

1. All room thermostats/sensors/controllers shall be installed per ADA compliance for new installations. For replacement of existing devices, leave sufficient rolled coil of wire above the ceiling should the device need to be moved down to meet this requirement in the future.
2. All sensor or thermostat pulls that are new require 1 extra conductor to be pulled as well for future use. The shield/drain is not suitable for a conductor.
3. All thermowells shall be filled with heat conductive compound that is provided.
4. Wiring Terminations designated as 'X' or 'XX' indicate information was unavailable at time of submittal. Please inform EMCOR before making field terminations.
5. Remote control devices, not in local panels, shall be accessible for adjustment and service - below 7' above fixed floor whenever possible or as shown on the provided Construction prints.
6. Only prints marked Construction are to be used during installation. If the prints are not marked Construction, the installer will correct any discrepancies between prints used and Construction at no cost to EMCOR.
7. All new BAS controller panels shall have a dedicated 120Vac power source. This source shall be located and marked in the electrical panel as well as on the control prints returned to EMCOR for Record prints.
8. Installer responsible for maintaining existing safeties into new BAS control – electrically or pneumatically connected.
9. See specifications for any additional information on installation standards.

1
PG3

GENERAL NOTES

Color	3-Letter	2-Letter	1-Letter
Black	BLK	BK	b
Brown	BRN	BR	n
Red	RED	RD	r
Orange	ORG	OR	o
Yellow	YEL	YL	y
Green	GRN	GN	g
Blue	BLU	BU	u
Violet	VIO	VL	v
Gray	GRY	GY	a
White	WHT	WH	w
Gold	GLD	GL	d
Silver	SLV	SV	s
Pink	PNK	PK	p

1-Letter abbreviations used for color of stripe on wire. (WH/o = White wire with orange stripe)

2
PG3

COLOR ABBREVIATIONS

REV/NO.	DATE	REVISION	BY
01/09/2019		ASBUILT	MK

DRAWN BY: MK
 CHK BY: RN
 DATE: 03/07/17
 JOB NO.: D1641420



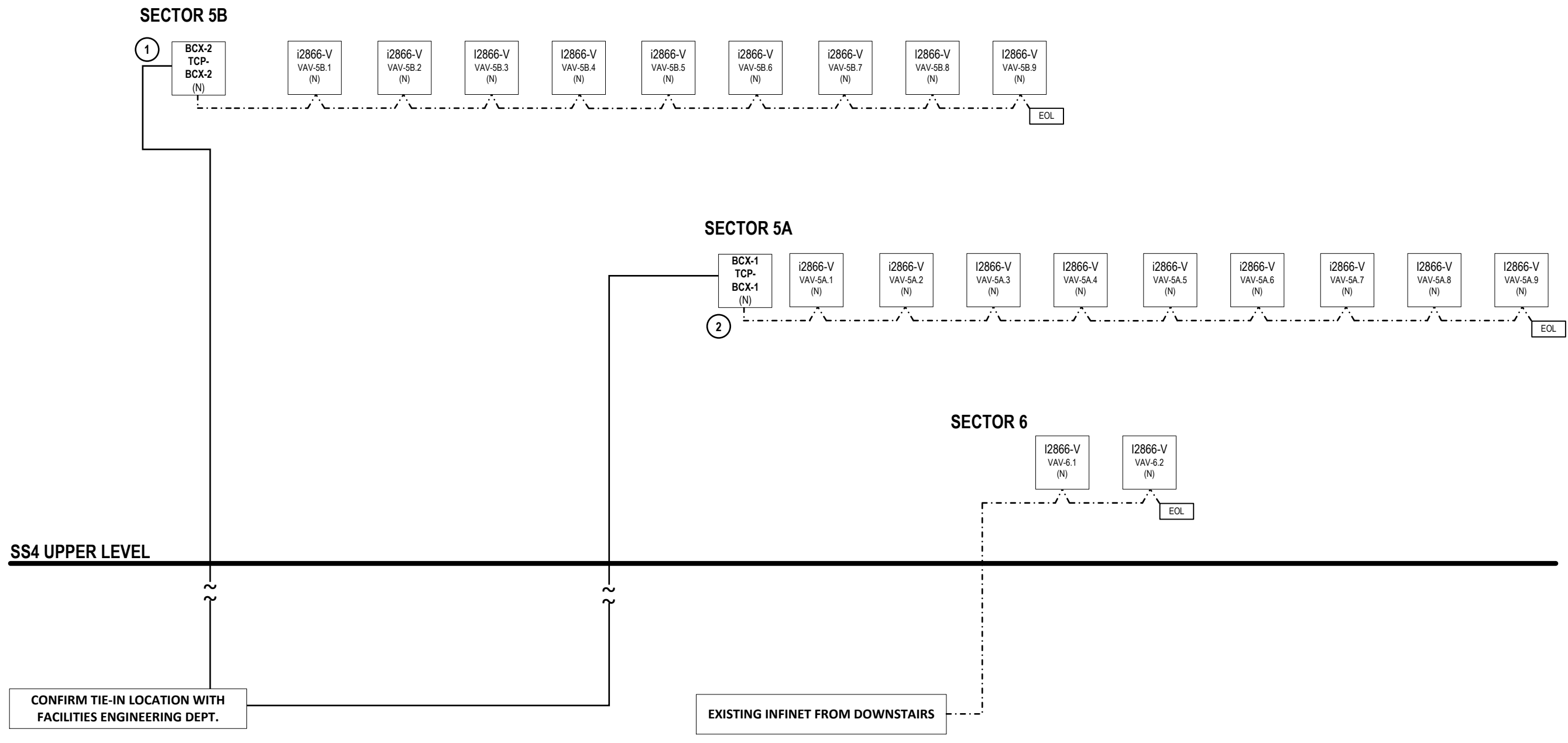
14450 DOOLITTLE DRIVE, SAN LEANDRO, CA 94577
 (510) 870-1690 - FAX (510) 870-1698
 LICENSE# 611215

LEGENDS, SYMBOLS

SHEET TITLE: LMC L-640 COLLEGE COMPLEX

PROJECT: LMC L-640 COLLEGE COMPLEX
 2700 EAST LELAND ROAD
 PITTSBURG, CA 94565

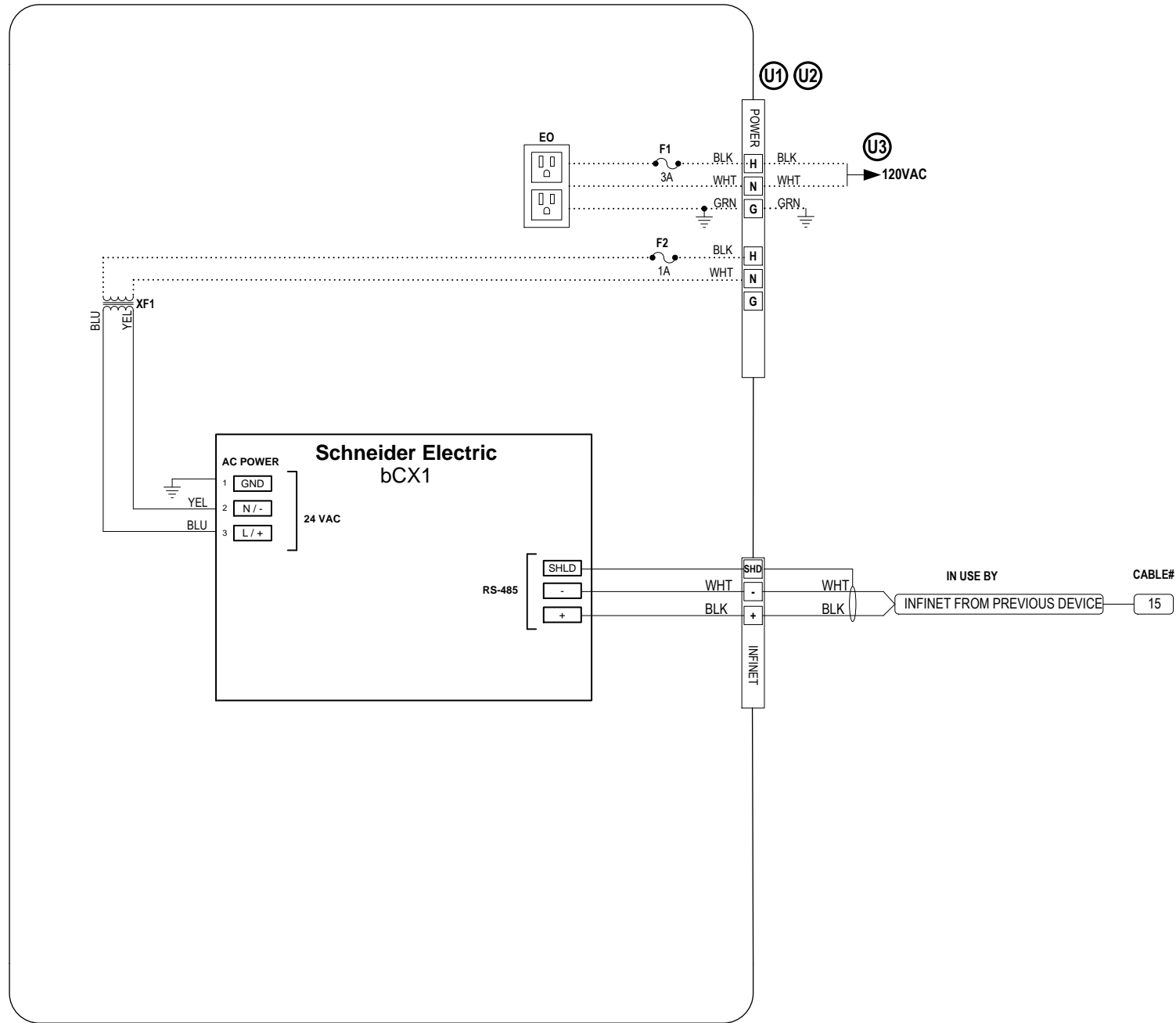
CONTRACTOR: MARTINEZ SHEET METAL INC
 4040 PACHECO BLVD
 MARTINEZ, CA 94533



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5

SCHEMATIC LAN ARCHITECTURE

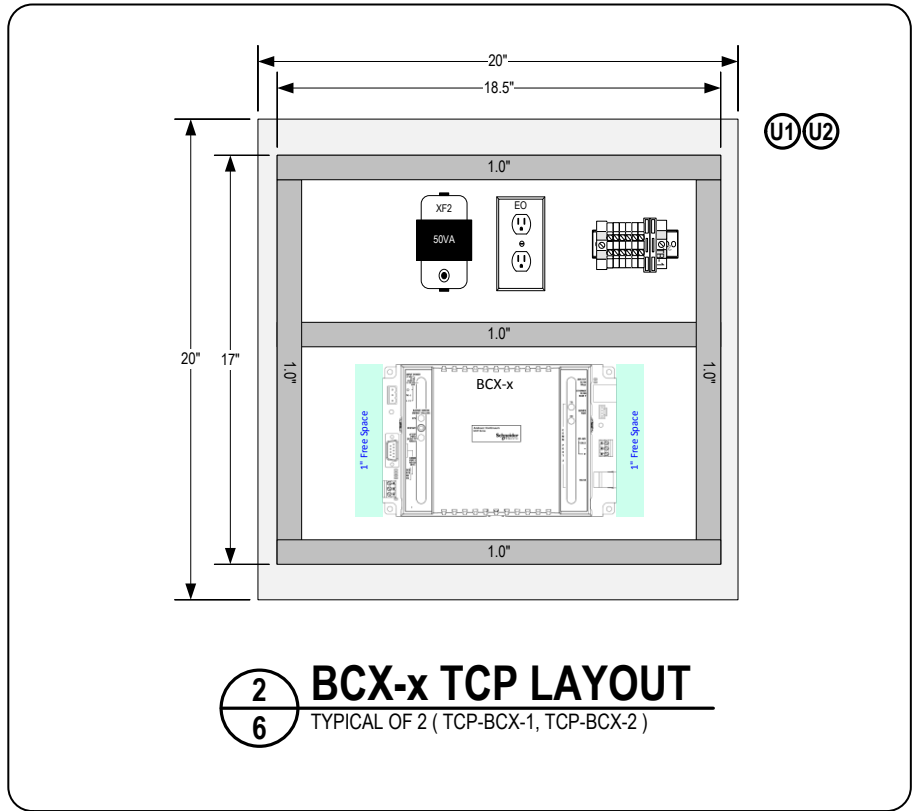
SHEET NOTES	
	ETHERNET - CAT5
	INFINET
1	NEW INFINET BCX CONTROLLER/ROUTER LOCATED IN IT ROOM # 253
2	NEW INFINET BCX CONTROLLER/ROUTER LOCATED IN DATA ROOM # 241



1
6 **BCX-X TCP DETAIL**
TYPICAL OF 2 (TCP-BCX-1, TCP-BCX-2)

UL NOTES

- U1** MAIN DISCONNECT AND BRANCH CIRCUIT PROTECTION, MAX 20A CIRCUIT BREAKER PROVIDED BY OTHERS, COPPER CONDUCTORS ONLY USE 60DEGc CONDUCTORS ONLY.
- U2** TORQUE TERMINAL SCREWS TO 4.4-7.1 LB-IN (MAX 10 GAUGE)
- U3** 120VAC FROM: PNL# CKT#



BILL OF MATERIAL				
TAG	QTY	MFR	P/N	DESCRIPTION
BCX-1, BCX-2	2	SCHNEIDER ELECRIC	BCX-1-CR-32-INF	INFINET CONTROLLER/ROUTER 32 NODES
XF1	1	FD	TR50VA005	120:24VAC 50VA TRANSFORMER
EO	1	LEVITON	5320-ICP	ELECTRICAL OUTLET, 120VAC, 15A
	1	APPLETON	4SSL1/2	ELECTRICAL HANDY BOX, 2"X4"
	1	APPLETON	2510	OUTLET PLATE COVER
F1	1	PHOENIX	3046100	120VAC LIGHTED, FUSED DISCONNECT (UT 4-HES ILA 250)
	1	BUSS	GDC-3.15A	3 AMP FUSE
F2	1	PHOENIX	3046100	120VAC LIGHTED, FUSED DISCONNECT (UT 4-HES ILA 250)
	1	BUSS	GDC-1A	1 AMP FUSE
ENC	1	HOFFMAN	A20N20ALP	NEMA 1 ENCLOSURE
	1	HOFFMAN	A20N20MP	PANEL
	2	PHOENIX	3044128	GROUND TERMINAL STRIP (UT-4-PE)
	6	PHOENIX	3044102	TERMINAL BLOCK (UT-4)
	2	PHOENIX	CLIPFLIX 35-5	END BLOCK
	1	PHOENIX	801733	DIN RAIL, 2 METER LENGTH

REV. NO.	DATE	REVISION	BY
01/09/2019		ASBUILT	MK
DRAWN BY: MK			
CHK BY: RN			
DATE: 03/07/17			
JOB NO.: D1641420			
EMCOR Services Mesa Energy Systems		14450 DOOLITTLE DRIVE, SAN LEANDRO, CA 94577 (510) 870-1860 - FAX (510) 870-1698 LICENSE# 611215	
SHEET TITLE: BCX-x TCP LAYOUT		CONTRACTOR: MARTINEZ SHEET METAL INC 4040 PACHECO BLVD MARTINEZ, CA 94533	
PROJECT: LMC L-640 COLLEGE COMPLEX 2700 EAST LELAND ROAD PITTSBURG, CA 94565		SHEET NO. 6 OF 12	

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Valve Tag	Serving	2W or 3W	Line Size	GPM	WPD (psi)	Calculated Cv	Valve Size	Valve Cv	Valve PD (psi)	Valve	Actuator	Set Up
VAV-5A.1	WOMEN'S 231	2W	3/4"	2	4.00	1.00	1/2"	1.2	2.78	B210B	TR24-SR	NO
VAV-5A.2	WOMEN'S 231	2W	3/4"	2	4.00	1.00	1/2"	1.2	2.78	B210B	TR24-SR	NO
VAV-5A.3	DATA 233	2W	3/4"	0.5	4.00	0.25	1/2"	0.3	2.78	B207B	TR24-SR	NO
VAV-5A.4	OFFICE 234	2W	3/4"	0.5	4.00	0.25	1/2"	0.3	2.78	B207B	TR24-SR	NO
VAV-5A.5	OFFICE 235	2W	3/4"	0.5	4.00	0.25	1/2"	0.3	2.78	B207B	TR24-SR	NO
VAV-5A.6	OFFICE 237	2W	3/4"	2	4.00	1.00	1/2"	1.2	2.78	B210B	TR24-SR	NO
VAV-5A.7	OFFICE 237	2W	3/4"	0.5	4.00	0.25	1/2"	0.3	2.78	B207B	TR24-SR	NO
VAV-5A.8	OFFICE 238	2W	3/4"	0.5	4.00	0.25	1/2"	0.3	2.78	B207B	TR24-SR	NO
VAV-5A.9	OFFICE 239	3W	3/4"	1.5	4.00	0.75	1/2"	0.8	3.52	B309B	TR24-SR	NO
VAV-5B.1	MEN'S 251	2W	3/4"	2	4.00	1.00	1/2"	1.2	2.78	B210B	TR24-SR	NO
VAV-5B.2	MEN'S 251	2W	3/4"	2	4.00	1.00	1/2"	1.2	2.78	B210B	TR24-SR	NO
VAV-5B.3	OFFICE 252	2W	3/4"	0.5	4.00	0.25	1/2"	0.3	2.78	B207B	TR24-SR	NO
VAV-5B.4	XX	2W	3/4"	0.5	4.00	0.25	1/2"	0.3	2.78	B207B	TR24-SR	NO
VAV-5B.5	COVERED WALKWAY	2W	3/4"	1.5	4.00	0.75	1/2"	0.8	3.52	B209B	TR24-SR	NO
VAV-5B.6	MEETING 260	2W	3/4"	0.5	4.00	0.25	1/2"	0.3	2.78	B207B	TR24-SR	NO
VAV-5B.7	COVERED WALKWAY	2W	3/4"	1.5	4.00	0.75	1/2"	0.8	3.52	B209B	TR24-SR	NO
VAV-5B.8	OFFICE 259	2W	3/4"	0.5	4.00	0.25	1/2"	0.3	2.78	B207B	TR24-SR	NO
VAV-5B.9	OFFICE 258	3W	3/4"	1.5	4.00	0.75	1/2"	0.8	3.52	B309B	TR24-SR	NO
VAV-6.1	CLASSROOM 290	2W	3/4"	1.0	4.00	0.50	1/2"	0.8	1.56	B209B	TR24-SR	NO
VAV-6.2	HALL 270	2W	3/4"	1.0	4.00	0.50	1/2"	0.8	1.56	B209B	TR24-SR	NO

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7
VALVE SCHEDULE

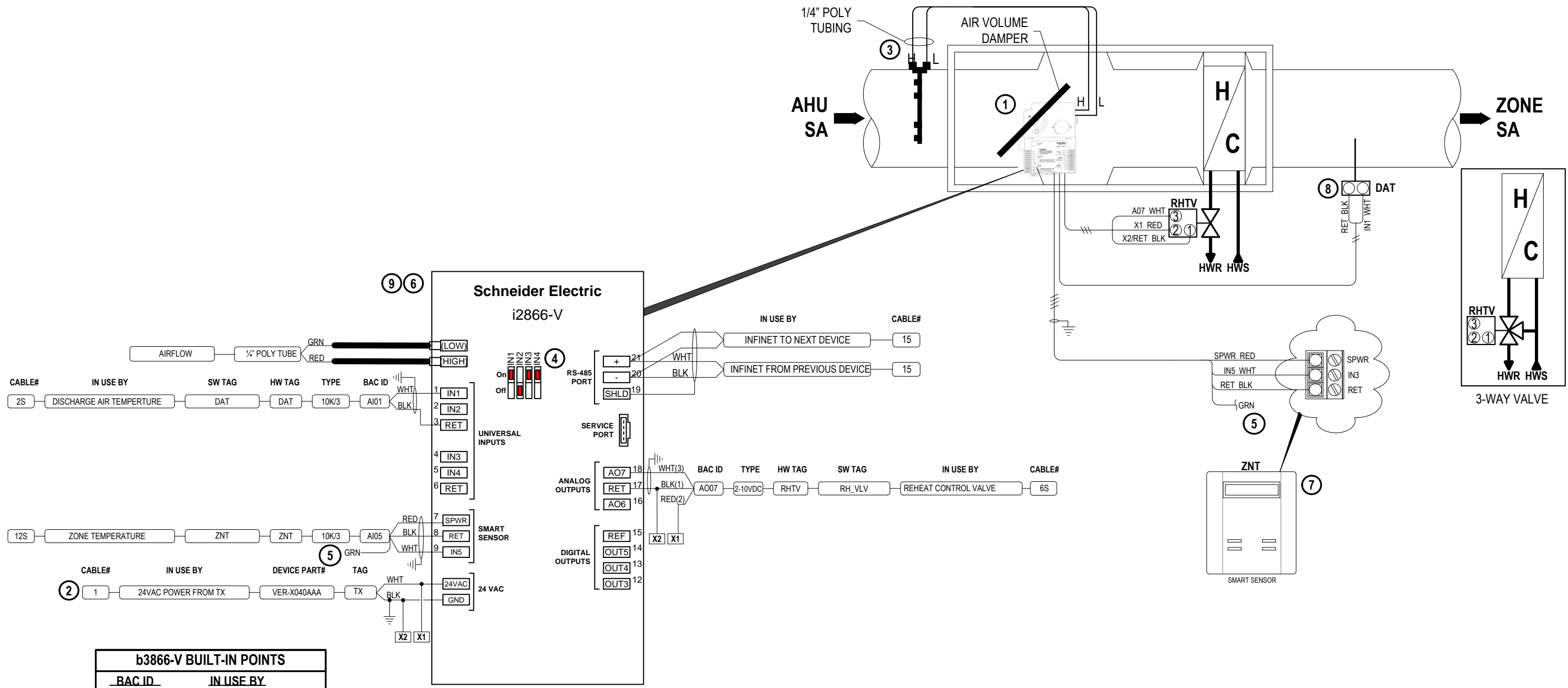
01/09/2019	DATE	ASBUILT	REVISION	MK
REVNO	DATE	ASBUILT	REVISION	BY

DRAWN BY:	MK
CHK BY:	RN
DATE:	03/07/17
JOB NO.:	D1641420

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 (510) 970-1690 - FAX (510) 970-1698
 LICENSE# 611215

<p>VALVE SCHEDULE</p> <p>SHEET TITLE:</p>	<p>CONTRACTOR:</p> <p>MARTINEZ SHEET METAL INC 4040 PACHECO BLVD MARTINEZ, CA 94533</p>
<p>PROJECT:</p> <p>LMC L-640 COLLEGE COMPLEX 2700 EAST LELAND ROAD PITTSBURG, CA 94565</p>	<p>SHEET NO.</p> <p style="font-size: 1.2em; font-weight: bold;">7 OF 12</p>

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b3866-V BUILT-IN POINTS	
BAC ID	IN USE BY
XXX.A17	AIRFLOW
XXX.BO1	DAMPER ACTUATOR OPEN (CCW)
XXX.AV	ACTUATOR FEEDBACK

- ### SHEET NOTES
- MOUNT CCW TO OPEN.
 - REFERENCE VAV SCHEDULE
 - USE 1/4" POLY TUBING FOR BOARD PRESSURE SENSOR CONNECTIONS TO BOX FLOW TUBES. HIGH - RED STRIPE TUBE, LOW - GREEN STRIPE TUBE
 - SET JUMPERS TO POSITION INDICATED.
 - SAFE OFF GREEN WIRE
 - REMOVE BATTERY TAB AND RECORD SERIAL NUMBER ON VAV BOX SCHEDULE SHEET
 - LABEL DEVICE
 - MUST MOUNT ON DUCT NOT ON VAV BOX
 - PLACE VAV TAG ON CEILING TILE GRID FRAME

1 VAV BOX WITH REHEAT CONTROL DETAIL

9 TYPICAL OF 19

BILL OF MATERIALS				
TAG	QTY	MANUFACTURER	PART NO.	DESCRIPTION
LC	19	SCHNEIDER ELECTRIC	i2866-V	DIRECT DIGITAL VAV BOX CONTROLLER
TX	19	VERIS INDUSTRIES	VER-X040AAA	120vac / 24vac, 40va TRANSFORMER (LOCATED AT VAV)
ZNT	19	SCHNEIDER ELECTRIC	TTS-SD-LCD-1	ROOM TEMPERATURE SENSOR WITH LCD
RHTV	19	BELIMO	SEE VALVE SCHED	CONTROL VALVE, 2-10 VDC

DATE	01/09/2019
REV/NO	ASBUILT
BY	MK

DRAWN BY: MK
 CHK BY: RN
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 JOB NO.: D1641420

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 Mesa Energy Systems

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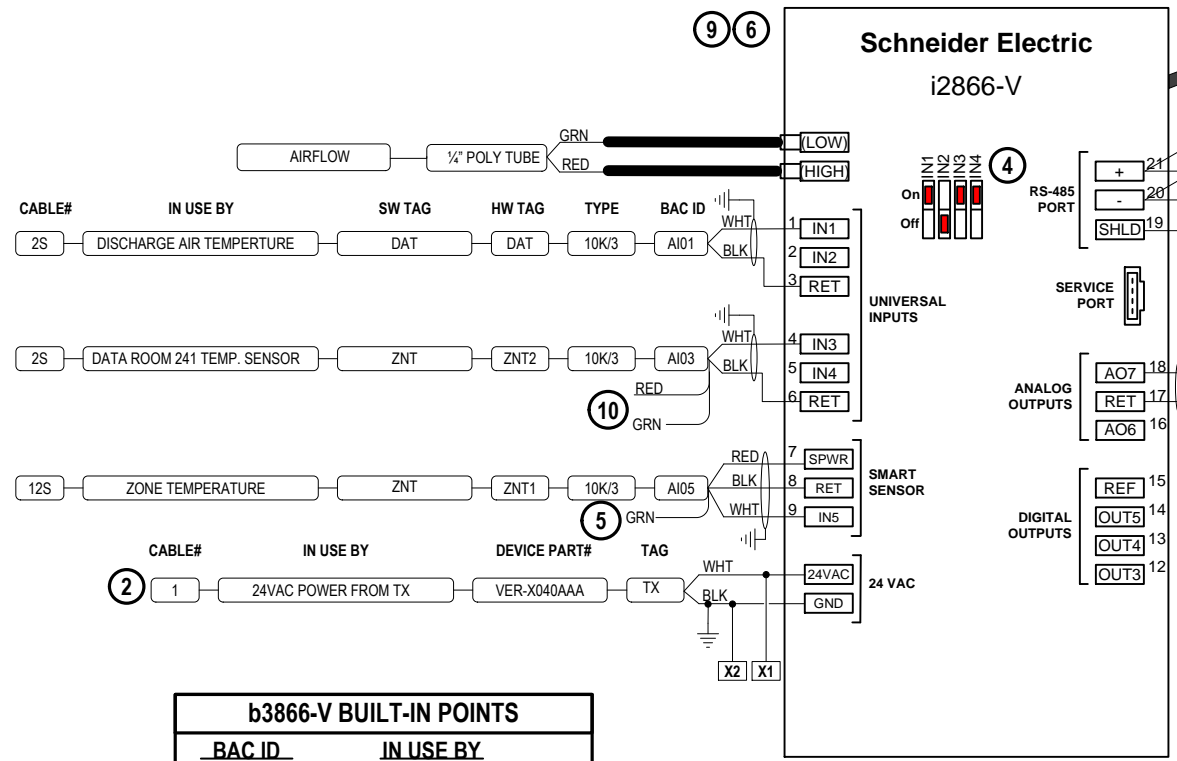
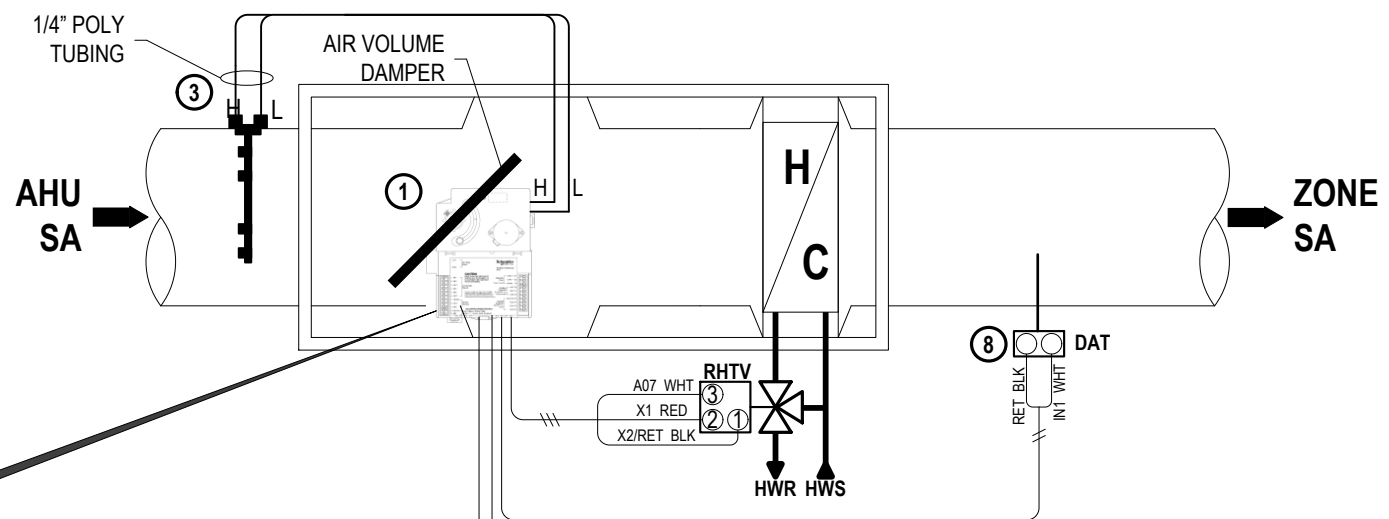
SHEET TITLE: VAV BOX WITH REHEAT CONTROL DETAIL

CONTRACTOR:
 MARTINEZ SHEET METAL INC
 4040 PACHECO BLVD
 MARTINEZ, CA 94533

PROJECT:
 LMC L-640 COLLEGE COMPLEX
 2700 EAST LELAND ROAD
 PITTSBURG, CA 94565

SHEET NO. 9 OF 12

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BAC ID	IN USE BY
XXX.AI7	AIRFLOW
XXX.BO1	DAMPER ACTUATOR OPEN (CCW)
XXX.AV	ACTUATOR FEEDBACK

SHEET NOTES

- ① MOUNT CCW TO OPEN.
- ② REFERENCE VAV SCHEDULE
- ③ USE 1/4" POLY TUBING FOR BOARD PRESSURE SENSOR CONNECTIONS TO BOX FLOW TUBES. HIGH - RED STRIPE TUBE, LOW - GREEN STRIPE TUBE
- ④ SET JUMPERS TO POSITION INDICATED.
- ⑤ SAFE OFF GREEN WIRE
- ⑥ REMOVE BATTERY TAB AND RECORD SERIAL NUMBER ON VAV BOX SCHEDULE SHEET
- ⑦ LABEL DEVICE
- ⑧ MUST MOUNT ON DUCT NOT ON VAV BOX
- ⑨ PLACE VAV TAG ON CEILING TILE GRID FRAME
- ⑩ SAFE OFF GREEN & RED WIRES
- ⑪ LOCATED IN DATA ROOM # 241 TO MONITOR ROOM TEMPERATURE

1 VAV-5A.9 CONTROL DETAIL

TAG	QTY	MANUFACTURER	PART NO.	DESCRIPTION
LC	1	SCHNEIDER ELECTRIC	i2866-V	DIRECT DIGITAL VAV BOX CONTROLLER
TX	1	VERIS INDUSTRIES	VER-X040AAA	120vac / 24vac, 40va TRANSFORMER (LOCATED AT VAV)
ZNT1	1	SCHNEIDER ELECTRIC	TTS-SD-LCD-1	ROOM TEMPERATURE SENSOR WITH LCD
ZNT2	1	SCHNEIDER ELECTRIC	TTS-S-B-1	BLANK ROOM TEMPERATURE SENSOR
RHTV	1	BELIMO	SEE VALVE SCHED	CONTROL VALVE, 2-10 VDC

DATE	01/09/2019
REV. NO.	ASBUILT
BY	MK

DRAWN BY: MK
 CHK BY: RN
 DATE: 03/07/17
 JOB NO.: D1641420

EMCOR Services
 Mesa Energy Systems

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 (510) 870-1800 - FAX (510) 670-1698
 LICENSE# 611215

VAV-5A.9 CONTROL DETAIL

SHEET TITLE:

CONTRACTOR:
 MARTINEZ SHEET METAL INC
 4040 PACHECO BLVD
 MARTINEZ, CA 94533

PROJECT:
 LMC L-640 COLLEGE COMPLEX
 2700 EAST LELAND ROAD
 PITTSBURG, CA 94565

SHEET NO. 10 OF 12

