

DO NOT SCALE DRAWINGS USE FIGURED DIMENSIONS ONLY

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FLOOR & ROOF **HVAC PLANS**

7

37410 MICHIGAN AVE. WAYNE, MI

QUICKLANE

DEMMER

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UNIT HEATER CONCENTRIC VENT THROUGH ROOF KIT.

3" PVC WATER HEATER FLUE & COMBUSTION AIR PIPE UP TO CONCENTRIC VENT THROUGH ROOF.

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SUPPLY & EXHAUST HAND/OFF/AUTO FAN STARTERS TO BE INTERLOCKED IN AUTO MODE WITH VEHICLE EXHAUST MONITORING SYSTEM. REFER TO WIRING DIAGRAM ON M-301 FOR MORE INFORMATION.

3" SANITARY VENT THROUGH ROOF

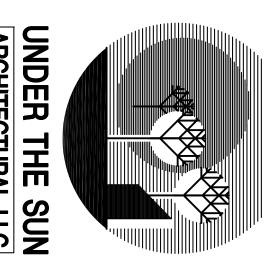
AIR COOLED CONDENSING UNIT. MOUNT ON EQUIPMENT RAILS. ROUTE REFRIGERANT PIPING DOWN THROUGH ROOF TO CEILING MOUNTED CASSETTE.

n o t i c e

CEILING MOUNTED SPLIT SYSTEM HEAT PUMP.

120 VAC THERMOSTAT LOCATED IN THE MEZZANINE COMPRESSOR ROOM SHALL BE INTERLOCKED WITH VARIABLE SPEED EXHAUST FAN AND ASSOCIATED INTAKE AIR HOOD DAMPER.

ARCHITECTURAL LLC 11022 Mourning Dove Lane South Lyon . MI . 48178



ROUTE DUCT DOWN TO BOTTOM OF ROOF JOIST. PROVIDE BELLMOUTH FITTING WITH EXPANDED METAL OVER EXHAUST DUCTS. SUPPLY DUCTS TO BE OPEN END DUCT.

24 V RADIANT TUBE HEATER THERMOSTAT. MOUNT @ 48" A.F.F.

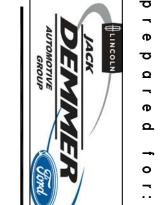
4"Ø RADIANT HEATER FLUE THROUGH ROOF



NEW FULLY ADDRESSABLE CARBON MONOXIDE AND NITROGEN DIOXIDE SENSORS WITH DIGITAL DISPLAY. MOUNT EACH SENSOR AT MANUFACTURES RECOMMENDED MOUNTING HEIGHTS.

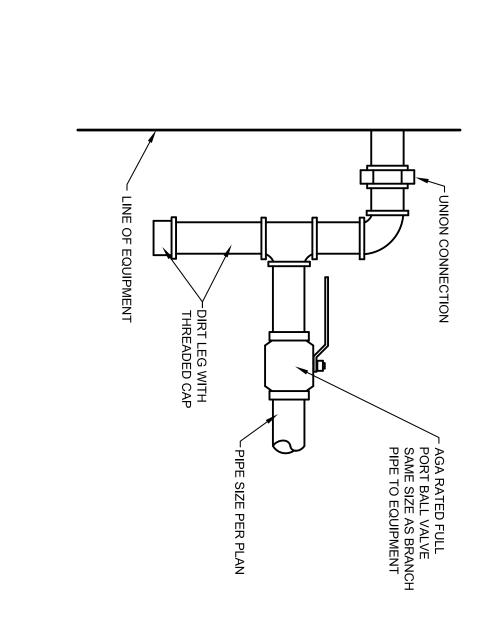
NEW CARBON MONOXIDE / NITROGEN DIOXIDE CONTROL PANEL.

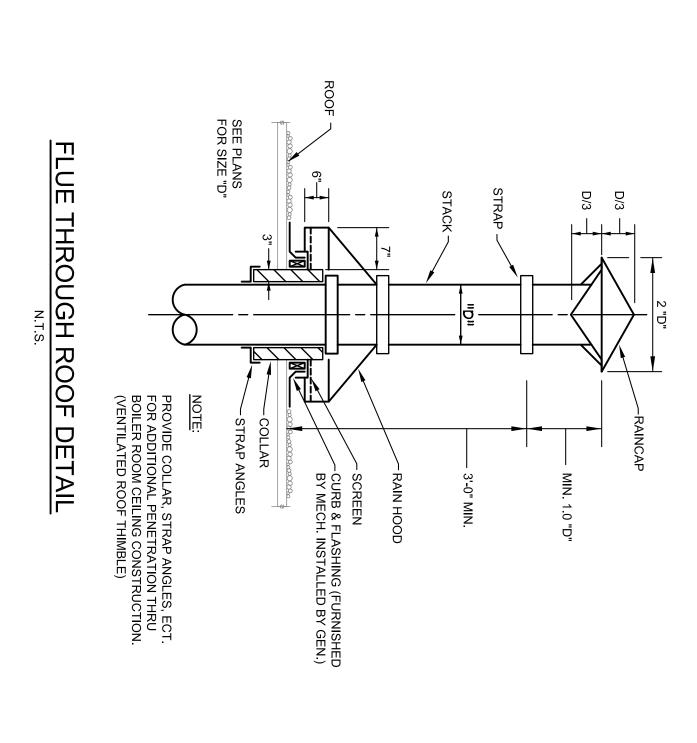
PROGRAMMABLE THERMOSTAT WITH CLEAR LOCKABLE COVER. COORDINATE FINAL LOCATION WITH OWNER & ARCHITECT. MOUNT @ 48" ABOVE FINISHED FLOOR TO MATCH ADJACENT LIGHT SWITCHES.



GAS PIPE EQUIPMENT CONNECTION DETAIL

N.T.S.



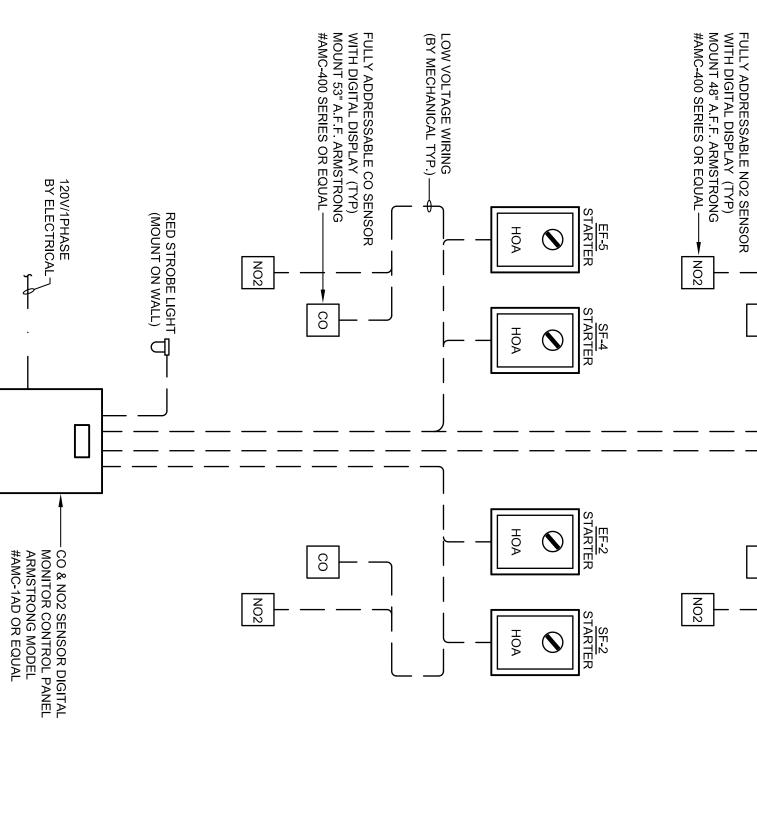


THE VEHICLE EXHAUST SYSTEM SHALL PRODUCE A VISUAL AND AUDIBLE ALARM ONCE CO OR NO2 LEVELS REACH PREDETERMINED LEVELS. THE ALARM SHALL CLOSE A SET OF DRY CONTACTS WHICH ACTIVATE EXHAUST & SUPPLY FANS WHICH OPERATE TO PURGE THE SPACE. THE FANS SHALL OPERATE FOR AN ADDITIONAL TWO MINUTES (ADJUSTABLE) ONCE THE AREA IS PURGED.

CARBON MONOXIDE / NITROGEN DIOXIDE

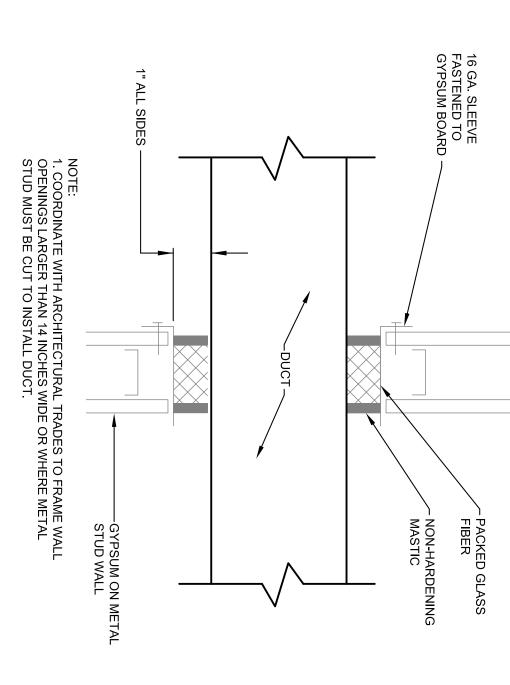
ALARM SYSTEM DIAGRAM

ALARM CONDITION



DUCT SEAL AT NON RATED WALLS

INTAKE HOOD DETAIL



8

8

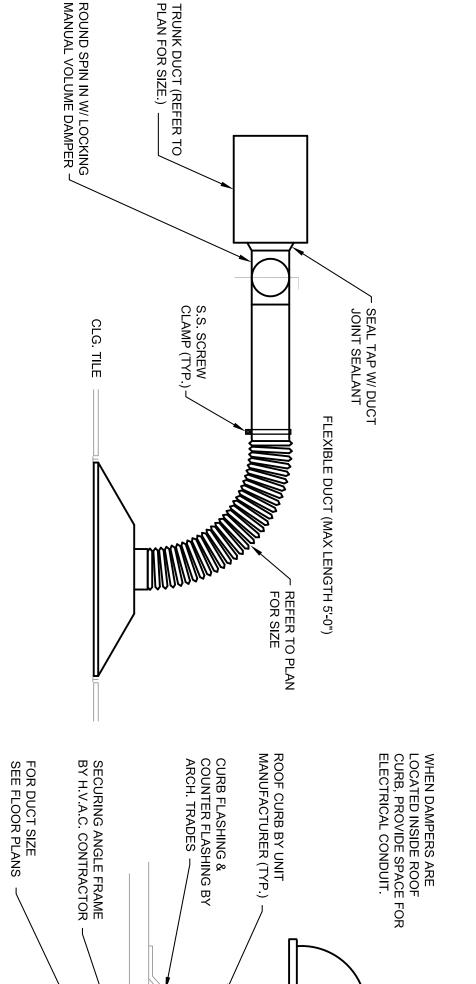
SF-1 STARTER

НОА

SPIN-IN AND CEILING DIFFUSER DETAIL

N.T.S.

EXHAUST FAN DETAIL

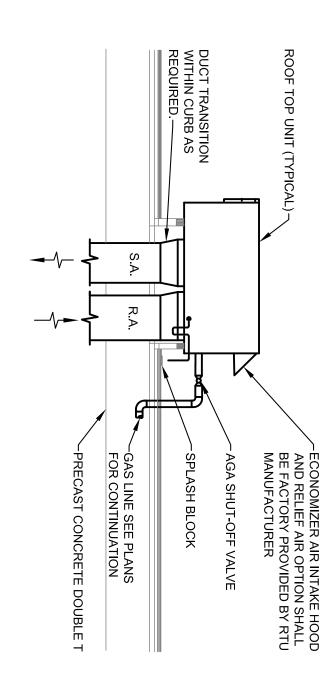


24" MIN. OR PER LOCAL AND STATE CODE. DUCTWORK, SEE PLAN FOR CONTINUATION AND SIZE. SECURING ANGLE FRAME BY H.V.A.C. CONTRACTOR 0 0 OPPOSED BLADE MOTOR OPERATED OUTSIDE AIR DAMPERS WITH SPRING RETURN TYPE DAMPER MOTOR FOR AIR INTAKE. – BURGLAR BARS " x 6" O.C. BY GENERAL CONTRACTOR EACH WAY ON ALL OPENINGS 12" AND LARGER. ROOF CURB AND FLASHING BY GENERAL CONTRACTOR (TYP.) ROOF - BIRDSCREEN (ALL FOUR SIDES).

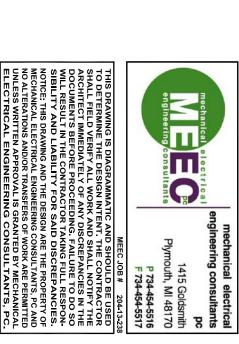
TYPICAL ROOFTOP UNIT DETAIL

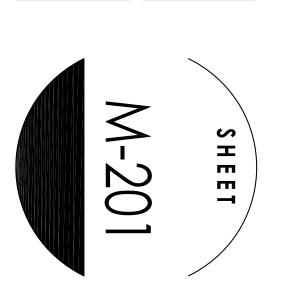
ANGLE SUPPORT TIED DOWN TO ALL FOUR SIDES.

MECHANICAL CONTRACTOR SHALL NOTIFY GENERAL CONTRACTOR OF WEIGHT OF EACH ROOFTOP UNIT TO BE USED AS SOON AS IT BECOMES AVAILABLE.

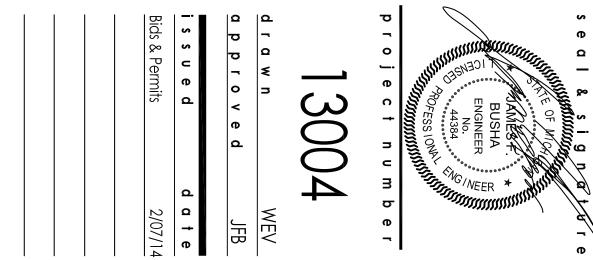


SELF-ACTI DAMPERS				
- SELF-ACTIVATED BACKDRAFT DAMPERS	12" MIN.	BIRDSCREEN ALL AROUND	EXHAUST FAN CURB CAP	FROM AIR INTAKES
NOTE:		DUCT TRANSITION WITHIN CURB AS REQUIRED. S.A. R.A.	ROOF TOP UNIT (TYPICAL)	











HVAC DETAILS

37410 MICHIGAN AVE WAYNE, MI

QUICKLANE

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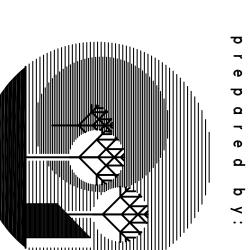
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UNDER ARCHITECTURAL LLC THE SUN





prepared

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repared for:

ROOF TOP UNIT SCHEDULE

ACCESSORIES:
1. UNIT CAPACITIES SHALL BE BASED ON A.R.I. CONDITIONS.
2. 7-DAY PROGRAMMABLE THERMOSTAT WITH FAN/OCCUPIED PROGRAMMING AND AUTO CHANGE OVER
3. FACTORY MOUNTED FUSED DISCONNECT SWITCH WITH PHASE MONITOR.
4. 100% COMPARATIVE ENTHALPY "ECONOMIZER" CONTROLS.
5. UNIT MOUNTED R.A. SMOKE DETECTOR

USA MASTER: 24X36,DWG (09/13)

MARK

6. U.L. LISTED
7. ASHRAE 90.1-2007 COMPLIANT.
8. 14" PREFABRICATED ROOF CUF
9. FILTER/DRIER
10.CRANKCASE HEATER

CONVIENENCE OUTLET

			틴	ELECTRIC UNIT	C UNIT	HEATE	HEATER SCHEDULE	EDUL	М	
MARK	MANUFACTURER	MANUFACTURER MODEL NUMBER	AREA SERVED	AIRFLOW CFM	KW OUTPUT	HEAT OUTPUT (BTUH)	VOLTAGE	PHASE	AMPS	NOTES
EUH-1	MARKEL	F3453	SEE PLANS	230	3.0	10,239	208	1	14.4	1, 2, 3, 4, 5

NOTES:
1. BUILT-IN 2-STAGE ST.
2. UNIT MOUNTED DISC
3. SUPPORT BRACKET

					(BIUH)					
1ARKEL	F3453	SEE PLANS	230	3.0	10,239	208	1	14.4	1, 2, 3, 4, 5	
۹L: MARKEL, I	۹L: MARKEL, INDEECO, BRASCH, Q MARK)	Q MARK)								
GE STAT AND	GE STAT AND RELAYS WHICH ARE OPERATED BY AN INTERNAL 24 VOLT SOURCE	RE OPERATED BY /	AN INTERNAL 2	4 VOLT SOUF	℃E.	4. U.L. LISTED) THERM	OSTAT WITH	CONTROL TRANSFORMER	
DISCONNECT SWITCH.	OT SWITCH.					5. REMOTE 2	4V. THERM	OSTAT WITH	5. REMOTE 24V. THERMOSTAT WITH CONTROL TRANSFORMER.	

1	MONE DE LENUN	ALUMINUM	LAY-IN	HIHW	48"x4"	48"x4"	48" / ASTI210 / 2 / 8"	PRICE	LD-1
1, 2	SQUARE O.B.D.	ALUMINUM	SURFACE	WHITE	8x"8	6"x6"	8"x8" 80 /F/A/B12	PRICE	EG-1
1, 2	-	ALUMINUM	LAY-IN	WHITE	24"x24"	22"x22"	24"x24" 80 /F/A/B12	PRICE	RG-2
1, 2	-	ALUMINUM	LAY-IN	WHITE	12"x24"	10" Ø	12"x24" 80 /F/A/B12	PRICE	RG-1
1	-	STEEL	LAY - IN	WHITE	24"x24"	10" Ø	10" / 24"x24" /SPD/31/B12	PRICE	CD-3
1	-	STEEL	LAY - IN	WHITE	24"x24"	8" Ø	8" / 24"x24" /SPD/31/B12	PRICE	CD-2
1	-	STEEL	SURFACE	BLIHM	12"x12"	6" Ø	6" / 12"x12" /SPD/31/B12	PRICE	CD-1
NOTES	ACCESSORY	CONSTRUCTION	MOUNTING TYPE	FINISH	DIFFUSER SIZE	NECK SIZE	MODEL NUMBER	MANUFACTURER	MARK
	LE	S SCHEDUI	DIFFUSER	S AND	GRILLES REGISTERS AND DIFFUSERS SCHEDULE	GRILLE			

NOTES:

1. REFER TO REFLECTED CEILING PLAN FOR LOCATIONS. PROVIDE ALL ACCESSORIES NEEDED TO PROPERLY MOUNT DEVICES.

2. 1/2"x1/2" ALUMINUM EGGCRATE GRID.

			INFRA-RED TUBE	RED TUE		HEATER SCHEDULE	EDULE			
MARK	MANUFACTURER	MODEL NUMBER	LOCATION	TYPE	UNIT LENGTH	MOUNTING		GAS DATA		NOTES:
						חבופח	TYPE	MBH (HIGH FIRE)	MBH (LOW FIRE)	
IRH-1	RE-VERBA-RAY	HL-3-30-75	SEE PLANS	VENTED	31'-3"	18'-0"	NATURAL	75	50	1, 2, 3, 4, 5
IRH-2	RE-VERBA-RAY	HL-3-20-75	SEE PLANS	VENTED	21'-7"	18'-0"	NATURAL	75	50	1, 2, 3, 4, 5
IRH-3	RE-VERBA-RAY	HL-3-20-75	SEE PLANS	VENTED	21'-8"	18'-0"	NATURAL	75	50	1, 2, 3, 4, 5
IRH-4	RE-VERBA-RAY	HL-3-50-150	SEE PLANS	VENTED	50'-7"	18'-0"	NATURAL	150	100	1, 2, 3, 4, 5
IRH-5	RE-VERBA-RAY	HL-3-50-150	SEE PLANS	VENTED	50'-7"	18'-0"	NATURAL	150	100	1, 2, 3, 4, 5
(APPROVED EQUA	(APPROVED EQUAL: SOLARONICS, SPACERAY)	ACERAY)								

UNIT TAG

NOTES:
1. DIRECT SPARK IGNITION
2. 24V HEATING THERMOSTAT
3. WEATHERPROOF ROOF EXHAUST CAP

A.G.A. CERTIFIED
 12 GA. HEAT EXCHANGER TUBE

				INTAKE AIR H	AIR HOOI	100D SCHEDULE	LE		
MARK	MANUFACTURER MODEL NUMBER	MODEL NUMBER	HOOD DIMENSIONS	THROAT DIMENSIONS	INTAKE (CFM)	STATIC PRESSURE	THROAT AREA (SQ.FT.)	THROAT VELOCITY (FPM)	NOTES
IAH-1	GREENHECK	FABRA HOOD	22"x24"x14"	18"x18"	1,000	0.046	2.25	444	1, 2, 3

NOTES:
1. PROVIDE GALVANIZED BIRDSCREEN - 0.5 IN MESH TYPE.
2. PROVIDE 12" HIGH, 1" INSULATED ROOF CURB.
3. PROVIDE 120 VAC INTERNAL MOUNTED DAMPER. (SHIPPED LOOSE)

			GAS	GAS FIRED UNIT		HEATER SCHEDULE	ULE				
			-)) !	! } !	AIR QUANTITY	1 1 1 1	ALVO SVÐ	DATA	ELECTRICAL DATA	_DATA	; ; ;
MAXX	MANUTAC I URER MODEL NUMBER	MODEL NOMBER	LOCATION	l Y P E	CFM	FUEL IYPE	INPUT CFH	OUTPUT MBH	VOLTAGE / PHASE	MOTOR HP	NO Fr
UH-1	REZNOR	UDAS30	SEE PLANS	HORIZONTAL PROP.	456	NAT.	30	24.6	120/1	.02	1,2,3,4
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	ADDDOVED FOLIAL DOVANT LENNOW										

NOTES:

1. VERTICAL CONCENTRIC VENT KIT.

2. SPARK IGNITION SYSTEM

THERMOSTAT FOR REMOTE MOUNTING.
 A.G.A. CERTIFIED.

D UNIT HEATER SCHEDULE	
	•

MANUFACTURER MODEL NUMBER LOCATION TYPE AIR QUANTITY FUEL TYPE INPUT OUTPUT VOLTAGE / HP
LOCATION TYPE CFM FUEL TYPE INPUT OUTPUT CFH MBH
REZNOR UDAS30 SEE PLANS HORIZONTAL 456 NAT. 30 24.6 120/1

_							1	က	_	2
]] 1	EF-4	EF-3	EF-2	EF-1	MARK			97.2	MBH	ОПТРПТ
	GREENHECK	GREENHECK	GREENHECK	GREENHECK	MANUFACTURER			6	CMINO	SNOT IANIMON
	G-143-VG	G-095-VG	G-143-VG	G-099-VG	MODEL NUMBER			71.31		TOTAL MBH
	SERVICE BAYS	COMPRESSOR ROOM	SERVICE BAYS	SERVICE BAY	BER AREA SERVED			52.78		SENSIBI E MBH
								76.2	D.B.	E
)))	ROOF	ROOF	ROOF	ROOF	LOCATION	EX		63.6	W.B.	E.A.T. (°F)
	2,000	1,000	2,000	1,000	AIRFLOW (CFM)					
						FA		55.8	D.B.	L.A.7
2	0.25	0.25	0.25	0.25	EXTERNAL S.P.	HAUST FAN SCHEDULE		53.3	W.B.	L.A.T. (°F)
4 400	1,189	1,716	1,189	1,499	FAN (RPM)	ULE		208/3	PHASE	VOLTS
					M)			36.5	Š	MOA
)	0.34	0.14	0.34	0.16	FAN (BHP)			50	<u> </u>	MOD
	4 1/2	1/6	4 1/2	5 1/4	HP) FAN (HP)			963		OPERATING WEIGHT (LBS.)
	1	1	1	1	IP) ELECT			1,		
i	115/	115/	115/	15/	:CT			1, 2,		

GREENHECK G-070-VG G-143-VG BATHROOMS ROOF 2,000 250 0.25 1,489 0.02 1/6 115/1/60 15/1/60 CTRICAL 5/1/60 5/1/60 1,2,3,4,5,6,7 1,2,3,4,5,6 1,2,3,4,5,6 1,2,3,4,5,6 NOTES

(APPROVED EQUAL: ACME, COOK, PENN VENTILATOR)

EF-6

NOTES:

1. FAN SHALL HAVE AMCA SEAL & BE U.L. 705 LISTED.

2. FAN SHALL HAVE GALVANIZED BIRD SCREEN.

3. SAFETY DISCONNECT SWITCH (BY ELECTRICAL).

4. PROVIDE STANDARD 1" INSULATED 12" TALL ROOF CURB.

MARK

SF-2

SF-1

PROVIDE DUCT MOUNTED GRAVITY BACKDRAFT DAMPER.
 PROVIDE HIGH EFFICENCY BRUSHLESS (EC) MOTOR WITH MOUNTED POTENTIOMETER DIAL.
 PROVIDE VARIABLE SPEED CONTROL FROM ROOM THERMOSTAT.

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UNDER THE SUN

ARCHITECTURAL LLC

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project title

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QUICKLANE

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ł				S	SUPPLY FA	FAN SCHEDULE	JLE				
	MANUFACTURER	MODEL NUMBER	AREA SERVED	LOCATION	AIRFLOW (CFM)	EXTERNAL S.P.	FAN (RPM)	FAN (BHP)	FAN (HP)	ELECTRICAL	NOTES
	GREENHECK	AS-12-433-A	SERVICE BAY	ROOF	1,000	0.25	1,579	0.09	1/4	115/1/60	1,2,3,4,5,6
	GREENHECK	AS-14-440-A	SERVICE BAY	ROOF	2,000	0.25	1,655	0.29	1/2	115/1/60	1,2,3,4,5,6
	GREENHECK	AS-14-440-A	SERVICE BAY	ROOF	2,000	0.25	1,655	0.28	1/2	115/1/60	1,2,3,4,5,6
	GREENHECK	AS-14-440-A	SERVICE BAY	ROOF	2,000	0.25	1,655	0.28	1/2	115/1/60	1,2,3,4,5,6
ÜΙ) EQUAL: ACME, COO	ED EQUAL: ACME, COOK, PENN VENTILATOR)	2)								

SF-4

SF-3

NOTES:

1. FAN SHALL HAVE AMCA SEAL & BE U.L. 705 LISTED.

2. FAN SHALL HAVE GALVANIZED BIRD SCREEN.

3. SAFETY DISCONNECT SWITCH (BY ELECTRICAL).

PROVIDE DUCT MOUNTED GRAVITY BACKDRAFT DAMPER.
 PROVIDE SOLID STATE SPEED CONTROL, 5 AMP (SHIPPED LOOSE)
 PROVIDE STANDARD 1" INSULATED 12" TALL ROOF CURB.

	7		
109	101	ROOM NUMBER	
218	943	AREA SQ. FT. (Az)	
RECEPTION	LOBBY	2009 MMC OCCUPANCY CLASSIFICATION	
.06	.06	AREA OUTDOOR AIRFLOW RATE (Ra) CFM/SQ. FT.	
13	57	AREA OUTDOOR AIR (Ra) × (Az) CFM	OUTDO
30	10	OCCUPANT DENSITY RATE #/1000 SQ. FT.	OUTDOOR AIR (
7	10	ZONE POPULATION (Pz=Az(#/1000)) PEOPLE	CALCULATION SCHEDULE
5	5	PEOPLE OUTDOOR AIRFLOW RATE (Rp) CFM/PERSON	TION SCH
35.0	50.0	OCCUPANT OUTDOOR AIR (Rp) x (Pz) CFM	IEDULE
48.1	106.6	BREATHING ZONE OUTDOOR AIR (Vbz=RpPz+RaAz) CFM	
0.8	0.8	ZONE AIR DISTRIBUTION EFFECTIVENESS (Ez)	
60.1	133.2	ZONE OUTDOOR AIRFLOW REQUIRED (Voz=Vbz/Ez) CFM	
190	200	TOTAL OUTDOOR AIR REQUIRED WITHIN ZONE CFM	

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DO NOT SCALE DRAWINGS USE FIGURED DIMENSIONS ONLY

s h e e t

37410 MICHIGAN AVE. WAYNE, MI

HVAC SCHEDULES

SPLIT SYSTEM AIR CONDITIONER & AIR COOLED CO	
INDENSING UNIT SCHEDULE	

		N N N N N N N N N N N N N N N N N N N	
FILITSII	MODEL NOMBER		
ASU9RLS	MODEL NOMBEN		EVA
3,600-12,000	(BTUH)	TOTAL	EVAPORATOR SECTION
3,600-12,000 3,000-22,000	(BTUH)	TOTAL	TION
430,353,265	(CFM)	AIRFLOW	
FED FROM ACCU-1	VOLTAGE / PHASE	ELECTRICAL DATA	
\CCU-1	MFS	_DATA	
ACCU-1	N. C.	MARK	
USTILUA	MONET ACCIONED	MANI IEACTI IDED	AIR COC
AOU9RLS	אוכטרר אפאטרי		AIR COOLED CONDENSER SECTION
208-230 / 1 2.6	VOLTAGE / PHASE	ELECTF	SECTION
2.6	AMPS	ELECTRICAL DATA	
15	MFS	TA	
R-410a		REFRIGERANT	
1,2,3,4		NOTES	

Bids & Permits

approved

WEV

JFB

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m b e r

NOTES:

1. PROVIDE WIRED REMOTE CONTROLLER #UTY-RNBYU+.

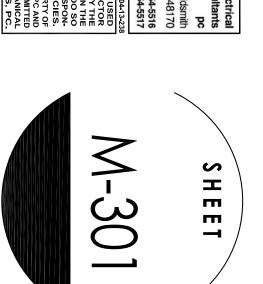
2. PROVIDE 3-POLE SINGLE THROW SAFETY SWITCH #K3PST FOR INTERIOR UNIT.

3. REFRIGERANT PIPING TO BE SIZED BY CONTRACTOR AND APPROVED BY MANUFACTURER.

4. PROVIDE LOW AMBIENT KIT FOR OPERATION DOWN TO 0°F.

+ 2	GALVANIZED STEEL	OUTSIDE AIR INTAKE DUCTWORK
- 2	GALVANIZED STEEL - LINED GALVANIZED STEEL (WHERE INDICATED ON DRAWINGS)	RETURN AIR
-2	GALVANIZED STEEL	EXHAUST AIR
+ 2	GALVANIZED STEEL	SUPPLY AIR
DESIGN PRESSURE CLASSIFICATION (INCHED, WG)	<u>MATERIAL</u>	AIR SYSTEM
DULE	DUCTWORK APPLICATION SCHEDULE	LONG





HVAC GENERAL REQUIREMENTS:

- PROVIDE MATERIALS AND EQUIPMENT AND EXECUTE THE WORK, INCLUDING ALL TESTING AND INSPECTIONS, IN COMPLIANCE WITH THE APPLICABLE PROVISIONS OF FEDERAL, STATE AND LOCAL GOVERNMENT LAWS, ORDINANCES, REFERENCED CODES AND STANDARDS CURRENT AS OF THE ISSUE DATE OF THESE DRAWINGS. ALL MORE STRINGENT REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL MODIFY, SUPPLEMENT AND SUPERSEDE APPLICABLE PORTIONS OF GOVERNING LAWS, ORDINANCES, CODES AND STANDARDS.
- CONTRACTOR SHALL PRESENT CERTIFICATE TO THE TENANT AND LANDLORD THAT ALL APPLICABLE BUILDING PERMITS HAVE BEEN SECURED PRIOR TO STARTING ANY WORK, AND PROVIDE THE TENANT AND LANDLORD WITH ALL REQUIRED CERTIFICATES OF FINAL APPROVAL FROM THE GOVERNING JURISDICTIONS AT COMPLETION OF THE WORK. PROVIDE ALL SHOP DRAWINGS AS REQUIRED IN FOLLOWING SECTIONS.
- COORDINATE EXACT LOCATION OF CONSTRUCTION TO PRECLUDE ANY INTERFERENCES BETWEEN PIPING, WIRING, LIGHTING FIXTURES, DUCTWORK, BUILDING EQUIPMENT, PROCESS EQUIPMENT AND OTHER CONSTRUCTION.
- PROVIDE LABOR, INCLUDING FIELD ERECTION AND SUPERVISION, MATERIALS, EQUIPMENT AND ANCILLARIES, AND COORDINATE, PROCURE, FABRICATE, DELIVER, ERECT OR INSTALL, INTERFACE WITH EXISTING WORK, START, DEBUG AND TEST ALL SYSTEMS AS NECESSARY TO PROVIDE THE OWNER WITH A COMPLETE, OPERATING FACILITY IN CONFORMANCE WITH THE CONSTRUCTION BID DOCUMENTS.
- ALL CUTTING AND PATCHING THAT MAY BE NECESSARY FOR THE INSTALLATION OF THE MECHANICAL CONTRACTOR'S WORK SHALL BE PERFORMED AND REPAIRED BY THE TRADE WHOM NORMALLY PERFORMS THAT WORK AND PAID FOR BY THE MECHANICAL CONTRACTOR. NO CUTTING / ALTERATION OF THE BUILDING STRUCTURAL SYSTEM SHALL BE PERFORMED WITHOUT THE WRITTEN CONSENT OF THE LANDLORD AFTER ARCHITECT HAS APPROVED AND SIGNED OFF.
- THE MECHANICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING HIS BID TO FAMILIARIZE HIMSELF WITH THE ACTUAL PROJECT CONDITIONS AND TO CHECK FOR ANY INTERFERENCES BETWEEN HIS WORK AND THAT OF THE OTHER TRADES, AND/OR ANY APPARENT VIOLATIONS OF LOCAL OR STATE CODES, LAWS, ORDINANCES AND REGULATIONS. SHOULD ANY VIOLATIONS OR INTERFERENCES APPEAR AND DEPARTURE FROM THE DESIGN INTENT OF THE CONTRACT DOCUMENTS IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO ENTERING INTO A CONTRACT WITH THE OWNER. FAILURE TO PROVIDE THE ARCHITECT WITH THE AFOREMENTIONED NOTIFICATION SHALL RESULT IN THE CONTRACTOR BEING HELD RESPONSIBLE TO COMPLETE ALL WORK TO MEET THE INTENT OF THE CONTRACT DOCUMENTS WITH NO ADDITIONAL EXPENSES BEING INCURRED BY THE OWNER.
- THE DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL LOCATIONS AND ARRANGEMENTS OF ALL THE EQUIPMENT AND PIPING. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS BUILDING CONSTRUCTION AND ALL OTHER WORK WILL PERMIT. DO NOT SCALE DRAWINGS FOR EXACT MEASUREMENTS.
- GENERAL NOTES: PIPING SHOULD THE CONTRACTOR SUBMIT ANY SHOP DRAWINGS FOR REVIEW THAT VARY FROM WHAT THE CONSTRUCTION BID DOCUMENTS INDICATE, THE CONTRACTOR SHALL PAY THE ENGINEER FOR REVIEWING HIS SUBMISSION.
- 2 THE PIPING SYSTEMS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL STATE AND LOCAL CODES. THE PIPING CONTRACTOR SHALL OBTAIN ALL PERMITS, PAY FOR ALL FEES, AND ARRANGE FOR ALL INSPECTIONS FOR HIS WORK. AT THE COMPLETION OF THE PROJECT, THE PLUMBING CONTRACTOR SHALL FURNISH THE OWNER WITH CERTIFICATES OF FINAL INSPECTIONS AND APPROVALS.

ALL PIPING SHALL BE CONCEALED UNLESS OTHERWISE MUST HAVE APPROVAL OF THE ARCHITECT.

NOTED. EXPOSING OF

ANY PIPING

GAS PIPING:

PIPING SHALL BE AS FOLLOWS:

- GAS PIPING SHALL BE SCHEDULE 40, BLACK STEEL WITH THREADED OR WELDED FITTINGS AS REQUIRED. PROVIDE SHUT-OFF COCKS ON ALL OUTLETS WHERE SHOWN.
- 2) VALVES SHALL NOT BE LOCATED IN ANY AIR PLENUM. PORTIONS OF A GAS PIPING SYSTEM INSTALLED IN CONCEALED LOCATIONS SHALL NOT HAVE UNIONS, TUBE FITTINGS, OR RUNNING THREADS.
- PAINT ALL NATURAL GAS PIPING ON ROOF YELLOW. PAINT ALL VERTICAL PIPING EXTERIOR WALL TO MATCH BUILDING COLOR.

- <u></u> GAS VALVE SHALL BE LUBRICATED TYPE CAST IRON OR U.L. LISTED TWO PIECE BRONZE BALL VALVE WITH RPTFE SEALS AND SEAT.
- 0 PIPING SHALL BE SUPPORTED FROM HANGERS AT AN ADEQUATE DISTANCE WITH SUPPORTING HANGER RODS FASTENED TO THE BUILDING FRAMING WHENEVER POSSIBLE. ISOLATE PIPING AND EQUIPMENT FROM THE BUILDING STRUCTURE WITH INSULATING HANGERS AND FITTINGS AS REQUIRED TO PREVENT GALVANIC CORROSION OF THE BUILDING PIPING SYSTEMS.
- ALL SERVICES SHALL BE PROPERLY SLEEVED WHEN ROUTED THROUGH FLOORS AND WALLS. CONTRACTOR TO PROVIDE FIRE RESISTANT ROPE PACKING FOR ALL PIPES PENETRATING FIRE RATED WALLS. CONTRACTOR SHALL OBTAIN A COPY OF THE ARCHITECTURAL DRAWINGS TO IDENTIFY FIRE RATED WALLS.
- THE PIPING CONTRACTOR SHALL VERIFY EXACT LOCATIONS AND PROVIDE ROUGH-INS ALL EQUIPMENT FURNISHED BY OTHER CONTRACTORS. AFTER ALL EQUIPMENT HAS INSTALLED BY OTHER CONTRACTORS, THE PIPING CONTRACTOR SHALL MAKE ALL FOUNDECTIONS AND SHALL INCLUDE IN HIS BASE BID ALL VALVES, UNIONS, COUPLINGS, THAT ARE REQUIRED TO MAKE FINAL CONNECTIONS.
- THE PIPING CONTRACTOR SHALL OBTAIN OTHER TRADES DRAWINGS AND COORDINATE HIS WORK WITH THE TOTAL PROJECT AS IT RELATES TO ALL TRADES AND VISIT THE PROJECT SITE PRIOR TO SUBMITTING HIS BID TO FAMILIARIZE HIMSELF WITH THE ACTUAL PROJECT CONDITIONS AND TO CHECK FOR ANY INTERFERENCES BETWEEN HIS SCOPE OF WORK AND THAT OF THE OTHER TRADES, AND/OR ANY APPARENT VIOLATIONS OF LOCAL OR STATE BUILDING CODES, LAWS, ORDINANCES, AND REGULATIONS. IF ANY INTERFERENCES OR VIOLATIONS APPEAR AND DEPARTURE FROM THE INITIAL DESIGN INTENT OF THE CONSTRUCTION BID DOCUMENTS IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT WITH THE AFOREMENTIONED NOTIFICATION SHALL RESULT IN THE CONTRACTOR BEING HELD RESPONSIBLE TO COMPLETE ALL WORK TO MEET THE INTENT OF THE CONSTRUCTION BID DOCUMENTS WITH NO ADDITIONAL COSTS BEING INCURRED BY THE OWNER.
- <u>10</u> THE CONTRACTOR SHALL SUBMIT EQUIPMENT SHOP DRAWINGS TO THE REVIEW PRIOR TO INSTALLATION OF ANY OF THE FOLLOWING EQUIPMENT: ARCHITECT
- GAS PIPING AND FITTINGS
- THE CONTRACTOR SHALL GUARANTEE ALL WORK INSTALLED UNDER THIS CONTRACT TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR AFTER THE ACCEPTANCE OF THE BUILDING BY THE OWNER, AND SHOULD DEFECTS OCCUR WITHIN THIS PERIOD, REPAIR AND/OR REPLACE DEFECTIVE ITEMS AND ANY DAMAGE RESULTING FROM FAILURE OF THESE ITEMS, AT NO EXPENSE TO THE OWNER.

- 12 IANUFACTURED SUPPORTS EQUAL TO MIRO INDUSTRIES 3-R, SPACED 10'-0" ON ALL FITTINGS FOR SUPPORT OF ALL GAS PIPING RUN ON ROOF. FASTEN GAS LY TO EACH SUPPORT AND PROVIDE SPACERS AS REQUIRED TO ADJUST FOR ITHOUT STRESSING THE PIPING.

- 5
- 16. THE CONTRACTOR SHALL COORDINATE HIS ROUGH-IN WORK WITH THE DIMENSIONED DRAWINGS FURNISHED BY THE FOOD SERVICE EQUIPMENT CONTRACTOR.
- SHEET METAL DUCTWORK CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "SMACNA" STANDARDS, NFPA 90A AND 96, AND THE LATEST EDITION OF THE ASHRAE GUIDE AND DATA BOOKS. ALL DUCTWORK SIZES INDICATED ON THE PLANS ARE THE INTERNAL DIMENSIONS AND DUCTWORK SIZES SHALL BE INCREASED ACCORDING SHOULD DUCTWORK BE INTERNALLY LINED WITH INSULATION. ALL DUCTWORK SHALL BE SEALED AIR TIGHT AND SHALL NOT ALLOW MORE THAN 10% AIR LEAKAGE THROUGHOUT THE ENTIRE SYSTEM.
- PROVIDE VOLUME DAMPERS IN THE DUCT SYSTEMS WHERE SHOWN ON PLANS AND WHERE REQUIRED TO INSURE PROPER SYSTEM BALANCING. SPIN-IN FITTINGS WITH MANUAL VOLUME DAMPERS MAY BE USED.

- DUCTWORK INSU JLATION:

- 0
- SUMMER: SIDE TEMP: JTSIDE TEMP: 76.0°F D.B. & 50% R.H. 91.1°F D.B. & 75.3°F W.B

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13004

SYMBOLS, ABBREV

HVAC NOTES,

QUICKLANE

DEMMER

37410 MICHIGAN AVE WAYNE, MI

ject title

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& SPECIFICATIONS

DO NOT SCALE DRAWINGS USE FIGURED DIMENSIONS ONLY

- SHEET METAL RUN-OUTS AND FLEX DUCT CONNECTIONS TO AIR DISTRIBUTION DEVICES SHALL BE THE SAME SIZE AS THE DEVICE NECK, UNLESS OTHERWISE NOTED.
- 12 DUCTS CONNECTING TO HVAC EQUIPMENT SHALL BE THE SAME SIZE AS EQUIPMENT DUCT CONNECTIONS, UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL SUBMIT EQUIPMENT SHOP DRAWINGS TO THE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION OF ANY OF THE FOLLOWING:

- 15 THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONTROL AND INTERLOCK WIRING UNLESS OTHERWISE NOTED ON THE DRAWINGS. MECHANICAL CONTRACTOR SHALL PAY AND COORDINATE WITH THE ELECTRICAL CONTRACTOR ALL HIGH VOLTAGE WIRING THAT IS REQUIRED FOR INTERLOCKING OF CONTROLS.
- 16

ELBOW - RADIUS (R) = 1.5 TIMES DIAMETER OF DUCT

- 17.
- MECHANICAL (
 ALL CONTROL CONTRACTOR SHALL TEST ALL CONTROL ELEMENTS, VERIFY CALIBRATION OF DEVICES AND MAKE ADJUSTMENTS AS REQUIRED AT COMPLETION OF PROJECT.

- THE CONTRACTOR SHALL COORDINATE LOCATIONS OF HIS EQUIPMENT AND WORK WITH OTHER BUILDING TRADES TO AVOID ANY INTERFERENCES BETWEEN HIS WORK AND THE WORK OF OTHER TRADES.
- ANY CUTTING AND/OR PATCHING, THAT MAY BE REQUIRED FOR THE INSTALLATION OF THE PIPING SYSTEMS, SHALL BE PERFORMED BY THE ARCHITECTURAL TRADES AND PAID FOR BY THIS CONTRACTOR. NO CUTTING OF THE BUILDING STRUCTURAL SYSTEM SHALL BE PERFORMED WITHOUT WRITTEN APPROVAL OF THE ARCHITECT BEING OBTAINED.
- A SEPARATE REFRIGERATION CONTRACTOR SHALL INSTALL COOLER AND FREEZER REFRIGERATION SYSTEMS. COMPRESSORS, COILS, CONTROLS, AIR COOLED CONDENSING UNITS, AND VALVES SHALL BE FURNISHED BY THE REFRIGERATION EQUIPMENT SUPPLIER. THIS CONTRACTOR SHALL INCLUDE PROVIDING REFRIGERATION LINES, NECESSARY FITTINGS, CHARGING SYSTEM WITH REFRIGERANT, INSULATION, AND CONNECTIONS TO COMPRESSORS AND COILS.
- SYSTEM SPECIFICATIONS:

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- PROVIDE FLEXIBLE DUCT CONNECTORS ON ALL DUCT CONNECTIONS TO AIR HANDLING EQUIPMENT.
- THE CONTRACTOR SHALL SUBMIT TO THE ARCHITECT A COMPLETE AIR BALANCE REPORT OF ALL AIR HANDLING SYSTEMS. THE REPORT SHALL INCLUDE FAN RPM, TOTAL STATIC PRESSURE, MOTOR RATED AMPACITY, MOTOR OPERATING AMPACITY, ENTERING AND DISCHARGE AIR TEMPERATURES, AIR QUANTITIES AT ALL DIFFUSERS AND GRILLES, A DIAGRAM OF THE AIR HANDLING SYSTEM INSTALLED, AND RECOMMENDATIONS TO CORRECT ANY DEFICIENCIES. THE AIR BALANCE REPORT SHALL BE PERFORMED BY AN INDEPENDENT N.E.B.B. CERTIFIED AIR BALANCE CONTRACTOR.
- ALL CONCEALED SUPPLY AND RETURN AIR DUCTWORK INSIDE OF THE BUILDING SHALL BE INSULATED WITH DUCT WRAP OF 1" MINIMUM THICKNESS AND 1-1/2# DENSITY, WITH VAPOR BARRIER. JOINTS SHALL BE STAPLED AND TAPED.
- DUCTWORK EXCEEDING INSULATION SHALL HAVE A FLAME 25/50 PER NFPA PAMPHLET 90A. SPREAD/SMOKE DENSITY RATING NOT
- VIBRATION ABSC TRANSMISSION C PER ASHRAE STA ORBING SUPPORTS SHALL BE INSTALLED ON ALL EQUIPMENT TO PREVENT OF VIBRATION AND NOISE TO THE STRUCTURE. PROVIDE VIBRATION ISOLATION ANDARDS.
- ALL MECHANICAL EQUIPMENT LOCATED ON THE ROOF SHALL BE PROPERLY SUPPORTED WITH PRE-FABRICATED CURBS, EQUIPMENT RAILS, OR OTHER MEANS AS APPROVED BY THE ARCHITECT.
- HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS ARE DESIGNED ON THE FOLLOWING CONDITIONS:
- INSIDE TEMP: OUTSIDE TEMP:

- 3 AIR DISTRIBUTION DEVICE LOCATIONS INDICATED ON THE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL AIR DISTRIBUTION DEVICES WITH ARCHITECTURAL PLANS AND/OR ELECTRICAL PLANS PRIOR TO INSTALLATION. LIGHT FIXTURES AND SPRINKLER HEAD LOCATIONS SHALL TAKE PRECEDENCE OVER AIR DISTRIBUTION DEVICES, UNLESS OTHERWISE NOTED.

- ROOFTOP UN SUPPLY & EX DUCTWORK & AIR DISTRIBL ELECTRIC UN RADIANT HEA INTAKE AIR H JNITS
 EXHAUST FANS
 K & ACCESSORIES
 BUTION DEVICES
 UNIT HEATERS
- APPROVAL OF SH CONSTRUCTION THE WORK OF COTHER TRADE'S I APPROVAL OF SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR RESPONSIBILITY TO CONFORM TO THE DESIGN INTENT OF THE BID DOCUMENTS. SHOP DRAWINGS IS INTENDED TO BE FOR GENERAL CONFORMANCE WITH THE DOCUMENTS ONLY. ANY EQUIPMENT THAT IS INSTALLED THAT WILL INVOLVE OTHER TRADES SHALL BE COORDINATED WITH THOSE TRADES. REFER TO BID DOCUMENTS.

- CONTRACTOR SHALL PROVIDE BUILDING OWNER WITH OPERATING AND MAINTENANCE MANUALS FOR ALL H.V.A.C. EQUIPMENT UPON COMPLETION OF PROJECT.

- ALL MECHANICAL RELATED CORING THROUGH WALLS AND FLOORS SHALL BE BY PENETRATIONS THROUGH RATED WALLS AND FLOORS WITH U.L. RATED CAULK SI SPECIFICATION REQUIREMENTS.

COORDINATE NEW DUCTWORK WITH BUILDING STRUCTURAL CONDITIONS, ALL OTHER TRADES TO AVOID INTERFERENCES.

MECHANICAL GENERAL NOTES:

EQUIPMENT MANUFACTURER RECOMMENDATIONS AND

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epared for:

PROVIDE ACCESS AROUND ALL NEW EQUIPMENT PER MANUFACTURERS RECOMMENDATIONS.

- MECHANICAL CONTRACTOR. SEAL ALL EALANT IN ACCORDANCE WITH THE
- COORDINATE ALL DUCTWORK ROUTING WITH ARCHITECTURAL AND STRUCTURAL TRADES TO AVOID INTERFERENCES. ALL DUCTWORK SHALL BE ROUTED AS HIGH AS POSSIBLE IN EXPOSED CEILING AREAS OR AT ELEVATIONS LISTED ON DRAWINGS.
- ALL NEW DUCT SIZES TO DIFFUSERS SHALL MATCH NECK SIZE OF DIFFUSER, REGISTER OR GRILLE. ARCHITECTURAL AND ELECTRICAL REFLECTED
- COORDINATE EXACT LOCATIONS OF DIFFUSERS AND RETURN AIR GRILLES WITH CEILING PLANS AND ARCHITECTURAL INTERIOR ELEVATIONS AND SECTIONS.
- COORDINATE ALL T-STAT AND REMOTE SENSOR HEIGHTS ABOVE FINISHED FLOO R WITH ARCHITECTURAL TRADES
- BALANCE ALL AIR SYSTEMS TO VALUES INDICATED ON DRAWINGS.
- ALL FLEXIBLE DUCTWORK SHALL BE LIMITED TO 5'-0" MAXIMUM LENGTH FROM HARD DUCT CONNECTION TO ROUND NECK SUPPLY AIR DIFFUSERS. FLEX DUCT APPROVED ABOVE ACCESSIBLE CEILING AND ON SUPPLY AIR DUCT ONLY.

UNDER

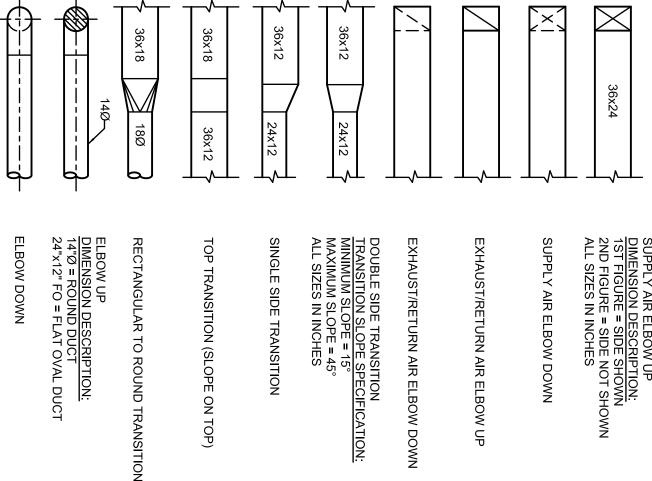
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ARCHITECTURAL LLC

11022 Mourning Dove Lane South Lyon . MI . 48178

			36x24 -) (3) (<u>S</u>)		Vo		F.DMPR.	F.DMPR.		I		SYMBOL	HVAC
EXHAUST/RETURN AIR ELBOW UP		SUPPLY AIR ELBOW DOWN	1ST FIGURE = SIDE SHOWN 2ND FIGURE = SIDE NOT SHOWN ALL SIZES IN INCHES	THERMOSTAT OR SENSOR SUPPLY AIR ELBOW UP DIMFNSION DESCRIPTION:	NITROGEN DIOXIDE SENSOR	CARBON MONOXIDE SENSOR	V CECIMIE DAMI EIX			VERTICAL FIRE DAMPER	HORIZONTAL FIRE DAMPER	SPIN-IN FITTING WITH VOLUME DAMPER	SUPPLY AIR DIFFUSER	RETURN / EXHAUST AIR GRILLE	DESCRIPTION	SYMBOLS
W.B.	۷D	T.A.D. (TYP)	S.A.	RG-# RPM RTU-#	O.E.D.	O.A.	MAU-#	₽	F-DMPR	EUH-#	(E) E.A. EG.# ERH-#	D.B. DIA / Ø	CP# CL CL CLG	B.O.D.	AFF A.L.	AB
WET BULB TEMPERATURE	VOLUME DAMPER	TRANSFER AIR DUCT TYPICAL	SUPPLY AIR GRILLE SUPPLY AIR	RETURN AIR GRILLE RELATIVE HUMIDITY REVOLUTIONS PER MINUTE ROOFTOP UNIT	RETURN AIR	NOT TO SCALE OUTSIDE AIR	MAKE UP AIR UNIT	INSIDE DIAMETER	FIRE DAMPER	ELECTRIC UNIT HEATER	EXISTING EXHAUST AIR EXHAUST FAN EXHAUST GRILLE ELECTRIC RADIANT HEATER	DRY BULB TEMPERATURE DIAMETER	CEILING DIFFUSER CUBIC FEET PER MINUTE CENTERLINE CEILING	BOTTOM OF DUCT	ABOVE FINISHED FLOOR ACOUSTIC DUCT LINER	ABBREVIATIONS

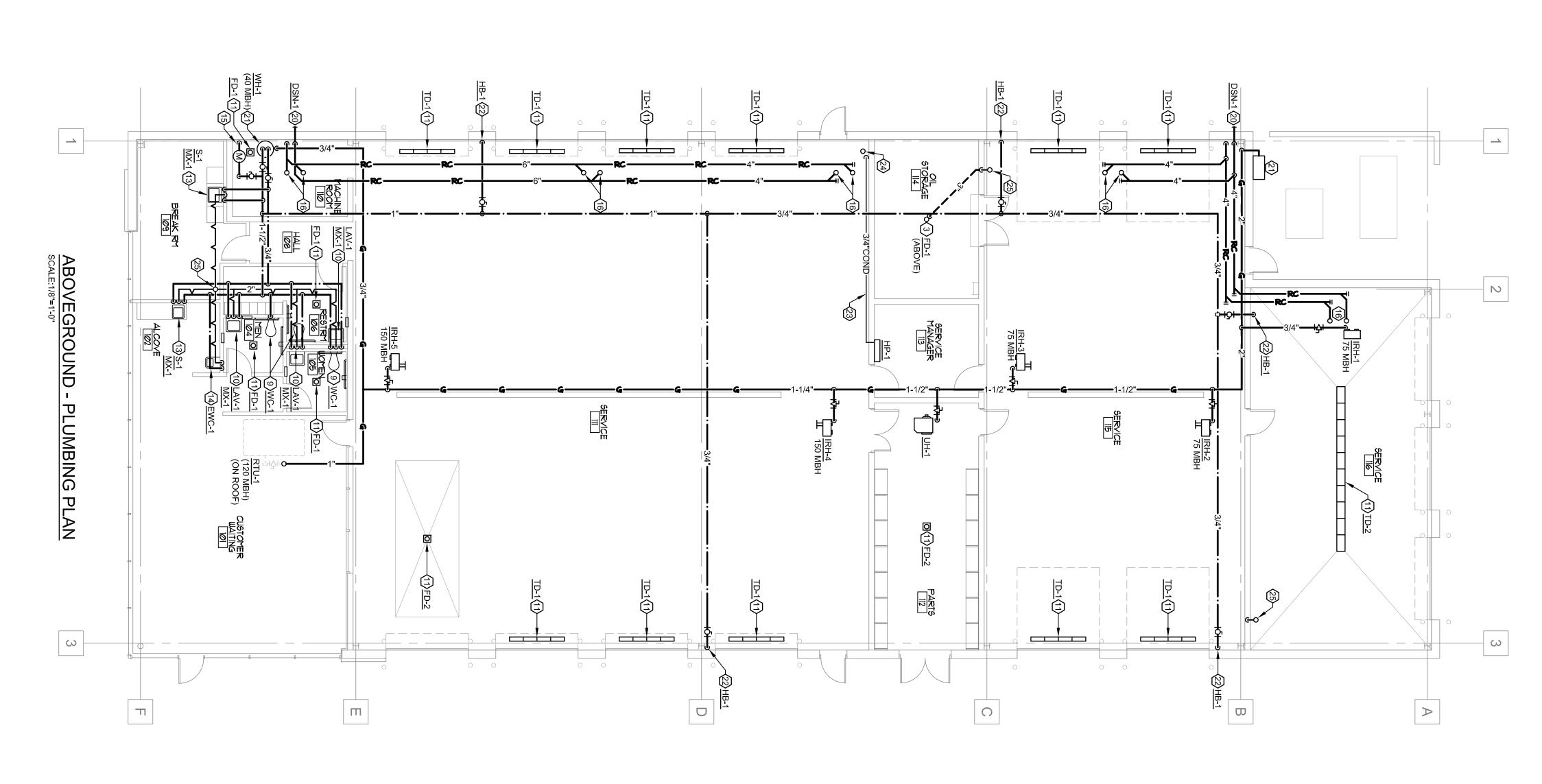




SHEET







KEYED NOTES: (#)

repared for:

4" SANITARY UP TO WATER CLOSET FLOOR FLANGE.

- 3" UNDERGROUND SANITARY WITH 2" UP IN WALL TO LAVATORY. 3" SANITARY WITH P-TRAP UP TO FLOOR DRAIN.
- 3" SANITARY WITH P-TRAP UP TO SERVICE SINK. 4" SANITARY UP TO FLOOR CLEANOUT.

prepare d

ь У.:

- 4" SANITARY WITH P-TRAP UP TO TRENCH DRAIN.
- 4" SANITARY WITH P-TRAP UP TO FLOOR DRAIN. 3" UNDERGROUND SANITARY WITH 2" UP IN WALL TO SINK.
- 3" UNDERGROUND SANITARY WITH 2" UP IN WALL TO ELECTRIC WATER COOLER. 1/2" HOT AND COLD WATER WITH 1-1/2" SANITARY AND VENT TO LAVATORY. PROVIDE THERMOSTATIC MIXING VALVE UNDER LAVATORY.
- COORDINATE FINAL FLOOR/TRENCH DRAIN LOCATION WITH FLOOR SLOPE. 1/2" HOT AND COLD WATER WITH 1-1/2" SANITARY AND VENT TO SINK. PROVIDE THERMOSTATIC MIXING VALVE UNDER SINK. 1" COLD WATER WITH DOWN TO WATER CLOSET FLUSH VALVE.

UNDER

THE SUN

ARCHITECTURAL LLC

4" RAIN CONDUCTOR PIPE UP TO ROOF SUMP. INSULATE SUMP PAN AND ALL HORIZONTAL RAIN CONDUCTOR PIPING. 1-1/2" DOMESTIC WATER SERVICE. COORDINATE WITH CIVIL TRADES FOR CONTINUATION. 11022 Mourning Dove Lane South Lyon . MI . 48178

1/2" COLD WATER AND 1-1/2" SANITARY WASTE AND VENT TO ELECTRIC WATER COOLER.

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4" SANITARY MAIN TO 5'-0" FROM BUILDING. COORDINATE FINAL TIE-IN LOCATION AND INVERT ELEVATION WITH CIVIL TRADES.

6" OIL SANITARY MAIN TO 5'-0" FROM BUILDING. COORDINATE FINAL TIE-IN LOCATION AND INVERT ELEVATION WITH CIVIL TRADES.

6" RAIN CONDUCTOR TO 5'-0" FROM BUILDING. COORDINATE FINAL TIE-IN LOCATION AND INVERT ELEVATION WITH CIVIL TRADES.

project title

DEMMER

NATURAL GAS METER SIZED FOR 750 CFH @ 7" W.C.

6" OVERFLOW RAIN CONDUCTOR DOWN TO 18" A.F.G. TO TERMINATE AT WALL MOUNTED DOWNSPOUT NOZZLE <u>DSN-1</u>.

QUICKLANE

ROUTE CONDENSATE ALONG WALL AND DOWN WALL TO SPILL TO HUB OUTLET. PROVIDE 1" AIR GAP.

3/4" COLD WATER DOWN TO 24" A.F.F. TO HOSE BIBB. PROVIDE HOSE BIBB WITH ATMOSPHERIC VACUUM BREAKER.

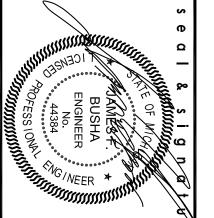
3" SANITARY VENT THROUGH ROOF. INSTALL A MINIMUM OF 10'-0" FROM ROOFTOP UNIT OUTDOOR AIR INTAKE OPENING.

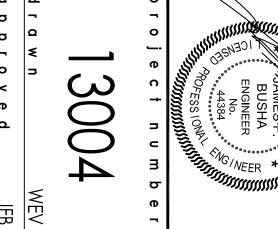
3" CAST IRON HUB OUTLET WITH P-TRAP. EXTEND PIPE 3" A.F.F.

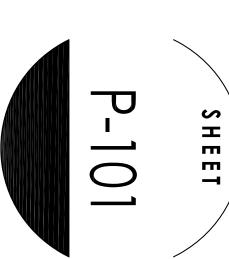
37410 MICHIGAN AVE. WAYNE, MI

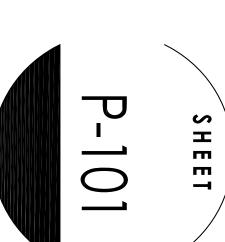
UNDERGROUND &

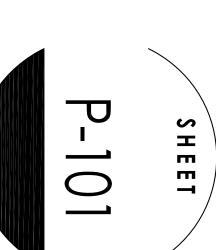
PLUMBING PLANS **ABOVEGROUND** DO NOT SCALE DRAWINGS USE FIGURED DIMENSIONS ONLY









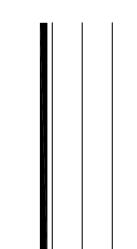


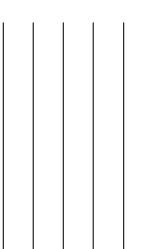
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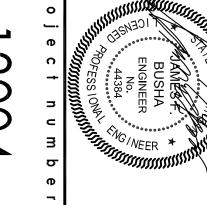
P-201 SHEET

electrical populations on sultants



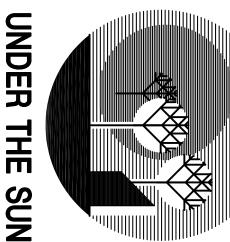


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DO NOT SCALE DRAWINGS USE FIGURED DIMENSIONS ONLY



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SUPPORT (FIELD SUPPLIED)

SUPPORT (FIELD SUPPLIED)

ь у:

JNION CONNECTION

~ AGA RATED FULL PORT BALL VALVE SAME SIZE AS BRANCH PIPE TO EQUIPMENT

ROOF BOOT (FIELD SUPPLIED) -

COMBUSTION AIR

prepare d

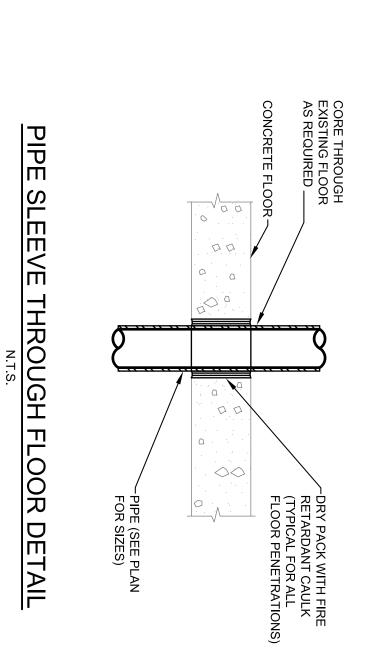
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ALL RIGHTS ARE HEREBY RESERVED. n o t i c e **PLUMBING DETAILS** UNDER ARCHITECTURAL LLC o j e c t title 11022 Mourning Dove Lane South Lyon . MI . 48178 QUICKLANE UNDER THE SUN, LLC COPYRIGHT YEAR 2013 37410 MICHIGAN AVE WAYNE, MI 13004 DEMMER WEV JFB

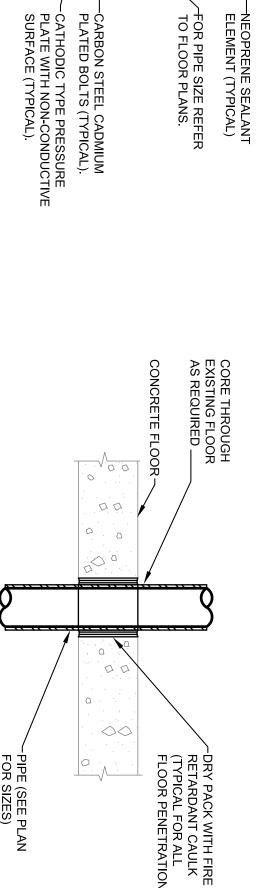
RADIANT HEATER N.G. CONNECTION DETAIL FLEXIBLE CONNECTOR. RADIANT TUBE BURNER CONTROL BOX DRIP LEG



TYPICAL DETAIL OF WATERTIGHT SEAL AND SLEEVE

THRU EXTERIOR WALL

N.T.S.





TYPICAL

ROOF SUMP WITH OVERFLOW DETAIL

DETAIL OF ROOF GAS PIPE SUPPORT

<u>NOTE:</u> PROVIDE PIPE SUPPORT EVERY 10' AND AT ALL FITTINGS

NOTES:

1. PLUMBING AND ARCHITECTURAL TRADES SHALL COORDINATE ALL REQUIREMENTS TO ASSURE PROPER WATERTIGHT INSTALLATION.

PREFABRICATED SUPPORT EQUAL TO MIRO INDUSTRIES MODEL RAH P

COORDINATE ROOF SUMP AND OVERFLOW SUMP LOCATIONS WITH ARCHITECTURAL AND STRUCTURAL ROOF PLANS.

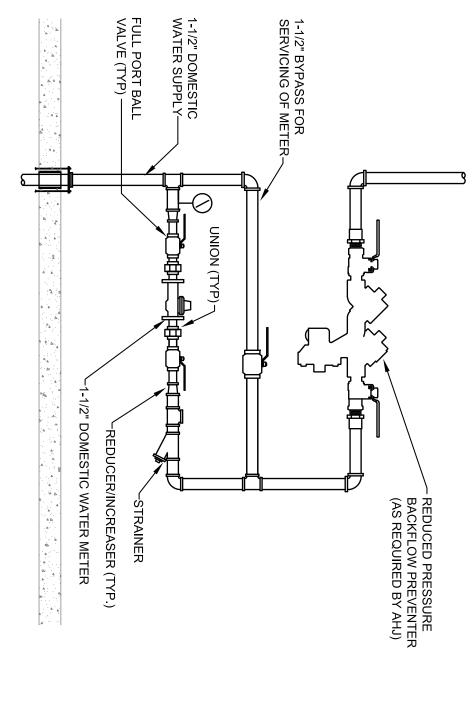
CHECK WITH LOCAL AUTHORITIES FOR EXACT METER PLACEMENT AND ORIENTATION

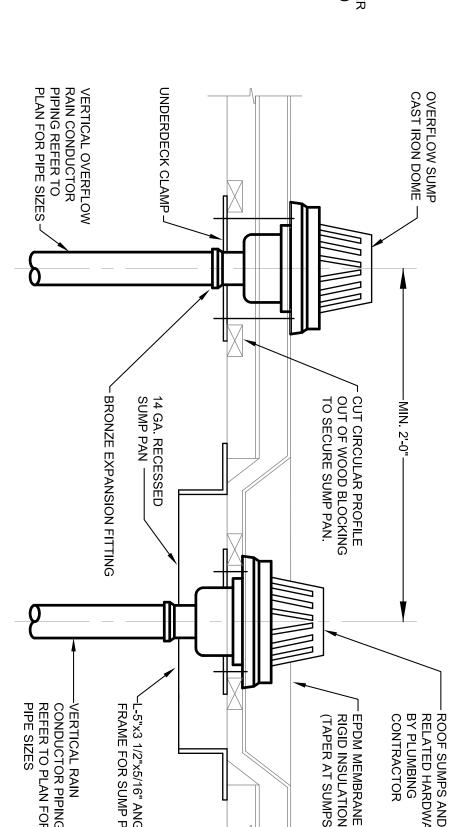
WATER STOP AND ANCHOR COLLAR, WELDED TO SLEEVE (TYPICAL).————

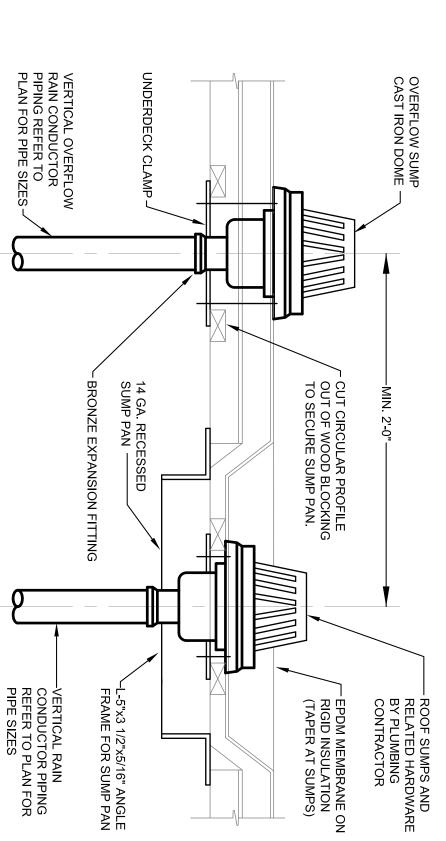
NEOPRENE SEALANT ELEMENT (TYPICAL)

EXTERIOR WALL

FOR PIPE SIZE REFER TO FLOOR PLANS.







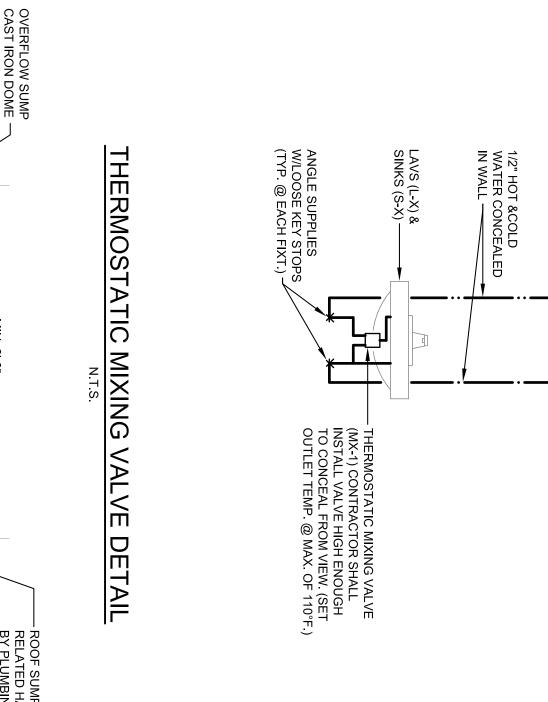
ADJUST HEIGHT SUPPORT TO ACCOMMODATE ROOF PITCH

GAS PIPE EQUIPMENT CONNECTION DETAIL

N.T.S.

CONCENTRIC VENT ROOF DETAIL

-3" PVC COMBUSTION AIR

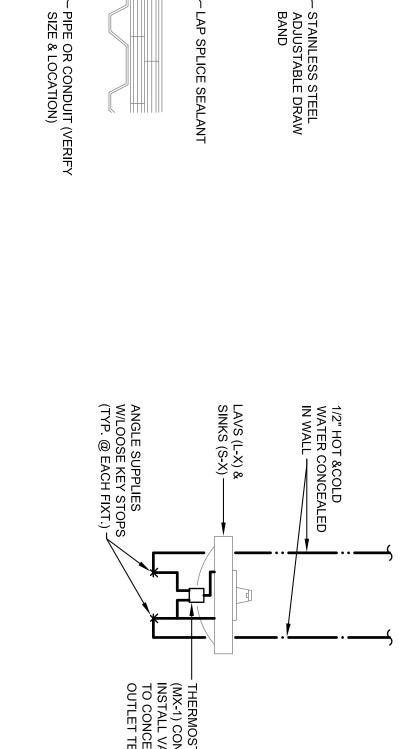


PIPE PENETRATION AND ROOF FLASHING DETAIL

RIGID INSULATION

METAL DECK

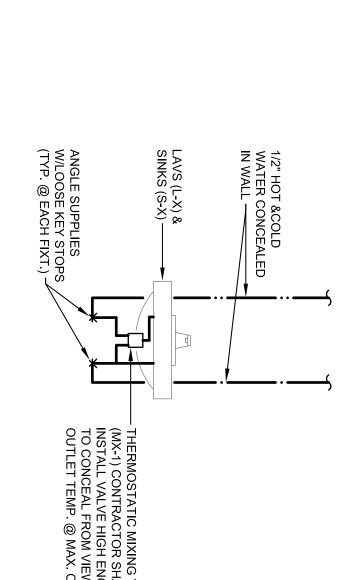
EPDM ROOF MEMBRANE



-DIRT LEG WITH THREADED CAP

0

PIPE SIZE PER PLAN



USA MASTER: 24X36,DWG (09/13)

APPROVED PLUMBING FIXTURE MANUFACTURERS: AMERICAN STANDARD, MANSFIELD, CRANE, TOTO, ELKAY, KOHLER, ZURN, FIAT, FLORESTONE, MUSTEE.
APPROVED PLUMBING HARDWARE MANUFACTURERS: AMERICAN STANDARD, DELTA, KOHLER, CHICAGO, SLOAN, ZURN, TOTO.
(FIXTURES TO BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF "THE BARRIER FREE DESIGN REQUIREMENTS OF THE MICHIGAN CONSTRUCTION CODE".)

NOTES: 1. PROVIDE PLASTIC TYPE PIPE COVERS EQUAL TO TRUEBRO "LAV GUARD" ON ALL ACCESSIBLE LAVATORIES AND SINKS.

		E	_ECTRIC	ELECTRIC WATER		ER SC	COOLER SCHEDULE			
MADI))	CAPACITY		ELECTRICAL		NOTES:
<u> </u>	מבועס דאני בער ה	WOODE NOWBERN		-176	AUA	G.P.H.	WATTS	F.L.A.	VOLT / PHASE	NO FIG.
EWC-1	ELKAY	EZS8	STAINLESS	STAINLESS WALL MOUNT	ADULT & CHILD	8	370	4.0	120 / 1	1, 2

NOTES: 1. PROVIDE OPTIONAL STAINLESS STEEL CABINET 2. NO LEAD DESIGN

		GAS F	GAS FIRED DOMESTIC	MESTIC	WATER	VATER HEATER SCHEDULE	SCHED	ULE	
					CAPACITIES		GAS DATA	АТА	
MARK	MANUFACTURER MODEL NUMBER	MODEL NUMBER	LOCATION	RECOVERY GPH	STORAGE GALLONS	TEMP. RISE DEG. F	INPUT CFH	TYPE	NOTES
WH-1	A.O. SMITH	GPDH-40	SEE PLANS	41	40	90	40	NAT.	1, 2, 3, 4
			11)						

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epared for:

USA MASTER: 24X36,DWG (09/13)

NOTES:
1. TEMPERATURE AND PRESSURE REFIEF VALVE
2. MAGNESIUM TANK SAVER ANODE ROD
3. A.G.A. CERTIFIED
4. 3" PVC FLUE AND COMBUSTION AIR PIPING.

			F	FLOOR DRAIN		SCHEDULE			
AGVIN		MODEL	NOT	ворү	GRATE	ATE	STDAINED	PIPE SIZE	NOTES:
MANN	MANOTAC TOTAL	NUMBER	FOCATION	MATERIAL	TYPE	FINISH	0 723	(IN.)	NO EG.
FD-1	ZURN	ZN415-6B	SEE PLAN	DUCO CAST IRON	6" DIA.	NICKEL BRONZE	NONE	3"	1
FD-2	ZURN	Z504	SEE PLAN	DUCO CAST IRON	12" DIA.	CAST IRON	NONE	4"	1
(APPROVEC	(APPROVED EQUAL: JOSAM, JR SMITH, SIOUX CHIEF, MIFAB)	SMITH, SIOUX CHIE	EF, MIFAB)						

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UNDER THE SUN, LLC COPYRIGHT YEAR 2013

QUICKLANE

DEMMER

37410 MICHIGAN AVE WAYNE, MI

n o † i c e

UNDER THE SUN

ARCHITECTURAL LLC

11022 Mourning Dove Lane South Lyon . MI . 48178

<u>NOTES:</u> 1. PROVIDE "SURESEAL" IN LINE TRAP SEAL.

			ΤF	TRENCH DRAIN		SCHEDULE			
MADK	MANHIEACTHEED	MODEL	NOIT CO.	BODY	GRATE	ίΤΕ		PIPE SIZE	NOTES:
S A	MANOTAC TOZET	NUMBER		MATERIAL	TYPE	FINISH		(IN.)	NO E
TD-1	ZURN	Z886-HD	SEE PLAN	HDPE	CG - SLOTTED GRATE	CAST IRON	6" x 80"	4"	1, 2, 3
TD-2	ZURN	Z882	SEE PLAN	HDPE	DGC - SLOTTED GRATE	DUCTILE IRON	12" x 240"	4"	1, 2
(APPROVEI	(APPROVED EQUAL: JOSAM, ZURN, SIOUX CHIEF, MIFAB)	RN, SIOUX CHIEF, N	/IIFAB)						

NOTES:
1. PROVIDE END OUTLET WITH 4" NO-HUB FITTING.
2. BODY SHALL HAVE .75% BUILT-IN SLOPE.
3. PROVIDE OPTIONAL HD FRAME ASSEMBLY.

			RO	ROOF DRAIN	N SCHEDULE	Ē	
MARK	MANIIEACTIBEB		BODY	DOME	ИE	PIPE SIZE	NOTES:
WARK	וייבייסן אלי סאבי	MODEL NOMBER	MATERIAL	MATERIAL	SIZE	(IN.)	NOTES.
RD-1	ZURN	Z100	DUCO CAST IRON	POLYETHYLENE	15"Ø	4	
ORD-1	ZURN	Z100-W3	DUCO CAST IRON	POLYETHYLENE	15"Ø	4	1
DSN-1	ZURN	Z199	NICKEL BRONZE	-	-	6"	

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DO NOT SCALE DRAWINGS USE FIGURED DIMENSIONS ONLY

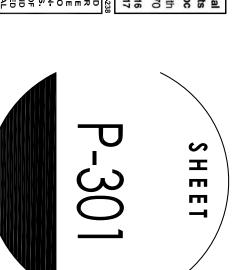
SCHEDULES

PLUMBING

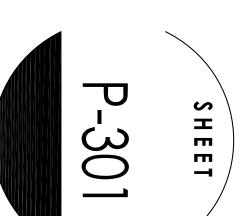
(APPROVED EQUAL: JOSAM, ZURN, MIFAB)

NOTES: 1. INTERNAL 3" WATER DAM.









PLUMBING GENERAL REQUIREMENTS:

USA MASTER: 24X36,DWG (09/13

- ____ PROVIDE MATERIALS AND EQUIPMENT AND EXECUTE THE WORK, INCLUDING ALL TESTING AND INSPECTIONS, IN COMPLIANCE WITH THE APPLICABLE PROVISIONS OF FEDERAL, STATE AND LOCAL GOVERNMENT LAWS, ORDINANCES, REFERENCED CODES AND STANDARDS CURRENT AS OF THE ISSUE DATE OF THESE DRAWINGS. ALL MORE STRINGENT REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL MODIFY, SUPPLEMENT AND SUPERSEDE APPLICABLE PORTIONS OF GOVERNING LAWS, ORDINANCES, CODES AND STANDARDS.
- CONTRACTOR SHALL PRESENT CERTIFICATE TO THE TENANT AND LANDLORD THAT ALL APPLICABLE BUILDING PERMITS HAVE BEEN SECURED PRIOR TO STARTING ANY WORK, AND PROVIDE THE TENANT AND LANDLORD WITH ALL REQUIRED CERTIFICATES OF FINAL APPROVAL FROM THE GOVERNING JURISDICTIONS AT COMPLETION OF THE WORK. PROVIDE ALL SHOP DRAWINGS AS REQUIRED IN FOLLOWING SECTIONS.
- COORDINATE EXACT LOCATION OF CONSTRUCTION TO PRECLUDE ANY INTERFERENCES BETWEEN PIPING, WIRING, LIGHTING FIXTURES, DUCTWORK, BUILDING EQUIPMENT, PROCESS EQUIPMENT AND OTHER CONSTRUCTION.
- PROVIDE LABOR, INCLUDING FIELD ERECTION AND SUPERVISION, MATERIALS, EQUIPMENT ANCILLARIES, AND COORDINATE, PROCURE, FABRICATE, DELIVER, ERECT OR INSTALL, INTERFOUTH EXISTING WORK, START, DEBUG AND TEST ALL SYSTEMS AS NECESSARY TO PROVIDE OWNER WITH A COMPLETE, OPERATING FACILITY IN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS.
- ALL CUTTING AND PATCHING THAT MAY BE NECESSARY FOR THE INSTALLATION OF THE MECHANICAL CONTRACTOR'S WORK SHALL BE PERFORMED AND REPAIRED BY THE TRADE WHOM NORMALLY PERFORMS THAT WORK AND PAID FOR BY THE MECHANICAL CONTRACTOR. NO CUTTING / ALTERATION OF THE BUILDING STRUCTURAL SYSTEM SHALL BE PERFORMED WITHOUT THE WRITTEN CONSENT OF THE LANDLORD AFTER ARCHITECT HAS APPROVED AND SIGNED OFF.
- THE PLUMBING CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING HIS BID TO FAMILIARIZE HIMSELF WITH THE ACTUAL PROJECT CONDITIONS AND TO CHECK FOR ANY INTERFERENCES BETWEEN HIS WORK AND THAT OF THE OTHER TRADES, AND/OR ANY APPARENT VIOLATIONS OF LOCAL OR STATE CODES, LAWS, ORDINANCES AND REGULATIONS. SHOULD ANY VIOLATIONS OR INTERFERENCES APPEAR AND DEPARTURE FROM THE DESIGN INTENT OF THE CONTRACT DOCUMENTS IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO ENTERING INTO A CONTRACT WITH THE OWNER. FAILURE TO PROVIDE THE ARCHITECT WITH THE AFOREMENTIONED NOTIFICATION SHALL RESULT IN THE CONTRACTOR BEING HELD RESPONSIBLE TO COMPLETE ALL WORK TO MEET THE INTENT OF THE CONTRACT DOCUMENTS WITH NO ADDITIONAL EXPENSES BEING INCURRED BY THE OWNER.
- THE DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL LOCATIONS AND ARRANGEMENTS OF ALL THE EQUIPMENT AND PLUMBING. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS BUILDING CONSTRUCTION AND ALL OTHER WORK WILL PERMIT. DO NOT SCALE DRAWINGS FOR EXACT MEASUREMENTS.
- SHOULD THE CONTRACTOR SUBMIT ANY SHOP DRAWINGS FOR REVIEW THAT VARY FROM WHAT THE CONSTRUCTION BID DOCUMENTS INDICATE, THE CONTRACTOR SHALL PAY THE ENGINEER FOR REVIEWING HIS SUBMISSION.

GEI NERAL NOTES: PLUMBING

- ALL PLUMBING SHALL BE CONCEALED UNLESS OTHERWISE NOTED. EXPOSING OF MUST HAVE APPROVAL OF THE ARCHITECT. ANY PLUMBING
- THE PLUMBING SYSTEMS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL STATE AND LOCAL PLUMBING CODES. THE PLUMBING CONTRACTOR SHALL OBTAIN ALL PERMITS, PAY FOR ALL FEES, AND ARRANGE FOR ALL INSPECTIONS FOR HIS WORK. AT THE COMPLETION OF THE PROJECT, THE PLUMBING CONTRACTOR SHALL FURNISH THE OWNER WITH CERTIFICATES OF FINAL INSPECTIONS AND APPROVALS.
- PLUMBING SHALL BE AS FOLLOWS:
- SANITARY AND VENT PIPING:
- ALL 1-1/2" AND LARGER WASTE AND VENT PIPING ABOVE GROUND SHALL WEIGHT CAST IRON SOIL PIPE WITH NO-HUB FITTINGS AND HEAVY DUTY BANDS
- 2) ALL WASTE PIPING BELOW GRADE SHALL BE SERVICE WEIGHT CAST IRON SOIL PIPE WITH COMPRESSION TYPE FITTINGS, OR SCHEDULE 40 PVC WHERE LOCAL CODE PERMITS.

DOMESTIC WATER PIPING:

- \Rightarrow ALL ABOVE GROUND DOMESTIC WATER PIPING SHALL BE TYPE "L" HARD DRAWN COPPER TUBING WITH WROUGHT COPPER OR CAST RED BRONZE FITTINGS. ALL SOLDERED FITTINGS SHALL BE MADE WITH SIL-FOS SOLDER OR AN APPROVED NON-TOXIC SOLDER. MECHANICAL TYPE FITTINGS EQUAL TO "PROPRESS SYSTEMS" ARE APPROVED IN LIEU OF SOLDERED FITTINGS.
- ALL UNDERGROUND PIPING SHALL BE TYPE "K" COPPER OR PEX. PIPE FITTINGS ARE NOT ALLOWED BELOW FLOOR SLAB.

Ċ VALVES:

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- BALL VALVES SHALL BE TWO PIECE FULL PORT BRONZE BALL VALVES WITH STAINLESS STRIM, TFE SEATS WITH 316 STAINLESS STEEL BALL AND STEM. THREADED BODY PACK DESIGN WITH ADJUSTABLE STEM PACKING WITH THREADED OR SOLDERED ENDS. RATED 150 PSIG SWP AND 600 PSIG CWP.
- CHECK VALVES SHALL BE SWING CHECK WITH BRONZE DISC, CLASS 150, ASTM B62 Y-PATTERN DESIGN WITH THREADED OR SOLDERED ENDS. RATED FOR 300 PSIG CWP.

PIPING INSULATION:

2)

- ABOVE GROUND STORM PIPING (HORIZONTAL PIPING INCLUDING FITTINGS) AND ROOF SUMP BODIES SHALL BE INSULATED WITH A MINIMUM 1" THICK FIBERGLASS INSULATION WITH A VAPOR BARRIER.
- PIPE INSULATION SHALL HAVE A FLAME SPREAD AND EXCEEDING 25/50, AS TESTED PER ASTM STANDARD E-84.

3)

2)

- IPING SHALL BE SUPPORTED FROM HANGERS OR TRAYS AT AN ADEQUATE DISTANCE WITH SUPPORTING HANGER RODS FASTENED TO THE BUILDING FRAMING. HANGERS FASTENED DIRECTLY O THE ROOF DECK ARE NOT ALLOWED.

- 10. THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER PITCH OF PIPE FOR DRAINAGE AND AIR VENTING OF PIPING SYSTEMS AND SHALL PROVIDE DRAINS TO RECEIVE THE PIPING SYSTEMS CONTENTS OF INDIRECT WASTE AND CONDENSATE DRAINAGE FROM ALL MECHANICAL DRAINS.
- THE PLUMBING CONTRACTOR SHALL OBTAIN OTHER TRADES DRAWINGS AND COORDINATE HIS WORK WITH THE TOTAL PROJECT AS IT RELATES TO ALL TRADES AND VISIT THE PROJECT SITE PRIOR TO SUBMITTING HIS BID TO FAMILIARIZE HIMSELF WITH THE ACTUAL PROJECT CONDITIONS AND TO CHECK FOR ANY INTERFERENCES BETWEEN HIS SCOPE OF WORK AND THAT OF THE OTHER TRADES, AND/OR ANY APPARENT VIOLATIONS OF LOCAL OR STATE BUILDING CODES, LAWS, ORDINANCES, AND REGULATIONS. IF ANY INTERFERENCES OR VIOLATIONS APPEAR AND DEPARTURE FROM THE INITIAL DESIGN INTENT OF THE CONSTRUCTION BID DOCUMENTS IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT WITH THE AFOREMENTIONED NOTIFICATION SHALL RESULT IN THE CONTRACTOR BEING HELD RESPONSIBLE TO COMPLETE ALL WORK TO MEET THE INTENT OF THE CONSTRUCTION BID DOCUMENTS WITH NO ADDITIONAL COSTS BEING INCURRED BY THE OWNER.

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- HE CONTRACTOR SHALL COORDINATE LOCATIONS OF HIS EQUIPMENT AND WORK WITH OTHER JUILDING TRADES TO AVOID ANY INTERFERENCES BETWEEN HIS WORK AND THE WORK OF OTHER RADES.
- ANY CUTTING AND/OR PATCHING, THAT MAY BE REQUIRED FOR THE INSTALLATION OF THE PLUMBING AND PIPING SYSTEMS, SHALL BE PERFORMED BY THE ARCHITECTURAL TRADES AND PAID FOR BY THIS CONTRACTOR. NO CUTTING OF THE BUILDING STRUCTURAL SYSTEM SHALL BE PERFORMED WITHOUT WRITTEN APPROVAL OF THE ARCHITECT BEING OBTAINED.
- WATER HAMMER ARRESTORS SHALL BE INSTALLED ON BOTH COLD AND HOT WATER LINES. INSTAL IN AN UPRIGHT POSITION AT ALL QUICK CLOSING VALVES, SOLENOIDS, AND PLUMBING FIXTURES MANUFACTURED WATER HAMMER ARRESTORS SHALL BE SMITH NO. 3000 SERIES "HYDROTROLS JOSAM, ZURN, OR AS APPROVED BY THE ARCHITECT, LOCATED, SIZED, AND INSTALLED INSTALLED ACCORDANCE WITH PLUMBING AND DRAINAGE INSTITUTE STANDARD NO.WH201.

- SOLATE PIPING AND EQUIPMENT FROM THE BUILDING STRUCTURE WITH INSULATING HANGERS AND ITTINGS AS REQUIRED TO PREVENT GALVANIC CORROSION OF THE BUILDING PIPING SYSTEMS.
-)OMESTIC WATER HEATERS SHALL BE EQUIPPED WITH A.S.M.E. RATED TEMPERATURE AND PRESSURE (ELIEF VALVES PIPED TO FLOOR. ROUTE DRAIN LINE TO NEAREST FLOOR DRAIN.
- ALL SERVICES SHALL BE PROPERLY SLEEVED WHEN ROUTED THROUGH FLOORS AND WALLS. CONTRACTOR TO PROVIDE FIRE RESISTANT ROPE PACKING FOR ALL PIPES PENETRATING FIRE RATED VALLS. CONTRACTOR SHALL OBTAIN A COPY OF THE ARCHITECTURAL DRAWINGS TO IDENTIFY FIRE VATED WALLS. CONTRACTOR SHALL PROVIDE A WEATHERPROOF SEAL FOR PIPING PENETRATING XTERIOR WALLS.
- *URNISH AND INSTALL ISOLATION VALVES AT ALL SERVICE POINTS OR EQUIPMENT CONNECTIONS.
 PROVIDE VACUUM BREAKERS AND ANTI-SIPHON FITTINGS ON WATER PIPING SYSTEMS BEFORE
 EQUIPMENT CONNECTIONS, AND AT ALL HOSE END SPIGOTS AND HOSE CONNECTIONS, ETC. INSTALL
 REDUCED PRESSURE BACKFLOW PREVENTERS ON ALL MAKE-UP WATER LINES TO FOOD SERVICE
 EQUIPMENT AND ON BUILDING DOMESTIC WATER SERVICE WHERE LOCAL CODE REQUIRES. THE
 INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH LOCAL CODES AND/OR AUTHORITIES FOR THE
 PROTECTION OF THE WATER SUPPLY SYSTEM. INSTALL STRAINER UP STREAM OF REDUCED
 PRESSURE BACKFLOW PREVENTER.

- LABEL ALL PIPING SYSTEMS WITH MANUFACTURED SELF ADHESIVE OR PRE-TENSIONED PIPE MARKERS. MARKERS SHALL INDICATE SERVICE AND DIRECTION OF FLOW. MARK PIPE NEAR: VALVES, BRANCH CONNECTIONS, PENETRATIONS, ACCESS DOORS AND NEAR MAJOR PIECES OF EQUIPMENT. MARKER SPACING SHALL NOT EXCEED 50'.
- THE PLUMBING CONTRACTOR SHALL VERIFY EXACT LOCATIONS AND PROVIDE ROUGH-INS FOR ALL EQUIPMENT FURNISHED BY OTHER CONTRACTORS. AFTER ALL EQUIPMENT HAS BEEN INSTALLED BY OTHER CONTRACTORS, THE PLUMBING CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS AND SHALL INCLUDE IN HIS BASE BID ALL VALVES, UNIONS, COUPLINGS, VACUUM BREAKERS, ETC., THAT ARE REQUIRED TO MAKE FINAL CONNECTIONS.
- FURNISH AND INSTALL AN INDIVIDUAL COMBINATION PRESSURE BALANCING AND THERMOSTATIC CONTROL VALVE THAT CONFORMS TO A.S.S.E. # 1070 WITH TEMPERED WATER PIPING CONNECTIONS FOR ALL ACCESSIBLE PLUMBING FIXTURES. SET VALVE FOR A MAXIMUM OF 110°F.
- THE CONTRACTOR SHALL SUBMIT EQUIPMENT SHOP DRAWINGS TO THE ARCHITECT FOR REVIEW PRIOR TO INSTALLATION OF ANY OF THE FOLLOWING EQUIPMENT:
- PLUMBING FIXTURES
 PLUMBING PIPE, FITTINGS AND HANGERS
 DOMESTIC WATER HEATER
 FLOOR DRAINS, TRENCH DRAINS, CLEANOUTS, ETC.
- THE CONTRACTOR SHALL GUARANTEE ALL WORK INSTALLED UNDER THIS CONTRACT TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR AFTER THE ACCEPTANCE OF THE BUILDING BY THE OWNER, AND SHOULD DEFECTS OCCUR WITHIN THIS PERIOD, REPAIR AND/OR REPLACE DEFECTIVE ITEMS AND ANY DAMAGE RESULTING FROM FAILURE OF THESE ITEMS, AT NO EXPENSE TO THE OWNER.
- PROVIDE PRE-MANUFACTURED SUPPORTS EQUAL TO MIRO INDUSTRIES 3-R, SPACED 10'-0" ON CENTER AND AT ALL FITTINGS FOR SUPPORT OF ALL GAS PIPING RUN ON ROOF. FASTEN GAS PIPING SECURELY TO EACH SUPPORT AND PROVIDE SPACERS AS REQUIRED TO ADJUST FOR ROOF SLOPE WITHOUT STRESSING THE PIPING.

PLUMBING GENERAL NOTES:

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repared for:

- SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL NEW PLUMBING FIXTURES.
- ALL PLUMBING RELATED CORING THROUGH FLOORS SHALL BE BY PLUMBING CONTRACTOR.
- COORDINATE ALL NEW LOCATIONS, SIZES AND ELEVATIONS OF SLEEVES THROUGH WALLS SLABS AND FOUNDATIONS WITH STRUCTURAL DRAWINGS AND EXISTING FIELD CONDITIONS.
- COORDINATE ALL PIPE ROUTING WITH SITE CONDITIONS, EQUIPMENT MANUFACTURER RECOMMENDATIONS AND ALL OTHER TRADES TO AVOID INTERFERENCES. PROVIDE ACCESS AROUND ALL NEW EQUIPMENT PER MANUFACTURERS RECOMMENDATIONS.
- ALL OVERHEAD DOMESTIC WATER AND STORM PIPING SHALL BE INSULATED AND LABELED IN ACCORDANCE WITH THE SPECIFICATION REQUIREMENTS.
- ALL PIPING SHALL BE CONCEALED IN WALLS, CEILING SPACES OR ARCHITECTURAL SOFFITS.
- SEAL ALL PENETRATIONS THROUGH WALLS AND FLOORS AIR AND WATERTIGHT. COORDINATE LOCATIONS AND ELEVATIONS OF ALL NEW UNDERGROUND UTILITIES WITH CIVIL SITE PLANS PRIOR TO START OF CONSTRUCTION.
- CONTRACTOR SHALL MAINTAIN ADEQUATE CLEARANCES (PER N.E.C.) ABOVE AND AROUND ANY NEW ELECTRICAL PANELS, EQUIPMENT AND TRANSFORMERS WHEN ROUTING OVERHEAD DOMESTIC WATER AND STORM PIPING.
- FAUCETS AND PLUMBING FIXTURES SHALL BE OF WATER CONSERVATION TYPE AND COMPLY WITH THE STATE OF MICHIGAN ENERGY STANDARDS.
- RUN ALL UNDERGROUND SANITARY AND STORM PIPING LARGER THAN 2" AT 1/8" PER FOOT MINIMUM PITCH UNLESS NOTED OTHERWISE. SANITARY PIPING LESS THAN 2" SHALL BE PITCHED AT 1/4" PER FOOT MINIMUM, UNLESS NOTED OTHERWISE.

PLUMBING SYMBOLS
ABBREVIATIONS

THIS ARCHITECTURAL DRAWING IS GIVEN IN STRICT CONFIDENCE. NO USE, IN WHOLE OR PART, MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF UNDER THE SUN, LLC.

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	SANITARY PIPING	RAIN CONDUCTOR PIPING	NATURAL GAS PIPING	FIRE PROTECTION PIPING	VENT PIPING	DOMESTIC HOT WATER RETURN PIPING	DOMESTIC HOT WATER PIPING	DOMESTIC COLD WATER PIPING	PIPE OUT BOTTOM	PIPE OUT TOP	PIPE TURNED DOWN		PIPE TURNED UP	UNION	PLUG VALVE	BALANCING VALVE WITH TEST PORTS	BALANCING VALVE	CHECK VALVE	BALL VALVE	GLOBE VALVE	GATE VALVE	DESCRIPTION
				WH-#	WC-# W.C.O.	VT.R.	(TYP)	S-#	RD-#	PRV PSI PVC	ORD-#	LAV-#	ΪĒ	HWR	GPM	F.F.ELV. FPWH-# FS-#	□	ш ф		C.O. COND	A.F.F.	
				WAIEX HEAIEX	WATER CLOSET WALL CLEANOUT	VENT-THRU-ROOF	TYPICAL	SINK	ROOF DRAIN	PRESSURE REDUCING VALVE POUNDS PER SQUARE INCH POLYVINYL CHLORIDE	OVERFLOW ROOF DRAIN	LAVATORY	INVERT ELEVATION	HOT WATER (DOMESTIC) HOT WATER RETURN (DOMESTIC)	GALLONS PER MINUTE	FINISHED FLOOR ELEVATION FROST PROOF WALL HYDRANT FLOOR SINK		ELECTBIC MATER COOLED	COLD WATER (DOMESTIC)	CLEAN OUT CONDENSATE	ABOVE FINISHED FLOOR	

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SYMBOLS, ABBREV

& SPECIFICATIONS

DO NOT SCALE DRAWINGS
USE FIGURED DIMENSIONS ONLY

PLUMBING NOTES,

