

CHILLER PUMPS SYSTEM POINT LIST		
SYSTEM POINT DESCRIPTION	TYPE	COMMAND
CHILLER 1 (C-1)	-	ENABLE / DISABLE
CHILLER 3 (C-3)	-	ENABLE / DISABLE
CHLR1-ISOLATION VALVES	-	OPEN / CLOSE
CHLR3-ISOLATION VALVES	-	OPEN / CLOSE
CHW PUMP 3 VFD	-	CHLR1 OP/ CHLR3 OP
CHW PUMP 4 VFD	-	CHLR1 OP/ CHLR3 OP
CMP 1 STATUS	-	ON
CWP-2 STATUS	-	OFF
CHWP-3 STATUS	-	OFF
CHWP-4 STATUS	-	ON
CW PUMP REQUEST	-	STOP
CHW PUMP STATUS	-	STOP
CW PUMP 1	-	STOP
CW PUMP 2	-	STOP
CHW PUMP 3	-	STOP
CHW PUMP 4	-	STOP

LOW VOLTAGE WIRING IS BY CONTROL CONTRACTOR. FOR ADDITIONAL POINTS AND PROGRAMMING OF THE EXISTING CONTROLS (AUTOMATIC LOGIC) GENERAL CONTRACTOR TO CONTRACT METRO CONTROL INC. (586) 790-2500. FREQUENCY DRIVES ARE BY MECHANICAL CONTRACTOR, WIRED BY ELECTRICAL CONTRACTOR.

SYMBOL LEGEND		
TWO LINE SYMBOLS	SCHEMATIC SYMBOLS	DESCRIPTION
		EXISTING TO REMAIN
		EXISTING TO BE REMOVED
		NEW WORK
		NEW CONNECTION TO EXISTING
		PIPING ELBOW
		PIPING ELBOW UP
		PIPING ELBOW DOWN
		PIPING TEE
		PIPING TEE UP
		PIPING TEE DOWN
		DIELECTRIC UNION OR FLANGE CONNECTION
		ISOLATION VALVE
		GATE VALVE
		CHECK VALVE
		BUTTERFLY VALVE
		MOTORIZED DEVICE
		SOLENOID VALVE
		BALL VALVE
		GLOBE VALVE
		LUBRICATED PLUG VALVE
		BALANCE VALVE
		CONTROL VALVE - 2 WAY
		CONTROL VALVE - 3 WAY
		BACKWATER VALVE
		STRAINER
		THERMOMETER
		PRESSURE GAUGE WITH BALL VALVE
		CIRCUIT SETTER
		FLOW METER
		PIPE ANCHOR
		PIPE GUIDE
		FLOW ARROW
		CONCENTRIC REDUCER (PIPE OR DUCT)
		ECCENTRIC REDUCER (PIPE OR DUCT)

ABBREVIATIONS	
SYMBOL	DESCRIPTION
ABV	ABOVE
A.F.F.	ABOVE FINISHED FLOOR
A.H.U.	AIR HANDLING UNIT
B.O.D.	BOTTOM OF DUCT
B.O.P.	BOTTOM OF PIPE
CHWP	CHILLED WATER PUMP
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
DN	DOWN
EXH.	EXHAUST
F.D.	FLOOR DRAIN
FLR.	FLOOR
I.E.	INVERT ELEVATION
M.B.H.	THOUSAND BTU/HR (BRITISH THERMAL UNITS PER HOUR)
N.I.C.	NOT IN CONTRACT
P.R.V.	PRESSURE REDUCING VALVE
P.T.	PLUGGED TEE
R.A.	RETURN AIR
R.A.F.	RETURN AIR FAN
S.A.	SUPPLY AIR
SAN	SANITARY PIPE
TYP.	TYPICAL
V	VENT
V.T.R.	VENT THROUGH ROOF

PIPING LEGEND	
SYMBOL	DESCRIPTION
	CHILLED WATER RETURN
	CHILLED WATER SUPPLY

MECHANICAL SHEET INDEX	
SHEET	DESCRIPTION
M-1	MECHANICAL GENERAL INFORMATION
M-2	PENTHOUSE FLOOR & ROOF PLANS

OVERVIEW OF MECHANICAL SCOPE

THIS OVERVIEW OF SCOPE IS INCLUDED TO GIVE THE CONTRACTOR A GENERAL OVERVIEW OF THE PROJECT REQUIREMENTS. THE OVERVIEW IS NOT ALL INCLUSIVE AND IS NOT INTENDED TO, AND SHOULD NOT BE USED TO, ESTABLISH CONTRACT LIMITS OR PRICING INCLUSIONS. THE CONTRACT DOCUMENTS SHALL BE USED TO ESTABLISH CONSTRUCTION CONTRACT SCOPE.

THIS OVERVIEW OF SCOPE INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING:

MECHANICAL:

1. PROVIDE AIR COOLED CHILLER AS SCHEDULED AND SHOWN ON THE DRAWINGS.
2. PROVIDE CHILLED WATER PIPING AND CONNECT TO EXISTING AS SHOWN ON DRAWINGS.
3. REPLACE MOTORS ON EXISTING CHILLED WATER PUMPS.
4. REMOVE EXISTING MEZZANINE PUMP.

PROJECT REQUIREMENTS

PROVIDE ALL NECESSARY PERMITS. ALL WORK SHALL BE INSTALLED TO COMPLY WITH THE OWNER'S STANDARDS, STATE AND LOCAL CODES INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING CODES AND THEIR RELATED REFERENCES.

- 2009 MICHIGAN BUILDING CODE
- 2012 MICHIGAN MECHANICAL CODE
- 2009 MICHIGAN PLUMBING CODE
- 2009 INTERNATIONAL FIRE CODE (AS REFERENCED)
- 2009 INTERNATIONAL FUEL GAS CODE
- NFPA 101 LIFE SAFETY CODE 1997 AND 2006 (AS REFERENCED)
- MICHIGAN ENERGY CODE-ASHRAE 90.1-2007

- 2011 NATIONAL ELECTRICAL CODE AS AMENDED BY THE 2011 MICHIGAN ELECTRICAL CODE RULES, PART 8.
- 2009 MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS

MANUFACTURER AND MODEL NUMBER LISTED REPRESENTS THE BASIS OF DESIGN FOR THIS PROJECT. THE MECHANICAL CONTRACTOR SHALL BEAR ALL ADDITIONAL COST ASSOCIATED WITH USING EQUIPMENT BY OTHER APPROVED MANUFACTURERS INCLUDING ADDITIONAL COSTS BY OTHER TRADES.

ALL EQUIPMENT INSTALLED SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. WHERE FIELD OR PROJECT CONDITIONS DO NOT ALLOW ALL MANUFACTURER'S RECOMMENDATIONS TO BE MET, THE INSTALLING CONTRACTOR SHALL SUBMIT IN WRITING TO THE ENGINEER THE PROPOSED DEVIATION, IN A SKETCH FORM, ACCOMPANIED BY THE MANUFACTURER'S CONCURRENCE.

AIR COOLED CHILLER SCHEDULE																							
MARK	LOCATION	SYSTEM SERVED	NOMINAL CAPACITY (TONS)	EVAPORATOR						CONDENSER				COMPRESSOR					UNIT POWER			BASIS OF DESIGN MODEL NUMBER	REMARKS
				E.W.T. F	L.W.T. F	NO. OF PASSES	GPM	MAX. PRESS. DROP (F.T.)	FLUID	FOULING FACTOR	AMBIENT F	NO. OF FANS	HP EACH	NO.	STEPS UNLOADING %	TYPE	REFRIGERANT	NUMBER OF INDEPENDENT REFRIGERANT CIRCUITS	KW	VOLTAGE	PHASE		
C-3	PENTHOUSE ROOF	HVAC	70	55	45	1	163	14.7	35% PROPYLENE GLYCOL	0.0001	95	6	1.5	4	25-50-75-100	SCROLL	410A	2	80.8	460	3	TRANE CGAM070F2	WITH DISCONNECT, ENHANCED CHILLER ACOUSTICAL INSULATION, SEVEN BLADE CONDENSER FANS WITH TOTALLY ENCLOSED AIR OVER MOTORS.

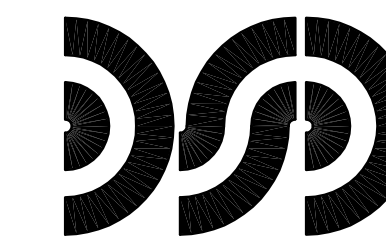
ARCHITECTURAL - MECHANICAL - ELECTRICAL COORDINATION SCHEDULE											
MARK	LOCATION	HP	KW	MCA	ELECTRICAL		DISCONNECT		STARTER		REMARKS
					VOLTAGE	PHASE	FURN.	INST.	FURN.	INST.	
C-3	PENTHOUSE ROOF	-	-	148A	460	3	S	S	S	S	-
CP-3 MOTOR	PENTHOUSE	15			460	3	M	E	M	E	VFD - PROVIDED BY MECHANICAL, INSTALLED BY ELECTRICAL
CP-4 MOTOR	PENTHOUSE	15			460	3	M	E	M	E	VFD - PROVIDED BY MECHANICAL, INSTALLED BY ELECTRICAL

LEGEND

S = SUPPLIER (MANUFACTURER)*
M = MECHANICAL
E = ELECTRICAL
VFD = VARIABLE FREQUENCY DRIVE

C = CHILLER
CP = CHILLED WATER PUMP

* - ITEMS INDICATED AS SUPPLIER SHALL BE PROVIDED WITH THE ITEM/ EQUIPMENT OR BY THE CONTRACTOR PURCHASING THE ITEM/EQUIPMENT



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**CITY OF ANN ARBOR
LARCOM SECONDARY
CHILLER PROJECT
ANN ARBOR, MI**

**MECHANICAL
GENERAL
INFORMATION**

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ISSUED FOR	DATE
OWNER REVIEW	10/18/13
BIDS	11/13/13
ADDENDUM 1	11/25/13

DESIGNER:	SDM
DRAWN:	RJF
PM / PIC:	JSR/LAT
CHECKED:	GDC
ACADFILE:	13-130-M-1
PROJECT No.	13-1310

M-1