REV	DRAWING NUMBER	DRAWING TITLE
	1.1-1.2	LEGEND
	2.1-2.10	COMMUNICATIONS BUS
	3.1	PNEUMATIC RISER
	4.1-4.5, NC-11 PS-36	HOT WATER SYSTEM
	5.1-5.7, NC-11 PS-37,38	CHILLED WATER SYSTEM
	6.1-6.2, NC-11 PS-1-3	AH-S01 TYPICAL FOR AH-S02,AH-S03
	7.1-7.3, NC-11 PS-4	AH-S04
	8.1-8.3, NC-11 PS-5	AH-S05
	9.1-9.2, NC-11 PS-6, 11-13	AH-S08 TYPICAL FOR AH-S14,AH-S15,AH-S16
	10.1-10.3, NC-11 PS-7	AH-S10
	11.1-11.3, NC-11 PS-8,9	AH-S11 TYPICAL FOR AH-S12
	12.1-12.3, NC-11 PS-10	AH-S13
	13.1-13.2, NC-11 PS-14	AH-S17
	14.1-14.2, NC-11 PS-15-19	AH-S19 TYPICAL FOR AH-S20,AH-S21,AH-S22,AH-S23
	15.1-15.2, NC-11 PS-20, NC-12 PS-9	AH-S24 TYPICAL FOR AH-T09
	16.1-16.3, NC-12 PS-1	AH-F01
	17.1-17.3, NC-12 PS-2, NC-13 PS-1	AH-F02 TYPICAL FOR AH-F04
	18.1-18.3, NC-12 PS-3, NC-13 PS-2	AH-F03 TYPICAL FOR AH-F05
	19.1-19.3, NC-13 PS-3	AH-F06
	20.1-20.2, NC-13 PS-4, 28 NC-12 PS-4,27	AH-F11 TYPICAL FOR AH-F12
	21.1-21.2, NC-13 PS-5,10	AH-F13 TYPICAL FOR AH-T05
	22.1-22.2, NC-13 PS-6, NC-12 PS-33	AH-F14 TYPICAL FOR AH-T08
	23.1-23.2, NC-13 PS-7	AH-L01
	24.1-24.2, NC-12 PS-5	AH-L04
	25.1-25.2, NC-12 PS-6	AH-C01
	26.1-26.2, NC-13 PS-8,11	AH-C02 TYPICAL FOR AH-T07
	27.1-27.3, NC-12 PS-7,12 NC-13 PS-9,14	AH-T01 TYPICAL FOR AH-T02,AH-TB05,AH-TB06
	28.1-28.3, NC-12 PS-8	AH-T06
	29.1-29.3, NC-13 PS-12	AH-T10
	30.1-30.3, NC-12 PS-10, NC-13 PS-13	AH-TB01 TYPICAL FOR AH-TB04
	31.1-31.3, NC-12 PS-11,34	AH-TB02 TYPICAL FOR AH-TB03
	32.1-32.3, NC-11 PS-35	SF-S06
	33.1-33.3, NC-12 PS-32	AH-BA1
	33.4	SCOREBOARD AC U
	34.1-34.7	FAN DETAILS
	35.1-35.9	ROOM SCHEDULE DETAILS
	35.1, NC-12 PS-13-26, NC-13 PS-15-27	DETAIL A - HEAT REMOVAL EXHAUST FANS
		DETAIL B - FAN COIL UNITS (CHILLED WATER & ELECTRIC HEAT)
	35.2	DETAIL C - COMMUNICATION ROOM UNITS (GENERAL ALARM)
		DETAIL D - DX COIL UNITS & CONDENSING UNITS

REV	DRAWING NUMBER	DRAWING TITLE
	35.3	DETAIL E - DX FAN COIL UNITS AND CONDENSING UNITS
		DETAIL F - ROOM AIR CONDITIONERS
	35.4, NC-11 PS-23, NC-12 PS-31	DETAIL G - VAV BOXES WITH REHEAT
	35.5 - 35.6, NC-11 PS-24-32, NC-12 PS-28, NC-13 PS-29	DETAIL H - REHEAT COILS
	35.7-35.9, NC-13 PS-32	DETAIL I - REHEAT COILS AND CONVECTORS
		DETAIL J - REHEAT COILS
	36.1-36.10	MISCELLANEOUS DETAILS
	36.1	DETAIL A - FROST PROTECTION
		DETAIL B - SUMP PUMPS
	36.2 - 36.3, NC-11 PS-21,22	DETAIL C - SMOKE EXHAUST SYSTEM
	36.4	DETAIL D - SEWAGE EJECTOR PUMPS
		DETAIL E - FIRE PUMP
	36.5	DETAIL F - SUMP PUMP FOR DRAINAGE
		DETAIL G - STANDBY EMERGENCY GENERATOR
	36.6	DETAIL H - ROOF MECHANISM/ HIGH BOWL DAMPERS
		DETAIL I - ROOF SNOW MELT
	36.7	DETAIL J - IN-FIELD HEATING SYSTEM
		DETAIL K - TC AIR COMPRESSOR
	36.8	DETAIL L - ELECTRIC HEATING SYSTEMS
	36.9	DETAIL M - ELECTRIC HEATING SYSTEMS
		DETAIL N - METHANE DETECTION SYSTEM INTERFACE
	36.10, NC-13 PS-30,31, NC-12 PS-29,30, NC-11 PS -33,34	DETAIL O - MULIPLEX PANELS
	36.11	SURGE SUPPRESSION / EMER GENERATOR
	36.12	CATERPILLAR CCM INTEGRATION
	PAGE 1-7	DAMPER SCHEDULE
	D1	DAMPER SCHEDULE DETAILS
	PAGE 1-2	PANEL SCHEDULE
	PAGE 1-10	ROOM SCHEDULE
	PAGE 1-2	VALVE SCHEDULE
	PAGE 1	WELL/TAP/METER SCHEDULE
	D2	WELL/TAP/METER SCHEDULE DETAILS

JOHNSON CONTROLS

Creating a better climate for business.

- ■ Environmental Control System
- ■ Facility Management System
- ☐ Air and Water System Balancing
- ☐ Fire Management System
- ☐ Security System
- ☐ Lighting Services
- ☐ Instrumentation System Installation
- ☐ Building Operations Management
- ☐ Energy Conservation Control
- ☐ Training Programs
- ☐ Performance Contracting
- ☐ Planned Service Agreements

Air Conditioning
Heating
Diagnostic Services
Coil Cleaning
Refrigeration
Automatic Temperature Controls
Facility Management Systems
Fire Management
Security Management
Building Operations and Management
Water Treatment
Electrical Equipment
Emergency Generator / Lighting Equipment
Industrial Controls / Recording / Indication Equipment

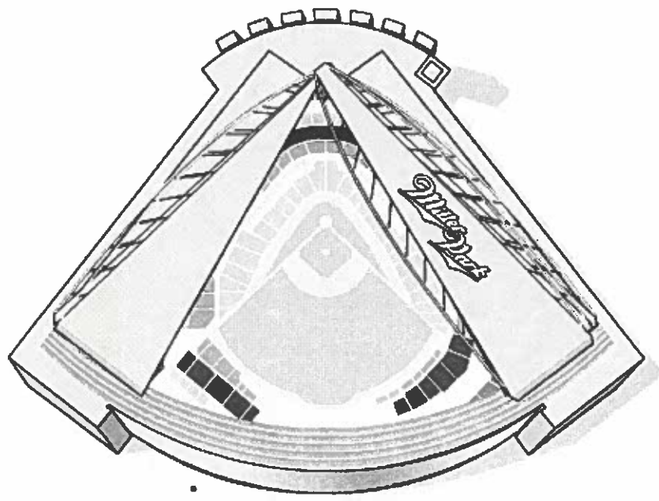
PROJECT TITLE

MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

ARCHITECT	ENGINEER
HKS / NBBJ / EPPSTEIN-UHEN	OVE ARUP and PARTNERS / PSJ ENGINEERING, INC / THE WILSON FIRM
MECHANICAL CONTRACTOR	**ELECTRICAL CONTRACTOR**
F.E.MORAN / SUPERIOR AIR HANDLING CORP	PIEPER ELECTRIC

REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY
	2	JCI CONTRACT 4933-0011		8/26/2004	MLR
	1	RECORD DRAWING		4/5/2001	MLR

REVISION INFORMATION
NUMBER
DATE 08/26/04
TIME 11:02 AM
FILE NAME Title.vsd



JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

SALES ENGINEER	PROJECT MANAGER	APPLICATION ENGINEER	DATE	CONTRACT NUMBER
PJS	TP	KJK	02/07/01	9 8075-0508

TABLE 1	CABLE / WIRE SPECIFICATION			TERMINALS PER CONDUCTOR COLOR					
WIRE USAGE	PLENUM PART NUMBER		DESCRIPTION	BLACK	WHITE	JACKET COLOR	RED	DRAIN	COMMENTS
	SOUTHWEST WIRE	WINDY CITY WIRE							
AI	CBL-18/2YEL-SW	CBL-18/2YEL-WC	18/2 Shld Yellow	AI Com	----------	AI	----------	TABLE 5	
AI	CBL-18/3YEL-SW	CBL-18/3YEL-WC	18/3 Shld Yellow	AI Com	Power	AI	----------	TABLE 5	
AO	CBL-18/2TAN-SW	CBL-18/2TAN-WC	18/2 Shld Tan	AO Com	----------	AO	----------	TABLE 5	
AO	CBL-18/3TAN-SW	CBL-18/3TAN-WC	18/3 Shld Tan	AO Com	Power	AO	----------	TABLE 5	
BI	CBL-18/2ORG-SW	CBL-18/2ORG-WC	18/2 Shld Orange	BI 24V	----------	BI	----------	TABLE 5	
BO	CBL-18/2VLT-SW	CBL-18/2VLT-WC	18/2 Shld Violet	BO Com	----------	BO	----------	TABLE 5	
BO	CBL-18/3VLT-SW	CBL-18/3VLT-WC	18/3 Shld Violet	BO Com	BO	BO	----------	TABLE 5	
24VAC	CBL-18/2GRY-SW	CBL-18/2GRY-WC	18/2 Shld Grey	24 V Com	----------	24 VAC	----------	----------	
GENERAL PURPOSE	CBL-18/2NAT-SW	CBL-18/2NAT-WC	18/2 Shld Natural	Common	----------	----------	Power	----------	
GENERAL PURPOSE	CBL-18/3NAT-SW	CBL-18/3NAT-WC	18/3 Shld Natural	Common	----------	Signal	Power	----------	
N2 BUS	CBL-18/3BLU-SW	CBL-18/3BLU-WC	18/3 Shld Blue	N2+	N2-	REF	----------	TABLE 6	
XT BUS	CBL-18/3BLU-SW	CBL-18/3BLU-WC	18/3 Shld Blue	XT+	XT-	REF	----------	----------	
N1 BUS-ARCNET	CBL-RG62PUR-SW	CBL-RG62PUR-WC	RG62 Purple	----------	----------	----------	----------	----------	
N1 BUS-ETHERNET	130208-07	555600-PURPLE	24/8 Purple	----------	----------	----------	----------	----------	SEE TABLES 7 & 8
BACNET BUS	130208-07	555600-PURPLE	24/8 Purple	----------	----------	----------	----------	----------	SEE TABLES 7 & 8
METASTAT	CBL-24/8NAT-SW	CBL-24/8NAT-WC	24/8 Natural	----------	----------	----------	----------	----------	SEE TABLES 2, 3, & 4
NT BUS	110205-SW	4380-WC	22/4 Natural	----------	----------	----------	----------	----------	
600 V	CBL-18/2600-SW	CBL-18/2600-WC	18/2	----------	----------	----------	----------	----------	
600 V	CBL-18/3600-SW	CBL-18/3600-WC	18/3	----------	----------	----------	----------	----------	
	CONNECT-AIR INTERNATIONAL	ANIXTER							
LON BUS	W221P-2002	9J2201544	22/2 Shld	----------	----------	----------	----------	----------	

NOTE #1: REFERENCE DETAILS OVERRIDE ABOVE COLOR CHART.

NOTE #2: EXISTING JOB STANDARDS OVERRIDE ALL OTHER DETAILS.

TE-6700 SERIES

TABLE 2	PHONE JACK PIN DESIGNATIONS	
PHONE JACK PIN NO.	SIGNAL DESIGNATION	COLOR
1	HEATING SETPOINT OR LED AND MANUAL OVERRIDE	WHT / GRN
2	SETPOINT (COOLING)	WHT / BLU
3	TEMPERATURE SENSOR	WHT / BRN
4	TEMPERATURE SENSOR COMMON	ORN / WHT
5	24 VAC OR 15 VDC POWER	BLU / WHT
6	POWER COMMON OR ZONE BUS COMMON	GRN / WHT
7	SETPOINT COMMON	BRN / WHT
8	ZONE BUS	WHT/ ORN

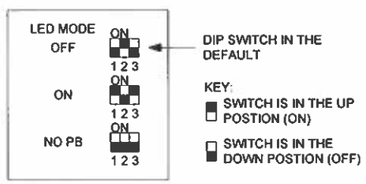
TABLE 3	TERMINAL BLOCK WIRING	
TERMINAL NO.	SIGNAL DESIGNATION	COLOR
1	TEMPERATURE SENSOR AND MANUAL OVERRIDE	WHT / BLU
2	TEMPERATURE SENSOR COMMON	BLU / WHT
3	SETPOINT COMMON	WHT / ORN
4	SETPOINT	ORN / WHT
5	24 VAC OR 15 VDC POWER	WHT / GRN
6	COMMON FOR POWER, ZONE BUS, OR MANUAL OVERRIDE AND LED	GRN / WHT
7	ZONE BUS	WHT / BRN
8	LED AND MANUAL OVERRIDE	BRN / WHT

NOTE: MANUAL OVERRIDE IS SELECTED FOR EITHER TERMINALS 1 AND 2 OR 6 AND 8 WITH THE LED ENABLED. TERMINAL 6 IS COMMON FOR TERMINAL 7.
A DUAL (HEATING/COOLING SETPOINT IS NOT AVAILABLE WITH A TERMINAL BLOCK.

HE-6700 SERIES

TABLE 4	TERMINAL BLOCK WIRING	
TERMINAL NO.	SIGNAL DESIGNATION	COLOR
1	TEMPERATURE SENSOR COMMON	WHT / BLU
2	TEMPERATURE SENSOR AND MANUAL OVERRIDE	BLU / WHT
3	SETPOINT (WARMER/COOLER)	WHT / ORN
4	SETPOINT COMMON	ORN / WHT
5	COMMON (FOR POWER, ZONE BUS, OR MANUAL OVERRIDE AND LED)	WHT / GRN
6	24 VAC OR 15 VDC POWER	GRN / WHT
7	RH OUTPUT	WHT / BRN
8	ZONE BUS	BRN / WHT
9	LED AND MANUAL OVERRIDE	

NOTE: MANUAL OVERRIDE IS SELECTED FOR EITHER TERMINALS 1 AND 2 OR 5 AND 9 WITH THE LED ENABLED. TERMINAL 5 IS COMMON FOR TERMINAL 7.



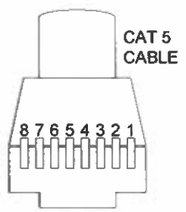
NOTE: SEE TABLES 2 & 3 FOR PHONE JACK, PREWIRED-CABLE CONFIGURATIONS.

ETHERNET PATCH CABLE

TABLE 7	STANDARD EIA/TIA T568B
PIN NO.	COLOR
1	WHT / ORN
2	ORN / WHT
3	WHT / GRN
4	BLU / WHT
5	WHT / BLU
6	GRN / WHT
7	WHT / BRN
8	BRN / WHT

ETHERNET CROSSOVER CABLE

TABLE 8	STANDARD EIA/TIA T568B
PIN NO.	COLOR
1	WHT / GRN
2	GRN / WHT
3	WHT / ORN
4	BLU / WHT
5	WHT / BLU
6	ORN / WHT
7	WHT / BRN
8	BRN / WHT



SYMBOL LEGEND

- PNEUMATIC TUBING
- LOW VOLTAGE
- CABLE
- HIGH VOLTAGE

REVISION INFORMATION
NUMBER
DATE 04/16/01
TIME 11:00 AM
FILE NAME Legend-a.vsd

Drawing Title: LEGEND

Project Title: MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

REFERENCE DRAWING		NO.	REVISION-LOCATION	ECN	DATE	BY
Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN BY MLR DATE		APPROVED BY DATE	

JOHNSON CONTROLS
Systems & Services Division

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Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER: 9 8075-0508
DRAWING NUMBER: 1.1

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
CAP-1	1	PD-101-10	CAPACITOR, 560PF
FILTER-1	1	81F4523	CORCOM 3VB1 LINE FILTER - NEWARK
MOV-1	1	AS-MOVKIT-0	KIT,TRANSIENT NOISE SUPPRESSOR, PK OF 12

TABLE 5	DRAIN CABLE		
	I/O GROUNDING		
TERMINALS	ENCLOSURE	NO ENCLOSURE	COMMENTS
I/O	HARD GROUND @ EACH PANEL. TAPE BACK @ EACH DEVICE	TAPE BACK @ EACH END	SEE FIGURE A
BO (NOISY INDUCTIVE LOADS)	TAPE BACK @ EACH END	TAPE BACK @ EACH END	ADD MOV-1 @ CONTROLLER TERMINALS
BO (GAS IGNITION)	TAPE BACK @ EACH END	TAPE BACK @ EACH END	ADD FILTER-1 @ CONTROLLER TERMINALS. HARD GROUND CASE

TABLE 6	DRAIN CABLE		
	N2 GROUNDING		
TERMINALS	ENCLOSURE	NO ENCLOSURE	COMMENTS
NCM	HARD GROUND TO BACK PLANE	NA	SEE FIGURE B
ASC	STRAIGHT THROUGH TO NEXT DEVICE	STRAIGHT THROUGH TO NEXT DEVICE	
ASC (EOL)	TAPE BACK @ ASC	TAPE BACK @ ASC	
ASC (NOISY)	SOFT GROUND ONCE PER ENCLOSURE	TAPE BACK @ ASC	ADD CAP-1 @ ENCLOSURE

FIGURE A

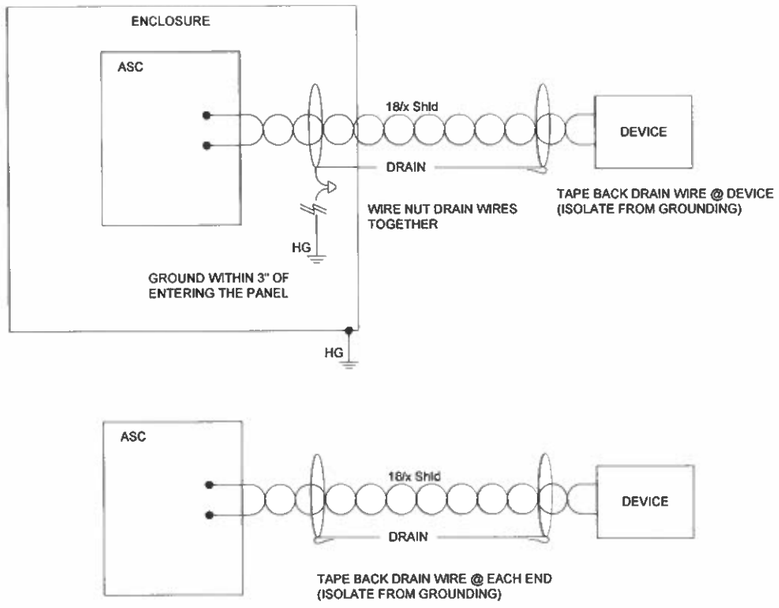
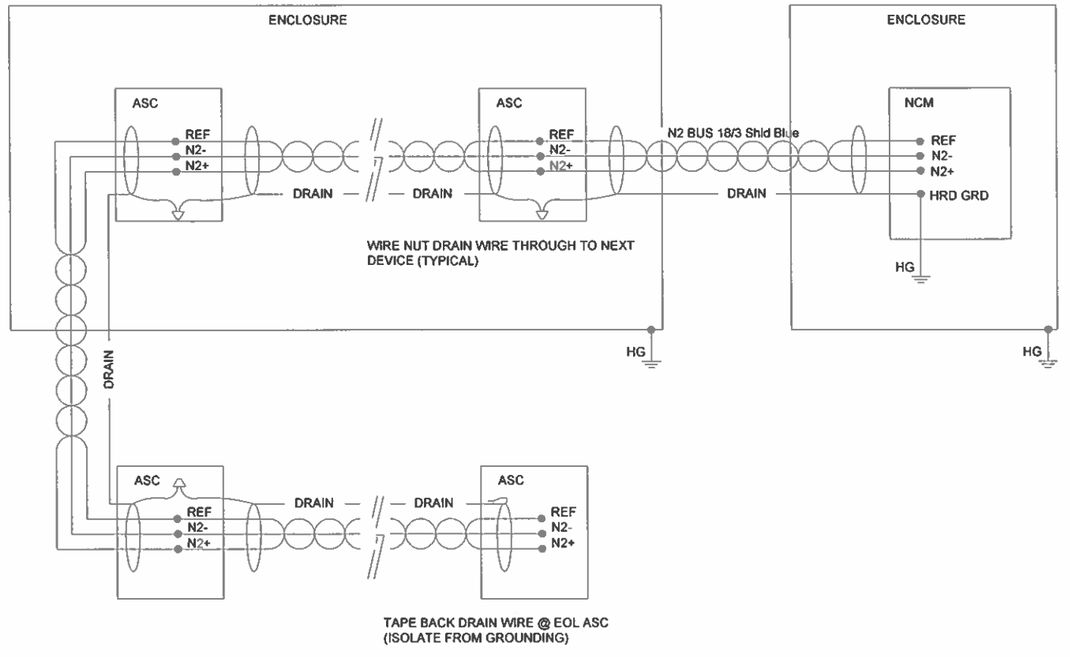


FIGURE B



SYMBOL LEGEND

- PNEUMATIC TUBING
- LOW VOLTAGE
- CABLE
- HIGH VOLTAGE

REVISION INFORMATION	
NUMBER	
DATE	04/11/01
TIME	10:14 AM
FILE NAME	Legend-b.vsd

Drawing Title: **LEGEND**

Project Title: **MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214**

REFERENCE DRAWING		NO	REVISION-LOCATION	ECN	DATE	BY
Sales Engineer	Project Manager	Application Engineer	DRAWN	APPROVED		
PJS	TP	KJK	BY MLR DATE	BY DATE		

JOHNSON CONTROLS
Systems & Services Division

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Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
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CONTRACT NUMBER: **9 8075-0508**

DRAWING NUMBER: **1.2**

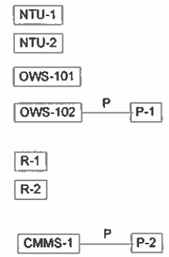
TRUNK SCHEMATIC LEGEND

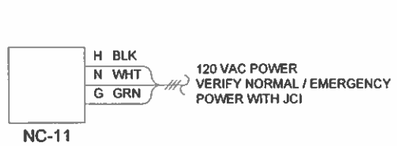
HUB	ACTIVE HUB
OWS	OPERATOR WORKSTATION
NTU	NETWORK TERMINAL UNIT
P	PRINTER
M	MODEM
1	N1 DEVICE-NUMBER = ADDRESS
1	N2 DEVICE-NUMBER = ADDRESS
R	N2 BUS REPEATER
N1-A	N1 ARCNET BUS
N1-E	N1 ETHERNET BUS
N1-F	N1 FIBER BUS
N2	N2 BUS
NT	NT BUS
N2/NT	N2 AND NT BUS
R	RS232 CABLE
M	MODEM CABLE - RS232
P	PARALLEL PRINTER CABLE
XT	XT BUS
*	N2 BUS END OF LINE
+	N1 BUS END OF LINE
•	NT JACK IO-NTU115

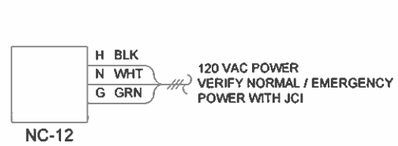
N1 ADDRESS	N2 ADDRESS	IP ADDRESS	DEVICE TYPE	PANEL & SYSTEM LOCATED	PRIMARY MECH SYSTEM	SERVICE
100	n/a	192.168.55.55	NIE	SL1 - Security Room 1101	n/a	N1 Ethernet
101	n/a	192.168.55.50	OWS	SL8 - Electronics Room 1805	n/a	N1 Ethernet
102	n/a	192.168.55.56	OWS	SL1 - Security Room 1101	n/a	N1 Ethernet
11	n/a	192.168.55.51	NCM-350	SL1 - Security Room 1101	n/a	N2 Devices - Service Level
12	n/a	192.168.55.52	NCM-350	TL8 - Mechanical Room 5804	n/a	N2 Devices
13	n/a	192.168.55.53	NCM-350	SL4 - Mechanical Room 1403	n/a	N2 Devices
14	n/a	192.168.55.54	NCM-350	SL8 - Warehouse Room 1811	n/a	N2 Devices
n/a	n/a		CMMS	SL1 - Security Room 1101	n/a	Maintainance Management

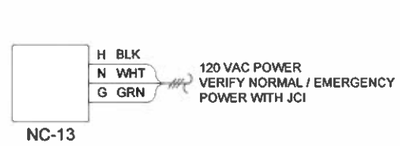
BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
CMMS-1	1	22523	APC SURGE SUPPRESSOR POWER STRIP
	1	263047	ZOOM 56K INTERNAL MODEM
	1	319861	NEC 15" MULTISYNC A500+ MONITOR
	1	461832	OPTIPLEX GX1 P3/500, 6.4GB/64MB/CD
	1	462757	64 MB RAM UPGRADE
NTU-x	2	IO-BAG101-0	CASE FOR NETWORK TERMINAL
	2	IO-NTU102-0	NETWORK TERMINAL W/LIGHT
OWS-101	1	086849	SURGE SUPPRESSOR POWER STRIP - APC
	1	F70648	DELL 17" LCD MONITOR
	1	E63313	P4/2.6GHZ/40GB/512MB/48XCDRW/WIN2K-NTFS
	1	C84692	512 MB RAM UPGRADE - KTD4550/512
	1	MS-SCTSWO-0	SYSTEM CONFIGURATION TOOL S/W, NEW
OWS-102	1	117082	SURGE SUPPRESSOR POWER STRIP
	1	263047	ZOOM 56K INTERNAL MODEM
	1	26911-00	NEC 15" MULTISYNC A500+ MONITOR
	1	26981639	OPTIPLEX G1 C/400, 4.3GB/32MB, MB VRAM
	1	331-0555	32 MB RAM UPGRADE
	1	331-0558	64 MB RAM UPGRADE
	1	HPC-F-46850	HP SURESTORE 8200I INTERNAL R/W CD-ROM
	1	NU-NET101-0	NCU,N1 CARD FOR NCM300,ARCNET
	1	WS-SWOPMI-0	WORKSTATION PMI, NEW ON CD
P-1, P-2	2	29006	PRINTE CABLE 6' DB25M/C
	2	51980	EPSON LQ-570, 24-PIN, 8K, 269/90CPS
R-x	2	4683-TTM-1	RS-485 TO RS-485 REPEATER 115VAC@ACRO
Panel Devices:			
NC-x	4	EN-EWC22-0	DUAL ENCLOSURE WITH POWER ENTRY BOX
	4	NU-NCM350-1	NETWORK CTRL MOD
	4	NU-NET101-0	N1 CARD FOR NCM300
S1-NIE01	1	MS-NIE5511-0	NIE EXIST NCM, MODEM, 24VAC, 50VA
	1	EN-EWC25-0	DUAL ENCLOSURE WITH 50 VA POWER



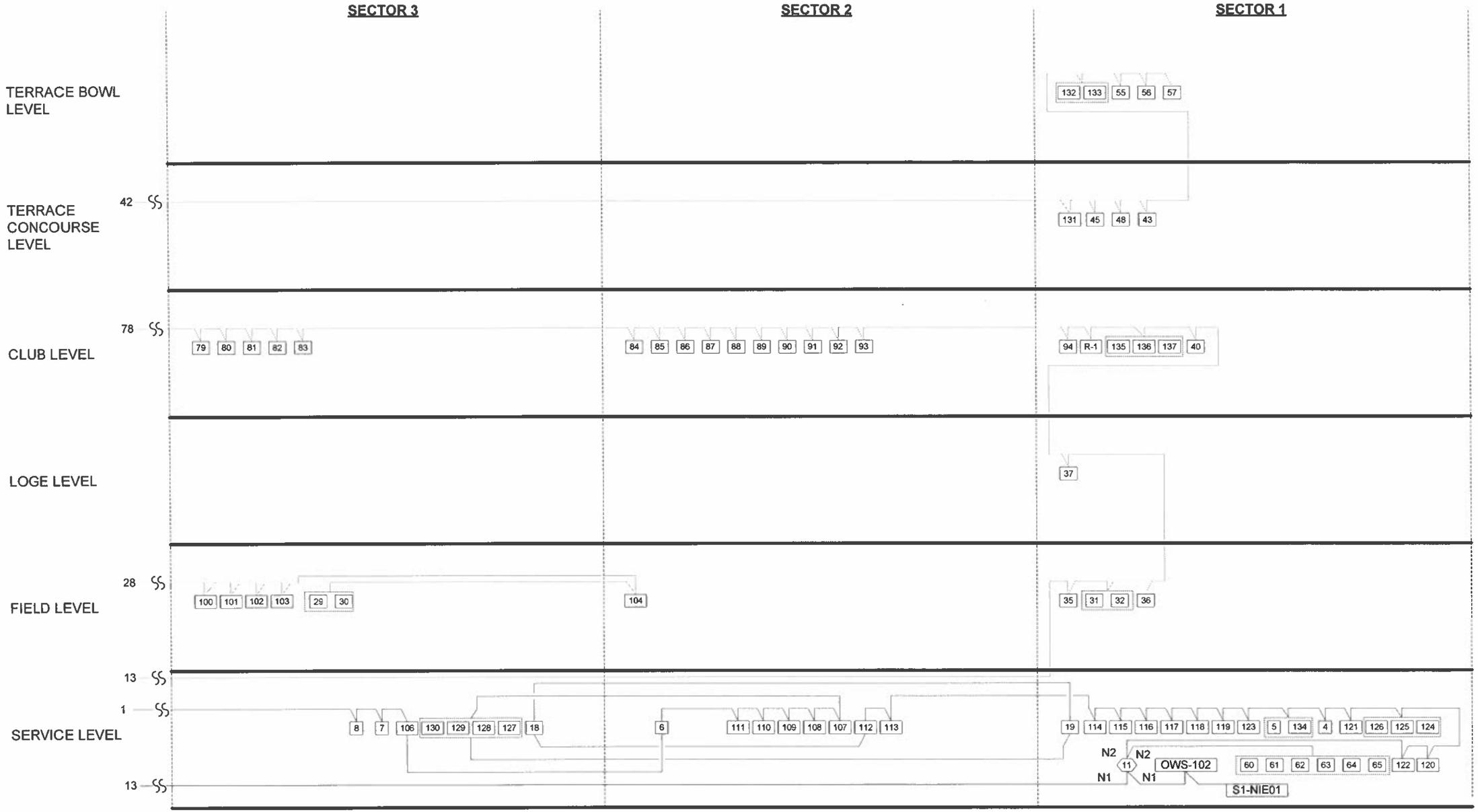




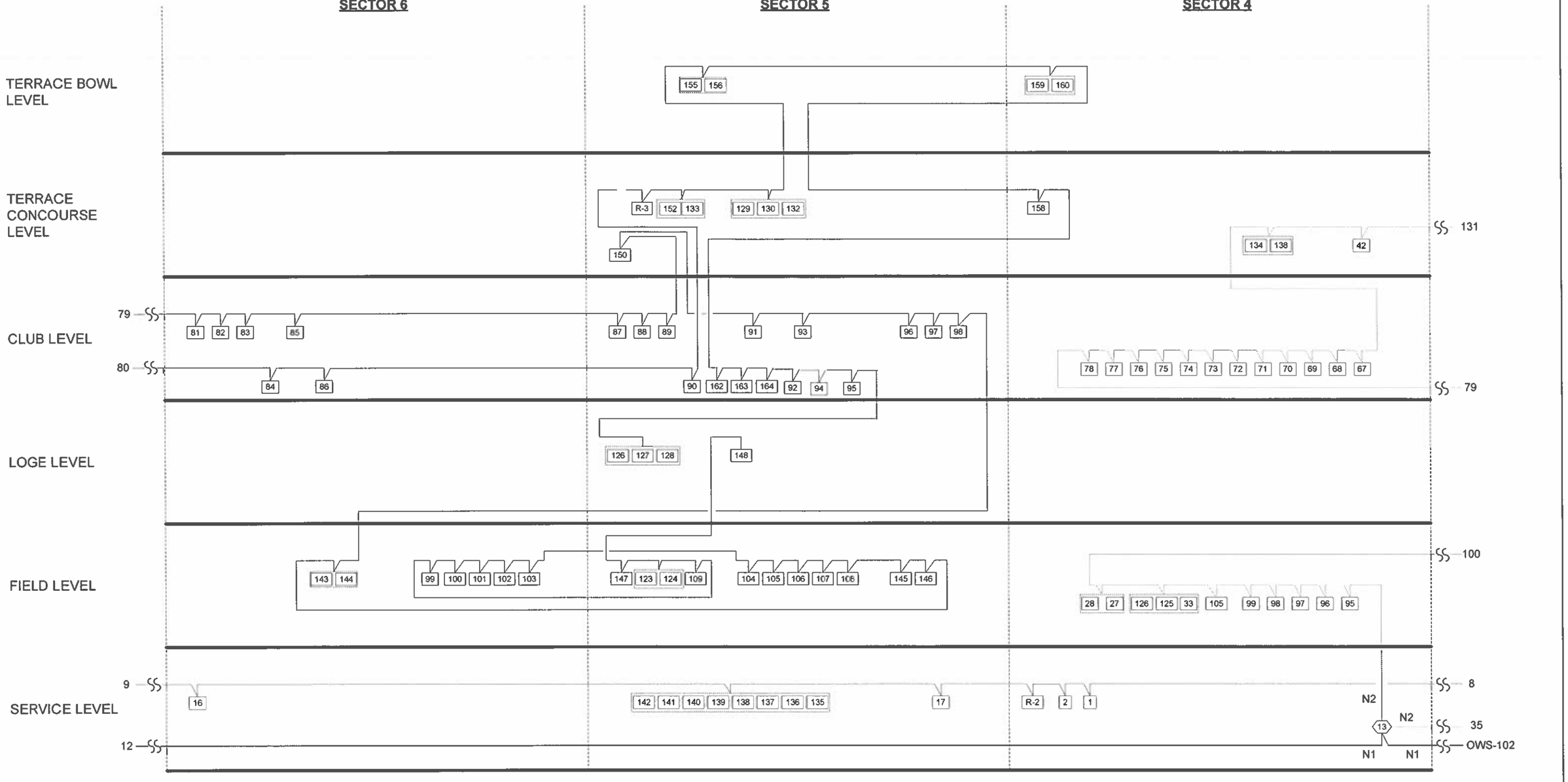


NOTE: DEDICATED PHONE LINE BY OWNER.

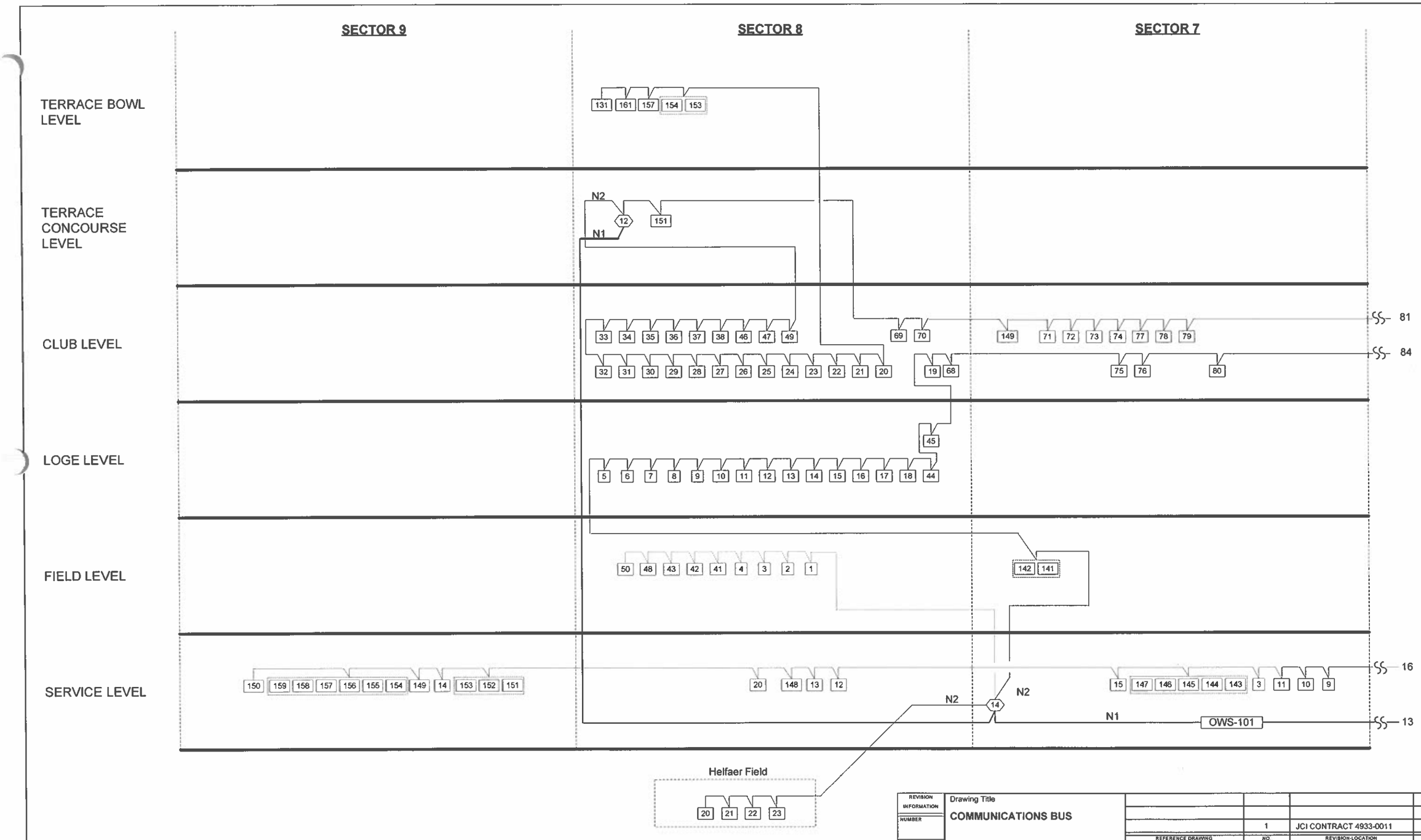
REVISION INFORMATION	Drawing Title: COMMUNICATIONS BUS							
NUMBER				1	JCI CONTRACT 4933-0011		8/26/2004	MLR
DATE: 08/26/04		REFERENCE DRAWING		NO.	REVISION-LOCATION	ECN	DATE	BY
TIME: 10:22 AM		Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN BY: MLR DATE		APPROVED BY: DATE	
FILE NAME: trunk.vsd	Project Title: MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division			Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER: 9 8075-0508 DRAWING NUMBER: 2.1	



REVISION INFORMATION	Drawing Title						
NUMBER	COMMUNICATIONS BUS						
			1	JCI CONTRACT 4933-0011		8/26/2004	MLR
DATE 08/26/04		REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY
TIME 10:39 AM	Project Title	Sales Engineer: PJS / Project Manager: TP / Application Engineer: KJK / DRAWN BY MLR DATE / APPROVED BY DATE					
FILE NAME trunk11a.vsd	MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division	Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER: 9 8075-0508	DRAWING NUMBER: 2.2	



REVISION INFORMATION	Drawing Title							
NUMBER	COMMUNICATIONS BUS							
				1	JCI CONTRACT 4933-0011		8/26/2004	MLR
DATE		REFERENCE DRAWING		NO.	REVISION-LOCATION	ECN	DATE	BY
08/26/04		Sales Engineer PJS	Project Manager TP	Application Engineer KJK	DRAWN BY MLR DATE		APPROVED BY DATE	
TIME 10:07 AM	Project Title							
	MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division			Branch Information Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER 9 8075-0508	
FILE NAME trunk13a.vsd							DRAWING NUMBER 2.3	



REVISION INFORMATION	Drawing Title							
NUMBER	COMMUNICATIONS BUS							
			1	JCI CONTRACT 4933-0011		8/26/2004	MLR	
DATE		REFERENCE DRAWING	NO.	REVISION-LOCATION		ECN	DATE	BY
08/26/04		Sales Engineer: PJS; Project Manager: TP	Application Engineer: KJK	DRAWN BY: MLR DATE		APPROVED BY	DATE	
TIME	Project Title			Branch Information		CONTRACT NUMBER		
10:06 AM	MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division		Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		9 8075-0508		
FILE NAME						DRAWING NUMBER		
trunk12a.vsd						2.4		

N1 ADDRESS	N2 TRUNK	N2 ADDRESS	DEVICE TYPE	PANEL & SYSTEM LOCATED	PRIMARY MECHANICAL SYSTEM	SERVICE
11	1	1	AHU	SL4	AH-S01	VISITORS CLUBHOUSE
11	1	2	AHU	SL4	AH-S02	BREWERS CLUBHOUSE
11	1	3	AHU	SL7	AH-S03	LOCKER ROOMS
11	1	4	AHU	SL1	AH-S04	FINE DINE FOOD SERV.
11	1	5	AHU	SL1	AH-S05	COMMISSARY
11	1	6	UNT	SL2	AH-S08	NOVELTY WAREHOUSE
11	1	7	UNT	SL3	AH-S10	EQUIP CORRAL 1225
11	1	8	UNT	SL3	AH-S11	SERV TUNNEL LEFT FIELD
11	1	9	UNT	SL7	AH-S12	SERV TUNNEL RIGHT FIELD
11	1	10	UNT	SL7	AH-S13	WORK SHOPS
11	1	11	UNT	SL7	AH-S14	BREWERS BATTING
11	1	12	UNT	SL8	AH-S15	WAREHOUSE 1811 SOUTH
11	1	13	UNT	SL8	AH-S16	WAREHOUSE 1811 NORTH
11	1	14	AHU	SL9	AH-S17	CHILLER ROOM
11	1	15	UNT	SL7	AH-S19	RT FIELD PLENUM
11	1	16	UNT	SL6	AH-S20	1ST BASE PLENUM
11	1	17	UNT	SL5	AH-S21	HOME PLATE PLENUM
11	1	18	UNT	SL3	AH-S22	3RD BASE PLENUM
11	1	19	UNT	SL1	AH-S23	LFT FIELD PLENUM
11	1	20	UNT	SL8	AH-S24	BROADCAST DOCK OFF.
11	1	21	UNT	SL8	ELEC SUBSTATION 5	ELEC RM 1822
11	1	22	UNT	SL8	ELEC SUBSTATION 1	ELEC RM 1809
11	1	23	UNT	SL6	ELEC SUBSTATION 2	ELEC RM 1606
11	1	24	UNT	SL4	ELEC SUBSTATION 3	ELEC RM 1401
11	1	25	UNT	SL1	ELEC SUBSTATION 4	ELEC RM 1121
11	1	26				
11	1	27				
11	1	28				
11	1	29				
11	1	30				
11	1	31				
11	1	32				
11	1	33				
11	1	34				
11	1	35				
11	1	36				
11	1	37				
11	1	38				
11	1	39				
11	1	40				

N1 ADDRESS	N2 TRUNK	N2 ADDRESS	DEVICE TYPE	PANEL & SYSTEM LOCATED	PRIMARY MECHANICAL SYSTEM	SERVICE
11	1	41				
11	1	42				
11	1	43				
11	1	44				
11	1	45				
11	1	46				
11	1	47				
11	1	48				
11	1	49				
11	1	50				
11	1	51				
11	1	52				
11	1	53				
11	1	54				
11	1	55				
11	1	56				
11	1	57				
11	1	58				
11	1	59				
11	1	60	XTM	SL1	BOWL AH UNITS	FIREMAN'S PANEL
11	1	61	XTM	SL1	BOWL AH UNITS	FIREMAN'S PANEL
11	1	62	XTM	SL1	BOWL AH UNITS	FIREMAN'S PANEL
11	1	63	XTM	SL1	BOWL AH UNITS	FIREMAN'S PANEL
11	1	64	XTM	SL1	BOWL AH UNITS	FIREMAN'S PANEL
11	1	65	XTM	SL1	BOWL AH UNITS	FIREMAN'S PANEL
11	1	66				
11	1	67				
11	1	68				
11	1	69				
11	1	70	XTM	SL1	GENERATORS	GEN ALM PANEL
11	1	71				
11	1	72				
11	1	73				
11	1	74				
11	1	75				
11	1	76				
11	1	77				
11	1	78				
11	1	79				
11	1	80				

REVISION INFORMATION
NUMBER
DATE 08/26/04
TIME 10:45 AM
FILE NAME trunk11b.vsd

Drawing Title
COMMUNICATIONS BUS

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

NO.	REVISION-LOCATION	ECN	DATE	BY
1	JCI CONTRACT 4933-0011		8/26/2004	MLR

REFERENCE DRAWING			DRAWN	APPROVED
Sales Engineer	Project Manager	Application Engineer	BY MLR DATE	BY DATE
PJS	TP	KJK		

JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER **9 8075-0508**

DRAWING NUMBER **2.5**

REV	N1 ADDRESS	N2 TRUNK	N2 ADDRESS	DEVICE TYPE	PANEL & SYSTEM LOCATED	PRIMARY MECHANICAL SYSTEM	SERVICE
	11	1	81				
	11	1	82				
	11	1	83				
	11	1	84				
	11	1	85				
	11	1	86				
	11	1	87				
	11	1	88				
	11	1	89				
	11	1	90				
	11	1	91				
	11	1	92				
	11	1	93				
	11	1	94				
	11	1	95				
	11	1	96				
	11	1	97				
	11	1	98				
	11	1	99				
	11	1	100				
	11	1	101				
	11	1	102				
	11	1	103				
	11	1	104				
	11	1	105				
	11	1	106	VMA	SL3	VAV-S01	SEE ROOM SCHEDULE
	11	1	107	VMA	SL2	VAV-S02	SEE ROOM SCHEDULE
	11	1	108	VMA	SL2	VAV-S03	SEE ROOM SCHEDULE
	11	1	109	VMA	SL2	VAV-S04	SEE ROOM SCHEDULE
	11	1	110	VMA	SL2	VAV-S05	SEE ROOM SCHEDULE
	11	1	111	VMA	SL2	VAV-S06	SEE ROOM SCHEDULE
	11	1	112	VMA	SL2	VAV-S07	SEE ROOM SCHEDULE
	11	1	113	VMA	SL2	VAV-S08	SEE ROOM SCHEDULE
	11	1	114	VMA	SL1	VAV-S09	SEE ROOM SCHEDULE
	11	1	115	VMA	SL1	VAV-S10	SEE ROOM SCHEDULE
	11	1	116	VMA	SL1	VAV-S11	SEE ROOM SCHEDULE
	11	1	117	VMA	SL1	VAV-S12	SEE ROOM SCHEDULE
	11	1	118	VMA	SL1	VAV-S13	SEE ROOM SCHEDULE
	11	1	119	VMA	SL1	VAV-S14	SEE ROOM SCHEDULE
	11	1	120	VMA	SL1	VAV-S15	SEE ROOM SCHEDULE

REV	N1 ADDRESS	N2 TRUNK	N2 ADDRESS	DEVICE TYPE	PANEL & SYSTEM LOCATED	PRIMARY MECHANICAL SYSTEM	SERVICE
	11	1	121	VMA	SL1	VAV-S16	SEE ROOM SCHEDULE
	11	1	122	VMA	SL1	VAV-S17	SEE ROOM SCHEDULE
	11	1	123	VMA	SL1	VAV-S18	SEE ROOM SCHEDULE
	11	1	124	UNT	SL1	RCs	SEE ROOM SCHEDULE
	11	1	125	UNT	SL1	RCs	SEE ROOM SCHEDULE
	11	1	126	UNT	SL1	MUX	N/A
	11	1	127	UNT	SL3	RCs	SEE ROOM SCHEDULE
	11	1	128	UNT	SL3	RCs	SEE ROOM SCHEDULE
	11	1	129	UNT	SL3	RCs	SEE ROOM SCHEDULE
	11	1	130	UNT	SL3	MUX	N/A
	11	1	131				
	11	1	132				
5	11	1	133				
4	11	1	134	XTM	SL1	MUX	N/A
4	11	1	135	UNT	SL5	RCs	SEE ROOM SCHEDULE
4	11	1	136	UNT	SL5	RCs	SEE ROOM SCHEDULE
4	11	1	137	UNT	SL5	RCs	SEE ROOM SCHEDULE
4	11	1	138	UNT	SL5	RCs	SEE ROOM SCHEDULE
4	11	1	139	UNT	SL5	RCs	SEE ROOM SCHEDULE
4	11	1	140	UNT	SL5	RCs	SEE ROOM SCHEDULE
4	11	1	141	UNT	SL5	MUX	N/A
4	11	1	142	UNT	SL5	MUX	N/A
4	11	1	143	UNT	SL7	RCs	SEE ROOM SCHEDULE
4	11	1	144	UNT	SL7	RCs	SEE ROOM SCHEDULE
4	11	1	145	UNT	SL7	RCs	SEE ROOM SCHEDULE
4	11	1	146	UNT	SL7	RCs	SEE ROOM SCHEDULE
4	11	1	147	UNT	SL7	RCs	SEE ROOM SCHEDULE
4	11	1	148	XTM	SL8	MUX	N/A
4	11	1	149	XTM	SL9	MUX	N/A
4	11	1	150	UNT	SL9	SF-S06	BOILER ROOM
4	11	1	151	DX	SL9	BOILERS	HW SYSTEM
4	11	1	152	XT	SL9	BOILERS	HW SYSTEM
4	11	1	153	XT	SL9	BOILERS	HW SYSTEM
4	11	1	154	DX	SL9	CHILLERS	CHW SYSTEM
4	11	1	155	XT	SL9	CHILLERS	CHW SYSTEM
4	11	1	156	XT	SL9	CHILLERS	CHW SYSTEM
4	11	1	157	DX	SL9	CHILLERS	CW SYSTEM
4	11	1	158	XT	SL9	CHILLERS	CW SYSTEM
4	11	1	159	XT	SL9	CHILLERS	CW SYSTEM
4	11	1	161	UNT	SL8	IRRIGATION	IHX
	11	1	162	UNT	SL6	CRU	CRU-S03

REVISION INFORMATION
NUMBER
DATE 08/16/02
TIME 10:09 AM
FILE NAME trunk11c.vsd

Drawing Title
COMMUNICATIONS BUS

NO.	REVISION-LOCATION	ECN	DATE	BY
5	RECORD DRAWING		6/11/2001	MLR

REFERENCE DRAWING			APPROVED
Sales Engineer	Project Manager	Application Engineer	DRAWN
PJS	TP	KJK	BY MLR DATE

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER
9 8075-0508

DRAWING NUMBER
2.6

N1 ADDRESS	N2 TRUNK	N2 ADDRESS	DEVICE TYPE	PANEL & SYSTEM LOCATED	PRIMARY MECHANICAL SYSTEM	SERVICE
11	1	163				
11	1	164				
11	1	165				
11	1	166				
11	1	167				
11	1	168				
11	1	169				
11	1	170				
11	1	171				
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11	1	197				
11	1	198				
11	1	199				
11	1	200	MIG	SL6	SOUTH GENERATOR	SOUTH GEN CCM
11	1	201	MIG	SL6	SOUTH GENERATOR	SOUTH GEN EMCP II
11	1	202	MIG	SL6	NORTH GENERATOR	NORTH GEN CCM

N1 ADDRESS	N2 TRUNK	N2 ADDRESS	DEVICE TYPE	PANEL & SYSTEM LOCATED	PRIMARY MECHANICAL SYSTEM	SERVICE
11	1	203	MIG	SL6	SOUTH GENERATOR	SOUTH GEN EMCP II
11	1	204				
11	1	205				
11	1	206				
11	1	207				
11	1	208				
11	1	209				
11	1	210	VND	SL8	JMI-210	ELEC SUBSTAT 1
11	1	211	VND	SL6	JMI-211	ELEC SUBSTAT 2
11	1	212	VND	SL4	JMI-212	ELEC SUBSTAT 3
11	1	213	VND	SL1	JMI-213	ELEC SUBSTAT 4
11	1	214	VND	SL8	JMI-214	ELEC SUBSTAT 5
11	1	215				
11	1	216				
11	1	217				
11	1	218				
11	1	219				
11	1	220				
11	1	221				
11	1	222				
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11	1	238				
11	1	239				
11	1	240				
11	1	241				
11	1	242				
11	1	243				

REVISION INFORMATION
NUMBER
DATE 08/26/04
TIME 10:58 AM
FILE NAME Trunk11d.vsd

Drawing Title
COMMUNICATIONS BUS

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

NO.	REVISION-LOCATION	ECN	DATE	BY
1	JCI CONTRACT 4933-0011		8/26/2004	MLR

REFERENCE DRAWING		NO.	REVISION-LOCATION			
Sales Engineer	Project Manager	Application Engineer	DRAWN		APPROVED	
PJS	TP	KJK	BY MLR	DATE	BY	DATE

JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER
9 8075-0508

DRAWING NUMBER
2.6.1

REV	N1 ADDRESS	N2 TRUNK	N2 ADDRESS	DEVICE TYPE	PANEL & SYSTEM LOCATED	PRIMARY MECHANICAL SYSTEM	SERVICE
5	14	1	1	VMA	FL8	VAV-A201	SEE ROOM SCHEDULE
5	14	1	2	VMA	FL8	VAV-A202	SEE ROOM SCHEDULE
5	14	1	3	VMA	FL8	VAV-A203	SEE ROOM SCHEDULE
5	14	1	4	VMA	FL8	VAV-A204	SEE ROOM SCHEDULE
4	14	1	5	VMA	LL8	VAV-A300	SEE ROOM SCHEDULE
4	14	1	6	VMA	LL8	VAV-A301	SEE ROOM SCHEDULE
4	14	1	7	VMA	LL8	VAV-A302	SEE ROOM SCHEDULE
4	14	1	8	VMA	LL8	VAV-A303	SEE ROOM SCHEDULE
4	14	1	9	VMA	LL8	VAV-A304	SEE ROOM SCHEDULE
4	14	1	10	VMA	LL8	VAV-A305	SEE ROOM SCHEDULE
4	14	1	11	VMA	LL8	VAV-A306	SEE ROOM SCHEDULE
4	14	1	12	VMA	LL8	VAV-A307	SEE ROOM SCHEDULE
4	14	1	13	VMA	LL8	VAV-A308	SEE ROOM SCHEDULE
4	14	1	14	VMA	LL8	VAV-A309	SEE ROOM SCHEDULE
4	14	1	15	VMA	LL8	VAV-A310	SEE ROOM SCHEDULE
4	14	1	16	VMA	LL8	VAV-A311	SEE ROOM SCHEDULE
4	14	1	17	VMA	LL8	VAV-A312	SEE ROOM SCHEDULE
4	14	1	18	VMA	LL8	VAV-A313	SEE ROOM SCHEDULE
4	14	1	19	VMA	CL8	VAV-A400	SEE ROOM SCHEDULE
4	12	1	20	VMA	CL8	VAV-A401	SEE ROOM SCHEDULE
4	12	1	21	VMA	CL8	VAV-A402	SEE ROOM SCHEDULE
4	12	1	22	VMA	CL8	VAV-A403	SEE ROOM SCHEDULE
4	12	1	23	VMA	CL8	VAV-A404	SEE ROOM SCHEDULE
4	12	1	24	VMA	CL8	VAV-A405	SEE ROOM SCHEDULE
4	12	1	25	VMA	CL8	VAV-A406	SEE ROOM SCHEDULE
4	12	1	26	VMA	CL8	VAV-A407	SEE ROOM SCHEDULE
4	12	1	27	VMA	CL8	VAV-A408	SEE ROOM SCHEDULE
4	12	1	28	VMA	CL8	VAV-A409	SEE ROOM SCHEDULE
4	12	1	29	VMA	CL8	VAV-A410	SEE ROOM SCHEDULE
4	12	1	30	VMA	CL8	VAV-A411	SEE ROOM SCHEDULE
4	12	1	31	VMA	CL8	VAV-A412	SEE ROOM SCHEDULE
4	12	1	32	VMA	CL8	VAV-A413	SEE ROOM SCHEDULE
4	12	1	33	VMA	CL8	VAV-A414	SEE ROOM SCHEDULE
4	12	1	34	VMA	CL8	VAV-A415	SEE ROOM SCHEDULE
4	12	1	35	VMA	CL8	VAV-A416	SEE ROOM SCHEDULE
4	12	1	36	VMA	CL8	VAV-A417	SEE ROOM SCHEDULE
4	12	1	37	VMA	CL8	VAV-A418	SEE ROOM SCHEDULE
4	12	1	38	VMA	CL8	VAV-A419	SEE ROOM SCHEDULE
	12	1	39				
	12	1	40				

REV	N1 ADDRESS	N2 TRUNK	N2 ADDRESS	DEVICE TYPE	PANEL & SYSTEM LOCATED	PRIMARY MECHANICAL SYSTEM	SERVICE
5	14	1	41	VMA	FL8	VAV-A205	SEE ROOM SCHEDULE
5	14	1	42	VMA	FL8	VAV-A206	SEE ROOM SCHEDULE
5	14	1	43	VMA	FL8	VAV-A207	SEE ROOM SCHEDULE
4	14	1	44	VMA	LL8	VAV-A314	SEE ROOM SCHEDULE
4	14	1	45	VMA	LL8	VAV-A315	SEE ROOM SCHEDULE
4	12	1	46	VMA	CL8	VAV-A420	SEE ROOM SCHEDULE
4	12	1	47	VMA	CL8	VAV-A421	SEE ROOM SCHEDULE
5	14	1	48	AHU	FL8	AH-BA1	BREWERS FLD LVL OFFICE
5	12	1	49	VMA	CL8	VAV-A422	SEE ROOM SCHEDULE
	14	1	50	VMA	FL8	VAV-A208	SEE ROOM SCHEDULE
	14	1	20	VND	Helfaer		
	14	1	21	VMA	Helfaer		
	14	1	22	VMA	Helfaer		
	14	1	23	VND	Helfaer		
	12	1	55				
	12	1	56				
	12	1	57				
	12	1	58				
	12	1	59				
	12	1	60				
	12	1	61				
	12	1	62				
	12	1	63				
	12	1	64				
	12	1	65				
	12	1	66				
	12	1	67				
	14	1	68	VAV	CL8	FC-C01	SEE ROOM SCHEDULE
	12	1	69	VAV	CL8	FC-C02	SEE ROOM SCHEDULE
	12	1	70	VAV	CL8	FC-C03	SEE ROOM SCHEDULE
	12	1	71	VAV	CL7	FC-C04	SEE ROOM SCHEDULE
	12	1	72	VAV	CL7	FC-C05	SEE ROOM SCHEDULE
	12	1	73	VAV	CL7	FC-C06	SEE ROOM SCHEDULE
	12	1	74	VAV	CL7	FC-C07	SEE ROOM SCHEDULE
	14	1	75	VAV	CL7	FC-C08	SEE ROOM SCHEDULE
	14	1	76	VAV	CL7	FC-C09	SEE ROOM SCHEDULE
	12	1	77	VAV	CL7	FC-C10	SEE ROOM SCHEDULE
	12	1	78	VAV	CL7	FC-C11	SEE ROOM SCHEDULE
	12	1	79	VAV	CL7	FC-C12	SEE ROOM SCHEDULE
	14	1	80	VAV	CL7	FC-C13	SEE ROOM SCHEDULE

REVISION INFORMATION
NUMBER
DATE 08/29/02
TIME 02:39 PM
FILE NAME trunk12b.vsd

Drawing Title
COMMUNICATIONS BUS

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

NO	REVISION-LOCATION	ECN	DATE	BY
5	RECORD DRAWING		6/11/2001	MLR

REFERENCE DRAWING			DRAWN		APPROVED	
Sales Engineer	Project Manager	Application Engineer	BY	DATE	BY	DATE
PJS	TP	KJK	MLR			

JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
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Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER
9 8075-0508

DRAWING NUMBER
2.7

REV	N1 ADDRESS	N2 TRUNK	N2 ADDRESS	DEVICE TYPE	PANEL & SYSTEM LOCATED	PRIMARY MECHANICAL SYSTEM	SERVICE
	12	1	81	VAV	CL6	FC-C14	SEE ROOM SCHEDULE
	12	1	82	VAV	CL6	FC-C15	SEE ROOM SCHEDULE
	12	1	83	VAV	CL6	FC-C16	SEE ROOM SCHEDULE
	14	1	84	VAV	CL6	FC-C17	SEE ROOM SCHEDULE
	12	1	85	VAV	CL6	FC-C18	SEE ROOM SCHEDULE
	14	1	86	VAV	CL6	FC-C19	SEE ROOM SCHEDULE
	12	1	87	VAV	CL5	FC-C20	SEE ROOM SCHEDULE
	12	1	88	VAV	CL5	FC-C21	SEE ROOM SCHEDULE
	12	1	89	VAV	CL5	FC-C22	SEE ROOM SCHEDULE
	14	1	90	VAV	CL5	FC-C23	SEE ROOM SCHEDULE
	12	1	91	VAV	CL5	FC-C24	SEE ROOM SCHEDULE
	14	1	92	VAV	CL5	FC-C25	SEE ROOM SCHEDULE
	12	1	93	VAV	CL5	FC-C26	SEE ROOM SCHEDULE
	14	1	94	VAV	CL5	FC-C27	SEE ROOM SCHEDULE
	14	1	95	VAV	CL5	FC-C28	SEE ROOM SCHEDULE
	12	1	96	VAV	CL5	FC-C29	SEE ROOM SCHEDULE
	12	1	97	VAV	CL5	FC-C30	SEE ROOM SCHEDULE
	12	1	98	VAV	CL5	FC-C31	SEE ROOM SCHEDULE
	12	1	99	VAV	FL6	FC-F01	SEE ROOM SCHEDULE
	12	1	100	VAV	FL6	FC-F02	SEE ROOM SCHEDULE
	12	1	101	VAV	FL6	FC-F03	SEE ROOM SCHEDULE
	12	1	102	VAV	FL6	FC-F04	SEE ROOM SCHEDULE
	12	1	103	VAV	FL6	FC-F05	SEE ROOM SCHEDULE
	12	1	104	VAV	FL5	FC-F06	SEE ROOM SCHEDULE
	12	1	105	VAV	FL5	FC-F07	SEE ROOM SCHEDULE
	12	1	106	VAV	FL5	FC-F08	SEE ROOM SCHEDULE
	12	1	107	VAV	FL5	FC-F09	SEE ROOM SCHEDULE
	12	1	108	VAV	FL5	FC-F10	SEE ROOM SCHEDULE
	12	1	109	VAV	FL5	FC-F21	SEE ROOM SCHEDULE
	12	1	110				
	12	1	111				
	12	1	112				
	12	1	113				
	12	1	114				
	12	1	115				
	12	1	116				
	12	1	117				
	12	1	118				
	12	1	119				
	12	1	120				
	12	1	125				
	14	1	126	UNT	LL5	RCs	SEE ROOM SCHEDULE
	14	1	127	UNT	LL5	RCs	SEE ROOM SCHEDULE
	14	1	128	UNT	LL5	RCs	SEE ROOM SCHEDULE
	14	1	129	XTM	TC5	MUX	N/A
	14	1	130	XTM	TC5	MUX	N/A
	12	1	131	XTM	TB8	MUX	N/A
	14	1	132	XTM	TC5	MUX	N/A
	12	1	133	XTM	TC5	MUX	N/A
	12	1	134				
	12	1	135				
	12	1	136				
	12	1	137				
	12	1	138				
	12	1	139				
	12	1	140				
	14	1	141	DX	FL7	AH-F01	RT FIELD BOWL
	12	1	142	XT	FL7	AH-F01	RT FIELD BOWL
	12	1	143	DX	FL6	AH-F02	HOME / RT FIELD BOWL
	12	1	144	XT	FL6	AH-F02	HOME / RT FIELD BOWL
	12	1	145	DX	FL5	AH-F03	1ST BASE BOWL
	12	1	146	XT	FL5	AH-F03	1ST BASE BOWL
	12	1	147	AHU	FL5	AH-F12	TICKET OFFICE RIGHT
	12	1	148	AHU	LL5	AH-L04	PRESS BOX
	12	1	149	AHU	CL7	AH-C01	RF CLUB CONCOURSE
	12	1	150	UNT	TC5	AH-T01	CLUB BOWL RT FIELD
	12	1	151	AHU	TC8	AH-T06	BREWER OFFICE
	14	1	152	UNT	TC5	AH-T09	FIRST AID - HOME PLATE
	12	1	153	DX	TB8	AH-TB01	RT FIELD BOWL
	12	1	154	XT	TB8	AH-TB01	RT FIELD BOWL
	14	1	155	DX	TB5	AH-TB02	HOME PLATE RIGHT
	12	1	156	XT	TB5	AH-TB02	HOME PLATE RIGHT
	12	1	157	UNT	TB8	AH-TB06	RT FIELD CONCOURSE
	14	1	158	AHU	TC4	AH-T08	NOVELTY STORE
	14	1	159	DX	TB4	AH-TB03	HOME PLATE LEFT
	12	1	160	XT	TB4	AH-TB03	HOME PLATE LEFT
	12	1	161	VAV	TB8	MUX	N/A
	12	1	162	VAV	CL5	FC1	SUITE KITCHEN
	12	1	163	VAV	CL5	FC2&3	SUITE KITCHEN
	12	1	164	VAV	CL5	FC4	SUITE KITCHEN

REVISION INFORMATION

NUMBER

DATE 08/16/02

TIME 10:10 AM

FILE NAME trunk12c.vsd

Drawing Title
COMMUNICATIONS BUS

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

REFERENCE DRAWING	NO.	REVISION-LOCATION	ECH	DATE	BY

Sales Engineer	Project Manager	Application Engineer	DRAWN	APPROVED
PJS	TP	KJK	BY MLR DATE	BY DATE

JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER
9 8075-0508

DRAWING NUMBER
2.8

N1 ADDRESS	N2 TRUNK	N2 ADDRESS	DEVICE TYPE	PANEL & SYSTEM LOCATED	PRIMARY MECHANICAL SYSTEM	SERVICE
13	1	1				
13	1	2				
13	1	3				
13	1	4				
13	1	5				
13	1	6				
13	1	7				
13	1	8				
13	1	9				
13	1	10				
13	1	11				
13	1	12				
13	1	13				
13	1	14				
13	1	15				
13	1	16				
13	1	17				
13	1	18				
13	1	19				
13	1	20				
13	1	21				
13	1	22				
13	1	23				
13	1	24				
13	1	25				
13	1	26	UNT	SCOREBOARD REAR	ELEC SUBSTATION 6	ELEC SUBSTATION 6
13	1	27	DX	FL4	AH-F04	3RD BASE BOWL
13	1	28	XT	FL4	AH-F04	3RD BASE BOWL
13	1	29	DX	FL3	AH-F05	HOME / LF BOWL
13	1	30	XT	FL3	AH-F05	HOME / LF BOWL
13	1	31	DX	FL1	AH-F06	LEFT FIELD BOWL
13	1	32	XT	FL1	AH-F06	LEFT FIELD BOWL
13	1	33	AHU	FL4	AH-F11	TICKET OFFICE LEFT
13	1	34				
13	1	35	AHU	FL1	AH-F13	BREW PUB
13	1	36	AHU	FL1	AH-F14	NOVELTY STORE
13	1	37	AHU	LL1	AH-L01	HALL OF FAME
13	1	38				
13	1	39				
13	1	40	AHU	CL1	AH-C02	.300 CLUB RESTAURANT

N1 ADDRESS	N2 TRUNK	N2 ADDRESS	DEVICE TYPE	PANEL & SYSTEM LOCATED	PRIMARY MECHANICAL SYSTEM	SERVICE
13	1	41				
13	1	42	UNT	TC4	AH-T02	CLUB BOWL LFT FIELD
13	1	43	AHU	TC1	AH-T05	LF CLUB CONCOURSE
13	1	44				
13	1	45	AHU	TC1	AH-T07	BEER GARDEN
13	1	46				
13	1	47				
13	1	48	UNT	TC1	AH-T10	CLUB KITCHEN
13	1	49	UNT141	P-F15	FL/1 MEZZANINE	AH-F15
13	1	50	UNT141	P-F15	FL/1 MEZZANINE	EXHAUST FANS
13	1	51	UNT140	P-BC1	FL/1 MEZZANINE	BOOSTER COILS
13	1	52	UNT140	P-BC1	FL/1 MEZZANINE	BOOSTER COILS
13	1	53	UNT140	P-BC1	FL/1 MEZZANINE	BOOSTER COILS
13	1	54	UNT140	P-BC1	FL/1 MEZZANINE	BOOSTER COILS
13	1	55	DX	TB1	AH-TB04	LEFT FIELD CLUB
13	1	56	XT	TB1	AH-TB04	LEFT FIELD CLUB
13	1	57	UNT	TB1	AH-TB05	LF BOWL / CONCOURSE
13	1	58				
13	1	59				
13	1	60				
13	1	61				
13	1	62				
13	1	63				
13	1	64				
13	1	65				
13	1	66				
13	1	67	VAV	CL4	FC-C32	SEE ROOM SCHEDULE
13	1	68	VAV	CL4	FC-C33	SEE ROOM SCHEDULE
13	1	69	VAV	CL4	FC-C34	SEE ROOM SCHEDULE
13	1	70	VAV	CL4	FC-C35	SEE ROOM SCHEDULE
13	1	71	VAV	CL4	FC-C36	SEE ROOM SCHEDULE
13	1	72	VAV	CL4	FC-C37	SEE ROOM SCHEDULE
13	1	73	VAV	CL4	FC-C38	SEE ROOM SCHEDULE
13	1	74	VAV	CL4	FC-C39	SEE ROOM SCHEDULE
13	1	75	VAV	CL4	FC-C40	SEE ROOM SCHEDULE
13	1	76	VAV	CL4	FC-C41	SEE ROOM SCHEDULE
13	1	77	VAV	CL4	FC-C42	SEE ROOM SCHEDULE
13	1	78	VAV	CL4	FC-C43	SEE ROOM SCHEDULE
13	1	79	VAV	CL3	FC-C44	SEE ROOM SCHEDULE
13	1	80	VAV	CL3	FC-C45	SEE ROOM SCHEDULE

REVISION INFORMATION
NUMBER
DATE 08/26/04
TIME 11:00 AM
FILE NAME trunk13b.vsd

Drawing Title
COMMUNICATIONS BUS

NO.	REVISION-LOCATION	ECN	DATE	BY
1	RECORD DRAWING		8/26/2004	MLR

REFERENCE DRAWING

Sales Engineer	Project Manager	Application Engineer	DRAWN	APPROVED
PJS	TP	KJK	BY MLR DATE	BY DATE

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER
9 8075-0508

DRAWING NUMBER
2.9

REV	N1 ADDRESS	N2 TRUNK	N2 ADDRESS	DEVICE TYPE	PANEL & SYSTEM LOCATED	PRIMARY MECHANICAL SYSTEM	SERVICE
4	13	1	81	VAV	CL3	FC-C46	SEE ROOM SCHEDULE
4	13	1	82	VAV	CL3	FC-C47	SEE ROOM SCHEDULE
4	13	1	83	VAV	CL3	FC-C48	SEE ROOM SCHEDULE
4	13	1	84	VAV	CL2	FC-C49	SEE ROOM SCHEDULE
4	13	1	85	VAV	CL2	FC-C50	SEE ROOM SCHEDULE
4	13	1	86	VAV	CL2	FC-C51	SEE ROOM SCHEDULE
4	13	1	87	VAV	CL2	FC-C52	SEE ROOM SCHEDULE
4	13	1	88	VAV	CL2	FC-C53	SEE ROOM SCHEDULE
4	13	1	89	VAV	CL2	FC-C54	SEE ROOM SCHEDULE
4	13	1	90	VAV	CL2	FC-C55	SEE ROOM SCHEDULE
4	13	1	91	VAV	CL2	FC-C56	SEE ROOM SCHEDULE
4	13	1	92	VAV	CL2	FC-C57	SEE ROOM SCHEDULE
4	13	1	93	VAV	CL2	FC-C58	SEE ROOM SCHEDULE
4	13	1	94	VAV	CL1	FC-C59	SEE ROOM SCHEDULE
4	13	1	95	VAV	FL4	FC-F11	SEE ROOM SCHEDULE
4	13	1	96	VAV	FL4	FC-F12	SEE ROOM SCHEDULE
4	13	1	97	VAV	FL4	FC-F13	SEE ROOM SCHEDULE
4	13	1	98	VAV	FL4	FC-F14	SEE ROOM SCHEDULE
4	13	1	99	VAV	FL4	FC-F15	SEE ROOM SCHEDULE
4	13	1	100	VAV	FL3	FC-F16	SEE ROOM SCHEDULE
4	13	1	101	VAV	FL3	FC-F17	SEE ROOM SCHEDULE
4	13	1	102	VAV	FL3	FC-F18	SEE ROOM SCHEDULE
4	13	1	103	VAV	FL3	FC-F19	SEE ROOM SCHEDULE
4	13	1	104	VAV	FL2	FC-F20	SEE ROOM SCHEDULE
4	13	1	105	VAV	FL4	FC-F22	SEE ROOM SCHEDULE
	13	1	106				
	13	1	107				
	13	1	108				
	13	1	109				
	13	1	110				
	13	1	111				
	13	1	112				
	13	1	113				
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	13	1	115				
	13	1	116				
	13	1	117				
	13	1	118				
	13	1	119				
	13	1	120				

REV	N1 ADDRESS	N2 TRUNK	N2 ADDRESS	DEVICE TYPE	PANEL & SYSTEM LOCATED	PRIMARY MECHANICAL SYSTEM	SERVICE
	13	1	121				
	13	1	122				
	13	1	123				
	13	1	124				
4	13	1	125	UNT	FL4	RCs	SEE ROOM SCHEDULE
4	13	1	126	UNT	FL4	RCs	SEE ROOM SCHEDULE
	13	1	127				
	13	1	128				
	13	1	129				
	13	1	130				
4	13	1	131	UNT	TC1	RCs	SEE ROOM SCHEDULE
4	13	1	132	XTM	TB1	MUX	N/A
4	13	1	133	XTM	TB1	MUX	N/A
4	13	1	134	XTM	TC4	MUX	N/A
4	13	1	135	UNT	CL1	RCs	SEE ROOM SCHEDULE
4	13	1	136	UNT	CL1	RCs	SEE ROOM SCHEDULE
4	13	1	137	UNT	CL1	RCs	SEE ROOM SCHEDULE
	13	1	138	XTM	TC4	MUX	N/A
	13	1	139	VAV	FL1	RCs	FRIDAYS BB RADIATION
	13	1	140				
	13	1	141				
	13	1	142				
	13	1	143				
	13	1	144				
	13	1	145				
	13	1	146				
	13	1	147				
	13	1	148				
	13	1	149				
	13	1	150				
	13	1	151				
	13	1	152				
	13	1	153				
	13	1	154				
	13	1	155				
	13	1	156				
	13	1	157				
	13	1	158				
	13	1	159				
	13	1	160				

REVISION INFORMATION

NUMBER

DATE 08/16/02

TIME 10:10 AM

FILE NAME trunk13c.vsd

Drawing Title

COMMUNICATIONS BUS

REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY

Sales Engineer	Project Manager	Application Engineer	DRAWN BY	DRAWN DATE	APPROVED BY	APPROVED DATE
PJS	TP	KJK	MLR			

Project Title

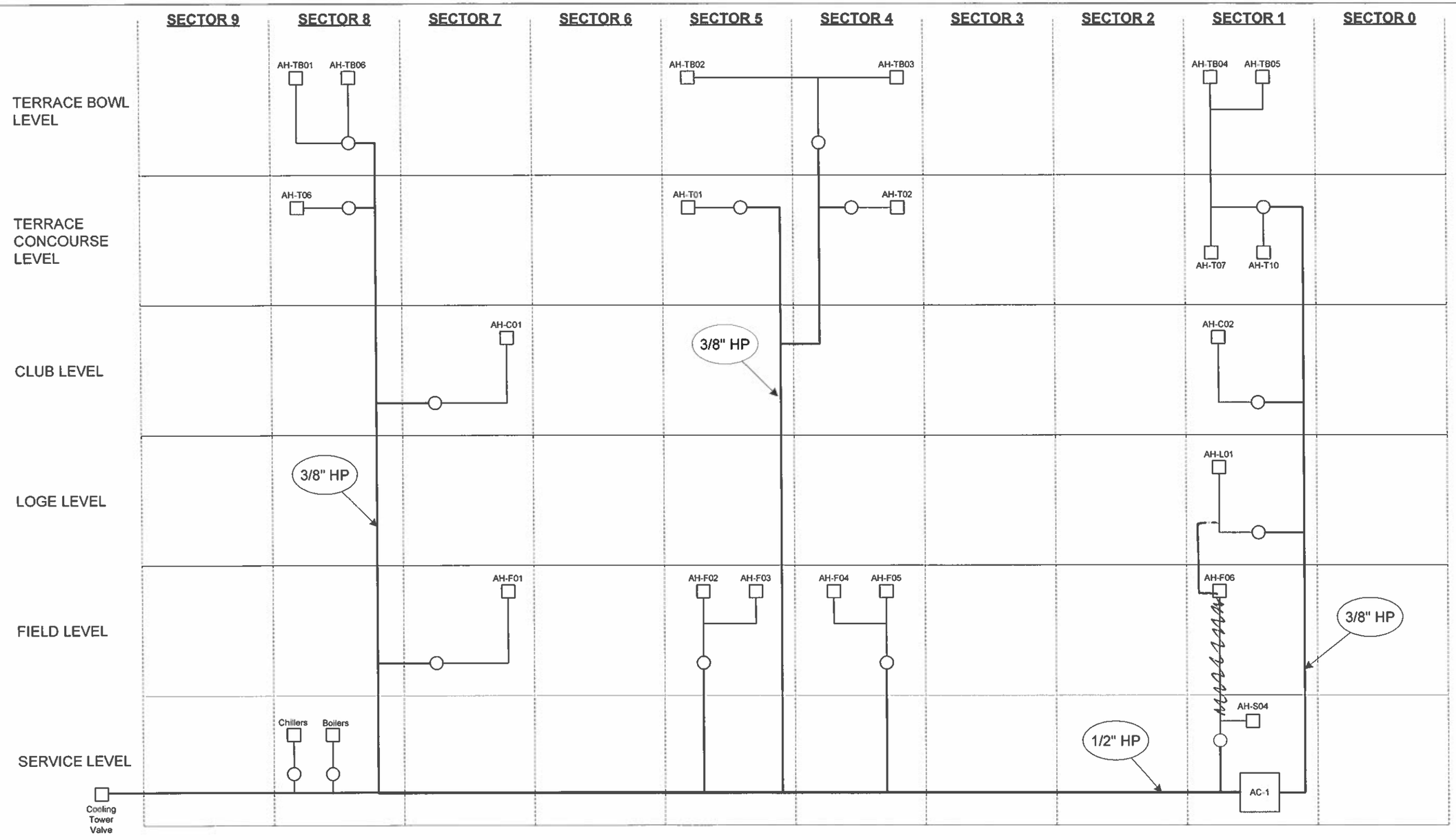
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER **9 8075-0508**

DRAWING NUMBER **2.10**



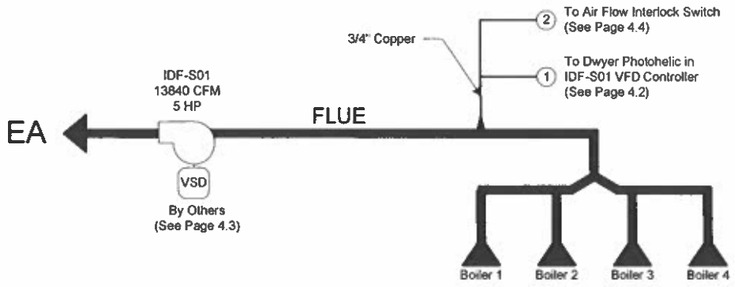
NOTES:

1. Not to Scale.
2. Main Sizing as shown with Compression Fittings.
3. For Air Compressor / Dryer Detail, See Page 36.7, Detail K
4. For DDC Temperature Control Panel Details, See the Individual Air Handler Drawings.

LEGEND:

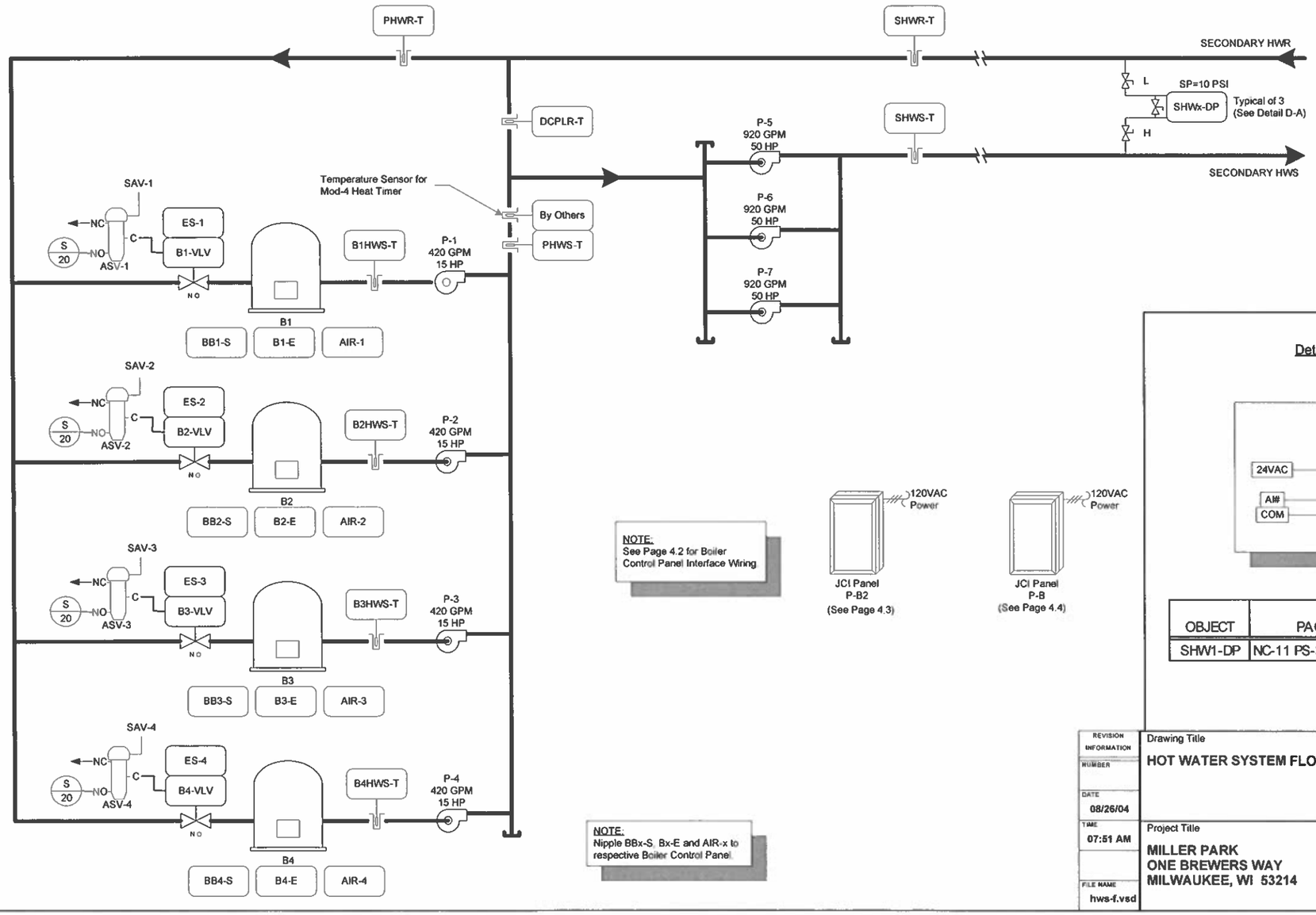
- ○ Pressure Reducing Valve
- □ DDC Temperature Control Panel
- ——— High Pressure Mains (80PSIG)
- ——— Low Pressure Mains (20PSIG)
- AC-1 Air Compressor & Dryer

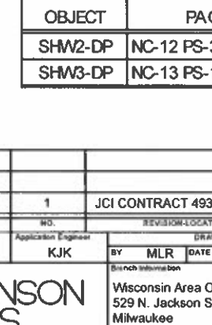
REVISION INFORMATION	Drawing Title									
NUMBER	PNEUMATIC RISER									
DATE 07/17/01		REFERENCE DRAWING		NO.	REVISION/LOCATION		ECN	DATE	BY	
TIME 07:14 AM		Sales Engineer PJS	Project Manager TP	Application Engineer KJK	DRAWN BY MLR	DATE	BY	APPROVED DATE		
FILE NAME pneum-riser.vsd	Project Title MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division			Branch Information Wisconsin Area Office 529 N Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER 9 8075-0508			
							DRAWING NUMBER 3.1			



BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
ASV-x	4	VGA8B2GT+3008E	3-W AIR VALVE 3/8IN BARB FTGS & MTG BRKT
ES-x	4	802T-A	
	4	802T-W2A	POSITION SWITCH - AB
SHWx-DP	3	PR282-44B12B	XDUCER, HI-DP 0-100# 4-20MA 24VAC NEMA 1
	9	VNH3-AM	1/4" BALL VALVE, 200F - DYNAQUIP
X-T	9	TE-631AP-1	SENS,T-Ni,0.1%,F/WZ1000-5
	9	WZ-1000-5	WELL,BRASS,1/2"NPT+COMPND
X-VLV	0	VALVE	SEE VALVE SCHEDULE





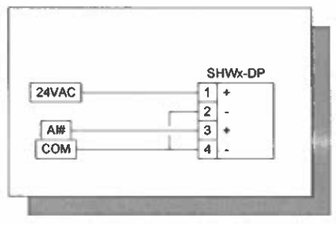
1

NOTE:
See Page 4.2 for Boiler
Control Panel Interface Wiring

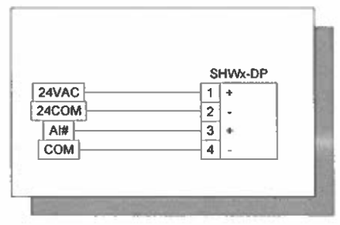
NOTE:
Nipple BBx-S, Bx-E and AIR-x to
respective Boiler Control Panel.

DETAIL D-A

Detail for SHWx-DP
Typical of 1



Detail for SHWx-DP
Typical of 2



OBJECT	PAGE	N2 ADDRESS & RISER LOCATION
SHW1-DP	NC-11 PS-35 / DX	152 / SL9

OBJECT	PAGE	N2 ADDRESS & RISER LOCATION
SHW2-DP	NC-12 PS-33 / AHU	158 / TC4
SHW3-DP	NC-13 PS-10 / AHU	43 / TC1

REVISION INFORMATION
NUMBER
DATE 08/26/04
TIME 07:51 AM
FILE NAME hws-f.vsd

Drawing Title
HOT WATER SYSTEM FLOW

NO.	REVISION-LOCATION	ECN	DATE	BY
1	JCI CONTRACT 4933-0011		8/26/2004	MLR

REFERENCE DRAWING

Sales Engineer	Project Manager	Application Engineer	DRAWN BY	DRAWN DATE	APPROVED BY	APPROVED DATE
PJS	TP	KJK	MLR			

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

JOHNSON CONTROLS
Systems & Services Division

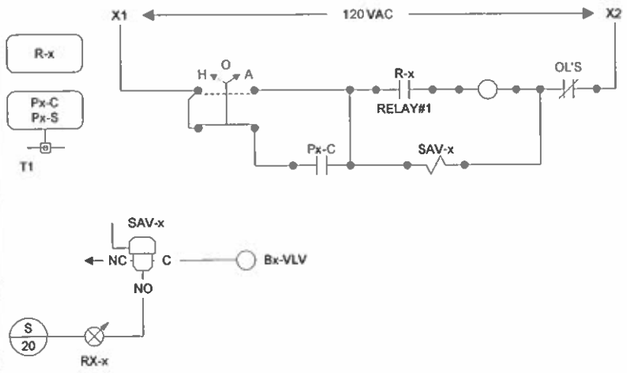
Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER **9 8075-0508**

DRAWING NUMBER **4.1**

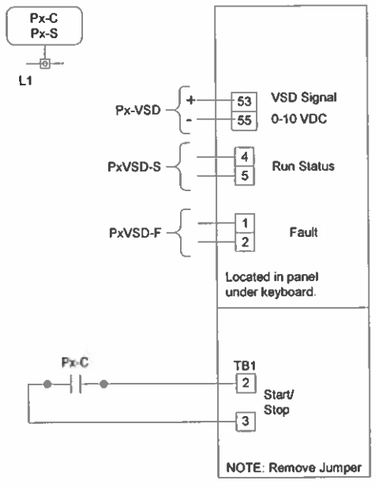
PRIMARY HW PUMP STARTER WIRING

TYPICAL OF 4
P-1, P-2, P-3, P-4



SECONDARY HW PUMP VSD WIRING

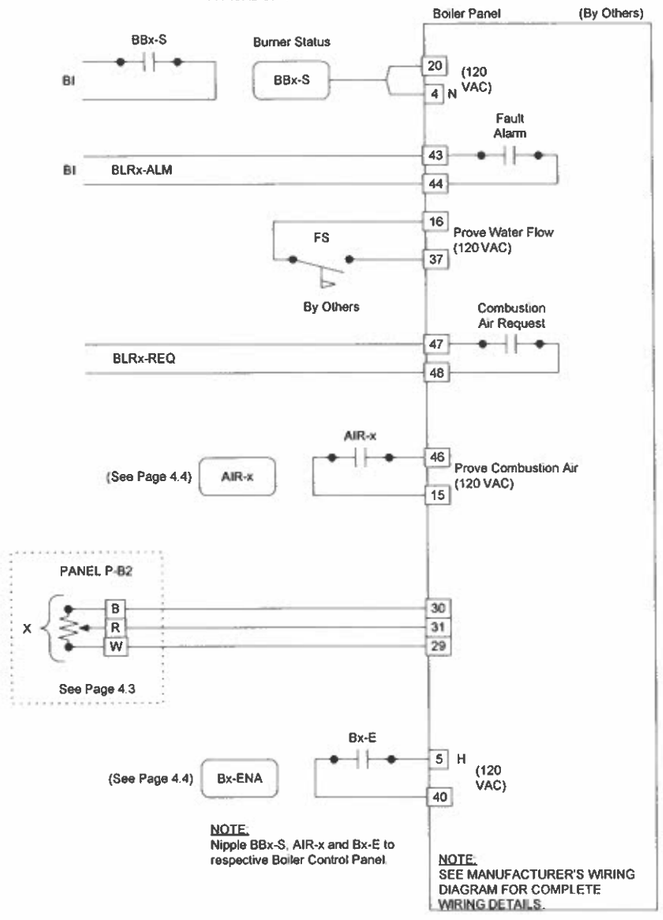
TYPICAL OF 3
P-5, P-6, P-7



NOTE:
SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

BOILER CONTROL PANEL INTERFACE WIRING

TYPICAL OF 4



NOTE:
Nipple BBx-S, AIR-x and Bx-E to respective Boiler Control Panel.

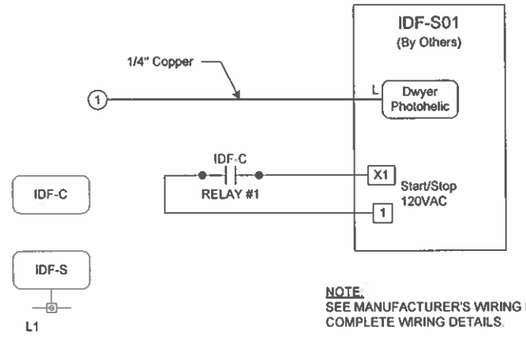
NOTE:
SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
BBx-S, AIR-x, R-x	12	CVR-21C-O	RELAY 2 SPDT 120 VAC
Bx-E,IDF-C	5	CVR-21A1C-H	RLY SPDT,SPST,10-30A/DC 120V,LED HOA@LEC
IDF-S	1	H-908	SW, CURRENT, 1-135A ADJ, SPLIT @VER
Px-C, Px-S	7	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
RX-x	4	R-3710-2010	RESTRICTOR INLINE ADJ
SAV-x	4	V11HAA-100	3-W SOLENOID,W/OV,120VAC

INDUCTION FAN VFD WIRING

TYPICAL OF 1



NOTE:
SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

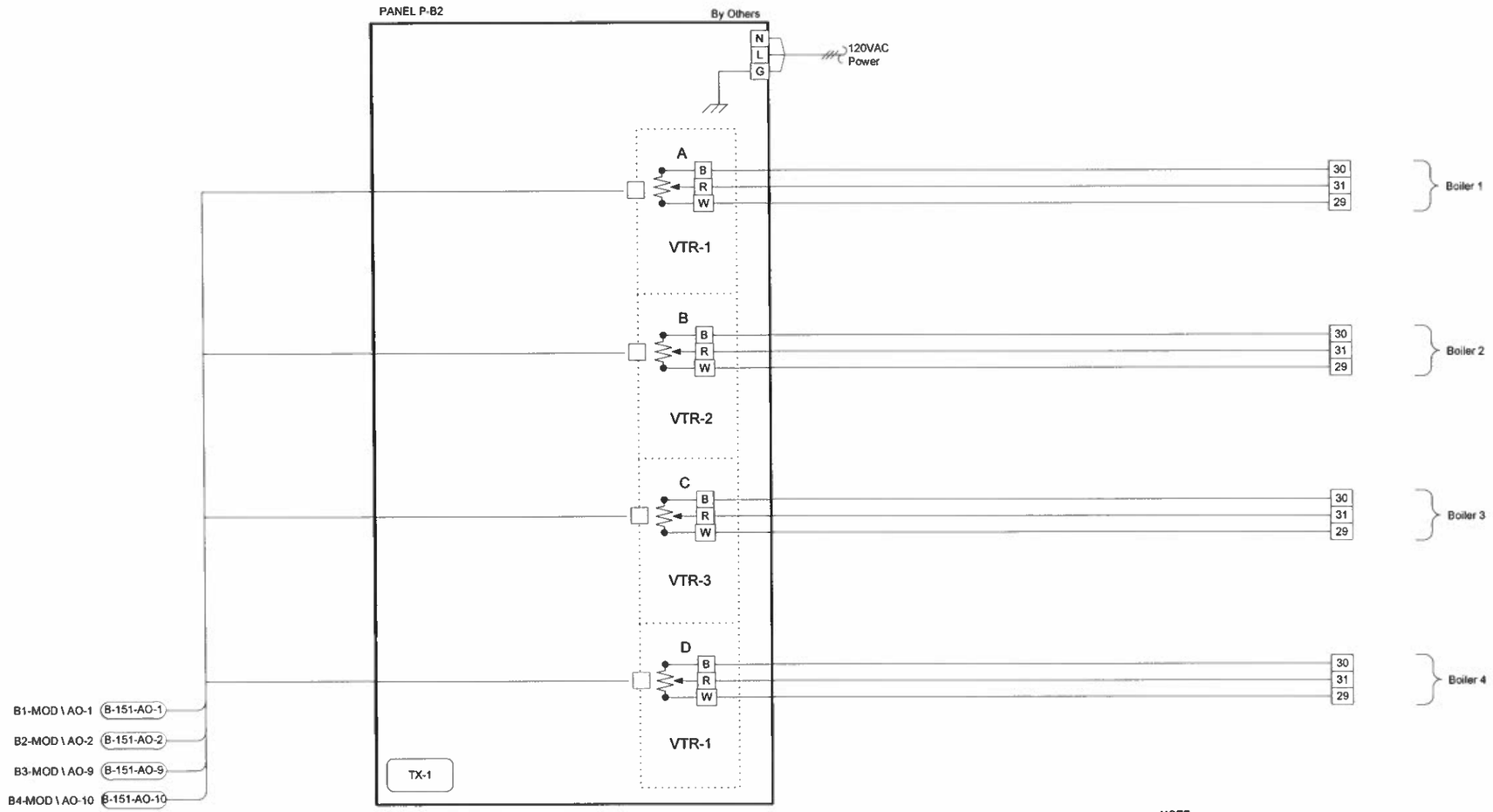
REVISION INFORMATION	Drawing Title							
	HOT WATER SYSTEM WIRING							
NUMBER								
		REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY
DATE		Sales Engineer / Project Manager / Application Engineer / DRAWN / APPROVED					
08/16/02		PJS / TP / KJK / BY MLR / DATE			BY	DATE	
TIME	Project Title						
10:08 AM	MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division	Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575			CONTRACT NUMBER: 9 8075-0508		
FILE NAME						DRAWING NUMBER: 4.2		
hws-w.vsd								

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices.			
TX-1	1	Y65-T31-0	120 TO 24 VAC TRANSFORMER 40VA
VTR-x	4	DRN3.1	0-10VDC TO 0-135 OHM TRANSDUCER

Boiler Interface Panel

Typical of 1



NOTE:
Nipple Bx-E to respective
Boiler Control Panel
(See Page 4.2)

REVISION INFORMATION	Drawing Title							
NUMBER	HOT WATER SYSTEM BOILER INTERFACE PANEL							
		REFERENCE DRAWING		NO	REVISION LOCATION	ECN	DATE	BY
DATE 08/16/02		Sales Engineer PJS	Project Manager TP	Application Engineer KJK	DRAWN BY MLR DATE	APPROVED BY	DATE	
TIME 10:08 AM	Project Title				Branch Information	CONTRACT NUMBER		
	MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division			Wisconsin Area Office 529 N Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575	9 8075-0508		
FILE NAME hws-w2.vsd						DRAWING NUMBER 4.3		

FROM LAST N2 DEVICE (N2) 3/18 BLU

TO NEXT N2 DEVICE (N2) 3/18 BLU

BLR1-ALM\ DI1 (B-151-DI-1) 2/18 ORG

BLR2-ALM\DI2 (B-151-DI-2) 2/18 ORG

BLR3-ALM\DI3 (B-151-DI-3) 2/18 ORG

BLR4-ALM\ DI4 (B-151-DI-4) 2/18 ORG

P1-S \ DI-5 (B-151-DI-5) 2/18 ORG

P2-S \ DI-6 (B-151-DI-6) 2/18 ORG

P3-S \ DI-7 (B-151-DI-7) 2/18 ORG

P4-S \ DI-8 (B-151-DI-8) 2/18 ORG

B1-MOD \ AO-1 (B-151-AO-1) 2/18 TAN

B2-MOD \ AO-2 (B-151-AO-2) 2/18 TAN

B3-MOD \ AO-9 (B-151-AO-9) 2/18 TAN

B4-MOD \ AO-10 (B-151-AO-10) 2/18 TAN

P5-VSD \ AO-11 (B-151-AO-11) 2/18 TAN

P6-VSD \ AO-12 (B-151-AO-12) 2/18 TAN

P7-VSD \ AO-13 (B-151-AO-13) 2/18 TAN

P5-C \ DO-4 (B-151-DO-4) 2/18 VIO

P6-C \ DO-5 (B-151-DO-5) 2/18 VIO

P7-C \ DO-6 (B-151-DO-6) 2/18 VIO

P1-C \ DO-7 (B-151-DO-7) 2/18 VIO

P2-C \ DO-8 (B-151-DO-8) 2/18 VIO

SHW1-DP \ AI-1 (B-151-AI-1) 3/18 YEL

PHWS-T \ AI-2 (B-151-AI-2) 2/18 YEL

PHWR-T \ AI-3 (B-151-AI-3) 2/18 YEL

B1HWS-T \ AI-4 (B-151-AI-4) 2/18 YEL

B2HWS-T \ AI-5 (B-151-AI-5) 2/18 YEL

B3HWS-T \ AI-6 (B-151-AI-6) 2/18 YEL

B4HWS-T \ AI-7 (B-151-AI-7) 2/18 YEL

SHWS-T \ AI-8 (B-151-AI-8) 2/18 YEL

SHWR-T \ XT1AI1 (B-152A-AI-1) 2/18 YEL

DCPLR-T \ XT1AI2 (B-152A-AI-2) 2/18 YEL

ACS14-T \ XT1AI5 (B-152A-AI-5) 2/18 YEL

ACS10-T \ XT1AI6 (B-152A-AI-6) 2/18 YEL

BB1-S \ XT2DI1 (B-152B-DI-1) 2/18 ORG

BB2-S \ XT2DI2 (B-152B-DI-2) 2/18 ORG

BB3-S \ XT2DI3 (B-152B-DI-3) 2/18 ORG

BB4-S \ XT2DI4 (B-152B-DI-4) 2/18 ORG

IDF-S \ XT2DI5 (B-152B-DI-5) 2/18 ORG

P5VSD-F \ XT2DI6 (B-152B-DI-6) 2/18 ORG

P5VSD-S \ XT2DI7 (B-152B-DI-7) 2/18 ORG

P5-S \ XT2DI8 (B-152B-DI-8) 2/18 ORG

P6VSD-F \ XT3DI1 (B-153A-DI-1) 2/18 ORG

P6VSD-S \ XT3DI2 (B-153A-DI-2) 2/18 ORG

P6-S \ XT3DI3 (B-153A-DI-3) 2/18 ORG

P7VSD-F \ XT3DI4 (B-153A-DI-4) 2/18 ORG

P7VSD-S \ XT3DI5 (B-153A-DI-5) 2/18 ORG

P7-S \ XT3DI6 (B-153A-DI-6) 2/18 ORG

GLYP1-A \ XT3DI7 (B-153A-DI-7) 2/18 ORG

GLYP2-A \ XT3DI8 (B-153A-DI-8) 2/18 ORG

P3-C \ XT4DO1 (B-153B-DO-1) 2/18 VIO

P4-C \ XT4DO2 (B-153B-DO-2) 2/18 VIO

IDF-C \ XT4DO3 (B-153B-DO-3) 2/18 VIO

COMB-AIR \ XT4DO4 (B-153B-DO-4) 2/18 VIO

B1-ENA \ XT4DO5 (B-153B-DO-5) 2/18 VIO

B2-ENA \ XT4DO6 (B-153B-DO-6) 2/18 VIO

B3-ENA \ XT4DO7 (B-153B-DO-7) 2/18 VIO

B4-ENA \ XT4DO8 (B-153B-DO-8) 2/18 VIO

1

PANEL P-B1

TX-1

TAG-1

DR-1

DX-X

XT-X

XT-X

XP-1

XP-3

XP-2

XP-4

R-6

R-7 (BLR-ENA)

AF-ILK (By Others) — 2

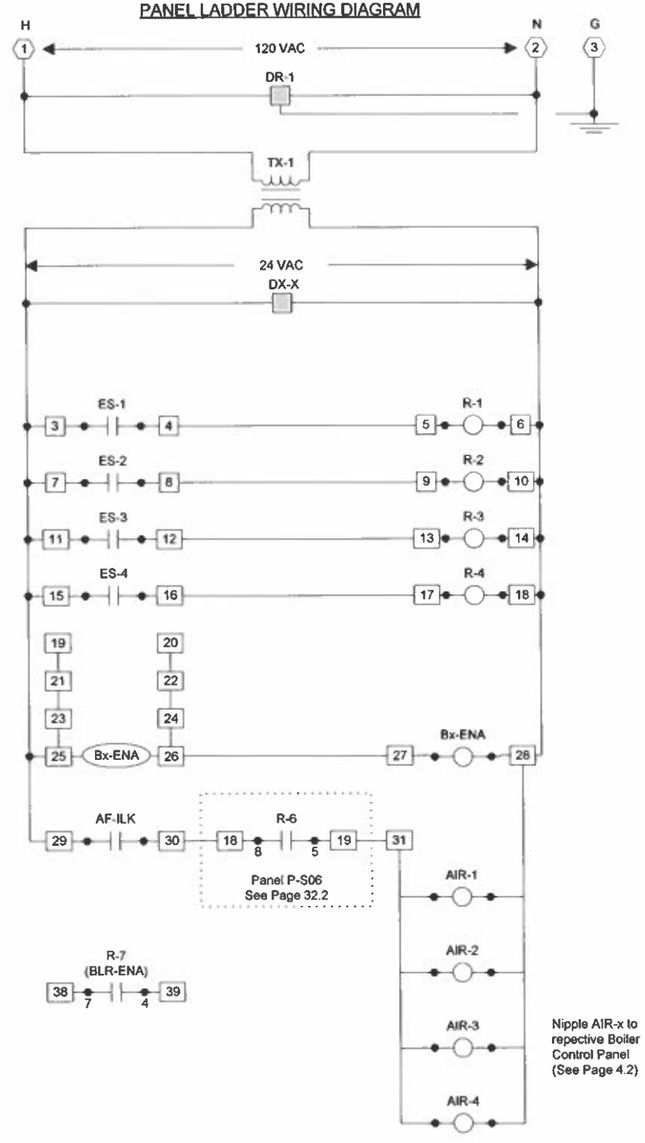
120 VAC POWER
VERIFY NORMAL / EMERGENCY POWER WITH JCI

HV TERMINALS:
SEE WIRING DIAGRAMS.

LV TERMINALS:
SEE WIRING DIAGRAMS.

PANEL FACE TAGS:
TAG-1: PANEL P-B
HOT WATER SYSTEM
JCI 9 8075-0508

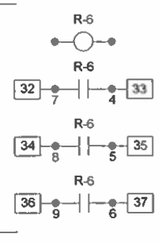
PANEL LADDER WIRING DIAGRAM



BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
DR-1	1	PD-117-2	RECEPTACLE,DUPLEX,UL,WHT
	1	PD-121-1	RECEPTACLE,DUPLEX,CVR
	1	PD-121-6	HANDY BOX 2 IN
DX-X	1	AS-LCPKEY-0	LCP SERVICE PORT ADJ KEY
	1	DX-9100-8454	DIGITAL CONTR., EXTENDED
	1	DX-9100-8990	MTG BASE (DX9100-8454)
P-B	1	M-8100-2436	PANEL,STANDARD,15 UNITS
R-6,7	2	PD-101-35	RLY BASE,3PDT,11PIN,10A
	2	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-1	1	PD-114-2	TRANSFORMER 100VA, 120/24
XP-1	1	XP-9102-8304	EXPANSION MODULE; 6 AI
XP-2,3	2	XP-9105-8304	DX EXPN MOD, 8 DI
XP-4	1	XP-9104-8303	EXPANSION MODULE; 8 DO
XT-X	2	XT-9100-8304	EXTENSION MODULE

Not Used



REVISION INFORMATION	Drawing Title: HOT WATER SYSTEM PANEL					
NUMBER			1	JCI CONTRACT 4933-0011	8/26/2004	MLR
DATE: 08/26/04		REFERENCE DRAWING	NO	REVISION-LOCATION	ECN / DATE / BY	
TIME: 08:04 AM	Project Title: MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR DATE	APPROVED: BY DATE
FILE NAME: hws-p.vsd	JOHNSON CONTROLS Systems & Services Division	Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575			CONTRACT NUMBER: 9 8075-0508	DRAWING NUMBER: 4.4

Main Hot Water System

1. The system consists of four boilers, four primary hot water pumps, one induction fan with a VFD, and three secondary hot water pumps with VFDs. The hot water system is designed to operate at 190°F supply water temperature.
2. When the hot water system is enabled, the lead secondary hot water pump will energize. When the lead secondary hot water pump is energized, as proved from the current switch across the motor, the hot water boilers will be enabled from the EMCS. The lead boiler control stop valve will be opened from a solenoid wired in the primary hot water pump, and primary hot water pump will be energized from the stop valve end switch. The hot water stop valve end switch will be hard-wired into the associated primary hot water pumps starter safety circuit to prevent the EMCS or the Hand position of the starter to energize a primary hot water pump unless the valve is proven open. If the primary hot water pump start switch is placed in the Hand position, the stop valve solenoid will energize and open the stop valve fully and when the stop valve is fully open the end switch will energize the primary hot water pump.
3. A current sensing relay across the primary hot water pump will confirm pump status. If the EMCS detects no status, the primary hot water pump will be de-energized, the stop valve will close and an alarm given at the EMCS.
4. The lead boiler is selected through Metasys.
5. When flow has been confirmed at the lead boiler through a flow switch and electrical interlock, the lead boiler will complete its initiating sequence and begin to operate through its on-board Fireye controls.
6. Each boiler is allowed to modulate independently based on a common adjustable setpoint (190°). Metasys will control the boiler staging as well as burner modulation. Each boiler's control panel provides a method of manually enabling and modulating the boiler as well.
7. When the outdoor air temp is below 42 (adjustable) OR the lead boiler is in alarm, the lag boiler will strart
8. When the outdoor air temp is below 0 (adjustable) OR either the lead or lag boiler is in alarm, a 3rd boiler will start
9. On a call for any boiler burner to fire, open the combustion fan damper fully (See the Boiler Room Ventilation sequence of operation). The combustion air damper end switch will energize the combustion fan when the combustion damper is proven fully open. The combustion damper end switch will be hard-wired into the safety circuit of the combustion supply fan to prevent the EMCS or the Hand position of the starter to energize the fan unless the combustion damper end switch is closed. Also, on a call for any boiler burner to fire the induction fan will energize. Hard-wire the induction fan VFD run contact and the combustion damper end switch into the four boiler panels to prevent the burner from firing unless the combustion damper is fully open and the induction fan is energized. If they fail to operate, an alarm will be raised at the EMCS. The induction fan status monitored on the EMCS will be a current switch. The induction start and the combustion damper open command will be hard-wired directly from the four boiler burner panels.
10. Provide manufacturers recommended field control wiring on the boilers. This includes mounting and wiring any manufacturers recommended controls for the flue pressure speed control on the induction fan VFD.
11. When all the boilers are off, close the combustion damper, de-energize the induction fan, de-energize the secondary hot water pumps, disable the boilers, let the primary hot water pump through the boiler for an adjustable time delay. After the delay, de-energize the primary hot water pump and close the boiler stop valve.

Secondary Hot Water System

1. The secondary hot water pumps P-5, P-6 and P-7 will operate through a lead/lag sequence, which will be initialized by the EMCS when the hot water system is enabled. One pump will be designated as standby
2. The lead secondary hot water pump will be energized by the EMCS as part of boiler start-up sequence. If the pump indicates a common trouble alarm at the EMCS it will be de-energized, but the alarm remains active. The lag pump will then be energized.
3. The lag secondary hot water pump will be energized in sequence with the lead pump only if the second lag boiler is energized and if the EMCS has determined that both pumps are required for best system efficiency.
4. Secondary hot water supply and return water temperature will be continuously monitored by the EMCS.
5. A current sensing relay across the secondary pumps will confirm pump status. If the EMCS detects no flow, that pump will be de-energized and an alarm given at the EMCS.
6. The lead pump will run continuously, until it cannot satisfy demand at which point the lag pump will be energized. The pumps will continue to run in parallel until demand drops to a point where a single pump can handle the load. Pumps will be de-energized in reverse order. The EMCS will schedule the pumps on and off to maintain the most efficient system operating point.
7. The EMCS will select the lowest of three pressure differential sensors to modulate the pump speed to maintain the hot water differential pressure setpoint. All energized pumps will operate at the same speed.
8. Provide a software lead pump rotation point (5-6-7 lead pump select) to equalize pump runtimes.
9. No secondary hot water flow meter is provided.

Boiler Staging Sequence

Lead Boiler	Lag Boiler	3rd Boiler	4th Boiler
Boiler 1	Boiler 2	Boiler 3	Boiler 4
Boiler 2	Boiler 3	Boiler 4	Boiler 1
Boiler 3	Boiler 4	Boiler 1	Boiler 2
Boiler 4	Boiler 1	Boiler 2	Boiler 3

REVISION INFORMATION
NUMBER
DATE 08/16/02
TIME 10:11 AM
FILE NAME hws-s.vsd

Drawing Title: SEQUENCE

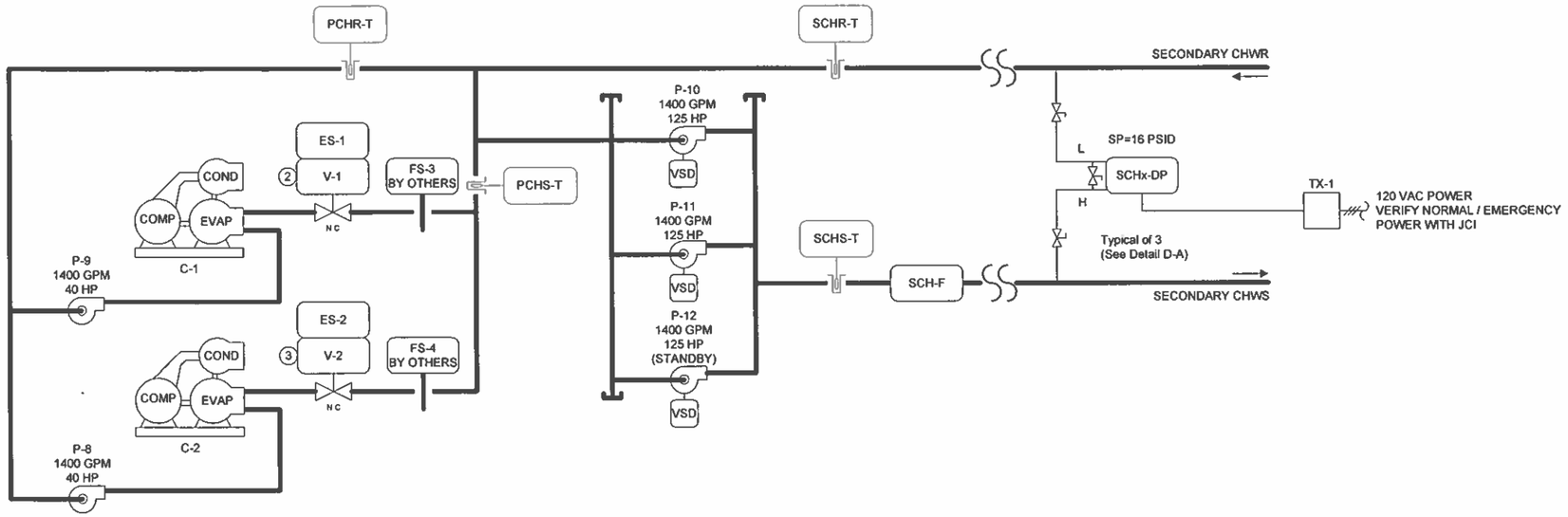
REFERENCE DRAWING	NO	REVISION-LOCATION	ECN	DATE	BY

Sales Engineer	Project Manager	Application Engineer	DRAWN	APPROVED
PJS	TP	KJK	BY MLR DATE	BY DATE

Project Title: MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

JOHNSON CONTROLS
Systems & Services Division
Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER: 9 8075-0508
DRAWING NUMBER: 4.5



NOTE: REFRIGERANT IS R-123

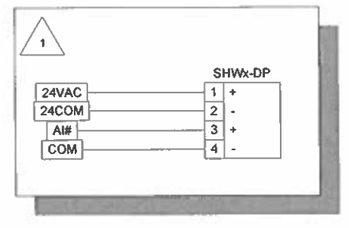
BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
ES-x	2	802T-A	CRANKARM - AB
	2	802T-W2A	POSITION SWITCH - AB
OA-T	1	TE-6316P-1	SENSOR,T-NI,0.1%,17FT AVG
PCHX-T, SCHX-T	4	TE-631AP-1	SENS,T-Ni,0.1%,F/WZ1000-5
	4	WZ-1000-5	WELL,BRASS,1/2"NPT+COMPND
SCH-F	1	BR24665-72-41	VENTURI 12" - BARCO
	1	FHNT33V1AACYYAA	TRANSMITTER - FUJI
	1	HM531S3399412	3-VALVE MANIFOLD - HEX VALVE
SCHx-DP	3	PD-101-1	RESISTOR, 499OHM 1/2W 1%
	3	PR282-44B12B	XDUCER, HI-DP 0-100# 4-20MA 24VAC NEMA 1
	9	VNH3-AM	1/4" BALL VALVE, 200F - DYNAQUIP
TX-1	3	Y65T31-0	XFMR,120-208-240/24,40VA,FOOT [Y65AR+]
V-x	0	VALVE	SEE VALVE SCHEDULE

OA-T

DETAIL D-A

Detail for SCHx-DP
Typical of 3



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REFERENCE DRAWING		NO	REVISION-LOCATION	ECN	DATE	BY
Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR DATE		APPROVED: BY DATE	

REVISION INFORMATION
NUMBER
DATE: 08/16/02
TIME: 10:10 AM
FILE NAME: cws-f.vsd

Drawing Title: **CHILLED WATER SYSTEM FLOW**

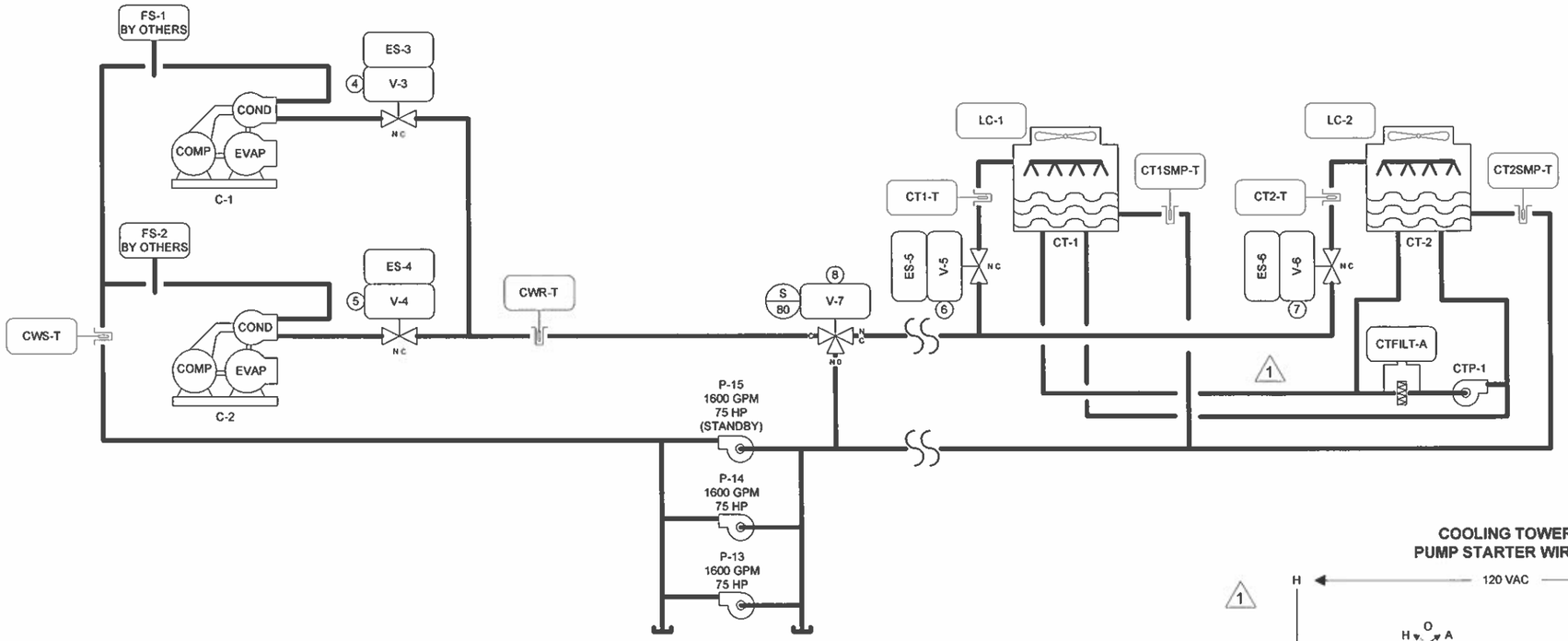
Project Title: **MILLER PARK**
ONE BREWERS WAY
MILWAUKEE, WI 53214

JOHNSON CONTROLS
Systems & Services Division

Branch Information:
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER: **9 8075-0508**

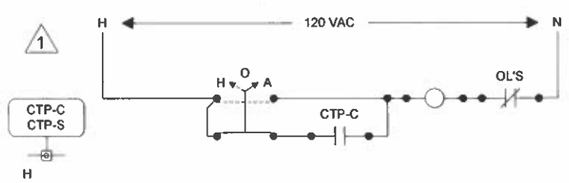
DRAWING NUMBER: **5.1**



BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
CTxPHx-S, CTP-X	5	H-708	SW,CURRENT,1-135A,ADJ,SOLID,W/LED
CTFILT-A	1	24-014	NEMA 4 DIFF PRESS SWITCH 5.5-45PSID - KELE
ES-x	2	802T-A	CRANKARM - AB
	2	802T-W2A	POSITION SWITCH - AB
LC-x	6	16MB3A0	WARRICK SERIES CONTROLS - KELBURN
	2	3E5B	RED BRASS CONTROL FITTING - KELBURN
	4	3R2C0	STAINLESS STEEL ELECTRODES (2' FT) - KELBURN
	6	3R3C0	STAINLESS STEEL ELECTRODES (3' FT) - KELBURN
	2	7765281	NEMA 4X ENCLOSURE - KELBURN
	2	7765282	SUB-PANEL - KELBURN
V-x	0	VALVE	SEE VALVE SCHEDULE
X-T	6	TE-631AP-1	SENS,T-Ni,0.1%,F/WZ1000-5
	6	WZ-1000-5	WELL,BRASS,1/2"NPT+COMPND

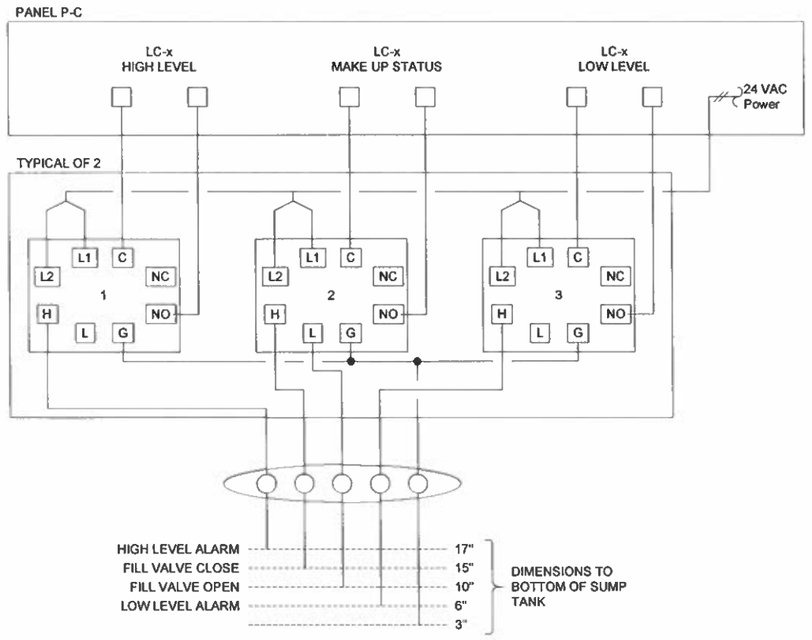
COOLING TOWER PUMP STARTER WIRING



CONDENSER WATER CHEMICAL TREATMENT

NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

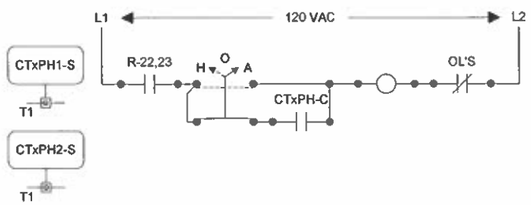
COOLING TOWER LEVEL CONTROL WIRING



NOTE:
DIRECT MODE - SINGLE LEVEL SERVICE (UNITS 1 & 3):
WHEN THE LIQUID RISES TO THE ELECTRODE ON TERMINAL 3, THE CONTROL ENERGIZES. THE CONTROL REMAINS ENERGIZED UNTIL THE LIQUID RECEDS BELOW ELECTROD ON TERMINAL 3.

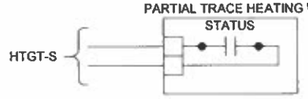
INVERSE MODE - DIFFERENTIAL SERVICE (UNIT 2):
CONTROL ENERGIZES WITH POWER. WHEN THE LIQUID RISES TO THE ELECTRODE ON TERMINAL 3, THE CONTROL DE-ENERGIZES. THE CONTROL REMAINS DE-ENERGIZED UNTIL THE LIQUID RECEDES BELOW ELECTRODE ON TERMINAL 4. THE CONTROL THEN ENERGIZES.

COOLING TOWER PAN HEATERS
TYPICAL OF 2



TRACE HEATING
TYPICAL OF 1

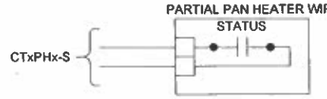
PARTIAL TRACE HEATING WIRING



NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

COOLING TOWER PAN HEATERS
TYPICAL OF 4

PARTIAL PAN HEATER WIRING



NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

REVISION INFORMATION						
NUMBER						
DATE 08/26/04			1	JCI CONTRACT 4933-0011	8/26/2004	MLR
TIME 11:14 AM	REFERENCE DRAWING		NO	REVISION-LOCATION	ECN DATE	BY
FILE NAME cws-f2.vsd	Sales Engineer PJS	Project Manager TP	Application Engineer KJK	DRAWN BY MLR DATE	APPROVED BY	DATE

Drawing Title
CONDENSER WATER SYSTEM FLOW

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

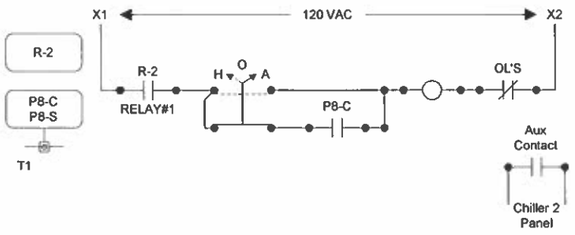
JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

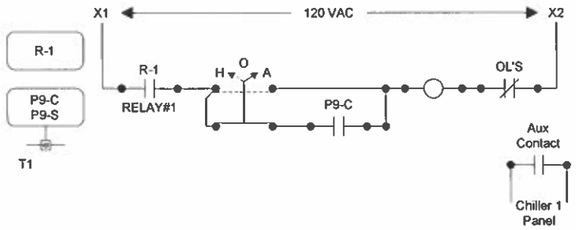
CONTRACT NUMBER **9 8075-0508**

DRAWING NUMBER **5.2**

PUMP (P-8) STARTER WIRING

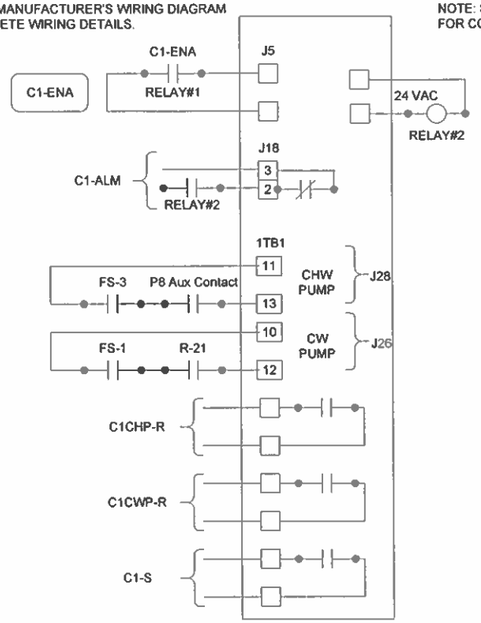


PUMP (P-9) STARTER WIRING



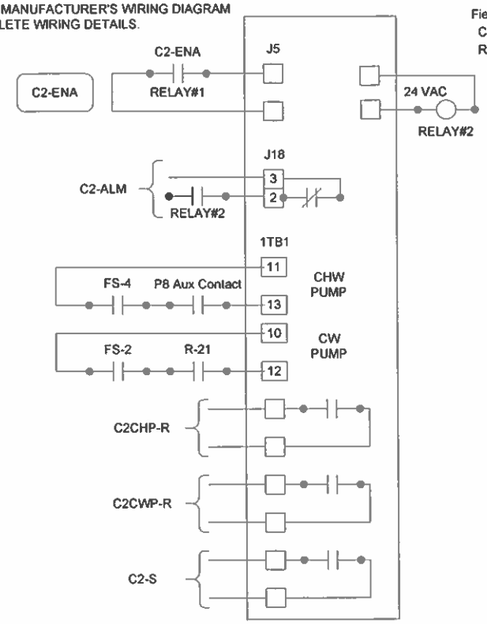
CHILLER (C-1) PANEL WIRING

NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.



CHILLER (C-2) PANEL WIRING

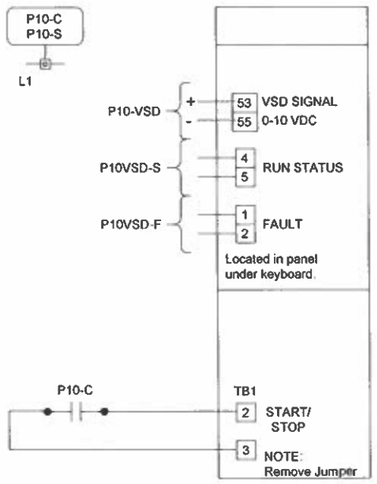
NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.



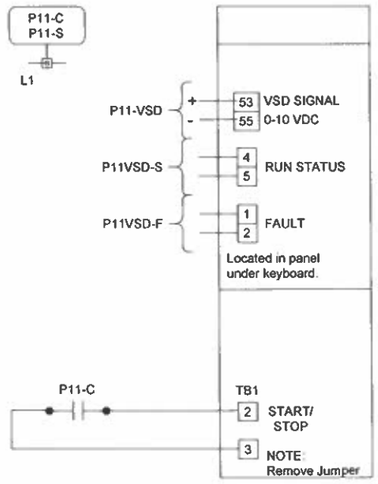
BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
CS-x,Px-C, Px-S	5	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
R-1-2, Cx-ENA	4	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC

PUMP (P-10) VSD WIRING



PUMP (P-11) VSD WIRING



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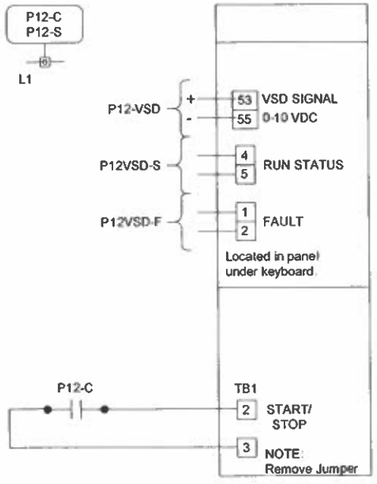


REVISION INFORMATION	
NUMBER	
DATE	08/16/02
TIME	10:07 AM
FILE NAME	cws-w.vsd

Drawing Title
CHILLED WATER SYSTEM WIRING

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

REFERENCE DRAWING	NO	REVISION LOCATION	ECN	DATE	BY

Sales Engineer	Project Manager	Application Engineer	DRAWN	APPROVED
PJS	TP	KJK	BY MLR DATE	BY DATE

JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

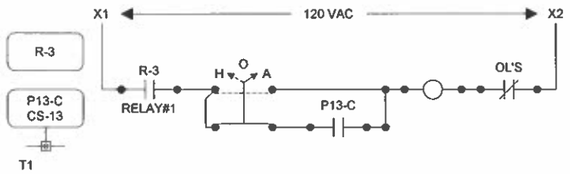
CONTRACT NUMBER
9 8075-0508

DRAWING NUMBER
5.3

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
CS-x, Px-C, Px-S, C TxH-C, CTxL-C	7	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
R-3-7	5	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
TDR-x	4	PD-101-37	RLY BASE,ROUND,11 PIN
	4	PD-109-29	TDR,MULTI-F/V,DPDT,11RND

PUMP (P-13) STARTER WIRING



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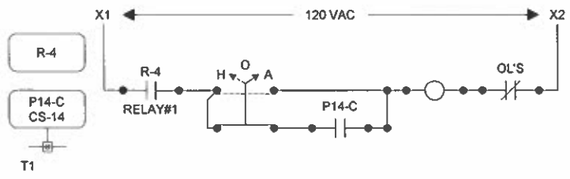

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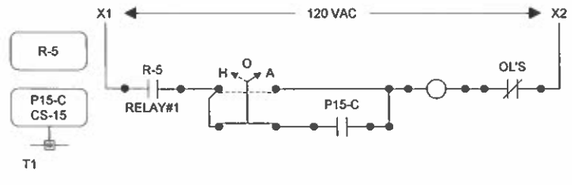
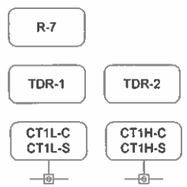
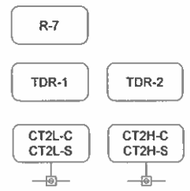
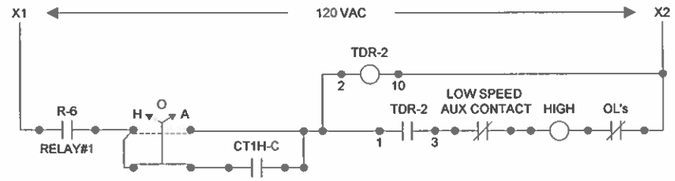


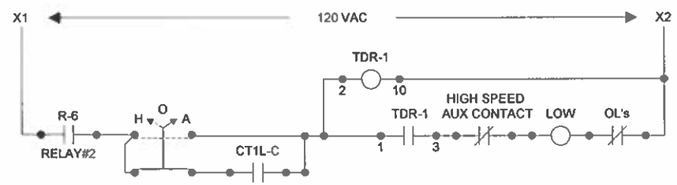




COOLING (CT-1) TOWER CONTROL



COOLING (CT-1) TOWER CONTROL



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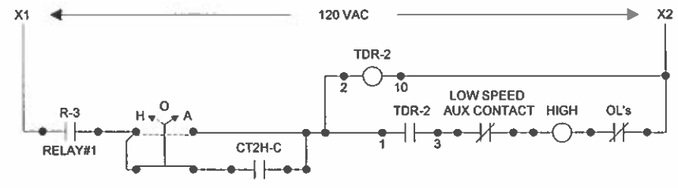

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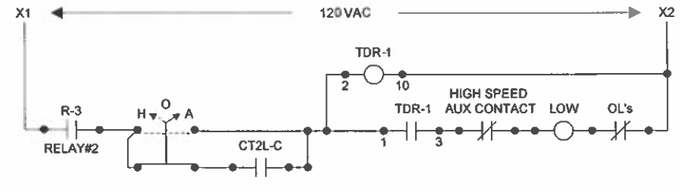
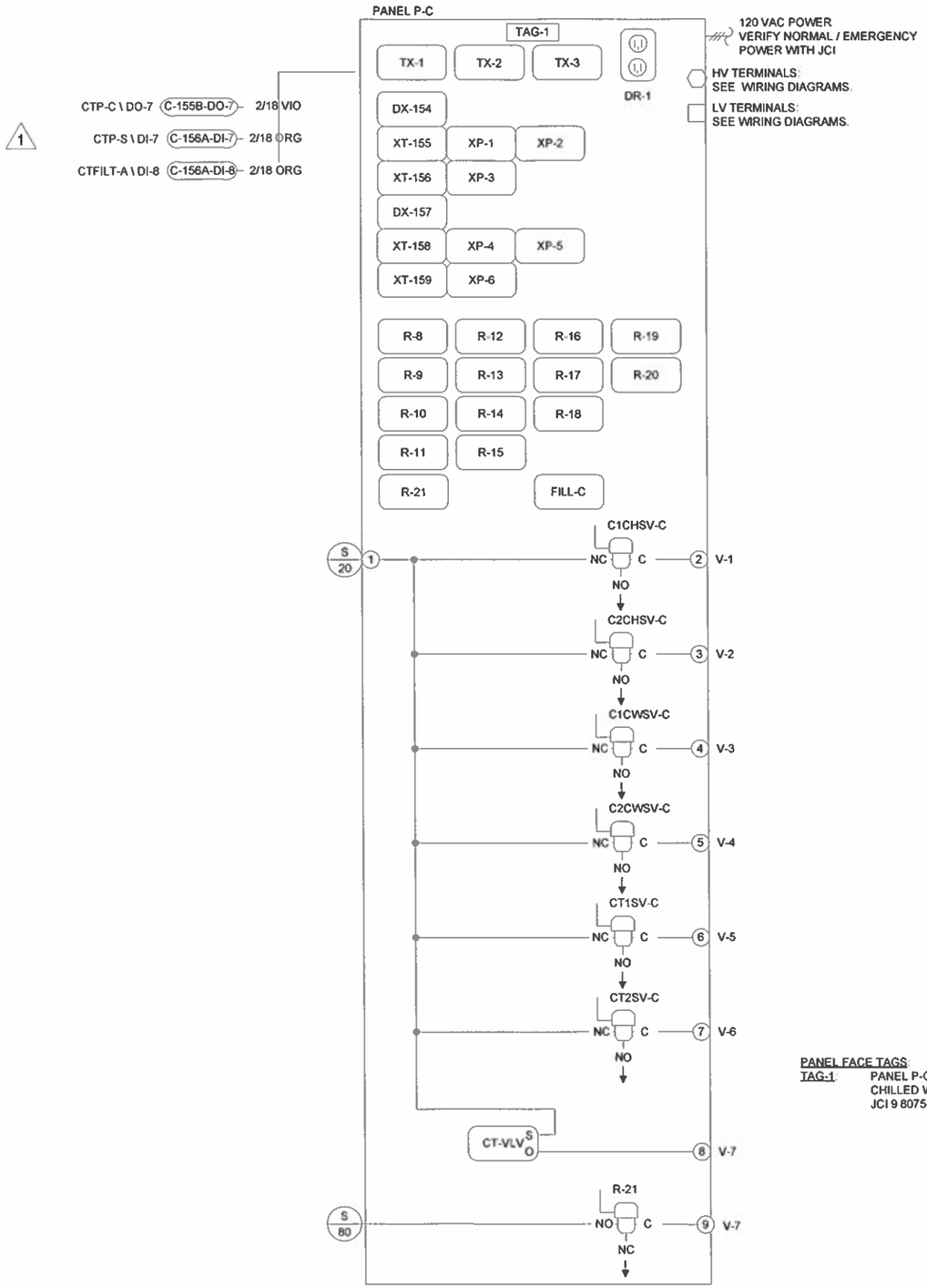


REVISION INFORMATION	Drawing Title: COOLING TOWER SYSTEM WIRING									
NUMBER										
DATE: 07/17/01										
TIME: 07:18 AM										
FILE NAME: cltwr-w.vsd		REFERENCE DRAWING		NO	REVISION-LOCATION		ECN	DATE	BY
		Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR DATE	APPROVED: BY DATE			
	Project Title: MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division			Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER: 9 8075-0508			
							DRAWING NUMBER: 5.4			



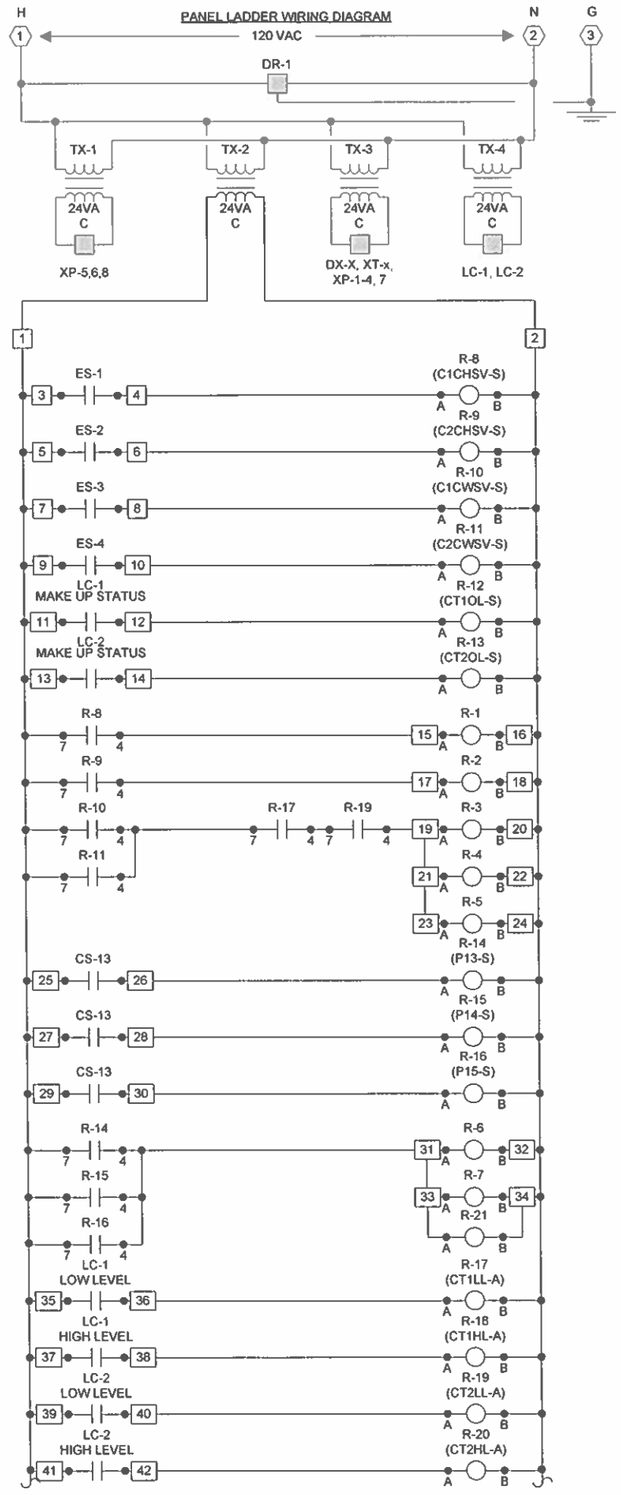
BILL OF MATERIALS

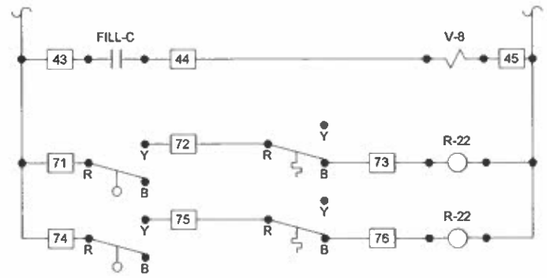
Designation	Qty	Part Number	Description
Panel Devices:			
CX-C	6	V11HGA-100	3-W SOLENOID,W/OV,24 VAC
DR-1	1	PD-117-2	RECEPTACLE,DUPLEX,UL,WHT
	1	PD-121-1	RECEPTACLE,DUPLEX,CVR
	1	PD-121-6	HANDY BOX 2 IN
DX-X	1	AS-LCPKEY-0	LCP SERVICE PORT ADJ KEY
	1	DX-9100-8454	DIGITAL CONTR., EXTENDED
	1	DX-9100-8990	MTG BASE (DX9100-8454)
P-C	1	M-8100-3648	PANEL,STANDARD,31 UNITS
R-8-20	13	PD-101-35	RLY BASE,3PDT,11PIN,10A
	13	PD-109-61	RELAY PLUG IN 3PDT 24VAC 10A w/LED
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-1-3	3	PD-114-2	TRANSFORMER 100VA, 120/24
X-VLV	1	EP-8000-2	XDUCR,EP,0/10V,HI VOL
XP-1	1	XP-9102-8304	EXPANSION MODULE: 6 AI
XP-2-4,7	4	XP-9105-8304	DX EXPN MOD, 8 DI
XP-5,6,8	3	XP-9103-8304	DX EXPN MOD, 8 DO TRIAC
XT-X	4	XT-9100-8304	EXTENSION MODULE

PANEL FACE TAGS:

TAG-1: PANEL P-C
CHILLED WATER SYSTEM
JCI 9 8075-0508

REVISION INFORMATION	Drawing Title: CHILLED WATER SYSTEM PANEL							
NUMBER				1	JCI CONTRACT 4933-0011		8/26/2004	MLR
		REFERENCE DRAWING		NO.	REVISION-LOCATION	ECN	DATE	BY
DATE: 08/26/04		Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR DATE		APPROVED: BY DATE	
TIME: 08:24 AM	Project Title: MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division			Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER: 9 8075-0508	
FILE NAME: cws-p.vsd							DRAWING NUMBER: 5.5	





REVISION INFORMATION	Drawing Title: CHILLED WATER SYSTEM PANEL WIRING						
NUMBER			1	RECORD DRAWING		6/14/2001	MLR
DATE: 06/14/01		REFERENCE DRAWING	NO	REVISION/LOCATION	ESN	DATE	BY
TIME: 10:22 AM	Project Title: MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	Sales Engineer: PJS; Project Manager: TP; Application Engineer: KJK	DRAWN BY: MLR DATE	APPROVED BY: DATE			
FILE NAME: cws-pw.vsd	JOHNSON CONTROLS Systems & Services Division	Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575	CONTRACT NUMBER: 9 8075-0508	DRAWING NUMBER: 5.6			

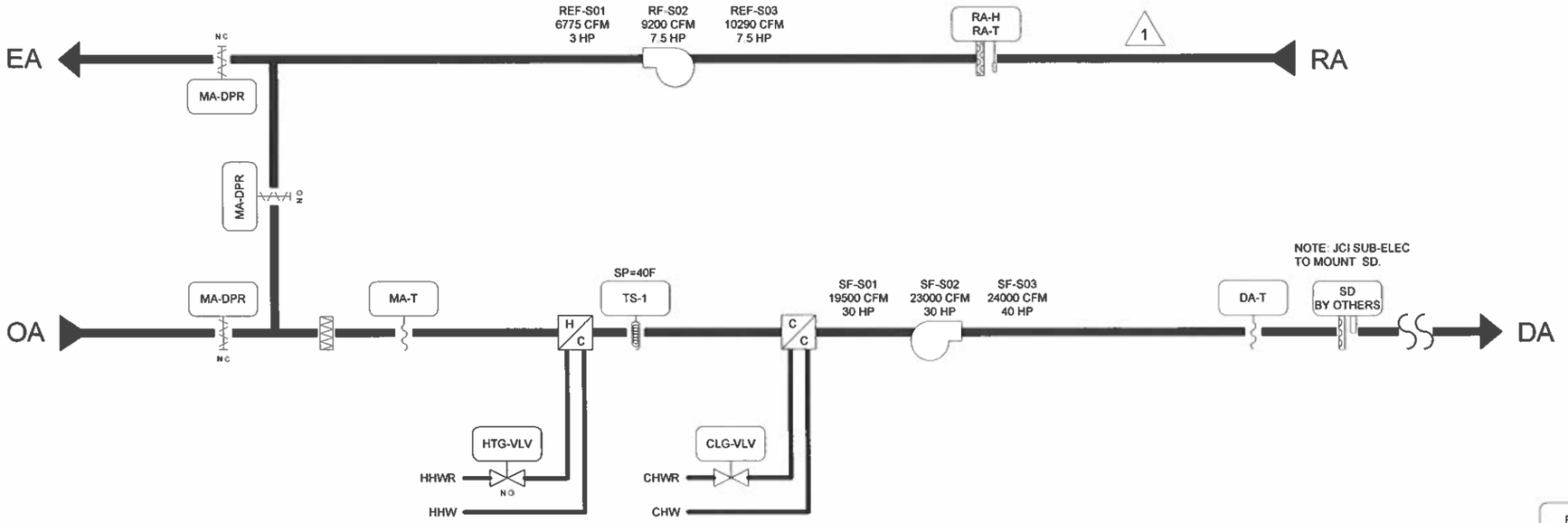
Main Chilled Water System

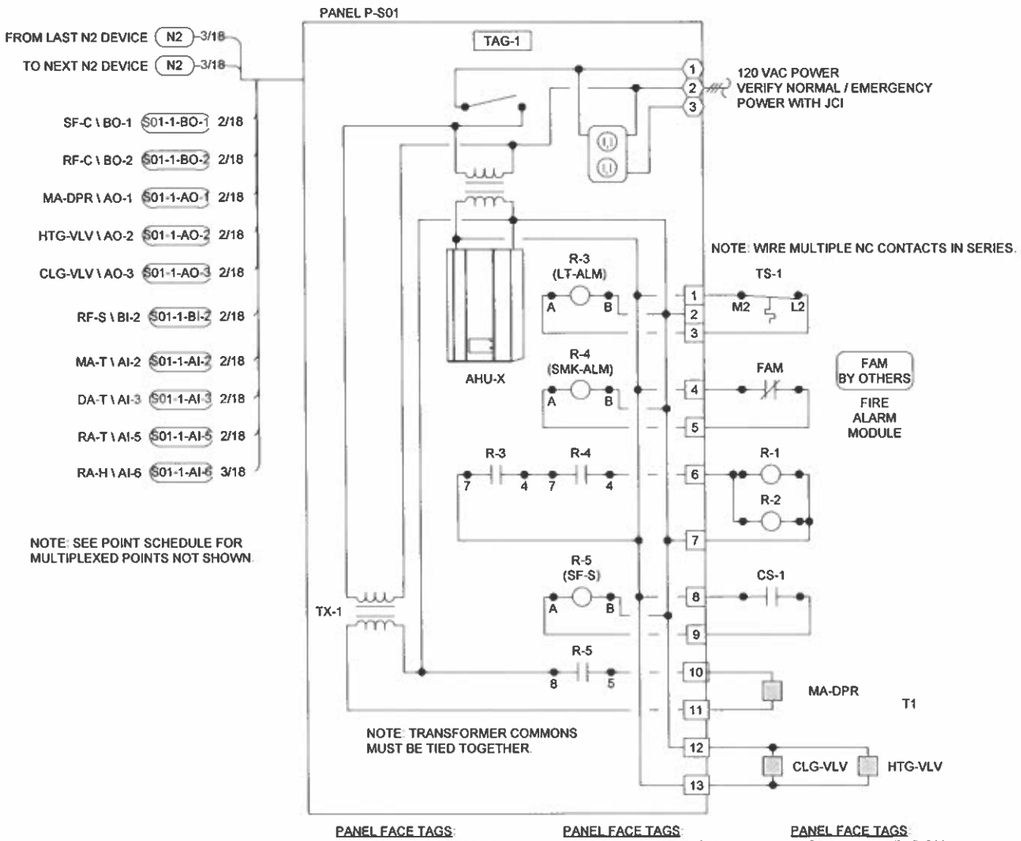
1. The chilled water system consists of two chillers with two primary chilled water pumps, two cooling towers with 2-speed motors, three condenser pumps and three chilled water secondary pumps with variable frequency drives.
2. The chilled water system is designed to operate at 42°F supply water temperature. The supply temperature will be reset upwards (if only one chiller is enabled) from the chilled water valve position of the air handling unit calling for the most cooling.
3. The chilled water plant equipment will operate through a lead-lag sequence which will be initialized by the EMCS based on a preprogrammed schedule. The lead chiller and primary pump will be alternated between CH-1/P-9 and CH-2/P-8 based on a preprogrammed schedule in the EMCS.
4. Upon a demand for cooling (based on any equipment requesting chilled water including any food service water condensing units) an enable signal will be given to the lead secondary chilled water pump. Once one secondary chilled water pump is enabled as proven by the current sensing relay across the pump, an enable command will be issued to the lead chiller by the EMCS which will begin the chillers on-board controller internal startup sequence. The chiller panel will request the evaporator pump to enable to the EMCS. The EMCS will issue the lead chillers evaporator control stop valve to open fully. After a predetermined time, to allow the evaporator stop valve to move into the open position as determined by an end switch, the lead chilled water pump will be energized by the EMCS. The chilled water stop valve end switch will be hard-wired into the primary chilled water pumps starter safety circuit to prevent the EMCS or the Hand position of the starter to energize the evaporator pump unless the associated evaporator stop valve is proven open. The chiller panel on-board controller will request the condenser pump to enable to the EMCS. The EMCS will open the lead condenser control stop valve and the lead tower stop valve will fully open. After a predetermined time, to allow the stop valve to move into the open position as determined by the end switches, the lead condenser water pump will be energized from the EMCS. The condenser stop valve per chiller and the tower stop valve per tower end switches will be hard-wired into the three condenser pump starters safety circuit to prevent the EMCS or the Hand position of the starter to energize a condenser pump unless one condenser stop valve is open and one tower stop valve is open as proven open by the end switches. The lead cooling tower and condenser water pumps will be alternated based on a preprogrammed schedule in the EMCS.
5. When condenser water flow is proven, as detected by a current sensing relay across the condenser pump, the cooling towers will be energized in sequence from the EMCS. If the EMCS detects low flow, the lead condenser pump will be de-energized and an alarm given at the EMCS. The lag pump will then be energized. The auxiliary contacts of the condenser pumps will be hard-wired into the safety circuit of the tower fan motors so that the EMCS or the Hand position of the tower fan starter will not allow the tower fan to enable unless at least one condenser pump auxiliary contact is closed.
6. A current sensing relay across the secondary pump will provide status indication (on/off) to the EMCS.
7. The lead chiller will then be enabled through its on-board controls which will control the chiller to maintain its setpoint. Mount and wire field controls per the chiller manufacturer recommendations.
8. If the lead chiller sends out a general alarm (from its Trane chiller panel) or looses power, the EMCS will initiate the sequence to bring the lag chiller on line. With both chillers on, chiller on-board controller will provide optimum operating point for both machines. The EMCS will bring on in sequence the lag condenser water pump, chilled water pump and secondary water pump and open control stop valves as described for the lead equipment. Provide delays and minimum on/off times in the EMCS software to prevent unnecessary chiller cycling.
9. Both chillers and support equipment will continue to run until the chilled water supply temperature is at the chilled water supply water setpoint and the tons used can be handled by one chiller, at which time the EMCS will initiate the sequence to de-energize the lag chiller.
10. The EMCS will first disable the lag chiller and simultaneously the lag primary chilled water pump and lag condenser water pump. After a predetermined time delay, the EMCS will close all control valves on the condenser and evaporative barrel of the lag chiller. The EMCS will only de-energize the secondary chilled water pump when it has determined the best system efficiency requires only one pump.
11. The supply temperature for each chiller will be set at 42°F at the local chiller control panel. The supply temperature in the primary chilled water loop will be continuously monitored by the EMCS. If the chilled water supply temperature rises above 47°F or below 37°F an alarm will be raised at the EMCS. The EMCS will remotely reset the chillers on-board controller setpoint per the sequence.
12. Chilled water return temperature in the primary loop will be continuously monitored by the EMCS. If the return temperature rises above 60°F an alarm will be raised at the EMCS.
13. The condenser water system will be energized through the EMCS during the start-up of either CH-1 or CH-2. The condenser water flow and return temperature will be continuously monitored by the EMCS. The condenser water supply temperature will operate with reset in the range 75°F to 80°F based on outside air temperature. If the condenser water supply temperature rises above 85°F an alarm will be raised at the EMCS. If the condenser water temperature drops below 60°F an alarm will be raised at the EMCS.
14. The lead cooling tower pony motor will be energized by the EMCS. If the auxiliary contact at the starter fails to close an alarm will be raised at the EMCS. The motor will de-energize, but alarm will remain. The pony motor of the lag cooling tower will then be energized after the lag cooling tower stop valve is fully open as determined by the stop valve end switch. The EMCS will close the lead cooling tower stop control valve.
15. When the condenser water supply temperature rises above 85°F while operating as described above, the EMCS will de-energize the pony motor and energize the primary motor. If the auxiliary contact at the starter fails to close an alarm will be raised at the EMCS, the primary motor de-energized and the pony motor energized.
1. When the condenser water supply temperature rises above 85°F while operating as described above, the EMCS will de-energize the pony motor and energize the primary motor. If the auxiliary contact at the starter fails to close an alarm will be raised at the EMCS, the primary motor de-energized and the pony motor energized.
2. When the condenser water supply temperature drops below 75°F the cooling tower fans will cycle back to the pony motor. Provide a de-accelerating relay in each two speed motor starter. If the condenser water temperature continues to drop, de-energize the pony motor.
3. The condenser water chemical treatment system will operate through an independent local control panel to meter the required chemicals to the cooling tower basins. Mount and wire controls per the manufacturer recommendations.
4. Upon the outside temperature reaching 50°F and the towers being off, the pan heaters and pipe trace heating will be activated. The pan heaters and trace heating will continue to be energized, until outside air temperature rises above 50°F or the cooling tower is activated. The pan heaters and trace heating will be furnished and installed by others, this contractor will be required to provide pilot duty relays from EMCS to energize and de-energize them.
5. The lead condenser pump will run continuously, until it cannot satisfy demand at which point the lag pump will be energized. The pumps will continue to run in parallel until demand drops to a point where a single pump can handle the load. Pumps will be de-energized in reverse order. The EMCS will schedule the pumps on and off to maintain the most efficient system operating point.
6. If the condenser entering temperature continues to drop below setpoint, the cooling tower bypass valve will modulate to bypass the condenser water from the cooling tower.
7. No chiller integrator panel is provided.
8. Provide a 3 level cooling tower sump level switch for both tower sumps. Wire the pump on/off level contact directly into the condenser pump safety circuits. This contact will open if the sump level is too low, which will de-energize all condenser pumps if both sumps are low. The EMCS will alarm each low level individually. If the sump level rises above the high level setpoint, alarm the EMCS.

Secondary Chilled Water System

1. The secondary chilled water pumps P-10, P-11 and P-12 will operate through a lead/lag sequence which will be initialized by the EMCS based on a preprogrammed schedule. One pump will be deisgnated as standby.
2. The lead secondary chilled water pump will be energized by the EMCS as part of chiller start-up sequence. If the pump indicates a common trouble alarm at the EMCS it will be de-energized but the alarm remains active. The lag pump will then be energized.
3. The lag secondary chilled water pump will be energized in sequence with the lead pump only if the lag chiller is energized and if the EMCS has determined that both pumps are required for best system efficiency.
4. Secondary chilled water supply and return water temperature will be continuously monitored by the EMCS.
5. A current sensing relay across the lead pump will confirm pump status. If the EMCS detects no flow, the lead pump will be de-energized and an alarm given at the EMCS.
6. The lead pump will run continuously, until it cannot satisfy demand at which point the lag pump will be energized. The pumps will continue to run in parallel until demand drops to a point where a single pump can handle the load. Pumps will be de-energized in reverse order. The EMCS will schedule the pumps on and off to maintain the most efficient system operating point.
7. The EMCS will select the lowest of three pressure differential sensors to modulate the pump speed to maintain the chilled water differential pressure setpoint. All energized pumps will operate at the same speed.
8. Provide a software lead pump rotation point (10-11-12 lead pump select) to equalize pump runtimes.

REVISION INFORMATION	Drawing Title								
NUMBER	**SEQUENCE**								
		REFERENCE DRAWING		NO.	REVISION LOCATION		ECN	DATE	BY
DATE 08/16/02		Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR	DATE		APPROVED: BY	DATE
TIME 10:07 AM	Project Title	JOHNSON CONTROLS			Branch Information		CONTRACT NUMBER		
	MILLER PARK **ONE BREWERS WAY** **MILWAUKEE, WI 53214**	Systems & Services Division			Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		**9 8075-0508**		
FILE NAME cws-s.vsd							DRAWING NUMBER **5.7**		

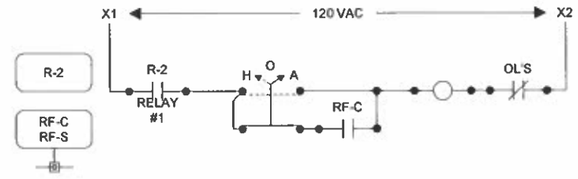




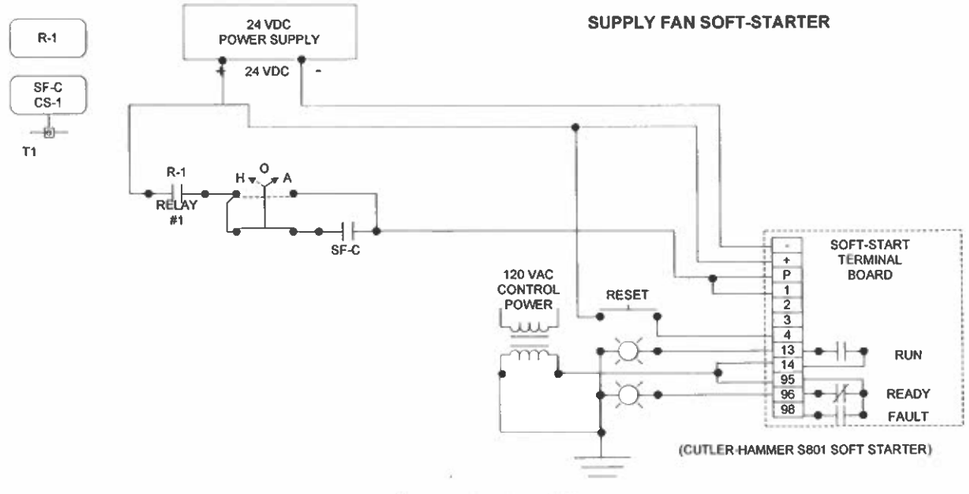
BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
DA-T	1	TE-6315P-1	SENS,T-Ni,0.1%,8' AVG
MA-T	1	TE-6316P-1	SENS,T-Ni,0.1%,17' AVG
MA-T, TS-1	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
R-1, R-2	2	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
RA-H, RA-T	1	HE-6310-2	XMTR,RH/T-Ni,DUCT,AC/DC
RF-C,RF-S,SF-C,CS-1	2	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
TS-1	2	A70HA-1C	STAT,LL,20',EL,MAN,15/55F
X-DPR	0	DAMPER	SEE DAMPER SCHEDULE
X-DPR, X-VLV	5	PD-101-1	RESISTOR, 499OHM 1/2W 1%
X-VLV	0	VALVE	SEE VALVE SCHEDULE
Panel Devices:			
AHU-X	1	AS-AHU103-300	AHU TERMINATION BD/ELECTRONICS IN EWC35
P-X	2	EN-EXP101-0	EXPANSION COVER AND BACKBONE
R-3-R-5	3	PD-101-35	RLY BASE,3PDT,11PIN,10A
	3	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-1	1	PD-114-2	TRANSFORMER 100VA, 120/24

RETURN FAN STARTER



SUPPLY FAN SOFT-STARTER



Pilot lights were changed from "On" and "Off" to "Run" and "Ready" when Soft-Starter was installed

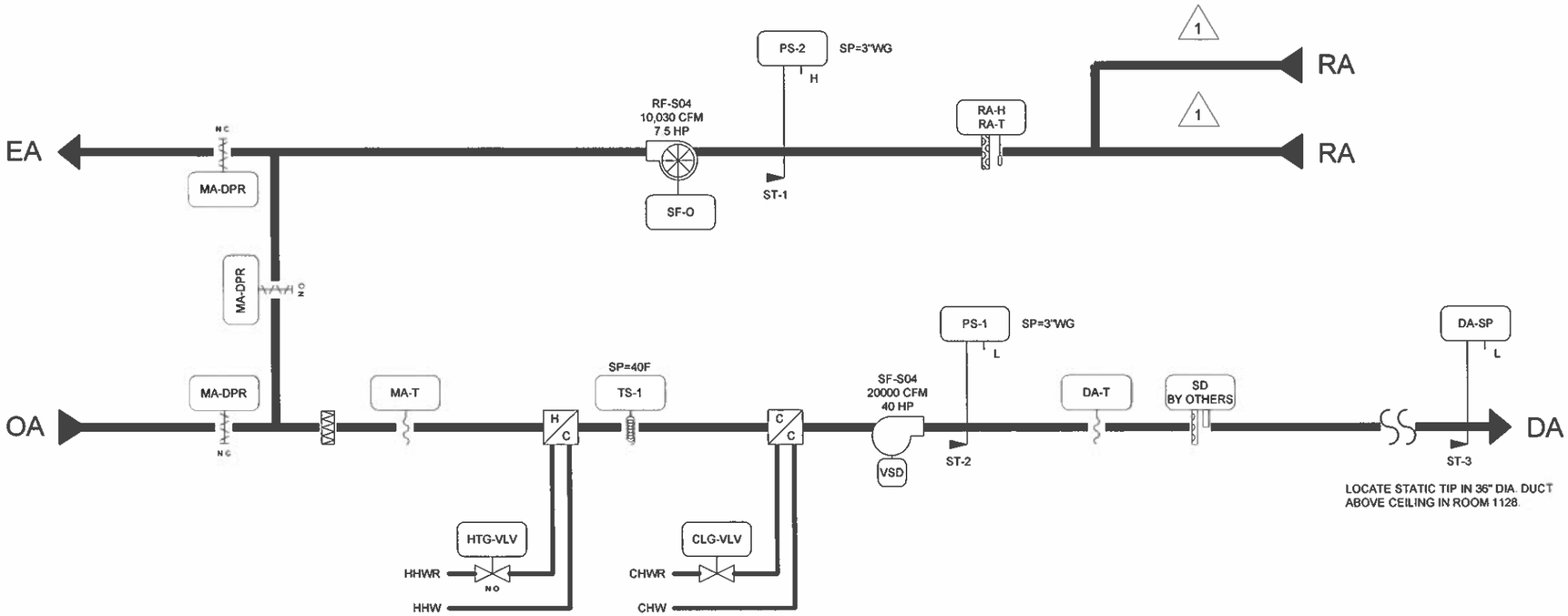
REVISION INFORMATION	Drawing Title						
NUMBER	AH-S01 FLOW TYPICAL FOR AH-S02, AH-S03	Soft-Starter added	2003-14	2003 SRF Project			DAM
DATE 11/06/09		REFERENCE DRAWING	NO	REVISION LOCATION	ECN	DATE	BY
TIME 09:11 AM	Project Title MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	Sales Engineer PJS / Project Manager TP / Application Engineer KJK / DRAWN BY MLR DATE / APPROVED BY DATE					
FILE NAME ahs01f2.vsd	JOHNSON CONTROLS Systems & Services Division	Branch Information Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575			CONTRACT NUMBER 9 8075-0508		
					DRAWING NUMBER 6.1		

AH-S01, AH-S02, AH-S03

Multi-zone Constant Volume MASP Air Handling System with Return Fan and Economizer Cycle

1. The air handling unit is equipped with supply fan, return fan, heating coil, cooling coil, pre-filter, final filter and economizer mixing box.
2. The air handling unit supply and return fans will be energized through the EMCS on a scheduled basis.
3. Provide for the air handling unit, an economizer logic network controller to position the economizer dampers for maximum economy and sequenced with the heating and cooling valves.
4. Unless the economizer controller is overridden by the warm-up cycle, the controller will verify that the air handling unit is running via a fan proof of flow controller and open the outside air damper to the minimum required ventilation position.
5. When the outside air dry bulb temperature is less than outside air dry bulb setpoint, the economizer dampers will be positioned for maximum free cooling using outside air to meet the cooling demand. The mechanical cooling equipment will only be used if the outside air cannot provide enough free cooling to meet demand.
6. Upon morning start-up of the occupied mode, mechanical cooling will be locked out, the heating coil control valve will fully open, the outside air damper will move to the closed position, and any interlocked exhaust fans will be de-energized. When the return air temperature reaches the warm-up setpoint, the air handler will return to normal operation.
7. Each zone sensor or group of zone sensors modulate the reheat coil hot water control valve to satisfy the required room temperature. See the Reheat Coil sequence of operation.
8. The chilled and hot water control valves will modulate in sequence to maintain the discharge air temperature. The discharge air temperature setpoint will be reset based on the operation of the zone reheat coil control valves and return air humidity.
9. Smoke detectors located in the supply and return ducts will on detection of smoke shut down the air handler supply and return fans via a hard-wire interlock with fan starters. Smoke detector status will be indicated at the EMCS.
10. Filter replacement will be scheduled based on supply fan runtime.
11. Current switches will be located on the feed to the supply fan and return fan to provide status indication (on/off). In off hours DDC controller will command the chilled water two-way control valve and outside air damper to a fully closed position, heating coil control valve to fully open position.
12. The EMCS will monitor and control all points for each air handling unit.
13. In off hours, the supply fan and return fan will be cycled intermittently at night by the zone sensor to maintain 60°F.

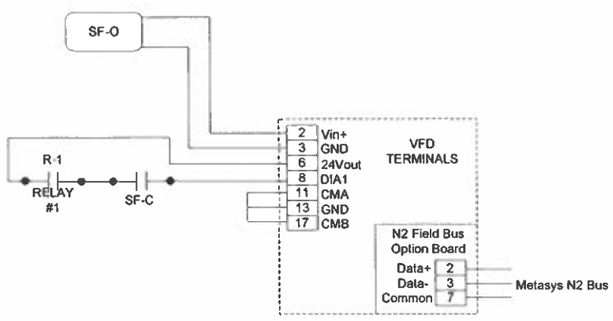
REVISION INFORMATION	Drawing Title									
NUMBER	SEQUENCE									
DATE 04/12/01		REFERENCE DRAWING		NO	REVISION LOCATION		ECN	DATE	BY	
TIME 08:17 AM		Sales Engineer PJS	Project Manager TP	Application Engineer KJK	DRAWN BY MLR	DATE	APPROVED BY	DATE		
FILE NAME ahs01s.vsd	Project Title MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division			Branch Information Wisconsin Area Office 529 N Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER 9 8075-0508			
							DRAWING NUMBER 6.2			



BILL OF MATERIALS

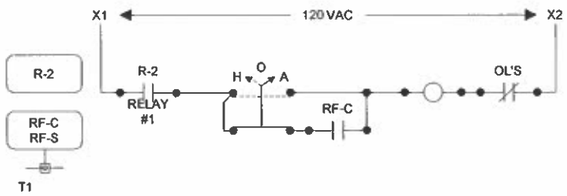
Designation	Qty	Part Number	Description
Field Devices:			
DA-SP	1	DPT-2640-26	XDUCR DP -5.0/5.0" 0-5V
DA-T	1	TE-6315P-1	SENS,T-Ni,0.1%,8' AVG
MA-T	1	TE-6316P-1	SENS,T-Ni,0.1%,17' AVG
MA-T, TS-1	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
PS-x	2	AFS-460	SW, AIR FLOW, SPST-NC RESET .05-12" @CLE
R-1, R-2	2	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
RA-H, RA-T	1	HE-6310-2	XMTR,RH/T-Ni,DUCT,AC/DC
RF-C,RF-S,SF-C,CS-1	2	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
ST-x	3	A520-2-A-1	8" STATIC PROBE, ALUM, 1/4"TUBE @MAMAC
TS-1	2	A70HA-1C	STAT,LL,20',EL,MAN,15/55F
X-DPR, X-VLV,XF-O	4	PD-101-1	RESISTOR, 499OHM 1/2W 1%
X-DPR, XF-O	0	DAMPER	SEE DAMPER SCHEDULE
X-VLV	0	VALVE	SEE VALVE SCHEDULE

SUPPLY FAN VARIABLE SPEED DRIVE

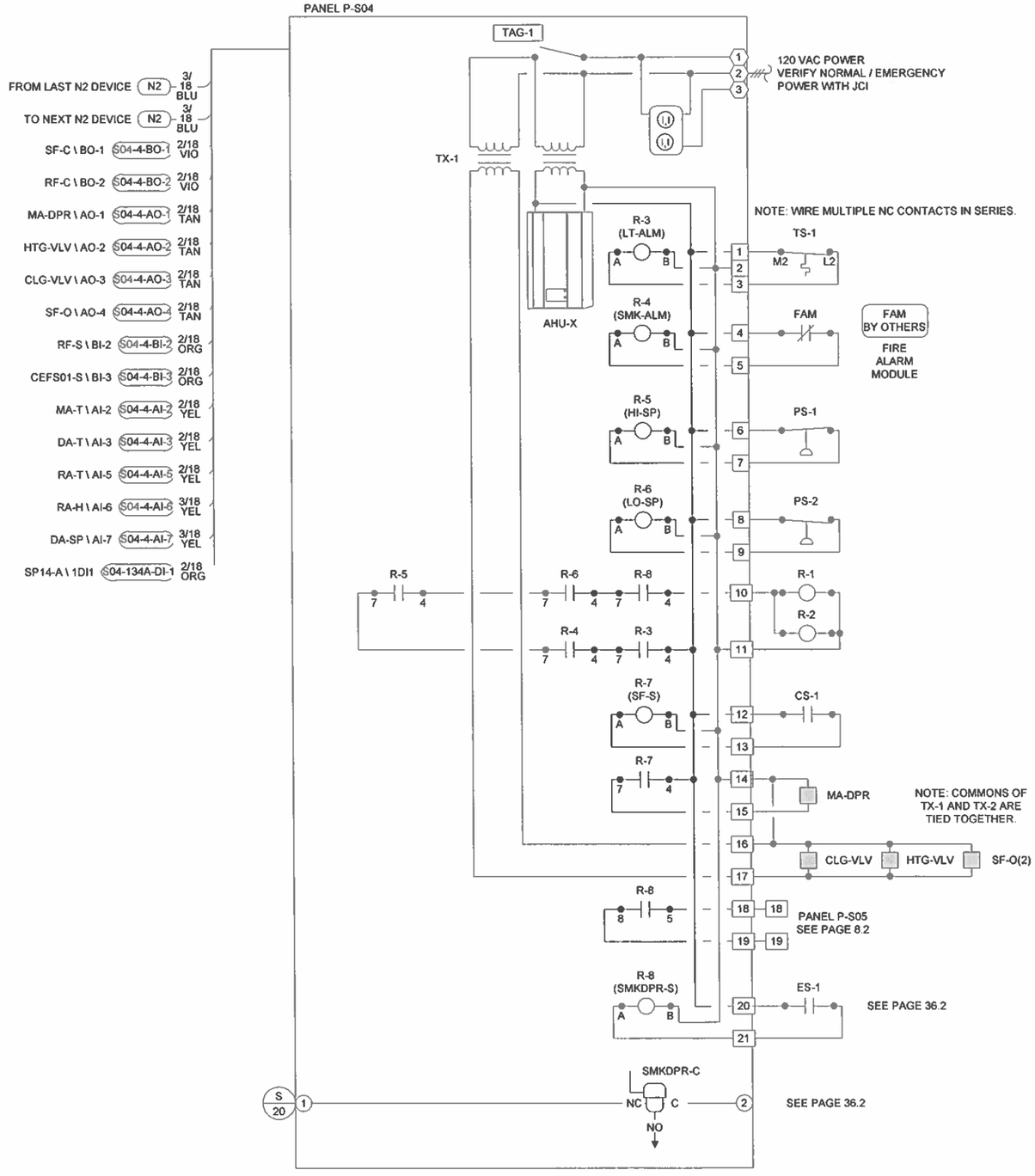


(CUTLER-HAMMER SV9000 Adjustable Frequency Drive)

RETURN FAN STARTER



REVISION INFORMATION	Drawing Title							
	AH-S04 FLOW	VFD Relpaced inlet Vanes	2003-14	2003 SRF Project				DAM
NUMBER		REFERENCE DRAWING	NO.	REVISION LOCATION	ECR	DATE	BY	
DATE 11/06/09		Sales Engineer PJS	Project Manager TP	Application Engineer KJK	DRAWN BY MLR	DATE	APPROVED BY	DATE
TIME 09:12 AM	Project Title			Branch Information			CONTRACT NUMBER	
	MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division		Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575			9 8075-0508	
FILE NAME ahs04f2.vsd							DRAWING NUMBER 7.1	



PANEL FACE TAGS:
TAG-1: PANEL P-S04
AH-S04
JCI 9 8075-0508

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
AHU-X	1	AS-AHU103-300	AHU TERMINATION BD/ELECTRONICS IN EWC35
P-X	2	EN-EXP101-0	EXPANSION COVER AND BACKBONE
R-3-R-8	6	PD-101-35	RLY BASE,3PDT,11PIN,10A
	6	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
SMKDPR-C	1	V11HGA-100	3-W SOLENOID,W/OV,24 VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-1	1	PD-114-2	TRANSFORMER 100VA, 120/24

REVISION INFORMATION
NUMBER
DATE 04/12/01
TIME 08:40 AM
FILE NAME ahs04p.vsd

Drawing Title
AH-S04 PANEL

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

REFERENCE DRAWING	NO	REVISION-LOCATION	ECN	DATE	BY

Sales Engineer	Project Manager	Application Engineer	DRAWN	APPROVED
PJS	TP	KJK	BY MLR DATE	BY DATE

JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER
9 8075-0508

DRAWING NUMBER
7.2

AH-S04

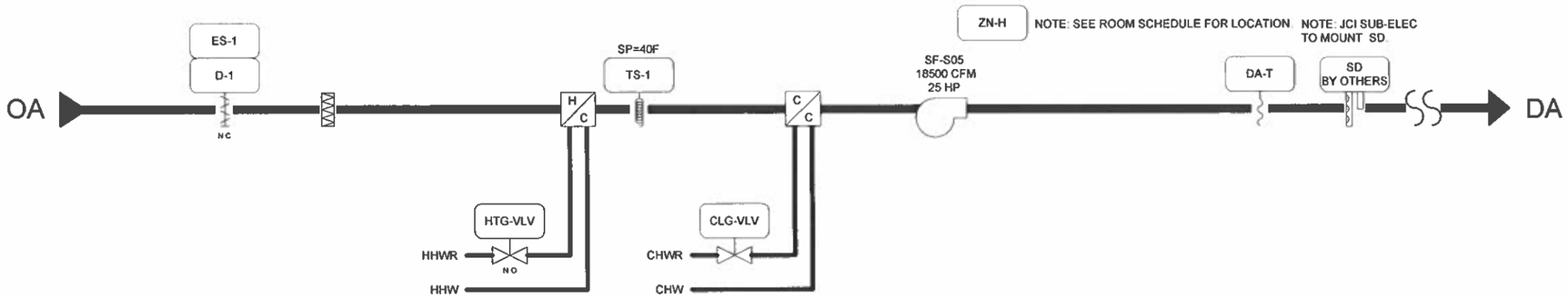
Multi-zone VAV MASP Air Handling System with Return Fan and Economizer Cycle

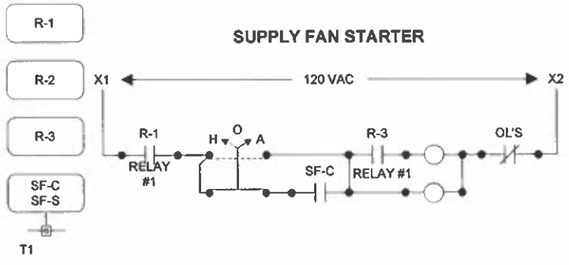
1. The air handling unit is equipped with supply fan, return fan, heating coil, cooling coil, pre-filter, final filter and economizer mixing box.
2. The air handling unit supply and return fans will be energized through the EMCS on a scheduled basis.
3. The supply fan capacity will be modulated via inlet guide vanes based upon static pressure in the supply duct. The return fan capacity will track the supply fan capacity. A high pressure safety cut-out located in the air handling unit will deactivate the unit upon a static pressure of 3.0" w.c. being detected in the cabinet. Provide actuators for inlet vanes.
4. Provide on the air handling unit, an economizer logic network controller to position the economizer dampers for maximum economy and sequenced with the heating and cooling valves.
5. Unless the economizer controller is overridden by the warm-up cycle, the controller will verify that the air handling unit is running via a fan proof of flow controller and open the outside air damper to the minimum required ventilation position.
6. When the outside air dry bulb temperature is less than outside air dry bulb setpoint, the economizer dampers will be positioned for maximum free cooling using outside air to meet the cooling demand. The mechanical cooling equipment will only be used if the outside air cannot provide enough free cooling to meet demand.
7. Upon morning start-up of the occupied mode mechanical cooling will be locked out, the heating control valve will fully open, the outside air damper will remain in the closed position, all VAV boxes will be at maximum CFM though the reheat valve will remain under the control of zone sensors, all interlocked exhaust fans will be de-energized, and the supply and return fan will track with no offset. When the return air temperature reaches the warm-up setpoint, the air handler will return to normal operation. Provide all relays, solenoids, and wiring required to lock out warm-up during normal occupancy hours.
8. Each zone sensor modulates the VAV box damper to satisfy the required room temperature. See the VAV Box sequence of operation.
9. The chilled water control valve will modulate in sequence to maintain the discharge air temperature. The discharge air temperature setpoint will be reset based on return air humidity.
10. Smoke detectors located in the supply and return ducts will on detection of smoke shut down the air handler supply and return fans via a hard-wire interlock with fan starters. Smoke detectors will indicate status at EMCS.
11. Filter replacement will be scheduled based on supply fan runtime.
12. Current switches will be located on the feed to the supply fan and return fan to provide status indication (on/off). In off hours DDC controller will command the chilled water two-way control valve to a fully closed position, the heating valve to the fully open position, and the outside air damper to the fully closed position.
13. The EMCS will monitor and control all points for each air handling unit.
14. If the supply air static at the supply fan raises above the high limit setpoint, the system will be shutdown. If the return air static drops below the low limit setpoint, the system will be shutdown.
15. In off hours, the supply fan and return fan will be cycled intermittently at night by the zone sensor to maintain 60°F.

REVISION INFORMATION	Drawing Title							
NUMBER	SEQUENCE							
		REFERENCE DRAWING		NO.	REVISION LOCATION		ECN	DATE / BY
DATE 04/12/01		Sales Engineer PJS	Project Manager TP	Application Engineer KJK	DRAWN BY MLR DATE	APPROVED BY DATE		
TIME 08:44 AM	Project Title	JOHNSON CONTROLS			Branch Information		CONTRACT NUMBER	
	MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	Systems & Services Division			Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		9 8075-0508	
FILE NAME ahs04s.vsd							DRAWING NUMBER 7.3	

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
D-1, ES-1	0	DAMPER	SEE DAMPER SCHEDULE
DA-T	1	TE-6315P-1	SENS,T-N,0.1%,8' AVG
R-1-R-3	3	CVR-21C-0	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
SF-C,SF-S	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
TS-1	2	A70HA-1C	STAT,LL,20',EL,MAN,15/55F
	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
X-VLV	0	VALVE	SEE VALVE SCHEDULE
ZN-H	1	HE-6300-2	XMTR,RH/T-N,WALL,AC/DC

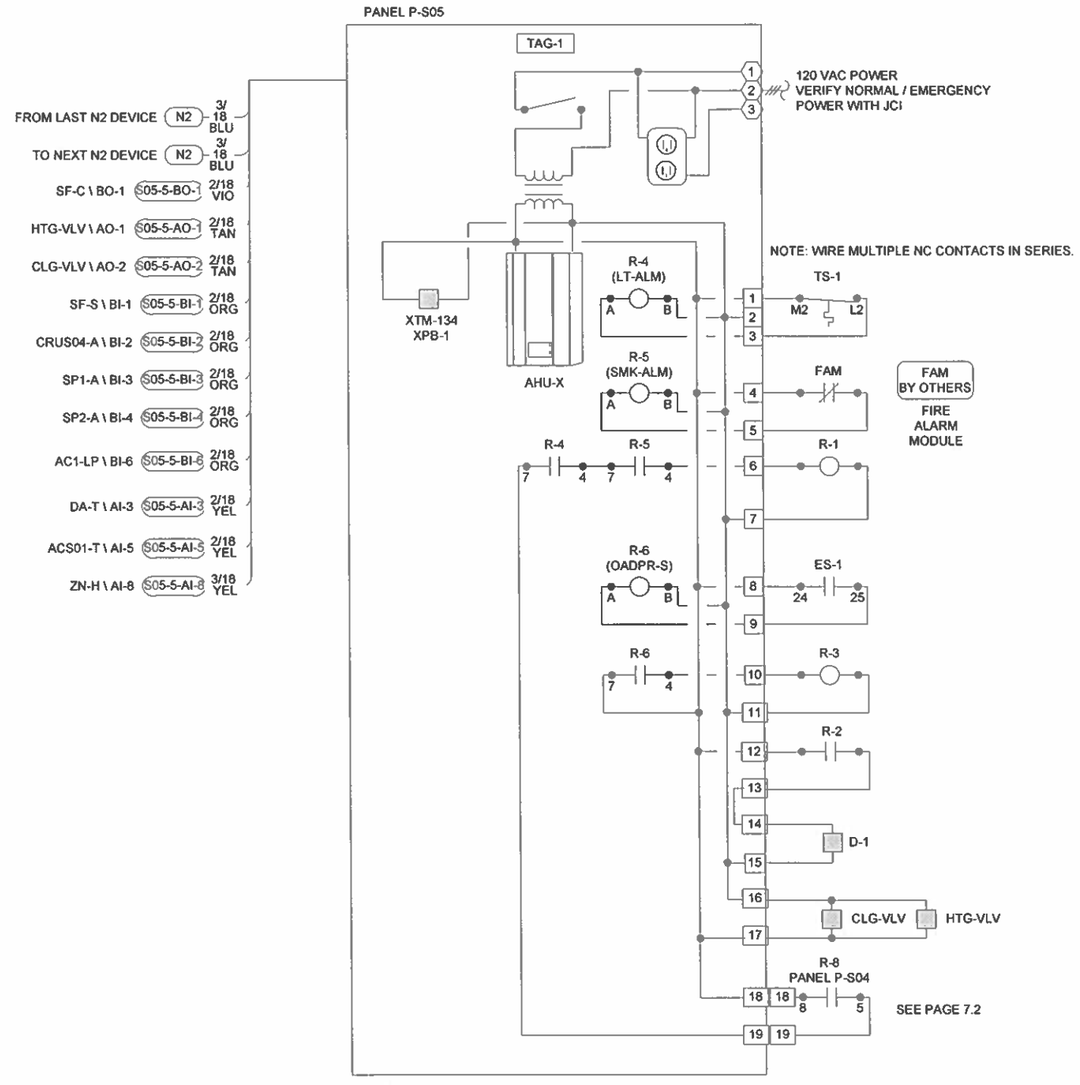




REVISION INFORMATION	Drawing Title: AH-S05 FLOW							
NUMBER								
DATE: 04/12/01		REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY
TIME: 08:49 AM		Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR DATE	APPROVED: BY DATE		
FILE NAME: ahs05f.vsd	Project Title: MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division	Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575	CONTRACT NUMBER: 9 8075-0508	DRAWING NUMBER: 8.1			

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
AHU-X	1	AS-AHU103-300	AHU TERMINATION BD/ELECTRONICS IN EWC35
P-X	1	EN-EXP101-0	EXPANSION COVER AND BACKBONE
R-4-R-6	3	PD-101-35	RLY BASE,3PDT,11PIN,10A
	3	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
XPB-1	1	XPB-821-5	CNTRLR,N2 EXPN MOD,8BI
XTM-134	1	XTM-105-5	CNTRLR,N2 EXTENSION MOD,COMM I/F



PANEL FACE TAGS:
TAG-1: PANEL P-S05
AH-S05
JCI 9 8075-0508

REVISION INFORMATION								
NUMBER								
DATE								
REFERENCE DRAWING		NO	REVISION-LOCATION			ECN	DATE	BY
Sales Engineer	Project Manager	Application Engineer	DRAWN			APPROVED		
PJS	TP	KJK	BY MLR	DATE		BY	DATE	

Drawing Title: **AH-S05 PANEL**

TIME: 08:52 AM
FILE NAME: ahs05p.vsd

Project Title: **MILLER PARK**
ONE BREWERS WAY
MILWAUKEE, WI 53214

JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER: **9 8075-0508**

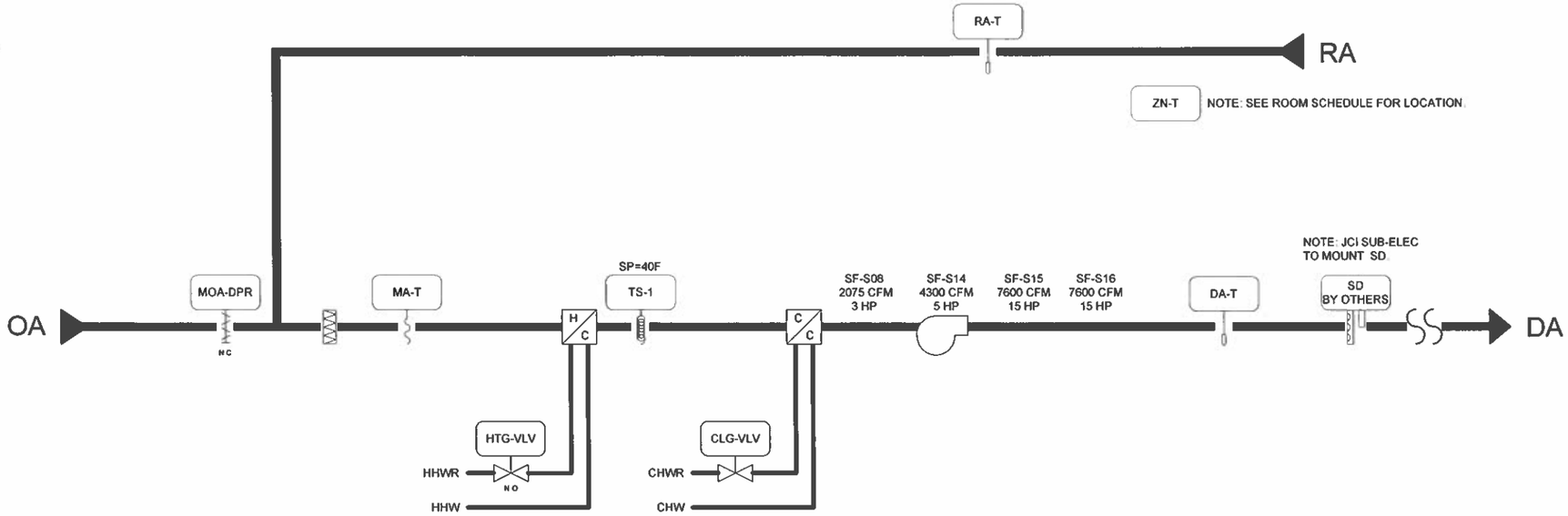
DRAWING NUMBER: **8.2**

AH-S05

Multi-zone Constant Volume 100%OA Air Handling System

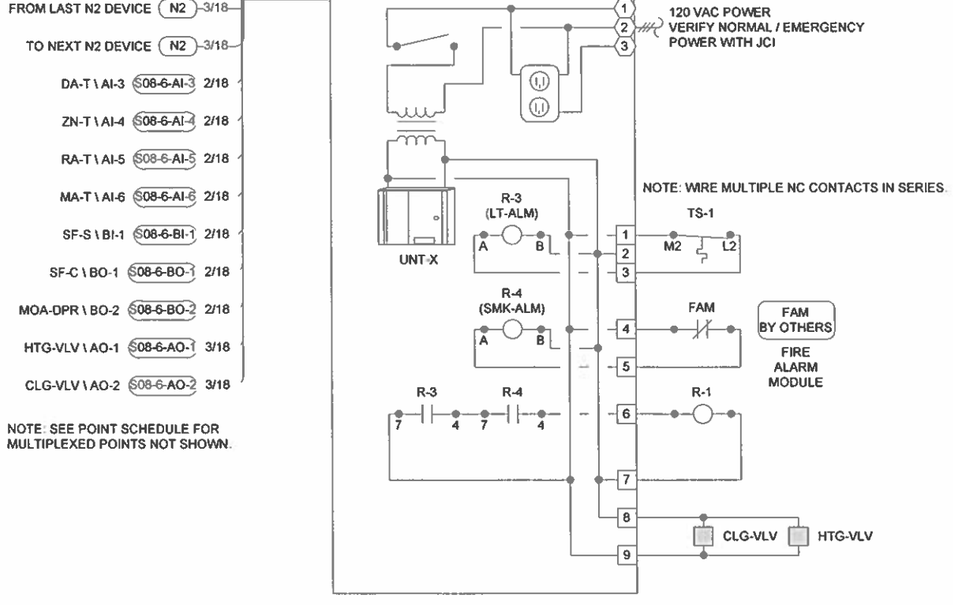
1. The air handling unit is equipped with supply fan, heating coil, cooling coil, pre-filter and final filter.
2. The air handling unit supply fan and associated exhaust fans will be energized through the EMCS on a scheduled basis.
3. The chilled and hot water control valves will modulate in sequence to maintain the discharge air temperature. The discharge air temperature will be reset based on the operation of the zone reheat coil control valves and room humidity.
4. Upon morning start-up of the occupied mode, mechanical cooling will be locked out, the heating control valve will fully open.
5. Smoke detectors located in the supply and exhaust ducts will on detection of smoke shut down the air handler supply fan and associated exhaust fan via a hard-wire interlock with fan starters. Smoke detector status will be indicated at the EMCS.
6. Filter replacement will be scheduled based on supply fan runtime.
7. Current switches will be located on the feed to the supply fan to provide status indication (on/off). In off hours DDC controller will command the chilled water two-way control valve and outside air damper to a fully closed position, hot water control valve to the fully open position.
8. The EMCS will monitor and control all points for each air handling unit.
9. End switches will be provided on all outside air dampers. Hard-wire the end switches into the safety circuit of the supply fan starter.
10. Each zone sensor or group of zone sensors modulate the reheat coil hot water control valve to satisfy the required room temperature. See the Reheat Coil sequence of operation.
11. In off hours, the supply fan will be cycled intermittently at night by the zone sensor to maintain 60°F.

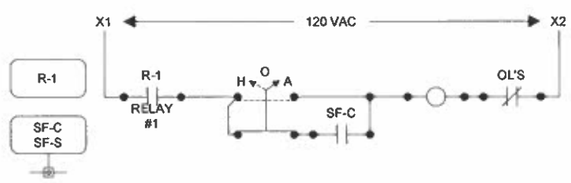
REVISION INFORMATION	Drawing Title							
NUMBER	**SEQUENCE**							
DATE **04/12/01**		REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY
TIME **08:57 AM**		Sales Engineer: PJS / Project Manager: TP / Application Engineer: KJK	DRAWN BY: MLR DATE:	APPROVED BY: DATE:			
FILE NAME **ahs05s.vsd**	Project Title **MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214**	JOHNSON CONTROLS Systems & Services Division	Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575	CONTRACT NUMBER **9 8075-0508**	DRAWING NUMBER **8.3**		



BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
DA-T,RA-T	2	TE-6311P-1	SENS,T-NI,0.1%,8" DUCT
MA-T	1	TE-6316P-1	SENS,T-NI,0.1%,17" AVG
MOA-DPR	0	DAMPER	SEE DAMPER SCHEDULE
R-1	1	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
SF-C,SF-S	1	H-735	SW,CURRENT,1-135A CMND RLY SOLID @VER
TS-1	1	A70HA-1C	STAT,LL,20',EL,MAN,15/55F
	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
X-VLV	0	VALVE	SEE VALVE SCHEDULE
ZN-T	1	TE-6314P-1	SENS,T-NI,0.1%,RM
Panel Devices:			
P-X	1	EN-EWC35-0	TRIPLE ENCLOSURE WITH 100VA POWER
R-3-R-4	2	PD-101-35	RLY BASE,3PDT,11PIN,10A
	2	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
UNT-X	1	AS-UNT141-1	UNT CNTRL 6AI 4BI 6BO 2AO W/O ENCL SCREW





PANEL FACE TAGS:
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PANEL FACE TAGS:
TAG-1: PANEL P-S14 AH-S14 JCI 9 8075-0508

PANEL FACE TAGS:
TAG-1: PANEL P-S15 AH-S15 JCI 9 8075-0508

PANEL FACE TAGS:
TAG-1: PANEL P-S16 AH-S16 JCI 9 8075-0508

REVISION INFORMATION								
NUMBER								
DATE 04/12/01								
TIME 09:04 AM								
FILE NAME ahs08f.vsd								
REFERENCE DRAWING		NO.	REVISION-LOCATION		ECN	DATE	BY
Sales Engineer PJS	Project Manager TP	Application Engineer KJK	DRAWN BY MLR DATE	APPROVED BY DATE			

Drawing Title
AH-S08 FLOW
TYPICAL FOR AH-S14, AH-S15, AH-S16

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER
9 8075-0508

DRAWING NUMBER
9.1

AH-S08, AH-S14, AH-S15, AH-S16

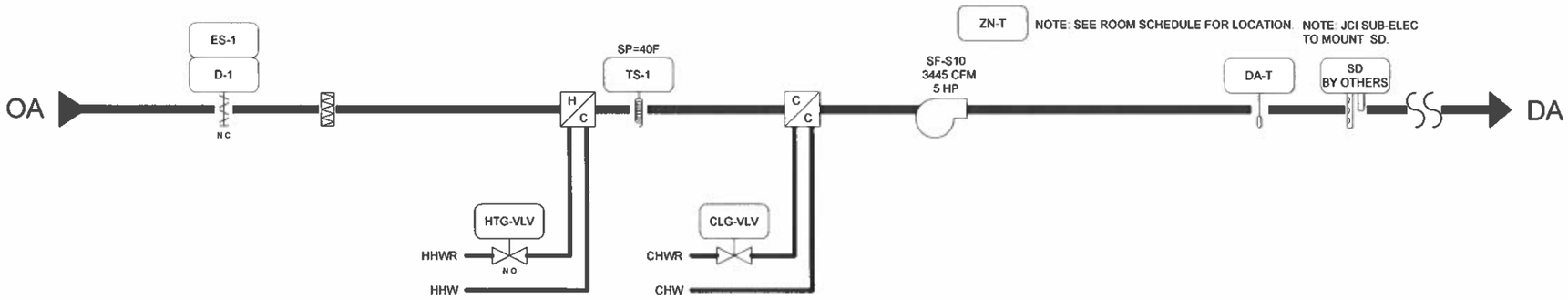
Single-zone Constant Volume MASP Air Handling System with Minimum Outside Air

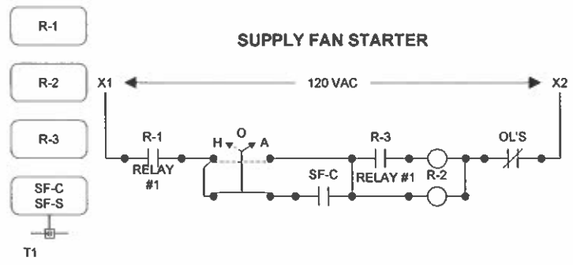
1. The air handling unit is equipped with supply fan, heating coil, cooling coil, pre-filter, final filter and minimum outside air damper.
2. The air handling unit supply fan will be energized through the EMCS on a scheduled basis.
3. No economizer controller is provided.
4. Unless in the warm-up cycle, the controller will verify that the air handling unit is running via a fan proof of flow controller and open the outside air damper to the minimum required ventilation position.
5. No economizer controller is provided.
6. Upon morning start-up of the occupied mode, mechanical cooling will be locked out, the heating coil control valve will fully open, and the outside air damper will move to the closed position, and any interlocked exhaust fans will be de-energized. When the return air temperature reaches the warm-up setpoint, the air handlers will return to normal operation. Provide all relays, solenoids and wiring required to lock out warm-up during normal occupancy hours.
7. The chilled water control valve will modulate in sequence with the heating coil control valve to maintain the discharge air temperature. The discharge air temperature setpoint will be reset based on room temperature.
8. Smoke detectors located in the supply and return ducts will on detection of smoke shut down the air handler supply fan via a hard-wire interlock with fan starters. Smoke detector status will be indicated at the EMCS.
9. Filter replacement will be scheduled based on supply fan runtime.
10. Current switches will be located on the feed to the supply fan to provide status indication (on/off). In off hours DDC controller will command the chilled water two-way control valve and outside air damper to a fully closed position, heating coil control valve to fully open position.
11. The EMCS will monitor and control all points for each air handling unit.
12. In off hours, the supply fan will be cycled intermittently at night by the zone sensor to maintain 60°F.

REVISION INFORMATION	Drawing Title						
NUMBER	SEQUENCE						
DATE 04/12/01		REFERENCE DRAWING	NO	REVISION LOCATION	ECN	DATE	BY
TIME 09:07 AM		Sales Engineer: PJS / Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR DATE		APPROVED: BY DATE	
FILE NAME ahs08s.vsd	Project Title: MILLER PARK, ONE BREWERS WAY, MILWAUKEE, WI 53214	JOHNSON CONTROLS, Systems & Services Division		Branch Information: Wisconsin Area Office, 529 N. Jackson Street, Milwaukee, WI 53202, Phone: 414-524-7500, Fax: 414-524-7575		CONTRACT NUMBER: 9 8075-0508	DRAWING NUMBER: 9.2

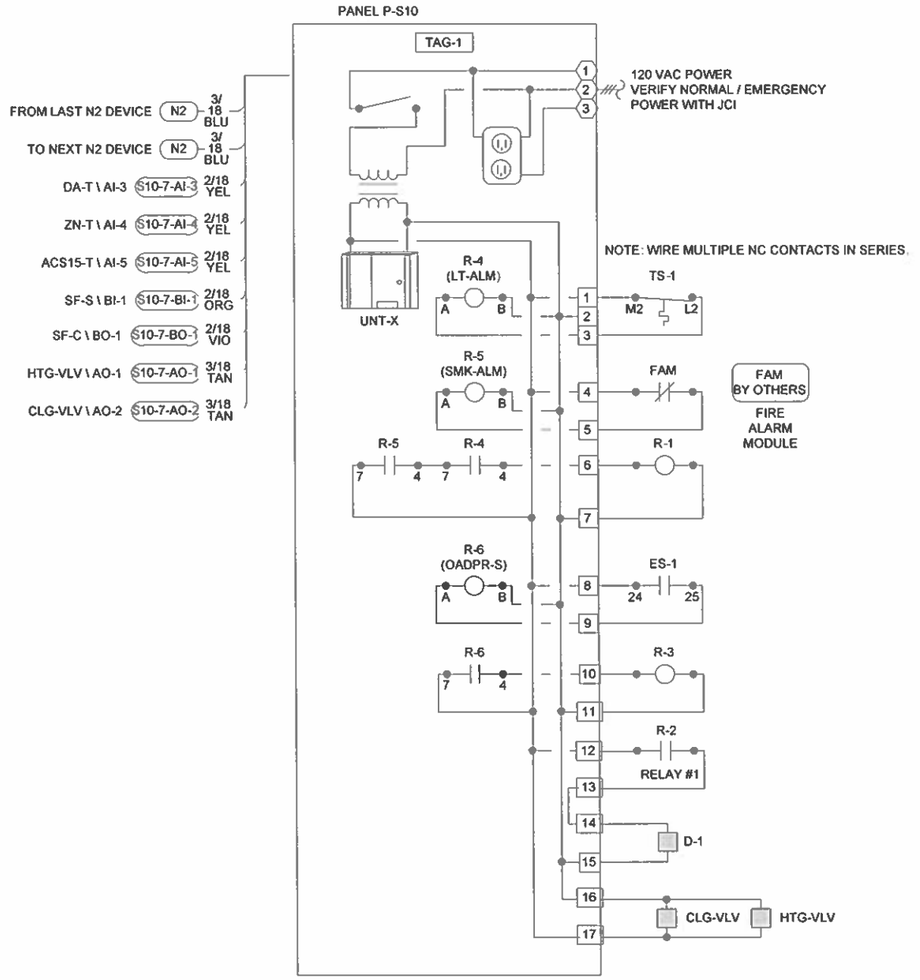
BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
D-1, ES-1	0	DAMPER	SEE DAMPER SCHEDULE
DA-T	1	TE-6311P-1	SENS,T-Ni,0.1%,8" DUCT
R-1-R-3	3	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
SF-C,SF-S	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
TS-1	1	A70HA-1C	STAT,LL,20',EL,MAN,15/55F
	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
X-VLV	0	VALVE	SEE VALVE SCHEDULE
ZN-T	1	TE-6314P-1	SENS,T-Ni,0.1%,RM





REVISION INFORMATION	Drawing Title									
NUMBER	AH-S10 FLOW									
DATE 04/12/01		REFERENCE DRAWING		NO.	REVISION LOCATION		ECN	DATE	BY	
TIME 09:16 AM		Sales Engineer PJS	Project Manager TP	Application Engineer KJK	DRAWN BY MLR	DATE	APPROVED BY	DATE		
FILE NAME ahs10f.vsd	Project Title MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division			Branch Information Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER 9 8075-0508			
							DRAWING NUMBER 10.1			



PANEL FACE TAGS:
TAG-1: PANEL P-S10
AH-S10
JCI 9 8075-0508

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
P-X	1	EN-EWC35-0	TRIPLE ENCLOSURE WITH 100VA POWER
R-4-R-6	3	PD-101-35	RLY BASE,3PDT,11PIN,10A
	3	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
UNT-X	1	AS-UNT141-1	UNT CNTRL 6AI 4BI 6BO 2AO W/O ENCL SCREW

REVISION INFORMATION	Drawing Title: AH-S10 PANEL							
NUMBER								
DATE: 04/12/01								
TIME: 09:19 AM		REFERENCE DRAWING		NO.	REVISION-LOCATION		ECN	DATE / BY
FILE NAME: ahs10p.vsd		Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR DATE		APPROVED: BY DATE	
	Project Title: MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division			Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER: 9 8075-0508	
							DRAWING NUMBER: 10.2	

AH-S10

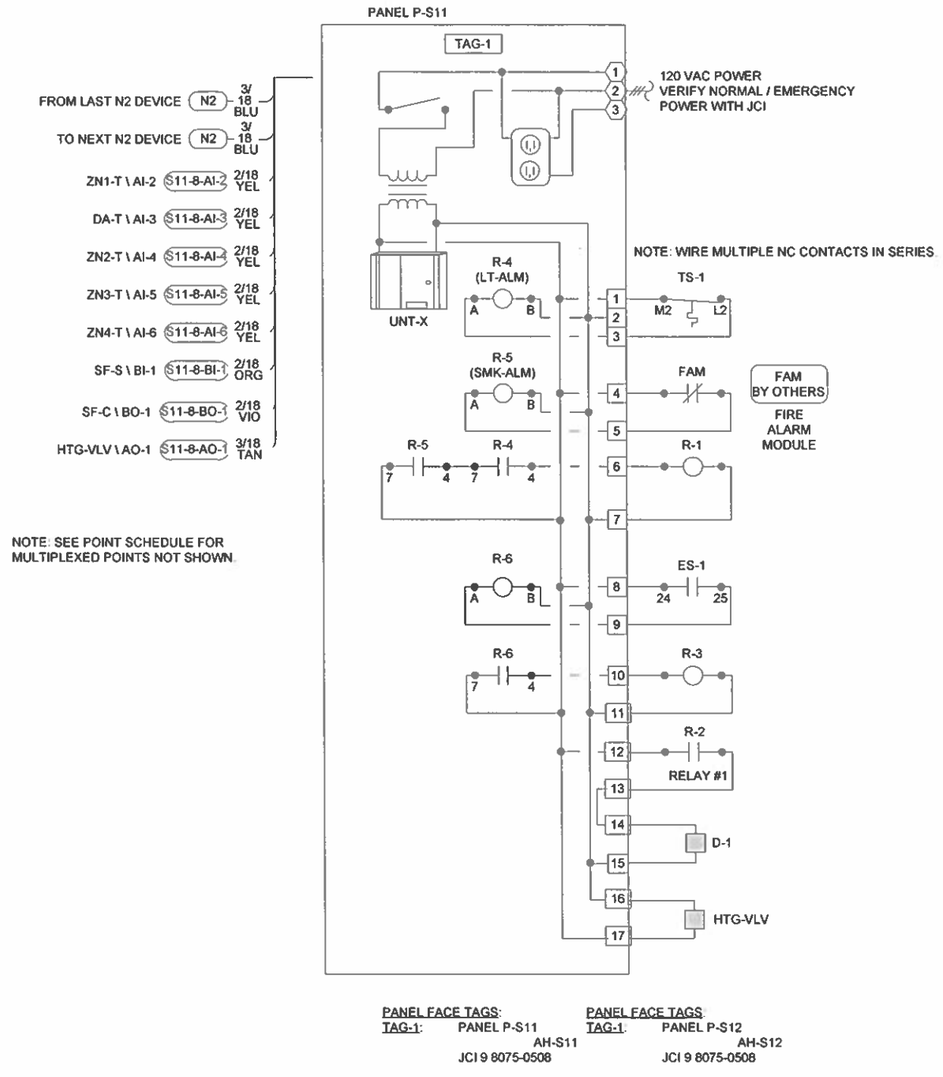
Single-zone Constant Volume 100%OA Air Handling System

1. The air handling unit is equipped with supply fan, heating coil, cooling coil, pre-filter and final filter.
2. The air handling unit supply fan and associated exhaust fans will be energized through the EMCS on a scheduled basis.
3. The chilled and hot water control valves will modulate in sequence to maintain the discharge air temperature. The discharge air temperature setpoint is reset based on room temperature.
4. Upon morning start-up of the occupied mode, mechanical cooling will be locked out, the heating control valve will fully open.
5. Smoke detectors located in the supply and exhaust ducts will on detection of smoke shut down the air handler supply fan and associated exhaust fan via a hard-wire interlock with fan starters. Smoke detector status will be indicated at the EMCS.
6. Filter replacement will be scheduled based on supply fan runtime.
7. Current switches will be located on the feed to the supply fan to provide status indication (on/off). In off hours DDC controller will command the chilled water two-way control valve and outside air damper to a fully closed position, hot water control valve to the fully open position.
8. The EMCS will monitor and control all points for each air handling unit.
9. End switches will be provided on all outside air dampers. Hard-wire the end switches into the safety circuit of the supply fan starter.
10. In off hours, the supply fan will be cycled intermittently at night by the zone sensor to maintain 60°F.

REVISION INFORMATION	Drawing Title									
NUMBER	**SEQUENCE**									
DATE 04/12/01		REFERENCE DRAWING		NO.	REVISION LOCATION		ECN	DATE	BY	
TIME 09:22 AM		Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN BY MLR	DATE	BY	APPROVED DATE		
FILE NAME ahs10s.vsd	Project Title: **MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214**	JOHNSON CONTROLS Systems & Services Division			Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575			CONTRACT NUMBER: **9 8075-0508**		
								DRAWING NUMBER: **10.3**		

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
P-X	1	EN-EWC35-0	TRIPLE ENCLOSURE WITH 100VA POWER
R-4-R-6	3	PD-101-35	RLY BASE,3PDT,11PIN,10A
	3	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
UNT-X	1	AS-UNT141-1	UNT CNTRL 6AI 4BI 6BO 2AO W/O ENCL SCREW



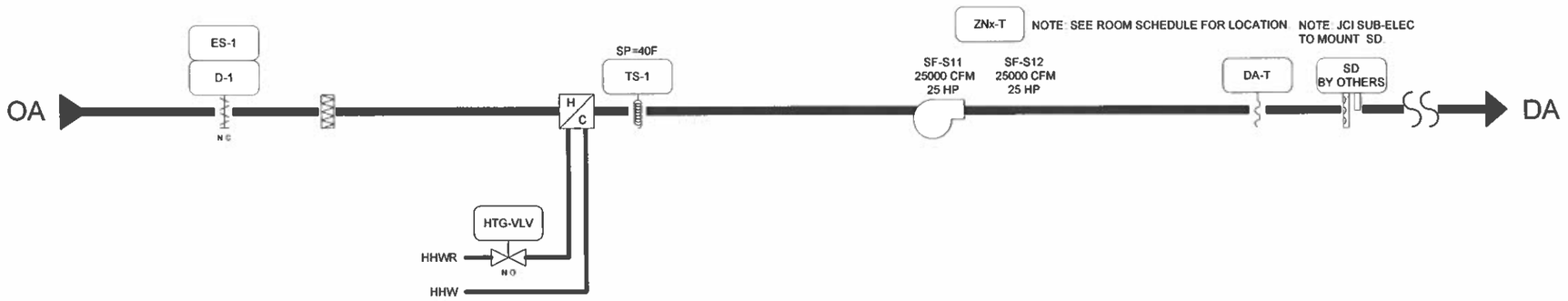
PANEL FACE TAGS:
TAG-1: PANEL P-S11
AH-S11
JCI 9 8075-0508

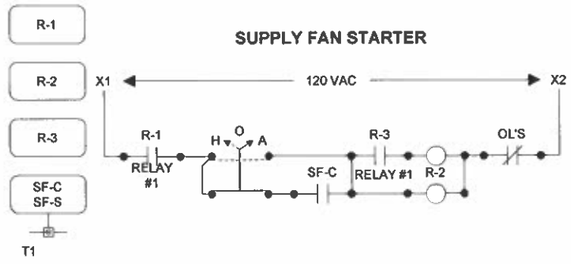
PANEL FACE TAGS:
TAG-1: PANEL P-S12
AH-S12
JCI 9 8075-0508

REVISION INFORMATION	Drawing Title							
NUMBER	AH-S11 PANEL TYPICAL FOR AH-S12							
DATE 04/12/01	REFERENCE DRAWING		NO	REVISION-LOCATION		ECN	DATE	BY
TIME 09:29 AM	Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN BY MLR DATE	APPROVED BY DATE			
FILE NAME ahs11p.vsd	Project Title MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division	Branch Information Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575	CONTRACT NUMBER 9 8075-0508	DRAWING NUMBER 11.2			

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
D-1, ES-1	0	DAMPER	SEE DAMPER SCHEDULE
DA-T	1	TE-6316P-1	SENS,T-NI,0.1%,17' AVG
R-1-R-3	3	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
SF-C,SF-S	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
TS-1	4	A70HA-1C	STAT,LL,20',EL,MAN,15/55F
	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
X-VLV	0	VALVE	SEE VALVE SCHEDULE
ZNx-T	4	TE-6314P-1	SENS,T-NI,0.1%,RM





REVISION INFORMATION	Drawing Title: AH-S11 FLOW TYPICAL FOR AH-S12							
NUMBER								
DATE: 04/12/01								
TIME: 09:30 AM								
FILE NAME: ahs11f.vsd								
		REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY
		Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR DATE	APPROVED: BY DATE		
	Project Title: MILLER PARK, ONE BREWERS WAY, MILWAUKEE, WI 53214	JOHNSON CONTROLS, Systems & Services Division			Branch Information: Wisconsin Area Office, 529 N. Jackson Street, Milwaukee, WI 53202, Phone: 414-524-7500, Fax: 414-524-7575	CONTRACT NUMBER: 9 8075-0508	DRAWING NUMBER: 11.1	

AH-S11, AH-S12

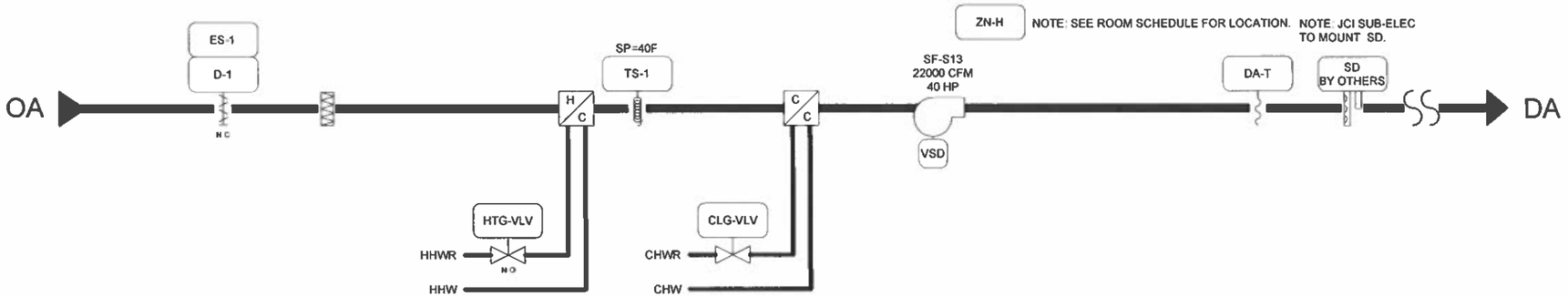
Service Tunnel Ventilation

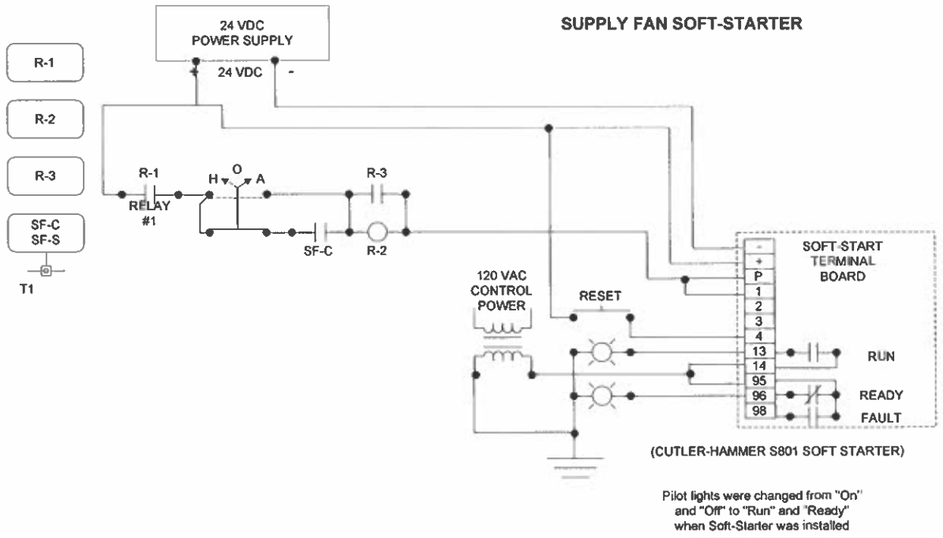
1. The tunnel exhaust and supply fans will be interlocked to ensure that they always operate at the same time. Provide the CO gas detection system.
2. The fans will be energized through the EMCS based on CO sensors located in the tunnel, reading a preset CO level. Simultaneously, the outside air and exhaust air dampers will open. The heating hot water valve will modulate to maintain a space temperature of 55°F +/- 5°F.
3. The CO will be overridden should the space temperature in the tunnel fall below 50°F as determined by any one of four temperature sensors.
4. Upon a call for heating, the outside air and exhaust air dampers will open, the fans will be energized and the heating hot water valve will be fully open. The system will continue to operate until a space temperature of 60°F is detected by all temperature sensors.
5. Smoke detectors located in the supply and exhaust ducts will on detection of smoke shut down the fans via a hard-wire interlock with the fan starters. Smoke detectors will indicate status at EMCS.
6. Filter replacement will be scheduled based on supply fan runtime.
7. Current switches will be located on the feed to the fans to provide status indication.
8. If the supply fan starter switch is in the Hand position, a hard-wired solenoid will open the outside air damper fully, and when the dampers fully open as proven from the end switch, the supply fan will energize. Hard-wire the damper end switch into the safety side of the fan motor starter to prevent the fan from energizing from the EMCS or the Hand position of the starter, unless the end switch is closed.
9. Furnish and install the CO detection system. Monitor the status of the CO alarm on the EMCS.

REVISION INFORMATION	Drawing Title							
NUMBER	**SEQUENCE**							
DATE 04/12/01		REFERENCE DRAWING		NO.	REVISION-LOCATION	ECN	DATE	BY
TIME 09:48 AM		Sales Engineer: PJS / Project Manager: TP	Application Engineer: KJK	DRAWN BY: MLR DATE	APPROVED BY DATE			
FILE NAME ahs11s.vsd	Project Title: **MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214**	JOHNSON CONTROLS Systems & Services Division	Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575	CONTRACT NUMBER: **9 8075-0508**	DRAWING NUMBER: **11.3**			

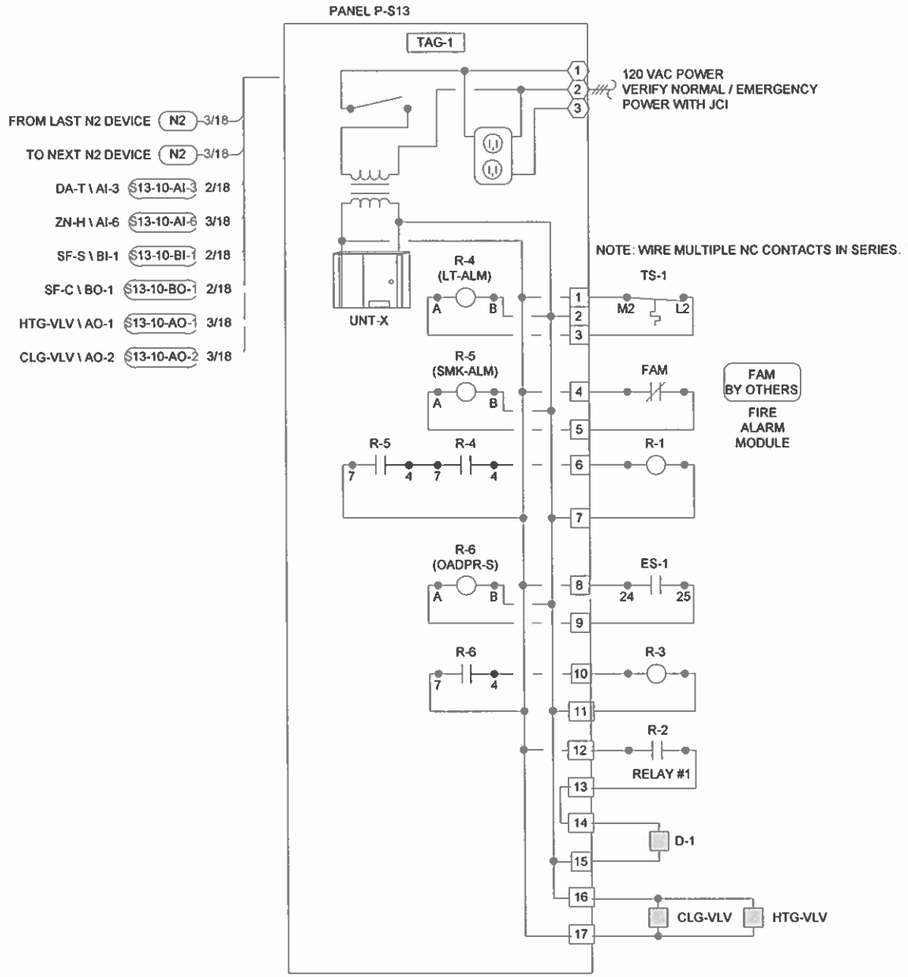
BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices.			
D-1, ES-1	0	DAMPER	SEE DAMPER SCHEDULE
DA-T	1	TE-6315P-1	SENS,T-Ni,0.1%,8' AVG
R-1-R-3	3	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
SF-C,SF-S	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
TS-1	2	A70HA-1C	STAT,LL,20',EL,MAN,15/55F
	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
X-VLV	0	VALVE	SEE VALVE SCHEDULE
ZN-H	1	HE-6300-2	XMTR,RH/T-Ni,WALL,AC/DC





REVISION INFORMATION	Drawing Title						
NUMBER	AH-S13 FLOW	Soft Starter Added	2003-14	2003 SRF Project			DAM
DATE 11/06/09		REFERENCE DRAWING	NO	REVISION-LOCATION	ECN	DATE	BY
TIME 09:12 AM	Project Title	Sales Engineer: PJS / Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR DATE	APPROVED: BY	DATE	
FILE NAME ahs13f-SS4.vsd	MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division	Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER: 9 8075-0508		
					DRAWING NUMBER: 12.1		



PANEL FACE TAGS:
TAG-1 PANEL P-S13
AH-S13
JCI 9 8075-0508

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
P-X	1	EN-EWC35-0	TRIPLE ENCLOSURE WITH 100VA POWER
R-4-R-6	3	PD-101-35	RLY BASE,3PDT,11PIN,10A
	3	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
UNT-X	1	AS-UNT141-1	UNT CNTRL 6AI 4BI 6BO 2AO W/O ENCL SCREW

REVISION INFORMATION
NUMBER
DATE 04/12/01
TIME 09:57 AM
FILE NAME ahs13p.vsd

Drawing Title
AH-S13 PANEL

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

REFERENCE DRAWING	NO	REVISION-LOCATION	ECN	DATE	BY

Sales Engineer	Project Manager	Application Engineer	DRAWN	APPROVED
PJS	TP	KJK	BY MLR DATE	BY DATE

JOHNSON CONTROLS
Systems & Services Division
Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

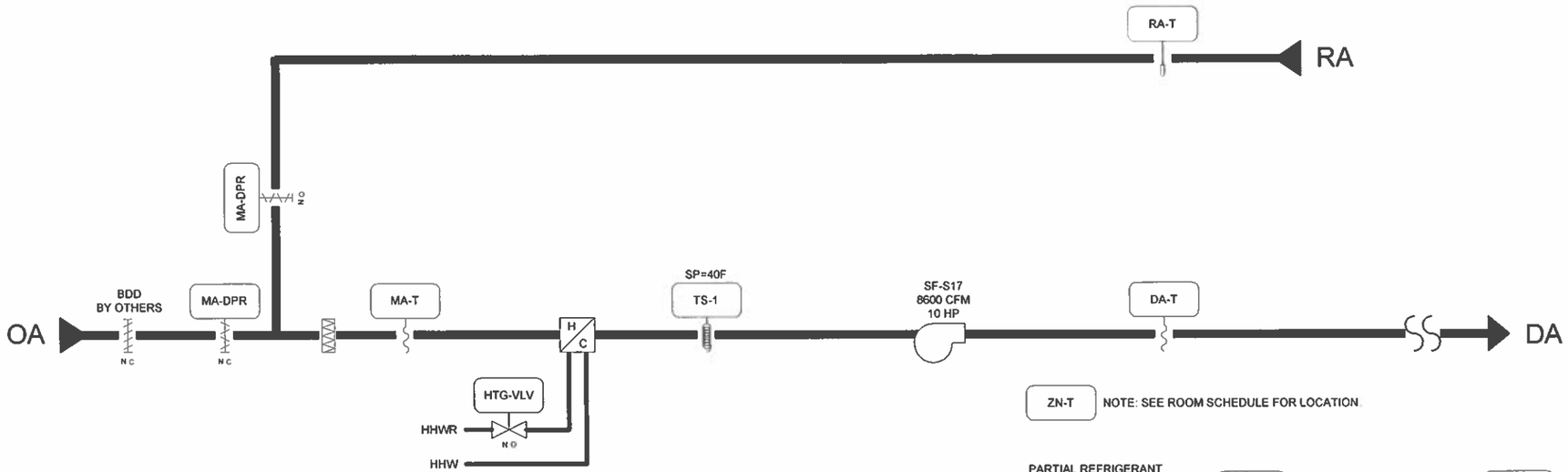
CONTRACT NUMBER
9 8075-0508
DRAWING NUMBER
12.2

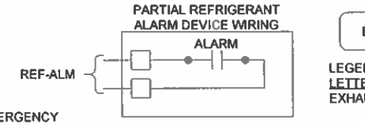
AH-S13

Single-zone Constant Volume MASP Air Handling System with Minimum Outside Air

1. The air handling unit is equipped with supply fan, heating coil, cooling coil, pre-filter, final filter and minmum outside air damper.
2. The air handling unit supply fan will be energized through the EMCS on a scheduled basis.
3. No economizer controller is provided.
4. Unless in the warm-up cycle, the controller will verify that the air handling unit is running via a fan proof of flow controller and open the outside air damper to the minimum required ventilation position.
5. No economizer controller is provided.
6. Upon morning start-up of the occupied mode, mechanical cooling will be locked out, the heating coil control valve will fully open, and the outside air damper will move to the closed position, and any interlocked exhaust fans will be de-energized. When the return air temperature reaches the warm-up setpoint, the air handlers will return to normal operation. Provide all relays, solenoids and wiring required to lock out warm-up during normal occupancy hours.
7. The chilled water control valve will modulate in sequence with the heating coil control valve to maintain the discharge air temperature. The discharge air temperature setpoint will be reset based on room temperature.
8. Smoke detectors located in the supply and return ducts will on detection of smoke shut down the air handler supply fan via a hard-wire interlock with fan starters. Smoke detector status will be indicated at the EMCS.
9. Filter replacement will be scheduled based on supply fan runtime.
10. Current switches will be located on the feed to the supply fan to provide status indication (on/off). In off hours DDC controller will command the chilled water two-way control valve and outside air damper to a fully closed position, heating coil control valve to fully open position.
11. The EMCS will monitor and control all points for each air handling unit.
12. In off hours, the supply fan will be cycled intermittently at night by the zone sensor to maintain 60°F.

REVISION INFORMATION	Drawing Title							
NUMBER	**SEQUENCE**							
DATE 04/12/01		REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY
TIME 10:01 AM		Sales Engineer: PJS / Project Manager: TP / Application Engineer: KJK		DRAWN: BY MLR DATE		APPROVED: BY DATE	
FILE NAME ahs13s.vsd	Project Title: **MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214**	JOHNSON CONTROLS Systems & Services Division		Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER: **9 8075-0508**		DRAWING NUMBER: **12.3**





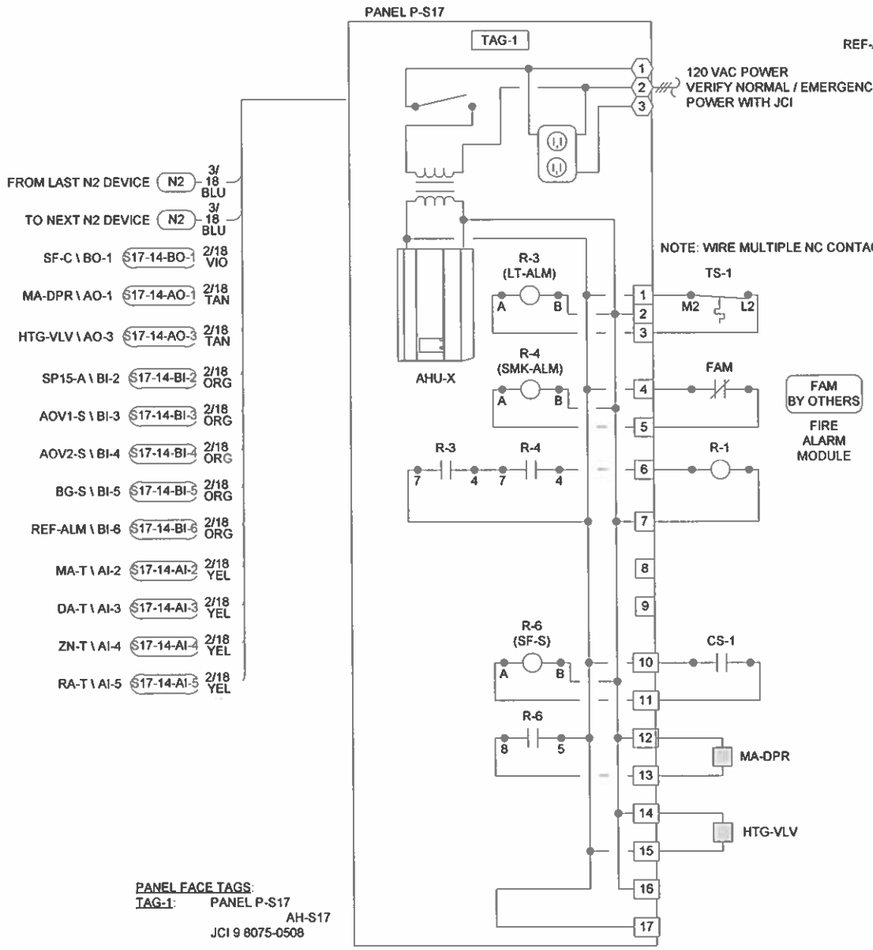
BG-S

LEGEND PLATE
LETTERING:
EXHAUST FAN

NOTE: SEE MANUFACTURER'S WIRING DIAGRAM
FOR COMPLETE WIRING DETAILS.

AOV1-S
AOV2-S

LEGEND PLATE
LETTERING:
OFF
AUTO VENT

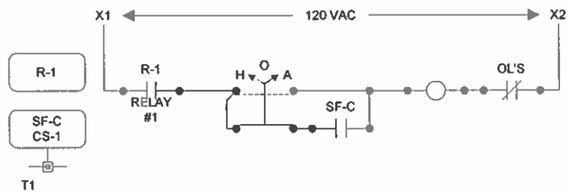


FAM
BY OTHERS

FIRE
ALARM
MODULE

PANEL FACE TAGS:
TAG-1: PANEL P-S17
AH-S17
JCI 9 8075-0508

SUPPLY FAN STARTER



EMERGENCY SHUTOFF / EXHAUST FAN OVERRIDE

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
AOVx-S	1	ZB2BG0	KEY OPERATOR - SQD
	1	ZB2BY2002	LEGEND PLATE - SQD
	1	ZB2BZ103	CONTACT BLOCK 2 NO - SQD
BG-S	1	800T-N28	BREAK GLASS SPARES - AB
	1	800T-NX114	BREAK GLASS SWITCH - AB
	1	800T-X559E	LEGEND PLATE - AB
DA-T, MA-T	2	TE-6315P-1	SENS,T-Ni,0.1%,8' AVG
MA-T, TS-1	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
R-1	1	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
RA-T	1	TE-6311P-1	SENS,T-Ni,0.1%,8" DUCT
SF-C,CS-1	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
TAG-2	1	M-8000-391	NAMEPLT,LAMICOID,1 LINE
TS-1	1	A70HA-1C	STAT,LL,20',EL,MAN,15/55F
X-DPR	0	DAMPER	SEE DAMPER SCHEDULE
X-DPR, X-VLV	3	PD-101-1	RESISTOR, 499OHM 1/2W 1%
X-VLV	0	VALVE	SEE VALVE SCHEDULE
ZN-T	1	TE-6314P-1	SENS,T-Ni,0.1%,RM
Panel Devices:			
AHU-X	1	AS-AHU103-300	AHU TERMINATION BD/ELECTRONICS IN EWC35
P-X	1	EN-EXP101-0	EXPANSION COVER AND BACKBONE
R-3,4,6	3	PD-101-35	RLY BASE,3PDT,11PIN,10A
	3	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE

REVISION INFORMATION							
NUMBER			1	RECORD DRAWINGS		6/14/2001	MLR
DATE	REFERENCE DRAWING	NO	REVISION LOCATION		ECN	DATE	BY
06/14/01	Sales Engineer: PJS / Project Manager: TP / Application Engineer: KJK		DRAWN BY: MLR DATE		APPROVED BY	DATE	
TIME 10:39 AM							
FILE NAME ahs17f.vsd							

Drawing Title
AH-S17 FLOW

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

JOHNSON CONTROLS
Systems & Services Division
Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER
9 8075-0508

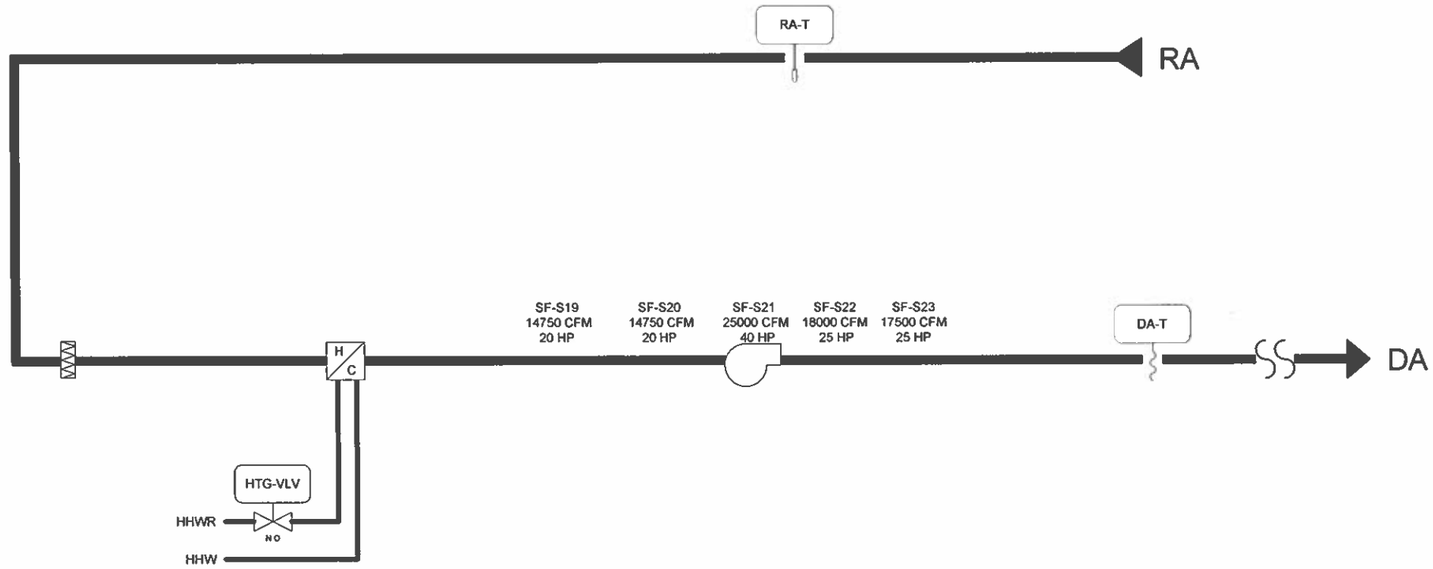
DRAWING NUMBER
13.1

AH-S17

Chiller Room Ventilation

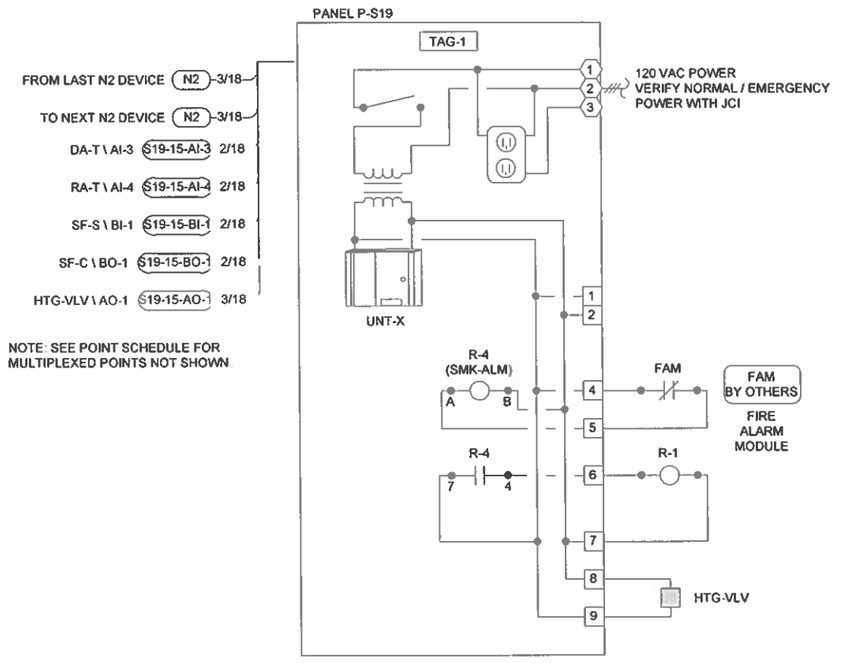
1. Upon the activation of the refrigeration equipment the air handling unit will be energized from the EMCS. This will mean that the supply fan will start and the outside air damper will move to its minimum position.
2. The hot water valve, outside and return dampers will modulate to maintain space temperature. The heating hot water valve will only modulate open should the space temperature fall below 50°F.
3. Upon the activation of the refrigerant leak detection system, an audible and visual alarm will be raised outside the chiller room. At the same time the exhaust fan will be energized from an interlock to the refrigerant alarm contact, and the outside air damper will move to a fully open position from the EMCS. The fan will continue to run until the alarm has been manually reset.
4. Provide an emergency break glass switch located outside the refrigeration equipment room which will upon activation actuate the exhaust fan and move the outside air damper to a fully open position. The fan will continue to run until the switch has been manually reset.
5. Removed per Brewers Operations.
6. Provide a manual key operated "AUTO-OFF-VENT" switch that will also be provided for the exhaust fan, supply fan and outside air damper.
7. Current switches located on the feed to the fans will provide status indication.
8. Filter replacement will be scheduled based on supply fan runtime.
9. The "AUTO-OFF-VENT" switch will have the first priority of control with the emergency break glass switch having second priority. The refrigerant leak detection system will have the lowest priority of control when the "AUTO-OFF-VENT" switch is in "AUTO" and the emergency break glass switch is in the normal position.

REVISION INFORMATION	Drawing Title						
NUMBER	**SEQUENCE**						
			1	RECORD DRAWINGS			MLR
		REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY
DATE 06/14/01		Sales Engineer: PJS / Project Manager: TP	Application Engineer: KJK	DRAWN BY MLR DATE		APPROVED BY DATE	
TIME 10:46 AM	Project Title			Branch Information		CONTRACT NUMBER	
	MILLER PARK **ONE BREWERS WAY** **MILWAUKEE, WI 53214**	JOHNSON CONTROLS Systems & Services Division		Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		**9 8075-0508**	
FILE NAME ahs17s.vsd						DRAWING NUMBER **13.2**	

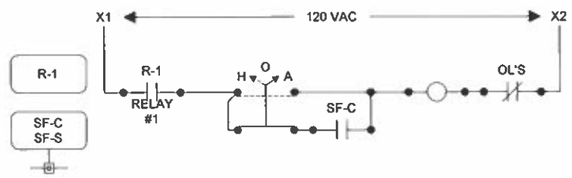


BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
DA-T	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
	1	TE-6315P-1	SENS,T-Ni,0.1%,8' AVG
R-1	1	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
RA-T	1	TE-6311P-1	SENS,T-Ni,0.1%,8" DUCT
SF-C,SF-S	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
X-VLV	0	VALVE	SEE VALVE SCHEDULE
Panel Devices:			
P-X	1	EN-EWC35-0	TRIPLE ENCLOSURE WITH 100VA POWER
R-4	1	PD-101-35	RLY BASE,3PDT,11PIN,10A
	1	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
UNT-X	1	AS-UNT141-1	UNT CNTRL 6AI 4BI 6BO 2AO W/O ENCL SCREW



SUPPLY FAN STARTER



PANEL FACE TAGS:
TAG-1: PANEL P-S19
AH-S19
JCI 9 8075-0508

PANEL FACE TAGS:
TAG-1: PANEL P-S20
AH-S20
JCI 9 8075-0508

PANEL FACE TAGS:
TAG-1: PANEL P-S21
AH-S21
JCI 9 8075-0508

PANEL FACE TAGS:
TAG-1: PANEL P-S22
AH-S22
JCI 9 8075-0508

PANEL FACE TAGS:
TAG-1: PANEL P-S23
AH-S23
JCI 9 8075-0508

REVISION INFORMATION
NUMBER
DATE 04/12/01
TIME 10:23 AM
FILE NAME ahs19f.vsd

Drawing Title
AH-S19 FLOW
TYPICAL FOR AH-S20, AH-S21, AH-S22, AH-S23

REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY

Sales Engineer	Project Manager	Application Engineer	DRAWN		APPROVED	
PJS	TP	KJK	BY MLR	DATE	BY	DATE

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER
9 8075-0508

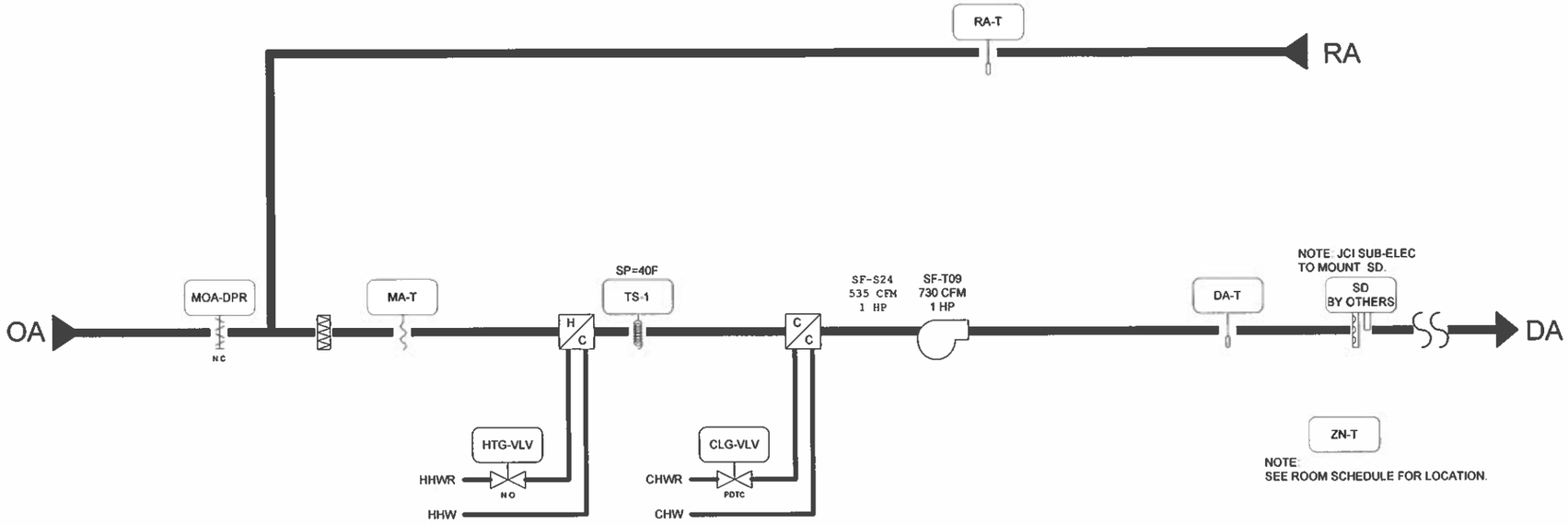
DRAWING NUMBER
14.1

AH-S19, AH-S20, AH-S21, AH-S22, AH-S23

Constant Volume 100%RA Air Handling System

1. The air handling unit is equipped with supply fan, heating coil, pre-filter and final filter.
2. The air handling unit supply fan will be energized through the EMCS on a scheduled basis.
3. The hot water control valve will modulate to maintain the discharge air temperature. The discharge air temperature setpoint is reset based on return air temperature.
4. Smoke detectors located in the supply and return ducts will on detection of smoke shut down the air handler supply fan via a hard-wire interlock with fan starters. Smoke detector status will be indicated at the EMCS.
5. Filter replacement will be scheduled based on supply fan runtime.
6. Current switches will be located on the feed to the supply fan to provide status indication (on/off). In off hours DDC controller will command the hot water control valve to the fully open position.
7. The EMCS will monitor and control all points for each air handling unit.

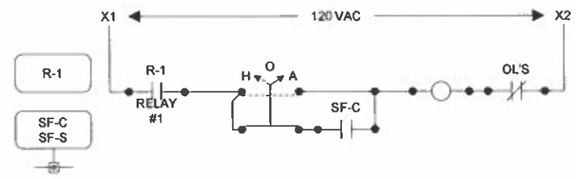
REVISION INFORMATION	Drawing Title							
NUMBER	**SEQUENCE**							
DATE 04/12/01		REFERENCE DRAWING	NO	REVISION LOCATION	ECN	DATE	BY	
TIME 10:26 AM		Sales Engineer: PJS / Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR DATE		APPROVED: BY DATE		
FILE NAME ahs19s.vsd	Project Title: **MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214**	JOHNSON CONTROLS Systems & Services Division		Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER: **9 8075-0508**		DRAWING NUMBER: **14.2**

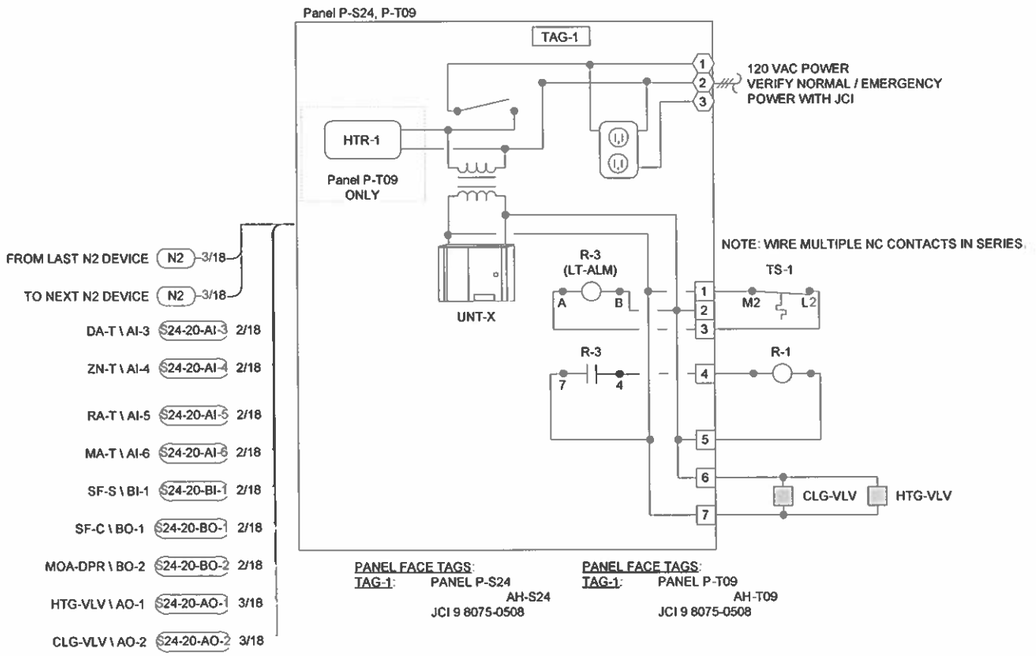


BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
DA-T,RA-T	2	TE-6311P-1	SENS,T-Ni,0.1%,8" DUCT
MA-T	1	TE-6315P-1	SENS,T-Ni,0.1%,8' AVG
MA-T,TS-1	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
MOA-DPR	0	DAMPER	SEE DAMPER SCHEDULE
R-1	1	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
SF-C,SF-S	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
TS-1	1	A70HA-1C	STAT,LL,20',EL,MAN,15/55F
X-VLV	0	VALVE	SEE VALVE SCHEDULE
ZN-T	1	TE-6314P-1	SENS,T-Ni,0.1%,RM
Panel Devices:			
P-X	1	EN-EWC35-0	TRIPLE ENCLOSURE WITH 100VA POWER
R-3	1	PD-101-35	RLY BASE,3PDT,11PIN,10A
	1	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
UNT-X	1	AS-UNT141-1	UNT CNTRL 6AI 4BI 6BO 2AO W/O ENCL SCREW
P-T09 PANEL			
Panel Devices:			
HTR-1	1	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
P-T09	1	M-8100-2424	CONTROL CABINET;STD. FACE
R-3	1	PD-101-35	RLY BASE,3PDT,11PIN,10A
	1	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
UNT-X	1	AS-UNT141-1	UNT CNTRL 6AI 4BI 6BO 2AO W/O ENCL SCREW

SUPPLY FAN STARTER





NOTE: SEE POINT SCHEDULE FOR MULTIPLEXED POINTS NOT SHOWN.

PANEL FACE TAGS:
TAG-1: PANEL P-S24
AH-S24
JCI 9 8075-0508

PANEL FACE TAGS:
TAG-1: PANEL P-T09
AH-T09
JCI 9 8075-0508

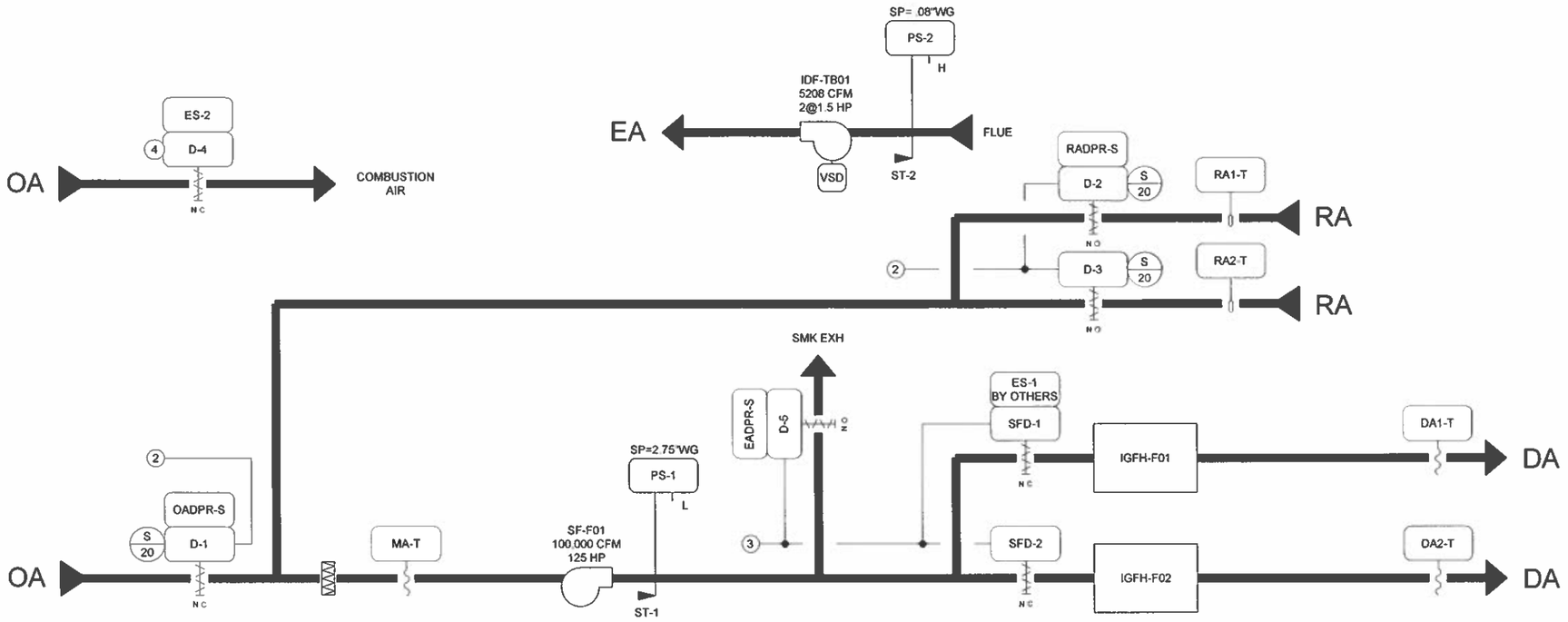
REVISION INFORMATION	Drawing Title: AH-S24 FLOW TYPICAL FOR AH-T09						
NUMBER			1	RECORD DRAWING			MLR
	REFERENCE DRAWING		NO	REVISION-LOCATION	ECN	DATE	BY
DATE 06/14/01	Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR DATE		APPROVED: BY DATE	
TIME 10:49 AM	Project Title: MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division		Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER: 9 8075-0508	
FILE NAME ahs24f.vsd						DRAWING NUMBER: 15.1	

AH-S24, AH-T09

Single-zone Constant Volume MASP Air Handling System with Minimum Outside Air

1. The air handling unit is equipped with supply fan, heating coil, cooling coil, pre-filter, final filter and minimum outside air damper.
2. The air handling unit supply fan will be energized through the EMCS on a scheduled basis.
3. No economizer controller is provided.
4. Unless in the warm-up cycle, the controller will verify that the air handling unit is running via a fan proof of flow controller and open the outside air damper to the minimum required ventilation position.
5. No economizer controller is provided.
6. Upon morning start-up of the occupied mode, mechanical cooling will be locked out, the heating coil control valve will fully open, and the outside air damper will move to the closed position, and any interlocked exhaust fans will be de-energized. When the return air temperature reaches the warm-up setpoint, the air handlers will return to normal operation. Provide all relays, solenoids and wiring required to lock out warm-up during normal occupancy hours.
7. The chilled water control valve will modulate in sequence with the heating coil control valve to maintain the discharge air temperature. The discharge air temperature setpoint will be reset based on room temperature.
8. No smoke detectors will be provided.
9. Filter replacement will be scheduled based on supply fan runtime.
10. Current switches will be located on the feed to the supply fan to provide status indication (on/off). In off hours DDC controller will command the chilled water two-way control valve and outside air damper to a fully closed position, heating coil control valve to fully open position.
11. The EMCS will monitor and control all points for each air handling unit.
12. In off hours, the supply fan will be cycled intermittently at night by the zone sensor to maintain 60°F.

REVISION INFORMATION	Drawing Title								
NUMBER	SEQUENCE								
		REFERENCE DRAWING		NO.	REVISION-LOCATION		ECN	DATE	BY
DATE 04/12/01		Sales Engineer PJS	Project Manager TP	Application Engineer KJK	DRAWN BY MLR	DATE	APPROVED BY	DATE	
TIME 10:37 AM	Project Title	JOHNSON CONTROLS			Branch Information		CONTRACT NUMBER		
	MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	Systems & Services Division			Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		9 8075-0508		
FILE NAME ahs24s.vsd							DRAWING NUMBER 15.2		

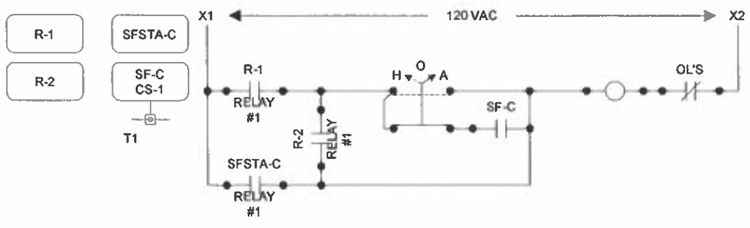


BILL OF MATERIALS

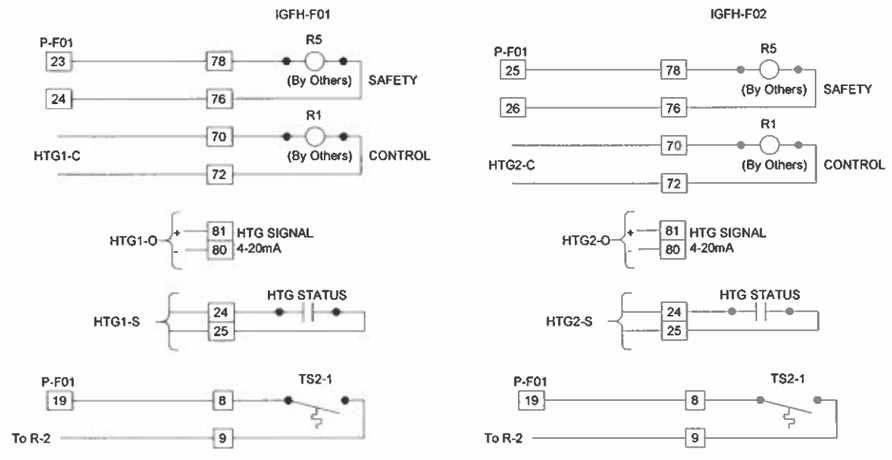
Designation	Qty	Part Number	Description
Field Devices:			
BOWL-T	1	TE-6000-1	SENS,T-Ni,1.0%
	1	TE-6001-2	MTG,OAT SENS (CONDULET)
D-x,SFD-x	0	DAMPER	SEE DAMPER SCHEDULE
ES-2,XDPR-S	4	TS-470	DAMPER POSITION SWITCH - KELE
MA-T	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
MA-T, DAx-T	3	TE-6316P-1	SENS,T-Ni,0.1%,17' AVG
PB-1	1	User Item	EMERGENCY STOP PUSH BUTTON
PS-1	1	AFS-460	SW, AIR FLOW, SPST-NC RESET .05-12" @CLE
PS-2	1	P32AC-2C	SW,DP,SPDT,5",U-BRKT
R-1-2,SFSTA-C	3	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
RAx-T	2	TE-6311P-1	SENS,T-Ni,0.1%,8" DUCT
SF-C,CS-1,IDF-C,ID F-S	2	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
ST-x	2	A520-2-A-1	8" STATIC PROBE, ALUM, 1/4"TUBE @MAMAC

BOWL-T

SUPPLY FAN STARTER



PARTIAL GAS-FIRED HEATER WIRING

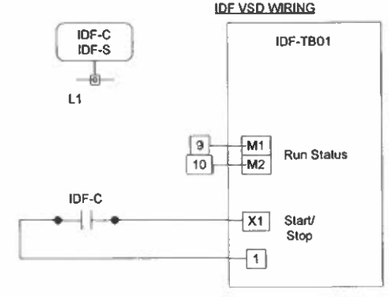


NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

EMERGENCY STOP PUSHBUTTON

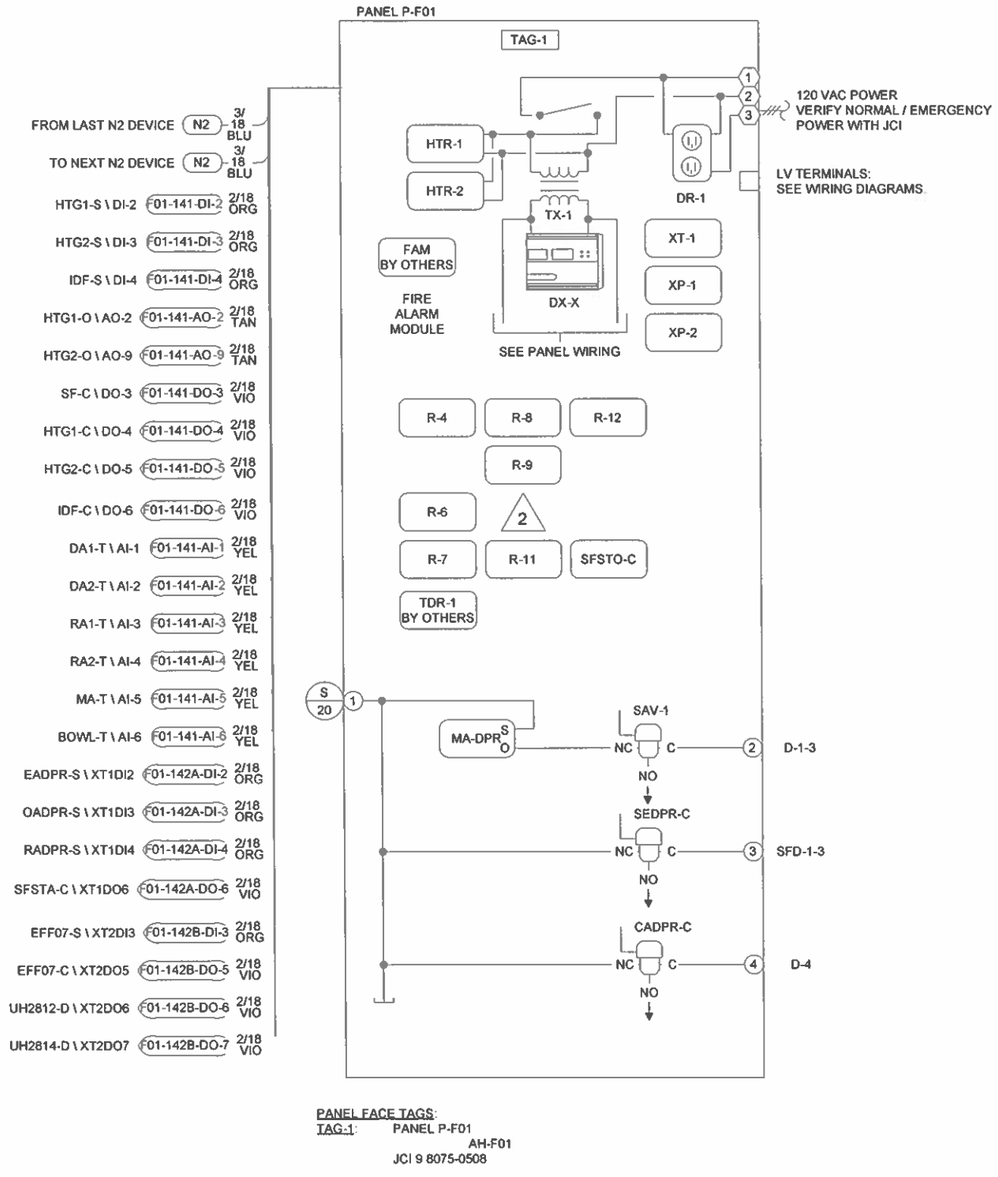
PB-1 LOCATE OUTSIDE FAN CHAMBER

IDF VSD WIRING

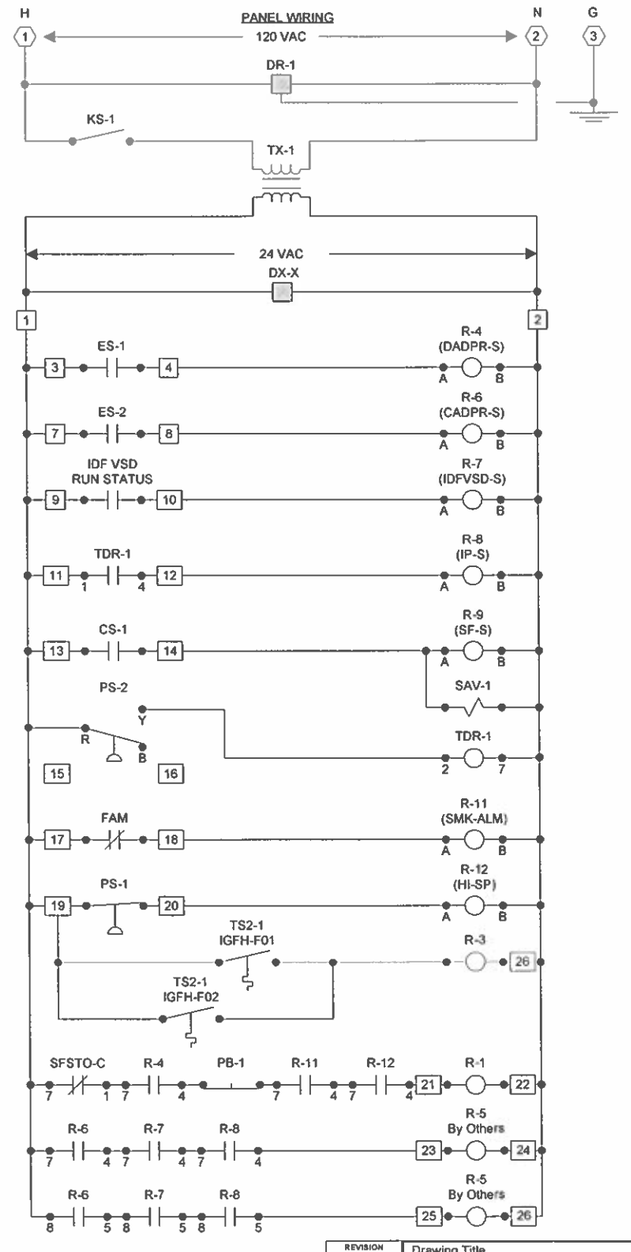


NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

REVISION INFORMATION	Drawing Title						
NUMBER	AH-F01 FLOW						
			1	RECORD DRAWINGS			MLR
DATE 06/14/01	REFERENCE DRAWING		NO	REVISION LOCATION	ECN	DATE	BY
TIME 11:01 AM	Sales Engineer PJS / Project Manager TP	Application Engineer KJK	DRAWN BY MLR DATE	APPROVED BY DATE			
	Project Title		Branch Information		CONTRACT NUMBER		
FILE NAME ahf01f.vsd	MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division	Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		9 8075-0508		
					DRAWING NUMBER 16.1		



PANEL FACE TAGS:
TAG-1: PANEL P-F01
AH-F01
JCI 9 8075-0508



BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices			
DR-1	1	PD-117-2	RECEPTACLE,DUPLEX,UL,WHT
	1	PD-121-1	RECEPTACLE,DUPLEX,CVR
	1	PD-121-6	HANDY BOX 2 IN
DX-X	1	AS-LCPKEY-0	LCP SERVICE PORT ADJ KEY
	1	DX-9100-8454	DIGITAL CONTR., EXTENDED
	1	DX-9100-8990	MTG BASE (DX9100-8454)
HTR-x	2	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
KS-1	1	PD-112-12	KNIFE SWITCH BLOCK
MA-DPR	1	EP-8000-2	XDUCR,EP,0/10V,HI VOL
P-X	1	M-8100-2436	PANEL,STANDARD,15 UNITS
SAV-1,XDPR-C	3	V11HGA-100	3-W SOLENOID,W/OV,24 VAC
SFSTO-C,R-4,6-12	8	PD-101-35	RLY BASE,3PDT,11PIN,10A
	8	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-x	1	PD-114-2	TRANSFORMER 100VA, 120/24
XP-1,2	2	XP-9104-8004	DX EXP MOD,4 DI,4DO TRIAC
XT-1	1	XT-9100-8204	EXTENSION MODULE

REVISION INFORMATION	Drawing Title: AH-F01 PANEL				
NUMBER					
DATE: 06/14/01		1	RECORD DRAWINGS		MLR
TIME: 10:57 AM		REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN / DATE / BY
FILE NAME: ahf01p.vsd	Project Title: MILLER PARK, ONE BREWERS WAY, MILWAUKEE, WI 53214	Sales Engineer: PJS; Project Manager: TP; Application Engineer: KJK; DRAWN BY: MLR DATE; APPROVED BY DATE			

JOHNSON CONTROLS
Systems & Services Division

Branch Information: Wisconsin Area Office, 529 N. Jackson Street, Milwaukee, WI 53202, Phone: 414-524-7500, Fax: 414-524-7575

CONTRACT NUMBER: 9 8075-0508

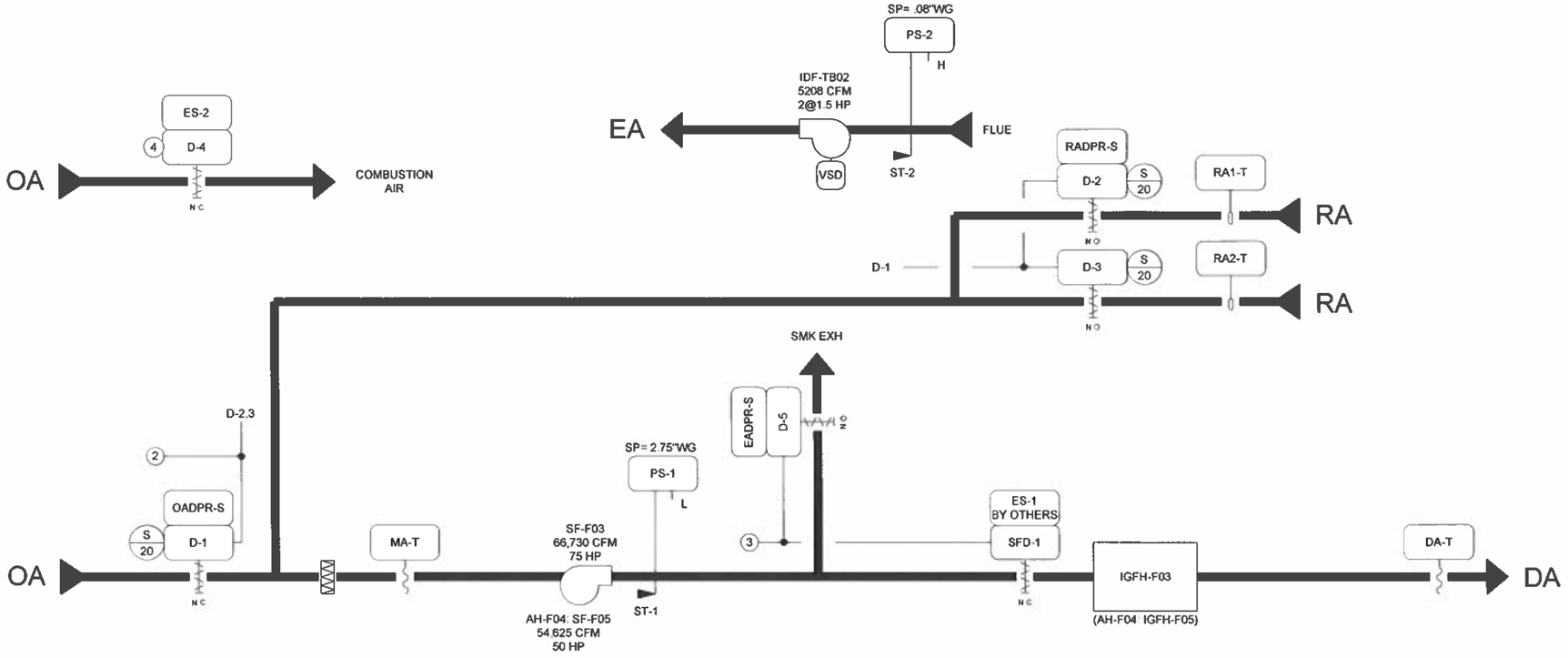
DRAWING NUMBER: 16.2

AH-F01

MASP Indirect Gas Fired Air Handling System

1. The air handling unit is equipped with supply fan, filter, 2 indirect gas-fired heaters, dedicated induction fan.
2. The air handling unit supply fan will be energized through the EMCS. The air handling unit will be interlocked with the operation of the roof, being started upon the roof being closed. An override will be provided to operate the unit in ventilation mode when the roof is open.
3. Upon the call for heating the air handling unit will be set to pre-heat mode. This will mean that the high level bowl louvers will be closed and the outside air dampers will be fully closed. The fan will be energized by the EMCS. The indirect heaters will be enabled but will be prevented from firing unless the combustion air dampers are proved to be open as detected by an end switch on the actuator and the associated induction fan is energized as proven by the induction fan VSD run contact. Both of these safeties will be hard-wired into the burner circuits to prevent firing until both conditions are met.
4. At the end of the pre-heat period, as determined by the return temperature reaching a preset limit, the unit will revert to normal operation. This will mean that the outside air damper will move to its minimum position. The indirect gas-fired burners will modulate to maintain the discharge air temperature. The discharge air temperature setpoint will be reset based on the return air temperature.
5. Upon the call for ventilation as determined by the EMCS and the outside air temperature, the outside air damper will fully open and the return air damper will fully close. The indirect gas-fired heaters will be prevented from firing, and the combustion air damper will close and the induction fan will de-energize. At the same time the high level left and right field dampers will fully open.
6. Filter replacement will be scheduled based on supply fan runtime.
7. Current switches located on the feed to the supply fan and draft induce fan will provide status indication (on/off).
8. The EMCS will monitor and control all points for each air handling unit.
9. End switches will be provided on dampers to provide status indication in the smoke exhaust mode. See the Smoke Exhaust System sequence of operation.
10. Where provided, flue draft fans will be interlocked with the gas burners. Low draft detector will be provided at the unit and roof fan; it will raise an alarm upon detection of low draft and shut down unit.
11. Mount and wire any manufacturers recommended controls for the flue pressure speed control on the induction fan VSDs. If any air handler supply fan burner is requesting heat, the associated induction fan will be energized until all the associated burners are not requesting heat.
12. In off hours, see the Frost Protection sequence of operation.

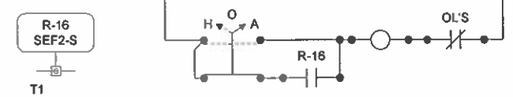
REVISION INFORMATION	Drawing Title							
NUMBER	SEQUENCE							
DATE 04/12/01		REFERENCE DRAWING		NO.	REVISION LOCATION	ECN	DATE	BY
TIME 11:55 AM		Sales Engineer PJS	Project Manager TP	Application Engineer KJK	DRAWN BY MLR DATE		APPROVED BY DATE	
FILE NAME ahf01s.vsd	Project Title MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division	Branch Information Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575			CONTRACT NUMBER 9 8075-0508	DRAWING NUMBER 16.3	



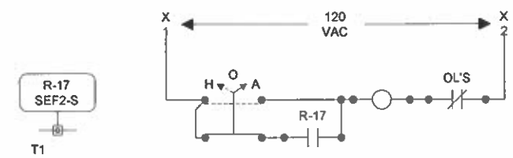
BILL OF MATERIALS

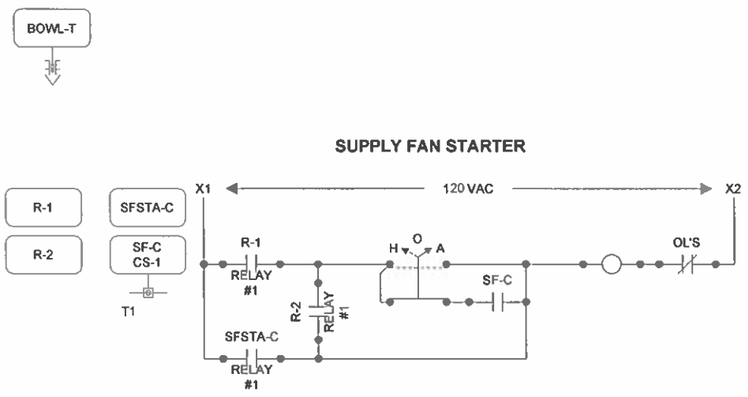
Designation	Qty	Part Number	Description
Field Devices:			
BOWL-T	1	TE-6000-1	SENS,T-Ni,1.0%
	1	TE-6001-2	MTG,OAT SENS (CONDULET)
D-x,SFD-x	0	DAMPER	SEE DAMPER SCHEDULE
ES-2,XDPR-S	4	TS-470	DAMPER POSITION SWITCH - KELE
MA-T	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
MA-T, DA-T	2	TE-6316P-1	SENS,T-Ni,0.1%,17" AVG
PS-1	1	AFS-460	SW, AIR FLOW, SPST-NC RESET .05-12" @CLE
PS-2	1	P32AC-2C	SW,DP,SPDT,5" U-BRKT
R-1-2,SFSTA-C	3	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
RAx-T	2	TE-6311P-1	SENS,T-Ni,0.1%,8" DUCT
SF-C,CS-1,R-3,R-x,S EFx-S	4	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
ST-x	2	A520-2-A-1	8" STATIC PROBE, ALUM, 1/4"TUBE @MAMAC

SMOKE EXHAUST FAN STARTER

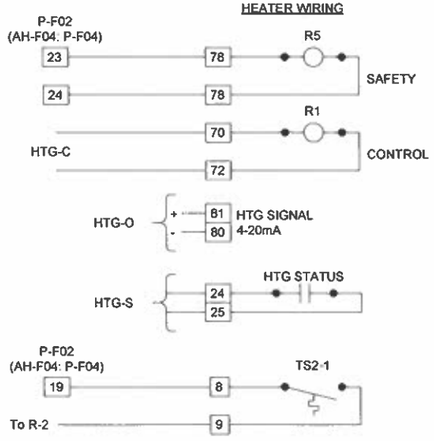


SMOKE CURTAIN STARTER



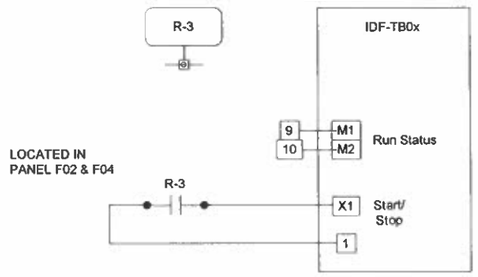


PARTIAL GAS-FIRED HEATER WIRING



NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

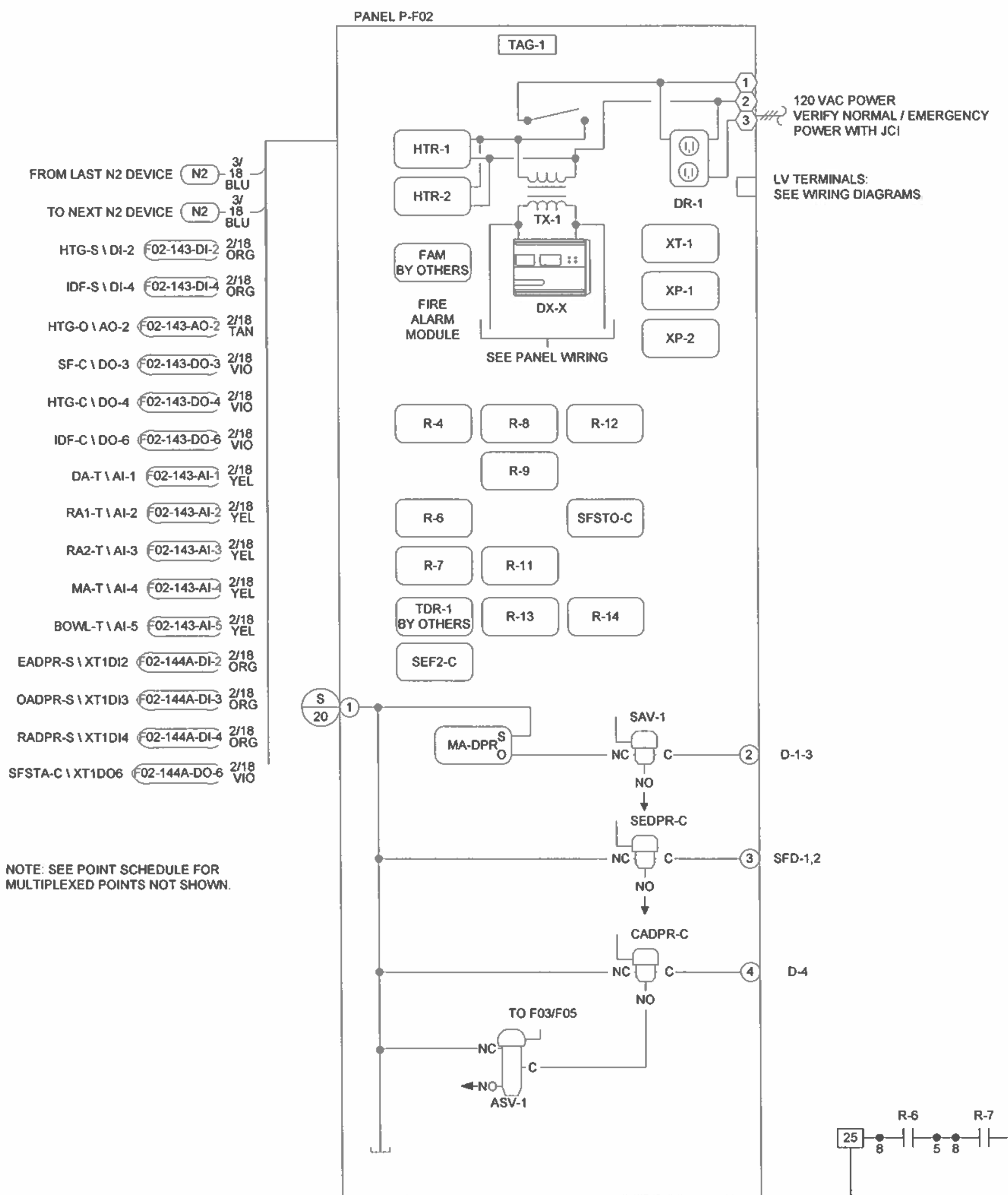
IDF VSD WIRING



NOTE:
IDF-TB02 Serves AH-F02 and AH-F03
IDF-TB03 Serves AH-F04 and AH-F05

NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

REVISION INFORMATION	Drawing Title: AH-F02 FLOW TYPICAL FOR AH-F04					
NUMBER			1	RECORD DRAWINGS		MLR
DATE: 06/14/01	REFERENCE DRAWING		NO	REVISION LOCATION	ECN	DATE / BY
TIME: 12:59 PM	Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR DATE	APPROVED: BY DATE	
FILE NAME: ahf02f.vsd	Project Title: MILLER PARK, ONE BREWERS WAY, MILWAUKEE, WI 53214	JOHNSON CONTROLS, Systems & Services Division	Branch Information: Wisconsin Area Office, 529 N Jackson Street, Milwaukee, WI 53202, Phone: 414-524-7500, Fax: 414-524-7575	CONTRACT NUMBER: 9 8075-0508	DRAWING NUMBER: 17.1	



NOTE: SEE POINT SCHEDULE FOR MULTIPLEXED POINTS NOT SHOWN.

PANEL FACE TAGS:
TAG-1: PANEL P-F02
AH-F02
JCI 9 8075-0508

PANEL FACE TAGS:
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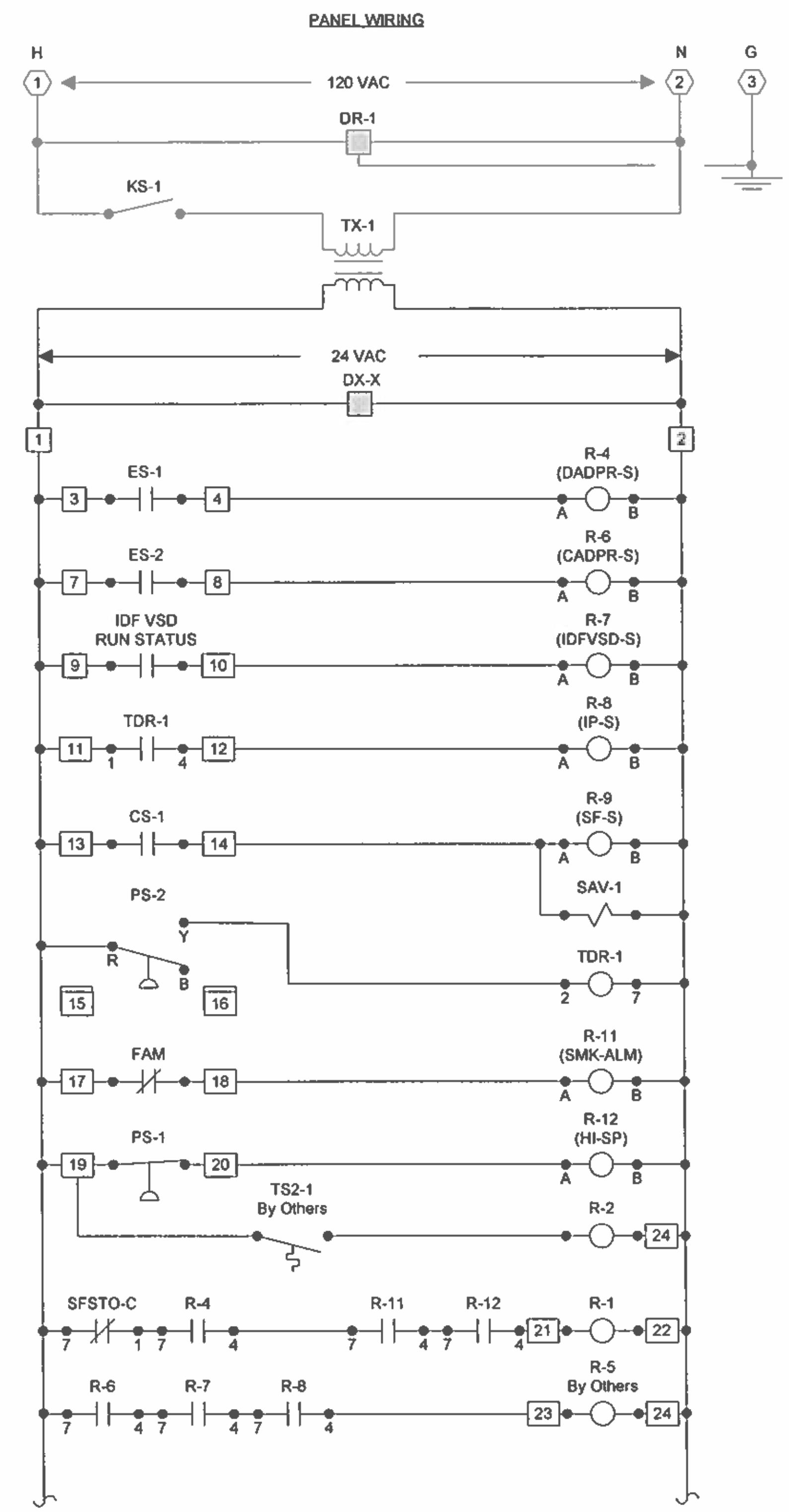
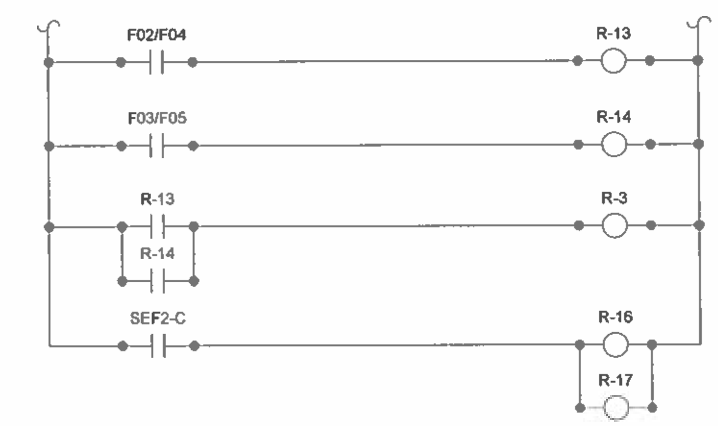
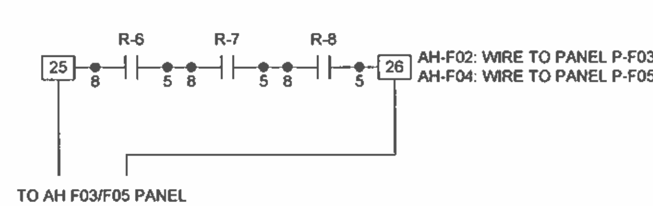
AH-F04
JCI 9 8075-0508







BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
DR-1	1	PD-117-2	RECEPTACLE,DUPLEX,UL,WHT
	1	PD-121-1	RECEPTACLE,DUPLEX,CVR
	1	PD-121-6	HANDY BOX 2 IN
DX-X	1	AS-LCPKEY-0	LCP SERVICE PORT ADJ KEY
	1	DX-9100-8454	DIGITAL CONTR., EXTENDED
	1	DX-9100-8990	MTG BASE (DX9100-8454)
HTR-x	2	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
KS-1	1	PD-112-12	KNIFE SWITCH BLOCK
MA-DPR	1	EP-8000-2	XDUCR,EP,0/10V,HI VOL
P-X	1	M-8100-2436	PANEL,STANDARD,15 UNITS
SAV-1,XDPR-C	3	V11HGA-100	3-W SOLENOID,W/OV,24 VAC
SFSTO-C,R-4,6-14,S	11	PD-101-35	RLY BASE,3PDT,11PIN,10A
EF2-C			
	11	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-x	1	PD-114-2	TRANSFORMER 100VA, 120/24
XP-1,2	2	XP-9104-8004	DX EXP MOD,4 DI,4DO TRIAC
XT-1	1	XT-9100-8204	EXTENSION MODULE

Revision Information		
Number		
Date	06/14/01	
Time	11:41 AM	
File Name	ahf02p.vsd	

Drawing Title: **AH-F02 PANEL TYPICAL FOR AH-F04**

Project Title: **MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214**

Reference Drawing	No.	Revision-Location	ECN	Date	By
	1	RECORD DRAWINGS		6/14/2001	MLR

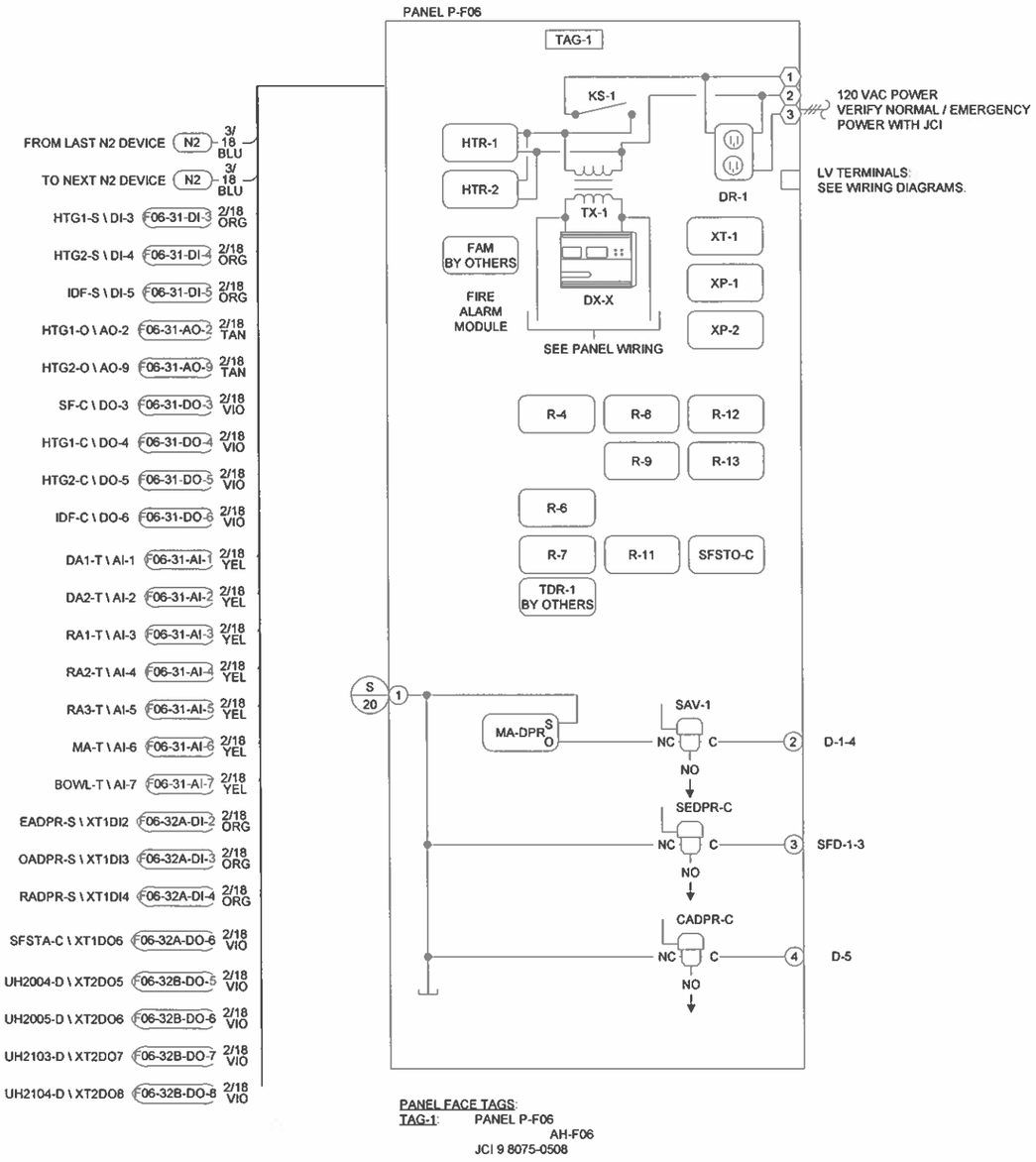
Sales Engineer	Project Manager	Application Engineer	Drawn By	Drawn Date	Approved By	Approved Date
PJS	TP	KJK	MLR			

JOHNSON CONTROLS
Systems & Services Division

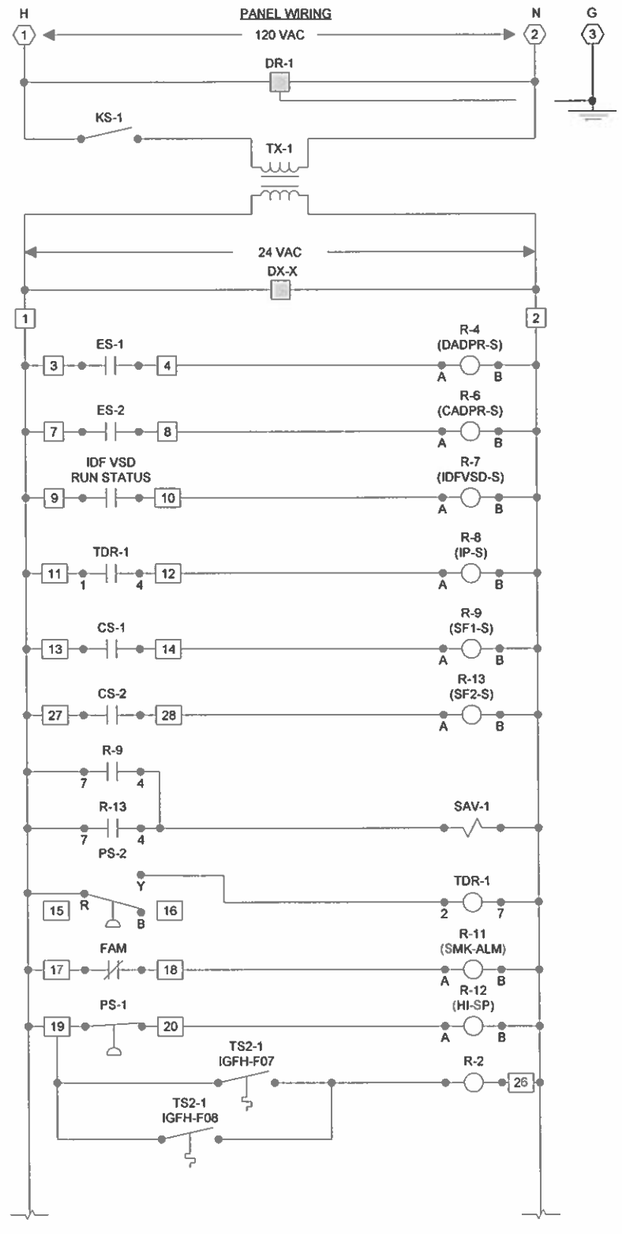
Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

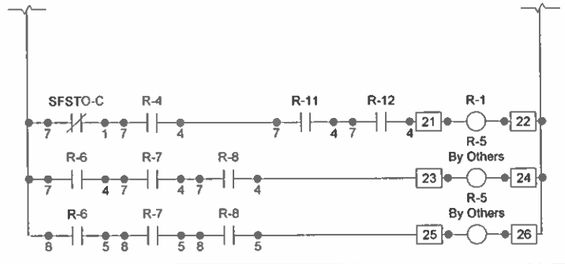
CONTRACT NUMBER: 9 8075-0508

DRAWING NUMBER: 17.2



PANEL FACE TAGS:
TAG-1: PANEL P-F06
AH-F06
JCI 9 8075-0508





BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
DR-1	1	PD-117-2	RECEPTACLE,DUPLEX,UL,WHT
	1	PD-121-1	RECEPTACLE,DUPLEX,CVR
	1	PD-121-6	HANDY BOX 2 IN
DX-X	1	AS-LCPKEY-0	LCP SERVICE PORT ADJ KEY
	1	DX-9100-8454	DIGITAL CONTR., EXTENDED
	1	DX-9100-8990	MTG BASE (DX9100-8454)
HTR-x	2	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
KS-1	1	PD-112-12	KNIFE SWITCH BLOCK
MA-DPR	1	EP-8000-2	XDUCR,EP,0/10V,HI VOL
P-X	1	M-8100-2436	PANEL,STANDARD,15 UNITS
SAV-1,XDPR-C	3	V11HGA-100	3-W SOLENOID,W/OV,24 VAC
SFSTO-C,R-4,6-13	9	PD-101-35	RLY BASE,3PDT,11PIN,10A
	9	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-x	1	PD-114-2	TRANSFORMER 100VA, 120/24
XP-1,2	2	XP-9104-8004	DX EXP MOD,4 DI,4DO TRIAC
XT-1	1	XT-9100-8204	EXTENSION MODULE

REVISION INFORMATION
NUMBER
DATE 06/14/01
TIME 01:26 PM
FILE NAME ahf06p.vsd

Drawing Title
AH-F06 PANEL

NO.	REVISION-LOCATION	ECN	DATE	BY
1	RECORD DRAWINGS			MLR

REFERENCE DRAWING

Sales Engineer	Project Manager	Application Engineer	DRAWN BY	DRAWN DATE	APPROVED BY	APPROVED DATE
PJS	TP	KJK	MLR			

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

JOHNSON CONTROLS
Systems & Services Division
Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

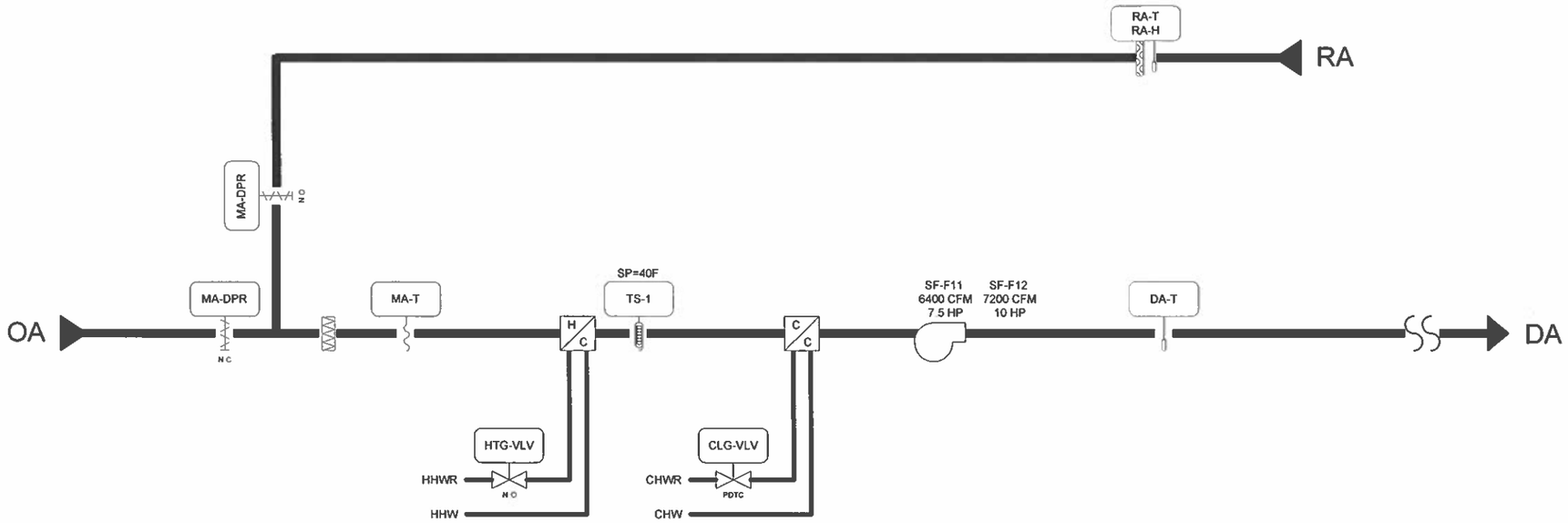
CONTRACT NUMBER **9 8075-0508**
DRAWING NUMBER **19.2**

AH-F06

MASP Indirect Gas Fired Air Handling System

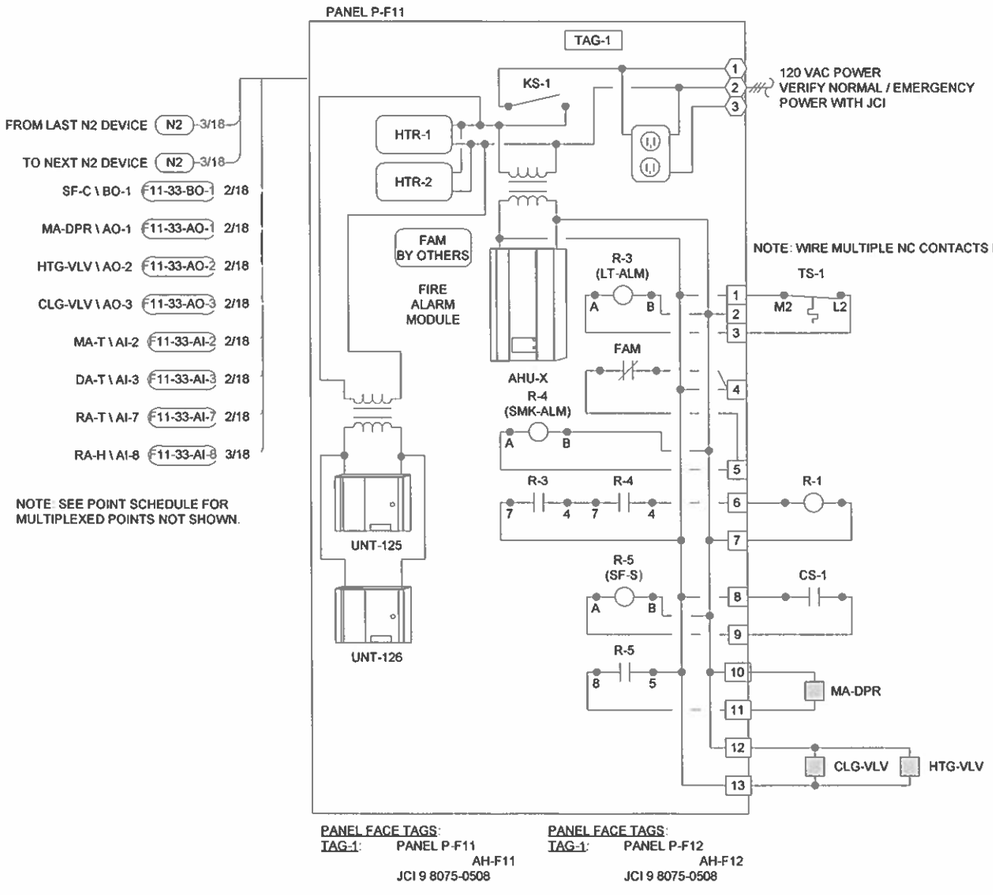
1. The air handling unit is equipped with 2 supply fans, filter, 2 indirect gas-fired heaters, dedicated induction fan.
2. The air handling unit supply fans will be energized through the EMCS. The air handling unit will be interlocked with the operation of the roof, being started upon the roof being closed. An override will be provided to operate the unit in ventilation mode when the roof is open.
3. Upon the call for heating the air handling unit will be set to pre-heat mode. This will mean that the high level bowl louvers will be closed and the outside air dampers will be fully closed. The fans will be energized by the EMCS. The indirect heaters will be enabled but will be prevented from firing unless the combustion air dampers are proved to be open as detected by an end switch on the actuator and the associated induction fan is energized as proven by the induction fan VSD run contact. Both of these safeties will be hard-wired into the burner circuits to prevent firing until both conditions are met.
4. At the end of the pre-heat period, as determined by the return temperature reaching a preset limit, the unit will revert to normal operation. This will mean that the outside air damper will move to its minimum position. The indirect gas-fired burners will modulate to maintain the discharge air temperature. The discharge air temperature setpoint will be reset based on the return air temperature.
5. Upon the call for ventilation as determined by the EMCS and the outside air temperature, the outside air damper will fully open and the return air damper will fully close. The indirect gas-fired heaters will be prevented from firing, and the combustion air damper will close and the induction fan will de-energize. At the same time the high level left and right field dampers will fully open.
6. Filter replacement will be scheduled based on supply fan runtime.
7. Current switches located on the feed to the supply fans and draft induce fan will provide status indication (on/off).
8. The EMCS will monitor and control all points for each air handling unit.
9. End switches will be provided on dampers to provide status indication in the smoke exhaust mode. See the Smoke Exhaust System sequence of operation.
10. Where provided, flue draft fans will be interlocked with the gas burners. Low draft detector will be provided at the unit and roof fan; it will raise an alarm upon detection of low draft and shut down unit.
11. Mount and wire any manufacturers recommended controls for the flue pressure speed control on the induction fan VSDs. If any air handler supply fan burner is requesting heat, the associated induction fan will be energized until all the associated burners are not requesting heat.
12. In off hours, see the Frost Protection sequence of operation.

REVISION INFORMATION	Drawing Title: SEQUENCE									
NUMBER										
DATE: 04/12/01		REFERENCE DRAWING		NO	REVISION-LOCATION		ECN	DATE	BY	
TIME: 01:39 PM		Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR DATE		APPROVED: BY	DATE		
FILE NAME: ahf06s.vsd	Project Title: MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division			Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER: 9 8075-0508			
							DRAWING NUMBER: 19.3			



BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
DA-T	1	TE-6311P-1	SENS,T-Ni,0.1%,8" DUCT
MA-T	1	TE-6315P-1	SENS,T-Ni,0.1%,8' AVG
MA-T, TS-1	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
R-1	1	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
RA-H, RA-T	1	HE-6310-2	XMTR,RH/T-Ni,DUCT,AC/DC
SF-C,CS-1	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
TS-1	1	A70HA-1C	STAT,LL,20',EL,MAN,15/55F
X-DPR	0	DAMPER	SEE DAMPER SCHEDULE
X-DPR, X-VLV	3	PD-101-1	RESISTOR, 499OHM 1/2W 1%
X-VLV	0	VALVE	SEE VALVE SCHEDULE
Panel Devices:			
AHU-X	1	AS-AHU103-300	AHU TERMINATION BD/ELECTRONICS IN EWC35
HTR-x	2	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
P-X	1	EN-EXP101-0	EXPANSION COVER AND BACKBONE
	1	M-8100-3042	PANEL,STANDARD,22 UNITS
R-3-R-5	3	PD-101-35	RLY BASE,3PDT,11PIN,10A
	3	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
UNT-x	2	AS-UNT141-1	CNTRLR,DIG,UNT,6AI,4BI,6BO,2AO,SCR

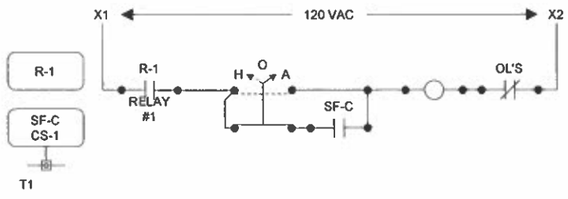


NOTE: SEE POINT SCHEDULE FOR MULTIPLEXED POINTS NOT SHOWN.

PANEL FACE TAGS:
TAG-1: PANEL P-F11
AH-F11
JCI 9 8075-0508

PANEL FACE TAGS:
TAG-1: PANEL P-F12
AH-F12
JCI 9 8075-0508

SUPPLY FAN STARTER



REVITION INFORMATION	Drawing Title: AH-F11 FLOW TYPICAL FOR AH-F12		
NUMBER			
DATE: 04/12/01			
TIME: 01:44 PM	Project Title: MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division	Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575
FILE NAME: ahf11f.vsd			CONTRACT NUMBER: 9 8075-0508 / DRAWING NUMBER: 20.1

REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY

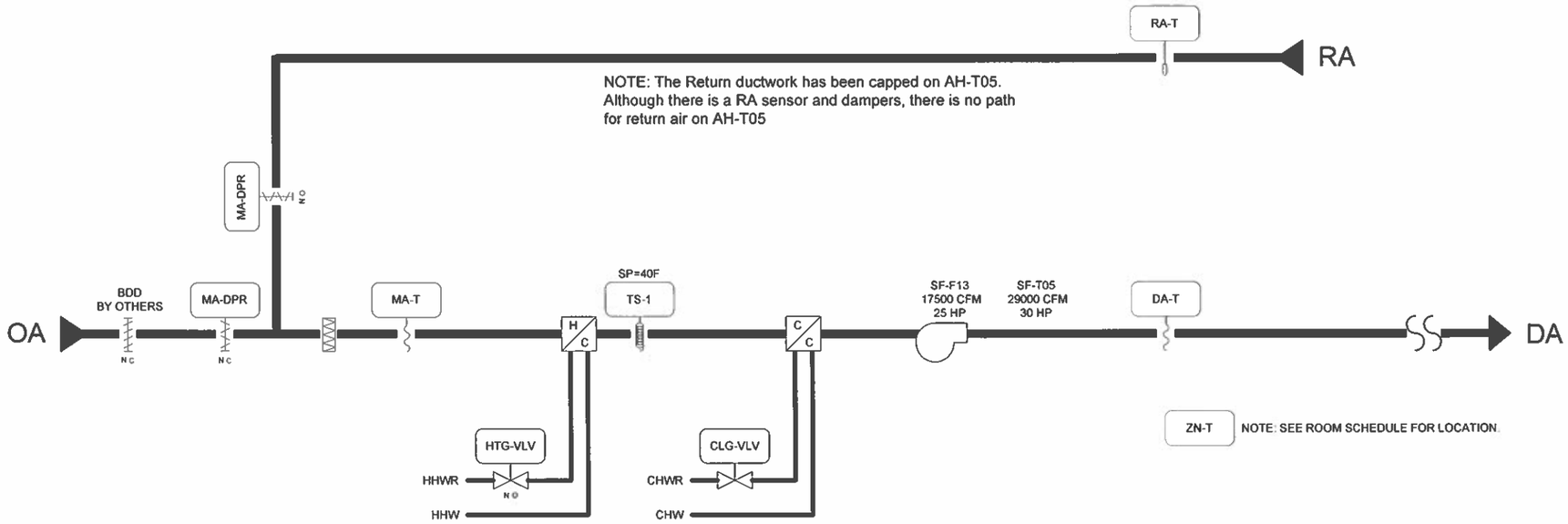
Sales Engineer	Project Manager	Application Engineer	DRAWN	APPROVED
PJS	TP	KJK	BY MLR DATE	BY DATE

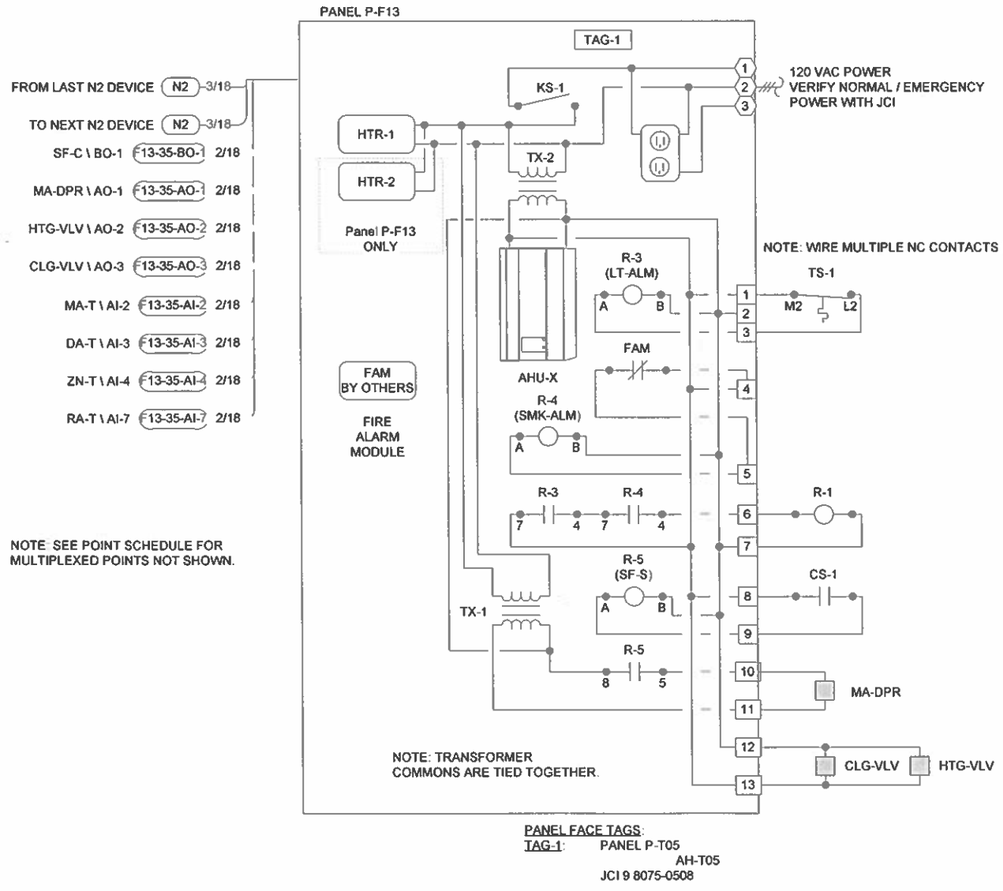
AH-F11, AH-F12

Multi-zone Constant Volume MASP Air Handling System with Economizer Cycle

1. The air handling unit is equipped with supply fan, heating coil, cooling coil, pre-filter, final filter and economizer mixing box.
2. The air handling unit supply fan will be energized through the EMCS on a scheduled basis.
3. Provide for the air handling unit, an economizer logic network controller to position the economizer dampers for maximum economy and sequenced with the heating and cooling valves.
4. Unless the economizer controller is overridden by the warm-up cycle, the controller will verify that the air handling unit is running via a fan proof of flow controller and open the outside air damper to the minimum required ventilation position.
5. When the outside air dry bulb temperature is less than outside air dry bulb setpoint, the economizer dampers will be positioned for maximum free cooling using outside air to meet the cooling demand. The mechanical cooling equipment will only be used if the outside air cannot provide enough free cooling to meet demand.
6. Upon morning start-up of the occupied mode, mechanical cooling will be locked out, the heating coil control valve will fully open, the outside air damper will move to the closed position, and any interlocked exhaust fans will be de-energized. When the return air temperature reaches the warm-up setpoint, the air handler will return to normal operation.
7. Each zone sensor or group of zone sensors modulate the reheat coil hot water control valve to satisfy the required room temperature. See the Reheat Coil sequence of operation.
8. The chilled and hot water control valves will modulate in sequence to maintain the discharge air temperature. The discharge air temperature setpoint will be reset based on the operation of the zone reheat coil control valves and return air humidity.
9. Smoke detectors located in the supply and return ducts will on detection of smoke shut down the air handler supply fan via a hard-wire interlock with fan starters. Smoke detector status will be indicated at the EMCS.
10. Filter replacement will be scheduled based on supply fan runtime.
11. Current switches will be located on the feed to the supply fan to provide status indication (on/off). In off hours DDC controller will command the chilled water two-way control valve and outside air damper to a fully closed position, heating coil control valve to fully open position.
12. The EMCS will monitor and control all points for each air handling unit.
13. In off hours, the supply fan will be cycled intermittently at night by the zone sensor to maintain 60°F.

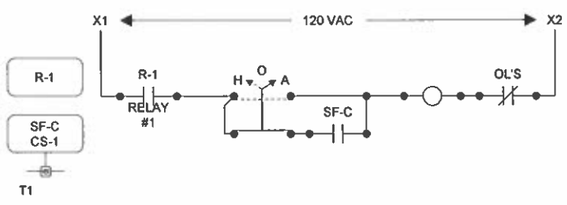
REVISION INFORMATION	Drawing Title							
NUMBER	SEQUENCE							
DATE 04/12/01		REFERENCE DRAWING		NO	REVISION-LOCATION	ECN	DATE	BY
TIME 01:48 PM		Sales Engineer PJS	Project Manager TP	Application Engineer KJK	DRAWN BY MLR DATE	APPROVED BY	DATE	
FILE NAME ahf11s.vsd	Project Title **MILLER PARK** **ONE BREWERS WAY** **MILWAUKEE, WI 53214**	JOHNSON CONTROLS Systems & Services Division			Branch Information Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575	CONTRACT NUMBER **9 8075-0508**		
						DRAWING NUMBER **20.2**		





NOTE: SEE POINT SCHEDULE FOR MULTIPLEXED POINTS NOT SHOWN.

SUPPLY FAN STARTER



BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
DA-T, MA-T	2	TE-6316P-1	SENS,T-Ni,0.1%,17' AVG
MA-T, TS-1	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
R-1	1	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
RA-T	1	TE-6311P-1	SENS,T-Ni,0.1%,8" DUCT
SF-C,CS-1	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
TS-1	2	A70HA-1C	STAT,LL,20',EL,MAN,15/55F
X-DPR	0	DAMPER	SEE DAMPER SCHEDULE
X-DPR, X-VLV	3	PD-101-1	RESISTOR, 499OHM 1/2W 1%
X-VLV	0	VALVE	SEE VALVE SCHEDULE
ZN-T	1	TE-6314P-1	SENS,T-Ni,0.1%,RM
P-F13 PANEL			
Panel Devices:			
AHU-X	1	AS-AHU103-300	AHU TERMINATION BD/ELECTRONICS IN EWC35
HTR-x	2	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
P-X	2	EN-EXP101-0	EXPANSION COVER AND BACKBONE
	1	M-8100-3042	PANEL,STANDARD,22 UNITS
R-3-R-5	3	PD-101-35	RLY BASE,3PDT,11PIN,10A
	3	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-x	2	PD-114-2	TRANSFORMER 100VA, 120/24
P-T05 PANEL			
Panel Devices:			
AHU-X	1	AS-AHU103-300	AHU TERMINATION BD/ELECTRONICS IN EWC35
HTR-1	1	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
P-X	1	M-8100-2424	PANEL,STANDARD,9 UNITS
R-3-R-5	3	PD-101-35	RLY BASE,3PDT,11PIN,10A
	3	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-x	2	PD-114-2	TRANSFORMER 100VA, 120/24

REVISION INFORMATION
NUMBER
DATE 08/16/02
TIME 10:09 AM
FILE NAME ahf13f.vsd

Drawing Title
AH-F13 FLOW
TYPICAL FOR AH-T05

REFERENCE DRAWING	NO.	REVISION LOCATION	ECM	DATE	BY

Sales Engineer	Project Manager	Application Engineer	DRAWN	APPROVED
PJS	TP	KJK	BY MLR DATE	BY DATE

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N. Jackson Street
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Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER
9 8075-0508
DRAWING NUMBER
21.1

AH-F13

Single-zone Constant Volume MASP Air Handling System with Economizer Cycle

1. The air handling unit is equipped with supply fan, heating coil, cooling coil, pre-filter, final filter and economizer mixing box.
2. The air handling unit supply fan will be energized through the EMCS on a scheduled basis.
3. Provide for the air handling unit, an economizer logic network controller to position the economizer dampers for maximum economy and sequenced with the heating and cooling valves.
4. Unless the economizer controller is overridden by the warm-up cycle, the controller will verify that the air handling unit is running via a fan proof of flow controller and open the outside air damper to the minimum required ventilation position.
5. When the outside air dry bulb temperature is less than outside air dry bulb setpoint, the economizer dampers will be positioned for maximum free cooling using outside air to meet the cooling demand. The mechanical equipment will only be used if the outside air cannot provide enough free cooling to meet demand.
6. Upon morning start-up of the occupied mode, mechanical cooling will be locked out, the heating coil control valve will fully open, and the outside air damper will move to the closed position, and any interlocked exhaust fans will be de-energized. When the return air temperature reaches the warm-up setpoint, the air handlers will return to normal operation. Provide all relays, solenoids and wiring required to lock out warm-up during normal occupancy hours.
7. The chilled water control valve will modulate in sequence with the heating coil control valve to maintain the discharge air temperature. The discharge air temperature setpoint will be reset based on room temperature.
8. Smoke detectors located in the supply and return ducts will on detection of smoke shut down the air handler supply fan via a hard-wire interlock with fan starters. Smoke detector status will be indicated at the EMCS.
9. Filter replacement will be scheduled based on supply fan runtime.
10. Current switches will be located on the feed to the supply fan to provide status indication (on/off). In off hours DDC controller will command the chilled water two-way control valve and outside air damper to a fully closed position, heating coil control valve to fully open position.
11. The EMCS will monitor and control all points for each air handling unit.
12. In off hours, the supply fan will be cycled intermittently at night by the zone sensor to maintain 60°F.

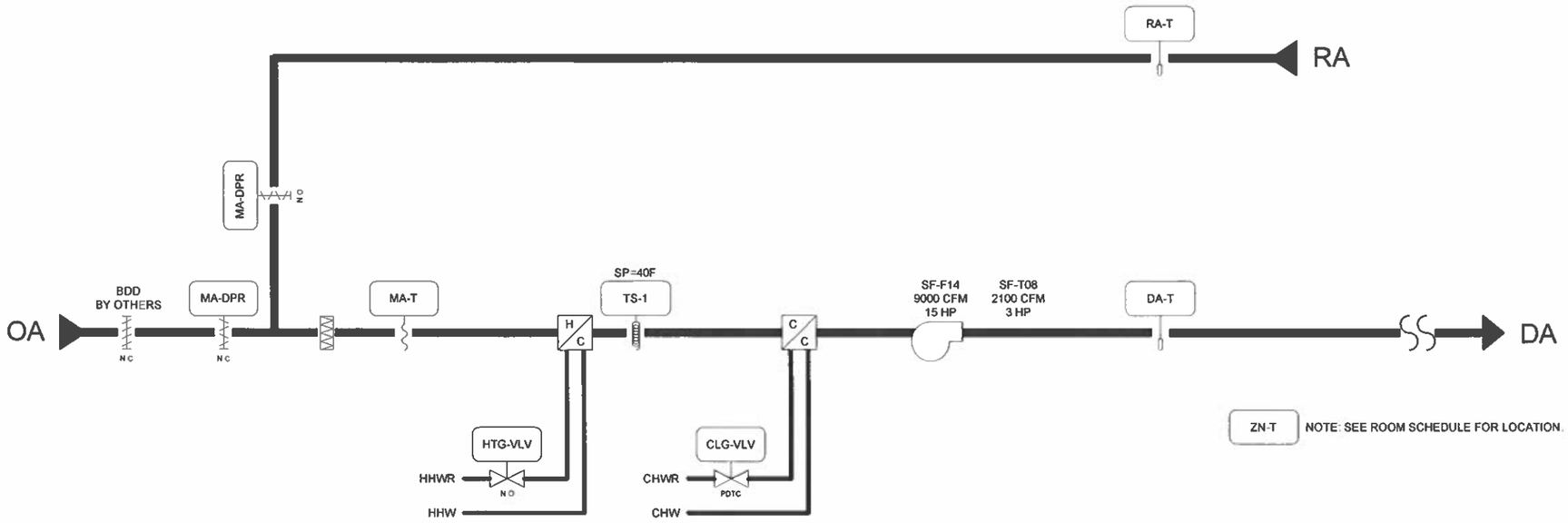
AH-T05

Single-zone Constant Volume 100% OA Air Handling System

1. The air handling unit is equipped with supply fan, heating coil, cooling coil, pre-filter, final filter and economizer mixing box. This unit does not have mixed air; the return ductwork has been capped off.
2. The air handling unit supply fan will be energized through the EMCS on a scheduled basis.
3. Provide for the air handling unit, an economizer logic network controller to position the economizer dampers for maximum economy and sequenced with the heating and cooling valves. Although economizer dampers are provided, there is no economizer logic on AH-T05. The unit is controlled based on 100% outdoor air logic
4. There is no warm-up cycle on this air handler. When the supply fan status in on, the outdoor air dampers open 100%
5. The chilled water control valve will modulate in sequence with the heating coil control valve to maintain the discharge air temperature. The discharge air temperature setpoint will be reset based on room temperature.
6. Smoke detectors located in the supply and return ducts will on detection of smoke shut down the air handler supply fan via a hard-wire interlock with fan starters. Smoke detector status will be indicated at the EMCS.
7. Filter replacement will be scheduled based on supply fan runtime.
8. Current switches will be located on the feed to the supply fan to provide status indication (on/off). In off hours DDC controller will command the chilled water two-way control valve and outside air damper to a fully closed position, heating coil control valve to fully open position.
9. The EMCS will monitor and control all points for each air handling unit.
10. In off hours, the supply fan will be cycled intermittently at night by the zone sensor to maintain 60°F. The outside air dampers will open during this unoccupied mode when the fan status is on.

The sequence for AH-T05 was updated by DAM 12/6/01

REVISION INFORMATION	Drawing Title: SEQUENCE							
NUMBER		REFERENCE DRAWING	NO	REVISION-LOCATION		ECN	DATE	BY
DATE: 08/16/02		Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR DATE		APPROVED: BY DATE	
TIME: 10:09 AM	Project Title: MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division		Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER: 9 8075-0508		
FILE NAME: ahf13s.vsd						DRAWING NUMBER: 21.2		



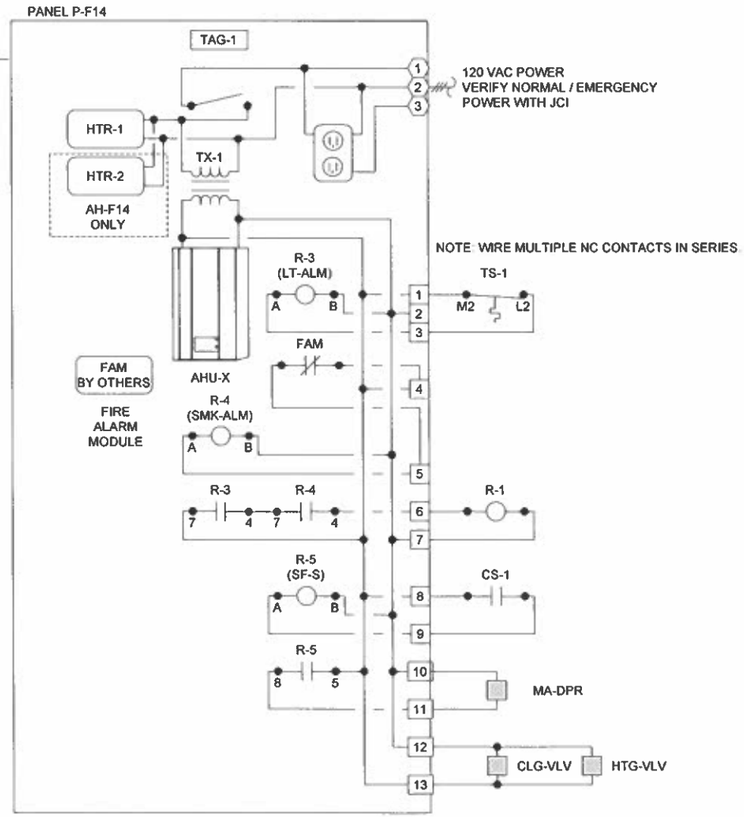
ZN-T NOTE: SEE ROOM SCHEDULE FOR LOCATION.

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
DA-T	1	TE-6311P-1	SENS,T-Ni,0.1%,8" DUCT
MA-T	1	TE-6315P-1	SENS,T-Ni,0.1%,8' AVG
MA-T, TS-1	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
R-1	1	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
RA-T	1	TE-6311P-1	SENS,T-Ni,0.1%,8" DUCT
SF-C,CS-1	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
TS-1	1	A70HA-1C	STAT,LL,20',EL,MAN,15/55F
X-DPR	0	DAMPER	SEE DAMPER SCHEDULE
X-DPR, X-VLV	3	PD-101-1	RESISTOR, 499OHM 1/2W 1%
X-VLV	0	VALVE	SEE VALVE SCHEDULE
ZN-T	1	TE-6314P-1	SENS,T-Ni,0.1%,RM
Panel Devices:			
AHU-X	1	AS-AHU103-300	AHU TERMINATION BD/ELECTRONICS IN EWC35
HTR-x	2	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
P-X	1	EN-EXP101-0	EXPANSION COVER AND BACKBONE
	1	M-8100-3042	PANEL,STANDARD,22 UNITS
R-3-R-5	3	PD-101-35	RLY BASE,3PDT,11PIN,10A
	3	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE

FROM LAST N2 DEVICE (N2) 3/18
TO NEXT N2 DEVICE (N2) 3/18
SF-C \ BO-1 (14-36-BO-1) 2/18
MA-DPR \ AO-1 (14-36-AO-1) 2/18
HTG-VLV \ AO-2 (14-36-AO-2) 2/18
CLG-VLV \ AO-3 (14-36-AO-3) 2/18
MA-T \ AI-2 (14-36-AI-2) 2/18
DA-T \ AI-3 (14-36-AI-3) 2/18
ZN-T \ AI-4 (14-36-AI-4) 2/18
RA-T \ AI-7 (14-36-AI-7) 2/18

NOTE: SEE POINT SCHEDULE FOR MULTIPLEXED POINTS NOT SHOWN.



PANEL FACE TAGS:
TAG-1: PANEL P-F14
AH-F14
JCI 9 8075-0508

PANEL FACE TAGS:
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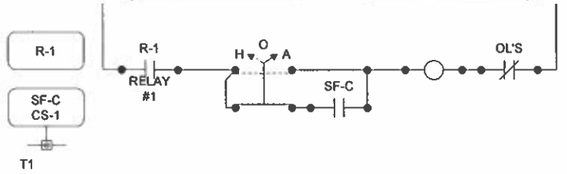
AH-T08
JCI 9 8075-0508

SUPPLY FAN STARTER



REVISION INFORMATION											
NUMBER											
DATE 04/12/01											
TIME 02:25 PM											
FILE NAME ahf14f.vsd											
REFERENCE DRAWING		NO.	REVISION-LOCATION			ECN	DATE	BY
Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR	DATE	APPROVED: BY	DATE		

Drawing Title
AH-F14 FLOW
TYPICAL FOR AH-T08

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

JOHNSON CONTROLS
Systems & Services Division
Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

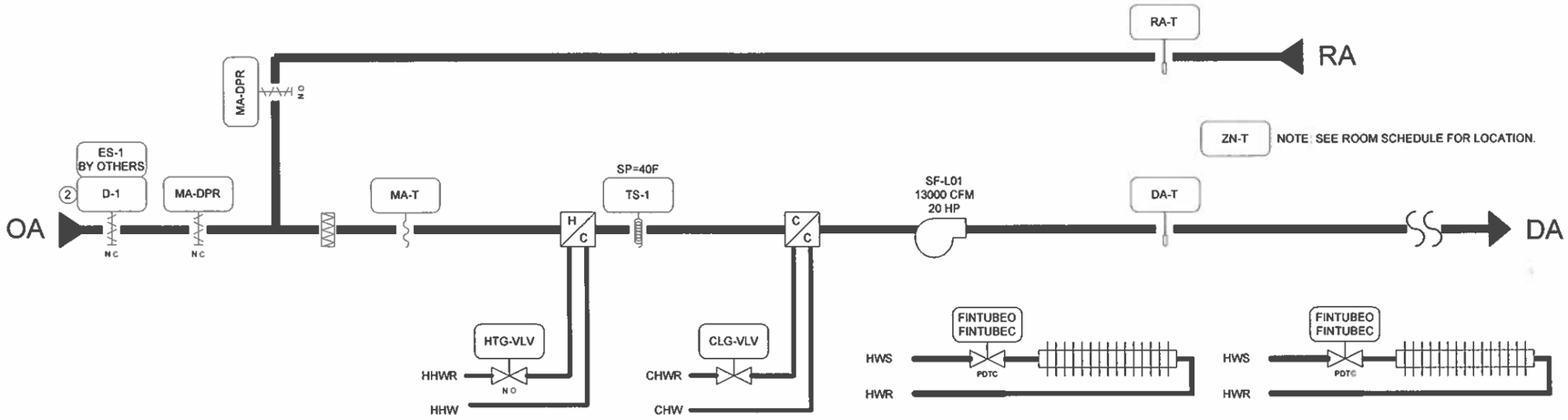
CONTRACT NUMBER
9 8075-0508
DRAWING NUMBER
22.1

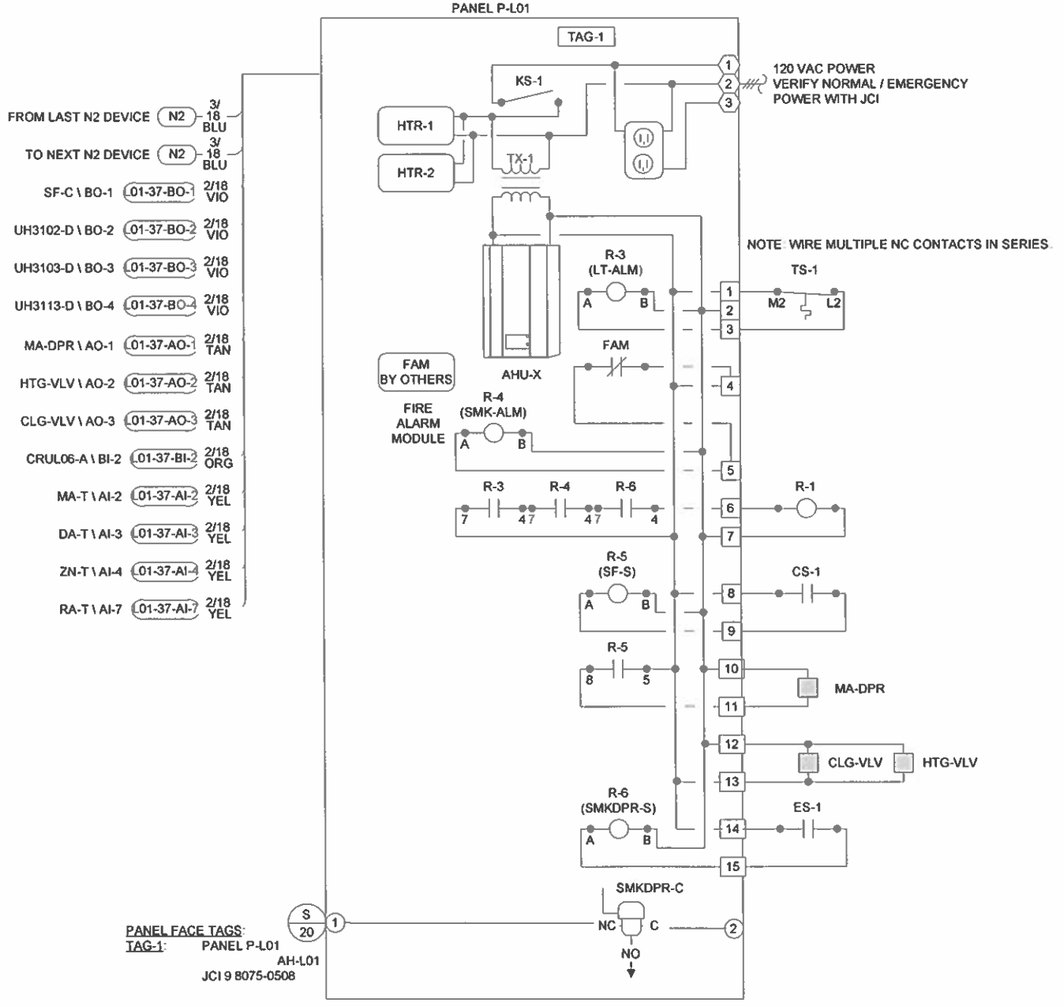
AH-F14, AH-T08

Single-zone Constant Volume MASP Air Handling System with Economizer Cycle

1. The air handling unit is equipped with supply fan, heating coil, cooling coil, pre-filter, final filter and economizer mixing box.
2. The air handling unit supply fan will be energized through the EMCS on a scheduled basis.
3. Provide for the air handling unit, an economizer logic network controller to position the economizer dampers for maximum economy and sequenced with the heating and cooling valves.
4. Unless the economizer controller is overridden by the warm-up cycle, the controller will verify that the air handling unit is running via a fan proof of flow controller and open the outside air damper to the minimum required ventilation position.
5. When the outside air dry bulb temperature is less than outside air dry bulb setpoint, the economizer dampers will be positioned for maximum free cooling using outside air to meet the cooling demand. The mechanical equipment will only be used if the outside air cannot provide enough free cooling to meet demand.
6. Upon morning start-up of the occupied mode, mechanical cooling will be locked out, the heating coil control valve will fully open, and the outside air damper will move to the closed position, and any interlocked exhaust fans will be de-energized. When the return air temperature reaches the warm-up setpoint, the air handlers will return to normal operation. Provide all relays, solenoids and wiring required to lock out warm-up during normal occupancy hours.
7. The chilled water control valve will modulate in sequence with the heating coil control valve to maintain the discharge air temperature. The discharge air temperature setpoint will be reset based on room temperature.
8. Smoke detectors located in the supply and return ducts will on detection of smoke shut down the air handler supply fan via a hard-wire interlock with fan starters. Smoke detector status will be indicated at the EMCS.
9. Filter replacement will be scheduled based on supply fan runtime.
10. Current switches will be located on the feed to the supply fan to provide status indication (on/off). In off hours DDC controller will command the chilled water two-way control valve and outside air damper to a fully closed position, heating coil control valve to fully open position.
11. The EMCS will monitor and control all points for each air handling unit.
12. In off hours, the supply fan will be cycled intermittently at night by the zone sensor to maintain 60°F.

REVISION INFORMATION	Drawing Title							
NUMBER	**SEQUENCE**							
DATE 04/12/01		REFERENCE DRAWING	NO.	REVISION LOCATION	ECN	DATE	BY
TIME 02:30 PM		Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN BY: MLR	DATE	APPROVED BY	DATE
FILE NAME ahf14s.vsd	Project Title: **MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214**	JOHNSON CONTROLS Systems & Services Division	Branch Information: Wisconsin Area Office 529 N Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575				CONTRACT NUMBER: **9 8075-0508**	DRAWING NUMBER: **22.2**

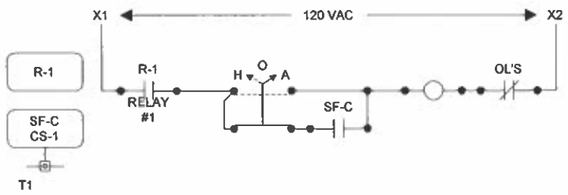




BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
DA-T	1	TE-6311P-1	SENS,T-NI,0.1%,8" DUCT
MA-T	1	TE-6316P-1	SENS,T-NI,0.1%,17' AVG
MA-T, TS-1	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
R-1	1	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
RA-T	1	TE-6311P-1	SENS,T-Ni,0.1%,8" DUCT
SF-C,CS-1	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
TS-1	2	A70HA-1C	STAT,LL,20',EL,MAN,15/55F
X-DPR, D-1	0	DAMPER	SEE DAMPER SCHEDULE
X-DPR, X-VLV	3	PD-101-1	RESISTOR, 499OHM 1/2W 1%
X-VLV	0	VALVE	SEE VALVE SCHEDULE
ZN-T	1	TE-6314P-1	SENS,T-Ni,0.1%,RM
Panel Devices:			
AHU-X	1	AS-AHU103-300	AHU TERMINATION BD/ELECTRONICS IN EWC35
HTR-x	2	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
P-X	1	EN-EXP101-0	EXPANSION COVER AND BACKBONE
	1	M-8100-3042	PANEL,STANDARD,22 UNITS
R-3-R-6	4	PD-101-35	RLY BASE,3PDT,11PIN,10A
	4	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
SMKDPR-C	1	V11HGA-100	3-W SOLENOID,W/OV,24 VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE

SUPPLY FAN STARTER



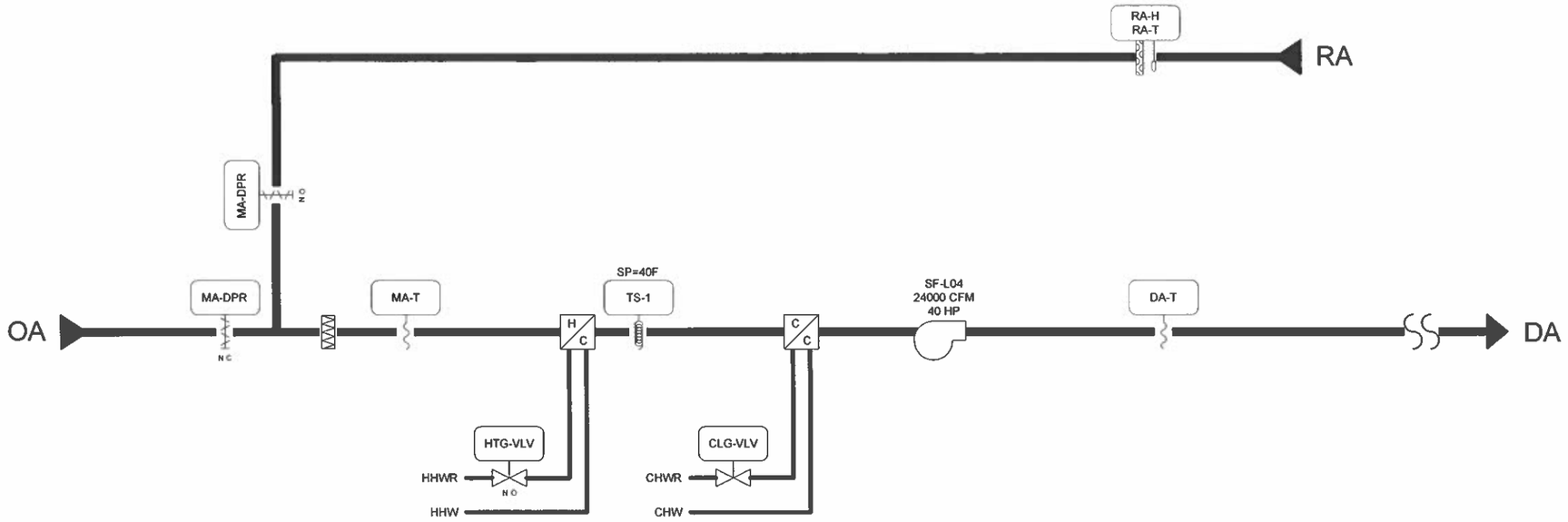
REVISION INFORMATION	Drawing Title: AH-L01 FLOW							
NUMBER				1	RECORD DRAWINGS		6/14/2001	MLR
DATE: 06/14/01		REFERENCE DRAWING		NO.	REVISION-LOCATION	ECN	DATE	BY
TIME: 04:44 PM		Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR DATE		APPROVED: BY DATE	
FILE NAME: ah101f.vsd	Project Title: MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division			Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER: 9 8075-0508	
							DRAWING NUMBER: 23.1	

AH-L01

Single-zone Constant Volume MASP Air Handling System with Economizer Cycle

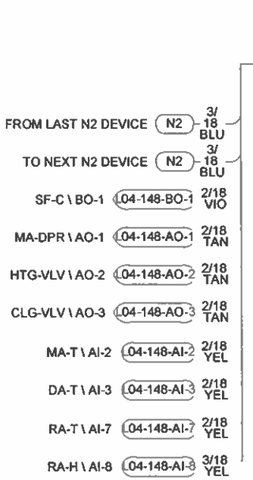
1. The air handling unit is equipped with supply fan, heating coil, cooling coil, pre-filter, final filter and economizer mixing box.
2. The air handling unit supply fan will be energized through the EMCS on a scheduled basis.
3. Provide for the air handling unit, an economizer logic network controller to position the economizer dampers for maximum economy and sequenced with the heating and cooling valves.
4. Unless the economizer controller is overridden by the warm-up cycle, the controller will verify that the air handling unit is running via a fan proof of flow controller and open the outside air damper to the minimum required ventilation position.
5. When the outside air dry bulb temperature is less than outside air dry bulb setpoint, the economizer dampers will be positioned for maximum free cooling using outside air to meet the cooling demand. The mechanical equipment will only be used if the outside air cannot provide enough free cooling to meet demand.
6. Upon morning start-up of the occupied mode, mechanical cooling will be locked out, the heating coil control valve will fully open, and the outside air damper will move to the closed position, and any interlocked exhaust fans will be de-energized. When the return air temperature reaches the warm-up setpoint, the air handlers will return to normal operation. Provide all relays, solenoids and wiring required to lock out warm-up during normal occupancy hours.
7. The chilled water control valve will modulate in sequence with the heating coil control valve to maintain the discharge air temperature. The discharge air temperature setpoint will be reset based on room temperature.
8. Smoke detectors located in the supply and return ducts will on detection of smoke shut down the air handler supply fan via a hard-wire interlock with fan starters. Smoke detector status will be indicated at the EMCS.
9. Filter replacement will be scheduled based on supply fan runtime.
10. Current switches will be located on the feed to the supply fan to provide status indication (on/off). In off hours DDC controller will command the chilled water two-way control valve and outside air damper to a fully closed position, heating coil control valve to fully open position.
11. The EMCS will monitor and control all points for each air handling unit.
12. In off hours, the supply fan will be cycled intermittently at night by the zone sensor to maintain 60°F.
13. Fintube control to open at OA-T < 50 deg F. Close at OA-T > 50 deg F.

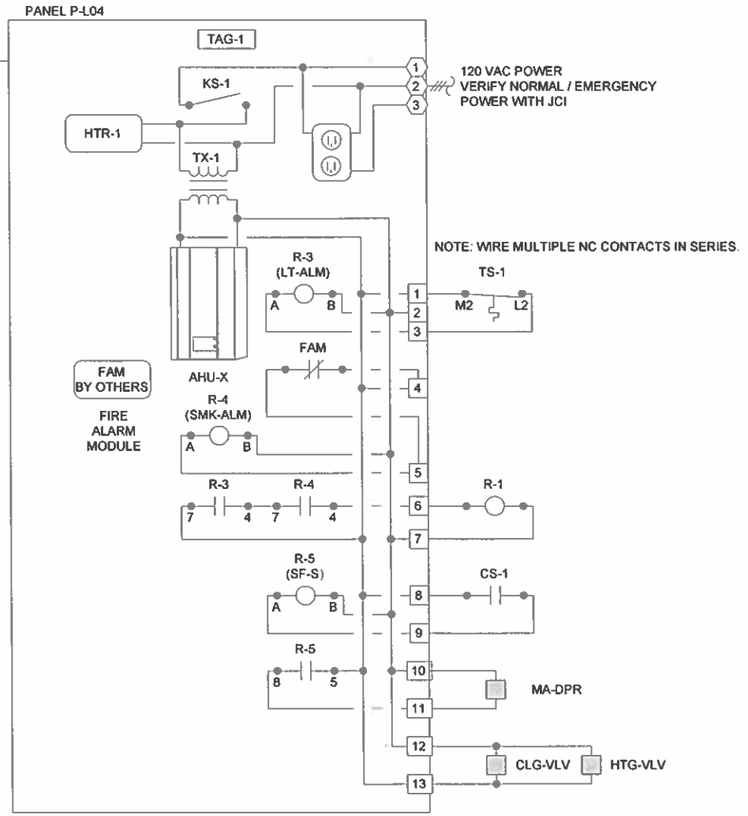
REVISION INFORMATION	Drawing Title						
NUMBER	**SEQUENCE**						
			1	RECORD DRAWINGS		6/14/2001	MLR
DATE 06/14/01		REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY
TIME 04:44 PM		Sales Engineer: PJS / Project Manager: TP / Application Engineer: KJK		DRAWN BY MLR DATE		APPROVED BY DATE	
FILE NAME ahl01s.vsd	Project Title: **MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214**	JOHNSON CONTROLS Systems & Services Division		Branch Information: Wisconsin Area Office, 529 N. Jackson Street, Milwaukee, WI 53202, Phone: 414-524-7500, Fax: 414-524-7575		CONTRACT NUMBER: **9 8075-0508**	DRAWING NUMBER: **23.2**



BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
DA-T, MA-T	2	TE-6316P-1	SENS,T-Ni,0.1%,17' AVG
MA-T, TS-1	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
R-1	1	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
RA-H, RA-T	1	HE-6310-2	XMTR,RH/T-Ni,DUCT,AC/DC
SF-C,CS-1	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
TS-1	2	A70HA-1C	STAT,LL,20',EL,MAN,15/55F
X-DPR	0	DAMPER	SEE DAMPER SCHEDULE
X-DPR, X-VLV	3	PD-101-1	RESISTOR, 499OHM 1/2W 1%
X-VLV	0	VALVE	SEE VALVE SCHEDULE
Panel Devices:			
AHU-X	1	AS-AHU103-300	AHU TERMINATION BD/ELECTRONICS IN EWC35
HTR-1	1	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
P-X	1	M-8100-2424	CONTROL CABINET,STD. FACE
R-3-R-5	3	PD-101-35	RLY BASE,3PDT,11PIN,10A
	3	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE





PANEL FACE TAGS:
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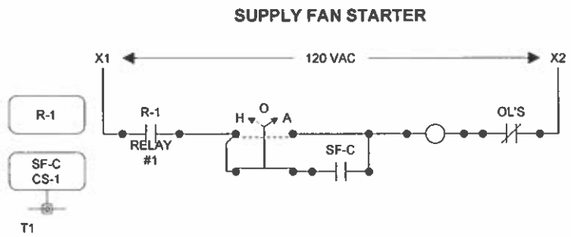
AH-L04
JCI 9 8075-0508



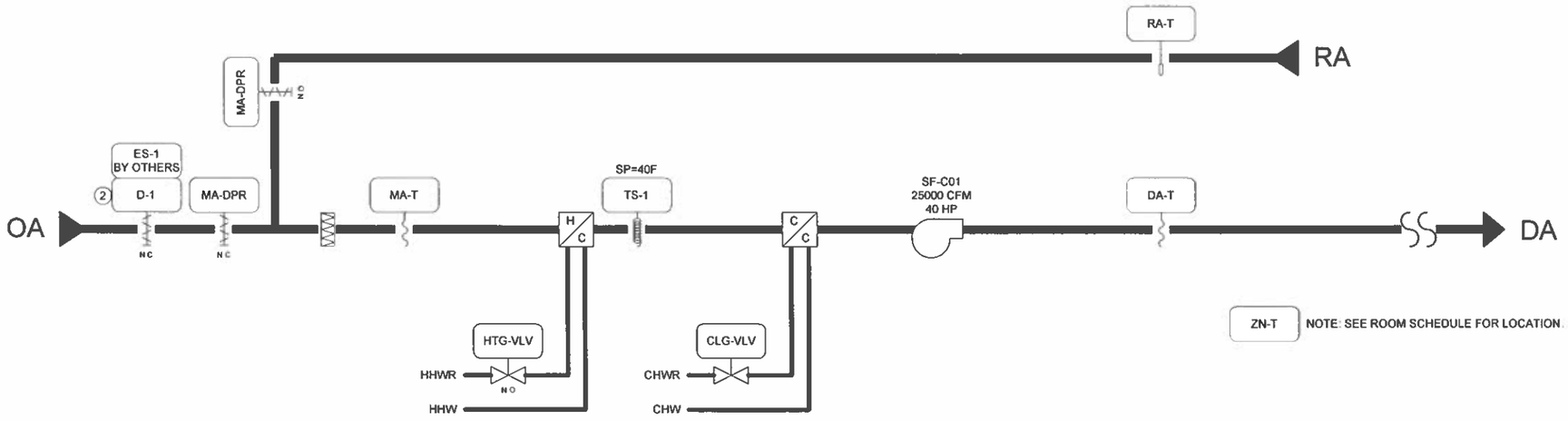
REVISION INFORMATION	Drawing Title: AH-L04 FLOW		
NUMBER		REFERENCE DRAWING	NO / REVISION-LOCATION / ECN / DATE / BY
DATE: 04/12/01		Sales Engineer: PJS; Project Manager: TP; Application Engineer: KJK	DRAWN: BY MLR DATE; APPROVED: BY DATE
TIME: 02:53 PM	Project Title: MILLER PARK, ONE BREWERS WAY, MILWAUKEE, WI 53214	JOHNSON CONTROLS, Systems & Services Division	Branch Information: Wisconsin Area Office, 529 N. Jackson Street, Milwaukee, WI 53202, Phone: 414-524-7500, Fax: 414-524-7575
FILE NAME: ahl04f.vsd			CONTRACT NUMBER: 9 8075-0508; DRAWING NUMBER: 24.1

AH-L04

Multi-zone Constant Volume MASP Air Handling System with Economizer Cycle

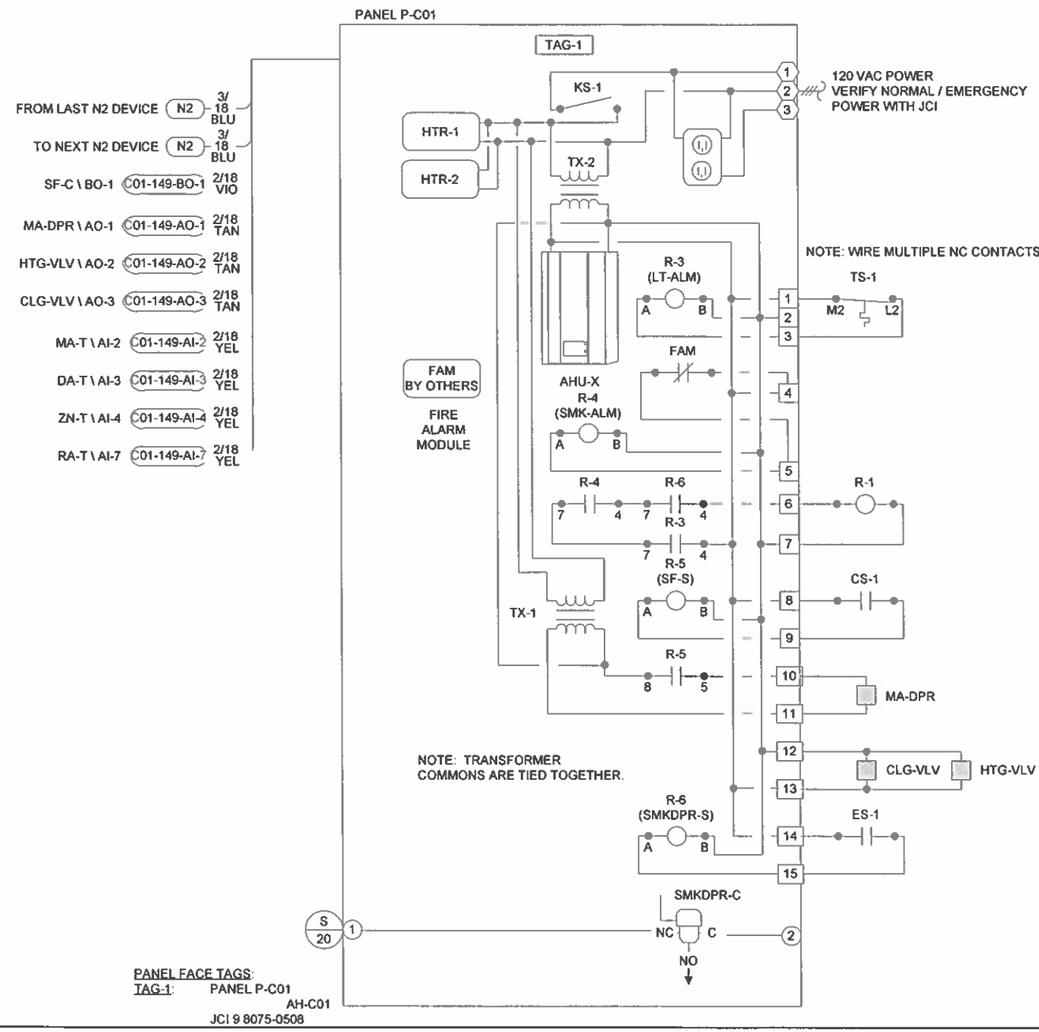
1. The air handling unit is equipped with supply fan, heating coil, cooling coil, pre-filter, final filter and economizer mixing box.
2. The air handling unit supply fan will be energized through the EMCS on a scheduled basis.
3. Provide for the air handling unit, an economizer logic network controller to position the economizer dampers for maximum economy and sequenced with the heating and cooling valves.
4. Unless the economizer controller is overridden by the warm-up cycle, the controller will verify that the air handling unit is running via a fan proof of flow controller and open the outside air damper to the minimum required ventilation position.
5. When the outside air dry bulb temperature is less than outside air dry bulb setpoint, the economizer dampers will be positioned for maximum free cooling using outside air to meet the cooling demand. The mechanical cooling equipment will only be used if the outside air cannot provide enough free cooling to meet demand.
6. Upon morning start-up of the occupied mode, mechanical cooling will be locked out, the heating coil control valve will fully open, the outside air damper will move to the closed position, and any interlocked exhaust fans will be de-energized. When the return air temperature reaches the warm-up setpoint, the air handler will return to normal operation.
7. Each zone sensor or group of zone sensors modulate the reheat coil hot water control valve to satisfy the required room temperature. See the Reheat Coil sequence of operation.
8. The chilled and hot water control valves will modulate in sequence to maintain the discharge air temperature. The discharge air temperature setpoint will be reset based on the operation of the zone reheat coil control valves and return air humidity.
9. Smoke detectors located in the supply and return ducts will on detection of smoke shut down the air handler supply fan via a hard-wire interlock with fan starters. Smoke detector status will be indicated at the EMCS.
10. Filter replacement will be scheduled based on supply fan runtime.
11. Current switches will be located on the feed to the supply fan to provide status indication (on/off). In off hours DDC controller will command the chilled water two-way control valve and outside air damper to a fully closed position, heating coil control valve to fully open position.
12. The EMCS will monitor and control all points for each air handling unit.
13. In off hours, the supply fan will be cycled intermittently at night by the zone sensor to maintain 60°F.

REVISION INFORMATION	Drawing Title							
NUMBER	**SEQUENCE**							
DATE 04/12/01		REFERENCE DRAWING		NO	REVISION-LOCATION	ECN	DATE	BY
TIME 02:59 PM		Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN BY MLR DATE		APPROVED BY DATE	
FILE NAME ahl04s.vsd	Project Title: **MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214**	JOHNSON CONTROLS Systems & Services Division			Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER: **9 8075-0508**	DRAWING NUMBER: **24.2**



BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
DA-T,MA-T	2	TE-6316P-1	SENS,T-Ni,0.1%,17' AVG
MA-T, TS-1	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
R-1	1	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
RA-T	1	TE-6311P-1	SENS,T-Ni,0.1%,8" DUCT
SF-C,CS-1	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
TS-1	2	A70HA-1C	STAT,LL,20',EL,MAN,15/55F
X-DPR	0	DAMPER	SEE DAMPER SCHEDULE
X-DPR, X-VLV	3	PD-101-1	RESISTOR, 499OHM 1/2W 1%
X-VLV	0	VALVE	SEE VALVE SCHEDULE
ZN-T	1	TE-6314P-1	SENS,T-Ni,0.1%,RM
Panel Devices:			
AHU-X	1	AS-AHU103-300	AHU TERMINATION BD/ELECTRONICS IN EWC35
HTR-x	2	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
P-X	2	EN-EXP101-0	EXPANSION COVER AND BACKBONE
	1	M-8100-3042	PANEL,STANDARD,22 UNITS
R-3-R-6	4	PD-101-35	RLY BASE,3PDT,11PIN,10A
	4	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-x	2	PD-114-2	TRANSFORMER 100VA, 120/24



PANEL FACE TAGS:
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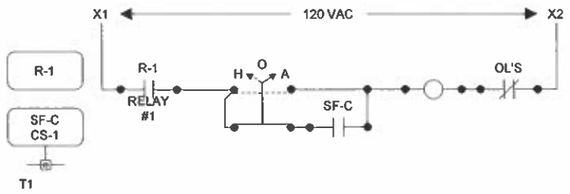
AH-C01
JCI 9 8075-0508

SUPPLY FAN STARTER



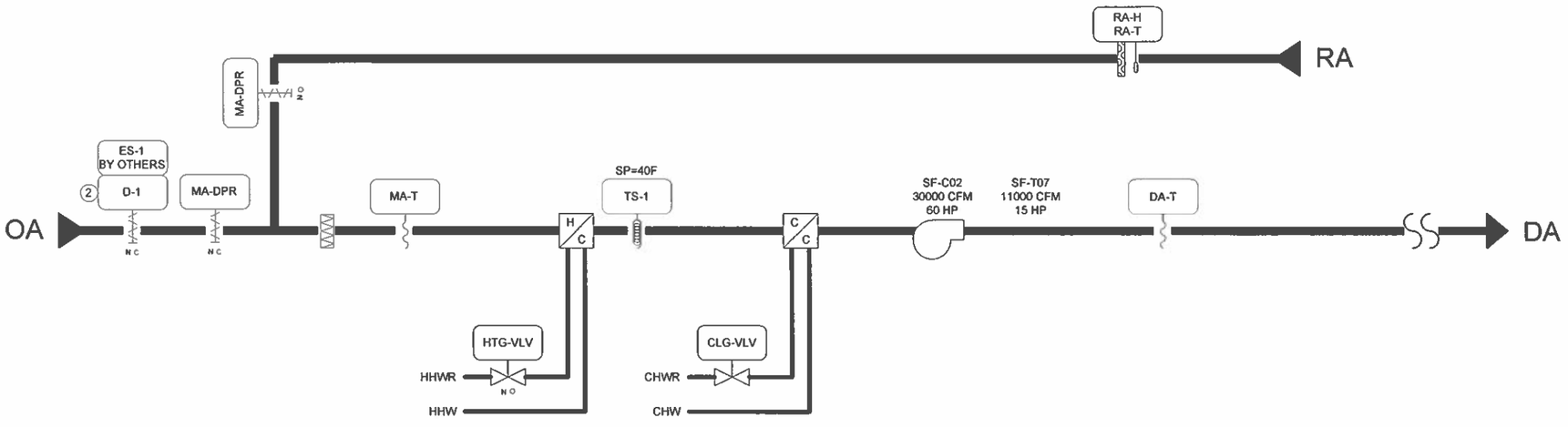
REVISION INFORMATION	Drawing Title: AH-C01 FLOW									
NUMBER										
DATE: 04/13/01										
TIME: 07:26 AM										
FILE NAME: ahc01f.vsd										
		REFERENCE DRAWING		NO	REVISION-LOCATION		ECN	DATE	BY
		Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR DATE	APPROVED: BY DATE			
	Project Title: MILLER PARK, ONE BREWERS WAY, MILWAUKEE, WI 53214	JOHNSON CONTROLS, Systems & Services Division	Branch Information: Wisconsin Area Office, 529 N. Jackson Street, Milwaukee, WI 53202, Phone: 414-524-7500, Fax: 414-524-7575	CONTRACT NUMBER: 9 8075-0508	DRAWING NUMBER: 25.1					

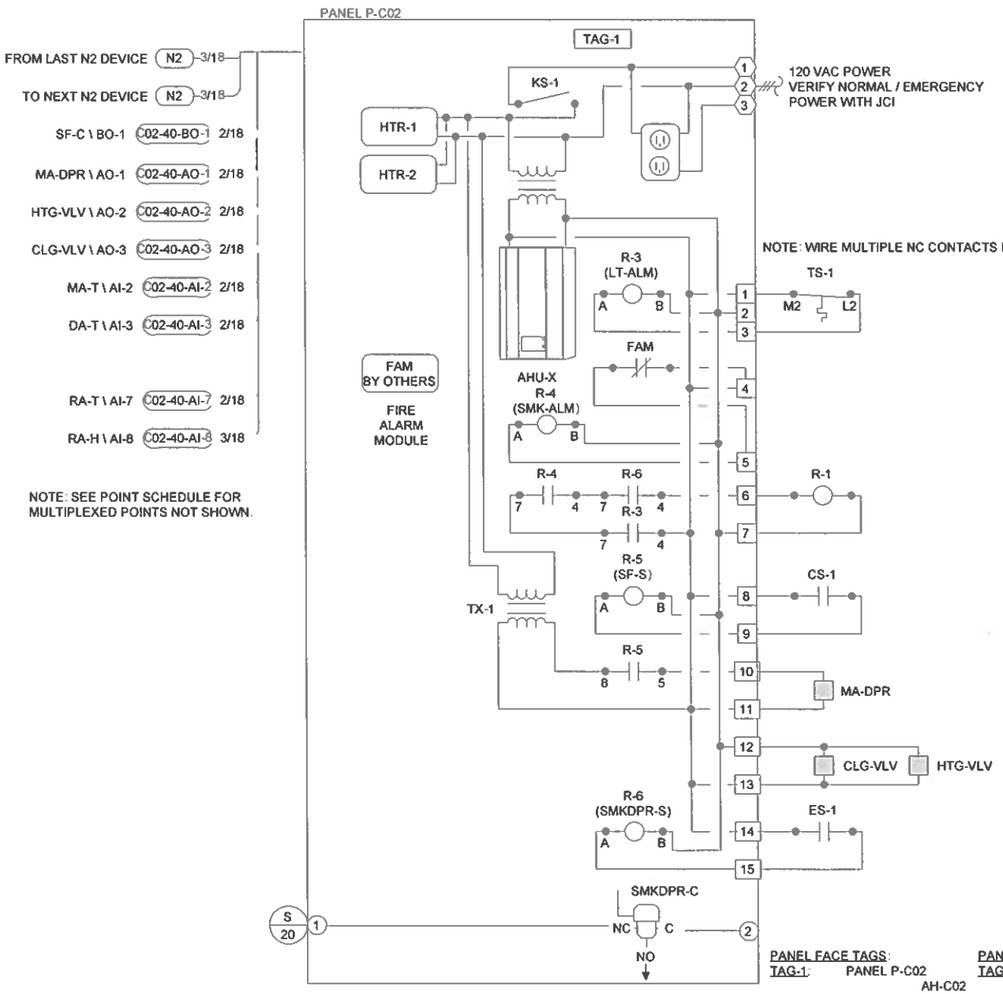
AH-C01

Single-zone Constant Volume MASP Air Handling System with Economizer Cycle

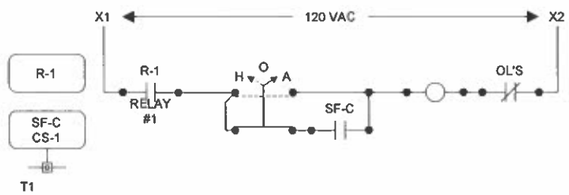
1. The air handling unit is equipped with supply fan, heating coil, cooling coil, pre-filter, final filter and economizer mixing box.
2. The air handling unit supply fan will be energized through the EMCS on a scheduled basis.
3. Provide for the air handling unit, an economizer logic network controller to position the economizer dampers for maximum economy and sequenced with the heating and cooling valves.
4. Unless the economizer controller is overridden by the warm-up cycle, the controller will verify that the air handling unit is running via a fan proof of flow controller and open the outside air damper to the minimum required ventilation position.
5. When the outside air dry bulb temperature is less than outside air dry bulb setpoint, the economizer dampers will be positioned for maximum free cooling using outside air to meet the cooling demand. The mechanical equipment will only be used if the outside air cannot provide enough free cooling to meet demand.
6. Upon morning start-up of the occupied mode, mechanical cooling will be locked out, the heating coil control valve will fully open, and the outside air damper will move to the closed position, and any interlocked exhaust fans will be de-energized. When the return air temperature reaches the warm-up setpoint, the air handlers will return to normal operation. Provide all relays, solenoids and wiring required to lock out warm-up during normal occupancy hours.
7. The chilled water control valve will modulate in sequence with the heating coil control valve to maintain the discharge air temperature. The discharge air temperature setpoint will be reset based on room temperature.
8. Smoke detectors located in the supply and return ducts will on detection of smoke shut down the air handler supply fan via a hard-wire interlock with fan starters. Smoke detector status will be indicated at the EMCS.
9. Filter replacement will be scheduled based on supply fan runtime.
10. Current switches will be located on the feed to the supply fan to provide status indication (on/off). In off hours DDC controller will command the chilled water two-way control valve and outside air damper to a fully closed position, heating coil control valve to fully open position.
11. The EMCS will monitor and control all points for each air handling unit.
12. In off hours, the supply fan will be cycled intermittently at night by the zone sensor to maintain 60°F.

REVISION INFORMATION	Drawing Title							
NUMBER	**SEQUENCE**							
		REFERENCE DRAWING	NO	REVISION-LOCATION	ECN	DATE	BY
DATE 04/13/01		Sales Engineer PJS / Project Manager TP	Application Engineer KJK	DRAWN BY MLR DATE		APPROVED BY DATE	
TIME 07:29 AM	Project Title **MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214**	JOHNSON CONTROLS Systems & Services Division		Branch Information Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER **9 8075-0508**		
FILE NAME ahc01s.vsd						DRAWING NUMBER **25.2**		





SUPPLY FAN STARTER



BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
Field Devices:			
DA-T,MA-T	2	TE-6316P-1	SENS,T-Ni,0.1%,17' AVG
MA-T, TS-1	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
R-1	1	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
RA-H, RA-T	1	HE-6310-2	XMTR,RH/T-Ni,DUCT,AC/DC
SF-C,CS-1	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
TS-1	2	A70HA-1C	STAT,LL,20',EL,MAN,15/55F
X-DPR	0	DAMPER	SEE DAMPER SCHEDULE
X-DPR, X-VLV	3	PD-101-1	RESISTOR, 499OHM 1/2W 1%
X-VLV	0	VALVE	SEE VALVE SCHEDULE
Panel Devices:			
SMKDPR-C	1	V11HGA-100	3-W SOLENOID,W/OV,24 VAC
P-C02 PANEL			
Panel Devices:			
AHU-X	1	AS-AHU103-300	AHU TERMINATION BD/ELECTRONICS IN EWC35
HTR-x	2	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
P-X	2	EN-EXP101-0	EXPANSION COVER AND BACKBONE
	1	M-8100-3042	PANEL,STANDARD,22 UNITS
R-3-R-6	4	PD-101-35	RLY BASE,3PDT,11PIN,10A
	4	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-1	1	PD-114-2	TRANSFORMER 100VA, 120/24
P-T07 PANEL			
Panel Devices:			
AHU-X	1	AS-AHU103-300	AHU TERMINATION BD/ELECTRONICS IN EWC35
HTR-x	2	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
P-X	1	M-8100-3042	PANEL,STANDARD,22 UNITS
R-3-R-6	4	PD-101-35	RLY BASE,3PDT,11PIN,10A
	4	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-1	1	PD-114-2	TRANSFORMER 100VA, 120/24

REVITION INFORMATION
NUMBER
DATE 04/13/01
TIME 07:39 AM
FILE NAME ahc02f.vsd

Drawing Title
AH-C02 FLOW
TYPICAL FOR AH-T07

REFERENCE DRAWING	NO	REVISION-LOCATION	ECN	DATE	BY

Sales Engineer	Project Manager	Application Engineer	DRAWN	APPROVED
PJS	TP	KJK	BY MLR DATE	BY DATE

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER
9 8075-0508

DRAWING NUMBER
26.1

AH-C02, AH-T07

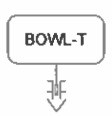
Multi-zone Constant Volume MASP Air Handling System with Economizer Cycle

1. The air handling unit is equipped with supply fan, heating coil, cooling coil, pre-filter, final filter and economizer mixing box.
2. The air handling unit supply fan will be energized through the EMCS on a scheduled basis.
3. Provide for the air handling unit, an economizer logic network controller to position the economizer dampers for maximum economy and sequenced with the heating and cooling valves.
4. Unless the economizer controller is overridden by the warm-up cycle, the controller will verify that the air handling unit is running via a fan proof of flow controller and open the outside air damper to the minimum required ventilation position.
5. When the outside air dry bulb temperature is less than outside air dry bulb setpoint, the economizer dampers will be positioned for maximum free cooling using outside air to meet the cooling demand. The mechanical cooling equipment will only be used if the outside air cannot provide enough free cooling to meet demand.
6. Upon morning start-up of the occupied mode, mechanical cooling will be locked out, the heating coil control valve will fully open, the outside air damper will move to the closed position, and any interlocked exhaust fans will be de-energized. When the return air temperature reaches the warm-up setpoint, the air handler will return to normal operation.
7. Each zone sensor or group of zone sensors modulate the reheat coil hot water control valve to satisfy the required room temperature. See the Reheat Coil sequence of operation.
8. The chilled and hot water control valves will modulate in sequence to maintain the discharge air temperature. The discharge air temperature setpoint will be reset based on the operation of the zone reheat coil control valves and return air humidity.
9. Smoke detectors located in the supply and return ducts will on detection of smoke shut down the air handler supply fan via a hard-wire interlock with fan starters. Smoke detector status will be indicated at the EMCS.
10. Filter replacement will be scheduled based on supply fan runtime.
11. Current switches will be located on the feed to the supply fan to provide status indication (on/off). In off hours DDC controller will command the chilled water two-way control valve and outside air damper to a fully closed position, heating coil control valve to fully open position.
12. The EMCS will monitor and control all points for each air handling unit.
13. In off hours, the supply fan will be cycled intermittently at night by the zone sensor to maintain 60°F.

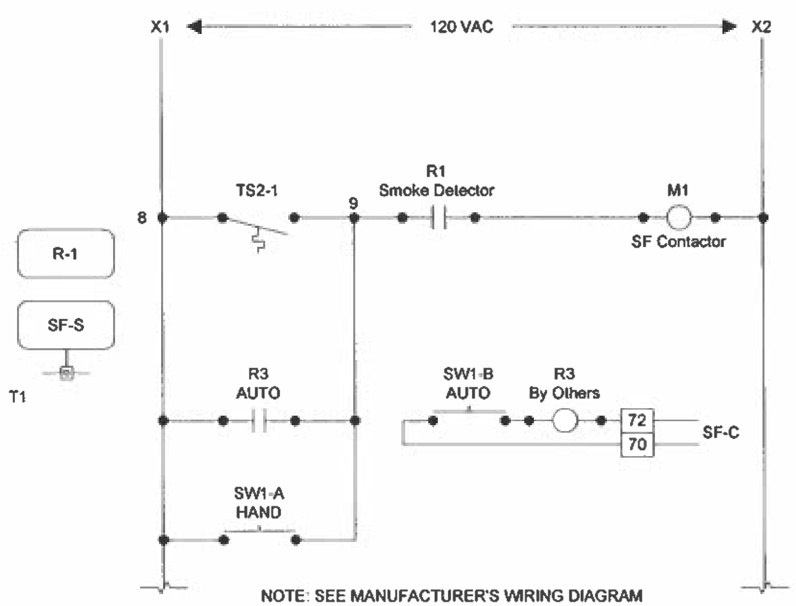
REVISION INFORMATION	Drawing Title							
NUMBER	SEQUENCE							
DATE 04/13/01		REFERENCE DRAWING		NO.	REVISION LOCATION	ECN	DATE	BY
TIME 07:45 AM		Sales Engineer PJS	Project Manager TP	Application Engineer KJK	DRAWN BY MLR DATE		APPROVED BY DATE	
FILE NAME ahc02s.vsd	Project Title MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division			Branch Information Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575	CONTRACT NUMBER 9 8075-0508	DRAWING NUMBER 26.2	

BILL OF MATERIALS

Designation	Qty	Part Number	Description
AH-T01 AND AH-T02 Field Devices:			
BOWL-T	1	TE-6000-1	SENS,T-Ni,1.0%
	1	TE-6001-2	MTG,OAT SENS (CONDULET)
DA-T	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
	1	TE-6316P-1	SENS,T-Ni,0.1%,17' AVG
R-1-3	1	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
SF-S	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
AH-TB05 AND AH-TB06 Field Devices:			
BOWL-T	1	TE-6000-1	SENS,T-Ni,1.0%
	1	TE-6001-2	MTG,OAT SENS (CONDULET)
D-x	0	DAMPER	SEE DAMPER SCHEDULE
DA-T	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
	1	TE-6316P-1	SENS,T-Ni,0.1%,17' AVG
ES-1,2	1	TS-470	DAMPER POSITION SWITCH - KELE
R-1-3	1	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
SF-S	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER

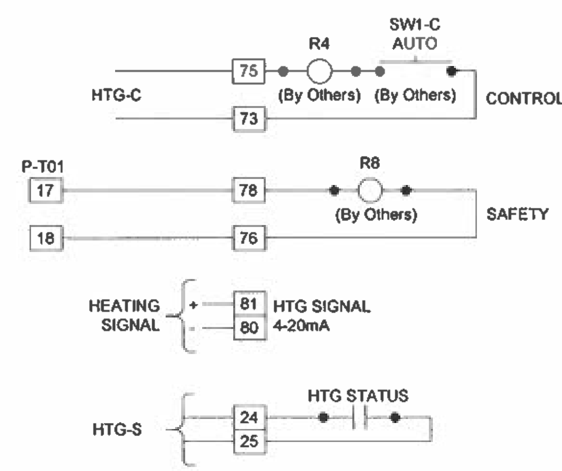


SUPPLY FAN STARTER



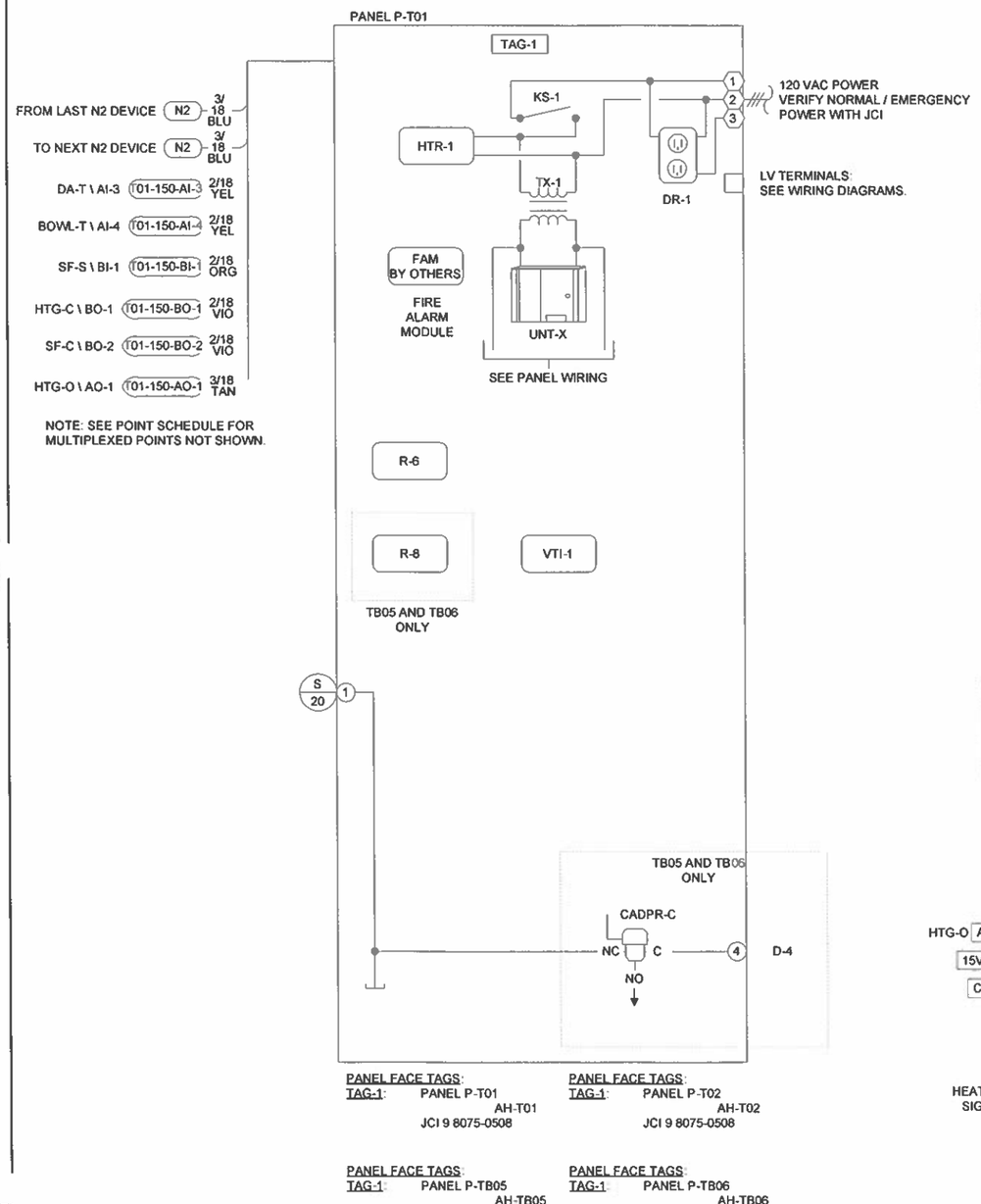
NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

PARTIAL GAS-FIRED HEATER WIRING



NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

REVISION INFORMATION NUMBER	Drawing Title: AH-T01 FLOW TYPICAL FOR AH-T02, AH-TB05, AH-TB06	REFERENCE DRAWING / NO. / REVISION-LOCATION / ECN / DATE / BY	
DATE 04/13/01		Sales Engineer PJS / Project Manager TP / Application Engineer KJK	DRAWN BY MLR DATE / APPROVED BY DATE
TIME 08:21 AM	Project Title: MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division	Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575
FILE NAME aht01f.vsd		CONTRACT NUMBER 9 8075-0508	DRAWING NUMBER 27.1

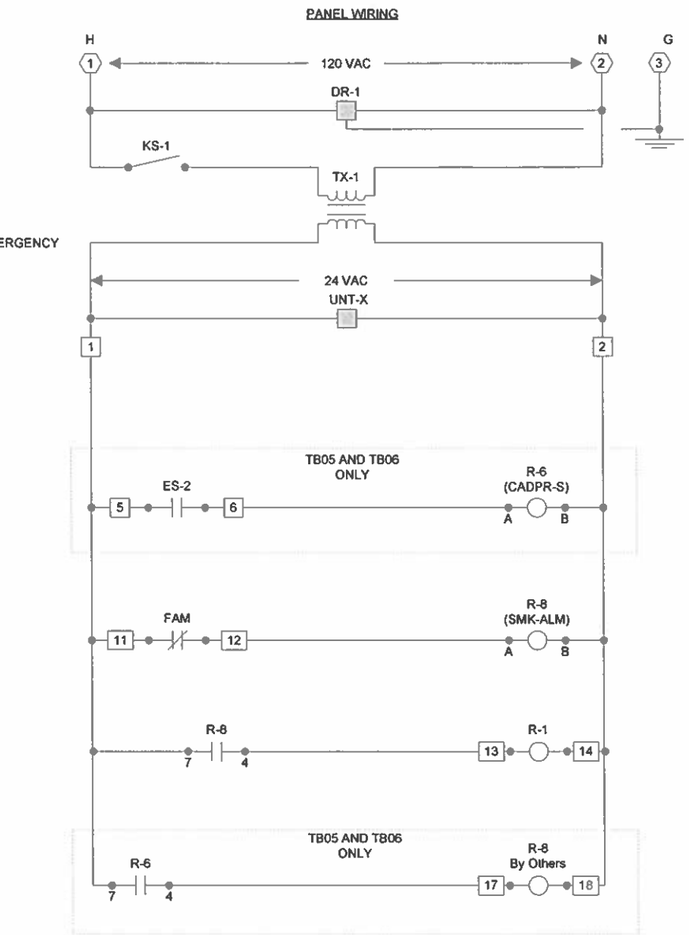


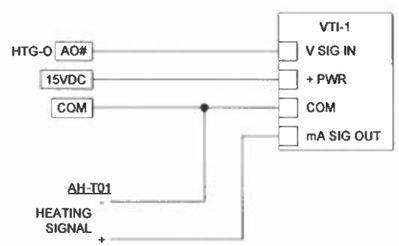
PANEL FACE TAGS:
TAG-1: PANEL P-T01
AH-T01
JCI 9 8075-0508

PANEL FACE TAGS:
TAG-1: PANEL P-T02
AH-T02
JCI 9 8075-0508

PANEL FACE TAGS:
TAG-1: PANEL P-TB05
AH-TB05
JCI 9 8075-0508

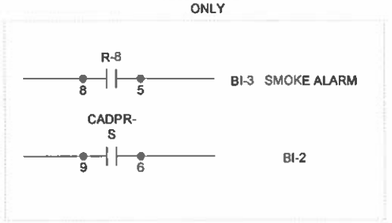
PANEL FACE TAGS:
TAG-1: PANEL P-TB06
AH-TB06
JCI 9 8075-0508





BILL OF MATERIALS

Designation	Qty	Part Number	Description
AH-T01 AND AH-T02			
Panel Devices:			
DR-1	1	PD-117-2	RECEPTACLE,DUPLEX,UL,WHT
	1	PD-121-1	RECEPTACLE,DUPLEX,CVR
	1	PD-121-6	HANDY BOX 2 IN
HTR-1	1	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
KS-1	1	PD-112-12	KNIFE SWITCH BLOCK
P-x	1	M-8100-2424	PANEL,STANDARD,9 UNITS
R-8	1	PD-101-35	RLY BASE,3PDT,11PIN,10A
	1	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-x	1	PD-114-2	TRANSFORMER 100VA, 120/24
UNT-X	1	AS-UNT141-1	UNITARY CONTRLLR,6 ISO BO W/SCREW TERM.
VTI-1	1	VTI-1	VOLTAGE/CURRENT CONVERTER 1-10V/4-20mA, KELE
AH-TB05 AND AH-TB06			
Panel Devices:			
DR-1	1	PD-117-2	RECEPTACLE,DUPLEX,UL,WHT
	1	PD-121-1	RECEPTACLE,DUPLEX,CVR
	1	PD-121-6	HANDY BOX 2 IN
HTR-1	1	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
KS-1	1	PD-112-12	KNIFE SWITCH BLOCK
P-x	1	M-8100-2424	PANEL,STANDARD,9 UNITS
R-6-8	2	PD-101-35	RLY BASE,3PDT,11PIN,10A
	2	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-x	1	PD-114-2	TRANSFORMER 100VA, 120/24
UNT-X	1	AS-UNT141-1	UNITARY CONTRLLR,6 ISO BO W/SCREW TERM.
VTI-1	1	VTI-1	VOLTAGE/CURRENT CONVERTER 1-10V/4-20mA, KELE
XDPR-C	1	V11HGA-100	3-W SOLENOID,W/OV,24 VAC



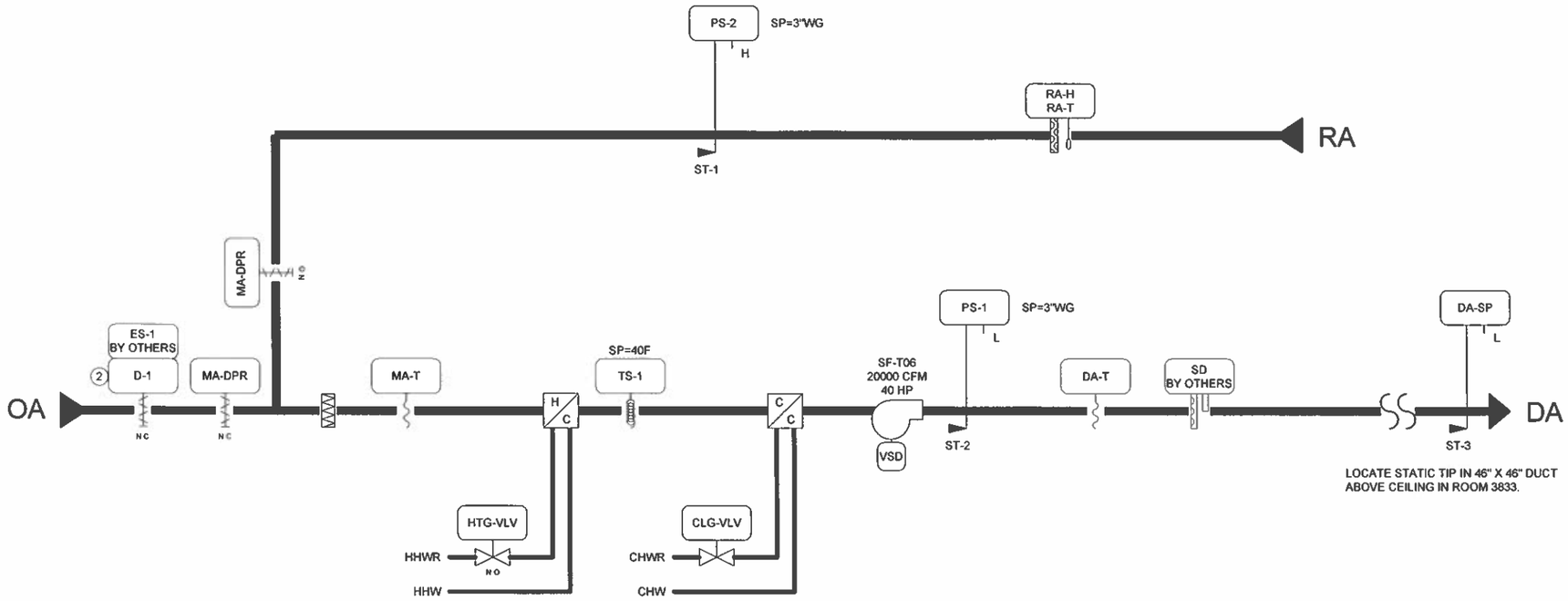
REVISION INFORMATION	Drawing Title								
NUMBER	AH-T01 PANEL TYPICAL FOR AH-T02, AH-TB05, AH-TB06								
DATE 04/13/01		REFERENCE DRAWING		NO.	REVISION-LOCATION		ECN	DATE	BY
TIME 08:50 AM		Sales Engineer PJS	Project Manager TP	Application Engineer KJK	DRAWN BY MLR DATE		APPROVED BY	DATE	
FILE NAME aht01p.vsd	Project Title MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division			Branch Information Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER 9 8075-0508		
							DRAWING NUMBER 27.2		

AH-T01, AH-T02, AH-TB05, AH-TB06

100%OA Indirect Gas Fired Air Handling System

1. The air handling unit is equipped with supply fan, filter, indirect gas-fired heater.
2. The air handling unit supply fan will be energized through the EMCS. The air handling unit will be interlocked with the operation of the roof, being started upon the roof being closed. An override will be provided to operate the unit in ventilation mode when the roof is open.
3. Upon the call for heating the air handling unit will be set to pre-heat mode. This will mean that the high level bowl louvers will be closed. The fan will be energized by the EMCS. The indirect heater will be enabled but will be prevented from firing unless the combustion air dampers are proved to be open as detected by an end switch on the actuator. The safety will be hard-wired into the burner circuit to prevent firing until the condition is met.
4. At the end of the pre-heat period, as determined by the bowl temperature reaching a preset limit, the unit will revert to normal operation. The indirect gas-fired burner will modulate to maintain the discharge air temperature. The discharge air temperature setpoint will be reset based on the bowl temperature.
5. Upon the call for ventilation as determined by the EMCS and the outside air temperature, the indirect gas-fired heater will be prevented from firing, and the combustion air damper will close. At the same time the high level left and right field dampers will fully open.
6. Filter replacement will be scheduled based on supply fan runtime.
7. Current switches located on the feed to the supply fan will provide status indication (on/off).
8. The EMCS will monitor and control all points for each air handling unit.
9. The unit will be shut down during the smoke exhaust mode.
10. No flue draft fan is present.
11. No flue draft fan is present.
12. End switches will be provided on all outside air dampers. Hard-wire the end switches into the safety circuit of the supply fan starter.
13. In off hours, see the Frost Protection sequence of operation.

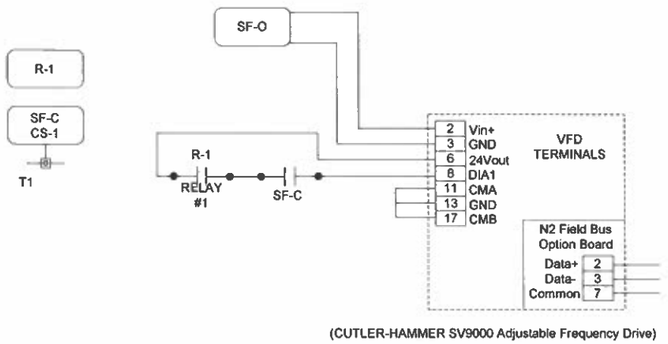
REVISION INFORMATION	Drawing Title							
NUMBER	SEQUENCE							
DATE 04/13/01		REFERENCE DRAWING		NO.	REVISION-LOCATION	ECN	DATE	BY
TIME 08:55 AM		Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR DATE		APPROVED: BY DATE	
FILE NAME aht01s.vsd	Project Title: MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division			Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER: 9 8075-0508	
							DRAWING NUMBER: 27.3	



BILL OF MATERIALS

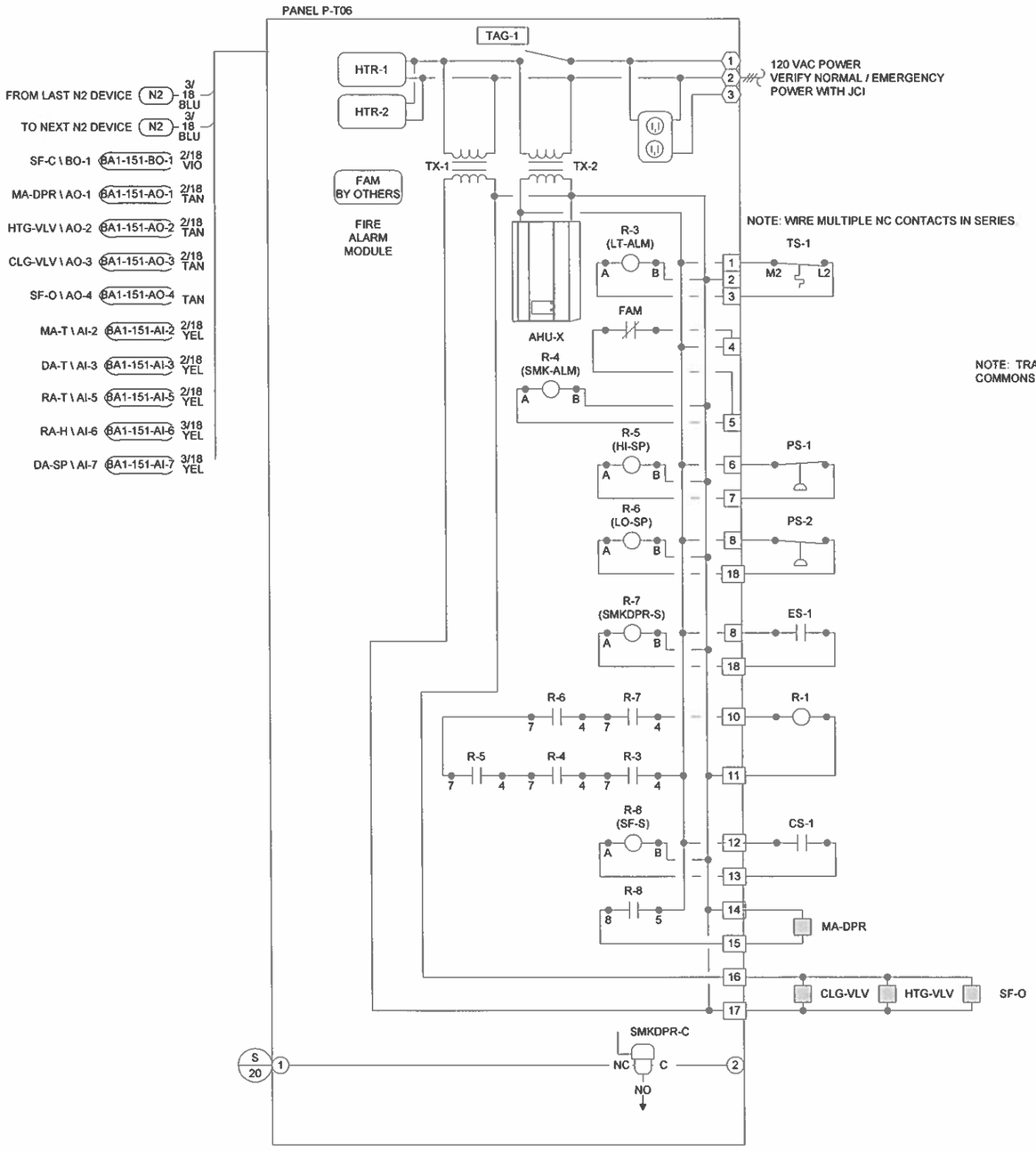
Designation	Qty	Part Number	Description
Field Devices:			
DA-SP	1	DPT-2640-26	XDUCR DP -5.0/5.0" 0-5V
DA-T, MA-T	2	TE-6315P-1	SENS,T-Ni,0.1%,17" AVG
DA-T, MA-T, TS-1	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
PS-x	2	AFS-460	SW, AIR FLOW, SPST-NC RESET .05-12" @CLE
R-1	1	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
RA-H, RA-T	1	HE-6310-2	XMTR,RH/T-Ni,DUCT,AC/DC
SF-C,CS-1	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
ST-x	3	A520-2-A-1	8" STATIC PROBE, ALUM, 1/4"TUBE @MAMAC
TS-1	2	A70HA-1C	STAT,LL,20',EL,MAN,15/55F
X-DPR, X-VLV,XF-O	4	PD-101-1	RESISTOR, 499OHM 1/2W 1%
X-DPR, XF-O, D-1	0	DAMPER	SEE DAMPER SCHEDULE
X-VLV	0	VALVE	SEE VALVE SCHEDULE

SUPPLY FAN VARIABLE SPEED DRIVE



(CUTLER-HAMMER SV9000 Adjustable Frequency Drive)

REVISION INFORMATION	Drawing Title: AH-T06 FLOW	VFD Replaced Inlet Vanes	2003-14	2003 SRF Project			DAM
NUMBER		REFERENCE DRAWING	NO	REVISION-LOCATION	ECN	DATE	BY
DATE: 11/06/09		Sales Engineer: PJS / Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR DATE		APPROVED: BY DATE	
TIME: 09:13 AM	Project Title: MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division		Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER: 9 8075-0508	
FILE NAME: aht06f2.vsd						DRAWING NUMBER: 28.1	



PANEL FACE TAGS:
TAG-1: PANEL P-T06
AH-T06
JCI 9 8075-0508

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
AHU-X	1	AS-AHU103-300	AHU TERMINATION BD/ELECTRONICS IN EWC35
HTR-x	2	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
P-X	1	M-8100-2430	PANEL,STANDARD,12 UNITS
R-3-R-8	6	PD-101-35	RLY BASE,3PDT,11PIN,10A
	6	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
SMKDPR-C	1	V11HGA-100	3-W SOLENOID,W/OV,24 VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-1	1	PD-114-2	TRANSFORMER 100VA, 120/24

REVISION INFORMATION
NUMBER
DATE 06/14/01
TIME 04:50 PM
FILE NAME aht06p.vsd

Drawing Title
AH-T06 PANEL

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY

Sales Engineer	Project Manager	Application Engineer	DRAWN	APPROVED
PJS	TP	KJK	BY MLR DATE	BY DATE

JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER
9 8075-0508

DRAWING NUMBER
28.2

AH-T06

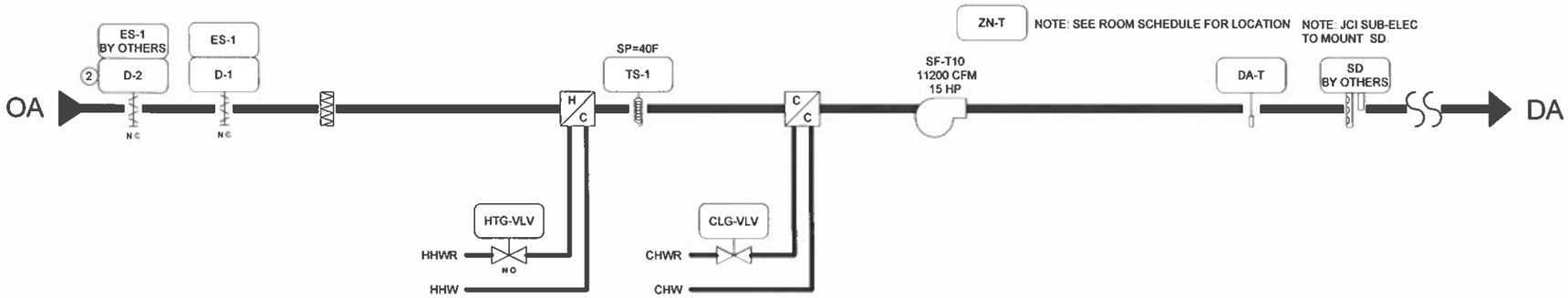
Multi-zone VAV MASP Air Handling System with Economizer Cycle

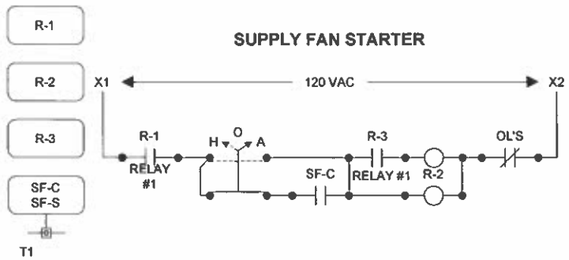
1. The air handling unit is equipped with supply fan, heating coil, cooling coil, pre-filter, final filter and economizer mixing box.
2. The air handling unit supply fan will be energized through the EMCS on a scheduled basis.
3. The supply fan capacity will be modulated via inlet guide vanes based upon static pressure in the supply duct. A high pressure safety cut-out located in the air handling unit will deactivate the unit upon a static pressure of 3.0" w.c. being detected in the cabinet. Provide actuators for inlet vanes.
4. Provide on the air handling unit, an economizer logic network controller to position the economizer dampers for maximum economy and sequenced with the heating and cooling valves.
5. Unless the economizer controller is overridden by the warm-up cycle, the controller will verify that the air handling unit is running via a fan proof of flow controller and open the outside air damper to the minimum required ventilation position.
6. When the outside air dry bulb temperature is less than outside air dry bulb setpoint, the economizer dampers will be positioned for maximum free cooling using outside air to meet the cooling demand. The mechanical cooling equipment will only be used if the outside air cannot provide enough free cooling to meet demand.
7. Upon morning start-up of the occupied mode mechanical cooling will be locked out, the heating control valve will fully open, the outside air damper will remain in the closed position, all VAV boxes will be at maximum CFM though the reheat valve will remain under the control of zone sensors, all interlocked exhaust fans will be de-energized. When the return air temperature reaches the warm-up setpoint, the air handler will return to normal operation. Provide all relays, solenoids, and wiring required to lock out warm-up during normal occupancy hours.
8. Each zone sensor modulates the VAV box damper to satisfy the required room temperature. See the VAV Box sequence of operation.
9. The chilled water control valve will modulate in sequence to maintain the discharge air temperature. The discharge air temperature setpoint will be reset based on return air humidity.
10. Smoke detectors located in the supply and return ducts will on detection of smoke shut down the air handler supply fan via a hard-wire interlock with fan starter. Smoke detectors will indicate status at EMCS.
11. Filter replacement will be scheduled based on supply fan runtime.
12. Current switches will be located on the feed to the supply fan to provide status indication (on/off). In off hours DDC controller will command the chilled water two-way control valve to a fully closed position, the heating valve to the fully open position, and the outside air damper to the fully closed position.
13. The EMCS will monitor and control all points for each air handling unit.
14. If the supply air static at the supply fan raises above the high limit setpoint, the system will be shutdown. If the return air static drops below the low limit setpoint, the system will be shutdown.
15. In off hours, the supply fan will be cycled intermittently by the zone sensor to maintain 60°F.

REVISION INFORMATION	Drawing Title							
NUMBER	SEQUENCE							
DATE 04/13/01		REFERENCE DRAWING		NO.	REVISION-LOCATION		ECN	DATE
TIME 09:28 AM		Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN BY: MLR DATE:		APPROVED BY:	DATE:
FILE NAME aht06s.vsd	Project Title: MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division			Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER: 9 8075-0508	DRAWING NUMBER: 28.3

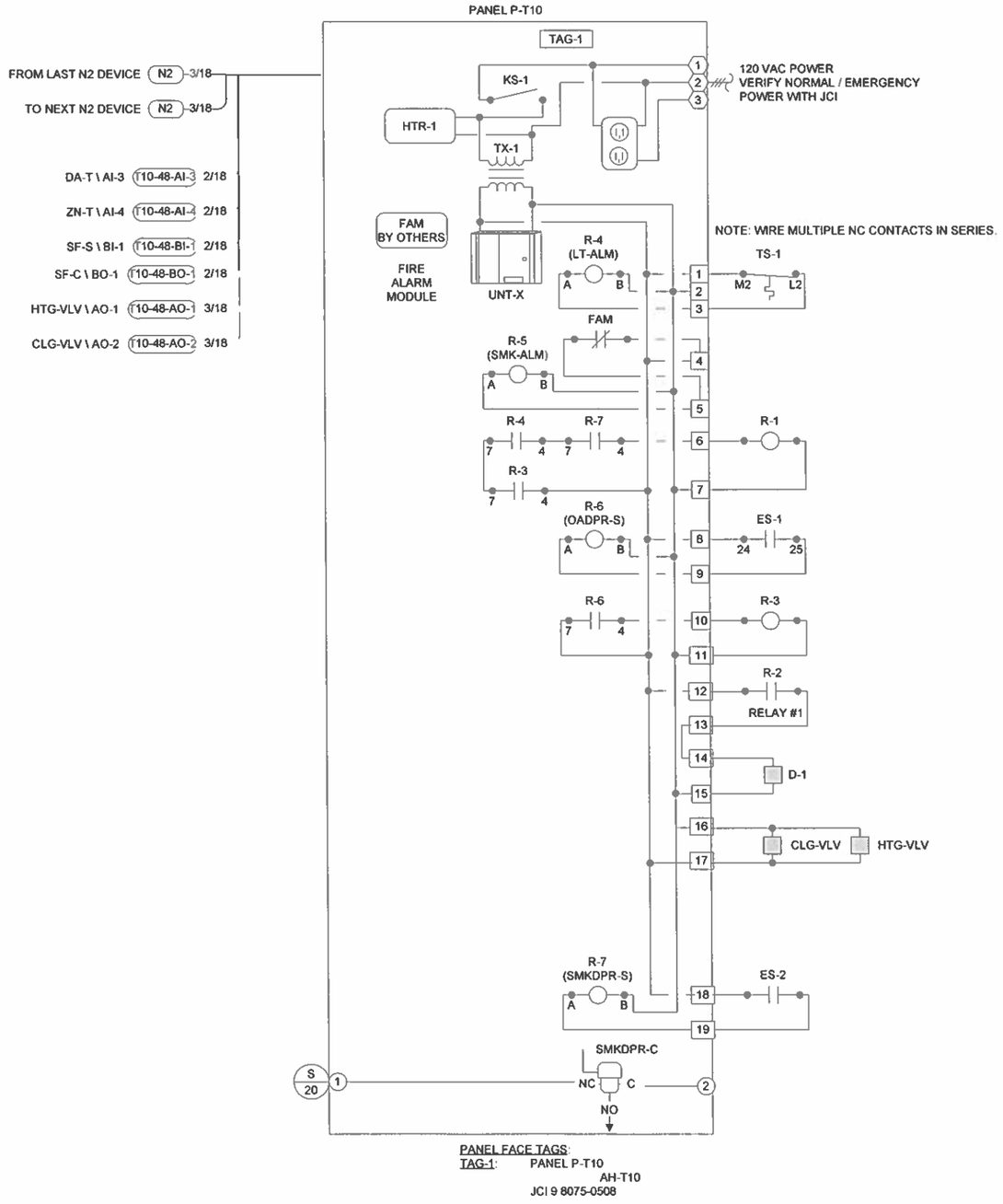
BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
D-x, ES-1	0	DAMPER	SEE DAMPER SCHEDULE
DA-T	1	TE-6311P-1	SENS,T-NI,0.1%,8" DUCT
R-1-R-3	3	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC LED @LEC
SF-C,SF-S	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
TS-1	2	A70HA-1C	STAT,LL,20',EL,MAN,15/55F
	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
X-VLV	0	VALVE	SEE VALVE SCHEDULE
ZN-T	1	TE-6314P-1	SENS,T-NI,0.1%,RM





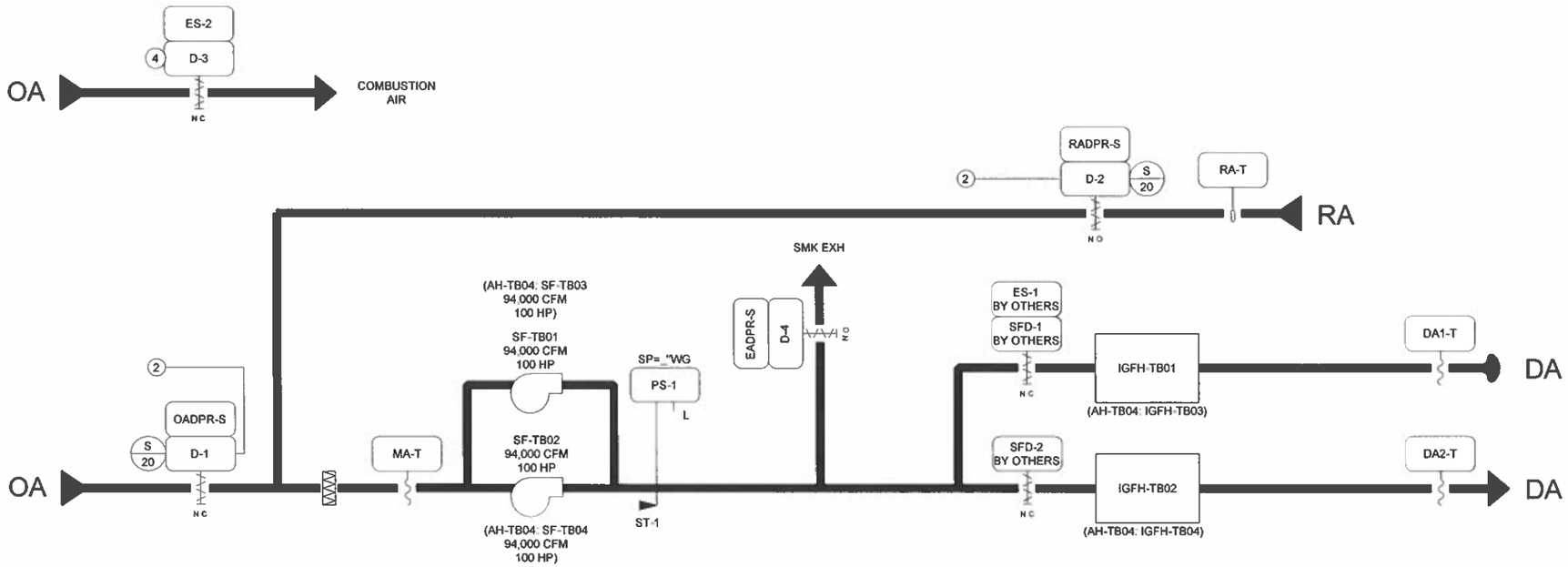
REVISION INFORMATION	Drawing Title									
NUMBER	AH-T10 FLOW									
DATE 04/13/01		REFERENCE DRAWING		NO.	REVISION-LOCATION		ECN	DATE	BY	
TIME 09:37 AM		Sales Engineer PJS	Project Manager TP	Application Engineer KJK	DRAWN BY MLR DATE	APPROVED BY		DATE		
FILE NAME aht10001.vsd	Project Title MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division	Branch Information Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575	CONTRACT NUMBER 9 8075-0508 DRAWING NUMBER 29.1						



BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
HTR-1	1	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
P-X	1	M-8100-2424	PANEL,STANDARD,9 UNITS
R-4-R-6	3	PD-101-35	RLY BASE,3PDT,11PIN,10A
	3	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
UNT-X	1	AS-UNT141-1	UNT CNTRL 6AI 4BI 6BO 2AO W/O ENCL SCREW

REVISION INFORMATION	Drawing Title							
NUMBER	AH-T10 PANEL							
DATE 04/13/01		REFERENCE DRAWING	NO	REVISION-LOCATION		ECN	DATE	BY
TIME 09:54 AM		Sales Engineer PJS	Project Manager TP	Application Engineer KJK	DRAWN BY MLR DATE	APPROVED BY	DATE	
FILE NAME aht10p.vsd	Project Title: MILLER PARK, ONE BREWERS WAY, MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division	Branch Information: Wisconsin Area Office, 529 N. Jackson Street, Milwaukee, WI 53202, Phone: 414-524-7500, Fax: 414-524-7575	CONTRACT NUMBER 9 8075-0508	DRAWING NUMBER 29.2			



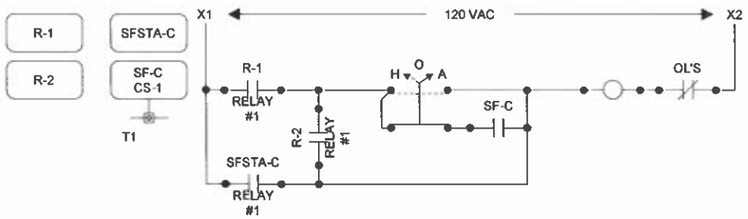
BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
BOWL-T	1	TE-6000-1	SENS,T-Ni,1.0%
	1	TE-6001-2	MTG,OAT SENS (CONDULET)
D-x	0	DAMPER	SEE DAMPER SCHEDULE
ES-2,XDPR-S	4	TS-470	DAMPER POSITION SWITCH - KELE
MA-T	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
MA-T, DAx-T	3	TE-6316P-1	SENS,T-Ni,0.1%,17' AVG
PB-1	1		EMERGENCY STOP PUSH BUTTON
PS-1	1	AFS-460	SW, AIR FLOW, SPST-NC RESET .05-12" @CLE
R-1-2,SFSTA-C	6	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
RA-T	1	TE-6311P-1	SENS,T-Ni,0.1%,8" DUCT
SFx-C,CS-x	2	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
ST-x	1	A520-2-A-1	8" STATIC PROBE, ALUM, 1/4"TUBE @MAMAC

PB-1 LOCATED OUTSIDE FAN CHAMBER.

BOWL-T

SUPPLY FAN SF-TB01 STARTER



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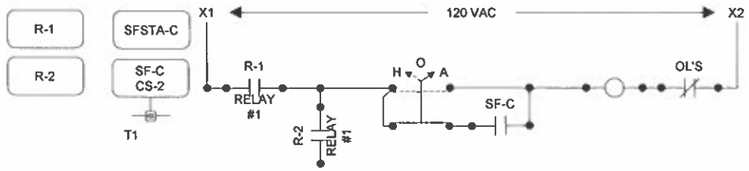
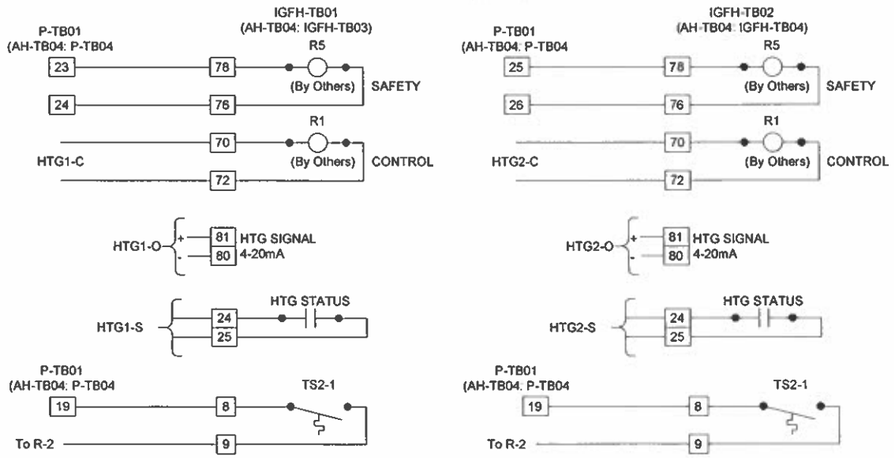
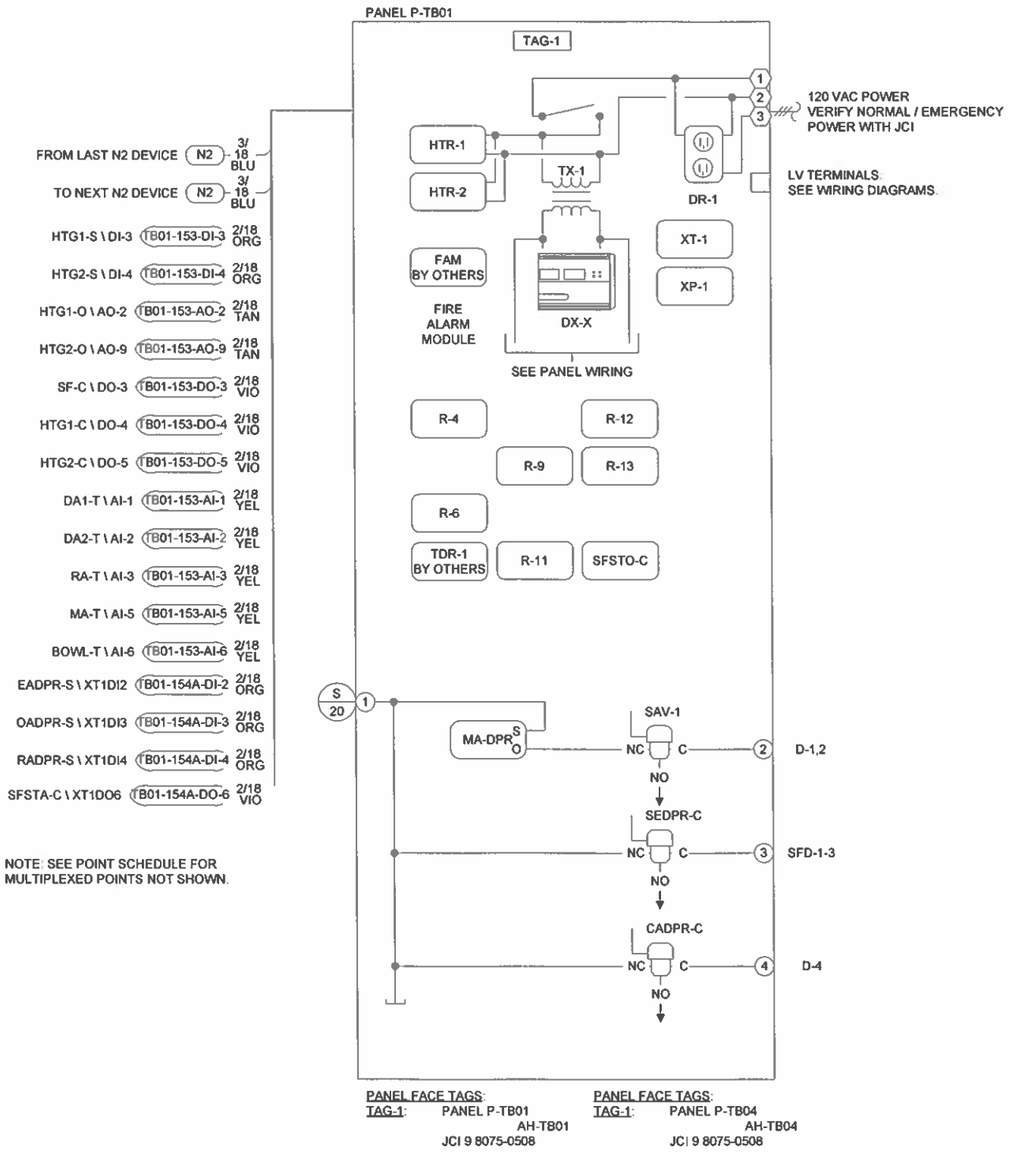


PARTIAL GAS-FIRED HEATER WIRING



NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

REVISION INFORMATION	Drawing Title						
NUMBER	AH-TB01 FLOW TYPICAL FOR AH-TB04						
			1	RECORD DRAWINGS		6/14/2001	MLR
DATE 06/15/01		REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY
TIME 07:21 AM	Project Title	Sales Engineer: PJS; Project Manager: TP; Application Engineer: KJK	DRAWN: BY MLR DATE	APPROVED: BY DATE			
	MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division	Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575	CONTRACT NUMBER: 9 8075-0508			
FILE NAME ahtb01f.vsd				DRAWING NUMBER: 30.1			

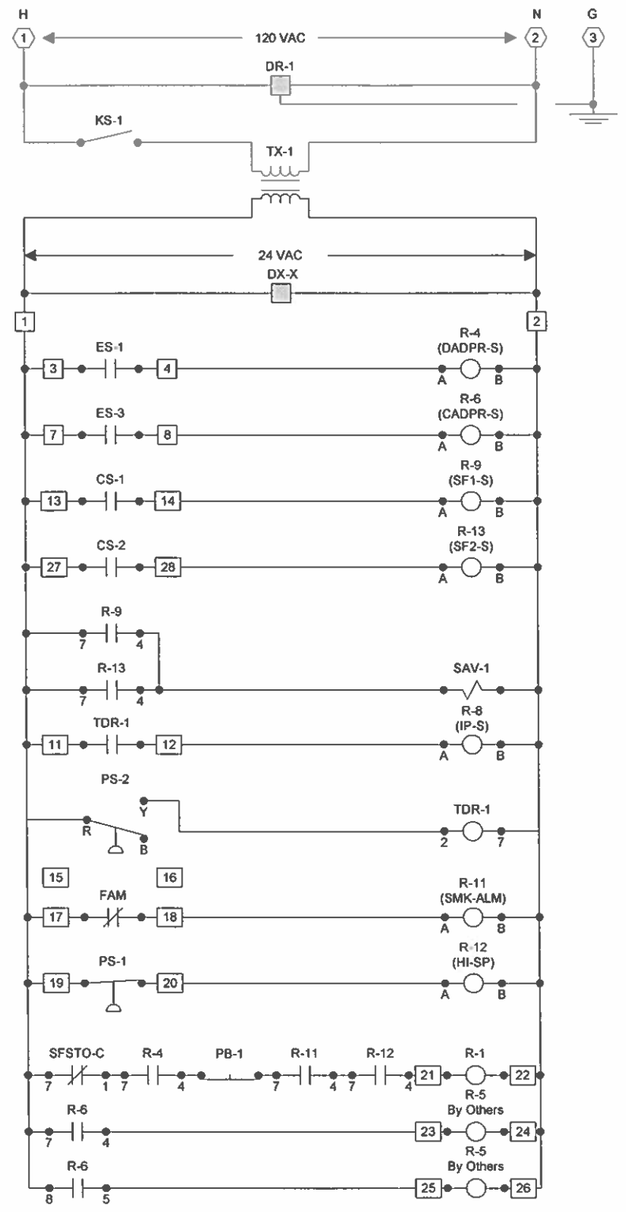


NOTE: SEE POINT SCHEDULE FOR MULTIPLEXED POINTS NOT SHOWN.

PANEL FACE TAGS:
TAG-1: PANEL P-TB01
AH-TB01
JCI 9 8075-0508

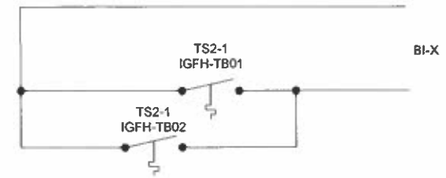
PANEL FACE TAGS:
TAG-1: PANEL P-TB04
AH-TB04
JCI 9 8075-0508

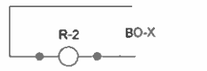
PANEL WIRING



BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
DR-1	1	PD-117-2	RECEPTACLE,DUPLEX,UL,WHT
	1	PD-121-1	RECEPTACLE,DUPLEX,CVR
	1	PD-121-6	HANDY BOX 2 IN
DX-X	1	AS-LCPKEY-0	LCP SERVICE PORT ADJ KEY
	1	DX-9100-8454	DIGITAL CONTR., EXTENDED
	1	DX-9100-8990	MTG BASE (DX9100-8454)
HTR-x	2	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
KS-1	1	PD-112-12	KNIFE SWITCH BLOCK
MA-DPR	1	EP-8000-2	XDUCR,EP,0/10V,HI VOL
P-X	1	M-8100-2436	PANEL,STANDARD,15 UNITS
SAV-1,XDPR-C	3	V11HGA-100	3-W SOLENOID,W/OV,24 VAC
SFSTO-C,R-4,6,9-13	7	PD-101-35	RLY BASE,3PDT,11PIN,10A
	7	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-x	1	PD-114-2	TRANSFORMER 100VA, 120/24
XP-1	1	XP-9104-8004	DX EXP MOD,4 DI,4DO TRIAC
XT-1	1	XT-9100-8204	EXTENSION MODULE





		1	RECORD DRAWINGS		6/14/2001	MLR
REFERENCE DRAWING		NO.	REVISION-LOCATION		ECN	DATE	BY
Sales Engineer	Project Manager	Application Engineer	DRAWN		APPROVED		
PJS	TP	KJK	BY MLR	DATE	BY	DATE	

REVISION INFORMATION
NUMBER
DATE 06/15/01
TIME 07:21 AM
FILE NAME ahtb01p.vsd

Drawing Title
AH-TB01 PANEL
TYPICAL FOR AH-TB04

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER
9 8075-0508

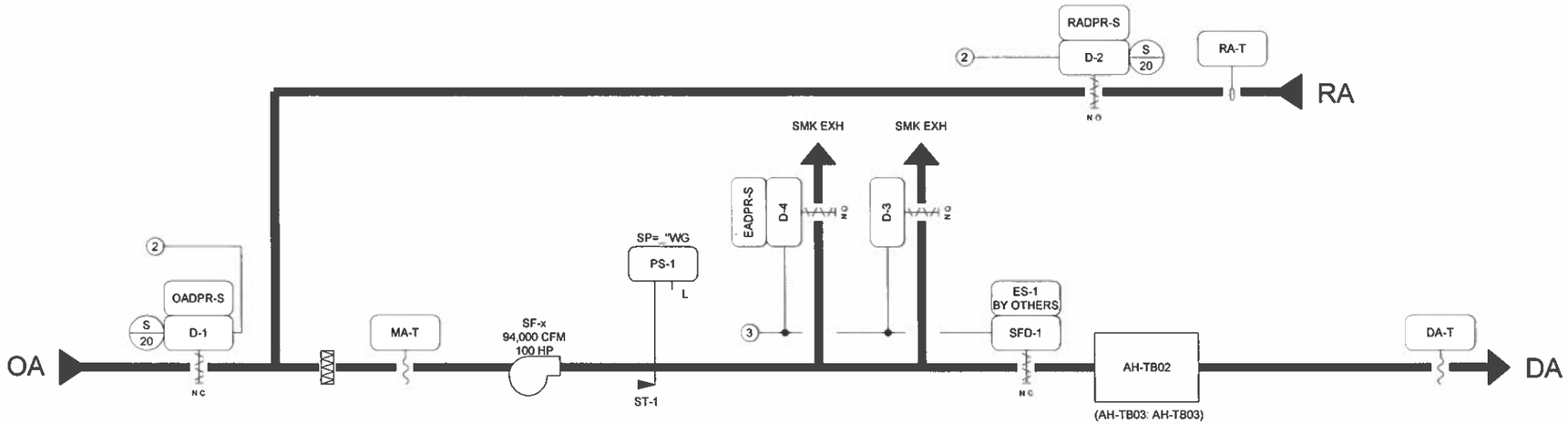
DRAWING NUMBER
30.2

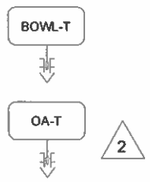
AH-TB01, AH-TB04

MASP Indirect Gas Fired Air Handling System

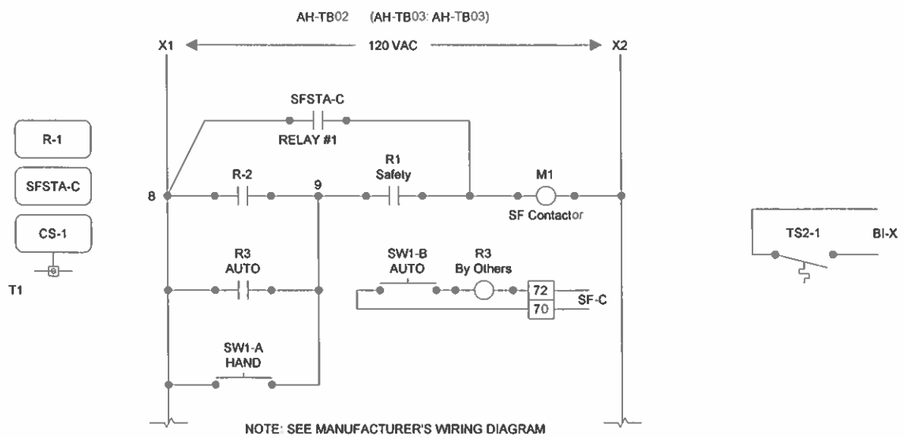
1. The air handling unit is equipped with 2 supply fans, filter, 2 indirect gas-fired heaters.
2. The air handling unit supply fans will be energized through the EMCS. The air handling unit will be interlocked with the operation of the roof, being started upon the roof being closed. An override will be provided to operate the unit in ventilation mode when the roof is open.
3. Upon the call for heating the air handling unit will be set to pre-heat mode. This will mean that the high level bowl louvers will be closed and the outside air dampers will be fully closed. The fans will be energized by the EMCS. The indirect heaters will be enabled but will be prevented from firing unless the combustion air dampers are proved to be open as detected by an end switch on the actuator. The safety will be hard-wired into the burner circuits to prevent firing until the condition is met.
4. At the end of the pre-heat period, as determined by the return temperature reaching a preset limit, the unit will revert to normal operation. This will mean that the outside air damper will move to its minimum position. The indirect gas-fired burners will modulate to maintain the discharge air temperature. The discharge air temperature setpoint will be reset based on the return air temperature.
5. Upon the call for ventilation as determined by the EMCS and the outside air temperature, the outside air damper will fully open and the return air damper will fully close. The indirect gas-fired heaters will be prevented from firing, and the combustion air damper will close. At the same time the high level left and right field dampers will fully open.
6. Filter replacement will be scheduled based on supply fan runtime.
7. Current switches located on the feed to the supply fans will provide status indication (on/off).
8. The EMCS will monitor and control all points for each air handling unit.
9. End switches will be provided on dampers to provide status indication in the smoke exhaust mode. See the Smoke Exhaust System sequence of operation.
10. No flue draft fan is present.
11. No flue draft fan is present.
12. In off hours, see the Frost Protection sequence of operation.

REVISION INFORMATION	Drawing Title							
NUMBER	**SEQUENCE**							
		REFERENCE DRAWING		NO.	REVISION-LOCATION	ECN	DATE	BY
DATE		Sales Engineer	Project Manager	Application Engineer	DRAWN	APPROVED		
04/13/01		PJS	TP	KJK	BY MLR DATE	BY	DATE	
TIME 10:45 AM	Project Title **MILLER PARK** **ONE BREWERS WAY** **MILWAUKEE, WI 53214**	JOHNSON CONTROLS Systems & Services Division			Branch Information Wisconsin Area Office 529 N Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575	CONTRACT NUMBER **9 8075-0508**		
FILE NAME ahtb01s.vsd						DRAWING NUMBER **30.3**		



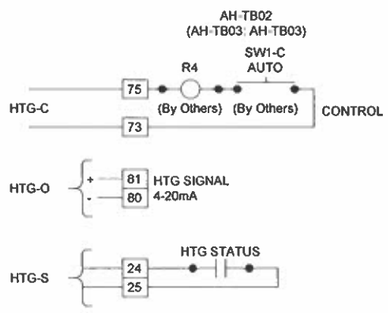


SUPPLY FAN STARTER



NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

PARTIAL GAS-FIRED HEATER WIRING

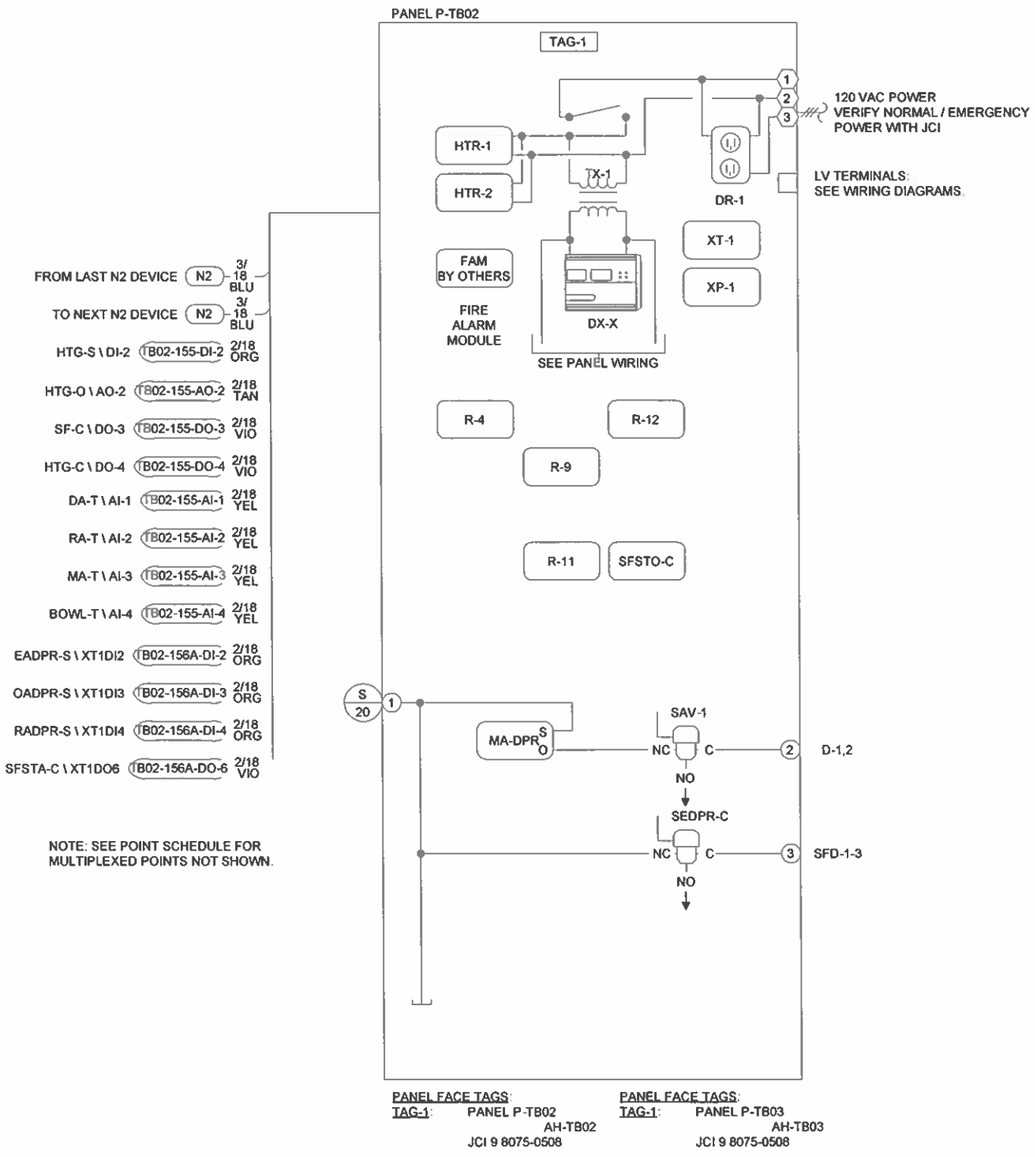


NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
BOWL-T	1	TE-6000-1	SENS,T-Ni,1.0%
	1	TE-6001-2	MTG,OAT SENS (CONDULET)
D-x,SFD-x	0	DAMPER	SEE DAMPER SCHEDULE
MA-T	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
MA-T, DA-T	2	TE-6316P-1	SENS,T-Ni,0.1%,17' AVG
OA-T	1	TE-6313P-1	SENSOR,T-NI,0.1%,3IN OAT
PS-1	1	AFS-460	SW, AIR FLOW, SPST-NC RESET .05-12" @CLE
R-1,SFSTA-C	2	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
RA-T	1	TE-6311P-1	SENS,T-Ni,0.1%,8" DUCT
SF-S	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
ST-x	1	A520-2-A-1	8" STATIC PROBE, ALUM, 1/4"TUBE @MAMAC
XDPR-S	3	TS-470	DAMPER POSITION SWITCH - KELE

REVISION INFORMATION	Drawing Title							
NUMBER	AH-TB02 FLOW TYPICAL FOR AH-TB03							
DATE 04/13/01		REFERENCE DRAWING	NO	REVISION LOCATION		ECN	DATE	BY
TIME 11:05 AM		Sales Engineer PJS	Project Manager TP	Application Engineer KJK	DRAWN BY MLR DATE		APPROVED BY DATE	
	Project Title	Branch Information				CONTRACT NUMBER		
FILE NAME ahtb02f.vsd	MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division	Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575			9 8075-0508		
						DRAWING NUMBER 31.1		

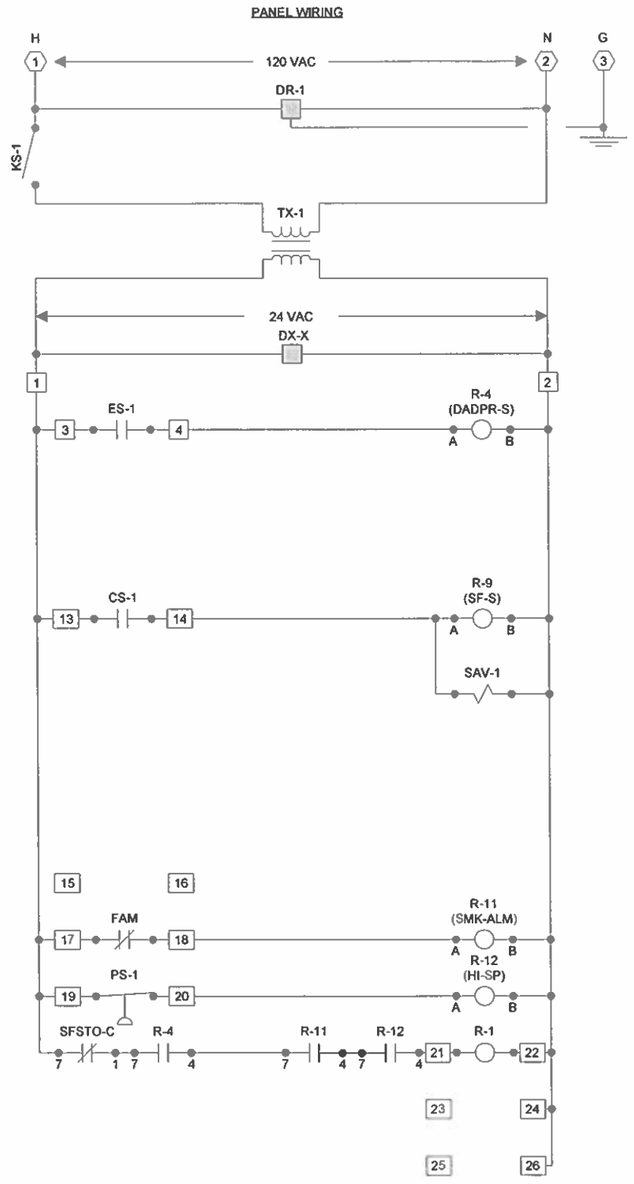


NOTE: SEE POINT SCHEDULE FOR MULTIPLEXED POINTS NOT SHOWN.

PANEL FACE TAGS:
TAG-1: PANEL P-TB02
AH-TB02
JCI 9 8075-0508

PANEL FACE TAGS:
TAG-1: PANEL P-TB03
AH-TB03
JCI 9 8075-0508

PANEL WIRING



BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
DR-1	1	PD-117-2	RECEPTACLE,DUPLEX,UL,WHT
	1	PD-121-1	RECEPTACLE,DUPLEX,CVR
	1	PD-121-6	HANDY BOX 2 IN
DX-X	1	AS-LCPKEY-0	LCP SERVICE PORT ADJ KEY
	1	DX-9100-8454	DIGITAL CONTR., EXTENDED
	1	DX-9100-8990	MTG BASE (DX9100-8454)
HTR-x	2	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
KS-1	1	PD-112-12	KNIFE SWITCH BLOCK
MA-DPR	1	EP-8000-2	XDUCR,EP,0/10V,HI VOL
P-X	1	A-30H20ALP	HOFFMAN NEMA4 PANEL
	1	A-30P20	HOFFMAN NEMA4 PANEL
SAV-1,XDPR-C	2	V11HGA-100	3-W SOLENOID,W/OV,24 VAC
SFSTO-C,R-4,9-13	5	PD-101-35	RLY BASE,3PDT,11PIN,10A
	5	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-x	1	PD-114-2	TRANSFORMER 100VA, 120/24
XP-1	1	XP-9104-8004	DX EXP MOD,4 DI,4DO TRIAC
XT-1	1	XT-9100-8204	EXTENSION MODULE

REVISION INFORMATION
NUMBER
DATE 04/13/01
TIME 11:14 AM
FILE NAME ahtb02p.vsd

Drawing Title
AH-TB02 PANEL
TYPICAL FOR AH-TB03

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

REFERENCE DRAWING	NO.	REVISION LOCATION	ECN	DATE	BY

Sales Engineer	Project Manager	Application Engineer	DRAWN	APPROVED
PJS	TP	KJK	BY MLR DATE	BY DATE

JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER
9 8075-0508

DRAWING NUMBER
31.2

AH-TB02, AH-TB03

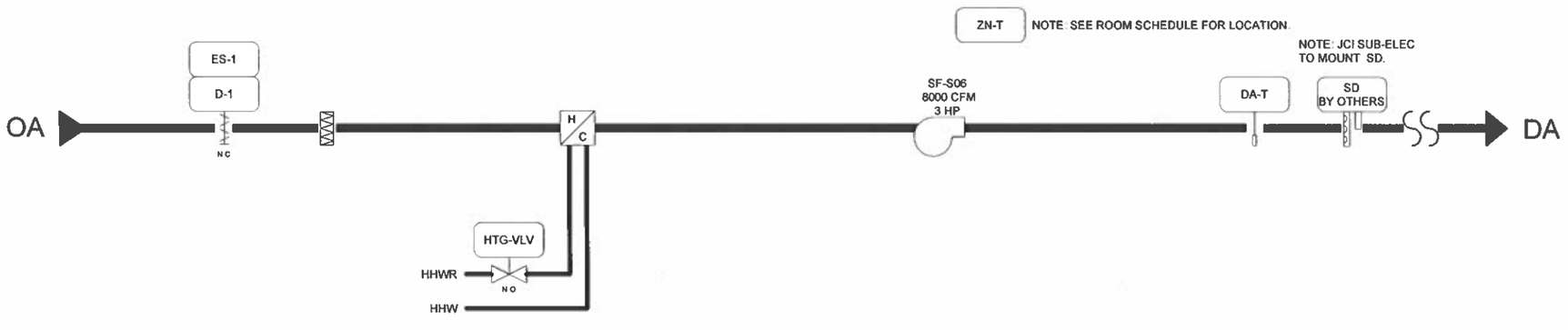
MASP Indirect Gas Fired Air Handling System

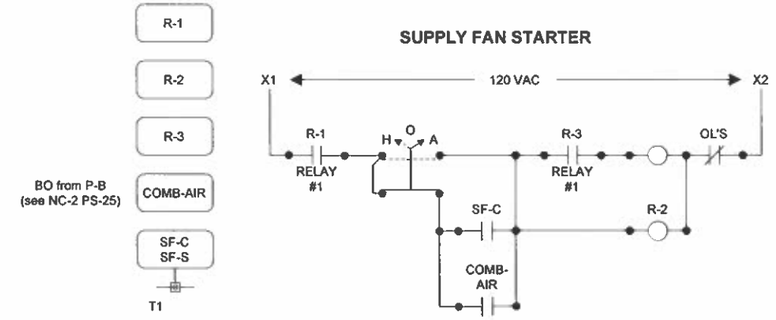
1. The air handling unit is equipped with supply fan, filter, indirect gas-fired heater.
2. The air handling unit supply fan will be energized through the EMCS. The air handling unit will be interlocked with the operation of the roof, being started upon the roof being closed. An override will be provided to operate the unit in ventilation mode when the roof is open.
3. Upon the call for heating the air handling unit will be set to pre-heat mode. This will mean that the high level bowl louvers will be closed and the outside air dampers will be fully closed. The fan will be energized by the EMCS. The indirect heater will be enabled but will be prevented from firing unless the combustion air dampers are proved to be open as detected by an end switch on the actuator. The safety will be hard-wired into the burner circuit to prevent firing until the condition is met.
4. At the end of the pre-heat period, as determined by the return temperature reaching a preset limit, the unit will revert to normal operation. This will mean that the outside air damper will move to its minimum position. The indirect gas-fired burner will modulate to maintain the discharge air temperature. The discharge air temperature setpoint will be reset based on the return air temperature.
5. Upon the call for ventilation as determined by the EMCS and the outside air temperature, the outside air damper will fully open and the return air damper will fully close. The indirect gas-fired heater will be prevented from firing, and the combustion air damper will close. At the same time the high level left and right field dampers will fully open.
6. Filter replacement will be scheduled based on supply fan runtime.
7. Current switches located on the feed to the supply fan will provide status indication (on/off).
8. The EMCS will monitor and control all points for each air handling unit.
9. End switches will be provided on dampers to provide status indication in the smoke exhaust mode. See the Smoke Exhaust System sequence of operation.
10. No flue draft fan is present.
11. No flue draft fan is present.
12. In off hours, see the Frost Protection sequence of operation.

REVISION INFORMATION	Drawing Title									
NUMBER	SEQUENCE									
DATE 04/13/01										
TIME 11:18 AM		REFERENCE DRAWING		NO.	REVISION-LOCATION		ECN	DATE	BY	
FILE NAME ahtb02s.vsd		Sales Engineer PJS	Project Manager TP	Application Engineer KJK	DRAWN BY MLR	DATE	APPROVED BY	DATE		
	Project Title MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division			Branch Information Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER 9 8075-0508			
							DRAWING NUMBER 31.3			

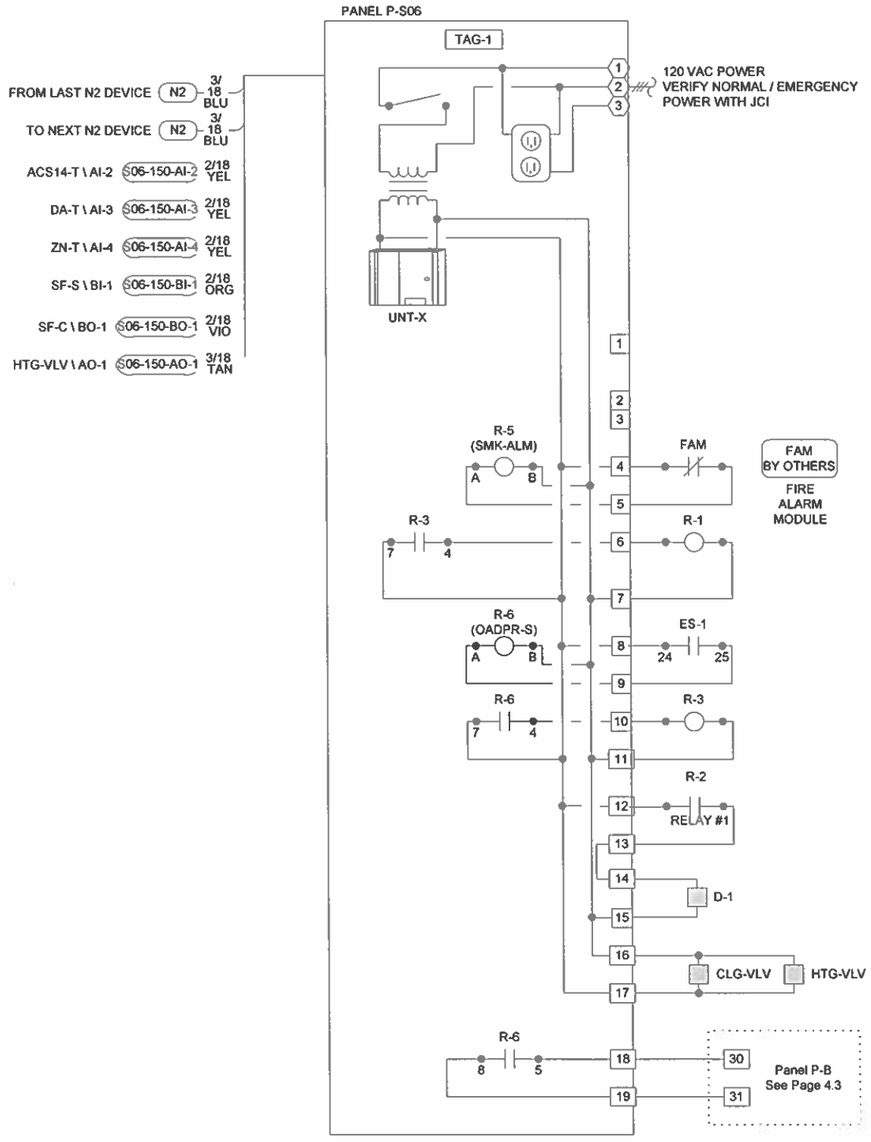
BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
D-1, ES-1	0	DAMPER	SEE DAMPER SCHEDULE
DA-T	1	TE-6311P-1	SENS,T-Ni,0.1%,8" DUCT
R-1-R-3,COMB-AIR	4	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
SF-C,SF-S	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
TS-1	1	A70GA-1C	STAT,LL,20FT,EL,AUT,15/55F
	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
X-VLV	0	VALVE	SEE VALVE SCHEDULE
ZN-T	1	TE-6314P-1	SENS,T-Ni,0.1%,RM





REVISION INFORMATION	Drawing Title								
NUMBER	SF-S06 FLOW								
DATE 04/13/01		REFERENCE DRAWING		NO.	REVISION-LOCATION		ECN	DATE	BY
TIME 12:00 PM		Sales Engineer PJS	Project Manager TP	Application Engineer KJK	DRAWN BY MLR	DATE	APPROVED BY	DATE	
FILE NAME sfs06f.vsd	Project Title MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division			Branch Information Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER 9 8075-0508	DRAWING NUMBER 32.1	



PANEL FACE TAGS:
TAG-1: PANEL P-S06
SF-S06
JCI 9 8075-0508

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
P-X	1	EN-EWC35-0	TRIPLE ENCLOSURE WITH 100VA POWER
R-5-R-6	2	PD-101-35	RLY BASE,3PDT,11PIN,10A
	2	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
UNT-X	1	AS-UNT141-1	UNT CNTRL 6AI 4BI 6BO 2AO W/O ENCL SCREW

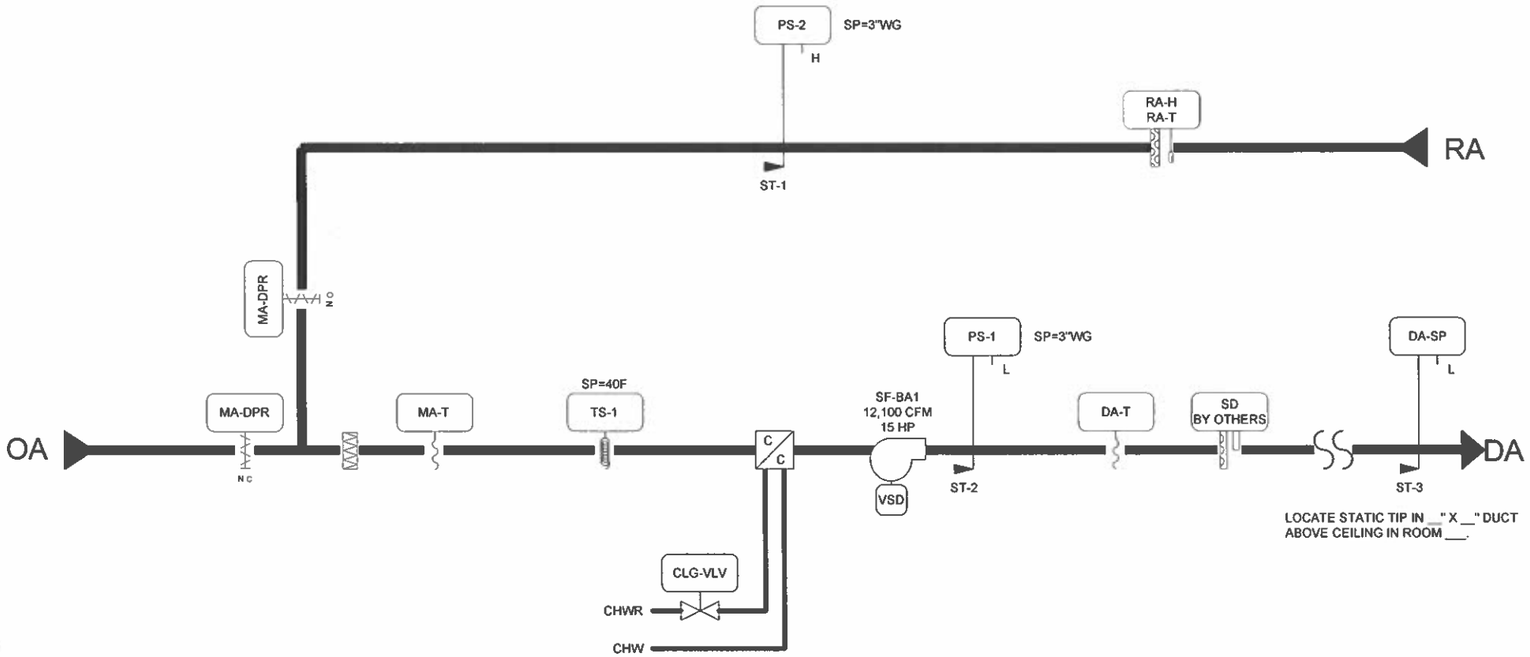
REVISION INFORMATION	Drawing Title: SF-S06 PANEL						
			1	RECORD DRAWINGS		6/14/2001	MLR
NUMBER		REFERENCE DRAWING	NO	REVISION LOCATION	ECN	DATE	BY
DATE 06/15/01		Sales Engineer: PJS / Project Manager: TP	Application Engineer: KJK	DRAWN BY MLR DATE		APPROVED BY DATE	
TIME 07:20 AM	Project Title: MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division		Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER: 9 8075-0508	
FILE NAME sfs06p.vsd						DRAWING NUMBER: 32.2	

SF-S06

Boiler Room Ventilation

1. The supply fan will not be energized until the outside air damper is open as determined by an end switch on the actuator. The fan will continue to run until the boilers are deactivated.
2. The heating coil valve will be modulated to maintain a minimum space temperature.
3. If the fan starter switch is in the Hand position, a hard-wired solenoid will open the combustion outside air damper fully, and when the damper is fully open as proven from the end switch, the supply fan will energize. Hard-wire the damper end switch into the safety side of the fan motor starter to prevent the fan from energizing from the EMCS or the Hand position of the starter, unless the end switch is closed.
4. Current switches located on the feed to the fan will provide status indication to the EMCS.
5. The fan will be energized on a call for a boiler to operate, from a solenoid hard-wired into the four burners that will open the combustion damper. The end switch on the combustion damper will energize the fan (See Main Hot Water System sequence of operation).
6. Filter replacement will be scheduled based on supply fan runtime.
7. Monitor the combustion air damper end switch on the EMCS.

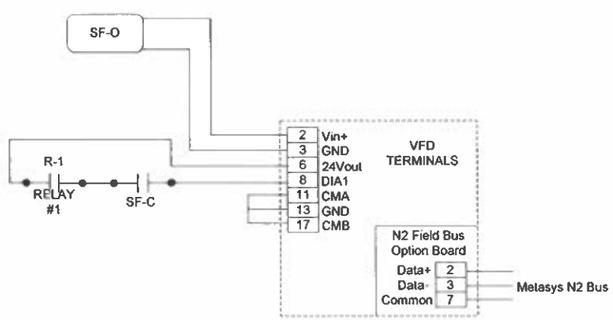
REVISION INFORMATION	Drawing Title							
NUMBER	SEQUENCE							
DATE 04/13/01		REFERENCE DRAWING	NO.	REVISION LOCATION	ECN	DATE	BY	
TIME 12:08 PM		Sales Engineer PJS / Project Manager TP / Application Engineer KJK	DRAWN BY MLR DATE	APPROVED BY DATE				
FILE NAME sfs06s.vsd	Project Title MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division	Branch Information: Wisconsin Area Office, 529 N Jackson Street, Milwaukee, WI 53202, Phone: 414-524-7500, Fax: 414-524-7575	CONTRACT NUMBER 9 8075-0508	DRAWING NUMBER 32.3			



BILL OF MATERIALS

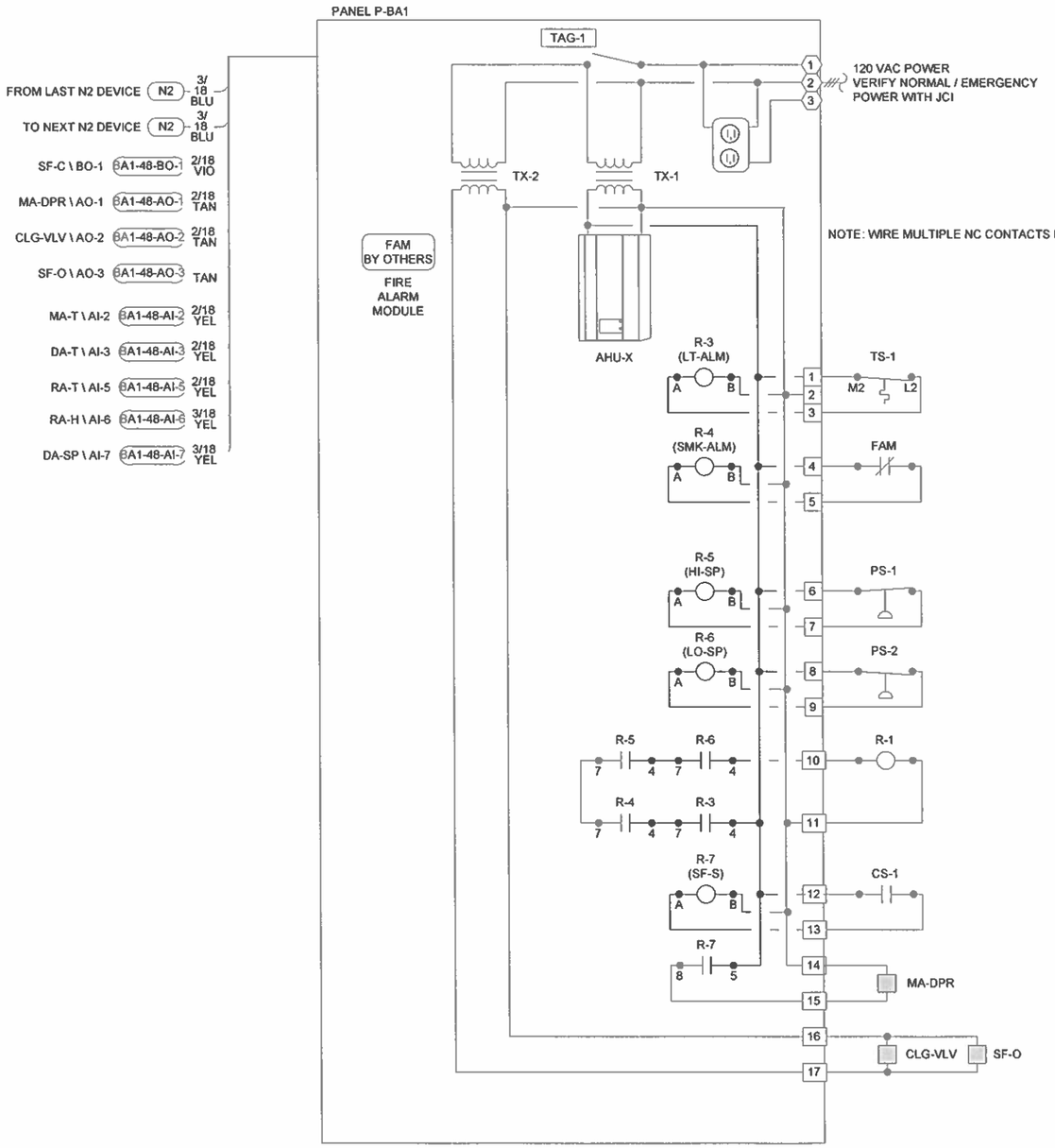
Designation	Qty	Part Number	Description
Field Devices:			
DA-SP	1	DPT2640-005B	DP TRANS DIF, -5 TO 5 WC
DA-T, MA-T	2	TE-6316P-1	SENS,T-Ni,0.1%,17' AVG
DA-T, MA-T, TS-1	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
PS-x	2	AFS-460	SW, AIR FLOW, SPST-NC RESET .05-12" @CLE
R-1	1	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
RA-H, RA-T	1	HE-6310-2	XMTR,RH/T-Ni,DUCT,AC/DC
SF-C,CS-1	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
ST-x	3	A520-2-A-1	8" STATIC PROBE, ALUM, 1/4"TUBE @MAMAC
TS-1	2	A70HA-1C	STAT,LL,20',EL,MAN,15/55F
X-DPR, X-VLV,XF-O	3	PD-101-1	RESISTOR, 499OHM 1/2W 1%
X-DPR, XF-O	0	DAMPER	SEE DAMPER SCHEDULE
X-VLV	0	VALVE	SEE VALVE SCHEDULE

SUPPLY FAN VARIABLE SPEED DRIVE



(CUTLER-HAMMER SV9000 Adjustable Frequency Drive)

REVISION INFORMATION	Drawing Title							
NUMBER	AH-BA1 FLOW	VFD Replaced Inlet Vanes	2003-14	2003 SRF Project				DAM
DATE 11/06/09		REFERENCE DRAWING	NO.	REVISION LOCATION	ECN	DATE	BY	
TIME 08:01 AM	Project Title	Sales Engineer PJS / Project Manager TP	Application Engineer KJK	DRAWN BY MLR DATE	APPROVED BY	DATE		
FILE NAME ahba1f2.vsd	MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division	Branch Information Wisconsin Area Office 529 N Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575	CONTRACT NUMBER 9 8075-0508	DRAWING NUMBER 33.1			



PANEL FACE TAGS:
TAG-1: PANEL P-BA1
AH-BA1
JCI 9 8075-0508

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
AHU-X	1	AS-AHU103-300	AHU TERMINATION BD/ELECTRONICS IN EWC35
P-BA1	2	EN-EXP101-0	EXPANSION COVER AND BACKBONE
R-3-R-7	5	PD-101-35	RLY BASE,3PDT,11PIN,10A
	5	PD-109-51	RELAY PLUG-IN 3PDT 24VAC
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-x	2	PD-114-2	TRANSFORMER 100VA, 120/24

REVISION INFORMATION
NUMBER
DATE 04/13/01
TIME 12:24 PM
FILE NAME ahba1p.vsd

Drawing Title
AH-BA1 PANEL

REFERENCE DRAWING	NO.	REVISION LOCATION	ECN	DATE	BY

Sales Engineer	Project Manager	Application Engineer	DRAWN	APPROVED
PJS	TP	KJK	BY MLR DATE	BY DATE

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER
9 8075-0508

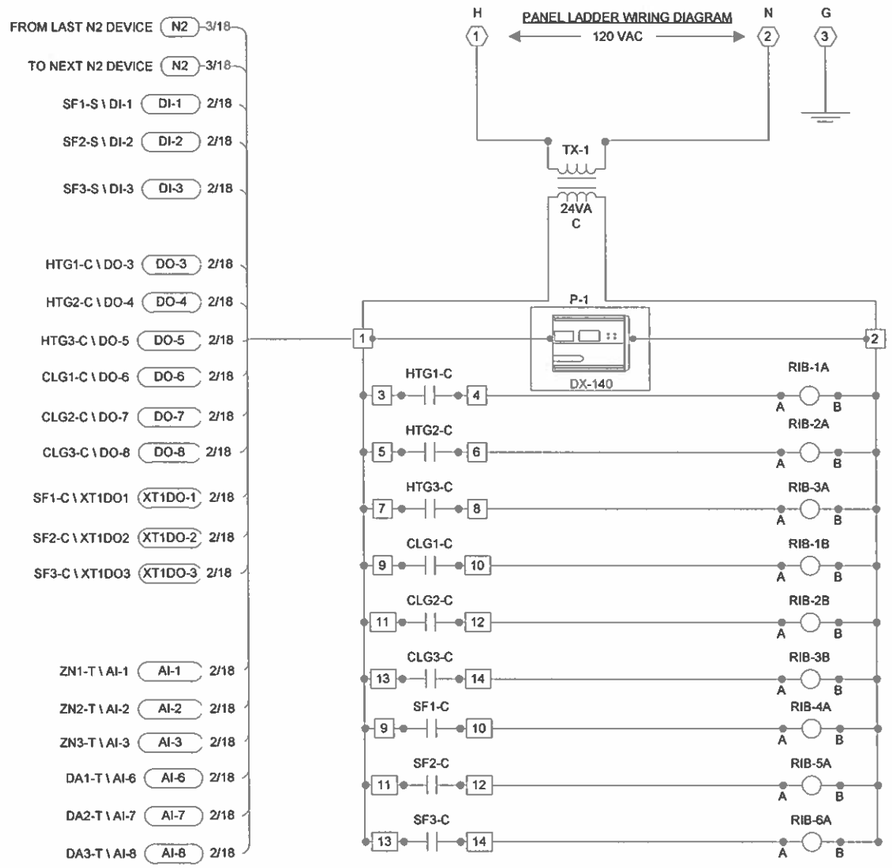
DRAWING NUMBER
33.2

AH-BA1

Multi-zone VAV MASP Air Handling System with Economizer Cycle

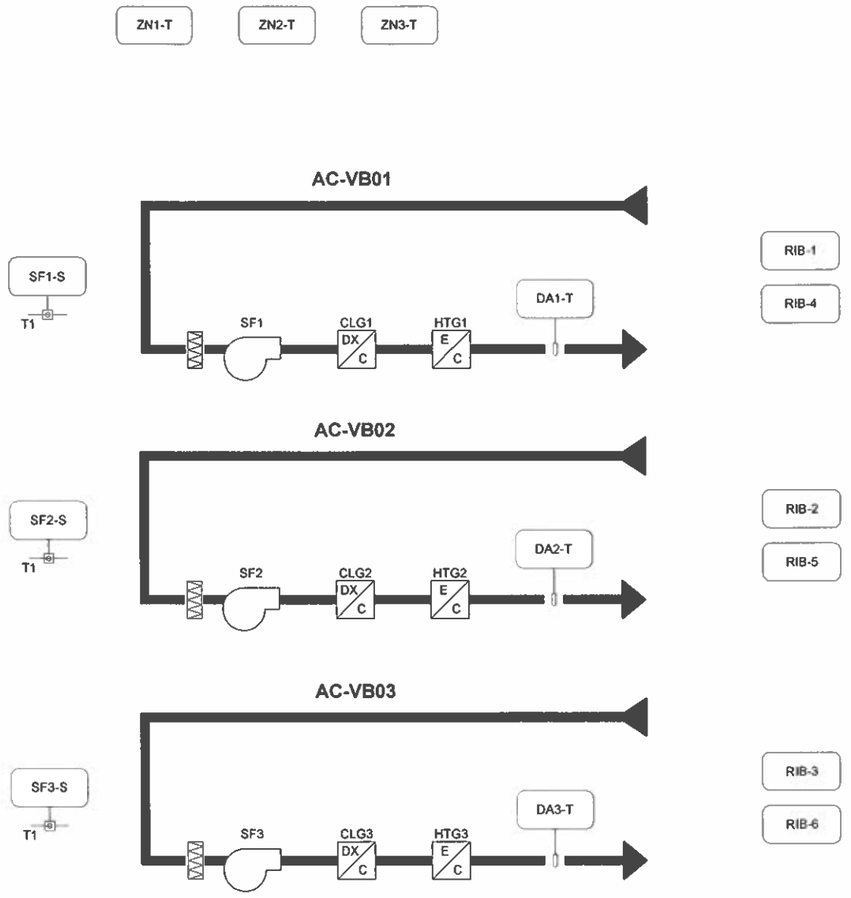
1. The air handling unit is equipped with supply fan, cooling coil, pre-filter, final filter and economizer mixing box.
2. The air handling unit supply fan will be energized through the EMCS on a scheduled basis.
3. The supply fan capacity will be modulated via inlet guide vanes based upon static pressure in the supply duct. A high pressure safety cut-out located in the air handling unit will deactivate the unit upon a static pressure of 3.0" w.c. being detected in the cabinet. Provide actuators for inlet vanes.
4. Provide on the air handling unit, an economizer logic network controller to position the economizer dampers for maximum economy and sequenced with the cooling valve.
5. Unless the economizer controller is overridden by the warm-up cycle, the controller will verify that the air handling unit is running via a fan proof of flow controller and open the outside air damper to the minimum required ventilation position.
6. When the outside air dry bulb temperature is less than outside air dry bulb setpoint, the economizer dampers will be positioned for maximum free cooling using outside air to meet the cooling demand. The mechanical cooling equipment will only be used if the outside air cannot provide enough free cooling to meet demand.
7. Upon morning start-up of the occupied mode mechanical cooling will be locked out, the outside air damper will remain in the closed position, all VAV boxes will be at maximum CFM though the reheat valve will remain under the control of zone sensors, all interlocked exhaust fans will be de-energized. When the return air temperature reaches the warm-up setpoint, the air handler will return to normal operation. Provide all relays, solenoids, and wiring required to lock out warm-up during normal occupancy hours.
8. Each zone sensor modulates the VAV box damper to satisfy the required room temperature. See the VAV Box sequence of operation.
9. The chilled water control valve will modulate in sequence to maintain the discharge air temperature. The discharge air temperature setpoint will be reset based on return air humidity.
10. Smoke detectors located in the supply and return ducts will on detection of smoke shut down the air handler supply fan via a hard-wire interlock with fan starter. Smoke detectors will indicate status at EMCS.
11. Filter replacement will be scheduled based on supply fan runtime.
12. Current switches will be located on the feed to the supply fan to provide status indication (on/off). In off hours DDC controller will command the chilled water two-way control valve to a fully closed position, and the outside air damper to the fully closed position.
13. The EMCS will monitor and control all points for each air handling unit.
14. If the supply air static at the supply fan raises above the high limit setpoint, the system will be shutdown. If the return air static drops below the low limit setpoint, the system will be shutdown.
15. In off hours, the supply fan will be cycled intermittently by the zone sensor to maintain 60'F.

REVISION INFORMATION	Drawing Title							
NUMBER	**SEQUENCE**							
		REFERENCE DRAWING		NO.	REVISION-LOCATION	ECN	DATE	BY
DATE 04/13/01		Sales Engineer PJS	Project Manager TP	Application Engineer KJK	DRAWN BY MLR DATE		APPROVED BY DATE	
TIME 12:30 PM	Project Title **MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214**	JOHNSON CONTROLS Systems & Services Division			Branch Information Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER **9 8075-0508**	
FILE NAME ahba1s.vsd							DRAWING NUMBER **33.3**	

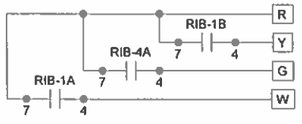


BILL OF MATERIALS

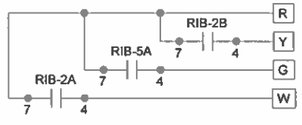
Designation	Qty	Part Number	Description
Field Devices:			
ZNx-T	3	TE-6314P-1	WALL MOUNT TEMP SENSOR
RIB-x	6	CVR21C-0	RELAY-IN-A-BOX
DAx-T	3	TE-6311P-1	DUCT PROBE TEMP SENSOR
SFx-S	3	H-908	CURRENT SWITCH
Panel Devices:			
P-1	1	EN-EWC10-0	SINGLE UNIT



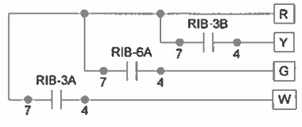
AC-VB01 WIRING



AC-VB02 WIRING



AC-VB03 WIRING



REVISION INFORMATION
NUMBER
DATE: 09/03/02
TIME: 04:41 PM
FILE NAME: accv123.vsd

Drawing Title: **VIDEO BOARD ROOM DETAILS**

Project Title: **MILLER PARK**
ONE BREWERS WAY
MILWAUKEE, WI 53214

REFERENCE DRAWING		NO	REVISION LOCATION	ECN	DATE	BY
Sales Engineer	Project Manager	Application Engineer	DRAWN		APPROVED	
DAM	DAM	DAM	BY MLR DATE	BY	DATE	

JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N. Jackson Street
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Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER: **9 8075-0508**

DRAWING NUMBER: **33.4**

AIR HANDLER I/L	START/STOP			STATUS			DISABLE			PANEL ALARM			DETAIL	COMMENT
	SYSTEM	OBJECT	PAGE #	SYSTEM	OBJECT	PAGE #	SYSTEM	OBJECT	PAGE #	SYSTEM	OBJECT	PAGE #		
NONE		DIV 16		EF	CEFS01-S	NC-11 PS-4							B	
NONE		DIV 16		EF	CEFS04-S	NC-11 PS-20							B	
NONE		DIV 16		EF	CEFS05-S	NC-11 PS-34							B	
AH-F11	EF	CEFF14-C	NC-13 PS-4	EF	CEFF14-S	NC-13 PS-4							A1	
AH-F12	EF	CEFF15-C	NC-13 PS-28	EF	CEFF15-S	NC-13 PS-28							A1	
AH-S11	EF	EFS01-C	NC-11 PS-24	EF	EFS01-S	NC-11 PS-24							A2	SEE SERVICE TUNNEL VENT
AH-S12	EF	EFS02-C	NC-11 PS-33	EF	EFS02-S	NC-11 PS-33							A2	SEE SERVICE TUNNEL VENT
AH-S11	EF	EFS03-C	NC-11 PS-26	EF	EFS03-S	NC-11 PS-26							A2	SEE SERVICE TUNNEL VENT
AH-S12	EF	EFS04-C	NC-11 PS-30	EF	EFS04-S	NC-11 PS-30							A2	SEE SERVICE TUNNEL VENT
AH-S17	EF	EFS05-C	NC-11 PS-37	EF	EFS05-S	NC-11 PS-37							F	SEE CHILLER RM VENT
C.O. ALARM	EF	EFS06-C	NC-11 PS-33	EF	EFS06-S	NC-11 PS-33				EF	EFS06-A	NC-11 PS-33	E	COMONITOR I/L
AH-S13	EF	EFS09-C	NC-11 PS-33	EF	EFS09-S	NC-11 PS-33							A2	
AH-S02,S03	EF	EFS10-C	NC-11 PS-30	EF	EFS10-S	NC-11 PS-30							A2	
AH-S02,S03	EF	EFS11-C	NC-11 PS-30	EF	EFS11-S	NC-11 PS-30							A2	
AH-S10	EF	EFS12-C	NC-11 PS-18	EF	EFS12-S	NC-11 PS-18							A2	
AH-S01,S04	EF	EFS13-C	NC-11 PS-18	EF	EFS13-S	NC-11 PS-18							A2	
AH-S02,S03		ON/OFF SWITCH		EF	EFS15-S	NC-11 PS-30	EF	EFS15-D	NC-11 PS-30	EF	EFS15-A	NC-11 PS-30	D	GREASE REMOVAL EF
AH-S01,S04		ON/OFF SWITCH		EF	EFS16-S	NC-11 PS-27	EF	EFS16-D	NC-11 PS-27	EF	EFS16-A	NC-11 PS-27	D	GREASE REMOVAL EF
AH-S01,S04	EF	EFS17-C	NC-11 PS-26	EF	EFS17-S	NC-11 PS-26							A2	
AH-S01,S04	EF	EFS18-C	NC-11 PS-6	EF	EFS18-S	NC-11 PS-6							A2	
AH-S02,S03	EF	EFS20-C	NC-11 PS-30	EF	EFS20-S	NC-11 PS-30							A2	
AH-S01,S04		ON/OFF SWITCH		EF	EFS21-S	NC-11 PS-24	EF	EFS21-D	NC-11 PS-24	EF	EFS21-A	NC-11 PS-24	D	GREASE REMOVAL EF
AH-S05		ON/OFF SWITCH		EF	EFS22-S	NC-11 PS-24	EF	EFS22-D	NC-11 PS-24	EF	EFS22-A	NC-11 PS-24	D	GREASE REMOVAL EF
AH-F13	EF	EFF01-C	NC-13 PS-5	EF	EFF01-S	NC-13 PS-5							A2	
FL FCU	EF	EFF02-C	NC-13 PS-27	EF	EFF02-S	NC-13 PS-27							A2	
FL FCU	EF	EFF03-C	NC-13 PS-25	EF	EFF03-S	NC-13 PS-25							A2	
FL FCU	EF	EFF04-C	NC-12 PS-24	EF	EFF04-S	NC-12 PS-24							A2	
FL FCU	EF	EFF05-C	NC-12 PS-24	EF	EFF05-S	NC-12 PS-24							A2	
NONE	EF	EFF07-C	NC-12 PS-32	EF	EFF07-S	NC-12 PS-32							A2	
NONE		ON/OFF SWITCH		EF	EFL03-S	NC-12 VMA-7	EF	EFL03-D	NC-12 VMA-7	EF	EFL03-A	NC-12 VMA-7	D	GREASE REMOVAL EF

NOTE: SEE EXCEL SPREADSHEET FANSCH1VSD.XLS FOR SOURCE OF BITMAP.

REVISION INFORMATION	Drawing Title						
NUMBER	FAN DETAILS						
DATE 08/16/02			1	RECORD DRAWINGS		4/16/2001	MLR
TIME 10:38 AM		REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY
		Sales Engineer: PJS / Project Manager: TP / Application Engineer: KJK		DRAWN: BY MLR DATE		APPROVED: BY DATE	
FILE NAME fansch1-new2.vsd	Project Title: MILLER PARK, ONE BREWERS WAY, MILWAUKEE, WI 53214	JOHNSON CONTROLS, Systems & Services Division	Branch Information: Wisconsin Area Office, 529 N. Jackson Street, Milwaukee, WI 53202, Phone: 414-524-7500, Fax: 414-524-7575			CONTRACT NUMBER: 9 8075-0508	DRAWING NUMBER: 34.1

REV	FAN	FAN LOCATION			SERVING			HP	CFM	STARTER LOCATION	AIR HANDLER I/L	START/STOP			STATUS			DISABLE			PANEL ALARM			DETAIL	COMMENT
												SYSTEM	OBJECT	PAGE S	SYSTEM	OBJECT	PAGE S	SYSTEM	OBJECT	PAGE S	SYSTEM	OBJECT	PAGE S		
1	CEF-S01	SL0	1004	TOILET	SL0	1004	TOILET	F	75	NU	NONE		DIV 16		EF	CEFS01-S	NC-11 PS-4							B	
1	CEF-S04	SL8	1816	TOILET	SL8	1816	TOILET	F	75	NU	NONE		DIV 16		EF	CEFS04-S	NC-11 PS-20							B	
1	CEF-S05	SL9	1907	TOILET	SL9	1907	TOILET	F	75	NU	NONE		DIV 16		EF	CEFS05-S	NC-11 PS-34							B	
1	CEF-F14	FL4	2422	TICKET OPERATIONS	FL4	MULT	TOILET	F	150	NU	AH-F11	EF	CEFF14-C	NC-13 PS-4	EF	CEFF14-S	NC-13 PS-4							A1	
1	CEF-F15	FL5	2515	WAIT	FL5	MULT	TOILET	F	145	NU	AH-F12	EF	CEFF15-C	NC-13 PS-28	EF	CEFF15-S	NC-13 PS-28							A1	
	FOR ALL OTHER CEF-xxx, SEE ROOM SCHEDULE																								
1	EF-S01	SL1	1116	COMMISSARY STORAGE	SL1	NA	SERVICE TUNNEL	7.5	13630	NU	AH-S11	EF	EFS01-C	NC-11 PS-24	EF	EFS01-S	NC-11 PS-24							A2	SEE SERVICE TUNNEL VENT
1	EF-S02	SL8	1811	WAREHOUSE	SL8	NA	SERVICE TUNNEL	7.5	13630	NU	AH-S12	EF	EFS02-C	NC-11 PS-33	EF	EFS02-S	NC-11 PS-33							A2	SEE SERVICE TUNNEL VENT
1	EF-S03	SL4	1402	BEVERAGE DIST	SL3	NA	SERVICE TUNNEL	7.5	13630	NU	AH-S11	EF	EFS03-C	NC-11 PS-26	EF	EFS03-S	NC-11 PS-26							A2	SEE SERVICE TUNNEL VENT
1	EF-S04	SL5	1542	TUNNEL EXH	SL5	NA	SERVICE TUNNEL	7.5	13630	NU	AH-S12	EF	EFS04-C	NC-11 PS-30	EF	EFS04-S	NC-11 PS-30							A2	SEE SERVICE TUNNEL VENT
1	EF-S05	SL9	1902	CHILLER RM	SL9	1902	CHILLER RM	3	9000	SMCC1	AH-S17	EF	EFS05-C	NC-11 PS-37	EF	EFS05-S	NC-11 PS-37							F	SEE CHILLER RM VENT
	EF-S06	OMIT																							
	EF-S07	OMIT																							
1	EF-S08	SL8	1811	WAREHOUSE	SL7	1708	VEHICLE DEPOT	1.5	3000	NU	C.O. ALARM	EF	EFS08-C	NC-11 PS-33	EF	EFS08-S	NC-11 PS-33				EF	EFS08-A	NC-11 PS-33	E	CO MONITOR I/L
1	EF-S09	SL8	1811	WAREHOUSE	SL8	1802	STORAGE	5	9625	NU	AH-S13	EF	EFS09-C	NC-11 PS-33	EF	EFS09-S	NC-11 PS-33							A2	
1	EF-S10	SL5	1542	TUNNEL EXH	SL4	1420	WEIGHT RM	2	3750	NU	AH-S02,S03	EF	EFS10-C	NC-11 PS-30	EF	EFS10-S	NC-11 PS-30							A2	
1	EF-S11	SL5	1542	TUNNEL EXH	SL4	1501	LAUNDRY	1	2000	NU	AH-S02,S03	EF	EFS11-C	NC-11 PS-30	EF	EFS11-S	NC-11 PS-30							A2	
1	EF-S12	SL3	1303	WEIGHT RM	SL2	1225	EQUIP CORRAL	1.5	3445	NU	AH-S10	EF	EFS12-C	NC-11 PS-18	EF	EFS12-S	NC-11 PS-18							A2	
1	EF-S13	SL3	1303	WEIGHT RM	SL2	1231	LAUNDRY	.75	2075	NU	AH-S01,S04	EF	EFS13-C	NC-11 PS-18	EF	EFS13-S	NC-11 PS-18							A2	
	EF-S14	OMIT																							
1	EF-S15	SL5	1542	TUNNEL EXH	SL5	1525	KITCHEN	3	1000	NU	AH-S02,S03		ON/OFF SWITCH		EF	EFS15-S	NC-11 PS-30	EF	EFS15-D	NC-11 PS-30	EF	EFS15-A	NC-11 PS-30	D	GREASE REMOVAL EF
1	EF-S16	SL3	1317	EQUIP RM	SL3	1310	KITCHEN	3	1000	NU	AH-S01,S04		ON/OFF SWITCH		EF	EFS16-S	NC-11 PS-27	EF	EFS16-D	NC-11 PS-27	EF	EFS16-A	NC-11 PS-27	D	GREASE REMOVAL EF
1	EF-S17	SL3	1303	WEIGHT RM	SL3	1303	WEIGHT RM	.75	1600	NU	AH-S01,S04	EF	EFS17-C	NC-11 PS-26	EF	EFS17-S	NC-11 PS-26							A2	
1	EF-S18	SL2	1224	NOVELTY WAREHOUSE	SL2	1217	LAUNDRY	1.5	3000	NU	AH-S01,S04	EF	EFS18-C	NC-11 PS-6	EF	EFS18-S	NC-11 PS-6							A2	
	EF-S19	OMIT																							
1	EF-S20	SL6	1619	EQUIP STORAGE	SL6	1608	UNIFORM STORAGE	1	2000	NU	AH-S02,S03	EF	EFS20-C	NC-11 PS-30	EF	EFS20-S	NC-11 PS-30							A2	
1	EF-S21	SL1	1116	COMMISSARY STORAGE	SL1	1129	MINI CONCESSION	7.5	3225	NU	AH-S01,S04		ON/OFF SWITCH		EF	EFS21-S	NC-11 PS-24	EF	EFS21-D	NC-11 PS-24	EF	EFS21-A	NC-11 PS-24	D	GREASE REMOVAL EF
1	EF-S22	SL1	1116	COMMISSARY STORAGE	SL2	1211	CONCESSION COMMISSARY	25	17225	NU	AH-S05		ON/OFF SWITCH		EF	EFS22-S	NC-11 PS-24	EF	EFS22-D	NC-11 PS-24	EF	EFS22-A	NC-11 PS-24	D	GREASE REMOVAL EF
1	EF-F01	FL0	2107	TOILET	FL0/LL1	MULT	TOILET	1.5	3065	NU	AH-F13	EF	EFF01-C	NC-13 PS-5	EF	EFF01-S	NC-13 PS-5							A2	
1	EF-F02	FL2	2000	CONCOURSE	FL2/FL3	MULT	TOILET	5	9915	NU	FL FCU	EF	EFF02-C	NC-13 PS-27	EF	EFF02-S	NC-13 PS-27							A2	
1	EF-F03	FL4	2413	TOILET	FL3/FL4	MULT	TOILET	1.5	2760	NU	FL FCU	EF	EFF03-C	NC-13 PS-25	EF	EFF03-S	NC-13 PS-25							A2	
1	EF-F04	FL5	2519	TOILET	FL5/FL6	MULT	TOILET	1.5	3650	NU	FL FCU	EF	EFF04-C	NC-12 PS-24	EF	EFF04-S	NC-12 PS-24							A2	
1	EF-F05	FL7	2000	CONCOURSE	FL6/FL7	MULT	TOILET	5	10625	NU	FL FCU	EF	EFF05-C	NC-12 PS-24	EF	EFF05-S	NC-12 PS-24							A2	
	EF-F06	OMIT																							
1	EF-F07	FL8	2817	CONCESSION	FL8/LL8	MULT	TOILET	0.75	2424	NU	NONE	EF	EFF07-C	NC-12 PS-32	EF	EFF07-S	NC-12 PS-32							A2	
	EF-F08	OMIT																							
	EF-F09	SEE ROOM SCHEDULE																							
	EF-F10	SEE ROOM SCHEDULE																							
	EF-F11	SEE ROOM SCHEDULE																							
	EF-F12	SEE ROOM SCHEDULE																							
	EF-F13	SEE ROOM SCHEDULE																							
	EF-L01	SEE ROOM SCHEDULE																							
	EF-L02	SEE ROOM SCHEDULE																							
1	EF-L03	LL8	3818	CONCESSION	LL8	3818	CONCESSION	7.5	3450	NU	NONE		ON/OFF SWITCH		EF	EFL03-S	NC-12 VMA-7	EF	EFL03-D	NC-12 VMA-7	EF	EFL03-A	NC-12 VMA-7	D	GREASE REMOVAL EF
	EF-TC01	SEE ROOM SCHEDULE																							
	EF-TC02	SEE ROOM SCHEDULE																							
	EF-TC03	SEE ROOM SCHEDULE																							
	EF-TC04	SEE ROOM SCHEDULE																							
	EF-TC05	SEE ROOM SCHEDULE																							
	EF-TC06	SEE ROOM SCHEDULE																							

NOTE: SEE EXCEL SPREADSHEET FANSCH1VSD.XLS
FOR SOURCE OF BITMAP.

REVISION INFORMATION	Drawing Title				
NUMBER	FAN DETAILS				
		1	RECORD DRAWINGS	4/16/2001	MLR
DATE 08/16/02	REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN DATE	BY
TIME 10:20 AM	Sales Engineer PJS / Project Manager TP / Application Engineer KJK	DRAWN BY MLR DATE	APPROVED BY DATE		
FILE NAME fansch1-new.vsd	Project Title: MILLER PARK, ONE BREWERS WAY, MILWAUKEE, WI 53214	JOHNSON CONTROLS, Systems & Services Division	Branch Information: Wisconsin Area Office, 529 N. Jackson Street, Milwaukee, WI 53202, Phone: 414-524-7500, Fax: 414-524-7575	CONTRACT NUMBER 9 8075-0508	DRAWING NUMBER 34.1

REV	FAN	FAN LOCATION		SERVING			HP	CFM	STARTER LOCATION	AIR HANDLER H/L	START/STOP			STATUS			DISABLE			DETAIL	COMMENT
											SYSTEM	OBJECT	PAGE #	SYSTEM	OBJECT	PAGE #	SYSTEM	OBJECT	PAGE #		
2	PRV-TB1	TB1	TERRACE BOWL ROOF	CL1	MULT	TOILET	0.5	1145	4MCC1	AH-C02	PRV	PRVTB1-C	NC-13 PS-30	PRV	PRVTB1-S	NC-13 PS-30				A2	
2	PRV-TB2	TB2	TERRACE BOWL ROOF	MULT	MULT	TOILET	3	7150	NU	AH-C01,T05,CL FCU	PRV	PRVTB2-C	NC-13 PS-30	PRV	PRVTB2-S	NC-13 PS-30				A2	
2	PRV-TB3	TB4	TERRACE BOWL ROOF	MULT	MULT	TOILET	2	4175	3MCC2	AH-C01,T05,CL FCU	PRV	PRVTB3-C	NC-13 PS-31	PRV	PRVTB3-S	NC-13 PS-31				A2	
2	PRV-TB4	TB5	TERRACE BOWL ROOF	MULT	MULT	TOILET	2	4750	2MCC2	AH-C01,T05,CL FCU	PRV	PRVTB4-C	NC-12 PS-29	PRV	PRVTB4-S	NC-12 PS-29				A2	
2	PRV-TB5	TB7	TERRACE BOWL ROOF	MULT	MULT	TOILET	3	7375	2MCC2	AH-C01,T05,CL FCU	PRV	PRVTB5-C	NC-12 PS-29	PRV	PRVTB5-S	NC-12 PS-29				A2	
2	PRV-TB6	TB8	TERRACE BOWL ROOF	CL6	MULT	TOILET	0.5	810	1MCC2	AH-T06	PRV	PRVTB6-C	NC-13 PS-30	PRV	PRVTB6-S	NC-13 PS-30				A2	
3	PRV-BG	TB8	TERRACE BOWL ROOF	TL8	5805	BEER GARDEN					5800	PRV-BG	NC12 PS30	NONE	NONE	NONE				H	CONTROLS 3 FANS
2	UF-TB1	TB7	TERRACE BOWL ROOF	SL7	1740	FLAMMABLE STORAGE	0.5	870	2MCC2	AH-S13	UF	UFTB1-C	NC-12 PS-29	UF	UFTB1-S	NC-12 PS-29				A2	
2	UF-TB2	TB7	TERRACE BOWL ROOF	SL7	1733	PAINT SHOP	5	10000	2MCC2	AH-S13	UF	UFTB2-C	NC-12 PS-29	UF	UFTB2-S	NC-12 PS-29				A2	
2	UF-TB3	TB7	TERRACE BOWL ROOF	SL7	1785	CHEMICAL STORAGE	0.5	1075	2MCC2	AH-S13	UF	UFTB3-C	NC-12 PS-29	UF	UFTB3-S	NC-12 PS-29				A2	
2	UF-TB4	TB7	TERRACE BOWL ROOF	SL5	MULT	DARKROOM	0.5	715	2MCC2	AH-S02,S03	UF	UFTB4-C	NC-12 PS-29	UF	UFTB4-S	NC-12 PS-29				A2	
2	UF-TB5	TB6	TERRACE BOWL ROOF	SL5-8	MULT	LOCKERS	10	17145	2MCC2	AH-S02,S03	UF	UFTB5-C	NC-12 PS-29	UF	UFTB5-S	NC-12 PS-29				A2	
2	UF-TB6	TB2	TERRACE BOWL ROOF	SL1-4	MULT	LOCKERS	5	11590	3MCC2	AH-S01,S04	UF	UFTB6-C	NC-13 PS-31	UF	UFTB6-S	NC-13 PS-31				A2	
2	EF-TB01	TB1	TERRACE BOWL ROOF	FL1	2201	CONCESSION	1.5	1000	4MCC1	NONE		PB SWITCH		EF	EFTB01-S	NC-13 PS-30	EF	EFTB01-D	NC-13 PS-30	C	GREASE EF
2	EF-TB02	TB2	TERRACE BOWL ROOF	FL2	2209	PANTRY	7.5	6900	NU	NONE		PB SWITCH		EF	EFTB02-S	NC-13 PS-30	EF	EFTB02-D	NC-13 PS-30	C	GREASE EF
2	EF-TB03	TB4	TERRACE BOWL ROOF	FL4	2407	CONCESSION	5	3450	3MCC2	NONE		PB SWITCH		EF	EFTB03-S	NC-13 PS-31	EF	EFTB03-D	NC-13 PS-31	C	GREASE EF
2	EF-TB04	TB5	TERRACE BOWL ROOF	FL5	2516	CONCESSION	5	3450	2MCC2	NONE		PB SWITCH		EF	EFTB04-S	NC-12 PS-29	EF	EFTB04-D	NC-12 PS-29	C	GREASE EF
	EF-TB05	PANT																			
2	EF-TB06	TB5	TERRACE BOWL ROOF	FL5	2511	SUITE PANTRY	3	3300	2MCC2	NONE		PB SWITCH		EF	EFTB06-S	NC-12 PS-29	EF	EFTB06-D	NC-12 PS-29	C	GREASE EF
2	EF-TB07	TB7	TERRACE BOWL ROOF	FL7	2502	PANTRY	7.5	6900	2MCC2	NONE		PB SWITCH		EF	EFTB07-S	NC-12 PS-29	EF	EFTB07-D	NC-12 PS-29	C	GREASE EF
2	EF-TB08	TB1	TERRACE BOWL ROOF	LL1	3110	CONCESSION	5	3450	4MCC1	NONE		PB SWITCH		EF	EFTB08-S	NC-13 PS-30	EF	EFTB08-D	NC-13 PS-30	C	GREASE EF
2	EF-TB09	TB4	TERRACE BOWL ROOF	LL3	3393	CONCESSION	3	3450	3MCC2	NONE		PB SWITCH		EF	EFTB09-S	NC-13 PS-31	EF	EFTB09-D	NC-13 PS-31	C	GREASE EF
2	EF-TB10	TB6	TERRACE BOWL ROOF	LL6	3601	CONCESSION	3	3450	2MCC2	NONE		PB SWITCH		EF	EFTB10-S	NC-12 PS-29	EF	EFTB10-D	NC-12 PS-29	C	GREASE EF
2	EF-TB11	TB7	TERRACE BOWL ROOF	LL7	3712	CONCESSION	5	3450	1MCC2	NONE		PB SWITCH		EF	EFTB11-S	NC-12 PS-30	EF	EFTB11-D	NC-12 PS-30	C	GREASE EF
2	EF-TB12	TB1	TERRACE BOWL ROOF	FL1	2101	BREW PUB	5	4800	4MCC1	AH-F13	EF	EFTB12-C	NC-13 PS-30	EF	EFTB12-S	NC-13 PS-30				A2	GREASE EF
2	EF-TB13	TB8	TERRACE BOWL ROOF	FL8	2803	CONCESSION	1.5	1000	1MCC2	NONE		PB SWITCH		EF	EFTB13-S	NC-12 PS-30	EF	EFTB13-D	NC-12 PS-30	C	GREASE EF
	EF-TB14	TB1	TERRACE BOWL ROOF	CL1	4103	STADIUM CLUB KITCHEN	10	11200	4MCC1	AH-T10	EF	EFTB14-C	NC-13 PS-30	EF	EFTB14-S	NC-13 PS-30				A2	GREASE EF
	EF-TB15	CLUB																			
2	EF-TB16	TB2	TERRACE BOWL ROOF	CL2	4202	CLUB GRILL	3	3450	NU	AH-C01,T05	EF	EFTB16-C	NC-13 PS-30	EF	EFTB16-S	NC-13 PS-30				A2	GREASE EF
2	EF-TB17	TB2	TERRACE BOWL ROOF	CL2	4215	PANTRY	3	3300	NU	AH-C01,T05	EF	EFTB17-C	NC-13 PS-30	EF	EFTB17-S	NC-13 PS-30				A2	GREASE EF
2	EF-TB18	TB4	TERRACE BOWL ROOF	?	?	?	3	3450	3MCC2	AH-C01,T05	EF	EFTB18-C	NC-13 PS-31	EF	EFTB18-S	NC-13 PS-31				A2	GREASE EF
2	EF-TB19	TB5	TERRACE BOWL ROOF	CL5	4508	CLUB GRILL	3	3450	2MCC2	AH-C01,T05	EF	EFTB19-C	NC-12 PS-29	EF	EFTB19-S	NC-12 PS-29				A2	GREASE EF
2	EF-TB20	TB5	TERRACE BOWL ROOF	CL5	4522	SUITE KITCHEN	0.5	1500	2MCC2	AH-C01,T05	EF	EFTB20-C	NC-12 PS-29	EF	EFTB20-S	NC-12 PS-29				A2	GREASE EF
2	EF-TB21	TB5	TERRACE BOWL ROOF	CL5	4522	SUITE KITCHEN	7.5	7000	2MCC2	AH-C01,T05	EF	EFTB21-C	NC-12 PS-29	EF	EFTB21-S	NC-12 PS-29				A2	GREASE EF
2	EF-TB22	TB7	TERRACE BOWL ROOF	CL7	4718	CONCESSION	3	3450	1MCC2	AH-C01,T05	EF	EFTB22-C	NC-12 PS-30	EF	EFTB22-S	NC-12 PS-30				A2	GREASE EF
2	EF-TB23	TB7	TERRACE BOWL ROOF	CL7	4716	PANTRY	3	3300	1MCC2	AH-C01,T05	EF	EFTB23-C	NC-12 PS-30	EF	EFTB23-S	NC-12 PS-30				A2	GREASE EF
2	EF-TB24	TB1	TERRACE BOWL ROOF	TC1	5103	CONCESSION	3	3450	4MCC1	NONE		PB SWITCH		EF	EFTB24-S	NC-13 PS-30	EF	EFTB24-D	NC-13 PS-30	C	GREASE EF
2	EF-TB25	TB1	TERRACE BOWL ROOF	TC1	5108	PANTRY	3	3450	4MCC1	NONE		PB SWITCH		EF	EFTB25-S	NC-13 PS-30	EF	EFTB25-D	NC-13 PS-30	C	GREASE EF
2	EF-TB26	TB2	TERRACE BOWL ROOF	TC2	5203	CONCESSION	3	3450	NU	NONE		PB SWITCH		EF	EFTB26-S	NC-13 PS-30	EF	EFTB26-D	NC-13 PS-30	C	GREASE EF
2	EF-TB27	TB2	TERRACE BOWL ROOF	TC2	5209	CONCESSION	3	3450	3MCC2	NONE		PB SWITCH		EF	EFTB27-S	NC-13 PS-31	EF	EFTB27-D	NC-13 PS-31	C	GREASE EF
2	EF-TB28	TB4	TERRACE BOWL ROOF	TC4	5413	CONCESSION	3	3450	3MCC2	NONE		PB SWITCH		EF	EFTB28-S	NC-13 PS-31	EF	EFTB28-D	NC-13 PS-31	C	GREASE EF
2	EF-TB29	TB4	TERRACE BOWL ROOF	TC4	5414	CONCESSION	3	3450	3MCC2	NONE		PB SWITCH		EF	EFTB29-S	NC-13 PS-31	EF	EFTB29-D	NC-13 PS-31	C	GREASE EF
2	EF-TB30	TB5	TERRACE BOWL ROOF	TC5	5514	CONCESSION	3	3450	2MCC2	NONE		PB SWITCH		EF	EFTB30-S	NC-12 PS-29	EF	EFTB30-D	NC-12 PS-29	C	GREASE EF
2	EF-TB31	TB7	TERRACE BOWL ROOF	TC7	5603	CONCESSION	3	3450	2MCC2	NONE		PB SWITCH		EF	EFTB31-S	NC-12 PS-29	EF	EFTB31-D	NC-12 PS-29	C	GREASE EF
2	EF-TB32	TB7	TERRACE BOWL ROOF	TC7	5705	CONCESSION	3	3450	1MCC2	NONE		PB SWITCH		EF	EFTB32-S	NC-12 PS-30	EF	EFTB32-D	NC-12 PS-30	C	GREASE EF
2	EF-TB33	TB8	TERRACE BOWL ROOF	TC8	5807	CONCESSION	3	3450	1MCC2	NONE		PB SWITCH		EF	EFTB33-S	NC-12 PS-30	EF	EFTB33-D	NC-12 PS-30	C	GREASE EF
2	EF-TB34	TB1	TERRACE BOWL ROOF	CL1	4138	STADIUM CLUB KITCHEN	3	7200		NONE		PB SWITCH		EF	EFTB34-S	NC-13 PS-30	EF	EFTB34-D	NC-13 PS-30	G	GREASE EF
2	EF-TB35	TB1	TERRACE BOWL ROOF	CL1	4138	STADIUM CLUB KITCHEN	1	2565		NONE		PB SWITCH		EF	EFTB35-S	NC-13 PS-30	EF	EFTB35-D	NC-13 PS-30	G	DISHWASHER EF

NOTE: SEE EXCEL SPREADSHEET FANSCH2VSD.XLS
FOR SOURCE OF BITMAP.

REVISION INFORMATION	Drawing Title
NUMBER	FAN DETAILS
DATE 08/16/02	
TIME 10:07 AM	Project Title
FILE NAME fansch2.vsd	MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214

NO	REVISION/LOCATION	ECN	DATE	BY

REFERENCE DRAWING			DRAWN	APPROVED
Sales Engineer	Project Manager	Application Engineer	BY MLR DATE	BY DATE
PJS	TP	KJK		

JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

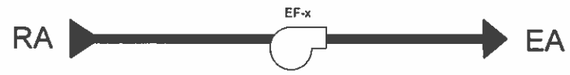
CONTRACT NUMBER 9 8075-0508

DRAWING NUMBER 34.2

BILL OF MATERIALS

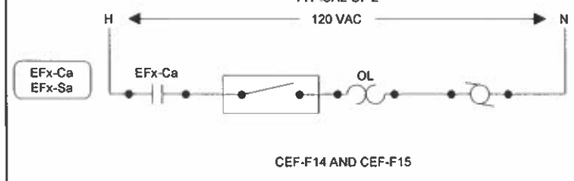
Designation	Qty	Part Number	Description
Field Devices:			
EFx-Ca, EFx-Sa	1	RIBX24SBA	FD SPST, W/HOA, 24V COIL, 3/4 HP
EFx-Cb, EFx-Sb	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER

DETAIL A
TYPICAL OF 42



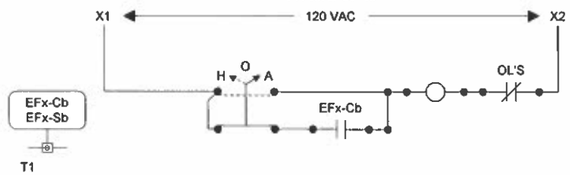
DETAIL A1

EXHAUST FAN STARTER WIRING
TYPICAL OF 2



DETAIL A2

EXHAUST FAN STARTER WIRING
TYPICAL OF 40



Schedule Controlled Exhaust Fans

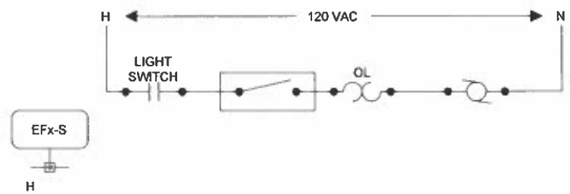
1. The EMCS will energize each exhaust fan through a predetermined schedule. The fans associated with the air handlers will operate in unison with air handling units serving the same areas as indicated in the air handling interlock schedule.
2. The EMCS will monitor the status (on/off) of each fan through a current switch located on the feed to the motor. A separate start/stop will be provided for each exhaust fan also.

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
EFx-S	1	H-908	SW, CURRENT, 1-135A ADJ, SPLIT @VER

DETAIL B
TYPICAL OF 3

EXHAUST FAN STARTER WIRING



Toilet Exhaust Fans

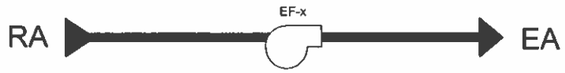
1. CEF-S01, S04, and S05 will be interlocked by Division 16 to run whenever their respective light switch is turned on. The EMCS will monitor the status (on/off) of each fan through a current switch located on the feed to the motor.

REVISION INFORMATION	Drawing Title: FAN DETAILS							
NUMBER								
DATE: 04/13/01		REFERENCE DRAWING		NO	REVISION-LOCATION		ECN	DATE / BY
TIME: 01:31 PM		Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR DATE			APPROVED: BY / DATE
FILE NAME: fandetab.vsd	Project Title: MILLER PARK, ONE BREWERS WAY, MILWAUKEE, WI 53214	JOHNSON CONTROLS, Systems & Services Division	Branch Information: Wisconsin Area Office, 529 N. Jackson Street, Milwaukee, WI 53202, Phone: 414-524-7500, Fax: 414-524-7575		CONTRACT NUMBER: 9 8075-0508	DRAWING NUMBER: 34.3		

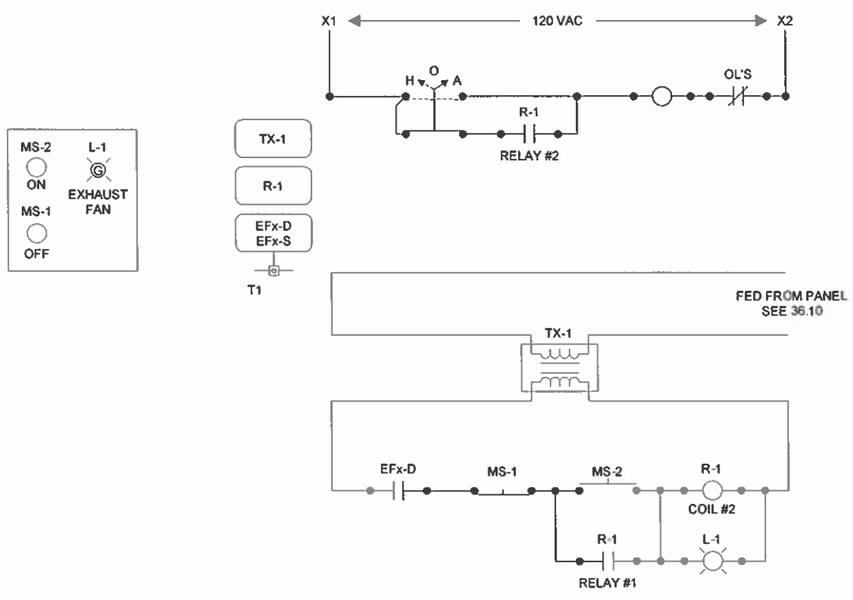
BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
EFx-S, EFx-D	1	H-735	SW,CURRENT,1-135A,CMND RLY,SOLID
TX-1	1	Y63T31-0	XFMR,120-208-240/24,50VA,FT-PLT [Y63SLB]
Panel Devices:			
L-1	1	PD-103-7	LED,GRN,24V,SNAP FIT
MS-1, 2	2	PD-105-1	MOM PSH BUTTN,1NO/1NC,BLK
	1	PLATE	2-GANG BLANK SS PLATE
R-1	1	PD-101-35	RLY BASE,3PDT,11PIN,10A,IDEC #SR3B-05
	1	PD-109-51	RLY,PLUG-IN,3PDT,24VAC,P&B KUP14A25-24

DETAIL C
TYPICAL OF 20



EXHAUST FAN STARTER WIRING



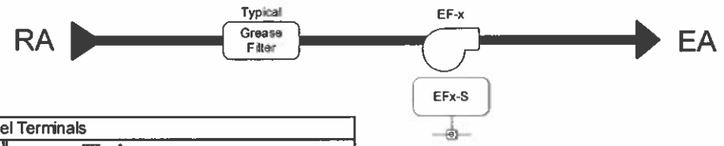
Food Service Grease Exhaust Fans (Non-Fan Interlocked)

1. For each fan, provide a local on-off pushbutton switch with a green indicating light in the food service area being served. When the "on" button is depressed, the green light will illuminate and the associated exhaust fan will energize. When the "off" button is pressed, the green light will turn off and the associated exhaust fan will de-energize. An EMCS point for each individual exhaust fan will energize for 5 seconds to unlatch the start push button signal to automatically de-energize the associated exhaust fan and turn off the green light based on the EMCS schedule. The only way to start the exhaust fan is via the "on" button, while the "off" button or the EMCS can stop the exhaust fan. Provide monitoring status of fan operation from the EMCS.

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
EFx-S	1	H-908	SW, CURRENT, 1-135A ADJ, SPLIT @VER

DETAIL D
TYPICAL OF 5

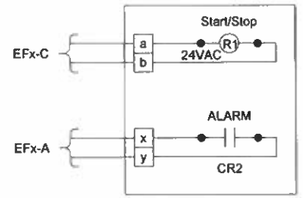


Unit	Number of Filter Boxes
EF-S15	1
EF-S16	1
EF-S21	2
EF-S22	7
EF-L03	2

Fan Control Panel Terminals						
		EFx-C		EFx-A		
Unit	Room	a	b	x	y	
EF-S15	1525	40	41	12	8	CR2
EF-S16	1310	40	41	12	8	CR2
EF-S21	1129	50	51	12	8	CR2A & CR2B *
EF-S22	1211	22	23	12	8	CR2
EF-L03	3818	50	51	12	8	CR2A & CR2B *

* NOTE: Wire contacts 12/8 on CR2A and CR2B in parallel.

PARTIAL CONTROL PANEL WIRING



NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

Grease Fan/Filter System Wiring

Exhaust Fan	Control Panel	Fan Cabinet	Filter Box
EF-15 EF-16	2	2	2
	5	5	
	3		3
	6		6
	7		7
	8		8
	9		9
	10		10
	21		21
	31		31
EF-S21 EF-S22 EF-L03	2	2	
	3	3	3x
	5	5	
	21	21	
	31	31	
	6x		6x
	7x		7x
	8x		8x
	9x		9x
	10x		10x

Grease Removal Fan and Filter System

1. For each fan unit install and wire a local control panel provided by others, where shown on the drawings, furnished by the unit manufacturer. Division 16 will provide 120 VAC wiring to the local control panel and to the filter box on each grease removal filter section.
2. The manufacturer's control panel includes the following features:
   Power on and system on lights
   Hand-Off-Auto keyswitch
   Odor control cycle on-off-cycle switch
   Odor control on light
   Audible alarm and reset
   Filter monitor lights
3. Provide 24 volt wiring from each filter box to the local control panel.
4. Provide 24 volt wiring from the control panel to the fan cabinet.
5. Wire the start-stop relay in the local control panel, furnished by the unit manufacturer, to the start-stop control signal from the EMCS. Provide monitoring status of fan operation and alarm status from the EMCS.
6. When the exhaust fan is energized, its associated interlocked make-up air handling unit will be energized (See the air handling unit interlock schedule).

REVISION INFORMATION
NUMBER
DATE 08/16/02
TIME 10:12 AM
FILE NAME fandetcd.vsd

Drawing Title: **FAN DETAILS**

Project Title: **MILLER PARK**
ONE BREWERS WAY
MILWAUKEE, WI 53214

REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY

Sales Engineer	Project Manager	Application Engineer	DRAWN	APPROVED
PJS	TP	KJK	BY MLR DATE	BY DATE

JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
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Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

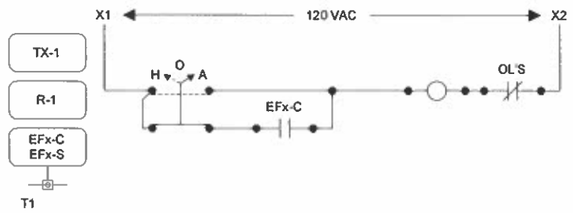
CONTRACT NUMBER **9 8075-0508**
DRAWING NUMBER **34.4**

BILL OF MATERIALS

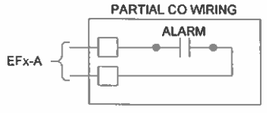
Designation	Qty	Part Number	Description
Field Devices:			
EFx-C, EFx-S	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
R-1	2	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
TX-1	1	Y63T31-0	XFMR,120-208-240/24,50VA,FT-PLT [Y63SLB]

DETAIL E
TYPICAL OF 1

EXHAUST FAN STARTER WIRING



PARTIAL CO WIRING



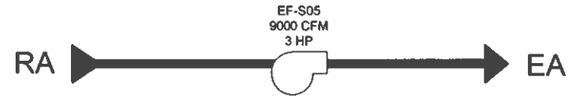
Exhaust Fan EF-S08

1. The fan will automatically turn on whenever there are high levels of carbon monoxide in the space. Provide monitoring status of fan operation from the EMCS.

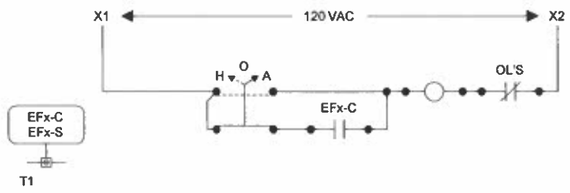
BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
EFx-C,EFx-S	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER

DETAIL F
TYPICAL OF 1



EXHAUST FAN STARTER WIRING



Exhaust Fan EF-S05

1. See Chiller Room Ventilation sequence of operation.

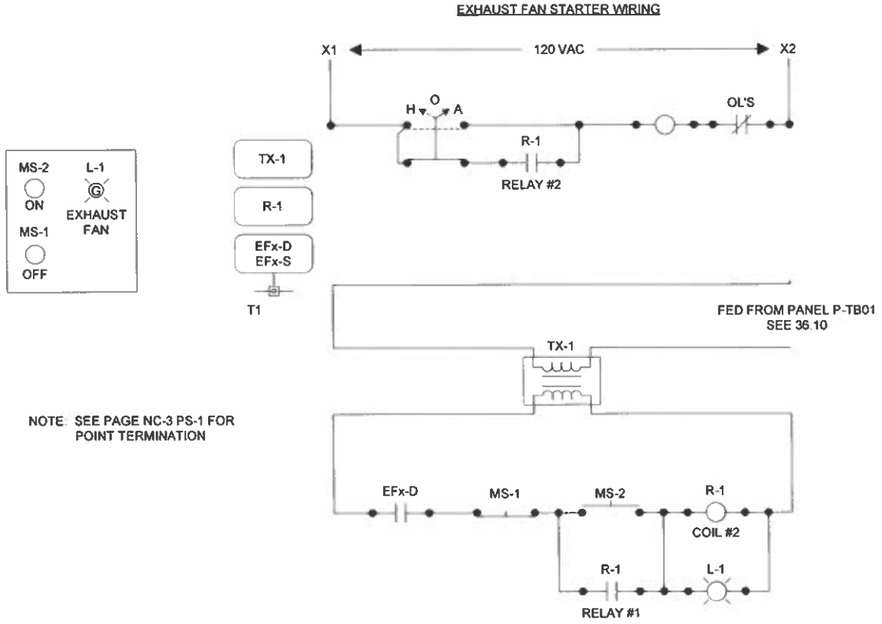
REVISION INFORMATION	Drawing Title: FAN DETAILS							
NUMBER								
			1	RECORD DRAWING		6/14/2001	MLR	
DATE: 06/15/01		REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY	
TIME: 07:32 AM		Sales Engineer: PJS / Project Manager: TP / Application Engineer: KJK / DRAWN BY: MLR DATE		APPROVED BY DATE				
FILE NAME: fandetef.vsd	Project Title: MILLER PARK, ONE BREWERS WAY, MILWAUKEE, WI 53214	JOHNSON CONTROLS, Systems & Services Division	Branch Information: Wisconsin Area Office, 529 N. Jackson Street, Milwaukee, WI 53202, Phone: 414-524-7500, Fax: 414-524-7575			CONTRACT NUMBER: 9 8075-0508		
						DRAWING NUMBER: 34.5		

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
EFx-S, EFx-D	1	H-908	SW,CURRENT,2.5-135A,ADJ,SPLIT
TX-1	1	Y63T31-0	XFMR,120-208-240/24,50VA,FT-PLT [Y63SLB]
Panel Devices:			
L-1	1	PD-103-7	LED,GRN,24V,SNAP FIT
MS-1, 2	2	PD-105-1	MOM PSH BUTTN,1NO/1NC,BLK
	1	PLATE	2-GANG BLANK SS PLATE
R-1	1	PD-101-35	RLY BASE,3PDT,11PIN,10A,IDEC #SR3B-05
	1	PD-109-51	RLY,PLUG-IN,3PDT,24VAC,P&B KUP14A25-24

DETAIL G
TYPICAL OF 2

EXHAUST FAN STARTER WIRING



NOTE: SEE PAGE NC-3 PS-1 FOR POINT TERMINATION

Food Service Exhaust Fans (Non-Fan Interlocked)

1. For each fan, provide a local on-off pushbutton switch with a green indicating light in the food service area being served. When the "on" button is depressed, the green light will illuminate and the associated exhaust fan will energize. When the "off" button is pressed, the green light will turn off and the associated exhaust fan will de-energize. An EMCS point for each individual exhaust fan will energize for 5 seconds to unlatch the start push button signal to automatically de-energize the associated exhaust fan and turn off the green light based on the EMCS schedule. The only way to start the exhaust fan is via the "on" button, while the "off" button or the EMCS can stop the exhaust fan. Provide monitoring status of fan operation from the EMCS.

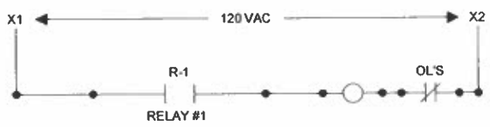
BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
R-1	1	PD-101-35	RLY BASE,3PDT,11PIN,10A,IDEC #SR3B-05
	1	PD-109-51	RLY,PLUG-IN,3PDT,24VAC,P&B KUP14A25-24

DETAIL H
TYPICAL OF 1

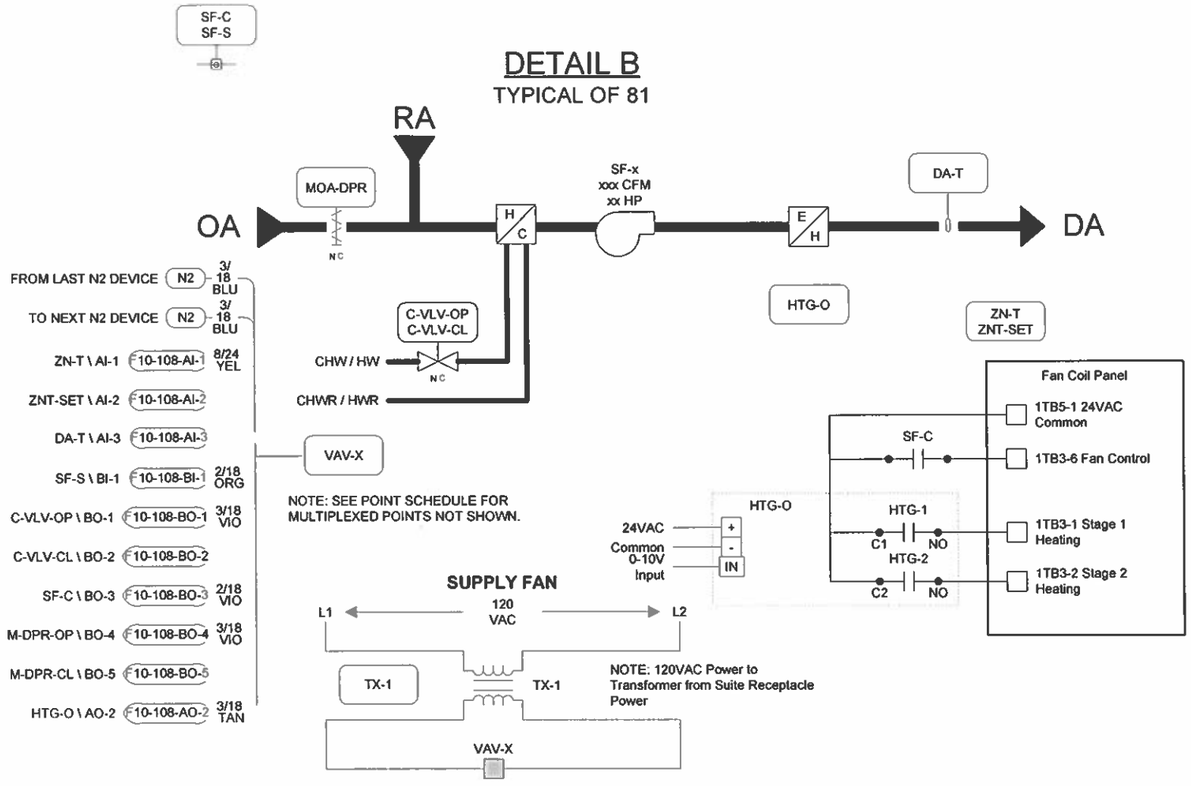
R-1

EXHAUST FAN STARTER WIRING



NOTE: SEE PAGE NC-12 PS-30 FOR POINT TERMINATION

REVISION INFORMATION	Drawing Title									
NUMBER	FAN DETAILS									
DATE 08/16/02		REFERENCE DRAWING		NO	REVISION-LOCATION		ECN	DATE	BY
TIME 10:08 AM		Sales Engineer PJS	Project Manager TP	Application Engineer KJK	DRAWN BY MLR	DATE	APPROVED BY	DATE	
FILE NAME fandetg.vsd	Project Title MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division	Branch Information Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575	CONTRACT NUMBER 9 8075-0508	DRAWING NUMBER 34.6				



BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
C-VLV-X	0	VALVE	SEE ROOM SCHEDULE
HTG-O	1	AAR	ANALOG ADJUSTABLE RELAY
MOA-DPR	0	DAMPER	SEE DAMPER SCHEDULE
SF-C, SF-S	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
TX-1	1	Y63T31-0	XFMR, 120/24, 50VA, PLATE
VAV-X	1	AS-ENC100-0	GENER ASC ENC,6.8X7.3X6.9
	1	AS-VAV141-1	VAV CONTROLLER 6 BO & 2 AO SCREW TERM
ZN-T	1	TE-6411S-2010	MSTAT,NI,W-C,SUR,TB,TH
DA-T	1	TE-6311P-1	DUCT MOUNT TEMP SENSOR

○ Fan Coils - Sequence of Operation:

Occupied Operation (Summer):

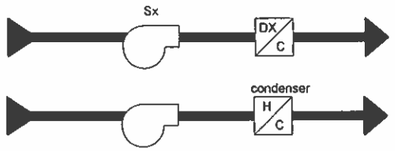
The supply fan will start based on a command from the Metasys system. When the fan status is "On", the outside air damper opens and the heating and cooling cycles are allowed to operate. If the room temperature is higher than its occupied setpoint, the cooling/heating valve will open to cool the room down until the room temperature is at its setpoint. If the room temperature is lower than its setpoint, the valve will close and the electric heat stages on. At this point, Metasys will control the air temperature leaving the fan coil such that the electric heat will produce no more than a 120° discharge temperature. As room warms up, the discharge temperature gradually decreases until the room temperature is at its setpoint.

Occupied Operation (Winter):

The supply fan will start based on a command from the Metasys system. When the fan status is "On", the outside air damper opens and the heating cycle is allowed to operate. If the room temperature is higher than its occupied setpoint, the cooling/heating valve will close to cool the room down until the room temperature is at its setpoint. If the room temperature is lower than its setpoint, the cooling/heating valve will be allowed to open to a maximum of 20% open. At this point, Metasys will control the air temperature leaving the fan coil such that the cooling/heating valve will produce no more than a 120° discharge temperature. As room warms up, the discharge temperature gradually decreases until the room temperature is at its setpoint. The electric heat stages are locked out during winter operation.

REVISION INFORMATION	Drawing Title						
NUMBER	**ROOM SCHEDULE DETAIL B - FAN COILS**						
			1	RECORD DRAWINGS		6/14/2001	MLR
DATE 08/16/02		REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY
TIME 10:08 AM		Sales Engineer: PJS; Project Manager: TP; Application Engineer: KJK; DRAWN BY MLR DATE				APPROVED BY DATE	
FILE NAME rsdet-b.vsc	Project Title: **MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214**	JOHNSON CONTROLS Systems & Services Division	Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER: **9 8075-0508**	DRAWING NUMBER: **35.1B**	

DETAIL C
Typical of 21



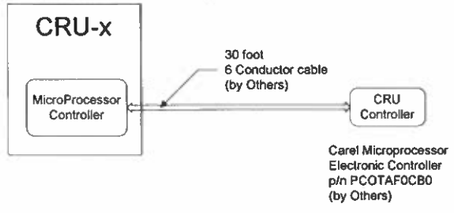
GENERAL ALARM

Rev.	MECHANICAL SYSTEM	LOCATION	SYSTEM	OBJECT	PAGE #
3	CRU-S01	S-7	CRU-ALM	CRUS01-A	NC-11 PS-13
3	CRU-S02	S-8	CRU-ALM	CRUS02-A	NC-11 PS-20
3	CRU-S04	S-1	CRU-ALM	CRUS04-A	NC-11 PS-5
3	CRU-S05	S-1	CRU-ALM	CRUS05-A	NC-11 PS-19
3	CRU-S06	S-4	CRU-ALM	CRUS06-A	NC-11 PS-25
3	CRU-S07	S-5	CRU-ALM	CRUS07-A	NC-11 PS-28
3	CRU-S08	S-8	CRU-ALM	CRUS08-A	NC-11 PS-33
3	CRU-L01	L-8	CRU-ALM	CRUL01-A	NOTE 1
3	CRU-L02	L-8	CRU-ALM	CRUL02-A	NOTE 1
3	CRU-L03	L-5	CRU-ALM	CRUL03-A	NC-12 PS-9
3	CRU-L04	L-4	CRU-ALM	CRUL04-A	NC-12 PS-28
3	CRU-L05	L-7	CRU-ALM	CRUL05-A	NC-12 PS-17
3	CRU-L06	L-1	CRU-ALM	CRUL06-A	NC-13 PS-7
3	CRU-L07	L-2	CRU-ALM	CRUL07-A	NC-13 PS-23
3	CRU-L08	L-4	CRU-ALM	CRUL08-A	NC-12 PS-28
3	CRU-L09	L-4	CRU-ALM	CRUL09-A	NC-12 PS-28
3	CRU-L10	L-4	CRU-ALM	CRUL10-A	NC-12 PS-28
3	CRU-T01	TC-2	CRU-ALM	CRUT01-A	NC-13 PS-23
3	CRU-T02	TC-7	CRU-ALM	CRUT02-A	NC-12 PS-16
3	CRU-T03	TC-5	CRU-ALM	CRUT03-A	NC-12 PS-29
3	CRU-T04	TC-5	CRU-ALM	CRUT04-A	NC-12 PS-9

NOTE 1: MUX POINTS TO VAVA307 DI-1 & DI-2 RESPECTIVELY.

COMMUNICATION ROOM UNIT WIRING

NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.



Carel Microprocessor
Electronic Controller
p/n PCOTAF0CB0
(by Others)

Communication Room Units (General Alarm)

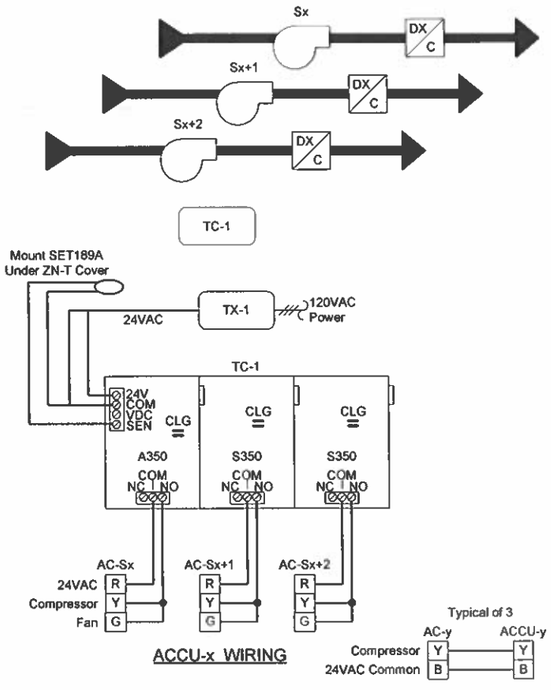
The systems will operate via their own on-board controllers; the EMCS will monitor alarm signals only. In addition, install remote controls and provide all field control wiring from unit panels to remote controls furnished by the unit manufacturer.

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
ACSx-T	1	TE-6314P-1	SENS,T-Ni,0.1%,RM
TC-1	1	A350AA-3C	CTRL,SPDT,-30-130F,W/SENS
	1	BKT287-1R	35MM DIN RAIL - 12" LONG
	1	EN-EWC10-0	SINGLE UNIT
	1	PLT344-1R	DIN RAIL END PLT (2/PKG)
	2	S350AA-1C	SEQ,SPDT,F/A350,1/30F
	1	Y65A21-0	XFMR,120/24,40VA,PLATE [Y65AA]

DETAIL D
Typical of 5

FAN COIL UNIT



ACCU-x WIRING

NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

ROOM TEMPERATURE

Rev.	MECHANICAL SYSTEM	LOCATION	SYSTEM	OBJECT	PAGE #
3	AC-S01, -S02, -S03	SL1	AC-TEMP	ACSO1-T	NC-11 PS-5
3	AC-S04, -S05, -S06	SL6	AC-TEMP	ACSO4-T	NC-11 PS-28
3	AC-S07, -S08, -S09	SL8	AC-TEMP	ACSO7-T	NC-11 PS-33
3	AC-S10, -S11, -S12	SL8	AC-TEMP	ACS10-T	NC-11 PS-36
3	AC-S15, -S16, -S17	SL3	AC-TEMP	ACS15-T	NC-11 PS-7

A350	S350	S350
SETPOINT=81F	DIFFERENTIAL= 2	DIFFERENTIAL=2
DIFFERENTIAL=1	OFFSET=1	OFFSET=3

Direct Expansion Fan Coil Units and Condensing Units

1. For each room being conditioned by three fan coil units, provide a 24 volt three stage room thermostat which will energize the fan coil units in stages to maintain setpoint. Provide interlock wiring to energize the associated condensing units on a call for cooling
2. Monitor the space temperature, for each room served, through the EMCS.

REVISION INFORMATION
NUMBER
DATE: 08/16/02
TIME: 10:07 AM
FILE NAME: radetcd.vsd

Drawing Title: **ROOM SCHEDULE DETAILS**

Project Title: **MILLER PARK**
ONE BREWERS WAY
MILWAUKEE, WI 53214

REFERENCE DRAWING	NO.	REVISION LOCATION	ECN	DATE	BY
Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN BY: MLR	DATE	APPROVED BY / DATE

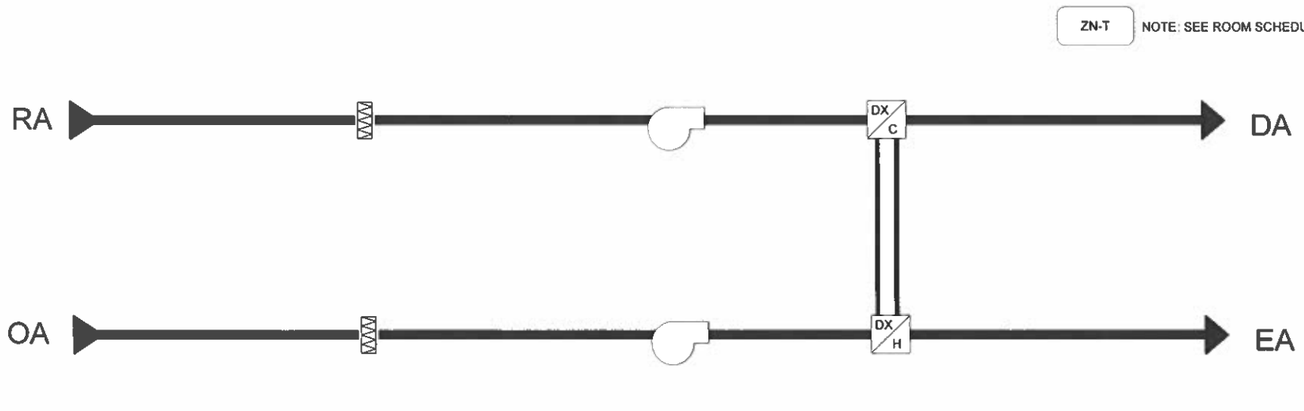
JOHNSON CONTROLS
Systems & Services Division

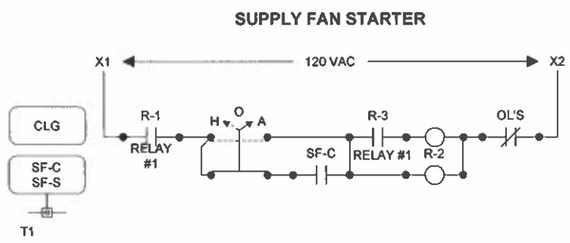
Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER: **9 8075-0508**
DRAWING NUMBER: **35.2**

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
DA-T	1	TE-6311P-1	SENS,T-Ni,0.1%,6" DUCT
R-1-R-3	3	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
SF-C,SF-S	1	H-735	SW, CURRENT, 1-135A CMND RLY SOLID @VER
TS-1	2	A70HA-1C	STAT,LL,20',EL,MAN,15/55F
	1	TE-6001-8	CLIP F/AVG ELEM (10/PKG)
X-VLV	0	VALVE	SEE VALVE SCHEDULE
ZN-T	1	TE-6314P-1	SENS,T-Ni,0.1%,RM





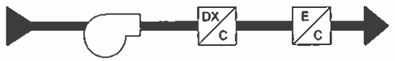
REVISION INFORMATION	Drawing Title								
NUMBER	CRU-S03 FLOW								
DATE 08/16/01		REFERENCE DRAWING		NO	REVISION-LOCATION		ECN	DATE	BY
TIME 04:02 PM		Sales Engineer: PJS	Project Manager: TP	Application Engineer: DAM	DRAWN: BY MLR	DATE	APPROVED: BY	DATE	
FILE NAME CRUS03F.vsd	Project Title: MILLER PARK, ONE BREWERS WAY, MILWAUKEE, WI 53214	JOHNSON CONTROLS, Systems & Services Division			Branch Information: Wisconsin Area Office, 529 N. Jackson Street, Milwaukee, WI 53202, Phone: 414-524-7500, Fax: 414-524-7575		CONTRACT NUMBER: 9 8075-0508		
							DRAWING NUMBER: 35.2A		

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
TS-1	1	T25A-1C	STAT,RM,2CKT,HT/CL,ADJ
ZN-T	1	TE-5314P-1	SENS,T-Ni,0.1%,RM
TS-2	1	T26S-18C	STAT,RM,H/C,ADJ,40/90F

DETAIL E
TYPICAL OF 7

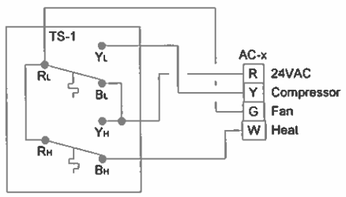
FAN COIL UNIT



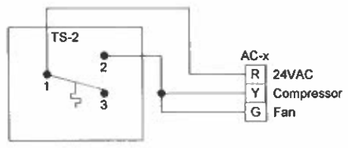
TS-1 — TYPICAL OF 6

TS-2 — TYPICAL OF 1

TS-1 WIRING

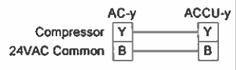


TS-2 WIRING



ACCU-x WIRING

NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.



NOTE: AC-S14 IS COOLING ONLY

ROOM TEMPERATURE

ACx-T

Rev.	MECHANICAL SYSTEM	LOCATION	SYSTEM	OBJECT	PAGE#
2	AC-S14	S-9	AC-TEMP	ACS14-T	NC-11 PS-36
2	AC-TC01	TC-1	AC-TEMP	ACTC01-T	NC-13 PS-10
2	AC-TB01	TB-1	AC-TEMP	ACTB01-T	NC-13 PS-13
2	AC-TB02	TB-1	AC-TEMP	ACTB02-T	NC-13 PS-13
2	AC-TB03	TB-4	AC-TEMP	ACTB03-T	NC-12 PS-34
2	AC-TB04	TB-5	AC-TEMP	ACTB04-T	NC-12 PS-11
2	AC-TB05	TB-8	AC-TEMP	ACTB05-T	NC-12 PS-10

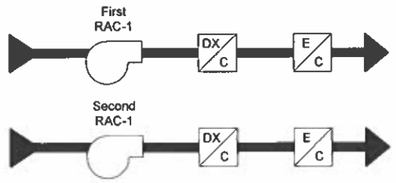
Direct Expansion Fan Coil Units and Condensing Units

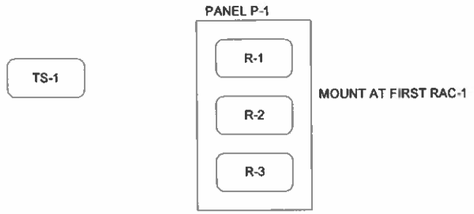
1. For each room being conditioned by one fan coil unit, provide a 24 volt single stage room thermostat which will energize the fan coil unit to maintain setpoint. Provide interlock wiring to energize the condensing unit on a call for cooling.
2. For each room being conditioned by one fan coil unit with built-in electric heating coil, provide a 24 volt single stage heating/cooling room thermostat with automatic change over which will energize the fan coil unit to maintain setpoint. On a call for heat, the electric heating coil will be energized. Provide interlock wiring to energize the condensing unit on a call for cooling.
3. Monitor the space temperature, for each room served, through the EMCS.

BILL OF MATERIALS

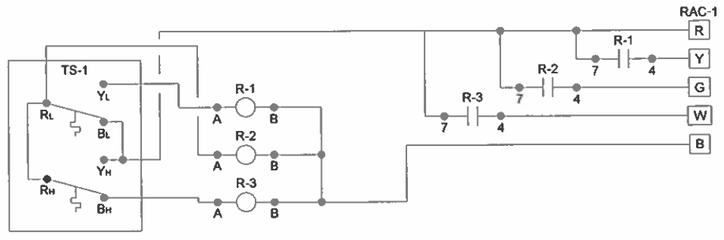
Designation	Qty	Part Number	Description
Field Devices:			
TS-1	1	T25A-1C	STAT,RM,2CKT,HT/CL,ADJ
Panel Devices:			
P-1	1	EN-EWC10-0	SINGLE UNIT
R-x	3	PD-101-35	RLY BASE,3PDT,11PIN,10A
	3	PD-109-51	RELAY PLUG-IN 3PDT 24VAC

DETAIL F
TYPICAL OF 2

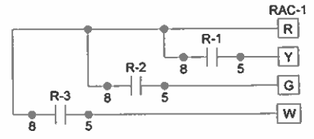




FIRST RAC-1 WIRING



SECOND RAC-1 WIRING



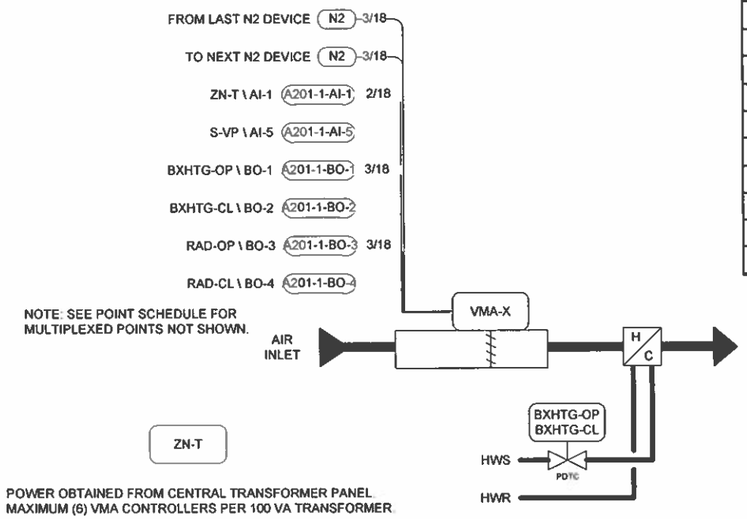
Room Air Conditioners

1. For each room served by room air conditioners, provide and wire a 24 volt wall mounted heating/cooling thermostat to control the heating and cooling functions of multiple room air conditioners.

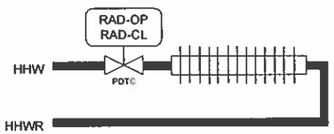
REVISION INFORMATION	Drawing Title: ROOM SCHEDULE DETAILS							
NUMBER		REFERENCE DRAWING	NO.	REVISION LOCATION		ECN	DATE	BY
DATE: 04/16/01		Sales Engineer: PJS / Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR DATE		APPROVED: BY DATE		
TIME: 08:26 AM	Project Title: MILLER PARK, ONE BREWERS WAY, MILWAUKEE, WI 53214	JOHNSON CONTROLS, Systems & Services Division		Branch Information: Wisconsin Area Office, 529 N. Jackson Street, Milwaukee, WI 53202, Phone: 414-524-7500, Fax: 414-524-7575		CONTRACT NUMBER: 9 8075-0508		
FILE NAME: rsdetef.vsd						DRAWING NUMBER: 35.3		

DETAIL G

TYPICAL OF 64

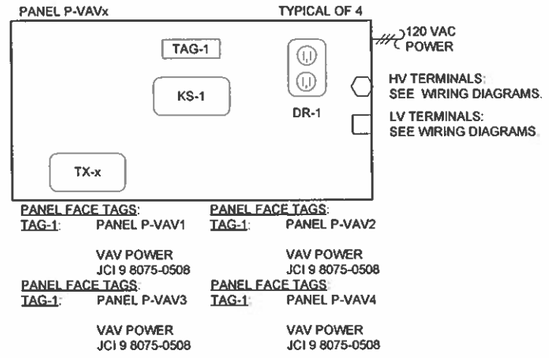


NOTE: SEE ROOM SCHEDULE FOR QUANTITY.

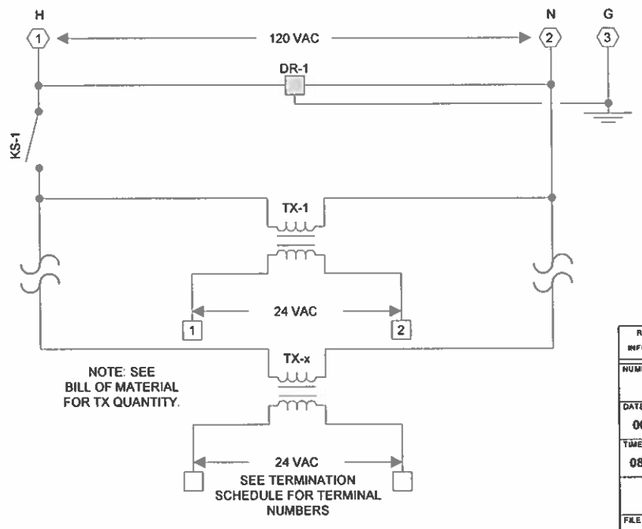


VAV Power Panel P-VAVx Termination Schedule

Rev	Panel	Transformer	Floor Served	24 VAC Terminals	Serves VAV	
					NC- N2 Addresses	VAV-x
2	P-VAV1	TX-1	SL2,3	1,2	NC-11 106-111	S01 - S06
2		TX-2	SL1,2	3,4	NC-11 112-117	S07 - S12
2		TX-3	SL1	5,6	NC-11 118-123	S13 - S18
2	P-VAV2	TX-1	FL8	1,2	NC-12 1-4, 50	A201 - A204
2		TX-2	FL8	3,4	NC-12 41-43	A205 - A207
2	P-VAV3	TX-1	LL8	1,2	NC-12 5-10	A300 - A305
2		TX-2	LL8	3,4	NC-12 11-16	A306 - A311
2		TX-3	LL8	5,6	NC-12 17-18, 44-45	A312 - A315
2	P-VAV4	TX-1	CL8	1,2	NC-12 19-24	A400 - A405
2		TX-2	CL8	3,4	NC-12 25-30	A406 - A411
2		TX-3	CL8	5,6	NC-12 31-36	A412 - A417
2		TX-4	CL8	7,8	NC-12 37-38, 46-47, 49	A418 - A422



PANEL P-VAVx LADDER WIRING DIAGRAM



VAV Boxes With REHEAT

I. Box manufacturer will ship box to Temperature Control Supplier. Furnish and install direct digital controller (including the damper actuator) on box and turn box over to Heating Contractor for installation.

II. Control Valve: Two-way modulating, normally open.

III. Rise in space temperature above setpoint:
- A. Box Actuator: Modulate to maximum open position.
- B. Reheat Coil Valve: Fully closed.

IV. Drop in space temperature below setpoint:
- A. First Step:
  1. Box Actuator: Modulate to minimum open position.
  2. Reheat Coil Valve: Fully closed.
- B. Second Step: Modulate reheat coil valve to fully open while the box damper remains at minimum position
- C. Third Step: Modulate the box damper toward maximum position while the reheat coil valve remains fully open.

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
BXHTG-X,RAD-X	0	VALVE	SEE ROOM SCHEDULE
VMA-X	1	AP-VMA1420-0	VAV MODULAR ASSY - CLG W/ REHEAT
ZN-T	1	TE-6314P-1	SENS,T-Ni,0.1%,RM

BILL OF MATERIALS P-VAV1

Designation	Qty	Part Number	Description
Panel Devices:			
DR-1	1	PD-117-2	RECEPTACLE,DUPLEX,UL,WHT
	1	PD-121-1	RECEPTACLE,DUPLEX,CVR
	1	PD-121-6	HANDY BOX 2 IN
KS-1	1	PD-112-12	KNIFE SWITCH BLOCK
P-VAV1	1	M-8100-1824	PANEL,STANDARD,7 UNITS
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-x	3	PD-114-2	TRANSFORMER 100VA, 120/24

BILL OF MATERIALS P-VAV2

Designation	Qty	Part Number	Description
Panel Devices:			
DR-1	1	PD-117-2	RECEPTACLE,DUPLEX,UL,WHT
	1	PD-121-1	RECEPTACLE,DUPLEX,CVR
	1	PD-121-6	HANDY BOX 2 IN
KS-1	1	PD-112-12	KNIFE SWITCH BLOCK
P-VAV2	1	M-8100-1824	PANEL,STANDARD,7 UNITS
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-x	2	PD-114-2	TRANSFORMER 100VA, 120/24

BILL OF MATERIALS P-VAV3

Designation	Qty	Part Number	Description
Panel Devices:			
DR-1	1	PD-117-2	RECEPTACLE,DUPLEX,UL,WHT
	1	PD-121-1	RECEPTACLE,DUPLEX,CVR
	1	PD-121-6	HANDY BOX 2 IN
KS-1	1	PD-112-12	KNIFE SWITCH BLOCK
P-VAV3	1	M-8100-1824	PANEL,STANDARD,7 UNITS
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-x	3	PD-114-2	TRANSFORMER 100VA, 120/24

BILL OF MATERIALS P-VAV4

Designation	Qty	Part Number	Description
Panel Devices:			
DR-1	1	PD-117-2	RECEPTACLE,DUPLEX,UL,WHT
	1	PD-121-1	RECEPTACLE,DUPLEX,CVR
	1	PD-121-6	HANDY BOX 2 IN
KS-1	1	PD-112-12	KNIFE SWITCH BLOCK
P-VAV4	1	M-8100-1824	PANEL,STANDARD,7 UNITS
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-x	4	PD-114-2	TRANSFORMER 100VA, 120/24

REVISION INFORMATION

NUMBER	REFERENCE DRAWING	NO	REVISION-LOCATION	ETN	DATE	BY
		1	RECORD DRAWINGS		6/14/2001	MLR

DATE 06/15/01
TIME 08:58 AM
FILE NAME rsdetg.vsd

Drawing Title: ROOM SCHEDULE DETAILS

Project Title: MILLER PARK, ONE BREWERS WAY, MILWAUKEE, WI 53214

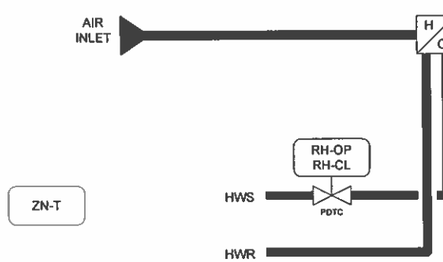
Sales Engineer	Project Manager	Application Engineer	DRAWN	APPROVED
PJS	TP	KJK	BY MLR DATE	BY DATE

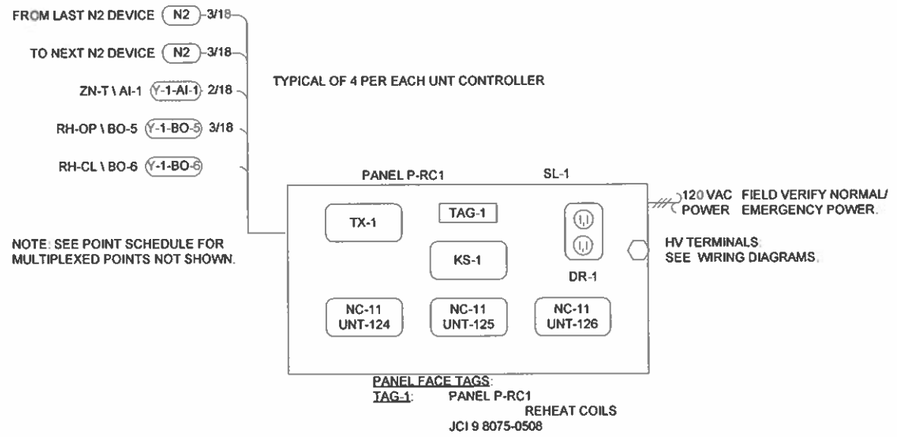
JOHNSON CONTROLS
Systems & Services Division
Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER: 9 8075-0508

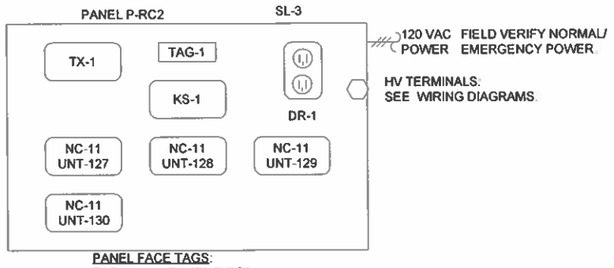
DRAWING NUMBER: 35.4

DETAIL H
TYPICAL OF 88





PANEL FACE TAGS:
TAG-1: PANEL P-RC1
REHEAT COILS
JCI 9 8075-0508



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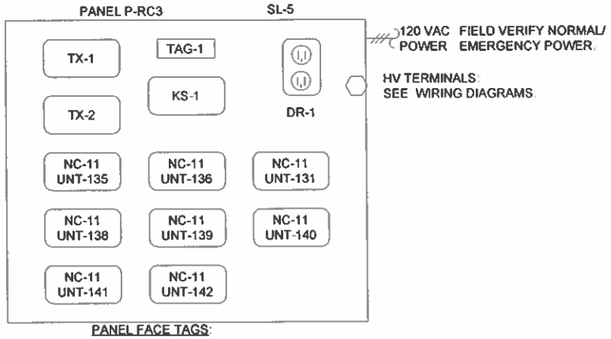
REHEAT COILS
JCI 9 8075-0508



PANEL FACE TAGS:
TAG-1: PANEL P-RC3
REHEAT COILS
JCI 9 8075-0508

Reheat Coils

I. Control Valve: Two-way modulating, normally open.
II. Rise in space temperature above setpoint:
  A. Reheat Coil Valve fully closed.
III. Drop in space temperature below setpoint:
  A. Modulate reheat coil valve to fully open.

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
RH-X	0	VALVE	SEE ROOM SCHEDULE
ZN-T	1	TE-6314P-1	SENS,T-Ni,0.1%,RM

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
DR-1	1	PD-117-2	RECEPTACLE,DUPLEX,UL,WHT
	1	PD-121-1	RECEPTACLE,DUPLEX,CVR
	1	PD-121-6	HANDY BOX 2 IN
KS-1	1	PD-112-12	KNIFE SWITCH BLOCK
P-RC1	1	M-8100-2436	PANEL,STANDARD,15 UNITS
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-1	1	PD-114-2	TRANSFORMER 100VA, 120/24
UNT-x	3	AS-UNT140-1	CNTRLR,DIG,UNT,6AI,4BI,8BO,SCREW

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
DR-1	1	PD-117-2	RECEPTACLE,DUPLEX,UL,WHT
	1	PD-121-1	RECEPTACLE,DUPLEX,CVR
	1	PD-121-6	HANDY BOX 2 IN
KS-1	1	PD-112-12	KNIFE SWITCH BLOCK
P-RC2	1	M-8100-2436	PANEL,STANDARD,15 UNITS
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-1	1	PD-114-2	TRANSFORMER 100VA, 120/24
UNT-x	4	AS-UNT140-1	CNTRLR,DIG,UNT,6AI,4BI,8BO,SCREW

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
DR-1	1	PD-117-2	RECEPTACLE,DUPLEX,UL,WHT
	1	PD-121-1	RECEPTACLE,DUPLEX,CVR
	1	PD-121-6	HANDY BOX 2 IN
KS-1	1	PD-112-12	KNIFE SWITCH BLOCK
P-RC3	1	M-8100-2436	PANEL,STANDARD,15 UNITS
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-x	2	PD-114-2	TRANSFORMER 100VA, 120/24
UNT-x	8	AS-UNT140-1	CNTRLR,DIG,UNT,6AI,4BI,8BO,SCREW

SEE PAGE 35.6 FOR REMAINING PANELS AND WIRING DIAGRAM

REVISION INFORMATION
NUMBER
DATE 11/06/09
TIME 09:22 AM
FILE NAME rsdeth1.vsd

Drawing Title
ROOM SCHEDULE DETAILS

REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY

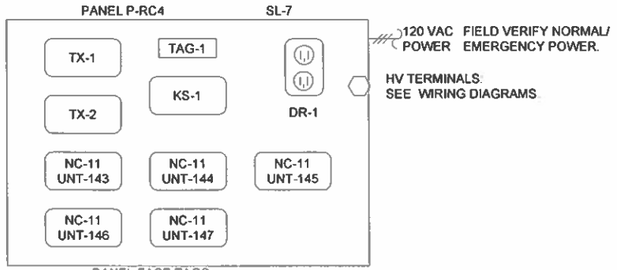
Sales Engineer	Project Manager	Application Engineer	DRAWN	APPROVED
PJS	TP	KJK	BY MLR DATE	BY DATE

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

JOHNSON CONTROLS
Systems & Services Division
Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

CONTRACT NUMBER
9 8075-0508
DRAWING NUMBER
35.5

DETAIL H
CONTINUED



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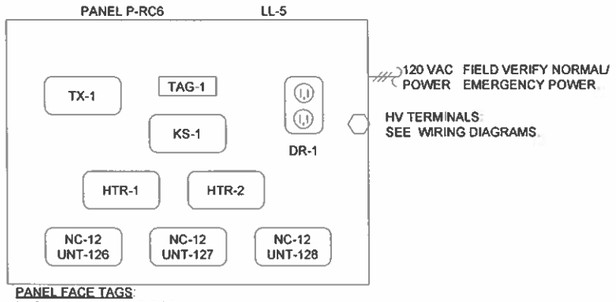
REHEAT COILS
JCI 9 8075-0508



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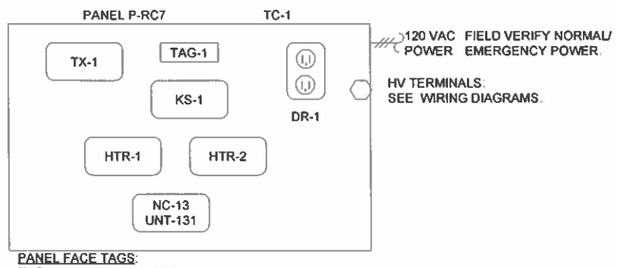
REHEAT COILS
JCI 9 8075-0508



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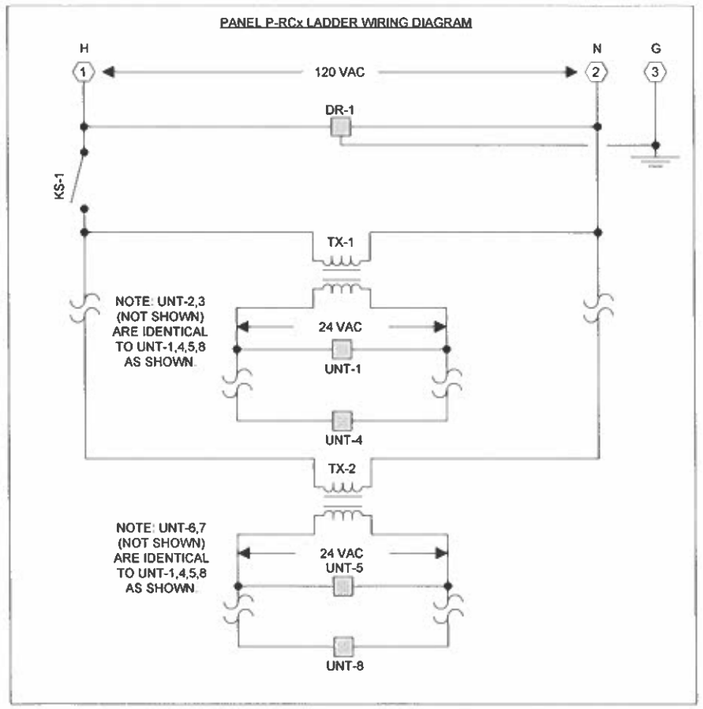
REHEAT COILS
JCI 9 8075-0508



BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
DR-1	1	PD-117-2	RECEPTACLE,DUPLEX,UL,WHT
	1	PD-121-1	RECEPTACLE,DUPLEX,CVR
	1	PD-121-6	HANDY BOX 2 IN
KS-1	1	PD-112-12	KNIFE SWITCH BLOCK
P-RC4	1	M-8100-2436	PANEL,STANDARD,15 UNITS
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-x	2	PD-114-2	TRANSFORMER 100VA, 120/24
UNT-x	5	AS-UNT140-1	CNTRLR,DIG,UNT,6AI,4BI,8BO,SCREW

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
DR-1	1	PD-117-2	RECEPTACLE,DUPLEX,UL,WHT
	1	PD-121-1	RECEPTACLE,DUPLEX,CVR
	1	PD-121-6	HANDY BOX 2 IN
HTR-x	2	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
KS-1	1	PD-112-12	KNIFE SWITCH BLOCK
P-RC6	1	M-8100-2436	PANEL,STANDARD,15 UNITS
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-1	1	PD-114-2	TRANSFORMER 100VA, 120/24
UNT-x	3	AS-UNT140-1	CNTRLR,DIG,UNT,6AI,4BI,8BO,SCREW

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
DR-1	1	PD-117-2	RECEPTACLE,DUPLEX,UL,WHT
	1	PD-121-1	RECEPTACLE,DUPLEX,CVR
	1	PD-121-6	HANDY BOX 2 IN
HTR-x	2	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
KS-1	1	PD-112-12	KNIFE SWITCH BLOCK
P-RC7	1	M-8100-2436	PANEL,STANDARD,15 UNITS
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-1	1	PD-114-2	TRANSFORMER 100VA, 120/24
UNT-x	1	AS-UNT140-1	CNTRLR,DIG,UNT,6AI,4BI,8BO,SCREW

REVITION INFORMATION
NUMBER
DATE 11/06/09
TIME 09:23 AM
FILE NAME rsdeth2.vsc

Drawing Title
ROOM SCHEDULE DETAILS

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

REFERENCE DRAWING	NO	REVISION-LOCATION	ECN	DATE	BY

Sales Engineer	Project Manager	Application Engineer	DRAWN	APPROVED
PJS	TP	KJK	BY MLR DATE	BY DATE

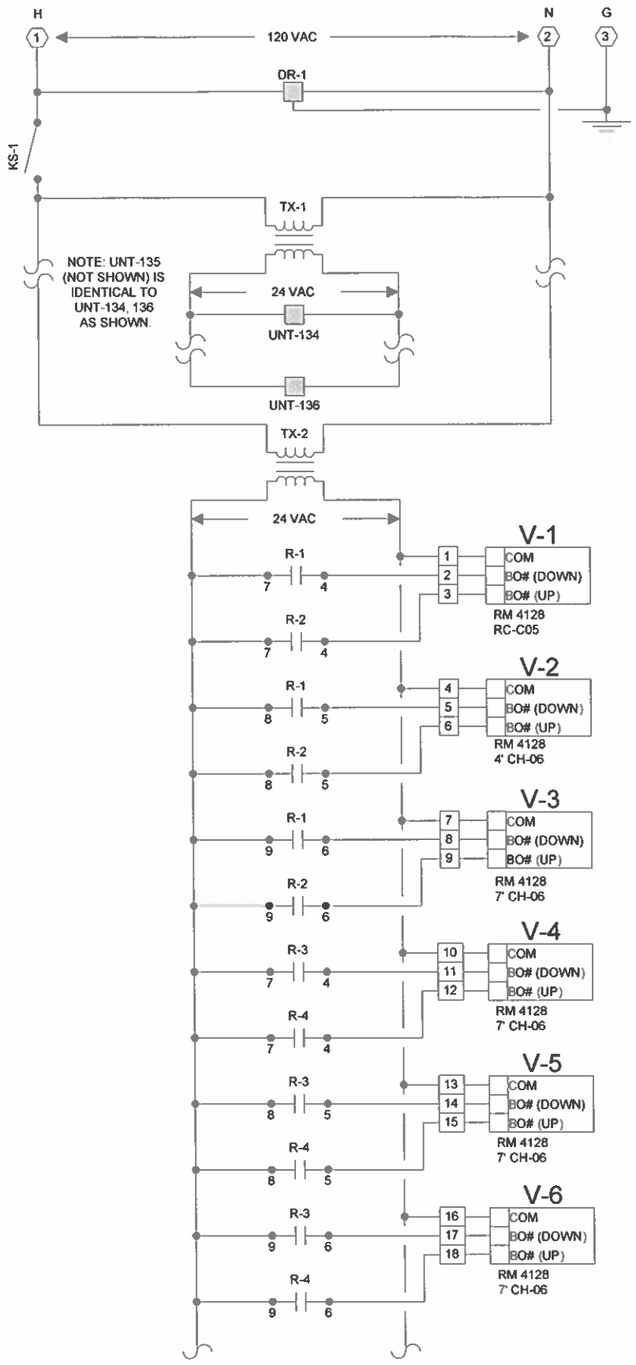
JOHNSON CONTROLS
Systems & Services Division

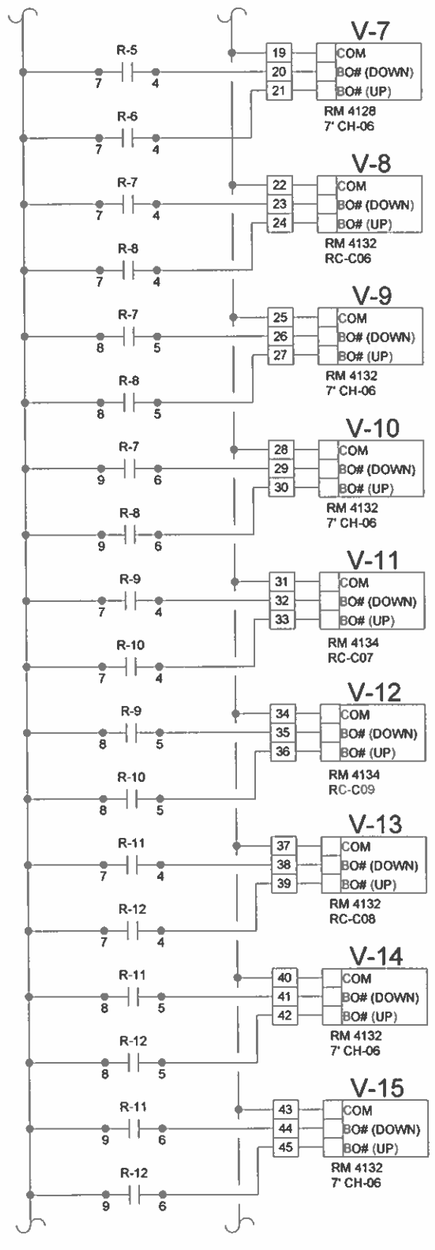
Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

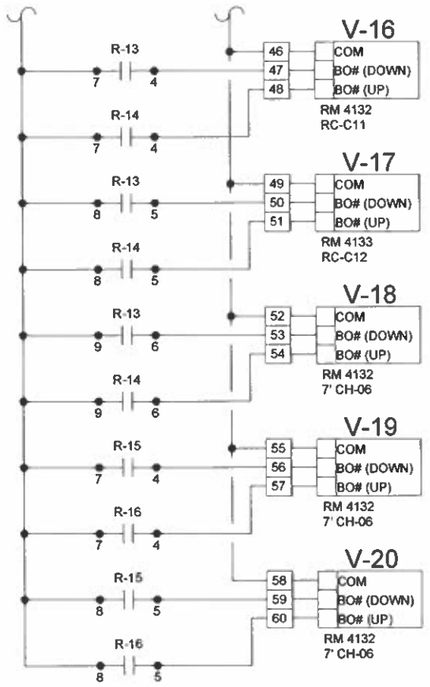
CONTRACT NUMBER **9 8075-0508**
DRAWING NUMBER **35.6**

DETAIL I, J
CONTINUED

PANEL P-RC8 LADDER WIRING DIAGRAM

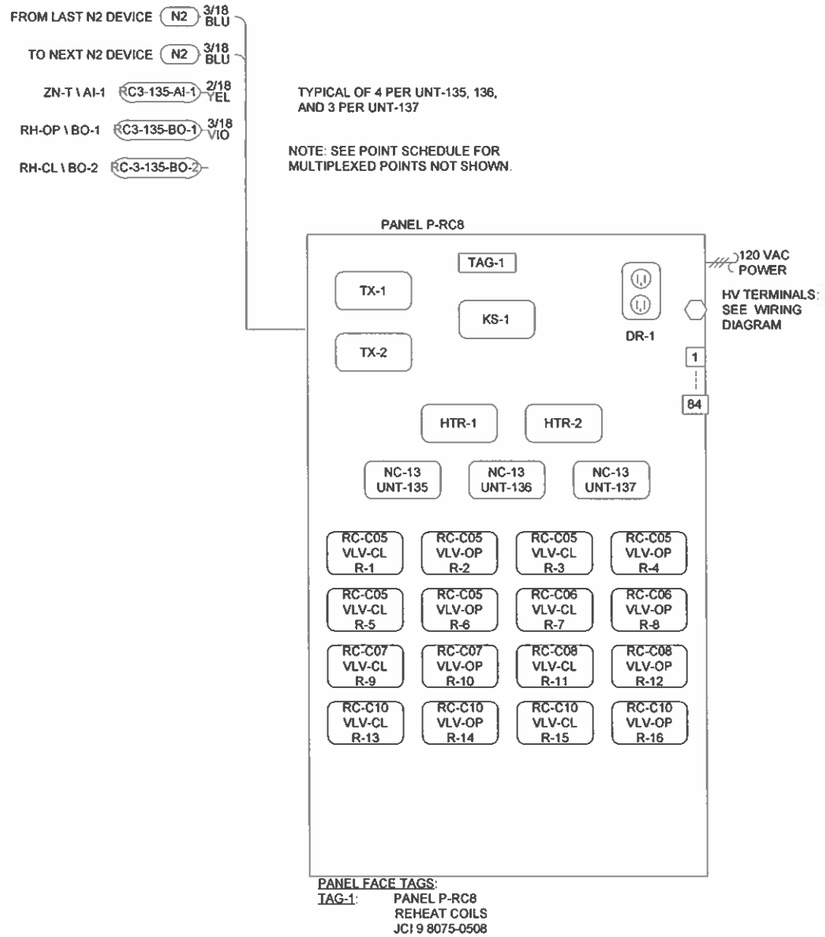






REVISION INFORMATION	Drawing Title							
NUMBER	ROOM SCHEDULE DETAILS .300 CLUB RESTAURANT							
DATE 04/16/01		REFERENCE DRAWING		NO.	REVISION-LOCATION	ECN	DATE	BY
TIME 08:58 AM		Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR DATE	APPROVED: BY	DATE	
	Project Title							
FILE NAME rsdetij2.vsd	MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division			Branch Information Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575	CONTRACT NUMBER 9 8075-0508		
						DRAWING NUMBER 35.8		

DETAIL I, J
CONTINUED



PANEL FACE TAGS:
TAG-1: PANEL P-RC8
REHEAT COILS
JCI 9 8075-0508

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
DR-1	1	PD-117-2	RECEPTACLE,DUPLEX,UL WHT
	1	PD-121-1	RECEPTACLE,DUPLEX,CVR
	1	PD-121-6	HANDY BOX 2 IN
HTR-x	2	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
KS-1	1	PD-112-12	KNIFE SWITCH BLOCK
P-RC8	1	M-8100-3042	PANEL,STANDARD,22 UNITS
RC-Cx VLVx-OP, RC-Cx VLVx-CL	16	PD-101-35	RLY BASE,3PDT,11PIN,10A,IDEC #SR3B-05
	16	PD-109-51	RLY,PLUG-IN,3PDT,24VAC,P&B KUP14A25-24
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
TX-x	2	PD-114-2	TRANSFORMER 100VA, 120/24
UNT-x	3	AS-UNT140-1	CNTRLR,DIG,UNT,6AI,4BI,8BO,SCREW

REVISION INFORMATION	Drawing Title									
NUMBER	ROOM SCHEDULE DETAILS .300 CLUB RESTAURANT									
DATE 04/16/01		REFERENCE DRAWING		NO.	REVISION LOCATION		ECN	DATE	BY	
TIME 09:03 AM		Sales Engineer PJS	Project Manager TP	Application Engineer KJK	DRAWN BY MLR	DATE	APPROVED BY	DATE		
FILE NAME rsdetij3.vsd	Project Title MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division			Branch Information Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER 9 8075-0508			
							DRAWING NUMBER 35.9			

DETAIL A
TYPICAL OF 14

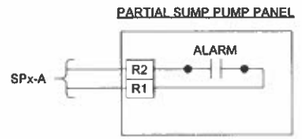
SEE AH-F01-6, AHT01,2, AH-TB01-6

Frost Protection

1. Not used per Brewers Operations / HKS.

DETAIL B
TYPICAL OF 15

PARTIAL SUMP PUMP PANEL



NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

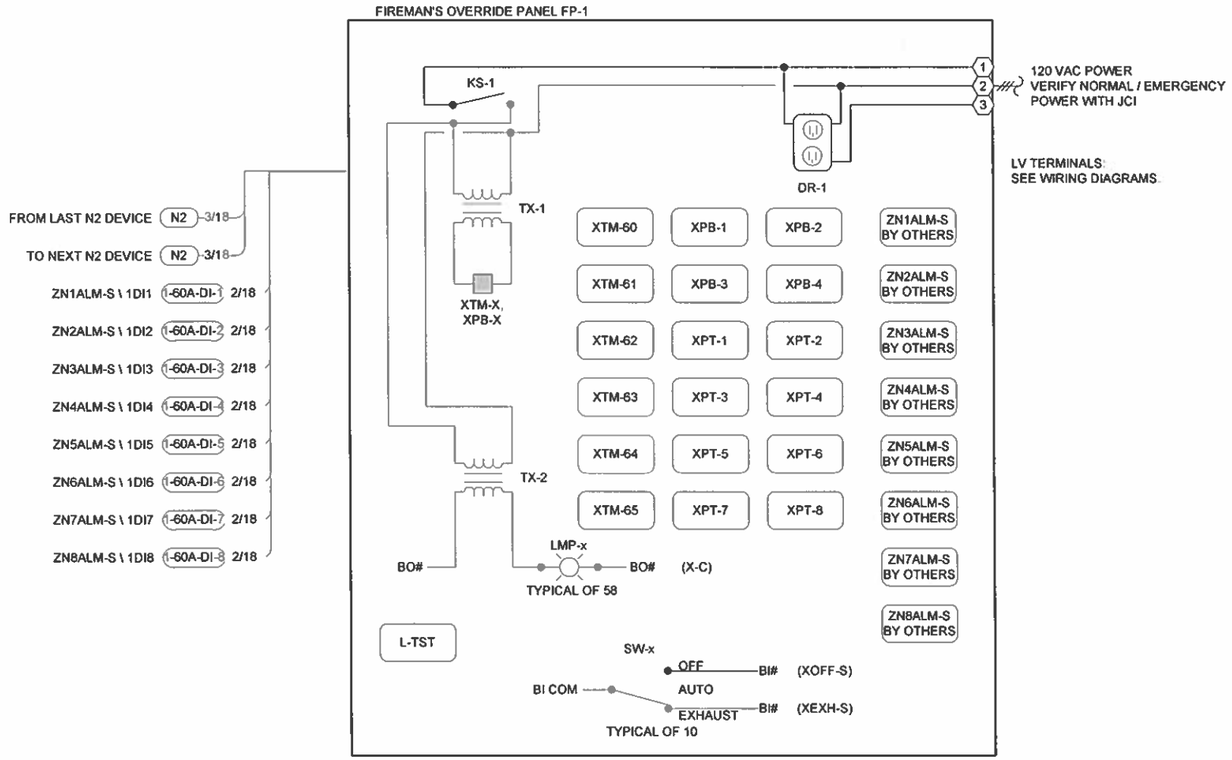
Rev.	MECHANICAL SYSTEM	LOCATION	SYSTEM	OBJECT	PAGE#
2	SP-1	SL0	SP-ALM	SP1-A	NC-11 PS-5
2	SP-2	SL1	SP-ALM	SP2-A	NC-11 PS-5
2	SP-3	SL1	SP-ALM	SP3-A	NC-11 PS-24
2	SP-4	SL1	SP-ALM	SP4-A	NC-11 PS-24
2	SP-5	SL2	SP-ALM	SP5-A	NC-11 PS-8
2	SP-6	SL3	SP-ALM	SP6-A	NC-11 PS-25
2	SP-7	SL3	SP-ALM	SP7-A	NC-11 PS-25
2	SP-8	SL4	SP-ALM	SP8-A	NC-11 PS-1
2	SP-9	SL5	SP-ALM	SP9-A	NC-11 PS-17
2	SP-10	SL6	SP-ALM	SP10-A	NC-11 PS-16
2	SP-11	SL6	SP-ALM	SP11-A	NC-11 PS-16
2	SP-12	SL6	SP-ALM	SP12-A	NC-11 PS-3
2	SP-13	SL8	SP-ALM	SP13-A	NC-11 PS-33
2	SP-14	SL8	SP-ALM	SP14-A	NC-11 PS-20
2	SP-15	SL9	SP-ALM	SP15-A	NC-11 PS-14

Plumbing Equipment: The EMCS will monitor the following items of plumbing equipment:

1. Sump Pumps (15 General panel alarms)

REVISION INFORMATION	Drawing Title						
NUMBER	MISCELLANEOUS DETAILS						
			1	RECORD DRAWINGS		6/14/2001	MLR
DATE 06/15/01		REFERENCE DRAWING	NO	REVISION LOCATION	ECN	DATE	BY
		Sales Engineer PJS / Project Manager TP	Application Engineer KJK	DRAWN BY MLR DATE		APPROVED BY DATE	
TIME 07:55 AM	Project Title	JOHNSON CONTROLS		Branch Information		CONTRACT NUMBER	
	MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	Systems & Services Division		Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		9 8075-0508	
FILE NAME msdetab.vsd						DRAWING NUMBER 36.1	

DETAIL C
TYPICAL OF 1



NOTE: AUTO = NORMAL OPERATION OF FANS.
OFF / EXHAUST ARE TO BE USED BY FIRE DEPARTMENT ONLY.

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
D-x	0	DAMPER	SEE DAMPER SCHEDULE
Panel Devices:			
DR-1	1	PD-117-2	RECEPTACLE,DUPLEX,UL,WHT
	1	PD-121-1	RECEPTACLE,DUPLEX,CVR
	1	PD-121-6	HANDY BOX 2 IN
FP-1	1	M-8100-3648	PANEL,STANDARD,31 UNITS
KS-1	1	PD-112-12	KNIFE SWITCH BLOCK
L-TST	1	PD-105-2	MOM PSH BUTTN,1NO/1NC,RED
LMP-x	58	PD-102-2	LAMP,28V,5KHRS,28PSB
	58	PD-103-33	LENS,RED,F/-55 SOCKET
	58	PD-103-55	P/L BODY ONLY,UL,13/16"
SW-x	1	PD-106-2	TOGL SW,3 POS,SPDT
TX-1,2	2	PD-114-2	TRANSFORMER 100VA, 120/24
XPB-x	4	XPB-821-5	N2 EXPN MOD, 8BI
XPT-x	8	XPT-861-5	N2 EXPN MOD, 8BO, TRIAC
XTM-x	6	XTM-105-5	N2 EXT'N MOD, COMM I/F

Smoke Exhaust System

1. The building is provided with eight (8) distinct smoke exhaust systems, which are provided in the following areas:
   - System A Field and Loge Concourse Left Field
   - System B Field and Loge Concourse Left Center Field
   - System C Field and Loge Concourse Right Center Field
   - System D Field and Loge Concourse Right Field
   - System E Terrace Concourse Left Field
   - System F Terrace Concourse Left Center Field
   - System G Terrace Concourse Right Center Field
   - System H Terrace Concourse Right Field
2. Provide a fireman's override panel. Upon the actuation of the automatic sprinkler system and/or smoke detection by the fire alarm system, the smoke control systems will operate automatically. Others will mount the eight fire alarm control modules next to the temperature controls fireman's control panel.
3. The motorized exhaust damper on the indirect gas fired air handling units supply fan discharge will open and the supply (combination fire/smoke damper) and outside air dampers will fully close. The return air damper will fully open. Provide required end switches and safety devices to protect the ductwork from over pressurizing.
4. The fan will then be energized. All other equipment not connected with the smoke system or fire protection systems that are connected to the EMCS, which will include but not be limited to, the air handling unit supply and return fans, exhaust fans, chillers, pumps and boilers will simultaneously be de-energized via the regular EMCS start/stop relay. Associated smoke/fire dampers serving all other air handling units will automatically close. Smoke exhaust fans will be capable of being manually overridden at the fireman's control panel. Provide an "OFF-AUTO-EXHAUST" switch for each zone. Show supply fan status and individual damper status's (OA, EA, RA, SA, smoke zone damper end switches) for each damper associated with the indirect gas fired air handlers on the panel also with an indicating lamp. Monitor the override switches on the EMCS. Provide relays off the EMCS that will override the HAND position in the OFF mode and a relay to override the safety circuits in the EXHAUST mode for the bowl air handling units (See the Indirect Gas Fired Air Handling Systems sequence of operation).

REVISION INFORMATION
NUMBER
DATE 04/16/01
TIME 09:24 AM
FILE NAME msdetc1.vsd

Drawing Title: **MISCELLANEOUS DETAILS**

REFERENCE DRAWING	NO.	REVISION LOCATION	ECN	DATE	BY

Sales Engineer	Project Manager	Application Engineer	DRAWN		APPROVED	
PJS	TP	KJK	BY MLR	DATE	BY	DATE

Project Title: **MILLER PARK**
ONE BREWERS WAY
MILWAUKEE, WI 53214

JOHNSON CONTROLS
Systems & Services Division

Branch Information:
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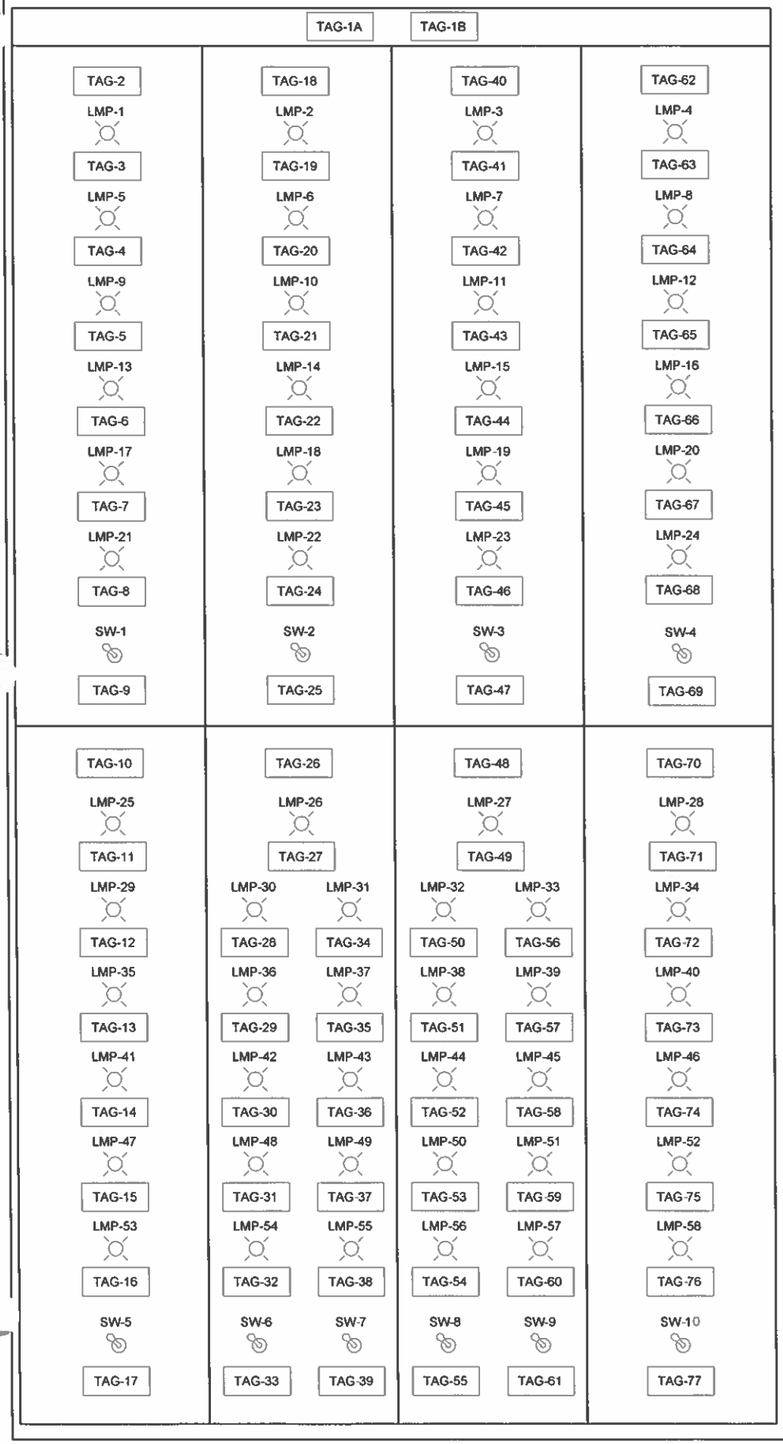
CONTRACT NUMBER: **9 8075-0508**
DRAWING NUMBER: **36.2**

FP-1 PANEL FACE



POTEAU NOTES:
- SECTION OFF PANEL FACE AS SHOWN
- USE REDUCED SIZE TAGs AS REQUIRED

DETAIL C
CONTINUED

PANEL FACE TAGS.

TAG-1A: PANEL FP-1
FIREMAN OVERRIDE
JCI 9 8075-0508

TAG-1B: LIGHT ON IS DAMPER POSITION SHOWN DURING AUTO-SMOKE / EXHAUST MODES

TAG-2: TERRACE CONCOURSE LEVEL LEFT FIELD AH-TB04
TAG-3: ZONE ALARM STATUS
TAG-4: SUPPLY FAN STATUS
TAG-5: OUTDOOR DAMPER CLOSED
TAG-6: SUPPLY DAMPER CLOSED
TAG-7: RETURN DAMPER OPEN
TAG-8: EXHAUST DAMPER OPEN
TAG-9: OFF-AUTO-EXHAUST
TAG-10: FIELD AND LOGE LEVEL LEFT FIELD AH-F06
TAG-11: ZONE ALARM STATUS
TAG-12: SUPPLY FAN STATUS
TAG-13: OUTDOOR DAMPER CLOSED
TAG-14: SUPPLY DAMPER CLOSED
TAG-15: RETURN DAMPER OPEN
TAG-16: EXHAUST DAMPER OPEN
TAG-17: OFF-AUTO-EXHAUST

TAG-18: TERRACE CONCOURSE LEVEL LEFT CENTER FIELD AH-TB03
TAG-19: ZONE ALARM STATUS
TAG-20: SUPPLY FAN STATUS
TAG-21: OUTDOOR DAMPER CLOSED
TAG-22: SUPPLY DAMPER CLOSED
TAG-23: RETURN DAMPER OPEN
TAG-24: EXHAUST DAMPER OPEN
TAG-25: OFF-AUTO-EXHAUST
TAG-26: FIELD AND LOGE LEVEL LEFT CENTER FIELD AH-F05 AH-F04
TAG-27: ZONE ALARM STATUS
TAG-28: SUPPLY FAN STATUS
TAG-29: OUTDOOR DAMPER CLOSED
TAG-30: SUPPLY DAMPER CLOSED
TAG-31: RETURN DAMPER OPEN
TAG-32: EXHAUST DAMPER OPEN
TAG-33: OFF-AUTO-EXHAUST
TAG-34: SUPPLY FAN STATUS
TAG-35: OUTDOOR DAMPER CLOSED
TAG-36: SUPPLY DAMPER CLOSED
TAG-37: RETURN DAMPER OPEN
TAG-38: EXHAUST DAMPER OPEN
TAG-39: OFF-AUTO-EXHAUST

TAG-40: TERRACE CONCOURSE LEVEL RIGHT CENTER FIELD AH-TB02
TAG-41: ZONE ALARM STATUS
TAG-42: SUPPLY FAN STATUS
TAG-43: OUTDOOR DAMPER CLOSED
TAG-44: SUPPLY DAMPER CLOSED
TAG-45: RETURN DAMPER OPEN
TAG-46: EXHAUST DAMPER OPEN
TAG-47: OFF-AUTO-EXHAUST
TAG-48: FIELD AND LOGE LEVEL RIGHT CENTER FIELD AH-F03 AH-F02
TAG-49: ZONE ALARM STATUS
TAG-50: SUPPLY FAN STATUS
TAG-51: OUTDOOR DAMPER CLOSED
TAG-52: SUPPLY DAMPER CLOSED
TAG-53: RETURN DAMPER OPEN
TAG-54: EXHAUST DAMPER OPEN
TAG-55: OFF-AUTO-EXHAUST
TAG-56: SUPPLY FAN STATUS
TAG-57: OUTDOOR DAMPER CLOSED
TAG-58: SUPPLY DAMPER CLOSED
TAG-59: RETURN DAMPER OPEN
TAG-60: EXHAUST DAMPER OPEN
TAG-61: OFF-AUTO-EXHAUST

TAG-62: TERRACE CONCOURSE LEVEL RIGHT FIELD AH-TB01
TAG-63: ZONE ALARM STATUS
TAG-64: SUPPLY FAN STATUS
TAG-65: OUTDOOR DAMPER CLOSED
TAG-66: SUPPLY DAMPER CLOSED
TAG-67: RETURN DAMPER OPEN
TAG-68: EXHAUST DAMPER OPEN
TAG-69: OFF-AUTO-EXHAUST
TAG-70: FIELD AND LOGE LEVEL RIGHT FIELD AH-F01
TAG-71: ZONE ALARM STATUS
TAG-72: SUPPLY FAN STATUS
TAG-73: OUTDOOR DAMPER CLOSED
TAG-74: SUPPLY DAMPER CLOSED
TAG-75: RETURN DAMPER OPEN
TAG-76: EXHAUST DAMPER OPEN
TAG-77: OFF-AUTO-EXHAUST

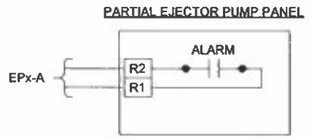
BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
TAG-x	68	M-8000-391	NAMEPLT,LAMICOID,1 LINE
	11	M-8000-393	NAMEPLT,LAMICOID,3 LINE

REVISION INFORMATION	Drawing Title: MISCELLANEOUS DETAILS						
NUMBER		REFERENCE DRAWING	NO	REVISION LOCATION	ECN	DATE	BY
DATE: 07/17/01		Sales Engineer: PJS / Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR DATE	APPROVED: BY	DATE	
TIME: 07:20 AM	Project Title: MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division		Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575	CONTRACT NUMBER: 9 8075-0508		
FILE NAME: msdetc2.vsd					DRAWING NUMBER: 36.3		

DETAIL D

TYPICAL OF 7



NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

Rev.	MECHANICAL SYSTEM	LOCATION	SYSTEM	OBJECT	PAGE#
2	EP-1	SL1	EP-ALM	EP1-A	NC-11 PS-24
2	EP-2	SL2	EP-ALM	EP2-A	NC-11 PS-24
2	EP-3	SL3	EP-ALM	EP3-A	NC-11 PS-25
2	EP-4	SL4	EP-ALM	EP4-A	NC-11 PS-2
2	EP-5	SL6	EP-ALM	EP5-A	NC-11 PS-31
2	EP-6	SL7	EP-ALM	EP6-A	NC-11 PS-31
2	EP-7	SL9	EP-ALM	EP7-A	NC-11 PS-34

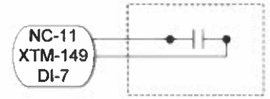
Plumbing Equipment: The EMCS will monitor the following items of plumbing equipment:

1. Sewage Ejector Pumps (7 General panel alarms)

DETAIL E

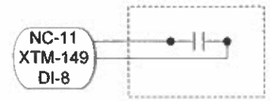
ELECTRIC METER 1

(1 CONTACT CLOSURE = 0.48 KILOWATTS)



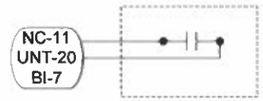
ELECTRIC METER 2

(1 CONTACT CLOSURE = 0.48 KILOWATTS)



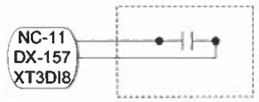
GAS METER

(1 CONTACT CLOSURE = 1000 CUBIC FEET)



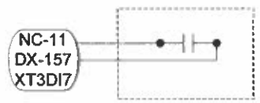
WATER METER - CW MAKEUP

(1 CONTACT CLOSURE = 100 GALLONS



WATER METER - CW BLOWDOWN

(1 CONTACT CLOSURE = 10 GALLONS



REVISION INFORMATION
NUMBER
DATE 08/16/02
TIME 10:06 AM
FILE NAME msdetde.vsd

Drawing Title
MISCELLANEOUS DETAILS

NO.	REVISION-LOCATION	ECN	DATE	BY
1	RECORD DRAWINGS		4/16/2001	MLR

REFERENCE DRAWING			DRAWN		APPROVED	
Sales Engineer	Project Manager	Application Engineer	BY	DATE	BY	DATE
PJS	TP	KJK	MLR			

Project Title
MILLER PARK
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MILWAUKEE, WI 53214

JOHNSON CONTROLS
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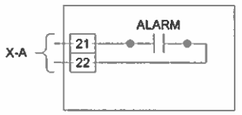
Fax: 414-524-7575

CONTRACT NUMBER
9 8075-0508

DRAWING NUMBER
36.4

DETAIL F
TYPICAL OF 2

PARTIAL SUMP PUMP PANEL



NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

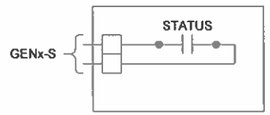
Rev.	MECHANICAL SYSTEM	LOCATION	SYSTEM	OBJECT	PAGE #
1	FIELD DRAINAGE SUMP PUMP 1 & 2	SECTOR 1	MISC	LEFT-A	NC-11 PS-5
1	FIELD DRAINAGE SUMP PUMP3 & 4	SECTOR 8	MISC	RIGHT-A	NC-11 PS-33

Plumbing Equipment: The EMCS will monitor the following items of plumbing equipment:

1. Sump Pump for Field Drainage (General panel alarm).

DETAIL G
TYPICAL OF 2

PARTIAL GENERATOR PANEL



NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

Rev.	MECHANICAL SYSTEM	LOCATION	SYSTEM	OBJECT	PAGE #
1	GEN-1	SECTOR 8	GEN	GEN1-S	NC-11 PS-21
1	GEN-2	SECTOR 2	GEN	GEN2-S	NC-11 PS-21

General: The EMCS will monitor the following items of equipment:

1. Standby Emergency Generator (On/Off status)

REVISION INFORMATION
NUMBER
DATE 04/16/01
TIME 09:33 AM
FILE NAME msdetfg.vsd

Drawing Title
MISCELLANEOUS DETAILS

REFERENCE DRAWING	NO.	REVISION LOCATION	ECN	DATE	BY

Sales Engineer	Project Manager	Application Engineer	DRAWN	APPROVED
PJS	TP	KJK	BY MLR DATE	BY DATE

Project Title
MILLER PARK
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MILWAUKEE, WI 53214

JOHNSON CONTROLS
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Fax: 414-524-7575

CONTRACT NUMBER
9 8075-0508

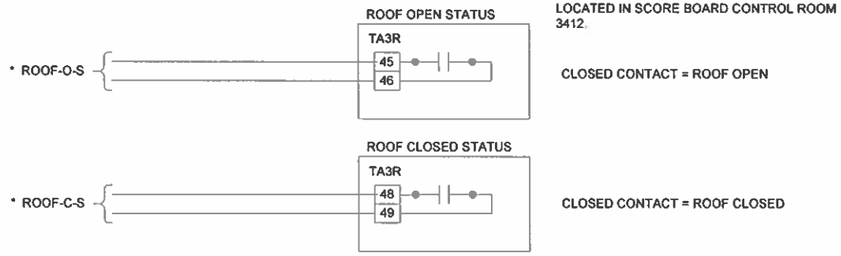
DRAWING NUMBER
36.5

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
HBDPRx-C	4	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC
P-HBDx	4	BZ-1000-11	UTILITY ENCLOSURE
R-1	4	PD-109-30	RELAY 4PDT 25A 115V

DETAIL H

PARTIAL CONTROL ROOF PANEL
Typical of 1



LOCATED IN SCORE BOARD CONTROL ROOM 3412.

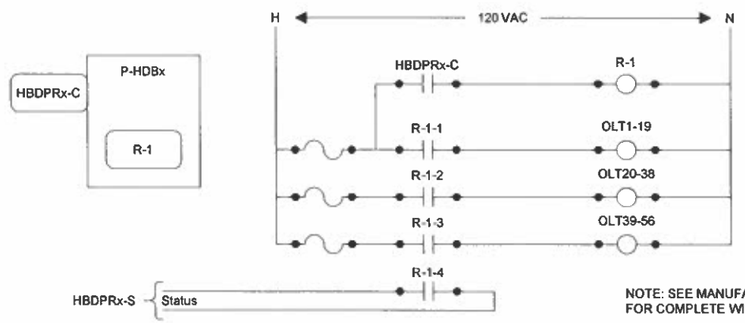
CLOSED CONTACT = ROOF OPEN

CLOSED CONTACT = ROOF CLOSED

NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

* PANEL P-RC6, ROOM 3505, PAGE NC-12 PS-28

HIGH BOWL DAMPER CONTROL
Typical of 4



NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

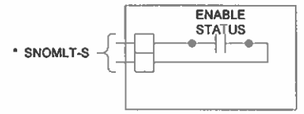
	Rev.	MECHANICAL SYSTEM	LOCATION	ELECTRIC PANEL PANEL #	LOCATION	SYSTEM	OBJECT	PAGE #	PANEL
	2	ROOF	TC5	n/a	n/a	MISC	ROOF-O-S	NC-12 PS-28	P-RC6
	2	ROOF	TC5	n/a	n/a	MISC	ROOF-C-S	NC-12 PS-28	P-RC6
3rd BASE	2	DAMPER	TB-1	L4T1	Access 5150	MISC	HBDPR1-C	NC-13 PS-30	P-TB1
3rd BASE	2	DAMPER	TB-1	L4T1	Access 5150	MISC	HBDPR1-S	NC-13 PS-30	P-TB1
3rd BASE	2	DAMPER	TC-4	L3TC1	Electric 5403	MISC	HBDPR2-C	NC-13 PS-31	P-TB4
3rd BASE	2	DAMPER	TC-4	L3TC1	Electric 5403	MISC	HBDPR2-S	NC-13 PS-31	P-TB4
1st BASE	2	DAMPER	TC-5	L2TC1	Electric 5506	MISC	HBDPR3-C	NC-12 PS-29	P-TB5
1st BASE	2	DAMPER	TC-5	L2TC1	Electric 5506	MISC	HBDPR3-S	NC-12 PS-29	P-TB5
1st BASE	2	DAMPER	TB-8	L1T1	Mech 5850	MISC	HBDPR4-C	NC-12 PS-30	P-TB8
1st BASE	2	DAMPER	TB-8	L1T1	Mech 5850	MISC	HBDPR4-S	NC-12 PS-30	P-TB8

General: The EMCS will monitor the following items of equipment:

1. Roof Mechanism (open/close status)
2. High Bowl dampers (open/close command, open/close status).

DETAIL I
TYPICAL OF 1

PARTIAL ROOF SNOW MELT PANEL
LOCATED IN SCOREBOARD CONTROL ROOM 3412



NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

* PANEL P-RC6, ROOM 3505, PAGE NC-12 PS-28

* PANEL P-RC6, ROOM 3505, PAGE NC-12 PS-28

NOTE:
The Snow Melt Panels will be installed at -
Outfield Gutter area of 4R & 4L
Outfield Catwalk for 3R, 2R,1, 2L & 3L
Home Plate Gutter area of 4R & 4L
Pivot Catwalk

General: The EMCS will monitor the following items of equipment:

1. Roof Snow Melt (on/off enable status)

REVISION INFORMATION
NUMBER
DATE 04/16/01
TIME 09:43 AM
FILE NAME msdethl.vsd

Drawing Title
MISCELLANEOUS DETAILS

REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY

Sales Engineer	Project Manager	Application Engineer	DRAWN	APPROVED
PJS	TP	KJK	BY MLR DATE	BY DATE

Project Title
MILLER PARK
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JOHNSON CONTROLS
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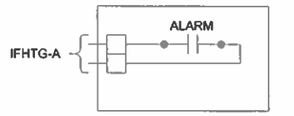
CONTRACT NUMBER
9 8075-0508

DRAWING NUMBER
36.6

DETAIL J
TYPICAL OF 1

PARTIAL IN-FIELD HEATING PANEL



NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

Rev.	MECHANICAL SYSTEM	LOCATION	SYSTEM	OBJECT	PAGE#
2	IN-FIELD HEATING		MISC	IFHTG-A	NC- PS-

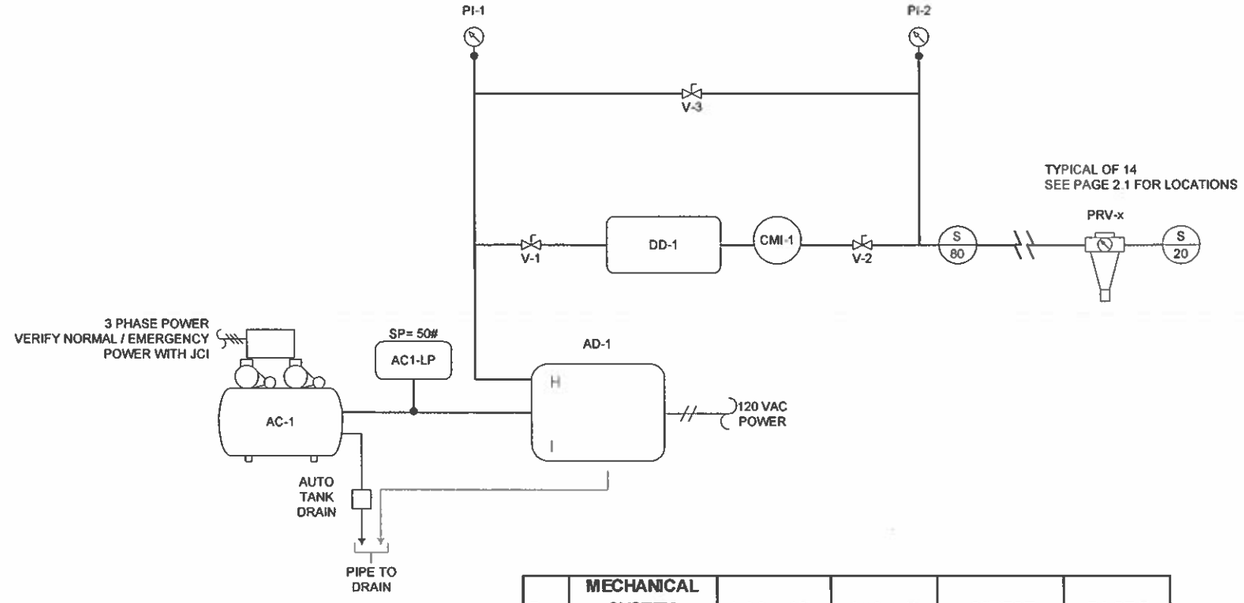
General: The EMCS will monitor the following items of equipment:

1. In-Field Heating System (General panel alarm).

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
AC-1	1	AD-010-3C4	AD-010-3C4 COMPR-DUPLEX
AC1-LP	1	P61AA-6C	PUMP & AIR COMP SWITCH
AD-1	1	A-4412-1	DRYER,12CFM W/AIR SYS 115
CMI-1	1	CMI	COLOR MOISTURE INDICATOR - HANKSON
DD-1	1	HMD-20-2	DESICCANT DRYER - HANKISON
PI-X	2	G-2010-302	GAGE,2.5IN,0-100PSIG,FLUSH
PRV-x	14	A-4000-138	PRV,3/8",W/BKT,GAGE POP
V-X	3	5x713	DYNAQUIP VMH2 A9 1/9 BRASS BTU VALVE - GRAINGER

DETAIL K
TYPICAL OF 1



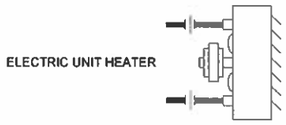
Rev.	MECHANICAL SYSTEM	LOCATION	SYSTEM	OBJECT	PAGE#
2	AC-1	SL1	MISC	AC1-LP	NC-11 PS-5

General: The EMCS will monitor the following items of equipment:

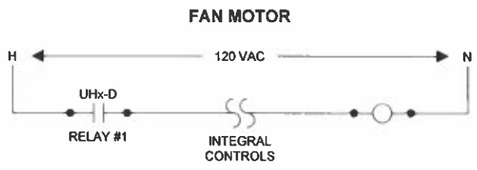
1. Temperature Control Air Compressor (Low tank pressure)

REVISION INFORMATION	Drawing Title: MISCELLANEOUS DETAILS							
NUMBER								
DATE: 04/16/01		REFERENCE DRAWING		NO.	REVISION LOCATION		ECN	DATE / BY
TIME: 09:47 AM		Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN BY: MLR DATE		APPROVED BY	DATE
FILE NAME: msdetjk.vsd	Project Title: MILLER PARK, ONE BREWERS WAY, MILWAUKEE, WI 53214	JOHNSON CONTROLS, Systems & Services Division			Branch Information: Wisconsin Area Office, 529 N. Jackson Street, Milwaukee, WI 53202, Phone: 414-524-7500, Fax: 414-524-7575		CONTRACT NUMBER: 9 8075-0508	DRAWING NUMBER: 36.7

DETAIL L
TYPICAL OF 71



UHx-D



Rev.	MECHANICAL SYSTEM	LOCATION	SYSTEM	OBJECT	PAGE #
1	CUH-2	LL5	UH	UH3508-D	NC-12 PS-28
1	CUH-2	LL5	UH	UH3509-D	NC-12 PS-28
1	CUH-2	CL1	UH	UH4102-D	NC-13 PS-8
1	CUH-2	CL1	UH	UH4104-D	NC-13 PS-8
1	CUH-1	CL1	UH	UH4107-D	NC-13 PS-8
1	CUH-1	CL1	UH	UH4109-D	NC-13 PS-8
1	CUH-2	CL2	UH	UH4213-D	NC-13 PS-20
1	CUH-2	CL2	UH	UH4214-D	NC-13 PS-21
1	CUH-2	CL5	UH	UH4511-D	NC-12 PS-21
1	CUH-2	CL5	UH	UH4512-D	NC-12 PS-21
1	CUH-2	CL7	UH	UH4712-D	NC-12 PS-15
1	CUH-2	CL7	UH	UH4713-D	NC-12 PS-15
1	UH-2	TC1	UH	UH5105-D	NC-13 PS-24
1	UH-2	TC1	UH		
1	UH-3	TC1	UH	UH5106-D	NC-12 PS-19
1	UH-3	TC1	UH	UH5107-D	NC-13 PS-23
1	UH-3	TC2	UH		
1	UH-3	TC2	UH	UH5205-D	NC-13 PS-22
1	UH-3	TC2	UH		
1	UH-3	TC2	UH	UH5206-D	NC-13 PS-22
1	UH-3	TC3	UH	UH5301-D	NC-13 PS-19
1	UH-3	TC4	UH	UH5302-D	NC-13 PS-18
1	UH-3	TC4	UH	UH5407-D	NC-13 PS-17
1	UH-3	TC4	UH		
1	UH-3	TC4	UH	UH5409-D	NC-13 PS-16
1	UH-3	TC4	UH		
1	UH-3	TC5	UH	UH5501-D	NC-12 PS-23
1	UH-3	TC5	UH		
1	UH-3	TC5	UH	UH5504-D	NC-12 PS-21
1	UH-3	TC5	UH		
1	UH-3	TC5	UH	UH5601-D	NC-12 PS-19
1	UH-3	TC6	UH	UH5602-D	NC-12 PS-18

Rev.	MECHANICAL SYSTEM	LOCATION	SYSTEM	OBJECT	PAGE #
1	UH-3	TC7	UH	UH5703-D	NC-12 PS-16
1	UH-3	TC7	UH	UH5704-D	NC-12 PS-16
1	UH-3	TC7	UH	UH5801-D	NC-12 PS-14
1	UH-3	TC7	UH		
1	UH-3	TC8	UH	UH5802-D	NC-12 PS-13
1	UH-3	TC8	UH		
1	UH-4	FL2	UH	UH2204-D	NC-13 PS-6
1	UH-4	FL2	UH	UH2205-D	NC-13 PS-6
1	UH-5	FL2	UH	UH2307-D	NC-13 PS-2
1	UH-4	FL3	UH	UH2309-D	NC-13 PS-2
1	UH-5	FL4	UH	UH2410-D	NC-13 PS-27
1	UH-5	FL4	UH	UH2413-D	NC-13 PS-25
1	UH-5	FL5	UH	UH2519-D	NC-12 PS-26
1	UH-5	FL5	UH	UH2520-D	NC-12 PS-25
1	UH-5	FL6	UH	UH2606-D	NC-12 PS-23
1	UH-4	FL6	UH	UH2608-D	NC-12 PS-24
1	UH-5	FL7	UH	UH2704-D	NC-12 PS-1
1	UH-5	FL7	UH	UH2706-D	NC-12 PS-1
1	UH-3	FL8	UH	UH2812-D	NC-12 PS-32
1	UH-3	FL8	UH	UH2814-D	NC-12 PS-32
1	UH-3	LL1	UH	UH3102-D	NC-13 PS-7
1	UH-4	LL1	UH	UH3103-D	NC-13 PS-7
1	UH-4	LL1	UH	UH3113-D	NC-13 PS-8
1	UH-4	LL2	UH	UH3114-D	NC-13 PS-8
1	UH-5	LL2	UH	UH3204-D	NC-13 PS-23
1	UH-4	LL2	UH	UH3209-D	NC-13 PS-22
1	UH-4	LL3	UH	UH3301-D	NC-13 PS-21
1	UH-4	LL4	UH	UH3403-D	NC-13 PS-21
1	UH-4	LL5	UH	UH3512-D	NC-12 PS-5
1	UH-4	LL6	UH	UH3603-D	NC-12 PS-5
1	UH-4	LL7	UH	UH3705-D	NC-12 PS-17
1	UH-5	LL7	UH	UH3710-D	NC-12 PS-15
1	UH-5	LL8	UH	UH3801-D	NC-12 PS-1
1	UH-5	LL8	UH	UH3802-D	NC-12 PS-1
1	UH-3	LL8	UH	UH3815-D	MUX TO VAVA302 NC-12, VMA-7 B04
1	UH-3	LL8	UH	UH3814-D	MUX TO VAVA302 NC-12, VMA-7 B03
1	CUH-2	CL-4	UH	UH4412-D	NC-13 PS-18
1	CUH-3	CL-4	UH	UH4413-D	NC-13 PS-18

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Field Devices:			
UHx-D	1	CVR-21C-O	RLY 2SPDT,10-30VAC/DC OR 120VAC,LED @LEC

Electric Heating Systems

1. Provide one on-off control signal from the EMCS to all of the electric unit heaters and cabinet heaters serving the concourse toilet rooms. Provide a dry set of contacts for each heater to override the heater's integral controls and automatically turn off the heaters. No other electric heating equipment will be part of this sequence.

REVISION INFORMATION
NUMBER
DATE 04/16/01
TIME 09:54 AM
FILE NAME msdetl.vsd

Drawing Title
MISCELLANEOUS DETAILS

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

REFERENCE DRAWING	NO	REVISION LOCATION	ECN	DATE	BY

Sales Engineer	Project Manager	Application Engineer	DRAWN	APPROVED
PJS	TP	KJK	BY MLR DATE	BY DATE

JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

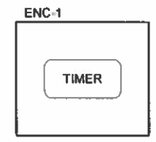
CONTRACT NUMBER
9 8075-0508
DRAWING NUMBER
36.8

BILL OF MATERIALS

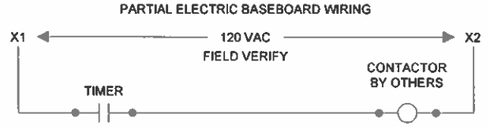
Designation	Qty	Part Number	Description
Field Devices:			
ENC-1	1	A-6R64	ENCLOSURE NEMA 3R - HOFFMAN
TIMER	1	90240	MANUAL TIMER 0-4HR - KELE

DETAIL M
TYPICAL OF 4

ELECTRIC BASEBOARD



PARTIAL ELECTRIC BASEBOARD WIRING



NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

Electric Heating Systems

1. For each bullpen and dugout, provide a wall mounted NEMA 3R rated electronic timer and NEMA 3R rated contactor to manually control the electric baseboard units. Timer will be adjustable from 0 to 4 hours. Division 16 will wire the electric baseboard through the contactor. No interface with the EMCS is required.

BILL OF MATERIALS

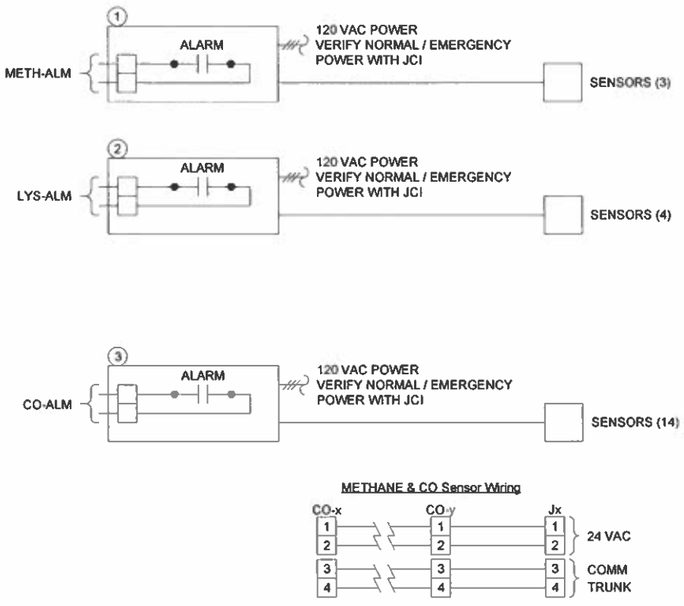
Designation	Qty	Part Number	Description
Field Devices:			
1	3	VA-201T-Q1	METHANE SENSOR - VULCAIN
	1	VA201C	CENTRAL PANEL - VULCAIN
2	4	VA-201T-Q1	METHANE SENSOR - VULCAIN
	1	VA201C	CENTRAL PANEL - VULCAIN
3	14	VA-201T-Q2	CO SENSOR - VULCAIN
	1	VA201C	CENTRAL PANEL - VULCAIN

DETAIL N
TYPICAL OF 1

PARTIAL GAS DETECTION PANELS

NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

SENSOR	LOCATION	
S-8	SL7, Mech Rm 1727	
S-12	SL5, Remote Studio Rm 1534	
S-14	SL4, Electrical Rm 1401	
L-1	SL8, Service Tunnel	
L-2	SL6, Service Tunnel	
L-3	SL3, Service Tunnel	
L-4	SL1, Service Tunnel	
CO-1	SL8, Service Tunnel	J3
CO-2	SL8, Service Tunnel	
CO-3	SL7, Service Tunnel	
CO-4	SL7, Service Tunnel	
CO-5	SL6, Service Tunnel	
CO-6	SL5, Service Tunnel	J4
CO-7	SL5, Service Tunnel	
CO-8	SL4, Service Tunnel	
CO-9	SL4, Service Tunnel	
CO-10	SL3, Service Tunnel	
CO-11	SL2, Service Tunnel	
CO-12	SL2, Service Tunnel	
CO-13	SL1, Service Tunnel	
CO-14	SL1, Service Tunnel	



METHANE & CO Sensor Wiring

Rev.	MECHANICAL SYSTEM	LOCATION	SYSTEM	OBJECT	PAGE #
2	METHANE DETECTION	SL5	GAS	METH-ALM	NC-11 PS-28
2	METHANE DETECTION	SL5	GAS	LYS-ALM	NC-11 PS-28
2	METHANE DETECTION	SL5	GAS	CO-ALM	NC-11 PS-28

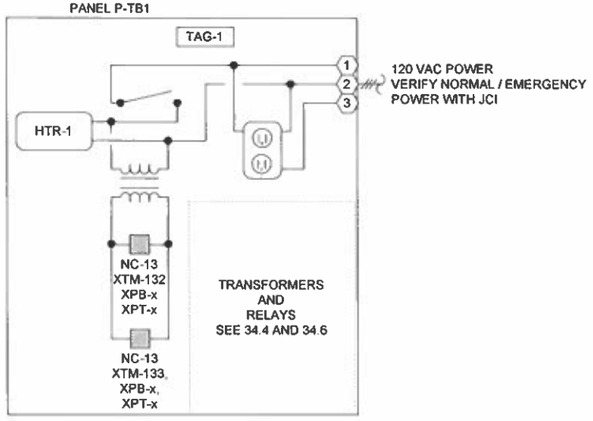
Methane Detection System Interface

1. Provide two remote annunciation interfaces with the owners methane gas detection systems. The first interface is for the lysimeter system. Whenever the lysimeter system detects methane, the EMCS will sound an alarm. The second interface is for the methane air monitoring gas detection system. When methane is detected in the space, the EMCS will sound an alarm and index all HVAC systems on the service level and field level to the occupied mode of operation.

REVISION INFORMATION	Drawing Title: MISCELLANEOUS DETAILS							
NUMBER								
DATE: 11/06/09								
TIME: 09:22 AM		REFERENCE DRAWING		NO.	REVISION-LOCATION		ECN	DATE / BY
		Sales Engineer: PJS	Project Manager: TP	Application Engineer: KJK	DRAWN: BY MLR DATE		APPROVED: BY DATE	
FILE NAME: msdetmn (Ver5).vsd	Project Title: MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division			Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575		CONTRACT NUMBER: 9 8075-0508	DRAWING NUMBER: 36.9

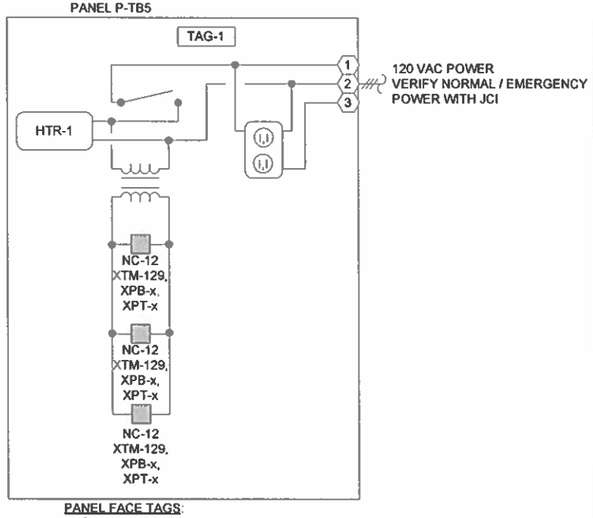
DETAIL O
TYPICAL OF 1

PANEL P-TB1



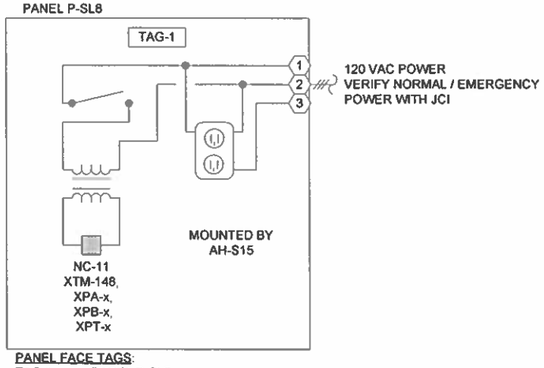
PANEL FACE TAGS:
TAG-1: PANEL P-TB1
MULTI-PLEXED
POINTS
JCI 9 8075-0508

PANEL P-TB5



PANEL FACE TAGS:
TAG-1: PANEL P-TB5
MULTI-PLEXED
POINTS
JCI 9 8075-0508

PANEL P-SL8



PANEL FACE TAGS:
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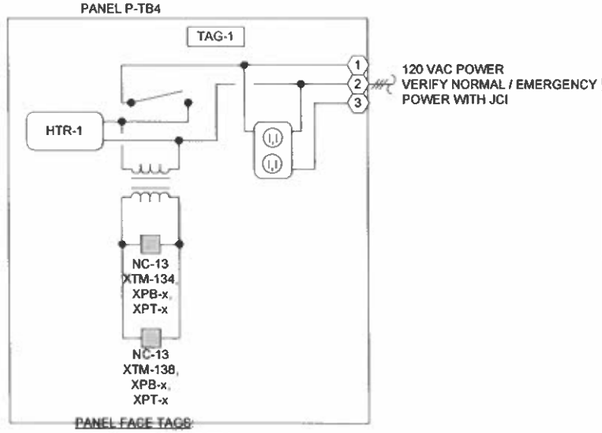
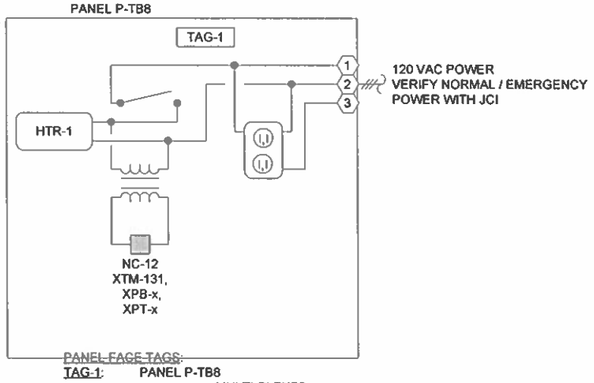
MULTI-PLEXED
POINTS
JCI 9 8075-0508

PANEL P-TB4



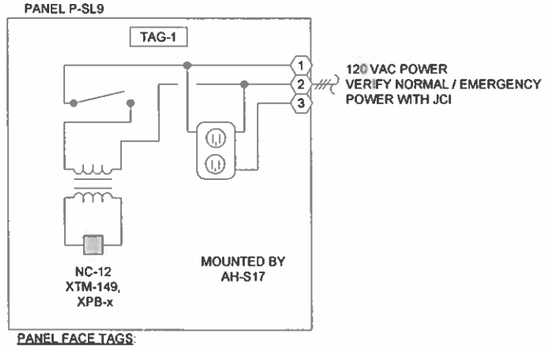
PANEL FACE TAGS:
TAG-1: PANEL P-TB4
MULTI-PLEXED
POINTS
JCI 9 8075-0508

PANEL P-TB8



PANEL FACE TAGS:
TAG-1: PANEL P-TB8
MULTI-PLEXED
POINTS
JCI 9 8075-0508

PANEL P-SL9



PANEL FACE TAGS:
TAG-1: PANEL P-SL9
MULTI-PLEXED
POINTS
JCI 9 8075-0508

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
HTR-1	1	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
P-TB1	1	M-8100-2424	PANEL,STANDARD,9 UNITS
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
XPB-x	2	XPB-821-5	N2 EXPN MOD, 8BI
XPT-x	2	XPT-861-5	N2 EXPN MOD, 8BO, TRIAC
XTM-X	2	BKT287-1R	35MM DIN RAIL - 12" LONG
	2	PLT344-1R	DIN RAIL END PLT (2/PKG)
	2	XTM-105-5	N2 EXT'N MOD, COMM I/F

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
HTR-1	1	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
P-TB4	1	M-8100-2424	PANEL,STANDARD,9 UNITS
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
XPB-x	2	XPB-821-5	N2 EXPN MOD, 8BI
XPT-x	2	XPT-861-5	N2 EXPN MOD, 8BO, TRIAC
XTM-X	2	BKT287-1R	35MM DIN RAIL - 12" LONG
	2	PLT344-1R	DIN RAIL END PLT (2/PKG)
	2	XTM-105-5	N2 EXT'N MOD, COMM I/F

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
HTR-1	1	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
P-TB5	1	M-8100-2424	PANEL,STANDARD,9 UNITS
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
XPB-x	3	XPB-821-5	N2 EXPN MOD, 8BI
XPT-x	3	XPT-861-5	N2 EXPN MOD, 8BO, TRIAC
XTM-X	3	BKT287-1R	35MM DIN RAIL - 12" LONG
	3	PLT344-1R	DIN RAIL END PLT (2/PKG)
	3	XTM-105-5	N2 EXT'N MOD, COMM I/F

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
HTR-1	1	EN2-12-P-040-D	PANEL HEATER, 120VAC, ELECTRO-FLEX
P-TB8	1	M-8100-2424	PANEL,STANDARD,9 UNITS
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
XPB-x	1	XPB-821-5	N2 EXPN MOD, 8BI
XPT-x	1	XPT-861-5	N2 EXPN MOD, 8BO, TRIAC
XTM-X	1	BKT287-1R	35MM DIN RAIL - 12" LONG
	1	PLT344-1R	DIN RAIL END PLT (2/PKG)
	1	XTM-105-5	N2 EXT'N MOD, COMM I/F

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
P-SL8	1	EN-EWC15-0	SINGLE ENCLOSURE WITH 50VA POWER
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
XPA-x	1	XPA-821-5	CNTRLR,N2 EXPN MOD,6AI,2AO
XPB-x	1	XPB-821-5	N2 EXPN MOD, 8BI
XPT-x	1	XPT-861-5	CNTRLR,N2 EXPN MOD,8BO,TRIAC
XTM-X	1	BKT287-1R	35MM DIN RAIL - 12" LONG
	1	PLT344-1R	DIN RAIL END PLT (2/PKG)
	1	XTM-105-5	N2 EXT'N MOD, COMM I/F

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
P-SL9	1	EN-EWC15-0	SINGLE ENCLOSURE WITH 50VA POWER
	1	EN-EXP101-0	EXPANSION COVER AND BACKBONE
TAG-1	1	M-8000-393	NAMEPLT,LAMICOID,3 LINE
XPB-x	1	XPB-821-5	N2 EXPN MOD, 8BI
XTM-X	1	BKT287-1R	35MM DIN RAIL - 12" LONG
	1	PLT344-1R	DIN RAIL END PLT (2/PKG)
	1	XTM-105-5	N2 EXT'N MOD, COMM I/F

REVISION INFORMATION								
NUMBER								
DATE 04/16/01								
TIME 10:08 AM								
FILE NAME msdeto.vsd								
	REFERENCE DRAWING	NO	REVISION-LOCATION	ECN	DATE	BY
	Sales Engineer: PJS / Project Manager: TP / Application Engineer: KJK		DRAWN: BY MLR DATE		APPROVED: BY DATE	

Drawing Title
MISCELLANEOUS DETAILS

Project Title
MILLER PARK
ONE BREWERS WAY
MILWAUKEE, WI 53214

JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N. Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

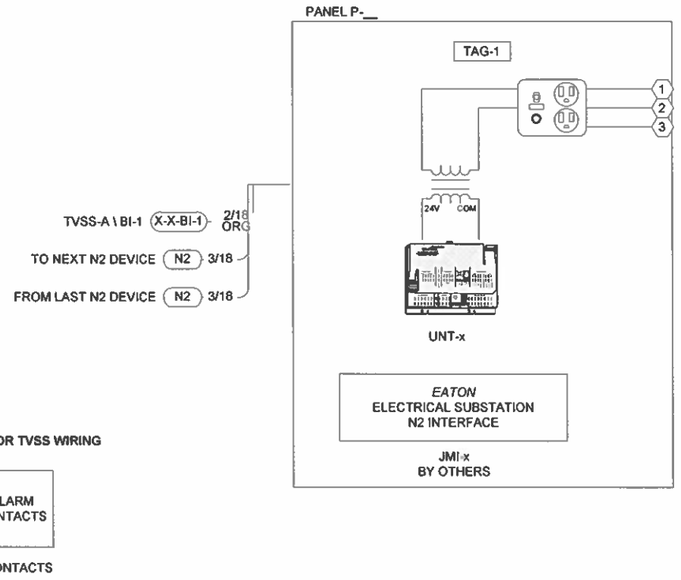
CONTRACT NUMBER
9 8075-0508

DRAWING NUMBER
36.10

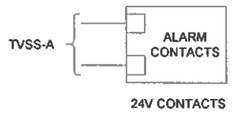
BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
UNT-x	1	AS-UNT141-101	CNTRLR,UNT,6AI,4BI,6BO,2AO,SCR,ENCL,50V
	1	AS-EXP101-1	EXPANSION COVER AND BACKBONE

DETAIL P
TYPICAL OF 6

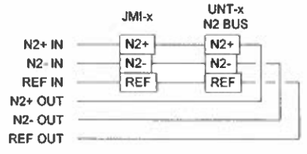


SURGE SUPPRESSOR TVSS WIRING



24V CONTACTS

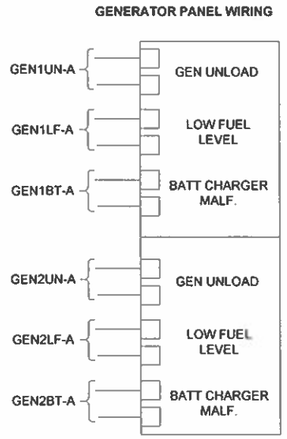
COMMUNICATIONS BUS WIRING



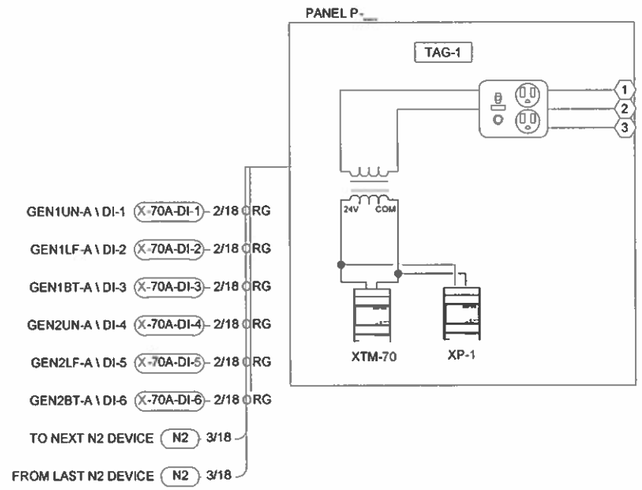
BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
XP-1	1	XPB-821-5	CNTRLR,N2 EXPN MOD,8BI
XTM-70	1	XTM-105-5	CNTRLR,N2 EXTENSION MOD,COMM I/F

DETAIL Q
TYPICAL OF 1



24V CONTACTS FROM RELAYS SUPPLIED BY OTHERS

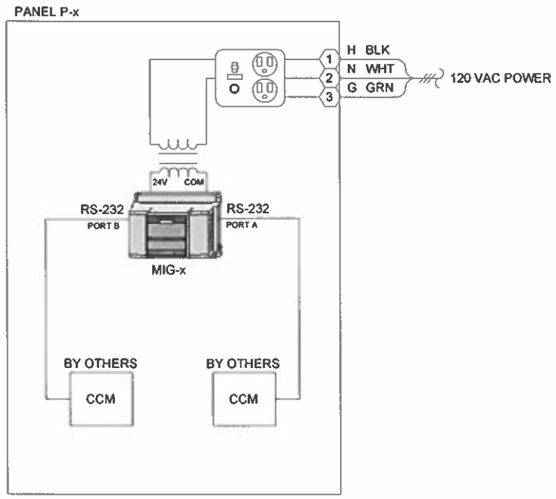


REVISION INFORMATION	Drawing Title						
NUMBER	**MISCELLANEOUS DETAILS**						
			1	JCI CONTRACT 4933-0011		8/26/2004	MLR
DATE 08/26/04		REFERENCE DRAWING	NO	REVISION-LOCATION	ECN	DATE	BY
TIME 09:13 AM		Sales Engineer: PJS; Project Manager: TP; Application Engineer: KJK; DRAWN BY: MLR DATE			BY	APPROVED DATE	
FILE NAME msdetpq.vsd	Project Title: **MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214**	JOHNSON CONTROLS Systems & Services Division	Branch Information: Wisconsin Area Office, 529 N. Jackson Street, Milwaukee, WI 53202, Phone: 414-524-7500, Fax: 414-524-7575		CONTRACT NUMBER: **9 8075-0508**	DRAWING NUMBER: **36.11**	

BILL OF MATERIALS

Designation	Qty	Part Number	Description
Panel Devices:			
MIG-x	1	MS-MIG3120-0	METASYS INTEGRATOR,300 SERIES,2-PORT
P-x	1	EN-EWC25-0	DUAL ENCLOSURE WITH 50VA POWER

DETAIL R
TYPICAL OF 1



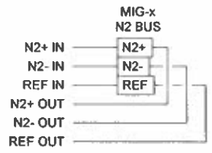
NOTE: USE VENDOR COMMUNICATION TABLES CATCCMNP.VCT AND CAT_GEN.VCT. SEE POINT MAPPING LIST.

NOTE: COMMUNICATION RATE IS 9600 BAUD, 8 DATA BITS, NO PARITY, 1 STOP BIT.

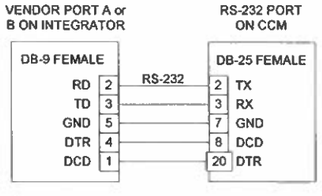
NOTE: TIMEOUT VALVE IS 1000ms, POLL DELAY IS 100ms

NOTE: VENDOR ADDRESS FOR EACH GENERATOR SET = 1.

COMMUNICATIONS BUS WIRING



METASYS INTEGRATOR TO CATERPILLAR CCM



NOTE: MAXIMUM LENGTH OF RS-232 SHOULD NOT EXCEED 50 FEET.

NOTE: SEE MANUFACTURER'S WIRING DIAGRAM FOR COMPLETE WIRING DETAILS.

EMCP II POINT MAPPING LIST

NPT[1]	NPA[2]	Unit	Description
			Fault Log: Code
AI	1	Code	Failure Mode Identifier Code (FMI) for Component ID (CID) at ADF 1[3]
AI	2	Code	Failure Mode Identifier for Component ID at ADF 2
AI	3	Code	Failure Mode Identifier for Component ID at ADF 3
AI	4	Code	Failure Mode Identifier for Component ID at ADF 4
AI	5	Code	Failure Mode Identifier for Component ID at ADF 5
AI	6	Code	Failure Mode Identifier for Component ID at ADF 6
AI	7	Code	Failure Mode Identifier for Component ID at ADF 7
AI	8	Code	Failure Mode Identifier for Component ID at ADF 8
AI	9	Code	Failure Mode Identifier for Component ID at ADF 9
AI	10	Code	Failure Mode Identifier for Component ID at ADF 10
AI	11	RPM	Generator Set Engine RPM[4]
AI	12	DegF	Engine Coolant Temperature[4]
AI	13	DegC	Engine Coolant Temperature[4]
AI	14	kPa	Engine Oil Pressure[4]
AI	15	psi	Engine Oil Pressure[4]
AI	16	Hours	Generator Set Hourmeter (if>65536, =0)
AI	17	Volt	System Battery Voltage
AI	18	Hz	Generator Frequency
AI	19	Volt	Generator Line-Line Voltage for Selected Phase[4]
AI	20	Amperes	Generator Line Current for Selected Phase[4]

1 Network Point Type
2 Network Point Address
3 If both the component ID and component failure mode identifier equal zero, there is no logged fault (AI 1-10, ADF 1-10).
4 The point will be unreliable if a fault condition is reported.

Continued on next page . . .

NPT[1] (Cont.)	NPA[2]	Unit	Description		
			Fault Log: Status		
BI	1		Fault Status for Component ID (CID) at ADF 1	0-ina,	1-act
BI	2		Fault Status for Component ID (CID) at ADF 2	0-ina,	1-act
BI	3		Fault Status for Component ID (CID) at ADF 3	0-ina,	1-act
BI	4		Fault Status for Component ID (CID) at ADF 4	0-ina,	1-act
BI	5		Fault Status for Component ID (CID) at ADF 5	0-ina,	1-act
BI	6		Fault Status for Component ID (CID) at ADF 6	0-ina,	1-act
BI	7		Fault Status for Component ID (CID) at ADF 7	0-ina,	1-act
BI	8		Fault Status for Component ID (CID) at ADF 8	0-ina,	1-act
BI	9		Fault Status for Component ID (CID) at ADF 9	0-ina,	1-act
BI	10		Fault Status for Component ID (CID) at ADF 10	0-ina,	1-act
BI	11		GSC Active Fault in Fault Log	0-ina,	1-act
BI	12		Remote Start Status[4]	0-off,	1-on
BI	13		GSC High Coolant Temperature[5]	0-nor,	1-alm
BI	14		GSC Low Coolant Temperature	0-nor,	1-alm
BI	15		GSC Low Oil Pressure	0-nor,	1-alm
BI	16		GSC Engine Control Switch *Not in Auto*	0-nor,	1-alm
BI	17		GSC Overspeed Shutdown Status	0-nor,	1-alm
BI	18		GSC Overcrank Shutdown Status	0-nor,	1-alm
BI	19		GSC Low Oil Pressure Shutdown Status	0-nor,	1-alm
BI	20		GSC High Coolant Temp Shutdown Status	0-nor,	1-alm
BI	21		GSC Spare Shutdown Status	0-nor,	1-alm
BI	22		GSC Emergency Stop Shutdown Status	0-nor,	1-alm
BI	23		GSC Coolant Loss Shutdown Status	0-nor,	1-alm
BI	24		GSC Diagnostic Code Shutdown Status	0-nor,	1-alm
BI	25		GSC Spare Fault Alarm 1	0-nor,	1-alm
BI	26		GSC Spare Fault Alarm 2	0-nor,	1-alm
BI	27		GSC Spare Fault Alarm 3	0-nor,	1-alm
BI	28		GSC Spare Fault Shutdown 1	0-nor,	1-alm
BI	29		GSC Spare Fault Shutdown 2	0-nor,	1-alm
BI	30		GSC Spare Fault Shutdown 3	0-nor,	1-alm
BI	31		Air Shutoff GSC Relay	0-off,	1-on
BI	32		Fuel Control GSC Relay	0-off,	1-on
BI	33		Crank Terminate GSC Relay	0-off,	1-on

1 Network Point Type
2 Network Point Address
4 The point will be unreliable if a fault condition is reported.
5 The points BI 13-38 will be unreliable if the point is undefined or unavailable.

Continued on next page . . .

NPT[1] (Cont.)	NPA[2]	Unit	Description		
BI	34		Starter Motor GSC Relay	0-off,	1-on
BI	35		Generator Set Fault GSC Relay	0-off,	1-on
BI	36		Run GSC Relay	0-off,	1-on
BI	37		Program Spare GSC Relay	0-off,	1-on
BI	38		Electronic Governor GSC Relay	0-off,	1-on
BO	1		Remote Start/Stop	0-stop,	1-start
BO[7]	2		Generator Set Fault GSC Relay	0-off,	1-on
BO[7]	3		Electronic Governor GSC Relay	0-off,	1-on
BO	4		Remote Emergency Stop[6]	0-off,	1-on
BO	5		Cooldown Override[6]	0-cont,	1-abort
BO[6]	6		Reset all Faults in Fault Log	0-N/A	1-reset
			Fault Log: Component ID		
ADF	1	Code	Component ID (CID) with Fault at AI 1[3]		
ADF	2	Code	Component ID (CID) with Fault at AI 2		
ADF	3	Code	Component ID (CID) with Fault at AI 3		
ADF	4	Code	Component ID (CID) with Fault at AI 4		
ADF	5	Code	Component ID (CID) with Fault at AI 5		
ADF	6	Code	Component ID (CID) with Fault at AI 6		
ADF	7	Code	Component ID (CID) with Fault at AI 7		
ADF	8	Code	Component ID (CID) with Fault at AI 8		
ADF	9	Code	Component ID (CID) with Fault at AI 9		
ADF	10	Code	Component ID (CID) with Fault at AI 10		
ADF	11	Sec	GSC Cycle Crank Time Setpoint		
ADF	12	Sec	Total GSC Cycle Crank Time Setpoint		
ADF	13	RPM	GSC Crank Terminate Speed Setpoint		
ADF	14	RPM	Engine Overspeed Setpoint		
ADF	15	RPM	Engine Oil Step Speed Setpoint		
ADF	16	kPa	Low Engine Oil Pressure at Rated Speed Setpoint		
ADF	17	kPa	Low Engine Oil Pressure at Idle Speed Setpoint		
ADF	18	RPM	Generator Set Ring Gear Teeth Setpoint		
ADI	1	Min	GSC Cooldown Timer Setpoint		
ADI	2	Code	Engine Control Switch Position[4] 0-off/reset, 2-start, 3-stop, 4-auto, 128-169-fault identifiers		
AO	1		Select Phase	(0=A, 1=B, 2=C)	

1 Network Point Type
2 Network Point Address
3 If both the component ID and component fault code equal zero, there is no logged fault. (AI 1-10, ADF 1-10)
4 The point will be unreliable if a fault condition is reported.
6 Do not map these points to Companion BO points or Metasys CS objects. If you map these points to Metasys BO points, make sure the Auto Restore option in the object's Definition or Focus window is disabled.
7 Do not use BO 2 and 3 for status, use BI 35 and 38 (BO points for command only).

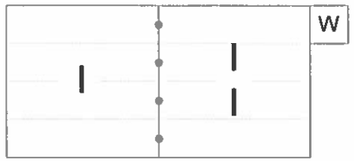
CCM POINT MAPPING LIST

NPT[1]	NPA[2]	Unit	Description		
BI	1		RS232C Link Message Fault Exists	0-nor	1-alm
BI	2		Miscellaneous Cat Data Link Fault	0-nor	1-alm
BI	3		Invalid Cat Data Message Fault	0-nor	1-alm
BI	4		Internal Buffer Overflow	0-nor	1-alm
BI	5		RS232C Short Circuit Fault	0-nor	1-alm
BI	6		Memory Backup Battery is Weak	0-nor	1-alm
BI	7		M5X Message Error	0-nor	1-alm
BI	8		Setpoint (EEPROM)	0-nor	1-alm
BO[3]	1		Reset CCM Inactive Faults	0-N/A	1-rst

1 Network Point Type
2 Network Point Address
3 Do not map these points to Companion BO points or Metasys system CS objects. If you map these points to Metasys system BO points, make sure the Auto Restore option in the BO object's Definition or Focus window is disabled.

REVISION INFORMATION	Drawing Title: MISCELLANEOUS DETAILS					
NUMBER						
DATE: 08/26/04		1	JCI CONTRACT 4933-0011		8/26/2004	MLR
TIME: 09:45 AM	REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY
FILE NAME: msdetr.vsd	Sales Engineer: PJS / Project Manager: TP / Application Engineer: KJK	DRAWN BY:	DRAWN DATE:	APPROVED BY:	APPROVED DATE:	
	Project Title: MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214	JOHNSON CONTROLS Systems & Services Division	Branch Information: Wisconsin Area Office 529 N. Jackson Street Milwaukee WI 53202 Phone: 414-524-7500 Fax: 414-524-7575	CONTRACT NUMBER: 9 8075-0508	DRAWING NUMBER: 36.12	

DETAIL A



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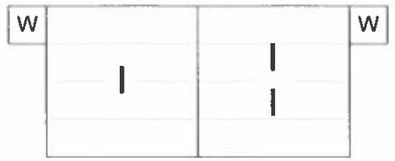
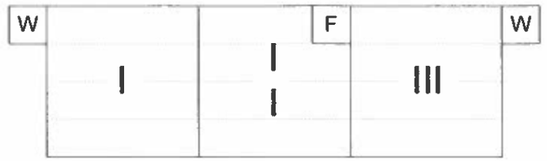


DETAIL C



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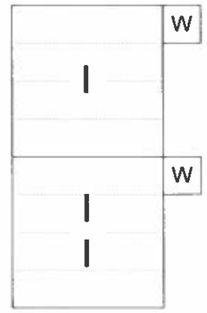

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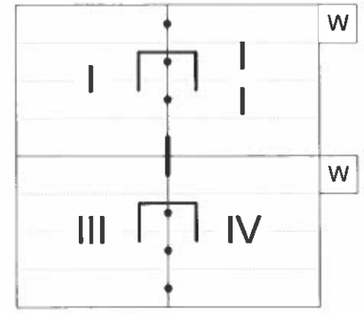

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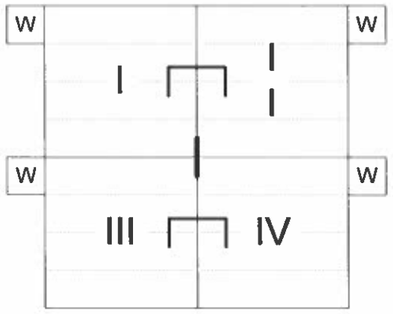

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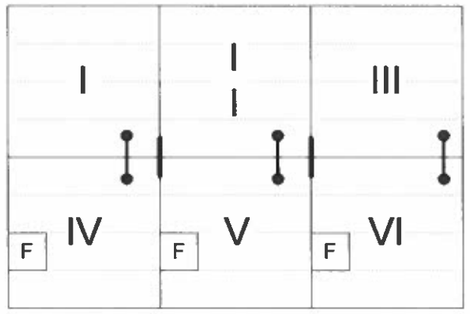

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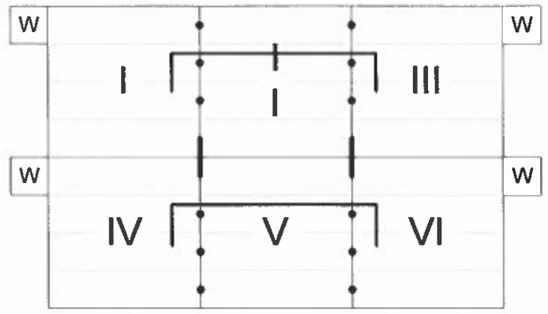

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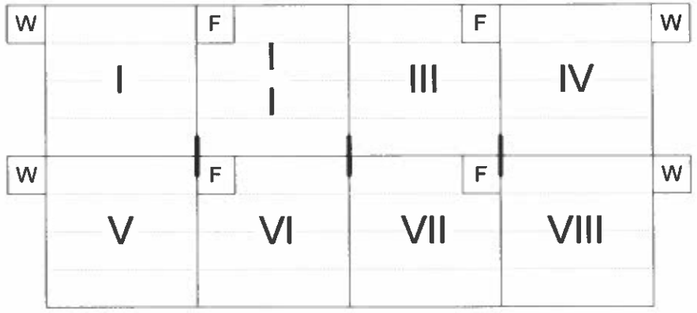

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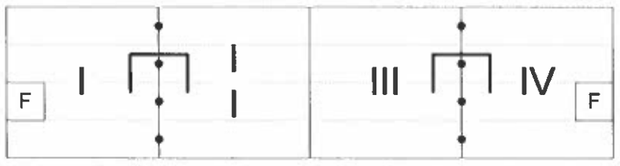

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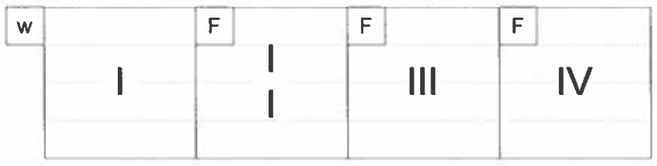

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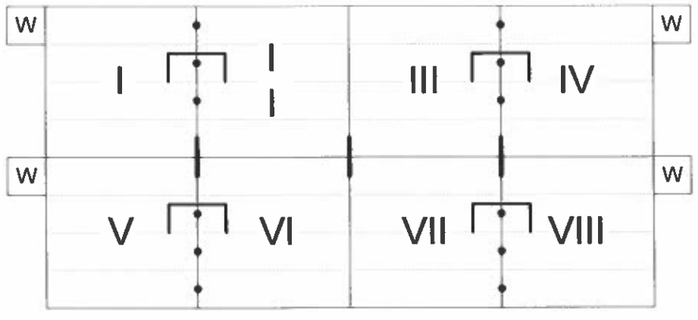


NOTE:

The [W] and [F] symbols are shown only to indicate the type of mounting for actuators.
See product literature for preferred driving blades.
See Damper Schedule for quantities of actuators required.

LEGEND

DMPR-KC205 - Two-panel Jackshaft

DMPR-KC206 - Three-panel Jackshaft

DMPR-KC100 - Vertical Blade-to-Blade Linkage

DMPR-KC200 - Support Bar (1) < = Four Blades
(2) > = Four Blades

DMPR-KC202 - Pin-To-Pin Coupling
Install a coupler on every pin.

[W] WALL Mounted Actuator

[F] FRAME Mounted Actuator

REVISION INFORMATION
NUMBER
DATE 04/16/01
TIME 10:54 AM
FILE NAME dprdet.vsd

Drawing Title: **DAMPER SCHEDULE DETAILS**

REFERENCE DRAWING		NO.	REVISION LOCATION		ECH	DATE	BY
Sales Engineer	Project Manager	Application Engineer	DRAWN		APPROVED		
PJS	TP	KJK	BY MLR	DATE	BY	DATE	

Project Title: **MILLER PARK**
ONE BREWERS WAY
MILWAUKEE, WI 53214

JOHNSON CONTROLS
Systems & Services Division

Branch Information
Wisconsin Area Office
529 N Jackson Street
Milwaukee
WI 53202
Phone: 414-524-7500
Fax: 414-524-7575

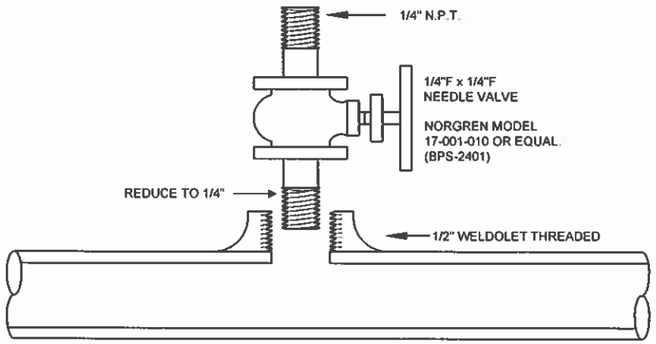
CONTRACT NUMBER **9 8075-0508**

DRAWING NUMBER **D1**

DETAIL A

PRESSURE TAP

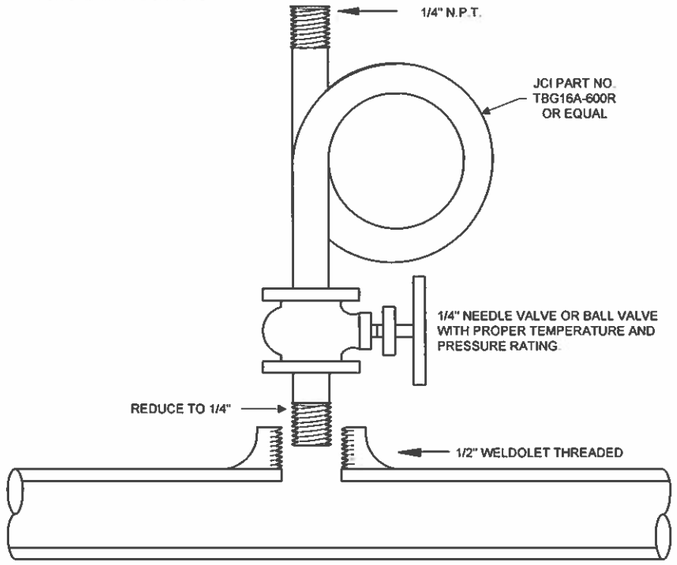
FOR WATER APPLICATIONS



DETAIL B

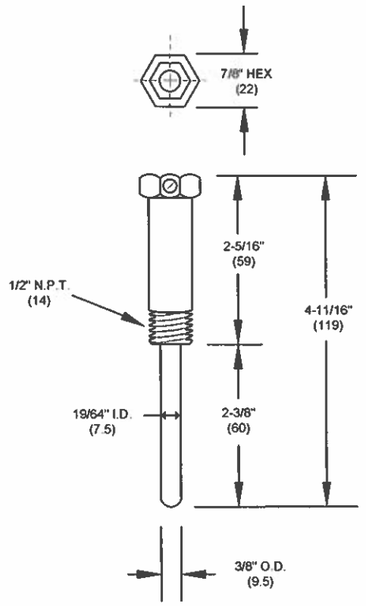
PRESSURE TAP

FOR STEAM APPLICATIONS



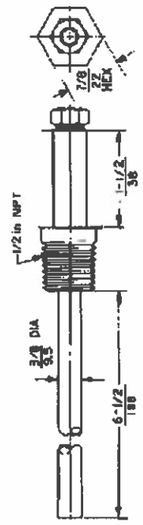
DETAIL C

WZ-1000-5



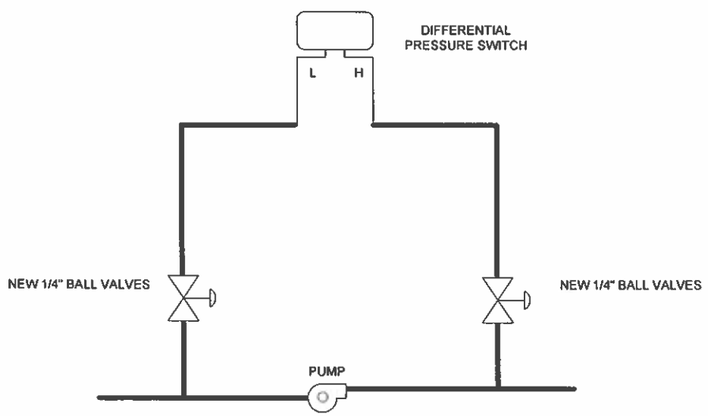
DETAIL D

T-800-1605



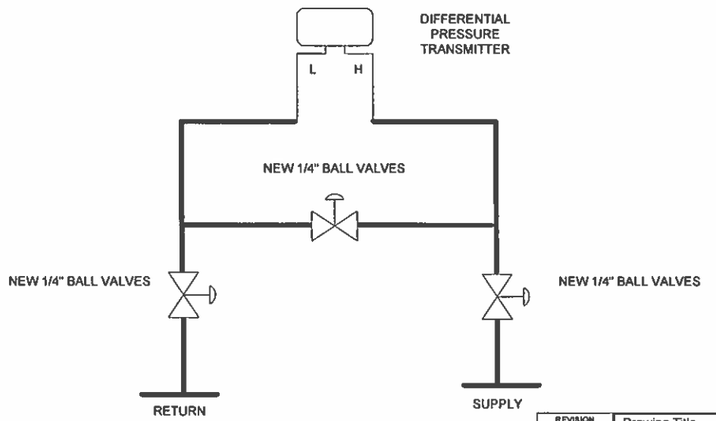
DETAIL E

DIFFERENTIAL PRESSURE



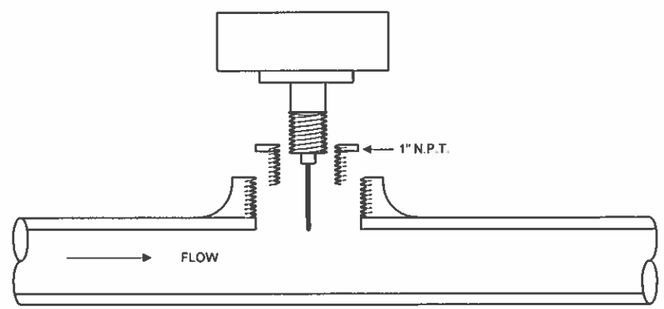
DETAIL F

DIFFERENTIAL PRESSURE



DETAIL G

FLOW SWITCH



REVISION INFORMATION	Drawing Title: WELL/TAP/METER SCHEDULE DETAILS								
NUMBER									
DATE: 04/16/01									
TIME: 10:58 AM	Project Title: MILLER PARK ONE BREWERS WAY MILWAUKEE, WI 53214								
FILE NAME: welltapdet.vsd									

REFERENCE DRAWING	NO.	REVISION-LOCATION	ECN	DATE	BY

Sales Engineer	Project Manager	Application Engineer	DRAWN		APPROVED	
PJS	TP	KJK	BY MLR	DATE	BY	DATE

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CONTRACT NUMBER: 9 8075-0508

DRAWING NUMBER: D2