PULLAR KITCHEN EQUIPMENT REPLACEMENT

CITY OF SAULT STE. MARIE

435 E. PORTAGE AVE.
SAULT STE. MARIE, MI 49783

U.P. ENGINEERS & ARCHITECTS, INC.

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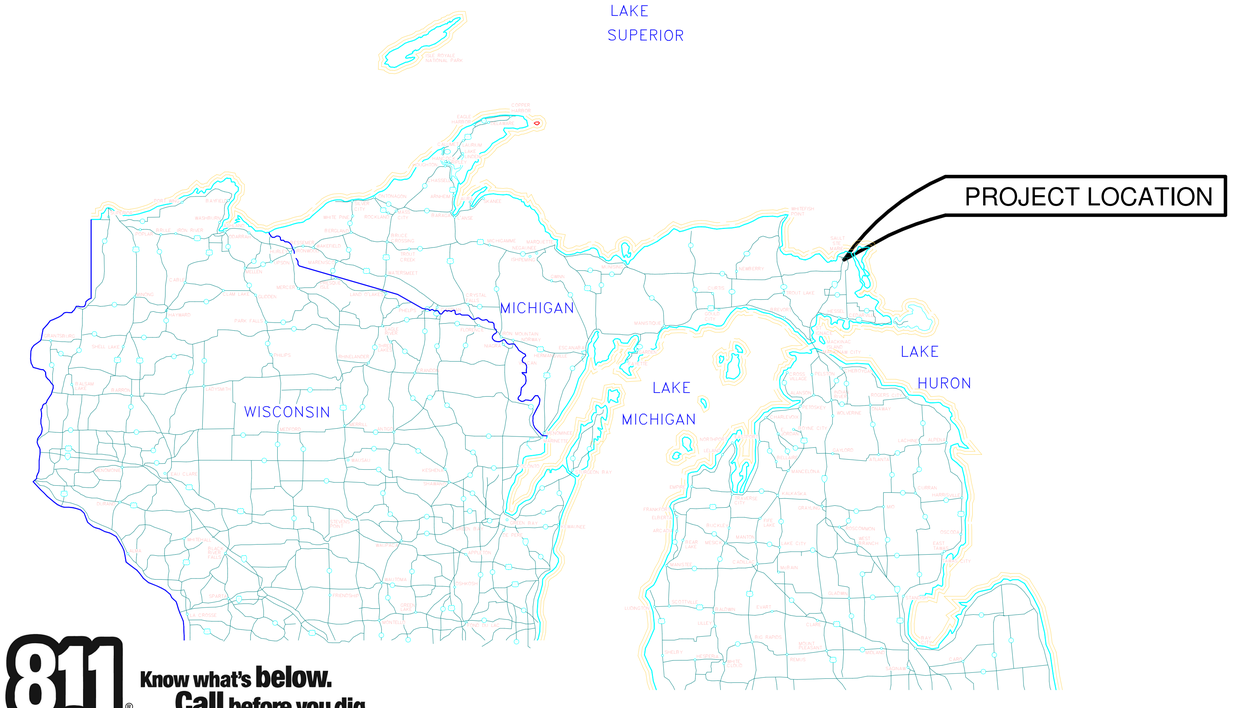
BUILDING CODE SUMMARY
ZONING:
2015 MICHIGAN BUILDING CODE
2015 MICHIGAN MECHANICAL CODE
2018 MICHIGAN PLUMBING CODE
2015 MICHIGAN ENERGY CODE
2017 NATIONAL ELECTRICAL CODE and MICHIGAN PART 8
USE GROUP: A-4, ARENA ASSEMBLY
CONSTRUCTION TYPE: III-B, NON-COMBUSTIBLE/ COMBUSTIBLE, UNPROTECTED
BUILDING AREA: 31,586 SF

SHEET INDEX



811 Know what's **below.** **Call** before you dig.

PULLAR KITCHEN EQUIPMENT REPLACEMENT
CITY OF SAULT STE. MARIE
435 E. PORTAGE AVE.
SAULT STE. MARIE, MI 49783

ISSUED FOR: BIDDING
DATE: 2/09/2024

PULLAR KITCHEN EQUIPMENT REPLACEMENT
CITY OF SAULT STE. MARIE
PROJECT NO: S14-03447

DESIGNED BY: SP
DRAWN BY: SP
CHECKED: SP
APPROVED: JG

TITLE SHEET

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2/8/2024 11:13:58 AM
P:\S14-03447 Sault Ste. Marie, City of\Puller Exhaust Hood\Dwgs\S14-03447 SSM City Puller Exhaust Hood_Mechanical Electrical.rvt

MECHANICAL/ELECTRICAL SPECIFICATIONS

ELECTRICAL

PART 1 GENERAL

A. WORK INCLUDED: PROVIDE ALL LABOR AND MATERIAL TO INSTALL A COMPLETE AND FUNCTIONAL ELECTRICAL SYSTEM AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN, INCLUDING BUT NOT NECESSARILY LIMITED TO:

1. BRANCH CIRCUIT WIRING, IN CONDUIT, FOR LIGHTING, RECEPTACLES, JUNCTION BOXES AND MOTORS.
2. HANGERS, ANCHORS, SLEEVES, CHASES, SUPPORTS FOR FIXTURES, AND OTHER ELECTRICAL MATERIALS AND EQUIPMENT IN ASSOCIATION THEREWITH.
3. LIGHTING FIXTURES AND LAMPS, WALL SWITCHES, RECEPTACLES AND SIMILAR ITEMS.
4. MOTORS, STARTERS, AND CONTROLS FOR MOTORS PROVIDED UNDER THE CONTRACT, BUT FOR WHICH MOTOR STARTER AND CONTROLS ARE NOT OTHERWISE PROVIDED.
5. WIRING TO AND CONNECTION OF THE LIGHTING FIXTURES, SWITCHES, RECEPTACLES, AND OTHER ITEMS AS INDICATED ON THE PLANS
6. OTHER ITEMS AND SERVICES REQUIRED TO COMPLETE THE SYSTEMS.

B. RELATED WORK: DOCUMENTS AFFECTING WORK OF THIS SECTION INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO: GENERAL CONDITIONS, SUPPLEMENTAL REQUIREMENTS AND DIVISION 1 SPECIFICATIONS.

QUALITY ASSURANCE

A. USE ADEQUATE NUMBERS OF SKILLED WORKMEN WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND THE METHODS NEEDED FOR PROPER PERFORMANCE OF THE WORK OF THIS SECTION.

B. CODES AND STANDARDS: IN ADDITION TO COMPLYING WITH ALL PERTINENT CODES AND REGULATIONS, COMPLY WITH:
1. NATIONAL ELECTRIC CODE, LATEST EDITION.
2. LOCAL UTILITY COMPANY REGULATIONS.
3. LOCAL, COUNTY, AND STATE ELECTRICAL CODES.

DEFINITIONS

A. FURNISH: TO SUPPLY, DELIVER, UNLOAD AND INSPECT FOR DAMAGE.

B. INSTALL: TO UNPACK, ASSEMBLE, ERECT, MOUNT, APPLY, PLACE, FINISH, CURE, PROTECT, CLEAN, ENERGIZE, PROGRAM, ADJUST, TEST AND MAKE COMPLETELY FUNCTIONAL AND OPERATIONAL.

C. PROVIDE: FURNISH AND INSTALL.

GROUNDING SYSTEM

A. ALL EQUIPMENT INCLUDING CONDUIT SYSTEM, MOTORS, RECEPTACLES AND OTHER APPARATUS SHALL BE GROUNDED BY CONDUIT AND CONDUCTOR AS PER ARTICLE 250 OF THE NATIONAL ELECTRIC CODE, AND AS SHOWN ON THE DRAWINGS.

B. PROJECTS WITH NEW STRUCTURES SHALL HAVE SERVICE ENTRANCE SIZED GROUND WIRE INSTALLED IN 20 LINEAR FEET OF STRUCTURE FOOTING. GROUND CABLE SHALL BE WIRE TIED TO EACH ROW OF REINFORCING STEEL. REMOTE STRUCTURES (WETWELLS, TANKS, ETC.) SHALL HAVE THE GROUND WIRE INSTALLED BELOW THE BOTTOM SLAB IN A 2-INCH CONCRETE ENCASEMENT.

PART 2 PRODUCTS

A. PROVIDE ONLY MATERIALS THAT ARE NEW, OF THE TYPE AN QUALITY SPECIFIED. WHERE UNDERWRITER'S LABORATORIES, INC. HAVE ESTABLISHED STANDARDS FOR SUCH MATERIALS, PROVIDE ONLY MATERIALS BEARING THE U.L. LABEL.

DISTRIBUTION SYSTEM

A. IDENTIFICATION
1. IDENTIFY ALL PANEL BOARDS, CABINETS, SAFETY SWITCHES AND OTHER APPARATUS USED FOR OPERATION AND CONTROL OF CIRCUITS, APPLIANCES AND EQUIPMENT.

B. WIRING DEVICES

1. PROVIDE DUPLEX RECEPTACLES OF 2-POLE, 3-WIRE, GROUNDING TYPE, AND 20 AMP, 120 VAC AND GROUNDED TO THE CONDUIT SYSTEM OR BY INSULATED GROUND CONDUCTOR, AND SHALL BE LEVITON CR20 OR APPROVED EQUAL
2. PROVIDE GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLES AS INDICATED ON THE DRAWINGS. GFCI RECEPTACLES SHALL BE 20A, 120 VAC AND SHALL BE LEVITON #7899 OR EQUAL, LIGHT ALMOND IN COLOR.
3. SPECIAL RECEPTACLES SHALL BE LISTED ON THE DRAWINGS AND AS REQUIRED BY CODE.
4. LIGHT SWITCHES SHALL BE COMMERCIAL GRADE 20A, 120 VAC, LEVITON #CS120-2 SINGLE POLE AND LEVITON #CS320-2 3-WAY OR APPROVED EQUAL OR AS INDICATED ON THE DRAWINGS, LIGHT ALMOND IN COLOR.
5. COVERPLATES FOR SWITCHES AND RECEPTACLES SHALL BE PHELONIC PLASTIC, COLOR TO MATCH DEVICE.
6. ALL RECEPTACLES SHALL BE MOUNTED AT 18" AFF TO CENTER OF RECEPTACLE, OR 9" ABOVE COUNTER, UNLESS NOTED OTHERWISE. ALL LIGHT SWITCHES SHALL BE MOUNTED AT 48" AFF UNLESS NOTED OTHERWISE. J-BOXES FOR TELEPHONES AND EQUIPMENT SHALL BE MOUNTED AT 48" AFF UNLESS NOTED OTHERWISE. VERIFY EXACT LOCATION WITH ARCHITECT.

C. WIRING RACEWAYS AND FITTINGS

1. CONCEALED WIRING SHALL BE METALLIC SHEATHED CABLE, #12 COPPER MIN., AND SHALL BE INSTALLED AS PER THE NATIONAL ELECTRIC CODE. ALL EXPOSED WIRING EXCEPT THAT WHICH IS RUNNING THROUGH FRAMING MEMBERS SHALL BE IN EMT CONDUIT AND SECURELY FASTENED TO THE SURFACE. UNDERGROUND CIRCUITS SHALL BE THWN INSULATED STRANDED COPPER WIRE INSTALLED IN PVC CONDUIT.
2. ALL OUTLETS, JUNCTION BOXES AND SWITCH BOXES SHALL BE STAMPED METALLIC WITH SCREWED ON COVERS OF SIZE AND SHAPE TO ACCOMMODATE WIRES WITHOUT CROWDING AND TO SUIT THE LOCATION. ALL DEVICE BOXES SHALL BE MINIMUM 4" SQUARE OR OCTAGONAL BY 1-1/2" DEEP. ALL TELEPHONE OUTLETS SHALL BE 4-11/16" SQUARE BY 2-1/8" DEEP. ALL BOXES SHALL BE PROVIDED WITH SUITABLE BOX EXTENSIONS AND/OR PLASTIC RINGS AS REQUIRED. THROUGH THE WALL BOXES OR BACK MOUNTED DEVICES ARE NOT PERMITTED.

D. LIGHTING FIXTURES

1. LIGHTING FIXTURES SHALL BE COMPLETE AND SUPPORTED INDEPENDENTLY OF CEILING FRAMING WITH DISCONNECTS, REQUIRED SUSPENSION ACCESSORIES, CANOPIES, CASTINGS, SOCKET HOLDERS, REFLECTORS, LAMPS, FUSES, LOW VOLTAGE TRANSFORMERS AS NECESSARY AND OTHER ITEMS AND SHALL BE COMPLETELY WIRED AND ASSEMBLED AS INDICATED ON THE DRAWINGS. WHEN FLUORESCENT FIXTURES ARE USED ON OCCUPANCY SENSORS, BALLASTS SHALL BE PROGRAM RAPID START OR OTHER LAMP LIFE EXTENDING TECHNOLOGY. FIXTURES SHALL BE AS SHOWN ON THE LIGHTING FIXTURE (LUMINAIRE) SCHEDULE ON THE DRAWINGS. THE LUMINAIRE SCHEDULE DOES NOT NECESSARILY INCLUDE EXACT DETAIL FOR MODEL NUMBERS AND THE FEATURES LISTED ABOVE SHALL BE INCLUDED REGARDLESS OF MODEL NUMBER INDICATED.

PART 3 EXECUTION

PREPARATION

A. COORDINATION

1. COORDINATE AS NECESSARY WITH OTHER TRADES TO ASSURE PROPER AND ADEQUATE PROVISION IN THE WORK OF THOSE TRADES FOR INTERFACE WITH WORK OF THIS SECTION
2. COORDINATE THE INSTALLATION OF ELECTRICAL ITEMS WITH THE SCHEDULE FOR WORK OF OTHER TRADES TO PREVENT UNNECESSARY DELAYS IN THE TOTAL WORK.
3. WHERE LIGHTING FIXTURES AND OTHER ELECTRICAL ITEMS ARE SHOWN IN CONFLICT WITH LOCATIONS OF STRUCTURAL MEMBERS AND MECHANICAL OR OTHER EQUIPMENT, PROVIDE REQUIRED SUPPORTS AND WIRING TO CLEAR THE ENCROACHMENT.
4. ARCHITECTURAL DRAWINGS SHOWING ELECTRICAL DEVICES AND DIMENSIONS FOR ELECTRICAL DEVICES TAKE PRECEDENCE OVER THE ELECTRICAL DRAWINGS.

B. DATA INDICATED ON THE DRAWINGS AND IN THESE SPECIFICATIONS ARE AS EXACT AS COULD BE SECURED, BUT THEIR ABSOLUTE ACCURACY IS NOT WARRANTED. THE EXACT LOCATIONS, DISTANCES, LEVELS AND OTHER CONDITIONS WILL BE GOVERNED BY ACTUAL CONSTRUCTION AND THE DRAWINGS AND SPECIFICATION SHOULD BE USED ONLY FOR GUIDANCE IN SUCH REGARD. USE THE DRAWINGS AND THESE SPECIFICATIONS FOR GUIDANCE AND SECURE THE ARCHITECT'S APPROVAL FOR CHANGES IN LOCATION.

C. WHERE OUTLETS ARE NOT SPECIFICALLY LOCATED ON THE DRAWINGS, LOCATE AS DETERMINED IN THE FIELD BY THE ARCHITECT. WHERE OUTLETS ARE INSTALLED WITHOUT SUCH SPECIFIC DIRECTION, RELOCATE AS DIRECTED BY THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER. ADJACENT OUTLETS ON OPPOSITE SIDES OF A WALL SHALL BE SEPARATED BY A STUD.

D. VERIFY ALL MEASUREMENTS AT THE BUILDING. NO EXTRA COMPENSATION WILL BE ALLOWED BECAUSE OF DIFFERENCES BETWEEN WORK SHOWN ON THE DRAWINGS AND ACTUAL MEASUREMENTS AT THE SITE OF CONSTRUCTION.

A. INSTALLATION OF RACEWAYS

B. KEEP ALL CABLE/CONDUIT AT LEAST 6" AWAY FROM THE COVERING ON HOT WATER PIPES.
1. KEEP ENDS OF CONDUIT CLOSED AND CLEAN OF FOREIGN DEBRIS WITH APPROVED CONDUIT SEALS DURING CONSTRUCTION. USE CONDUIT UNIONS WHERE JOINTS ARE REQUIRED. DO NOT USE RUNNING THREADS.

C. PROVIDE NECESSARY SLEEVES AND CHASES WHERE CONDUITS PASS THROUGH FLOORS AND WALLS. PROVIDE OTHER NECESSARY OPENINGS AND SPACES, ARRANGING FOR PROPER TIME TO PREVENT UNNECESSARY CUTTING IN CONNECTION WITH THE WORK. PERFORM CUTTING AND PATCHING IN ACCORDANCE WITH THE PROVISIONS FOR THE ORIGINAL WORK. GROUT/CAULK AROUND ALL PENETRATIONS.

D. PROVIDE NECESSARY SLEEVES AND CHASES WHERE CONDUITS PASS THROUGH FLOORS AND WALLS. PROVIDE OTHER NECESSARY OPENINGS AND SPACES, ARRANGING FOR PROPER TIME TO PREVENT UNNECESSARY CUTTING IN CONNECTION WITH THE WORK. PERFORM CUTTING AND PATCHING IN ACCORDANCE WITH THE PROVISIONS FOR THE ORIGINAL WORK. GROUT/CAULK AROUND ALL PENETRATIONS.

E. WHERE CONDUIT IS EXPOSED, RUN PARALLEL TO OR AT RIGHT ANGLES TO LINES OF THE BUILDING.

F. MAKE BENDS WITH STANDARD CONDUIT ELBOWS OR CONDUIT BENT TO NOT LESS THAN THE SAME RADIUS.

G. MAKE BEND FREE FROM DENTS AND FLATTENING.

H. SECURELY AND RIGIDLY SUPPORT CABLE, CONDUITS AND BOXES THROUGHOUT THE WORK.

INSTALLATION OF LIGHTING FIXTURES

A. INSTALL ALL LIGHTING FIXTURES COMPLETE AND READY FOR SERVICE, IN ACCORDANCE WITH THE FIXTURE SCHEDULE ON THE DRAWINGS.

B. CONDUCTORS IN WIRING CHANNELS OF FIXTURES MOUNTED IN ROWS SHALL BE THE SAME SIZE AS THE CIRCUIT WIRING SUPPLYING THE ROWS.

C. INSTALL ALL FLUORESCENT FIXTURES STRAIGHT AND TRUE WITH REFERENCE TO ADJACENT WALLS.

D. INSTALL ALL LIGHTING FIXTURES, SO THAT THE WEIGHT OF THE FIXTURE IS SUPPORTED DIRECTLY BY A SOUND AND SAFE STRUCTURAL MEMBER OF THE BUILDING USING ADEQUATE NUMBER AND TYPE OF FASTENERS TO ENSURE A SAFE INSTALLATION.

E. FIXTURES THAT ARE RECESSED IN AN INSULATED CEILING SHALL HAVE A DAM BOX WITH CAULKED SEAMS AND DOUBLE INSULATION COVER. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

F. LAMPING: PROVIDE ALL LAMPS AS SHOWN ON THE FIXTURE SCHEDULE AND AS REQUIRED FOR A COMPLETE OPERATING LIGHTING SYSTEM. FLUORESCENT LAMPS SHALL HAVE A 4100K COLOR TEMPERATURE AND A MINIMUM COLOR RENDERING INDEX OF 85.

TEST REQUIREMENTS

A. ALL SYSTEMS SHALL TEST FREE FROM SHORT CIRCUITS AND GROUNDS, SHALL BE FREE FROM MECHANICAL AND ELECTRICAL DEFECTS, AND SHALL SHOW AN INSULATION RESISTANCE BETWEEN PHASE CONDUCTORS AND GROUND OF NOT LESS THAN THAT REQUIRED BY THE NATIONAL ELECTRIC CODE.

B. TEST ALL CIRCUITS FOR PROPER NEUTRAL CONNECTIONS.

C. IF VOLTAGE AND REGULATION ARE NOT WITHIN ACCEPTABLE LIMITS, ARRANGE WITH THE SERVICE UTILITY FOR PROPER VOLTAGE.

D. WHEN MATERIAL AND/OR WORKMANSHIP IS FOUND NOT TO COMPLY WITH THE SPECIFIED REQUIREMENTS, WITHIN THREE DAYS AFTER RECEIPT OF NOTICE OF SUCH NON-COMPLIANCE REMOVE THE NON-COMPLYING ITEMS FROM THE JOB SITE AND REPLACE THEM WITH ITEMS COMPLYING WITH THE SPECIFIED REQUIREMENTS, ALL AT NO ADDITIONAL COST TO THE OWNER.

PROJECT COMPLETION

A. UPON COMPLETION OF THE WORK OF THIS SECTION, THOROUGHLY CLEAN ALL EXPOSED PORTIONS OF THE ELECTRICAL INSTALLATION, REMOVING ALL TRACES OF SOIL, LABELS, GREASE, OIL AND OTHER FOREIGN MATERIAL AND USING ONLY THE TYPE OF CLEANER. RECOMMENDED BY THE MANUFACTURER OF THE ITEM BEING CLEANED.

B. PROVIDE NEW PANELBOARD DIRECTORIES FOR NEW PANELS AND EXISTING PANELS THAT HAVE BEEN MODIFIED. THE PANEL DIRECTORY SHALL BE TYPED AND PLACED IN THE PANEL.

C. PROCURE PERMITS AND LICENSES AND PAY FEES, FINES AND TAXES AS REQUIRED BY AUTHORITIES. UPON COMPLETION OF THE WORK AND CLEAN UP, PRIOR TO FINAL PAYMENT, SECURE CERTIFICATES OF INSPECTION FROM INSPECTORS HAVING JURISDICTION AND SUBMIT TO THE OWNER.

MECHANICAL

PART 1 GENERAL

A. CONDITIONS OF THE CONTRACT: THE CONDITIONS OF THE CONTRACT AND THE GENERAL REQUIREMENTS ARE HEREBY MADE A PART OF THE DIVISION.

B. WORK INCLUDED UNDER THIS DIVISION OF THE SPECIFICATIONS CONSISTS OF FURNISHING LABOR, EQUIPMENT AND MATERIALS, TOOLS, AND SKILLS NECESSARY FOR AND REASONABLY INCIDENTAL TO THE COMPLETE INSTALLATION OF THE MECHANICAL SYSTEMS, AS HEREIN DESCRIBED AND INDICATED ON THE DRAWINGS, INCLUDING SUCH MINOR DETAILS NOT SPECIFICALLY MENTIONED OR SHOWN AS MAY NECESSARY TO COMPLETE THE SYSTEM, READY FOR SUCCESSFUL OPERATION, AND SUBJECT TO THE TERMS AND CONDITIONS OF THE CONTRACT. ALL WORK UNDER THIS DIVISION SHALL BE DONE IN ACCORDANCE WITH THE BEST MODERN PRACTICE, USING FIRST GRADE EQUIPMENT AND MATERIAL NEW AND PREVIOUSLY UNUSED. DUCTWORK, PIPING AND EQUIPMENT SHALL BE ARRANGED TO AVOID INTERFERENCE WITH EACH OTHER AND LIGHT OUTLETS AND FIXTURES.

C. THE MAJOR ITEMS OF WORK TO BE INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

1. PROVIDE A COMPLETE PLUMBING SYSTEM INCLUDING NEW WATER SERVICE PIPE, SANITARY DRAINAGE AND VENTS, DOMESTIC WATER SYSTEM AND WATER HEATER.
2. PROVIDE A COMPLETE FORCED AIR HEATING, VENTILATING AND AIR CONDITIONING SYSTEM INCLUDING MINI-SPLIT AIR CONDITIONING, FINTUBE RADIATION, HYDRONIC PIPING AND INSULATION.
3. PROVIDE A COMPLETE TEMPERATURE CONTROL SYSTEM.

THE CONTRACTOR SHALL

A. FURNISH AND INSTALL EVERYTHING REQUIRED OR REASONABLY IMPLIED BY THESE SPECIFICATIONS AND DRAWINGS, THE INTENT BEING THAT THERE BE TURNED OVER TO THE OWNER SYSTEMS COMPLETE IN EVERY DETAIL AND READY FOR OPERATION. BIDDERS ARE REQUESTED TO REPORT TO THE ENGINEER ANY OMISSIONS OR DEVIATIONS FROM STANDARD PRACTICE WHICH WILL AFFECT THIS PROPOSAL. OBTAIN ANY CLARIFICATION PRIOR TO BID OR ABIDE BY ENGINEER'S DECISION AND INTERPRETATION OF PLANS AND SPECIFICATIONS. IF AN ITEM IS EITHER MENTIONED OR SHOWN, IT IS CONSIDERED SUFFICIENT FOR INCLUSION OF SAID ITEM IN CONTRACT.

B. PROVIDE ON-SITE TRAINING FOR OWNER AND/OR OWNER REPRESENTATIVES FOR ALL MECHANICAL SYSTEMS AND CONTROLS.

C. PROVIDE OPERATIONS AND MAINTENANCE MANUALS FOR ALL PRODUCTS.

COORDINATION WITH OTHER TRADES

A. CARE SHALL BE EXERCISED BY CONTRACTOR IN RUNNING ALL PIPES, DUCTS, CONDUITS, ETC. TO AVOID INTERFERENCES WITH OTHER WORK AND MATERIALS INSTALLED BY OTHER CONTRACTORS WORKING ON THE SITE. REVIEW ALL CONDITIONS SET FORTH ON THE PLANS AND SPECIFICATIONS AND COORDINATE SAME WITH THE OTHER CONTRACTORS.

B. PIPING PASSING THROUGH CORRIDORS, TUNNELS, CHASES, ETC. SHALL BE CONSIDERED FOR PROPER DRAINAGE. CONSULT WITH CONTRACTORS AND AVOID CONFLICTS WITH LOCATION OF PIPING. ORDER OF PRIORITY FOR ALL PIPING, DUCTWORK AND ELECTRICAL CONDUIT TO BE INSTALLED SHALL BE AS FOLLOWS WITH THE HIGHEST PRIORITY LISTED FIRST:

1. PLUMBING DRAIN LINES
2. FIRE PROTECTION PIPING
3. DUCTWORK
4. DOMESTIC HOT AND COLD WATER
5. HYDRONIC PIPING
6. ELECTRICAL CONDUIT
7. GAS PIPING (NATURAL AND/OR LP)

WORKMANSHIP

A. ALL WORK SHALL BE DONE IN A SKILLFUL, NEAT AND WORKMANLIKE MANNER, IN ACCORDANCE WITH THE BEST MODERN PRACTICE FOR EACH CLASS OF WORK AND TO BE THE APPROVAL OF THE ARCHITECT/ENGINEER AND OWNER.

SCOPE OF WORK

A. THE OMISSION OF EXPRESS REFERENCE TO ANY PARTS NECESSARY FOR, OR REASONABLY INCIDENTAL TO A COMPLETE MECHANICAL INSTALLATION, SHALL NOT BE CONSTRUED FROM RELEASING THE CONTRACTOR FROM FURNISHING SUCH PARTS.

DRAWINGS AND PLANS

A. DESIGN DRAWINGS SHOW GENERAL ARRANGEMENT AND EXTENT OF WORK. THE DRAWINGS ARE DIAGRAMMATIC AND MAY NOT NECESSARILY BE DRAWN TO SCALE FOR PURPOSE OF CLARITY AND LEGIBILITY. IT IS INTENDED THAT ALL MECHANICAL ITEMS BE LOCATED SYMMETRICALLY WITH ARCHITECTURAL ELEMENTS WHERE FEASIBLE AND BE INSTALLED TO AVOID OBSTRUCTIONS AND PROVIDE HEADROOM. CONTRACTOR TO REVIEW PLANS OF OTHER TRADES WITH HIS OWN WORK TO AVOID CONFLICTS AND INTERFERENCE'S. CONTRACTOR MUST MAKE USE OF ALL SOURCES OF INFORMATION INCLUDING DRAWINGS OF EQUIPMENT FURNISHED BY OTHERS. FAILURE TO REVIEW WORKING SPACES OR CHECK DIMENSIONS IN QUESTION SHALL NOT WARRANT CONFLICTS. DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE COMPLIMENTARY.

PERMITS, FEES AND INSPECTIONS

A. WHERE GOVERNING REGULATIONS AND IMPOSED CODES AND STANDARDS REQUIRE CHARGES, NOTICES, PERMITS, LICENSES, INSPECTIONS, TESTS, AND SIMILAR ITEMS OR ACTIONS IN ORDER TO LAWFULLY PROCEED WITH THE REQUIRED MECHANICAL WORK, OBTAIN THOSE ITEMS, PAY ALL FEES, AND TAKE THOSE ACTIONS IN ACCORDANCE WITH THE REGULATIONS OF THE GOVERNING AUTHORITY.

B. THE MECHANICAL WORK SHALL BE IN CONFORMANCE WITH THE FOLLOWING:

1. STATE OF MICHIGAN BUILDING CODE
2. STATE OF MICHIGAN PLUMBING CODE
3. STATE OF MICHIGAN MECHANICAL CODE
4. SANITARY, GAS AND WATER UTILITY AUTHORITY STANDARDS
5. ALL LOCAL CODES AND REGULATIONS
6. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA 101) LIFE SAFETY.

CERTIFICATES OF APPROVAL

A. UPON COMPLETION OF THE BUILDING, PROVIDE OWNER WITH CERTIFICATE OF APPROVAL FROM THE PLUMBING AND MECHANICAL DIVISIONS, BUREAU OF CONSTRUCTION CODES, DEPARTMENT OF LABOR, STATE OF MICHIGAN AND LOCAL OFFICE.

TESTING

A. ALL SYSTEMS INSTALLED UNDER THIS CONTRACT SHALL BE SUBJECTED TO THE FOLLOWING TESTS:

1. BUILDING DRAINAGE-SANITARY, ALL LINES WITHIN THE BUILDING WALLS, WATER TEST-NO LESS THAN 10 FEET HEAD OF WATER FOR ONE (1) HOUR OR AS REQUIRED BY CODE
2. WATER-DOMESTIC-HOT AND WATER PIPING IN TUNNELS, WALLS, TRENCHES, BELOW SLAB AND/OR IN THE GROUND SHALL BE TESTED AT 100 P.S.I. AIR BEFORE ANY SLABS ARE POURED, SOAP TEST APPLIED TO ALL CONNECTIONS OR AN AIR AND WATER WET TEST AT 100 P.S.I., AND HOLDING TIGHT WITHOUT LOSS OF PRESSURE FOR A MINIMUM OF A FOUR (4) HOUR PERIOD AND SHALL BE WITNESSED BY A REPRESENTATIVE OF THE ARCHITECT/ENGINEER.
3. GAS PIPING-AIR TEST TO 100 P.S.I. AND TO REMAIN TIGHT WITH LOSS FOR PRESSURE FOR A MINIMUM OF A FOUR (4) HOUR PERIOD. TEST ALL JOINTS WHILE UNDER PRESSURE.

PART 2 PRODUCTS

PIPING INSULATION

A. MATERIALS: FLAME SPREAD/SMOKE DEVELOPED RATING OF 25/50 OR LESS IN ACCORDANCE WITH ASTM E84 (NFPA 255).

B. APPLICATOR: COMPANY SPECIALIZING IN PERFORMING THE WORK OF THIS SECTION WITH MINIMUM OF THREE (3) YEARS EXPERIENCE.

C. MANUFACTURERS:

1. OWENS-CORNING FIBERGLASS CORPORATION.
2. CERTAINTEED CORPORATION.
3. JOHNS-MANVILLE CORPORATION.
4. KNAUF.
5. OR APPROVED EQUAL.

D. TYPE: SEE PIPING SYSTEM INSULATION SCHEDULE

PIPING

A. WATER PIPING BURIED WITHIN 5 FEET OF BUILDING

1. COPPER TUBING: ASTM B88, TYPE K, HARD DRAWN OR ANNEALED.
2. FITTINGS: ASME B16.18, CAST BRONZE OR ASTM B16.22 WROUGHT COPPER AND BRONZE
3. JOINTS: ASTM B32, SOLDER, GRADE 95TA.
4. COPPER TUBING: ASTM B88, TYPE K
5. FITTINGS: ASME B16.26, CAST BRONZE.
6. JOINTS: FLARED

B. WATER PIPING, ABOVE GRADE

1. COPPER TUBING: ASTM B88, TYPE L HARD DRAWN.
2. FITTINGS: ASME B16.18, CAST BRONZE OR ASTM B16.22 WROUGHT COPPER AND BRONZE
3. JOINTS: ASTM B32, SOLDER, GRADE 95TA.

C. NATURAL GAS PIPING, BURIED WITHIN 5 FEET OF BUILDING

1. STEEL PIPE: ASTM A53 OR A120, SCHEDULE 40 BLACK.
2. FITTINGS: ASTM A234, FORGED STEEL WELDING TYPE, WITH AWWA C105 POLYETHYLENE JACKET OR DOUBLE LAYER, HALF-LAPPED 10 MIL POLYETHYLENE TAPE.
3. JOINTS: ANSI B31.2 WELDED.

D. NATURAL GAS PIPING, ABOVE GRADE

1. STEEL PIPE: ASTM A53 OR A120, SCHEDULE 40 BLACK.
2. FITTINGS: ASTM B16.3, MALLEABLE IRON, OR ASTM A234, FORGED STEEL WELDING TYPE.
3. JOINTS: NFPA 54, THREADED OR WELDED TO ANSI/NFPA Z223.1

E. FLANGES, UNIONS AND COUPLINGS

1. PIPE SIZE 2 INCHES AND UNDER;
   a. FERROUS PIPE: 150 PSIG MALLEABLE IRON THREADED UNIONS.
   b. COPPER TUBE AND PIPE: 150 PSIG BRONZE UNIONS WITH SOLDERED JOINTS.
2. PIPE SIZE OVER 2 INCHES:
   a. FERROUS PIPE: 150 PSIG FORGED STEEL SLIP-ON FLANGES; 1/16 INCH THICK PREFORMED NEOPRENE GASKETS.
   b. COPPER TUBE AND PIPE: 150 PSIG SLIP-ON BRONZE FLANGES; 1/16 INCH THICK PREFORMED NEOPRENE GASKETS
3. DIELECTRIC CONNECTIONS: UNION WITH GALVANIZED OR PLATED STEEL THREADED END, COPPER SOLDER END, WATER IMPERVIOUS ISOLATION BARRIER.

F. BALL VALVES

1. MANUFACTURERS:
   A. CRANE COMPANY
   B. APOLLO
   C. NIBCO, INC.
   D. OR APPROVED EQUAL
2. UP TO AND INCLUDING 2 INCHES: BRONZE TWO PIECE BODY, CHROME PLATED STEEL BALL, TEFLON SEATS AND STUFFING BOX RING, LEVEL HANDLE THREADED ENDS.

G. PLUG VALVES

1. MANUFACTURERS:
   A. CRANE COMPANY
   B. APOLLO
   C. NIBCO, INC.
   D. OR APPROVED EQUAL
2. UP TO AND INCLUDING 2 INCHES: BRONZE BODY, BRONZE TAPERED PLUG, NON-LUBRICATED, TEFLON PACKING, THREADED ENDS.
3. OVER 2 INCHES: CAST IRON BODY AND PLUG, NON-LUBRICATED, TEFLON PACKING, FLANGED ENDS.

DUCTWORK INSULATION

A. MATERIALS: FLAME SPREAD/SMOKE DEVELOPED RATING OF 25/50 OR LESS IN ACCORDANCE WITH ASTM E84 (NFPA 255).

B. APPLICATOR: COMPANY SPECIALIZING IN PERFORMING THE WORK OF THIS SECTION WITH MINIMUM OF THREE (3) YEARS EXPERIENCE.

C. MANUFACTURERS:

1. OWENS-CORNING FIBERGLASS CORPORATION.
2. CERTAINTEED CORPORATION.
3. JOHNS-MANVILLE CORPORATION.
4. KNAUF.
5. OR APPROVED EQUAL.

D. TYPE: SEE DUCT INSULATION SCHEDULE

DUCTWORK

A. GALVANIZED STEEL DUCTS: ASTM A525 AND ASTM A527 GALVANIZED STEEL SHEET, LOCK-FORMING QUALITY, HAVING G90 ZINC COATING IN CONFORMANCE WITH ASTM A90.

B. INSULATED FLEXIBLE DUCTS

1. TWO PLY VINYL FILM SUPPORTED BY HELICALLY WOUND SPRING STEEL WIRE; FIBERGLASS INSULATION, POLYETHYLENE VAPOR BARRIER FILM.
2. PRESSURE RATING: 10 INCHES WG POSITIVE, 1.0 INCHES WG NEGATIVE.
3. MAXIMUM VELOCITY: 4000 FPM
4. TEMPERATURE RANGE: -10 DEG F TO 160 DEG F

C. HANGER ROD: ASTM A36; STEEL, GALVANIZED; THREADED BOTH ENDS, THREADED ONE END OR CONTINUOUSLY THREADED.

D. DUCTWORK FABRICATION

1. FABRICATE AND SUPPORT IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE, AND AS INDICATED. PROVIDE DUCT MATERIAL, GAGES, REINFORCING, AND SEALING FOR OPERATING PRESSURES INDICATED.
2. CONSTRUCT T'S, BENDS, AND ELBOWS WITH RADIUS OF NOT LESS THAN 1-1/2 TIMES WIDTH OF DUCT ON CENTERLINE. WHERE NOT POSSIBLE AND WHERE RECTANGULAR ELBOWS ARE USED, PROVIDE AIR FOIL TURNING VANES. WHERE ACOUSTICAL LINING IS INDICATED, PROVIDE TURNING VANES OF PERFORATED METAL WITH GLASS FIBER INSULATION.
3. INCREASE DUCT SIZES GRADUALLY, NOT EXCEEDING 15 DEG DIVERGENCE WHEREVER POSSIBLE; MAXIMUM 30 DEG DIVERGENCE UPSTREAM OF EQUIPMENT AND 45 DEG CONVERGENCE DOWNSTREAM.
4. FABRICATE CONTINUOUSLY WELDED ROUND AND OVAL DUCT FITTINGS TWO GAGES HEAVIER THAN DUCT GAGES INDICATED IN SMACNA STANDARD. JOINTS SHALL BE MINIMUM 4 INCH CEMENTED SLIP JOINT, BRAZED OR ELECTRIC WELDED. PRIME COAT WELDED JOINTS.
5. PROVIDE STANDARD 45 DEGREE LATERAL WYE TAKEOFFS UNLESS OTHERWISE INDICATED WHERE 90 DEG CONICAL TEE CONNECTIONS MAY BE USED.

PART 3 EXECUTION

A. PIPING INSTALLATION:

1. PROVIDE NON-CONDUCTING DIELECTRIC CONNECTIONS WHEREVER JOINING DISSIMILAR METALS.
2. ROUTE PIPING IN ORDERLY MANNER AND MAINTAIN GRADIENT.
3. PROVIDE CLEARANCE FOR INSTALLATION OF INSULATION AND ACCESS TO VALVES AND FITTINGS.
4. PROVIDE ACCESS WHERE VALVES AND FITTINGS ARE NOT EXPOSED.
5. ESTABLISH ELEVATIONS OF BURIED PIPING OUTSIDE THE BUILDING TO ENSURE NOT LESS THAN 5 FT. OF COVER.
6. INSTALL VALVES WITH STEM UPRIGHT OR HORIZONTAL, NOT INVERTED.
7. PIPE VENTS FROM GAS PRESSURE REDUCING VALVES TO OUTDOORS AND TERMINATE IN WEATHER PROOF HOOD.

B. DUCTWORK INSTALLATION:

1. INSTALL AND SEAL DUCTS IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE.
2. DUCTS SIZES ARE INSIDE CLEAR DIMENSIONS. FOR LINED DUCTS, MAINTAIN SIZES INSIDE LINING.

C. SERVICE CONNECTIONS

1. PROVIDE NEW SANITARY SEWER SERVICES. BEFORE COMMENCING WORK, CHECK INVERT ELEVATIONS REQUIRED FOR SEWER CONNECTIONS. CONFIRM INVERTS AND ENSURE THAT THESE CAN BE PROPERLY CONNECTED WITH SLOPE FOR DRAINAGE AND COVER TO AVOID FREEZING.
2. PROVIDE NEW WATER SERVICE COMPLETE WITH WATER METER WITH BY-PASS VALVES.
3. PROVIDE 18 GA GALVANIZED SHEET METAL SLEEVE AROUND SERVICE MAIN TO 6 INCHES ABOVE FLOOR AND 6 FEET MINIMUM BELOW GRADE. SIZE FOR MINIMUM OF 2INCHES OF LOOSE BATT INSULATION STUFFING.
4. PROVIDE NEW GAS SERVICE COMPLETE WITH GAS METER AND REGULATORS. GAS SERVICE DISTRIBUTION PIPING TO HAVE INITIAL MINIMUM PRESSURE OF 14 IN WG.

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PULLAR KITCHEN EQUIPMENT REPLACEMENT
CITY OF SAULT STE. MARIE
435 E. PORTAGE AVE.
SAULT STE. MARIE, MI 49783

ISSUED FOR:	DATE:
BIDDING	2/09/2024

PULLAR KITCHEN EQUIPMENT REPLACEMENT
CITY OF SAULT STE. MARIE
PROJECT NO: S14-03447

DESIGNED BY: SP
DRAWN BY: SP
CHECKED: SP
APPROVED: JG

MECHANICAL AND ELECTRICAL SPECIFICATIONS

ME001

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ELECTRICAL ABBREVIATIONS, SYMBOLS AND NOTES

ABBREVIATIONS AND SYMBOLS LEGEND

ABBREVIATIONS

A	AMPERES
AV	PANELBOARD AV
AV	AUDIO/VIDEO
A/V	AUDIO/VIDEO
C	PANELBOARD KPP-C
C.B.	CIRCUIT BREAKER
GFCI	GROUND FAULT CIRCUIT INTERUPTING
GFI	GROUND FAULT CIRCUIT INTERUPTING
KVA	KILO-VOLT AMPS (ELECTRIC POWER)
QT	QUAD TUBE (FLUORESCENT LAMP)
TT	TWIN TUBE (FLUORESCENT LAMP)
TYP	TYPICAL
V	VOLT
4W	FOUR WIRE
3ø	THREE PHASE

LIGHTING SYMBOLS

- A — LIGHT FIXTURE - RECESSED FLUORESCENT OR LED
- LIGHT FIXTURE - EMERGENCY (WALL MOUNT)
- LIGHT FIXTURE - EXIT/EMERGENCY (DIRECTIONAL ARROWS WHERE INDICATED ON PLANS) (WALL OR CEILING MOUNT)
- B — LUMINARE - STANDARD FLUORESCENT STRIP LIGHT
- LUMINARE - RECESSED FLUORESCENT OR INCANDESCENT
- LUMINARE - SURFACE MOUNT FLUORESCENT OR INCANDESCENT
- C — LIGHT FIXTURE - SURFACE FLUORESCENT OR LED

SWITCHES AND RECEPTACLE SYMBOLS

- DUPLEX RECEPTACLE
- FLOOR RECEPTACLE (GFI PROTECTED WHERE REQUIRED)
- QUAD RECEPTACLE (GFI PROTECTED WHERE REQUIRED)
- G — GROUND FAULT INTERUPTING RECEPTACLE. PROVIDE WEATHER-PROOF WHILE IN USE COVER WHERE LOCATED OUTDOORS.
- CTR — COUNTERTOP RECEPTACLE (GFCI WHERE REQUIRED)
- TOP SWITCHED RECEPTACLE
- IG — ISOLATED GROUND RECEPTACLE
- POLE RECEPTACLE
- S — SWITCH - SINGLE POLE
- S_3 — SWITCH - THREE WAY
- S_4 — SWITCH - FOUR WAY
- SS — DUAL LEVEL SWITCHING - SWITCH OUTER (2) LAMPS SEPARATE FROM CENTER LAMP
- S_K — SWITCH - SINGLE POLE, KEYED
- S_T — SWITCH - SINGLE POLE, TIMED
- S_D — SWITCH - DIMMER
- S_P — SWITCH - PILOT
- TC — SWITCH - TIME CLOCK
- SWITCH - PUSH BUTTON
- M — OCCUPANCY SENSOR (CEILING MOUNTED)
- OSS — OCCUPANCY SENSOR (WALL MOUNTED)
- PC — PHOTO CELL

TELEPHONE, DATA AND COMMUNICATION SYMBOLS

- TELEPHONE/DATA OUTLET. PROVIDE 1"CONDUIT WITH PULL STRING PER LOCATION. DATA CABLES AND TERMINATIONS BY OTHERS.
- TELEPHONE/DATA OUTLET - FLOOR MOUNTED
- WIRELESS ACCESS POINT (WAP)
- SPEAKER - WALL MOUNTED
- S — SPEAKER - CEILING MOUNTED
- IC — INTERCOM
- A — AMPLIFIER
- C — CLOCK - WALL MOUNTED
- TV — TELEVISION CABLE OUTLET
- J — JUNCTION BOX
- J — JUNCTION BOX
- SECURITY CAMERA (OUTDOOR/INDOOR PER PLAN)
- DL — DOOR ALARM KEYPAD. PROVIDE 1"CONDUIT WITH PULL STRING PER LOCATION. DATA CABLES AND TERMINATIONS BY OTHERS.

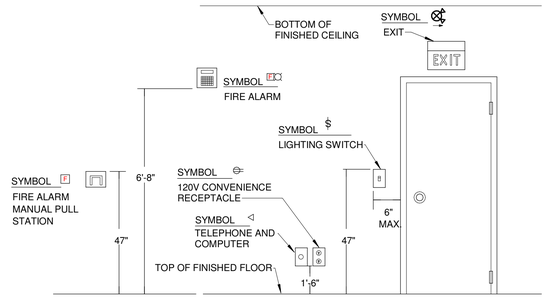
MISCELLANEOUS SYMBOLS

- DISCONNECT
- FUSED DISCONNECT
- STARTER DISCONNECT
- CONNECTION TO MOTOR
- T — THERMOSTAT
- TRANSFORMER
- IN-LINE FUSE
- GROUND
- M — ELECTRIC METER
- FUSED SWITCH
- NORMALLY CLOSED CONTACT
- NORMALLY OPEN CONTACT
- CIRCUIT BREAKER WITH SIZE AS NOTED
- NORMALLY CLOSED SWITCH
- NORMALLY OPEN SWITCH
- DISCONNECT
- N L E — AUTOMATIC TRANSFER SWITCH (ATS)
- PANEL - SURFACE MOUNT
- PANEL - RECESSED

FIRE SAFETY AND ALARM SYMBOLS

- FACP — FIRE ALARM CONTROL PANEL
- FAAP — FIRE ALARM ANNUNCIATOR PANEL
- FIRE ALARM BOOSTER PANEL
- SMOKE DETECTOR
- H — HEAT DETECTOR
- CO — CARBON MONOXIDE DETECTOR
- D — DUCT SMOKE DETECTOR
- F — MANUAL PULL STATION
- FIRE ALARM HORN/STROBE (WALL MOUNTED)
- FIRE ALARM HORN/STROBE (CEILING MOUNTED)
- FIRE ALARM HORN/STROBE (WALL MOUNTED)
- FS — FLOW SWITCH
- TS — TAMPER SWITCH
- S — FIRE ALARM SPEAKER
- EOLR — END OF LINE RESISTOR
- MAGNETIC DOOR HOLD OPEN
- GONG

NOTES & DETAILS



NOTE:
VERIFY HEIGHTS SHOWN COMPLY WITH LOCAL BUILDING CODE.

TYPICAL DEVICE MOUNTING HEIGHT

GENERAL NOTES:

1. IT SHALL BE THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO NOTIFY OTHER CONTRACTORS TO ARRANGE CLEARANCES AND ACCESS OPENINGS FOR ALL LARGE ELECTRICAL EQUIPMENT.

2. IT SHALL BE UNDERSTOOD THAT THE ACT OF SUBMITTING A BID BY THE CONTRACTOR CARRIES WITH IT THE AGREEMENT TO ALL ITEMS AND CONDITIONS REFERRED OR INDICATED OR IMPLIED ON THE DRAWINGS AND THE SPECIFICATIONS AND NO CONSIDERATION WILL BE GRANTED FOR ANY ALLEGED MISUNDERSTANDING OF MATERIALS TO BE FURNISHED FOR WORK TO BE DONE.

3. THE ELECTRICAL INSTALLATION SHALL COMPLY WITH RULES AND REGULATIONS OF THE LATEST EDITION OF THE OCCUPATIONAL SAFETY AND HEALTH ACT, NATIONAL ELECTRICAL CODE, STATE ELECTRICAL CODE, LOCAL MUNICIPAL CODE AND ANY OTHER BOARD HAVING JURISDICTION OVER THE ELECTRICAL INSTALLATION.

4. THE ELECTRICAL CONTRACTOR SHALL NOT ASSUME THAT ANY DRAWING OR SPECIFICATION FORMING A PART OF THE CONTRACT DOCUMENTS AUTHORIZES THE VIOLATION OF ANY CODE, REGULATION OR STANDARD. WHERE CONFLICTS ARISE, IT SHALL BE DEEMED THAT THE CONTRACTOR HAS ESTIMATED THE COST OF ALL WORK TO BE COMPLETED IN ACCORD WITH THE PREVAILING CODE.

5. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR ELECTRICAL WORK AND SHALL PAY ALL REQUIRED FEES AND SALES OR USE TAX AND FINES AS APPLICABLE TO THIS BRANCH OF WORK.

6. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL DELIVER TO THE OWNER WITHOUT COST ALL REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.

7. THE INTENT AND OBJECT OF THESE SPECIFICATIONS AND DRAWINGS IS TO INCLUDE A COMPLETE WIRING SYSTEM FROM SERVICE PANEL TO EACH AND EVERY OUTLET INDICATED OR SPECIFIED, INCLUDING CONNECTING ALL ELECTRICAL DEVICES AND/OR EQUIPMENT FURNISHED BY THE OWNER OR OTHER CONTRACTORS.

8. THE DRAWINGS, WHICH CONSTITUTE A PART OF THE CONTRACT, ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF CIRCUITS AND OUTLETS, LOCATION OF SWITCHES, PANELBOARD AND OTHER WORK, BUT EXTREME ACCURACY IS NOT GUARANTEED AND FIELD VERIFICATION OF ALL LOCATIONS AND DIMENSIONS IS DIRECTED.

9. GROUND ALL EQUIPMENT INCLUDING CONDUIT, RECEPTACLES, LIGHTING, MOTORS, PIPING AS PER ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE, AND AS SHOWN ON THESE DRAWINGS.

10. PROVIDE ONLY MATERIALS THAT ARE NEW OF THE TYPE AND QUALITY SPECIFIED, WHERE UNDERWRITERS LABORATORIES HAVE ESTABLISHED STANDARDS FOR SUCH MATERIALS, PROVIDE ONLY MATERIALS BEARING THE U.L. LABEL.

11. ARCHITECTURAL DRAWINGS SHOWING DIMENSIONS FOR ELECTRICAL DEVICES TAKE PRECEDENCE OVER THE ELECTRICAL DRAWINGS.

12. SYSTEMS SHALL BE FREE FROM SHORTS AND GROUNDS. TEST FOR MECHANICAL AND ELECTRICAL DEFECTS. VERIFY CORRECT CONNECTION OF HOT, NEUTRAL AND GROUND CONDUCTORS. ALL CONDUCTORS SHALL BE COLOR CODED AND LABELED WITH ZONE IDENTIFICATION FOR THE CASE OF LIGHTING.

13. WHEN MATERIAL AND/OR WORKMANSHIP IS FOUND NOT TO COMPLY WITH THE SPECIFIED REQUIREMENTS, WITHIN THREE DAYS AFTER RECEIPT OF NOTICE OF SUCH NON-COMPLIANCE, REMOVE THE NON-COMPLYING ITEMS FROM THE JOB AND REPLACE WITH NEW ITEMS MEETING THE REQUIREMENTS. COSTS FOR REPAIR OF NON-COMPLIANCE WORK SHALL BE BY THE CONTRACTOR WITH NO ADDITIONAL COST TO THE OWNER.

14. UPON COMPLETION OF THE WORK, THOROUGHLY CLEAN ALL DEVICES AND EQUIPMENT.

15. ALL TELECOM, TV CABLE AND DATA CABLE SHALL BE DEDICATED RUNS FROM THE OUTLET LOCATIONS TO THE BACKBOARD LOCATION.

16. WORK ASSIGNMENTS INFERRED BY THE DRAWINGS AND NOTES INCLUDED IN THESE PROJECT DOCUMENTS ARE INFORMATIONAL ONLY AND ARE NOT INTENDED TO RELIEVE THE BIDDING CONTRACTOR OF HIS OBLIGATION TO THE OWNER TO PROVIDE A COMPLETE AND COORDINATED PROJECT. COMPREHENSIVE SUBCONTRACTOR COORDINATION AND FINAL WORK ASSIGNMENTS TO SUBCONTRACTORS ARE THE SOLE RESPONSIBILITY OF THE BIDDING CONTRACTOR.

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ELECTRICAL ABBREVIATIONS

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ABBREVIATIONS

ACCU	AIR COOLED CONDENSING UNIT
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AI	ANALOG INPUT
AO	ANALOG OUTPUT
APD	AIR PRESSURE DROP
AS	AIR SEPERATOR
B	BOILER
BB	BASEBOARD
BC	BOOSTER COIL
BDD	BACKDRAFT DAMPER
BFG	BELOW FINISHED GRADE
BFP	BACKFLOW PREVENTER
BHP	BRAKE HORSE POWER
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BT	BATH TUB
BTU	BRITISH THERMAL UNITS
BTUH	BRITISH THERMAL UNITS PER HOUR
C	CONVECTOR
CA	COMPRESSED AIR
CB	CATCH BASIN
CC	COOLING COIL
CCF	100 CUBIC FEET
CD	CEILING DIFFUSER
CF	CUBIC FEET
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFP	CLEAN OUT FERRULE AND PLUG
CH	CHILLER
CI	CAST IRON
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CO	CLEAN OUT
CO	CARBON MONOXIDE
COND	CONDENSATE
CO2	CARBON DIOXIDE
CT	COOLING TOWER
CU	CONDENSING UNIT
CU FT	CUBIC FOOT
CUH	CABINET UNIT HEATER
CW	COLD WATER
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
D	DIFFUSER
DB	DRY BULB
DEG F	DEGREE FAHRENHEIT
DF	DRINKING FOUNTAIN
DI	DIGITAL INPUT
DIA	DIAMETER
DN	DOWN
DO	DIGITAL OUTPUT
DWV	DRAIN, WASTE AND VENT
EA	EACH
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EG	EXHAUST AIR GRILLE
ELEV	ELEVATION
ER	EXHAUST AIR REGISTER
EUH	ELECTRIC UNIT HEATER
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EWT	ENTERING WATER TEMPERATURE
EX	EXISTING
EXH	EXHAUST
F	FURNACE
FAI	FRESH AIR INTAKE
FBO	FURNISHED BY OTHERS
FC	FAN COIL
FD	FLOOR DRAIN
FD	FIRE DAMPER
FIN	FIN TUBE RADIATION
FLG	FLANGE
FP	FIRE PROTECTION
FPM	FEET PER MINUTE
FT	FOOT OR FEET
F&T	FLOAT AND THERMOSTATIC TRAP
G	GAS (NATURAL)
GAL	GALLON
GC	GENERAL CONTRACTOR
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GT	GREASE TRAP
H	HYDROGEN
HB	HOSE BIBB
HC	HEATING COIL
HCO	HORIZONTAL CLEANOUT
HP	HORSE POWER
HTR	HEATER
HVAC	HEATING, VENTILATING & AIR COND
HW	HOT WATER
HWC	HOT WATER RECIRCULATING
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HX	HEAT EXCHANGER
IE	INVERT ELEVATION
IF	INLINE FAN
IN	INCH OR INCHES
IP	IRON PIPE
INV	INVERT
IWH	INSTANTANEOUS WATER HEATER
JAN	JANITOR
JC	JANITOR'S CLOSET
JS	JANITOR'S SINK
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LAV	LAVATORY
LBS	POUNDS
LHWR RETURN	LOW TEMPERATURE HOT WATER
LHWS SUPPLY	LOW TEMPERATURE HOT WATER
LIQ	LIQUID (REFRIGERATION)
LV	LOUVER
LP	PROPANE GAS (LIQUID)
LWT	LEAVING WATER TEMPERATURE
M	METER
MAU	MAKE-UP AIR HANDLING UNIT
MAX	MAXIMUM
MB	MOP BASIN
MBH	BRITISH THERMAL UNITS (1000)
MBTUH	BRITISH THERMAL UNITS (1000)
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPACITY
MD	MOTORIZED DAMPER
MECH	MECHANICAL
MIN	MINIMUM
MOCP PROTECTION	MAXIMUM OVER CURRENT
N2O	NITROUS OXIDE
NC	NORMALLY CLOSED
NIC	NOT INCLUDED OR NOT IN CONTRACT
NIT	NITROGEN
NO	NORMALLY OPEN
OA	OUTDOOR AIR
OAI	OUTDOOR AIR INTAKE
OC	ON CENTER
OD	OVERFLOW DRAIN
ODP	OPEN DRIP PROOF
OXY	OXYGEN
P	PUMP
PC	PLUMBING CONTRACTOR
PD	PNEUMATIC OPERATED DAMPER
PIV	POST INDICATING VALVE
PRV	PRESSURE REDUCING VALVE
PT	PRESSURE TEMPERATURE PLUG
PTAC	PACKAGED TERMINAL AIR COND. UNIT
PVAC	PROCESS VACUUM
R	REGISTER
RA	RETURN AIR
RD	ROOF DRAIN
RET	RETURN
RF	RETURN FAN
RG	RETURN AIR GRILLE
RPZ	REDUCED PRESSURE ZONE BACKFLOW PREVENTER
RR	RETURN REGISTER
RTU	ROOF TOP UNIT
S	SINK
SA	SUPPLY AIR
SAD	SUPPLY AIR DIFFUSER
SAF	SUPPLY AIR FAN
SAN	SANITARY SEWER
SD	SMOKE DETECTOR
SG	SUPPLY AIR GRILLE
SH	SHOWER HEAD
SHC	STEAM HEATING COIL
SR	SUPPLY REGISTER
SS	STAINLESS STEEL
ST	STORM
STM	STEAM
SUCT	SUCTION (REFRIGERATION)
TCC	TEMPERATURE CONTROL CONTRACTOR
TCD	TEMPERATURE CONTROL DAMPER
TCP	TEMPERATURE CONTROL PANEL
TD	TRANSFER DUCT
TG	TRANSFER AIR GRILLE
TT	THERMOSTATIC TRAP
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
UV	UNIT VENTILATOR
V	VENT
VAC	VACUUM
VAV	VARIABLE AIR VOLUME BOX
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
VS	VENT STACK (SANITARY)
VTR	VENT THRU ROOF (SANITARY)
VUV	VERTICAL UNIT VENTILATOR
W	WASTE
WB	WET BULB
WC	WATER CLOSET
W/O	WITHOUT
WH	WATER HEATER
WSHP	WATER SOURCE HEAT PUMP

NOTE:
NOT ALL ABBREVIATIONS AND/OR SYMBOLS ARE USED IN THIS SET OF DOCUMENTS.

SYMBOL LEGEND

- SUPPLY AIR DIFFUSER
- LINEAR DIFFUSER
- RETURN OR EXHAUST AIR GRILLE
- EXHAUST FAN - ROOF
- FRESH AIR INTAKE HOOD - ROOF
- RELIEF AIR HOOD - ROOF
- SUPPLY REGISTER
- RETURN OR EXHAUST REGISTER
- SQUARE TO ROUND TRANSITION
- VOLUME CONTROL DAMPER
- FIRE / SMOKE DAMPER (RATING DETERMINED BY WALL TYPE)
- MOTORIZED DAMPER
- DUCT SMOKE DETECTOR
- THERMOSTAT - 60" A.F.F.
- HUMIDISTAT - 60" A.F.F.
- AIR FLOW
- SUPPLY AIR DUCT UP
- SUPPLY AIR DUCT DOWN
- RETURN AIR DUCT UP
- RETURN AIR DUCT DOWN
- EXHAUST AIR DUCT UP
- EXHAUST AIR DUCT DOWN
- BALL VALVE
- BUTTERFLY VALVE
- CIRCUIT SETTER
- CHECK VALVE
- GATE VALVE
- GLOBE VALVE
- 2-WAY CONTROL VALVE
- 3-WAY CONTROL VALVE
- PRESSURE RELIEF VALVE
- BALANCE VALVE
- INLINE PUMP
- STRAINER
- CAP
- PIPING 90
- PIPING "T"
- METER
- CONNECTION TO EXISTING

- PIPE BREAK
- PIPE DOWN
- PIPE UP
- CLEAN OUT
- GAS METER
- UNION
- HOSE BIBB
- ELECTRIC BELL
- SIAMESE CONNECTION
- BARE FIN TUBE ELEMENT
- FIN TUBE ELEMENT WITH COVER
- EXTERNALLY INSULATED DUCTWORK
- INTERNALLY LINED DUCTWORK

PLUMBING PIPING

- CW — DOMESTIC COLD WATER - EXISTING
- CW - - - DOMESTIC COLD WATER - DEMO
- CW — DOMESTIC COLD WATER - NEW
- HW — DOMESTIC HOT WATER - EXISTING
- HW - - - DOMESTIC HOT WATER - DEMO
- HW — DOMESTIC HOT WATER - NEW
- HWC — DOMESTIC HOT WATER RECIRC - EXISTING
- HWC - - - DOMESTIC HOT WATER RECIRC DEMO
- HWC — DOMESTIC HOT WATER RECIRC - NEW
- SAN — SANITARY - EXISTING
- SAN - - - SANITARY - DEMO
- SAN — SANITARY - NEW
- V — VENT - EXISTING
- V - - - VENT - DEMO
- V — VENT - NEW
- ST — STORM - EXISTING
- ST - - - STORM - DEMO
- ST — STORM - NEW
- OD — OVERFLOW STORM - EXISTING
- OD - - - OVERFLOW STORM - DEMO
- OD — OVERFLOW STORM - NEW
- G — GAS - EXISTING
- G - - - GAS - DEMO
- G — GAS - NEW

DUCTWORK

- 24x14 SA — SUPPLY AIR DUCT - EXISTING
- 24x14 SA — SUPPLY AIR DUCT - DEMO
- 24x14 SA — SUPPLY AIR DUCT - NEW
- 24x14 RA — RETURN AIR DUCT - EXISTING
- 24x14 RA — RETURN AIR DUCT - DEMO
- 24x14 RA — RETURN AIR DUCT - NEW
- 24x14 OA — OUTSIDE AIR DUCT - EXISTING
- 24x14 OA — OUTSIDE AIR DUCT - DEMO
- 24x14 OA — OUTSIDE AIR DUCT - NEW
- 24x14 EA — EXHAUST AIR DUCT - EXISTING
- 24x14 EA — EXHAUST AIR DUCT - DEMO
- 24x14 EA — EXHAUST AIR DUCT - NEW

MECHANICAL PIPING

- HWS — HYDRONIC HOT WATER SUPPLY - EXISTING
- HWS - - - HYDRONIC HOT WATER SUPPLY - DEMO
- HWS — HYDRONIC HOT WATER SUPPLY - NEW
- HWR — HYDRONIC HOT WATER RETURN - EXISTING
- HWR - - - HYDRONIC HOT WATER RETURN - DEMO
- HWR — HYDRONIC HOT WATER RETURN - NEW
- FP — FIRE PROTECTION - EXISTING
- FP - - - FIRE PROTECTION - DEMO
- FP — FIRE PROTECTION - NEW
- CDS — CONDENSOR WATER SUPPLY
- CDS - - - CONDENSOR WATER SUPPLY - DEMO
- CDS — CONDENSOR WATER SUPPLY - EXIST
- CDR — CONDENSOR WATER RETURN
- CDR - - - CONDENSOR WATER RETURN - DEMO
- CDR — CONDENSOR WATER RETURN - EXIST
- CHWS — CHILLED WATER SUPPLY
- CHWS - - - CHILLED WATER SUPPLY - DEMO
- CHWS — CHILLED WATER SUPPLY - EXIST
- CHWR — CHILLED WATER RETURN
- CHWR - - - CHILLED WATER RETURN - DEMO
- CHWR — CHILLED WATER RETURN - EXIST
- AIR — COMPRESSED AIR - EXISTING
- AIR - - - COMPRESSED AIR - DEMO
- AIR — COMPRESSED AIR - NEW
- STM — STEAM - EXISTING
- STM - - - STEAM - DEMO
- STM — STEAM - NEW
- C — CONDENSATE - EXISTING
- C - - - CONDENSATE - DEMO
- C — CONDENSATE - NEW

NOTES

MECHANICAL/PLUMBING AND FIRE PROTECTION GENERAL NOTES

1. THESE DRAWINGS ARE DIAGRAMMATIC IN CHARACTER AND DO NOT NECESSARILY INDICATE EVERY OFFSET, VALVE, FITTING, ETC. REQUIRED. CONTRACTOR IS RESPONSIBLE FOR FIELD ROUTING ALL DUCTWORK AND PIPING AT NO ADDITIONAL COST.

2. THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT, MATERIALS AND OPERATIONS AND PERFORM ALL LABOR REQUIRED FOR INSTALLATIONS AS INDICATED THE DRAWINGS, IN THE SPECIFICATIONS AND AS REQUIRED BY LOCAL, STATE AND FEDERAL CODES, AND AS MAY BE REASONABLY IMPLIED TO ACCOMPLISH COMPLETE MECHANICAL, PLUMBING AND FIRE PROTECTION SYSTEMS.

3. ALL ELECTRICAL DISCONNECTS REQUIRED PER NEC CODE SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR UNLESS NOTED OTHERWISE.

4. CONTRACTOR SHALL PROVIDE PRODUCTS AS SPECIFIED ON THE DRAWINGS AND SPECIFICATIONS, HOWEVER, WHERE THE WORDS "EQUAL TO" ARE USED, ADDITIONAL PRODUCTS MAY BE SUBMITTED AS PROPOSED SUBSTITUTIONS, BUT REQUIRE APPROVAL FROM ARCHITECT/ENGINEER.

5. DESIGN DRAWINGS SHOW GENERAL ARRANGEMENT AND EXTENT OF WORK. THE DRAWINGS ARE DIAGRAMMATIC AND MAY NOT NECESSARILY BE DRAWN TO SCALE FOR PURPOSE OF CLARITY AND LEGIBILITY. IT IS INTENDED THAT ALL ITEMS BE LOCATED SYMMETRICALLY WITH ARCHITECTURAL ELEMENTS WHERE FEASIBLE AND BE INSTALLED TO AVOID OBSTRUCTIONS AND PRESERVE HEADROOM. CONTRACTOR SHALL REVIEW PLANS OF OTHER TRADES WITH HIS OWN WORK TO AVOID CONFLICTS AND INTERFERENCES. CONTRACTOR MUST MAKE USE OF ALL SOURCES OF INFORMATION INCLUDING DRAWINGS OF EQUIPMENT FURNISHED BY OTHERS. FAILURE TO REVIEW WORKING SPACES OR CHECK DIMENSIONS IN QUESTION SHALL NOT WARRANT CONFLICTS.

6. DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE COMPLIMENTARY. WHERE DRAWINGS AND SPECIFICATIONS CONFLICT EACH OTHER, IT IS THE CONTRACTORS RESPONSIBILITY TO GET CLARIFICATION FROM THE ARCHITECT/ENGINEER PRIOR TO BIDDING. FAILURE TO GET CLARIFICATION SHALL NOT RESULT IN ADDITIONAL COST AND THE MORE STRINGENT SHALL BE USED AS INTENDED BASIS FOR BIDDING.

7. PLANS AND SPECIFICATIONS ARE INTENDED TO CONFORM TO GOVERNING CODES AND STANDARDS. IF NON-CONFORMITIES ARE DISCOVERED WHILE BIDDING, OR PERFORMING THE WORK IMPLIED, BRING THE SAME TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR CLARIFICATION IN WRITING PRIOR TO SUBMITTING BID OR PROCEEDING WITH WORK. NON-CONFORMITIES OF CODE COMPLIANCE WORK INSTALLED AND CORRECTIONS REQUIRED WITHOUT CONSULTION AND WRITTEN RESPONSE OF SAME BY THE ENGINEER WILL BE THE CONTRACTORS FINANCIAL RESPONSIBILITY.

8. MOTORS SHALL BE PROVIDED BY MECHANICAL CONTRACTOR AS REQUIRED BY THE EQUIPMENT FURNISHED BY THE MECHANICAL CONTRACTOR. MOTORS TO BE SUITABLE FOR LOAD, DUTY, VOLTAGE, FREQUENCY, HAZARD, SERVICE AND LOCATION INTENDED. SINGLE PHASE MOTORS MUST HAVE INTEGRAL THERMAL OVERLOAD PROTECTION IN ADDITION TO THAT PROVIDED IN MOTOR CONTROLLERS. MOTORS TO CONFORM IN DESIGN AND PERFORMANCE TO THE MOTOR STANDARDS OF NEMA. MOTORS RATED FOR CONTINUOUS DUTY UNDER FULL LOAD WITH A MAXIMUM TEMPERATURE RISE OF 105 DEG F FOR OPEN, 125 DEG F FOR DRIP PROOF AND 130 DEG F FOR EXPLOSION PROOF AND TOTALLY ENCLOSED TYPES. SUPPLY MOTORS WITH BELT DRIVES WITH ADJUSTABLE BASES, REMOVABLE BELT GUARDS AND VARIABLE PITCH DRIVE PULLEY SELECTED SO THAT MIDPOINT OF VARIABLE RANGE OF PULLEY WILL DRIVE EQUIPMENT AT RATED SPEED. MOTORS 1 HP AND LARGER SHALL BE THREE PHASE (UNLESS OTHERWISE LISTED).

9. MOTOR CONTROLLERS SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR FOR MOTORS FURNISHED BY THE MECHANICAL CONTRACTOR. MOTOR CONTROLLERS SHALL BE OF SIZES AND TYPES AS NEEDED TO MEET THE OPERATIONAL CONDITIONS AS REQUIRED BY THE SEQUENCE OF OPERATION. ELECTRICAL CONTRACTOR TO FURNISH AND INSTALL THE POWER CIRCUIT, LOCAL DISCONNECT AND CONNECTION TO MOTOR TERMINALS. MECHANICAL CONTRACTOR TO MOUNT MOTOR CONTROLLERS AND CONTROL COMPONENTS AND WIRE AND MAKE ALL FINAL CONTROL CONNECTIONS BETWEEN DEVICES.

10. THE DRAWINGS INDICATE KNOWN UTILITY AND DRAINAGE LINES IN ACCORDANCE WITH THE INFORMATION FURNISHED TO THE ENGINEER. RESPONSIBILITY FOR LOCATING, UNCOVERING, DISPOSING OR MAINTAINING ALL EXISTING UTILITY LINES TO REST SOLELY WITH THE CONTRACTOR. VERIFY LOCATIONS AND DEPTHS OF SERVICE CONNECTION POINTS BEFORE PROCEEDING WITH CONSTRUCTION.

11. CONTRACTOR SHALL CHECK EXISTING PREMISES BEFORE SUBMISSION OF BIDS TO CHECK ALL CONDITIONS WHICH MAY EFFECT THE PERFORMANCE OF THE WORK INVOLVED. NO ALLOWANCES OR EXTRA PAYMENT WILL BE MADE DUE TO CONTRACTOR'S FAILURE TO EXAMINE SITE AND FULLY DISCERN WORKING CONDITIONS.

12. MECHANICAL CONTRACTOR SHALL RECEIVE, PROPERLY HOUSE, HANDLE, HOIST, AND DELIVER TO PROPER LOCATION EQUIPMENT AND OTHER MATERIALS REQUIRED FOR THIS CONTRACT.

13. THE CONTRACTOR SHALL OBTAIN PERMITS, ARRANGE FOR INSPECTIONS, AND PAY FEES AND EXPENSES IN CONNECTION THEREWITH, AS A PART OF THE WORK REQUIRING SUCH PERMITS. EVERY EFFORT IS MADE TO DESCRIBE THE WORK REQUIREMENTS IN CONFORMITY WITH APPLICABLE CODES.

14. THE CONTRACTOR SHALL REVIEW ANY ALTERNATES OF OTHER TRADES, AND PRICE THEIR BID TO ACCOUNT FOR ITEMS AFFECTING HIS WORK.

15. PIPING PASSING THROUGH CORRIDORS, TUNNELS, CHASES, ETC. SHALL BE CONSIDERED FOR PROPER DRAINAGE. CONSULT WITH THE OTHER CONTRACTORS AND AVOID CONFLICT WITH LOCATION OF PIPING. ORDER OF PRIORITY FOR ALL PIPING AND CONDUITS TO BE INSTALLED SHALL BE AS FOLLOWS WITH THE HIGHEST PRIORITY LISTED FIRST.

A. PLUMBING DRAIN LINES
B. CONDENSATE LINES
C. DUCTWORK
D. FIRE PROTECTION
E. HOT AND COLD WATER PIPING
F. ELECTRICAL CONDUIT

16. WORK ASSIGNMENTS INFERRED BY THE DRAWINGS AND NOTES INCLUDED IN THESE PROJECT DOCUMENTS ARE INFORMATIONAL ONLY AND ARE NOT INTENDED TO RELIEVE THE BIDDING CONTRACTOR OF HIS OBLIGATION TO THE OWNER TO PROVIDE A COMPLETE AND COORDINATED PROJECT. COMPREHENSIVE SUBCONTRACTOR COORDINATION AND FINAL WORK ASSIGNMENTS TO SUBCONTRACTORS ARE THE SOLE RESPONSIBILITY OF THE BIDDING CONTRACTOR.

17. ALL DUCTS SERVING SUPPLY, RETURN AND EXHAUST TERMINALS SHALL BE PROVIDED WITH BALANCE DAMPERS. FOR CLARITY, ALL DAMPERS MAY NOT BE SHOWN ON PLANS.

18. PROVIDE DIELECTRIC UNIONS/CONNECTIONS AT ALL JUNCTIONS OF DISSIMILAR METALS.

UPEA ENGINEERS & ARCHITECTS
www.upea.com

PULLAR KITCHEN EQUIPMENT REPLACEMENT
CITY OF SAULT STE. MARIE
435 E. PORTAGE AVE.
SAULT STE. MARIE, MI 49783

ISSUED FOR: BIDDING
DATE: 2/09/2024

PULLAR KITCHEN EQUIPMENT REPLACEMENT
CITY OF SAULT STE. MARIE
PROJECT NO: S14-03447

DESIGNED BY: SP
DRAWN BY: SP
CHECKED: SP
APPROVED: JG

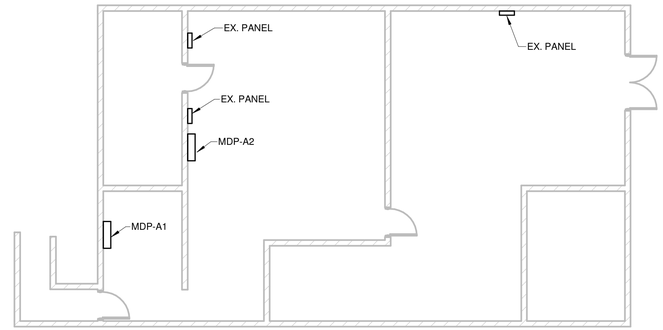
MECHANICAL AND PLUMBING ABBREVIATIONS AND SYMBOLS

M001

2/8/2024 11:14:02 AM
P:\S14-03447 Sault Ste. Marie, City of Pullar Exhaust Hood\Dwgs\S14-03447 SSM City Pullar Exhaust Hood_Mechanical Electrical.rvt

KEYNOTES

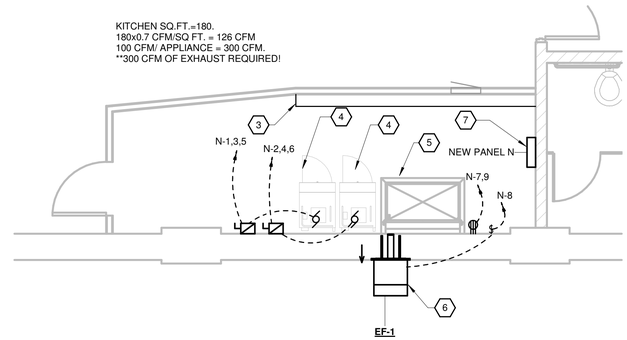
1. REMOVE EXISTING HOOD, FAN, WEATHERHOOD, AND ASSOCIATED SUPPORTS AND ELECTRICAL. PROVIDE NEW BLANK OFF PANEL AS REQUIRED.
2. DISCONNECT EXISTING GAS PIPING FROM APPLIANCES UNDER HOOD. REMOVE PIPING AND SUPPORTS. COORDINATE GAS DISCONNECT WITH GAS PROVIDER.
3. PROVIDE 5/8" GYPSUM BOARD ON EXISTING SOFFIT. PAINT TO MATCH EXISTING.
4. VENTLESS HOOD ELECTRIC KETTLE FRYER. GILES MODEL #WOG-MP-VH. 20.4 KW, 208V, 3-PHASE. CONTRACTOR TO PROVIDE AND INSTALL PER MANUFACTURER'S REQUIREMENTS.
5. VENTLESS RECIRCULATING ELECTRIC COOKTOP. EVO MODEL #10-0148-EVT. 208V, SINGLE PHASE, 32-AMPS. CONTRACTOR TO PROVIDE AND INSTALL PER MANUFACTURER'S REQUIREMENTS.
6. COORDINATE EXACT LOCATION OF EXHAUST FAN WITH EQUIPMENT LAYOUT.
7. NEW 200 AMP, 32 SPACE, 208/120, 3-PHASE PANELBOARD. SEE RISER DIAGRAM FOR FEED DETAILS. COORDINATE EXACT LOCATION OF NEW PANEL WITH THE OWNER SO THAT CLEARANCES ARE MAINTAINED AT ALL TIMES.



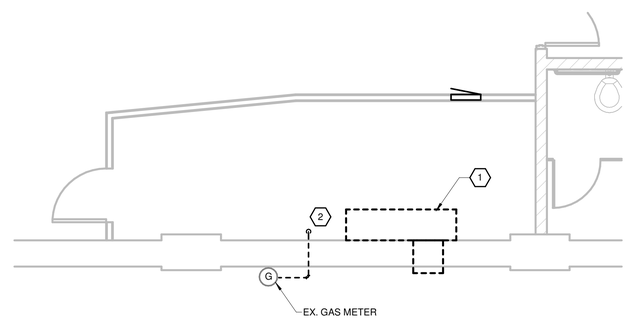
C4 BASEMENT PLAN
1/8" = 1'-0"

A1 MAIN LEVEL OVERALL PLAN
1/16" = 1'-0"

KITCHEN SQ.FT.=180.
180x0.7 CFM/SQ.FT. = 126 CFM
100 CFM/ APPLIANCE = 300 CFM.
**300 CFM OF EXHAUST REQUIRED!



B4 ENLARGED PROPOSED CONCESSIONS PLAN
1/4" = 1'-0"



A4 ENLARGED EXISTING CONCESSIONS PLAN
1/4" = 1'-0"

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PULLAR KITCHEN EQUIPMENT REPLACEMENT
CITY OF SAULT STE. MARIE
435 E. PORTAGE AVE.
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CITY OF SAULT STE. MARIE
PROJECT NO: S14-03447

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MECHANICAL/ ELECTRICAL PLAN

ME101

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P:\S14-03447 Sault Ste. Marie, City of-Pullar Exhaust Hood\Dwgs\S14-03447 SSM City Pullar Exhaust Hood_Mechanical Electrical.rvt

Branch Panel: NEW PANEL N

Location:
Supply From:
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4
Manufacturer: Square D

A.I.C. Rating: 10 kA
Mains Type: MLO
Mains Rating: 225 A

Notes:

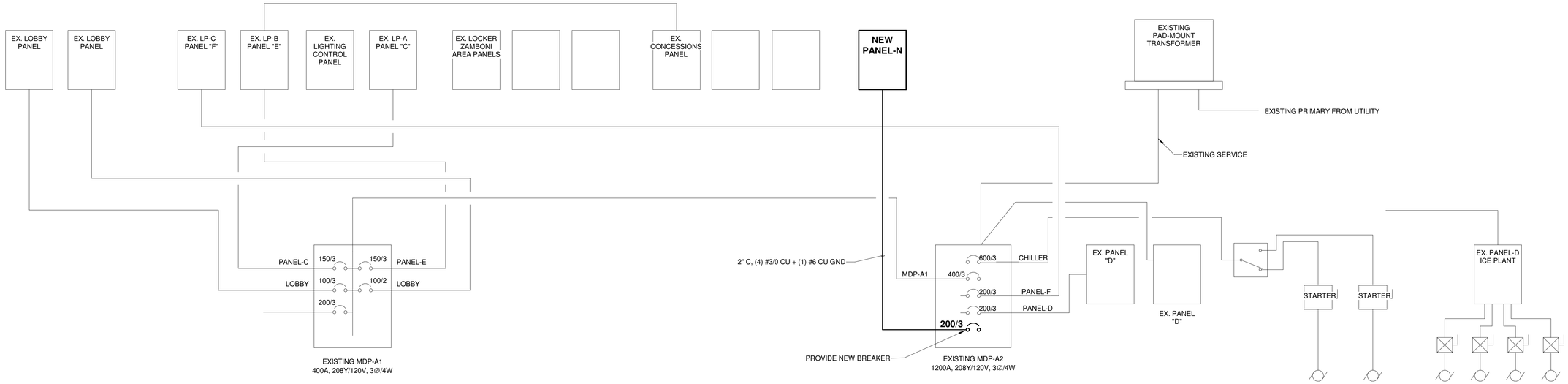
CKT	Circuit Description	Wire	Brkr Size	Brkr Poles	Phase A Load (VA)		Phase B Load (VA)		Phase C Load (VA)		Brkr Poles	Brkr Size	Wire	Circuit Description	CKT
N-1					6800	6800									N-2
N-3	Electric Fryer (GFI)	#3	80 A	3			6800	6800			3	80 A	#3	Electric Fryer (GFI)	N-4
N-5									6800	6800					N-6
N-7	Electric Griddle (GFI)	#8	40 A	2	3328	696					1	20 A	#12	Exhaust Fan	N-8
N-9							3328								N-10
N-11															N-12
N-13															N-14
N-15															N-16
N-17															N-18
N-19															N-20
N-21															N-22
N-23															N-24
N-25															N-26
N-27															N-28
N-29															N-30
N-31															N-32
				Total Load:	17624 VA		16928 VA		13600 VA						
				Total Amps:	151 A		145 A		113 A						
				Total Connected Load:	48152 VA										

Legend:

FAN SCHEDULE

ID	DESCRIPTION	TYPE	MANUFACTURER	MODEL NUMBER	AIR FLOW (CFM)	EXT. SP. (FT)	RPM	DUCT CONNECTION (IN)	ELECTRICAL			NOTES
									VOLTS	PHASE	HP	
EF-1	KITCHEN EXHAUST FAN	SIDEWALL	GREENHECK	SBE-1H20-4	300	0.22	616	-	120	1	1/4	1,2,3

1. COORDINATE ELECTRICAL REQUIREMENTS WITH ELECTRICAL CONTRACTOR.
2. PROVIDE WITH GRAVITY BACKDRAFT DAMPER AND WEATHERHOOD.
3. INSTALL PER MANUFACTURER'S REQUIREMENTS.



A1 RISER DIAGRAM
NOT TO SCALE

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CITY OF SAULT STE. MARIE
PROJECT NO: S14-03447

DESIGNED BY: SP
DRAWN BY: SP
CHECKED: SP
APPROVED: JG

MECHANICAL/ ELECTRICAL DETAILS AND SCHEDULES

ME501

2/8/2024 11:14:04 AM
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ES ICC EVALUATION SERVICE®

ICC-ES PMG Product Certificate

PMG-1004

Effective Date: August 2023

This listing is subject to re-examination in one year.

www.icc-es-pmg.org | (800) 423-6587 | (562) 699-0543 *A Subsidiary of the International Code Council®*

CSI: DIVISION: 23 00 00—HEATING, VENTILATING AND AIR CONDITIONING (HVAC)
Section: 23 38 13—Commercial Kitchen Hoods

Product certification system:

The ICC-ES product certification system includes testing samples taken from the market or supplier's stock, or a combination of both, to verify compliance with applicable codes and standards. The system also involves factory inspections, and assessment and surveillance of the supplier's quality system.

Product: Giles Recirculating (Ventless) Hoods

Listee: Giles Enterprises, Inc.
Post Office Box 210247
2750 Gunter Park Drive West
Montgomery, Alabama 36121-0247
800-554-4537
www.gsfe.com

Additional Listee:

Halton Company
101 Industrial Drive
Scottsville, Kentucky 42164

Compliance with the following codes:

2024, 2021, 2018, 2015, 2012, 2009, 2006, 2003 and 2000 *International Mechanical Code*® (IMC)
2024, 2021, 2018, 2015, 2012 and 2009 *International Fire Code*® (IFC)
2024, 2021, 2018, 2015, 2012, 2009 and 2006 *Uniform Mechanical Code*® (UMC)*
2022, 2019, 2016, 2013, 2010 and 2007 *California Mechanical Code* (CMC)*
2020, 2015 and 2010 *National Building Code of Canada*® (NBC)**
*Copyrighted publications of the International Association of Plumbing and Mechanical Officials
**Copyrighted publication of National Research Council Canada

Compliance with the following standards:

EPA Test Method 202, of Condensable Particulate Emissions from Stationary Sources.
NFPA 1-2021, -2018, -2015 Fire Code
NFPA 96-2021, -2017, -2014, -2011, -2008, -2004, Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations
UL 710B (Ed. 2), Standard for Recirculating Systems
UL 710 (Ed. 6), Standard for Safety Exhaust Hoods for commercial Cooking Equipment
UL 867 (Ed. 5), Standard for Safety Electrostatic Air Cleaners
UL 1046, Standard for Safety Grease Filters for Exhaust Ducts (Ed. 4)

evo

Project: _____ Item #:_____ Config #:_____

Evo® EVent® 48E - Electric Cooktop in Ventless Recirculating Ventilation System

Model #: 10-0148-EVT

Model 10-0148-EVT
w/ 36" Casters Shown

DESCRIPTION

The Evo EVent® 48E is an electrically controlled 48" x 24" (1219mm x 610mm) rectangular steel cooktop in an integrated ventless recirculating ventilation unit. Evo EVents four combined heaters heat a static cooking zone with variable temperatures ranging from 100ºF to 550ºF (38ºC to 288ºC). A high velocity CFM ventless system provides containment and capture from the intake aperture located on the chef-side adjacent the cooking surface, and a discharge duct on the chef-side returns clean filtered air. The duct system is fully welded stainless steel and utilizes a 4-stage filtration system including a washable stainless steel grease baffle filter, mesh particulate filter, electrostatic precipitator, and a replaceable activated charcoal filter. Factory installed fire suppression system with dry contact fire alarm micro switch and cross-pattern nozzles provide a continuous zone of fire protection.

SPECIFICATIONS

FILTRATION - Completely self-contained 4-stage filtration process reduces grease emissions below that are allowed in NFPA 96 and ANSI UL710B using the EPA 202 test method. The self-contained 4-stage filtration system includes a washable stainless steel grease baffle filter, mesh particulate filter, electrostatic precipitator (ESP) and replaceable activated charcoal filter. All filters are easily removable with the included 8 MM hex key. Airflow sensors continually monitor airflow and grease removal while an interlock system will not allow unit to operate if filters are missing, clogged or in the event of a fire.

FIRE PROTECTION - Factory installed Buckeye® Kitchen Mister system includes BFR-5 tank, 2 - nitrogen cartridges, SRM control head, piping, flex cable, fusible link, nozzles and manual pull station. Manual pull is located on the chef side (front) of the unit. BFR-5 tank comes pre-filled (charged) with fire suppression chemical. Fire protection system meets NFPA 96 Chapter 13 and was tested to UL300 standards. **Fire protection system must be armed and certified by Buckeye® Authorized distributor after installation and before first use (operators responsibility).**

EXHAUST AND AIR FLOW - Exhaust air is horizontal discharge. A minimum of 70 cubic feet (CFM) of fresh air per minute is required both in and out of cooking area to ensure the dilution of cooking aromas. Dedicated Make-up Air unit is not required. Please consult your HVAC contractor.

COOKING APPLIANCE - The 48E unit includes a 48" x 24" (1219mm x 610mm) flat rectangular steel cook surface with Evo® patented intelligent heating technology that provides a 24" x 17" heated cooking area. Each unit also includes a resistive touchscreen display that provides feedback on the operation of the unit.

STANDARD FEATURES

- 48" x 24" (1219mm x 610mm) flat rectangular steel cook surface
- Variable temperatures 100°F to 550°F (38°C to 288°C)
- Completely self-contained, 4-stage filtration system
- Resistive interactive touchscreen display that provides instant status of filters, grease drawers and control of temperature presets
- Stainless steel and aluminum construction for durability, strength and ease of cleaning
- Can be factory configured for 36" or 34" overall counter height
- Large removable grease collection tray
- Self-contained filtration process reduces emissions below that allowed in NFPA 96 and ANSI UL710B using the EPA 202 test method
- Pre-engineered factory installed fire protection system
- Fire protection system includes a dry contact micro switch for connection to a central fire alarm system (operators responsibility)
- Low noise with only 70 dBA average
- Evo EVents are semi-mobile, making them easy to roll out for housekeeping and maintenance
- Chef-side accessible washable stainless steel grease baffle filter, mesh particulate filter, electrostatic precipitator (ESP) and disposable activated charcoal filter
- Charcoal filter recommended replacement interval - 2 weeks
- Available in 208 or 240 V, 1-phase (Must be specified at order)
- 8-foot cord and molded NEMA 6-50P
- Units ship with one complete set of 4 filters, grill surface cleaning kit, 2 stainless steel spatulas, grill scraper, and owner's manual
- Limited one-year parts and labor warranty

AVAILABLE PARTS

- 10-0150-EVT-34 34" Caster Kit - ADA Compliant
- 10-0150-EVT-36 36" Caster Kit - Standard
- 10-0150-EVT-FMS Stainless Steel Surround
- 13-0200-EVT Electrostatic Precipitator (ESP)
- 13-0210-EVT Stainless Steel Grease Baffle Filter
- 13-0220-EVT Aluminum Mesh Pre-Filter
- 13-0230-EVT Replaceable Charcoal Filter
- 20-EVT-1000 Recommended Spare Parts Kit

CERTIFICATIONS

E470119 | UL710B LISTED | MADE IN AMERICA

Evo America, LLC 20360 SW Avery Ct., Tualatin, OR 97062
Ph 503-626-1802 • Fax 503-213-5869 •evoamerica.com • sales@evoamerica.com

Version: 2021 v2

NOTE: Due to ongoing product improvement, specifications are subject to change without notice and are not intended for installation purposes.

PROVIDE COMMISSIONING OF FIRE PROTECTION SYSTEM FROM QUALIFIED BUCKEY FIRE CONTRACTOR.

CONTACT:
WINNINGER FIRE PROTECTION
6855 JUNCTION ROAD BRIDGEPORT CHARTER TOWNSHIP, MI 48722
(989) 652-4438
ANDREW BROWN
(989) 751-5289
ABROWN@WFPFIRE.COM

GILES
Responsive. Reliable.

Project Name/No:_____ Item No: _____
Quantity: _____ SIS#: _____ AIA/CSI#: _____

Multi-Purpose Ventless Hood Electric Fryer

Model WOG-MP-VH

The ***WOG-MP-VH Electric Ventless Hood Fryer,*** features a large-capacity square vat & plenty of power. Rapid temperature recovery can effectively shorten frying cycles to deliver more turns per day for maximum profits with minimal effort & expense.

- *Giles'* proven integral ventless hood system requires no venting to outside and, generally, can be operated where conventional ducted vent hoods are impractical or prohibited. Listed to ***UL-KNKG (-7 Canada), complies with ANSI/UL-197 & ANSI/UL-710B.***
- Build-in hood filter cleaning timer ... helps operators maintain optimum hood performance.
- Equipped with self-contained ***Ansul® R-102 Wet Chemical Fire Suppression ...*** piping, discharge nozzles, detector link brackets & conduit, Automan mechanism, fire damper, on-board manual actuation pull & stainless steel chemical tank. ***Final field set-up, testing & certification by an Ansul® agent is required ... not included, customer provided.***
- **20 kW** of cooking power to handle all of your menu needs ... french fries, chicken, seafood, veggies & more.
- Intuitive computer controller features dual basket timers, programmable cooking presets for fifty (50) different menu items, ***COOL MODE***, ***FORCE-FILTER*** control, ***BOIL-OUT*** program, multiple language selection & password control.
- On-board oil filtration system with robust 1/2-hp pump.
- Heavy-duty casters ... front w/locking brake.
- Durable all stainless steel construction.
- Needs less than 87"of ceiling height ... designed to occupy minimal floorspace.
- Optional Giles ***KitchenTrac®*** WiFi remote monitoring is available for this model.

Design Features

- ***2-Year Parts & Labor Warranty***
- (2) cooking baskets
- Built-in oil filtration system
- Custom Computer controller
- High oil temperature limit control
- Drain valve safety interlock
- Built-in fire suppression system
- Durable 5" Casters - front locking
- Heat-resistant Brush Set
- Product Stirring Utensil
- Waste Oil Discharge Hose
- Metal Crumb Scoop

Ventless Hood System: Proven 3-stage air cleaning with built-in fire suppression system.

[1] Stainless steel Baffle Filter removes a portion of the grease from cooking vapors.
[2] Electronic Air Cleaner (EAC) electrostatically captures finer grease particulate on collector plates.
[3] Disposable Charcoal Filter helps to control cooking aromas in the recirculated air.

On-Board Oil Filtration: Robust 1/2-hp pump can complete a filter cycle in 5 minutes. Uses a stainless steel filter screen *(filter paper can be used as alternative).* Single step drain, crumb flush and oil filtering. Turn of a single valve refills vat with reconditioned oil. When used properly, cooking oil life can be increased by at least 50%.

KITCHENTRAC REMOTE EQUIPMENT MONITORING

Optional WIFI Remote Monitoring: Monitor your cooking appliances remotely with ***Giles' KITCHENTRAC®***. WiFi connects fryer to a web server with software to provide analytics for your equipment status, utilization, performance & much more. Accessible from any internet connected device. ***Subscription required for some advanced levels of service ... Standard service is free w/purchase of option.***

IMPORTANT INFORMATION !!

Orders for *GILES Fryers w/Integral Recirculating/Ventless Hood* will not be accepted until Giles verifies, 1). that the Purchaser has received all necessary approvals from local authorities, and 2). that the Purchaser is aware of specific installation requirements & limitations, as stated in the *GFSE Recirculating/Ventless Hood Approval Letter*, which must be adhered to during installation. The *GFSE Hood Approval Letter (HAL)* must be completed, submitted along with any requested documentation, and approved by Giles prior to order acceptance. The document is available for download at www.gfse.com under the *SUPPORT* tab in *VENTLESS DOCUMENTS*.

GILES Food Service Equipment • **ISO 9001-2015 Registered**
PO Box 210247 • 2750 Gunter Park Drive W • Montgomery, AL 36109 USA
334.272.1457 • Fax 334.239.4117 • **Toll Free 800.554.4537 (US/Canada Only)** • **www.gfse.com** • Email: services@gfse.com

rinted in USA, 65745 (Rel. Date: Jul.2000, Rev. Date: Sep.2020, Rev. I)

PROVIDE COMMISSIONING, TESTING, FIELD SET-UP AND CERTIFICATION BY A QUALIFIED ANSUL DEALER FOR THE FIRE PROTECTION SYSTEM.

UPEA ENGINEERS & ARCHITECTS
www.upea.com

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CITY OF SAULT STE. MARIE
435 E. PORTAGE AVE.
SAULT STE. MARIE, MI 49783

ISSUED FOR: | DATE:

PULLAR KITCHEN EQUIPMENT REPLACEMENT
CITY OF SAULT STE. MARIE
PROJECT NO: S14-03447

DESIGNED BY: SP
DRAWN BY: SP
CHECKED: SP
APPROVED: JG

KITCHEN EQUIPMENT INFORMATION

ME701

2/8/2024 11:14:11 AM
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