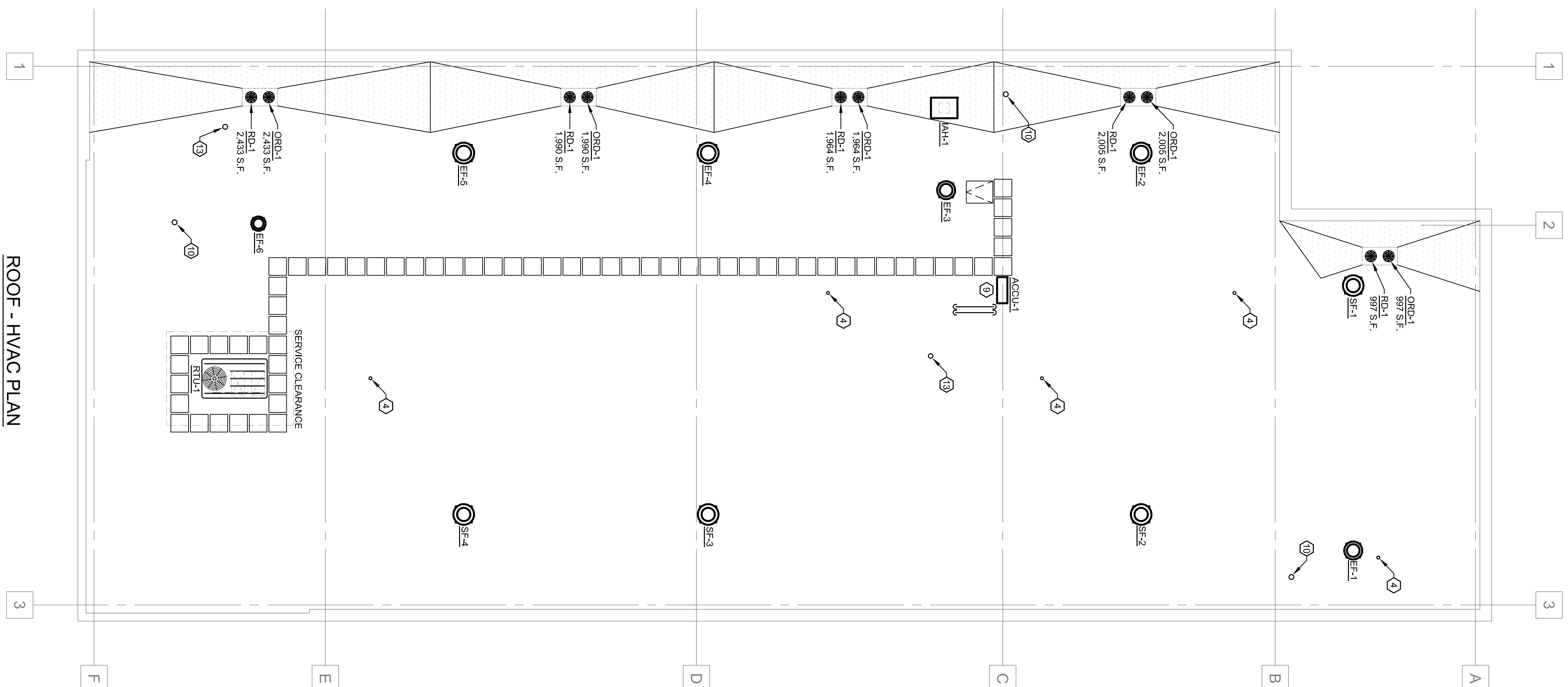


FLOOR - HVAC PLAN
SCALE: 1/8"=1'-0"

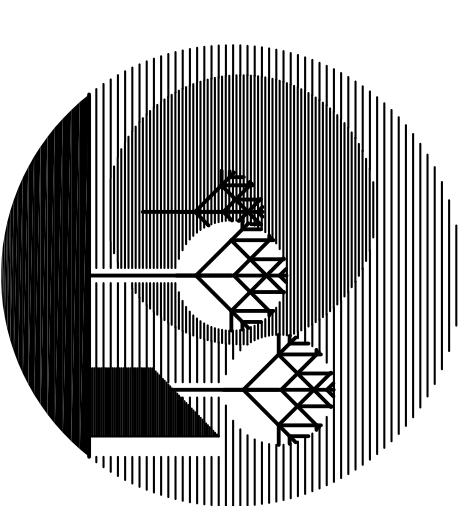


ROOF - HVAC PLAN
SCALE: 1/8"=1'-0"

- KEYED NOTES: (#)**
- PROGRAMMABLE THERMOSTAT WITH CLEAR LOCABLE COVER, COORDINATE FINAL LOCATION WITH OWNER & ARCHITECT. MOUNT @ 48" ABOVE FINISHED FLOOR TO MATCH ADJACENT LIGHT SWITCHES.
 - NEW CARBON MONOXIDE / NITROGEN DIOXIDE CONTROL PANEL.
 - NEW FULLY ADDRESSABLE CARBON MONOXIDE AND NITROGEN DIOXIDE SENSORS WITH DIGITAL DISPLAY, MOUNT EACH SENSOR AT MANUFACTURER'S RECOMMENDED MOUNTING HEIGHTS.
 - 4'0" RADIANT HEATER FLUE THROUGH ROOF.
 - 24 V RADIANT TUBE HEATER THERMOSTAT, MOUNT @ 48" A.I.F.
 - ROUTE DUCT DOWN TO BOTTOM OF ROOF JOIST. PROVIDE BELMOUTH FITTING WITH EXPANDED METAL OVER EXHAUST DUCTS. SUPPLY DUCTS TO BE OPEN END DUCT.
 - 120 VAC THERMOSTAT LOCATED IN THE MEZZAINE COMPRESSOR ROOM SHALL BE INTERLOCKED WITH VARIABLE SPEED EXHAUST FAN AND ASSOCIATED INTAKE AIR HOOD DAMPER.
 - CEILING MOUNTED SPLIT SYSTEM HEAT PUMP.
 - AIR COOLED CONDENSING UNIT, MOUNT ON EQUIPMENT RAILS, ROUTE REFRIGERANT PIPING DOWN THROUGH ROOF TO CEILING MOUNTED CASSETTE.
 - 3" SANITARY VENT THROUGH ROOF.
 - SUPPLY & EXHAUST HAND/OFF/AUTO FAN STARTERS TO BE INTERLOCKED IN AUTO MODE WITH VEHICLE EXHAUST MONITORING SYSTEM. REFER TO MECHANICAL DRAWING M-301 FOR MORE INFORMATION.
 - 3" PVC WATER HEATER FLUE & COMBUSTION AIR PIPE UP TO CONCENTRIC VENT THROUGH ROOF.
 - UNIT HEATER CONCENTRIC VENT THROUGH ROOF KIT.
 - MOUNT RADIANT HEATER AT 18'-0" ABOVE FINISHED FLOOR AND LEVEL AND CENTERED BETWEEN ADJACENT LIGHT FIXTURES. PROVIDE 45° DOWN 45° ANGLE POINTING TO THE EXTERIOR WALL ON IN SERVICE 111 & 115, MOUNT HORIZONTAL IN SERVICE 116.

Prepared for:
DEMNER
ARCHITECTURAL LLC
11022 MOUNTAIN DOVE LANE
SOUTH LYON, MI 48178

Prepared by:



DEMNER QUICKLANE
3740 MICHIGAN AVE WAYNE MI

Project title

FLOOR & ROOF HVAC PLANS

DO NOT SCALE DRAWINGS
USE FIGURED DIMENSIONS ONLY

seati & slonoff architects
BUSHA ENGINEER
REGISTERED PROFESSIONAL ENGINEER

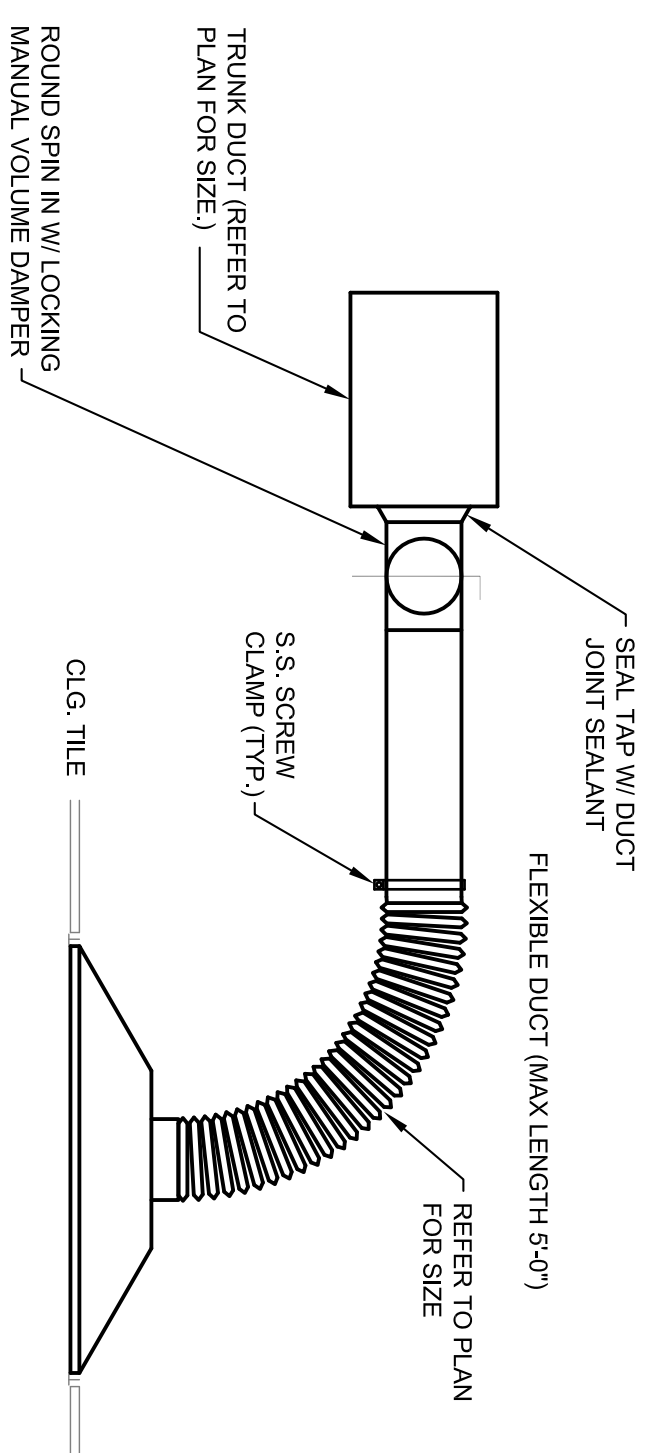
Project number
13004

drawn WEV
approved JFB
issued date 2/07/14
Bids & Permits

MEEC
mechanical electrical
engineering consultants
1415 Oldsmar
Plymouth, MI 48170
P: 248-464-8970
F: 248-464-8971

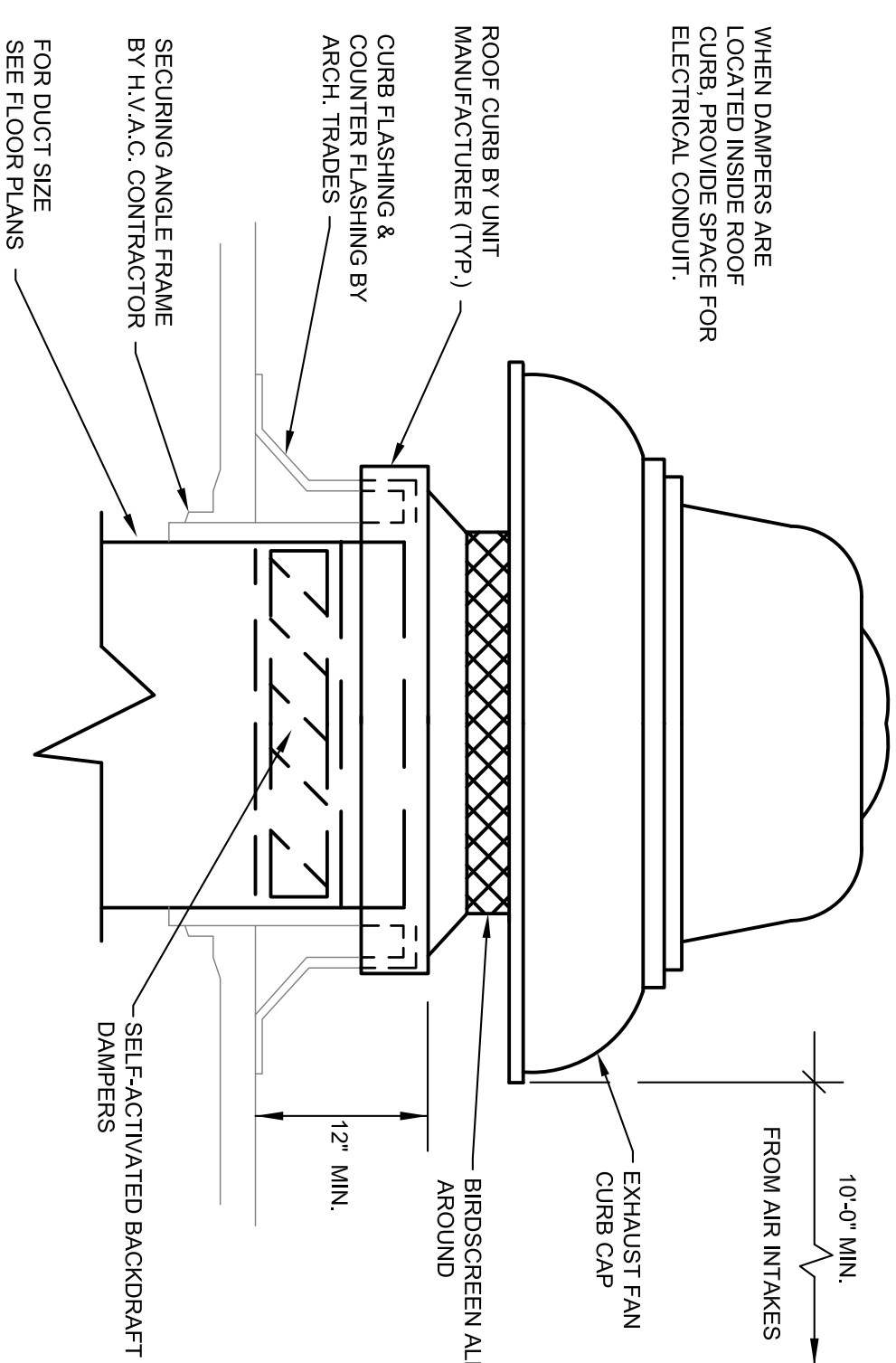
THIS DRAWING IS AN INSTRUMENT OF SERVICE AND SHALL REMAIN THE PROPERTY OF MEEC. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED IN THE DOCUMENTS. ANY REUSE OR MODIFICATION OF THIS DRAWING WITHOUT THE WRITTEN CONSENT OF MEEC IS STRICTLY PROHIBITED. MEEC ASSUMES NO LIABILITY FOR SAID DISCREPANCIES. MECHANICAL, ELECTRICAL, ENGINEERING CONSULTANTS, P.C. AND MEEC ENGINEERS ASSOCIATES, P.C. ARE LICENSED PROFESSIONAL ENGINEERS. LICENSE NUMBERS WRITTEN APPROVALS ARE GRANTED BY MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, P.C.

SHEET
M-101



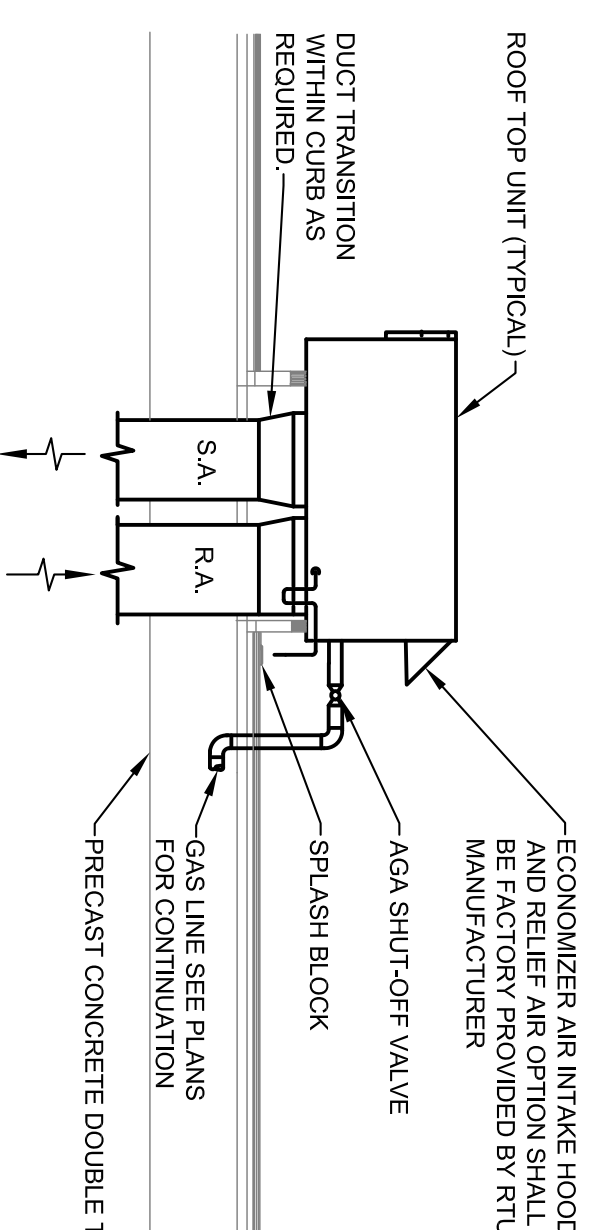
SPIN-IN AND CEILING DIFFUSER DETAIL

N.T.S.



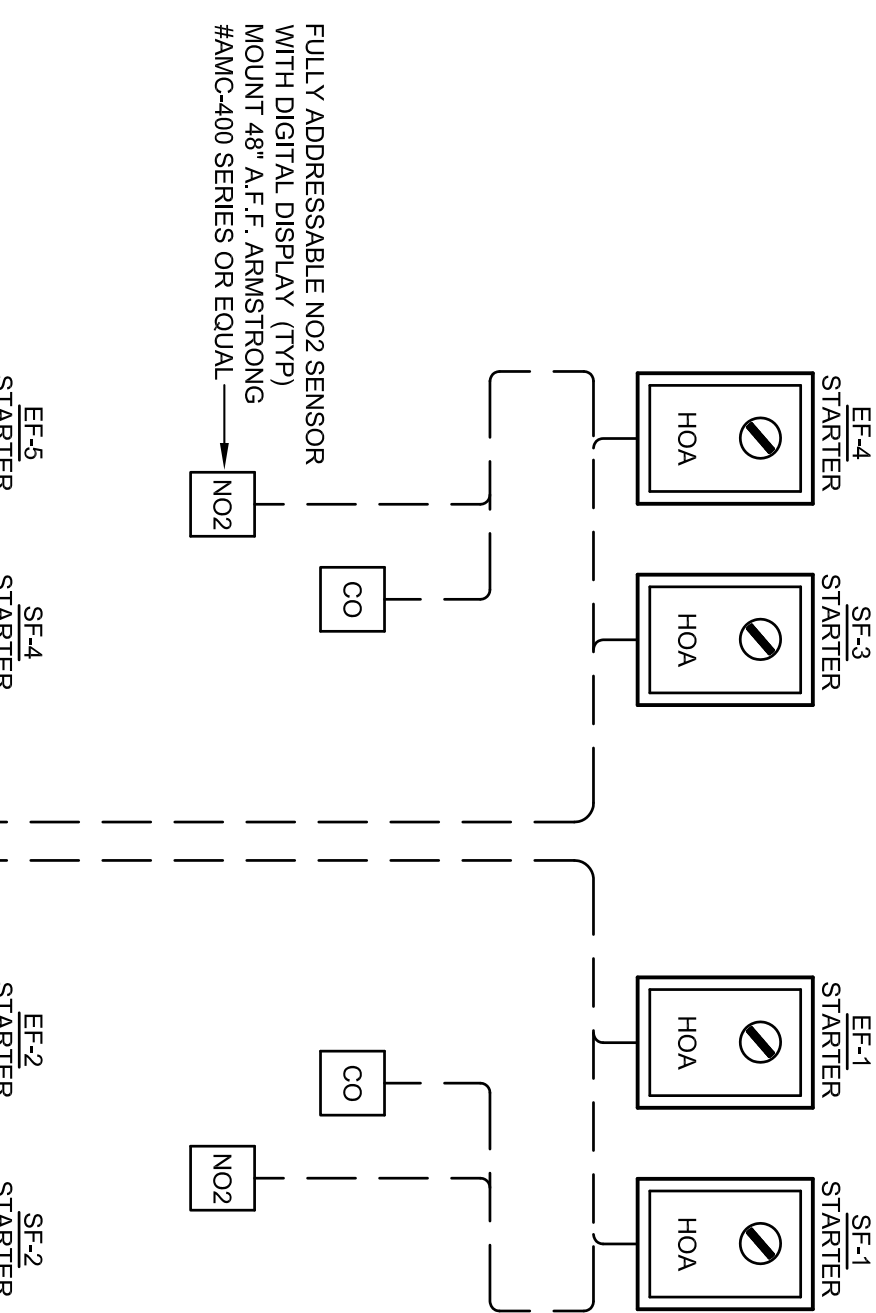
EXHAUST FAN DETAIL

N.T.S.



TYPICAL ROOFTOP UNIT DETAIL

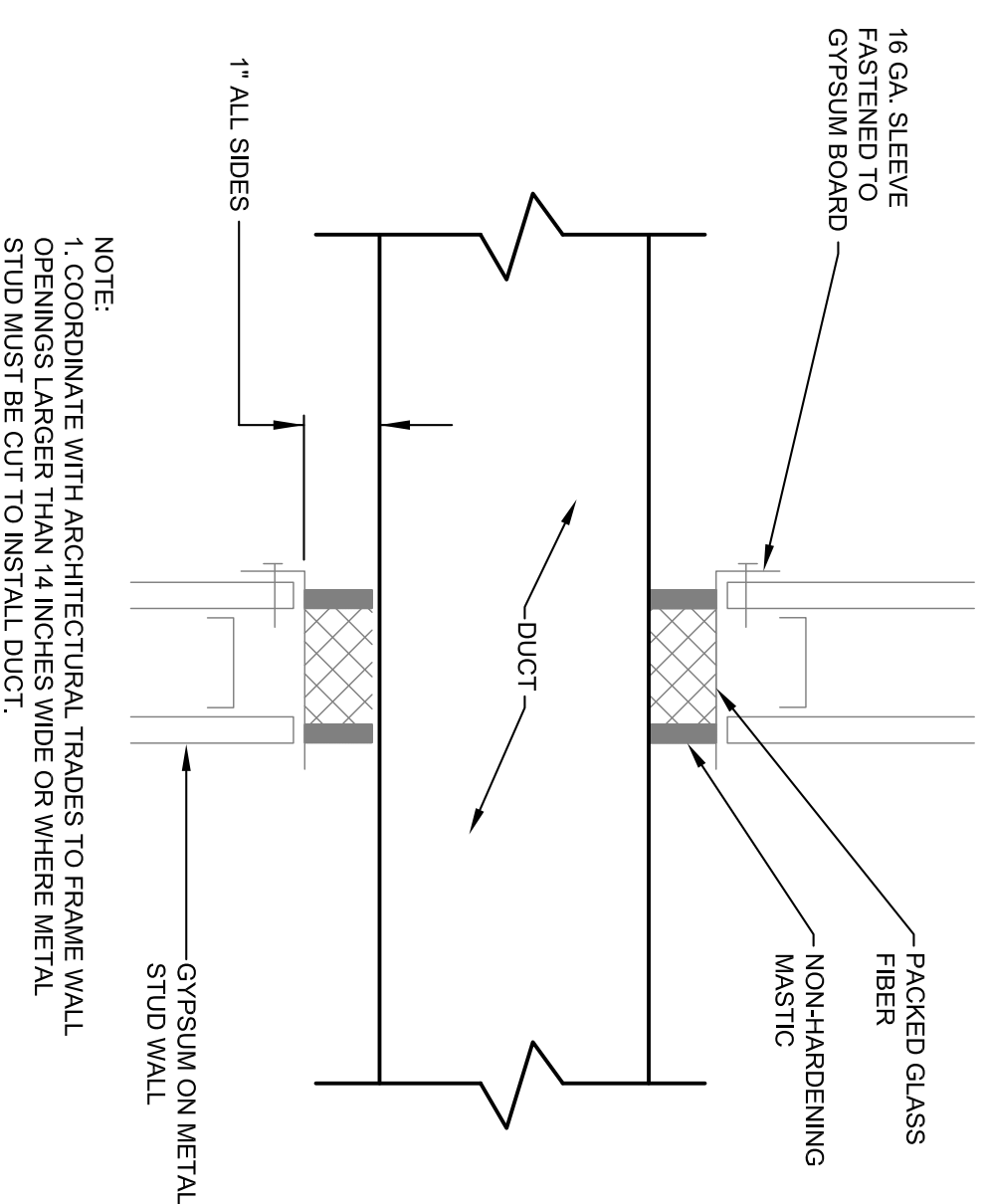
N.T.S.



CARBON MONOXIDE / NITROGEN DIOXIDE ALARM SYSTEM DIAGRAM

N.T.S.

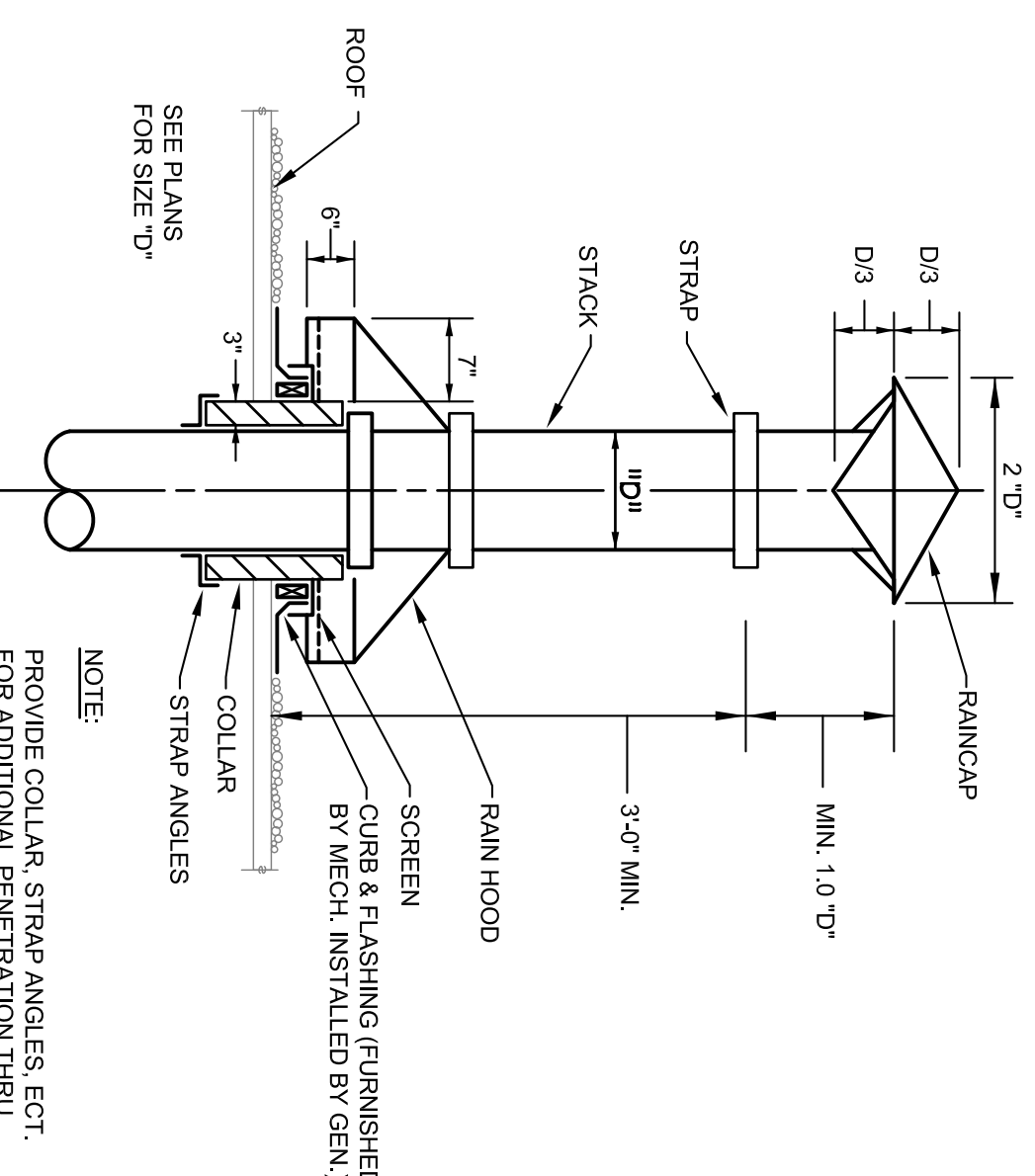
ALARM CONDITION
THE VEHICLE EXHAUST SYSTEM SHALL PRODUCE A VISUAL AND AUDIBLE ALARM ONCE CO OR NO2 LEVELS REACH PREDETERMINED LEVELS. THE ALARM SHALL CLOSE A SET OF DRY CONTACTS WHICH WILL OPERATE THE STROBE LIGHT AND BELL. THE ALARM SHALL OPERATE FOR AN ADDITIONAL TWO MINUTES (ADJUSTABLE) ONCE THE AREA IS PURGED.



DUCT SEAL AT NON RATED WALLS

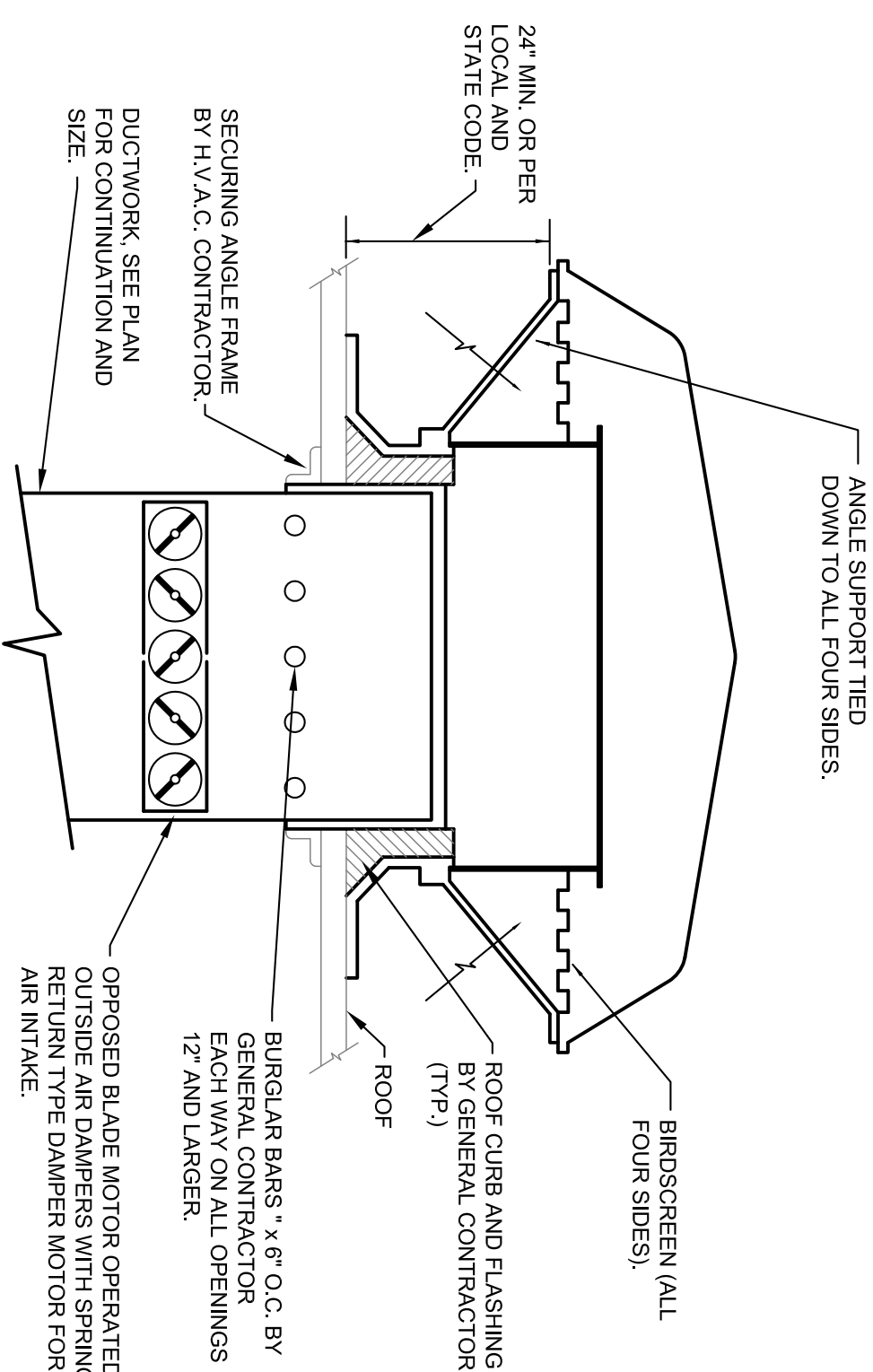
N.T.S.

NOTE:
NOTCH WITH ARCHITECTURAL TRADES TO FRAME WALL OPENINGS LARGER THAN 4 INCHES WIDE OR WHERE METAL STUD MUST BE CUT TO INSTALL DUCT.



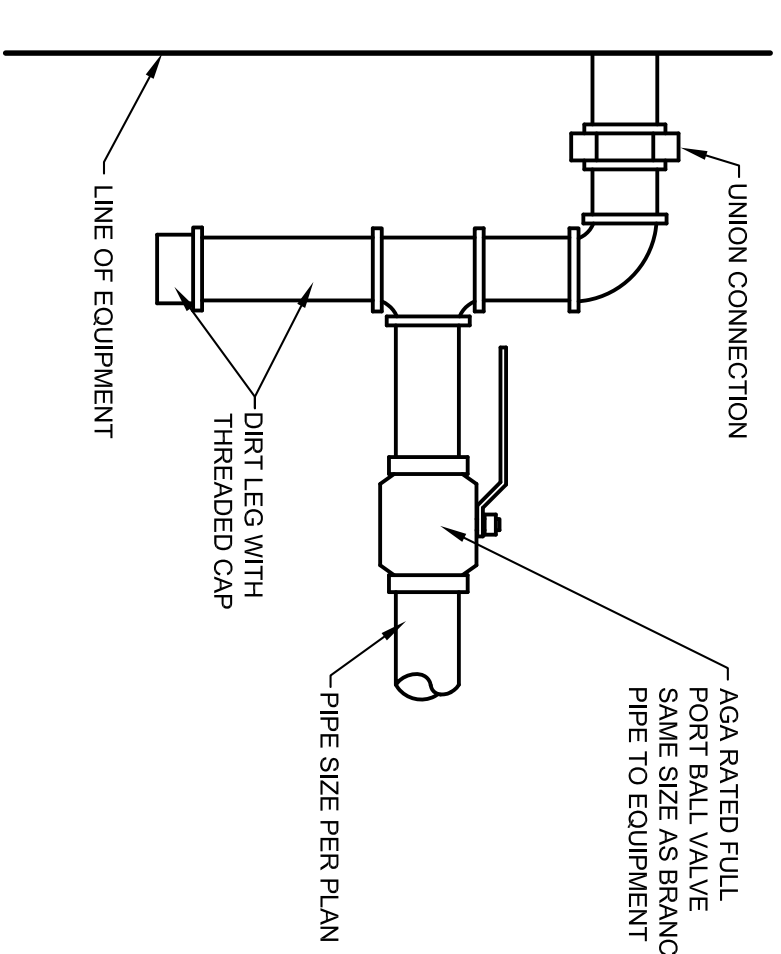
FLUE THROUGH ROOF DETAIL

N.T.S.



INTAKE HOOD DETAIL

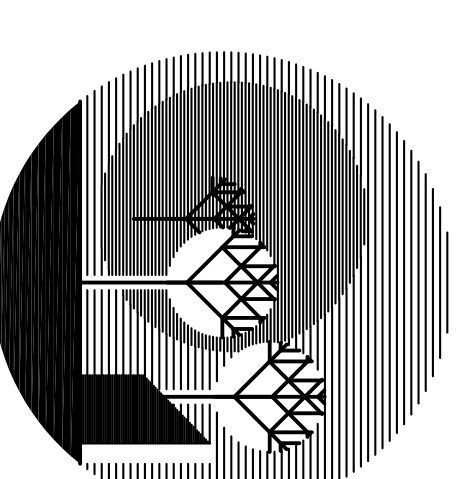
N.T.S.



GAS PIPE EQUIPMENT CONNECTION DETAIL

N.T.S.

Prepared by:



UNDER THE SUN ARCHITECTURAL LLC
11022 Morning Dove Lane
South Lyon, MI, 48178

NOTICE

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.
ALL RIGHTS ARE HEREBY RESERVED.
UNDER THE SUN, LLC
COPYRIGHT YEAR 2009

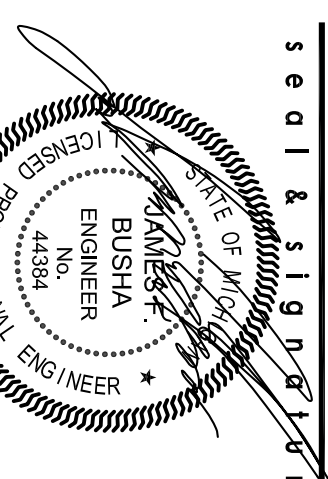
PROJECT TITLE

DEMNER QUICKLANE
3740 MICHIGAN AVE WAYNE MI

SHEET TITLE

HVAC DETAILS

DO NOT SCALE DRAWINGS
USE FIGURED DIMENSIONS ONLY



PROJECT NUMBER

13004

drawn	WEV
approved	JFB
issued	date
Bids & Permits	2/07/14

MEEC
MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, P.C.
1415 Oldsmar Pkwy., N.W. 48170
Phone: 248-488-8970
Fax: 248-488-8971

SHEET M-201

Table with columns: MARK, MANUFACTURER, MODEL NUMBER, AREA SERVED, CFM, MIN. O.A. (CFM), E.S.P. IN. WG., FAN RPM, MAX BHP, # FANS, HP EACH, TYPE, SIZE, MERV, INPUT MBH, OUTPUT MBH, NOMINAL TONS, TOTAL MBH, SENSIBLE MBH, E.A.T. (°F), L.A.T. (°F), D.B., W.B., D.B., W.B., VOLTS PHASE, MCA, MOP, OPERATING WEIGHT (LBS.), ACCESSORIES. Includes rows for RTU-1 TRANS and RTU-1-1.

- ACCESSORIES:
1. UNITS SHALL BE BASED ON A.R.L. CONDITIONS.
2. ZONAY PROGRAMMABLE THERMOSTAT WITH FAN/OCCUPIED PROGRAMMING AND AUTO CHANGE OVER.
3. FACTORY MOUNTED FUSED DISCONNECT SWITCH WITH PHASE MONITOR.
4. 100% COMPARTIVE ETHANALPY ECONOMIZER CONTROLS.
5. UNIT MOUNTED R.A. SMOKE DETECTOR.
6. U.L.L. LISTED.
7. ASHRAE 90.1-2007 COMPLIANT.
8. 14" PREFABRICATED ROOF CURB.
9. FILTER/DRIVER.
10. CRANKCASE HEATER.
11. CONVENIENCE OUTLET.

ELECTRIC UNIT HEATER SCHEDULE

Table with columns: MARK, MANUFACTURER, MODEL NUMBER, AREA SERVED, AIRFLOW CFM, KW OUTPUT, HEAT OUTPUT (BTU/H), VOLTAGE, PHASE, AMPS, ACCESSORY, NOTES. Includes rows for EUH-1 MARKEL and EUH-1 MARKEL.

- NOTES:
1. BUILT-IN 2-STAGE STAT AND RELAYS WHICH ARE OPERATED BY AN INTERVAL 24 VOLT SOURCE.
2. UNIT MOUNTED DISCONNECT SWITCH.
3. SUPPORT BRACKET.
4. U.L.L. LISTED.
5. REMOVE ZAV. THERMOSTAT WITH CONTROL TRANSFORMER.

GRILLES REGISTERS AND DIFFUSERS SCHEDULE

Table with columns: MARK, MANUFACTURER, MODEL NUMBER, NECK SIZE, DIFFUSER SIZE, FINISH, MOUNTING TYPE, CONSTRUCTION, ACCESSORY, NOTES. Includes rows for CD-1, CD-2, CD-3, RG-1, RG-2, EG-1, LD-1.

- NOTES:
1. REFER TO SELECTED CEILING PLAN FOR LOCATIONS. PROVIDE ALL ACCESSORIES NEEDED TO PROPERLY MOUNT DEVICES.
2. 1/2" X 1/2" X 1/2" ALUMINUM EGSGRATE GRID.

INFRA-RED TUBE HEATER SCHEDULE

Table with columns: MARK, MANUFACTURER, MODEL NUMBER, LOCATION, TYPE, UNIT LENGTH, MOUNTING HEIGHT, GAS DATA (TYPE, MBH, (HIGH FIBER), TYPE, MBH, (LOW FIBER)), NOTES. Includes rows for IRH-1, IRH-2, IRH-3, IRH-4, IRH-5.

- NOTES:
1. FAN/HEAT SPARK CONTIN.
2. 24V HEATING THERMOSTAT.
3. WEATHERPROOF ROOF EXHAUST CAP.
4. A.G.A. CERTIFIED.
5. 12 GA. HEAT EXCHANGER TUBE.

INTAKE AIR HOOD SCHEDULE

Table with columns: MARK, MANUFACTURER, MODEL NUMBER, HOOD DIMENSIONS, THROAT DIMENSIONS, INTAKE (CFM), STATIC PRESSURE, THROAT AREA (SQ. FT.), VELOCITY (FPM), NOTES. Includes row for IH-1.

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

GAS FIRED UNIT HEATER SCHEDULE

Table with columns: MARK, MANUFACTURER, MODEL NUMBER, LOCATION, TYPE, AIR QUANTITY CFM, FUEL TYPE, GAS DATA (INPUT CHH, OUTPUT MBH, VOLTAGE / PHASE, MOTOR HP), ELECTRICAL DATA (HP, .02), NOTES. Includes row for UH-1.

- NOTES:
1. VERTICAL CONCENTRIC VENT KIT.
2. SPARK IGNITION SYSTEM.
3. THERMOSTAT FOR REMOTE MOUNTING.
4. A.G.A. CERTIFIED.

ROOF TOP UNIT SCHEDULE

Table with columns: MARK, MANUFACTURER, MODEL NUMBER, AREA SERVED, LOCATION, AIRFLOW (CFM), EXTERNAL S.P., FAN (RPM), FAN (BHP), FAN (HP), ELECTRICAL, OPERATING WEIGHT (LBS.), ACCESSORIES. Includes rows for EF-1 through EF-6.

- NOTES:
1. FAN SHALL HAVE AMCA SEAL & BE U.L. 706 LISTED.
2. FAN SHALL HAVE GALVANIZED BIRD SCREEN.
3. SAFETY DISCONNECT SWITCH (BY ELECTRICAL).
4. PROVIDE STANDARD 1" INSULATED 12" TALL ROOF CURB.
5. PROVIDE DUCT MOUNTED GRAVITY BACKDRAFT DAMPER.
6. PROVIDE HIGH EFFICIENCY BRUSHLESS (EC) MOTOR WITH MOUNTED POTENTIOMETER DIAL.
7. PROVIDE VARIABLE SPEED CONTROL FROM ROOM THERMOSTAT.

EXHAUST FAN SCHEDULE

Table with columns: MARK, MANUFACTURER, MODEL NUMBER, AREA SERVED, LOCATION, AIRFLOW (CFM), EXTERNAL S.P., FAN (RPM), FAN (BHP), FAN (HP), ELECTRICAL, NOTES. Includes rows for SF-1 through SF-4.

- NOTES:
1. FAN SHALL HAVE AMCA SEAL & BE U.L. 706 LISTED.
2. FAN SHALL HAVE GALVANIZED BIRD SCREEN.
3. SAFETY DISCONNECT SWITCH (BY ELECTRICAL).
4. PROVIDE DUCT MOUNTED GRAVITY BACKDRAFT DAMPER.
5. PROVIDE SOLID STATE SPEED CONTROL, 5 AMP (SHIPPED LOOSE).
6. PROVIDE STANDARD 1" INSULATED 12" TALL ROOF CURB.
7. PROVIDE VARIABLE SPEED CONTROL FROM ROOM THERMOSTAT.

SUPPLY FAN SCHEDULE

Table with columns: MARK, MANUFACTURER, MODEL NUMBER, AREA SERVED, LOCATION, AIRFLOW (CFM), EXTERNAL S.P., FAN (RPM), FAN (BHP), FAN (HP), ELECTRICAL, NOTES. Includes rows for SF-1 through SF-4.

OUTDOOR AIR CALCULATION SCHEDULE

Table with columns: UNIT TAG, ROOM NUMBER, AREA (SQ. FT. / %), OCCUPANT CLASSIFICATION, AREA OUTDOOR AIRFLOW RATE (CFM/SQ. FT.), AREA OUTDOOR AIR (RA) X (%), OCCUPANT DENSITY RATE (#/1000 SQ. FT.), ZONE POPULATION (P2=RA/(1000)), PEOPLE, PEOPLE AIR FLOW RATE (RA) X (%), ZONE AIRFLOW (CFM), PEOPLE PER FAN, PEOPLE PER FAN, BREATHING AIR REQUIRED (Vbz=Rp2+Rbz), ZONE OUTDOOR AIR DISTRIBUTION EFFECTIVENESS (Ez), ZONE OUTDOOR AIR REQUIRED (Vz=Vbz/Ez), TOTAL OUTDOOR AIR REQUIRED WITHIN ZONE CFM. Includes rows for RTU-1.

PER THE 2009 MICHIGAN MECHANICAL CODE TABLE 403.3 THE SPACES WITHIN THIS SCHEDULE MEET OR EXCEED THE REQUIREMENTS FOR OUTDOOR AIR FLOW RATE.

SPLIT SYSTEM AIR CONDITIONER & AIR COOLED CONDENSING UNIT SCHEDULE

Table with columns: MARK, MANUFACTURER, MODEL NUMBER, TOTAL COOLING (BTUH), TOTAL HEATING (BTUH), AIRFLOW (CFM), ELECTRICAL DATA (VOLTAGE / PHASE, MRS, ACQU-1), MARK, MANUFACTURER, MODEL NUMBER, AIR COOLED CONDENSER SECTION (MARK, MANUFACTURER, MODEL NUMBER), ELECTRICAL DATA (VOLTAGE / PHASE, MRS, ACQU-1), REFRIGERANT, NOTES. Includes row for HP-1.

- NOTES:
1. PROVIDE WIRED REMOTE CONTROLLER 4UTY-RN-VLV.
2. PROVIDE 3/8" SINGLE THROW SAFETY SWITCH ASKPST 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.

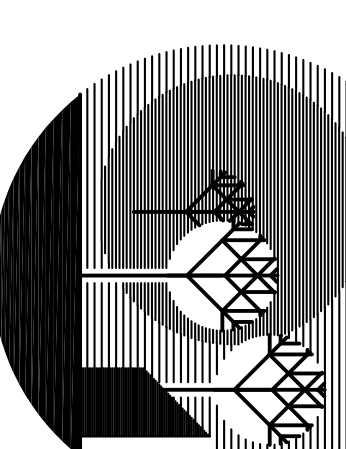
DUCTWORK APPLICATION SCHEDULE

Table with columns: AIR SYSTEM, MATERIAL, DESIGN PRESSURE CLASSIFICATION (INCHED. WG), EXHAUST AIR, GALVANIZED STEEL, GALVANIZED STEEL, RETURN AIR, GALVANIZED STEEL, GALVANIZED STEEL, OUTSIDE AIR INTAKE DUCTWORK, GALVANIZED STEEL, GALVANIZED STEEL.

Prepared for:



Prepared by:



UNDER THE SUN ARCHITECTURAL LLC
11022 Morning Dove Lane
South Lyon, MI, 48178

notice

THIS ARCHITECTURAL DRAWING IS GIVEN IN STRICT COMPLIANCE. NO USE, IN WHOLE OR PART, MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF UNDER THE SUN, LLC. ALL RIGHTS ARE HEREBY RESERVED.

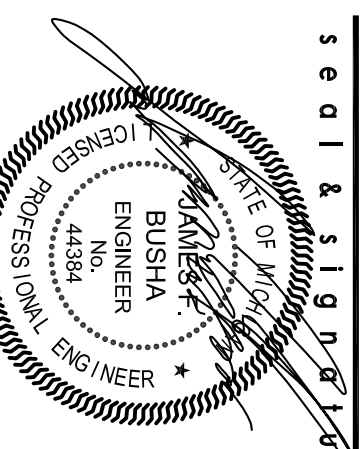
UNDER THE SUN, LLC
COPYRIGHT YEAR 2009
Project Title

DEMME QUICKLANE
9740 MICHIGAN AVE
WAYNE MI

sheet title

HVAC SCHEDULES

DO NOT SCALE DRAWINGS
USE DIMENSIONS ONLY



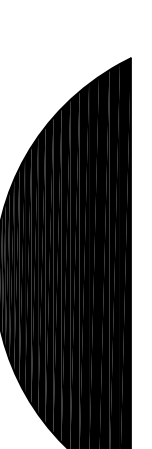
Project number

13004

Table with columns: DRAWN, WEV, JFB; DISPLAYED, JFB; ISSUED, DATE, 2/07/14; Bids & Permits.



MECO
mechanical electrical engineering consultants pc
1415 Galswin
Plymouth, MI 48170
P: 248-464-8870
F: 248-464-8871



HVAC SPECIFICATIONS:

HVAC GENERAL REQUIREMENTS:

1. 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 APPLICABLE GOVERNING LAWS, ORDINANCES, CODES AND STANDARDS SHALL BE APPLICABLE PORTIONS OF GOVERNING LAWS, ORDINANCES, CODES AND STANDARDS.
2. 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 INSPECTION AND ALL SHIP DRAWINGS AS REQUIRED IN FOLLOWING SECTIONS.
3. COORDINATE EXACT LOCATION OF CONSTRUCTION, INCLUDING EQUIPMENT, PROTECT BETWEEN PIPING, WIRING, LIGHTING FIXTURES, DUCTWORK, PRECLUDE ANY INTERFERENCES BETWEEN PIPING AND OTHER CONSTRUCTION.
4. PROVIDE LABOR INCLUDING FIELD ERECTION AND SUPERVISION MATERIALS EQUIPMENT AND ANCHLAGES, 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.
5. ALL CUTTING AND PATCHING THAT MAY BE NECESSARY FOR THE INSTALLATION OF THE MECHANICAL CONTRACTORS 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.
6. 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 SHALL BE NOTICED PRIOR TO ENTERING INTO A CONTRACT WITH THE OWNER. FAILURE TO PROVIDE 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.
7. THE DRAWINGS ARE DIAGNOSTIC 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.
8. SHOULD THE CONTRACTOR SUBMIT ANY SHOP DRAWINGS FOR REVIEW THAT VARY FROM WHAT THE ARCHITECTOR SPECIFICATIONS INDICATE, THE CONTRACTOR SHALL PAY THE ENGINEER FOR REVIEWING HIS SUBMISSION.

GENERAL NOTES: PIPING

 1. ALL PIPING SHALL BE CONCEALED UNLESS OTHERWISE NOTED. EXPOSING OF ANY PIPING MUST HAVE APPROVAL OF THE ARCHITECT.
 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.
 3. PIPING SHALL BE AS FOLLOWS:

A. GAS PIPING:

 - 1) 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 PLenums, PORTIONS OF A GAS PIPING SYSTEM INSTALLED IN CONCEALED LOCATIONS SHALL NOT HAVE UNIONS, TUBE FITTINGS, OR RUNNING THREADS.
 - 3) PAINT ALL NATURAL GAS PIPING ON ROOF YELLOW. PAINT ALL VERTICAL PIPING ON EXTERIOR WALL TO MATCH BUILDING COLOR.

B. VALVES:

 - 1) GAS VALVE SHALL BE LUBRICATED TYPE, CAST IRON OR U.L. LISTED TWO PIECE BRONZE BALL VALVE WITH PRTFE SEALS AND SEAT.
9. 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 THE WORK OF OTHER TRADES. SHOULD ANY INTERFERENCES OR VIOLATIONS OF BUILDING CODES, LAWS, ORDINANCES, AND REGULATIONS, APPEAR AND DEPARTURE FROM THE ARCHITECT PRIOR TO ENTERING INTO A CONTRACT WITH THE OWNER. FAILURE TO PROVIDE 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 COSTS BEING INCURRED BY THE OWNER.
10. THE CONTRACTOR SHALL SUBMIT EQUIPMENT SHOP DRAWINGS TO THE ARCHITECT FOR REVIEW PRIOR TO INSTALLATION OF ANY OF THE FOLLOWING EQUIPMENT:

A. GAS PIPING AND FITTINGS
11. 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.

MECHANICAL GENERAL NOTES:

1. COORDINATE NEW DUCTWORK WITH BUILDING STRUCTURAL CONDITIONS. EQUIPMENT MANUFACTURERS RECOMMENDATIONS AND ALL OTHER TRADES TO AVOID INTERFERENCES.
2. PROVIDE ACCESS AROUND ALL NEW EQUIPMENT PER MANUFACTURERS RECOMMENDATIONS.
3. ALL MECHANICAL RELATED CORING THROUGH WALLS AND FLOORS SHALL BE BY MECHANICAL CONTRACTOR. SEAL ALL CORING WITH APPROVED DUCT WALLS AND FLOORS WITH U.L. RATED CLOUD SEALANT IN ACCORDANCE WITH THE SPECIFICATION REQUIREMENTS.
4. ALL DUCTWORK SHALL BE ROUTED AS HIGH AS POSSIBLE IN EXPOSED CEILING AREAS OR AT ELEVATIONS LISTED ON DRAWINGS.
5. COORDINATE ALL DUCTWORK ROUTING WITH ARCHITECTURAL AND STRUCTURAL TRADES TO AVOID INTERFERENCES.
6. ALL NEW DUCT SIZES TO DIFFUSERS SHALL MATCH NECK SIZE OF DIFFUSER, REGISTER OR GRILLE.
7. COORDINATE EXACT LOCATIONS OF DIFFUSERS AND RETURN AIR GRILLES WITH ARCHITECTURAL AND ELECTRICAL REFLECTED CEILING PLANS AND ARCHITECTURAL INTERIOR ELEVATIONS AND SECTIONS.
8. COORDINATE ALL T5/T4 AND REMOTE SENSOR HEIGHTS ABOVE FINISHED FLOOR WITH ARCHITECTURAL TRADES.
9. BALANCE ALL AIR SYSTEMS TO VALUES INDICATED ON DRAWINGS.
10. 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.

HVAC SYMBOLS

SYMBOL	DESCRIPTION
	RETURN / EXHAUST AIR GRILLE
	SUPPLY AIR DIFFUSER
	SPIN-IN FITTING WITH VOLUME DAMPER
	HORIZONTAL FIRE DAMPER
	VERTICAL FIRE DAMPER
	VOLUME DAMPER
	CARBON MONOXIDE SENSOR
	NITROGEN DIOXIDE SENSOR
	THERMOSTAT OR SENSOR
	SUPPLY AIR ELBOW UP
	RETURN AIR ELBOW DOWN
	EXHAUST/RETURN AIR ELBOW UP
	EXHAUST/RETURN AIR ELBOW DOWN
	DOUBLE SIDE TRANSITION
	TRANSITION SLOPE SPECIFICATION: MAXIMUM SLOPE = 45° ALL SIZES IN INCHES
	SINGLE SIDE TRANSITION
	TOP TRANSITION (SLOPE ON TOP)
	RECTANGULAR TO ROUND TRANSITION
	ELBOW UP
	140° ROUND DUCT
	2X1/2" FLAT OVAL DUCT
	ELBOW DOWN
	ELBOW - RADIUS (R) = 1.5 TIMES DIAMETER OF DUCT

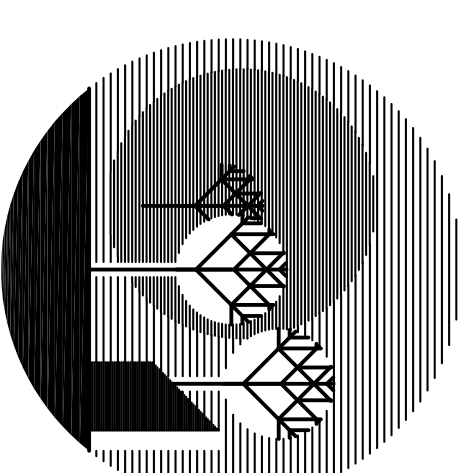
ABBREVIATIONS

ABB.	DESCRIPTION
A.F.	ABOVE FINISHED FLOOR
A.L.	ACOUSTIC DUCT LINER
B.O.D.	BOTTOM OF DUCT
C.D.#	CEILING DIFFUSER
C.F.M.	CUBIC FEET PER MINUTE
C.I.	CENTRIFUGAL
C.L.G.	CEILING
D.B.	DRY BULB TEMPERATURE
D.I.A. / Ø	DIAMETER
(E)	EXISTING
E.A.	EXHAUST AIR
E.F.#	EXHAUST FAN
E.G.#	EXHAUST GRILLE
E.H.#	ELECTRIC RADIANT HEATER
E.H.#	ELECTRIC UNIT HEATER
E.H.#	ELECTRIC UNIT HEATER
F.D.W.R.	FIRE DAMPER
I.D.	INSIDE DIAMETER
M.A.U.#	MAKE UP AIR UNIT
N.T.S.	NOT TO SCALE
O.A.	OUTSIDE AIR
O.E.D.	OPEN ENDED DUCT
R.A.	RETURN AIR
R.G.#	RETURN AIR GRILLE
R.H.	RELATIVE HUMIDITY
R.P.M.	REVOLUTIONS PER MINUTE
R.U.#	ROOF-UP UNIT
S.G.#	SUPPLY AIR GRILLE
S.A.	SUPPLY AIR
T.A.D.	TRANSFER AIR DUCT
T.P.D.	TYPICAL
V.D.	VOLUME DAMPER
W.B.	WET BULB TEMPERATURE

Prepared for:



Prepared by:

UNDER THE SUN
ARCHITECTURAL LLC11022 Morning Dove Lane
South Lyon, MI, 48178

notice

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.

ALL RIGHTS ARE HEREBY RESERVED.

UNDER THE SUN, LLC
COPYRIGHT YEAR 2003

Project title

**DEMNER
QUICKLANE**

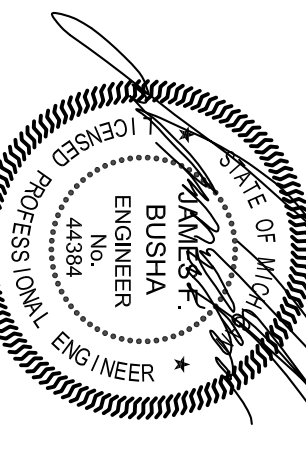
3740
MICHIGAN AVE
WAYNE MI

sheet title

**HVAC NOTES,
SYMBOLS, ABBREV.
& SPECIFICATIONS**

DO NOT SCALE DRAWINGS
USE REQUIRED DIMENSIONS ONLY

Seal & Signature



Project number

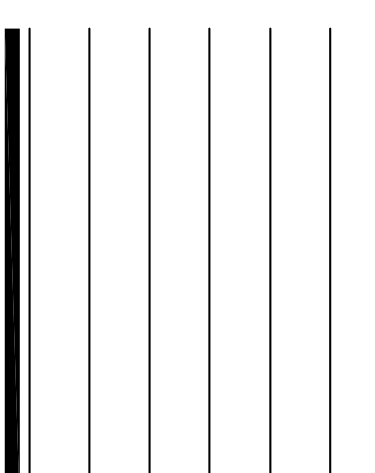
13004

Drawn WEV

Approved JFB

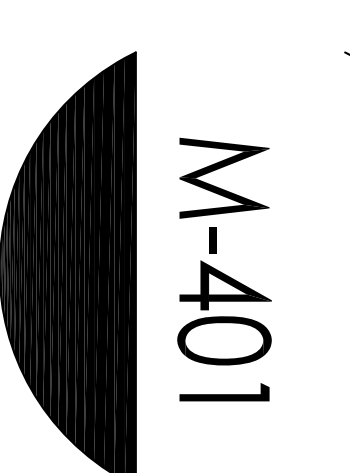
Issued date

Bids & Permits 2/07/14



SHEET

M-401



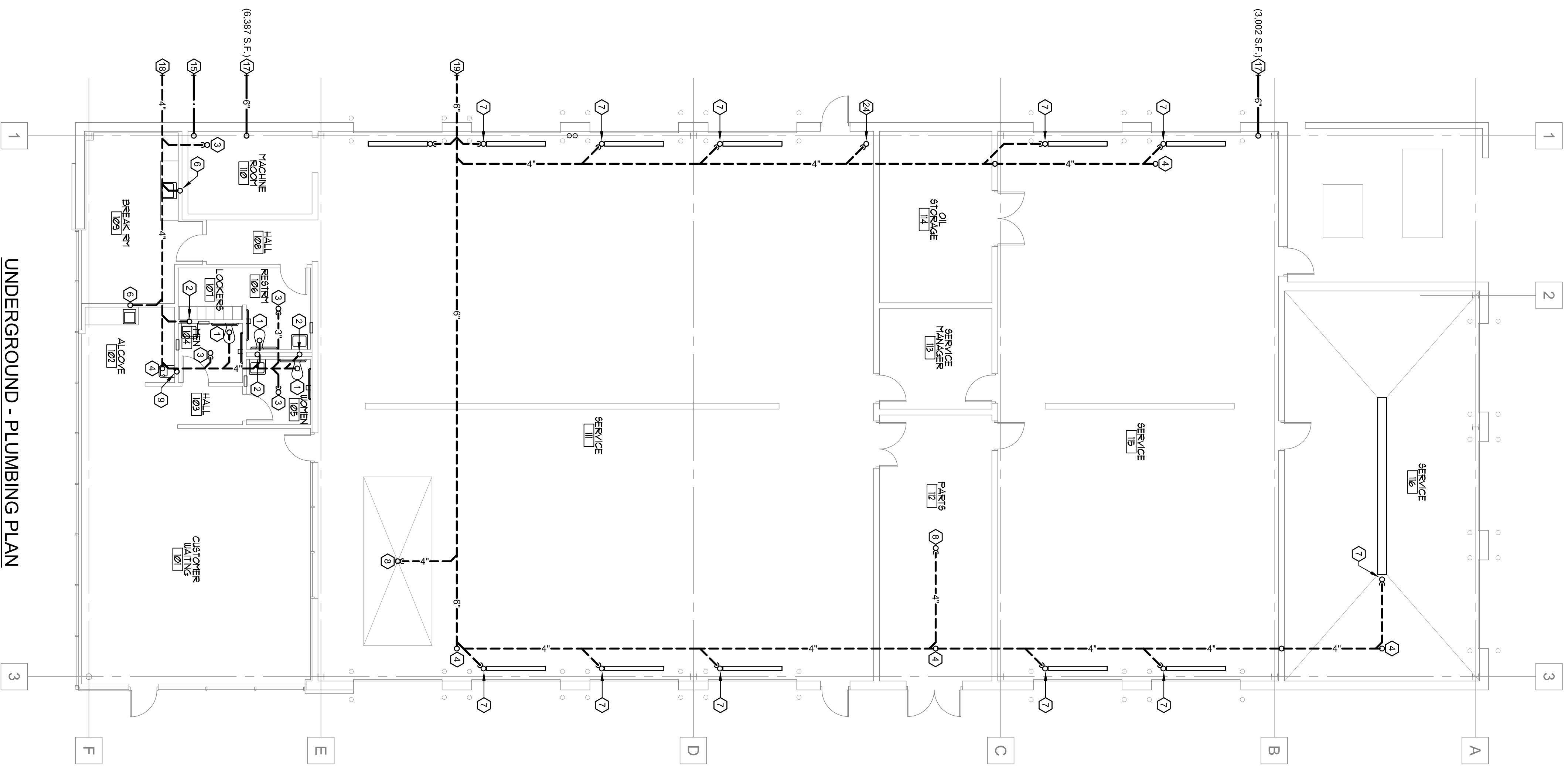
MEEC logo
1415 Oldsmar
Plymouth, MI 48170
F: 734-466-8977

MEEC 001 - 380-1320

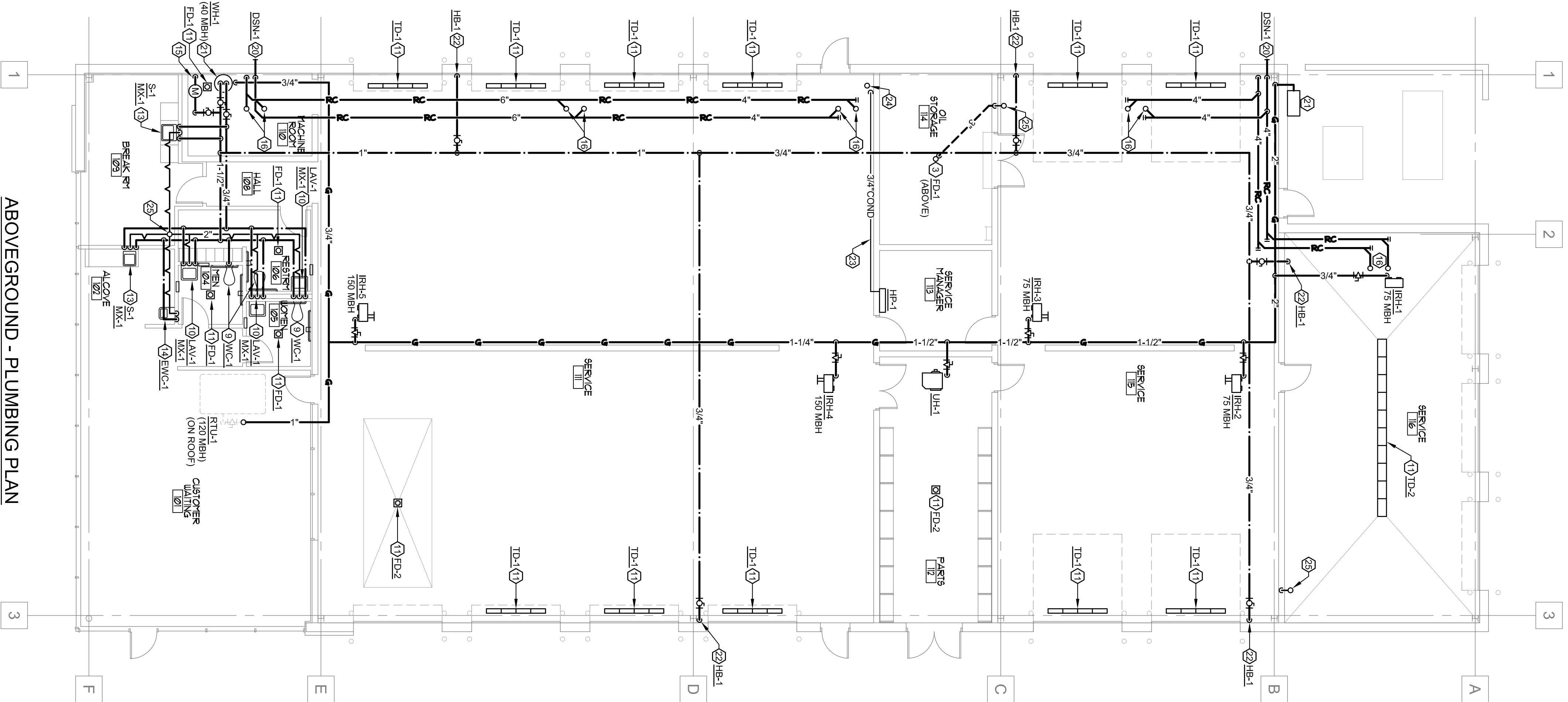
mechanical electrical
engineering consultants
pc

THIS DRAWING IS DIAGNOSTIC AND SHOULD BE USED AS SUCH. THE CONTRACTOR SHALL 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 THE WORK OF OTHER TRADES. SHOULD ANY INTERFERENCES OR VIOLATIONS OF BUILDING CODES, LAWS, ORDINANCES, AND REGULATIONS, APPEAR AND DEPARTURE FROM THE ARCHITECT PRIOR TO ENTERING INTO A CONTRACT WITH THE OWNER, FAILURE TO PROVIDE 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 COSTS BEING INCURRED BY THE OWNER.

MECHANICAL, ELECTRICAL, ENGINEERING CONSULTANTS, PC AND ARCHITECTURAL ENGINEERING CONSULTANTS, PC ARE LICENSED PROFESSIONALS IN THE STATE OF MICHIGAN. ALL RIGHTS WRITTEN APPROVAL IS GRANTED BY MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, PC.



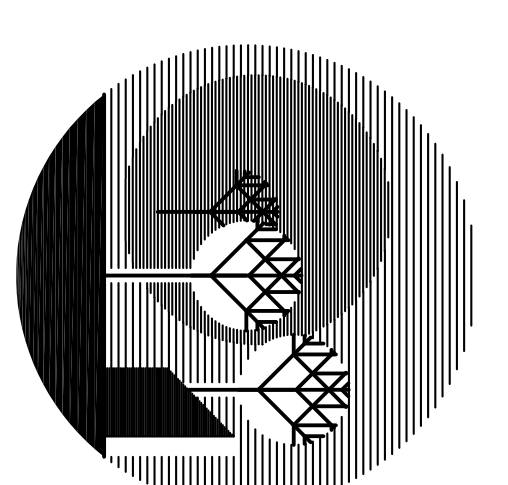
UNDERGROUND - PLUMBING PLAN
SCALE: 1/8"=1'-0"



ABOVEGROUND - PLUMBING PLAN
SCALE: 1/8"=1'-0"

KEYED NOTES:

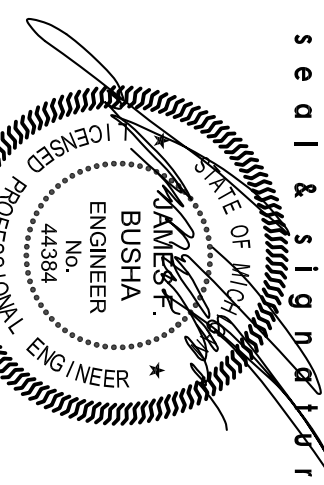
1. 4" SANITARY UP TO WATER CLOSET FLOOR FLANGE.
2. 3" UNDERGROUND SANITARY WITH 2" UP IN WALL TO LAVATORY.
3. 3" SANITARY WITH P-TRAP UP TO FLOOR DRAIN.
4. 4" SANITARY UP TO FLOOR CLEANOUT.
5. 3" SANITARY WITH P-TRAP UP TO SERVICE SINK.
6. 3" UNDERGROUND SANITARY WITH 2" UP IN WALL TO SINK.
7. 4" SANITARY UP TO TRENCH DRAIN.
8. 4" SANITARY WITH P-TRAP UP TO FLOOR DRAIN.
9. 3" UNDERGROUND SANITARY WITH 2" UP IN WALL TO ELECTRIC WATER COOLER.
10. 1/2" HOT AND COLD WATER WITH 1-1/2" SANITARY AND VENT TO LAVATORY. PROVIDE THERMOSTATIC MIXING VALVE UNDER SLOPE.
11. COORDINATE FINAL FLOOR/TRENCH DRAIN LOCATION WITH FLOOR SLOPE.
12. 1" COLD WATER WITH DOWN TO WATER CLOSET FLUSH VALVE.
13. PROVIDE THERMOSTATIC MIXING VALVE UNDER SINK.
14. 1/2" COLD WATER AND 1-1/2" SANITARY WASTE AND VENT TO ELECTRIC WATER COOLER.
15. 1-1/2" DOMESTIC WATER SERVICE. COORDINATE WITH CIVIL TRADES FOR CONTINUATION.
16. 4" RAIN CONDUCTOR PIPE UP TO ROOF SLUMP. INSULATE SLUMP PAN AND ALL HORIZONTAL RAIN CONDUCTOR PIPING.
17. 6" RAIN CONDUCTORS TO 5'-0" FROM BUILDING. COORDINATE FINAL HEAD LOCATION AND INVERT ELEVATION WITH CIVIL TRADES.
18. 4" SANITARY MAIN TO 5'-0" FROM BUILDING. COORDINATE FINAL LOCATION AND INVERT ELEVATION WITH CIVIL TRADES.
19. 6" OIL SANITARY MAIN TO 5'-0" FROM BUILDING. COORDINATE FINAL HEAD LOCATION AND INVERT ELEVATION WITH CIVIL TRADES.
20. 6" OVERFLOW RAIN CONDUCTOR DOWN TO 18" A.F.G. TO TERMINATE AT WALL MOUNTED DOWNSPOUT NOZZLE DSNL1.
21. NATURAL GAS METERS SIZED FOR 750 GPH @ 7" W.C.
22. 3/4" COLD WATER DOWN TO 24" A.F.F. TO HOSE BIBB. PROVIDE HOSE BIBB WITH ATMOSPHERIC VACUUM BREAKER.
23. ROUTE CONDENSATE ALONG WALL AND DOWN WALL TO SPILL TO HUB OUTLET. PROVIDE 1" AIR GAP.
24. 3" CAST IRON HUB OUTLET WITH P-TRAP. EXTEND PIPE 3" A.F.F.
25. 3" SANITARY VENT THROUGH ROOF. INSTALL A MINIMUM OF 10'-0" FROM ROOFTOP UNIT OUTDOOR AIR INTAKE OPENING.



UNDER THE SUN ARCHITECTURAL LLC
11022 Morning Dove Lane
South Lyon, MI, 48178

DEMNER QUICKLANE
3740 MICHIGAN AVE WAYNE, MI

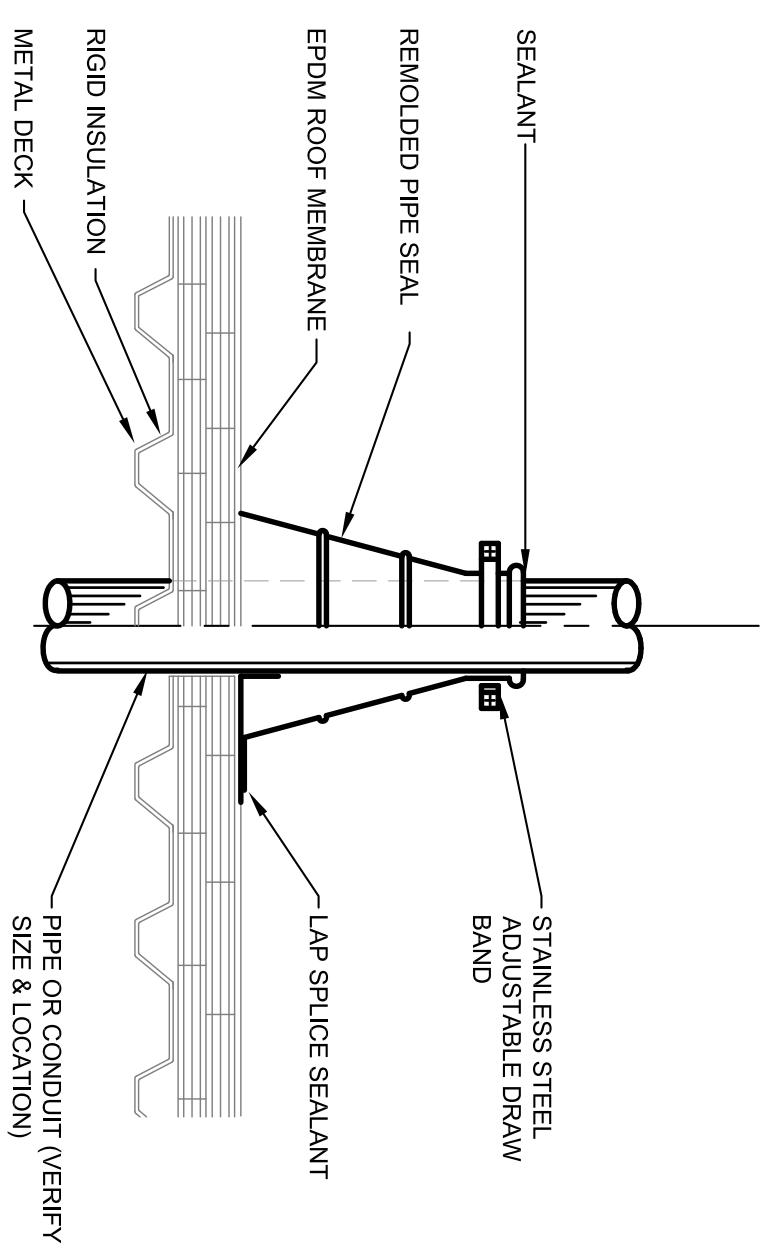
UNDERGROUND & ABOVEGROUND PLUMBING PLANS
DO NOT SCALE DRAWINGS
USE FINISHED DIMENSIONS ONLY



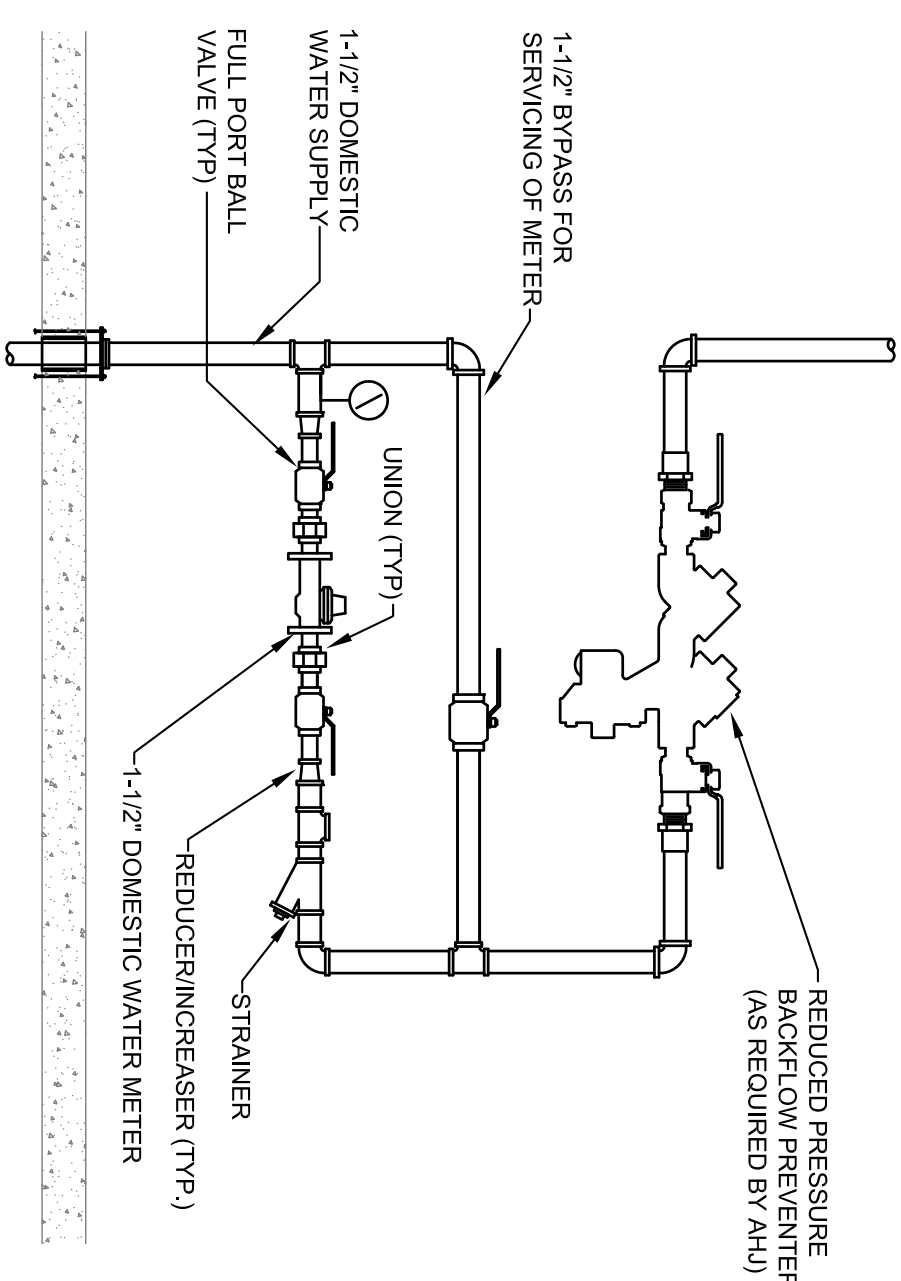
Project number
13004
drawn WEV
approved JFB
issued date 2/07/14
Bids & Permits

MEEC mechanical electrical plumbing
1415 Galesville Plymouth, MI 48170
P: 248-466-8977 F: 248-466-8977

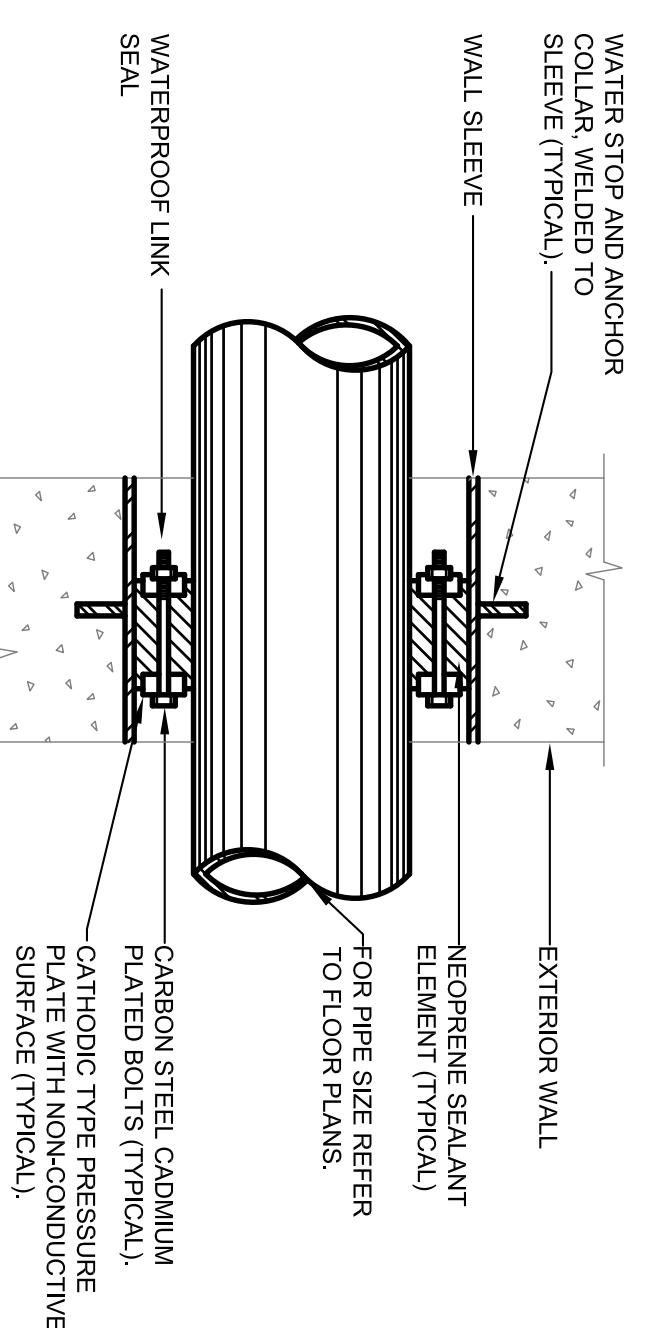
SHEET
P-101



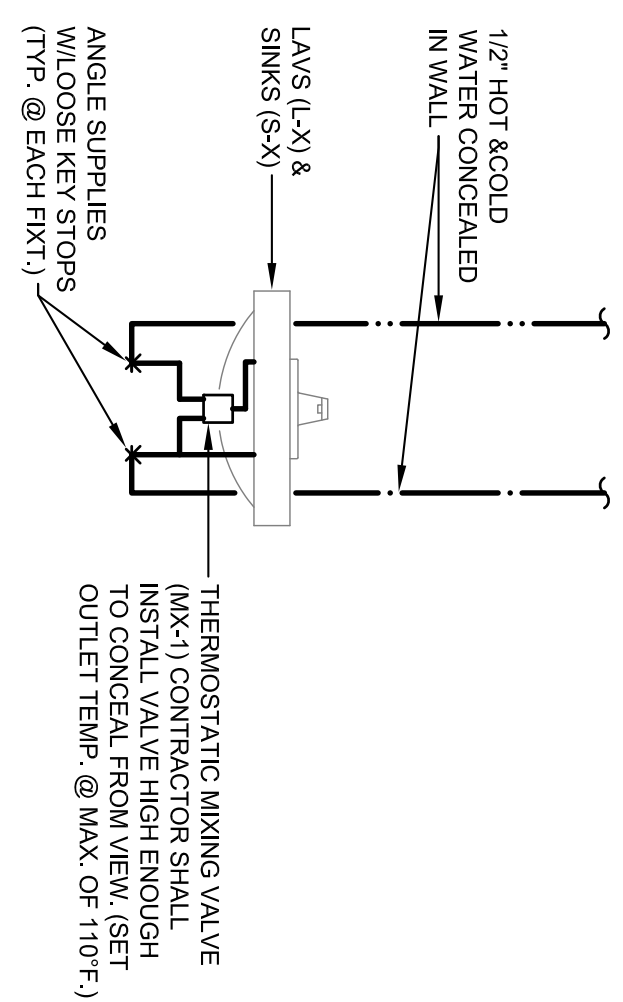
PIPE PENETRATION AND ROOF FLASHING DETAIL
N.T.S.



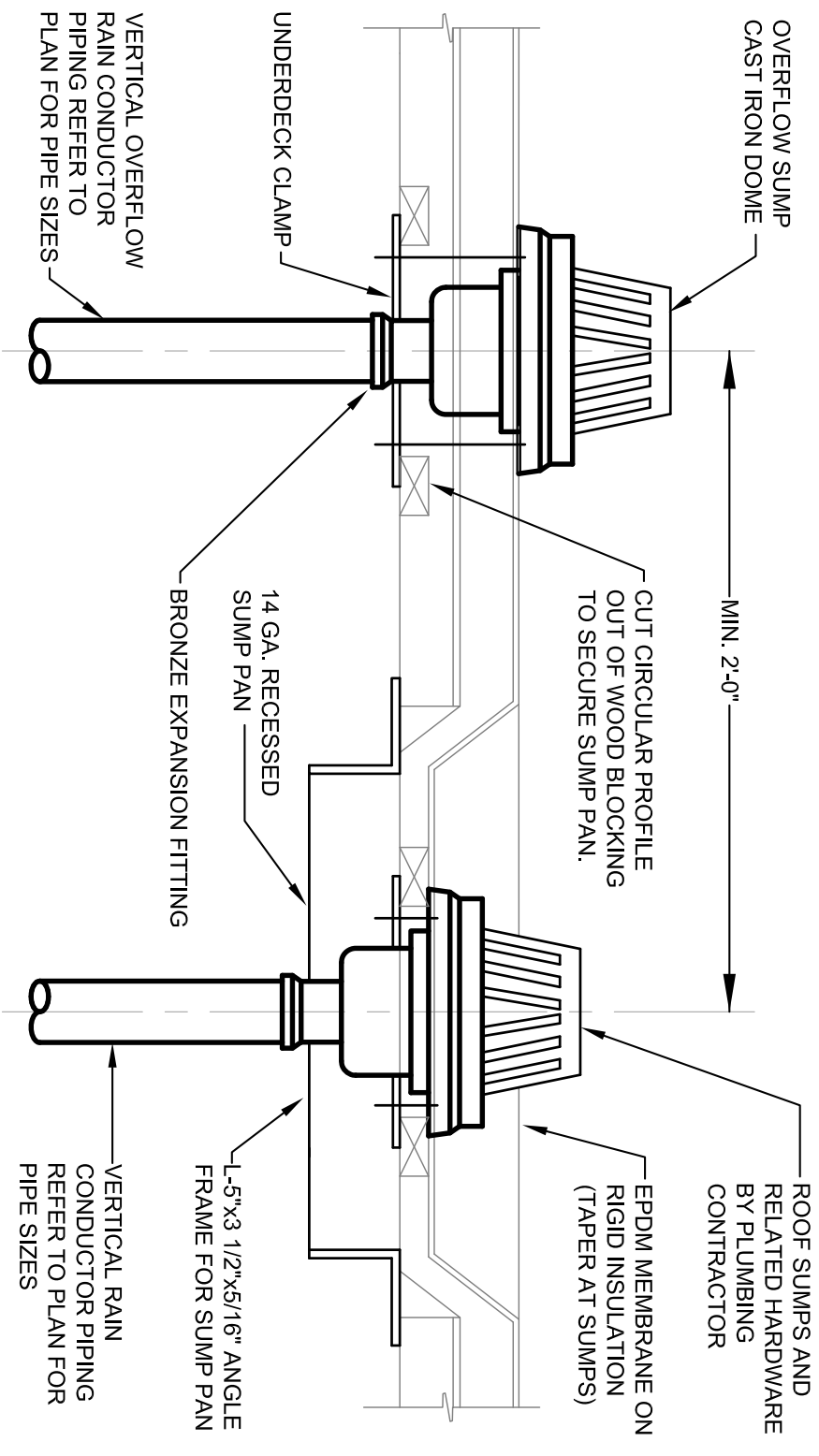
DOMESTIC WATER METER WITH REDUCED PRESSURE BACKFLOW PREVENTER DIAGRAM
N.T.S.



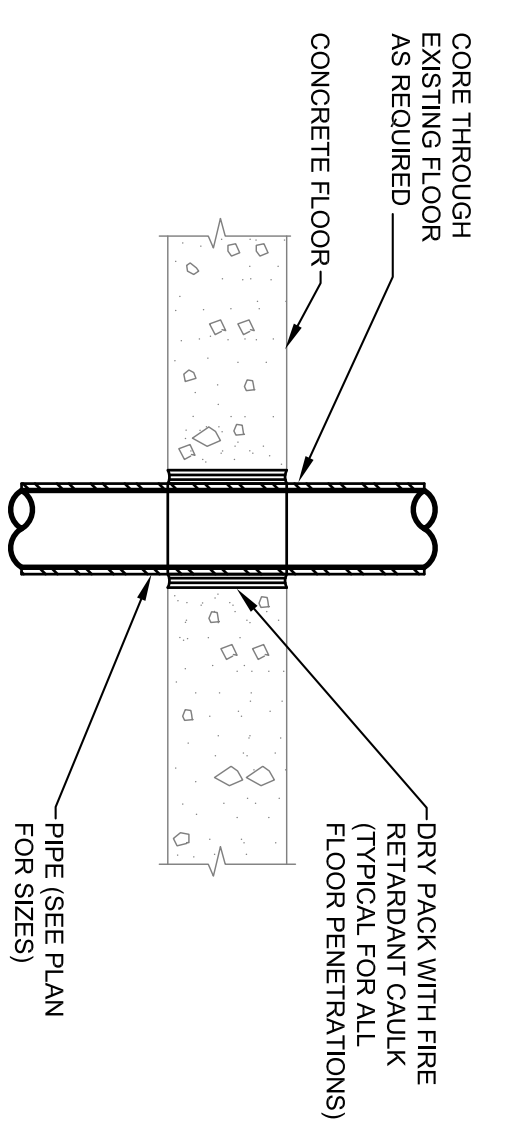
TYPICAL DETAIL OF WATERTIGHT SEAL AND SLEEVE THRU EXTERIOR WALL
N.T.S.



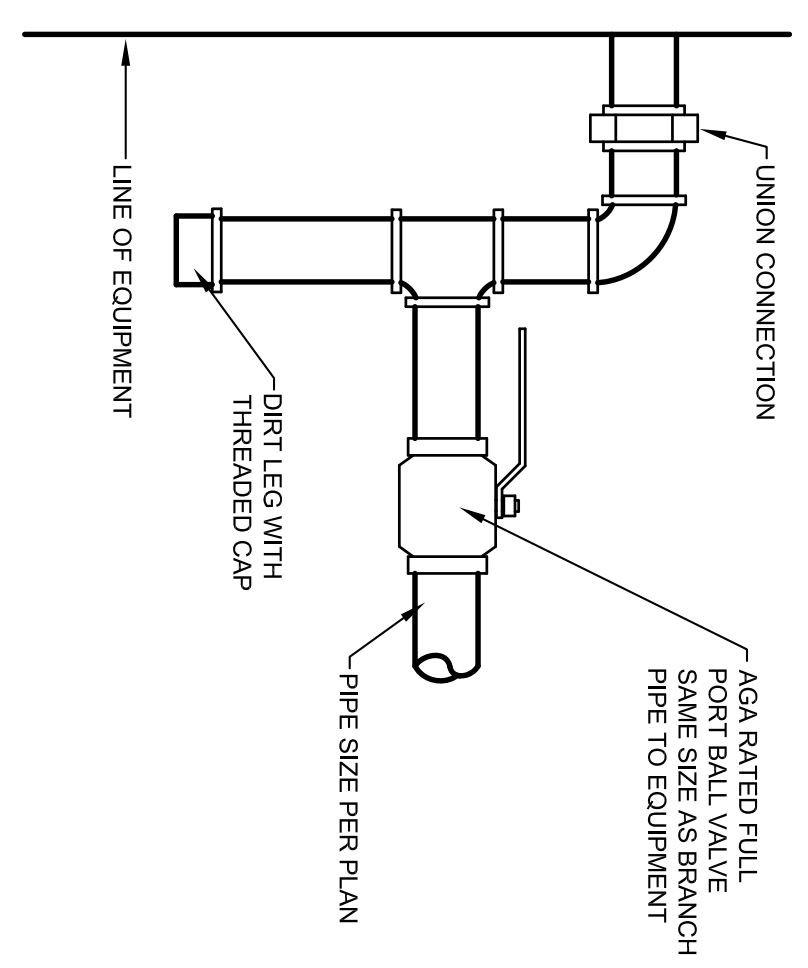
THERMOSTATIC MIXING VALVE DETAIL
N.T.S.



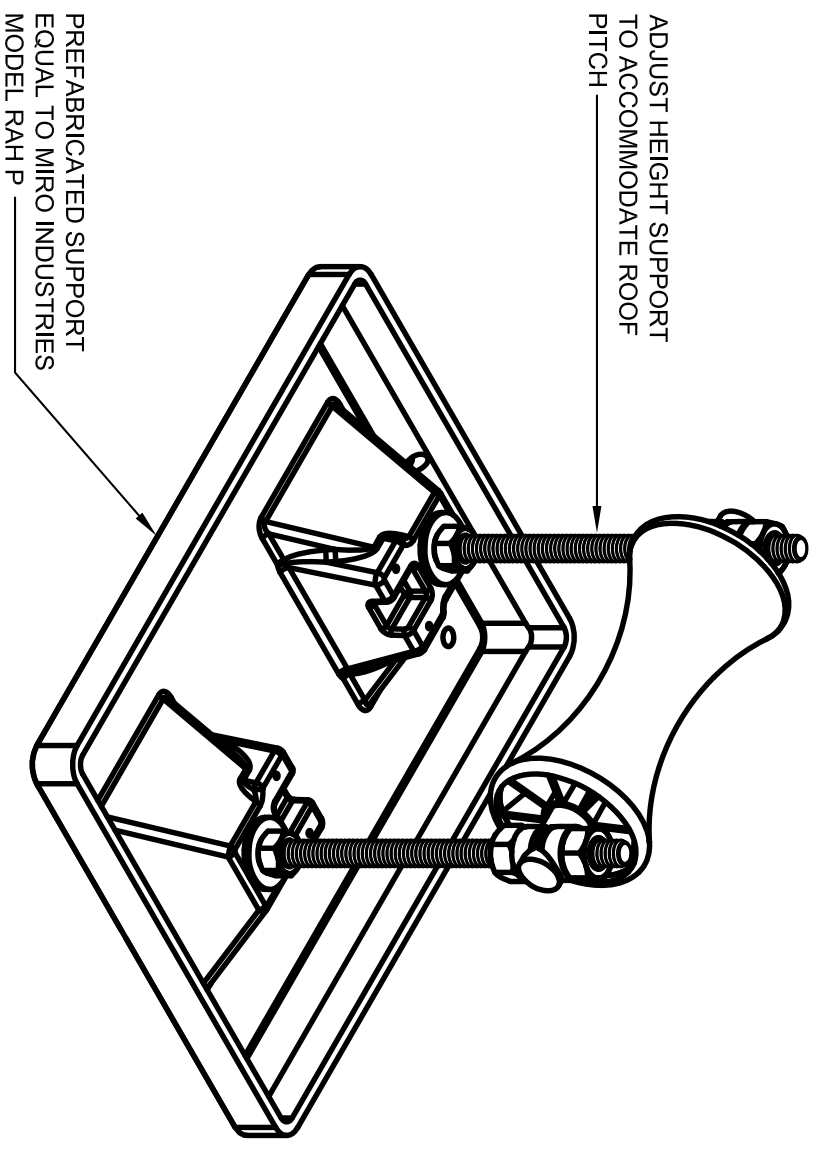
TYPICAL ROOF SUMP WITH OVERFLOW DETAIL
N.T.S.



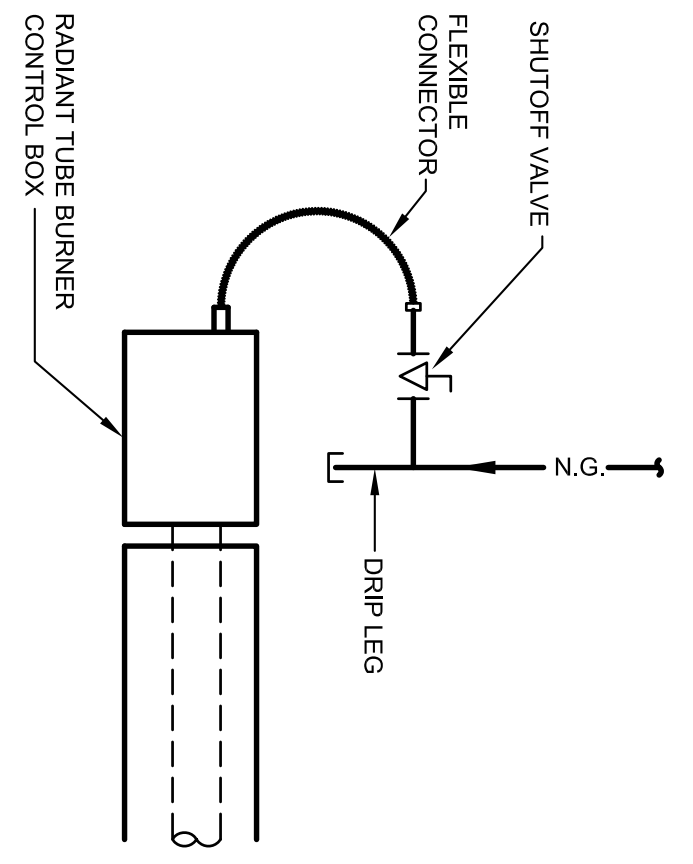
PIPE SLEEVE THROUGH FLOOR DETAIL
N.T.S.



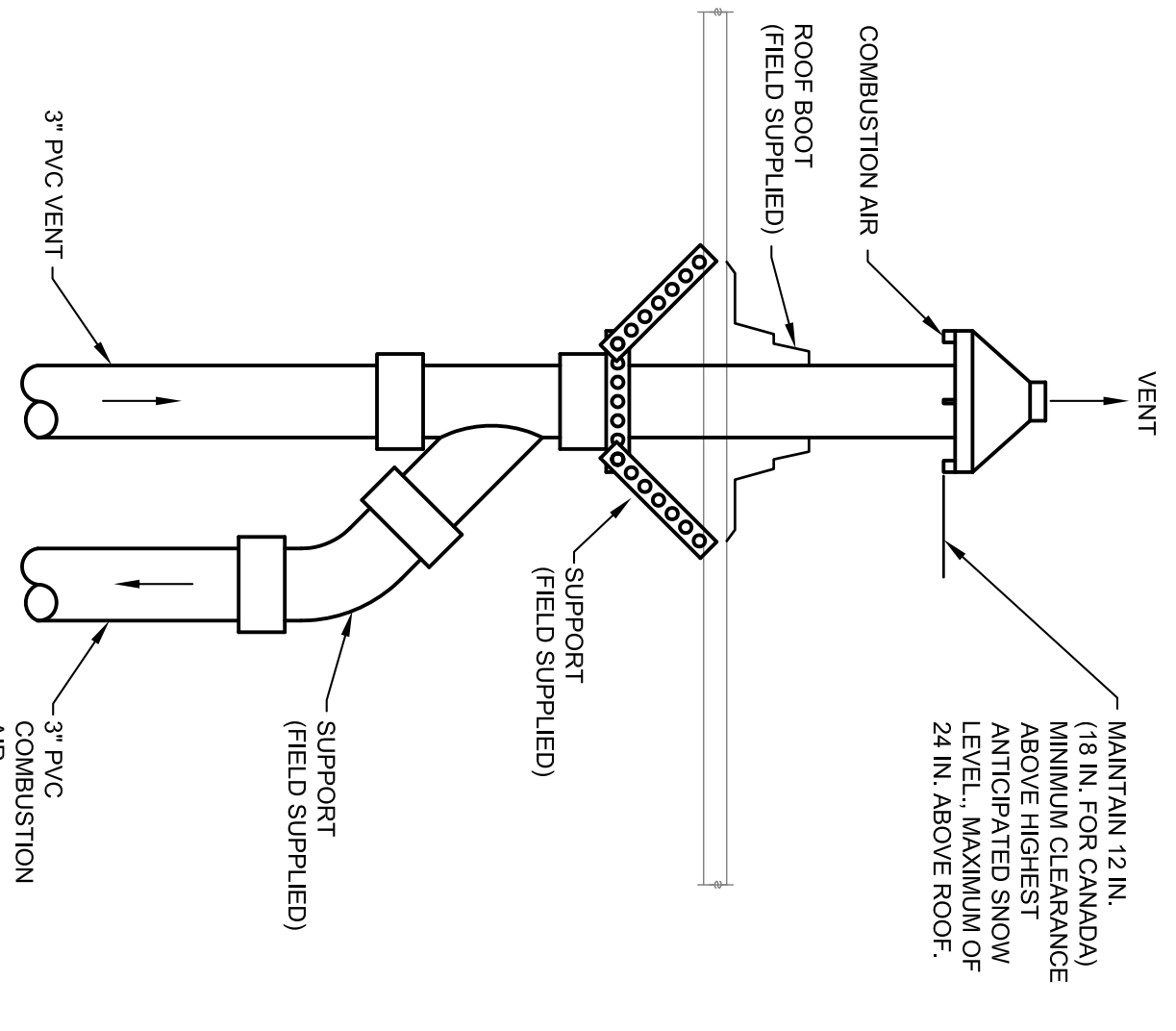
GAS PIPE EQUIPMENT CONNECTION DETAIL
N.T.S.



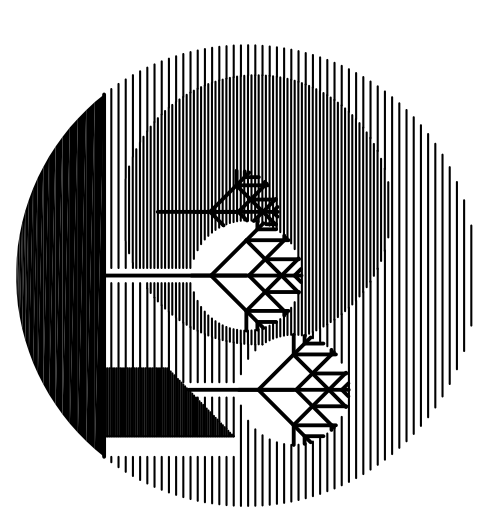
DETAIL OF ROOF GAS PIPE SUPPORT
N.T.S.



RADIANT HEATER N.G. CONNECTION DETAIL
N.T.S.



CONCENTRIC VENT ROOF DETAIL
N.T.S.



UNDER THE SUN ARCHITECTURAL LLC
11022 Morning Dove Lane
South Lyon, MI, 48178

notice
THIS ARCHITECTURAL DRAWING IS GIVEN IN STRICT COMPLIANCE. NO USE, IN WHOLE OR PART, MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF UNDER THE SUN, LLC.
ALL RIGHTS ARE HEREBY RESERVED.
UNDER THE SUN, LLC
COPYRIGHT YEAR 2008

Project title
DEMNER QUICKLANE
3740 MICHIGAN AVE WAYNE MI

sheet title
PLUMBING DETAILS

DO NOT SCALE DRAWINGS
USE DIMENSIONS ONLY
see & sign off
BUSHA
REGISTERED PROFESSIONAL ENGINEER
PROJECT number
13004

drawn **WEV**
approved **JFB**
issued **date**
Bids & Permits **2/07/14**

MEEC mechanical electrical plumbing
1415 Galesburg Plymouth, MI 48170 P: 248-464-8977 F: 248-464-8977
THIS DRAWING IS THE PROPERTY OF MEEC CONSULTANTS, P.C. AND IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREIN. ANY REUSE OR REPRODUCTION OF THIS DRAWING WITHOUT THE WRITTEN CONSENT OF MEEC CONSULTANTS, P.C. IS STRICTLY PROHIBITED. THE USER SHALL VERIFY ALL WORK AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES, OMISSIONS, OR ERRORS IN THE DOCUMENTS BEFORE PROCEEDING. FAILURE TO DO SO SHALL BE AT THE USER'S RISK. MEEC CONSULTANTS, P.C. IS NOT RESPONSIBLE FOR ANY DAMAGE, LOSS, OR LIABILITY FOR SAID DISCREPANCIES, OMISSIONS, OR ERRORS. MEEC CONSULTANTS, P.C. IS AN EQUAL OPPORTUNITY EMPLOYER. MEEC CONSULTANTS, P.C. IS AN EQUAL OPPORTUNITY EMPLOYER. MEEC CONSULTANTS, P.C. IS AN EQUAL OPPORTUNITY EMPLOYER. MEEC CONSULTANTS, P.C. IS AN EQUAL OPPORTUNITY EMPLOYER.

PLUMBING FIXTURE SCHEDULE

MARK	ITEM	ADA	DESCRIPTION	ACCESSORIES	PIPE CONNECTION SIZES				NOTES
					W	V	CW	HW	
WC-1	FLOOR MOUNTED FLUSH VALVE WATER CLOSET	X	American Standard MADEIRA Elongated 16-1/2" (400mm) High Low Consumption TBM #5401.001	Flush Valve: Sloan #111-ROXYAL Seat: American Standard #59065.110 Flange	4"	2"	1"	--	
L-1	WALL MOUNTED LAVATORY		American Standard #6035.012 LUCERNE Basin	Faucet: American Standard #7385.004VA.002 Aerator: American Standard #V05 Drain: McGuire #H70BY-LIN 1/4" lum Supply: McGuire #H70BY-LIN 1/2" lum P-trap: McGuire P-trap 1-1/2" Chrome Carrier: Jay R. Smith #0700-2	1-1/2"	1-1/2"	1/2"	1/2"	1
S-1	STAINLESS STEEL SINK (18 9/16)		Eley #LRT1919 with Eley #LQ2432BH two lever faucet & tubular spring-mount aerator - 3-hole installation	3-1/2" drain outlet, cortical stainless steel with nonleak fill cap brass 1-1/2" O.D. tailpiece	2"	2"	1/2"	1/2"	
GD-1	GARBAGE DISPOSER		INSINKERATOR BADGER 5	1/2 HP 110V/1Ø DISH WASHER CONNECTION	1-1/2"	--	--	--	
MK-1	THERMOSTATIC MIXING VALVE		WATTS USG-8	ASSE 1070 Thermostatic Mixing Valve	--	--	1/2"	1/2"	
HB-1	HOSE BIBB		WOODFORD MODEL 28	Atmospheric Vacuum Breaker	--	--	3/4"	--	

APPROVED PLUMBING FIXTURE MANUFACTURERS: AMERICAN STANDARD, MANFIELD, GRANE, TOTO, ELKAY, KOHLER, ZURN, FIAT, FLORESTONE, MISTEE. 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 TRUEBERO "LAV SQUARE" ON ALL ACCESSIBLE LAVATORIES AND SINKS.

ELECTRIC WATER COOLER SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	FINISH	TYPE	ADA	CAPACITY G.P.H.	ELECTRICAL			NOTES
							WATTS	F.L.A.	VOLT./PHASE	
EMC-1	ELKAY	EZS8	STAINLESS	WALL MOUNT	ADULT & CHILD	8	370	4.0	120 / 1	1, 2

(APPROVED EQUAL: SUIRROC, HALSEY-TAYLOR, ACCORN AQUA)

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

GAS FIRED DOMESTIC WATER HEATER SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	LOCATION	CAPACITIES			GAS DATA			NOTES
				RECOVERY GPH	STORAGE GALLONS	TEMP. RISE DEG. F.	INPUT CFH	TYPE		
WH-1	A.O. SMITH	GRDH-40	SEE PLANS	41	40	90	40	NAT.	1, 2, 3, 4	

(APPROVED EQUAL: LOCHINVAR, A.O. SMITH, BROOKFORD WHITE)

NOTES:
1. TEMPERATURE AND PRESSURE RELIEF VALVE
2. MAGNESIUM TANK SAVER ANODE ROD
3. A.G.A. CERTIFIED
4. 5 P.V.C. FLUE AND COMBUSTION AIR PIPING.

FLOOR DRAIN SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	LOCATION	BODY MATERIAL	GRATE		FINISH	STRAINER	PIPE SIZE (IN.)	NOTES
					TYPE	TYPE				
FD-1	ZURN	ZM415-6B	SEE PLAN	DUCO CAST IRON	6" DIA.	NICKEL BRONZE	NONE	NONE	3"	1
FD-2	ZURN	ZS04	SEE PLAN	DUCO CAST IRON	12" DIA.	CAST IRON	NONE	NONE	4"	1

(APPROVED EQUAL: JOSSAM, JR SMITH, SIOUX CHIEF, MIFAB)

NOTES:
1. PROVIDE "SURESEAL" IN LINE TRAP SEAL.

TRENCH DRAIN SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	LOCATION	BODY MATERIAL	GRATE		FINISH	DIMENSIONS	PIPE SIZE (IN.)	NOTES
					TYPE	TYPE				
TD-1	ZURN	Z888-HD	SEE PLAN	HDPE	CG - SLOTTED GRATE	CAST IRON	CAST IRON	6" x 80"	4"	1, 2, 3
TD-2	ZURN	Z882	SEE PLAN	HDPE	DGC - SLOTTED GRATE	DUCTILE IRON	DUCTILE IRON	12" x 240"	4"	1, 2

(APPROVED EQUAL: JOSSAM, ZURN, SIOUX CHIEF, MIFAB)

NOTES:
1. PROVIDE END OUTLET WITH 4 NO-HUB FITTINGS.
2. BOD SHALL HAVE 75% BULK IN SLOPE.
3. PROVIDE OPTIONAL HD FRAME ASSEMBLY.

ROOF DRAIN SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	BODY MATERIAL	DOME		PIPE SIZE (IN.)	NOTES
				MATERIAL	SIZE		
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"	

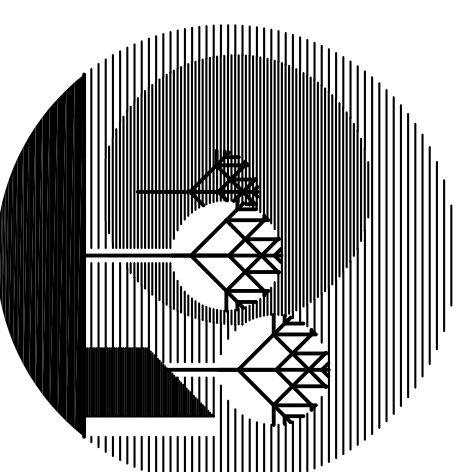
(APPROVED EQUAL: JOSSAM, ZURN, MIFAB)

NOTES:
1. INTERNAL 3" WATER DAM.

Prepared for:



Prepared by:



UNDER THE SUN ARCHITECTURAL LLC
11022 Morning Dove Lane
South Lyon, MI, 48178

notice

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. ALL RIGHTS ARE HEREBY RESERVED.

UNDER THE SUN, LLC
COPYRIGHT YEAR 2019

Project title

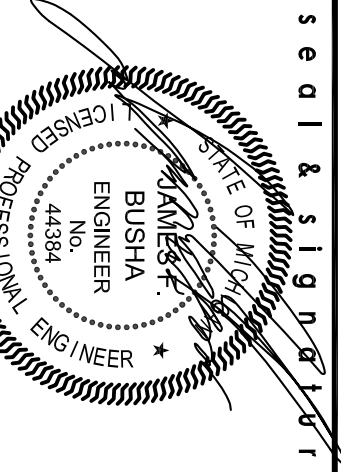
DEMME QUICKLANE

3740 MICHIGAN AVE WAYNE MI

sheet title

PLUMBING SCHEDULES

DO NOT SCALE DRAWINGS
USE REQUIRED DIMENSIONS ONLY



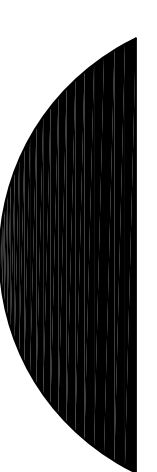
Project number

13004

Drawn: WEV
Applied: JFB
Issued: date
Bids & Permits: 2/07/14

SHEET

P-301



mechanical electrical plumbing
engineering consultants
1415 Galesville
Farmington, MI 48170
P: 248-466-8977
F: 248-466-8971

THIS DRAWING IS UNDESIGNED, UNDESIGNED AND SHOULD BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED. ANY OTHER USE OF THIS DRAWING IS PROHIBITED. THE USER SHALL VERIFY ALL WORK AND SHALL NOTIFY THE DESIGNER OF ANY DISCREPANCIES, OMISSIONS, OR INADEQUACIES IN THE DOCUMENTS BEFORE PROCEEDING. IT IS THE USER'S RESPONSIBILITY TO OBTAIN ALL NECESSARY PERMITS AND TO OBTAIN ALL NECESSARY APPROVALS FROM ALL AFFECTING AGENCIES. MECHANICAL, ELECTRICAL, ENGINEERING CONSULTANTS, P.C. AND MECHANICAL, ELECTRICAL, ENGINEERING CONSULTANTS, P.C. AND MECHANICAL, ELECTRICAL, ENGINEERING CONSULTANTS, P.C. AND MECHANICAL, ELECTRICAL, ENGINEERING CONSULTANTS, P.C. UNLESS WRITTEN APPROVAL IS GRANTED BY MECHANICAL, ELECTRICAL, ENGINEERING CONSULTANTS, P.C.

PLUMBING SPECIFICATIONS:

- PLUMBING GENERAL REQUIREMENTS:**
1. 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.
 2. 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.
 3. COORDINATE EXACT LOCATION OF CONSTRUCTION TO PRECLUDE ANY INTERFERENCES BETWEEN PIPING, WIRING, LIGHTING FIXTURES, DUCTWORK, BUILDING EQUIPMENT, PROCESS EQUIPMENT AND OTHER CONSTRUCTION.
 4. REQUIRE LABOR, INCLUDING FIELD ERECTION, AND SUPERVISION, MATERIALS, EQUIPMENT AND ADEQUATE COORDINATION BETWEEN TRADES, TO BE PROVIDED BY THE CONTRACTOR. THE CONTRACTOR SHALL START, DEBUG AND TEST ALL SYSTEMS AS NECESSARY TO PROVIDE THE OWNER WITH A COMPLETE, OPERATING FACILITY IN CONFORMANCE WITH THE CONSTRUCTION BID DOCUMENTS.
 5. ALL CUTTING AND PATCHING THAT MAY BE NECESSARY FOR THE INSTALLATION OF THE MECHANICAL CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL ALTERATION OF THE BUILDING STRUCTURAL SYSTEM SHALL BE PERFORMED WITHOUT THE WRITTEN CONSENT OF THE LANDLORD AFTER ARCHITECT HAS APPROVED AND SIGNED OFF.
 6. THE PLUMBING CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING HIS BID TO FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY 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 COORDINATED SHOP DRAWINGS SHALL RESULT IN THE CONTRACTOR BEING HELD RESPONSIBLE FOR EXPENSES BEING INCURRED BY THE OWNER.
 7. 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.
 8. 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.
- GENERAL NOTES: PLUMBING**
1. ALL PLUMBING SHALL BE CONCEALED UNLESS OTHERWISE NOTED. EXPOSING OF ANY PLUMBING MUST HAVE APPROVAL OF THE ARCHITECT.
 2. THE PLUMBING SYSTEMS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL STATE AND LOCAL CODES AND REGULATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND ARRANGE FOR ALL INSPECTIONS FOR HIS WORK. AT THE COMPLETION OF THE PROJECT, THE PLUMBING CONTRACTOR SHALL FINISH THE WORK WITH CERTIFICATES OF FINAL INSPECTIONS AND APPROVALS.
 3. PLUMBING SHALL BE AS FOLLOWS:
 - A. SANITARY AND VENT PIPING:
 - 1) ALL 1-1/2" AND LARGER WASTE AND VENT PIPING ABOVE GROUND SHALL BE STANDARD 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 PIPE WITH COMPRESSION TYPE FITTINGS, OR SCHEDULE 40 P.V.C. WHERE LOCAL CODE PERMITS.
 - B. DOMESTIC WATER PIPING:
 - 1) ALL ABOVE GROUND DOMESTIC WATER PIPING SHALL BE TYPE "A" HARD DRAWN COPPER PIPE WITH 90 DEGREE ELBOWS AND TEES. ALL BELOW GROUND DOMESTIC WATER PIPING SHALL BE MADE WITH 3/4-INCH SOLDER OR AN APPROVED NON-TOXIC SOLDER MECHANICAL TYPE FITTINGS EQUAL TO "PROGRESS SYSTEMS" ARE APPROVED IN LIEU OF SOLDERED FITTINGS.
 - 2) ALL UNDERGROUND PIPING SHALL BE TYPE "K" COPPER OR PEX. PIPE FITTINGS ARE NOT ALLOWED BELOW FLOOR SLAB.
 - C. VALVES:
 - 1) BALL VALVES SHALL BE TWO PIECE FULL PORT BRONZE BALL VALVES WITH STAINLESS STEEL TRIM. THE SEATS WITH 316 STAINLESS STEEL BALL AND STEM. THREADED BODY PACK NUT DESIGN WITH ADJUSTABLE STEEL PACKING WITH THREADED OR SOLDERED ENDS, RATED FOR 150 PSIG SHF AND 800 PSIG CWP.
 - 2) 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.
 4. PIPING INSULATION:
 - 1) DOMESTIC HOT, COLD & HOT WATER RETURN PIPING SHALL BE INSULATED WITH MINIMUM 1" THICK FIBERGLASS INSULATION WITH A FIRE RETARDANT JACKET, HAVING AN AVERAGE R VALUE OF 3.45. COLD WATER PIPING INSULATION SHALL BE PROVIDED WITH A VAPOR BARRIER. PROVIDE PREFORMED SECTIONS WITH PVC COVERS AT ALL FITTINGS.
 - 2) ABOVE GROUND STORY PIPING (HORIZONTAL PIPING INCLUDING FITTINGS) AND ROOF INSULATION WITH A VAPOR BARRIER.
 - 3) PIPE INSULATION SHALL HAVE A FLAME SPREAD AND SMOKE DENSITY RATING NOT EXCEEDING 25/50, AS TESTED PER ASTM STANDARD E-84.

PLUMBING GENERAL NOTES:

1. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL NEW PLUMBING FIXTURES.
2. ALL PLUMBING RELATED CORING THROUGH FLOORS SHALL BE BY PLUMBING CONTRACTOR.
3. COORDINATE ALL NEW LOCATIONS, SIZES AND ELEVATIONS OF SLEEVES THROUGH WALLS SLABS AND FOUNDATIONS WITH STRUCTURAL DRAWINGS AND EXISTING FIELD CONDITIONS.
4. COORDINATE ALL PIPE ROUTING WITH SITE CONDITIONS. EQUIPMENT MANUFACTURERS RECOMMENDATIONS AND ALL OTHER TRADES TO AVOID INTERFERENCES. PROVIDE ACCESS AROUND ALL NEW EQUIPMENT PER MANUFACTURERS RECOMMENDATIONS.
5. ALL OVERHEAD DOMESTIC WATER AND STORM PIPING SHALL BE INSULATED AND LABELED IN ACCORDANCE WITH THE SPECIFICATION REQUIREMENTS.
6. ALL PIPING SHALL BE CONCEALED IN WALLS, CEILING SPACES OR ARCHITECTURAL SOFFITS.
7. SEAL ALL PENETRATIONS THROUGH WALLS AND FLOORS AIR AND WATER TIGHT; COORDINATE LOCATIONS AND ELEVATIONS OF ALL NEW UNDERGROUND UTILITIES WITH CIVIL SITE PLANS PRIOR TO START OF CONSTRUCTION.
8. CONTRACTORS 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.
9. MICHIGAN ENERGY STANDARDS.
10. 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 FITTED AT 1/4" PER FOOT MINIMUM, UNLESS NOTED OTHERWISE.

PLUMBING SYMBOLS

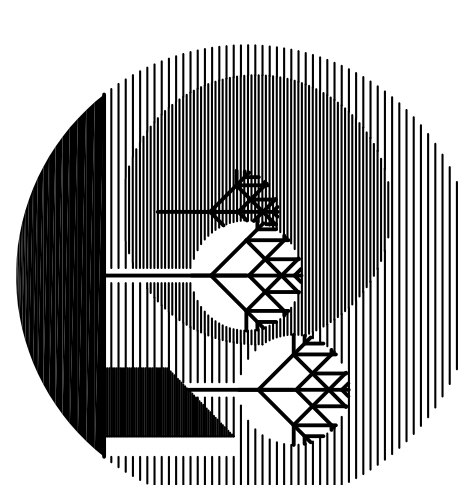
SYMBOL	DESCRIPTION	ABBREVIATIONS
	GATE VALVE	A.F.F.
	GLOBE VALVE	C.O.
	BALL VALVE	C.O.M.D C.W.
	CHECK VALVE	D.W.G
	BALANCING VALVE	E.W.C.#
	BALANCING VALVE WITH TEST PORTS	F.D.# F.F.E.L.V. F.F.W.H.#
	PLUG VALVE	F.S.#
	UNION	G.P.M
	PIPE TURNED UP	H.W. H.W.R.
	PIPE TURNED DOWN	I.E. L.A.V-#
	PIPE OUT TOP	L.A.V-#
	PIPE OUT BOTTOM	O.R.D.#
	DOMESTIC COLD WATER PIPING	P.R.V. P.S. P.V.C.
	DOMESTIC HOT WATER PIPING	R.D.#
	DOMESTIC HOT WATER RETURN PIPING	S-#
	VENT PIPING	(T.P.P) V. V.T.R.
	FIRE PROTECTION PIPING	W.C.# W.C.O. W.H.#
	NATURAL GAS PIPING	WATER CLOSET WALL CLOSET WATER HEATER
	RAIN CONDUCTOR PIPING	SINK
	SANITARY PIPING	TYPICAL
	STORM PIPING	VENT VENT-THRU-ROOF

ABBREVIATIONS

1. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL NEW PLUMBING FIXTURES.
2. ALL PLUMBING RELATED CORING THROUGH FLOORS SHALL BE BY PLUMBING CONTRACTOR.
3. COORDINATE ALL NEW LOCATIONS, SIZES AND ELEVATIONS OF SLEEVES THROUGH WALLS SLABS AND FOUNDATIONS WITH STRUCTURAL DRAWINGS AND EXISTING FIELD CONDITIONS.
4. COORDINATE ALL PIPE ROUTING WITH SITE CONDITIONS. EQUIPMENT MANUFACTURERS RECOMMENDATIONS AND ALL OTHER TRADES TO AVOID INTERFERENCES. PROVIDE ACCESS AROUND ALL NEW EQUIPMENT PER MANUFACTURERS RECOMMENDATIONS.
5. ALL OVERHEAD DOMESTIC WATER AND STORM PIPING SHALL BE INSULATED AND LABELED IN ACCORDANCE WITH THE SPECIFICATION REQUIREMENTS.
6. ALL PIPING SHALL BE CONCEALED IN WALLS, CEILING SPACES OR ARCHITECTURAL SOFFITS.
7. SEAL ALL PENETRATIONS THROUGH WALLS AND FLOORS AIR AND WATER TIGHT; COORDINATE LOCATIONS AND ELEVATIONS OF ALL NEW UNDERGROUND UTILITIES WITH CIVIL SITE PLANS PRIOR TO START OF CONSTRUCTION.
8. CONTRACTORS 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.
9. MICHIGAN ENERGY STANDARDS.
10. 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 FITTED AT 1/4" PER FOOT MINIMUM, UNLESS NOTED OTHERWISE.



Prepared by:



11022 Morning Dove Lane
South Lyon, MI, 48178

NOTICE

THIS ARCHITECTURAL DRAWING IS GIVEN IN STRICT COMPLIANCE. NO USE, IN WHOLE OR PART, MAY BE MADE WITHOUT PRIOR WRITTEN CONSENT OF UNDER THE SUN, LLC.
ALL RIGHTS ARE HEREBY RESERVED.
UNDER THE SUN, LLC
COPYRIGHT YEAR 2003

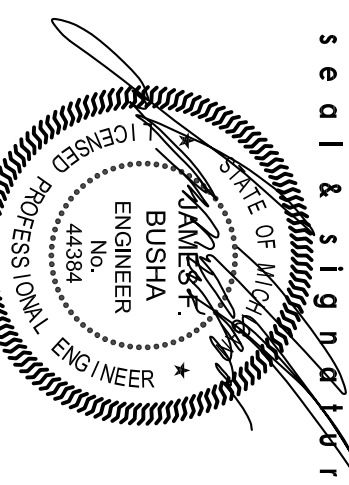
Project Title

DEMIMER QUICKLANE

3740 MICHIGAN AVE WAYNE MI

she et i t t l e

PLUMBING NOTES, SYMBOLS, ABBREV. & SPECIFICATIONS
DO NOT SCALE DRAWINGS
USE REQUIRED DIMENSIONS ONLY



Project Number

13004

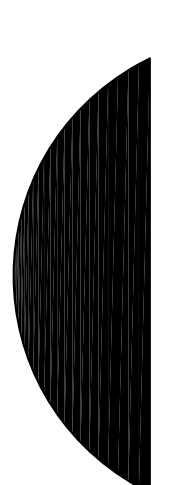
Drawn by WEV

Checked by JFB

Issued date 2/07/14

SHEET

P-401



MEECO
MECHANICAL ELECTRICAL ENGINEERING CONSULTANTS, P.C.
1415 Galesburg
Farmington, MI 48330
P: 248-466-8877
F: 248-466-8871

THIS DRAWING IS UNDESIGNED, UNDESIGNED AND SHOULD BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED IN THESE DRAWINGS. ANY OTHER USE OF THIS DRAWING WITHOUT THE WRITTEN APPROVAL OF MEECO SHALL BE AT THE USER'S RISK. MEECO SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED IN THESE DRAWINGS. MEECO SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS IN THESE DRAWINGS. MEECO SHALL NOT BE RESPONSIBLE FOR ANY DAMAGE TO PERSONS OR PROPERTY CAUSED BY THE USE OF THESE DRAWINGS. MEECO SHALL NOT BE RESPONSIBLE FOR ANY DAMAGE TO PERSONS OR PROPERTY CAUSED BY THE USE OF THESE DRAWINGS. MEECO SHALL NOT BE RESPONSIBLE FOR ANY DAMAGE TO PERSONS OR PROPERTY CAUSED BY THE USE OF THESE DRAWINGS.