Report By:

National TAB
1329 E. KEMPER ROAD
SUITE 4210
CINCINNATI, OH 45246

Report: Chilled Water Report

Function: Test, Adjust, & Balance

Date: 09/30/2025

Completed By: National TAB

PROJECT

Warabeya North America (Columbus, OH)

1575 Rail Southern Court

Columbus, OH 43217

Client

National Pro Balance LLC

PO Box 531596

Cincinnati, OH 45253

National TAB

Project: Warabeya North America (Columbus, OH)

Table Of Contents

Section	Page #
Scenario Testing	3
Pump	4
Circuit Setter	18
Chiller	21
Water Tower	24

Warabeya Chilled Water Pump Testing

Pumps Running at 100%

Asset	Service	Scenario	Water Pressure Drop			Pressure Drop	Calcuated GPM			Design GPM
			1	2	3	(DESIGN)	1	2	3	
P-11	Condens. Side of Chillers	1 Pump/ 1 Chiller on	60 ft	46.5 ft	43.1 ft	70 ft	1418	1611	1673	1313
P-12	Condens. Side of Chillers	2 Pump/ 2 Chillers on		44.2 ft	42.5 ft	70 ft		1652	1685	1313
P-13	Condens. Side of Chillers	3 Pump/ 3 Chillers on			41.9 ft	70 ft			1697	1313
Chiller-2	Condens. Side of Chillers	1 Pump/ 1 Chiller on	25.8	22.2 ft	15.8 ft	19.6 ft	1506	1397	1178	1313
Chiller-3	Condens. Side of Chillers	2 Pump/ 2 Chillers on		23.6 ft	16.9 ft	19.6 ft		1440	1219	1313
Chiller-4	Condens. Side of Chillers	3 Pump/ 3 Chillers on			16.2 ft	19.6 ft			1193	1313
P-15	Evap. Side of Chillers	1 Pump/ 1 Chiller on	41.8 FT	46.2 ft	67.6 FT	70 ft	1649	1568	1296	1274
P-16	Evap. Side of Chillers	2 Pump/ 2 Chillers on		46.8 ft	65.8 FT	70 ft		1588	1314	1274
P-17	Evap. Side of Chillers	3 Pump/ 3 Chillers on			66.9 FT	70 ft			1303	1274
Chiller-2	Evap. Side of Chillers	1 Pump/ 1 Chiller on	41.2 ft	38.8 ft	36.3 ft	21.1 ft	1780	1727	1677	1274
Chiller-3	Evap. Side of Chillers	2 Pump/ 2 Chillers on		39.8 ft	37.2 ft	21.1 ft		1749	1691	1274
Chiller-4	Evap. Side of Chillers	3 Pump/ 3 Chillers on			35.8 ft	21.1 ft			1659	1274

Evap Side

Final #s Running pumps at 90%

Asset	Service	Scenario	Water Pressure Drop			Pressure Drop	Calcuated GPM			Design GPM
			1	2	3	(DESIGN)	1	2	3	
P-11	Condens. Side of Chillers	1 Pump/ 1 Chiller on	57.8 ft	41.8 ft	38.9 ft	70 ft	1276	1450	1506	1313
P-12	Condens. Side of Chillers	2 Pump/ 2 Chillers on		40.2 ft	39.1 ft	70 ft		1487	1517	1313
P-13	Condens. Side of Chillers	3 Pump/ 3 Chillers on			38.5 ft	70 ft			1527	1313
Chiller-2	Condens. Side of Chillers	1 Pump/ 1 Chiller on	23.6 ft	19.8 ft	14.4 ft	19.6 ft	1355	1257	1060	1313
Chiller-3	Condens. Side of Chillers	2 Pump/ 2 Chillers on		20.5 ft	15.2ft	19.6 ft		1296	1097	1313
Chiller-4	Condens. Side of Chillers	3 Pump/ 3 Chillers on			15.0 ft	19.6 ft			1074	1313
Cond Side										
Final #s	Running pumps at 70%									
P-15	Evap. Side of Chillers	1 Pump/ 1 Chiller on	35.2 FT	39.8 ft	48.9 FT	70 ft	1154	1098	907	1274
P-16	Evap. Side of Chillers	2 Pump/ 2 Chillers on		40.2 ft	46.2 FT	70 ft		1112	920	1274
P-17	Evap. Side of Chillers	3 Pump/ 3 Chillers on			47.1 FT	70 ft			912	1274
Chiller-2	Evap. Side of Chillers	1 Pump/ 1 Chiller on	33.8 ft	22.6 ft	21.9 ft	21.1 ft	1246	1209	1282	1274
Chiller-3	Evap. Side of Chillers	2 Pump/ 2 Chillers on		21.9 ft	22.2 ft	21.1 ft		1224	1294	1274
Chiller-4	Evap. Side of Chillers	3 Pump/ 3 Chillers on			22.8 ft	21.1 ft			1305	1274

Summary: Found that Condensate pumps are underperforming and overamping at 60hz. Reduced to 90% for testing to keep pumps on. Pumps do not meet flow in scenario 3 (all 3 chillers running). Evap Pumps were oversupplying water in all 3 run scenarios, so pumps were reduced to 70% to obtain final readings.

National TAB

Project: Warabeya North America (Columbus, OH)

System/Unit: Pump

Asset: P-11 AREA:TOWER

Unit Data		
	Design	**Actual**
MFG	NA	BELL & GOSSETT
Model Num	NA	e-1532 6G
Serial Num	-	C365907-01
Service	-	COND LOOP
Type	-	GROUND MOUNTED
Configuration	-	CENTRIFUGAL PUMP
Pump RPM	-	1149
GPM/HD	1300 / 70	1300 / 70
Impeller Diameter	13.25	13.25

Motor Data		
	Design	**Actual**
Motor MFG	-	NEMA
Frame	-	324
Horsepower	30	30
Motor Rpm	-	1182
Phase	-	3
Voltage	-	460
Amperage	-	36
Service Factor	-	1.15
Efficiency	-	93.6%
Power Factor	-	0.82

Test Data		
	Design	**Actual**
Valve Open Diff (FT)	-	60 FT
Final Suction Pres (FT)	-	-2.1 FT
Final Discharge Pres (FT)	-	57.9 FT
Total Head Pres (FT)	70	60 FT
Final GPM	1300	1404
Pump Rotation	-	CW CORRECT
Motor RPM	-	1800
Motor Frequency	-	60 HZ
RL Voltage	-	470 VFD
RL Amperage	-	68 VFD
Brake Horse Power	-	28

Completed By: Nick Payne on 08/21/2025

National TAB

Project: Warabeya North America (Columbus, OH)

System/Unit: Pump

Asset: P-12 AREA:TOWER

Unit Data		
	Design	**Actual**
MFG	NA	BELL & GOSSETT
Model Num	NA	e-1532 6G
Serial Num	-	C365907-02
Service	-	COND LOOP
Type	-	GROUND MOUNTED
Configuration	-	CENTRIFUGAL PUMP
Pump RPM	-	1149
GPM/HD	1300 / 70	1300 / 70
Impeller Diameter	13.25	13.25

Motor Data		
	Design	**Actual**
Motor MFG	-	NEMA
Frame	-	324
Horsepower	30	30
Motor Rpm	-	1182
Phase	-	3
Voltage	-	460
Amperage	-	36
Service Factor	-	1.15
Efficiency	-	93.6%
Power Factor	-	0.82

Test Data		
	Design	**Actual**
Valve Open Diff (FT)	-	58.8 FT
Final Suction Pres (FT)	-	-1.9 FT
Final Discharge Pres (FT)	-	59.9 FT
Total Head Pres (FT)	70	58.8 FT
Final GPM	1300	1418
Pump Rotation	-	CW CORRECT
Motor RPM	-	1800
Motor Frequency	-	60 HZ
RL Voltage	-	471 VFD
RL Amperage	-	67 VFD
Brake Horse Power	-	27

Completed By: Nick Payne on 08/21/2025

National TAB

Project: Warabeya North America (Columbus, OH)

System/Unit: Pump

Asset: P-13 AREA:TOWER

Unit Data		
	Design	**Actual**
MFG	NA	BELL & GOSSETT
Model Num	NA	e-1532 6G
Serial Num	-	C365908-01
Service	-	COND LOOP
Type	-	GROUND MOUNTED
Configuration	-	CENTRIFUGAL PUMP
Pump RPM	-	1149
GPM/HD	1300 / 70	1300 / 70
Impeller Diameter	13.25	13.25

Motor Data		
	Design	**Actual**
Motor MFG	-	NEMA
Frame	-	324
Horsepower	30	30
Motor Rpm	-	1182
Phase	-	3
Voltage	-	460
Amperage	-	36
Service Factor	-	1.15
Efficiency	-	93.6%
Power Factor	-	0.82

Test Data		
	Design	**Actual**
Valve Open Diff (FT)	-	59.7 FT
Final Suction Pres (FT)	-	-1.8 FT
Final Discharge Pres (FT)	-	57.8 FT
Total Head Pres (FT)	70	59.7 FT
Final GPM	1300	1404
Pump Rotation	-	CW CORRECT
Motor RPM	-	1800
Motor Frequency	-	60 HZ
RL Voltage	-	469 VFD
RL Amperage	-	68 VFD
Brake Horse Power	-	28

Completed By: Nick Payne on 08/21/2025

National TAB

Project: Warabeya North America (Columbus, OH)

System/Unit: Pump

Asset: P-15 AREA:CHILLER

Unit Data		
	Design	**Actual**
MFG	NA	BELL & GOSSETT
Model Num	NA	e-1532 6G
Serial Num	-	C365908-02
Service	-	PRIMARY CHILLED WATER LOOP
Type	-	GROUND MOUNTED
Configuration	-	CENTRIFUGAL PUMP
Pump RPM	-	1145
GPM/HD	1275 / 70	1275 / 70
Impeller Diameter	13.25	13.25

Motor Data		
	Design	**Actual**
Motor MFG	-	NEMA
Frame	-	324
Horsepower	30	30
Motor Rpm	-	1182
Phase	-	3
Voltage	-	460
Amperage	-	36
Service Factor	-	1.15
Efficiency	-	93.6%
Power Factor	-	0.82

Test Data		
	Design	**Actual**
Pump Off Pres	-	69.2 FT
Valve Open GPM	-	1621
Valve Open Diff (FT)	-	42.26 FT
Final Suction Pres (FT)	-	68.0 FT
Final Discharge Pres (FT)	-	135.6 FT
Total Head Pres (FT)	70	67.6 FT
Final GPM	1275	1297
Pump Rotation	-	CW CORRECT
System SetPt	-	100%
RL Voltage	-	471 VFD
RL Amperage	-	34 VFD
Brake Horse Power	-	28.3

Completed By: Nick Payne on 09/23/2025

National TAB

Project: Warabeya North America (Columbus, OH)

System/Unit: Pump

Asset: P-16 AREA:CHILLER

Unit Data		
	Design	**Actual**
MFG	NA	BELL & GOSSETT
Model Num	NA	e-1532 6G
Serial Num	-	C365908-03
Service	-	PRIMARY CHILLED WATER LOOP
Type	-	GROUND MOUNTED
Configuration	-	CENTRIFUGAL PUMP
Pump RPM	-	1145
GPM/HD	1275 / 70	1275 / 70
Impeller Diameter	13.25	13.25

Motor Data		
	Design	**Actual**
Motor MFG	-	NEMA
Frame	-	324
Horsepower	30	30
Motor Rpm	-	1182
Phase	-	3
Voltage	-	460
Amperage	-	36
Service Factor	-	1.15
Efficiency	-	93.6%
Power Factor	-	0.82

Test Data		
	Design	**Actual**
Pump Off Pres	-	69.2 FT
Valve Open GPM	-	1649
Valve Open Diff (FT)	-	41.8 FT
Final Suction Pres (FT)	-	70.2 FT
Final Discharge Pres (FT)	-	136.0 FT
Total Head Pres (FT)	70	65.8 FT
Final GPM	1275	1292
Pump Rotation	-	CW CORRECT
Motor Frequency	-	60 HZ
System SetPt	-	100%
RL Voltage	-	470 VFD
RL Amperage	-	33 VFD
Brake Horse Power	-	27.5

Completed By: Nick Payne on 09/23/2025

National TAB

Project: Warabeya North America (Columbus, OH)

System/Unit: Pump

Asset: P-17 AREA:CHILLER

Unit Data		
	Design	**Actual**
MFG	NA	BELL & GOSSETT
Model Num	NA	e-1532 6G
Serial Num	-	C365908-01
Service	-	PRIMARY CHILLED WATER LOOP
Type	-	GROUND MOUNTED
Configuration	-	CENTRIFUGAL PUMP
Pump RPM	-	1145
GPM/HD	1275 / 70	1275 / 70
Impeller Diameter	13.25	13.25

Motor Data		
	Design	**Actual**
Motor MFG	-	NEMA
Frame	-	324
Horsepower	30	30
Motor Rpm	-	1182
Phase	-	3
Voltage	-	460
Amperage	-	36
Service Factor	-	1.15
Efficiency	-	93.6%
Power Factor	-	0.82

Test Data		
	Design	**Actual**
Pump Off Pres	-	69.2 FT
Valve Open GPM	-	1613
Valve Open Diff (FT)	-	48.9 GFT
Final Suction Pres (FT)	-	63.2 FT
Final Discharge Pres (FT)	-	130.1 FT
Total Head Pres (FT)	70	66.9 FT
Final GPM	1275	1292
Pump Rotation	-	CW CORRECT
Motor Frequency	-	60 HZ
System SetPt	-	100%
RL Voltage	-	470 VFD
RL Amperage	-	33 VFD
Brake Horse Power	-	27.5

Completed By: Nick Payne on 09/23/2025

National TAB

Project: Warabeya North America (Columbus, OH)

System/Unit: Pump

Asset: P-19 AREA:SYSTEM

Unit Data		
	Design	**Actual**
MFG	NA	BELL & GOSSETT
Model Num	NA	e-1510 6G
Serial Num	-	C365909-03
Service	-	PRIMARY SYSTEM
Type	-	GROUND MOUNTED
Configuration	-	CENTRIFUGAL PUMP
Pump RPM	-	1800
GPM/HD	1425 / 130	1425 / 130
Impeller Diameter	11.75	11.75

Motor Data		
	Design	**Actual**
Motor MFG	-	NEMA
Frame	-	364
Horsepower	60	60
Motor Rpm	-	1780
Phase	-	3
Voltage	-	460
Amperage	-	36
Service Factor	-	1.00
Efficiency	-	93.0%
Power Factor	-	0.83

Test Data		
	Design	**Actual**
Pump Off Pres	-	65.7 ft
Valve Open GPM	-	1806
Valve Open Diff (FT)	-	80.9 ft
Final Suction Pres (FT)	-	46.2 ft
Final Discharge Pres (FT)	-	115.5 ft
Total Head Pres (FT)	130	69.3 ft
Final GPM	1425	1605
Pump Rotation	-	CW CORRECT
System SetPt	-	90%
RL Voltage	-	433 vfd
RL Amperage	-	64 VFD
Brake Horse Power	-	53.3

Completed By: Nick Payne on 09/23/2025

National TAB

Project: Warabeya North America (Columbus, OH)

System/Unit: Pump

Asset: P-20 AREA:SYSTEM

Unit Data		
	Design	**Actual**
MFG	NA	BELL & GOSSETT
Model Num	NA	e-1510 6G
Serial Num	-	C365909-01
Service	-	PRIMARY SYSTEM
Type	-	GROUND MOUNTED
Configuration	-	CENTRIFUGAL PUMP
Pump RPM	-	1800
GPM/HD	1425 / 130	1425 / 130
Impeller Diameter	11.75	11.75

Motor Data		
	Design	**Actual**
Motor MFG	-	NEMA
Frame	-	364
Horsepower	60	60
Motor Rpm	-	1780
Phase	-	3
Voltage	-	460
Amperage	-	36
Service Factor	-	1.00
Efficiency	-	93.0%
Power Factor	-	0.83

Test Data		
	Design	**Actual**
Pump Off Pres	-	65.7 FT
Valve Open GPM	-	1789
Valve Open Diff (FT)	-	81.2 FT
Final Suction Pres (FT)	-	45.7 FT
Final Discharge Pres (FT)	-	113.19
Total Head Pres (FT)	130	68.2 FT
Final GPM	1425	1594
Pump Rotation	-	CW CORRECT
System SetPt	-	90%
RL Voltage	-	471 VFD
RL Amperage	-	62 VFD
Brake Horse Power	-	51.6

Completed By: Nick Payne on 09/23/2025

National TAB

Project: Warabeya North America (Columbus, OH)

System/Unit: Pump

Asset: P-21 AREA:SYSTEM

Unit Data		
	Design	**Actual**
MFG	NA	BELL & GOSSETT
Model Num	NA	e-1510 6G
Serial Num	-	C365909-02
Service	-	PRIMARY SYSTEM
Type	-	GROUND MOUNTED
Configuration	-	CENTRIFUGAL PUMP
Pump RPM	-	1800
GPM/HD	1425 / 130	1425 / 130
Impeller Diameter	11.75	11.75

Motor Data		
	Design	**Actual**
Motor MFG	-	NEMA
Frame	-	364
Horsepower	60	60
Motor Rpm	-	1780
Phase	-	3
Voltage	-	460
Amperage	-	36
Service Factor	-	1.00
Efficiency	-	93.0%
Power Factor	-	0.83

Test Data		
	Design	**Actual**
Pump Off Pres	-	65.7 FT
Valve Open GPM	-	1769
Valve Open Diff (FT)	-	83.1 FT
Final Suction Pres (FT)	-	43.2 FT
Final Discharge Pres (FT)	-	113.1 FT
Total Head Pres (FT)	130	69.8 FT
Final GPM	1425	1579
Pump Rotation	-	CW CORRECT
System SetPt	-	90%
RL Voltage	-	468 VFD
RL Amperage	-	64 VFD
Brake Horse Power	-	53.3

Completed By: Nick Payne on 09/23/2025

National TAB

Project: Warabeya North America (Columbus, OH)

System/Unit: Pump

Asset: P-22 AREA:34 DEG SYSTEM

Unit Data		
	Design	**Actual**
MFG	NA	BELL & GOSSETT
Model Num	NA	e-1532 6E
Serial Num	-	C365910-02
Service	-	34 DEG SYSTEM
Type	-	GROUND MOUNTED
Configuration	-	CENTRIFUGAL PUMP
Pump RPM	-	1800
GPM/HD	1450 / 95	1450 / 95
Impeller Diameter	10.5	10.5

Motor Data		
	Design	**Actual**
Motor MFG	-	BALDOR
Frame	-	326JM
Horsepower	50	50
Motor Rpm	-	1775
Phase	-	3
Voltage	-	460
Amperage	-	57
Service Factor	-	1.15
Efficiency	-	94.5%
Power Factor	-	0.87

Test Data		
	Design	**Actual**
Pump Off Pres	-	70 FT
Valve Open GPM	-	2160
Valve Open Diff (FT)	-	71 FT
Final Suction Pres (FT)	-	58.1 FT
Final Discharge Pres (FT)	-	140.3 FT
Total Head Pres (FT)	95	82.2 FT
Final GPM	1450	1558
Pump Rotation	-	CW CORRECT
Motor RPM	-	1800
Motor Frequency	-	60 HZ
RL Voltage	-	475 VFD
RL Amperage	-	52 VFD
Brake Horse Power	-	45.6

Completed By: Nick Payne on 08/21/2025

National TAB

Project: Warabeya North America (Columbus, OH)

System/Unit: Pump

Asset: P-23 AREA:34 DEG SYSTEM

Unit Data		
	Design	**Actual**
MFG	NA	BELL & GOSSETT
Model Num	NA	e-1532 6E
Serial Num	-	C365910-01
Service	-	34 DEG SYSTEM
Type	-	GROUND MOUNTED
Configuration	-	CENTRIFUGAL PUMP
Pump RPM	-	1800
GPM/HD	1450 / 95	1450 / 95
Impeller Diameter	10.5	10.5

Motor Data		
	Design	**Actual**
Motor MFG	-	BALDOR
Frame	-	326JM
Horsepower	50	50
Motor Rpm	-	1775
Phase	-	3
Voltage	-	460
Amperage	-	57
Service Factor	-	1.15
Efficiency	-	94.5%
Power Factor	-	0.87

Test Data		
	Design	**Actual**
Pump Off Pres	-	70 FT
Pump Dead Head Pres	-	
Act Impeller Dia (IN)	-	
Valve Open GPM	-	
Valve Open Diff (FT)	-	
Final Suction Pres (FT)	-	
Final Discharge Pres (FT)	-	
Total Head Pres (FT)	95	
Final GPM	1450	
Pump Rotation	-	
Motor RPM	-	
Pump RPM	-	
Motor Frequency	-	
System SetPt	-	
RL Voltage	-	471 VFD
RL Amperage	-	54 VFD
Brake Horse Power	-	

Notes:
Pump not installed

Written By: Nick Payne on 09/23/2025

National TAB

Project: Warabeya North America (Columbus, OH)

System/Unit: Pump

Asset: P-24 AREA:UNDERFLOOR

Unit Data		
	Design	**Actual**
MFG	NA	BELL & GOSSETT
Model Num	NA	PL-55
Serial Num	-	1BL032
Service	-	UNDERFLOOR
Type	-	BOOSTER
Configuration	-	INLINE
Pump RPM	-	3250
GPM/HD	9 / 35	9 / 35

Motor Data		
	Design	**Actual**
Motor MFG	-	B&G
Horsepower	-	500 W
Phase	-	1
Voltage	-	115
Amperage	-	4.7

Test Data		
	Design	**Actual**
Pump Off Pres	-	53.3 FT
Valve Open GPM	-	9
Valve Open Diff (FT)	-	34.5 FT
Final Suction Pres (FT)	-	50.9 FT
Final Discharge Pres (FT)	-	85.4 FT
Total Head Pres (FT)	35	34.5 FT
Final GPM	9	9
System SetPt	-	ON/OFF
RL Voltage	-	120
RL Amperage	-	3.2

Completed By: Nick Payne on 09/23/2025

National TAB

Project: Warabeya North America (Columbus, OH)

System/Unit: Pump

Asset: P-25 AREA:VAC CHILLER

Unit Data		
	Design	**Actual**
MFG	NA	BELL & GOSSETT
Model Num	NA	e-1532 1.25BC
Serial Num	-	C365911-02
Service	-	VAC CHILLER LOOP
Type	-	GROUND MOUNTED
Configuration	-	CENTRIFUGAL PUMP
Pump RPM	-	1674
GPM/HD	40 / 70	40 /70
Impeller Diameter	8.75	8.75

Motor Data		
	Design	**Actual**
Motor MFG	-	NEMA
Frame	-	182
Horsepower	3	3.0
Motor Rpm	-	1765
Phase	-	3
Voltage	-	460
Amperage	-	3.8
Service Factor	-	1.15
Efficiency	-	86.7%
Power Factor	-	0.80

Test Data		
	Design	**Actual**
Valve Open GPM	-	41.6
Valve Open Diff (FT)	-	66.1 FT
Final Suction Pres (FT)	-	3.2 FT
Final Discharge Pres (FT)	-	69.3 FT
Total Head Pres (FT)	70 FT	66.1 FT
Final GPM	40	41.6
Pump Rotation	-	CW CORRECT
Motor Frequency	-	60 HZ
RL Voltage	-	460/460/461
RL Amperage	-	3.2/3.1/3.2
Brake Horse Power	-	2.5

Completed By: Nick Payne on 09/23/2025

National TAB

Project: Warabeya North America (Columbus, OH)

System/Unit: Pump

Asset: P-26 AREA:VAC CHILLER

Unit Data		
	Design	**Actual**
MFG	NA	BELL & GOSSETT
Model Num	NA	e-1532 1.25BC
Serial Num	-	C365911-07
Service	-	VAC CHILLER LOOP
Type	-	GROUND MOUNTED
Configuration	-	CENTRIFUGAL PUMP
Pump RPM	-	1674
GPM/HD	40 / 70	40 /70
Impeller Diameter	8.75	8.75

Motor Data		
	Design	**Actual**
Motor MFG	-	NEMA
Frame	-	182
Horsepower	3	3.0
Motor Rpm	-	1765
Phase	-	3
Voltage	-	460
Amperage	-	3.8
Service Factor	-	1.15
Efficiency	-	86.7%
Power Factor	-	0.80

Test Data		
	Design	**Actual**
Valve Open GPM	-	43.6
Valve Open Diff (FT)	-	58.7 FT
Final Suction Pres (FT)	-	3.2 FT
Final Discharge Pres (FT)	-	61.9 FT
Total Head Pres (FT)	70 FT	58.7 FT
Final GPM	40	43.6
Pump Rotation	-	CW CORRECT
Motor Frequency	-	60 HZ
RL Voltage	-	461/460/460
RL Amperage	-	3.5/3.4/3.5
Brake Horse Power	-	2.8

Completed By: Nick Payne on 09/23/2025

Circuit Setter

CHW CS/

Asset									
Asset Name	**Location**	**Size**	**Type**	**Service**	**Design GPM**	**Setting**	**Delta P**	**Final GPM**	**% to Design**
AHU-1	AHU-1		MANUAL	AHU	59.61				-
MAU-2	EQUIP PLATFORM 200	3	MANUAL	AHU	280.9	14.3 FT	15.2/14.5/13.9 FT	283.8	101.0
MAU-3	EQUIP PLATFORM 200	4	MANUAL	AHU	593.8	14.52 ft	15.1/14.8 ft	601.5	101.3
MAU-4	EQUIP PLATFORM 200	2.5	MANUAL	AHU	90.47	14.94 FT	15.6 FT	92.5	102.2
MAU-1 (POST) 1	EQUIP PLATFORM 200	3	MANUAL	AHU	387.1	15.2 FT	15.6/14.8/16.1 FT	395.9	102.3
MAU-1 (PRE) 1	EQUIP PLATFORM 200	4	MANUAL	AHU	516.8	29.8 FT	30.2/28.8/29.9 FT	515.4	99.7
UC-127-1	127	1	MANUAL	COOLER	5.3	7	1.8 psi	5.5	103.8
UC-129-1	129	2	MANUAL	COOLER	46	7	2.3 psi	45.2	98.3
UC-129-2	129	2	MANUAL	COOLER	46	7	2.8 psi	47.2	102.6
UC-129-3	129	2	MANUAL	COOLER	46	6	5.9 psi	46.6	101.3
UC-131-1	131	1	MANUAL	COOLER	11	6	4.8 psi	11.7	106.4
UC-132-1	132	2	MANUAL	COOLER	60	9	1.6 psi	58.9	98.2
UC-132-2	132	2	MANUAL	COOLER	60	9	2.0 psi	64.5	107.5
UC-132-3	132	2	MANUAL	COOLER	60	7	4.7 psi	61.4	102.3
UC-134-1	134	2	MANUAL	COOLER	60	8	2.6 psi	63.6	106.0
UC-136-1	136	2	MANUAL	COOLER	48	7	3.3 psi	50.2	104.6
UC-136-2	136	2	MANUAL	COOLER	48	8	1.6 psi	49.9	104.0
UC-136-3	136	2	MANUAL	COOLER	48	9	1.1 psi	48.8	101.7
UC-137-1	137	2	MANUAL	COOLER	45	9	1.0 psi	45.9	102.0
UC-137-2	137	2	MANUAL	COOLER	45	7	2.6 psi	45.7	101.6
UC-139-1	139	0.75	MANUAL	COOLER	3	6	4.3 psi	3.2	106.7
UC-141-1	141	1.25	MANUAL	COOLER	22	6	9.2 psi	20.6	93.6
UC-141-2	141	1.25	MANUAL	COOLER	22	6	8.9 psi	20.2	91.8
UC-142-1	142	2	MANUAL	COOLER	23	8	1.1 psi	24.5	106.5
UC-142-2	142	1.5	MANUAL	COOLER	23	7	2.00 psi	22.9	99.6
UC-149A-1	149A	1.25	MANUAL	COOLER	13.4	8	0.8 psi	13.9	103.7
UC-149B-1	149B	1.25	MANUAL	COOLER	13.4	6	4.0 psi	13.6	101.5
UC-149B-2	149B	1.25	MANUAL	COOLER	13.4	6	4.0 psi	13.6	101.5
UC-149B-3	149B	2	MANUAL	COOLER	13.4	5	1.1 psi	12.6	94.0
UC-149B-4	149B	2	MANUAL	COOLER	13.4	3.0	6.8 psi	12.2	91.0
UC-151-1	151	2"	MANUAL	COOLER	54	9	1.4 psi	54.4	100.7
UC-151-2	151	2"	MANUAL	COOLER	54	9	1.2 psi	50.3	93.1
UC-151-3	151	2"	MANUAL	COOLER	54	9	1.3 psi	52.9	98.0
UC-152-1	152	1.25	MANUAL	COOLER	22	9	0.95 psi	19.8	90.0
UC-152-2	152	1.25	MANUAL	COOLER	22	9	0.99 psi	20.2	91.8
UC-152-3	152	1.25	MANUAL	COOLER	22	9	1.2 psi	21.9	99.5
UC-152A-1	152A	1.25	MANUAL	COOLER	16	8.0	1.0 psi	15.8	98.8
UC-152A-2	152A	1.25	MANUAL	COOLER	16	8	1.05 psi	15.3	95.6
UC-152B-1	152B	2	MANUAL	COOLER	54	9	1.3 psi	52.4	97.0
UC-152B-2	152B	2	MANUAL	COOLER	54	9	1.3 psi	51.9	96.1
UC-152C-1	152C	1.25	MANUAL	COOLER	22	7	3.9 psi	20.5	93.2
UC-152C-2	152C	1.25	MANUAL	COOLER	22	7	3.7 psi	20.1	91.4
UC-156-1	156	1.25	MANUAL	COOLER	13.4	6	3.3 psi	12.9	96.3
UC-159A-1	159A	1.25	MANUAL	COOLER	38	8	6.6 psi	38.36	101.1
UC-159A-2	159A	1.25	MANUAL	COOLER	38	7.5	8.3 psi	36.7	96.6
UC-159B-1	159B	1	MANUAL	COOLER	11	6.5	3.4 psi	11.81	107.3

UC-159B-2	159B	1	MANUAL	COOLER	11	9	0.5 psi	11.3	102.7
UC-160-1	160	2	MANUAL	COOLER	78	9	2.2 psi	74.3	95.3
UC-160A-1	160A	2	MANUAL	COOLER	37.1	6	3.45 psi	35.1	94.6
UC-161B-1	161B	1	MANUAL	COOLER	11	7	1.8 psi	10.5	95.5
UC-161B-2	161B	1	MANUAL	COOLER	11	7	2.0 psi	11.7	106.4
UC-162A-1	162A	2	MANUAL	COOLER	70	9	2.0 psi	64.9	92.7
UC-162A-2	162A	2	MANUAL	COOLER	70	9	2.1 psi	66.5	95.0
UC-162A-3	162A	2	MANUAL	COOLER	70	9	2.0 psi	64.4	92.0
UC-162B-1	162B	1.5	MANUAL	COOLER	16	7	2.0 psi	15.3	95.6
UC-162B-2	162B	1.5	MANUAL	COOLER	16	7.5	1.9 psi	17.5	109.4
UC-164-1	164	2	MANUAL	COOLER	13.4	5.5	0.9 psi	14.2	106.0
UC-167-1	167	1.25	MANUAL	COOLER	22	9	1.07 psi	20.8	94.5
UC-167-2	167	1.25	MANUAL	COOLER	22	9	1.3 psi	22.7	103.2
UC-167-3	167	1.25	MANUAL	COOLER	22	9	1.1 psi	20.9	95.0
UC-173-1	173	2	MANUAL	COOLER	70	8.5	2.7 psi	70.6	100.9
UC-173-2	173	2	MANUAL	COOLER	70	8	3.4 psi	72.7	103.9
UC-173-3	173	2	MANUAL	COOLER	70	7.5	4.4 psi	71.1	101.6
UC-174-1	174	2	MANUAL	COOLER	38	6	3.9 psi	37.2	97.9
UC-174-2	174	2	MANUAL	COOLER	38	5.5	7.2 psi	40.3	106.1
UC-177-2	177	2	MANUAL	COOLER	43	9	0.8 psi	41.4	96.3
UC-177-3	177	2	MANUAL	COOLER	43	6.5	3.5 psi	44	102.3
UC-177-4	177	2	MANUAL	COOLER	43	9	1.0 psi	45.9	106.7
UC-177-6	177	2	MANUAL	COOLER	43	9	1.3	45	104.7
UC-177-8	177	2"	MANUAL	COOLER	43	8	1.0 psi	42.9	99.8
UC-177-9	177	2	MANUAL	COOLER	43	9	0.95 psi	44.77	104.2
UC-177-10	177	2	MANUAL	COOLER	43	7	2.4 psi	43.9	102.1
UC-177-11	177	2	MANUAL	COOLER	43	6	5.1 psi	42.5	98.8
UC-180-1	180	2	MANUAL	COOLER	49	9	1.05 psi	47.6	97.1
UC-180-2	180	2	MANUAL	COOLER	49	9	1.00 psi	45.9	93.7
UC-180-3	180	2	MANUAL	COOLER	49	9	1.09 psi	48	98.0
UC-182-1	182	2	MANUAL	COOLER	38	9	0.74 psi	39.51	103.9
Total					4513.88			4460.15	98.81%

Asset	Notes	Date	Written By
AHU-1	Valve is clocked into pipe directly next to it- unable to read pressure drop.	09/30/2025	Nick Payne

National TAB

Project: Warabeya North America (Columbus, OH)

System/Unit: Chiller

Asset: C-2 AREA:MECH RM 147

Unit Data		
	Design	**Actual**
MFG	NA	DAIKIN
Model Num	NA	WSC087MBAWA
Serial Num	-	STNU2501000029

Test Data-Evaporator		
	Design	**Actual**
GPM	1274	1282
EWT (F)	34.01	36.2 deg F
LWT (F)	26.00	26.0 deg F
Water Temp Delta T (F)	-	10.2 deg F
CHW Delta P	21.1 ft	21.9 ft

Test Data-Condenser		
	Design	**Actual**
CW GPM	1313	1397{1}
EWT (F)	-	80 deg F
LWT (F)	-	88 deg F
Water Temp Delta T (F)	-	8 deg F
CHW Delta P	19.6 ft	22.2 ft

Completed By: Nick Payne on 09/23/2025

Notes:
[1] Reading obtained with 2 pumps/2 chillers running for optimal flow.

Written By: Nick Payne on 09/23/2025

National TAB

Project: Warabeya North America (Columbus, OH)

System/Unit: Chiller

Asset: C-3 AREA:MECH RM 147

Unit Data		
	Design	**Actual**
MFG	NA	DAIKIN
Model Num	NA	WSC087MBAWA
Serial Num	-	STNU2501000156

Test Data-Evaporator		
	Design	**Actual**
GPM	1274	1294
EWT (F)	34.01	35.8 deg F
LWT (F)	26.00	26.0 deg F
Water Temp Delta T (F)	-	9.8 deg F
CHW Delta P	21.1 ft	22.2 ft

Test Data-Condenser		
	Design	**Actual**
CW GPM	1313	1440 [1]
EWT (F)	-	81 deg F
LWT (F)	-	88 deg F
Water Temp Delta T (F)	-	7 deg F
CHW Delta P	19.6 ft	23.6 ft

Completed By: Nick Payne on 09/23/2025

Notes:
[1]

Written By: Nick Payne on 09/23/2025

National TAB

Project: Warabeya North America (Columbus, OH)

System/Unit: Chiller

Asset: C-4 AREA:MECH RM 147

Unit Data		
	Design	**Actual**
MFG	NA	DAIKIN
Model Num	NA	WSC087MBAWA
Serial Num	-	STNU250100088

Test Data-Evaporator		
	Design	**Actual**
GPM	1274	1305
EWT (F)	34.01	35.9 deg F
LWT (F)	26.00	26.0 deg F
Water Temp Delta T (F)	-	9.9 deg F
CHW Delta P	21.1 ft	22.8 ft

Test Data-Condenser		
	Design	**Actual**
CW GPM	1313	1381 [1]
EWT (F)	-	88 deg F
LWT (F)	-	80 deg F
Water Temp Delta T (F)	-	8 deg F
CHW Delta P	19.6 ft	

Completed By: Nick Payne on 09/23/2025

Notes:
[1] Reading obtained with 2 pumps/2 chillers running for optimal flow.

Written By: Nick Payne on 09/23/2025

National TAB

Project: Warabeya North America (Columbus, OH)

System/Unit: Water Tower

Asset: CT-2 AREA:

Unit Data		
	Design	**Actual**
MFG	NA	BALTIMORE AIRCOIL
Model Num	NA	S3E-8518-077M
Serial Num	-	24391-501

Test Data		
	Design	**Actual**
CW GPM	1313	1397
EWT (F)	94.30	88 deg F
LWT (F)	85.00	80 deg F

Completed By: Nick Payne on 09/23/2025

National TAB

Project: Warabeya North America (Columbus, OH)

System/Unit: Water Tower

Asset: CT-3 AREA:

Unit Data		
	Design	**Actual**
MFG	NA	BALTIMORE AIRCOIL
Model Num	NA	S3E-8518-077M
Serial Num	-	24391-401

Test Data		
	Design	**Actual**
CW GPM	1313	1440
EWT (F)	94.30	88 deg F
LWT (F)	85.00	80 deg F

Completed By: Nick Payne on 09/23/2025

National TAB

Project: Warabeya North America (Columbus, OH)

System/Unit: Water Tower

Asset: CT-4 AREA:

Unit Data		
	Design	**Actual**
MFG	NA	BALTIMORE AIRCOIL
Model Num	NA	S3E-8518-077M
Serial Num	-	24391-601

Test Data		
	Design	**Actual**
CW GPM	1313	1381
EWT (F)	94.30	88 deg F
LWT (F)	85.00	80 deg F

Completed By: Nick Payne on 09/23/2025