

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
		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 EXPANSION LOOP
		PIPE ANCHOR
		PIPE GUIDE
		CONCRETE THRUST BLOCK
		FLOW ARROW
		FIRE DAMPER HORIZONTAL POSITION
		COMBINATION FIRE/SMOKE DAMPER HORIZONTAL POSITION
		FIRE DAMPER VERTICAL POSITION
		COMBINATION FIRE/SMOKE DAMPER VERTICAL POSITION
		FIRE PROTECTION FLOW SWITCH
		FIRE PROTECTION TAMPER SWITCH
		MOTORIZED DEVICE
		SUPPLY AIR CEILING DIFFUSER
		RETURN AIR REGISTER OR GRILLE
		EXHAUST AIR REGISTER OR GRILLE
		FLEXIBLE DUCT
		SPIN-IN FITTING WITH VOLUME DAMPER (TO BOTTOM OF DUCT)
		SPIN-IN FITTING WITH VOLUME DAMPER (TO SIDE OF DUCT)
		CONCENTRIC REDUCER (PIPE OR DUCT)
		ECCENTRIC REDUCER (PIPE OR DUCT)
		THERMOSTAT
		HUMIDISTAT
		TEMPERATURE CONTROL SENSOR

ABBREVIATIONS	
SYMBOL	DESCRIPTION
ABV	ABOVE
A.F.F.	ABOVE FINISHED FLOOR
B.O.D.	BOTTOM OF DUCT
CONN.	CONNECTION
EXH.	EXHAUST
E.R.	EXHAUST REGISTER
F.D.	FIRE DAMPER
FLR.	FLOOR
N.I.C.	NOT IN CONTRACT
NK.	NECK
O.A.	OUTSIDE AIR
R.A.	RETURN AIR
S.A.	SUPPLY AIR
V.D.	VOLUME DAMPER
W.G.	WALL GRILLE

PIPING LEGEND	
SYMBOL	DESCRIPTION
	REFRIGERANT PIPING - SUPPLY
	REFRIGERANT PIPING - RETURN

MECHANICAL SHEET INDEX	
SHEET	DESCRIPTION
M-001	GENERAL MECHANICAL INFORMATION
M-101	BUILDING 1E - MECHANICAL PLANS
M-102	BUILDING 1W - MECHANICAL PLANS
M-103	BUILDING 1W - MECHANICAL PLANS
M-104	BUILDING 1W - MECHANICAL PLANS
M-105	BUILDING 2B, BUILDING 4, BUILDING 3 - MECHANICAL 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 NEW SUPPLY DIFFUSERS WITH ALL RELATED DUCTWORK AND ACCESSORIES.
2. REBALANCE THE SUPPLY AIR SYSTEM.
3. PROVIDE NEW INLINE EXHAUST FAN FOR OR CLOSET, AS INDICATED.
4. PROVIDE NEW A/C UNIT FOR IT ROOMS.

**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
- 2009 MICHIGAN MECHANICAL CODE
- 2009 MICHIGAN PLUMBING CODE
- 2009 INTERNATIONAL FIRE CODE (AS REFERENCED)
- 2009 INTERNATIONAL FUEL GAS CODE
- NFPA 101 LIFE SAFETY CODE 2006
- MICHIGAN ENERGY CODE-ASHRAE 90.1-2007
- 2008 NATIONAL ELECTRICAL CODE
- 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.

ARCHITECTURAL - MECHANICAL - ELECTRICAL COORDINATION SCHEDULE											
MARK	LOCATION	HP	KW	MCA	ELECTRICAL		DISCONNECT		STARTER		REMARKS
					VOLTAGE	PHASE	FURN.	INST.	FURN.	INST.	
EF-1	BUILDING 1E TR CLOSET AB43A AND TR CLOSET AB17	1/6	-	-	120	1	E	E	E	E	PROVIDE DISCONNECT SWITCH. FAN TO RUN CONTINUOUSLY
ACU-1	BUILDING 1E TR CLOSET AB23.1	-	-	0.4	208	1	E	E	S	S	
ACU-2	BUILDING 1E TR CLOSET AB29	-	-	0.6	208	1	E	E	S	S	
ACU-3	BUILDING 3 TR CLOSET 02C	-	-	0.4	208	1	E	E	S	S	
ACU-4	BUILDING 2B TR CLOSET FG86	-	-	0.4	208	1	E	E	S	S	
ACU-5	BUILDING 2B TR CLOSET F145	-	-	0.4	208	1	E	E	S	S	
ACCU-1	BUILDING 1E OUTDOOR	-	-	7.0	208	1	E	E	S	S	
ACCU-2	BUILDING 1E OUTDOOR	-	-	15.0	208	1	E	E	S	S	
ACCU-3	BUILDING 3 OUTDOOR	-	-	7.0	208	1	E	E	S	S	
ACCU-4	BUILDING 2B ROOF	-	-	7.0	208	1	E	E	S	S	
ACCU-5	BUILDING 2B ROOF	-	-	7.0	208	1	E	E	S	S	

**LEGEND**

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

EF = EXHAUST FAN  
ACU = AIR CONDITIONING UNIT  
ACCU = AIR CONDITIONING CONDENSING UNIT

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

INDOOR/OUTDOOR UNIT SCHEDULE																	
MARK	No. OF UNITS	LOCATION	UNIT TYPE	INDOOR UNIT				OUTDOOR UNIT				REMARKS					
				COOLING BTU/H	DRY AIR FLOW	VOLT./PH.	M.C.A. AMPS	MAX. FUSE SIZE	MODEL NO.	CFM	VOLT./PH.		M.C.A. AMPS	MAX. FUSE SIZE	MODEL NO.		
ACU-1	1	BUILDING 1E TR CLOSET	WALL MOUNTED	12,000	325/184	208/1	0.4	15	FTXN12KEVJ	ACCU-1	GROUND	921	208/1	7.0	15	RKN12KEVJ	FOR EACH INDOOR UNIT, PROVIDE CONDENSATE PUMP AND NAVIGATION WIRED REMOTE CONTROLLER. FOR LOCATION COORDINATE WITH GENERAL CONTRACTOR.
ACU-2	1	BUILDING 1E AB23.1	WALL MOUNTED	22,000	572/403	208/1	0.6	15	FTXN24KEVJ	ACCU-2	GROUND	1,752	208/1	15.0	20	RKN24KEVJ	
ACU-3	1	BUILDING 3 C02	WALL MOUNTED	12,000	300/180	208/1	0.4	15	FTXN12KEVJ	ACCU-3	GROUND	921	208/1	7.0	15	RKN12KEVJ	
ACU-4	1	BUILDING 2B FG86	WALL MOUNTED	12,000	300/180	208/1	0.4	15	FTXN12KEVJ	ACCU-4	ROOF	921	208/1	7.0	15	RKN12KEVJ	
ACU-5	1	BUILDING 2B F145	WALL MOUNTED	12,000	300/180	208/1	0.4	15	FTXN12KEVJ	ACCU-5	ROOF	921	208/1	7.0	15	RKN12KEVJ	



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**GENERAL MECHANICAL INFORMATION**  
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ISSUED FOR	DATE
50% OWNER REVIEW	7/29/11
90% OWNER REVIEW	8/26/11
FINAL OWNER REVIEW	9/21/11
BIDS	10/21/11
ADDENDUM No. 2	6/11/2012

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**M-001**