWER		
3	 TERMINALS ON INDIVIDUAL COMPONENTS																						WHITE 120 VAC GROUNDED NEUTRAL		
4	 FUSED DIN-RAIL MOUNTED TERMINAL BLOCKS											 TWISTED PAIR SHIELD											GREEN EARTH GROUND		
5	 ELECTRO-MECHANICAL CONTROL RELAY N.O. CONTACT											 SHIELDED PAIR											<u>WIRE NUMBERS</u> AS SHOWN WHERE WIRE ORIGINATES		
6	 ELECTRO-MECHANICAL CONTROL RELAY N.C. CONTACT											 FIELD WIRING													
7	 ELECTRO-MECHANICAL CONTROL RELAY COIL											 CUSTOMER POWER WIRING													
8	 PILOT LIGHT											 SUPPLIED BY OTHERS											WIRE NUMBER SHOWN ON SHEETS OTHER THAN WHERE IT ORIGINATES		
9	 HAND-OFF-AUTO SELECTOR SWITCH - "X" correlates closed contacts with switch position X											 FIELD ELECTRICAL WIRING NUMBER													
10																									
11																									
12	 NORMALLY OPEN FLOAT SWITCH																						WIRE NUMBER PAGE NUMBER		
13	 NORMALLY OPEN MOTOR THERMAL SWITCH																								
14	 NORMALLY OPEN PUSHBUTTON																								
15	 NORMALLY CLOSED PUSHBUTTON																						<u>MAPPING</u>		
16	 E-STOP PUSHBUTTON																								
17	 CIRCUIT BREAKER																						[BRACKETS] ARE ONLY USED IN MAPPING		
18																									
19																									
20																									

NRRWA FILTER 2

<u>SHEET</u>	<u>DESCRIPTION</u>
500	COVER SHEET
501	120 VAC CONTROL POWER
502	PLC LAYOUT AND COMMUNICATION
503	DIGITAL INPUTS 1
504	DIGITAL INPUTS 2
505	RELAY OUTPUTS
506	ANALOG INPUTS
507	ANALOG OUTPUTS
508	PANEL LAYOUT
509	LEGEND



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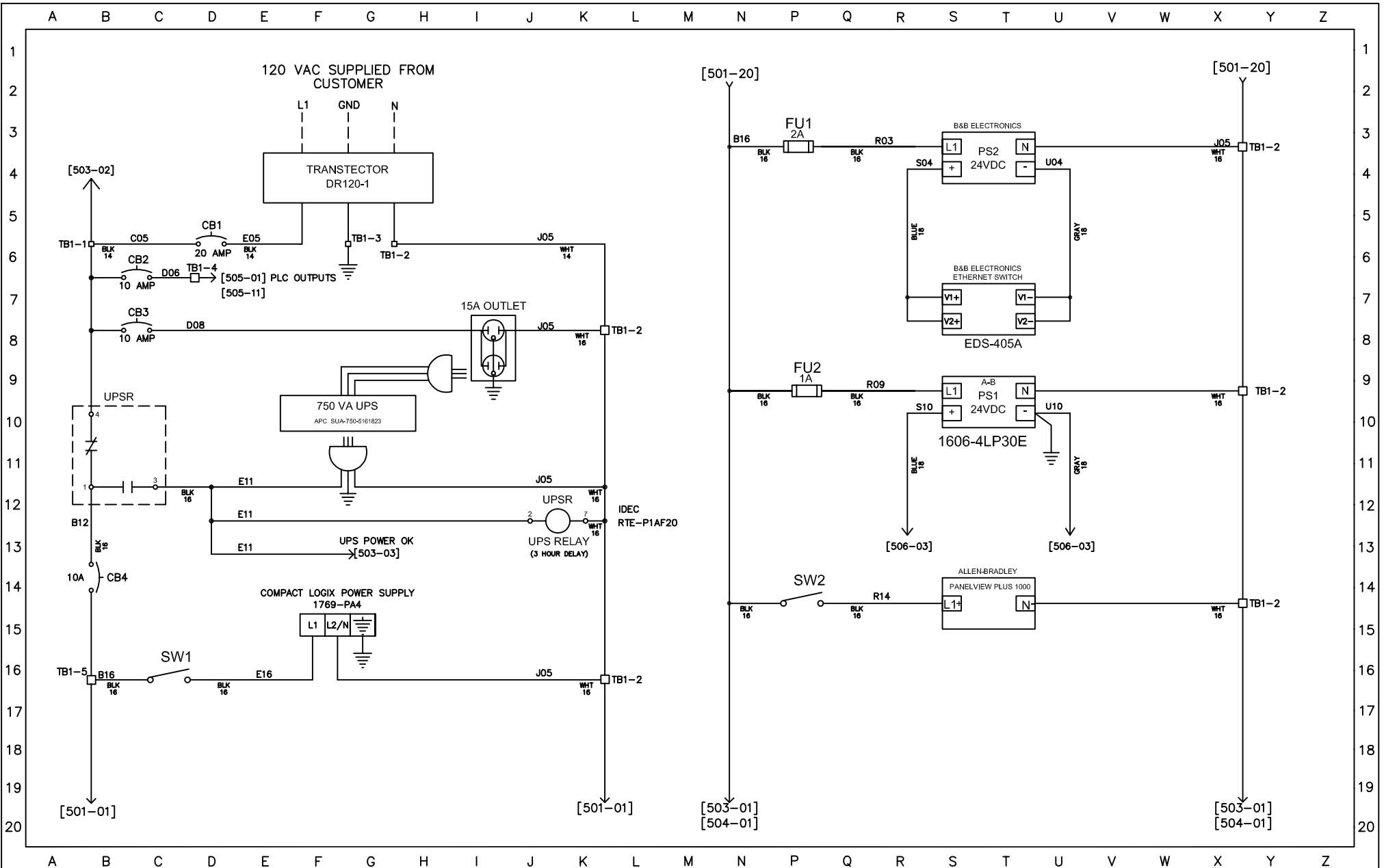
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<small>DRAWN BY:</small> SAH	<small>DATE:</small> 1/25/2008	<small>SHEET NO.</small> 500	<small>NEXT SHEET</small> 501
<small>PROJECT ENGR:</small> JRC			

TITLE: COVER SHEET WTP - FILTER 2	REVISION #: 0	REVISION DATE:
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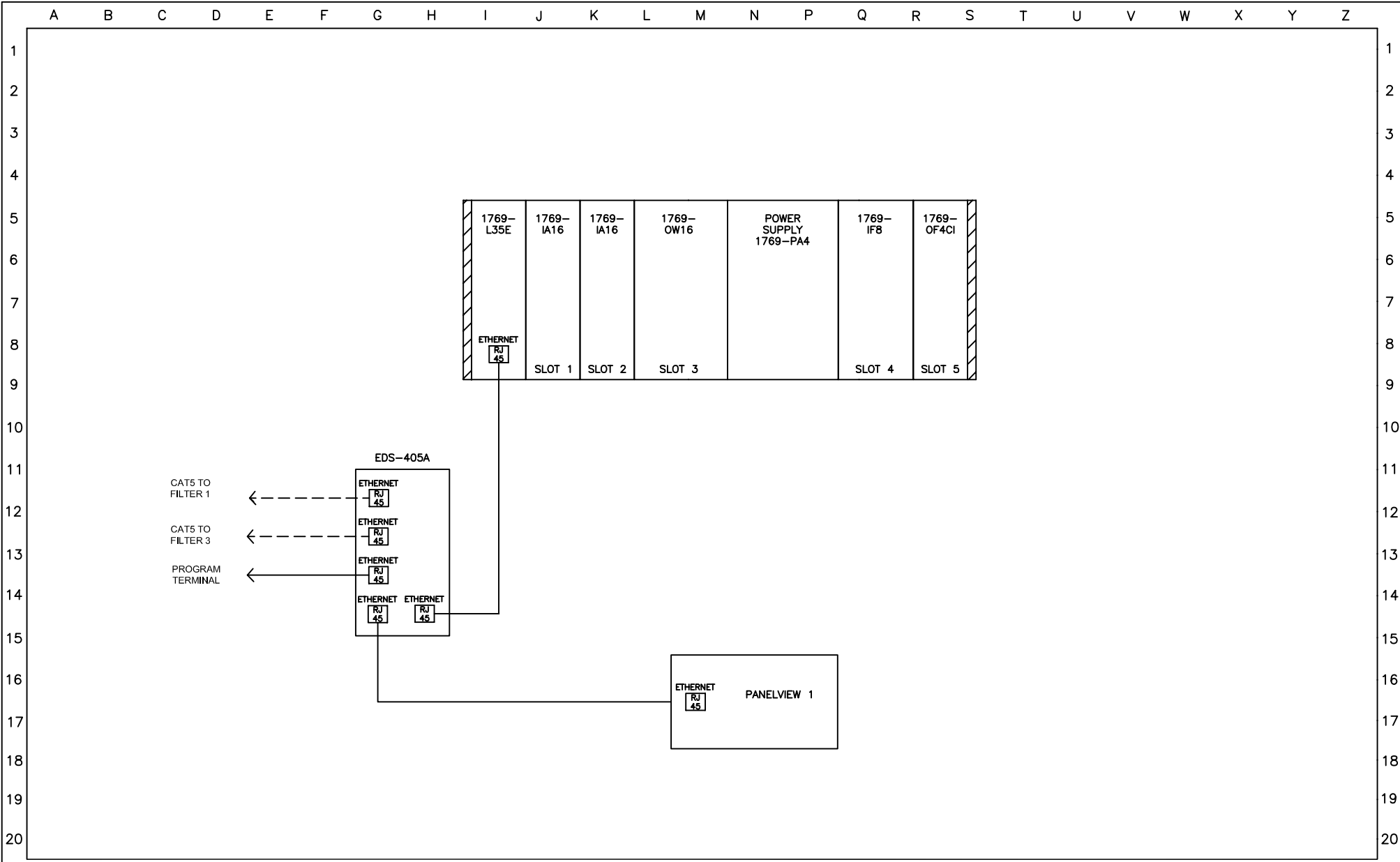
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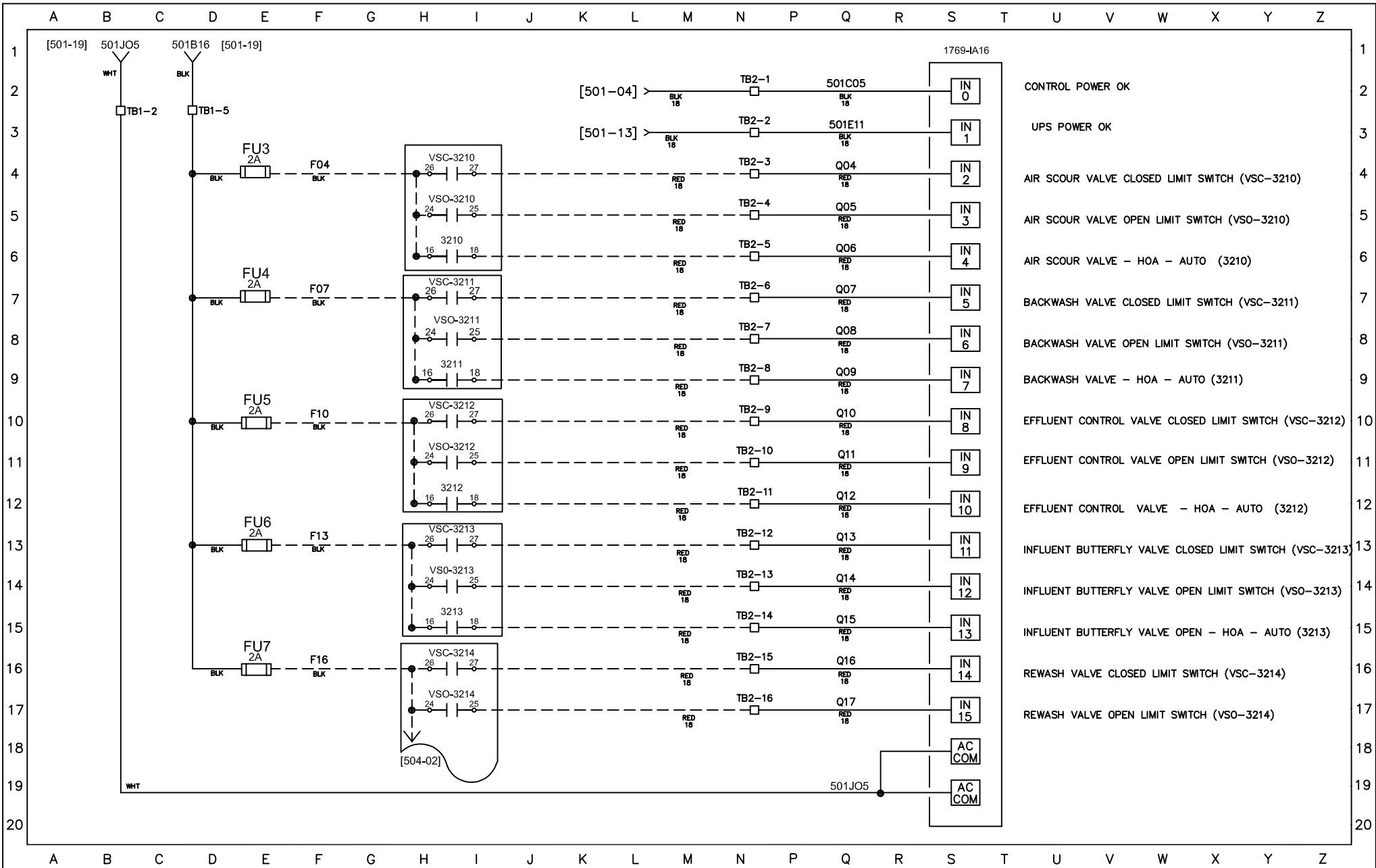
DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO. 501	NEXT SHEET 502
PROJECT ENGR: JRC			

TITLE: 120VAC CONTROL POWER
WTP - FILTER 2

REVISION #: 0
REVISION DATE:



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		<p>DRAWN BY: SAH</p> <p>PROJECT ENGR: JRC</p>	<p>DATE: 1/25/2008</p>	<p>SHEET NO. 502</p>	<p>NEXT SHEET 503</p>



- IN 0 CONTROL POWER OK
- IN 1 UPS POWER OK
- IN 2 AIR SCOUR VALVE CLOSED LIMIT SWITCH (VSC-3210)
- IN 3 AIR SCOUR VALVE OPEN LIMIT SWITCH (VSO-3210)
- IN 4 AIR SCOUR VALVE - HOA - AUTO (3210)
- IN 5 BACKWASH VALVE CLOSED LIMIT SWITCH (VSC-3211)
- IN 6 BACKWASH VALVE OPEN LIMIT SWITCH (VSO-3211)
- IN 7 BACKWASH VALVE - HOA - AUTO (3211)
- IN 8 EFFLUENT CONTROL VALVE CLOSED LIMIT SWITCH (VSC-3212)
- IN 9 EFFLUENT CONTROL VALVE OPEN LIMIT SWITCH (VSO-3212)
- IN 10 EFFLUENT CONTROL VALVE - HOA - AUTO (3212)
- IN 11 INFLUENT BUTTERFLY VALVE CLOSED LIMIT SWITCH (VSC-3213)
- IN 12 INFLUENT BUTTERFLY VALVE OPEN LIMIT SWITCH (VSO-3213)
- IN 13 INFLUENT BUTTERFLY VALVE OPEN - HOA - AUTO (3213)
- IN 14 REWASH VALVE CLOSED LIMIT SWITCH (VSC-3214)
- IN 15 REWASH VALVE OPEN LIMIT SWITCH (VSO-3214)

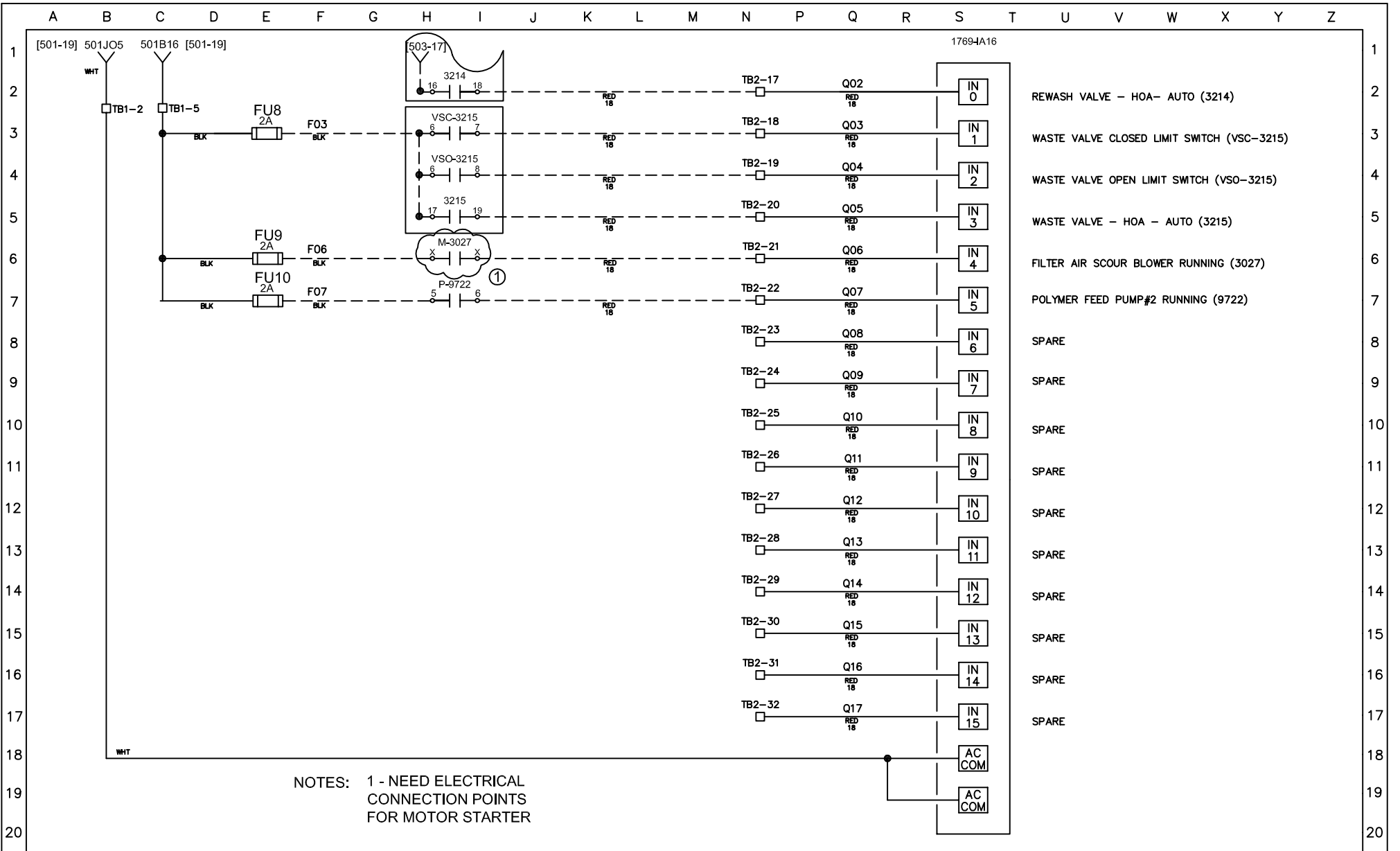



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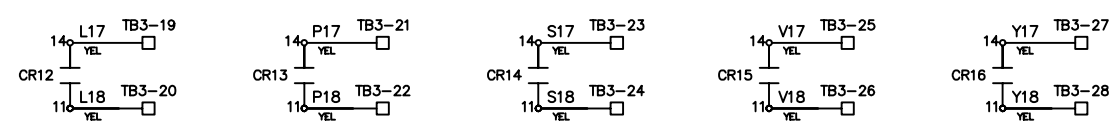
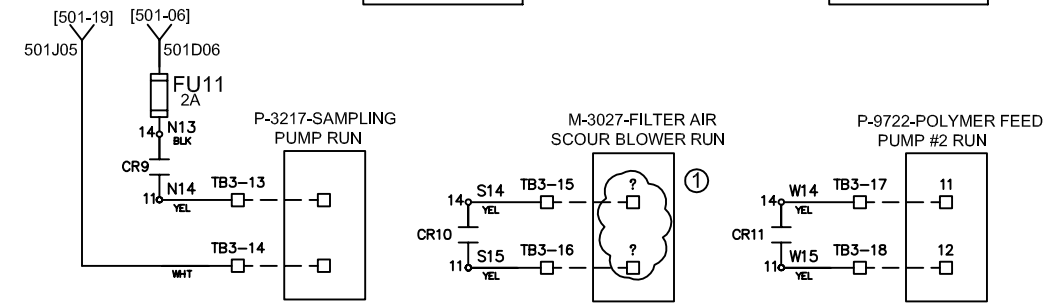
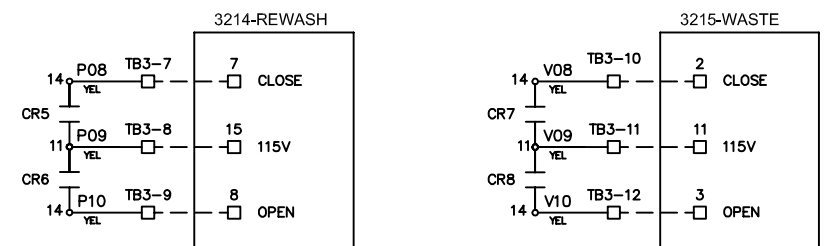
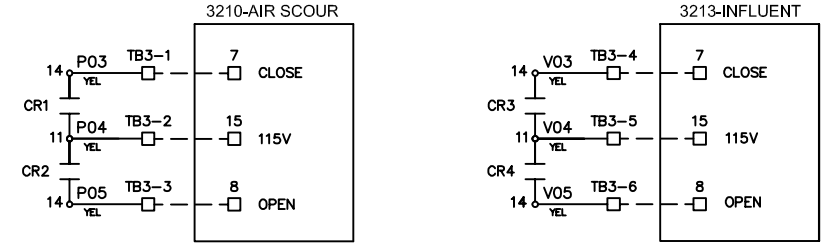
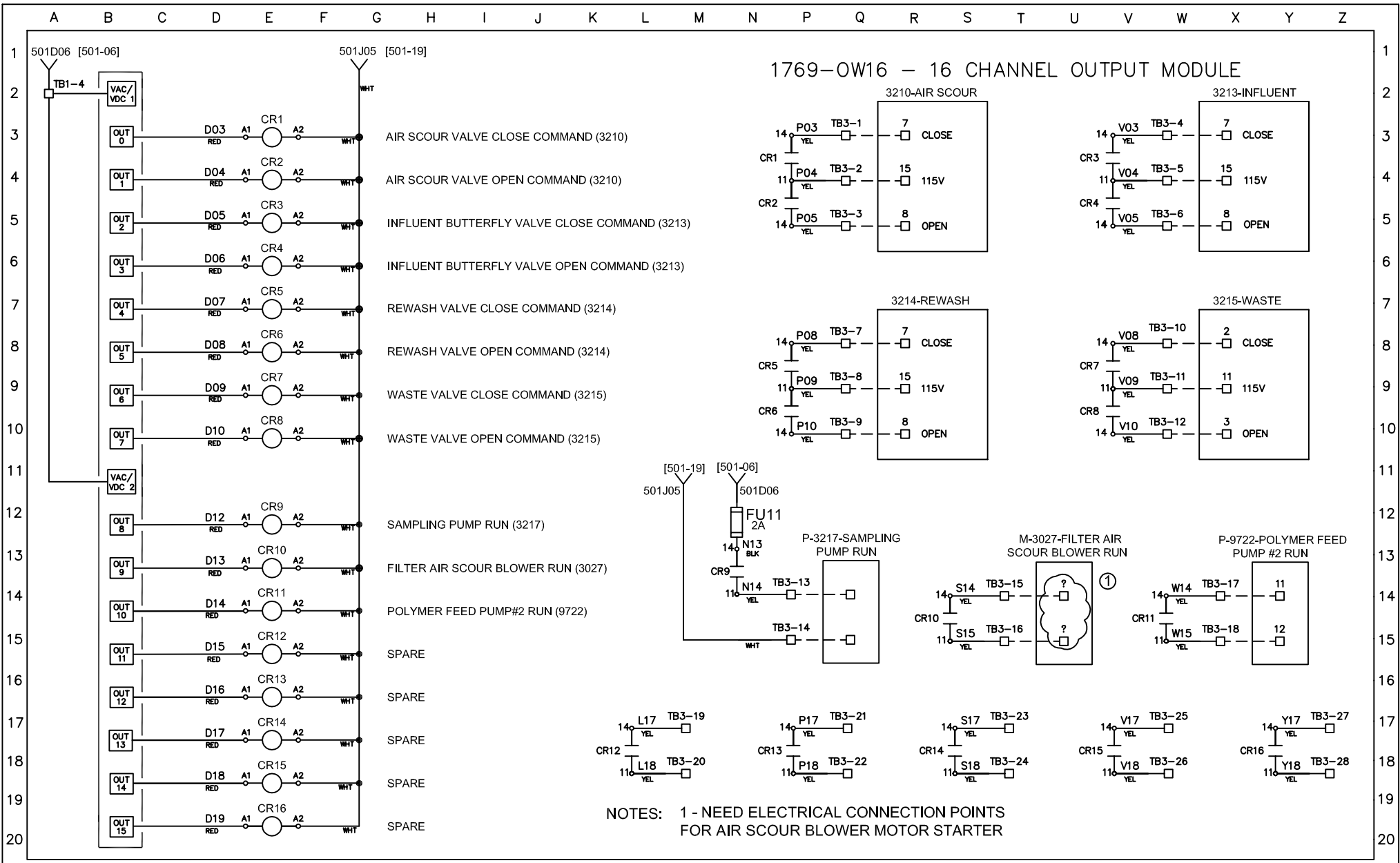
J3362 NRRWA			
DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO. 503	NEXT SHEET 504
PROJECT ENGR: JRC			

TITLE: DIGITAL INPUTS 1	
WTP - FILTER 2	
REVISION #: 0	REVISION DATE:



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<p>www.sunapsys.com 540-904-6862</p>	<p>DRAWN BY: SAH</p>	<p>DATE: 1/25/2008</p>	<p>SHEET NO: 504</p>	<p>NEXT SHEET: 505</p>	<p>REVISION #: 0</p>	<p>REVISION DATE:</p>	

1769-OW16 - 16 CHANNEL OUTPUT MODULE



NOTES: 1 - NEED ELECTRICAL CONNECTION POINTS FOR AIR SCOUR BLOWER MOTOR STARTER

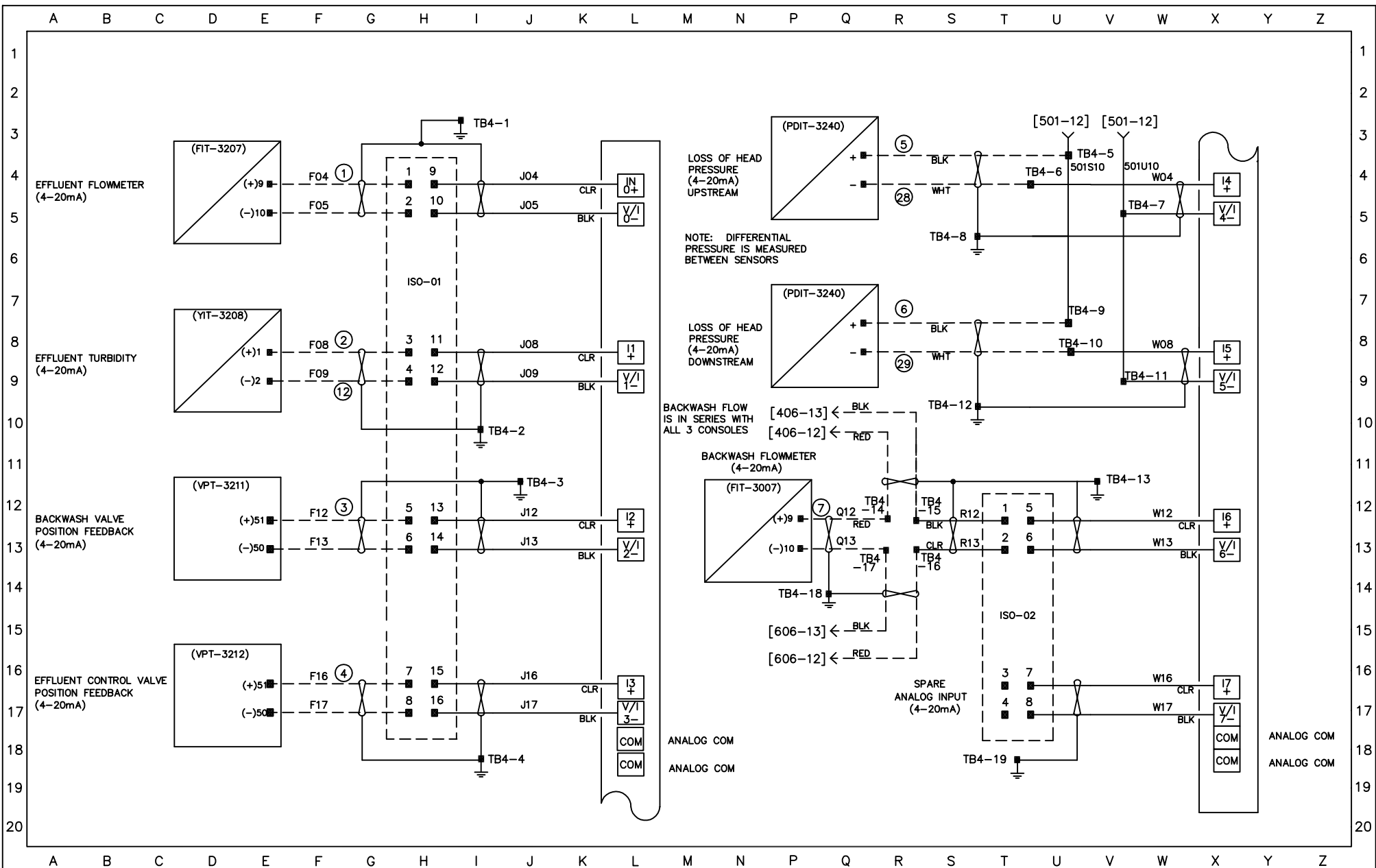


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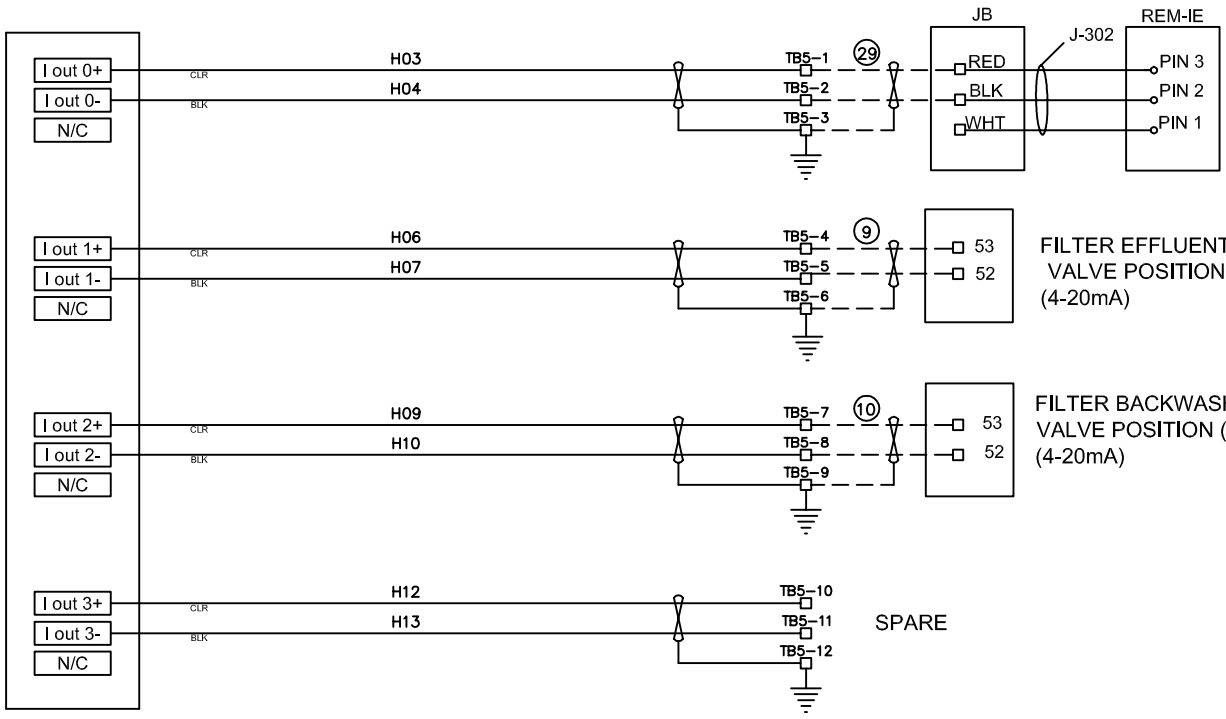
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J3362 NRRWA			
DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO. 505	NEXT SHEET 506
PROJECT ENGR: JRC			

TITLE: RELAY OUTPUTS WTP - FILTER 2	
REVISION #: 0	REVISION DATE:



1769-OF4CI - ANALOG OUTPUT 4-20mA



POLYMER FEED
PUMP #2 FEED
RATE (9722)

FILTER EFFLUENT
VALVE POSITION (V-3212)
(4-20mA)

FILTER BACKWASH
VALVE POSITION (V-3211)
(4-20mA)

SPARE

A B C D E F G H I J K L M N P Q R S T U V W X Y Z



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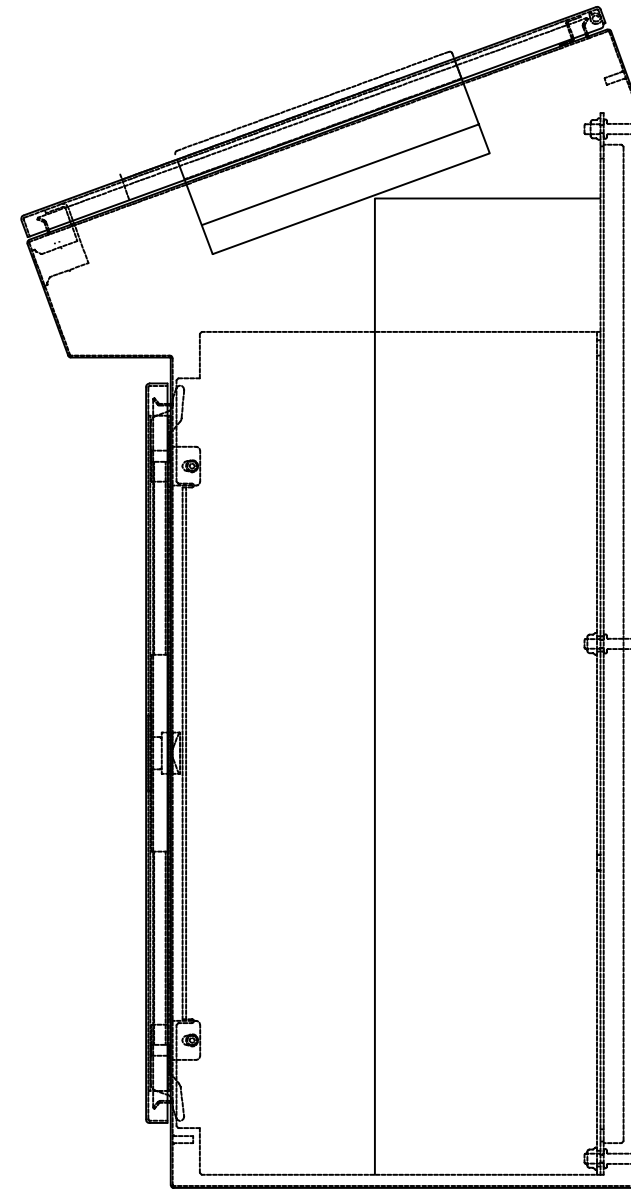
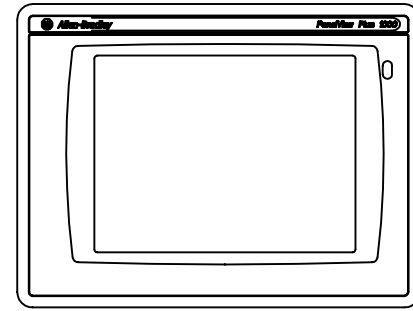
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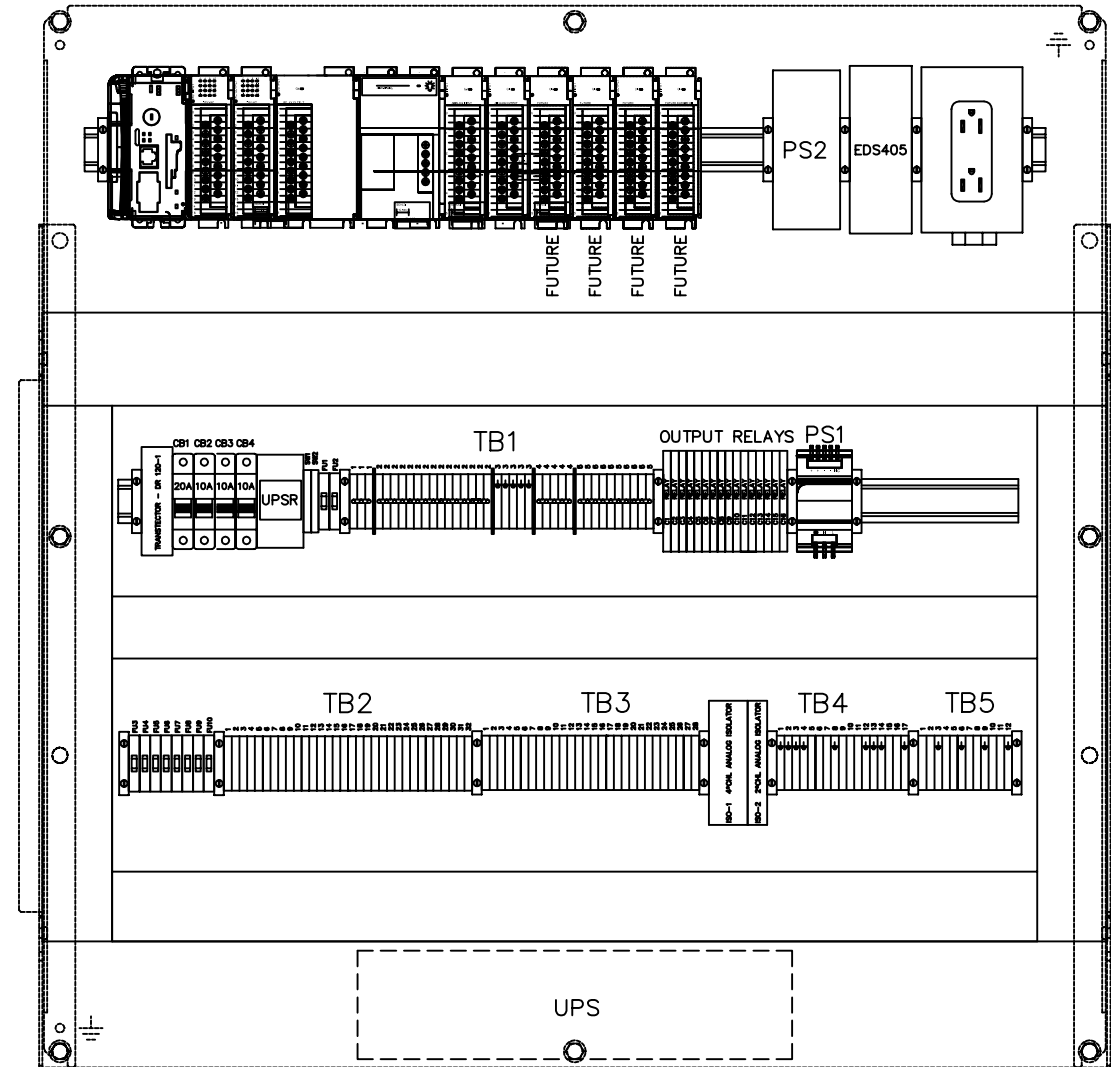
DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO. 507	NEXT SHEET 508
PROJECT ENGR: JRC			

TITLE: ANALOG OUTPUTS
WTP - FILTER 2

REVISION #: 1 REVISION DATE: 3/03/2009



BACK PANEL



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








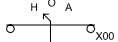






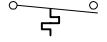

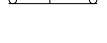
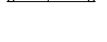

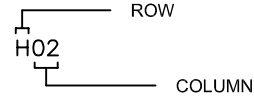
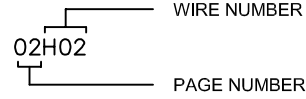
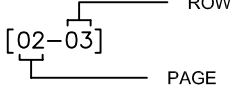
J3362 NRRWA

TITLE: PANEL LAYOUT
WTP - FILTER 2

DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO. 508	NEXT SHEET 509
PROJECT ENGR: JRC			

REVISION #: 0

REVISION DATE:

A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R	S	T	U	V	W	X	Y	Z		
1	SYMBOLS																							WIRE COLOR CODES		1
2		NON-FUSED DIN RAIL MOUNTED TERMINALS		GROUND	2																					
3		TERMINALS ON INDIVIDUAL COMPONENTS			3																					
4		FUSED DIN-RAIL MOUNTED TERMINAL BLOCKS		TWISTED PAIR SHIELD	4																					
5		ELECTRO-MECHANICAL CONTROL RELAY N.O. CONTACT		SHIELDED PAIR	5																					
6		ELECTRO-MECHANICAL CONTROL RELAY N.C. CONTACT			6																					
7		ELECTRO-MECHANICAL CONTROL RELAY COIL			7																					
8		PILOT LIGHT	---	FIELD WIRING	8																					
9		HAND-OFF-AUTO SELECTOR SWITCH -		CUSTOMER POWER WIRING	9																					
10		"X" correlates closed contacts with switch position X		SUPPLIED BY OTHERS	10																					
11				FIELD ELECTRICAL WIRING NUMBER	11																					
12		NORMALLY OPEN FLOAT SWITCH			12																					
13		NORMALLY OPEN MOTOR THERMAL SWITCH			13																					
14		NORMALLY OPEN PUSHBUTTON			14																					
15		NORMALLY CLOSED PUSHBUTTON			15																					
16		E-STOP PUSHBUTTON			16																					
17		CIRCUIT BREAKER			17																					
18																								WIRE NUMBERS	18	
19																								AS SHOWN WHERE WIRE ORIGINATES	19	
20																									20	
																							WIRE NUMBER SHOWN ON SHEETS OTHER THAN WHERE IT ORIGINATES			
																										
																							MAPPING			
																										
																							[BRACKETS] ARE ONLY USED IN MAPPING			



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J3362 NRRWA

DRAWN BY: SAH

DATE:

SHEET NO.

NEXT SHEET

PROJECT ENGR: JRC

1/25/2008

509

FNL

TITLE: LEGEND
WTP - FILTER 2

REVISION #: 0

REVISION DATE:

NRRWA FILTER 3

<u>SHEET</u>	<u>DESCRIPTION</u>
600	COVER SHEET
601	120 VAC CONTROL POWER
602	PLC LAYOUT AND COMMUNICATION
603	DIGITAL INPUTS 1
604	DIGITAL INPUTS 2
605	RELAY OUTPUTS
606	ANALOG INPUTS
607	ANALOG OUTPUTS
608	PANEL LAYOUT
609	LEGEND



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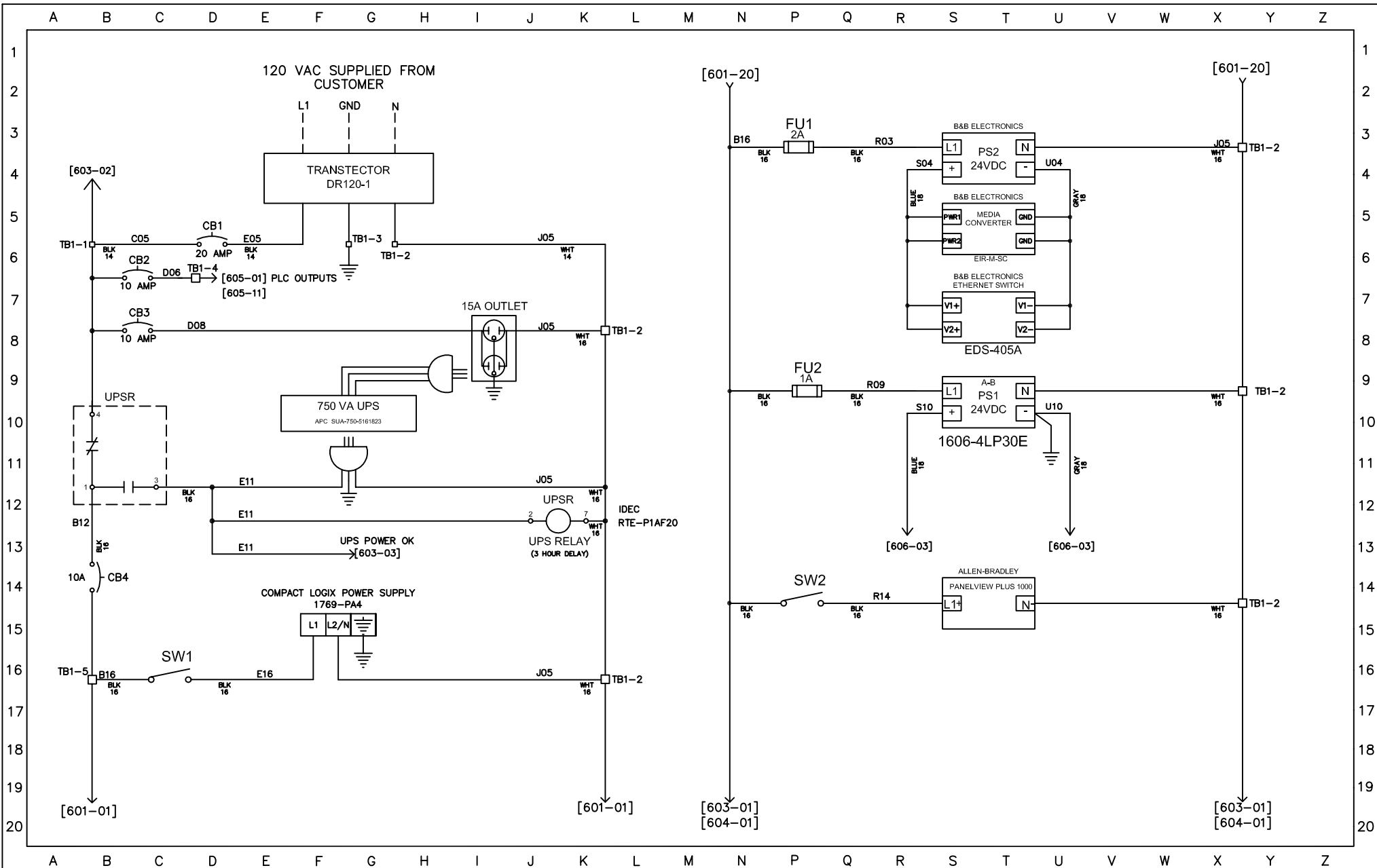
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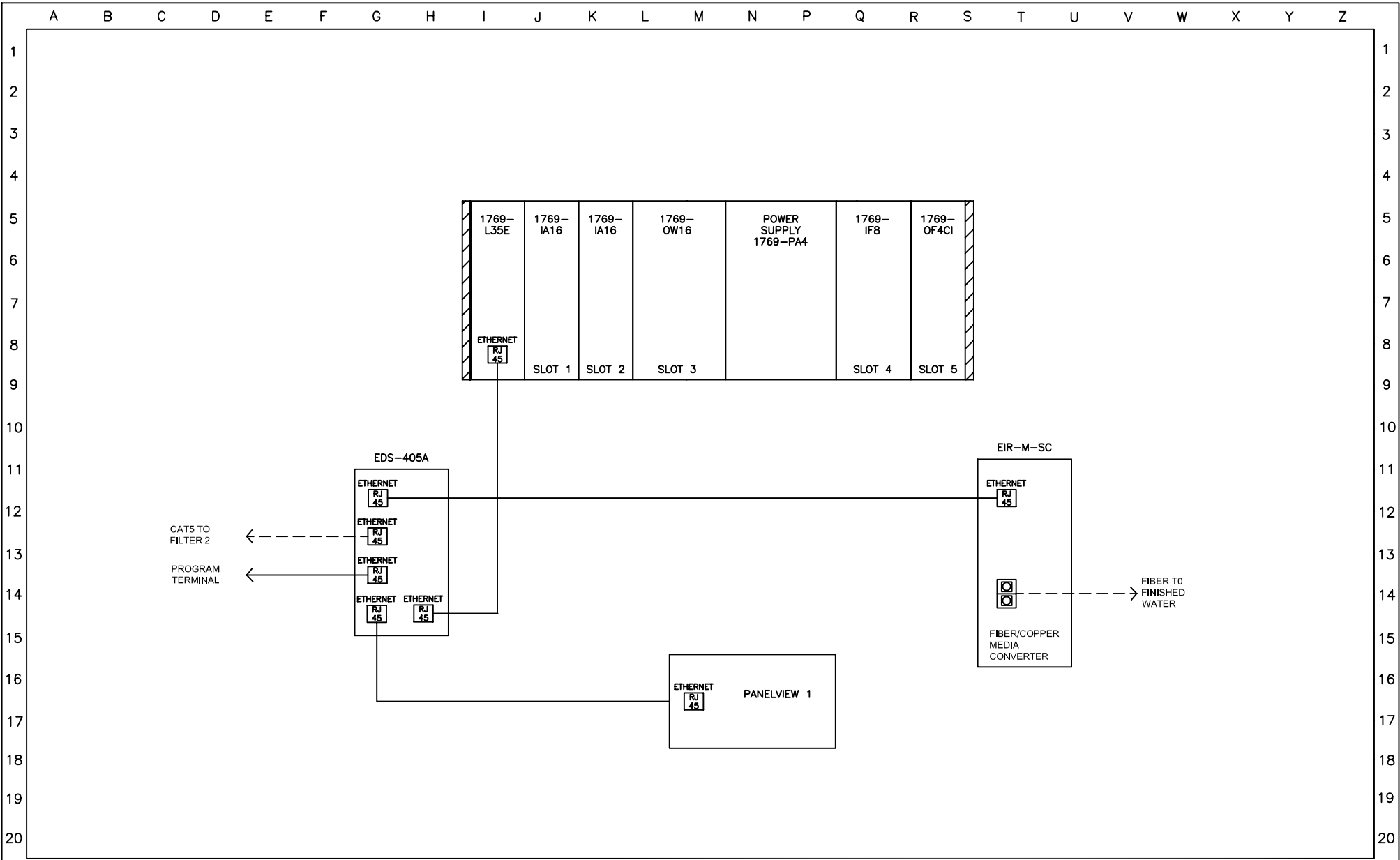
J3362 NRRWA

<small>DRAWN BY:</small> SAH	<small>DATE:</small> 1/25/2008	<small>SHEET NO.:</small> 600	<small>NEXT SHEET:</small> 601
<small>PROJECT ENGR:</small> JRC			

TITLE: COVER SHEET
WTP - FILTER 3

REVISION #: 0 REVISION DATE:





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DATE: 1/25/2008

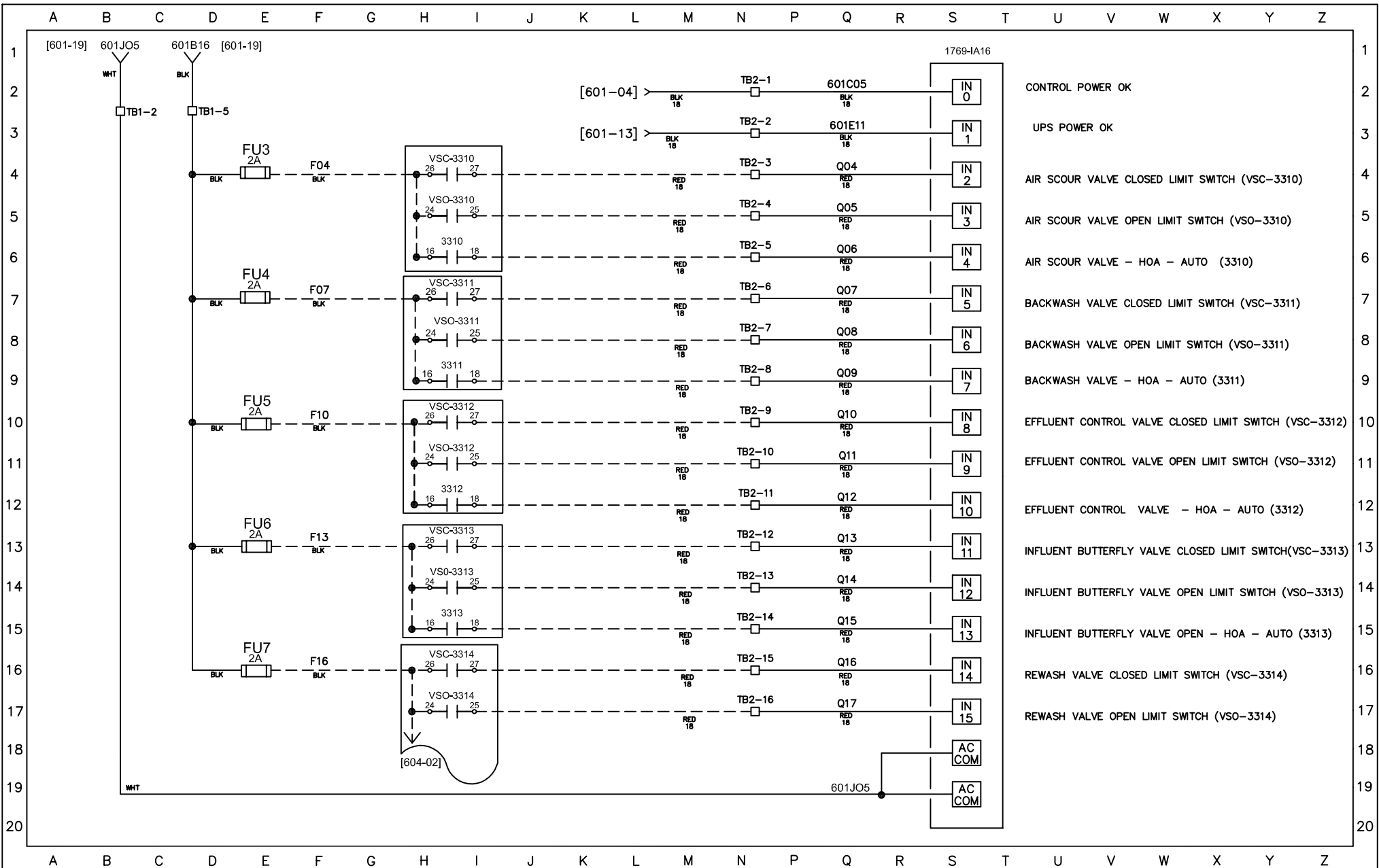
SHEET NO: 602

NEXT SHEET: 603

TITLE: PLC LAYOUT AND COMMUNICATION
WTP - FILTER 3

REVISION #: 0

REVISION DATE:



- CONTROL POWER OK
- UPS POWER OK
- AIR SCOUR VALVE CLOSED LIMIT SWITCH (VSC-3310)
- AIR SCOUR VALVE OPEN LIMIT SWITCH (VSO-3310)
- AIR SCOUR VALVE - HOA - AUTO (3310)
- BACKWASH VALVE CLOSED LIMIT SWITCH (VSC-3311)
- BACKWASH VALVE OPEN LIMIT SWITCH (VSO-3311)
- BACKWASH VALVE - HOA - AUTO (3311)
- EFFLUENT CONTROL VALVE CLOSED LIMIT SWITCH (VSC-3312)
- EFFLUENT CONTROL VALVE OPEN LIMIT SWITCH (VSO-3312)
- EFFLUENT CONTROL VALVE - HOA - AUTO (3312)
- INFLUENT BUTTERFLY VALVE CLOSED LIMIT SWITCH(VSC-3313)
- INFLUENT BUTTERFLY VALVE OPEN LIMIT SWITCH (VSO-3313)
- INFLUENT BUTTERFLY VALVE OPEN - HOA - AUTO (3313)
- REWASH VALVE CLOSED LIMIT SWITCH (VSC-3314)
- REWASH VALVE OPEN LIMIT SWITCH (VSO-3314)



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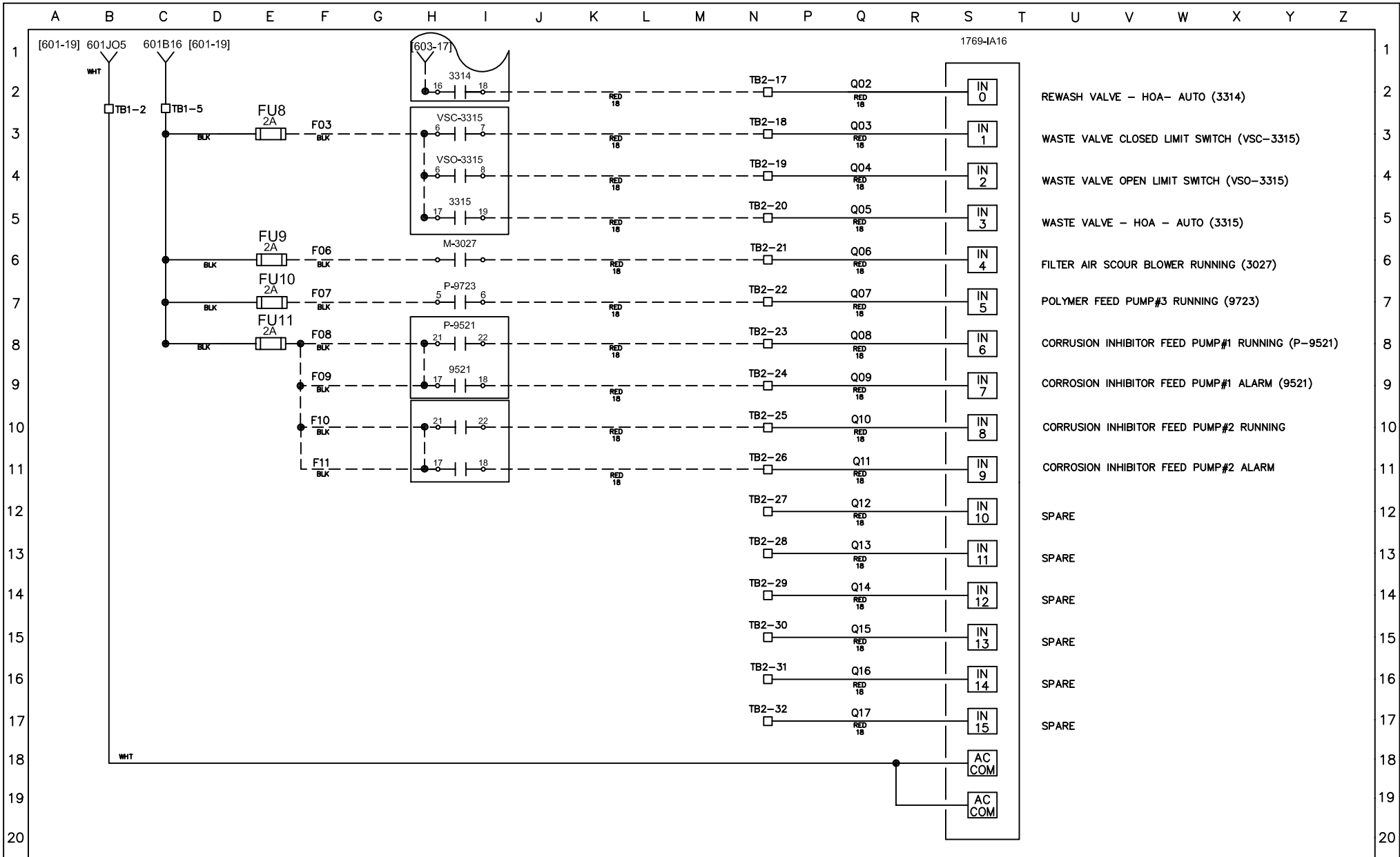
J3362 NRRWA

DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO. 603	NEXT SHEET 604
PROJECT ENGR: JRC			

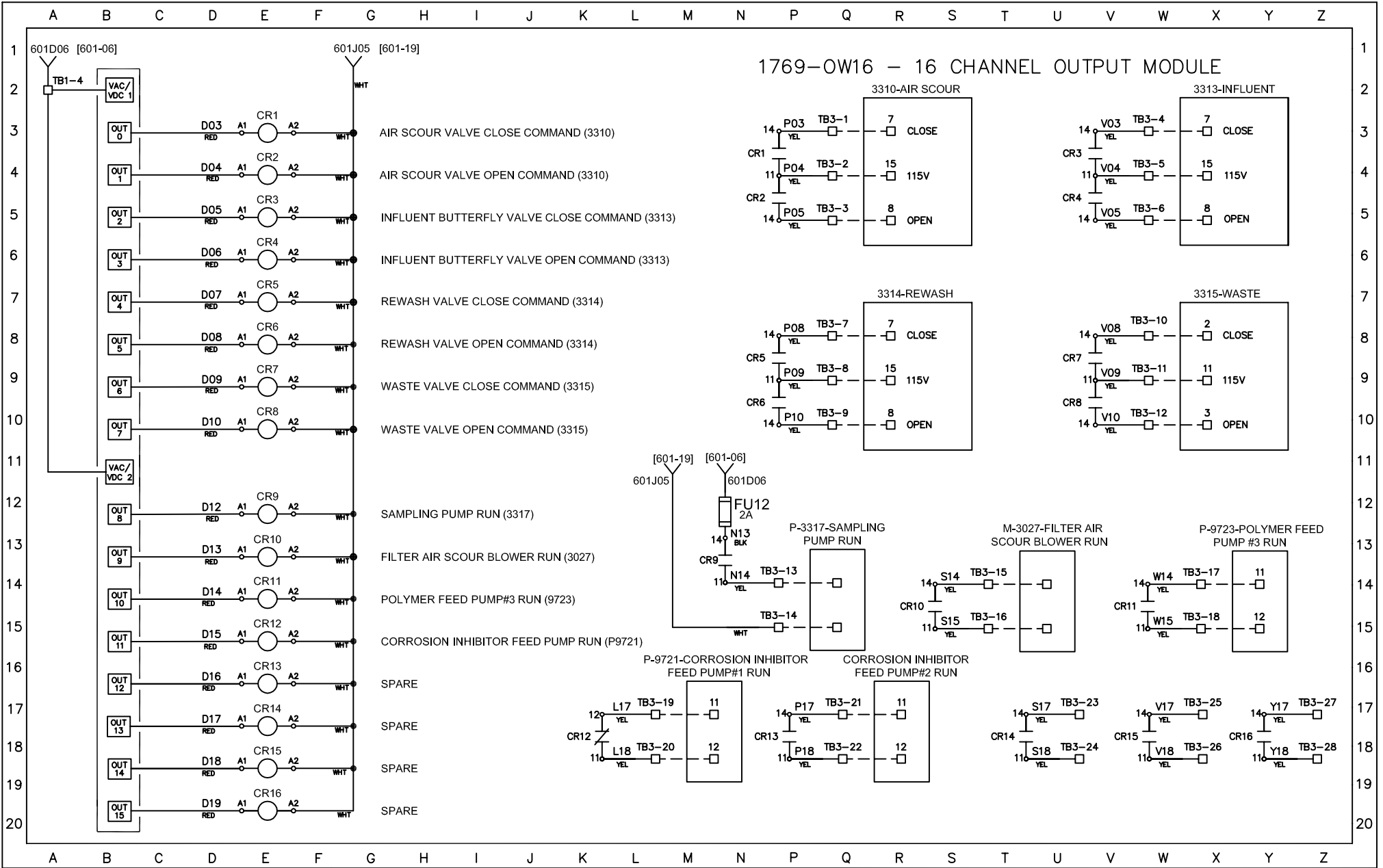
TITLE: DIGITAL INPUTS 1
WTP - FILTER 3

REVISION #: 0

REVISION DATE:



- IN 0 REWASH VALVE - HOA- AUTO (3314)
- IN 1 WASTE VALVE CLOSED LIMIT SWITCH (VSC-3315)
- IN 2 WASTE VALVE OPEN LIMIT SWITCH (VSO-3315)
- IN 3 WASTE VALVE - HOA - AUTO (3315)
- IN 4 FILTER AIR SCOUR BLOWER RUNNING (3027)
- IN 5 POLYMER FEED PUMP #3 RUNNING (9723)
- IN 6 CORROSION INHIBITOR FEED PUMP #1 RUNNING (P-9521)
- IN 7 CORROSION INHIBITOR FEED PUMP #1 ALARM (9521)
- IN 8 CORROSION INHIBITOR FEED PUMP #2 RUNNING
- IN 9 CORROSION INHIBITOR FEED PUMP #2 ALARM
- IN 10 SPARE
- IN 11 SPARE
- IN 12 SPARE
- IN 13 SPARE
- IN 14 SPARE
- IN 15 SPARE



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PROJECT ENGR: JRC

DATE: 1/25/2008

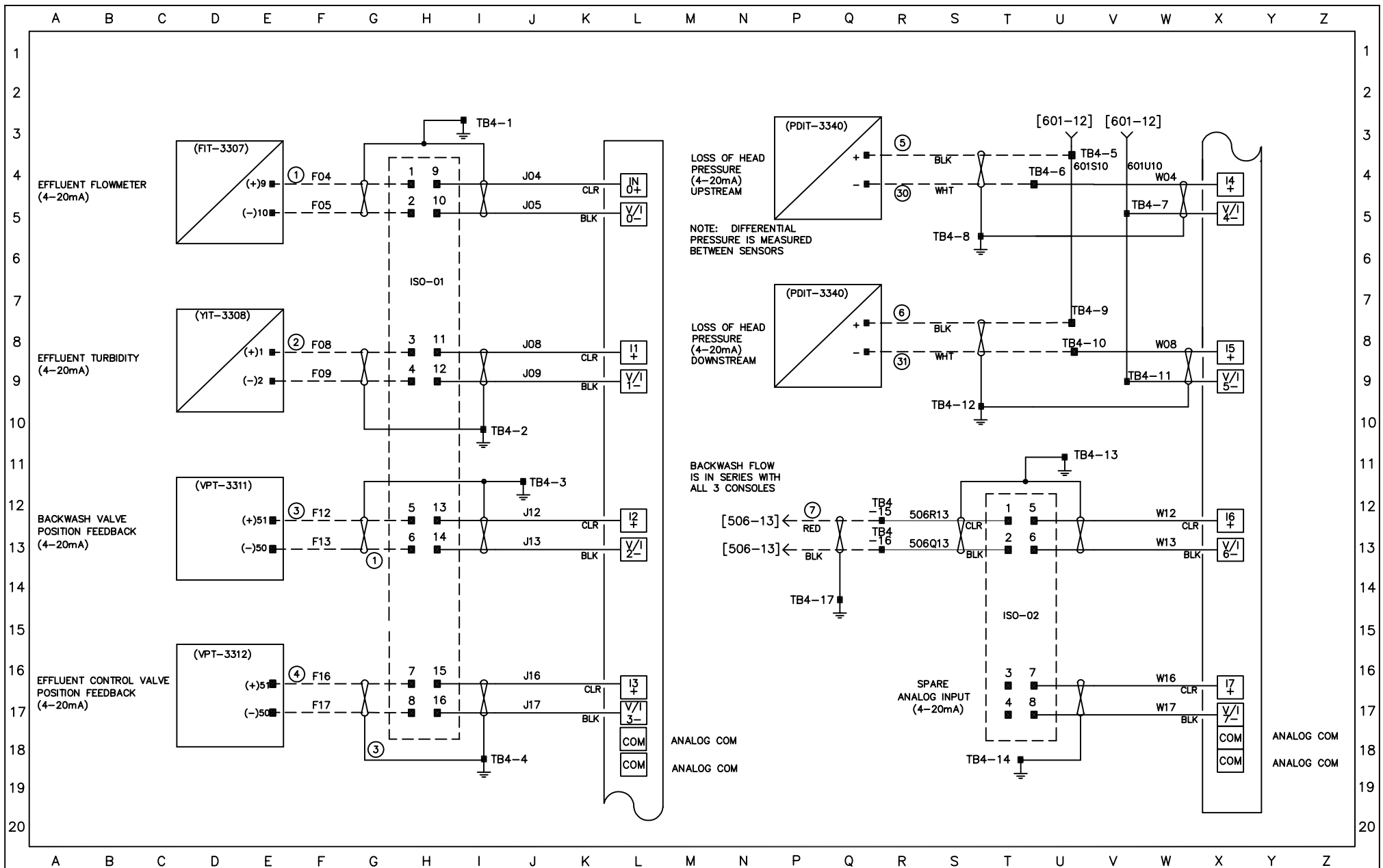
SHEET NO. 605

NEXT SHEET 606

TITLE: RELAY OUTPUTS
WTP - FILTER 3

REVISION #: 1

REVISION DATE: 3/03/2009



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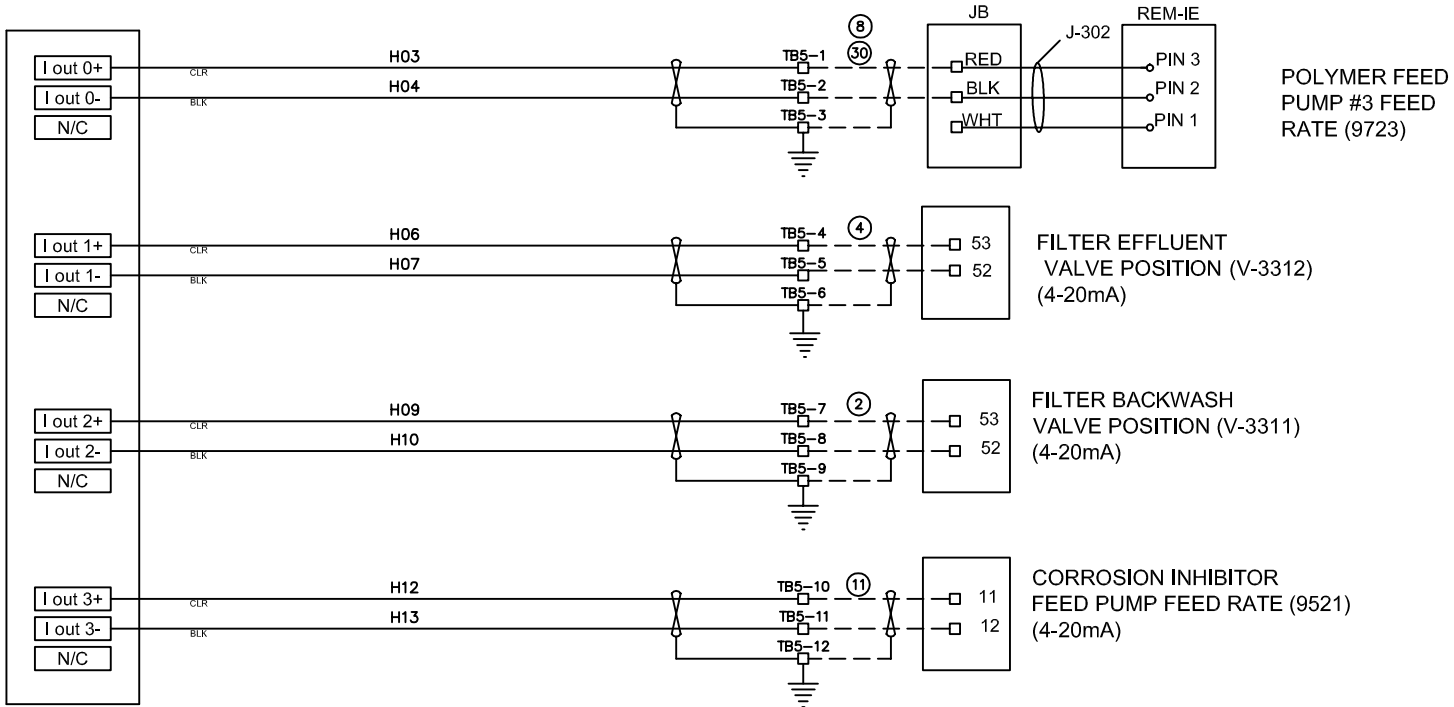
J3362 NRRWA

DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO. 606	NEXT SHEET 607
PROJECT ENGR: JRC			

TITLE: ANALOG INPUTS
WTP - FILTER 3

REVISION #: 1
REVISION DATE: 3/03/2009

1769-OF4CI - ANALOG OUTPUT 4-20mA



A B C D E F G H I J K L M N P Q R S T U V W X Y Z



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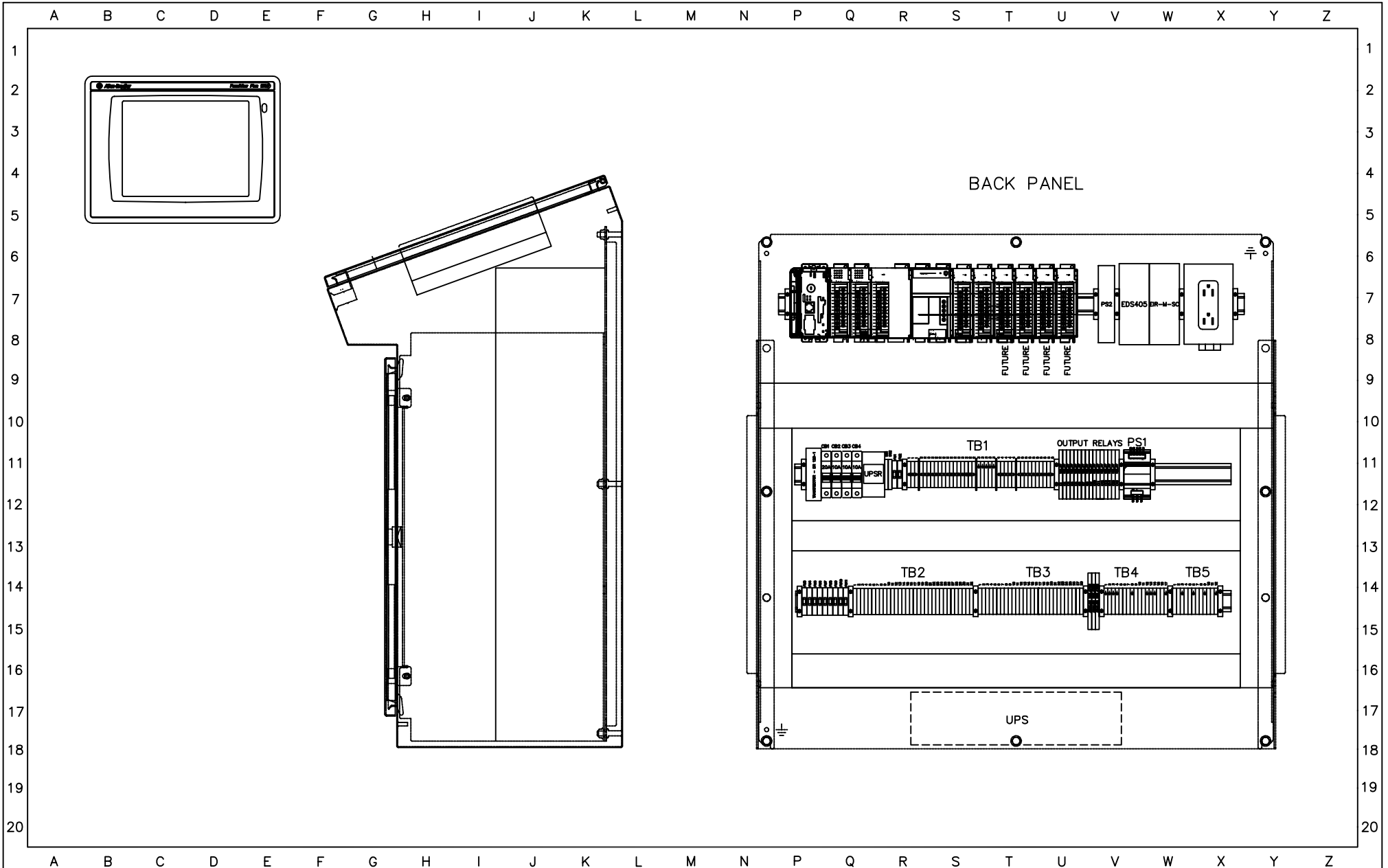
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DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO. 607	NEXT SHEET 608
PROJECT ENGR: JRC			

TITLE: ANALOG OUTPUTS
WTP - FILTER 3

REVISION #: 1 REVISION DATE: 3/03/2009



BACK PANEL

TB1 OUTPUT RELAYS PS1

TB2 TB3 TB4 TB5

UPS



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






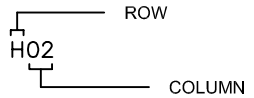



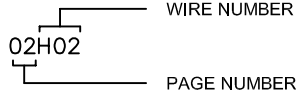
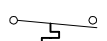
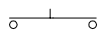

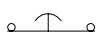
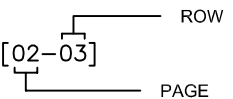
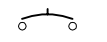
J3362 NRRWA

DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO. 608	NEXT SHEET 609
PROJECT ENGR: JRC			

TITLE:
PANEL LAYOUT
WTP - FILTER 3

REVISION #: 0

REVISION DATE:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R	S	T	U	V	W	X	Y	Z																							
1	SYMBOLS																								WIRE COLOR CODES																							
2	 NON-FUSED DIN RAIL MOUNTED TERMINALS												 GROUND												RED 120 VAC SINGLE PHASE CONTROL POWER																							
3	 TERMINALS ON INDIVIDUAL COMPONENTS												 TWISTED PAIR SHIELD												WHITE 120 VAC GROUNDED NEUTRAL																							
4	 FUSED DIN-RAIL MOUNTED TERMINAL BLOCKS												 SHIELDED PAIR												GREEN EARTH GROUND																							
5	 ELECTRO-MECHANICAL CONTROL RELAY N.O. CONTACT																								BLUE 24 VOLTS DIRECT CURRENT																							
6	 ELECTRO-MECHANICAL CONTROL RELAY N.C. CONTACT																								BLACK POWER WIRE (ABOVE 120 VOLTS)																							
7	 ELECTRO-MECHANICAL CONTROL RELAY COIL																								WIRE NUMBERS																							
8	 PILOT LIGHT												 FIELD WIRING												AS SHOWN WHERE WIRE ORIGINATES																							
9	 HAND-OFF-AUTO SELECTOR SWITCH - "X" correlates closed contacts with switch position X												 CUSTOMER POWER WIRING																																			
10													 SUPPLIED BY OTHERS												WIRE NUMBER SHOWN ON SHEETS OTHER THAN WHERE IT ORIGINATES																							
11	 NORMALLY OPEN FLOAT SWITCH												 FIELD ELECTRICAL WIRING NUMBER																																			
12	 NORMALLY OPEN MOTOR THERMAL SWITCH																																															
13	 NORMALLY OPEN PUSHBUTTON																																															
14	 NORMALLY CLOSED PUSHBUTTON																								MAPPING																							
15	 E-STOP PUSHBUTTON																																															
16	 CIRCUIT BREAKER																								[BRACKETS] ARE ONLY USED IN MAPPING																							
17																																																
18																																																
19																																																
20																																																



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J3362 NRRWA

DRAWN BY: SAH	DATE: 1/25/2008	SHEET NO. 609	NEXT SHEET FNL
PROJECT ENGR: JRC			

TITLE: LEGEND
WTP - FILTER 3

REVISION #: 0 REVISION DATE:

NEW RIVER REGIONAL WATER AUTHORITY RAW WATER INTAKE PUMP STATION

SHEET	DESCRIPTION
100	COVER SHEET
101	CONTROL POWER – 120VAC
102	PLC LAYOUT AND COMMUNICATION
103	PLC MICROLOGIX BASE DIGITAL INPUTS
104	PLC BASE RELAY OUTPUTS & ANALOG INPUTS
105	PLC EXPANSION DIGITAL INPUTS 1
106	PLC EXPANSION DIGITAL INPUTS 2
107	PLC EXPANSION ANALOG INPUTS
108	PLC EXPANSION ANALOG OUTPUTS
109	PANEL LAYOUT
110	CABINET LAYOUT
111	LEGEND



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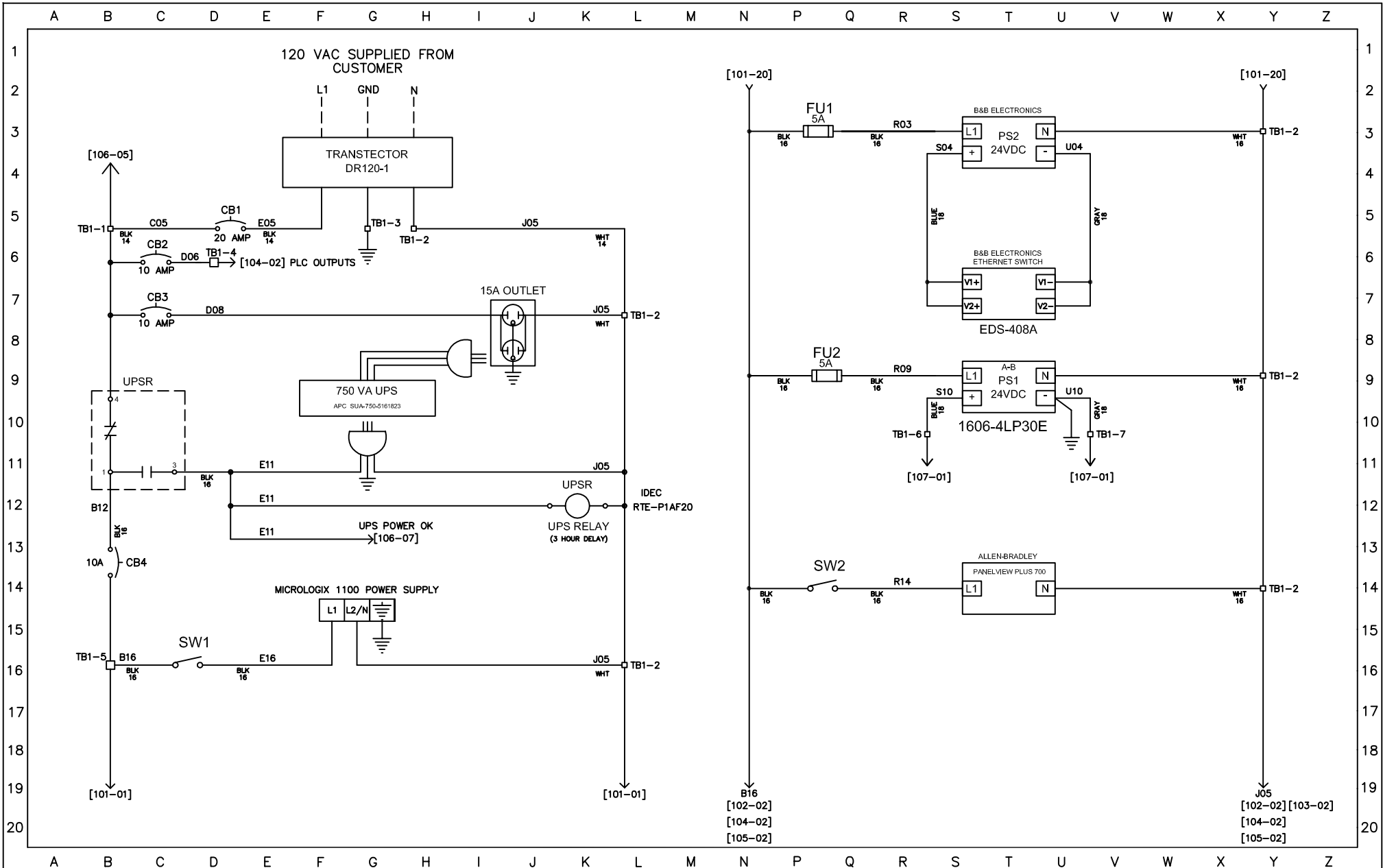
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J3362 NRRWA

DRAWN BY: BEF	DATE: 1/25/2008	SHEET NO. 100	NEXT SHEET 101
PROJECT ENGR: RED			

TITLE: COVER SHEET
RAW WATER INTAKE PUMP STATION

REVISION #: 0 REVISION DATE:



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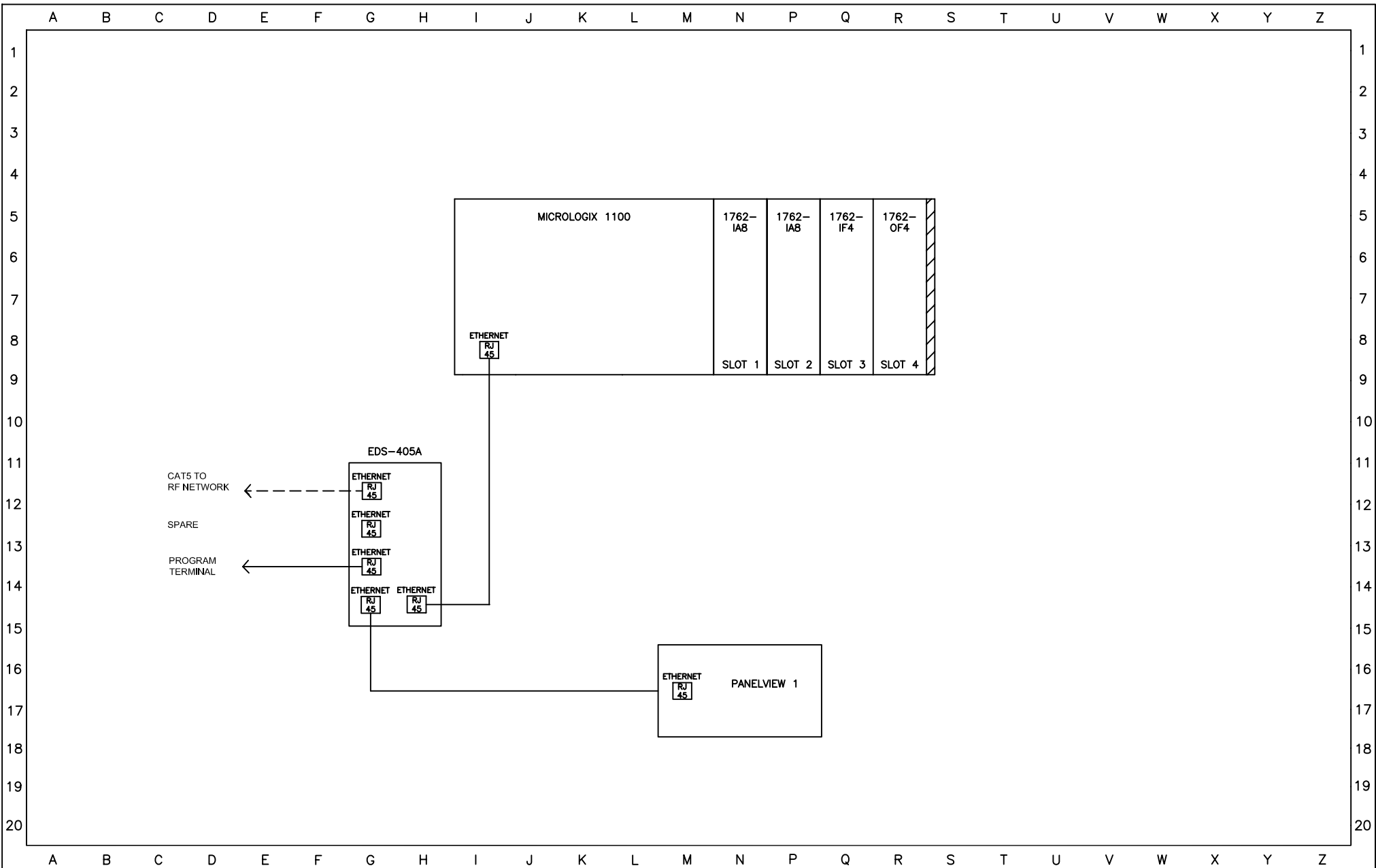
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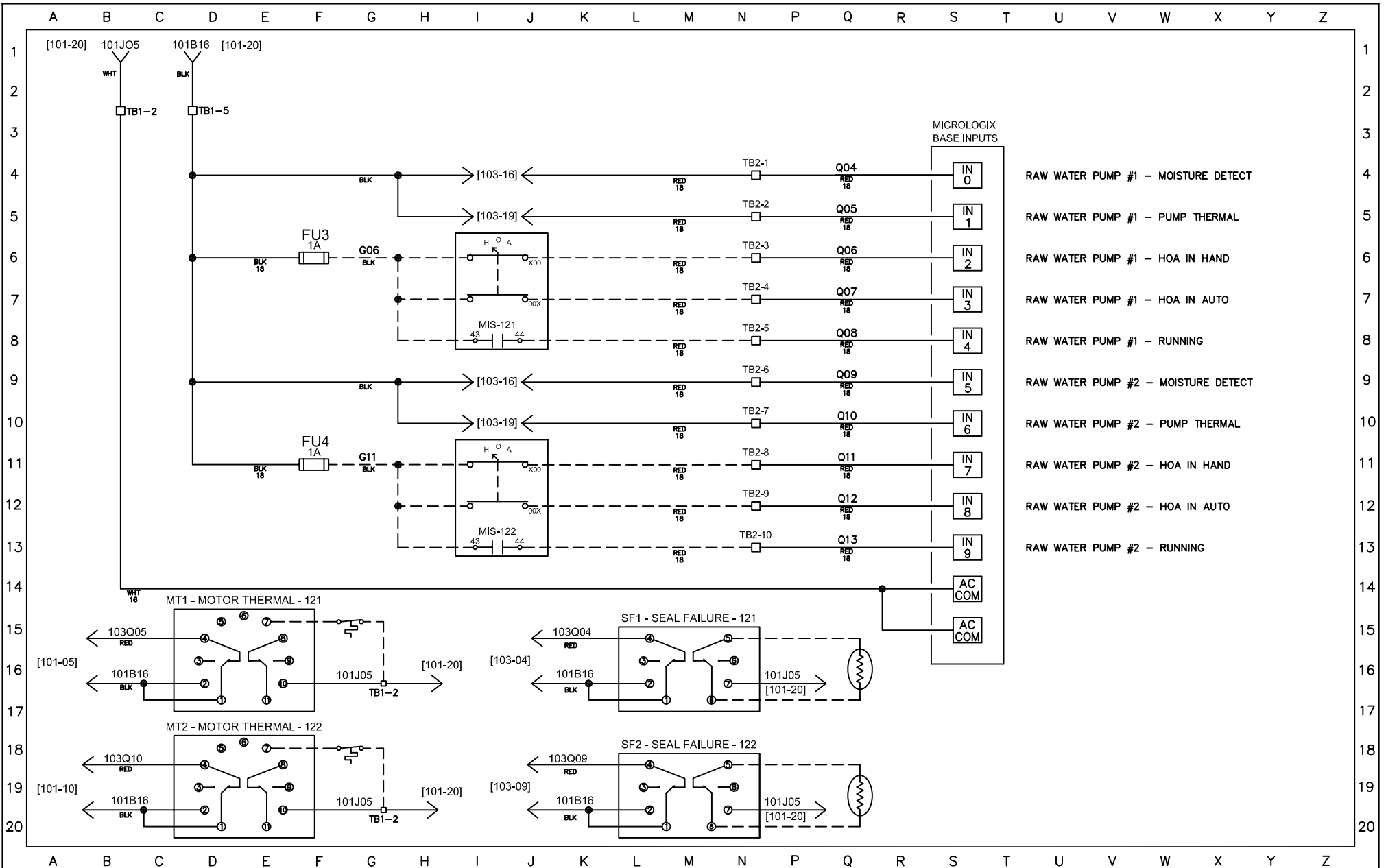
J3362 NRRWA

DRAWN BY:	BEF	DATE:	1/25/2008	SHEET NO.	101	NEXT SHEET	102
PROJECT ENGR:	RED						

TITLE: 120 VAC CONTROL POWER
RAW WATER INTAKE PUMP STATION

REVISION #:	0	REVISION DATE:	
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- IN 0 RAW WATER PUMP #1 - MOISTURE DETECT
- IN 1 RAW WATER PUMP #1 - PUMP THERMAL
- IN 2 RAW WATER PUMP #1 - HOA IN HAND
- IN 3 RAW WATER PUMP #1 - HOA IN AUTO
- IN 4 RAW WATER PUMP #1 - RUNNING
- IN 5 RAW WATER PUMP #2 - MOISTURE DETECT
- IN 6 RAW WATER PUMP #2 - PUMP THERMAL
- IN 7 RAW WATER PUMP #2 - HOA IN HAND
- IN 8 RAW WATER PUMP #2 - HOA IN AUTO
- IN 9 RAW WATER PUMP #2 - RUNNING



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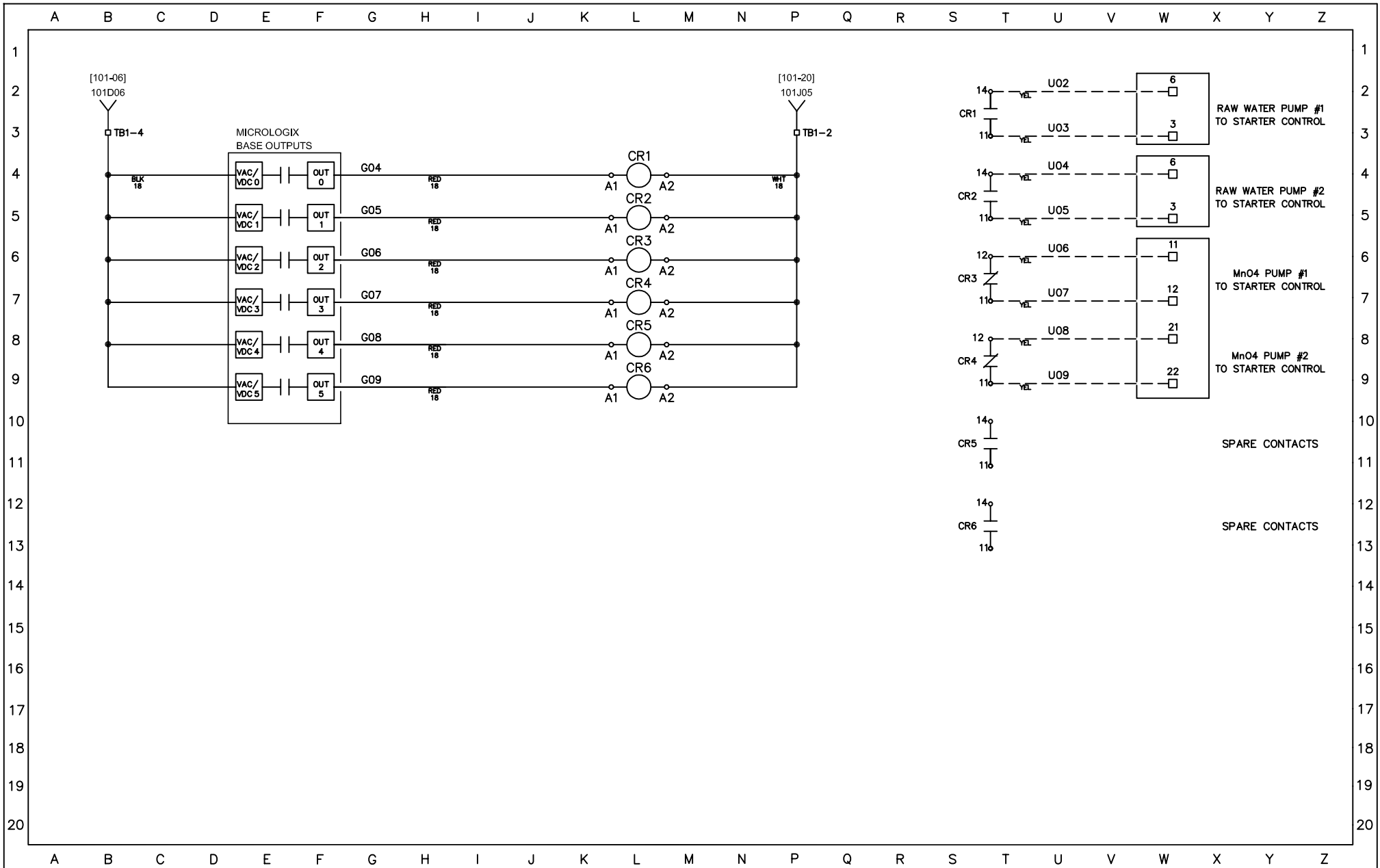
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DRAWN BY: BEF	DATE: 1/25/2008	SHEET NO. 103	NEXT SHEET 104
PROJECT ENGR: RED			

TITLE: PLC MICROLOGIX BASE DIGITAL INPUTS
RAW WATER INTAKE PUMP STATION

REVISION #: 0
REVISION DATE:



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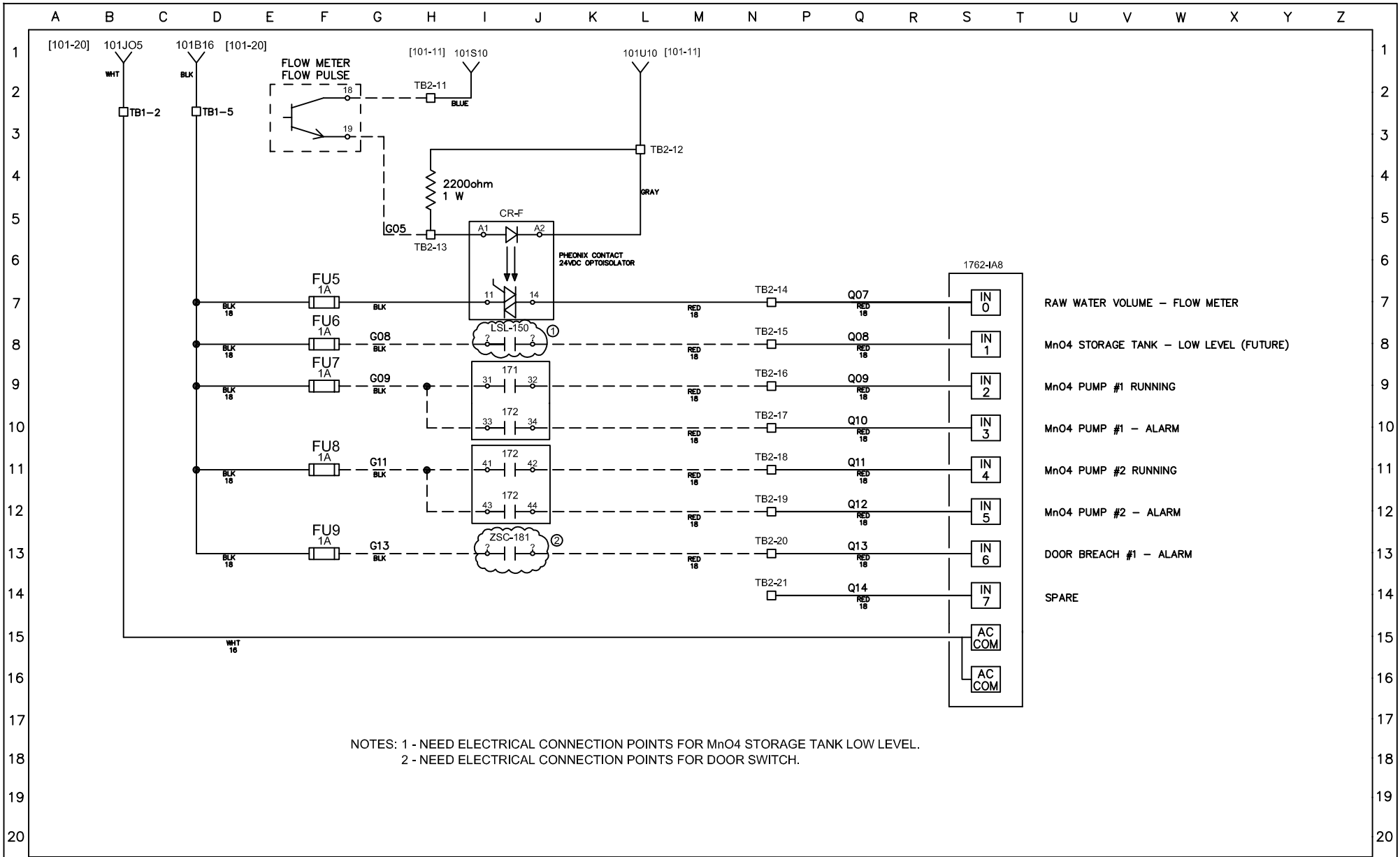
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J3362 NRRWA

DRAWN BY: BEF	DATE: 1/25/2008	SHEET NO. 104	NEXT SHEET 105
PROJECT ENGR: RED			

TITLE: PLC BASE RELAY OUT AND ANALOG INPUTS
RAW WATER INTAKE PUMP STATION

REVISION #: 0 REVISION DATE:



NOTES: 1 - NEED ELECTRICAL CONNECTION POINTS FOR MnO4 STORAGE TANK LOW LEVEL.
 2 - NEED ELECTRICAL CONNECTION POINTS FOR DOOR SWITCH.



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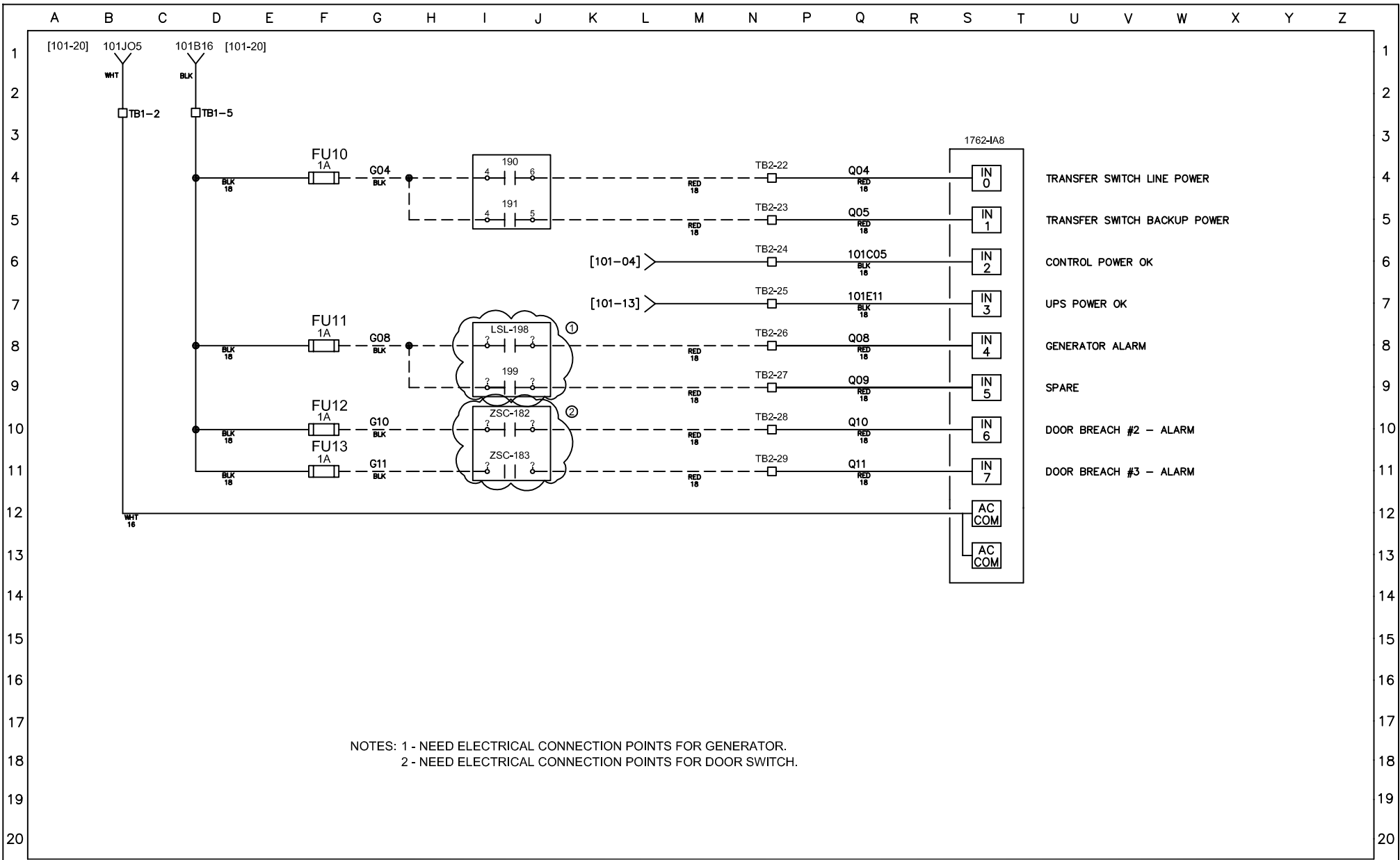
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J3362 NRRWA

DRAWN BY: BEF DATE: 1/25/2008 SHEET NO: 105 NEXT SHEET: 106

TITLE: PLC EXPANSION DIGITAL INPUTS 1
 RAW WATER INTAKE PUMP STATION

REVISION #: 0 REVISION DATE:



NOTES: 1 - NEED ELECTRICAL CONNECTION POINTS FOR GENERATOR.
 2 - NEED ELECTRICAL CONNECTION POINTS FOR DOOR SWITCH.

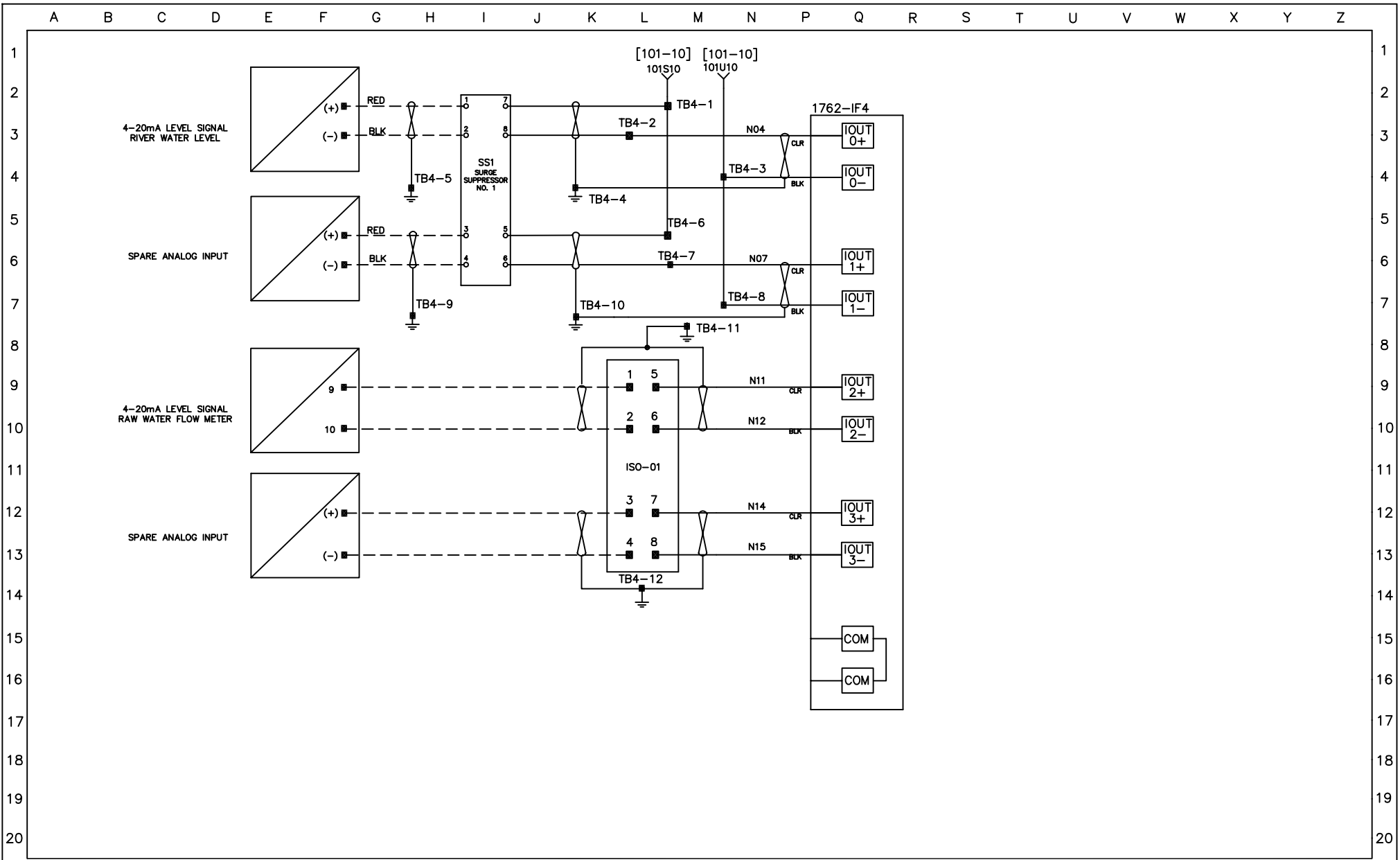


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J3362		NRRWA	
DRAWN BY: BEF	DATE: 1/25/2008	SHEET NO. 106	NEXT SHEET 107
PROJECT ENGR: RED			

TITLE: PLC EXPANSION DIGITAL INPUTS 2 RAW WATER INTAKE PUMP STATION	
REVISION #: 0	REVISION DATE:



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J3362 NRRWA

DRAWN BY: BEF
PROJECT ENGR: RED

DATE: 1/25/2008

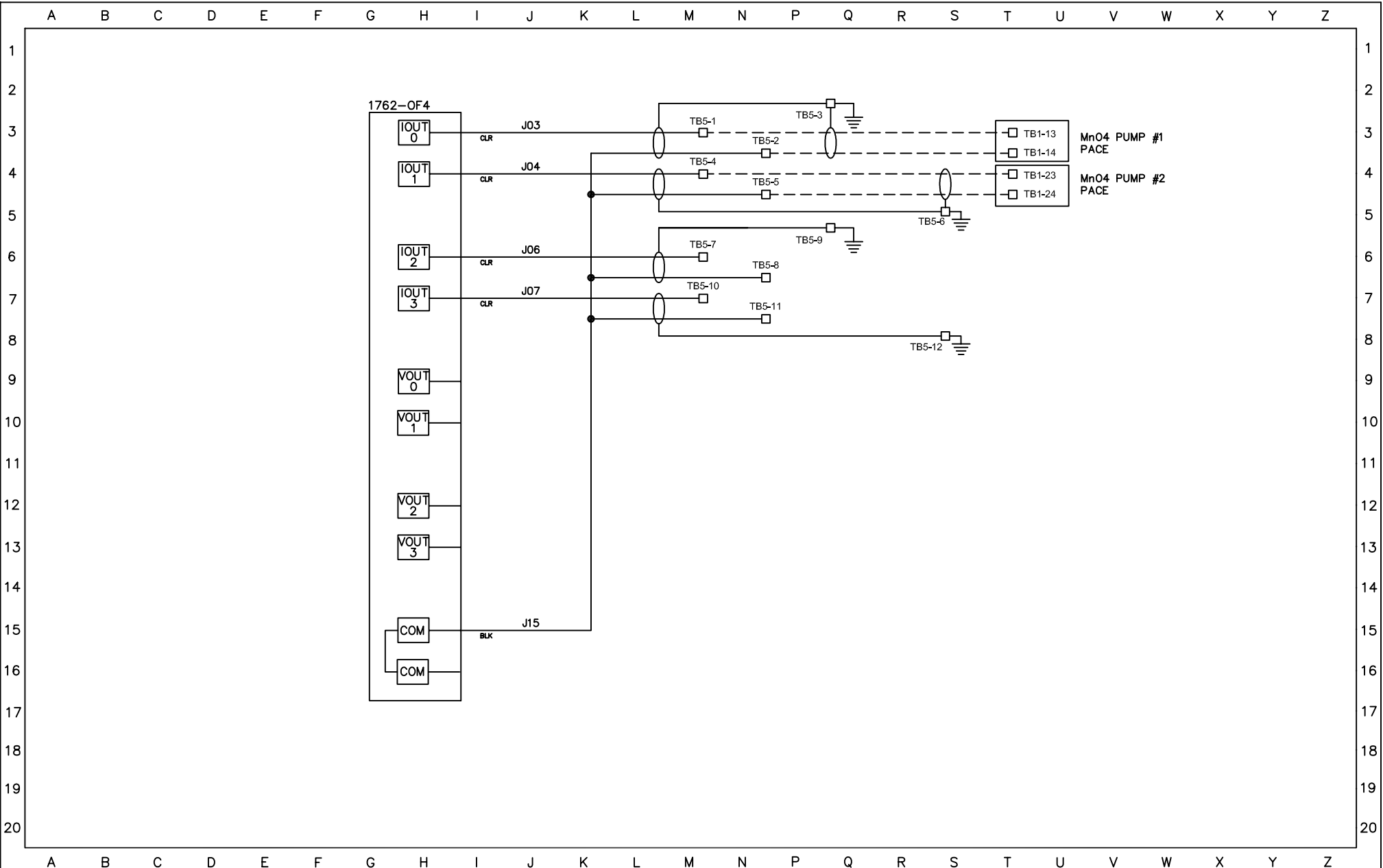
SHEET NO. 107

NEXT SHEET 108

TITLE: PLC EXPANSION ANALOG INPUTS
RAW WATER INTAKE PUMP STATION

REVISION #: 0

REVISION DATE:




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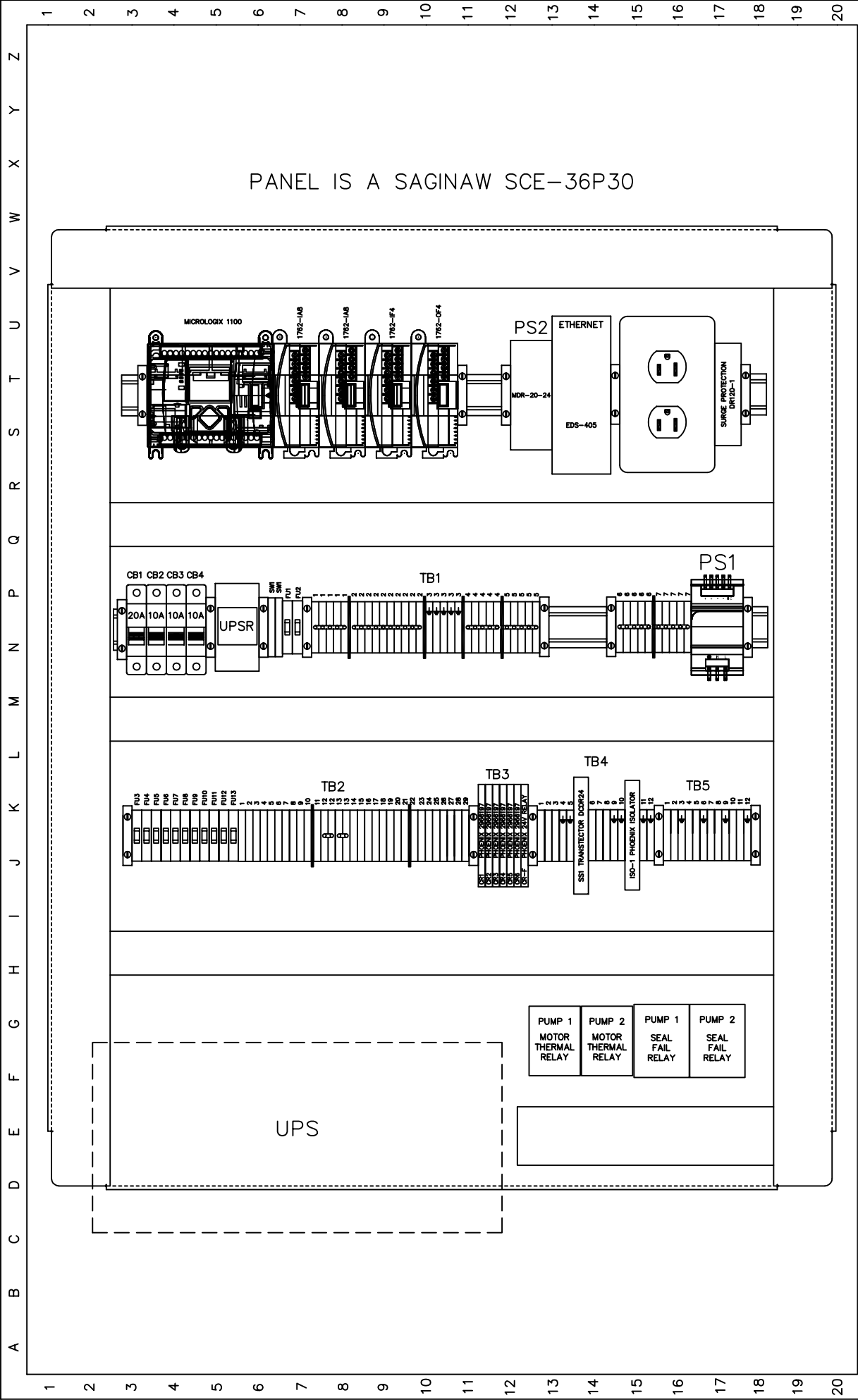
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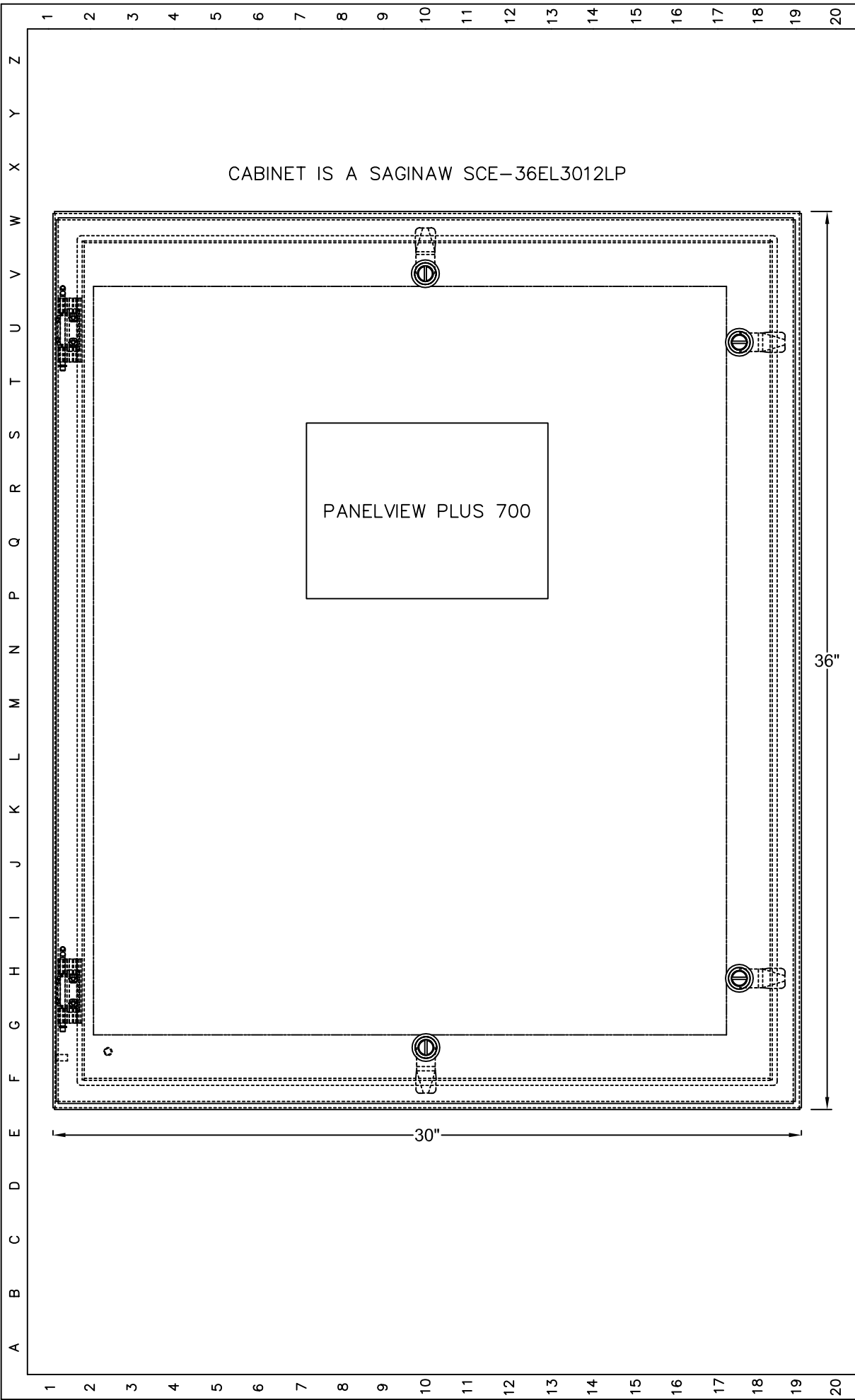
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J3362 NRRWA			
DRAWN BY: BEF	DATE: 1/25/2008	SHEET NO: 108	NEXT SHEET: 109
PROJECT ENGR: RED			

TITLE: PLC EXPANSION ANALOG OUTPUTS RAW WATER INTAKE PUMP STATION	
REVISION #: 0	REVISION DATE:



A		B		C		D		E		F		G		H		I		J		K		L		M		N		P		Q		R		S		T		U		V		W		X		Y		Z											
1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22		23		24		25		26		27		28		29		30	
TITLE: PANEL LAYOUT																																																											
RAW WATER INTAKE PUMP STATION																																																											
J3362										NRRWA										SHEET NO. 109																																							
DATE: 1/25/2008										PROJECT NO. 109										NEXT SHEET 110																																							
DRAWN BY: BEF										PROJECT ENG: RED										REVISION # 0																																							
DATE: 1/25/2008										PROJECT ENG: RED										REVISION DATE:																																							
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CABINET IS A SAGINAW SCE-36EL3012LP

PANELVIEW PLUS 700

30"

36"

TITLE: CABINET LAYOUT

RAW WATER INTAKE PUMP STATION

REVISION #: 0 REVISION DATE:

SHEET NO. 110
NEXT SHEET 111







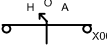
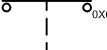




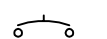
DATE: 1/25/2008
PROJECT: NRRWA






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SYMBOLS

WIRE COLOR CODES

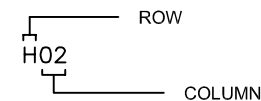
TB 	NON-FUSED DIN RAIL MOUNTED TERMINALS
○	TERMINALS ON INDIVIDUAL COMPONENTS
TB 	FUSED DIN-RAIL MOUNTED TERMINAL BLOCKS
CR 	ELECTRO-MECHANICAL CONTROL RELAY N.O. CONTACT
CR 	ELECTRO-MECHANICAL CONTROL RELAY N.C. CONTACT
CR 	ELECTRO-MECHANICAL CONTROL RELAY COIL
IL 	PILOT LIGHT
	HAND-OFF-AUTO SELECTOR SWITCH - "X" correlates closed contacts with switch position X
	NORMALLY OPEN FLOAT SWITCH
	NORMALLY OPEN MOTOR THERMAL SWITCH
	NORMALLY OPEN PUSHBUTTON
	NORMALLY CLOSED PUSHBUTTON
	E-STOP PUSHBUTTON
	CIRCUIT BREAKER

	GROUND
	TWISTED PAIR SHIELD
	SHIELDED PAIR
---	FIELD WIRING
	CUSTOMER POWER WIRING
	SUPPLIED BY OTHERS

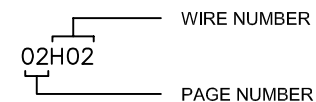
RED	120 VAC SINGLE PHASE CONTROL POWER
WHITE	120 VAC GROUNDED NEUTRAL
GREEN	EARTH GROUND
BLUE	24 VOLTS DIRECT CURRENT
BLACK	POWER WIRE (ABOVE 120 VOLTS)

WIRE NUMBERS

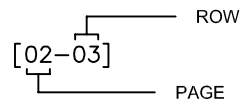
AS SHOWN WHERE WIRE ORIGINATES



WIRE NUMBER SHOWN ON SHEETS
OTHER THAN WHERE IT ORIGINATES



MAPPING



[BRACKETS] ARE ONLY USED IN MAPPING

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J3362 NRRWA		TITLE: LEGEND RAW WATER INTAKE PUMP STATION	
DRAWN BY: BEF	DATE: 1/25/2008	SHEET NO. 111	NEXT SHEET FNL
PROJECT ENGR: RED			

REVISION #: 0	REVISION DATE:
---------------	----------------

NEW RIVER REGIONAL WATER AUTHORITY FINISHED WATER PUMP STATION

SHEET	DESCRIPTION
100	COVER SHEET
101	CONTROL POWER – 120VAC
102	PLC LAYOUT AND COMMUNICATION
103	PLC MICROLOGIX BASE DIGITAL INPUTS
104	PLC BASE RELAY OUTPUTS & ANALOG INPUTS
105	PLC EXPANSION DIGITAL INPUTS 1
106	PLC EXPANSION DIGITAL INPUTS 2
107	PLC EXPANSION ANALOG INPUTS 1
108	PLC EXPANSION ANALOG INPUTS 2
109	PANEL LAYOUT
110	CABINET LAYOUT
111	LEGEND



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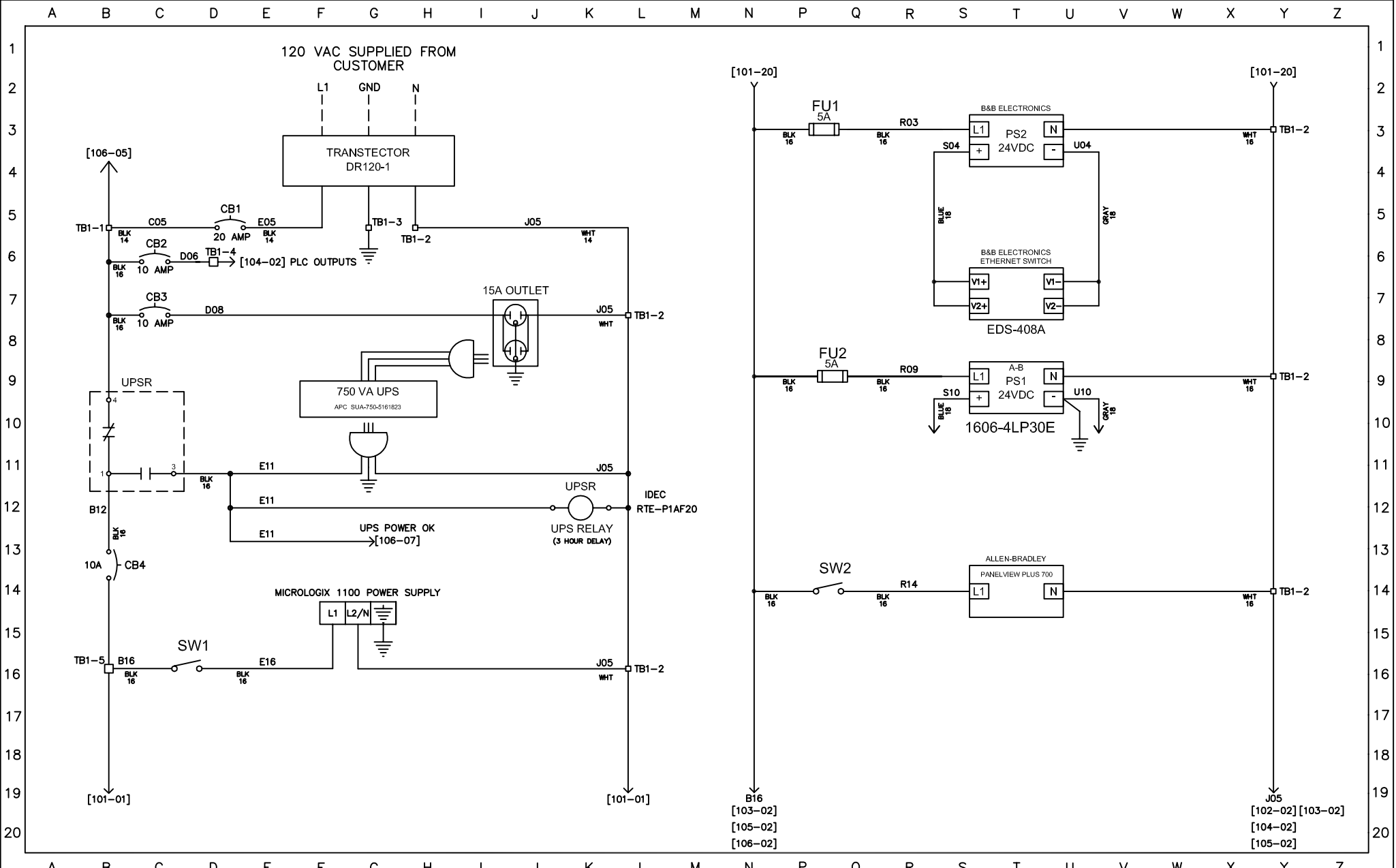
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J3362 NRRWA

DRAWN BY: BEF	DATE: 1/25/2008	SHEET NO: 900	NEXT SHEET: 901
PROJECT ENGR: RED			

TITLE: COVER SHEET
FINISHED WATER PUMP STATION

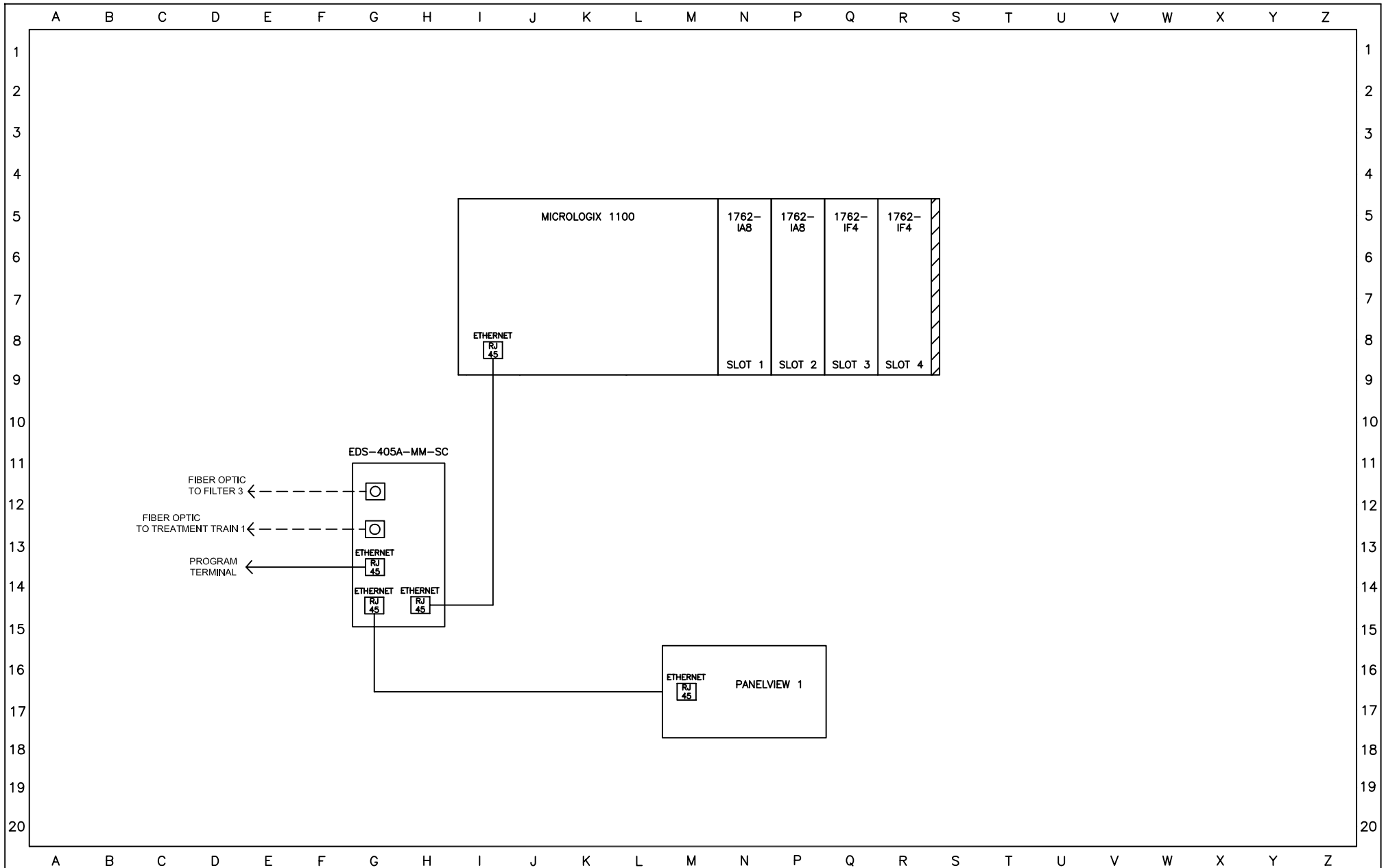
REVISION #: 0 REVISION DATE:



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J3362 NRRWA		DRAWN BY: BEF		DATE: 4/25/2008		SHEET NO. 901		NEXT SHEET 902	
PROJECT ENGR: RED									

TITLE: 120 VAC CONTROL POWER FINISHED WATER PUMP STATION	
REVISION #: 0	REVISION DATE:



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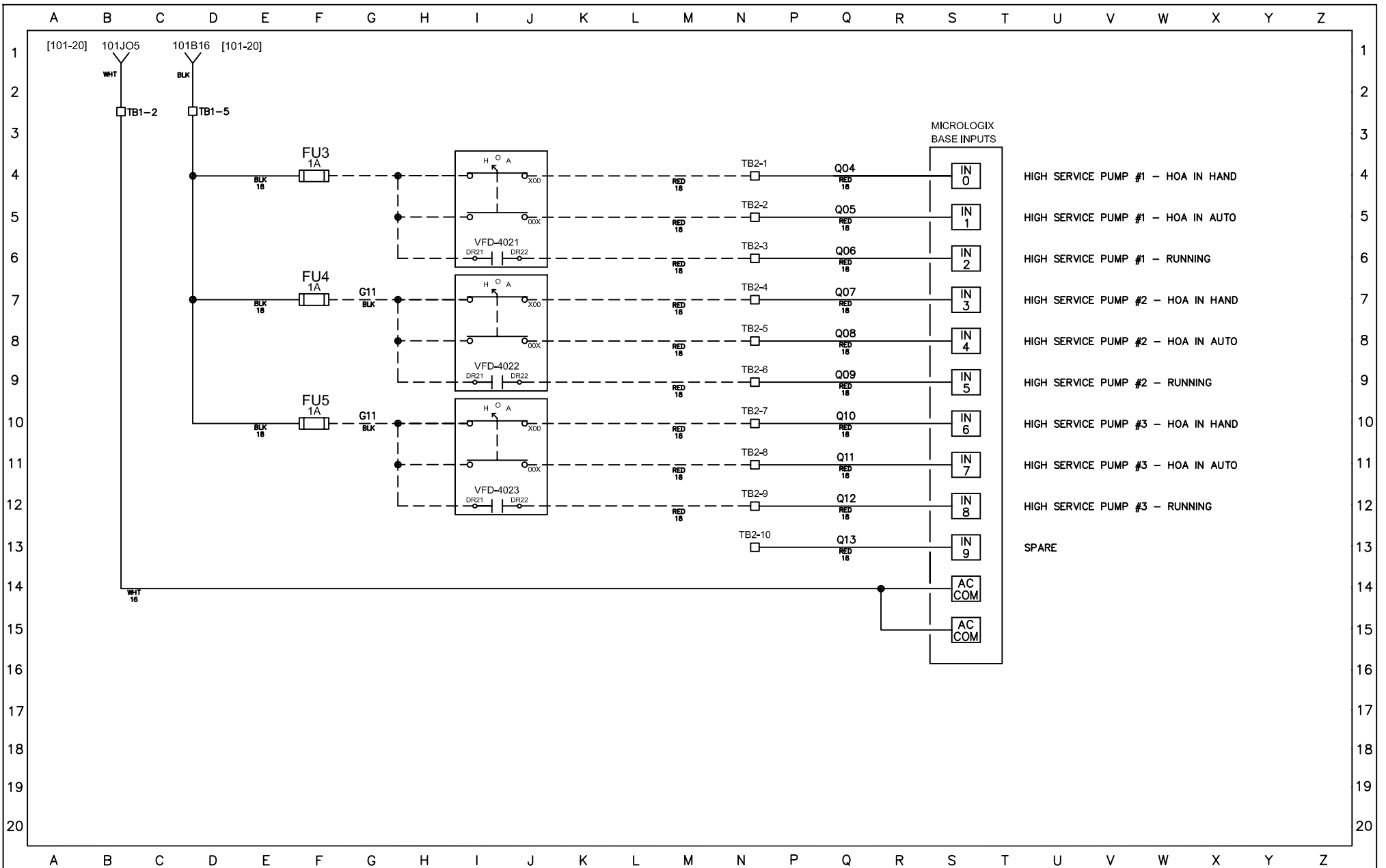
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J3362 NRRWA

DRAWN BY:	BEF	DATE:	1/25/2008	SHEET NO.	902	NEXT SHEET	903
PROJECT ENGR:	RED						

TITLE: PLC LAYOUT & COMMUNICATION
FINISHED WATER PUMP STATION

REVISION #: 0 REVISION DATE:



- IN 0 HIGH SERVICE PUMP #1 - HOA IN HAND
- IN 1 HIGH SERVICE PUMP #1 - HOA IN AUTO
- IN 2 HIGH SERVICE PUMP #1 - RUNNING
- IN 3 HIGH SERVICE PUMP #2 - HOA IN HAND
- IN 4 HIGH SERVICE PUMP #2 - HOA IN AUTO
- IN 5 HIGH SERVICE PUMP #2 - RUNNING
- IN 6 HIGH SERVICE PUMP #3 - HOA IN HAND
- IN 7 HIGH SERVICE PUMP #3 - HOA IN AUTO
- IN 8 HIGH SERVICE PUMP #3 - RUNNING
- IN 9 SPARE



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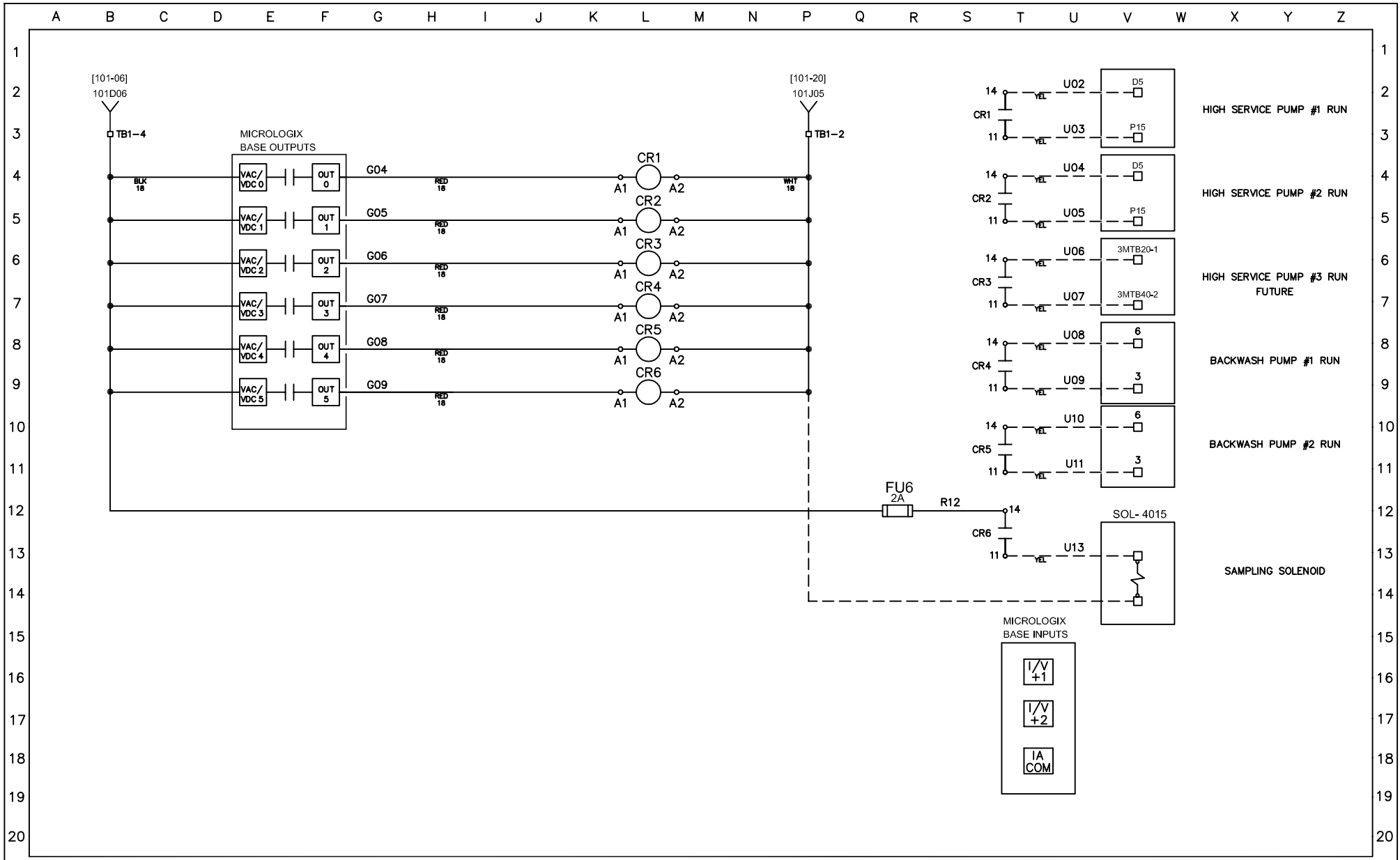
J3362 NRRWA

DRAWN BY: BEF	DATE: 1/25/2008	SHEET NO. 903	NEXT SHEET 904
PROJECT ENGR: RED			

TITLE: PLC MICROLOGIX BASE DIGITAL INPUTS
FINISHED WATER PUMP STATION

REVISION #: 1

REVISION DATE: 3/03/2009



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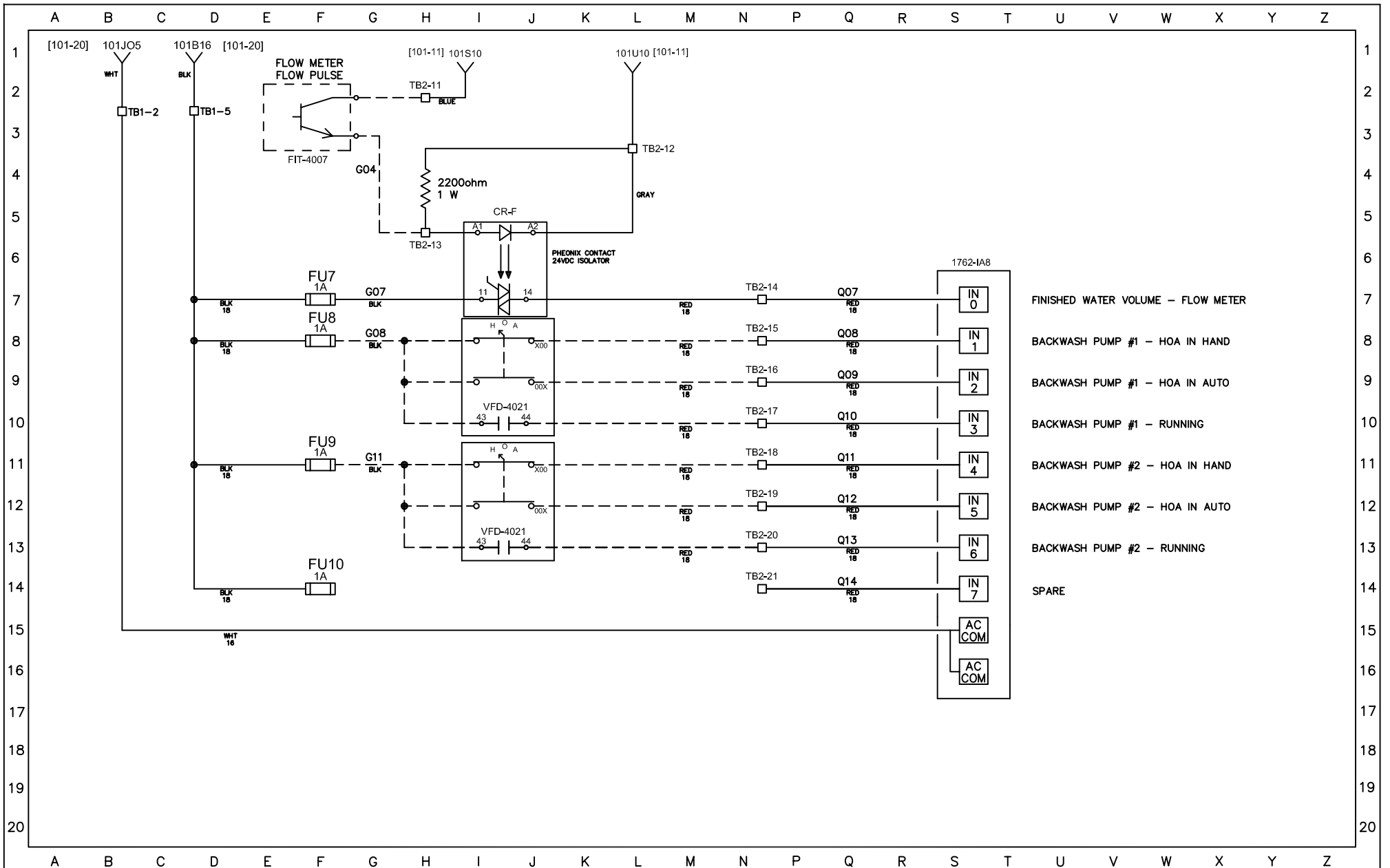
J3362 NRRWA

DRAWN BY:	BEF	DATE:	1/25/2008	SHEET NO.:	904	NEXT SHEET:	905
PROJECT ENGR:	RED						

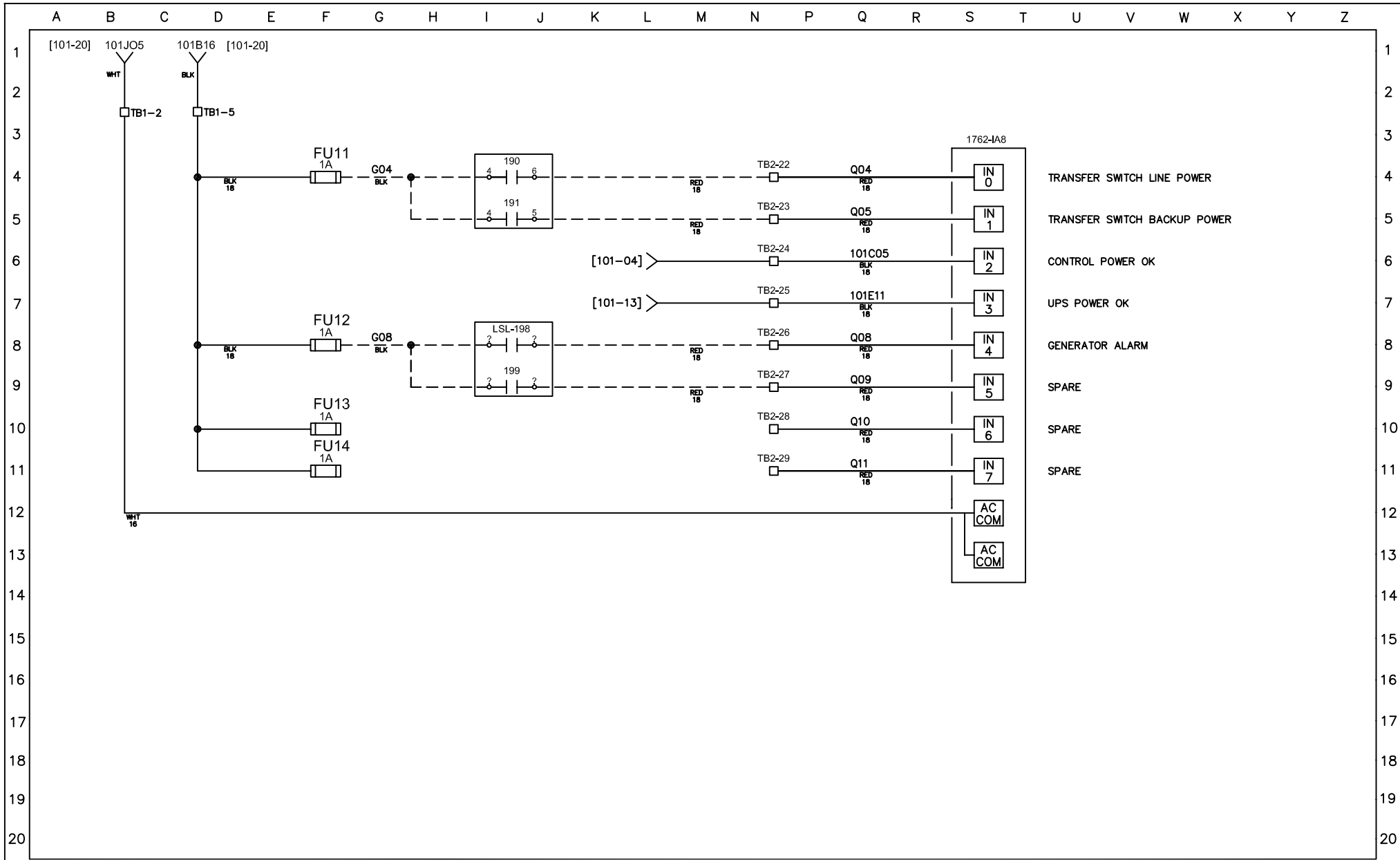
TITLE: PLC BASE RELAY OUT AND ANALOG INPUTS
FINISHED WATER PUMP STATION

REVISION #: 1

REVISION DATE: 3/03/2009



- IN 0 FINISHED WATER VOLUME – FLOW METER
- IN 1 BACKWASH PUMP #1 – HOA IN HAND
- IN 2 BACKWASH PUMP #1 – HOA IN AUTO
- IN 3 BACKWASH PUMP #1 – RUNNING
- IN 4 BACKWASH PUMP #2 – HOA IN HAND
- IN 5 BACKWASH PUMP #2 – HOA IN AUTO
- IN 6 BACKWASH PUMP #2 – RUNNING
- IN 7 SPARE



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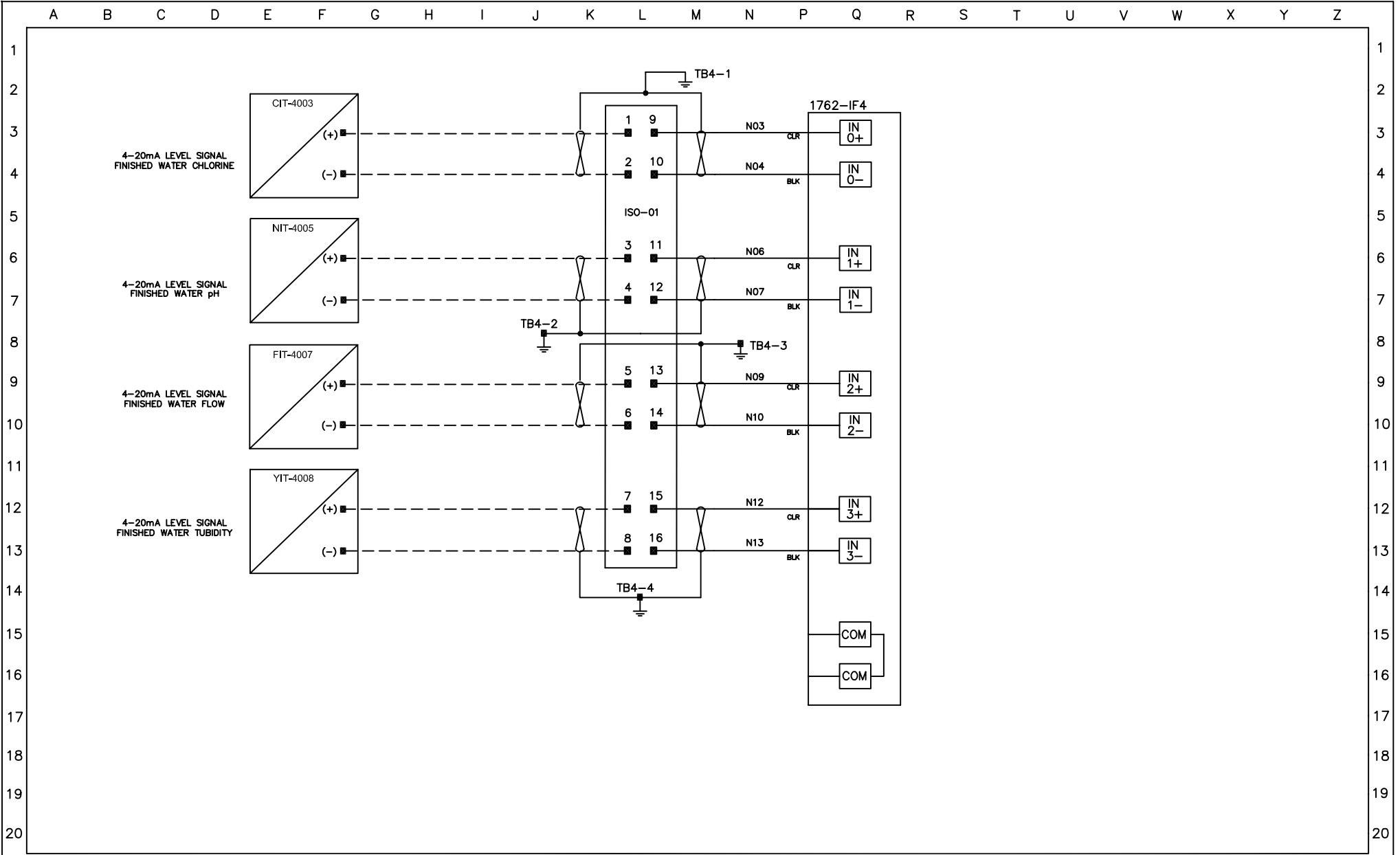
J3362 NRRWA

DRAWN BY: BEF	DATE: 1/25/2008	SHEET NO. 906	NEXT SHEET 907
PROJECT ENGR: RED			

TITLE: PLC EXPANSION DIGITAL INPUTS 2
FINISHED WATER PUMP STATION

REVISION #: 0

REVISION DATE:



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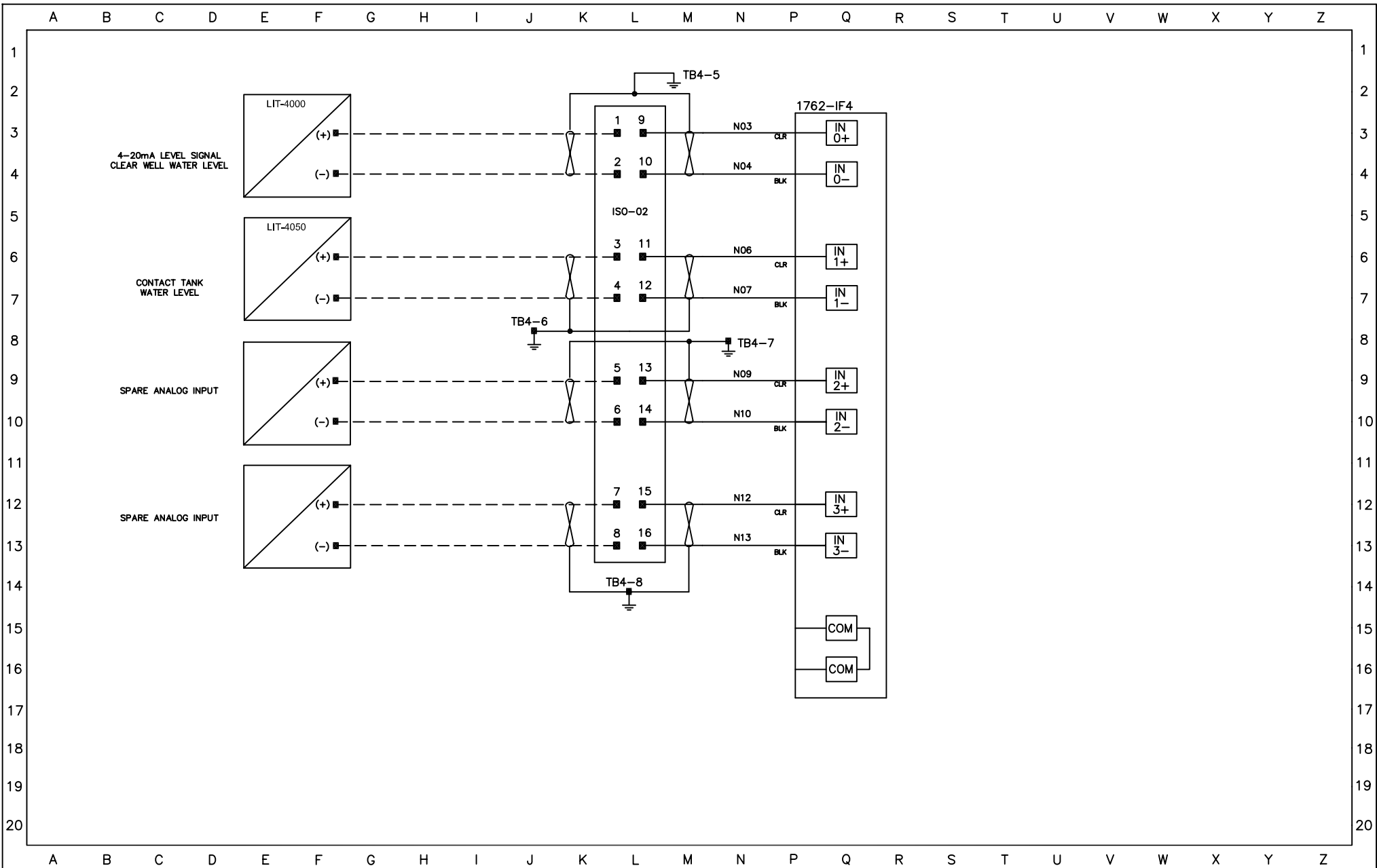
J3362 NRRWA

DRAWN BY: BEF	DATE: 1/25/2008	SHEET NO: 907	NEXT SHEET: 908
PROJECT ENGR: RED			

TITLE: PLC EXPANSION ANALOG INPUTS 1
FINISHED WATER PUMP STATION

REVISION #: 0

REVISION DATE:



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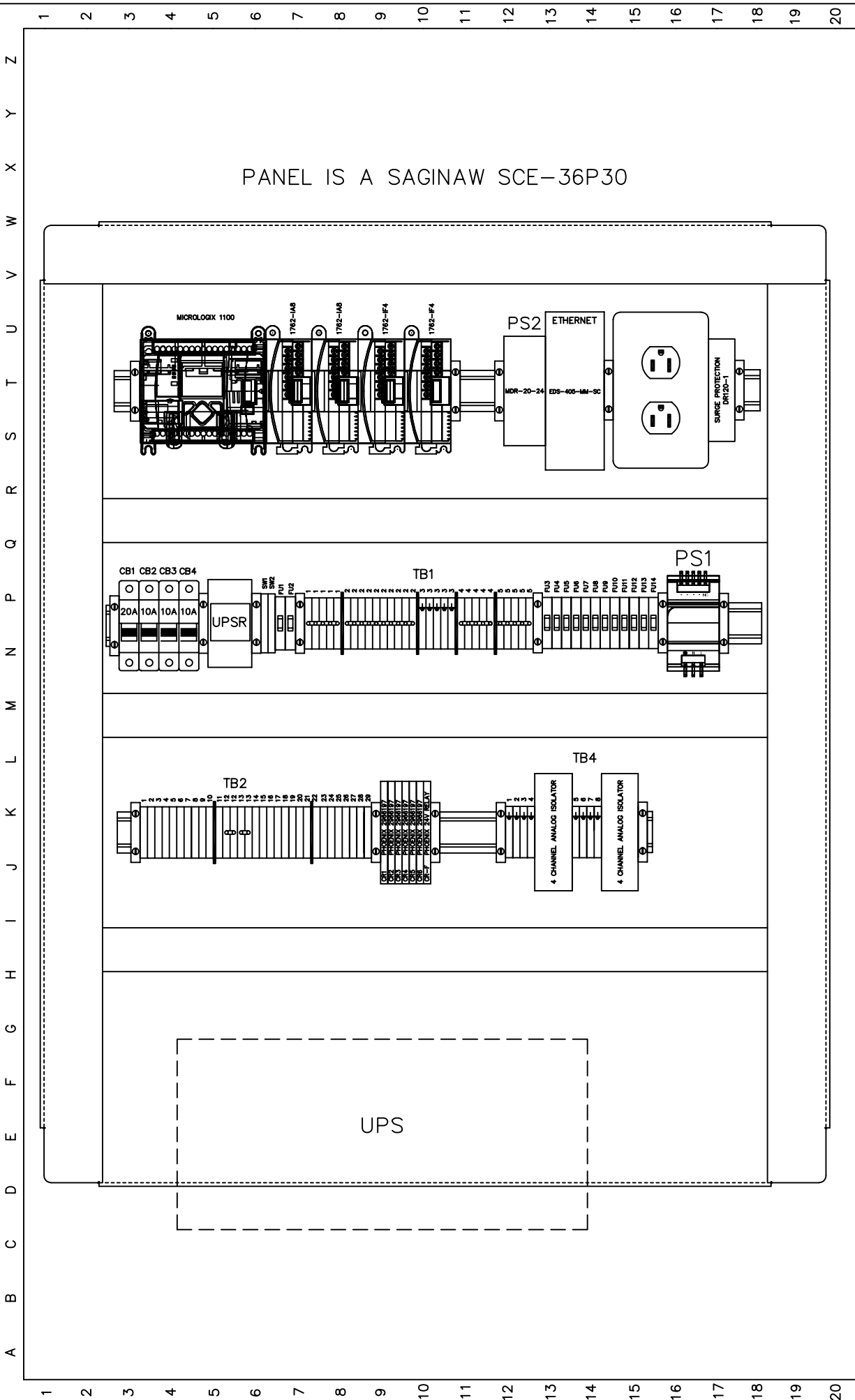
J3362 NRRWA

DRAWN BY:	BEF	DATE:	1/25/2008	SHEET NO.	908	NEXT SHEET	909
PROJECT ENGR:	RED						

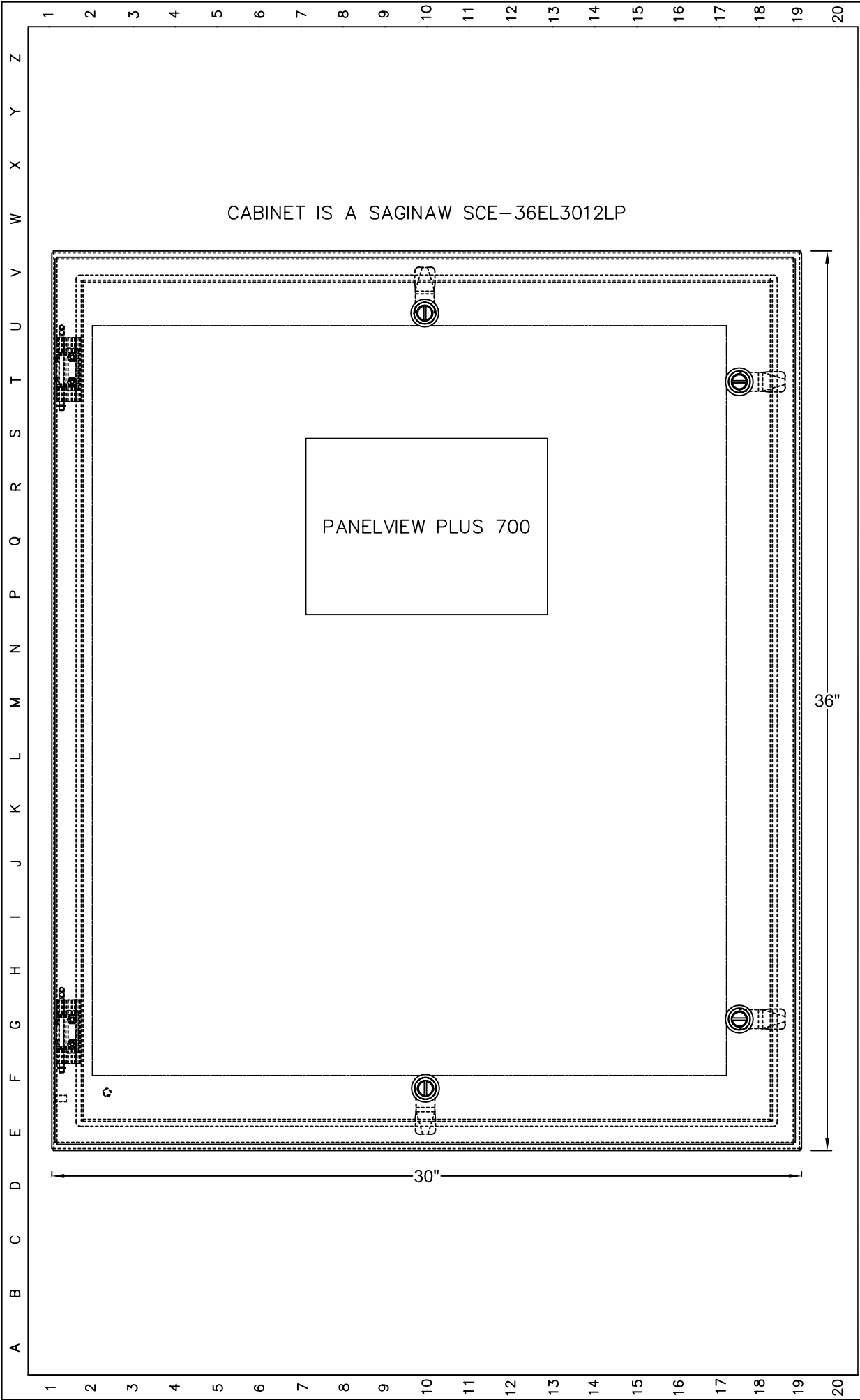
TITLE: PLC EXPANSION ANALOG INPUTS 2
FINISHED WATER PUMP STATION

REVISION #: 0

REVISION DATE:



<p style="font-size: 8px; margin-top: 5px;"> SUNAPSYS Leader in Controls and Information 850 Third Street Vinton, VA 24179-3300 www.sunapsys.com 540-904-6662 </p>	<p style="font-size: 12px; margin: 0;">J3362 NRRWA</p> <p style="font-size: 8px; margin: 5px 0 0 0;"> DRAWN BY: BEF PROJECT ENGR: RED </p> <p style="font-size: 8px; margin: 5px 0 0 0;"> DATE: 1/25/2008 </p>	<p style="font-size: 10px; margin: 0;"> SHEET NO. 909 NEXT SHEET 910 </p>	<p style="font-size: 10px; margin: 0;"> REVISION #: 0 REVISION DATE: </p>
<p>THIS DRAWING IS THE PROPERTY OF SUNAPSYS, INC. AND IS TRANSMITTED IN CONFIDENCE. THE REPRODUCTION, USE OR DISCLOSURE, IN WHOLE OR IN PART, OF THE DESIGN AND DETAILS CONTAINED HEREIN IS PROHIBITED WITHOUT THE WRITTEN PERMISSION OF SUNAPSYS, INC.</p>			
<p>TITLE: PANEL LAYOUT RAW WATER INTAKE PUMP STATION</p>			



CABINET IS A SAGINAW SCE-36EL3012LP

PANELVIEW PLUS 700

30"

36"

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J3362 NRRWA
 DRAWN BY: BEF
 PROJECT ENGINEER: RED
 DATE: 1/25/2008

SHEET NO. 910
 NEXT SHEET 911

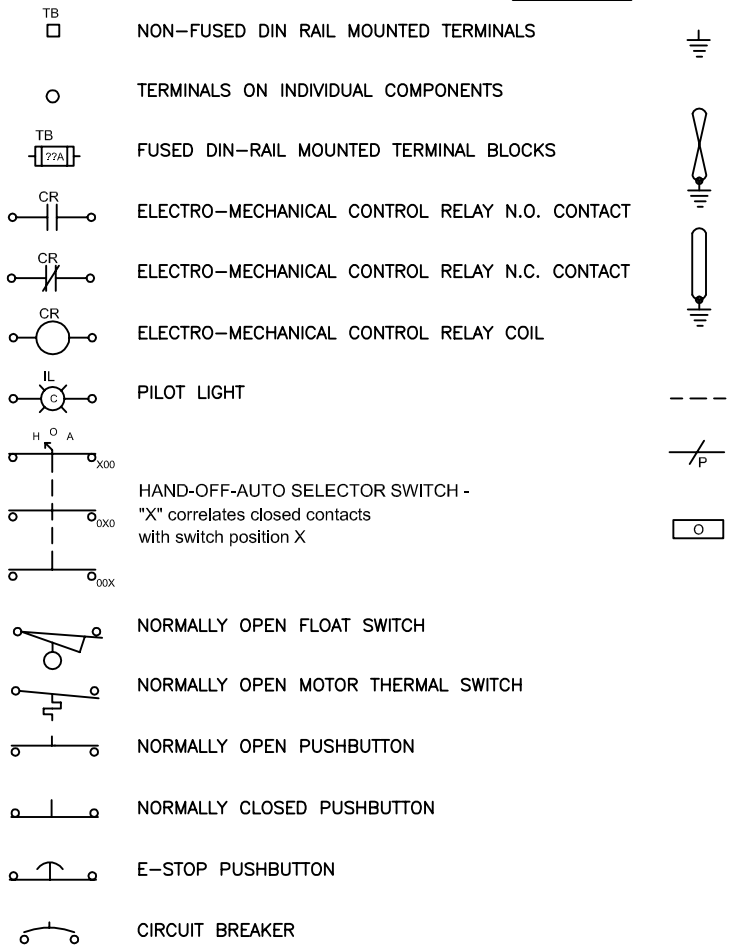
TITLE: CABINET LAYOUT
 RAW WATER INTAKE PUMP STATION
 REVISION #: 0
 REVISION DATE:

SYMBOLS

WIRE COLOR CODES

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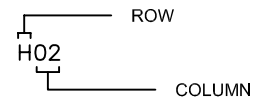
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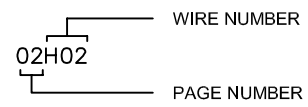
RED	120 VAC SINGLE PHASE CONTROL POWER
WHITE	120 VAC GROUNDED NEUTRAL
GREEN	EARTH GROUND
BLUE	24 VOLTS DIRECT CURRENT
BLACK	POWER WIRE (ABOVE 120 VOLTS)

WIRE NUMBERS

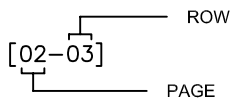
AS SHOWN WHERE WIRE ORIGINATES



WIRE NUMBER SHOWN ON SHEETS
OTHER THAN WHERE IT ORIGINATES



MAPPING



[BRACKETS] ARE ONLY USED IN MAPPING

A B C D E F G H I J K L M N P Q R S T U V W X Y Z



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J3362		NRRWA	
DRAWN BY: BEF	DATE: 1/25/2008	SHEET NO: 911	NEXT SHEET: FNL
PROJECT ENGR: RED			

TITLE: LEGEND	
FINISHED WATER PUMP STATION	
REVISION # 0	REVISION DATE:

Bill of Materials

Job: Principal
 Customer
 Owner

BOM - Panel

Panel:

Item	Vendor	Manufacturer	Part Number	Description	Qty	Drawing Nomenclature
1	Williams Supply,	A-B	1769-L32E	Compact logix	1	
2	Williams Supply,	A-B	1769-PA4	power supply	1	
3	Williams Supply,	Allen-Bradley	1769-IA16	Input module, 120 VAC 16 inputs	3	
4	Williams Supply,	Allen-Bradley	1769-OW16	Relay output card	2	
5	Williams Supply,	Allen-Bradley	1769-IF8	8 Channel Analog Input Card	2	
6	Williams Supply,	Allen-Bradley	1769-OF4CI	Analog output module	3	
7	Williams Supply,	Allen-Bradley	1769-ECR	End Cap for Compact I/O Module	1	
8	Williams Supply,	A-B	2711P-T10C4A1	Ethernet and RS-232 Communicati	1	
9	Commonwealth C	Phoenix	2966197	REL-MR-60DC/21 w/ PLC-RSC-1	32	
10	Williams Supply,	Allen-Bradley	1492-J4	6mm, 30A terminal *****order qtys	120	
11	Williams Supply,	Allen-Bradley	1492-EAJ35	End Anchor *****min order qty. 1	15	
12	Williams Supply,	Allen-Bradley	1492-JG4	Ground terminal	20	
13	Williams Supply,	Allen-Bradley	1492-CJJ6-10	10 Pole Jumper **Minimum Quant	4	
14	Williams Supply,	Allen-Bradley	1492-WFB4	5 x 20mm fuse holder, Min order 5	30	
15	Saginaw Control	Saginaw	SCE-603616LP	NEMA 12 Enclosure	1	
16	Saginaw Control	Saginaw	SCE-60P36	Backpanel	1	
17	Gexpro	Bussmann	GMA1A	5 x 20mm fast acting fuse	0	
18	Gexpro	Bussmann	GMA2A	5 x 20mm fast acting fuse	30	
19	Gexpro	Bussmann	GMA5A	5 x 20mm fast acting fuse	10	
20	Williams Supply,	Allen-Bradley	1606-XLP30E	Power Supply 24VDC A 1.25 amp	1	
21	Hermitage Autom	Idec	RTE-P1AF20	timing relay use socket SR2P-06	1	
22	Hermitage Autom	Idec	SR2P-06	base for timing relay RTE-P1AF20	1	
23	PC Connection		SUA750-5161823	Smart-UPS 750 VA USB and Seria	1	
24	Commonwealth C	Phoenix	2814045	Four channel isolator, 30Vdc	2	
25	MSI Tec	Moxa	EDS-508A	8 port managed Ethernet Switch (Pr	1	
26	B & B Electronics	B & B	EIR-M-SC	Fiber/Copper Media Converter	1	
27	B & B Electronics	Moxa	MDR-40-24	24Vdc, 40 watt	1	
28	Commonwealth C	Phoenix	3004032	Knife disconnect terminal block	2	
29	Commonwealth C	Phoenix	3004210	Knife disconnect terminal block en	2	
30	Commonwealth C	Square D	QOU110	1 Pole Breaker - 10Amp	3	
31	Commonwealth C	Square D	QOU120	1 Pole Breaker - 20Amp	1	
33	Transtector Syste	Transtector	DR120-1	Power Surge Protection for 120 VA	1	
34	Commonwealth C	Phoenix	5600461	Din Mount Receptacle Box EM-D	1	
35	Saginaw Control	Saginaw	SCE-FK1216	Floor stand kit	1	
36	Visual Communic	Visual Communic	L--1 x 6	1" x 6" legend, wht/blk/rev	1	
37	PC Connection	LinSys	RV042	10/100 4-port VPN Router	1	

Bill of Materials

Job: Principal
 Customer
 Owner

BOM - Panel

Panel:

Item	Vendor	Manufacturer	Part Number	Description	Qty	Drawing Nomenclature
1	Williams Supply,	Allen-Bradley	1769-L35E	Processor	1	
2	Williams Supply,	A-B	1769-PA4	power supply	1	
3	Williams Supply,	Allen-Bradley	1769-IA16	Input module, 120 VAC 16 inputs	3	
4	Williams Supply,	Allen-Bradley	1769-OW16	Relay output card	2	
5	Williams Supply,	Allen-Bradley	1769-IF8	8 Channel Analog Input Card	2	
6	Williams Supply,	Allen-Bradley	1769-OF4CI	Analog output module	3	
7	Williams Supply,	Allen-Bradley	1769-ECR	End Cap for Compact I/O Module	1	
9	Commonwealth C	Phoenix	2966197	120VAC Coil Relay 1 Pole DT DI	32	
10	Williams Supply,	Allen-Bradley	1492-J4	6mm, 30A terminal ****order qtys	120	
11	Williams Supply,	Allen-Bradley	1492-EAJ35	End Anchor *****min order qty. 1	15	
12	Williams Supply,	Allen-Bradley	1492-JG4	Ground terminal	20	
13	Williams Supply,	Allen-Bradley	1492-CJJ6-10	10 Pole Jumper **Minimum Quant	4	
14	Williams Supply,	Allen-Bradley	1492-WFB4	5 x 20mm fuse holder, Min order 5	30	
15	Saginaw Control	Saginaw	SCE-603616LP	NEMA 12 Enclosure	1	
16	Saginaw Control	Saginaw	SCE-60P36	Backpanel	1	
17	Gexpro	Bussmann	GMA1A	5 x 20mm fast acting fuse	0	
18	Gexpro	Bussmann	GMA2A	5 x 20mm fast acting fuse	30	
19	Gexpro	Bussmann	GMA5A	5 x 20mm fast acting fuse	10	
20	Williams Supply,	Allen-Bradley	1606-XLP30E	Power Supply 24VDC A 1.25 amp	1	
21	Hermitage Autom	Idec	RTE-P1AF20	timing relay use socket SR2P-06	1	
22	Hermitage Autom	Idec	SR2P-06	base for timing relay RTE-P1AF20	1	
23	PC Connection		SUA750-5161823	Smart-UPS 750 VA USB and Seria	1	
24	Commonwealth C	Phoenix	2814045	Four channel isolator, 30Vdc	2	
25	MSI Tec	Moxa	EDS-508A	8 port managed Ethernet Switch (Pr	1	
26	B & B Electronics	B & B	EIR-M-SC	Fiber/Copper Media Converter	1	
27	B & B Electronics	Moxa	MDR-40-24	24Vdc, 40 watt	1	
28	Commonwealth C	Phoenix	3004032	Knife disconnect terminal block	2	
29	Commonwealth C	Phoenix	3004210	Knife disconnect terminal block en	2	
30	Commonwealth C	Square D	QOU110	1 Pole Breaker - 10Amp	3	
31	Commonwealth C	Square D	QOU120	1 Pole Breaker - 20Amp	1	
33	Transtector Syste	Transtector	DR120-1	Power Surge Protection for 120 VA	1	
34	Commonwealth C	Phoenix	5600461	Din Mount Receptacle Box EM-D	1	
36	Saginaw Control	Saginaw	SCE-FK1216	Floor stand kit	1	
37	Visual Communic	Visual Communic	L--1 x 6	1" x 6" legend, wht/blk/rev	1	

Bill of Materials

Job: Principal
Customer
Owner

BOM - Panel

Panel:

Item	Vendor	Manufacturer	Part Number	Description	Qty	Drawing Nomenclature
1	Williams Supply,	Allen-Bradley	1769-L35E	Processor	1	
2	Williams Supply,	A-B	1769-PA4	power supply	1	
3	Williams Supply,	Allen-Bradley	1769-IA16	Input module, 120 VAC 16 inputs	2	
4	Williams Supply,	Allen-Bradley	1769-OW16	Relay output card	1	
5	Williams Supply,	Allen-Bradley	1769-IF8	8 Channel Analog Input Card	1	
6	Williams Supply,	Allen-Bradley	1769-OF4CI	Analog output module	1	
7	Williams Supply,	Allen-Bradley	1769-ECR	End Cap for Compact I/O Module	1	
8	Williams Supply,	A-B	2711P-T10C4A1	Ethernet and RS-232 Communicati	1	
9	Commonwealth C	Phoenix	2966197	120VAC Coil Relay 1 Pole DT DI	16	
10	Williams Supply,	Allen-Bradley	1492-J4	6mm, 30A terminal *****order qtys	80	
11	Williams Supply,	Allen-Bradley	1492-EAJ35	End Anchor *****min order qty. 1	15	
12	Williams Supply,	Allen-Bradley	1492-JG4	Ground terminal	20	
13	Williams Supply,	Allen-Bradley	1492-CJJ6-10	10 Pole Jumper **Minimum Quant	4	
14	Williams Supply,	Allen-Bradley	1492-WFB4	5 x 20mm fuse holder, Min order 5	15	
15	Williams Supply,	Hoffman	CFC383616SS	Floor mount console	1	
16	Williams Supply,	Hoffman	CP3636	Backpanel	1	
17	Gexpro	Bussmann	GMA1A	5 x 20mm fast acting fuse	10	
18	Gexpro	Bussmann	GMA2A	5 x 20mm fast acting fuse	20	
19	Gexpro	Bussmann	GMA5A	5 x 20mm fast acting fuse	10	
20	Williams Supply,	Allen-Bradley	1606-XLP30E	Power Supply 24VDC A 1.25 amp	1	
21	Hermitage Autom	Idec	RTE-P1AF20	timing relay use socket SR2P-06	1	
22	Hermitage Autom	Idec	SR2P-06	base for timing relay RTE-P1AF20	1	
23	Commonwealth C	Phoenix	2814029	Two channel isolator, 30Vdc	1	
24	Commonwealth C	Phoenix	2814045	Four channel isolator, 30Vdc	1	
25	MSI Tec	Moxa	EDS-405A	5 port managed Ethernet Switch (Pr	1	
26	B & B Electronics	Moxa	MDR-20-24	24Vdc, 20 watt	1	
27	PC Connection	APC	BE750BB	750VA UPS	1	
28	Commonwealth C	Phoenix	3004032	Knife disconnect terminal block	2	
29	Commonwealth C	Phoenix	3004210	Knife disconnect terminal block en	2	
30	Commonwealth C	Square D	QOU110	1 Pole Breaker - 10Amp	3	
31	Commonwealth C	Square D	QOU120	1 Pole Breaker - 20Amp	1	
32	Transtector Syste	Transtector	DR120-1	Power Surge Protection for 120 VA	1	
33	Commonwealth C	Phoenix	5600461	Din Mount Receptacle Box EM-D	1	
34	Visual Communic	Visual Communic	L-1 x 5	1" x 5" legends	1	

Bill of Materials

Job: Principal
Customer
Owner

BOM - Panel

Panel:

Item	Vendor	Manufacturer	Part Number	Description	Qty	Drawing Nomenclature
1	Williams Supply,	Allen-Bradley	1769-L35E	Processor	1	
2	Williams Supply,	A-B	1769-PA4	power supply	1	
3	Williams Supply,	Allen-Bradley	1769-IA16	Input module, 120 VAC 16 inputs	2	
4	Williams Supply,	Allen-Bradley	1769-OW16	Relay output card	1	
5	Williams Supply,	Allen-Bradley	1769-IF8	8 Channel Analog Input Card	1	
6	Williams Supply,	Allen-Bradley	1769-OF4CI	Analog output module	1	
7	Williams Supply,	Allen-Bradley	1769-ECR	End Cap for Compact I/O Module	1	
8	Williams Supply,	A-B	2711P-T10C4A1	Ethernet and RS-232 Communicati	1	
9	Commonwealth C	Phoenix	2966197	120VAC Coil Relay 1 Pole DT DI	16	
10	Williams Supply,	Allen-Bradley	1492-J4	6mm, 30A terminal *****order qtys	80	
11	Williams Supply,	Allen-Bradley	1492-EAJ35	End Anchor *****min order qty. 1	15	
12	Williams Supply,	Allen-Bradley	1492-JG4	Ground terminal	20	
13	Williams Supply,	Allen-Bradley	1492-CJJ6-10	10 Pole Jumper **Minimum Quant	4	
14	Williams Supply,	Allen-Bradley	1492-WFB4	5 x 20mm fuse holder, Min order 5	15	
15	Williams Supply,	Hoffman	CFC383616SS	Floor mount console	1	
16	Williams Supply,	Hoffman	CP3636	Backpanel	1	
17	Gexpro	Bussmann	GMA1A	5 x 20mm fast acting fuse	10	
18	Gexpro	Bussmann	GMA2A	5 x 20mm fast acting fuse	20	
19	Gexpro	Bussmann	GMA5A	5 x 20mm fast acting fuse	10	
20	Williams Supply,	Allen-Bradley	1606-XLP30E	Power Supply 24VDC A 1.25 amp	1	
21	Hermitage Autom	Idec	RTE-P1AF20	timing relay use socket SR2P-06	1	
22	Hermitage Autom	Idec	SR2P-06	base for timing relay RTE-P1AF20	1	
23	Commonwealth C	Phoenix	2814029	Two channel isolator, 30Vdc	1	
24	Commonwealth C	Phoenix	2814045	Four channel isolator, 30Vdc	1	
25	MSI Tec	Moxa	EDS-405A	5 port managed Ethernet Switch (Pr	1	
26	B & B Electronics	Moxa	MDR-20-24	24Vdc, 20 watt	1	
27	PC Connection	APC	BE750BB	750VA UPS	1	
28	Commonwealth C	Phoenix	3004032	Knife disconnect terminal block	2	
29	Commonwealth C	Phoenix	3004210	Knife disconnect terminal block en	2	
30	Commonwealth C	Square D	QOU110	1 Pole Breaker - 10Amp	3	
31	Commonwealth C	Square D	QOU120	1 Pole Breaker - 20Amp	1	
32	Transtector Syste	Transtector	DR120-1	Power Surge Protection for 120 VA	1	
33	Commonwealth C	Phoenix	5600461	Din Mount Receptacle Box EM-D	1	
34	Visual Communic	Visual Communic	L-1 x 5	1" x 5" legends	1	

Bill of Materials

Job: Principal
Customer
Owner

BOM - Panel

Panel:

Item	Vendor	Manufacturer	Part Number	Description	Qty	Drawing Nomenclature
1	Williams Supply,	Allen-Bradley	1769-L35E	Processor	1	
2	Williams Supply,	A-B	1769-PA4	power supply	1	
3	Williams Supply,	Allen-Bradley	1769-IA16	Input module, 120 VAC 16 inputs	2	
4	Williams Supply,	Allen-Bradley	1769-OW16	Relay output card	1	
5	Williams Supply,	Allen-Bradley	1769-IF8	8 Channel Analog Input Card	1	
6	Williams Supply,	Allen-Bradley	1769-OF4CI	Analog output module	1	
7	Williams Supply,	Allen-Bradley	1769-ECR	End Cap for Compact I/O Module	1	
8	Williams Supply,	A-B	2711P-T10C4A1	Ethernet and RS-232 Communicati	1	
9	Commonwealth C	Phoenix	2966197	120VAC Coil Relay 1 Pole DT DI	16	
10	Williams Supply,	Allen-Bradley	1492-J4	6mm, 30A terminal *****order qtys	80	
11	Williams Supply,	Allen-Bradley	1492-EAJ35	End Anchor *****min order qty. 1	15	
12	Williams Supply,	Allen-Bradley	1492-JG4	Ground terminal	20	
13	Williams Supply,	Allen-Bradley	1492-CJJ6-10	10 Pole Jumper **Minimum Quant	4	
14	Williams Supply,	Allen-Bradley	1492-WFB4	5 x 20mm fuse holder, Min order 5	15	
15	Williams Supply,	Hoffman	CFC383616SS	Floor mount console	1	
16	Williams Supply,	Hoffman	CP3636	Backpanel	1	
17	Gexpro	Bussmann	GMA1A	5 x 20mm fast acting fuse	10	
18	Gexpro	Bussmann	GMA2A	5 x 20mm fast acting fuse	20	
19	Gexpro	Bussmann	GMA5A	5 x 20mm fast acting fuse	10	
20	Williams Supply,	Allen-Bradley	1606-XLP30E	Power Supply 24VDC A 1.25 amp	1	
21	Hermitage Autom	Idec	RTE-P1AF20	timing relay use socket SR2P-06	1	
22	Hermitage Autom	Idec	SR2P-06	base for timing relay RTE-P1AF20	1	
23	Commonwealth C	Phoenix	2814029	Two channel isolator, 30Vdc	1	
24	Commonwealth C	Phoenix	2814045	Four channel isolator, 30Vdc	1	
25	MSI Tec	Moxa	EDS-405A	5 port managed Ethernet Switch (Pr	1	
26	B & B Electronics	B & B	EIR-M-SC	Fiber/Copper Media Converter	1	
27	B & B Electronics	Moxa	MDR-40-24	24Vdc, 40 watt	1	
28	PC Connection	APC	BE750BB	750VA UPS	1	
29	Commonwealth C	Phoenix	3004032	Knife disconnect terminal block	2	
30	Commonwealth C	Phoenix	3004210	Knife disconnect terminal block en	2	
31	Commonwealth C	Square D	QOU110	1 Pole Breaker - 10Amp	3	
32	Commonwealth C	Square D	QOU120	1 Pole Breaker - 20Amp	1	
33	Transtector Syste	Transtector	DR120-1	Power Surge Protection for 120 VA	1	
34	Commonwealth C	Phoenix	5600461	Din Mount Receptacle Box EM-D	1	
35	Visual Communic	Visual Communic	L-1 x 5	1" x 5" legends	1	

Bill of Materials

Job: Principal
Customer
Owner

BOM - Panel

Panel:

Item	Vendor	Manufacturer	Part Number	Description	Qty	Drawing Nomenclature
1	Williams Supply,	Allen-Bradley	1763-L16AWA	Micrologix 1100, 10 AC in, 6 relay	1	
2	Williams Supply,	Allen-Bradley	1762-IA8	8pt digital input module	2	
3	Williams Supply,	Allen-Bradley	1762-IF4	MicroLogix 1200 Analog I/O modu	1	
4	Williams Supply,	A-B	1762-OF4	Analog output module	1	
5	Williams Supply,	A-B	2711P-T7C4A1	Touch screen, Ethernet, 120VAC p	1	
6	Commonwealth C	Phoenix	2966197	120VAC Coil Relay 1 Pole DT DI	6	
7	Williams Supply,	Allen-Bradley	1492-J4	6mm, 30A terminal ****order qtys	60	
8	Williams Supply,	Allen-Bradley	1492-EAJ35	End Anchor *****min order qty. 1	15	
9	Williams Supply,	Allen-Bradley	1492-CJJ6-10	10 Pole Jumper **Minimum Quant	5	
10	Williams Supply,	Allen-Bradley	1492-JG4	Ground terminal	10	
11	Saginaw Control	Saginaw	SCE-36EL3012L	Nema 4 enclosure	1	
12	Saginaw Control	Saginaw	SCE-36P30	Backpanel	1	
13	Gexpro	Bussmann	GMA1A	5 x 20mm fast acting fuse	20	
14	Williams Supply,	Allen-Bradley	1606-XLP30E	Power Supply 24VDC A 1.25 amp	1	
15	Hermitage Autom	Idec	RTE-P1AF20	timing relay use socket SR2P-06	1	
16	Hermitage Autom	Idec	SR2P-06	base for timing relay RTE-P1AF20	1	
17	PC Connection		SUA750-5161823	Smart-UPS 750 VA USB and Seria	1	
18	Commonwealth C	Phoenix	2814045	Four channel isolator, 30Vdc	1	
19	MSI Tec	Moxa	EDS-405A-MM-	5 port managed Ethernet Switch (Pr	1	
20	B & B Electronics	Moxa	MDR-20-24	24Vdc, 20 watt	1	
21	Commonwealth C	Phoenix	3004032	Knife disconnect terminal block	2	
22	Commonwealth C	Square D	QOU110	1 Pole Breaker - 10Amp	3	
23	Commonwealth C	Square D	QOU120	1 Pole Breaker - 20Amp	1	
24	Transtector Syste	Transtector	DR120-1	Power Surge Protection for 120 VA	1	
25	Commonwealth C	Phoenix	5600461	Din Mount Receptacle Box EM-D	1	
26	Transtector Syste	Transtector Syste	DRDC-24	DUAL CHANNEL ANALOG SIG	1	
27	Newark Electroni	Crouzet	PNRU110A	Liquid level relay Newark p/n: 25C	2	
28	Hermitage Autom	ATC	SPM120ADA	Overtemperature relay	2	
29	Hermitage Autom	Idec	SR2P-06	base for timing relay RTE-P1AF20	2	
30	Commonwealth C	Phoenix	2967840	PLC-OSC-24DC/230AC/1 Optoco	1	
31	Visual Communic	Visual Communic	L--1 x 6	1" x 6" legend, wht/blk/rev	1	
32	PC Connection	LinSys	RV042	10/100 4-port VPN Router	1	
33	Commonwealth C	Phoenix	5600461	Din Mount Receptacle Box EM-D	1	
34	Industrial Process	Keller	900001.0009	Bellow	1	

Bill of Materials

Job: Principal
Customer
Owner

BOM - Panel

Panel:

Item	Vendor	Manufacturer	Part Number	Description	Qty	Drawing Nomenclature
1	Williams Supply,	Allen-Bradley	1763-L16AWA	Micrologix 1100, 10 AC in, 6 relay	1	
2	Williams Supply,	Allen-Bradley	1762-IA8	8pt digital input module	2	
3	Williams Supply,	Allen-Bradley	1762-IF4	MicroLogix 1200 Analog I/O modu	1	
4	Williams Supply,	A-B	1762-OF4	Analog output module	1	
5	Williams Supply,	A-B	2711P-T7C4A1	Touch screen, Ethernet, 120VAC p	1	
6	Commonwealth C	Phoenix	2966197	120VAC Coil Relay 1 Pole DT DI	6	
7	Williams Supply,	Allen-Bradley	1492-J4	6mm, 30A terminal ****order qtys	60	
8	Williams Supply,	Allen-Bradley	1492-EAJ35	End Anchor *****min order qty. 1	15	
9	Williams Supply,	Allen-Bradley	1492-CJJ6-10	10 Pole Jumper **Minimum Quant	4	
10	Williams Supply,	Allen-Bradley	1492-JG4	Ground terminal	10	
11	Saginaw Control	Saginaw	SCE-36EL3012L	Nema 4 enclosure	1	
12	Saginaw Control	Saginaw	SCE-36P30	Backpanel	1	
13	Gexpro	Bussmann	GMA1A	5 x 20mm fast acting fuse	20	
14	Williams Supply,	Allen-Bradley	1606-XLP30E	Power Supply 24VDC A 1.25 amp	1	
15	Hermitage Autom	Idec	RTE-P1AF20	timing relay use socket SR2P-06	1	
16	Hermitage Autom	Idec	SR2P-06	base for timing relay RTE-P1AF20	1	
17	PC Connection		SUA750-5161823	Smart-UPS 750 VA USB and Seria	1	
18	Commonwealth C	Phoenix	2814029	Two channel isolator, 30Vdc	1	
19	MSI Tec	Moxa	EDS-405A	5 port managed Ethernet Switch (Pr	1	
20	B & B Electronics	Moxa	MDR-20-24	24Vdc, 20 watt	1	
21	Commonwealth C	Phoenix	3004032	Knife disconnect terminal block	2	
22	Commonwealth C	Square D	QOU110	1 Pole Breaker - 10Amp	3	
23	Commonwealth C	Square D	QOU120	1 Pole Breaker - 20Amp	1	
24	Commonwealth C	Phoenix	5600461	Din Mount Receptacle Box EM-D	1	
25	Transtector Syste	Transtector Syste	DRDC-24	DUAL CHANNEL ANALOG SIG	2	
26	Williams Supply,	Allen-Bradley	1762-IF4	MicroLogix 1200 Analog I/O modu	1	
27	Williams Supply,	Allen-Bradley	1762-IA8	8pt digital input module	1	
28	Transtector Syste	Transtector	DR120-1	Power Surge Protection for 120 VA	1	
29	Commonwealth C	Phoenix	2967840	PLC-OSC-24DC/230AC/1 Optoco	1	
30	Commonwealth C	Phoenix	2814045	Four channel isolator, 30Vdc	1	
31	Visual Communic	Visual Communic	L--1 x 6	1" x 6" legend, wht/blk/rev	1	