GENERAL NOTES

1. INSTALLATION SHALL COMPLY WITH 2009 INDIANA ELECTRIC CODE. ALL ITEMS/ EQUIPMENT INSTALLED EITHER IN PART OR ASSEMBLY SHALL BE UL/ NRTL LISTED PER CODE.
2. SUBMIT SUBMITTALS ON ALL EQUIPMENT, DEVICES AND MATERIALS.
3. COORDINATE WITH OTHER DISCIPLINES AND OWNER TO VERIFY FINAL LOCATIONS OF DEVICES AND CONNECTIONS.
4. SLOPED PIPING HAS RIGHT OF WAY OVER CONDUIT.
5. INSTALL PENETRATION FIRESTOPPING AS INDICATED AND REQUIRED.
6. HEIGHTS OF SUSPENDED EQUIPMENT SHALL BE TO THE BOTTOM OF THE UNIT.
7. HEIGHTS OF WALL MOUNTED EQUIPMENT SHALL BE TO THE CENTER OF THE UNIT.
8. IF MOUNTING HEIGHT IS NOT INDICATED, INSTALL AS HIGH AS POSSIBLE.
9. INSTALL SLEEVES AS NECESSARY:
   a. SLEEVES FOR RACEWAYS AND CABLES SHALL BE SCHEDULE 40 GALVANIZED STEEL PIPE SLEEVES, ASTM A53/ A53M TYPE E, GRADE B WITH PLAIN ENDS.
   b. FOR RECTANGULAR OPENINGS USE GALVANIZED SHEET STEEL WITH A THICKNESS OF 0.052 INCHES FOR OPENINGS SMALLER THAN 50 INCHES IN PERIMETER AND 0.138 INCHES FOR THOSE LARGER.
   c. SLEEVES SHALL BE FLUSH WITH WALLS.
   d. EXTEND FLOOR SLEEVES 2" ABOVE FINISHED FLOOR LEVEL.
   e. IF NECESSARY GROUT SPACE OUTSIDE OF SLEEVE IN CONCRETE AND MASONRY WALLS AND FLOOR.
   f. IN NON RATED FIRE WALLS AND FLOORS SEAL ANNULAR SPACE WITH JOINT SEALANT.
   g. ALWAYS MAINTAIN FIRE RATING OF ASSEMBLY.
10. IF REQUIRED FOR HYDROSTATIC PRESSURE REASONS, INSTALL EPDM SEALING ELEMENTS WITH TWO PLASTIC PRESSURE PLATES AND STAINLESS STEEL CONNECTING BOLTS AND NUTS.
11. GROUT SHALL BE NONMETALLIC SHRINK-RESISTANT TYPE THAT IS NONSTAINING AND NON CORROSIVE.
12. EXTEND FLOOR SLEEVES 2" ABOVE FINISHED FLOOR.
13. MAINTAIN FIRE RATING OF FIRE-RATED ASSEMBLIES.
14. SEAL PENETRATION OF INDIVIDUAL RACEWAYS AND CABLES WITH FLEXIBLE BOOT-TYPE FLASHING.

REFERENCE SYMBOLS AND INFORMATION

GENERAL NOTES (ON THIS SHEET): GENERAL INFORMATION OR REQUIREMENTS WHICH PERTAIN TO ALL SHEETS OF THE DISCIPLINE IT IS LOCATED ON.

GENERAL NOTES: GENERAL INFORMATION OR REQUIREMENTS WHICH PERTAIN ONLY TO THE SHEET IT APPEARS ON.

KEYED DEMOLITION NOTES/KEYED PLAN NOTES: KEYED NOTES WHICH ARE SPECIFIC ONLY TO THE SHEET IT APPEARS ON. KEYED NOTES ARE NUMBERED TO CORRESPOND WITH THE NUMBER INDICATED BY THE APPROPRIATE PLAN NOTE SYMBOL.

- A — REVISION NUMBER
- # — KEYED DEMOLITION NOTE
- # — KEYED PLAN NOTE
- CONNECTION POINT OF NEW TO EXISTING
- DEMOLITION OF EXISTING TO THIS POINT

DETAIL REFERENCE: INDICATES LOCATION OF DETAIL USED FOR CLARIFICATION OF INSTALLATION.

- 01 / E001 — DETAIL NUMBER / SHEET WHERE DETAIL IS LOCATED

SECTION REFERENCE: INDICATES LOCATION OF SECTION OR ELEVATION THROUGH AREA INDICATED.

- 01 / E001 — SECTION/ELEVATION NUMBER / SHEET WHERE SECTION/ELEVATION IS LOCATED

PHASING LINETYPES: INDICATES THE PHASE IN WHICH AN ELEMENT IS CREATED AND/OR DEMOLISHED.

- DEMOLITION
- EXISTING TO REMAIN
- BY LAYER — NEW WORK
- GENERAL CONSTRUCTION TO REMAIN

POWER

- RECEPTACLE SPECIAL, NEMA CONFIGURATION
- FLUSH FLOOR OUTLET
- FLUSH FLOOR BOX, THREE GANG
- BAT — EMERGENCY BATTERY UNIT
- RECEPTACLE, SINGLE
- RECEPTACLE, DUPLEX
- RECEPTACLE CEILING MOUNTED, DUPLEX
- RECEPTACLE, QUADRAPLEX
- WP — RECEPTACLE, DUPLEX WEATHERPROOF (WHILE-IN-USE' TYPE)
- E — RECEPTACLE ON EMERGENCY CIRCUIT, RECEPTACLE AND PLATE SHALL BE RED
- TL — RECEPTACLE, DUPLEX, EMERGENCY RED TWIST LOCK
- GFI — RECEPTACLE, DUPLEX, GROUND FAULT CIRCUIT INTERRUPTER
- USB-A & C RECEPTACLE
- DOORBELL PUSH BUTTON
- DOOR BELL CHIME
- T LV — TRANSFORMER, 120V TO LOW VOLTAGE
- S — SECURITY ALARM POINT DOOR SWITCH
- S — SECURITY DOOR LOCK RELEASE - ELECTRIC STRIKE
- S — SECURITY MOTION DETECTOR
- S — SECURITY ALARM BELL
- C — CLOCK OUTLET
- C — CLOCK OUTLET WITH CONTROL STATION
- TV — TELEVISION OUTLET (RG6)
- J — JUNCTION BOX 4 11/16 x 4 11/16 x 2 1/8" UNLESS NOTED OTHERWISE
- MDP — MAIN DISTRIBUTION OR POWER PANELBOARDS
- FLUSH OR SURFACE MOUNTED BRANCH PANELBOARDS 120/280V
- ELECTRICAL MOTOR CONNECTION - VERIFY HP, AND PHASE
- DISCONNECT SWITCH
- EXHAUST FAN CONNECTION
- MOTOR CONTROLLER WITH AUX CONTACTS HOA, PB, PILOT AND CONTROL TRANSFORMER.
- LV TV — TELEVISION OUTLET (RG6 AND 2-CAT6)
- FUSED DISCONNECT SWITCH
- T — ELECTRICAL TRANSFORMER
- NON-FUSED DISCONNECT SWITCH RATING AS NOTED
- CIRCUIT POWER TRANSFORMER 480V PRIMARY, 120V SECONDARY
- CIRCUIT BREAKER
- FUSE
- GROUND

LIGHTS

- SURFACE MOUNTED OR RECESSED LED FIXTURE
- WALL MOUNTED LED FIXTURE
- SURFACE/RECESSED 1 x 4 LED LIGHT FIXTURE
- SURFACE/RECESSED 2 x 4 LED LIGHT FIXTURE
- PHOTOCELL
- EXIT LIGHT FIXTURE CEILING MOUNTED
- EXIT LIGHT FIXTURE WALL MOUNTED
- LIGHT FIXTURE CONNECTED TO EMERGENCY POWER
- BATTERY OPERATED EMERGENCY LIGHT - WALL MOUNTED
- POLE MOUNTED LIGHT FIXTURE - SINGLE HEAD
- SURFACE / RECESSED LED FIXTURE
- WALL MOUNTED LED FIXTURE
- BOLLARD LIGHT FIXTURE
- FLOOD LIGHT GROUND MOUNTED
- OCCUPANCY SENSOR

WIRE

- HOMERUN
- or — WIRING CONCEALED IN CEILING OR WALL
- WIRING CONCEALED UNDER OR IN FLOOR
- WIRING EMERGENCY
- A B C — A= GROUND; B= NEUTRAL; C= HOT
- WIRING TURNED UP
- WIRING TURNED DOWN
- WIREMOLD; APPENDED NOTE DENOTES TYPE
- CABLE TRAY
- H — HEAT TRACE CABLE
- K — CARD KEY ACCESS CONTROL
- F — CEILING MOUNTED FIRE ALARM HORN / STROBE

FIRE

- I — IONIZATION SMOKE
- H — THERMAL DETECTOR 135° FIXED
- P — PHOTO DETECTOR PHOTO ELECTRIC
- F — PULL STATION
- STROBE UNIT 30CD
- D — FIRE ALARM, IONIZATION DUCT DETECTOR
- P CO — COMBINATION SMOKE DETECTOR & CARBON MONOXIDE DETECTOR
- FACP — FIRE ALARM CONTROL PANEL
- FAAP — FIRE ALARM ANNUNCIATOR PANEL
- T — FIRE ALARM, TAMPER SWITCH
- F — FIRE ALARM, FLOW SWITCH
- F — HORN STROBE
- S — FIRE ALARM, SPEAKER
- S — FIRE ALARM, SPEAKER STROBE

SWITCHES

- $ — SWITCH, SINGLE POLE
- $3 — SWITCH, THREE-WAY
- $4 — SWITCH, FOUR-WAY
- $DS — SWITCH, DIMMER
- $DS — SWITCH, DOOR SECURITY
- $K — SWITCH, KEYED
- $P — SWITCH, PILOT LIGHT
- $a — SWITCH, CONTROLLING FIXTURES MARKED WITH a
- $T — SWITCH, MANUAL TIMER
- $TT — TT SWITCH FOR MOTORS 1/2HP OR SMALLER
- PUSH BUTTON CONTROL STATION
- PUSH BUTTON "UP-DOWN-DN"
- PANIC BUTTON
- MOTION DETECTOR
- GB — SECURITY GLASS BREAK DETECTOR
- OS — SINGLE CIRCUIT PIR WALL SENSOR 'SCHNEIDER ELECTRIC' #SLSPWS1277UX(COLOR).
- OS 2 — DUAL CIRCUIT PIR WALL SENSOR 'SCHNEIDER ELECTRIC' #SLSPWD1277UX(COLOR).
- OS U — LOW VOLTAGE ULTRASONIC CEILING SENSOR 'SCHNEIDER ELECTRIC' #SLSCUS2000 (SENSOR); 'SCHNEIDER ELECTRIC' #SLSPP1277 (POWER PACK).
- OS I — LOW VOLTAGE CEILING MOUNT PIR OCCUPANCY SENSOR 'SCHNEIDER ELECTRIC' #SLSCI2000 (SENSOR); 'SCHNEIDER ELECTRIC' #SLSPP1277 (POWER PACK).
- OS D/T — LOW VOLTAGE CEILING MOUNT DUAL-TECHNOLOGY OCCUPANCY SENSOR 'SCHNEIDER ELECTRIC' #SLSCDT2000 (SENSOR); 'SCHNEIDER ELECTRIC' #SLSPP1277 (POWER PACK).

COMMUNICATION / SECURITY

- TELEPHONE OUTLET BOX AND COVER PLATE
- P — TELEPHONE OUTLET BOX, AND COVER PLATE, PUBLIC
- TELEPHONE OUTLET FLOOR BOX WITH COVER PLATE
- TELEDATA OUTLET
- TELEDATA OUTLET FLOOR BOX WITH COVER PLATE
- DATA OUTLET
- S — SPEAKER, FLUSH CEILING MOUNTED
- S — SPEAKER, WALL MOUNTED
- SPEAKER HORN TYPE, WALL MOUNTED
- PA — SOUND SYSTEM AMPLIFIER
- INTERCOM HANDSET
- M — INTERCOM MASTER PANEL
- SPS — INTERCOM SYSTEM POWER SUPPLY
- SECURITY CAMERA
- (360°) — SECURITY CAMERA (360°)
- IR — AUDIO/VISUAL WALL DEVICE
- LI — AUDIO/VISUAL WALL DEVICE

DRAWING INDEX

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E100	UNDER SLAB ELECTRICAL PLAN
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E301	ENLARGED KITCHEN - POWER PLAN AND KITCHEN EQUIPMENT
E401	ROOF - POWER PLAN

Rev. No.	Date	Description
-	05-26-26	REVIEW SET
-	09-23-26	REVIEW SET
1	11-19-26	CITY SUBMITTAL

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CUSTOMER: Tre Ragazzi Restaurants
PROJECT NAME: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: ELECTRICAL GENERAL INFORMATION
DRAWN BY: DAE
PROJECT No: 26010

E001
05/28/2026

CONDUCTOR INSULATION AND MULTICONDUCTOR SCHEDULE TABLE

	THHN-THWN	XHHW	MI	NM	MC	UF	AC
SERVICE ENTRANCE	●						
EXPOSED FEEDERS	●						
CONCEALED FEEDERS	●				●		●
FEEDERS BELOW CONCRETE		●					
FEEDERS UNDERGROUND		●					
FEEDERS BELOW RAISED FLOORING	●						
FEEDERS IN CABLE TRAY	●				●		●
EXPOSED BRANCH CIRCUITS	●						
CONCEALED BRANCH CIRCUITS	●				●		●
BRANCH CIRCUITS BELOW CONCRETE	●						
BRANCH CIRCUITS UNDERGROUND		●					
BRANCH CIRCUITS BELOW RAISED FLOORING	●						
BRANCH CIRCUITS IN CABLE TRAY	●						
CLASS 1 CONTROL CIRCUITS	●						
CLASS 2 CONTROL CIRCUITS	●						

SCHEDULE OF CONDUIT APPLICATIONS

CONDUIT LOCATION OR APPLICATION	CONDUIT TYPE: RIGID	INTERMEDIATE	E.M.T.	FLEXIBLE	FLEXIBLE W/ W.P. JACKET	P.V.C. SCHED 40	A.C. CABLE		
IN CONCRETE SLAB (NOT LARGER THAN 1"C)		(3)							
BELOW LOWEST FLOOR SLAB		(3)				(2)			
CONCEALED IN WALLS, ABOVE CEILINGS AND IN FURRED SPACES		(3)	(1)						
INSIDE, ABOVE BOTTOM OF ROOF STEEL							◯		
FEEDER, POWER AND SIGNAL CIRCUITS RUN EXPOSED	(3)	(3)							
FINAL CONNECTION TO EQUIP. SUBJECT TO VIBRATION				◯					
FINAL CONNECTION TO EQUIP. IN DAMP LOCATIONS					◯				
SHORT CONNECTIONS WHERE NON-FLEXIBLE CONDUIT IS IMPRACTICAL				◯					

NOTE:

◯ - TYPE OF CONDUIT TO BE USED.

(1) - E.M.T. SHALL NOT BE USED IN SIZES LARGER THAN 2 INCH.

(2) - CONVERT TO RIGID OR INTER. THROUGH SLAB.

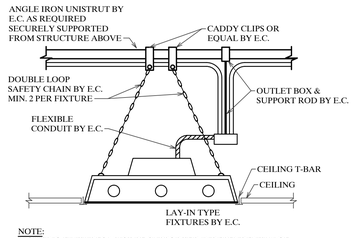
(3) - USE THREADED FITTINGS ONLY.

MINIMUM SIZE EQUIPMENT GROUNDING CONDUCTORS FOR GROUNDING RACEWAY AND EQUIPMENT

	SIZE (AWG OR KCMIL)	
AUTOMATIC OVER CURRENT SETTING (AMPS - NOT EXCEEDING)	COPPER	ALUMINUM OR COPPER CLAD ALUMINUM
15	14	12
20	12	10
60	10	8
100	8	6
200	6	4
300	4	2
400	3	1
500	2	1/0
600	1	2/0
800	1/0	3/0
1000	2/0	4/0
1200	3/0	250
1600	4/0	350
2000	250	400
2500	350	400
3000	400	600
4000	500	600
5000	700	750
6000	800	1200

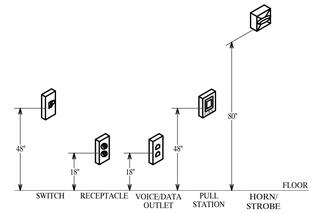
CONDUCTOR SIZING FOR RHW, THHW, THW, THWN, XHHW, USE, ZW AT 167°F

SIZE AWG OR KCMIL	COPPER	ALUMINUM
12	25	20
10	35	30
8	50	40
6	65	50
4	85	65
3	100	75
2	115	90
1	130	100
1/0	150	120
2/0	175	135
3/0	200	155
4/0	230	180
250	255	205
300	285	230
350	310	250
400	335	270
500	380	310
600	420	340
700	460	375
750	475	385
800	490	395
900	520	425
1000	545	445
1250	590	485
1500	625	520
1750	650	545
2000	665	560



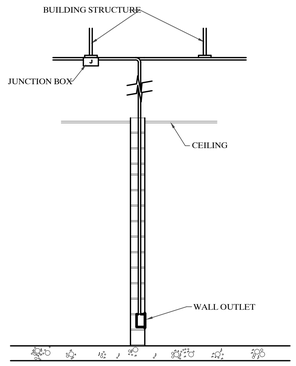
NOTE:
LIGHTING FIXTURES MUST BE SUPPORTED INDEPENDENTLY OF CEILING SYSTEM. UPON WRITTEN REQUEST TO THE ENGINEER, OTHER MEANS OF SUPPORT WILL BE CONSIDERED FOR APPROVAL.

A E002 LAY-IN FIXTURE SUPPORT DETAIL
SCALE: NTS

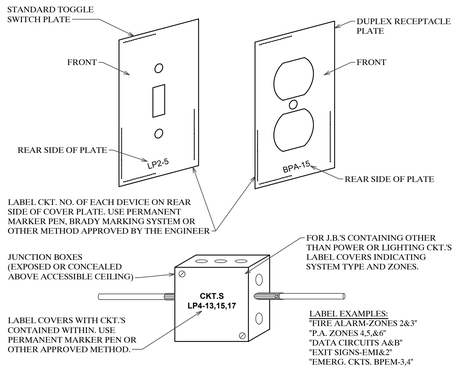


NOTE:
ALL DIMENSIONS ARE TYPICAL FOR GIVEN DEVICE UNLESS OTHERWISE NOTED ON PLANS.

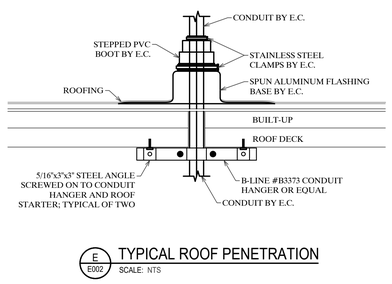
B E002 OPERABLE DEVICE MOUNTING HEIGHT DETAIL
SCALE: NTS



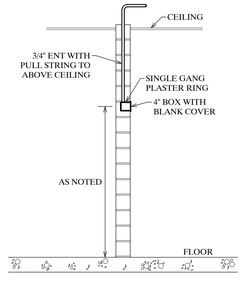
C E002 TYPICAL DETAIL FOR OVERHEAD FEED TO INTERIOR WALL OUTLET
SCALE: NTS



D E002 ELECTRICAL IDENTIFICATION DETAIL
SCALE: NTS



E E002 TYPICAL ROOF PENETRATION
SCALE: NTS



F E002 TYPICAL TV OUTLET ROUGH-IN DETAIL
SCALE: NTS

Rev. No.	Date	Description
-	05-28-26	REVIEW SET
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CUSTOMER: Tre Ragazzi Restaurants
PROJECT NAME: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: ELECTRICAL DETAILS
DRAWN BY: DAE
PROJECT No. 26010

E002
05/28/2026

ELECTRICAL SPECIFICATIONS

260923 LIGHTING CONTROL DEVICES

ACCEPTABLE MANUFACTURERS INCLUDE (BUT ARE NOT LIMITED TO):

A. AREA LIGHTING RESEARCH, INC.; TYCO ELECTRONICS.
B. GRASSLIN CONTROLS CORPORATION; A GE INDUSTRIAL SYSTEMS COMPANY.
C. HUBBELL LIGHTING.
D. INTERMATIC, INC.
E. LEVITON MFG. COMPANY INC.
F. LITHONIA LIGHTING; ACUITY LIGHTING GROUP, INC.
G. NOVITAS, INC.
H. PARAGON ELECTRIC CO.; INVENSYS CLIMATE CONTROLS.
I. RAB LIGHTING, INC.
J. SENSOR SWITCH, INC.
K. SQUARE D; SCHNEIDER ELECTRIC.
L. TORK.
M. TOUCH-PLATE, INC.
N. WATT STOPPER (THE).

1.2 INDOOR OCCUPANCY SENSORS

A. GENERAL DESCRIPTION: WALL- OR CEILING-MOUNTING, SOLID-STATE UNITS WITH A SEPARATE RELAY UNIT.
   1. OPERATION: UNLESS OTHERWISE INDICATED, TURN LIGHTS ON WHEN COVERED AREA IS OCCUPIED AND OFF WHEN UNOCCUPIED; WITH A TIME DELAY FOR TURNING LIGHTS OFF, ADJUSTABLE OVER A MINIMUM RANGE OF 1 TO 15 MINUTES.
   2. SENSOR OUTPUT: CONTACTS RATED TO OPERATE THE CONNECTED RELAY, COMPLYING WITH UL 773A. SENSOR SHALL BE POWERED FROM THE RELAY UNIT.
   3. RELAY UNIT: DRY CONTACTS RATED FOR 20-A BALLAST LOAD AT 120- AND 277-V AC, FOR 13-A TUNGSTEN AT 120-V AC, AND FOR 1 HP AT 120-V AC. POWER SUPPLY TO SENSOR SHALL BE 24-V DC, 150-MA, CLASS 2 POWER SOURCE.
   4. MOUNTING:
      a. SENSOR: SUITABLE FOR MOUNTING IN ANY POSITION ON A STANDARD OUTLET BOX.
      b. RELAY: EXTERNALLY MOUNTED THROUGH A 1/2" KNOCKOUT IN A STANDARD ELECTRICAL ENCLOSURE.
      c. TIME-DELAY AND SENSITIVITY ADJUSTMENTS: RECESSED AND CONCEALED BEHIND HINGED DOOR.
   5. INDICATOR: LED, TO SHOW WHEN MOTION IS BEING DETECTED DURING TESTING AND NORMAL OPERATION OF THE SENSOR.
   6. BYPASS SWITCH: OVERRIDE THE ON FUNCTION IN CASE OF SENSOR FAILURE.
   7. AUTOMATIC LIGHT-LEVEL SENSOR: ADJUSTABLE FROM 2 TO 200 FC; KEEP LIGHTING OFF WHEN SELECTED LIGHTING LEVEL IS PRESENT.
B. PIR TYPE: CEILING MOUNTING; DETECT OCCUPANCY BY SENSING A COMBINATION OF HEAT AND MOVEMENT IN AREA OF COVERAGE.
   1. DETECTOR SENSITIVITY: DETECT OCCURRENCES OF 6" MINIMUM MOVEMENT OF ANY PORTION OF A HUMAN BODY THAT PRESENTS A TARGET OF NOT LESS THAN 36 SQ. IN.
   2. DETECTION COVERAGE (ROOM): DETECT OCCUPANCY ANYWHERE IN A CIRCULAR AREA OF 1000 SQ. FT. WHEN MOUNTED ON A 96" HIGH CEILING.
   3. DETECTION COVERAGE (CORRIDOR): DETECT OCCUPANCY WITHIN 90' WHEN MOUNTED ON A 10' HIGH CEILING.
C. ULTRASONIC TYPE: CEILING MOUNTING; DETECT OCCUPANCY BY SENSING A CHANGE IN PATTERN OF REFLECTED ULTRASONIC ENERGY IN AREA OF COVERAGE.
   1. DETECTOR SENSITIVITY: DETECT A PERSON OF AVERAGE SIZE AND WEIGHT MOVING NOT LESS THAN 12" IN EITHER A HORIZONTAL OR A VERTICAL MANNER AT AN APPROXIMATE SPEED OF 12"/S.
   2. DETECTION COVERAGE (SMALL ROOM): DETECT OCCUPANCY ANYWHERE WITHIN A CIRCULAR AREA OF 600 SQ. FT. WHEN MOUNTED ON A 96" HIGH CEILING.
   3. DETECTION COVERAGE (STANDARD ROOM): DETECT OCCUPANCY ANYWHERE WITHIN A CIRCULAR AREA OF 1000 SQ. FT. WHEN MOUNTED ON A 96" HIGH CEILING.
   4. DETECTION COVERAGE (LARGE ROOM): DETECT OCCUPANCY ANYWHERE WITHIN A CIRCULAR AREA OF 2000 SQ. FT. WHEN MOUNTED ON A 96" HIGH CEILING.
   5. DETECTION COVERAGE (CORRIDOR): DETECT OCCUPANCY ANYWHERE WITHIN 90' WHEN MOUNTED ON A 10' HIGH CEILING IN A CORRIDOR NOT WIDER THAN 14'.
D. DUAL-TECHNOLOGY TYPE: CEILING MOUNTING; DETECT OCCUPANCY BY USING A COMBINATION OF PIR AND ULTRASONIC DETECTION METHODS IN AREA OF COVERAGE. PARTICULAR TECHNOLOGY OR COMBINATION OF TECHNOLOGIES THAT CONTROLS ON-OFF FUNCTIONS SHALL BE SELECTABLE IN THE FIELD BY OPERATING CONTROLS ON UNIT.
   1. SENSITIVITY ADJUSTMENT: SEPARATE FOR EACH SENSING TECHNOLOGY.
   2. DETECTOR SENSITIVITY: DETECT OCCURRENCES OF 6" MINIMUM MOVEMENT OF ANY PORTION OF A HUMAN BODY THAT PRESENTS A TARGET OF NOT LESS THAN 36 SQ. IN. AND DETECT A PERSON OF AVERAGE SIZE AND WEIGHT MOVING NOT LESS THAN 12" IN EITHER A HORIZONTAL OR A VERTICAL MANNER AT AN APPROXIMATE SPEED OF 12".
   3. DETECTION COVERAGE (STANDARD ROOM): DETECT OCCUPANCY ANYWHERE WITHIN A CIRCULAR AREA OF 1000 SQ. FT. WHEN MOUNTED ON A 96" HIGH CEILING.

1.3 CONDUCTORS AND CABLES

A. POWER WIRING TO SUPPLY SIDE OF REMOTE-CONTROL POWER SOURCES: NOT SMALLER THAN NO. 12 AWG."
B. CLASS 1 CONTROL CABLE: MULTICONDUCTOR CABLE WITH STRANDED-COPPER CONDUCTORS NOT SMALLER THAN NO. 14 AWG."

1.4 INSTALLATION

A. INSTALL AND AIM SENSORS IN LOCATIONS TO ACHIEVE NOT LESS THAN 90 PERCENT COVERAGE OF AREAS INDICATED. DO NOT EXCEED COVERAGE LIMITS SPECIFIED IN MANUFACTURER'S WRITTEN INSTRUCTIONS.
B. MOUNT ELECTRICALLY HELD LIGHTING CONTACTORS WITH ELASTOMERIC ISOLATOR PADS, TO ELIMINATE STRUCTURE-BORNE VIBRATION, UNLESS CONTACTORS ARE INSTALLED IN AN ENCLOSURE WITH FACTORY-INSTALLED VIBRATION ISOLATORS.

END OF SECTION 260923

260519 LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

1.1 ACCEPTABLE MANUFACTURERS INCLUDE (BUT ARE NOT LIMITED TO):

A. ADVANCE PRODUCTS & SYSTEMS, INC
B. AFC CABLE SYSTEMS, INC.
C. ALCAN PRODUCTS CORPORATION; ALCAN CABLE DIVISION.
D. AMERICAN INSULATED WIRE CORP.; A LEVITON COMPANY.
E. CALPICO, INC.
F. GENERAL CABLE CORPORATION.
G. HUBBELL POWER SYSTEMS, INC.
H. 3M; ELECTRICAL PRODUCTS DIVISION.
I. METRAFLEX CO.
J. PIPELINE SEAL AND INSULATOR, INC.
K. SENATOR WIRE & CABLE COMPANY.
L. SOUTHWIRE COMPANY.
M. TYCO ELECTRONICS CORP.

1.2 CONDUCTORS AND CABLES

A. COPPER CONDUCTORS.
B. CONDUCTOR INSULATION TYPE THHN-THWN.
C. MULTICONDUCTOR CABLE FOR **ARMORED CABLE, TYPE AC** OR **METAL-CLAD CABLE, TYPE MC** WITH GROUND WIRE.

1.3 CONNECTORS AND SPLICES

A. FACTORY-FABRICATED CONNECTORS AND SPLICES OF SIZE, AMPACITY RATING, MATERIAL, TYPE, AND CLASS FOR APPLICATION AND SERVICE INDICATED.

1.4 CONDUCTOR MATERIAL APPLICATIONS

A. COPPER FEEDERS SHALL BE SOLID FOR NO. 10 AWG AND SMALLER; STRANDED FOR NO. 8 AWG AND LARGER.
B. COPPER BRANCH CIRCUITS SHALL BE SOLID FOR NO. 10 AWG AND SMALLER; STRANDED FOR NO. 8 AWG AND LARGER.

1.5 INSTALLATION

A. CABLES SHALL BE CONCEALED, UNLESS OTHERWISE INDICATED.
B. INSTALL PER MANUFACTURER'S APPROVED PULLING COMPOUND OR LUBRICANT. DO NOT EXCEED THE MAXIMUM PULLING TENSIONS AND SIDEWALL PRESSURE VALUES.
C. ALL PULLING MEANS USED SHALL NOT DAMAGE CABLES OR RACEWAYS.
D. INSTALL EXPOSED CABLES PARALLEL AND PERPENDICULAR TO BUILDING STRUCTURAL MEMBERS.
E. TIGHTEN ELECTRICAL CONNECTORS AND TERMINALS AS SPECIFIED IN MANUFACTURER'S PUBLISHED TORQUE VALUES.
F. ONLY USE SPLICES AND TAPS THAT HAVE COMPATIBLE CONDUCTOR MATERIAL WITH SIMILAR MECHANICAL STRENGTH AND INSULATION RATING TO UNSPLICED CONDUCTORS. IF USING ALUMINUM CONDUCTORS USE OXIDE INHIBITOR.
G. AT OUTLETS, INSTALL A MINIMUM OF 6" OF SLACK.
H. PERFORM TESTS AND INSPECTIONS AND PREPARE TEST REPORTS.
I. REMOVE AND REPLACE MALFUNCTIONING UNITS AND RETEST AS SPECIFIED ABOVE.
J. CONDUCTOR INSULATION AND MULTICONDUCTOR SCHEDULE IS ON DRAWINGS.

END OF SECTION 260519

260533 RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

1.1 ACCEPTABLE MANUFACTURERS INCLUDE (BUT ARE NOT LIMITED TO):

A. AFC CABLE SYSTEMS, INC.
B. ALFLEX INC.
C. ALLIED TUBE & CONDUIT; A TYCO INTERNATIONAL LTD. CO.
D. ANAMET ELECTRICAL, INC.; ANACONDA METAL HOSE.
E. ARMORCAST PRODUCTS COMPANY.
F. NEWBASIS.
G. ARNCO CORPORATION.
H. CARSON INDUSTRIES LLC.
I. CDR SYSTEMS CORPORATION.
J. COOPER B-LINE, INC.
K. ELECTRI-FLEX CO.
L. ENDOT INDUSTRIES INC.
M. HOFFMAN.
N. IPEX INC.
O. LAMSON & SESSIONS; CARLON ELECTRICAL PRODUCTS.
P. MANHATTAN/CDT/COLE-FLEX.
Q. MAVERICK TUBE CORPORATION.
R. NORDIC FIBERGLASS, INC.
S. O-Z GEDNEY; A UNIT OF GENERAL SIGNAL.
T. SQUARE D; SCHNEIDER ELECTRIC.
U. THOMAS & BETTS CORPORATION.
V. WALKER SYSTEMS, INC.; WIREMOLD COMPANY (THE).
W. WHEATLAND TUBE COMPANY.
X. WIREMOLD COMPANY (THE); ELECTRICAL SALES DIVISION.

1.2 METAL CONDUIT AND TUBING

A. RIGID STEEL CONDUIT.
B. IMC.
C. PVC-COATED RIGID STEEL CONDUIT WITH A 0.040" THICK COATING
D. EMT.
E. ZINC COATED STEEL FMC.
F. LFMC, FLEXIBLE STEEL CONDUIT WITH PVC JACKET.
G. STEEL FITTINGS FOR CONDUIT, EMT, AND CABLE SHALL BE COMPRESSION TYPE. COATED FITTING SHALL HAVE A MINIMUM OF A 0.040" THICKNESS WITH OVERLAPPING SLEEVES PROTECTING THREADED JOINTS.
H. JOINT COMPOUND FOR RIGID STEEL CONDUIT OR IMC SHALL BE COMPOUNDED FOR USE TO LUBRICATE AND PROTECT THREADED RACEWAY JOINTS FROM CORROSION AND ENHANCE THEIR CONDUCTIVITY.

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1.3 METAL WIREWAYS

A. SHEET METAL SIZED AND SHAPED AS INDICATED, TYPE 1, UNLESS OTHERWISE INDICATED.
B. INCLUDE COUPLINGS, OFFSETS, ELBOWS, EXPANSION JOINTS, ADAPTERS, HOLD-DOWN STRAPS, END CAPS, AND OTHER FITTINGS TO MATCH AND MATE WITH WIREWAYS AS REQUIRED FOR COMPLETE SYSTEM.
C. HINGED TYPE WIREWAY COVERS.
D. MANUFACTURER'S STANDARD ENAMEL FINISH.

1.4 SURFACE RACEWAYS

A. GALVANIZED STEEL SURFACE METAL RACEWAYS WITH SNAP-ON COVERS.

1.5 BOXES, ENCLOSURES, AND CABINETS

A. SHEET METAL OUTLET AND DEVICE BOXES
B. CAST-METAL OUTLET AND DEVICE BOXES, FERROUS ALLOY, TYPE FD, WITH GASKETED COVER.
C. SMALL SHEET METAL PULL AND JUNCTION BOXES
D. CAST-METAL ACCESS, PULL, AND JUNCTION BOXES CAST ALUMINUM OR CAST IRON WITH GASKETED COVER.
E. STEEL HINGED-COVER ENCLOSURES SHALL BE TYPE 1, WITH CONTINUOUS-HINGE COVER WITH FLUSH LATCH, UNLESS OTHERWISE INDICATED. FINISHED INSIDE AND OUT WITH MANUFACTURER'S STANDARD ENAMEL.
F. CABINETS:
   1. TYPE 1, GALVANIZED-STEEL BOX WITH REMOVABLE INTERIOR PANEL AND REMOVABLE FRONT, FINISHED INSIDE AND OUT WITH MANUFACTURER'S STANDARD ENAMEL.
   2. HINGED DOOR IN FRONT COVER WITH FLUSH LATCH AND CONCEALED HINGE.
   3. KEY LATCH TO MATCH PANELBOARDS.
   4. METAL BARRIERS TO SEPARATE WIRING OF DIFFERENT SYSTEMS AND VOLTAGE.
   5. ACCESSORY FEET WHERE REQUIRED FOR FREESTANDING EQUIPMENT.

1.6 RACEWAY APPLICATION

A. OUTDOORS: APPLY RACEWAY PRODUCTS AS SPECIFIED BELOW, UNLESS OTHERWISE INDICATED:
   1. EXPOSED CONDUIT: RIGID STEEL CONDUIT.
   2. CONCEALED CONDUIT, ABOVEGROUND: RIGID STEEL CONDUIT.
   3. UNDERGROUND CONDUIT: RNC, TYPE EPC-40-PVC, DIRECT BURIED.
   4. CONNECTION TO VIBRATING EQUIPMENT (INCLUDING TRANSFORMERS AND HYDRAULIC, PNEUMATIC, ELECTRIC SOLENOID, OR MOTOR-DRIVEN EQUIPMENT): LFMC.
   5. BOXES AND ENCLOSURES, ABOVEGROUND: TYPE 3R.
B. COMPLY WITH THE FOLLOWING INDOOR APPLICATIONS, UNLESS OTHERWISE INDICATED:
   1. EXPOSED, NOT SUBJECT TO PHYSICAL DAMAGE: EMT.
   2. EXPOSED, NOT SUBJECT TO SEVERE PHYSICAL DAMAGE: EMT
   3. EXPOSED AND SUBJECT TO SEVERE PHYSICAL DAMAGE: RIGID STEEL CONDUIT. INCLUDES RACEWAYS IN THE FOLLOWING LOCATIONS:
      a. LOADING DOCK.
      b. CORRIDORS USED FOR TRAFFIC OF MECHANIZED CARTS, FORKLIFTS, AND PALLET-HANDLING UNITS.
      c. MECHANICAL ROOMS.
   4. CONCEALED IN CEILINGS AND INTERIOR WALLS AND PARTITIONS: EMT.
   5. CONNECTION TO VIBRATING EQUIPMENT (INCLUDING TRANSFORMERS AND HYDRAULIC, PNEUMATIC, ELECTRIC SOLENOID, OR MOTOR-DRIVEN EQUIPMENT): FMC, EXCEPT USE LFMC IN DAMP OR WET LOCATIONS.
   6. DAMP OR WET LOCATIONS: RIGID STEEL CONDUIT.
   7. BOXES AND ENCLOSURES: TYPE 1, EXCEPT USE TYPE 4, STAINLESS STEEL IN DAMP OR WET LOCATIONS.
C. MINIMUM RACEWAY SIZE: 3/4-INCH" TRADE SIZE.
D. RACEWAY FITTINGS: COMPATIBLE WITH RACEWAYS AND SUITABLE FOR USE AND LOCATION.
   1. RIGID AND INTERMEDIATE STEEL CONDUIT: USE THREADED RIGID STEEL CONDUIT FITTINGS, UNLESS OTHERWISE INDICATED.
   2. PVC EXTERNALLY COATED, RIGID STEEL CONDUITS: USE ONLY FITTINGS LISTED FOR USE WITH THAT MATERIAL. PATCH AND SEAL ALL JOINTS, NICKS, AND SCRAPES IN PVC COATING AFTER INSTALLING CONDUITS AND FITTINGS. USE SEALANT RECOMMENDED BY FITTING MANUFACTURER.
E. INSTALL NONFERROUS CONDUIT OR TUBING FOR CIRCUITS OPERATING ABOVE 60 HZ. WHERE ALUMINUM RACEWAYS ARE INSTALLED FOR SUCH CIRCUITS AND PASS THROUGH CONCRETE, INSTALL IN NONMETALLIC SLEEVE.
F. DO NOT INSTALL ALUMINUM CONDUITS IN CONTACT WITH CONCRETE.

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1.7 INSTALLATION

A. KEEP RACEWAYS AT LEAST 6 INCHES (150 MM) AWAY FROM PARALLEL RUNS OF FLUES AND STEAM OR HOT-WATER PIPES. INSTALL HORIZONTAL RACEWAY RUNS ABOVE WATER AND STEAM PIPING.
B. COMPLETE RACEWAY INSTALLATION BEFORE STARTING CONDUCTOR INSTALLATION.
C. ARRANGE STUB-UPS SO CURVED PORTIONS OF BENDS ARE NOT VISIBLE ABOVE THE FINISHED SLAB.
D. INSTALL NO MORE THAN THE EQUIVALENT OF THREE 90-DEGREE BENDS IN ANY CONDUIT RUN EXCEPT FOR COMMUNICATIONS CONDUITS, FOR WHICH FEWER BENDS ARE ALLOWED.
E. CONCEAL CONDUIT AND EMT WITHIN FINISHED WALLS, CEILINGS, AND FLOORS, UNLESS OTHERWISE INDICATED.
F. RACEWAYS EMBEDDED IN SLABS:
   1. RUN CONDUIT LARGER THAN 1" TRADE SIZE, PARALLEL OR AT RIGHT ANGLES TO MAIN REINFORCEMENT. WHERE AT RIGHT ANGLES TO REINFORCEMENT, PLACE CONDUIT CLOSE TO SLAB SUPPORT.
   2. ARRANGE RACEWAYS TO CROSS BUILDING EXPANSION JOINTS AT RIGHT ANGLES WITH EXPANSION FITTINGS.
   3. CHANGE FROM ENT TO RNC, TYPE EPC-40-PVC, RIGID STEEL CONDUIT, OR IMC BEFORE RISING ABOVE THE FLOOR.
G. THREADED CONDUIT JOINTS, EXPOSED TO WET, DAMP, CORROSIVE, OR OUTDOOR CONDITIONS: APPLY LISTED COMPOUND TO THREADS OF RACEWAY AND FITTINGS BEFORE MAKING UP JOINTS. FOLLOW COMPOUND MANUFACTURER'S WRITTEN INSTRUCTIONS.
H. RACEWAY TERMINATIONS AT LOCATIONS SUBJECT TO MOISTURE OR VIBRATION: USE INSULATING BUSHINGS TO PROTECT CONDUCTORS, INCLUDING CONDUCTORS SMALLER THAN NO. 4 AWG.
I. INSTALL PULL WIRES IN EMPTY RACEWAYS. USE POLYPROPYLENE OR MONOFILAMENT PLASTIC LINE WITH NOT LESS THAN 200-LB (90-KG) TENSILE STRENGTH. LEAVE AT LEAST 12 INCHES (300 MM) OF SLACK AT EACH END OF PULL WIRE.
J. INSTALL RACEWAY SEALING FITTINGS AT SUITABLE, APPROVED, AND ACCESSIBLE LOCATIONS AND FILL THEM WITH LISTED SEALING COMPOUND. FOR CONCEALED RACEWAYS, INSTALL EACH FITTING IN A FLUSH STEEL BOX WITH A BLANK COVER PLATE HAVING A FINISH SIMILAR TO THAT OF ADJACENT PLATES OR SURFACES. INSTALL RACEWAY SEALING FITTINGS AT THE FOLLOWING POINTS:
   1. WHERE CONDUITS PASS FROM WARM TO COLD LOCATIONS, SUCH AS BOUNDARIES OF REFRIGERATED SPACES.
K. FLEXIBLE CONDUIT CONNECTIONS: USE MAXIMUM OF 72" OF FLEXIBLE CONDUIT FOR RECESSED AND SEMIRECESSED LIGHTING FIXTURES, EQUIPMENT SUBJECT TO VIBRATION, NOISE TRANSMISSION, OR MOVEMENT; AND FOR TRANSFORMERS AND MOTORS.
   1. USE LFMC IN DAMP OR WET LOCATIONS SUBJECT TO SEVERE PHYSICAL DAMAGE.
   2. USE LFMC OR LFNC IN DAMP OR WET LOCATIONS NOT SUBJECT TO SEVERE PHYSICAL DAMAGE.
L. RECESSED BOXES IN MASONRY WALLS: SAW-CUT OPENING FOR BOX IN CENTER OF CELL OF MASONRY BLOCK, AND INSTALL BOX FLUSH WITH SURFACE OF WALL.
M. APPLY FIRESTOPPING TO ELECTRICAL PENETRATIONS OF FIRE RATED FLOOR AND WALL ASSEMBLIES TO RESTORE ORIGINAL FIRE-RESISTANCE RATING OF ASSEMBLY.
N. PROVIDE FINAL PROTECTION AND MAINTAIN CONDITIONS THAT ENSURE COATINGS, FINISHES, AND CABINETS ARE WITHOUT DAMAGE OR DETERIORATION AT TIME OF SUBSTANTIAL COMPLETION.
O. REPAIR DAMAGE TO GALVANIZED FINISHES WITH ZINC-RICH PAINT RECOMMENDED BY MANUFACTURER.
P. REPAIR DAMAGE TO PVC OR PAINT FINISHES WITH MATCHING TOUCHUP COATING RECOMMENDED BY MANUFACTURER.

1.8 INSTALLATION OF UNDERGROUND CONDUIT

A. DIRECT-BURIED CONDUIT:
   1. EXCAVATE TRENCH BOTTOM TO PROVIDE FIRM AND UNIFORM SUPPORT FOR CONDUIT. PREPARE TRENCH BOTTOM AS SPECIFIED FOR PIPE LESS THAN 6" IN NOMINAL DIAMETER.
   2. INSTALL BACKFILL AS SPECIFIED.
   3. AFTER INSTALLING CONDUIT, BACKFILL AND COMPACT. START AT TIE-IN POINT, AND WORK TOWARD END OF CONDUIT RUN, LEAVING CONDUIT AT END OF RUN FREE TO MOVE WITH EXPANSION AND CONTRACTION AS TEMPERATURE CHANGES DURING THIS PROCESS. FIRMLY HAND TAMP BACKFILL AROUND CONDUIT TO PROVIDE MAXIMUM SUPPORTING STRENGTH. AFTER PLACING CONTROLLED BACKFILL TO WITHIN 12" OF FINISHED GRADE, MAKE FINAL CONDUIT CONNECTION AT END OF RUN AND COMPLETE BACKFILLING WITH NORMAL COMPACTION.
   4. INSTALL MANUFACTURED RIGID STEEL CONDUIT ELBOWS FOR STUB-UPS AT POLES AND EQUIPMENT AND AT BUILDING ENTRANCES THROUGH THE FLOOR.
      a. COUPLE STEEL CONDUITS TO DUCTS WITH ADAPTERS DESIGNED FOR THIS PURPOSE, AND ENCASE COUPLING WITH 3" OF CONCRETE.
      b. FOR STUB-UPS AT EQUIPMENT MOUNTED ON OUTDOOR CONCRETE BASES, EXTEND STEEL CONDUIT HORIZONTALLY A MINIMUM OF 60" FROM EDGE OF EQUIPMENT PAD OR FOUNDATION. INSTALL INSULATED GROUNDING BUSHINGS ON TERMINATIONS AT EQUIPMENT.
   5. WARNING PLANKS: BURY WARNING PLANKS APPROXIMATELY 12" ABOVE DIRECT-BURIED CONDUITS, PLACING THEM 24" O.C. ALIGN PLANKS ALONG THE WIDTH AND ALONG THE CENTERLINE OF CONDUIT.

END OF SECTION 260533

260553 IDENTIFICATION FOR ELECTRICAL SYSTEMS

1.1 POWER RACEWAY IDENTIFICATION MATERIALS

A. RACEWAYS CARRYING CIRCUITS AT 600 V OR LESS SHALL HAVE BLACK LETTERS ON AN ORANGE FIELD INDICATING VOLTAGE AND SYSTEM OR SERVICE TYPE.
B. SELF-ADHESIVE VINYL LABELS SHALL BE PREPRINTED, FLEXIBLE LABEL LAMINATED WITH A CLEAR, WEATHER- AND CHEMICAL-RESISTANT COATING AND MATCHING WRAPAROUND ADHESIVE TAPE FOR SECURING ENDS OF LEGEND LABEL.
C. SNAP-AROUND LABELS SHALL BE SLIT, PRETENSIONED, FLEXIBLE, PREPRINTED, COLOR-CODED ACRYLIC SLEEVE, WITH DIAMETER SIZED TO SUIT DIAMETER OF RACEWAY OR CABLE IT IDENTIFIES AND TO STAY IN PLACE BY GRIPPING ACTION.
D. SNAP-AROUND, COLOR-CODING BANDS SHALL BE SLIT, PRETENSIONED, FLEXIBLE, SOLID-COLORED ACRYLIC SLEEVE, 2" LONG, WITH DIAMETER SIZED TO SUIT DIAMETER OF RACEWAY OR CABLE IT IDENTIFIES AND TO STAY IN PLACE BY GRIPPING ACTION.
E. METAL TAGS SHALL BE BRASS OR ALUMINUM, 2 BY 2 BY 0.05 INCH, WITH STAMPED LEGEND, PUNCHED FOR USE WITH SELF-LOCKING CABLE TIE FASTENER.
F. WRITE-ON TAGS SHALL BE POLYESTER TAG, 0.010" THICK, WITH CORROSION-RESISTANT GROMMET AND CABLE TIE FOR ATTACHMENT TO CONDUCTOR OR CABLE. MARKERS SHALL BE MACHINE-PRINTED, PERMANENT, WATERPROOF, BLACK INK MARKER RECOMMENDED BY PRINTER MANUFACTURER.

1.2 ARMORED AND METAL-CLAD CABLE IDENTIFICATION MATERIALS

A. RACEWAYS CARRYING CIRCUITS AT 600 V AND LESS SHALL BE BLACK LETTERS ON AN ORANGE FIELD INDICATING VOLTAGE AND SYSTEM OR SERVICE TYPE I.
B. SELF-ADHESIVE VINYL LABELS SHALL BE PREPRINTED, FLEXIBLE LABEL LAMINATED WITH A CLEAR, WEATHER- AND CHEMICAL-RESISTANT COATING AND MATCHING WRAPAROUND ADHESIVE TAPE FOR SECURING ENDS OF LEGEND LABEL.
C. SELF-ADHESIVE VINYL TAPE SHALL BE COLORED, HEAVY DUTY, WATERPROOF, FADE RESISTANT; 2" WIDE AND COMPOUNDED FOR OUTDOOR USE.

1.3 POWER AND CONTROL CABLE IDENTIFICATION MATERIALS

A. SELF-ADHESIVE VINYL LABELS SHALL BE PREPRINTED, FLEXIBLE LABEL LAMINATED WITH A CLEAR, WEATHER- AND CHEMICAL-RESISTANT COATING AND MATCHING WRAPAROUND ADHESIVE TAPE FOR SECURING ENDS OF LEGEND LABEL.
B. BRASS OR ALUMINUM METAL TAGS SHALL BE 2" BY 2" BY 0.05 WITH STAMPED LEGEND, PUNCHED FOR USE WITH SELF-LOCKING CABLE TIE FASTENER.
C. SNAP-AROUND LABELS SHALL BE SLIT, PRETENSIONED, FLEXIBLE, PREPRINTED, COLOR-CODED ACRYLIC SLEEVE, WITH DIAMETER SIZED TO SUIT DIAMETER OF RACEWAY OR CABLE IT IDENTIFIES AND TO STAY IN PLACE BY GRIPPING ACTION.
D. SNAP-AROUND, COLOR-CODING BANDS SHALL BE SLIT, PRETENSIONED, FLEXIBLE, SOLID-COLORED ACRYLIC SLEEVE, 2" LONG, WITH DIAMETER SIZED TO SUIT DIAMETER OF RACEWAY OR CABLE IT IDENTIFIES AND TO STAY IN PLACE BY GRIPPING ACTION.

1.4 UNDERGROUND-LINE WARNING TAPE

A. TAPE:
   1. RECOMMENDED BY MANUFACTURER FOR THE METHOD OF INSTALLATION AND SUITABLE TO IDENTIFY AND LOCATE UNDERGROUND ELECTRICAL AND COMMUNICATIONS UTILITY LINES.
   2. PRINTING ON TAPE SHALL BE PERMANENT AND SHALL NOT BE DAMAGED BY BURIAL OPERATIONS.
   3. TAPE MATERIAL AND INK SHALL BE CHEMICALLY INERT, AND NOT SUBJECT TO DEGRADING WHEN EXPOSED TO ACIDS, ALKALIS, AND OTHER DESTRUCTIVE SUBSTANCES COMMONLY FOUND IN SOILS.
B. COLOR AND PRINTING:
   1. INSCRIPTIONS FOR RED-COLORED TAPES: ELECTRIC LINE, HIGH VOLTAGE.
   2. INSCRIPTIONS FOR ORANGE-COLORED TAPES: TELEPHONE CABLE, CATV CABLE, COMMUNICATIONS CABLE, OPTICAL FIBER CABLE.
C. TYPE I:
   1. PIGMENTED POLYOLEFIN, BRIGHT-COLORED, CONTINUOUS-PRINTED ON ONE SIDE WITH THE INSCRIPTION OF THE UTILITY, COMPOUNDED FOR DIRECT-BURIAL SERVICE.
   2. THICKNESS: 4 MILS.
   3. WEIGHT: 18.5 LB/1000 SQ. FT.
   4. 3-INCH TENSILE: 30 LBF AND 2500 PSI.

1.5 WARNING LABELS AND SIGNS

A. SELF-ADHESIVE WARNING LABELS: FACTORY-PRINTED, MULTICOLOR, PRESSURE-SENSITIVE ADHESIVE LABELS, CONFIGURED FOR DISPLAY ON FRONT COVER, DOOR, OR OTHER ACCESS TO EQUIPMENT UNLESS OTHERWISE INDICATED.
B. PREPRINTED ALUMINUM BAKED-ENAMEL WARNING SIGNS SHALL BE 7"X10" WITH ½" GROMMETS IN CORNERS FOR MOUNTING AND PUNCHED OR DRILLED FOR FASTENERS, WITH COLORS, LEGEND, AND SIZE REQUIRED FOR APPLICATION.
   WEATHER-RESISTANT, NONFADING PREPRINTED METAL-BACKED, BUTYRATE WARNING SIGNS SHALL BE 10"X14" WITH ½" GROMMETS IN CORNERS FOR MOUNTING AND HAVE 0.0396" GALVANIZED-STEEL BACKING; AND WITH COLORS, LEGEND, AND SIZE REQUIRED FOR APPLICATION.
C. WARNING LABEL AND SIGN SHALL INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING LEGENDS:
   1. MULTIPLE POWER SOURCE WARNING: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."
   2. WORKSPACE CLEARANCE WARNING: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36"."

1.6 INSTRUCTION SIGNS

A. ENGRAVED, LAMINATED ACRYLIC OR MELAMINE PLASTIC, MINIMUM 1/16" THICK FOR SIGNS UP TO 20 SQ. INCHES AND 1/8" THICK FOR LARGER SIZES WITH PUNCHED OR DRILLED HOLES FOR MECHANICAL FASTENERS. INCLUDE ENGRAVED LEGEND WITH BLACK LETTERS ON WHITE FACE. FRAME SHALL BE MITERED ACRYLIC MOLDING AND ARRANGED FOR ATTACHMENT NEAR APPLICABLE EQUIPMENT.
B. ADHESIVE FILM LABEL SHALL BE MACHINE PRINTED, IN BLACK, BY THERMAL TRANSFER OR EQUIVALENT PROCESS. MINIMUM LETTER HEIGHT SHALL BE 3/8".
C. ADHESIVE FILM LABEL WITH CLEAR PROTECTIVE OVERLAY SHALL BE MACHINE PRINTED, IN BLACK, BY THERMAL TRANSFER OR EQUIVALENT PROCESS. MINIMUM LETTER HEIGHT SHALL BE 3/8". OVERLAY SHALL PROVIDE A WEATHERPROOF AND UV-RESISTANT SEAL FOR LABEL.

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-	05-28-26	REVIEW SET
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PROJECT: TRE RAGAZZI RESTAURANT
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DRAWN BY: DAE
PROJECT No. 26010

E003
05/28/2026

ELECTRICAL SPECIFICATIONS

260553 CONT.

1.7 EQUIPMENT IDENTIFICATION LABELS

A. ADHESIVE FILM LABEL SHALL BE MACHINE PRINTED, IN BLACK, BY THERMAL TRANSFER OR EQUIVALENT PROCESS. MINIMUM LETTER HEIGHT SHALL BE 3/8".

B. ADHESIVE FILM LABEL WITH CLEAR PROTECTIVE OVERLAY SHALL BE MACHINE PRINTED, IN BLACK, BY THERMAL TRANSFER OR EQUIVALENT PROCESS. MINIMUM LETTER HEIGHT SHALL BE 3/8". OVERLAY SHALL PROVIDE A WEATHERPROOF AND UV-RESISTANT SEAL FOR LABEL.

C. SELF-ADHESIVE, ENGRAVED, LAMINATED ACRYLIC OR MELAMINE LABEL SHALL BE ADHESIVE BACKED, WITH WHITE LETTERS ON A DARK-GRAY BACKGROUND. MINIMUM LETTER HEIGHT SHALL BE 3/8".

D. ENGRAVED, LAMINATED ACRYLIC OR MELAMINE LABEL SHALL BE PUNCHED OR DRILLED FOR SCREW MOUNTING. USE A MINIMUM OF 3/8" WHITE LETTERS ON A DARK-GRAY BACKGROUND.

1.8 CABLE TIES

A. GENERAL-PURPOSE CABLE TIES SHALL BE A MINIMUM OF 3/16" WIDE AND FUNGUS INERT, SELF EXTINGUISHING, ONE PIECE, SELF LOCKING, TYPE 6/6 NYLON. TENSILE STRENGTH SHALL BE 12,000 PSI AT 73˚F AND HAVE A TEMPERATURE RANGE OF -40˚F TO 185˚F. USE BLACK TIES EXCEPT WHERE INDICATED.

B. UV-STABILIZED CABLE TIES SHALL BE A MINIMUM OF 3/16" WIDE AND FUNGUS INERT, DESIGNED FOR CONTINUOUS EXPOSURE TO EXTERIOR SUNLIGHT, SELF EXTINGUISHING, ONE PIECE, SELF LOCKING, TYPE 6/6 NYLON. TENSILE STRENGTH SHALL BE 12,000 PSI AT 73˚F AND HAVE A TEMPERATURE RANGE OF -40˚F TO 185˚F. USE BLACK TIES EXCEPT WHERE INDICATED.

C. PLENUM-RATED CABLE TIES SHALL BE A MINIMUM OF 3/16", SELF EXTINGUISHING, UV STABILIZED, ONE PIECE, SELF LOCKING, TENSILE STRENGTH SHALL BE 7,000 PSI AT 73˚F AND HAVE A TEMPERATURE RANGE OF -40˚F TO 185˚F. USE BLACK TIES EXCEPT WHERE INDICATED.

1.9 MISCELLANEOUS IDENTIFICATION PRODUCTS

A. SELECT PAINT SYSTEM APPLICABLE FOR SURFACE MATERIAL AND LOCATION (EXTERIOR OR INTERIOR).

B. FASTENERS FOR LABELS AND SIGNS SHALL BE SELF-TAPPING, STAINLESS-STEEL SCREWS OR STAINLESS-STEEL MACHINE SCREWS WITH NUTS AND FLAT AND LOCK WASHERS.

1.10 INSTALLATION

A. SELF-ADHESIVE IDENTIFICATION PRODUCTS: CLEAN SURFACES BEFORE APPLICATION, USING MATERIALS AND METHODS RECOMMENDED BY MANUFACTURER OF IDENTIFICATION DEVICE.

B. ATTACH SIGNS AND PLASTIC LABELS THAT ARE NOT SELF-ADHESIVE TYPE WITH MECHANICAL FASTENERS APPROPRIATE TO THE LOCATION AND SUBSTRATE.

C. SYSTEM IDENTIFICATION COLOR-CODING BANDS FOR RACEWAYS AND CABLES: EACH COLOR-CODING BAND SHALL COMPLETELY ENCIRCLE CABLE OR CONDUIT. PLACE ADJACENT BANDS OF TWO-COLOR MARKINGS IN CONTACT, SIDE BY SIDE. LOCATE BANDS AT CHANGES IN DIRECTION, AT PENETRATIONS OF WALLS AND FLOORS, AT 50' MAXIMUM INTERVALS IN STRAIGHT RUNS, AND AT 25' MAXIMUM INTERVALS IN CONGESTED AREAS.

D. ALUMINUM WRAPAROUND MARKER LABELS AND METAL TAGS: SECURE TIGHT TO SURFACE OF CONDUCTOR OR CABLE AT A LOCATION WITH HIGH VISIBILITY AND ACCESSIBILITY.

E. CABLE TIES: FOR ATTACHING TAGS. USE GENERAL-PURPOSE TYPE, EXCEPT AS LISTED BELOW:
   1. OUTDOORS: UV-STABILIZED NYLON.
   2. IN SPACES HANDLING ENVIRONMENTAL AIR: PLENUM RATED.

F. UNDERGROUND-LINE WARNING TAPE: DURING BACKFILLING OF TRENCHES INSTALL CONTINUOUS UNDERGROUND-LINE WARNING TAPE DIRECTLY ABOVE LINE AT 6" TO 8" BELOW FINISHED GRADE. USE MULTIPLE TAPES WHERE WIDTH OF MULTIPLE LINES INSTALLED IN A COMMON TRENCH OR CONCRETE ENVELOPE EXCEEDS 16" OVERALL.

1.11 IDENTIFICATION SCHEDULE

A. INSTALL INSTRUCTIONAL SIGN INCLUDING THE COLOR-CODE FOR GROUNDED AND UNGROUNDED CONDUCTORS USING ADHESIVE-FILM-TYPE LABELS.

B. AUXILIARY ELECTRICAL SYSTEMS CONDUCTOR IDENTIFICATION: IDENTIFY FIELD-INSTALLED ALARM, CONTROL, AND SIGNAL CONNECTIONS.
   1. IDENTIFY CONDUCTORS, CABLES, AND TERMINALS IN ENCLOSURES AND AT JUNCTIONS, TERMINALS, AND PULL POINTS. IDENTIFY BY SYSTEM AND CIRCUIT DESIGNATION.
   2. USE SYSTEM OF MARKER TAPE DESIGNATIONS THAT IS UNIFORM AND CONSISTENT WITH SYSTEM USED BY MANUFACTURER FOR FACTORY-INSTALLED CONNECTIONS.
   3. COORDINATE IDENTIFICATION WITH PROJECT DRAWINGS, MANUFACTURER'S WIRING DIAGRAMS, AND THE OPERATION AND MAINTENANCE MANUAL.

C. LOCATIONS OF UNDERGROUND LINES: IDENTIFY WITH UNDERGROUND-LINE WARNING TAPE FOR POWER, LIGHTING, COMMUNICATION, AND CONTROL WIRING AND OPTICAL FIBER CABLE.
   1. LIMIT USE OF UNDERGROUND-LINE WARNING TAPE TO DIRECT-BURIED CABLES.
   2. INSTALL UNDERGROUND-LINE WARNING TAPE FOR BOTH DIRECT-BURIED CABLES AND CABLES IN RACEWAY.

D. WARNING LABELS FOR INDOOR CABINETS, BOXES, AND ENCLOSURES FOR POWER AND LIGHTING: SELF-ADHESIVE WARNING LABELS, BAKED-ENAMEL WARNING SIGNS OR METAL-BACKED, BUTYRATE WARNING SIGNS.
   1. IDENTIFY SYSTEM VOLTAGE WITH BLACK LETTERS ON AN ORANGE BACKGROUND.
   2. APPLY TO EXTERIOR OF DOOR, COVER, OR OTHER ACCESS.
   3. FOR EQUIPMENT WITH MULTIPLE POWER OR CONTROL SOURCES, APPLY TO DOOR OR COVER OF EQUIPMENT INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:
      a. POWER TRANSFER SWITCHES.
      b. CONTROLS WITH EXTERNAL CONTROL POWER CONNECTIONS.

E. OPERATING INSTRUCTION SIGNS: INSTALL INSTRUCTION SIGNS TO FACILITATE PROPER OPERATION AND MAINTENANCE OF ELECTRICAL SYSTEMS AND ITEMS TO WHICH THEY CONNECT. INSTALL INSTRUCTION SIGNS WITH APPROVED LEGEND WHERE INSTRUCTIONS ARE NEEDED FOR SYSTEM OR EQUIPMENT OPERATION.

260553 CONT.

F. EQUIPMENT IDENTIFICATION LABELS: ON EACH UNIT OF EQUIPMENT, INSTALL UNIQUE DESIGNATION LABEL THAT IS CONSISTENT WITH WIRING DIAGRAMS, SCHEDULES, AND THE OPERATION AND MAINTENANCE MANUAL. APPLY LABELS TO DISCONNECT SWITCHES AND PROTECTION EQUIPMENT, CENTRAL OR MASTER UNITS, CONTROL PANELS, CONTROL STATIONS, TERMINAL CABINETS, AND RACKS OF EACH SYSTEM. SYSTEMS INCLUDE POWER, LIGHTING, CONTROL, COMMUNICATION, SIGNAL, MONITORING, AND ALARM SYSTEMS UNLESS EQUIPMENT IS PROVIDED WITH ITS OWN IDENTIFICATION.
   1. LABELING INSTRUCTIONS:
      a. INDOOR EQUIPMENT: ADHESIVE FILM LABEL, ADHESIVE FILM LABEL WITH CLEAR PROTECTIVE OVERLAY, SELF-ADHESIVE, ENGRAVED, LAMINATED ACRYLIC OR MELAMINE LABEL, OR ENGRAVED, LAMINATED ACRYLIC OR MELAMINE LABEL. UNLESS OTHERWISE INDICATED, PROVIDE A SINGLE LINE OF TEXT WITH ½" HIGH LETTERS ON 1-1/2" HIGH LABEL; WHERE TWO LINES OF TEXT ARE REQUIRED, USE LABELS 2" HIGH.
      b. OUTDOOR EQUIPMENT: ENGRAVED, LAMINATED ACRYLIC OR MELAMINE LABEL.
      c. ELEVATED COMPONENTS: INCREASE SIZES OF LABELS AND LETTERS TO THOSE APPROPRIATE FOR VIEWING FROM THE FLOOR.
      d. UNLESS PROVIDED WITH SELF-ADHESIVE MEANS OF ATTACHMENT, FASTEN LABELS WITH APPROPRIATE MECHANICAL FASTENERS THAT DO NOT CHANGE THE NEMA OR NRTL RATING OF THE ENCLOSURE.
   2. EQUIPMENT TO BE LABELED:
      a. PANELBOARDS: TYPEWRITTEN DIRECTORY OF CIRCUITS IN THE LOCATION PROVIDED BY PANELBOARD MANUFACTURER. PANELBOARD IDENTIFICATION SHALL BE SELF-ADHESIVE, ENGRAVED, LAMINATED ACRYLIC OR MELAMINE LABEL.
      b. ENCLOSURES AND ELECTRICAL CABINETS.
      c. MOTOR-CONTROL CENTERS.
      d. ENCLOSED SWITCHES.
      e. ENCLOSED CIRCUIT BREAKERS.
      f. ENCLOSED CONTROLLERS.
      g. VARIABLE-SPEED CONTROLLERS.

END OF SECTION 260553

262416 PANELBOARDS

1.1 ACCEPTABLE MANUFACTURERS INCLUDE (BUT ARE NOT LIMITED TO):

A. EATON ELECTRICAL INC.; CUTLER-HAMMER BUSINESS UNIT.
B. GENERAL ELECTRIC COMPANY; GE CONSUMER & INDUSTRIAL - ELECTRICAL DISTRIBUTION.
C. SIEMENS ENERGY & AUTOMATION, INC.
D. SQUARE D; A BRAND OF SCHNEIDER ELECTRIC

1.2 GENERAL REQUIREMENTS FOR PANELBOARDS

A. ENCLOSURES: FLUSH- AND SURFACE-MOUNTED CABINETS.
   1. RATED FOR ENVIRONMENTAL CONDITIONS AT INSTALLED LOCATION.
      a. INDOOR DRY AND CLEAN LOCATIONS: TYPE 1.
   2. FRONT: SECURED TO BOX WITH CONCEALED TRIM CLAMPS. FOR SURFACE-MOUNTED FRONTS, MATCH BOX DIMENSIONS; FOR FLUSH-MOUNTED FRONTS, OVERLAP BOX.
   3. HINGED FRONT COVER: ENTIRE FRONT TRIM HINGED TO BOX AND WITH STANDARD DOOR WITHIN HINGED TRIM COVER.
   4. DIRECTORY CARD: INSIDE PANELBOARD DOOR, MOUNTED IN TRANSPARENT CARD HOLDER.

B. INCOMING MAINS LOCATION TOP AND BOTTOM.

C. PHASE, NEUTRAL, AND GROUND BUSES: TIN-PLATED ALUMINUM.

D. TIN-PLATED ALUMINUM CONDUCTOR CONNECTORS SHALL BE SUITABLE FOR USE WITH CONDUCTOR MATERIAL AND SIZES. ALL LUG TYPES SHALL BE COMPRESSION TYPE.

1.3 DISTRIBUTION PANELBOARDS

A. POWER AND FEEDER DISTRIBUTION TYPE.

B. DOORS SHALL BE SECURED WITH VAULT-TYPE LATCH WITH TUMBLER LOCK; KEYED ALIKE.

C. MAINS SHALL HAVE CIRCUIT BREAKERS.

D. BRANCH OVERCURRENT PROTECTIVE DEVICES: FOR CIRCUIT-BREAKER FRAME SIZES 125 A AND SMALLER: PLUG-IN CIRCUIT BREAKERS.

E. BRANCH OVERCURRENT PROTECTIVE DEVICES: FOR CIRCUIT-BREAKER FRAME SIZES LARGER THAN 125 A: BOLT-ON CIRCUIT BREAKERS; PLUG-IN CIRCUIT BREAKERS WHERE INDIVIDUAL POSITIVE-LOCKING DEVICE REQUIRES MECHANICAL RELEASE FOR REMOVAL.

F. BRANCH OVERCURRENT PROTECTIVE DEVICES: FUSED SWITCHES.

1.4 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

A. LIGHTING AND APPLIANCE BRANCH-CIRCUIT TYPE.

B. MAINS SHALL HAVE CIRCUIT BREAKERS.

C. BRANCH OVERCURRENT PROTECTIVE DEVICES: PLUG-IN CIRCUIT BREAKERS, REPLACEABLE WITHOUT DISTURBING ADJACENT UNITS.

D. CONTACTORS IN MAIN BUS: CLASS A, MECHANICALLY HELD, GENERAL-PURPOSE CONTROLLER, WITH SAME SHORT-CIRCUIT INTERRUPTING RATING AS PANELBOARD.
   1. EXTERNAL CONTROL-POWER SOURCE: 120-V BRANCH CIRCUIT.

E. DOORS: CONCEALED HINGES; SECURED WITH FLUSH LATCH WITH TUMBLER LOCK; KEYED ALIKE.

1.5 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

A. MOLDED-CASE CIRCUIT BREAKER (MCCB): WITH INTERRUPTING CAPACITY TO MEET AVAILABLE FAULT CURRENTS.
   1. THERMAL-MAGNETIC CIRCUIT BREAKERS: INVERSE TIME-CURRENT ELEMENT FOR LOW-LEVEL OVERLOADS, AND INSTANTANEOUS MAGNETIC TRIP ELEMENT FOR SHORT CIRCUITS. ADJUSTABLE MAGNETIC TRIP SETTING FOR CIRCUIT-BREAKER FRAME SIZES 250 A AND LARGER.
   2. ADJUSTABLE INSTANTANEOUS-TRIP CIRCUIT BREAKERS: MAGNETIC TRIP ELEMENT WITH FRONT-MOUNTED, FIELD-ADJUSTABLE TRIP SETTING.
   3. ELECTRONIC TRIP CIRCUIT BREAKERS WITH RMS SENSING; FIELD-REPLACEABLE RATING PLUG OR FIELD-REPLICABLE ELECTRONIC TRIP; AND THE FOLLOWING FIELD-ADJUSTABLE SETTINGS:
      a. INSTANTANEOUS TRIP.
      b. LONG- AND SHORT-TIME PICKUP LEVELS.
      c. LONG- AND SHORT-TIME TIME ADJUSTMENTS.
      d. GROUND-FAULT PICKUP LEVEL, TIME DELAY, AND I^2T RESPONSE.
   4. CURRENT-LIMITING CIRCUIT BREAKERS: FRAME SIZES 400 A AND SMALLER; LET-THROUGH RATINGS LESS THAN NEMA FU 1, RK-5.
   5. GFCI CIRCUIT BREAKERS: SINGLE- AND TWO-POLE CONFIGURATIONS WITH CLASS A GROUND-FAULT PROTECTION (6-MA TRIP).
   6. GROUND-FAULT EQUIPMENT PROTECTION (GFEP) CIRCUIT BREAKERS: CLASS B GROUND-FAULT PROTECTION (30-MA TRIP).
   7. ARC-FAULT CIRCUIT INTERRUPTER (AFCI) CIRCUIT BREAKERS: COMPLY WITH UL 1699; 120/240-V, SINGLE-POLE CONFIGURATION.

262416 PANELBOARDS

8. MOLDED-CASE CIRCUIT-BREAKER (MCCB) FEATURES AND ACCESSORIES:
   a. STANDARD FRAME SIZES, TRIP RATINGS, AND NUMBER OF POLES.
   b. LUGS: MECHANICAL STYLE, SUITABLE FOR NUMBER, SIZE, TRIP RATINGS, AND CONDUCTOR MATERIALS.
   c. GROUND-FAULT PROTECTION: INTEGRALLY MOUNTED RELAY AND TRIP UNIT WITH ADJUSTABLE PICKUP AND TIME-DELAY SETTINGS, PUSH-TO-TEST FEATURE, AND GROUND-FAULT INDICATOR.
   d. COMMUNICATION CAPABILITY: CIRCUIT-BREAKER-MOUNTED COMMUNICATION MODULE WITH FUNCTIONS AND FEATURES COMPATIBLE WITH POWER MONITORING AND CONTROL SYSTEM SPECIFIED.
   e. SHUNT TRIP: 120-V TRIP COIL ENERGIZED FROM SEPARATE CIRCUIT, SET TO TRIP AT 55 PERCENT OF RATED VOLTAGE.
   f. HANDLE PADLOCKING DEVICE: FIXED ATTACHMENT, FOR LOCKING CIRCUIT-BREAKER HANDLE IN ON POSITION.
   g. HANDLE CLAMP: LOOSE ATTACHMENT, FOR HOLDING CIRCUIT-BREAKER HANDLE IN ON POSITION.

B. FUSED SWITCH: TYPE HD; CLIPS TO ACCOMMODATE SPECIFIED FUSES; LOCKABLE HANDLE.

1.6 INSTALLATION

A. RECEIVE, INSPECT, HANDLE, STORE AND INSTALL PANELBOARDS AND ACCESSORIES.

B. MOUNT TOP OF TRIM 90" ABOVE FINISHED FLOOR UNLESS OTHERWISE INDICATED.

C. MOUNT PANELBOARD CABINET PLUMB AND RIGID WITHOUT DISTORTION OF BOX. MOUNT RECESSED PANELBOARDS WITH FRONTS UNIFORMLY FLUSH WITH WALL FINISH AND MATING WITH BACK BOX.

D. INSTALL OVERCURRENT PROTECTIVE DEVICES AND CONTROLLERS NOT ALREADY FACTORY INSTALLED. SET FIELD-ADJUSTABLE CIRCUIT-BREAKER TRIP RANGES.

E. INSTALL FILLER PLATES IN UNUSED SPACES.

F. STUB FOUR 1" EMPTY CONDUITS FROM PANELBOARD INTO ACCESSIBLE CEILING SPACE OR SPACE DESIGNATED TO BE CEILING SPACE IN THE FUTURE.

G. ARRANGE CONDUCTORS IN GUTTERS INTO GROUPS AND BUNDLE AND WRAP WITH WIRE TIES.

H. PERFORM TESTS AND INSPECTIONS.

I. PANELBOARDS WILL BE CONSIDERED DEFECTIVE IF THEY DO NOT PASS TESTS AND INSPECTIONS.

END OF SECTION 262416

262726 WIRING DEVICES

1.1 ACCEPTABLE MANUFACTURERS INCLUDE (BUT ARE NOT LIMITED TO):

A. COOPER WIRING DEVICES; A DIVISION OF COOPER INDUSTRIES, INC. (COOPER).
B. HUBBELL INCORPORATED; WIRING DEVICE-KELLEMS (HUBBELL).
C. LEVITON MFG. COMPANY INC. (LEVITON).
D. PASS & SEYMOUR/LEGRAND; WIRING DEVICES & ACCESSORIES (PASS & SEYMOUR).

1.2 STRAIGHT BLADE RECEPTACLES

A. CONVENIENCE RECEPTACLES, 125 V, 20 A: CONFIGURATION 5-20R.

1.3 GFCI RECEPTACLES

A. STRAIGHT BLADE, **FEED**-THROUGH TYPE, CLASS A, AND INCLUDE INDICATOR LIGHT THAT IS LIGHTED WHEN DEVICE IS TRIPPED.
B. DUPLEX GFCI CONVENIENCE RECEPTACLES, 125 V, 20 A:

1.4 OCCUPANCY SENSORS

A. WALL-SWITCH OCCUPANCY AND DAYLIGHT SENSORS. PASSIVE INFRARED TYPE
B. CEILING MOUNTED OCCUPANCY SENSOR: ULTRASONIC TYPE.

1.5 COMMUNICATIONS OUTLETS

A. TELEPHONE OUTLET SINGLE RJ-45 JACK FOR TERMINATING 100-OHM, BALANCED, FOUR-PAIR UTP; TIA/EIA-568-B.1; COMPLYING WITH CATEGORY 5E.

1.6 WALL PLATES

A. SINGLE AND COMBINATION TYPES TO MATCH CORRESPONDING WIRING DEVICES WITH SEAMLESS FACEPLATES WITH NO VISIBLE PLATE-SECURING SCREWS.

1.7 FINISHES

A. COLOR SHALL MATCH EXISTING.

1.8 INSTALLATION

A. RECEPTACLE ORIENTATION:
   1. INSTALL GROUND PIN OF VERTICALLY MOUNTED RECEPTACLES UP, AND ON HORIZONTALLY MOUNTED RECEPTACLES TO THE RIGHT.

B. DEVICE PLATES: DO NOT USE OVERSIZED OR EXTRA-DEEP PLATES. REPAIR WALL FINISHES AND REMOUNT OUTLET BOXES WHEN STANDARD DEVICE PLATES DO NOT FIT FLUSH OR DO NOT COVER ROUGH WALL OPENING.

C. ARRANGEMENT OF DEVICES: UNLESS OTHERWISE INDICATED, MOUNT FLUSH, WITH LONG DIMENSION VERTICAL AND WITH GROUNDING TERMINAL OF RECEPTACLES ON TOP. GROUP ADJACENT SWITCHES UNDER SINGLE, MULTIGANG WALL PLATES.

D. ADJUST LOCATIONS OF FLOOR SERVICE OUTLETS AND SERVICE POLES TO SUIT ARRANGEMENT OF PARTITIONS AND FURNISHINGS.

E. PERFORM TESTS AND INSPECTIONS AND PREPARE TEST REPORTS.
   1. TEST INSTRUMENT FOR CONVENIENCE RECEPTACLES: DIGITAL WIRING ANALYZER WITH DIGITAL READOUT OR ILLUMINATED LED INDICATORS OF MEASUREMENT.

F. TESTS FOR CONVENIENCE RECEPTACLES:
   1. LINE VOLTAGE: ACCEPTABLE RANGE IS 105 TO 132 V.
   2. PERCENT VOLTAGE DROP UNDER 15-A LOAD: A VALUE OF 6 PERCENT OR HIGHER IS NOT ACCEPTABLE.
   3. GROUND IMPEDANCE: VALUES OF UP TO 2 OHMS ARE ACCEPTABLE.
   4. GFCI TRIP: TEST FOR SPECIFIED TRIPPING VALUES.
   5. USING THE TEST PLUG, VERIFY THAT THE DEVICE AND ITS OUTLET BOX ARE SECURELY MOUNTED.
   6. THE TESTS SHALL BE DIAGNOSTIC, INDICATING DAMAGED CONDUCTORS, HIGH RESISTANCE AT THE CIRCUIT BREAKER, POOR CONNECTIONS, INADEQUATE FAULT CURRENT PATH, DEFECTIVE DEVICES, OR SIMILAR PROBLEMS. CORRECT CIRCUIT CONDITIONS, REMOVE MALFUNCTIONING UNITS AND REPLACE WITH NEW ONES, AND RETEST AS SPECIFIED ABOVE.

END OF SECTION 262726

262816 ENCLOSED SWITCHES AND CIRCUIT BREAKERS

1.1 ACCEPTABLE MANUFACTURERS INCLUDE (BUT ARE NOT LIMITED TO):

A. EATON ELECTRICAL INC.; CUTLER-HAMMER BUSINESS UNIT.
B. GENERAL ELECTRIC COMPANY; GE CONSUMER & INDUSTRIAL - ELECTRICAL DISTRIBUTION.
C. SIEMENS ENERGY & AUTOMATION, INC.
D. SQUARE D; A BRAND OF SCHNEIDER ELECTRIC.

1.2 FUSIBLE SWITCHES

A. TYPE GD, GENERAL DUTY, SINGLE THROW, 240-V AC, 800 A AND SMALLER: HORSEPOWER RATED, WITH CARTRIDGE FUSE INTERIORS TO ACCOMMODATE INDICATED FUSES, LOCKABLE HANDLE WITH CAPABILITY TO ACCEPT TWO PADLOCKS, AND INTERLOCKED WITH COVER IN CLOSED POSITION.

B. TYPE HD, HEAVY DUTY, SINGLE THROW, 240-V AC, 1200 A AND SMALLER: HORSEPOWER RATED, WITH CLIPS OR BOLT PADS TO ACCOMMODATE INDICATED FUSES, LOCKABLE HANDLE WITH CAPABILITY TO ACCEPT THREE PADLOCKS, AND INTERLOCKED WITH COVER IN CLOSED POSITION.

1.3 NONFUSIBLE SWITCHES

A. TYPE GD, GENERAL DUTY, SINGLE THROW, 600 A AND SMALLER: HORSEPOWER RATED, LOCKABLE HANDLE WITH CAPABILITY TO ACCEPT TWO PADLOCKS, AND INTERLOCKED WITH COVER IN CLOSED POSITION.

B. TYPE HD, HEAVY DUTY, SINGLE THROW, 240V AC, 1200 A AND SMALLER: , HORSEPOWER RATED, LOCKABLE HANDLE WITH CAPABILITY TO ACCEPT THREE PADLOCKS, AND INTERLOCKED WITH COVER IN CLOSED POSITION.

1.4 ENCLOSURES

A. ENCLOSED SWITCHES AND CIRCUIT BREAKERS: COMPLY WITH ENVIRONMENTAL CONDITIONS AT INSTALLED LOCATION.
   1. INDOOR, DRY AND CLEAN LOCATIONS: NEMA 250, TYPE 1.
   2. OUTDOOR LOCATIONS: NEMA 250, TYPE 3R.

1.5 INSTALLATION

A. INSTALL INDIVIDUAL WALL-MOUNTED SWITCHES AND CIRCUIT BREAKERS WITH TOPS AT UNIFORM HEIGHT UNLESS OTHERWISE INDICATED.

B. TEMPORARY LIFTING PROVISIONS: REMOVE TEMPORARY LIFTING EYES, CHANNELS, AND BRACKETS AND TEMPORARY BLOCKING OF MOVING PARTS FROM ENCLOSURES AND COMPONENTS.

C. INSTALL FUSES IN FUSIBLE DEVICES.

D. PERFORM TESTS AND INSPECTIONS.

E. ENCLOSED SWITCHES AND CIRCUIT BREAKERS WILL BE CONSIDERED DEFECTIVE IF THEY DO NOT PASS TESTS AND INSPECTIONS.

END OF SECTION 262816

262913 ENCLOSED CONTROLLERS

1.1 ACCEPTABLE MANUFACTURERS INCLUDE (BUT ARE NOT LIMITED TO):

A. EATON ELECTRICAL INC.; CUTLER-HAMMER BUSINESS UNIT.
B. GENERAL ELECTRIC COMPANY; GE CONSUMER & INDUSTRIAL - ELECTRICAL DISTRIBUTION.
C. ROCKWELL AUTOMATION, INC.; ALLEN-BRADLEY BRAND.
D. SIEMENS ENERGY & AUTOMATION, INC.
E. SQUARE D; A BRAND OF SCHNEIDER ELECTRIC.

1.2 FULL-VOLTAGE CONTROLLERS

A. GENERAL PURPOSE FULL-VOLTAGE CONTROLLERS, CLASS A.

B. NONREVERSING SURFACE MOUNTED MOTOR-STARTING SWITCHES WITH "QUICK-MAKE, QUICK-BREAK" TOGGLE OR PUSH-BUTTON ACTION; MARKED TO SHOW WHETHER UNIT IS OFF OR ON WITH PILOT LIGHT.

C. NONREVERSING SURFACE MOUNTED FRACTIONAL HORSEPOWER MANUAL CONTROLLERS WITH "QUICK-MAKE, QUICK-BREAK" TOGGLE OR PUSH-BUTTON ACTION; MARKED TO SHOW WHETHER UNIT IS OFF, ON, OR TRIPPED WITH PILOT LIGHT. OVERLOAD RELAYS WITH INVERSE-TIME-CURRENT CHARACTERISTICS, CLASS 10 TRIPPING CHARACTERISTICS; HEATERS MATCHED TO NAMEPLATE FULL-LOAD CURRENT OF ACTUAL PROTECTED MOTOR; AND EXTERNAL RESET PUSH BUTTON BIMETALLIC TYPE

D. NONREVERSING MAGNETIC CONTROLLERS SHALL BE FULL VOLTAGE, ACROSS THE LINE, ELECTRICALLY HELD. CONTACTOR COILS SHALL BE PRESSURE-ENCAPSULATED TYPE WITH MANUFACTURER'S STANDARD MATCHING CONTROL POWER OR LINE VOLTAGE. USE TOTALLY ENCLOSED, DOUBLE-BREAK, SILVER-CADMIUM OXIDE POWER CONTACTS ASSEMBLED TO ALLOW INSPECTION AND REPLACEMENT. CONTROL CIRCUITS SHALL BE 24-V AC, OBTAINED FROM INTEGRAL CPT, WITH PRIMARY AND SECONDARY FUSES, WITH CPT OF SUFFICIENT CAPACITY TO OPERATE INTEGRAL DEVICES AND REMOTELY LOCATED PILOT, INDICATING, AND CONTROL DEVICES. USE ANY OF THE FOLLOWING:
   1. MELTING ALLOY OVERLOAD RELAYS WITH INVERSE INVERSE-TIME-CURRENT CHARACTERISTICS, CLASS 10 TRIPPING CHARACTERISTICS; HEATERS IN EACH PHASE MATCHED TO NAMEPLATE FULL-LOAD CURRENT OF ACTUAL PROTECTED MOTOR AND WITH APPROPRIATE ADJUSTMENT FOR DUTY CYCLE.
   2. BIMETALLIC OVERLOAD RELAYS WITH INVERSE INVERSE-TIME-CURRENT CHARACTERISTICS, CLASS 10 TRIPPING CHARACTERISTICS; HEATERS IN EACH PHASE MATCHED TO NAMEPLATE FULL-LOAD CURRENT OF ACTUAL PROTECTED MOTOR AND WITH APPROPRIATE ADJUSTMENT FOR DUTY CYCLE.
   3. SOLID-STATE OVERLOAD RELAY WITH SWITCH OR DIAL SELECTABLE FOR MOTOR RUNNING OVERLOAD PROTECTION, SENSORS IN EACH PHASE, CLASS 10 TRIPPING CHARACTERISTIC SELECTED TO PROTECT MOTOR AGAINST VOLTAGE AND CURRENT UNBALANCE AND SINGLE PHASING AND EXTERNAL OVERLOAD RESET PUSH BUTTON.

E. COMBINATION MAGNETIC CONTROLLER SHALL BE FACTORY-ASSEMBLED COMBINATION OF MAGNETIC CONTROLLER, OCPD, AND DISCONNECTING MEANS.
   1. FUSIBLE DISCONNECTING MEANS HEAVY-DUTY, HORSEPOWER-RATED, FUSIBLE SWITCH WITH CLIPS OR BOLT PADS TO ACCOMMODATE CLASS J FUSES WITH LOCKABLE HANDLE THAT ACCEPTS THREE PADLOCKS AND INTERLOCKS WITH COVER IN CLOSED POSITION, INCLUDE AUXILIARY CONTACT THAT ARE N.O./N.C. ARRANGED TO ACTIVATE BEFORE SWITCH BLADES OPEN.
   2. NONFUSIBLE DISCONNECTING MEANS HEAVY-DUTY, HORSEPOWER-RATED, NONFUSIBLE SWITCH WITH LOCKABLE HANDLE THAT ACCEPTS THREE PADLOCKS AND INTERLOCKS WITH COVER IN CLOSED POSITION, INCLUDE AUXILIARY CONTACT THAT ARE N.O./N.C. ARRANGED TO ACTIVATE BEFORE SWITCH BLADES OPEN.

1.3 ENCLOSURES

A. ENCLOSED CONTROLLERS SHALL COMPLY WITH ENVIRONMENTAL CONDITIONS AT INSTALLED LOCATION, TYPE 1 FOR DRY AND CLEAN INDOOR LOCATIONS AND TYPE 3R FOR OUTDOOR LOCATIONS.

1.4 ACCESSORIES

A. PUSH BUTTONS, PILOT LIGHTS, AND SELECTOR SWITCHES SHALL BE HEAVY-DUTY TYPE; FACTORY INSTALLED IN CONTROLLER ENCLOSURE COVER UNLESS OTHERWISE INDICATED.

B. CONTROL RELAYS SHALL BE AUXILIARY AND ADJUSTABLE TIME-DELAY RELAYS.

C. PHASE-FAILURE, PHASE-REVERSAL, AND UNDERVOLTAGE AND OVERVOLTAGE RELAYS SHALL BE SOLID-STATE SENSING CIRCUIT WITH ISOLATED OUTPUT CONTACTS FOR HARD-WIRED CONNECTIONS. PROVIDE ADJUSTABLE UNDERVOLTAGE, OVERVOLTAGE, AND TIME-DELAY SETTINGS.

262913 ENCLOSED CONTROLLERS

1.5 INSTALLATION

C. INSTALL ENCLOSED CONTROLLERS ON WALLS WITH TOPS AT UNIFORM HEIGHT, AND WITH DISCONNECT OPERATING HANDLES NOT HIGHER THAN 79" ABOVE FINISHED FLOOR, UNLESS OTHERWISE INDICATED, AND BY BOLTING UNITS TO WALL OR MOUNTING ON LIGHTWEIGHT STRUCTURAL-STEEL CHANNELS BOLTED TO WALL.

D. REMOVE TEMPORARY LIFTING EYES, CHANNELS, AND BRACKETS AND TEMPORARY BLOCKING OF MOVING PARTS FROM ENCLOSURES AND COMPONENTS.

E. INSTALL FUSES IN EACH FUSIBLE-SWITCH ENCLOSED CONTROLLER.

F. INSTALL FUSES IN CONTROL CIRCUITS IF NOT FACTORY INSTALLED.

G. INSTALL HEATERS IN THERMAL OVERLOAD RELAYS. SELECT HEATERS BASED ON ACTUAL NAMEPLATE FULL-LOAD AMPERES AFTER MOTORS HAVE BEEN INSTALLED.

H. INSTALL WIRING BETWEEN ENCLOSED CONTROLLERS AND REMOTE DEVICES AND FACILITY'S CENTRAL CONTROL SYSTEM.

I. BUNDLE, TRAIN, AND SUPPORT WIRING IN ENCLOSURES.

J. CONNECT SELECTOR SWITCHES TO BYPASS ONLY THOSE MANUAL- AND AUTOMATIC-CONTROL DEVICES THAT HAVE NO SAFETY FUNCTIONS WHEN SWITCH IS IN MANUAL-CONTROL POSITION.

K. CONNECT SELECTOR SWITCHES WITH ENCLOSED-CONTROLLER CIRCUIT IN BOTH MANUAL AND AUTOMATIC POSITIONS FOR SAFETY-TYPE CONTROL DEVICES SUCH AS LOW- AND HIGH-PRESSURE CUTOUTS, HIGH-TEMPERATURE CUTOUTS, AND MOTOR OVERLOAD PROTECTORS.

L. PERFORM TESTS AND INSPECTIONS AND PREPARE REPORTS.

M. ACCEPTANCE TESTING PREPARATION:
   1. TEST INSULATION RESISTANCE FOR EACH ENCLOSED CONTROLLER, COMPONENT, CONNECTING SUPPLY, FEEDER, AND CONTROL CIRCUIT.
   2. TEST CONTINUITY OF EACH CIRCUIT.

L. ENCLOSED CONTROLLERS WILL BE CONSIDERED DEFECTIVE IF THEY DO NOT PASS TESTS AND INSPECTIONS.

M. SET FIELD-ADJUSTABLE SWITCHES AND OVERLOAD-RELAY PICKUP AND TRIP RANGES.

N. TRAIN OWNER'S MAINTENANCE PERSONNEL TO ADJUST, OPERATE, AND MAINTAIN ENCLOSED CONTROLLERS.

END OF SECTION 262913

265100 INTERIOR LIGHTING

1.1 GENERAL REQUIREMENTS FOR LIGHTING FIXTURES AND COMPONENTS

A. METAL PARTS SHALL BE FREE OF BURRS AND SHARP CORNERS AND EDGES.

B. SHEET METAL COMPONENTS SHALL BE STEEL UNLESS OTHERWISE INDICATED. FORM AND SUPPORT TO PREVENT WARPING AND SAGGING.

C. DOORS, FRAMES, AND OTHER INTERNAL ACCESS SHALL BE SMOOTH OPERATING, FREE OF LIGHT LEAKAGE UNDER OPERATING CONDITIONS, AND DESIGNED TO PERMIT

PANEL: 'PP'				VOLTS: 120/208			MTG: SURFACE				
				AMPS: 400			PHASE: 3			AIC: 65KA	
LOCATION: KITCHEN				CKTS: 42			WIRE: 4			SCCR: 65KA	
				LUGS: MCB			FEED: BOTTOM/TOP				
REMARKS	LOAD ØA	LOAD ØB	LOAD ØC	POLE	CIR NO.	CIR NO.	POLE	LOAD ØA	LOAD ØB	LOAD ØC	REMARKS
KITCHEN LIGHTING	1.2			20	1	2	20	1.2			BAR LIGHTING
KITCHEN LIGHTING		1.2		20	3	4	20		1.2		DINING LIGHTING
DINNING LIGHTING			1.2	20	5	6	20			1.2	PATIO LIGHTING
E102 DECORATIVE LIGHT	1.0			20	7	8	20	0.5			SITE LIGHTING
PATIO FAN		0.5		20	9	10	20		0.1		WATER HETER 1
WATER HEATER 2			0.1	20	11	12	20			1.5	PATIO RADIANT HEATER
PATIO RADIANT HEATER	1.5			20	13	14	2	1.5			
		1.5		2	15	16	20		1.5		PATIO RADIANT HEATER
PATIO RADIANT HEATER			1.5	20	17	18	2			1.5	
	1.5			2	19	20	20	1.5			PATIO RADIANT HEATER
PATIO RADIANT HEATER		1.5		20	21	22	2		1.5		
			1.5	2	23	24	20			1.5	PATIO RADIANT HEATER
PATIO RADIANT HEATER	1.5			20	25	26	2	1.5			
		1.5		2	27	28	20		1.5		PATIO RADIANT HEATER
DINNING RECEPTACLE			1.2	20	29	30	2			1.5	
DINNING RECEPTACLE	1.2			20	31	32	20	1.0			RESTROOM RECEPTACLE
DINNING RECEPTACLE		1.2		20	33	34	20		0.5		HOST TERMINAL
PATIO RECEPTACLE			1.2	20	35	36	20			0.5	CASHER REG. /PRINT./KV'S
PATIO RECEPTACLE	1.2			20	37	38	20	5.6			
EWH		1.0		20	39	40	20		5.6		PANEL 'MP'
			1.0	2	41	42	20			5.6	
	9.1	8.4	7.7					12.8	11.9	13.3	TOTAL KVA: 63.2KVA (175.6A)

FEEDER SIZE:
FOR 100A PANEL BOARD, FEEDER CONDUCTOR SHALL BE 4-#2, 1-#8 GND IN A 2-1/2" CONDUIT.
FOR 200A PANEL BOARD, FEEDER CONDUCTOR SHALL BE 4-#4/0, 1-#2 GND IN A 2-1/2" CONDUIT.
FOR 400A PANEL BOARD, FEEDER CONDUCTOR SHALL BE 4-#500MCM, 1-#1/0 GND IN A 3-1/2" CONDUIT.

PANEL: 'MP'				VOLTS: 120/208			MTG: SURFACE				
				AMPS: 100			PHASE: 3			AIC: 65KA	
LOCATION: KITCHEN				CKTS: 42			WIRE: 4			SCCR: 65KA	
				LUGS: MCB			FEED: BOTTOM/TOP				
REMARKS	LOAD ØA	LOAD ØB	LOAD ØC	POLE	CIR NO.	CIR NO.	POLE	LOAD ØA	LOAD ØB	LOAD ØC	REMARKS
MEZZAINE LIGHTING	1.0			20	1	2	20	1.0			MEZZAINE RECEPTACLE
WASHER		1.8		20	3	4	20		1.0		MEZZAINE RECEPTACLE
DRYER			2.5	30	5	6	20			1.0	MEZZAINE RECEPTACLE
	2.5			2	7	8	20	1.0			1T RACK
EF-3		VFD		20	9	10	40		2.3		HP-6
EF-4			0.1	20	11	12	2			2.3	
SPARE				20	13	14	20				SPARE
SPARE				20	15	16	20				SPARE
SPARE				20	17	18	20				SPARE
SPARE				20	19	20	20				SPARE
SPARE				20	21	22	20				SPARE
SPARE				20	23	24	20				SPARE
SPARE				20	25	26	20				SPARE
SPARE				20	27	28	20				SPARE
SPARE				20	29	30	20				SPARE
SPARE				20	31	32	20				SPARE
SPARE				20	33	34	20				SPARE
SPARE				20	35	36	20				SPARE
SPARE				20	37	38	20				SPARE
SPARE				20	39	40	20				SPARE
SPARE				20	41	42	20				SPARE
	3.5	2.0	2.6					2.0	3.3	3.3	TOTAL KVA: 16.7 KVA (46.1A)

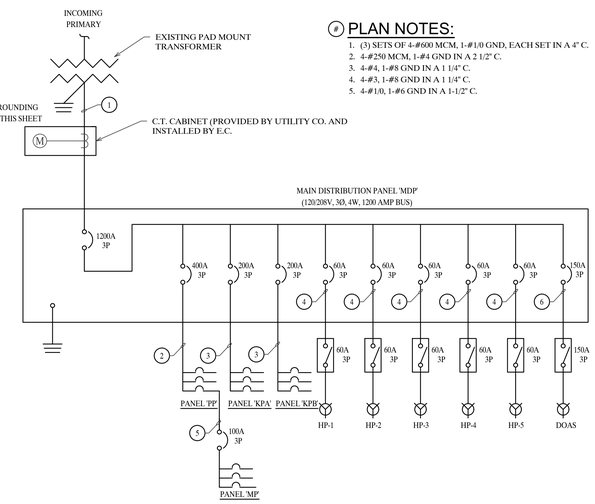
FEEDER SIZE:
FOR 100A PANEL BOARD, FEEDER CONDUCTOR SHALL BE 4-#2, 1-#8 GND IN A 2-1/2" CONDUIT.
FOR 200A PANEL BOARD, FEEDER CONDUCTOR SHALL BE 4-#4/0, 1-#2 GND IN A 2-1/2" CONDUIT.
FOR 400A PANEL BOARD, FEEDER CONDUCTOR SHALL BE 4-#500MCM, 1-#1/0 GND IN A 3-1/2" CONDUIT.

PANEL: 'KPA'				VOLTS: 120/208			MTG: SURFACE				
				AMPS: 200			PHASE: 3			AIC: 65KA	
LOCATION: KITCHEN				CKTS: 60			WIRE: 4			SCCR: 65KA	
				LUGS: MCB			FEED: BOTTOM/TOP				
REMARKS	LOAD ØA	LOAD ØB	LOAD ØC	POLE	CIR NO.	CIR NO.	POLE	LOAD ØA	LOAD ØB	LOAD ØC	REMARKS
E1 BACKBAR COOLER	0.4			20	1	2	20	0.4			E2 REFRIGERATED CABINET
E3 REFRIGERATED CABINET		0.4		20	3	4	20		0.7		E7 BLENDER STATION
E10 FREEZER / MUG FROSTER			0.3	20	5	6	20			0.7	E7 BLENDER STATION
E10 FREEZER / MUG FROSTER	0.3			20	7	8	20	0.3			E13 WATER DISPENSOR
E11 REFRIGERATOR		1.8		20	9	10	20		0.3		E14 BOTTLE COOLER
E12 DRAWERED FRIDGE			0.3	20	11	12	20			0.3	E20 UNDER COUNTER FRIDGE
E19 CLASS WASHER	2.9			30	13	14	20	0.6			E28 WATER DISPENSOR
		2.9		2	15	16	20		1.8		E29 TEA BREWER
E26 ESPRESSO MACHINE			1.8	20	17	18	20			1.8	E30 COFFEE BREWER
E31 UNDER COUNTER FRIDGE	0.3			20	19	20	20	0.9			
E33 ICE CHOPPER		0.2		20	21	22			0.9		E34 ICE MAKER
E93 DISPOSER			2.1	30	23	24	3			0.9	
	2.1				25	26	20	0.3			E51 REACH-IN FRIDGE
E64D FIRE SWITCH		2.1		3	27	28	100		8.7		E94 WAREWASHER
			1.8	20	29	30	2			8.7	
E21.7 COOLER CONDENSER 2	0.7			20	31	32	20	1.8			E94.1 BOOSTER HEATER
		0.7			33	34	20		0.4		E21 WALK-IN COOLER 2
			0.7	3	35	36	20			0.2	E21.2 COOLER COIL 2
E21.6 FREEZER CONDENSER	1.1			20	37	38	20	0.4			E21.1 WALK-IN FREEZER
		1.1			39	40	20		0.7		E21.4 FREEZER COIL
			1.1	3	41	42	2			0.7	
FUR-1	1.0			20	43	44	20	1.0			FUR-4
FUR-2		1.0		20	45	46	20		1.0		FUR-5
~~FUR-3~~			~~1.0~~	~~20~~	~~47~~	~~48~~	~~20~~			~~0.8~~	~~DISHWASHER EXHAST~~
BAR RECEPTACLE	0.6			20	49	50	20	0.2			EF-1
E14 BOTTLE COOLER		0.3		20	51	52	20				SPARE
SPARE				20	53	54	20				SPARE
SPARE				20	55	56	20				SPARE
SPARE				20	57	58	20				SPARE
SPARE				20	59	60	20				SPARE
	9.4	10.5	9.1					5.9	14.5	14.1	TOTAL KVA: 63.3 KVA (175.8A)

FEEDER SIZE:
FOR 100A PANEL BOARD, FEEDER CONDUCTOR SHALL BE 4-#2, 1-#8 GND IN A 2-1/2" CONDUIT.
FOR 200A PANEL BOARD, FEEDER CONDUCTOR SHALL BE 4-#4/0, 1-#2 GND IN A 2-1/2" CONDUIT.
FOR 400A PANEL BOARD, FEEDER CONDUCTOR SHALL BE 4-#500MCM, 1-#1/0 GND IN A 3-1/2" CONDUIT.

PANEL: 'KPB'				VOLTS: 120/208			MTG: SURFACE				
				AMPS: 200			PHASE: 3			AIC: 65KA	
LOCATION: KITCHEN				CKTS: 60			WIRE: 4			SCCR: 65KA	
				LUGS: MCB			FEED: BOTTOM/TOP				
REMARKS	LOAD ØA	LOAD ØB	LOAD ØC	POLE	CIR NO.	CIR NO.	POLE	LOAD ØA	LOAD ØB	LOAD ØC	REMARKS
E37 DOUGH SHEETER	0.6			20	1	2	20	1.0			E38 PASTA EXTRUDER
E42 FOOD PROCESSOR		1.4		20	3	4	20		0.3		E43 REACH-IN FREEZER
E44 RACH-IN FRIDGE			0.4	20	5	6	20			1.2	E45 HEATED WELLS
E45 HEATED WELLS	1.2			20	7	8	20	0.4			E46 MEGA TOP FRIDGE
E48 MEGA TOP FRIDGE		0.4		20	9	10	20		0.4		E50 MEGA TOP FRIDGE
E52 CABINET COOK & HOLD			3.1	40	11	12	20			0.1	E53 PASTA COOKER
	3.1			2	13	14	20				SHUNT
SHUNT				20	15	16	20		1.8		E54A CONV. UPPER OVEN
E54 CONV. LOWER OVEN			1.0	20	17	18	20				SHUNT
SHUNT				20	19	20	20	0.3			E57 CHEF BASE
E55 CONVEYOR OVEN		3.0		40	21	22	20				SHUNT
			3.0	2	23	24	20			0.7	E60 HD RANGE 36
SHUNT				20	25	26	20				SHUNT
E62 48" HD RANGE		0.7		20	27	28	20		0.7		E63 REFRIGERATOR
SHUNT				20	29	30	20			1.8	E64.1 EXHAUST HOOD
E64 EXHAUST HOOD	1.8			20	31	32	40	3.3			
E64A FIRE SUPRESSION		1.2		20	33	34			3.3		E73 KETTLE ELECTRIC
E65 PIZZA PREP FRIDGE			0.5	20	35	36	3			3.3	
E74 REACH-IN FRIDGE	0.7			20	37	38	20	1.6			E76 FOOD PACKING MACHINE
E75 REF WORKTOP		0.4		20	39	40	20		1.2		E79 PLANETARY MIXER
E81 FOOD SLICER			0.3	20	41	42	20			1.0	KITCHEN RECEPTACLE
E10 FREEZER / MUG FROSTER	0.3			20	43	44	20	0.5			KITCHEN RECEPTACLE
E9 WINE COOLER		0.7		20	45	46	20		1.8		E55A WORK TOP
E95A EXHAUST FAN			0.8	20	47	48	20			1.9	E64B EXHAUST FAN
WINE CLOSET COOLING	1.7			20	49	50		1.9			
MOTORIZED DAMPER		0.5		20	51	52	3		1.9		
E101 REFRIGERATED CABINET			0.4	20	53	54	20			0.4	E21.3 PREP COOLER 1
E104 UNDERCOUNTER REF.	0.1			20	55	56	20	0.1			E21.5 COOLER COIL 1
KITCHEN RECEPTACLE		1.0		20	57	58	20		1.1		E21.8 COOLER CONDENSER 1
KITCHEN RECEPTACLE			1.0	20	59	60	2			1.1	
	9.5	9.3	10.5					9.1	12.5	11.5	TOTAL KVA: 62.4KVA (173.4A)

FEEDER SIZE:
FOR 100A PANEL BOARD, FEEDER CONDUCTOR SHALL BE 4-#2, 1-#8 GND IN A 2-1/2" CONDUIT.
FOR 200A PANEL BOARD, FEEDER CONDUCTOR SHALL BE 4-#4/0, 1-#2 GND IN A 2-1/2" CONDUIT.
FOR 400A PANEL BOARD, FEEDER CONDUCTOR SHALL BE 4-#500MCM, 1-#1/0 GND IN A 3-1/2" CONDUIT.



ELECTRICAL ONE-LINE DIAGRAM
NO SCALE

PLAN NOTES:

1. (3) SETS OF 4-#600 MCM, 1-#1/0 GND, EACH SET IN A 4" C.
2. 4-#250 MCM, 1-#4 GND IN A 2 1/2" C.
3. 4-#4, 1-#8 GND IN A 1 1/4" C.
4. 4-#3, 1-#8 GND IN A 1 1/4" C.
5. 4-#1/0, 1-#6 GND IN A 1-1/2" C.

Rev. No.	Date	Description
-	05-28-26	REVIEW SET
-	09-23-26	REVIEW SET
1	11-19-26	CITY SUBMITTAL

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HANNAH R. SADLER
REGISTERED
No. 10505427
STATE OF INDIANA
PROFESSIONAL ENGINEER

CUSTOMER: Tre Ragazzi Restaurants
PROJECT NAME: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: ELECTRICAL SPECIFICATIONS
DRAWN BY: DAE
PROJECT No. 26010

E005
05/28/2026

FIXTURE LEGEND

NOTE: FIXTURES BELOW TO BE PROVIDED & INSTALLED BY THE LOUVERED PERGOLA

HT1: EXTERIOR RADIANT PATIO HEATER: TBD, COORDINATE HEATER REQUIREMENTS WITH THE LOUVERED PERGOLA.

R7: RECESSED CAN LIGHT FIXTURE: AZENCO, 3"" DIA BLACK TRIM, 4W, 90CRI, 2700K, 320 LUMENS, DIMMABLE.

L3: LINEAR LED STRIP LIGHT: AZENCO, 96 LUMENS/FT, 2700K; DIMMABLE, 4.7W/FT.

NOTE: FIXTURES BELOW TO BE PROVIDED & INSTALLED BY SHELL CONTRACTOR. NOTIFY DESIGNER OF ANY CONFLICTS.

EM4: EXISTING EMERGENCY LIGHT PER SHELL DRAWINGS. CONFIRM IN FIELD.

NOTE: FIXTURES BELOW TO BE PROVIDED & INSTALLED BY CONTRACTOR. CONTACT **TRACI ASHCRAFT** AT SPECIFIED TO ORDER: 317.863.7024 OR tashcraft@slindiana.com

F1: RECESSED FLAT PANEL LIGHT: METALUX, 2' x 4', 60W LED, 3500K, 80 CRI, 6400LM, DIMMABLE, MODEL #: 24FP6435C

F2: SURFACE-MOUNT PANEL LIGHT: METALUX, 2' x 4', 30W LED, 3500K, 80 CRI, 3500LM, DIMMABLE, MODEL #: 24FP3135C

EM1: EXIT SIGN, BLACK HOUSING COLOR, SELF-POWERED, RED LETTER ON MIRROR BACKGROUND WITH CIRCULAR TRIM, RECESSED WALL MOUNT, SINGLE-SIDED WITH NO ARROWS.

EM2: EMERGENCY LIGHT: EVENLITE CURVE CRV-9 IN BLACK FINISH

EM3: EMERGENCY LIGHT: EVENLITE CURVE CRV-9 IN WHITE FINISH

EM4: SURFACE-MOUNTED EXIT SIGN WITH EMERGENCY LIGHT: EVENLITE, TELESIS TWLCOM, WET LOCATION, SINGLE FACE, RED LETTERS IN BLACK HOUSING

EM5: SURFACE-MOUNTED EXIT SIGN WITH EMERGENCY LIGHT: EVENLITE, TELESIS TCXCOM, RED LETTERS IN WHITE HOUSING

IPT: ILLUMINATED PANEL LIGHT: ETERNALIGHT, LUMIMESH, 50% OUTPUT, RECTANGLE, L750/9.5W, 2700K, DIMMABLE

L1: LINEAR LED TAPE LIGHT: STREAMLITE WET LOCATION, 113 LM/FT, 2700K, 24VDC, 1.5W/FT, 90+ CRI; DIMMABLE; S2 CHANNEL. CONTRACTOR TO VERIFY QUANTITY TO FILL ENTIRE LENGTH OF BAR TOP OVERHANG & TRANSFORMER REQUIREMENTS PRIOR TO ORDER; FIXTURE TO BE WET-RATED AT ALL BAR AREAS

L2: LINEAR LED TAPE LIGHT: DIODELED NEON BLAZE 4, 208 LM/FT, 2700K, 24VDC, 4.44W/FT, 80+ CRI, DIMMABLE, TOP U-CLIP, SIDE BENDING. CONTRACTOR TO VERIFY QUANTITY TO FILL ENTIRE LENGTH OF SPECIFIED CEILING BULKHEADS & TRANSFORMER REQUIREMENTS PRIOR TO ORDER.

L4: LINEAR LED TAPE LIGHT: DIODELED NEON BLAZE 2, 134 LM/FT, 2700K, 24VDC, 2.44W/FT, 80+ CRI, DIMMABLE, TOP U-CLIP, SIDE BENDING. CONTRACTOR TO VERIFY QUANTITY TO FILL ENTIRE LENGTH OF BAR TOP OVERHANG & TRANSFORMER REQUIREMENTS PRIOR TO ORDER; FIXTURE TO BE WET-RATED AT ALL BAR AREAS

L5: LINEAR LED LIGHT: DIODELED STREAMLITE 4, 400 LM/FT, 2700K, 24V , 5W/FT, 90+ CRI, DIMMABLE, 20MM ROUND CHANNEL. CONTRACTOR TO VERIFY QUANTITY TO FILL ENTIRE LENGTH OF SPECIFIED CEILING BULKHEADS & TRANSFORMER REQUIREMENTS PRIOR TO ORDER.

FIXTURE LEGEND (CONT'D)

NOTE: FIXTURES BELOW TO BE PROVIDED & INSTALLED BY CONTRACTOR. CONTACT **TRACI ASHCRAFT** AT SPECIFIED TO ORDER: 317.863.7024 OR tashcraft@slindiana.com

P9: SUSPENDED STEM MOUNTED CYLINDER LIGHT FIXTURE: LUMENWERX, AREA 3" CYLINDER, BLACK FINISH, 14W, 90CRI, 2700K, 50° BEAM SPREAD, 1400 LUMENS, DIMMABLE. REFER TO ELEVATION FOR MOUNTING HEIGHT.

R1: RECESSED CAN LIGHT FIXTURE: LUMENWERX, AREA 2 DOWNLIGHT, BLACK TRIM, 10W, 90CRI, 2700K, 50° BEAM SPREAD, 900 LUMENS, DIMMABLE

R2: RECESSED CAN LIGHT FIXTURE: LUMENWERX, AREA 4 DOWNLIGHT, BLACK TRIM, 20W, 90CRI, 2700K, 80° BEAM SPREAD, 2000 LUMENS, DIMMABLE

R3: RECESSED CAN LIGHT FIXTURE: LUMENWERX, AREA 3 DOWNLIGHT, BLACK TRIM, 10W, 90CRI, 2700K, 50° BEAM SPREAD, 1100 LUMENS, DIMMABLE

R4: RECESSED CAN LIGHT FIXTURE: LUMENWERX, AREA 3 DOWNLIGHT, WHITE TRIM, 10W, 90CRI, 2700K, 50° BEAM SPREAD, 1100 LUMENS, DIMMABLE

R5: RECESSED CAN LIGHT FIXTURE: LUMENWERX, AREA 4 DOWNLIGHT, BLACK TRIM, 20W, 90CRI, 2700K, 50° BEAM SPREAD, 2000 LUMENS, DIMMABLE

R6: RECESSED PUCK LIGHT FIXTURE: ESSENTIALLEDS, ELEGANCE PUCK FUNDAMENTALS, ROUND, BRONZE FINISH, 4.4W, 95+CRI, 2700K, 276 LUMENS, 30° LENS, DIMMABLE

R8: RECESSED CAN LIGHT FIXTURE: LUMENWERX, AREA 4 DOWNLIGHT, BLACK TRIM, 14W, 90CRI, 2700K, 50° BEAM SPREAD, 1400 LUMENS, DIMMABLE

S4: ADJUSTABLE COVE LED LIGHT: SSL LIGHTING, MINI COVELINE 2, 10W, 93 CRI, 2700K, 60° BEAM SPREAD, DIMMABLE; CONTRACTOR TO VERIFY QUANTITY TO FILL ENTIRE LENGTH OF SPECIFIED CEILING BULKHEADS & TRANSFORMER REQUIREMENTS PRIOR TO ORDER.

UL1: IN-GROUND SPOT LIGHT FIXTURE: FC OUTDOOR LIGHTING, FCI-1375R, 3.75" ROUND, 7W, 93 CRI, 2700K, 650 LUMENS, SPOT, DIMMABLE

UL2: SURFACE MOUNT UPLIGHT FIXTURE: VISTA, MODEL 5013, 2-4W, ABS GROUND STAKE, DARK BRONZE FINISH, 2.5W, 3000K, 36°FLOOD, DIMMABLE

GENERAL REFLECTED CEILING NOTES

A. PROVIDE FIRE DAMPERS AT FIRE-RATED PARTITIONS.

B. THE GENERAL CONTRACTOR AND THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL CEILING HEIGHT AND CEILING PLENUM CONDITIONS FOR CLEARANCE OF DUCTWORK, LIGHTING, AND OTHER OBSTRUCTIONS TO ASSURE THE FINISHED CEILING HEIGHT INDICATED. ANY DISCREPANCY SHALL BE BROUGHT TO THE ARCHITECT/DESIGNER'S ATTENTION IMMEDIATELY, PRIOR TO THE COMMENCEMENT OF ANY WORK.

C. CEILING IN ALL AREAS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS, AND STATE AND LOCAL BUILDING CODES.

D. ALL DIMENSIONS ARE FROM CENTERLINE TO CENTERLINE OF FIXTURES.

E. ALL GYPSUM BOARD WALLS, CEILINGS, AND BULKHEADS SHALL BE A SMOOTH LEVEL 4 FINISH AS OUTLINED IN GYPSUM ASSOCIATION GA-214.

F. REFER TO ELECTRICAL DRAWINGS FOR SWITCHING INTENT. MOUNT CENTER OF SWITCH 6'-9" FROM EDGE OF DOOR FRAME, UNLESS NOTED OTHERWISE. CONFIRM ALL NEW SWITCH LOCATIONS WITH OWNER PRIOR TO ROUGH-IN. STACK SWITCHES AS NECESSARY.

G. ALL MATERIALS EXPOSED WITHIN THE PLENUM MUST BE NONCOMBUSTIBLE OR SHALL COMPLY WITH LABELING, FLAME, AND SMOKE DEVELOPMENT RATINGS AS SPECIFIED IN THE CURRENT EDITION OF THE APPLICABLE MECHANICAL CODE.

H. MEANS OF EGRESS ILLUMINATION SHALL BE LOCATED IN ACCORDANCE WITH SECTION 1008, OBC.

I. PAINT ALL GRILLES, DIFFUSERS, ETC. TO MATCH SURFACE ON WHICH THEY OCCUR.

J. DRYWALL CEILINGS TO HAVE CONCEALED SPRINKLER HEADS. EXPOSED CEILINGS AND COOLER AREAS TO HAVE BLACK UPRIGHT SPRINKLER HEADS.

KEYED PLAN NOTES:

1. PROVIDE OVERRIDE SWITCH FOR OCCUPANCY SENSOR.
2. PROVIDE CONCEALED OUTLET FOR LINEAR LED, VERIFY CONTROL METHOD WITH OWNER/CONTRACTOR.
3. ELECTRICAL CONTROL PANEL FOR PATIO HEATERS. COORDINATE EXACT LOCATION WITH OWNER.

PHANOMEN PROVIDED LIGHTING

NOTE: FIXTURES BELOW TO BE PROVIDED BY PHANOMEN & INSTALLED BY CONTRACTOR

FAN1: EXTERIOR CEILING FAN: 70" DIA, FINISH TBD, NO LIGHT KIT, DAMP-RATED; CEILING FAN MUST BE ATTACHED TO A SECURELY ANCHORED JUNCTION BOX CAPABLE OF WITHSTANDING A LOAD OF AT LEAST 35 LBS. BOTTOM OF FIXTURE TO BE MOUNTED AT TBD.

P1: NEW PENDANT LIGHT FIXTURE: 4W, LED LAMPING, 2700K, DIMMABLE. REFER TO ELEVATIONS FOR MOUNTING HEIGHT.

P2: NEW PENDANT LIGHT FIXTURE: 4W, LED LAMPING, 2700K, DIMMABLE. REFER TO ELEVATIONS FOR MOUNTING HEIGHT.

P3: NEW PENDANT LIGHT FIXTURE: 4W, LED LAMPING, 2700K, DIMMABLE. REFER TO ELEVATIONS FOR MOUNTING HEIGHT.

P4A: NEW PENDANT LIGHT FIXTURE: 4W, LED LAMPING, 2700K, DIMMABLE. REFER TO ELEVATIONS FOR MOUNTING HEIGHT.

P4B: NEW PENDANT LIGHT FIXTURE: 4W, LED LAMPING, 2700K, DIMMABLE. REFER TO ELEVATIONS FOR MOUNTING HEIGHT.

P5: NEW PENDANT LIGHT FIXTURE: 4W, LED LAMPING, 2700K, DIMMABLE. REFER TO ELEVATIONS FOR MOUNTING HEIGHT.

P6: NEW PENDANT LIGHT FIXTURE: 4W, LED LAMPING, 2700K, DIMMABLE. REFER TO ELEVATIONS FOR MOUNTING HEIGHT.

P7: NEW PENDANT LIGHT FIXTURE: 4W, LED LAMPING, 2700K, DIMMABLE, DAMP-RATED. REFER TO ELEVATIONS FOR MOUNTING HEIGHT.

P8: NEW PENDANT LIGHT FIXTURE: 4W, LED LAMPING, 2700K, DIMMABLE, DAMP-RATED. REFER TO ELEVATIONS FOR MOUNTING HEIGHT.

S1: NEW SURFACE MOUNT LIGHT FIXTURE: 4W, LED LAMPING, 2700K, DIMMABLE.

S2: NEW SURFACE MOUNT LIGHT FIXTURE: 4W, LED LAMPING, 2700K, DIMMABLE.

S3: EXTERIOR IN-GROUND MOUNTED ADJUSTABLE LANDSCAPE SPOTLIGHT: BLACK FINISH, 8W, 90CRI, 3000K, DIMMABLE.

W1: NEW INTERIOR WALL SCONCE: 8W, 2700K LED LAMPING, DIMMABLE. REFER TO ELEVATION FOR MOUNTING HEIGHT.

W2: NOT USED

W3: NEW INTERIOR WALL SCONCE: 8W, 2700K LED LAMPING, DIMMABLE. REFER TO ELEVATION FOR MOUNTING HEIGHT.

W4: NOT USED

W5: NEW EXTERIOR WALL SCONCE: 8W, 2700K LED LAMPING, DIMMABLE. WET-RATED. REFER TO ELEVATION FOR MOUNTING HEIGHT.

W6: NOT USED

W7: NEW ILLUMINATED MIRROR, 24" WIDE. REFER TO ELEVATION FOR MOUNTING HEIGHT.

TB1: TABLE LAMP: 6W, LED LAMPING, 2700K, DIMMABLE.

NIC

FIRST FLOOR - LIGHTING PLAN
SCALE: 1/4"= 1'-0"

Rev. No.	Date	Description
-	05-28-26	REVIEW SET
-	09-23-26	REVIEW SET
1	11-19-26	CITY SUBMITTAL

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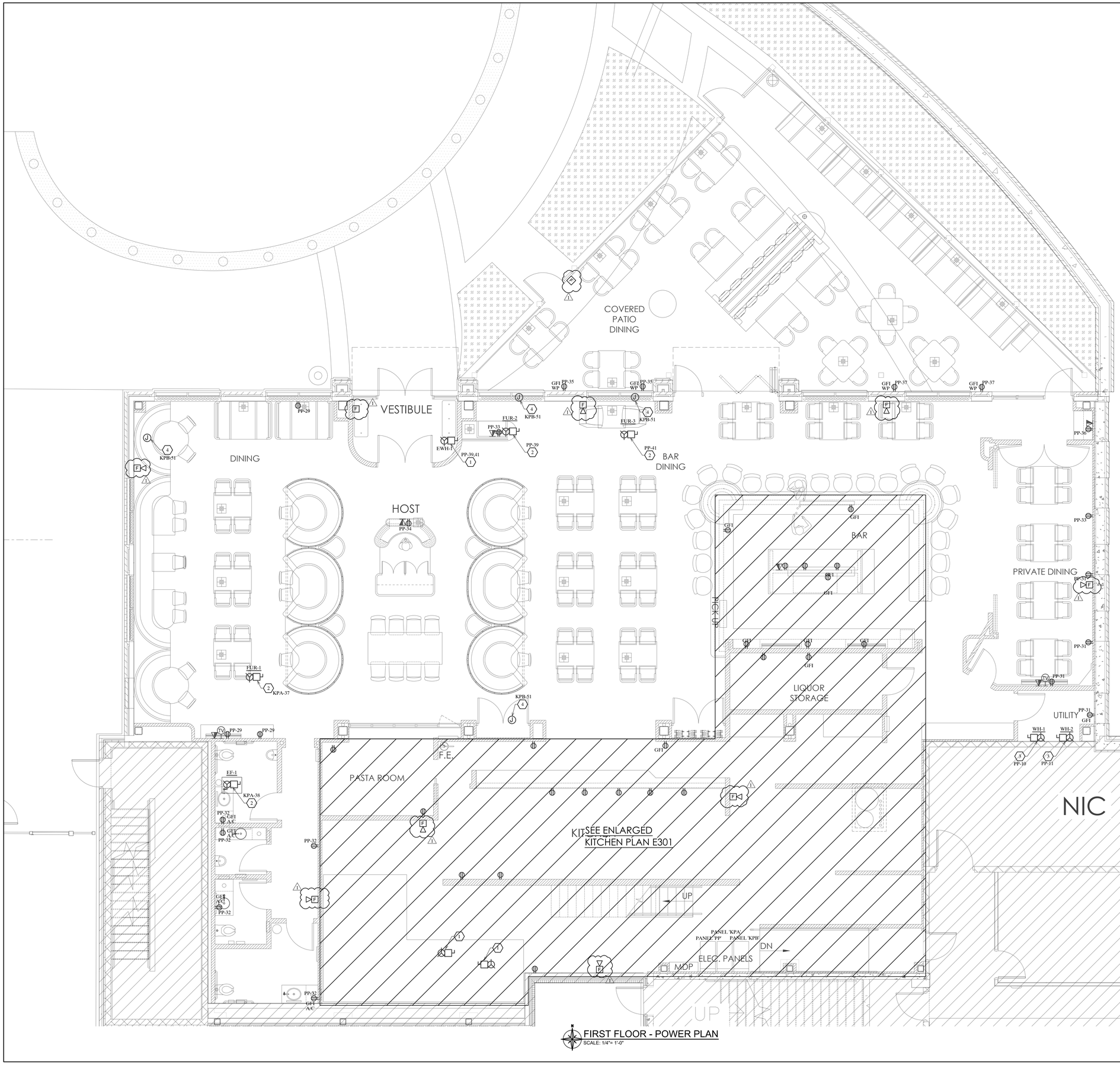
HANNAH R. SADLER
REGISTERED
No. 10505427
STATE OF INDIANA
PROFESSIONAL ENGINEER

CUSTOMER: Tre Ragazzi Restaurants
PROJECT: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: FIRST FLOOR - LIGHTING PLAN
PROJECT No.: 26010
DRAWN BY: DAE

E101
05/28/2026



FIRST FLOOR - POWER PLAN
SCALE: 1/4"= 1'-0"

GENERAL NOTES:

A. ALL WORK SHALL BE IN ACCORDANCE WITH THE BEST QUALITY STANDARDS OF THE TRADE, AND SHALL CONFORM WITH ALL FEDERAL, STATE, AND LOCAL CODES AND STANDARDS.
B. THE CONTRACTOR SHALL INCLUDE IN BID PROPOSAL ALL COSTS REQUIRED TO COMPLETELY AND PROPERLY INSTALL ALL WORK REQUIRED FOR THE PROJECT, AND SHALL EXAMINE THE SCOPE OF WORK OF OTHER TRADES PRIOR TO SUBMITTING A BID PROPOSAL.
C. CONSTRUCTION DOCUMENTS SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE, HOWEVER, SYSTEMS HAVE BEEN SHOWN DIAGRAMMATICALLY AND IN SOME CASES, ENLARGED FOR CLARITY. ANY OFFSETS, ADDITIONAL FITTINGS, AND/OR APPURTENANCES REQUIRED TO PROVIDE A COMPLETE AND COORDINATED SYSTEM SHALL BE BORNE BY THE CONTRACTOR.
D. ALL CIRCUITS OVER 100' IN LENGTH SHALL BE A MINIMUM #10 AWG CONDUCTOR.
E. WIRING SYSTEM SHALL BE CONDUIT AND WIRE. MINIMUM WIRE SIZE SHALL BE #12 AWG. USE SOLID CONDUCTOR FOR #10 AWG AND SMALLER, USE STRANDED IN LARGER SIZES.
F. ALL COVER PLATES FOR ELECTRICAL DEVICES SHALL BE OF A COLOR TO MATCH THE AREA COLOR SCHEME AS DIRECTED BY THE OWNER.
G. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY CONDUIT, WIRING, PANELS, LIGHTING, ELECTRICAL DEVICES, SWITCHES AND OTHER COMPONENTS IN COMPLETE COMPLIANCE WITH ALL CURRENT FEDERAL, STATE AND LOCAL CODES AND ORDINANCES.
H. INSTALL GROUND WIRE IN ALL FEEDERS AND BRANCH CIRCUITS.
I. MINIMUM CONDUIT SIZE SHALL BE 3/4".
J. ALL DEDICATED RECEPTACLES SHALL BE 20 AMP RATED.

(#) KEYED PLAN NOTES:

1. 20A, 208V-1Ø CONNECTION FOR EWH.
2. 20A, 120V-1Ø CONNECTION FOR FURNACE.
3. 20A, 120V-1Ø CONNECTION FOR WATER HEATER.
4. PROVIDE J-BOX FOR MOTORIZED DAMPER POWER.

Rev. No.	Date	Description
-	05-28-26	REVIEW SET
-	09-23-26	REVIEW SET
1	11-19-26	CITY SUBMITTAL

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HANNAH R. SADLER
REGISTERED
No. 10505427
STATE OF INDIANA
PROFESSIONAL ENGINEER
Hannah R Sadler

CUSTOMER: Tre Ragazzi Restaurants
PROJECT: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: FIRST FLOOR - POWER PLAN
DRAWN BY: DAE
PROJECT No. 26010

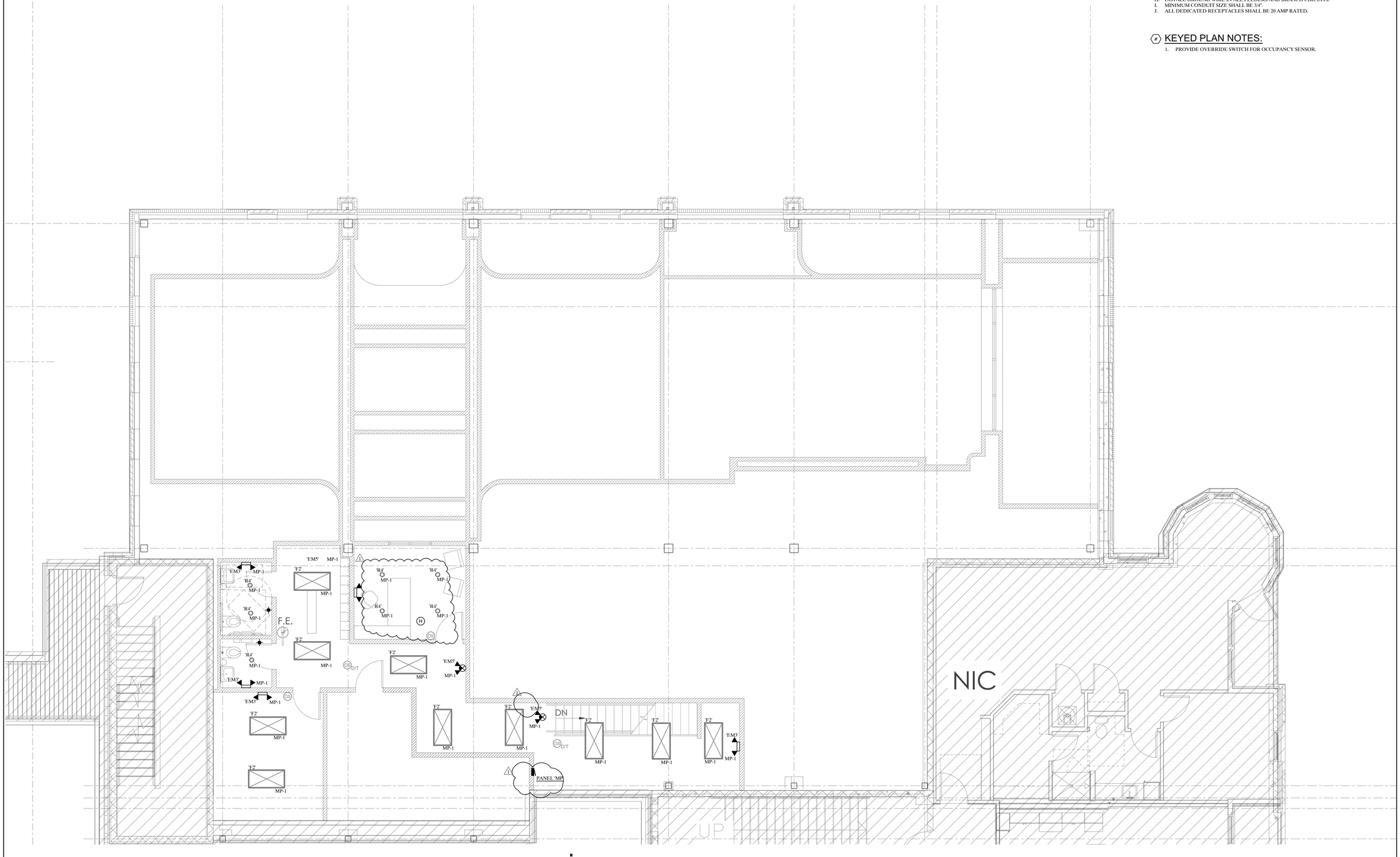
E102
05/28/2026

GENERAL NOTES:

A. ALL WORK SHALL BE IN ACCORDANCE WITH THE BEST QUALITY STANDARDS OF THE TRADE, AND SHALL CONFORM WITH ALL FEDERAL, STATE, AND LOCAL CODES AND STANDARDS.
B. THE CONTRACTOR SHALL INCLUDE IN BID PROPOSAL ALL COSTS REQUIRED TO COMPLETELY AND PROPERLY INSTALL ALL WORK REQUIRED FOR THE PROJECT, AND SHALL EXAMINE THE SCOPE OF WORK OF OTHER TRADES PRIOR TO SUBMITTING A BID PROPOSAL.
C. CONSTRUCTION DOCUMENTS SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE, HOWEVER, SYSTEMS HAVE BEEN SHOWN DIAGRAMMATICALLY AND IN SOME CASES, ENLARGED FOR CLARITY. ANY OFFSETS, ADDITIONAL FITTINGS, AND/OR APPURTENANCES REQUIRED TO PROVIDE A COMPLETE AND COORDINATED SYSTEM SHALL BE BORNE BY THE CONTRACTOR.
D. ALL CIRCUITS OVER 100' IN LENGTH SHALL BE A MINIMUM #10 AWG CONDUCTOR.
E. WIRING SYSTEM SHALL BE CONDUIT AND WIRE. MINIMUM WIRE SIZE SHALL BE #12 AWG. USE SOLID CONDUCTOR FOR #10 AWG AND SMALLER, USE STRANDED IN LARGER SIZES.
F. ALL COVER PLATES FOR ELECTRICAL DEVICES SHALL BE OF A COLOR TO MATCH THE AREA COLOR SCHEME AS DIRECTED BY THE OWNER.
G. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY CONDUIT, WIRING, PANELS, LIGHTING, ELECTRICAL DEVICES, SWITCHES AND OTHER COMPONENTS IN COMPLETE COMPLIANCE WITH ALL CURRENT FEDERAL, STATE AND LOCAL CODES AND ORDINANCES.
H. INSTALL GROUND WIRE IN ALL FEEDERS AND BRANCH CIRCUITS.
I. MINIMUM CONDUIT SIZE SHALL BE 3/4".
J. ALL DEDICATED RECEPTACLES SHALL BE 20 AMP RATED.

(#) KEYED PLAN NOTES:

1. PROVIDE OVERRIDE SWITCH FOR OCCUPANCY SENSOR.



SECOND FLOOR - LIGHTING PLAN
SCALE: 1/4"= 1'-0"

Rev. No.	Date	Description
-	05-28-26	REVIEW SET
-	09-23-26	REVIEW SET
1	11-19-26	CITY SUBMITTAL

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HANNAH R. SADLER
REGISTERED
No. 10505427
STATE OF INDIANA
PROFESSIONAL ENGINEER

CUSTOMER: **Tre Ragazzi Restaurants**
PROJECT: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: SECOND FLOOR - LIGHTING PLAN
DRAWN BY: DAE
PROJECT No. 26010

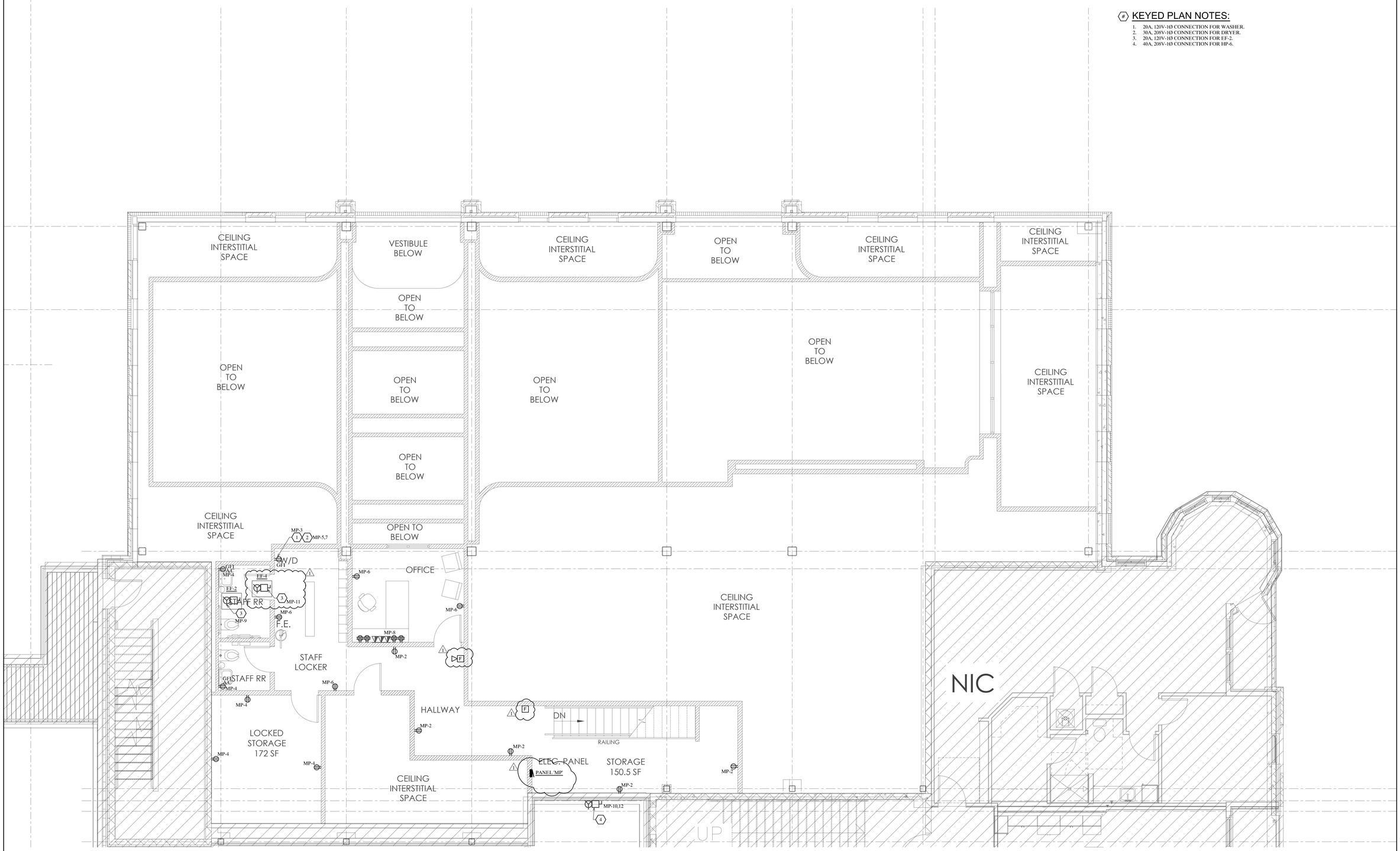
E201
05/28/2026

GENERAL NOTES:

A. ALL WORK SHALL BE IN ACCORDANCE WITH THE BEST QUALITY STANDARDS OF THE TRADE, AND SHALL CONFORM WITH ALL FEDERAL, STATE, AND LOCAL CODES AND STANDARDS.
B. THE CONTRACTOR SHALL INCLUDE IN BID PROPOSAL ALL COSTS REQUIRED TO COMPLETELY AND PROPERLY INSTALL ALL WORK REQUIRED FOR THE PROJECT, AND SHALL EXAMINE THE SCOPE OF WORK OF OTHER TRADES PRIOR TO SUBMITTING A BID PROPOSAL.
C. CONSTRUCTION DOCUMENTS SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE, HOWEVER, SYSTEMS HAVE BEEN SHOWN DIAGRAMMATICALLY AND IN SOME CASES, ENLARGED FOR CLARITY. ANY OFFSETS, ADDITIONAL FITTINGS, AND/OR APPURTENANCES REQUIRED TO PROVIDE A COMPLETE AND COORDINATED SYSTEM SHALL BE BORNE BY THE CONTRACTOR.
D. ALL CIRCUITS OVER 100' IN LENGTH SHALL BE A MINIMUM #10 AWG CONDUCTOR.
E. WIRING SYSTEM SHALL BE CONDUIT AND WIRE. MINIMUM WIRE SIZE SHALL BE #12 AWG. USE SOLID CONDUCTOR FOR #10 AWG AND SMALLER, USE STRANDED IN LARGER SIZES.
F. ALL COVER PLATES FOR ELECTRICAL DEVICES SHALL BE OF A COLOR TO MATCH THE AREA COLOR SCHEME AS DIRECTED BY THE OWNER.
G. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY CONDUIT, WIRING, PANELS, LIGHTING, ELECTRICAL DEVICES, SWITCHES AND OTHER COMPONENTS IN COMPLETE COMPLIANCE WITH ALL CURRENT FEDERAL, STATE AND LOCAL CODES AND ORDINANCES.
H. INSTALL GROUND WIRE IN ALL FEEDERS AND BRANCH CIRCUITS.
I. MINIMUM CONDUIT SIZE SHALL BE 3/4".
J. ALL DEDICATED RECEPTACLES SHALL BE 20 AMP RATED.

(#) KEYED PLAN NOTES:

1. 20A, 120V-1Ø CONNECTION FOR WASHER.
2. 30A, 208V-1Ø CONNECTION FOR DRYER.
3. 20A, 120V-1Ø CONNECTION FOR EF-2.
4. 40A, 208V-1Ø CONNECTION FOR HP-6.



SECOND FLOOR - POWER PLAN
SCALE: 1/4"= 1'-0"

Rev. No.	Date	Description
-	05-28-26	REVIEW SET
-	09-23-26	REVIEW SET
1	11-19-26	CITY SUBMITTAL

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HANNAH R. SADLER
REGISTERED
No. 10505427
STATE OF INDIANA
PROFESSIONAL ENGINEER

CUSTOMER: Tre Ragazzi Restaurants
PROJECT NAME: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: SECOND FLOOR - POWER PLAN
DRAWN BY: DAE
PROJECT No: 26010

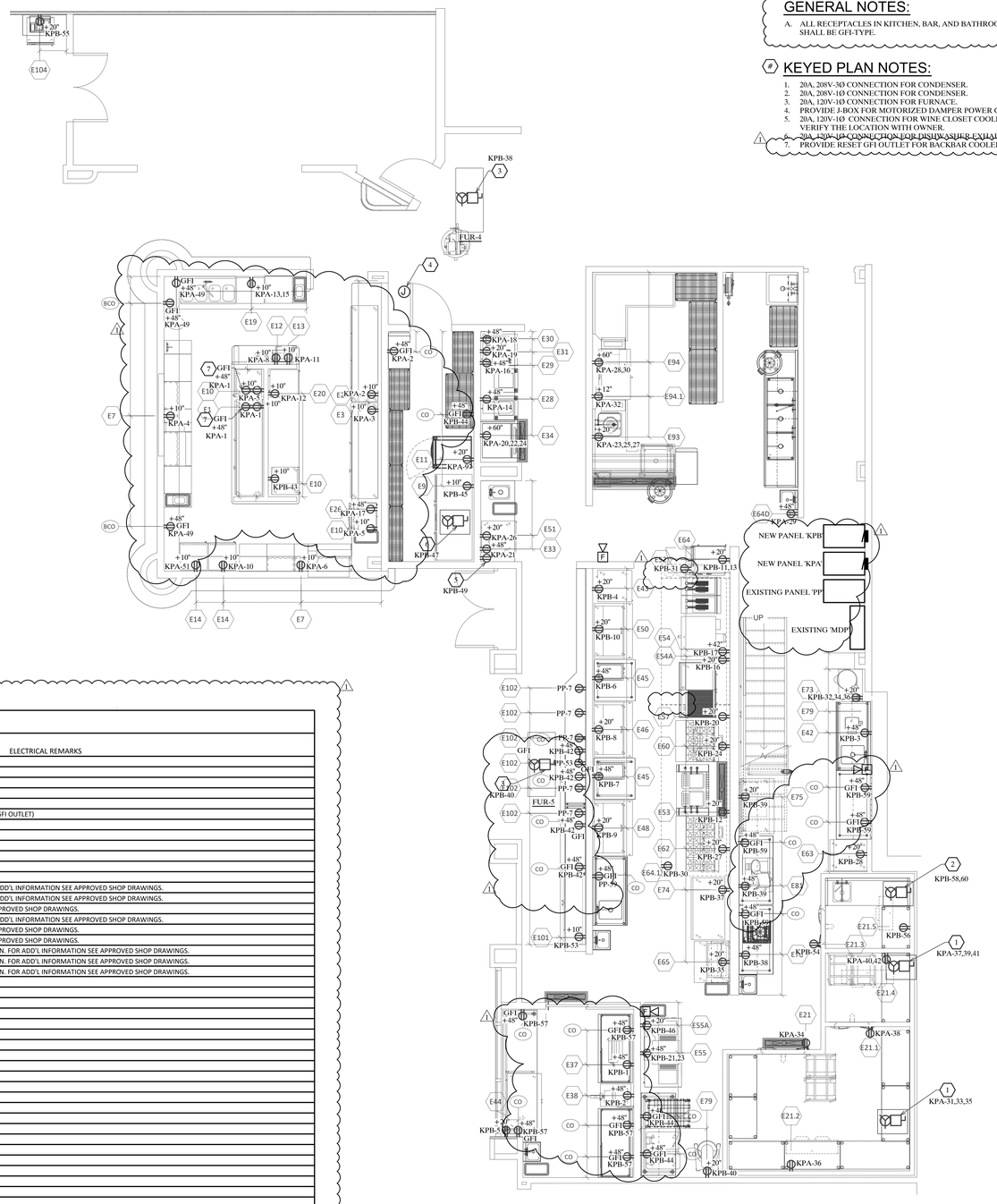
E202
05/28/2026

GENERAL NOTES:

A. ALL RECEPTACLES IN KITCHEN, BAR, AND BATHROOMS SHALL BE GFI-TYPE.

KEYED PLAN NOTES:

1. 20A, 208V-3Ø CONNECTION FOR CONDENSER.
2. 20A, 208V-1Ø CONNECTION FOR CONDENSER.
3. 20A, 120V-1Ø CONNECTION FOR FURNACE.
4. PROVIDE J-BOX FOR MOTORIZED DAMPER POWER CONNECTION.
5. 20A, 120V-1Ø CONNECTION FOR WINE CLOSET COOLING SYSTEM, VERIFY THE LOCATION WITH OWNER.
6. 20A, 120V-1Ø CONNECTION FOR DISHWASHER EXHAUST FAN.
7. PROVIDE RESET GFI OUTLET FOR BACKBAR COOLER.



KITCHEN PLAN - POWER
SCALE: 1/4"= 1'-0"

ELECTRICAL SCHEDULE

ITEM NO.	QTY.	ITEM DESCRIPTION	ITEM REMARKS	ELECT. NO.	AMPS	WATTS	HP	VOLTS	PHASE	CONN TYPE	PLUG TYPE	ELECT. HGT. (AFF)	DFA	ELECTRICAL REMARKS
1	1	BACK BAR COOLER		E1	2.7		1/3	120V	1	CORD & PLUG	NEMA 5-15P	10"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
2	1	BACK BAR CABINET, REFRIGERATED		E2	2.7		1/3	120V	1	CORD & PLUG	NEMA 5-15P	10"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
3	1	BACK BAR CABINET, REFRIGERATED		E3	2.7		1/3	120V	1	CORD & PLUG	NEMA 5-15P	10"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
7	2	BLENDER STATION		E7	5.9			120V	1	CORD & PLUG	NEMA 5-15P	10"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
9	1	WINE COOLER		E9	6.2	710	1/2	120V	1	CORD & PLUG	NEMA 5-15P	10"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
10	3	FREEZER, MUG FROSTER		E10	2.5		1/3	120V	1	CORD & PLUG	NEMA 5-15P	10"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE. (DO NOT PLUG INTO GFI OUTLET)
11	1	REFRIGERATOR, FISH/POULTRY		E11	15.0		1/4	120V	1	CORD & PLUG	NEMA 5-15P	20"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
12	1	GLASS POLISHER		E12	12.3	1,350		120V	1	CORD & PLUG	NEMA 5-15P	10"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
13	1	WATER DISPENSING SYSTEM		E13	2.0		1/8	120V	1	CORD & PLUG	NEMA 5-15P	10"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
14	2	FREEZER, MUG FROSTER		E14	2.5			120V	1	CORD & PLUG	NEMA 5-15P	10"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
19	1	GLASS WASHER, UNDER COUNTER		E19	27.9		3/4	208V	1	DIRECT		10"		E.C. TO CONNECT TO FINAL LOCATION.E.C. TO VERIFY VOLTAGE ON SITE.
20	1	UNDER COUNTER REFRIGERATOR		E20	2.0		1/6	120V	1	CORD & PLUG	NEMA 5-15R	10"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
21	1	WALK-IN COOLER 2	CUSTOM	E21	2.9			120V	1	DIRECT			X	LIGHTING AND CONTROLS . E.C. TO CONNECT TO FINAL LOCATION. FOR ADD'L INFORMATION SEE APPROVED SHOP DRAWINGS.
21.1	1	WALK-IN FREEZER	CUSTOM	E21	2.9			120V	1	DIRECT			X	LIGHTING AND CONTROLS . E.C. TO CONNECT TO FINAL LOCATION. FOR ADD'L INFORMATION SEE APPROVED SHOP DRAWINGS.
21.2	1	COOLER COIL 2	CUSTOM	E21.2	1.6			120V	1	DIRECT			X	E.C. TO CONNECT TO FINAL LOCATION. FOR ADD'L INFORMATION SEE APPROVED SHOP DRAWINGS.
21.3	1	WALK-IN PREP COOLER 1	CUSTOM	E21.3	2.9			120V	1	DIRECT			X	LIGHTING AND CONTROLS . E.C. TO CONNECT TO FINAL LOCATION. FOR ADD'L INFORMATION SEE APPROVED SHOP DRAWINGS.
21.4	1	FREEZER COIL	CUSTOM	E21.4	6.6			208/240V	1	DIRECT			X	E.C. TO CONNECT TO FINAL LOCATION. FOR ADD'L INFORMATION SEE APPROVED SHOP DRAWINGS.
21.5	1	COOLER COIL 1	CUSTOM	E21.5	0.8			120V	1	DIRECT			X	E.C. TO CONNECT TO FINAL LOCATION. FOR ADD'L INFORMATION SEE APPROVED SHOP DRAWINGS.
21.6	1	FREEZER CONDENSER	CUSTOM	E21.6	8.7		1 3/4	208/240V	1	DIRECT				CONDENSER AT REMOTE LOCATION.E.C. TO CONNECT TO FINAL LOCATION. FOR ADD'L INFORMATION SEE APPROVED SHOP DRAWINGS.
21.7	1	COOLER CONDENSER 2	CUSTOM	E21.7	6.0		1/2	208/240V	3	DIRECT				CONDENSER AT REMOTE LOCATION.E.C. TO CONNECT TO FINAL LOCATION. FOR ADD'L INFORMATION SEE APPROVED SHOP DRAWINGS.
21.8	1	PREP COOLER CONDENSER 1	CUSTOM	E21.8	10.6		1 1/2	208/240V	1	DIRECT				CONDENSER AT REMOTE LOCATION.E.C. TO CONNECT TO FINAL LOCATION. FOR ADD'L INFORMATION SEE APPROVED SHOP DRAWINGS.
26	1	ESPRESSO MACHINE	BY OTHERS	E26	15.0	1,800		120V	1	DIRECT		48"		BY OTHERS. E.C. TO VERIFY UTILITIES WITH PROVIDER.
28	1	WATER DISPENSER		E28	4.5			120V	1	CORD & PLUG	NEMA 5-15P	48"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
29	1	TEA BREWER		E29	14.4	1,730		120V	1	CORD & PLUG	NEMA 5-15P	48"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
30	1	COFFEE BREWER		E30	14.0	1,820		120/208V	1	DIRECT		48"		E.C. TO CONNECT TO FINAL LOCATION.
31	1	UNDER COUNTER REFRIGERATOR		E31	2.0		1/6	120V	1	CORD & PLUG	NEMA 5-15P	20"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
33	1	ICE CRUSHER/CHOPPER , COUNTERTOP		E33	1.3			120V	1	DIRECT		48"		E.C. TO CONNECT TO FINAL LOCATION.
34	1	ICE MAKER, CUBE STYLE		E34	7.2			208/240V	3	DIRECT		60"		E.C. TO CONNECT TO FINAL LOCATION.
37	1	DOUGH SHEETER		E37	5.0			120V	1	CORD & PLUG	NEMA 5-15P	48"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
38	1	PASTA EXTRUDER		E38	8.0			120V	1	CORD & PLUG	NEMA 5-15P	48"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
42	1	FOOD PROCESSOR, COUNTERTOP		E42	12.0			120V	1	CORD & PLUG	NEMA 5-15P	48"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
43	1	REACH IN UNDER COUNTER FREEZER		E43	2.3		1/4	120V	1	CORD & PLUG	NEMA 5-15R	20"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
44	1	GLASS DOOR REFRIGERATOR		E44	3.2	370	1/5	120V	1	CORD & PLUG	NEMA 5-15P	20"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
45	2	COUNTERTOP HEATED WELLS		E45	10.0	1,200	1/4	120V	1	CORD & PLUG	NEMA 5-15P	48"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
46	1	MEGA TOP SANDWICH/SALAD PREP REFRIGERATOR		E46	2.9		1/5	120V	1	CORD & PLUG	NEMA 5-15P	20"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
48	1	MEGA TOP SANDWICH/SALAD PREP REFRIGERATOR		E48	2.9		1/5	120V	1	CORD & PLUG	NEMA 5-15P	20"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
50	1	MEGA TOP SANDWICH/SALAD PREP REFRIGERATOR		E50	2.9		1/5	120V	1	CORD & PLUG	NEMA 5-15P	20"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
51	1	REACH IN UNDER COUNTER REFRIGERATOR		E51	2.3		1/4	120V	1	CORD & PLUG	NEMA 5-15P	20"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
52	1	HEATED HOLDING /PROOFING CABINET		E52	16.7	2,000		120V	1	CORD & PLUG	NEMA 5-20P	20"		E.C. TO PROVIDE DEDICATED SPECIAL RECEPTACLE
53	1	PASTA COOKER, GAS		E53	0.5			120V	1	CORD & PLUG	NEMA 5-15P	20"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
54	1	CONVECTION OVEN - UPPER OVEN		E54	7.9		1/2	120V	1	CORD & PLUG	NEMA 5-15P	42"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
54A	1	CONVECTION OVEN - LOWER OVEN		E54A	15.0		1/4	120V	1	CORD & PLUG	NEMA 5-15P	20"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
55	1	COUNTER TOP , CONVEYOR OVEN		E55	27.0	6,000		208/240V	1	CORD & PLUG	NEMA 6-50P	48"		E.C. TO PROVIDE DEDICATED SPECIAL RECEPTACLE
55A	1	REFRIGERATOR, WORK TOP		E55A	15.0		1/4	120V	1	CORD & PLUG	NEMA 5-15P	20"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
57	1	CHEF BASE		E57	2.4		1/5	120V	1	CORD & PLUG	NEMA 5-15R	20"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
60	1	HD RANGE 36		E60	5.9	710		120V	1	CORD & PLUG	NEMA 5-15P	20"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
62	1	48" HD RANGE - CONVECTION		E62	5.9	710	1/2	120V	1	CORD & PLUG	NEMA 5-15P	20"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
63	1	REFRIGERATOR, FISH/POULTRY		E63	5.5		1/4	120V	1	CORD & PLUG	NEMA 5-15P	20"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
64	1	EXHAUST HOOD		E64	15.0			120V	1	DIRECT			X	LIGHTING, SENSORS AND CONTROLS . E.C. TO CONNECT TO FINAL LOCATION. FOR ADD'L INFORMATION SEE APPROVED SHOP DRAWINGS.
64.1	1	EXHAUST HOOD		E64.1	15.0			120V	1	DIRECT			X	LIGHTING, SENSORS AND CONTROLS . E.C. TO CONNECT TO FINAL LOCATION. FOR ADD'L INFORMATION SEE APPROVED SHOP DRAWINGS.
64A	1	FIRE SUPPRESSION SYSTEM		E64A	10.0			120V	1	DIRECT			X	E.C. TO CONNECT TO FINAL LOCATION. E.C. TO PROVIDE ELECTRICAL SERVICE TO CONTROLS.FOR ADD'L INFORMATION SEE APPROVED SHOP DRAWINGS.
64B	1	EXHAUST FAN		E64B	15.8		5	208V	3	DIRECT				REMOTE LOCATION. E.C. TO CONNECT TO FINAL LOCATION.FOR ADD'L INFORMATION SEE APPROVED SHOP DRAWINGS.
64C	1	DOAS		E64C	142.2			208V	3	DIRECT				REMOTE LOCATION. E.C. TO CONNECT TO FINAL LOCATION.FOR ADD'L INFORMATION SEE APPROVED SHOP DRAWINGS.
64D	1	FIRE SUPRESSION SWITCH		EK64D	15.0		1/4	120V	1	DIRECT		48"		E.C. PROVIDE FIRE ACTIVATION STATION. SEE MANUAL ACTIVATION DETAIL, SHEET #E1-K2.0 . E.C. TO CONFIRM LOCATION OF ACTIVATION BUTTON WITH ARCHITECT.
65	1	SANDWICH/SALAD UNIT		E65	4.5	520	1/4	120V	1	CORD & PLUG	NEMA 5-15P	20"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
73	1	KETTLE ELECTRIC , TABLE TYPE WITH FAUCET		E73	27.2	9,800		208/240V	3	DIRECT		20"		E.C. TO CONNECT TO FINAL LOCATION.
74	1	REACH-IN REFRIGERATOR		E74	5.4		1/2	120V	1	CORD & PLUG	NEMA 5-15P	20"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
75	1	REFRIGERATED WORKTOP		E75	3.0		1/5	120V	1	CORD & PLUG	NEMA 5-15P	20"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
76	1	FOOD PACKING MACHINE		E76	13.0		1	120V	1	CORD & PLUG	NEMA 5-15P	48"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
79	1	30 QUART MIXER		E79	12.0		1.5	208/240V	1	CORD & PLUG	NEMA 6-20P	20"		E.C. TO PROVIDE DEDICATED SPECIAL RECEPTACLE
81	1	FOOD SLICER, ELECTRIC		E81	2.5		1/2	120V	1	CORD & PLUG	NEMA 5-15P	48"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
93	1	DISPOSER		E93	17.4		2	120/208V	3	DIRECT		20"		E.C. TO CONNECT TO FINAL LOCATION. E.C. TO PROVIDE ELECTRICAL SERVICE TO CONTROLS.
94	1	WAREWASHER , CONVEYOR		E94	83.9	15,000	3.0	208V	1	DIRECT		60"		E.C. TO CONNECT TO FINAL LOCATION.E.C. TO VERIFY VOLTAGE ON SITE.
94.1	1	BOOSTER HEATER		E94.1	15.0		1/4	120V	1	DIRECT		12"		E.C. TO CONNECT TO FINAL LOCATION.E.C. TO VERIFY VOLTAGE ON SITE.
95A	1	EXHAUST FAN, CONDENSATE		E95A	6.3			120V	1	DIRECT				REMOTE LOCATION. E.C. TO CONNECT TO FINAL LOCATION.FOR ADD'L INFORMATION SEE APPROVED SHOP DRAWINGS.
101	1	BACK BAR CABINET, REFRIGERATED		E101	3.5		1/6	120V	1	CORD & PLUG	NEMA 5-15P	10"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
102	6	DECORATIVE LAMPS		E102	2.1	250		120V	1	DIRECT			X	E.C. TO CONNECT TO FINAL LOCATION.
104	1	UNDERCOUNTER REFRIGERATOR		E104	1.0		1/16	120V	1	CORD & PLUG	NEMA 5-15P	20"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
CO	18	CONVENIENCE OUTLET		CO	10.0			120V	1	CORD & PLUG	NEMA 5-15P	48"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.
COB	3	CONVEINIENCE OUTLET - BAR		COB	10.0			0V	1	CORD & PLUG	NEMA 5-15P	10"		E.C. TO PROVIDE DEDICATED DUPLEX RECEPTACLE.

Rev. No.	Date	Description
-	05-28-26	REVIEW SET
-	09-23-26	REVIEW SET
1	11-19-26	CITY SUBMITTAL

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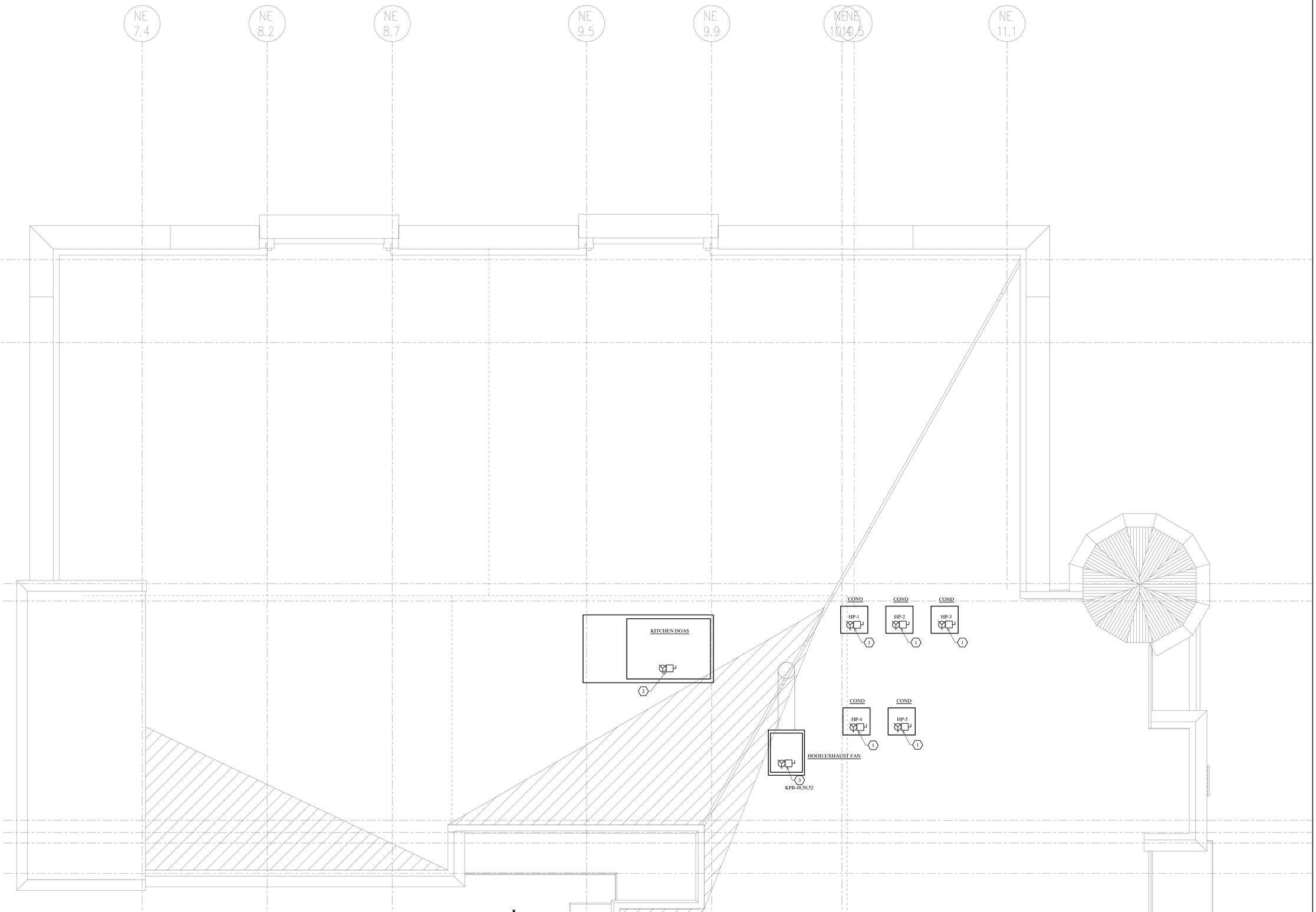
No. 10505427
STATE OF INDIANA
PROFESSIONAL ENGINEER

CUSTOMER: Tre Ragazzi Restaurants
PROJECT NAME: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: KITCHEN POWER PLAN AND KITCHEN EQUIPMENT
DRAWN BY: DAE
PROJECT No. 26010

E301
05/28/2026

KEYED PLAN NOTES:

1. 20A, 208V-1Ø CONNECTION FOR HEAT PUMP, FEED FROM MDP.
2. 150A, 208V-3Ø CONNECTION FOR DOAS, FEED FROM MDP.
3. 20A, 208V-3Ø CONNECTION FOR HOOD EXHAUST FAN.



ROOF - POWER PLAN
SCALE: 1/4"= 1'-0"

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PROJECT NAME: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: ROOF - POWER PLAN
DRAWN BY: DAE
PROJECT No. 26010

E401
05/28/2026

OVERALL GENERAL NOTES

1. ALL PIPING AND DUCTS IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN FURRED CHASE OR SUSPENDED CEILING.
2. THE FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF FACE SHOWN OR INDICATED. DUCT SIZES ARE NET INSIDE DIMENSIONS.
3. ACCESS PANELS IN SUSPENDED CEILING ARE REQUIRED FOR ALL VALVES, TRAPS, DAMPERS, CLEANOUTS, CONTROLS, ETC., AND SHALL BE FURNISHED AND INSTALLED BY ARCHITECTURAL SPECIFICATIONS.
4. TOTAL STATIC PRESSURE NOTED IN SCHEDULES INCLUDES DUCT SYSTEM, TERMINAL UNITS, FILTERS, COILS, ETC.
5. FOR TYPICAL DUCTWORK, AIR STREAM, STEAM, WATER & PIPING CONNECTIONS TO EQUIPMENT, SEE STANDARD DETAILS IN THESE CONSTRUCTION DOCUMENTS.
6. WATER PIPE CONNECTIONS TO AIR HEATING AND COOLING COILS SHALL BE MADE SO THERE WILL BE COUNTER FLOW BETWEEN WATER AND AIR.

GENERAL MECHANICAL NOTES

A. ALL WORK SHALL BE IN ACCORDANCE WITH THE BEST QUALITY STANDARDS OF THE TRADE AND SHALL CONFORM WITH ALL FEDERAL, STATE, AND LOCAL CODES AND STANDARDS.

B. CONTRACT DOCUMENTS CONSIST OF BOTH THE PROJECT MANUAL AND DRAWINGS AND BOTH ARE INTENDED TO BE COMPLEMENTARY - ANYTHING APPEARING ON EITHER MUST BE EXECUTED THE SAME AS IF SHOWN ON BOTH.

C. THE CONTRACTOR SHALL INCLUDE IN BID PROPOSAL ALL COSTS REQUIRED TO COMPLETELY AND PROPERLY INSTALL ALL WORK REQUIRED FOR THE PROJECT AND SHALL EXAMINE THE SCOPE OF WORK OF OTHER TRADES PRIOR TO SUBMITTING A BID PROPOSAL.

D. CONSTRUCTION DOCUMENTS SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE; HOWEVER, SYSTEMS HAVE BEEN SHOWN DIAGRAMMATICALLY AND IN SOME CASES AND ENLARGED FOR CLARITY. ANY OFFSETS, ADDITIONAL FITTINGS, AND/OR APPURTENANCES REQUIRED TO PROVIDE A COMPLETE AND COORDINATED SYSTEM SHALL BE BORNE BY THE CONTRACTOR.

E. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF CEILING MOUNTED MATERIALS INCLUDING ALL DIFFUSERS, GRILLES, AND REGISTERS.

F. THE MECHANICAL CONTRACTOR SHALL COORDINATE DUCTWORK INSTALLATIONS WITH OTHER TRADES. LIGHTING AND DUCTWORK DESIGNS INDICATED ON CONTRACT DRAWINGS WERE COORDINATED, HOWEVER CONFLICTS WITH DUCTWORK AND LIGHTS MAY ARISE DUE TO GRID INSTALLATION. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DUCTWORK MODIFICATIONS AND OFFSETS REQUIRED TO ACCOMMODATE FIELD CONDITIONS.

G. ALL EQUIPMENT INCLUDING BUT NOT LIMITED TO DUCTWORK, PIPING, UNIT HEATERS, ETC. SHALL BE HUNG FROM THE TOP CHORD OF THE STRUCTURAL STEEL.

H. ALL EXTERIOR PENETRATIONS SHALL BE WEATHER AND WATER TIGHT.

I. REFRIGERANT PIPE SIZING AND CONFIGURATION BY UNIT MANUFACTURER.

J. CONTRACTORS SHALL REVIEW STRUCTURAL PLANS AND ACTUAL LAYOUT OF BEAMS, JOISTS, ETC. TO AVOID CONFLICT BETWEEN DUCT. ADJUST DUCT ROUTING TO ACCEPT STRUCTURAL CONDITIONS.

K. ALL EXHAUST DISCHARGES AND GAS FLUES WHERE INDICATED SHALL BE LOCATED A MINIMUM OF 10'-0" AWAY FROM OUTSIDE AND COMBUSTION AIR INTAKES UNLESS LOCAL AND STATE CODES MANDATE ADDITIONAL DISTANCE.

L. CONTRACTOR SHALL VERIFY ELECTRICAL CHARACTERISTICS OF ALL MECHANICAL EQUIPMENT WITH THE ELECTRICAL CONTRACTOR PRIOR TO PLACING EQUIPMENT ON ORDER.

M. WHERE WALL TYPE LOUVERS ARE INDICATED, MECHANICAL CONTRACTOR SHALL SEAL WATER-TIGHT ALL AROUND LOUVER WITH SILICON CAULKING. CONTRACTOR SHALL COORDINATE PAINTING REQUIREMENTS FOR LOUVERS WITH GENERAL CONTRACTOR PRIOR TO SUBMITTING BID.

N. PLANS INDICATE GENERAL LOCATION AND ARRANGEMENT OF MECHANICAL SYSTEMS. INSTALL AS INDICATED UNLESS DEVIATIONS ARE APPROVED.

O. PROVIDE SUBMITTALS FOR EACH TYPE OF EQUIPMENT, MATERIAL AND ACCESSORY.

P. INSTALL ALL MECHANICAL SYSTEMS PER SMACNA.

Q. INSTALL DUCT WORK WITH FEWEST AMOUNT OF JOINTS.

R. INSTALL DUCT WORK PARALLEL AND PERPENDICULAR TO BUILDING LINES.

S. DUCT WORK SHALL HAVE A MINIMUM OF 1" CLEARANCE.

T. PROTECT ALL MECHANICAL EQUIPMENT, SYSTEMS, MATERIALS AND ACCESSORIES FROM DAMAGE DURING STORAGE, INSTALLATION AND CONSTRUCTION.

U. EXAMINE AND REVIEW CONDITIONS FOR COMPLIANCE BEFORE PROCEEDING WITH CONSTRUCTION AND INSTALLATION.

V. DUCTS PENETRATING FIRE RATED ASSEMBLIES SHALL HAVE A FIRE DAMPER.

W. BALANCE DAMPERS SHALL BE LOCATED AT BRANCH CONNECTION TO THE MAIN.

MECHANICAL FIELD VERIFY:

INFORMATION CONCERNING THE LOCATION(S) AND SIZES OF EXISTING DUCTWORK AND DIFFUSERS WAS OBTAINED FROM EXISTING DRAWINGS AND CURSORY FIELD OBSERVATION. HOWEVER, ACTUAL "AS-BUILT" DRAWINGS WERE NOT AVAILABLE, CERTAIN INFORMATION CONCERNING THE LOCATION OF THE EXISTING CONDITIONS HAS BEEN ASSUMED IN THIS DRAWING. THE EXACT LOCATION(S) AND DIRECTION OF FLOW OF ALL EXISTING EQUIPMENT, ETC., IS UNKNOWN. REASONABLE EFFORT HAS BEEN MADE TO ACCURATELY DEPICT THE EXISTING CONDITIONS, HOWEVER, ALL EXISTING WORK MUST BE VERIFIED IN THE FIELD TO DETERMINE THE EXACT LOCATIONS, DIRECTIONS OF DUCT RUNS, SIZE, ETC., PRIOR TO STARTING CONSTRUCTION. ANY CONFLICT BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER FOR VERIFICATION AND/OR CORRECTION.

PIPING FIELD VERIFY:

INFORMATION CONCERNING THE LOCATION(S) AND SIZES OF EXISTING EQUIPMENT AND PIPING WAS OBTAINED FROM EXISTING DRAWINGS AND CURSORY FIELD OBSERVATION. HOWEVER, ACTUAL "AS-BUILT" DRAWINGS WERE NOT AVAILABLE, CERTAIN INFORMATION CONCERNING THE LOCATION OF THE EXISTING CONDITIONS HAS BEEN ASSUMED IN THIS DRAWING. THE EXACT LOCATION(S) AND DIRECTION OF FLOW OF ALL EXISTING EQUIPMENT, ETC., IS UNKNOWN. REASONABLE EFFORT HAS BEEN MADE TO ACCURATELY DEPICT THE EXISTING CONDITIONS, HOWEVER, ALL EXISTING WORK MUST BE VERIFIED IN THE FIELD TO DETERMINE THE EXACT LOCATIONS, DIRECTIONS OF PIPE RUNS, SIZE, ETC., PRIOR TO STARTING CONSTRUCTION. ANY CONFLICT BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER FOR VERIFICATION AND/OR CORRECTION.

ABBREVIATION LEGEND

AC	AIR CONDITIONING UNIT
ABV	ABOVE
AFMS	AIR FLOW MEASURING STATION
AHU	AIR HANDLING UNIT
BLDG	BUILDING
CH	CHILLED WATER SUPPLY (PIPING)
CHR	CHILLED WATER RETURN (PIPING)
CW	COLD WATER
CP	CONDENSATE PUMP
COND	CONDENSATE
CONN	CONNECT
CR	CONDENSATE RETURN
CC	COOLING COIL
CFM	CUBIC FEET PER MINUTE
DCP	DISTRIBUTED CONTROL PANEL
Db	DRY BULB TEMPERATURE, (DEGREES)
dB	DECIBELS
DN	DOWN
DPT	DIFFERENTIAL PRESSURE TRANSMITTER
DWG	DRAWINGS
ECC	ENGINEERING CONTROL CENTER
EF	EXHAUST FAN
ELEC.	ELECTRICAL
EXIST..	EXISTING
EP	ELECTRICAL/PNEUMATIC
EXH	EXHAUST AIR
FIN.	FINISHED FLOOR
FD	FLOOR DRAIN
FF	FINAL FILTER
FLR.	FLOOR
FLEX	FLEXIBLE
FLEX CONN.	FLEXIBLE CONNECTOR
FLNGD	FLANGED (SEE DWG'S)
FPM	FEET PER MINUTE
FSD	FIRE SMOKE DAMPER
FT	FEET
F&T	FLOAT AND THERMOSTATIC
GA.	GAGE
G.P.M.	GALLONS PER MINUTE
HC	HEATING COIL
H.O.A.	HAND-OFF-AUTO
HORIZ.	HORIZONTAL
HP	HORSEPOWER
HPS	HIGH PRESSURE STEAM
HPR	HIGH PRESSURE RETURN
HW	HOT WATER SUPPLY
HWR	HOT WATER RETURN
HWP	HOT WATER PUMP
IN	INCHES
KW	KILOWATT
KWH	KILOWATT HOUR
LPR	LOW PRESSURE STEAM RETURN
LPS	LOW PRESSURE STEAM SUPPLY
LTCP	LOCAL TEMPERATURE CONTROL PANEL
LBS/HOUR	POUNDS PER HOUR
MVD	MANUAL VOLUME DAMPER
MAX.	MAXIMUM
MECH	MECHANICAL
MIN.	MINIMUM
MFG	MANUFACTURER
MTD	MOUNTED
N.C.	NORMALLY CLOSED
NC	NOISE CRITERIA
NO	NUMBER
N.O.	NORMALLY OPEN
NPR	NEGATIVE PRESSURE RELIEF VENT
OA	OUTSIDE AIR
O.C.	ON CENTERS
O.L.	OVER LOAD
PD	PRESSURE DROP (FEETWATER)
PHC	PREHEAT COIL
PL	PLACES
PSI	POUNDS PER SQUARE INCH
PRV	PRESSURE REDUCING VALVE
RA	RETURN AIR
REQ'D	REQUIRED
RET	RETURN
SF	SUPPLY FAN
RM	ROOM
RV	RELIEF VENT
SA	SUPPLY AIR
SHT	SHEET
SP	STATIC PRESSURE (INCHES OF WATER)
SPEC.	SPECIFICATION
SPS	STATIC PRESSURE SENSOR
SPT	STATIC PRESSURE TRANSMITTER
SQ/FT	SQUARE FEET
SYS	SYSTEM
TSTAT	THERMOSTAT
TEMP	TEMPERATURE
TYP	TYPICAL
VSMC	VARIABLE SPEED MOTOR CONTROLLER
VTR	VENT THROUGH ROOF
VAV	VARIABLE AIR VOLUME
Wb	WET BULB
WC	WATER COLUMN
WF	WATER FILTER
WFMD	WATER FLOW MEASURING DEVICE

CONTROLS

- ROOM CONTROL: THERMOSTAT, HUMIDISTAT
- REMOTE BULB THERMOSTAT
- DUCT OR PIPE THERMOSTAT (NOTE: PROVIDE 12" MIN LENGTH IN DUCT WHEN SPACE PERMITS)
- DUCT OR PIPE TEMP. SENSOR SEE NOTE ABOVE.
- DUCT HUMIDITY SENSOR
- DUCT STATIC PRESSURE SENSOR
- SMOKE DETECTOR (SEE ELECTRICAL DWGS)
- HOLDING COIL IN MOTOR STARTER
- CONTACT, NORMALLY OPEN (N.O.)
- CONTACT, NORMALLY CLOSED (N.C.)
- SWITCH
- SIGNAL FROM ECC OR DCP
- SIGNAL TO ECC OR DCP
- SIGNAL TO FIRE ALARM SYSTEM
- PRESSURE TRANSMITTER

REFERENCE SYMBOLS AND INFORMATION

GENERAL NOTES (ON THIS SHEET): GENERAL INFORMATION OR REQUIREMENTS WHICH PERTAIN TO ALL SHEETS OF THE DISCIPLINE IT IS LOCATED ON.

GENERAL NOTES: GENERAL INFORMATION OR REQUIREMENTS WHICH PERTAIN ONLY TO THE SHEET IT APPEARS ON.

KEYED DEMOLITION NOTES/KEYED PLAN NOTES: KEYED NOTES WHICH ARE SPECIFIC ONLY TO THE SHEET IT APPEARS ON. KEYED NOTES ARE NUMBERED TO CORRESPOND WITH THE NUMBER INDICATED BY THE APPROPRIATE PLAN NOTE SYMBOL.

- # — REVISION NUMBER
- # — KEYED DEMOLITION NOTE
- # — KEYED PLAN NOTE
- CONNECTION POINT OF NEW TO EXISTING
- DEMOLITION OF EXISTING TO THIS POINT

DETAIL REFERENCE: INDICATES LOCATION OF DETAIL USED FOR CLARIFICATION OF INSTALLATION.

- 01 / M001 — DETAIL NUMBER / SHEET WHERE DETAIL IS LOCATED

SECTION REFERENCE: INDICATES LOCATION OF SECTION OR ELEVATION THROUGH AREA INDICATED.

- 01 / M001 — SECTION/ELEVATION NUMBER / SHEET WHERE SECTION/ELEVATION IS LOCATED

PHASING LINETYPES: INDICATES THE PHASE IN WHICH AN ELEMENT IS CREATED AND/OR DEMOLISHED.

- DEMOLITION
- EXISTING TO REMAIN
- BY LAYER — NEW WORK
- GENERAL CONSTRUCTION TO REMAIN

DUCTWORK LEGEND

- UP / DOWN — SUPPLY AIR DUCT / OUTSIDE AIR DUCT
- UP / DOWN — EXHAUST AIR DUCT
- UP / DOWN — RETURN AIR DUCT
- FLAT OVAL DUCT UP
- FLAT OVAL DUCT DOWN
- 6" — VANE TURN ELBOW & AIR SPLIT TYPE DUCT TAKE-OFF
- SUPPLY TOP REGISTER OR GRILLE (WALL TYPE)
- EXHAUST CEILING REGISTER OR GRILLE
- EXHAUST OR RETURN TOP REGISTER OR GRILLE (WALL TYPE)
- CEILING DIFFUSER
- FLEXIBLE DUCT
- FIRE/SMOKE DAMPER
- FIRE DAMPER
- INCLINED RISE, IN DIRECTION OF AIR FLOW
- INCLINED DROP, IN DIRECTION OF AIR FLOW
- FC — FLEXIBLE CONNECTION
- R — INCLINED RISE IN RESPECT TO DIRECTION OF AIR FLOW
- DN — INCLINED DROP IN RESPECT TO DIRECTION OF AIR FLOW
- TRANSITION. 4:1 RATIO FOR LOW PRESSURE, 7:1 RATIO FOR HIGH PRESSURE.
- ELBOW TURNED UP WITH TURNING VANES
- ELBOW TURNED DOWN WITH TURNING VANES
- SQUARE TYPE ELBOW WITH DOUBLE THICKNESS VANES. VANES REQUIRED IN ALL DUCTWORK ELBOW UNLESS NOTED OTHERWISE.
- VANED ELBOW (PROVIDE ALL SQUARE OR RECTANGULAR ELBOWS WITH VANES EVEN IF SYMBOL IS MISSING)
- VANED ELBOW (SHORT RADIUS)
- STANDARD RADIUS ELBOW
- DOUBLE WALL SOUND ATTENUATING DUCT
- 10"x 8" — NEW DUCT-WIDTH X DEPTH
- MPS / 10"x 8" — NEGATIVE PRESSURE RELIEF VENT
- SPIN-N-TAP WITH MVD DAMPER
- LOUVER
- MANUAL VOLUME DAMPER
- MOTORIZED DAMPER (OPPOSED BLADE) W/INTERLOCK
- MOTORIZED DAMPER (PARALLEL BLADE) W/INTERLOCK
- 12"x10" — RECTANGULAR DUCT (WXH)
- M.V.D. / 6"Ø — ROUND DUCT TAKE OFF WITH SPIN-IN EXTRACTOR
- MANUAL VOLUME DAMPER
- FLEXIBLE DUCT (MAXIMUM 5'-0" IN LENGTH)
- LD-100S — LINEAR DIFFUSER WITH CFM INDICATED
- 100S — CEILING SUPPLY DIFFUSER W/ CFM INDICATED (FOUR WAY THROW)

FITTINGS, VALVES, AND PIPING

CAP	AUTOMATIC AIR VENT
PIPING BREAKLINE	MANUAL AIR VENT
DIRECTION OF FLOW	ALIGNMENT GUIDE
PIPE TURNED UP	PIPE ANCHOR
PIPE TURNED DOWN	EXPANSION JOINT
CONCENTRIC REDUCER	EXPANSION LOOP
ECCENTRIC REDUCER	FLEXIBLE CONNECTOR
TEE	FLOW SWITCH
TEE, OUTLET UP	PITCH OF PIPE, RISE (R) OR DROP (D)
TEE, OUTLET DOWN	PRESSURE GAUGE
UNION, SCREWED	PRESSURE SWITCH
UNION, ELECTRIC	P/T PLUG SITE
BALL VALVE	PUMP
BUTTERFLY VALVE	STRAINER
CHECK VALVE	STRAINER W/ BLOW DOWN
GATE VALVE	THERMOMETER
GATE VALVE WITH 3/4" HOSE ADAPTER	HOSE BIBB OR WALL HYDRANT
GLOBE VALVE	BACKFLOW PREVENTER
NEEDLE VALVE	METER (WATER OR GAS)
PLUG VALVE	SIGHT GLASS
PRESSURE REDUCING VALVE	FLOOR DRAIN
RELIEF OR SAFETY VALVE	ROOF DRAIN
ANGLE VALVE	OVERFLOW DRAIN
ANGLE GLOBE VALVE	FLOOR OR TO GRADE CLEANOUT
SOLENOID VALVE	CLEANOUT PLUG ABOVE FLOOR
TWO WAY CONTROL VALVE	WALL CLEANOUT
THREE WAY CONTROL VALVE	YARD CLEANOUT
FLOW CONTROL VALVE	FLOAT AND THERMOSTATIC STEAM TRAP
DIFFERENTIAL PRESSURE TRANSMITTER	INVERTED BUCKET TRAP
AIRFLOW MEASURING STATION	TEMPERATURE SENSOR

PIPING DESIGNATIONS

HIGH PRESSURE STEAM	HPS
MEDIUM PRESSURE STEAM	MPS
LOW PRESSURE STEAM	LPS
HIGH PRESSURE CONDENSATE	HPC
MEDIUM PRESSURE CONDENSATE	MPC
LOW PRESSURE CONDENSATE	LPC
HEATING WATER SUPPLY	HWS
HEATING WATER RETURN	HWR
CHILLED WATER SUPPLY	CWS
CHILLED WATER RETURN	CWR
CHILLED WATER SUPPLY (ALT)	CHWS
CHILLED WATER RETURN (ALT)	CHWR
DRAIN	D
CONDENSER SUPPLY	CS
CONDENSER RETURN	CR
CONDENSATE PUMP DISCHARGE	CPD
REFRIGERANT LIQUID	RL
REFRIGERANT SUCTION	RS
REFRIGERANT DISCHARGE	RD
HEAT PUMP LOOP SUPPLY	LS
HEAT PUMP LOOP RETURN	LR

DRAWING INDEX

DRAWING No.	DRAWING TITLE
M001	MECHANICAL GENERAL INFORMATION
M002	MECHANICAL DETAILS AND SPECIFICATIONS
M003	MECHANICAL SCHEDULES
M004	MECHANICAL CALCULATIONS
M101	FIRST FLOOR - MECHANICAL PLAN
M201	SECOND FLOOR - MECHANICAL PLAN
M301	ROOF - MECHANICAL PLAN
M401	HOOD DRAWINGS
M402	HOOD DRAWINGS
M403	HOOD DRAWINGS
M404	HOOD DRAWINGS
M405	HOOD DRAWINGS
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M415	HOOD DRAWINGS
M416	HOOD DRAWINGS
M417	HOOD DRAWINGS

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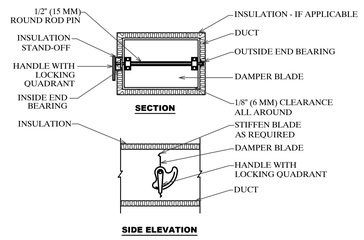
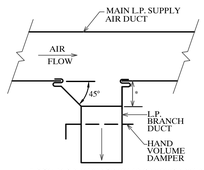
CUSTOMER: Tre Ragazzi Restaurants
PROJECT NAME: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: MECHANICAL GENERAL INFORMATION
DRAWN BY: DAE
PROJECT No: 26010

M001
05/28/2026

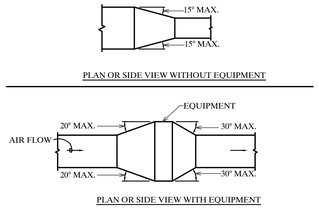


A M002 VOLUME DAMPER DETAIL
SCALE: NTS



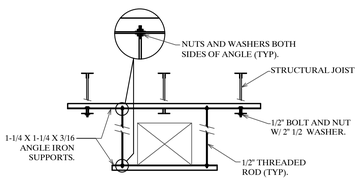
*-EQUALS WIDTH OF BRANCH DUCT UP TO 12". 12" FOR ALL BRANCH DUCTS LARGER THAN 12".

B M002 TYPICAL LOW PRESSURE BRANCH
SCALE: NTS

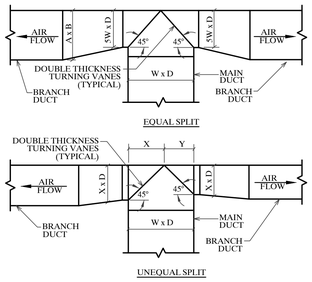


NOTE: UNLESS OTHERWISE INDICATED ON PLANS, MAXIMUM ANGLES SHOWN SHALL APPLY.

C M002 TYPICAL DUCTWORK TRANSITIONS
SCALE: NTS



D M002 DUCT HANGER DETAIL
SCALE: NTS



E M002 DUCT DETAIL
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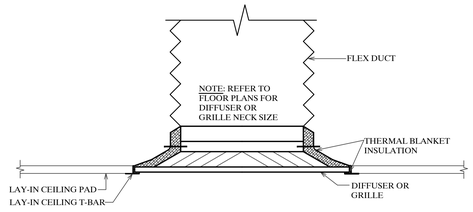

F M002 DIFFUSER INSTALLATION DETAIL
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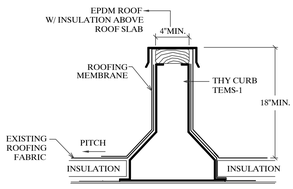
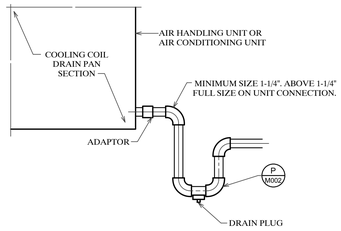
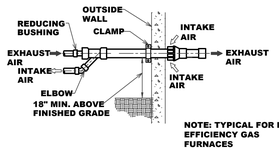


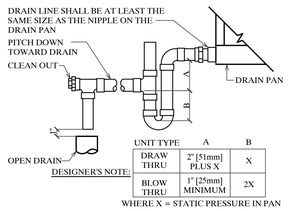
G M002 EQUIPMENT MOUNTING CURB DETAIL
SCALE: NTS



H M002 CONDENSATE DRAIN DETAIL
SCALE: NTS



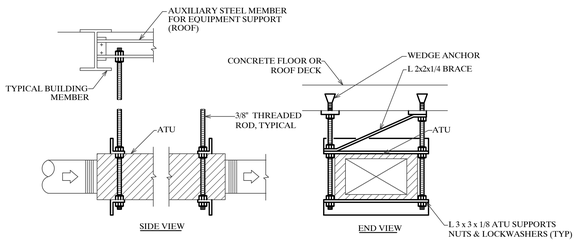
J M001 CONCENTRIC WALL FLUE VENT
SCALE: NTS



UNIT TYPE	A	B
DRAW THRU	2" [51mm] PLUS X	X
BLOW THRU	1" [25mm] MINIMUM	2X

WHERE X = STATIC PRESSURE IN PAN

K M002 CONDENSATE DRAIN DETAIL
SCALE: NTS



L M002 HORIZONTAL FURNACE MOUNTING DETAIL
SCALE: NTS

AIR BALANCE

KITCHEN

KITCHEN HOOD EXHAUST FAN (KEF): 4754 CFM
DISHWASHER MACHINE EXHAUST FAN (DEF): 875 CFM
EMPLOYEE RESTROOM EXHAUST FAN (EF-3): 225 CFM
TOTAL KITCHEN EXHAUST: 5854 CFM
KITCHEN MAKE-UP AIR (MUA): 4500 CFM
TOTAL KITCHEN OUTSIDE AIR: 4500 CFM
TOTAL OUTSIDE AIR REQUIRED FOR NEGATIVE PRESSURIZATION: 1345 CFM

DINING AREA:

MEN AND WOMEN RESTROOM EXHAUST FANS (EF-1): 300 CFM
TOTAL TRANSFER AIR TO THE KITCHEN: 1345 CFM
TOTAL VENTILATION BY SPLIT UNITS (FGF-1-FGF-5): 2110 CFM
TOTAL AIR REQUIRED FOR POSITIVE PRESSURIZATION: 0 CFM

METAL DUCTS

1.1 SHEET METAL MATERIALS

A. GALVANIZED STEEL SHEETS: COMPLY WITH ASTM A653/A 653M, G60 (Z180) AND A MILL PHOSPHATIZED FINISH FOR SURFACES EXPOSED TO VIEW.

B. REINFORCEMENT SHAPES AND PLATES SHALL BE GALVANIZED STEEL DISSIMILAR MATERIALS SHALL BE SEPARATED USING APPROPRIATE GASKET MATERIALS.

C. GALVANIZED STEEL TIE RODS THAT ARE 1/4-INCH MINIMUM DIAMETER FOR LENGTHS 36 INCHES OR LESS AND 3/8-INCH DIAMETER FOR LONGER LENGTHS LONGER.

D. CARBON STEEL SHEETS: COMPLY WITH ASTM A/1008 1008M, WITH OILED, MATTE FINISH FOR EXPOSED DUCTS.

1.2 DUCT LINER

A. TYPE I, FLEXIBLE LINER SHALL HAVE A MAXIMUM THERMAL CONDUCTIVITY OF 0.27 BTU X IN./H X SQ. FT. X DEG F AT 75 DEG F MEAN TEMPERATURE.

B. TYPE II, RIGID LINER SHALL HAVE A MAXIMUM THERMAL CONDUCTIVITY OF 0.23 BTU X IN./H X SQ. FT. X DEG F AT 75 DEG F MEAN TEMPERATURE.

C. ANTIMICROBIAL EROSION-RESISTANT COATING TESTED AND REGISTERED FOR USE IN HVAC SYSTEMS

D. WATER-BASED LINER ADHESIVE: COMPLY WITH NFPA 90A OR NFPA 90B AND WITH ASTM C 916.

E. INSULATION PINS AND WASHERS:

1. CUPPED-HEAD CAPACITOR-DISCHARGE-WELD PINS SHALL BE COPPER- OR ZINC-COATED STEEL PIN, FULLY ANNEALED FOR CAPACITOR-DISCHARGE WELDING, 0.106-INCH DIAMETER SHANK, LENGTH TO SUIT DEPTH OF INSULATION LINED WITH INTEGRAL 1-1/2-INCH GALVANIZED CARBON-STEEL WASHER.
2. INSULATION-RETAINING WASHERS SHALL BE SELF-LOCKING WASHERS FORMED FROM 0.016-INCH THICK GALVANIZED STEEL; WITH BEVELED EDGE SIZED AS REQUIRED TO HOLD INSULATION SECURELY IN PLACE BUT NOT LESS THAN IN DIAMETER.

F. SHOP APPLICATION OF DUCT LINER IS PERMITTED.

1.3 SEALANT AND GASKETS

A. WATER-BASED JOINT AND SEAM SEALANT SHALL BE BRUSHED ON WITH A MINIMUM SOLIDS CONTENT OF 65%, A MINIMUM SHORE A HARDNESS OF 20, WATER MOLD AND MILDEW RESISTANT AND A MAXIMUM VOC OF 75 G/L. MUST BE RATED FOR UP TO 10" WG AND FOR INDOOR AND OUTDOOR SERVICE. SHALL BE COMPATIBLE WITH METAL SUBSTRATE.

B. FLANGED JOINT SEALANT SHALL BE A SINGLE-COMPONENT, ACID-CURING, SILICONE ELASTOMERIC, TYPE S, GRADE NS, CLASS 25 AND O USE.

C. FLANGE GASKETS SHALL BE BUTYL RUBBER, NEOPRENE, OR EPDM POLYMER WITH POLYISOBUTYLENE PLASTICIZER.

1.4 HANGERS AND SUPPORTS

A. HANGER RODS SHALL BE CADMIUM-PLATED STEEL RODS AND NUTS.

B. STEEL CABLES FOR GALVANIZED-STEEL DUCTS.

C. STEEL CABLE END CONNECTIONS SHALL BE CADMIUM-PLATED STEEL ASSEMBLIES WITH BRACKETS, SWIVEL, AND BOLTS DESIGNED FOR DUCT HANGER SERVICE; WITH AN AUTOMATIC-LOCKING AND CLAMPING DEVICE.

D. SHEET METAL SCREWS, BLIND RIVETS, OR SELF-TAPPING METAL SCREWS SHALL BE COMPATIBLE WITH DUCT MATERIALS.

E. SUPPORT GALVANIZED-STEEL DUCTS WITH GALVANIZED-STEEL SHAPES AND PLATES.

1.5 DUCT INSTALLATION

A. PROTECT ALL MATERIALS, INSTALLED AND STORED, FROM DAMAGE.

B. COVER OPENINGS BETWEEN NON-FIRE RATED INTERIOR PARTITIONS AND DUCT (OR DUCT INSULATION) WITH SHEET METAL OVERLAPPING ON FOUR SIDES BY A MINIMUM OF 1 ½".

C. TRIM DUCT SEALANTS FLUSH WITH METAL. CREATE A SMOOTH AND UNIFORM EXPOSED BEAD.

D. REPAIR OR REPLACE DAMAGED SECTIONS AND FINISHED WORK THAT DOES NOT COMPLY WITH THESE REQUIREMENTS.

E. HANGERS AND SUPPORTS SHALL USE STRUCTURAL-STEEL FASTENERS APPROPRIATE FOR CONSTRUCTION MATERIALS TO WHICH HANGERS ARE BEING ATTACHED.

F. HANGERS EXPOSED TO VIEW SHALL BE THREADED ROD AND ANGLE OR CHANNEL SUPPORTS.

G. INSTALL UPPER ATTACHMENTS TO STRUCTURES. SELECT AND SIZE UPPER ATTACHMENTS WITH PULL-OUT, TENSION, AND SHEAR CAPACITIES APPROPRIATE FOR SUPPORTED LOADS AND BUILDING MATERIALS WHERE USED.

H. PAINT INTERIOR OF METAL DUCTS THAT ARE VISIBLE THROUGH REGISTERS AND GRILLES AND THAT DO NOT HAVE DUCT LINER. APPLY ONE COAT OF FLAT, BLACK, LATEX PAINT OVER A COMPATIBLE GALVANIZED-STEEL PRIMER.

I. PERFORM TESTS AND INSPECTIONS. DUCT SYSTEM WILL BE CONSIDERED DEFECTIVE IF IT DOES NOT PASS TESTS AND INSPECTIONS.

J. CLEAN EXISTING DUCT SYSTEMS BEFORE TESTING, ADJUSTING, AND BALANCING.

1.6 DUCT SCHEDULE

A. INTERMEDIATE REINFORCEMENT SHALL BE STAINLESS STEEL.

DUCT ACCESSORIES

1.1 MATERIALS

A. REINFORCEMENT SHAPES AND PLATES SHALL MATCH OR BE COMPATIBLE WITH SHEET METAL DUCT MATERIAL.

B. TIE RODS SHALL BE STAINLESS STEEL, 1/4-INCH MINIMUM DIAMETER FOR LENGTHS 36 INCHES OR LESS; 3/8-INCH MINIMUM DIAMETER FOR LENGTHS LONGER THAN 36 INCHES.

1.2 MANUAL VOLUME DAMPERS

A. ALL STAINLESS STEEL DAMPER WITH STANDARD LEAKAGE RATING AND LINKAGE OUTSIDE OF AIRSTREAM. USE A HAT-SHAPED FRAME WITH STAINLESS STEEL CHANNELS, MITERED AND WELDED CORNERS, FLANGELESS FRAMES FOR INSTALLATION IN DUCTS, STAINLESS STIFFEN DAMPER BLADES AND OIL IMPREGNATED BRONZE BEARINGS.

1.3 FLANGE CONNECTORS

A. GALVANIZED STEEL MATCHING CONNECTING DUCTWORK IN GAGE AND SHAPE. IT SHALL BE AN ADD-ON, FACTORY-FABRICATED DEVICE WITH SLIDE-ON TRANSVERSE FLANGE CONNECTORS, GASKETS, AND COMPONENTS.

1.4 TURNING VANES

A. MANUFACTURED STAINLESS STEEL TURNING VANES WITH CURVED BLADES AND SUPPORTED WITH BARS PERPENDICULAR TO BLADES SET. INSTALL SINGLE WALL VANES FOR DUCTS UP TO 48" WIDE AND DOUBLE WALL FOR LARGER DUCTS.

1.5 DUCT-MOUNTED ACCESS DOORS

A. STAINLESS STEEL DOUBLE WALL RECTANGULAR DOOR WITH INSULATION PER DUCT PRESSURE CLASS AND 1"X1" BUTT OR PIANO HINGES AND CAM LATCHES. NUMBER OF HINGES SHALL BE APPROPRIATE TO DOOR SIZE. FRAME SHALL BE GALVANIZED WITH BED OVER TABS AND FOAM GASKETS.

1.6 FLEXIBLE CONNECTORS

A. FLEXIBLE CONNECTORS SHALL BE MADE OF FLAME-RETARDANT OR NONCOMBUSTIBLE FABRICS.

B. INDOOR SYSTEM FLEXIBLE CONNECTOR SHALL BE GLASS FABRIC DOUBLE COATED WITH NEOPRENE. MINIMUM WEIGHT SHALL BE 26 OZ/ SQ YD WITH A TENSILE STRENGTH OF 480 LBF/ INCH IN THE WRAP AND 360 LBF/INCH IN THE FILLING AT -40^{0}F TO 200^{0}F.

C. OUTDOOR SYSTEM FLEXIBLE CONNECTOR SHALL BE GLASS FABRIC DOUBLE COATED WITH PROOF, SYNTHETIC RUBBER RESISTANT TO UV RAYS AND OZONE. MINIMUM WEIGHT SHALL BE 24 OZ/ SQ YD WITH A TENSILE STRENGTH OF 500 LBF/ INCH IN THE WRAP AND 440 LBF/INCH IN THE FILLING AT -50^{0}F TO 250^{0}F.

1.7 FLEXIBLE DUCTS

A. NONINSULATED FLEXIBLE DUCT SHALL BE BLACK POLYMER FILM SUPPORTED BY HELICALLY WOUND, SPRING-STEEL WIRE WITH A PRESSURE RATING OF 4" WG TO -0.5" WG AT A MAXIMUM AIR VELOCITY OF 4000 FPM AND A TEMPERATURE RANGE OF -20^{0}F TO 175^{0}F.

B. INSULATED, FLEXIBLE DUCT SHALL BE BLACK POLYMER FILM SUPPORTED BY HELICALLY WOUND, SPRING-STEEL WIRE; FIBROUS-GLASS INSULATION WITH ALUMINIZED VAPOR-BARRIER FILM. PRESSURE RATING SHALL BE 4" WG TO -0.5" WG AT A MAXIMUM AIR VELOCITY OF 4000 FPM AND A TEMPERATURE RANGE OF -20^{0}F TO 175^{0}F.

C. STAINLESS STEEL CLAMPS WITH CADMIUM-PLATED HEX SCREW TO TIGHTEN BAND WITH A WORM GEAR ACTION IN SIZES 3 THROUGH 18

D. ADHESIVE PLUS SHEET METAL SCREWS FOR NON-CLAMP CONNECTORS.

1.8 INSTALLATION

A. INSTALL DUCT ACCESSORIES OF MATERIALS THAT ARE COMPATIBLE WITH DUCT MATERIALS.

B. INSTALL VOLUME DAMPERS AT POINTS ON SUPPLY, RETURN, AND EXHAUST SYSTEMS WHERE INDICATED ON DRAWINGS. WHERE DAMPERS ARE INSTALLED IN DUCTS HAVING DUCT LINER, INSTALL DAMPERS WITH HAT CHANNELS OF SAME DEPTH AS LINER, AND TERMINATE LINER WITH NOSING AT HAT CHANNEL.

C. SET DAMPERS TO FULLY OPEN POSITION BEFORE TESTING, ADJUSTING, AND BALANCING.

D. INSTALL DUCT ACCESS DOORS ON SIDES OF DUCTS TO ALLOW FOR PROPER USE AT THE FOLLOWING LOCATIONS:

1. DOWNSTREAM FROM DAMPERS AND EQUIPMENT.
2. ADJACENT TO AND CLOSE ENOUGH TO FIRE OR SMOKE DAMPERS, TO RESET OR REINSTALL FUSIBLE LINKS. ACCESS DOORS FOR ACCESS TO FIRE OR SMOKE DAMPERS HAVING FUSIBLE LINKS SHALL BE PRESSURE RELIEF ACCESS DOORS AND SHALL BE OUTWARD OPERATION FOR ACCESS DOORS INSTALLED UPSTREAM FROM DAMPERS AND INWARD OPERATION FOR ACCESS DOORS INSTALLED DOWNSTREAM FROM DAMPERS.
3. CONTROL DEVICES REQUIRING INSPECTION.
4. ELSEWHERE AS INDICATED.

E. INSTALL ACCESS DOORS WITH SWING AGAINST DUCT STATIC PRESSURE.

F. ACCESS DOOR SIZES:

1. ONE-HAND OR INSPECTION ACCESS: 8 BY 5 INCHES.
2. TWO-HAND ACCESS: 12 BY 6 INCHES.
3. HEAD AND HAND ACCESS: 18 BY 10 INCHES.
4. HEAD AND SHOULDERS ACCESS: 21 BY 14 INCHES.
5. BODY ACCESS: 25 BY 14 INCHES.

G. INSTALL FLEXIBLE CONNECTORS TO CONNECT DUCTS TO EQUIPMENT.

H. CONNECT DIFFUSERS OR LIGHT TROFFER BOOTS TO DUCTS WITH MAXIMUM 60-INCH LENGTHS OF FLEXIBLE DUCT CLAMPED OR STRAPPED IN PLACE.

I. CONNECT FLEXIBLE DUCTS TO METAL DUCTS WITH ADHESIVE PLUS SHEET METAL SCREWS.

J. FULLY TEST AND OPERATE ALL DAMPERS TO VERIFY FULL RANGE OF MOVEMENT.

K. INSPECT ALL EQUIPMENT AND ACCESSORIES FOR PROPER INSTALLATION.

Rev. No.	Date	Description
-	05-28-26	REVIEW SET
-	09-23-26	REVIEW SET
1	11-19-26	CITY SUBMITTAL

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PROFESSIONAL ENGINEER

CUSTOMER: Tre Ragazzi Restaurants
PROJECT NAME: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: MECHANICAL DETAILS AND SPECIFICATIONS
DRAWN BY: DAE
PROJECT No. 26010

M002
05/28/2026

SEAL CLASS				
	SUPPLY (2" PRESSURE AND LOWER)	SUPPLY (HIGHER THAN 2" PRESSURE)	EXHAUST	RETURN
OUTDOOR	A	A	C	C
UNCONDITIONED SPACES	B	A	C	B
CONDITIONED SPACES	C	B	B	C

ESCUTCHEONS	
	TYPE
NEW PIPE	
PROTRUDING FROM WALL	ONE-PIECE, DEEP PATTERN
INSULATED PIPING	ONE-PIECE, STAMPED-STEEL
BARE PIPE	ONE-PIECE CAST BRASS - POLISHED CHROME-PLATED FINISH
FOR THE FLOOR	ONE-PIECE, FLOOR-PLATE
EXISTING PIPE	
ALL PIPE	SPLIT-PLATE STAMPED STEEL WITH POLISHED CHROME-PLATED FINISH
FOR THE FLOOR	SPLIT-CASTING, FLOOR-PLATE
1 REPLACE BROKEN AND DAMAGED ESCHTCHEONS AND FLOOR PLATES USING NEW MATERIALS	
2 SUBMITT EACH TYPE FOR REVIEW	

DUCT SCHEDULE				
	PRESSURE CLASS	SMACNA SEAL CLASS	SMACNA LEAKAGE CLASS (RECT)	SMACNA LEAKAGE CLASS (ROUND /OVAL)	LINER
SUPPLY DUCT - FAN COIL UNITS, HEAT PUMPS, TERMINAL UNITS	+1"	A	24	12	
SUPPLY DUCT - CONSTANT VOLUME AIR HANDLING UNITS	+3"	B	12	6	
SUPPLY DUCT VARIABLE AIR VOLUME AIR HANDLING UNIT	+3"	B	6	6	
RETURN DUCT - FAN COIL UNITS, HEAT PUMPS, TERMINAL UNITS	1"	A	24	12	
RETURN DUCT - AIR HANDLING UNITS	3"	B	12	6	
OTHER EQUIPMENT	+3"	B	12	6	
EXHAUST DUCT	+1"	A	24	12	
OUTDOOR AIR - FAN COIL UNITS, HEAT PUMPS, TERMINAL UNITS	+1"	A	24	12	
OUTDOOR AIR - AIR HANDLING UNITS	+3"	B	12	6	
DOUBLE WALL EXHAUST DUCT					

NOTES:

A. CONTRACTOR SHALL INSTALL GAS PRESSURE REDUCING VALVES AS REQUIRED FOR ALL EQUIPMENT. CONTRACTOR SHALL FIELD VERIFY INCOMING PRESSURE SERVICE.

NOTES:

A. KITCHEN HOOD EXHAUST DUCT TO BE WELDED BLACK STEEL, UL LISTED FIRE RATED DUCT INSULATION SIMILAR TO 3M FIRE BARRIER DUCT WRAP 615+ INSTALLED PER MANUFACTURERS RECOMMENDATION.
B. WAREWASHER EXHAUST DUCT TO BE ALUMINUM WITH SEALED JACKET AND SLOPED TO ACCESS POINTS FOR CLEANING.

NOTICE: SPECIFICATIONS OF R-454B REFRIGERANT

1. APPLICATION: R-454B IS NOT A DROP-IN REPLACEMENT FOR R-410A. THE EQUIPMENT DESIGN MUST ACCOMMODATE THE A2L SAFETY GROUP OF R-454B. IT CANNOT BE USED IN R-410A SYSTEMS.
2. PHYSICAL PROPERTIES: R-454B HAS AN ATMOSPHERIC BUBBLE POINT OF -59.6 °F (-50.9 °C) AND AN ATMOSPHERIC DEW POINT OF -58.0 °F (-50.0 °C). ITS BUBBLE POINT SATURATION PRESSURE AT 77 °F (25°C) IS 213 PSIG (1469 KPA) AND DEW POINT SATURATION PRESSURE AT 77 °F (25 C) IS 205 PSIG (1415KPA).
3. COMPOSITION: R-454B IS CLASSIFIED AS SAFETY GROUP A2L PER ASHRAE STANDARD 34. VERIFY THAT SERVICE EQUIPMENT AND INSTRUMENTS ARE CERTIFIED FOR USE WITH GROUP A2L REFRIGERANTS, AND IN PARTICULAR WITH R-454B IS A NON-AZEOTROPIC MIXTURE OF 68.9% BY WEIGHT DIFLUOROMETHANE (HFC-32) AND 31.1 % BY WEIGHT 2,3,3,3-TETRAFLUORO-1-PROPENE (HFO-1234YF).

ELECTRIC WALL HEATER SCHEDULE

TAG	CFM	MBH	KW	RPM	ELECTRICAL VOLTAGE	ELECTRICAL MCA	ELECTRICAL MOP	GRILL DIMENSIONS	MOUNTING	WEIGHT LBS	MANUFACTURER/MODEL NUMBER	NOTES
EWH-1	245	6.83	2.0	1400	208V/1PHASE	9.6	–	25-1/32" H X 17-7/16"W	WALL	55	TPI CORP. F3452T	ALL

NOTES	
1	Powder coated bar stock steel tamper proof grille, with extruded Aluminum frame and 16 gauge housing.
2	In-Built double pole tamper proof thermostat with a 60°-120°F temperature range & positive off, Manual reset thermal limit switch.
3	Corrosion resistant steel tubular element with brazed steel fins.
4	Permanently lubricated, unit bearing, shaded pole motor with impedance protection.
5	Van Axial Fan, Propeller type fan blade.
6	Wall box required - may be ordered early for rough in purposes. Factory installed contactors: circuit breakers, control transformers.

GRILLE, REGISTER, AND DIFFUSER SCHEDULE (Basis of Design)

TAG	MAXIMUM CFM	MAX. N.C.	TOTAL PRESSURE DROP	NECK SIZE	DAMPER Y / N	MANUFACTURER / MODEL NO.	FACE SIZE	REMARKS	NOTES
A	205	30	----	6"ø-12"ø	Y	TITUS ML-39	-	SUPPLY, LINEAR	1
B	600	30	----	6"ø-12"ø	Y	TITUS OMNI	24"x 24"	SUPPLY, LAY-IN	1
C	400	30	----	6"ø-10"ø	Y	TITUS 50R-SS	24"x 24"	EXHAUST, LAY-IN	1
D	600	30	----	-	N	TITUS 50R-SS	ON DRAWING	RETURN GRILLE	1
E	600	30	----	6"ø-12"ø	N	TITUS 50R-SS	12"x 24"	RETURN, LAY-IN	1
F	750	30	----	6"ø-14"ø	Y	AJ Manufacturing SSPLT-R	24"x 24"	SUPPLY, LAY-IN	1
G	600	30	----	6"ø-12"ø	Y	TITUS TMR	-	SUPPLY, ROUND	1

A. Maximum N.C. values are based on Octave Band 1 through 8 sound power levels minus a room absorption of 10dB, re 10 to the -12 Watts.
B. Verify border requirements with all applicable architectural sheets, reflected ceiling plans, and room finish schedules.
C. Provide square to round transitions, by Manufacturer, as required. Also see Plans.
D. Provide cable operated damper for unaccessible ceiling area.

NOTES:
1 Provide baked enamel finish Black Color, as selected by Architect.

Drawing Symbol & Definition
A6-145 Tag, Neck Size, and CFM Value

LOUVER SCHEDULE

MARK	SERVICE	CFM	WIDTH INCHES	HEIGHT INCHES	FRAME DEPTH INCHES	VELOCITY FPM	MAX APD IN.WG	BLADE STYLE	MANUFACTURER	MODEL	REMARKS
LV-1	EF-1	300	20	14	4	457	0.031	J	GREENHECK	EDJ-401-20X14	ALL
LV-2	EF-2	300	16	14	4	447	0.03	J	GREENHECK	EDJ-401-16X14	ALL
LV-3	FUR-2	425	20	16	6	498	0.037	-	GREENHECK	ESD-635-16X20	ALL
LV-4	FUR-1,4,5	1265	28	28	6	468	0.033	-	GREENHECK	ESD-635-28X28	ALL
LV-5	FUR-3	420	20	16	6	498	0.037	-	GREENHECK	ESD-635-16X20	ALL
LV-6	DISHWASHER EXHAUST	875	30	20	6	488	0.033	-	GREENHECK	ESD-435-30X20	ALL

REMARKS:
1. FURNISH WITH ALUMINUM BIRD SCREEN.
2. FURNISH WITH KYNAR PAINT FINISH OF STANDARD COLOR SELECTION BY ARCHITECT.

DUCT INSULATION SCHEDULE

DUCT LOCATION	SUPPLY	RETURN	OUTDOOR	EXHAUST	NOTES
CONCEALED – PLENUM RETURN	NONE	NONE	MFB-1	NONE	2
CONCEALED – DUCTED RETURN	MFB-1	NONE	MFB-1	NONE	
INDOOR EXPOSED DUCT	MFB-2	NONE	MFB-2	NONE	
OUTDOOR EXPOSED DUCT	MFB-3	MFB-3	MFB-3	NONE	1

MFB-1: MINERAL FIBER BLANKET – 1 ½ " THICK, 0.75 LB/ CU. FT., 4.2 R-VALUE.
MFB-2: MINERAL FIBER BOARD – 1 ½ " THICK, 2-LB/ CU. FT., 6.5 R-VALUE.
MFB-3: CLOSED-CELL POLYISOCYANURATE FOAM CORE BONDED ON EACH SIDE WITH A FOIL FACER – 3" THICK, 19 R-VALUE.

NOTES:

1	INSTALL 0.024" THICK SMOOTH ALUMINUM JACKET OVER OUTDOOR EXPOSED INSULATED DUCT. VAPOR SEALED INSTALLATION.
2	ON SUPPLY DUCT, INSULATE THE FIRST 10-FEET OF DUCT WITH MFB-1.

EXHAUST FAN SCHEDULE

	FAN DATA						ELECTRICAL DATA							GENERAL INFORMATION				
TAG	CFM	ESP IN. W.C.	TIP SPEED	RPM	SONES	HP	WATTS	BHP	VOLTAGE	MCA	MOP	CONTROLLED BY	FAN TYPE	MANUFACTURER AND MODEL NUMBER	LOCATION	APPROX. WEIGHT LBS	NOTES
EF-1	300	0.5	2556	1367	2.6	-	72	0.09	115/60/1	1.9	20	SCHEDULE	INLINE EXHAUST FAN	GREENHECK CSP-A390-VG	CEILING	24	ALL
EF-2	225	0.5	1988	1264	2.3	-	45.84	0.06	115/60/1	1.9	20	SCHEDULE	INLINE EXHAUST FAN	GREENHECK CSP-A390-VG	CEILING	24	ALL
~~EF-3~~	~~300~~	~~0.5~~	~~2556~~	~~1367~~	~~2.6~~	~~-~~	~~72~~	~~0.09~~	~~115/60/1~~	~~1.9~~	~~20~~	~~SCHEDULE~~	~~INLINE EXHAUST FAN~~	~~GREENHECK CSP-A390-VG~~	~~CEILING~~	~~24~~	~~ALL~~
EF-4	75	0.25	-	824	0.3	-	-	-	115/60/1	0.07	15	SWITCH	CEILING FAN	PANASONIC RG-C811A	RESTROOM	9.3	1,4

NOTES:
1 Fan with disconnect

WINE CLOSET COOLING SYSTEM

TAG	FAN DATA HIGH CFM	FAN DATA LOW CFM	FAN DATA OUTSIDE AIR CFM	COOLING DATA SEER	COOLING DATA TOTAL MBH	COOLING DATA ROWS FPI	COOLING DATA REFRIG. TYPE	ELECTRICAL DATA SINGLE POINT POWER VOLTAGE	ELECTRICAL DATA MCA	ELECTRICAL DATA MOP	WEIGHT LBS	MANUFACTURER AND MODEL NUMBER	NOTES
WC-1	245	-	0.0	13.0	4.3	---	-	120/1/60	8.6	20	78	WINE GUARDIAN D025	

DEHUMIDIFIER SCHEDULE

INDOOR UNIT							
TAG	CFM	Moisture Removal Capacity (lb/hr)	Voltage	MCA	MOP	Approx Weight (lb)	Manufacturer Model Number
DHU-1	206	6.73	115	-	-	61.2	MOISWELL DEFENDER M70

GAS RADIANT HEATER SCHEDULE

TAG	GAS TYPE	RADIANT EFFICENCY %	SINGLE STAGE GAS VALVE MBH INPUT		TWO STAGE GAS VALVE MBH INPUT LOW	TWO STAGE GAS VALVE MBH INPUT HIGH	DIMENSIONS LENGTH TUBE FEET	DIMENSIONS LENGTH OVERALL FEET	DIMENSIONS WIDTH INCHES	DIMENSIONS MOUNTING HEIGHT FEET ABOVE SURFACE	DIMENSIONS ANGLE DEGREES	UNIT POWER VOLTAGE	UNIT POWER MCA	Approx Weight LBS	Manufacturer / Model Number	NOTES
RH-1	NG	---	---	34.0	---	---	4	4	9	8.5-13	30	24	-	59	MODINE OHP 34	All
RH-2	NG	---	---	34.0	---	---	4	4	9	8.5-13	30	24	-	59	MODINE OHP 34	All

NOTES:
1 U-tube, direct spark iginition, fan center relay, low voltage thermostat.
2 Exhaust vent kit #42924000; Lower mounting kit #43515000 with emitter guard kit, draft inducer guard kit and decorative grille face.
3 Hanging kit.

Furnace, DX Coil and Condensing Unit Schedule

Furnace

GENERAL INFORMATION TAG	INDOOR FAN OA CFM	INDOOR FAN % OA	CFM	E.S.P. (in wg)	HP	RPM	HEATING PERFORMANCE MBH INPUT	HEATING PERFORMANCE MBH OUTPUT	DX COOLING COIL TOTAL	DX COOLING COIL SENS	EDB	EWB	LDB	LWB	ELECTRICAL Voltage	ELECTRICAL MCA	ELECTRICAL MOP	Approx Weight LBS	Coil Model Number	Furnace Manufacturer Model Number	NOTES
FUR-1	420	29.167	1440	0.50	1/2	1075	80	77.6	60	45.6	80	67	55	54	115/1/60	8.1	15	121	GOODMAN CSCT6012L3	GOODMAN GRVM970803BN	All
FUR-2	425	29.514	1440	0.50	1/2	1075	80	77.6	60	45.6	80	67	55	54	115/1/60	8.1	15	121	GOODMAN CSCT6012L3	GOODMAN GRVM970803BN	All
FUR-3	420	29.167	1440	0.50	1/2	1075	80	77.6	60	45.6	80	67	55	54	115/1/60	8.1	15	121	GOODMAN CSCT6012L3	GOODMAN GRVM970803BN	All
FUR-4	420	29.167	1440	0.50	1/2	1075	80	77.6	60	45.6	80	67	55	54	115/1/60	8.1	15	121	GOODMAN CSCT6012L3	GOODMAN GRVM970803BN	All
FUR-5	425	29.514	1440	0.50	1/2	1075	80	77.6	60	45.6	80	67	55	54	115/1/60	8.1	15	121	GOODMAN CSCT6012L3	GOODMAN GRVM970803BN	All

Condensing Unit

GENERAL INFORMATION TAG	NOMINAL TONS	AMB. AIR TEMP F.	TOTAL MBH	ELECTRICAL Voltage	ELECTRICAL MCA	ELECTRICAL MOP	Approx Weight LBS	Condensing Unit Manufacturer Model Number	NOTES
HP-1	5	91	60	208/1/60	36.4	60	321	GOODMAN GLZT7C6010A	All
HP-2	5	91	60	208/1/60	36.4	60	321	GOODMAN GLZT7C6010A	All
HP-3	5	91	60	208/1/60	36.4	60	321	GOODMAN GLZT7C6010A	All
HP-4	5	91	60	208/1/60	36.4	60	321	GOODMAN GLZT7C6010A	All
HP-5	5	91	60	208/1/60	36.4	60	321	GOODMAN GLZT7C6010A	All

NOTES:
1 Constant Volume, Single Zone Unit.
2 Unit Mounted Disconnect
3 Horizontal condensing type furnace wiith matching cased dx coil, filtered return, 3" vertical or horizontal exterior vent mounting kit.
4 1/2" Ribbed vibration pad under entire unit.
5 Condensing Unit to be provided with start assist kit, low ambeint controls, crank case heaters, five minutes restart time delay, and service vavles.
6 Hot gas by pass- auto reset low pressure switch
7 Manual reset high pressure switch
8 High-capacity liquid line drier
9 Steel louvered coil panels for hail protectio
10 Use with R-32 refrigerant
11 local sensors for each furnace
12 Maximum vent length with 5 elbows is 119'
13 7 day programmable thermostat with touch screen interface

VRF SYSTEM SCHEDULE

INDOOR UNITS TAG	TONNAGE	AREA SERVED	UNIT TYPE	SUPPLY CFM	COOLING MBH TOTAL	COOLING MBH SENSIBLE	HEATING MBH	ELECTRICAL VOLTAGE	ELECTRICAL MCA	ELECTRICAL MOP	WEIGHT LBS	MANUFACTURER / MODEL NO.	NOTES
MS-1	0.75	PASTA ROOM	WALL MOUNTED	448	9.0	8.1	10.9	208/230-1PH	1	-	27	MITSUBISHI MSZ-GX09NL	1,2,4,5,6,7,8,9

OUTDOOR UNITS TAG	COOLING MBH	HEATING MBH	ENERGY IEER/EER	ENERGY COP	ELECTRICAL VOLTAGE	ELECTRICAL MCA	ELECTRICAL MOP	WEIGHT LBS	MANUFACTURER/MODEL NUMBER	NOTES
HP-6	16.6	20	16.6	2.6	208/1/60	21.7	38	137	MITSUBISHI MXZ-2D20NL	1,3,4,5,6,7,8,9

NOTES
1 ALL EQUIMENT AND ACCESSORIES ARE TO BE INSTALLED BY A CERFIFIED MITSUBISHI INSTALLER FOR VRF AND MINI SPLIT SYSTEMS.
2 PROVIDE CONDENSATE PUMP AND DRAIN PAN WITH OVERFLOW SWITCH. INSTALL PER SPLAN AND MANUFACTUER SPECIFICATIONS.
3 REFRIGERANT PIPING SHALL BE SIZED AND INSTALLED AS PER MANUFACTURER'S SPECIFICATIONS. EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
4 PROVIDE FACTORY MOUNTED DISCONNECT SWITCH.
5 PROVIDE WIRED REMOTE TEMPERATURE CONTROLLER AND INTEGRATE WITH CENTRAL BACNET CONTROLLER.
6 PROVIDE ALL SUPPORTS FOR CEILING OR WALL MOUNTED SYSTEMS. COORDINATE LOCATIONS AND WEIGHTS WITH STRUCTURAL ENGINEER AND ARCHITECT.

Rev. No.	Date	Description
-	05-28-26	REVIEW SET
-	09-23-26	REVIEW SET
1	11-19-26	CITY SUBMITTAL

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No. 10505427
STATE OF INDIANA
PROFESSIONAL ENGINEER

PROJECT No. 26010
DRAWN BY DAE

CUSTOMER: Tre Ragazzi Restaurants
PROJECT NAME: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: MECHANICAL SCHEDULES

M003
05/28/2026

AIR SYSTEM SIZING SUMMARY BY HAP 5.11/HAP 6.2

Air System Sizing Summary for FUR-1

26010 load calculations — 06/15/2026
DAE — 10:05AM

Air System Information
- Air System Name: FUR-1
- Equipment Class: SPLT AHU
- Air System Type: SZCAV
- Number of zones: 1
- Floor Area: 433.0ft²
- Location: Indianapolis, Indiana

Sizing Calculation Information
- Calculation Months: Jan to Dec
- Sizing Data: Calculated
- Zone CFM Sizing: Sum of space airflow rates
- Space CFM Sizing: Individual peak space loads

Central Cooling Coil Sizing Data
- Total coil load: 4.6Tons
- Total coil load: 55.2MBH
- Sensible coil load: 30.4MBH
- Coil CFM at Aug 1600: 1380CFM
- Max block CFM: 1380CFM
- Sum of peak zone CFM: 1380CFM
- Sensible heat ratio: 0.551
- CFM/Ton: 299.7
- ft²/Ton: 94.1
- BTU/(hr·ft²): 127.6
- Water flow @ 10.0 °F rise: N/A
- Load occurs at: Aug 1600
- OA DB / WB: 93.7 / 80.1°F
- Entering DB / WB: 77.7 / 68.9°F
- Leaving DB / WB: 56.7 / 56.0°F
- Coil ADP: 54.3°F
- Bypass Factor: 0.100
- Resulting RH: 65%
- Design supply temp.: 55.0°F
- Zone T-stat Check: 1 of 1OK
- Max zone temperature deviation: 0.0°F

Central Heating Coil Sizing Data
- Max coil load: 43.7MBH
- Coil CFM at Des Htg: 1380CFM
- Max coil CFM: 1380CFM
- Water flow @ 20.0 °F drop: N/A
- Load occurs at: Des Htg
- BTU/(hr·ft²): 101.0
- Ent. DB / Lvg DB: 44.2 / 74.4°F

Supply Fan Sizing Data
- Actual max CFM: 1380CFM
- Standard CFM: 1340CFM
- Actual max CFM/ft²: 3.19CFM/ft²
- Fan motor BHP: 0.00BHP
- Fan motor kW: 0.00kW
- Fan static: 0.00in wg

Outdoor Ventilation Air Data
- Design airflow CFM: 420CFM
- CFM/ft²: 0.97CFM/ft²
- CFM/person: 15.56CFM/person

Air System Sizing Summary for FUR-2

26010 load calculations — 06/15/2026
DAE — 10:05AM

Air System Information
- Air System Name: FUR-2
- Equipment Class: SPLT AHU
- Air System Type: SZCAV
- Number of zones: 1
- Floor Area: 1209.0ft²
- Location: Indianapolis, Indiana

Sizing Calculation Information
- Calculation Months: Jan to Dec
- Sizing Data: Calculated
- Zone CFM Sizing: Sum of space airflow rates
- Space CFM Sizing: Individual peak space loads

Central Cooling Coil Sizing Data
- Total coil load: 5.0Tons
- Total coil load: 59.7MBH
- Sensible coil load: 31.8MBH
- Coil CFM at Aug 1500: 1368CFM
- Max block CFM: 1368CFM
- Sum of peak zone CFM: 1368CFM
- Sensible heat ratio: 0.533
- CFM/Ton: 275.1
- ft²/Ton: 243.1
- BTU/(hr·ft²): 49.4
- Water flow @ 10.0 °F rise: N/A
- Load occurs at: Aug 1500
- OA DB / WB: 94.3 / 80.2°F
- Entering DB / WB: 78.2 / 69.5°F
- Leaving DB / WB: 56.0 / 55.4°F
- Coil ADP: 53.6°F
- Bypass Factor: 0.100
- Resulting RH: 67%
- Design supply temp.: 55.0°F
- Zone T-stat Check: 1 of 1OK
- Max zone temperature deviation: 0.0°F

Central Heating Coil Sizing Data
- Max coil load: 34.6MBH
- Coil CFM at Des Htg: 1368CFM
- Max coil CFM: 1368CFM
- Water flow @ 20.0 °F drop: N/A
- Load occurs at: Des Htg
- BTU/(hr·ft²): 28.6
- Ent. DB / Lvg DB: 43.7 / 67.9°F

Supply Fan Sizing Data
- Actual max CFM: 1368CFM
- Standard CFM: 1329CFM
- Actual max CFM/ft²: 1.13CFM/ft²
- Fan motor BHP: 0.00BHP
- Fan motor kW: 0.00kW
- Fan static: 0.00in wg

Outdoor Ventilation Air Data
- Design airflow CFM: 430CFM
- CFM/ft²: 0.36CFM/ft²
- CFM/person: 11.02CFM/person

Air System Sizing Summary for FUR-3

26010 load calculations — 06/15/2026
DAE — 10:05AM

Air System Information
- Air System Name: FUR-3
- Equipment Class: SPLT AHU
- Air System Type: SZCAV
- Number of zones: 1
- Floor Area: 880.0ft²
- Location: Indianapolis, Indiana

Sizing Calculation Information
- Calculation Months: Jan to Dec
- Sizing Data: Calculated
- Zone CFM Sizing: Sum of space airflow rates
- Space CFM Sizing: Individual peak space loads

Central Cooling Coil Sizing Data
- Total coil load: 5.0Tons
- Total coil load: 59.5MBH
- Sensible coil load: 32.7MBH
- Coil CFM at Jul 1600: 1475CFM
- Max block CFM: 1475CFM
- Sum of peak zone CFM: 1475CFM
- Sensible heat ratio: 0.550
- CFM/Ton: 297.2
- ft²/Ton: 177.3
- BTU/(hr·ft²): 67.7
- Water flow @ 10.0 °F rise: N/A
- Load occurs at: Jul 1600
- OA DB / WB: 93.7 / 80.1°F
- Entering DB / WB: 77.4 / 68.7°F
- Leaving DB / WB: 56.3 / 55.6°F
- Coil ADP: 53.9°F
- Bypass Factor: 0.100
- Resulting RH: 66%
- Design supply temp.: 55.0°F
- Zone T-stat Check: 1 of 1OK
- Max zone temperature deviation: 0.0°F

Central Heating Coil Sizing Data
- Max coil load: 43.4MBH
- Coil CFM at Des Htg: 1475CFM
- Max coil CFM: 1475CFM
- Water flow @ 20.0 °F drop: N/A
- Load occurs at: Des Htg
- BTU/(hr·ft²): 49.3
- Ent. DB / Lvg DB: 45.1 / 73.2°F

Supply Fan Sizing Data
- Actual max CFM: 1475CFM
- Standard CFM: 1432CFM
- Actual max CFM/ft²: 1.68CFM/ft²
- Fan motor BHP: 0.00BHP
- Fan motor kW: 0.00kW
- Fan static: 0.00in wg

Outdoor Ventilation Air Data
- Design airflow CFM: 425CFM
- CFM/ft²: 0.48CFM/ft²
- CFM/person: 12.50CFM/person

Air System Sizing Summary for FUR-4

26010 load calculations — 06/15/2026
DAE — 10:05AM

Air System Information
- Air System Name: FUR-4
- Equipment Class: SPLT AHU
- Air System Type: SZCAV
- Number of zones: 1
- Floor Area: 611.5ft²
- Location: Indianapolis, Indiana

Sizing Calculation Information
- Calculation Months: Jan to Dec
- Sizing Data: Calculated
- Zone CFM Sizing: Sum of space airflow rates
- Space CFM Sizing: Individual peak space loads

Central Cooling Coil Sizing Data
- Total coil load: 4.2Tons
- Total coil load: 50.1MBH
- Sensible coil load: 27.4MBH
- Coil CFM at Jul 1500: 1118CFM
- Max block CFM: 1118CFM
- Sum of peak zone CFM: 1118CFM
- Sensible heat ratio: 0.548
- CFM/Ton: 267.8
- ft²/Ton: 146.5
- BTU/(hr·ft²): 81.9
- Water flow @ 10.0 °F rise: N/A
- Load occurs at: Jul 1500
- OA DB / WB: 94.3 / 80.2°F
- Entering DB / WB: 79.7 / 69.9°F
- Leaving DB / WB: 56.3 / 55.5°F
- Coil ADP: 53.7°F
- Bypass Factor: 0.100
- Resulting RH: 62%
- Design supply temp.: 55.0°F
- Zone T-stat Check: 1 of 1OK
- Max zone temperature deviation: 0.0°F

Central Heating Coil Sizing Data
- Max coil load: 41.2MBH
- Coil CFM at Des Htg: 1118CFM
- Max coil CFM: 1118CFM
- Water flow @ 20.0 °F drop: N/A
- Load occurs at: Des Htg
- BTU/(hr·ft²): 67.4
- Ent. DB / Lvg DB: 39.1 / 74.3°F

Supply Fan Sizing Data
- Actual max CFM: 1118CFM
- Standard CFM: 1085CFM
- Actual max CFM/ft²: 1.83CFM/ft²
- Fan motor BHP: 0.00BHP
- Fan motor kW: 0.00kW
- Fan static: 0.00in wg

Outdoor Ventilation Air Data
- Design airflow CFM: 420CFM
- CFM/ft²: 0.69CFM/ft²
- CFM/person: 26.25CFM/person

Air System Sizing Summary for FUR-5

26010 load calculations — 06/15/2026
DAE — 10:05AM

Air System Information
- Air System Name: FUR-5
- Equipment Class: SPLT AHU
- Air System Type: SZCAV
- Number of zones: 1
- Floor Area: 930.0ft²
- Location: Indianapolis, Indiana

Sizing Calculation Information
- Calculation Months: Jan to Dec
- Sizing Data: Calculated
- Zone CFM Sizing: Sum of space airflow rates
- Space CFM Sizing: Individual peak space loads

Central Cooling Coil Sizing Data
- Total coil load: 4.8Tons
- Total coil load: 57.2MBH
- Sensible coil load: 29.8MBH
- Coil CFM at Aug 1600: 1247CFM
- Max block CFM: 1247CFM
- Sum of peak zone CFM: 1247CFM
- Sensible heat ratio: 0.522
- CFM/Ton: 261.9
- ft²/Ton: 195.3
- BTU/(hr·ft²): 61.5
- Water flow @ 10.0 °F rise: N/A
- Load occurs at: Aug 1600
- OA DB / WB: 93.7 / 80.1°F
- Entering DB / WB: 78.6 / 69.9°F
- Leaving DB / WB: 55.8 / 55.2°F
- Coil ADP: 53.2°F
- Bypass Factor: 0.100
- Resulting RH: 68%
- Design supply temp.: 55.0°F
- Zone T-stat Check: 1 of 1OK
- Max zone temperature deviation: 0.0°F

Central Heating Coil Sizing Data
- Max coil load: 33.1MBH
- Coil CFM at Des Htg: 1247CFM
- Max coil CFM: 1247CFM
- Water flow @ 20.0 °F drop: N/A
- Load occurs at: Des Htg
- BTU/(hr·ft²): 35.6
- Ent. DB / Lvg DB: 41.9 / 67.2°F

Supply Fan Sizing Data
- Actual max CFM: 1247CFM
- Standard CFM: 1211CFM
- Actual max CFM/ft²: 1.34CFM/ft²
- Fan motor BHP: 0.00BHP
- Fan motor kW: 0.00kW
- Fan static: 0.00in wg

Outdoor Ventilation Air Data
- Design airflow CFM: 425CFM
- CFM/ft²: 0.46CFM/ft²
- CFM/person: 11.18CFM/person

Air System Sizing Summary for MS-1

26010 load calculations — 06/15/2026
DAE — 10:05AM

Air System Information
- Air System Name: MS-1
- Equipment Class: UNDEF
- Air System Type: SZCAV
- Number of zones: 1
- Floor Area: 161.0ft²
- Location: Indianapolis, Indiana

Sizing Calculation Information
- Calculation Months: Jan to Dec
- Sizing Data: Calculated
- Zone CFM Sizing: Sum of space airflow rates
- Space CFM Sizing: Individual peak space loads

Central Cooling Coil Sizing Data
- Total coil load: 0.3Tons
- Total coil load: 4.0MBH
- Sensible coil load: 2.1MBH
- Coil CFM at Jul 1500: 54CFM
- Max block CFM: 54CFM
- Sum of peak zone CFM: 54CFM
- Sensible heat ratio: 0.532
- CFM/Ton: 162.4
- ft²/Ton: 487.8
- BTU/(hr·ft²): 24.6
- Water flow @ 10.0 °F rise: 0.79gpm
- Load occurs at: Jul 1500
- OA DB / WB: 94.3 / 80.2°F
- Entering DB / WB: 80.3 / 69.5°F
- Leaving DB / WB: 42.8 / 42.6°F
- Coil ADP: 38.6°F
- Bypass Factor: 0.100
- Resulting RH: 50%
- Design supply temp.: 55.0°F
- Zone T-stat Check: 1 of 1OK
- Max zone temperature deviation: 0.0°F

Central Heating Coil Sizing Data
- Max coil load: 1.9MBH
- Coil CFM at Des Htg: 54CFM
- Max coil CFM: 54CFM
- Water flow @ 20.0 °F drop: 0.19gpm
- Load occurs at: Des Htg
- BTU/(hr·ft²): 11.7
- Ent. DB / Lvg DB: 30.5 / 64.0°F

Supply Fan Sizing Data
- Actual max CFM: 54CFM
- Standard CFM: 52CFM
- Actual max CFM/ft²: 0.33CFM/ft²
- Fan motor BHP: 0.00BHP
- Fan motor kW: 0.00kW
- Fan static: 0.00in wg

Outdoor Ventilation Air Data
- Design airflow CFM: 27CFM
- CFM/ft²: 0.17CFM/ft²
- CFM/person: 26.82CFM/person

AIR BALANCE REPORT

EXHAUST
- KEF 4574 CFM
- DEF 1000 CFM
- EF-1 300 CFM
- EF-2 225 CFM
- EF-3 300 CFM

TOTAL 6399 CFM

OUTSIDE AIR
- MAU 4500 CFM
- FUR-1 420 CFM
- FUR-2 425 CFM
- FUR-3 420 CFM
- FUR-4 420 CFM
- FUR-5 425 CFM

TOTAL OUTSIDE AIR 6610

AIR BALANCE=6610-6399=211 CFM

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HANNAH R. SADLER — REGISTERED — No. 10505427 — STATE OF INDIANA — PROFESSIONAL ENGINEER

Hannah R. Sadler

CUSTOMER: Tre Ragazzi Restaurants
PROJECT NAME: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: MECHANICAL CALCULATIONS
DRAWN BY: DAE
PROJECT No. 26010

M004
05/28/2026

GENERAL PLAN NOTES:

A. MANUFACTURER TO APPROVE LINE SIZING FOR ALL COMBUSTION AIR AND VENT PIPING.
B. ALL FURNACES SHALL BE ACCESSIBLE FROM BELOW.

KEYED PLAN NOTES:

1. 30" Ø DUCT UP TO THE DOAS-1 ON ROOF. PROVIDE WITH FIRE DAMPER.
2. 28" Ø DUCT UP TO THE HOOD EXHAUST FAN ON ROOF.
3. ~~POSITION DAMPER.~~
4. SLOPE DUCT AT 1/8" PER 1'.
5. PLACE UNIT AS HIGH AS POSSIBLE IN THE ROOM.
6. EXHAUST FAN SERVING THE DISHWASHER. SEE HOOD DRAWINGS FOR MORE INFORMATION.
7. 12"Ø EXHAUST CONNECTION FROM DISHWASHER. ROUTE UNDERNEATH SUPPLY DUCT MAIN AS REQUIRED.
8. 8"Ø UP TO 2ND FLOOR.
9. CONTRACTOR SHALL FIELD VERIFY THAT ACCESS TO THE SOUTH OF THE FURNACE IS NOT REQUIRED.
10. CONTRACTOR SHALL FIELD VERIFY THAT ACCESS TO THE NORTH OF THE FURNACE IS NOT REQUIRED.

PASTA ROOM

NIC

FIRST FLOOR - MECHANICAL PLAN
SCALE: 1/4"= 1'-0"

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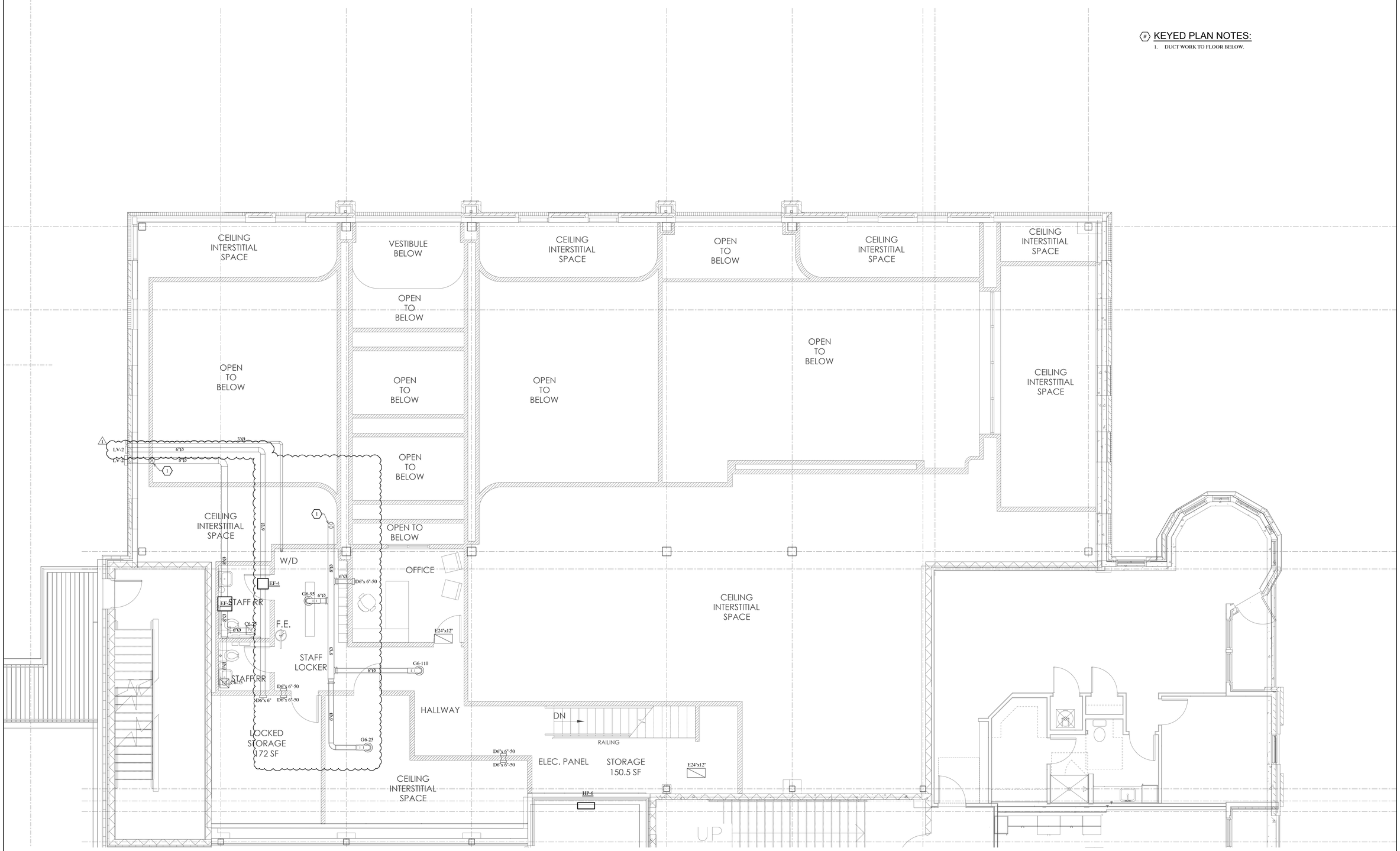
CUSTOMER: Tre Ragazzi Restaurants
PROJECT NAME: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: FIRST FLOOR - MECHANICAL PLAN
DRAWN BY: DAE
PROJECT No: 26010

M101
05/28/2026

KEYED PLAN NOTES:

1. DUCT WORK TO FLOOR BELOW.



SECOND FLOOR - MECHANICAL PLAN
SCALE: 1/4"= 1'-0"

Rev. No.	Date	Description
-	05-28-26	REVIEW SET
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1	11-19-26	CITY SUBMITTAL

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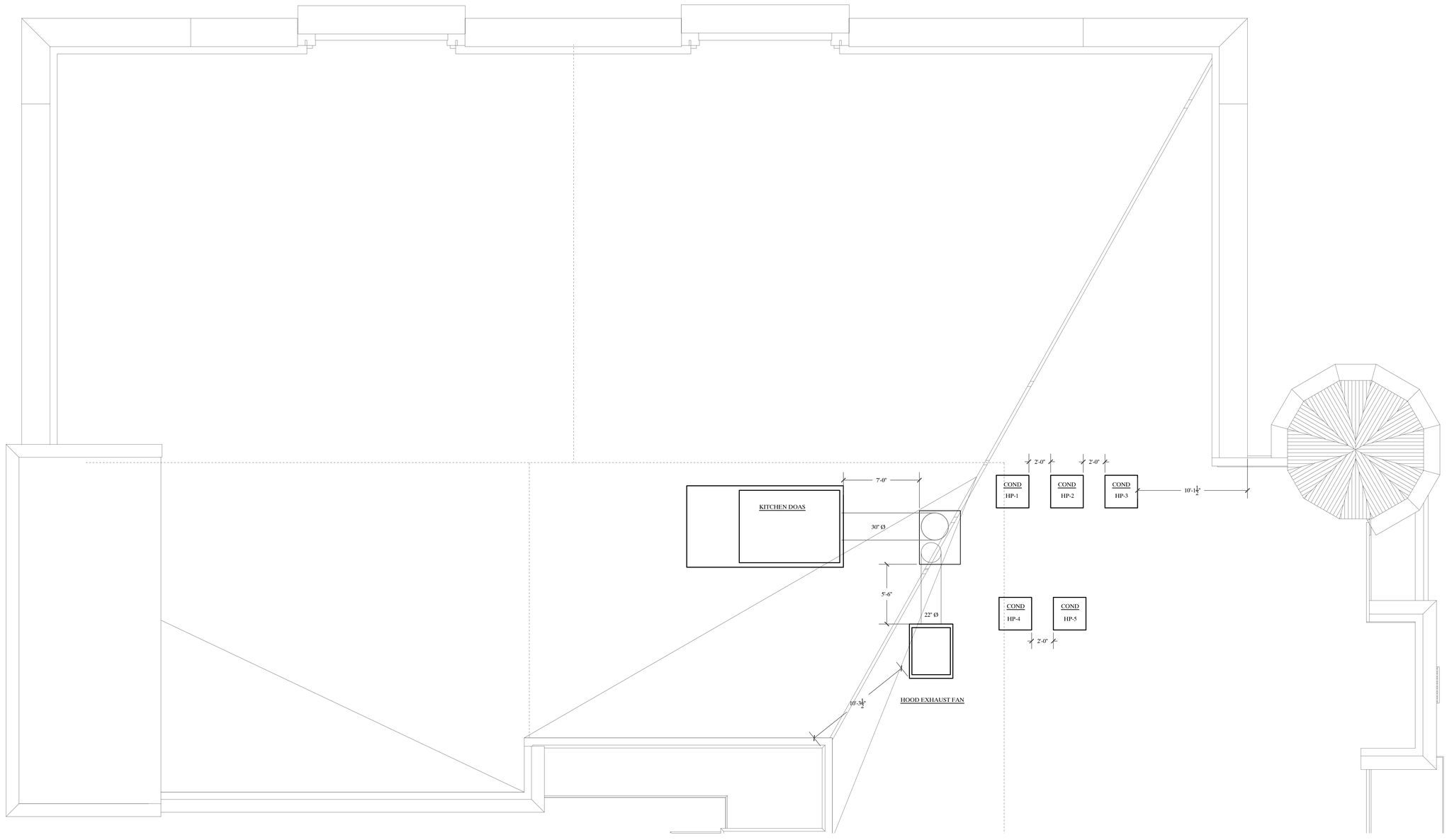
CUSTOMER: Tre Ragazzi Restaurants
PROJECT NAME: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: SECOND FLOOR - MECHANICAL PLAN
DRAWN BY: DAE
PROJECT No: 26010

M201
05/28/2026



ROOF - MECHANICAL PLAN
SCALE: 1/4"= 1'-0"

Rev. No.	Date	Description
-	05-28-26	REVIEW SET
-	09-23-26	REVIEW SET
1	11-19-26	CITY SUBMITTAL

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CUSTOMER: **Tre Ragazzi Restaurants**
PROJECT NAME: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: ROOF - MECHANICAL PLAN
DRAWN BY: DAE
PROJECT No: 26010

M301
05/28/2026

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EMAIL: reg56@captiveaire.com

HOOD INFORMATION - JOB#8455325

HOOD NO	TAG	MODEL	MANUFACTURER	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXH CFM	EXHAUST PLENUM RISER(S)							HOOD CONSTRUCTION	HOOD CONFIG	
										WIDTH	LENGTH	HEIGHT	DIA	CFM	VEL	SP		END TO END	ROW
1	KHOOD L	6024 ND-2	CAPTIVEAIRE	9' 3"	600 DEG	I	HEAVY	210	1942			4"	16"	1942	1391	-0.587"	430 SS WHERE EXPOSED	LEFT	ALONE
2	KHOOD R	6024 ND-2	CAPTIVEAIRE	12' 6"	600 DEG	I	HEAVY	225	2812			4"	18"	2812	1591	-0.836"	430 SS WHERE EXPOSED	RIGHT	ALONE
3	DISH	4824 VHB-G	CAPTIVEAIRE	7' 0"	700 DEG	II	N/A	143	1000			4"	10"	1000	1833	-0.192"	430 SS 100%	ALONE	ALONE

HOOD INFORMATION

HOOD NO	TAG	FILTER(S)					LIGHT(S)			UTILITY CABINET(S)					FIRE SYSTEM PIPING	HOOD HANGING WEIGHT
		TYPE	QTY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QTY	TYPE	WIRE GUARD	LOCATION	SIZE	FIRE SYSTEM		ELECTRICAL	SWITCHES	
												TYPE	SIZE	MODEL #	QUANTITY	
1	KHOOD L	CAPTRATE SOLO FILTER	6	20"	16"	85% SEE FILTER SPEC	3	RECESSED ROUND	NO	LEFT	12"x60"x24"	TANK FS	4.0/4.0/4.0			YES	984 LBS
2	KHOOD R	CAPTRATE SOLO FILTER	9	20"	16"	85% SEE FILTER SPEC	4	RECESSED ROUND	NO							YES	769 LBS
3	DISH						2	RECESSED ROUND	NO							NO	213 LBS

HOOD OPTIONS

HOOD NO	TAG	OPTION
1	KHOOD L	FIELD WRAPPER 4.00" HIGH FRONT, LEFT.
		BACKSPLASH 122.00" HIGH X 309.00" LONG 430 SS VERTICAL.
		INSULATION FOR TOP OF HOOD.
		STRUCTURAL FRONT PANEL.
		INSULATION FOR BACK OF HOOD.
		LEFT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS.
		FULL DIMENSION HANGING BRACKET.
2	KHOOD R	FIELD WRAPPER 4.00" HIGH FRONT, RIGHT.
		INSULATION FOR TOP OF HOOD.
		STRUCTURAL FRONT PANEL.
		INSULATION FOR BACK OF HOOD.
		RIGHT VERTICAL END PANEL 27" TOP WIDTH, 21" BOTTOM WIDTH, 80" HIGH INSULATED 430 SS.
		FULL DIMENSION HANGING BRACKET.

CLEARANCE TO COMBUSTIBLES

HOODS #	SURFACE	"CLEARANCE
1	TOP	0"
	FRONT	0"
	BACK	0"
	LEFT	0"
	RIGHT	18"
2	TOP	0"
	FRONT	0"
	BACK	0"
	LEFT	18"
	RIGHT	18"

- "0" CLEARANCE TO COMBUSTIBLES CONFORMS TO UL710 STANDARD.
- HOOD MOUNTED UTILITY CABINETS REQUIRE 36" SERVICE CLEARANCE.

CAPTIVE-AIRE HOODS ARE BUILT IN COMPLIANCE WITH

NFPA #96
NSF
UL 710 & ULC710 STANDARDS
E.T.L. LISTED 3054804-001

IMC 2021

GREASE DUCT & CHIMNEY SPECIFICATIONS:
PROVIDE GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW" ROUND 20 GAUGE 430 STAINLESS STEEL DUCTWORK. MODEL "DW" IS LISTED TO UL-1978 AND IS INSTALLED USING "V" CLAMP LOCKING CONNECTIONS SEALED WITH 3M FIRE BARRIER 2000 PLUS. MODEL "DW" DOES NOT REQUIRE WELDING PROVIDING IT HAS BEEN INSTALLED PER THE MANUFACTURES INSTALLATION GUIDE.
PROVIDE RATED ACCESS DOORS AT EVERY CHANGE IN DIRECTION AND EVERY 12' ON CENTER. PER MANUFACTURES LISTING MODEL "DW" HORIZONTAL RUNS LESS THAN 75 FT. CAN BE SLOPED 1/16" PER 12", HORIZONTAL RUNS MORE THAN 75 FT. CAN BE SLOPED 3/16" PER 12".
DUCT SHOULD BE SLOPED AS MUCH AS POSSIBLE TO REDUCE THE CHANCE OF GREASE ACCUMULATION IN HORIZONTAL RUNS.

IF THE DUCT OR CHIMNEY IS WITHIN 18 INCHES OF COMBUSTIBLE MATERIAL, PROVIDE UL-2221 OR UL-103 HT LISTED DOUBLE WALL GREASE DUCT OR DOUBLE WALL CHIMNEY EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW- 2R, 2R TYPE HT, 3R, OR 3Z" ROUND 20 GAUGE 430 STAINLESS INNER DUCT INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL.

CAPTIVEAIRE SYSTEMS RECOMMENDS THE USE OF LISTED, PRE-FABRICATED ROUND GREASE EXHAUST DUCT TO REDUCE STATIC PRESSURE IN THE SYSTEM, MINIMIZE INSTALLATION AND INSPECTION TIMES, AND ENSURE DUCT IS LIQUID TIGHT

HVAC DISTRIBUTION NOTE

HIGH VELOCITY DIFFUSERS OR HVAC RETURNS SHOULD NOT BE PLACED WITHIN TEN (10) FEET OF THE EXHAUST HOOD. PERFORATED DIFFUSERS ARE RECOMMENDED.

VERIFY CEILING HEIGHT

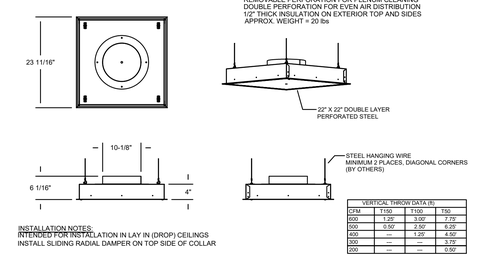
___' - ___"

HEIGHT REQUIRED TO VERIFY THAT HOOD FITS SPACE AND TO SIZE THE ENCLOSURE PANELS

CUSTOMER APPROVAL TO MANUFACTURE:

APPROVED AS NOTED ☐
APPROVED WITH NO EXCEPTION TAKEN ☐
REVISE AND RESUBMIT ☐
SIGNATURE _____
YOUR TITLE _____ DATE _____

QTY 18-DROP-IN PERFORATED SUPPLY PLENUM DIFFUSER (DI-PSP)



INSTALLATION NOTES:
INTENDED FOR INSTALLATION IN LAY IN (DROP) CEILINGS
INSTALL SLIDING RADIAL DAMPER ON TOP SIDE OF COLLAR

VERTICAL THROW DATA (ft)

CFM	T150	T100	T50
600	1.25'	3.00'	7.75'
500	0.50'	2.50'	6.25'
400	---	1.25'	4.50'
300	---	---	3.75'
200	---	---	0.50'

DIFFUSER SPECIFICATION

SPECIFICATION: CAPTRATE GREASE-STOP SOLO FILTER

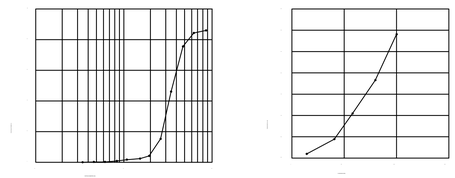
THE CAPTRATE GREASE-STOP SOLO FILTER IS A SINGLE-STAGE FILTER FEATURING A UNIQUE S-BAFFLE DESIGN IN CONJUNCTION WITH A SLOTTED REAR BAFFLE DESIGN, TO DELIVER EXCEPTIONAL FILTRATION EFFICIENCY.

FILTER IS STAINLESS STEEL CONSTRUCTION, AND SIZED TO FIT INTO STANDARD 2-INCH DEEP HOOD CHANNEL(S).

UNITS SHALL INCLUDE STAINLESS STEEL HANDLES AND A FASTENING DEVICE TO SECURE THE TWO COMPONENTS WHEN ASSEMBLED.

GREASE EXTRACTION EFFICIENCY PERFORMANCE SHALL REMOVE AT LEAST 75% OF GREASE PARTICLES FIVE MICRONS IN SIZE, AND 85% GREASE PARTICLES SEVEN MICRONS IN SIZE AND LARGER, WITH A CORRESPONDING PRESSURE DROP NOT TO EXCEED 1.0 INCHES OF WATER GAUGE.

THE CAPTRATE GREASE-STOP SOLO WAS TESTED TO ASTM STANDARD ASTM F2519-05. MANUFACTURER APPROVED FOR USE IN SOLID FUEL APPLICATIONS AS A SPARK ARRESTER.



CAPTRATE FILTERS ARE BUILT IN COMPLIANCE WITH:.
NFPA #96.
NSF STANDARD #2.
UL STANDARD #1046.
INT. MECH. CODE (IMC).
ULC-S649.

REVISIONS

	DESCRIPTION	DATE
△		
△		
△		
△		

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www.captiveaire.com

Tre Ragazzi
CARMEL, IN, 46032

DATE: 11/5/2026
DWG.#: 8455325
DRAWN BY: MRY
SCALE: 3/4" = 1'-0"
MASTER DRAWING

SHEET NO. 1

Rev. No.	Date	Description
-	05-28-26	REVIEW SET
-	09-23-26	REVIEW SET
1	11-19-26	CITY SUBMITTAL

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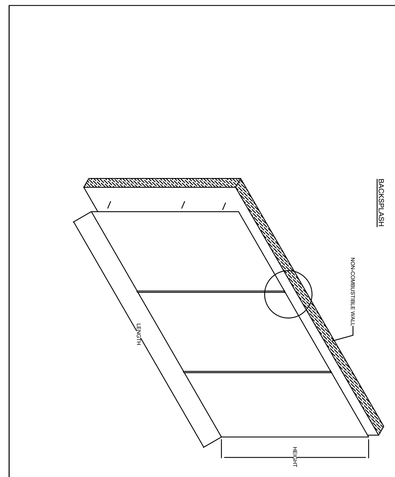
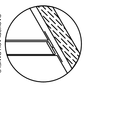
Mechanical, Electrical, and Energy Engineering

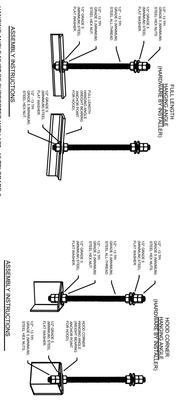
HANNAH R. SADLER
REGISTERED
No. 10505427
STATE OF INDIANA
PROFESSIONAL ENGINEER

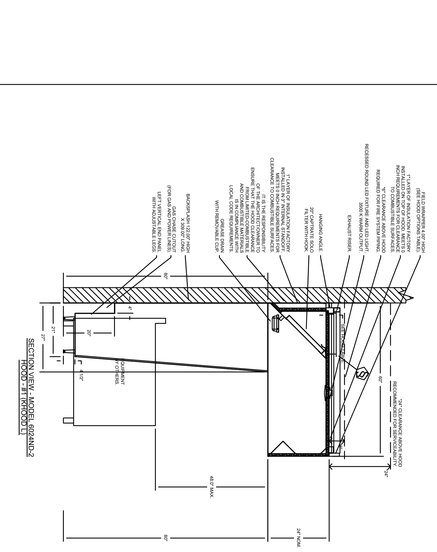
CUSTOMER: Tre Ragazzi Restaurants
PROJECT: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: HOOD DRAWINGS
DRAWN BY: DAE
PROJECT No. 26010

M401
05/28/2026








SECTION VIEW - MODEL 60SND2
HOOD #1 (KHOOD1)
6'-0" MAX
3'-0" MIN
8'
1'-0"
2'-0"
1'-0"
1'-0"
1

FIRE SYSTEM INFORMATION - JOB#8455325

FIRE SYSTEM NO	TAG	TYPE	SIZE	MAX FP	DESIGN FP	INSTALLATION	
						SYSTEM	LOCATION ON HOOD
1		TANK FS	4.0/4.0/4.0	60	56	FIRE CABINET LEFT	LEFT, HOOD 1

GAS VALVE(S)

FIRE SYSTEM NO	TAG	TYPE	SIZE	SUPPLIED BY
1		SC ELECTRICAL	2.000	CAPTIVEAIRE SYSTEMS

FIRE SYSTEM PARTS LIST KEY

FIRE SYSTEM NO	TAG	KEY NUMBER - PART DESCRIPTION	QTY BY FACTORY	QTY BY DIST
1		0 - 0 - TANK STRAP - TANK STRAP - USED FOR TANK FIRE SUPPRESSION.	9	0
		0 - 0 - 98694A115 - HARDWARE, DATANKLOCK LOCKING BRACKET SQUARE NUTS 5/16" ZINC, TANK FIRE SUPPRESSION.	6	0
		0 - 0 - DATANKLOCK - DISCHARGE ADAPTER TANK LOCKING PLATE FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	3	0
		0 - 0 - CBI-107 - CHROME PLATED PIPE FITTING 3/8" NPT UNION.	2	0
		0 - 0 - 79425 - 3/8" NPT FEMALE TO 1/2" MALE PROPRESS ADAPTER.	3	0
		0 - 0 - 9097200PC - PRO PRESS PC611 1/2 PRESS TEE LD.	12	0
		0 - 0 - A0034332 - JUNCTION BOX FOR MANUAL PULL STATION. 1.5" DEEP BACK BOX, RED COLOR.	1	0
		0 - 0 - CBI-106 - CHROME PLATED PIPE FITTING 3/8" NPT 90 DEGREE ELBOW.	2	0
		16 - 16 - OL-F - NOZZLE - TANK PROTECTION APPLIANCE COVERAGE NOZZLE (INCLUDES METAL BLOW OFF CAP, LANYARD, USED WITH CHROME-PLATED PIPE).	14	0
		26 - 26 - QSA-3/8 - QUIK SEAL - 3/8" (UL).	14	0
		0 - 0 - 87-130045-001 - HOSE, SECONDARY ACTUATOR HOSE, 7.5" BRAIDED STAINLESS STEEL, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - 87-300152-001 - HARDWARE, SVA BOLTS, TANK FIRE SUPPRESSION.	12	0
		0 - 0 - - TANK FIRE SUPPRESSION MAINTENANCE GUIDE UTILITY CABINET LABEL SHEET.	1	0
		0 - 0 - 9055455PC - PRO PRESS 1/2 PRESS X PRESS 90 ELBOW LD.	12	0
		0 - 0 - - TANK FIRE SUPPRESSION POST-DISCHARGE PROCEDURE UTILITY CABINET LABEL SHEET.	1	0
		0 - 0 - WK-283952-000 - DISCHARGE ADAPTER, TANK FIRE SUPPRESSION.	3	0
		0 - 0 - CBI-22.5 - CHROME PLATED PIPE FITTING 3/8" NPT 22.5 DEGREE ELBOW.	4	0
		34 - 34 - A0034331 - RED COLOR - 24VDC SINGLE ACTION MANUAL ACTUATION DEVICE (PUSH/PULL STATION) WITH PROTECTIVE COVER, ONE (1) NORMALLY OPEN CONTACT.	1	0
		16 - 16 - 79210 - 1/2" X 3/8" NPT MALE ADAPTER, VIEGA.	14	0
		0 - 0 - 32-00002 - QUIK SEAL - 1/2" (UL).	2	0
		0 - 0 - 361091 - 3/8" BRASS PLUG.	3	0
		0 - 0 - BI145 - 3/8" BLACK IRON 90 ELL.	5	0
		0 - 0 - TFS-UCTANKBRACKET - TANK BRACKET FOR FIRE SYSTEM TANK INSTALLATION IN UTILITY CABINETS, TANK FIRE SUPPRESSION.	3	0
		0 - 0 - 79580 - 1/2" X 1/2" PRO-PRESS TEE X 1/2 " NPT FEMALE CONNECTION, VIEGA.	3	0
		0 - 0 - A31484 - 1/4" NPT SCHRADER VALVE AND CAP, JB INDUSTRIES. 1/4" FLARE X 1/4" MPT HALF UNION. USED ON TANK SERVICE PORT.	2	0
		0 - 0 - 79525 - 1/2" 90 PRO-PRESS ELBOW WITH 1/2 " NPT FEMALE CONNECTION, VIEGA.	2	0
		0 - 0 - 4429K422 - 1/2" X 1/4" BRASS REDUCING BUSHING.	2	0
		0 - 0 - 4429K153 - 1/2" MALE NPT TO 1/2" FEMALE NPT ELBOW, BRASS.	3	0
		0 - 0 - 87-300030-001 - PRIMARY ACTUATOR KIT (PAK) - ACTUATOR AND RELEASE SOLENOID ASSEMBLY, ONE NEEDED PER FIRE SYSTEM, SUPERVISED, TANK FIRE SUPPRESSION.	1	0
		0 - 0 - 87-120042-001 - SECONDARY ACTUATOR VALVE (SVA) - SINGLE ACTUATOR, REQUIRES PRIMARY RELEASE ACTUATOR, TANK FIRE SUPPRESSION.	2	0
		0 - 0 - 87-300033-001 - DIN CONNECTOR, CANFIELD PART #5J560-201-EU0A, TANK FIRE SUPPRESSION, SUBMINATURE SOLENOID CONNECTION (CED VENDOR 30377).	1	0
		0 - 0 - 87-300001-001 - TANK - PRESSURIZED TANK USED FOR TANK FIRE SUPPRESSION.	3	0
		0 - 0 - 12-F28021-32144-OT-360 - DUCT FIRE THERMOSTAT WITH 12 FOOT WIRE LEADS. NO, CLOSE ON TEMP RISE AT 360°F. (A0034310).	2	0
		0 - 0 - SLPCON-05FT - SUPERVISED LOOP CONNECTION KIT. CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN END TO END HOODS WITH LESS THAN A 4' GAP. KIT CONTAINS 7 FEET OF BLACK MG WIRE, 7 FEET OF TAN MG WIRE, 5 FEET OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS.	1	0
		0 - 0 - SLPCON-03FT - SUPERVISED LOOP CONNECTION KIT. CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN END TO END HOODS WITH LESS THAN A 2' GAP. KIT CONTAINS 5 FEET OF BLACK MG WIRE, 5 FEET OF TAN MG WIRE, 3 FEET OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS.	1	0
		0 - 0 - SLPCON-30FT - SUPERVISED LOOP CONNECTION KIT. CONTAINS THE PARTS NEEDED TO CONNECT THE SUPERVISED LOOP BETWEEN HOODS WITH UPTO 29' GAP. KIT CONTAINS 32 FEET OF BLACK MG WIRE, 32 FEET OF TAN MG WIRE, 30 FEET OF FLEXIBLE CONDUIT, AND TWO 7/8" CONNECTORS.	1	0
		SC-AGSGSV2 - GAS VALVE - 2" ELECTRICAL SHUTOFF VALVE FOR USE WITH HMI RESET, 120V, 60HZ (#AGSGSV2). STRAINER BUILT INTO THE GAS VALVE.	1	0

JOB NO 8455325 | MODEL NUMBER: DCV-1111 | DRAWN BY: MRY | SCHEMATIC TYPE: Electrical Mechanical | DESCRIPTION OF OPERATION: DESCRIPTION OF OPERATION: Captive-Aire Tre Ragazzi Restaurant equipped with Electronic Detection utilizing CORE hood to an Located Release Mechanism. Installed in Hood Utility Cabinet beyond Fire protection. Includes 10' flex housing to duct sensor, batteries, and terminals for connection to main control panel. | JOB NAME: Tre Ragazzi | DATE: 11/5/2026 | DRAWING NO: ECP #1.0

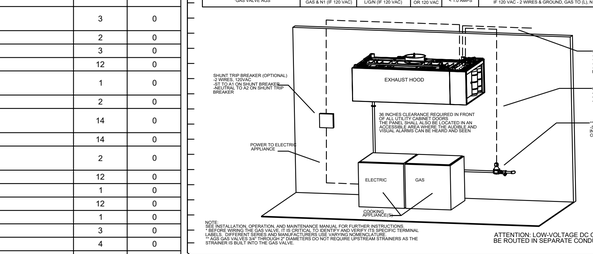
TANK PROTECTION ELECTRICAL DETAIL

03/18/2026 Rev. 03

FS-1: MASTER

ELECTRICIAN:
1. WIRE MAIN CONTROL PANEL PER INCLUDED SCHEMATIC
2. WIRE SHUNT TRIP BREAKER PER SCHEMATIC
3. WIRE SHUNT TRIP BREAKER (OPTIONAL)
4. WIRE GAS APPLIANCE KILL SWITCH, IF EQUIPPED (OPTIONAL)
5. WIRE GAS VALVE

ELECTRICAL CONTRACTOR REQUIREMENT					
ITEM	CONNECTION IN PANEL	CONNECTION IN DEVICE	VOLTAGE	AMPERAGE	COMMENTS
SHUNT TRIP BREAKER (OPTIONAL)	ST & N1	BREAKER DOR AT & N1	120 VAC	< 6 AMPS	ST TO A1 ON SHUNT BREAKER COIL, AND NEUTRAL TO A2 ON SHUNT TRIP BREAKER COIL
CONTROL PANEL POWER	H1 & H1 + GROUND	CIRCUIT BREAKER	120 VAC	15 AMPS	CONTROL PANEL POWER MUST NOT BE RUN THROUGH SHUNT TRIP BREAKER
UDS APPLIANCE KILL SWITCH (OPTIONAL)	KTS & N1	KTS, N1	120 VAC	< 4 AMPS	KILL SWITCH TERMINALS MUST BE IN SERIES WITH OTHER KILL SWITCHES
REMOTE 120VAC ANSUL AUTOMAN (OPTIONAL)	AU1, AU2	SOLENOID	120 VAC	< 6 AMPS	120V TO AU1, AU2 TO ANSUL ELECTRIC AUTOMAN, ANSUL SOLENOID TO NEUTRAL
*GAS VALVE ASCO	GAS & N1/T (IF 24 VDC) GAS & N1 (IF 120 VAC)	RED/RED/GREEN	24 VAC OR 120 VAC	< 1.0 AMPS	IF 24 VAC, 2 WIRES & GROUND, VLV2 TO RED, AND GREEN TO GROUND IF 120 VAC- 2 WIRES & GROUND, GAS TO B1, B2 TO RED, AND GREEN TO GROUND
*GAS VALVE AGS	GAS & N1/T (IF 24 VDC) GAS & N1 (IF 120 VAC)	+24V (IF 24 VDC) L1/GN (IF 120 VAC)	24 VAC OR 120 VAC	< 1.0 AMPS	IF 24 VAC- 2 WIRES & GROUND, LOG TO N1, N1TO TO L1, AND GREEN TO GROUND IF 120 VAC- 2 WIRES & GROUND, GAS TO (L) N1 TO (L), AND TO GREEN TO GROUND



NOTE:
SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS
* GAS VALVES WITH 1/2" TO 1" DIAMETERS HAVE INTEGRAL STRAINERS WITH REMOVABLE SCREENS. DIFFERENT SIZES AND MANUFACTURERS USE VARYING NOMENCLATURE.
** AGS GAS VALVES 3/4" THROUGH 2" DIAMETERS DO NOT REQUIRE UPSTREAM STRAINERS AS THE STRAINER IS BUILT INTO THE GAS VALVE.

ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES

JOB NO 8455325 | MODEL NUMBER: DCV-1111 | DRAWN BY: MRY | SCHEMATIC TYPE: Electrical Mechanical | DESCRIPTION OF OPERATION: DESCRIPTION OF OPERATION: Captive-Aire Tre Ragazzi Restaurant equipped with Electronic Detection utilizing CORE hood to an Located Release Mechanism. Installed in Hood Utility Cabinet beyond Fire protection. Includes 10' flex housing to duct sensor, batteries, and terminals for connection to main control panel. | JOB NAME: Tre Ragazzi | DATE: 11/5/2026 | DRAWING NO: ECP #1.0

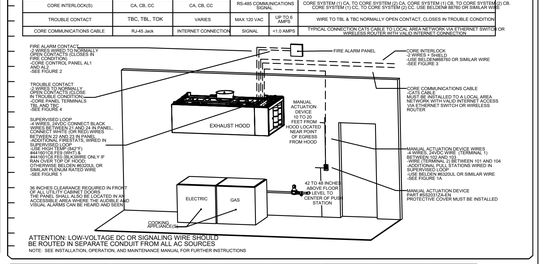
TANK PROTECTION LOW-VOLTAGE DETAIL

10/01/2023 Rev. 3

FS-1: MASTER

ALARM CONTRACTOR:
1. WIRE MANUAL ACTUATION DEVICE(S), *REMOTE FIRESTAT(S), CORE INTERLOCK(S), FIRE SENSOR(S) AND FIRE ALARM CONTACTS
2. COMPLETE FINAL HOOKUP OF SYSTEM
3. PROGRAM CORE PANEL AS NEEDED
*REMOTE FIRESTAT(S) MAYBE BE REQUIRED DEPENDING ON THE DUCT LAYOUT AND HOOD TEMPERATURE RATING. REFERENCE MANUAL FOR LOCATION AND GUIDELINES.

ALARM CONTRACTOR REQUIREMENT					
ITEM	CONNECTION IN PANEL	CONNECTION ON DEVICE	VOLTAGE	AMPERAGE	COMMENTS
MANUAL ACTUATION DEVICE(S)	101 AND 104 102 AND 103	1 & 2	24 VDC	< 1.0 AMPS	WIRE MANUAL ACTUATION DEVICE TERMINAL 1 TO FIRST CORE PANEL TERMINAL 101 AND 104. WIRE MANUAL ACTUATION DEVICE TERMINAL 2 TO NEXT MANUAL ACTUATION DEVICE OR LAST CORE PANEL TERMINAL 102 AND 103. JUMPER 101 TO 104 AND 102 TO 103 IF NO MANUAL ACTUATION DEVICE IS INSTALLED
MANUAL ACTUATION DEVICE COVER	N/A	N/A	N/A	N/A	MANUAL ACTUATION DEVICE COVER IS REQUIRED FOR EACH MANUAL ACTUATION DEVICE INSTALLED
REMOTE FIRESTAT SENSOR(S)	S1 AND S4 S3 AND S3	BLACK AND WHITE	24 VDC	< 1.0 AMPS	WIRE FIRE SENSOR BLACK WIRE TO FIRST HOOD CORE PANEL TERMINAL S1 AND S3. WIRE FIRE SENSOR WHITE WIRE TO NEXT FIRE SENSOR OR LAST CORE PANEL TERMINAL S4 AND S3. HIGH TEMP SPST-NO FIRESTAT(S) MUST BE INSTALLED AT CORE OR WITHIN 24" FROM OUTLET(S) AT CORE. OR WITHIN 24" FROM OUTLET(S) AT DUCT TRANSITION OF HOOD, OTHERWISE BEYOND MODEL OR SIMILAR PLENUM RATED HOOD. SEE FIGURE 1
FIRE ALARM CONTACT	AL1, AL2	VARIES	SEE MAX VOLTAGE	UP TO 1 AMP	FIRE ALARM RELAY OR CONTACTS LOCATED IN THE CORE ELECTRICAL CONSOLE PANEL
CORE INTERLOCK(S)	CA, CB, CC	CA, CB, CC	RS-485 COMMUNICATIONS SIGNAL		CORE SYSTEM (1) CA, TO CORE SYSTEM (2) CA. CORE SYSTEM (1) CB, TO CORE SYSTEM (2) CB. CORE SYSTEM (1) CC, TO CORE SYSTEM (2) CC. USE BELDEN 9792 OR SIMILAR WIRE
TROUBLE CONTACT	TBC, TBL, TDK	VARIES	MAX 120 VAC	UP TO 6 AMPS	WIRE TO TBL & TBC NORMALLY OPEN CONTACT, CLOSES IN TROUBLE CONDITION
CORE COMMUNICATIONS CABLE	RJ-45 Jack	INTERNET CONNECTION	SIGNAL	+1.0 AMPS	TYPICAL CONNECTION CAT5 CABLE TO LOCAL AREA NETWORK VIA ETHERNET SWITCH OR WIRELESS ROUTER FROM ALL CORE PANELS CONNECTION.



ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES

NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS

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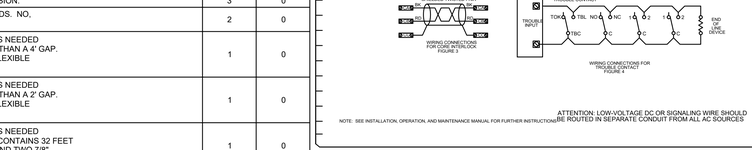
TANK PROTECTION LOW-VOLTAGE FIGURES

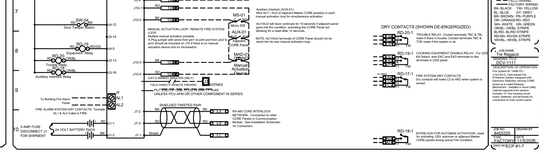
10/01/2023 Rev. 17

FS-1: MASTER



ATTENTION: LOW-VOLTAGE DC OR SIGNALING WIRE SHOULD BE ROUTED IN SEPARATE CONDUIT FROM ALL AC SOURCES

NOTE: SEE INSTALLATION, OPERATION, AND MAINTENANCE MANUAL FOR FURTHER INSTRUCTIONS



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Rev. No.	Date	Description
-	05-28-26	REVIEW SET
-	09-23-26	REVIEW SET
1	11-19-26	CITY SUBMITTAL

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HANNAH R. SADLER
REGISTERED
No. 10505427
STATE OF INDIANA
PROFESSIONAL ENGINEER

CUSTOMER: Tre Ragazzi Restaurants
PROJECT NAME: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: HOOD DRAWINGS

DRAWN BY: DAE
PROJECT No: 26010

M403
05/28/2026

Tre Ragazzi
CARMEL, IN, 46032

DATE: 11/5/2026

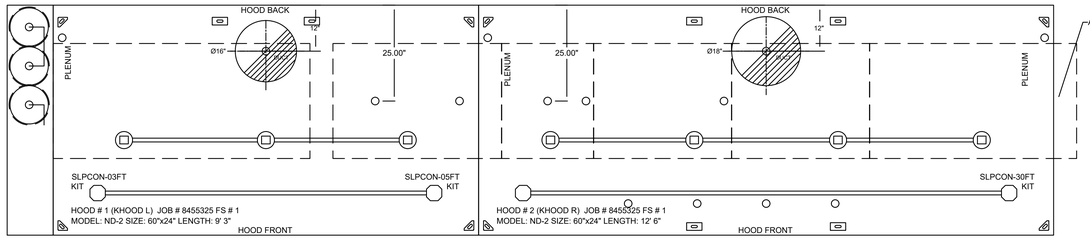
DWG.#: 8455325

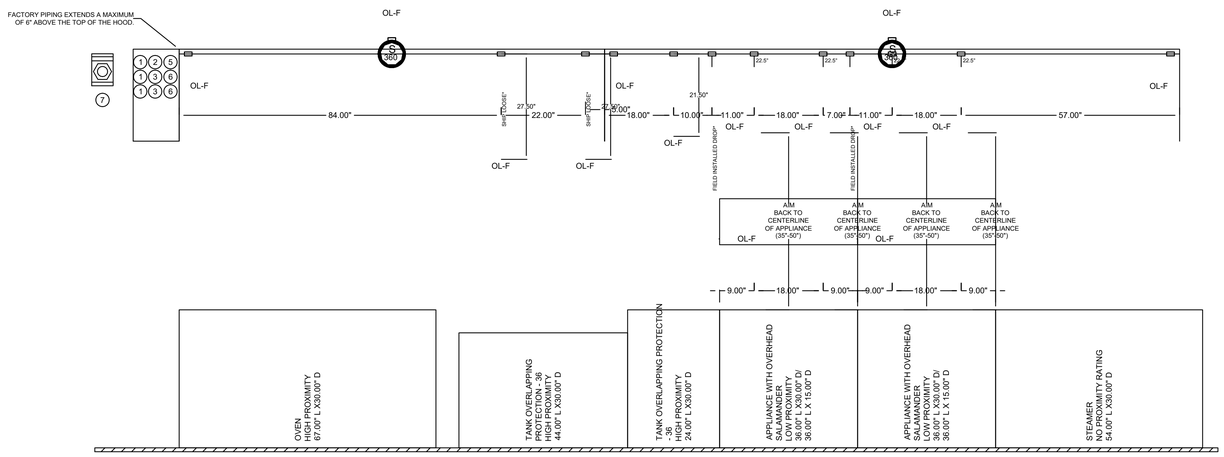
DRAWN BY: MRY

SCALE: 3/4" = 1'-0"

MASTER DRAWING

SHEET NO. 3





NOTES
- FIELD PIPE DROPS AS SHOWN
  PIPING, ELBOWS, TEES, AND NOZZLES SUPPLIED BY CAS.
- FIELD INSTALLED DROP: FACTORY WILL PROVIDE QTY 2 60IN LONG PIECES OF CHROME PLATED PIPING SHIPPED LOOSE TO BE FIELD-INSTALLED.
- SHIP LOOSE DROP: FACTORY WILL PROVIDE THE EXACT CHROME PIPE LENGTH NEEDED SHIPPED LOOSE TO BE FIELD-INSTALLED.
- RELOCATE NOZZLES IF FLOW PATTERN IS BLOCKED BY SHELVING, SALAMANDERS, ETC.
- OVERLAPPING COVERAGE SHALL NOT BE USED ON ANY APPLIANCE WITH AN OBSTRUCTION.
- IF APPLICABLE, EXTENDED PRE-PIPED DROPS ARE SHIPPED LOOSE.
- FACTORY PIPING EXTENDS A MAXIMUM OF 6" ABOVE THE TOP OF THE HOOD.

- APPLIANCE DIMENSIONS LISTED REPRESENT THE COOKING SURFACE SIZE, NOT THE OVERALL APPLIANCE SIZE.

- THIS PRE-ENGINEERED FIRE SYSTEM COMPLIES WITH U.L. 300 REQUIREMENTS.

- OL-F NOZZLE PART NUMBER REPLACES 3070-3/8H-10-SS

JOB #: 8455325.
JOB NAME: R5 ANTHONYS SEAFOOD CARMEL.

SYSTEM SIZE: TANK-SP-3 DESIGN FP: 56. MAXIMUM FP: 60.
HOOD # 1 9' 3.00" LONG x 60" WIDE x 24" HIGH.
RISER # 1 SIZE: 16" DIA.
HOOD # 1 METAL BLOW-OFF CAPS INCLUDED.
HOOD # 2 12' 6.00" LONG x 60" WIDE x 24" HIGH.
RISER # 1 SIZE: 18" DIA.
HOOD # 2 METAL BLOW-OFF CAPS INCLUDED.

- HEAVY-DUTY APPLIANCES (RATED 600°F) WILL REQUIRE AN ADDITIONAL DOWNSTREAM FIRESTAT IN THE EVENT THAT THE DUCTWORK CONTAINS ANY HORIZONTAL RUNS OVER 25 FT IN LENGTH.
- MEDIUM TO LIGHT-DUTY APPLIANCES (RATED 450°F) WILL NOT REQUIRE ANY ADDITIONAL DOWNSTREAM DETECTION.

AGENT DISTRIBUTION PIPING LIMITATIONS	
PIPE SECTION	MAX PIPE LENGTH (FT)
MAX SUPPLY LINE TO FIRST OVERLAPPING NOZZLE	42
OVERLAPPING NOZZLE APPLIANCE BRANCH	10
DEDICATED NOZZLE APPLIANCE BRANCH	10

LEGEND - FIRE CABINET TANK SYSTEM

1 4 GALLON TANK.
2 PRIMARY ACTUATOR RELEASE.
3 SECONDARY ACTUATOR RELEASE.
4 PRESSURE SUPERVISION SWITCH.
5 PRIMARY HOSE ASSEMBLY.
6 SECONDARY HOSE ASSEMBLY.
7 REMOTE MANUAL ACTUATION DEVICE.

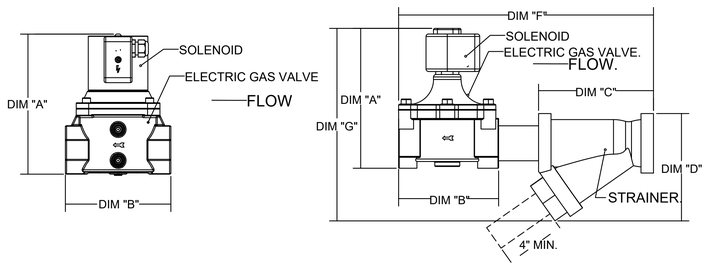
GAS VALVES AND STRAINERS

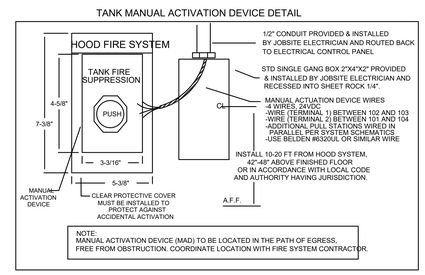
	GAS VALVE SIZING						GAS VALVE DIMENSIONS						INSTALLATION	PART NUMBERS		
	TYPE	SIZE	VOLTAGE	MINIMUM INLET PRESSURE	MAXIMUM INLET PRESSURE	FLOW AT 1 IN.W.C. DROP NATURAL GAS	FLOW AT 1 IN.W.C. DROP PROPANE	DIM "A"	DIM "B"	DIM "C"	DIM "D"	DIM "F"	DIM "G"	PIPE ORIENTATION	GAS VALVE PART NUMBER	STRAINER PART NUMBER	GAS VALVE/STRAINER KIT
GAS VALVE FOR FS#1--->	ELECTRICAL	2"	120 VAC	0 PSI (0 IN.W.C.)	5 PSI (138 IN.W.C.)	3,096,280 BTU/HR	7,740,700 BTU/HR	9-1/16"	6-5/8"	N/A	N/A	N/A	N/A	HORIZONTAL/VERTICAL	AGSGSV2	N/A	(SC)AGSGSV2

ELECTRIC GAS VALVES ONLY: SOLENOID ORIENTATION
3/4"-3" 120VAC GAS VALVES CAN BE MOUNTED WITH THE SOLENOID IN ANY POSITION AT OR ABOVE HORIZONTAL.
3/4"-2" 24VDC GAS VALVES CAN BE MOUNTED WITH THE SOLENOID IN ANY POSITION AT OR ABOVE HORIZONTAL.

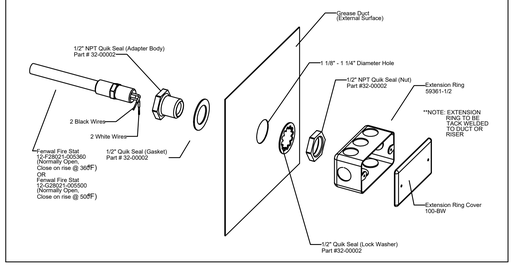
ALL GAS VALVES/STRAINERS
PROPER CLEARANCE MUST BE PROVIDED IN ORDER TO SERVICE THE STRAINERS.
A MINIMUM OF 4" CLEARANCE DISTANCE MUST BE PROVIDED AT THE BASE OF THE STRAINER.
CUSTOMER MUST VERIFY BTU CONSUMPTION AS WELL AS PRESSURE RATING.
SPECIFIC GRAVITY OF NATURAL GAS = 0.64, SPECIFIC GRAVITY OF LP = 1.52.

CALCULATIONS
TO CALCULATE GAS FLOW FOR OTHER THAN 1 IN.W.C. PRESSURE DROP.
NEW BTU/HR = (BTU/HR AT 1 IN.W.C. PRESSURE DROP) X NEW PRESSURE DROP0.5.
TO CALCULATE GAS FLOW FOR OTHER THAN 0.64 SPECIFIC GRAVITY.
NEW BTU/HR = (BTU/HR AT 0.64) X (0.64 / NEW SPECIFIC GRAVITY)0.5.





FIRE SENSOR - FACTORY INSTALLED



CAPTIVE-AIRE EQUIPMENT PACKAGE PROVIDED BY KITCHEN EQUIPMENT CONTRACTOR

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Tre Ragazzi
CARMEL, IN, 46032

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DRAWN BY: MRY
SCALE: 3/4" = 1'-0"
MASTER DRAWING

SHEET NO. 4

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PROJECT No. 26010

M404
05/28/2026

EXHAUST FAN INFORMATION - JOB#8455325

FAN UNIT NO	TAG	QTY	FAN UNIT MODEL #	MANUFACTURER	CFM	ESP	RPM	MOTOR ENCL	HP	BHP	PHASE	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS)	SONES
1	KEF	1	USBI24DD-RM	CAPTIVEAIRE	4754	2.200	1140	ODP,PREMIUM	5.000	3.3500	3	208	15.8	1575 FPM	922	26
2	DEF	1	SIF15DD	CAPTIVEAIRE	1000	1.205	1495	TEFC,PREMIUM	1.000	0.4420	3	208	3.0		277	11.9

DOAS/RTU FAN SCHEDULE - JOB#8455325

FAN INFORMATION										ELECTRICAL INFORMATION					COOLING INFORMATION								REHEAT INFORMATION					GAS HEAT INFORMATION						A2L MINIMUM ROOM VOLUME		
FAN UNIT NO	TAG	QTY	DOAS/RTU MODEL #	MANUFACTURER	BLOWER	TOTAL CFM	MAX OUTSIDE AIR CFM	RETURN AIR CFM	WEIGHT (LBS)	ESP	HP	PHASE	VOLT	MCA	MOCP	OUTSIDE AIR		LEAVING AIR			CAPACITY		IEER	ISMRE2	DISCHARGE		CAPACITY		MOISTURE REMOVAL RATE	GAS TYPE	INPUT BTUs	OUTPUT BTUs	TEMP RISE	REQUIRED INPUT GAS PRESSURE		ROOM AREA (FT2)	AIRFLOW (CFM)	HEIGHT (FT)
																DB	WB	DB	WB	DP	TOTAL	SENS.			DB	WB	DESIRED	MAX									
3	MAU	1	CAS-HVAC4-I.500-20-30T-DOAS	CAPTIVEAIRE	20P-4	4500	4500	0	4894	0.600	5.00	3	208	142.2A	150A	86.1°F	77.9°F	54.4°F	53.0°F	52.0°F	372.5 MBH	148.0 MBH	17.8	8.1	70.0°F	59.1°F	76.4 MBH	260 MBH	202.4 LBS/HR	NATURAL	463112	375121	70°F	7 IN. W.C. - 14 IN. W.C.		1013.3	1824	7.2

NOTES:

1. INVERTER SCROLL COMPRESSOR WITH INTEGRATED OIL SENSOR. DIGITAL OR STAGED SCROLL NOT AN APPROVED EQUAL
2. DIRECT DRIVE PLENUM BLOWER. BELT DRIVEN BLOWERS ARE NOT ACCEPTABLE
3. INTEGRATED MONITORING VIA CELLULAR CONNECTION BY MANUFACTURER
4. REFRIGERATION PRESSURE MONITORING ON HIGH AND LOW PRESSURE SIDE OF SYSTEM INCLUDED THROUGH DIGITAL INTERFACE
5. EC MOTOR CONDENSING FANS
6. ELECTRONIC EXPANSION VALVE. TXV NOT ACCEPTABLE
7. SUCTION LINE ACCUMULATOR
8. FACTORY COMMISSIONING WITH 5 YEAR PARTS WARRANTY, 25 YEAR WARRANTY ON STAINLESS STEEL HEAT EXCHANGER
9. AVERAGING INTAKE, EVAP AND DISCHARGE TEMPERATURE SENSORS (DISCHARGE SENSOR TO BE FACTORY MOUNTED WITHIN UNIT)
10. 2" EXTERIOR DUAL-WALL CONSTRUCTION W/ R-13 INSULATION-MINIMUM 26GA EXTERIOR W/ 14GA BASE
11. 81% EFFICIENT FURNACE, WITH MODULATING INDUCER TO MAINTAIN CONSTANT COMBUSTION EFFICIENCY ACROSS FIRING RANGE. 6:1 TURNDOWN WITH NG AND 5:1 TURNDOWN WITH LP
12. UNIT SHALL INCLUDE A SERVICE SAFE STOP FEATURE - PROTECTS THE COMPRESSOR FROM DAMAGE DURING SHUTDOWN FOR SERVICE
13. SUPPLY CFM MONITORING INTEGRAL TO UNIT WITH CFM MEASUREMENT INCLUDED THROUGH DIGITAL INTERFACE
14. FULLY MODULATING HOT GAS REHEAT
15. LOW AMBIENT COOLING OPERATION DOWN TO 0°F
16. SIDE DISCHARGE/NO RETURN
17. MINIMUM ROOM AREA ASSUMED 7.2' SUPPLY DIFFUSER HEIGHT AND IS CALCULATED PER UL60335-2-40 4TH ED. VALUES BASED ON FACTORY CHARGE. ACTUAL SITE CHARGE MAY DIFFER.
18. SCCR RATING OF 100kAMP

FAN ACCESSORIES

FAN UNIT NO	TAG	EXHAUST				SUPPLY			
		GREASE CUP	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT	SIDE DISCHARGE	GRAVITY DAMPER	MOTORIZED DAMPER	WALL MOUNT
1	KEF	YES							
2	DEF								

CURB ASSEMBLIES

NO	ON FAN	TAG	R-VALUE	WEIGHT	ITEM	SIZE
1	# 1	KEF		79 LBS	CURB	42.500"W X 52.000"L X 24.000"H VENTED.
2		DUCT RUN1		37 LBS	CURB	26.000"W X 26.000"L X 20.000"H.
3	# 3	MAU	4.3	210 LBS	CURB	80.000"W X 111.000"L X 14.000"H INSULATED 16 GAUGE.

1" R4.3 FOIL FACED FIBERGLASS INSULATION. COMPLIES WITH UL/ULC,ASTM, & ASHRAE STANDARDS.

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1	KEF	1	BI24 - INLET SERVICE DUCT CONNECTION. USED TO CONNECT TO STANDARD 24" GREASE DUCT OR FIELD WELDED DUCT. INCLUDES (2) 7" RISERS BOLTED TO STANDARD INLET RISER
		1	UTILITY SET GREASE CUP
		1	BI24 - 24" DISCHARGE EXTENSION
		1	BI - DISCHARGE ORIENTATION VERTICAL UPPER LEFT - CW INLET SIDE
		1	BI24 - INLET CONNECTION STANDARD 24" FLANGED GREASE DUCT
		1	CURB MOUNTED SLED FOR USBI 24. USED TO MOUNT ON 52" L X 42.5" W CURB
		1	UTILITY SET - FAN SLED RESTRAINED SPRING VIBRATION ISOLATORS - BI24 THRU BI36 / EQUIVALENT SIZED UTILITY SET - INDOOR/OUTDOOR USE (SET OF 6)
		1	2 YEAR PARTS WARRANTY
2	DEF	1	SIF - STAINLESS STEEL HOUSING CONSTRUCTION
		1	SIF 15- SS LOW SP STRAIGHT DISCHARGE- SQUARE TO ROUND DISCHARGE ADAPTER
		1	SIF15 - INLET - STANDARD 16" DUCT CONNECTION
		1	SIF - HORIZONTAL OVERHEAD MOUNT - PRE-INSTALLED MOUNTS (11-36)
		1	HANGING SPRING VIBRATION ISOLATORS (SET OF 4), FOR INDOOR OR OUTDOOR USE WITH SQUARE INLINE FANS (HSA125)
		1	VAV PACKAGE W/ MANUAL CONTROL (VFD INCLUDED)
		1	VFD FACTORY MOUNTED AND WIRED IN EXHAUST FAN
		1	VFD MOUNTING PLATE ON SIF 15
		1	2 YEAR PARTS WARRANTY
3	MAU	1	INLET PRESSURE GAUGE, 0-35"
		1	MANIFOLD PRESSURE GAUGE, 0 TO 10" WC, 1 FURNACE
		1	COOLING OVERRIDE
		1	SHIP LOOSE GAS STRAINER 1 1/4"
		1	RTU BLOWER DOOR SWITCH
		1	2" MERV 13 FILTERS FOR RTU4 (QTY. 12)
		1	2" MERV 8 FILTERS FOR RTU4 (QTY. 12)
		1	OVERHEAT STAT
		1	TOTAL CFM MONITORING
		1	BLOWER STOP DELAY. ALLOWS RESIDUAL HEAT TO BE TRANSFERRED INTO THE SUPPLY AIR AFTER HEATING HAS STOPPED. FACTORY SET AT: 90 SECS FOR IBT, 30 SECS FOR DF
		1	30 TON MODULATING COOLING OPTION, 208/230V. 3CFS. R454B REFRIGERANT, VARIABLE SPEED COMPRESSOR, ECM CONDENSING FANS
		1	LOW AMBIENT COOLING OPERATION - DOWN TO 0F AMBIENT
		1	R454B LEAK DETECTOR OPTION FOR RTUS
		1	RTU FIXED 100% OA INTAKE CONTROL
		1	OCCUPIED SCHEDULING
		1	INTAKE FIRESTAT SET TO 135°F
		1	FREEZESTAT
		1	DISCHARGE FIRESTAT SET TO 240°F
		1	CASLINK BUILDING MONITORING SYSTEM - INTERNET OR CELLULAR CONNECTION REQUIRED
		1	30 TON MODULATING REHEAT OPTION - SPACE DEWPOINT CONTROL. - R454B
		1	RTU4 CURB DUCT HANGER
		1	120V FIRE INPUT
		1	COMMERCIAL SMOKE DETECTOR/ALARM INTERLOCK - ALARM SUPPLIED BY OTHERS
		1	RTU4 NO RETURN - 100% OA
		1	2" METAL MESH FILTERS FOR RTU4 OUTDOOR INTAKE
		1	VAV PACKAGE W/ 0-10VDC INPUT CONTROL (571 VFD INCLUDED)
		1	CONTROL PANEL ENCLOSURE HEATER 100W - RECOMMENDED FOR WINTER DESIGN TEMPERATURES LESS THAN 0°F
		1	RTU HEATED FURNACE CONDENSATE DRAIN KIT. REQUIRED FOR WINTER DESIGN TEMP OF 0 DEGREES F AND LOWER
		1	RTU4 SIDE DISCHARGE
		1	VFD FACTORY MOUNTED AND WIRED IN RTU COMMERCIAL CONTROL VESTIBULE
		1	SINGLE POINT ELECTRICAL CONNECTION FOR RTU. 750VA TRANSFORMER USED. IF A NON-DCV PREWIRE CONTROLS THIS UNIT, THE #28, #47, "MA", OR "E2" PREWIRE OPTION MUST BE SELECTED. DOES NOT PROVIDE SUPPLY STARTER IN PREWIRE
		1	5 YEAR ENTIRE UNIT PARTS WARRANTY, 10 YEAR ENTIRE UNIT PARTS WARRANTY WITH REMOTE MONITORING AND CAPTIVEAIRE SERVICE CONTRACT, 25 YEAR STAINLESS STEEL FURNACE PARTS WARRANTY (SEE ADDITIONAL DETAILS)
		1	EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET

HMI SCHEDULE				
UNIT NUMBER	HMI #	HMI LOCATION	TEMP AVERAGING	MODBUS ADDRESS
FAN #3	HMI #1 - UNIT	IN UNIT	NOT AVERAGED	55
FAN #3	HMI #2 - SPACE		AVERAGED	56
FAN #3	HMI #3 - SPACE		AVERAGED	57

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Tre Ragazzi
CARMEL, IN, 46032

DATE: 11/5/2026

DWG #: 8455325

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SCALE: 3/4" = 1'-0"

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SHEET NO. 5

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REGISTERED
No. 10505427
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PROFESSIONAL ENGINEER

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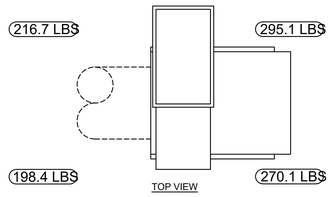
LOCATION: CARMEL, IN
DRAWING TITLE: HOOD DRAWINGS
DRAWN BY: DAE
PROJECT No: 26010

M405
05/28/2026

FAN #1 USBI24DD-RM-S - EXHAUST FAN (KEF)



TOP VIEW

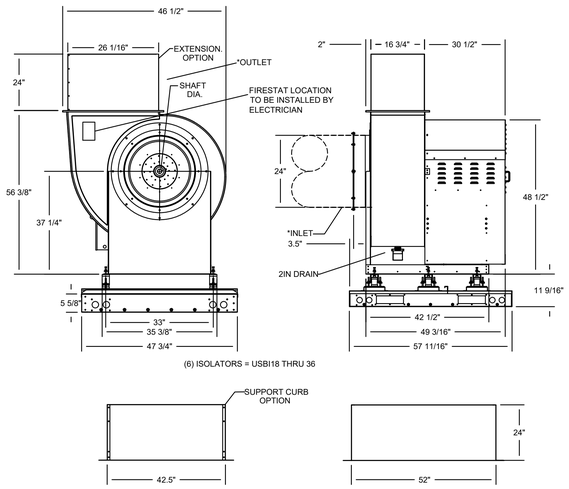
FEATURES:

- CURB MOUNTED FANS WITH VIBRATION ISOLATOR
- FULL PERIMETER CURB
- LIFTING HOOK POCKETS ON ALL SIDES
- UL705
- UL762 & ULC-S645 (RESTAURANT MODEL)
- HEAT SLINGER
- GREASE CLASSIFICATION TESTING
- 2" DRAIN
- MOTOR WEATHER COVER
- FULLY SEALED SCROLL HOUSING
- SCROLL ACCESS DOOR
- FLANGE 2" - 24 THRU 36

NORMAL TEMPERATURE TEST DIRECT DRIVE
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 350°F (176°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

OPTIONS

- BI24 - INLET SERVICE DUCT CONNECTION. USED TO CONNECT TO STANDARD 24" GREASE DUCT OR FIELD WELDED DUCT. INCLUDES (2) 7" RISERS BOLTED TO STANDARD INLET RISER.
- UTILITY SET GREASE CUP.
- BI24 - 24" DISCHARGE EXTENSION.
- BI - DISCHARGE ORIENTATION VERTICAL UPPER LEFT - CW INLET SIDE.
- BI24 - INLET CONNECTION STANDARD 24" FLANGED GREASE DUCT.
- CURB MOUNTED SLED FOR USBI 24. USED TO MOUNT ON 52" L X 42.5" W CURB.
- UTILITY SET - FAN SLED RESTRAINED SPRING VIBRATION ISOLATORS - BI24 THRU BI36 / EQUIVALENT SIZED UTILITY SET - INDOOR/OUTDOOR USE (SET OF 6).
- 2 YEAR PARTS WARRANTY.

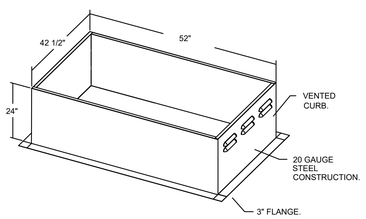


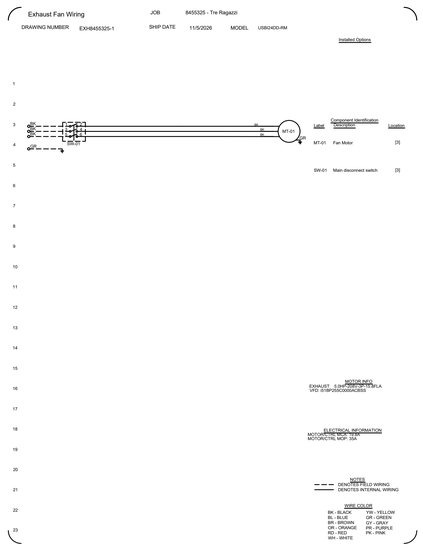
(6) ISOLATORS = USBI18 THRU 36

* INLET NOTES:
LENGTH OF THE STRAIGHT DUCT ON THE INLET TO BE 3 TIMES THE EQUIVALENT DUCT DIAMETER BEFORE CONNECTING TO ANY FITTINGS SUCH AS ELBOWS TO AVOID SYSTEM EFFECT.

* CORNER WEIGHTS ARE CALCULATED BASED ON VERTICAL DISCHARGE. SUPPORT DUCT PROPERLY BEFORE FAN TO ENSURE CORNER WEIGHTS ARE NOT AFFECTED.

OPTIONS:
- FULL BOTTOM CORNERS.





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Tre Ragazzi
CARMEL, IN, 46032

DATE: 11/5/2026
DWG.#: 8455325
DRAWN BY: MRY
SCALE: 3/4" = 1'-0"
MASTER DRAWING

SHEET NO. 6

Rev. No.	Date	Description
-	05-28-26	REVIEW SET
-	09-23-26	REVIEW SET
1	11-19-26	CITY SUBMITTAL

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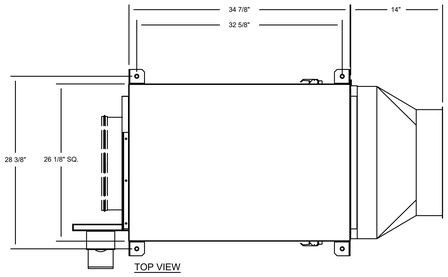
HANNAH R. SADLER
REGISTERED
No. 10505427
STATE OF INDIANA
PROFESSIONAL ENGINEER

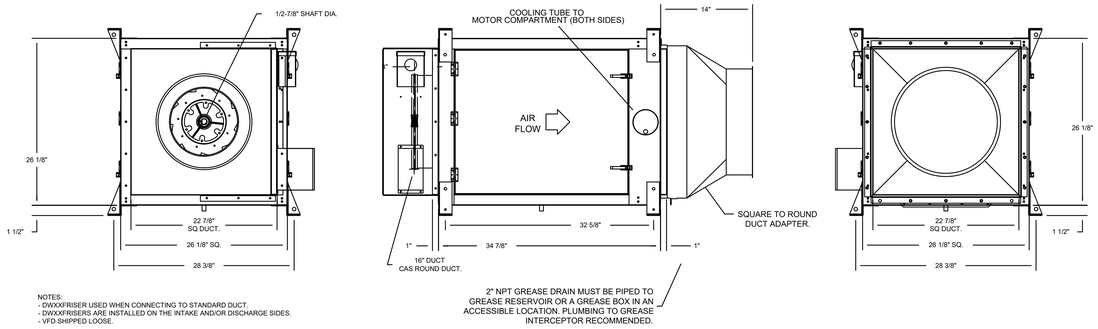
CUSTOMER: Tre Ragazzi Restaurants
PROJECT: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: HOOD DRAWINGS
DRAWN BY: DAE
PROJECT No. 26010

M406
05/28/2026

FAN #2 SIF15DD-HESS-UL762 - EXHAUST FAN (DEF)



TOP VIEW



NOTES:
- DWXXFRISER USED WHEN CONNECTING TO STANDARD DUCT.
- DWXXFRISERS ARE INSTALLED ON THE INTAKE AND/OR DISCHARGE SIDES.
- VFD SHIPPED LOOSE.

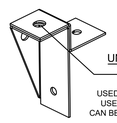
2" NPT GREASE DRAIN MUST BE PIPED TO GREASE RESERVOIR OR A GREASE BOX IN AN ACCESSIBLE LOCATION. PLUMBING TO GREASE INTERCEPTOR RECOMMENDED.

FEATURES:

- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- TWO ACCESS DOORS FOR EASY ACCESS.
- BACKWARD INCLINED NON-OVERLOADING WHEELS.
- UL762 LISTING.
- AMCA AIR & SOUND CERTIFIED.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- NEMA 3R SAFETY DISCONNECT SWITCH.
- DRAIN MUST BE CONNECTED TO OPTIONAL GREASE BOX OR PIPED TO GREASE RESERVOIR (RECOMMENDED).

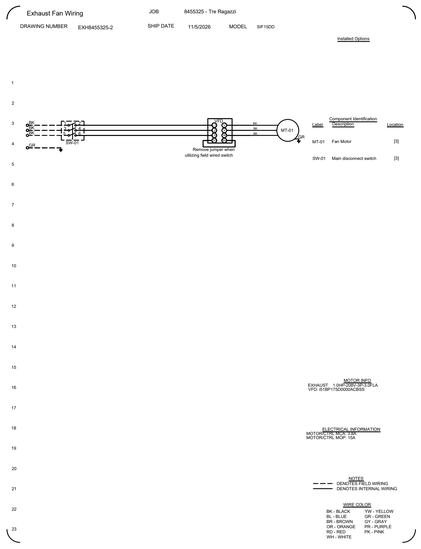
OPTIONS

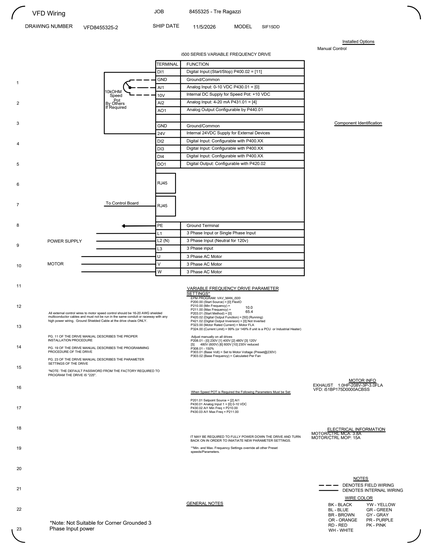
- SIF - STAINLESS STEEL HOUSING CONSTRUCTION.
- SIF 15- SQ TO ROUND DISCHARGE ADAPTER.
- SIF15 - INLET - STANDARD 16" DUCT CONNECTION.
- SIF - HORIZONTAL OVERHEAD MOUNT - PRE-INSTALLED MOUNTS (11-36).
- HANGING SPRING VIBRATION ISOLATORS (SET OF 4), FOR INDOOR OR OUTDOOR USE WITH SQUARE INLINE FANS (HSA125).
- VAV PACKAGE W/ MANUAL CONTROL (VFD INCLUDED).
- VFD FACTORY MOUNTED AND WIRED IN EXHAUST FAN.
- VFD MOUNTING PLATE ON SIF 15.
- 2 YEAR PARTS WARRANTY.



UNIVERSAL MOUNTING BRACKET

1/2" DIA. THREADED ROD ONLY
.560" DIA. MOUNTING HOLES.
USED WITH CEILING VIBRATION ISOLATORS.
USED WITH FLOOR VIBRATION ISOLATORS.
CAN BE RELOCATED IN THE FIELD AS NEEDED.





REVISIONS

	DESCRIPTION	DATE
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No. 10505427
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PROFESSIONAL ENGINEER

Hannah R Sadler

CUSTOMER: Tre Ragazzi Restaurants
PROJECT NAME: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: HOOD DRAWINGS

Tre Ragazzi
CARMEL, IN, 46032

PROJECT No. 26010
DRAWN BY: DAE

DATE: 11/5/2026

DWG #: 8455325

DRAWN BY: MRY

SCALE: 3/4" = 1'-0"

MASTER DRAWING

SHEET NO. 7

M407
05/28/2026

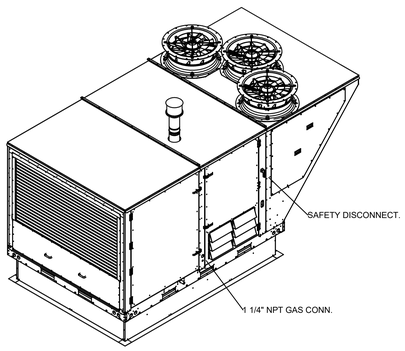
FAN #3 CAS-HVAC4-I.500-20-30T-DOAS - HEATER (MAU)

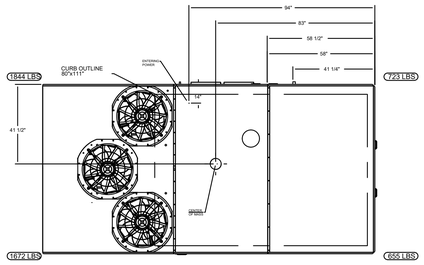
NOTES:
1. DO NOT OBSTRUCT OUTSIDE AIR INLET, OUTSIDE AIR COIL OR OUTSIDE AIR FAN.
2. ( ) DENOTES CORNER WEIGHT.
3. ROOF OPENING MUST BE 2" SMALLER THAN CURB DIMENSIONS IN BOTH DIRECTIONS.
4. CONNECTION FROM BREAKER TO UNITS SAFETY DISCONNECT SWITCH TO BE COPPER WIRE ONLY.
5. EXTERIOR GAS CONNECTION PROVIDED BY FACTORY WITH QUICK SEAL AND ANTI-ROTATION BRACKET.
6. PROVIDED GAS STRAINER TO BE INSTALLED UPSTREAM OF UNIT GAS CONNECTION

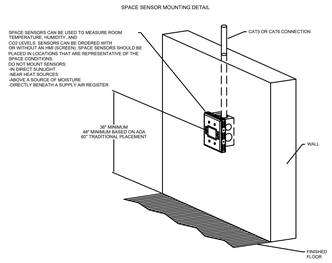
*NOTE: INTEGRAL CO2 MONITORING AND CONTROL CAPABILITIES FOR ALL SPACE MOUNTED THERMOSTATS.

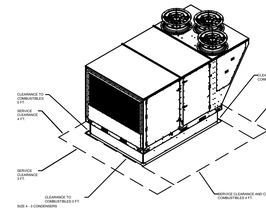
***NOTE: THIS UNIT IS INTENDED TO SERVE IN PLACE OF THE KITCHEN HVAC ROOF TOP UNIT (RTU) IN ADDITION TO PROVIDING APPROPRIATE MAKE-UP AIR FOR THE KITCHEN HOOD(S). RTU AND ASSOCIATED DUCTWORK SHALL BE REMOVED FROM SCOPE UNLESS REQUIRED FOR INTERNAL LOAD ESTIMATES. FINAL DESIGN SHALL BE REVIEWED AND APPROVED BY THE ENGINEER OF RECORD.**

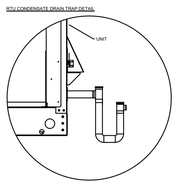
*NOTE: SUPPLY DUCT MUST BE INSTALLED TO MEET SMACNA STANDARDS. A MINIMUM STRAIGHT DUCT LENGTH MUST BE MAINTAINED DOWNSTREAM OF UNIT DISCHARGE AS OUTLINED IN AMCA PUBLICATION 201. WHEN USING RECTANGULAR DUCTWORK, ELBOWS MUST BE RADIUS THROAT, RADIUS BACK WITH TURNING VANES. FLEXIBLE DUCTWORK AND SQUARE THROAT/SQUARE BACK ELBOWS SHOULD NOT BE USED. ANY TRANSITION AND/OR TURNS IN THE DUCTWORK WILL CAUSE SYSTEM EFFECT. SYSTEM EFFECT WILL DRASTICALLY INCREASE STATIC PRESSURE AND REDUCE AIRFLOW. DO NOT RELY ON UNIT TO SUPPORT DUCT IN ANY WAY. FAILURE TO PROPERLY SIZE DUCTWORK MAY CAUSE SYSTEM EFFECTS AND REDUCE PERFORMANCE OF THE EQUIPMENT.
SUGGESTED SUPPLY STRAIGHT DUCT SIZE IS 33-7/8" x 21-1/8".

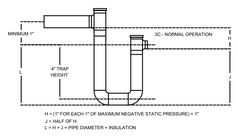






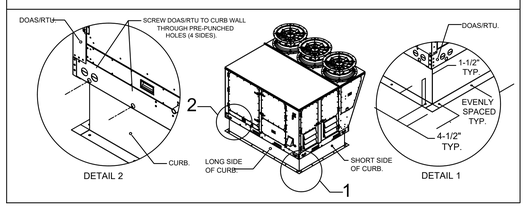


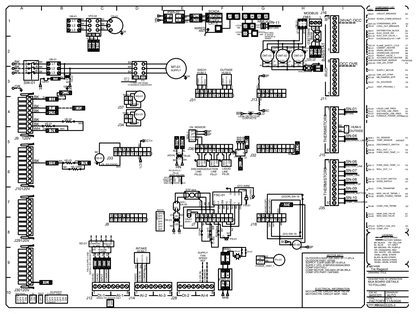


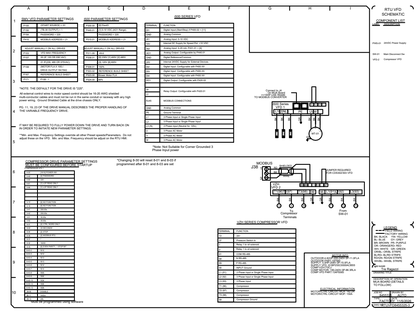


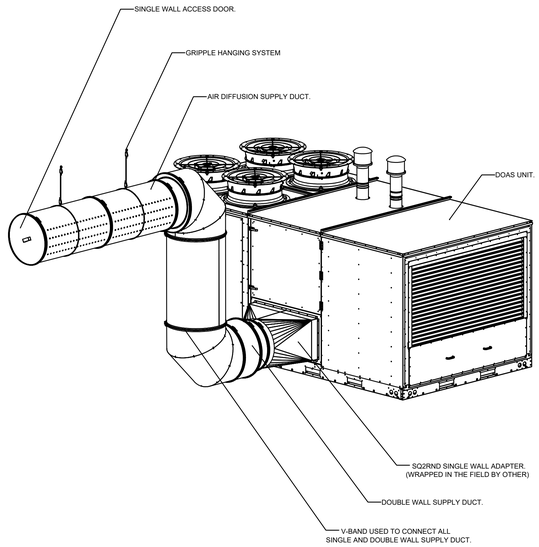
TYPICAL DOAS/RTU ROOF MOUNTING INSTALLATION INSTRUCTIONS

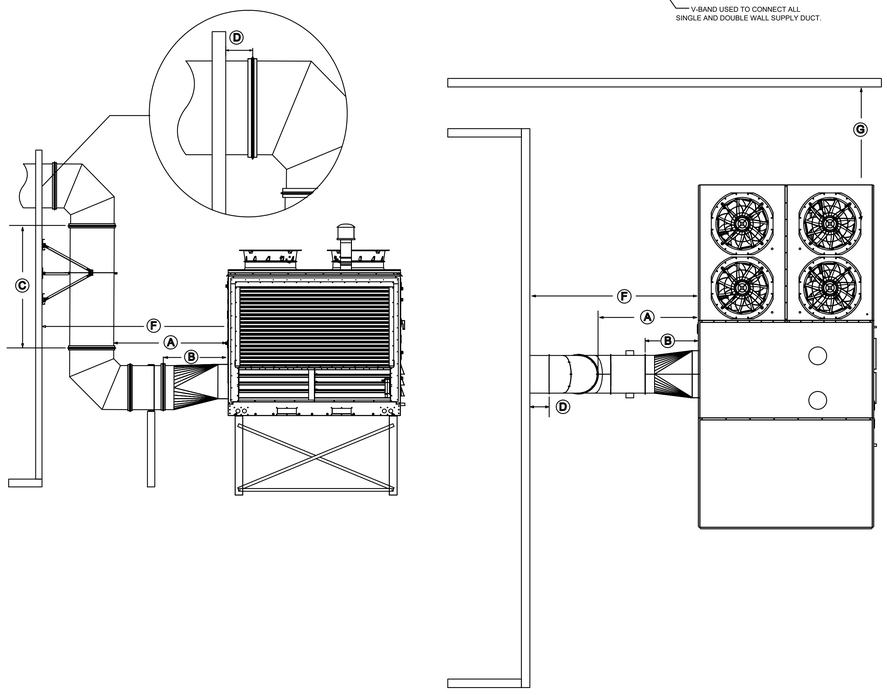
1. SECURE THE CURB TO THE ROOF FRAMING MEMBERS BY DRILLING 1/4" PILOT HOLES IN THE CURB FLANGES AT LOCATIONS SHOWN IN THE DIAGRAM BELOW. USING 3/8" X 3" ZINC PLATED STEEL LAG BOLTS, AND ZINC PLATED WASHERS, SCREW THROUGH THE CURB FLANGES AND INTO THE ROOF FRAMING MEMBERS. A MINIMUM OF (5) LAG BOLTS ON EACH SHORT SIDE, AND (7) LAG BOLTS ON EACH LONG SIDE IS REQUIRED.
2. SECURE THE UNIT BASE TO THE SIDE WALLS OF THE CURB USING (24) 1/4"-14 X 2" SELF-DRILLING, STEEL ZINC PLATED SCREWS. PRE-PUNCHED HOLES HAVE BEEN PROVIDED FOR EACH SCREW LOCATION.






ECU-HTC SCHEMATIC
COMPONENT LIST
Tre Ragazzi
CARMEL, IN, 46032
Terminal Strip Schematic
Typical Wiring Schematic
Typical Wiring Schematic
Typical Wiring





Side Discharge Requirements							
Unit Size	Dim. A	Dim. B	Dim. C	Dim. D	Dim. E	Dim. F	Dim. G
Size 4	4'-0 1/2"	2'-0"	10'-0"	0'-4"	15' SW / 8' DW	8'-2"	8'-2"

AIR DIFFUSION SUPPLY DUCT SPECIFICATIONS:
PROVIDE AIR DIFFUSION SUPPLY DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL DW-S0(HC), DW-S90(HC), & DW-S180(HC).
THREE DISTINCT HOLE PATTERN OPTIONS TO COVER A VARIETY OF CEILING HEIGHTS.
NO ADDITIONAL DIFFUSERS REQUIRED, AS THE DUCT ITSELF PROVIDES AIR DIFFUSION.
MADE OF HIGH QUALITY STAINLESS STEEL DESIGNED TO LAST 20+ YEARS.
HIGH INDUCTION SUPPLY DUCT IS CONSTRUCTED USING 24 GAUGE, 430 SS - 5" THRU 24".
HIGH INDUCTION SUPPLY DUCT IS CONSTRUCTED USING 20 GAUGE, 430 SS - 26" THRU 36".
QUICK ONSITE ASSEMBLY USING EPDM GASKETS & UNIVERSAL V-BANDS.
DOUBLE WALL SUPPLY DUCT AVAILABLE FOR INTERIOR AND EXTERIOR SPACES, EITHER CONDITIONED OR UNCONDITIONED.
DOUBLE WALL SUPPLY DUCT AVAILABLE IN DW-1S, DW-2S, & DW-3S TO MEET SPECIFIC REGIONAL "R" VALUE REQUIREMENTS.

Insulation R-Value Recommendations		
Supply Duct Type	Minimum R-value	Space Type
Single Wall - S & -HC	N/A	Conditioned Space Only
Double Wall - 1S	R-4	Unconditioned Interior Space Only
Double Wall - 2S	R-8	Unconditioned Space Climate Zones 1-4
Double Wall - 3S	R-12	Unconditioned Space Climate Zones 5-8

DOUBLE WALL SUPPLY DUCT IS INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL.
AIR DIFFUSION SUPPLY DUCT COMPLIES WITH SMACNA (SHEET METAL AND AIR CONDITIONING CONTRACTORS) BEST PRACTICES.
POSITIONING OF SPRINKLERS TO AVOID OBSTRUCTION TO DISCHARGE, SEE NFPA 13, TABLE 8.12.5.1.1.

GREASE DUCT & CHIMNEY SPECIFICATIONS:
PROVIDE GREASE DUCT EQUAL TO CAPTIVEAIRE SYSTEMS MODEL "DW"
ROUND 20 GAUGE 430 STAINLESS STEEL DUCTWORK. MODEL "DW"
IS LISTED TO UL-1978 AND IS INSTALLED USING "V" CLAMP LOCKING
CONNECTIONS SEALED WITH 3M FIRE BARRIER 2000 PLUS. MODEL "DW"
DOES NOT REQUIRE WELDING PROVIDING IT HAS BEEN INSTALLED PER
THE MANUFACTURES INSTALLATION GUIDE.
PROVIDE RATED ACCESS DOORS AT EVERY CHANGE IN DIRECTION AND EVERY 12' ON CENTER. PER
MANUFACTURES LISTING MODEL "DW" HORIZONTAL RUNS LESS THAN 75 FT. CAN BE SLOPED 1/16" PER 12",
HORIZONTAL RUNS MORE THAN 75 FT. CAN BE SLOPED 3/16" PER 12".
DUCT SHOULD BE SLOPED AS MUCH AS POSSIBLE TO REDUCE THE CHANCE OF GREASE ACCUMULATION IN
HORIZONTAL RUNS.

IF THE DUCT OR CHIMNEY IS WITHIN 18 INCHES OF COMBUSTIBLE MATERIAL, PROVIDE UL-2221 OR UL-103 HT
LISTED DOUBLE WALL GREASE DUCT OR DOUBLE WALL CHIMNEY EQUAL TO CAPTIVEAIRE SYSTEMS MODEL
"DW- 2R, 2R TYPE HT, 3R, OR 3Z" ROUND 20 GAUGE 430 STAINLESS INNER DUCT INSULATED WITH A 24 GAUGE
430 STAINLESS OUTER SHELL.

CUSTOMER APPROVAL TO MANUFACTURE:

APPROVED AS NOTED ☐
APPROVED WITH NO EXCEPTION TAKEN ☐
REVISE AND RESUBMIT ☐
SIGNATURE _____
YOUR TITLE _____ DATE _____

REVISIONS

	DESCRIPTION	DATE
1		
2		
3		
4		

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Tre Ragazzi
CARMEL, IN, 46032

DATE: 11/5/2026

DWG.#: 8455325

DRAWN BY: MRY

SCALE: 3/8" = 1'-0"

MASTER DRAWING

SHEET NO. 9

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Hannah R. Sadler

CUSTOMER: Tre Ragazzi Restaurants
PROJECT: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: HOOD DRAWINGS
DRAWN BY: DAE
PROJECT No. 26010

M409
05/28/2026

ELECTRICAL PACKAGE - JOB#8455325

NO	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED				
				LOCATION	QUANTITY		FAN TAG	TYPE	HP	VOLT	FLA
1		DCV-1111	WALL MOUNT IN RS BOX	UTILITY CABINET LEFT	1 LIGHT 1 FAN	SMART CONTROLS & DCV	REF	EXHAUST	3	5.000	208	15.0
							MAU	SUPPLY	3	5.000	208	15.0

JOB NO 8455325 | MODEL NUMBER DCV-1111 | JOB NAME Tre Ragazzi | DRAWN BY | CHECKED BY | DESCRIPTION OF OPERATION

BREAKER PANEL TO PRIMARY CONTROL PANEL

CONTROL PANEL TO ACCESSORY ITEMS

CONTROL PANEL TO FANS

CONTROL PANEL TO FIRE SYSTEM

CONTROL PANEL TO FIRE SYSTEM

JOB NO 8455325 | MODEL NUMBER DCV-1111 | JOB NAME Tre Ragazzi | DRAWN BY | CHECKED BY | DESCRIPTION OF OPERATION

BREAKER PANEL TO PRIMARY CONTROL PANEL

CONTROL PANEL TO ACCESSORY ITEMS

CONTROL PANEL TO FANS

CONTROL PANEL TO FIRE SYSTEM

CONTROL PANEL TO FIRE SYSTEM

MOTOR POWER CIRCUIT

FACTORY INSTALLED SCHEMATIC COMPONENTS (IF ORDERED)

COMPONENT LIST

LEGEND

DRY CONTACTS SHOWN DE-ENERGIZED

SCALE: 3/4 X 1/4 X 1/8 BOX

SHEET NO.	DRAWN BY:	SCALE:	DWG.#:	DATE:
10	MRY	3/4" = 1'-0"	8455325	11/5/2026

MASTER DRAWING

Tre Ragazzi

CARMEL, IN, 46032

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REVISIONS

DESCRIPTION	DATE

M410

09282026

CUSTOMER: **Tre Ragazzi Restaurants**

PROJECT NAME: TRE RAGAZZI RESTAURANT

LOCATION: CARMEL, IN | DRAWN BY: DAE | PROJECT No. 26010

DRAWING TITLE: HOOD DRAWINGS

HANNAH R. SCHOLER — 10505427 — STATE OF INDIANA — PROFESSIONAL ENGINEER

DAE

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Mechanical, Electrical, and Energy Engineering

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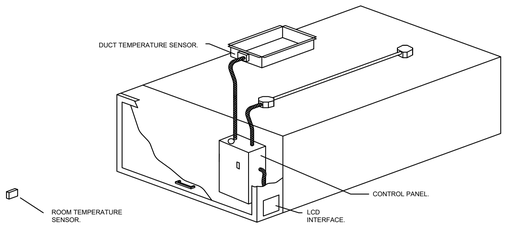
DEMAND CONTROL VENTILATION HOOD CONTROL PANEL SPECIFICATIONS:

- CONTROLS SHALL BE LISTED BY ETL (UL 508A) AND SHALL COMPLY WITH DEMAND VENTILATION SYSTEM TURNDOWN REQUIREMENTS OUTLINED IN IECC 403.7.5 (2021).
- THE CONTROL ENCLOSURE SHALL BE NEMA 1 RATED AND LISTED FOR INSTALLATION INSIDE OF THE EXHAUST HOOD UTILITY CABINET. THE CONTROL ENCLOSURE MAY BE CONSTRUCTED OF STAINLESS STEEL OR PAINTED STEEL.
- TEMPERATURE PROBE(S) LOCATED IN THE EXHAUST DUCT RISER(S) SHALL BE CONSTRUCTED OF STAINLESS STEEL.
- A DIGITAL CONTROLLER SHALL BE PROVIDED TO ACTIVATE THE HOOD EXHAUST FANS DYNAMICALLY BASED ON A FIXED DIFFERENTIAL BETWEEN THE AMBIENT AND DUCT TEMPERATURES SENSORS. THIS FUNCTION SHALL MEET THE REQUIREMENTS OF IMC 507.1.1.
- A DIGITAL CONTROLLER SHALL PROVIDE ADJUSTABLE HYSTERESIS SETTINGS TO PREVENT CYCLING OF THE FANS AFTER THE COOKING APPLIANCES HAVE BEEN TURNED OFF AND/OR THE HEAT IN THE EXHAUST SYSTEM IS REDUCED.
- A DIGITAL CONTROLLER SHALL PROVIDE AN ADJUSTABLE MINIMUM FAN RUN-TIME SETTING TO PREVENT FAN CYCLING.
- VARIABLE FREQUENCY DRIVES (VFDS) SHALL BE PROVIDED FOR FANS AS REQUIRED. THE DIGITAL CONTROLLER SHALL MODULATE THE VFDS BETWEEN A MINIMUM SETPOINT AND A MAXIMUM SETPOINT ON DEMAND. THE DUCT TEMPERATURE SENSOR INPUT(S) TO THE DIGITAL CONTROLLER SHALL BE USED TO CALCULATE THE SPEED REFERENCE SIGNAL.
- THE VFD SPEED RANGE OF OPERATION SHALL BE FROM 0% TO 100% FOR THE SYSTEM, WITH THE ACTUAL MINIMUM SPEED SET AS REQUIRED TO MEET MINIMUM VENTILATION REQUIREMENTS.
- AN INTERNAL ALGORITHM TO THE DIGITAL CONTROLLER SHALL MODULATE SUPPLY FAN VFD SPEED PROPORTIONAL TO ALL EXHAUST FANS THAT ARE LOCATED IN THE SAME FAN GROUP AS THE SUPPLY FAN.
- THE SYSTEM SHALL OPERATE IN PREP MODE DURING LIGHT COOKING LOAD OR COOL DOWN MODE WHEN SUFFICIENT HEAT REMAINS UNDERNEATH THE HOOD SYSTEM AFTER COOKING OPERATIONS HAVE COMPLETED. OPERATION DURING EITHER OF THESE PERIODS WILL DISABLE THE SUPPLY FANS AND PROVIDE AN EXHAUST FAN SPEED THAT IS EQUAL TO THE MINIMUM VENTILATION REQUIREMENT.
- A DIGITAL CONTROLLER SHALL DISABLE THE SUPPLY FAN(S), ACTIVATE THE EXHAUST FAN(S), ACTIVATE THE APPLIANCE SHUNT TRIP, AND DISABLE AN ELECTRIC GAS VALVE AUTOMATICALLY WHEN FIRE CONDITION IS DETECTED ON A COVERED HOOD.
- A DIGITAL CONTROLLER SHALL ALLOW FOR EXTERNAL BMS FAN CONTROL VIA DRY CONTACT (EXTERNAL CONTROL SHALL NOT OVERRIDE FAN OPERATION LOGIC AS REQUIRED BY CODE).
- AN LCD INTERFACE SHALL BE PROVIDED WITH THE FOLLOWING FEATURES:
  A. ON/OFF PUSH BUTTON FAN & LIGHT SWITCH ACTIVATION.
  B. INTEGRATED GAS VALVE RESET FOR ELECTRONIC GAS VALVES (NO RESET RELAY REQUIRED).
  C. VFD FAULT DISPLAY WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
  D. DUCT TEMPERATURE SENSOR FAILURE DETECTION WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
  E. MIS-WIRED DUCT TEMPERATURE SENSOR DETECTION WITH AUDIBLE & VISUAL ALARM NOTIFICATION.
  F. A SINGLE LOW VOLTAGE CAT-5 RJ45 WIRING CONNECTION.
  G. AN ENERGY SAVINGS INDICATOR THAT UTILIZES MEASURED KWH FROM THE VFDS.

SEQUENCE OF OPERATIONS:

THE HOOD CONTROL PANEL IS CAPABLE OF OPERATING IN ONE OR MORE OF THE FOLLOWING STATES AT ANY GIVEN TIME:

- AUTOMATIC: THE SYSTEM OPERATES BASED ON THE DIFFERENTIAL BETWEEN ROOM TEMPERATURE AND THE TEMPERATURE AT THE HOOD CAVITY OR EXHAUST DUCT COLLAR. FANS ACTIVATE AT A CONFIGURABLE TEMPERATURE DIFFERENTIAL THRESHOLD. DEPENDING ON THE JOB CONFIGURATION EACH FAN ZONE CAN BE CONFIGURED AS STATIC OR DYNAMIC. THESE TERMS REFER TO WHETHER A VARIABLE MOTOR (SUCH AS EC MOTORS OR VFD DRIVEN MOTORS) MODULATE WITH TEMPERATURE. IF THE PANEL IS EQUIPPED WITH VARIABLE SPEED FANS AND THE ZONE IS DEFINED AS "DYNAMIC", THESE WILL MODULATE WITHIN A USER-DEFINED RANGE BASED ON THE TEMPERATURE DIFFERENTIAL. PANELS EQUIPPED WITH VARIABLE SPEED FANS AND A FAN ZONE DEFINED AS "STATIC", FANS WILL RUN AT A SET SPEED CALCULATED FOR THE DRIVE. DEMAND CONTROL VENTILATION SYSTEMS ARE CAPABLE OF MODULATING EXHAUST AND MAKE UP AIR FAN SPEEDS PER THE REQUIREMENTS OUTLINED IN IECC 403.7.5 (2021).
- MANUAL: THE SYSTEM OPERATES BASED ON HUMAN INPUT FROM AN HMI.
- SCHEDULE: A WEEKLY SCHEDULE CAN BE SET TO RUN FANS FOR A SPECIFIED PERIOD THROUGHOUT THE DAY. THERE ARE THREE OCCUPIED TIMES PER DAY TO ALLOW FOR THE USER TO SET UP A TIME THAT IS SUITABLE TO THEIR NEEDS. ANY TIME THAT IS WITHIN THE DEFINED OCCUPIED TIME, THE SYSTEM WILL RUN AT MODULATION MODE AND FOLLOW THE FAN PROCEDURE ALGORITHM BASED ON TEMPERATURE DURING THIS TIME. DURING UNOCCUPIED TIME, THE SYSTEM WILL HAVE AN EXTRA OFFSET TO PREVENT UNINTENDED ACTIVATION OF THE SYSTEM DURING A TIME WHERE THE SYSTEM IS NOT BEING OCCUPIED.
- OTHER: THE SYSTEM OPERATES BASED ON THE INPUT FROM AN EXTERNAL SOURCE (DDC, BMS OR HARD-WIRED INTERLOCK).
- FIRE: UPON ACTIVATION OF THE HOOD FIRE SUPPRESSION SYSTEM, THE EXHAUST FAN WILL COME ON OR CONTINUE TO TO RUN, THE HOOD MAKEUP AIR WILL SHUTDOWN, AND A SIGNAL WILL BE SENT FOR ACTIVATING THE SHUNT TRIP BREAKER PROVIDED BY THE ELECTRICIAN. FUEL GAS WILL SHUT OFF VIA A MECHANICAL/ELECTRICAL GAS VALVE ACTUATED BY THE HOOD FIRE SUPPRESSION SYSTEM.



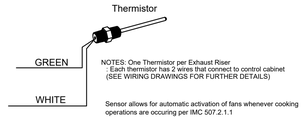
TYPICAL HOOD CONTROL PANEL INSTALLATION

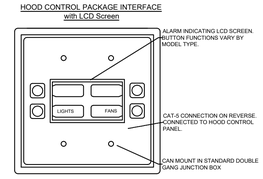
SYSTEM DESIGN VERIFICATION (SDV)

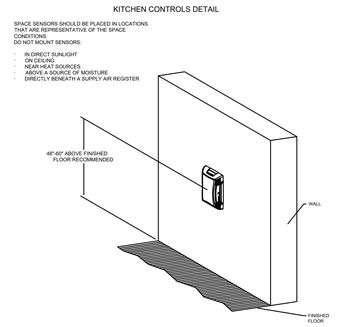
IF ORDERED, CAS SERVICE WILL PERFORM A SYSTEM DESIGN VERIFICATION (SDV) ONCE ALL EQUIPMENT HAS HAD A COMPLETE START UP PER THE OPERATION AND INSTALLATION MANUAL. TYPICALLY, THE SDV WILL BE PERFORMED AFTER ALL INSPECTIONS ARE COMPLETE.

ANY FIELD RELATED DISCREPANCIES THAT ARE DISCOVERED DURING THE SDV WILL BE BROUGHT TO THE ATTENTION OF THE GENERAL CONTRACTOR AND CORRESPONDING TRADES ON SITE. THESE ISSUES WILL BE DOCUMENTED AND FORWARDED TO THE APPROPRIATE SALES OFFICE. IF CAS SERVICE HAS TO RESOLVE A DISCREPANCY THAT IS A FIELD ISSUE, THE GENERAL CONTRACTOR WILL BE NOTIFIED AND BILLED FOR THE WORK. SHOULD A RETURN TRIP BE REQUIRED DUE TO ANY FIELD RELATED DISCREPANCY THAT CANNOT BE RESOLVED DURING THE SDV, THERE WILL BE ADDITIONAL TRIP CHARGES.

DURING THE SDV, CAS SERVICE WILL ADDRESS ANY DISCREPANCY THAT IS THE FAULT OF THE MANUFACTURER. SHOULD A RETURN TRIP BE REQUIRED, THE GENERAL CONTRACTOR AND APPROPRIATE SALES OFFICE WILL BE NOTIFIED. THERE WILL BE NO ADDITIONAL CHARGES FOR MANUFACTURER DISCREPANCIES.







SECTION 23 09 23

SPECIFICATIONS
TAG: CASLink Building Management System, SCADA

PART 1- GENERAL

1.1 SUMMARY

A. Building Management System (BMS), utilizing Direct Digital Controls (DDC).

1.2 DESCRIPTION

A. CASLink is a cloud-based Building Management System that can be used to monitor, control and optimize the operation of kitchen ventilation, lighting, utilities and HVAC equipment. It gathers sensor data, component operating data, alarms, user and factory settings information periodically.

B. Information is displayed in a user-friendly interface hosted on the CASLink website, which is accessible through a secure login to owners and operators using an internet enabled device.

C. Email alerts based on sensor data and system alarms, both prescriptive and custom, can be set up on demand.

1.3 SUBMITTALS

A. The manufacturer assumes no liability for the use or results of use from this document. Specifications are to be reviewed by the engineer to confirm the requirements of the project and meet Federal, State, and Local codes.

B. As the manufacturer continues product development, it reserves the right to change the design and specifications without notice.

1.4 WARRANTY

A. All units shall be provided with the following standard warranties:

1. System is warranted to be free from defects in materials and workmanship, under normal use and service, for a period of 2-years from date of shipment.

B. The manufacturer shall not be liable for incidental and consequential losses and damages potentially attributable to malfunctioning equipment. Should any part of the equipment prove to be defective in material or workmanship within the 60-month warranty period, upon examination by the manufacturer, such part will be repaired or replaced by manufacturer at no charge. The buyer shall pay all labor costs incurred in connection with such repair or replacement. Equipment shall not be returned without manufacturer's prior authorization, and all returned equipment shall be shipped by the buyer, freight prepaid to a destination determined by the manufacturer.

C. Refer to Manufacturer's Operation, Installation, and Maintenance (OIM) Manual for detailed descriptions of what is/is not covered and contact information for warranty claims.

PART 2- PRODUCTS

2.1 GENERAL

A. CASLink is implemented by a SCADA module installed in an electrical control panel or in an electrical cabinet. The SCADA module serves as a gateway to communicate locally gathered data from CASLink-enabled controllers to CASLink's servers. Data is transmitted via a factory installed cellular device, which is integral to the SCADA module.

2.2 COMPONENTS

A. System integration (Products Not Furnished or Installed)

1. Kitchen Hood Demand Control Ventilation Systems
2. Kitchen Hood Smart Control Systems
3. Paragon Dedicated Outdoor Air System
4. Direct Fired MUA Controls
5. Indirect Fired MUA Controls
6. RTULink Cloud-Based Thermostat
7. CORE Fire Protection
8. TANK Fire Protection
9. High Volume Low Speed (HVLS) Fans
10. Lighting Control Panel
11. Hood Self-Cleaning Remote Manifold

PART 3- EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions under which the system is installed. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to Installer.

3.2 APPLICATION

A. CASLink monitors relevant sensor and system data at adequate data rates which allows users and support teams to assess performance and diagnose alarms remotely. Gathered data is displayed and organized in a user-friendly interface which can be accessed by customers and manufacturer engineering support teams.

B. CASLink's website requires login credentials. These can be created for owners and operators as needed. Two-factor authentication is required for enhanced security.

C. CASLink's interface allows for adjustments of critical system settings such that performance can be optimized remotely using historical data. CASLink processes historical data to create dashboards that include real time operating information, analytics and insights derived from proprietary machine learning algorithms.

3.3 INSTALLATION

A. Install in accordance with manufacturer's instructions, drawings, written specifications, manufacturer's installation manual, and all applicable building codes.



CASLink Monitor and Control

- Hood control panel to support communications to cloud-based Building Management System.
- Hood Control Panel to allow cloud-based Building Management System to monitor real time parameters outlined as MONITOR in the points list.
- Hood Control Panel to allow cloud-based Building Management System to control parameters outlined as CONTROL in the points list.
- Hood Control Panel to allow cloud-based Building Management System to implement SYSTEM ECONOMIZER control strategies for fully integrated Building Management.

MONITORING AND CONTROL POINTS LIST

DCV Packages	Function
Room Temperature	MONITOR
Duct Temperature(s)	MONITOR
MUA Discharge Temperature	MONITOR
Kitchen RTU Discharge Temperature	MONITOR
Fan Speed	MONITOR
Fan Amperage	MONITOR
Fan Power	MONITOR
VFD Faults	MONITOR
Controller Faults	MONITOR
Fan Faults	MONITOR
Fan Status	MONITOR
PCU Faults	MONITOR
PCU Filter Clog Percentages	MONITOR
Fire Condition	MONITOR
CORE Fire System	MONITOR
Building Pressures	MONITOR
Prep Time Button	MONITOR & CONTROL
Fans Button	MONITOR & CONTROL
Lights Button	MONITOR & CONTROL
Wash Button	MONITOR & CONTROL

SC Packages	Function
Room Temperature(s)	MONITOR
Duct Temperature(s)	MONITOR
MUA Discharge Temperature	MONITOR
Kitchen RTU Discharge Temperature	MONITOR
Controller Faults	MONITOR
Fan Faults	MONITOR
Fan Status	MONITOR
PCU Faults	MONITOR
PCU Filter Clog Percentages	MONITOR
Fire Condition	MONITOR
CORE Fire System	MONITOR
Building Pressures	MONITOR
Fans Button(s)	MONITOR & CONTROL
Lights Button(s)	MONITOR & CONTROL
Wash Button	MONITOR & CONTROL

CAPTIVE-AIRE EQUIPMENT PACKAGE PROVIDED BY KITCHEN EQUIPMENT CONTRACTOR

REVISIONS

	DESCRIPTION	DATE
1		
2		
3		
4		

CAPTIVE-AIRE

20 E. Airport Rd. Ste. 100, Brownsburg, IN, 46112 PHONE: (317) 618 - 4918 FAX: 9192275929 EMAIL: regs56@captiveaire.com

www.captiveaire.com

Indiana Office

Tre Ragazzi
CARMEL, IN, 46032

DATE: 11/5/2026

DWG #: 8455325

DRAWN BY: MRY

SCALE: 3/4" = 1'-0"

MASTER DRAWING

SHEET NO. 11

Rev. No.	Date	Description
-	05-28-26	REVIEW SET
-	09-23-26	REVIEW SET
1	11-19-26	CITY SUBMITTAL

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HANNAH R. SADLER
REGISTERED
No. 10505427
STATE OF INDIANA
PROFESSIONAL ENGINEER

DRAWN BY: DAE
PROJECT No: 26010

CUSTOMER: Tre Ragazzi Restaurants
PROJECT NAME: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: HOOD DRAWINGS

M411
05/28/2026

DUCTWORK #1 PARTS - JOB#8455325 MAIN

TAG	PART #	CFM	GPM	ZONE	COVEREDBY	SP	WEIGHT	VELOCITY	QTY	DESCRIPTION
P1	DW1804LT	2812				-0.0009	2.89	1591	1	SINGLE WALL DUCT 18" DIAMETER, 4' LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P2	DW1824AJDKIT	2812				-0.0034	18.70	1591	1	SINGLE WALL DUCT ADJUSTABLE, 18" DIAMETER, 23.5" LONG, FLANGE AT ONE END WITH A 18" ADJUSTABLE COLLAR - STAINLESS STEEL.
P3 ASSEMBLED W/P61	DW18TEASY	2812		1		-0.1280	22.75	1591	1	SINGLE WALL DUCT TEE, 18" DUCT, ASSEMBLY.
P4	DW1804C1D	2812				-0.0008	3.12	1591	1	SINGLE WALL DUCT OFF SET COLLAR - 18" DIAMETER DUCT - 1/4" PITCH.
P5	DW1847LT	2812				-0.0103	28.24	1591	1	SINGLE WALL DUCT 18" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P6	DW1848AJDKIT	2812				-0.0059	34.16	1591	1	SINGLE WALL DUCT ADJUSTABLE, 18" DIAMETER, 47.5" LONG, FLANGE AT ONE END WITH A 18" ADJUSTABLE COLLAR - STAINLESS STEEL.
P7	DW1804C1D	2812				-0.0008	3.12	1591	1	SINGLE WALL DUCT OFF SET COLLAR - 18" DIAMETER DUCT - 1/4" PITCH.
P8	DW1822ADPEC17	2812				-0.0314	13.44	1591	1	SINGLE WALL DUCT ECCENTRIC ADAPTER, 18" DUCT DIA TO 22" DUCT DIA, ASSEMBLY - STAINLESS STEEL.
P9	DW22TEASY	4754		1		-0.2865	30.55	1801	1	SINGLE WALL DUCT TEE, 22" DUCT, ASSEMBLY.
P10	DW1622ADP21	1942				-0.0336	16.02	1391	1	SINGLE WALL DUCT ADAPTER, 16" DUCT DIA TO 22" DUCT DIA, ASSEMBLY - STAINLESS STEEL.
P11	DW2204C1D	4754				-0.0009	3.79	1801	1	SINGLE WALL DUCT OFF SET COLLAR - 22" DIAMETER DUCT - 1/4" PITCH.
P12	DW2247LT	4754				-0.0108	34.17	1801	1	SINGLE WALL DUCT 22" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL
P13	DW22SUBRASY						3.80		1	DUCT SUPPORT BRACKET KIT, 22" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P14	DW2247LT	4754				-0.0108	34.17	1801	1	SINGLE WALL DUCT 22" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P15 ASSEMBLED W/P59	DW22TEASY	4754		1		-0.0078	30.55	1801	1	SINGLE WALL DUCT TEE, 22" DUCT, ASSEMBLY.
P16	DW2247LT	4754				-0.0108	34.17	1801	1	SINGLE WALL DUCT 22" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P17	DW2235LT	4754				-0.0080	25.86	1801	1	SINGLE WALL DUCT 22" DIAMETER, 35" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P18	DW2218AJDKIT	4754				-0.0023	18.10	1801	1	SINGLE WALL DUCT ADJUSTABLE, 22" DIAMETER, 17.5" LONG, FLANGE AT ONE END WITH A 22" ADJUSTABLE COLLAR - STAINLESS STEEL.
P19	DW22SUBRASY						3.80		1	DUCT SUPPORT BRACKET KIT, 22" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P20	DW22SUBRASY						3.80		1	DUCT SUPPORT BRACKET KIT, 22" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P21 ASSEMBLED W/P22	DW22TEASY	4754		1		-0.1092	30.55	1801	1	SINGLE WALL DUCT TEE, 22" DUCT, ASSEMBLY.
P22 ASSEMBLED W/P21 O=S	DW2223ADKIT						7.72		1	DUCT ACCESS DOOR WITH HANDLE & GREASE DAM, FOR 22" DUCT USE 23" DOOR. STAINLESS STEEL.
P23	DW2247LT	4754				-0.0108	34.17	1801	1	SINGLE WALL DUCT 22" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P24	DW2224AJDKIT	4754				-0.0035	22.83	1801	1	SINGLE WALL DUCT ADJUSTABLE, 22" DIAMETER, 23.5" LONG, FLANGE AT ONE END WITH A 22" ADJUSTABLE COLLAR - STAINLESS STEEL.
P25 ASSEMBLED W/P26	DW22TEASY	4754		1		-0.1420	30.55	1801	1	SINGLE WALL DUCT TEE, 22" DUCT, ASSEMBLY.
P26 ASSEMBLED W/P25 O=S	DW2223ADKIT						7.72		1	DUCT ACCESS DOOR WITH HANDLE & GREASE DAM, FOR 22" DUCT USE 23" DOOR. STAINLESS STEEL.
P27	DW2247LT	4754				-0.0108	34.17	1801	1	SINGLE WALL DUCT 22" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P28	DW22CHASESUPASY						30.99		1	SINGLE WALL DUCT VERTICAL CHASE SUPPORT ASSEMBLY, 22" DUCT. PARTS ARE ZINC COATED.
P29	DW2247LT	4754				-0.0108	34.17	1801	1	SINGLE WALL DUCT 22" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P30	DW2247LT	4754				-0.0108	34.17	1801	1	SINGLE WALL DUCT 22" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P31	DW22CHASESUPASY						30.99		1	SINGLE WALL DUCT VERTICAL CHASE SUPPORT ASSEMBLY, 22" DUCT. PARTS ARE ZINC COATED.
P32	DW2247LT	4754				-0.0108	34.17	1801	1	SINGLE WALL DUCT 22" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P33	DW22CHASESUPASY						30.99		1	SINGLE WALL DUCT VERTICAL CHASE SUPPORT ASSEMBLY, 22" DUCT. PARTS ARE ZINC COATED.
P34 ASSEMBLED W/P35	DW22TEASY	4754		1		-0.0078	30.55	1801	1	SINGLE WALL DUCT TEE, 22" DUCT, ASSEMBLY.
P35 ASSEMBLED W/P34 O=T	DW2223ADKIT						7.72		1	DUCT ACCESS DOOR WITH HANDLE & GREASE DAM, FOR 22" DUCT USE 23" DOOR. STAINLESS STEEL.
P36	DW2247LT	4754				-0.0108	34.17	1801	1	SINGLE WALL DUCT 22" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P37	DW2247LT	4754				-0.0108	34.17	1801	1	SINGLE WALL DUCT 22" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P38	DW2247LT	4754				-0.0108	34.17	1801	1	SINGLE WALL DUCT 22" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P39	DW22CHASESUPASY						30.99		1	SINGLE WALL DUCT VERTICAL CHASE SUPPORT ASSEMBLY, 22" DUCT. PARTS ARE ZINC COATED.
P40	DW2247LT	4754				-0.0108	34.17	1801	1	SINGLE WALL DUCT 22" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P41	DW22CHASESUPASY						30.99		1	SINGLE WALL DUCT VERTICAL CHASE SUPPORT ASSEMBLY, 22" DUCT. PARTS ARE ZINC COATED.
P42 ASSEMBLED W/P43	DW22TEASY	4754		1		-0.0078	30.55	1801	1	SINGLE WALL DUCT TEE, 22" DUCT, ASSEMBLY.
P43 ASSEMBLED W/P42 O=T	DW2223ADKIT						7.72		1	DUCT ACCESS DOOR WITH HANDLE & GREASE DAM, FOR 22" DUCT USE 23" DOOR. STAINLESS STEEL.
P44	DW2247LT	4754				-0.0108	34.17	1801	1	SINGLE WALL DUCT 22" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P45	DW2235LT	4754				-0.0080	25.86	1801	1	SINGLE WALL DUCT 22" DIAMETER, 35" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P46 ASSEMBLED W/P48	DW2218AJDKIT	4754				-0.0021	18.10	1801	1	SINGLE WALL DUCT ADJUSTABLE, 22" DIAMETER, 17.5" LONG, FLANGE AT ONE END WITH A 22" ADJUSTABLE COLLAR - STAINLESS STEEL.
P47	DW22CHASESUPASY						30.99		1	SINGLE WALL DUCT VERTICAL CHASE SUPPORT ASSEMBLY, 22" DUCT. PARTS ARE ZINC COATED.
P48 ASSEMBLED W/P46 O=B,P49	DW2622TPDB	4754					15.46	1801	1	DUCT TO CURB TRANSITION DOWN TURN, 26-1/2" CURB TO 22" DUCT, 16 GA ALUMINIZED. NOT FOR USE WITH EXHAUST FANS.
P49 ASSEMBLED W/P48	DW22RISER	4754				-0.0009	3.53	1801	1	SINGLE WALL DUCT RISER FOR WELDED HOODS, 22" DIA DUCT. STAINLESS STEEL.
P50	DW2224AJDKIT	4754				-0.0037	22.83	1801	1	SINGLE WALL DUCT ADJUSTABLE, 22" DIAMETER, 23.5" LONG, FLANGE AT ONE END WITH A 22" ADJUSTABLE COLLAR - STAINLESS STEEL.
P51 ASSEMBLED W/P52	DW22TEASY	4754		1		-0.1092	30.55	1801	1	SINGLE WALL DUCT TEE, 22" DUCT, ASSEMBLY.
P52 ASSEMBLED W/P51 O=S	DW2223ADKIT						7.72		1	DUCT ACCESS DOOR WITH HANDLE & GREASE DAM, FOR 22" DUCT USE 23" DOOR. STAINLESS STEEL.
P53	DW2247LT	4754				-0.0108	34.17	1801	1	SINGLE WALL DUCT 22" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P54	DW2235LT	4754				-0.0081	25.86	1801	1	SINGLE WALL DUCT 22" DIAMETER, 35" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P55	DW2218AJDKIT	4754				-0.0018	18.10	1801	1	SINGLE WALL DUCT ADJUSTABLE, 22" DIAMETER, 17.5" LONG, FLANGE AT ONE END WITH A 22" ADJUSTABLE COLLAR - STAINLESS STEEL.
P56	DW22SUBRASY						3.80		1	DUCT SUPPORT BRACKET KIT, 22" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P57	DW2224ADPEC13	4754				-0.0184	11.52	1801	1	SINGLE WALL DUCT ECCENTRIC ADAPTER, 22" DUCT DIA TO 24" DUCT DIA, ASSEMBLY - STAINLESS STEEL.
SYSTEM AT P57						-1.8967	0.00			
P58	DW22SUBRASY						3.80		1	DUCT SUPPORT BRACKET KIT, 22" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P59 ASSEMBLED W/P15 O=T	DW2223ADKIT						7.72		1	DUCT ACCESS DOOR WITH HANDLE & GREASE DAM, FOR 22" DUCT USE 23" DOOR. STAINLESS STEEL.
P60	DW18SUBRASY						3.38		1	DUCT SUPPORT BRACKET KIT, 18" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P61 ASSEMBLED W/P3 O=S	DW1819ADKIT						5.55		1	DUCT ACCESS DOOR WITH HANDLE & GREASE DAM, FOR 18" DUCT USE 19" DOOR. STAINLESS STEEL.
	3M-2000PLUS						0.80		19	DUCT - 3M FIRE BARRIER 2000 PLUS SILICONE - USED AS SEALANT TO SEAL DUCT JOINTS.
	DW16CLASY						1.18		1	DUCT "V" CLAMP WITH NEW DESIGN 14 GA BRACKETS, 16" DUCT, ASSEMBLY.
	DW18CLASY						1.30		9	DUCT "V" CLAMP WITH NEW DESIGN 14 GA BRACKETS, 18" DUCT, ASSEMBLY.
	DW22CLASY						1.50		38	DUCT "V" CLAMP WITH NEW DESIGN 14 GA BRACKETS, 22" DUCT, ASSEMBLY.
	DW24CLASY						1.65		1	DUCT "V" CLAMP WITH NEW DESIGN 14 GA BRACKETS, 24" DUCT, ASSEMBLY.
TOTAL WEIGHT							1393.43			
TOTAL PRESSURE						-1.6945				

SINGLE WALL FACTORY BUILT DUCTWORK

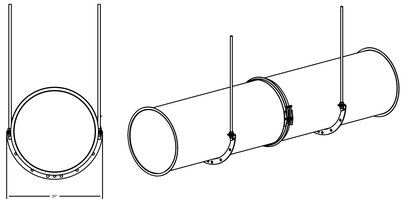
- ALL DUCTWORK IS REQUIRED TO BE INSTALLED WITH THE MAXIMUM SUPPORT SPACING LISTED BELOW.
- FOR A COMPLETE LIST OF APPROVED SUPPORT METHODS, SEE THE INSTALLATION AND OPERATION MANUAL.
- DUCTWORK SHALL SLOPE NOT LESS THAN 1/16" PER LINEAR FOOT TOWARDS THE HOOD OR AN APPROVED GREASE COLLECTION RESERVOIR.
- WHERE HORIZONTAL DUCTS EXCEED 75 FEET IN LENGTH, THE SLOPE SHALL NOT BE LESS THAN 3/16" PER LINEAR FOOT.
- GREASE DUCT CLEANOUTS MAY BE REQUIRED BY LOCAL CODE, INTERNATIONAL MECHANICAL CODE, AND/OR NFPA 96. PLEASE CONSULT WITH THE ENGINEER OF RECORD TO ENSURE GREASE DUCT CLEANOUTS ARE PROPERLY PLACED AND ACCESSIBLE.
- GREASE DUCT CLEANOUTS NOT ACCESSIBLE BY A 10' STEP LADDER MUST BE PROVIDED WITH A WORK PLATFORM OR OTHER MEANS OF SAFE ACCESS, PROVIDED BY OTHERS.

DUCT DIAMETER	HORIZONTAL SUPPORT (FT)	VERTICAL WALL SUPPORT (FT)	VERTICAL CURB SUPPORT (FT)
18"	10'	10'	24'
20"	10'	10'	24'
22"	10'	10'	24'

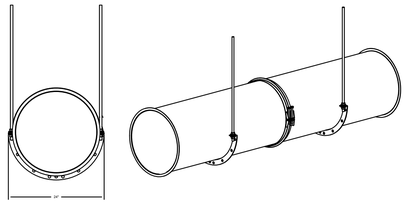
DO NOT LEAK TEST USING SMOKE BOMBS CONTAINING CHLORINES/CHLORIDES. CONSULT WITH CAPTIVEAIRE FOR PROPER LEAK TESTING METHODS.

SUPPORT SYSTEM DETAILS #1

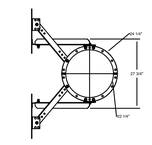
DW18SUBRASY - HORIZONTAL SUPPORT

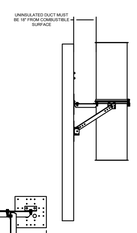


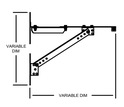
DW22SUBRASY - HORIZONTAL SUPPORT

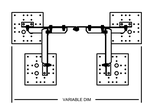


DW22VESU18 - VERTICAL WALL SUPPORT









REVISIONS

	DESCRIPTION	DATE
1		
2		
3		
4		

CAPTIVEAIRE

www.captiveaire.com

Indiana Office

Brownsburg, IN, 46112 PHONE: (317) 618 - 4918 FAX: 9192275929 EMAIL: regs56@captiveaire.com

20 E. Airport Rd. Ste. 100, Brownsburg, IN, 46112

Tre Ragazzi
CARMEL, IN, 46032

DATE: 11/5/2026

DWG.#: 8455325

DRAWN BY: MRY

SCALE: NOT TO SCALE

MASTER DRAWING

SHEET NO. 12

Rev. No.	Date	Description
-	05-28-26	REVIEW SET
-	09-23-26	REVIEW SET
1	11-19-26	CITY SUBMITTAL

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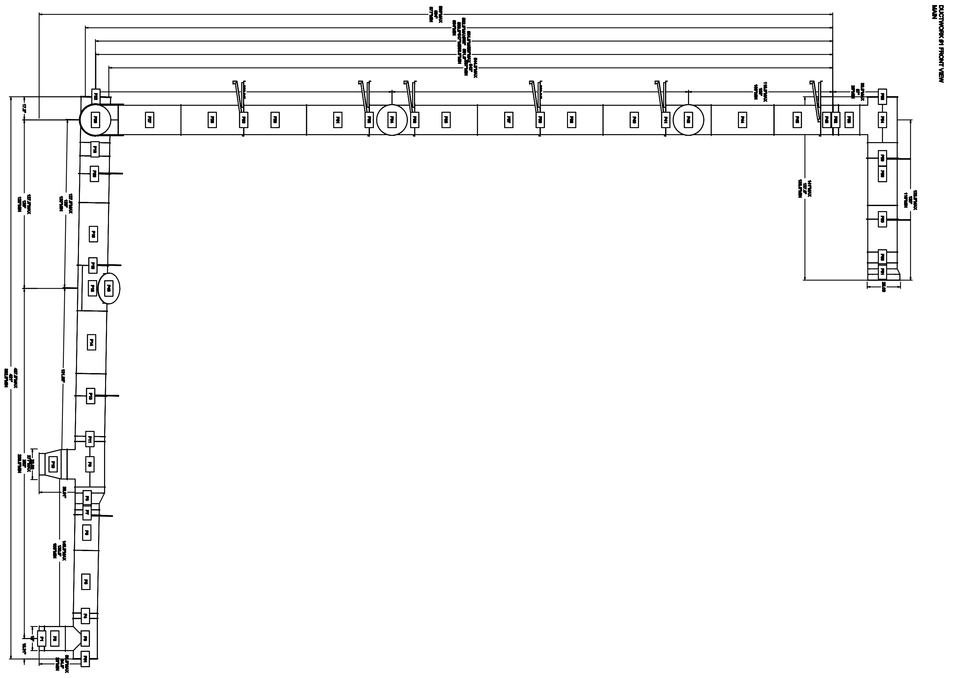
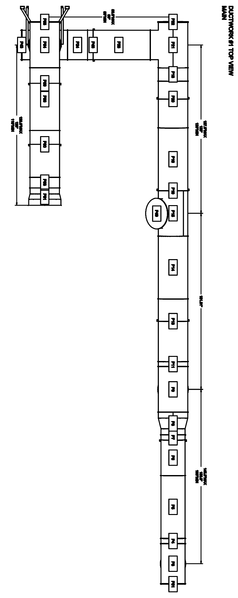
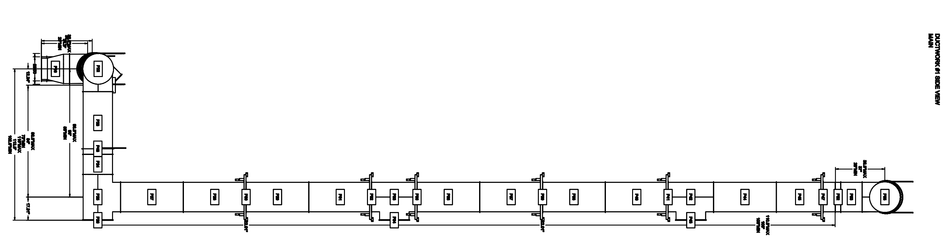
HANNAH R. SADLER
REGISTERED
No. 10505427
STATE OF INDIANA
PROFESSIONAL ENGINEER

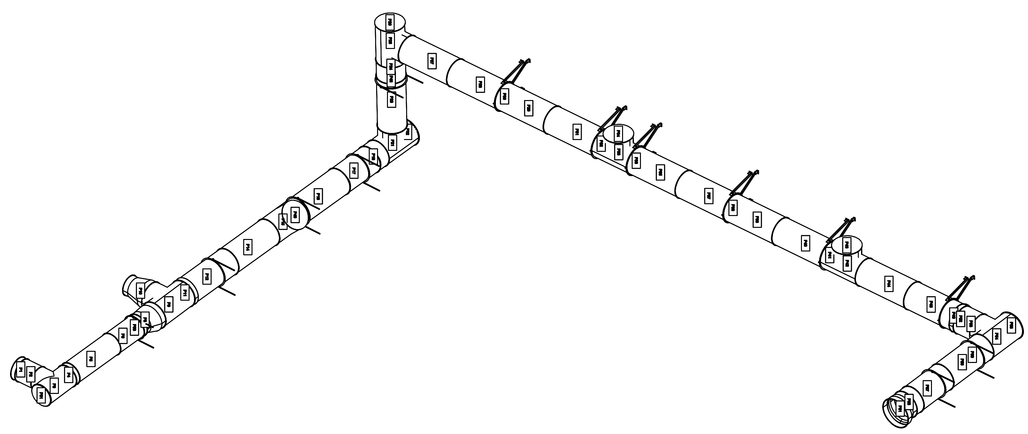
CUSTOMER: Tre Ragazzi Restaurants
PROJECT NAME: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: HOOD DRAWINGS
DRAWN BY: DAE
PROJECT No. 26010

M412
05/28/2026









SHEET NO.
13

MASTER DRAWING

SCALE:
NOT TO SCALE

DRAWN BY:
MRY

PROJECT No.
9455325

DATE: 11/5/2026

Tre Ragazzi

CARMEL, IN, 46032

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REVISIONS

DESCRIPTION	DATE

M413
05/28/2026

CUSTOMER:
Tre Ragazzi Restaurants

PROJECT NAME:
TRE RAGAZZI RESTAURANT

LOCATION:
CARMEL, IN

DRAWN BY: DAE

PROJECT No. 26010

DRAWING TITLE:
HOOD DRAWINGS

HANNAH R. SADLER — REGISTERED — 10505427 — STATE OF INDIANA — PROFESSIONAL ENGINEER

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Rev. No.	Date	Description
-	05-28-26	REVIEW SET
-	09-23-26	REVIEW SET
1	11-19-26	CITY SUBMITTAL

DUCTWORK #2 PARTS - JOB#8455325 DISH

TAG	PART #	CFM	GPM	ZONE	COVEREDBY	SP	WEIGHT	VELOCITY	QTY	DESCRIPTION
P1 ASSEMBLED W/P2	DW10TEASY	1000		1		-0.1540	10.16	1834	1	SINGLE WALL DUCT TEE, 10" DUCT, ASSEMBLY.
P2 ASSEMBLED W/P1 O=S	DW1011ADKIT						2.23		1	DUCT ACCESS DOOR WITH HANDLE & GREASE DAM, FOR 10" DUCT USE 11" DOOR. STAINLESS STEEL.
P3	DW1047LT	1000				-0.0329	15.72	1834	1	SINGLE WALL DUCT 10" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P4	DW1047LT	1000				-0.0329	15.72	1834	1	SINGLE WALL DUCT 10" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P5	DW1035LT	1000				-0.0245	11.78	1834	1	SINGLE WALL DUCT 10" DIAMETER, 35" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P6	DW1024AJDKIT	1000				-0.0105	10.09	1834	1	SINGLE WALL DUCT ADJUSTABLE, 10" DIAMETER, 23.5" LONG, FLANGE AT ONE END WITH A 10" ADJUSTABLE COLLAR - STAINLESS STEEL.
P7	DW10SUBRASY						2.54		1	DUCT SUPPORT BRACKET KIT, 10" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P8 ASSEMBLED W/P9	DW10TEASY	1000		1		-0.0880	10.16	1834	1	SINGLE WALL DUCT TEE, 10" DUCT, ASSEMBLY.
P9 ASSEMBLED W/P8 O=S	DW1011ADKIT						2.23		1	DUCT ACCESS DOOR WITH HANDLE & GREASE DAM, FOR 10" DUCT USE 11" DOOR. STAINLESS STEEL.
P10	DW1047LT	1000				-0.0329	15.72	1834	1	SINGLE WALL DUCT 10" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P11	DW1030AJDKIT	1000				-0.0140	12.22	1834	1	SINGLE WALL DUCT ADJUSTABLE, 10" DIAMETER, 29.5" LONG, FLANGE AT ONE END WITH A 10" ADJUSTABLE COLLAR - STAINLESS STEEL.
P12	DW10SUBRASY						2.54		1	DUCT SUPPORT BRACKET KIT, 10" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P13	DW1035LT	1000				-0.0245	11.78	1834	1	SINGLE WALL DUCT 10" DIAMETER, 35" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P14	DW1035LT	1000				-0.0245	11.78	1834	1	SINGLE WALL DUCT 10" DIAMETER, 35" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P15	DW10SUBRASY						2.54		1	DUCT SUPPORT BRACKET KIT, 10" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P16	DW1047LT	1000				-0.0329	15.72	1834	1	SINGLE WALL DUCT 10" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P17	DW1047LT	1000				-0.0329	15.72	1834	1	SINGLE WALL DUCT 10" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P18	DW1047LT	1000				-0.0329	15.72	1834	1	SINGLE WALL DUCT 10" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P19	DW1047LT	1000				-0.0329	15.72	1834	1	SINGLE WALL DUCT 10" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P20	DW1047LT	1000				-0.0329	15.72	1834	1	SINGLE WALL DUCT 10" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P21	DW1047LT	1000				-0.0329	15.72	1834	1	SINGLE WALL DUCT 10" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P22	DW1047LT	1000				-0.0329	15.72	1834	1	SINGLE WALL DUCT 10" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P23	DW1047LT	1000				-0.0329	15.72	1834	1	SINGLE WALL DUCT 10" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P24	DW1047LT	1000				-0.0329	15.72	1834	1	SINGLE WALL DUCT 10" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P25	DW1047LT	1000				-0.0329	15.72	1834	1	SINGLE WALL DUCT 10" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P26	DW1047LT	1000				-0.0329	15.72	1834	1	SINGLE WALL DUCT 10" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P27	DW1047LT	1000				-0.0329	15.72	1834	1	SINGLE WALL DUCT 10" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P28	DW1047LT	1000				-0.0329	15.72	1834	1	SINGLE WALL DUCT 10" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P29	DW1047LT	1000				-0.0329	15.72	1834	1	SINGLE WALL DUCT 10" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P30	DW1047LT	1000				-0.0329	15.72	1834	1	SINGLE WALL DUCT 10" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P31	DW1047LT	1000				-0.0329	15.72	1834	1	SINGLE WALL DUCT 10" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P32	DW1047LT	1000				-0.0329	15.72	1834	1	SINGLE WALL DUCT 10" DIAMETER, 47" LONG, FLANGE AT BOTH ENDS. STAINLESS STEEL.
P33	DW1024AJDKIT	1000				-0.0126	10.09	1834	1	SINGLE WALL DUCT ADJUSTABLE, 10" DIAMETER, 23.5" LONG, FLANGE AT ONE END WITH A 10" ADJUSTABLE COLLAR - STAINLESS STEEL.
P34	DW10SUBRASY						2.54		1	DUCT SUPPORT BRACKET KIT, 10" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P35	DW10SUBRASY						2.54		1	DUCT SUPPORT BRACKET KIT, 10" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P36	DW10SUBRASY						2.54		1	DUCT SUPPORT BRACKET KIT, 10" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P37	DW10SUBRASY						2.54		1	DUCT SUPPORT BRACKET KIT, 10" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P38	DW10SUBRASY						2.54		1	DUCT SUPPORT BRACKET KIT, 10" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P39	DW10SUBRASY						2.54		1	DUCT SUPPORT BRACKET KIT, 10" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P40	DW10SUBRASY						2.54		1	DUCT SUPPORT BRACKET KIT, 10" DUCT, USED FOR HANGING DUCT. 12 GA STEEL, CLEAR ZINC COATING. - 2 RINGS, 4 BRACKETS, & HARDWARE BAG 2.
P41	DW1004C2D	1000				-0.0027	1.77	1834	1	SINGLE WALL DUCT OFF SET COLLAR - 10" DIAMETER DUCT - 1/2" PITCH.
SYSTEM AT P41						-1.2053	0.00			
	3M-2000PLUS						0.80		6	DUCT - 3M FIRE BARRIER 2000 PLUS SILICONE - USED AS SEALANT TO SEAL DUCT JOINTS.
	DW10CLASY						0.82		32	DUCT "V" CLAMP WITH NEW DESIGN 14 GA BRACKETS, 10" DUCT, ASSEMBLY.
TOTAL WEIGHT							465.13			
TOTAL PRESSURE						-0.9957				

SINGLE WALL FACTORY BUILT DUCTWORK

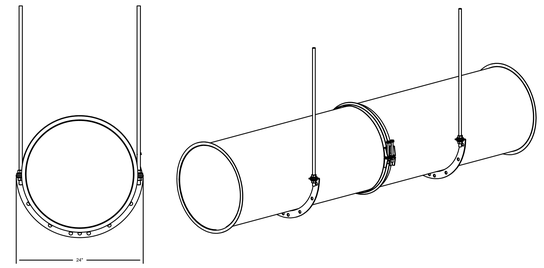
- ALL DUCTWORK IS REQUIRED TO BE INSTALLED WITH THE MAXIMUM SUPPORT SPACING LISTED BELOW.
- FOR A COMPLETE LIST OF APPROVED SUPPORT METHODS, SEE THE INSTALLATION AND OPERATION MANUAL.
- DUCTWORK SHALL SLOPE NOT LESS THAN 1/16" PER LINEAR FOOT TOWARDS THE HOOD OR AN APPROVED GREASE COLLECTION RESERVOIR.
- WHERE HORIZONTAL DUCTS EXCEED 75 FEET IN LENGTH, THE SLOPE SHALL NOT BE LESS THAN 3/16" PER LINEAR FOOT.
- GREASE DUCT CLEANOUTS MAY BE REQUIRED BY LOCAL CODE, INTERNATIONAL MECHANICAL CODE, AND/OR NFPA 96. PLEASE CONSULT WITH THE ENGINEER OF RECORD TO ENSURE GREASE DUCT CLEANOUTS ARE PROPERLY PLACED AND ACCESSIBLE.
- GREASE DUCT CLEANOUTS NOT ACCESSIBLE BY A 10' STEP LADDER MUST BE PROVIDED WITH A WORK PLATFORM OR OTHER MEANS OF SAFE ACCESS, PROVIDED BY OTHERS.

DUCT DIAMETER	HORIZONTAL SUPPORT (FT)	VERTICAL WALL SUPPORT (FT)	VERTICAL CURB SUPPORT (FT)
10"	10'	10'	24'

DO NOT LEAK TEST USING SMOKE BOMBS CONTAINING CHLORINES/CHLORIDES. CONSULT WITH CAPTIVEAIRE FOR PROPER LEAK TESTING METHODS.

SUPPORT SYSTEM DETAILS #2

DW22SUBRASY - HORIZONTAL SUPPORT



REVISIONS

	DESCRIPTION	DATE
1		
2		
3		
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20 E. Airport Rd. Ste. 100, Brownsburg, IN, 46112 PHONE: (317) 618 - 4918 FAX: 9192275929 EMAIL: regs56@captiveaire.com
www.captiveaire.com

Tre Ragazzi
CARMEL, IN, 46032

DATE: 11/5/2026

DWG.#: 8455325

DRAWN BY: MRY

SCALE: 3/4" = 1'-0"

MASTER DRAWING

SHEET NO. 14

Rev. No.	Date	Description
-	05-28-26	REVIEW SET
-	09-23-26	REVIEW SET
1	11-19-26	CITY SUBMITTAL

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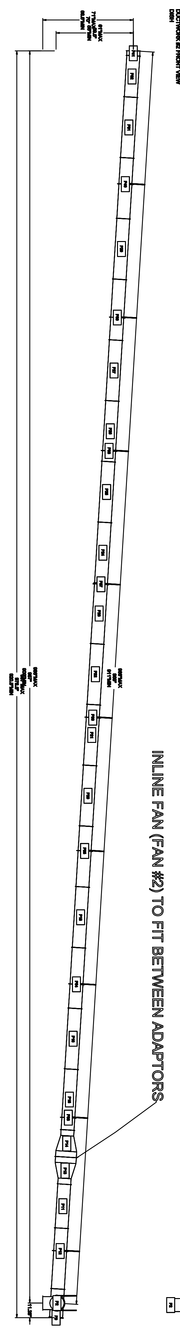
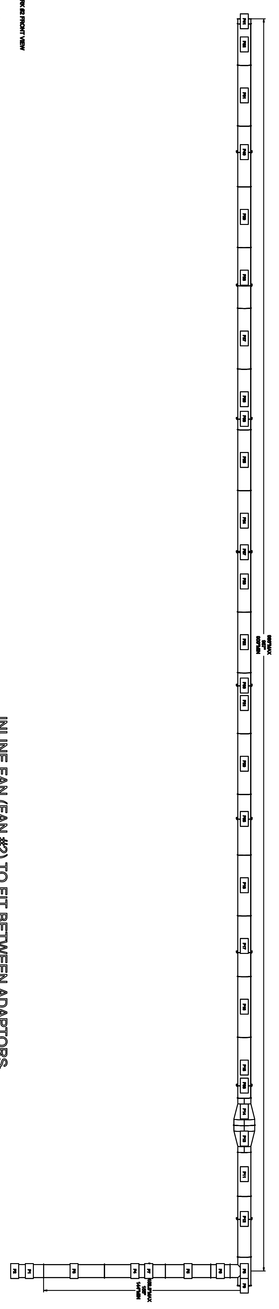
HANNAH R. SADLER
REGISTERED
No. 10505427
STATE OF INDIANA
PROFESSIONAL ENGINEER
Hannah R Sadler

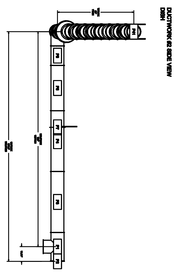
CUSTOMER: Tre Ragazzi Restaurants
PROJECT NAME: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: HOOD DRAWINGS
DRAWN BY: DAE
PROJECT No: 26010

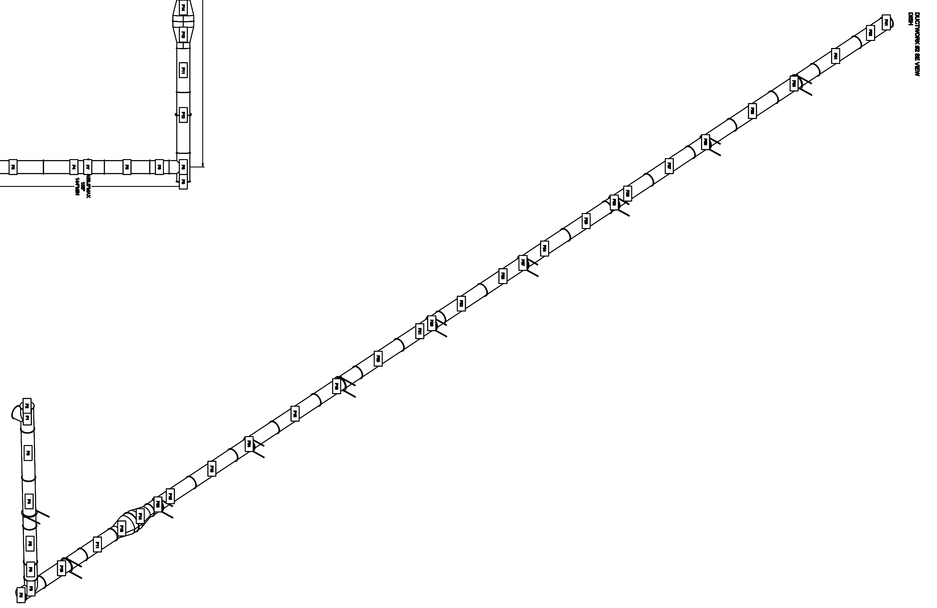
M414
05/28/2026





INLINE FAN (FAN #2) TO FIT BETWEEN ADAPTORS





SHEET NO.	15
MASTER DRAWING	
SCALE:	NOT TO SCALE
DRAWN BY:	MRY
DWG.#	9455326
DATE:	11/5/2026

Tre Ragazzi

CARMEL, IN, 46032

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REVISIONS		
DESCRIPTION	DATE	

M415
05/20/2026

CUSTOMER: **Tre Ragazzi Restaurants**

PROJECT NAME: TRE RAGAZZI RESTAURANT

LOCATION: CARMEL, IN | DRAWN BY: DAE | PROJECT No.: 26010

DRAWING TITLE: HOOD DRAWINGS

HANNAH R. SCHOLER — 10505227 — STATE OF INDIANA — PROFESSIONAL ENGINEER

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Rev. No.	Date	Description
-	05-28-26	REVIEW SET
-	09-23-26	REVIEW SET
1	11-19-26	CITY SUBMITTAL

DUCTWORK #3 PARTS - JOB#8455325 DOUBLE WALL SUPPY

TAG	PART #	CFM	GPM	ZONE	COVEREDBY	SP	THROW	WEIGHT	VELOCITY	QTY	DESCRIPTION
RTU	DW20X42TO24DWSQRDADPOS-RTU4SD	4500						51.66		1	RTU4 DOUBLE WALL DUCT SIDE DISCHARGE OFFSET ADAPTER - OFFSET 2.532" ALONG THE 20" WIDTH - SQUARE TO ROUND - 20" X 42" TO 24" - 24" TALL - 5000 CFM - VELOCITY 1591 FPM - 2" FLANGE ON TOP SIDE, 1" FLANGES ON BOTTOM & SIDES, 1/2" ON ROUND SIDE - STAINLESS STEEL.. FSK INSULATION, VENTURE CLAD, & VENTURE TAPE SHIP LOOSE.
P1	DW2407LTEC-3S	4500						17.81	1432	1	SINGLE WALL SUPPLY DUCT 24" DIAMETER, 7" LONG, FLANGED ON BOTH ENDS WITH END CAP WELDED ON ONE END. USED TO TRANSITION FROM 3" DOUBLE WALL SUPPLY DUCT TO SINGLE WALL SUPPLY DUCT.
P2 [SEALED]	DW2444DWLT-3S-S	4500						62.00	1432	1	DOUBLE WALL SUPPLY DUCT 24 DIAMETER 44" LONG, FLANGE AT BOTH ENDS - 3" INSULATION - R VALUE 12 - 30" STAINLESS STEEL OUTER SHELL.
P3 [SEALED]	DW2444DWLT-3S-S	4500						62.00	1432	1	DOUBLE WALL SUPPLY DUCT 24 DIAMETER 44" LONG, FLANGE AT BOTH ENDS - 3" INSULATION - R VALUE 12 - 30" STAINLESS STEEL OUTER SHELL.
P4 [SEALED]	DW2435DWLT-3S-S	4500						49.00	1432	1	DOUBLE WALL SUPPLY DUCT 24 DIAMETER 35" LONG, FLANGE AT BOTH ENDS - 3" INSULATION - R VALUE 12 - 30" STAINLESS STEEL OUTER SHELL.
P5 [SEALED]	DW2427DWAJD-3S-S	4500						78.38	1432	1	DOUBLE WALL SUPPLY ADJUSTABLE DUCT - 24" INNER DUCT - 3" INSULATION - R VALUE 12 - 30" STAINLESS STEEL OUTER SHELL. MIN LENGTH = 11" / MAX LENGTH = 24.5" / ADJUSTMENT = 13.5" / ADJUSTABLE SECTION MAY NEED TO BE CUT. INCLUDES SINGLE AND DOUBLE WALL "V" CLAMPS.
P6	DW2490DWASY-3S-S	4500						43.00	1432	1	DOUBLE WALL SUPPLY DUCT 90 DEGREE ELBOW, 24" DUCT, ASSEMBLY. 3" INSULATED - R VALUE 12 - 30" STAINLESS STEEL OUTER SHELL
P7	DW24RISER	4500						3.85	1432	1	SINGLE WALL DUCT RISER FOR WELDED HOODS, 24" DIA DUCT. STAINLESS STEEL.
P8	DW2444DWLT-3S-S	4500						62.00	1432	1	DOUBLE WALL SUPPLY DUCT 24 DIAMETER 44" LONG, FLANGE AT BOTH ENDS - 3" INSULATION - R VALUE 12 - 30" STAINLESS STEEL OUTER SHELL.
P9	DW2444DWLT-3S-S	4500						62.00	1432	1	DOUBLE WALL SUPPLY DUCT 24 DIAMETER 44" LONG, FLANGE AT BOTH ENDS - 3" INSULATION - R VALUE 12 - 30" STAINLESS STEEL OUTER SHELL.
P10	DW2444DWLT-3S-S	4500						62.00	1432	1	DOUBLE WALL SUPPLY DUCT 24 DIAMETER 44" LONG, FLANGE AT BOTH ENDS - 3" INSULATION - R VALUE 12 - 30" STAINLESS STEEL OUTER SHELL.
P11	DW2444DWLT-3S-S	4500						62.00	1432	1	DOUBLE WALL SUPPLY DUCT 24 DIAMETER 44" LONG, FLANGE AT BOTH ENDS - 3" INSULATION - R VALUE 12 - 30" STAINLESS STEEL OUTER SHELL.
P12	DW2444DWLT-3S-S	4500						62.00	1432	1	DOUBLE WALL SUPPLY DUCT 24 DIAMETER 44" LONG, FLANGE AT BOTH ENDS - 3" INSULATION - R VALUE 12 - 30" STAINLESS STEEL OUTER SHELL.
P13	DW2444DWLT-3S-S	4500						62.00	1432	1	DOUBLE WALL SUPPLY DUCT 24 DIAMETER 44" LONG, FLANGE AT BOTH ENDS - 3" INSULATION - R VALUE 12 - 30" STAINLESS STEEL OUTER SHELL.
P14	DW2444DWLT-3S-S	4500						62.00	1432	1	DOUBLE WALL SUPPLY DUCT 24 DIAMETER 44" LONG, FLANGE AT BOTH ENDS - 3" INSULATION - R VALUE 12 - 30" STAINLESS STEEL OUTER SHELL.
P15	DW2444DWLT-3S-S	4500						62.00	1432	1	DOUBLE WALL SUPPLY DUCT 24 DIAMETER 44" LONG, FLANGE AT BOTH ENDS - 3" INSULATION - R VALUE 12 - 30" STAINLESS STEEL OUTER SHELL.
P16	DW2444DWLT-3S-S	4500						62.00	1432	1	DOUBLE WALL SUPPLY DUCT 24 DIAMETER 44" LONG, FLANGE AT BOTH ENDS - 3" INSULATION - R VALUE 12 - 30" STAINLESS STEEL OUTER SHELL.
P17	DW2444DWLT-3S-S	4500						62.00	1432	1	DOUBLE WALL SUPPLY DUCT 24 DIAMETER 44" LONG, FLANGE AT BOTH ENDS - 3" INSULATION - R VALUE 12 - 30" STAINLESS STEEL OUTER SHELL.
P18	DW2444DWLT-3S-S	4500						62.00	1432	1	DOUBLE WALL SUPPLY DUCT 24 DIAMETER 44" LONG, FLANGE AT BOTH ENDS - 3" INSULATION - R VALUE 12 - 30" STAINLESS STEEL OUTER SHELL.
P19	DW2447DWAJD-3S-S	4500						116.54	1432	1	DOUBLE WALL SUPPLY ADJUSTABLE DUCT - 24" INNER DUCT - 3" INSULATION - R VALUE 12 - 30" STAINLESS STEEL OUTER SHELL. MIN LENGTH = 11" / MAX LENGTH = 48.5" / ADJUSTMENT = 30.5" / ADJUSTABLE SECTION MAY NEED TO BE CUT. INCLUDES SINGLE AND DOUBLE WALL "V" CLAMPS.
P20	DW2490DWASY-3S-S	4500						43.00	1432	1	DOUBLE WALL SUPPLY DUCT 90 DEGREE ELBOW, 24" DUCT, ASSEMBLY. 3" INSULATED - R VALUE 12 - 30" STAINLESS STEEL OUTER SHELL
SYSTEM AT P20						0.0691		0.00			
P21	DW2430DWCHASESUPASY							51.58		1	DOUBLE WALL DUCT VERTICAL CHASE SUPPORT ASSEMBLY. 3 LAYERS REDUCED/ZERO CLEARANCE - 30" STAINLESS STEEL OUTER SHELL. PARTS ARE ZINC COATED.
P22	DW2430DWCHASESUPASY							51.58		1	DOUBLE WALL DUCT VERTICAL CHASE SUPPORT ASSEMBLY. 3 LAYERS REDUCED/ZERO CLEARANCE - 30" STAINLESS STEEL OUTER SHELL. PARTS ARE ZINC COATED.
P23	DW2430DWCHASESUPASY							51.58		1	DOUBLE WALL DUCT VERTICAL CHASE SUPPORT ASSEMBLY. 3 LAYERS REDUCED/ZERO CLEARANCE - 30" STAINLESS STEEL OUTER SHELL. PARTS ARE ZINC COATED.
P24	DW2430DWCHASESUPASY							51.58		1	DOUBLE WALL DUCT VERTICAL CHASE SUPPORT ASSEMBLY. 3 LAYERS REDUCED/ZERO CLEARANCE - 30" STAINLESS STEEL OUTER SHELL. PARTS ARE ZINC COATED.
P25	DW2430DWCHASESUPASY							51.58		1	DOUBLE WALL DUCT VERTICAL CHASE SUPPORT ASSEMBLY. 3 LAYERS REDUCED/ZERO CLEARANCE - 30" STAINLESS STEEL OUTER SHELL. PARTS ARE ZINC COATED.
P26	DW2430DWCHASESUPASY							51.58		1	DOUBLE WALL DUCT VERTICAL CHASE SUPPORT ASSEMBLY. 3 LAYERS REDUCED/ZERO CLEARANCE - 30" STAINLESS STEEL OUTER SHELL. PARTS ARE ZINC COATED.
P27	DW2430DWCHASESUPASY							51.58		1	DOUBLE WALL DUCT VERTICAL CHASE SUPPORT ASSEMBLY. 3 LAYERS REDUCED/ZERO CLEARANCE - 30" STAINLESS STEEL OUTER SHELL. PARTS ARE ZINC COATED.
P28	DW2430DWCHASESUPASY							51.58		1	DOUBLE WALL DUCT VERTICAL CHASE SUPPORT ASSEMBLY. 3 LAYERS REDUCED/ZERO CLEARANCE - 30" STAINLESS STEEL OUTER SHELL. PARTS ARE ZINC COATED.
P29	HF3-LG-20FT-10P							2.00		1	SUPPLY DUCT CABLE SUSPENSION SYSTEM - UL APPROVED - GRIPPLE NO.3 (200 LBS) LOOP HANGER KITS. QUANTITY OF 10 PER KIT.
P30	HF3-LG-20FT-10P							2.00		1	SUPPLY DUCT CABLE SUSPENSION SYSTEM - UL APPROVED - GRIPPLE NO.3 (200 LBS) LOOP HANGER KITS. QUANTITY OF 10 PER KIT.
P31	HF3-LG-20FT-10P							2.00		1	SUPPLY DUCT CABLE SUSPENSION SYSTEM - UL APPROVED - GRIPPLE NO.3 (200 LBS) LOOP HANGER KITS. QUANTITY OF 10 PER KIT.
	20100MNE+9485PC-BLACK							0.50		2	SUPPLY DUCT GASKET - LIGHT DUTY BLENDED EPDM FOAM GASKET - 20100MNE + 9485PC BLACK 1/8" X 1/2" X 50'.
	DW24CLASY							1.65		1	DUCT "V" CLAMP WITH NEW DESIGN 14 GA BRACKETS, 24" DUCT, ASSEMBLY.
	DW30CLASY							2.01		17	DUCT "V" CLAMP WITH NEW DESIGN 14 GA BRACKETS, 30" DUCT, ASSEMBLY.
	HF3-LG-20FT-10P							2.00		1	SUPPLY DUCT CABLE SUSPENSION SYSTEM - UL APPROVED - GRIPPLE NO.3 (200 LBS) LOOP HANGER KITS. QUANTITY OF 10 PER KIT.
	SEALDUCTEXT							0.01		4	SEAL DUCT EXTERIOR - SF 685 BUTYL WATERPROOF ALUMINUM TAPE IS USED TO SEAL THE EXTERIOR OF THE DOUBLE WALL DUCT. SEALDUCTEXT QUANTITY.SHOULD BE PER QUANTITY OF PARTS THAT NEED TO BE SEALED. DOUBLE V CLAMP WILL NEED TO BE SEALED IN THE FIELD ORDER "TAPESF-685" SEPARATE.
	TAPESF-685							1.00		2	DOUBLE WALL DUCT TAPE - USED TO SEAL DOUBLE WALL DUCT SHELLS - 2" X 100' SF-685 BUTYL WATERPROOF ALUMINUM TAPE.
TOTAL WEIGHT								1668.74			
TOTAL PRESSURE						0.3699					

SINGLE WALL FACTORY BUILT SUPPLY DUCTWORK

- ALL DUCTWORK IS REQUIRED TO BE INSTALLED WITH THE MAXIMUM SUPPORT SPACING LISTED BELOW.
- FOR A COMPLETE LIST OF APPROVED SUPPORT METHODS, SEE THE INSTALLATION AND OPERATION MANUAL.

DUCT DIAMETER	HORIZONTAL SUPPORT (FT)	HORIZONTAL STANDARD LOOP(FT)	VERTICAL WALL SUPPORT (FT)	VERTICAL CURB SUPPORT (FT)	VERTICAL FLOOR SUPPORT (FT)
5" - 36"	10'	5'	10'	20'	20'

DOUBLE WALL FACTORY BUILT SUPPLY DUCTWORK

- ALL DUCTWORK IS REQUIRED TO BE INSTALLED WITH THE MAXIMUM SUPPORT SPACING LISTED BELOW.
- FOR A COMPLETE LIST OF APPROVED SUPPORT METHODS, SEE THE ENTIRE INSTALLATION AND OPERATION MANUAL

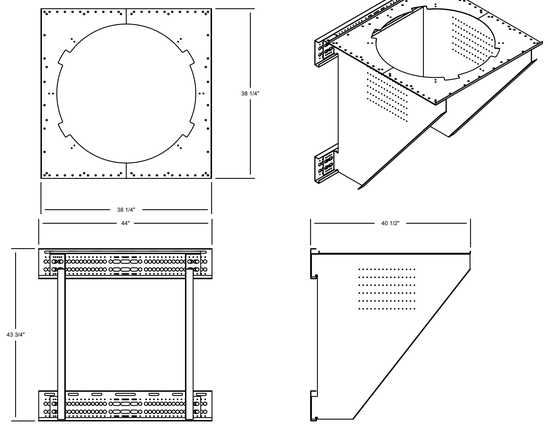
HORIZONTAL	
DUCT DIAMETER	SUPPORT SPACING (FT)
5" - 36"	5

VERTICAL			
TYPE	WALL SUPPORT (FT)	CURB SUPPORT (FT)	FLOOR SUPPORT (FT)
1S, 2S, 3S	10'	20'	20'

DO NOT LEAK TEST USING SMOKE BOMBS CONTAINING CHLORINES/CHLORIDES. CONSULT WITH CAPTIVEAIRE FOR PROPER LEAK TESTING METHODS.

SUPPORT SYSTEM DETAILS #3

DW30DWVESU - VERTICAL WALL SUPPORT - LARGE



REVISIONS

	DESCRIPTION	DATE
1		
2		
3		
4		

CAPTIVEAIRE

www.captiveaire.com

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20 E. Airport Rd. Ste. 100, Brownsburg, IN. 46112 PHONE: (317) 618 -4918 FAX: 9192275929 EMAIL: regS6@captiveaire.com

Tre Ragazzi
CARMEL, IN, 46032

DATE: 11/5/2026

DWG.#: 8455325

DRAWN BY: MRY

SCALE: 3/4" = 1'-0"

MASTER DRAWING

SHEET NO. 16

Rev. No.	Date	Description
-	05-28-26	REVIEW SET
-	09-23-26	REVIEW SET
1	11-19-26	CITY SUBMITTAL

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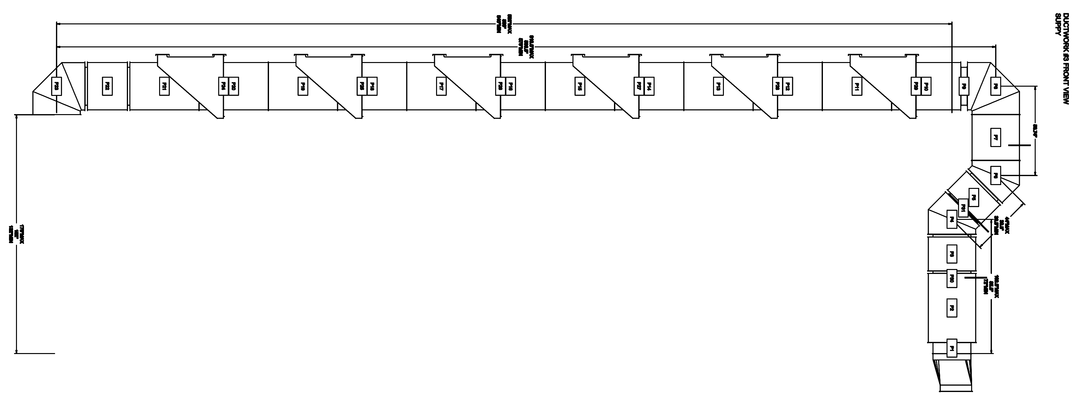
REGISTERED
No. 10505427
STATE OF INDIANA
PROFESSIONAL ENGINEER

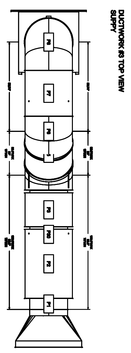
Hannah R. Sadler

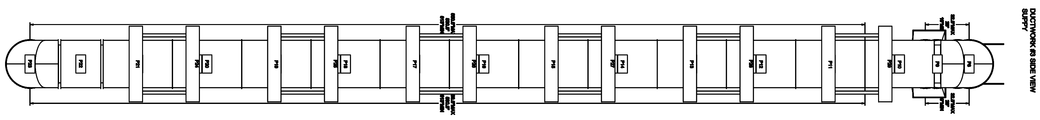
CUSTOMER: Tre Ragazzi Restaurants
PROJECT: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: HOOD DRAWINGS

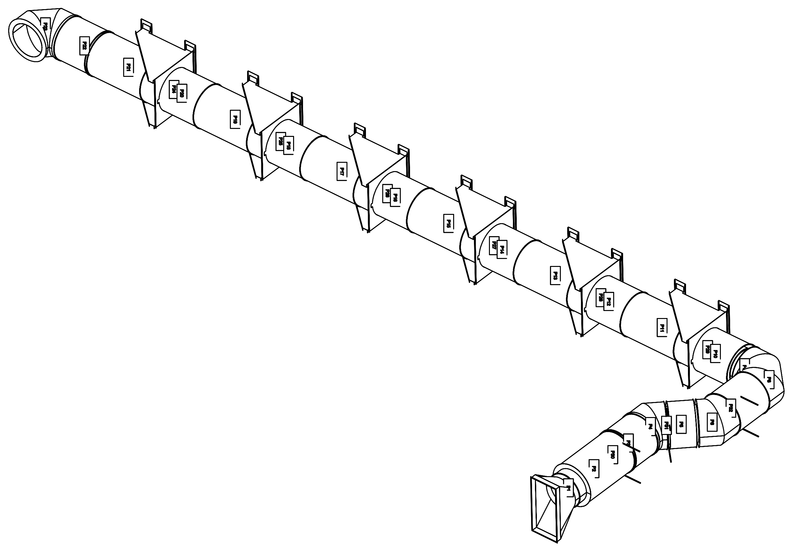
DRAWN BY: DAE
PROJECT No. 26010

M416
05/28/2026









SHEET NO. 17

MASTER DRAWING

SCALE: NOT TO SCALE

DRAWN BY: MRY

DWG.#: 9455326

DATE: 11/5/2026

Tre Ragazzi

CARMEL, IN, 46032

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REVISIONS

DESCRIPTION	DATE

M417

09292026

CUSTOMER:
Tre Ragazzi Restaurants

PROJECT NAME:
TRE RAGAZZI RESTAURANT

LOCATION: CARMEL, IN

DRAWN BY: DAE

PROJECT No.: 26010

DRAWING TITLE:
HOOD DRAWINGS

HANNAH R. SCHOLER — REGISTERED — 10505227 — STATE OF INDIANA — PROFESSIONAL ENGINEER

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Mechanical, Electrical, and Energy Engineering

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Rev. No.	Date	Description
-	05-28-26	REVIEW SET
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1	11-19-26	CITY SUBMITTAL

GENERAL PLUMBING NOTES

1. NOT ALL SYMBOLS INDICATED ON THIS DRAWING ARE NECESSARILY USED ON THIS PROJECT.
2. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS. IN THE EVENT OF CONFLICT BETWEEN REQUIREMENTS DETAILED IN DRAWINGS, SPECIFICATIONS, OR GENERAL CONDITIONS THE BIDDER SHALL INFORM THE ENGINEER OF SUCH CONFLICT IN WRITING NOT LATER THAN TEN (10) DAYS BEFORE SUCH BIDS ARE DUE. IF SUCH NOTIFICATION IS NOT PROVIDED, THE ENGINEER SHALL RESOLVE THE CONFLICT WHEN NOTIFIED, AND THE CONTRACTOR SHALL ACCEPT THE ENGINEER'S RESOLUTION WITHOUT ANY FURTHER COMPENSATION.
3. THE PLUMBING CONTRACTOR SHALL REVIEW AND COORDINATE PLUMBING REQUIREMENTS WITH ALL SHOP DRAWINGS FOR PLUMBING CONNECTIONS TO EQUIPMENT FURNISHED BY THE OWNER, GENERAL CONTRACTOR, MECHANICAL CONTRACTOR, ELECTRICAL CONTRACTOR AND CONTROLS CONTRACTOR.
4. CONNECTIONS AND REQUIRED COMPONENTS SHALL BE AS INDICATED ON THE APPLICABLE SHOP DRAWINGS.
5. THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL FOR ALL EQUIPMENT, PIPING AND FIXTURES INDICATED FOR DEMOLITION. MECHANICAL CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL ITEMS NOT SELECTED BY THE OWNER.
6. SUBMIT MANUFACTURER'S PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH MATERIAL AND PRODUCT USED.
7. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS, WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
8. COORDINATE LOCATION OF PLUMBING SYSTEMS TO AVOID INTERFERENCE WITH LOCATION OF STRUCTURE AND OTHER BUILDING SYSTEMS. NOTIFY OWNER PRIOR TO CONSTRUCTION OF CONFLICTS, WHICH CANNOT BE RESOLVED.
9. ALL WORKMANSHIP AND MATERIALS SHALL BE OF THE HIGHEST QUALITY IN EVERY RESPECT. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, OF THE LATEST DESIGN, AND FREE OF DEFECTS. ALL MATERIALS AND EQUIPMENT SHALL CONFORM TO THE LATEST AMENDED EDITION OF ALL APPLICABLE STANDARDS, INCLUDING BUT NOT LIMITED TO, SMACNA, UL, AND NEMA STANDARDS.
10. OBTAIN ALL EQUIPMENT OF THE SAME TYPE FROM THE SAME MANUFACTURER.
11. WATER QUALITY TESTING IS REQUIRED.
12. DISRUPTIONS TO EXISTING SERVICES MUST BE COORDINATED WITH THE CONSTRUCTION MANAGER AND THE OWNER NO LESS THAN 10 BUSINESS DAYS IN ADVANCE.
13. INSTALL DIELECTRIC FITTINGS AS REQUIRED
14. SEE OTHER SECTIONS FOR DETAILS ON EXCAVATION REQUIREMENTS.
15. DRAWINGS ARE ONLY SCHEMATIC AND DIAGRAMMATIC IN NATURE. INSTALL PIPING AS GENERALLY INDICATED.
16. INSTALL VALVES AT ALL LOW POINT IN SYSTEM.
17. INSTALL AIR RELIEF VALVES AT ALL HIGH POINTS IN THE SYSTEM.
18. PROVIDE O&M MANUALS FOR ALL EQUIPMENT.
19. MINIMUM DESIGN WORKING PRESSURE SHALL BE 125 PSIG FOR ALL SUPPLY PIPING.
20. PROTECT ALL EQUIPMENT AND MATERIALS DURING WHILE IN STORAGE AND DURING CONSTRUCTION. REPLACE ANY DAMAGED ITEMS. DO NOT ATTEMPT TO REPAIR.
21. INSTALL FORCE MAINS AT ELEVATIONS INDICATED.
22. PROVIDE FINAL CONNECTIONS TO EQUIPMENT WITH SHUT-OFF VALVES, BALANCE REGULATORS, UNIONS, ETC. AS SPECIFIED AND AS REQUIRED BY EQUIPMENT OPERATION. COORDINATE WITH OWNER'S REPRESENTATIVE FOR EQUIPMENT IDENTIFICATION, CONNECTION REQUIREMENTS, EXACT LOCATIONS AND MOUNTING HEIGHTS.

THE CONTRACTORS ARE REQUIRED TO VISIT THE SITE AND FULLY ACQUAINT THEMSELVES WITH THE EXISTING CONDITIONS AND THE DIFFICULTIES INVOLVED IN ACCOMPLISHING THE NEW WORK. PROBLEMS, DISCREPANCIES OR INFORMATION NEEDED SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER IN WRITING PRIOR TO SUBMITTING A PROPOSAL. THE SUBMISSION OF PROPOSAL WILL INDICATE THAT THE CONTRACTOR HAS FULLY UNDERSTOOD AND HAS INCLUDED ALL COSTS FOR THIS PROJECT.

PIPING DESIGNATIONS

SANITARY SEWER	
STORM SEWER	
CONDENSATE DRAIN	
VENT	
COLD WATER	
SOFT COLD WATER	SCW
HOT WATER	
HOT WATER RETURN	
PROPANE GAS	LPG
NATURAL GAS	NG
VACUUM (AIR)	VA
COMPRESSED AIR	CA
ACID WASTE	AW
ACID VENT	AV
OXYGEN	O
NITROGEN	N
NITROUS OXIDE	NO

EQUIPMENT DESIGNATIONS

AAP	AREA ALARM PANEL
AC	AIR COMPRESSOR
ACC	AIR COOLED CONDENSER
ACCU	AIR COOLED CONDENSING UNIT
AD	ACCESS DOOR
AHU	AIR HANDLING UNIT
AHX	AIR-TO-AIR HEAT EXCHANGER
AS	AIR SEPARATOR
B	BOILER
BFP	REDUCED PRESSURE BACKFLOW PREVENTER
CC	COOLING COIL
CH	CHILLER
CO	CLEAN OUT
CP	CONDENSATE PUMP
CT	COOLING TOWER
CTP	COOLING TOWER PUMP
CUH	CABINET UNIT HEATER
CWP	CHILLED WATER PUMP
DG	DOOR GRILLE
DSP	DUPLEX SUMP PUMP
DWH	DOMESTIC WATER HEATER
DWS	DUPLEX WATER SOFTENER
EBR	ELECTRIC BASEBOARD RADIATION
EG	EXHAUST GRILLE OR REGISTER
EF	EXHAUST FAN
ERP	ELECTRIC RADIANT PANEL
ET	EXPANSION TANK
EUH	ELECTRIC UNIT HEATER
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
F	FURNACE
FCO	FLOOR CLEAN OUT
FCU	FAN COIL UNIT
FD	FIRE DAMPER OR FLOOR DRAIN
FPB	FAN POWERED BOX
FTR	FIN TUBE RADIATION
GV	GRAVITY VENTILATOR
H	HUMIDIFIER
HB	HOSE BIBB
HC	HEATING COIL
HP	HEAT PUMP
HWP	HEATING WATER PUMP
HX	HEAT EXCHANGER
IFB	INTEGRAL FACE AND BYPASS COIL
L	LOUVER OR LAVATORY
LD	LINEAR DIFFUSER
MAN	GAS MANIFOLD
MAP	MASTER ALARM PANEL
MAU	MAKE-UP AIR UNIT
MVP	MEDICAL VACUUM PUMP
OIA	OUTSIDE AIR INTAKE
NT	NEUTRALIZATION TANK
P	CIRCULATING PUMP
PRV	PRESSURE REDUCING VALVE
RO	REVERSE OSMOSIS UNIT
RCP	RADIANT CEILING PANEL
REF	ROOF EXHAUST FAN
RF	RETURN FAN
RG	RETURN GRILLE OR REGISTER
RH	REHEAT COIL
RTU	ROOFTOP UNIT
RV	RELIEF VENT
RPZ	BACKFLOW PREVENTER
SA	SOUND ATTENUATOR
SD	SUPPLY DIFFUSER OR SMOKE DAMPER
SF	SUPPLY FAN
SG	SUPPLY GRILLE
SH	SHOWER
SP	SUMP PUMP
SS	SAFETY STATION
ST	SUMP TANK
SK	SINK
TB	TERMINAL BOX
TCP	TEMPERATURE CONTROL PANEL
TG	TRANSFER AIR GRILLE
TMV	THERMOSTATIC MIXING VALVE
UF	UTILITY FAN
UH	UNIT HEATER
UV	UNIT VENTILATOR
VAV	VARIABLE VOLUME BOX
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
WC	WATER CLOSET
WD	WALL DIFFUSER
WEF	WALL EXHAUST FAN
WFR	WALL FIN RADIATION
WG	WALL GRILLE
WH	WATER HEATER
WHA	WATER HAMMER ARRESTOR
ZVB	ZONE VALVE BOX

ABBREVIATIONS

AE	ARCHITECT/ENGINEER
AF	AIR FOIL
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ALT	ALTERNATE
ALUM	ALUMINUM
AMB	AMBIENT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APD	AIR PRESSURE DROP
ARI	AIR CONDITIONING AND REFRIGERATION INSTITUTE
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASPE	AMERICAN SOCIETY OF PLUMBING ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AUX	AUXILIARY
AWWA	AMERICAN WATER WORKS ASSOCIATION
BDD	BACKDRAFT DAMPER
BFC	BELOW FINISHED CEILING
BFG	BELOW FINISHED GRADE
BHP	BREAK HORSEPOWER
BLDG	BUILDING
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
CA	COMPRESSED AIR
CAV	CONSTANT AIR VOLUME
CF	CEILING FAN
CFM	CUBIC FEET PER MINUTE
CFOI	CONTRACTOR FURNISHED; OWNER INSTALLED
CKT	CIRCUIT
CLG	CEILING
CO	CLEANOUT
CONT	CONTINUATION
CONT'D	CONTINUED
CW	COLD WATER
CWR	CHILLED WATER RETURN
DB	DRY BULB
DF	DRINKING FOUNTAIN
DI	DEIONIZED
DIA	DIAMETER
DN	DOWN
DPR	DAMPER
DWG	DRAWING
DX	DIRECT EXPANSION
EA	EACH
EAT	ENTERING AIR TEMPERATURE (°F)
EC	ELECTRICAL CONTRACTOR
EDB	ENTERING DRY BULB TEMPERATURE (°F)
EER	ENERGY EFFICIENCY RATIO
EFF	EFFICIENCY
EL	ELEVATION
EMD	END OF MAIN DRIP
EQ	EQUIPMENT
ESP	EXTERNAL STATIC PRESSURE
EWB	ENTERING WET BULB TEMPERATURE (°F)
EWT	ENTERING WATER TEMPERATURE (°F)
EX	EXISTING
EXH	EXHAUST
EXIST	EXISTING
EXT	EXTERIOR
°F	DEGREES FAHRENHEIT
FC	FORWARD CURVED
FD	FIRE DAMPER OR FLOOR DRAIN
FDN	FOUNDATION
FLR	FLOOR
FPC	FIRE PROTECTION CONTRACTOR
FPI	FINS PER INCH
FPM	FEET PER MINUTE
F/T	FLOAT AND THERMOSTATIC TRAP
FT	FOOT OR FEET
FTG	FOOTING
GA	GAGE OR GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HD	HEAD
HP	HORSEPOWER
HPR	HIGH PRESSURE STEAM CONDENSATE RETURN
HPS	HIGH PRESSURE STEAM SUPPLY
HR	HOUR(S)
HW	HOT WATER
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HZ	HERTZ
ID	INSIDE DIAMETER
IN	INCH/INCHES
INT	INTERIOR
IPS	INTERNATIONAL PIPE STANDARD
INV	INVERT
K	KELVIN
KEC	KITCHEN EQUIPMENT CONTRACTOR
KW	KILOWATT
LAB	LABORATORY
LAT	LEAVING AIR TEMPERATURE (°F)
LB	POUND
LBS	POUNDS
LDB	LEAVING DRY BULB TEMPERATURE (°F)
LPR	LOW PRESSURE STEAM CONDENSATE RETURN
LPS	LOW PRESSURE STEAM
LWB	LEAVING WET BULB TEMPERATURE (°F)
LWT	LEAVING WATER TEMPERATURE (°F)
MA	MIXED AIR
MAT	MIXED AIR TEMPERATURE (°F)
MAX	MAXIMUM
MBH	THOUSAND BTUH
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPS
MEZZ	MEZZANINE
MFR	MANUFACTURER
MFS	MINIMUM FUSE SIZE
MIN	MINIMUM
MISC	MISCELLANEOUS
MPR	MEDIUM PRESSURE STEAM CONDENSATE RETURN
MPS	MEDIUM PRESSURE STEAM
MTD	MOUNTED
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NFC	NATIONAL FIRE CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NOM	NOMINAL
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAI	OUTSIDE AIR INTAKE
OAT	OUTSIDE AIR TEMPERATURE (°F)
OBD	OPPOSED BLADE DAMPER
OD	OUTSIDE DIAMETER/DIMENSION
OFCI	OWNER FURNISHED; CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED; OWNER INSTALLED
OZ	OUNCE
PC	PLUMBING CONTRACTOR
PD	PRESSURE DROP
PH	PHASE
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAUGE
PVC	POLYVINYL CHLORIDE
RA	RETURN AIR
RAD	RADIATION
RAT	RETURN AIR TEMPERATURE (°F)
RD	ROOF DRAIN
RH	RELATIVE HUMIDITY
RM	ROOM
RMS	ROOMS
RPM	REVOLUTIONS PER MINUTE
RPS	REVOLUTIONS PER SECOND
SA	SUPPLY AIR
SAN	SANITARY
SCFM	STANDARD CUBIC FEET PER MINUTE
SCW	SOFT COLD WATER
SF	SQUARE FOOT OR SAFETY FACTOR
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
SYS	SYSTEM
TC	TEMPERATURE CONTROL
TCC	TEMPERATURE CONTROL CONTRACTOR
TD	TEMPERATURE DROP OR DIFFERENCE
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPERATURE
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UL	UNDERWRITER'S LABORATORIES
UNO	UNLESS NOTED OTHERWISE
V	VOLTS
VA	VALVE
VTR	VENT THROUGH ROOF
W	WATT
W/	WITH
W/O	WITHOUT
WB	WET BULB
WPD	WATER PRESSURE DROP
Ø	ROUND OR DIAMETER OR PHASE
⌀	OVAL
℄	CENTERLINE

FITTINGS, VALVES, AND PIPING

- CAP
- BREAKLINE
- DIRECTION OF FLOW
- 90° ELBOW UP
- 90° ELBOW DOWN
- 45 DEGREE PIPE TURNED DOWN
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- 90° ELBOW
- TEE
- TEE, OUTLET UP
- TEE, OUTLET DOWN
- UNION, SCREWED
- UNION, ELECTRIC
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- GATE VALVE
- GATE VALVE WITH 3/4" HOSE ADAPTER
- GLOBE VALVE
- NEEDLE VALVE
- PLUG VALVE
- PRESSURE REDUCING VALVE
- RELIEF OR SAFETY VALVE
- ANGLE VALVE
- ANGLE GLOBE VALVE
- SOLENOID VALVE
- TWO WAY CONTROL VALVE
- THREE WAY CONTROL VALVE
- FLOW CONTROL VALVE
- AUTOMATIC AIR VENT
- MANUAL AIR VENT
- ALIGNMENT GUIDE
- PIPE ANCHOR
- EXPANSION JOINT
- EXPANSION LOOP
- FLEXIBLE CONNECTOR
- FLOW SWITCH
- PITCH OF PIPE, RISE (R) OR DROP (D)
- PRESSURE GAUGE
- PRESSURE SWITCH
- P/T PLUG SITE
- PUMP
- STRAINER
- STRAINER W/ BLOW DOWN
- THERMOMETER
- HOSE BIBB OR WALL HYDRANT
- BACKFLOW PREVENTER
- METER
- GAS METER
- WATER HAMMER ARRESTOR
- FLOOR DRAIN
- ROOF DRAIN
- OVERFLOW DRAIN
- FLOOR OR TO GRADE CLEANOUT
- CLEANOUT PLUG ABOVE FLOOR
- WALL CLEANOUT
- YARD CLEANOUT
- DIFFERENTIAL PRESSURE TRANSMITTER

REFERENCE SYMBOLS AND INFORMATION

GENERAL NOTES (ON THIS SHEET): GENERAL INFORMATION OR REQUIREMENTS WHICH PERTAIN TO ALL SHEETS OF THE DISCIPLINE IT IS LOCATED ON.

GENERAL NOTES: GENERAL INFORMATION OR REQUIREMENTS WHICH PERTAIN ONLY TO THE SHEET IT APPEARS ON.

KEYED DEMOLITION NOTES/KEYED PLAN NOTES: KEYED NOTES WHICH ARE SPECIFIC ONLY TO THE SHEET IT APPEARS ON. KEYED NOTES ARE NUMBERED TO CORRESPOND WITH THE NUMBER INDICATED BY THE APPROPRIATE PLAN NOTE SYMBOL.

- # — REVISION NUMBER
- # — KEYED DEMOLITION NOTE
- # — KEYED PLAN NOTE
- CONNECTION POINT OF NEW TO EXISTING
- DEMOLITION OF EXISTING TO THIS POINT

DETAIL REFERENCE: INDICATES LOCATION OF DETAIL USED FOR CLARIFICATION OF INSTALLATION.

- 01 / P001 — DETAIL NUMBER; SHEET WHERE DETAIL IS LOCATED

SECTION REFERENCE: INDICATES LOCATION OF SECTION OR ELEVATION THROUGH AREA INDICATED.

- 01 / P001 — SECTION/ELEVATION NUMBER; SHEET WHERE SECTION/ELEVATION IS LOCATED

PHASING LINETYPES: INDICATES THE PHASE IN WHICH AN ELEMENT IS CREATED AND/OR DEMOLISHED.

- DEMOLITION
- EXISTING TO REMAIN
- BY LAYER — NEW WORK
- GENERAL CONSTRUCTION TO REMAIN

DRAWING INDEX

DRAWING No.:	DRAWING TITLE
P001	PLUMBING GENERAL INFORMATION
P002	PLUMBING DETAILS
P003	PLUMBING SCHEDULES AND PLUMBING RISER
P004	PLUMBING SPECIFICATIONS
P005	PLUMBING SPECIFICATIONS
P100	FIRST FLOOR SANITARY PLAN
P101	FIRST FLOOR DOMESTIC WATER SUPPLY PLAN
P102	FIRST FLOOR - DOMESTIC WATER SUPPLY PLAN
P201	SECOND FLOOR PLUMBING PLANS

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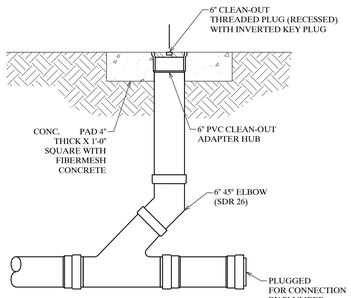
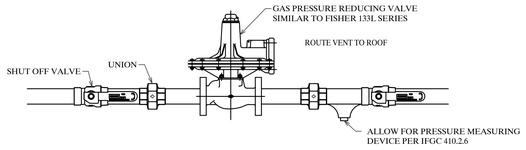
CUSTOMER: Tre Ragazzi Restaurants
PROJECT NAME: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: PLUMBING GENERAL INFORMATION
DRAWN BY: DAE
PROJECT No: 26010

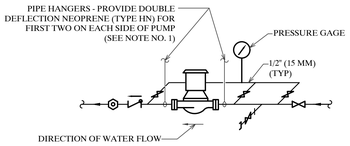
P001
05/28/2026



A P002 TYPICAL CLEANOUT DETAIL
SCALE: NTS

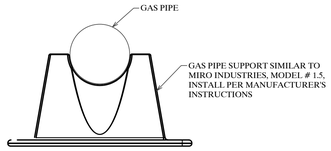


G P001 GAS PRESSURE REDUCING VALVE
SCALE: NTS

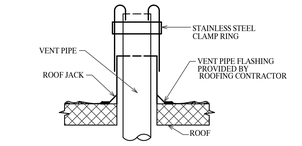


NOTES:
1. SUPPORT PUMP FROM PIPING ONLY. DO NOT SUPPORT PUMP FROM MOTOR.

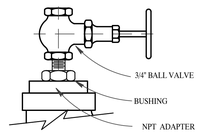
B P002 IN-LINE WATER PUMP PIPING CONNECTIONS
SCALE: NTS



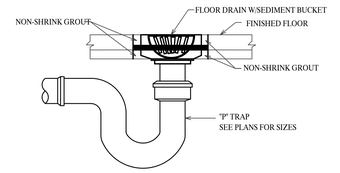
H P002 TYPICAL GAS SUPPORT
SCALE: NTS



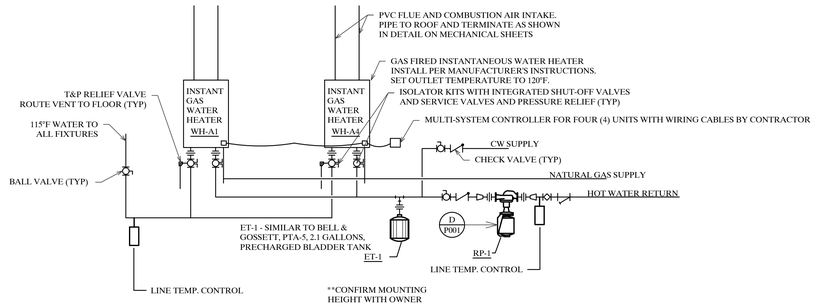
C P002 PLUMBING VENT THRU ROOF DETAIL
SCALE: NTS



D P002 MANUAL AIR VENT
SCALE: NTS



F P002 TYPICAL FLOOR DRAIN DETAIL
SCALE: NTS



J P002 WATER HEATER DETAIL
SCALE: NTS

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STATE OF INDIANA
PROFESSIONAL ENGINEER

CUSTOMER: **Tre Ragazzi Restaurants**
PROJECT NAME: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: PLUMBING DETAILS
DRAWN BY: DAE
PROJECT No: 26010

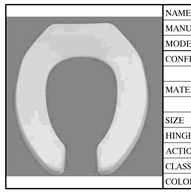
P002
05/28/2026



MARK NO.	WC-1
LOCATION	RESTROOMS
MANUFACTURER	SLOAN
MODEL	ST-2459
DESCRIPTION	WALL MOUNT, FLUSHOMETER
MATERIAL	VITREOUS CHINA
FLOW RATE	1.28 GPF
BOWL	ELONGATED
ROUGH-IN DIM	12"
ADA COMPLIANT	YES
INLET SPUD DIA.	1 1/2"
COLOR	WHITE
COMMENTS	WITH EVERCLEAN®
	DIRECT-FED SIPHON JET ACTION
	TOP SPUD
	INCLUDE TOILET SEAT: 5901.100



NAME	WATER CLOSET WC-1
MANUF.	SLOAN
MODEL	OPTIMA PLUS 8110/8111
INTERNAL DES.	DIAPHRAGM
STYLE	EXPOSED
INLET SIZE	1"
TRIP MECH	BATTERY-OPERATED
	SENSOR ACTUATED
CONSUMPTION	1.6 GPF
TAIL PIECE SZ.	1 1/2"
COMMENTS	



NAME	WATER CLOSET WC-1 & WC-2
MANUF.	SLOAN
MODEL	COMMERCIAL TOILET SEAT
CONFIGUR	OPEN FRONT
	WITHOUT COVER
MATERIAL	SOLID POLYPROPYLENE
	W/ ANTIMICROBIAL AGENT
SIZE	ELONGATED
HINGE TYPE	ELONGATED, SOFT CLOSE
ACTION	CHECK
CLASS	STANDARD COMMERCIAL
COLOR	WHITE



NAME	URINAL U-1
MANUF.	KOHLER
MODEL	BRANHAM K-25039-T-0
DESCRIPTION	ADA (WHERE INDICATED),
	FLOOR MOUNTED
	BACK-OUTLET
	VITREOUS CHINA
TYPE	
STRAINER	INTEGRAL CAST STRAINER
DES. CONS.	0.5 GPF
COLOR	WHITE
SUPPLY SPUD	3/4"
OUTLET SIZE	2"



NAME	URINAL, U-1
MANUF.	SLOAN
MODEL	OPTIMA PLUS 8180
INTERNAL DES.	DIAPHRAGM
STYLE	EXPOSED
INLET SIZE	1"
TRIP MECH	BATTERY-OPERATED
	SENSOR ACTUATED
CONSUMPTION	1.0 GPF
TAIL PIECE SZ.	1 1/2"
COMMENTS	



NAME	HOSE BIBB HB-1
MANUF.	WOODFORD MANUF. COMPANY
MODEL	B65
MAX PRESS.	165 PSI
MAX TEMP	120 °F
CONN.	3/4" MALE HOSE
TEE KEY	YES
VOLTS/Hz	120/60
INLET	3/4" FEMALE THREADED
REMARKS	BRASS VALVE BODY
	CHROME FINISH



MARK NO.	LAVATORY LAV-1
LOCATION	RESTROOMS
MANUFACTURER	KOHLER
MODEL	WHIST 19" OVAL UNDERMOUNT SINK
DESCRIPTION	19" OVAL UNDERMOUNT SINK
MATERIAL	VITREOUS CHINA
DIMENSIONS	19" x 16.125"
FAUCET HOLES	4" CENTERS
DEPTH	5.375"
ADA COMPLIANT	YES
COLOR	TRANSLUCENT SAPHIRE
COMMENTS	INCLUDE ADA INSULATION
	PACKAGE FOR ALL EXPOSED PIPING



NAME	FAUCET LAV-1
MANUF.	KOHLER
MODEL	ARTIFACTS SINGLE HANDLE
BODY MAT.	BRASS
FINISH	VIBRANT BRUSHED MODERNE BRASS
MAX FLOW	1.2 GPM
TEMPERING	MECHANICAL
CENTERS	SINGLE HOLE
MOUNTING	DECK
HANDLES	LEVER
INLET	1/2" MALE SHANKS
SPOUT TYPE	RIGID
SPOUT OUTLET	AERATOR
OPERATION	NON COMPRESS. MANUAL
DRAIN	POP UP



NAME	LAVATORY LAV-2
MANUF.	KOHLER
MODEL	SALUTE 15" ROUND SINK
DESCRIPTION	ADA
	GLASS
	FINISH,
TYPE	SHELF BACK
SIZE	13 7/8" x 13 7/8"
HOLE LOCA.	DECK
HOLE PUNCH.	-
COLOR	TRANSLUCENT SAPPHIRE
DRAIN	GRID
INTERCEPTOR	NOT REQUIRED
PEDESTAL	NOT REQUIRED
PROT. SHIELD	INTEGRAL



NAME	FAUCET LAV-2
MANUF.	KOHLER
MODEL	ARTIFACTS GENTLEMAN'S SINGLE HANDLE
BODY MAT.	BRASS
FINISH	VIBRANT BRUSHED MODERNE BRASS
MAX FLOW	1.2 GPM
TEMPERING	MECHANICAL
CENTERS	SINGLE HOLE
MOUNTING	DECK
HANDLES	LEVER
INLET	1/2" MALE SHANKS
SPOUT TYPE	RIGID
SPOUT OUTLET	AERATOR
OPERATION	NON COMPRESS. MANUAL
DRAIN	POP UP



NAME	MOP SINK MS-1
MANUF.	FIAT
MODEL	MOLDED STONE
DESCRIPTION	CAST POLYMER
	WITH RIM GUARD
SHAPE	SQUARE
SIZE	24" x 24" x 10"D
TILING FL.	ON TWO SIDES
RIM GUARD	ON ALL SIDES
COLOR	WHITE
FAUCET	INCLUDE MODEL 830 AA
DRAIN	GRID WITH 3" OUTLET
COMMENTS	INCLUDE MOP BRACKET



NAME	WATER HEATER WH-1,2
MANUF.	AOSMITH
MODEL	ACT-199I-N
TYPE	NATURAL GAS; 1 GALLON
HEAT RECOVERY	100 °F @ 10 GPM
MBH	199
WATER CONNECTION	-
DIMENSIONS	23-5/8"Hx17-3/4"Wx11-1/4"D
VOLTS/HERTZ/PHASE	120V
COMMENTS	MAX TEMP SETTING: 110



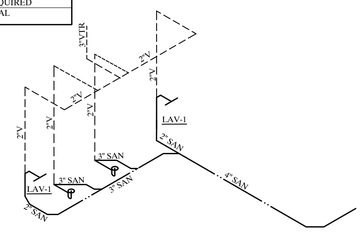
NAME	FAUCET LAV-3
MANUF.	SLOAN
MODEL	SF-21
BODY MAT.	BRASS
FINISH	POLISHED CHROME
MAX FLOW	0.5 GPM
TEMPERING	MECHANICAL
CENTERS	SINGLE HOLE
MOUNTING	DECK
HANDLES	LEVER
INLET	1/2" MALE SHANKS
SPOUT TYPE	RIGID
SPOUT OUTLET	AERATOR
OPERATION	NON COMPRESS. MANUAL
DRAIN	POP UP



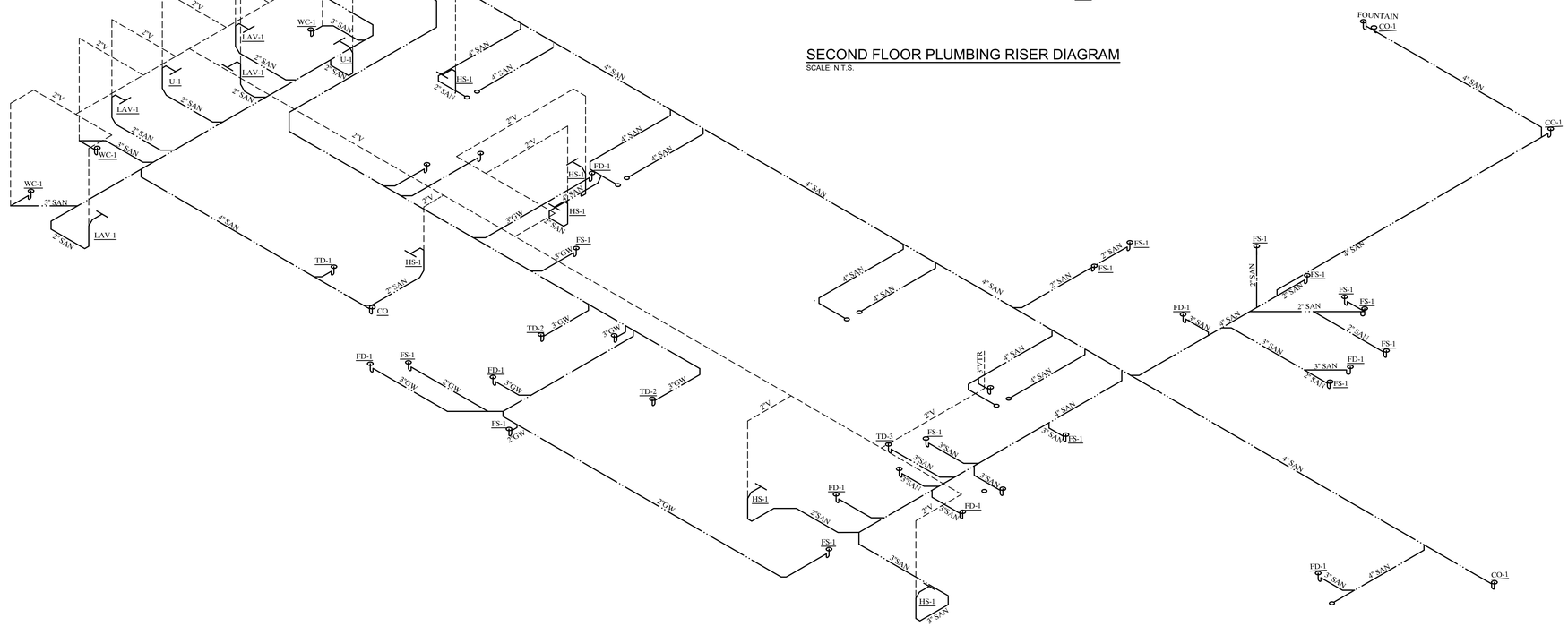
NAME	LAVATORY LAV-3
MANUF.	SLOAN
MODEL	SS-3206
DESCRIPTION	ADA
	VIRTEOUS CHINA
	FINISH,
TYPE	SHELF BACK
SIZE	18.25" x 20"
HOLE LOCA.	DECK
HOLE PUNCH.	SINGLE
COLOR	WHITE
DRAIN	GRID
INTERCEPTOR	NOT REQUIRED
PEDESTAL	NOT REQUIRED
PROT. SHIELD	INTEGRAL

DRAIN SCHEDULE

FIXTURE I.D.	MANUFACTURER	MODEL & (#) NO.	SIZE
FD-1	ZURN	Z300 FLOOR DRAIN	3"
FD-2	ZURN	Z300 FLOOR DRAIN W/ FUNNEL	3"
CO	ZURN	Z1400 CLEAN OUT	3"
FS-1	ZURN	Z1995 SANI-FLOOR RECEPTOR	24"x16"-6" OUTLET
YCO	ZURN	YARD CLEAN OUT	4"
WCO	ZURN	Z1446 WALL CLEAN OUT	3"



SECOND FLOOR PLUMBING RISER DIAGRAM
SCALE: N.T.S.



FIRST FLOOR PLUMBING RISER DIAGRAM
SCALE: N.T.S.

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CLIENT/OWNER: **Tre Ragazzi Restaurants**
PROJECT NAME: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: PLUMBING SCHEDULES AND PLUMBING RISER
DRAWN BY: DAE
PROJECT No. 26010

P003
05/28/2026

NATURAL GAS PIPING

	1" AND SMALLER	1" AND BIGGER
INDOOR, PRESSURE LESS THAN 0.5 PSIG	CORRUGATED STAINLESS STEEL TUBING WITH MECH. FITTINGS WITH SOCKET OR THREADED ENDS STEEL PIPING WITH MALLEABLE-IRON FITTINGS AND THREADED JOINTS	STEEL PIPING WITH MALLEABLE-IRON FITTINGS AND THREADED JOINTS
INDOOR, PRESSURE MORE THAN 0.5 PSIG but not more than 5 psig	CORRUGATED STAINLESS STEEL TUBING WITH MECH. FITTINGS WITH SOCKET OR THREADED ENDS STEEL PIPING WITH MALLEABLE-IRON FITTINGS AND THREADED JOINTS	STEEL PIPING WITH MALLEABLE-IRON FITTINGS AND THREADED JOINTS
1. JOIN DISSIMILAR MATERIALS WITH DIELECTRIC FITTINGS 3. INSTALL PIPING LEVEL AND PLUMB UNLESS INDICATED OTHERWISE AND WITH RIGHT ANGLES PARALLEL TO WALLS 4.INSTALL SCH. 40 PVC PIPE SLEEVES FOR PIPING PASSING THROUGH FLOORS, ROOFS, AND WALLS. INSTALL FLUSH EXCEPT IN MECHANICAL ROOMS AND THEN EXTEND 2" ABOVE THE FINISHED FLOOR. 5. IF APPLICABLE, MAINTAIN FIRE RATING AROUND PIPE PENETRATIONS		

NOTE: INTERIOR GAS PIPING SHALL BE SUPPORTED BY ROD HANGERS. HANGERS IN THE PIPE RUN SHALL BE 12" OR LESS IN LENGTH FROM THE TOP OF THE PIPE TO THE SUPPORTING STRUCTURE. HANGERS ARE DETAILED TO AVOID BENDING OF THE HANGERS AND THEIR ATTACHMENTS. PROVISIONS SHALL BE MADE TO ACCOMMODATE EXPECTED DEFLECTIONS.

DOMESTIC WATER PIPING

	2" AND SMALLER	2.5" AND BIGGER
UNDER-BUILDING-SLAB BUILDING SERVICE PIPING	SOFT COPPER TUBE - ASTM B 88, TYPE K (ASTM B 88M, TYPE A) - INSTALLED IN PE ENCASEMENT	MECHANICAL - JOINT, DUCTILE IRON PIPE; WITH MECHANICAL JOINTS PUSH-ON-JOINT, DUCTILE IRON PIPE WITH PUSH-ON-JOINT FITTINGS AND GASKETED JOINTS - INSTALLED IN PE ENCASEMENT PLAIN-END, DUCTILE-IRON PIPE; GROOVED-JOINT, DUCTILE-IRON-PIPE ACCESSORIES; AND GROOVED JOINTS - INSTALLED IN PE ENCASEMENT
UNDER-BUILDING-SLAB DOMESTIC WATER PIPING	HARD COPPER TUBE - ASTM B 88, TYPE L (ASTM B 88M, TYPE A)	
ABOVE GROUND DOMESTIC WATER PIPING	GALVANIZED-STEEL WITH GRAY-IRON WITH THREADED ENDS HARD COPPER TUBE - ASTM B 88, TYPE L (ASTM B 88M, TYPE A) PEX TUBE WITH CRIMPED JOINTS	GALVANIZED PIPE WITH TRHEADED OR GROOVED JOINTS HARD COPPER TUBE - ASTM B 88, TYPE L (ASTM B 88M, TYPE A)
FLEXIBLE CONNECTORS	CORRUGATED BRONZE TUBING WITH WIRE-BRAID COVERING; WORKING PRESSURE RATING OF 200 PSIG; PLAIN ENDS. CORRUGATED STAINLESS-STEEL TUBING WITH WIRE-BRAID COVERING; WORKING PRESSURE OF 200 PSIG WITH THREADED ENDS	CORRUGATED STAINLESS-STEEL TUBING WITH WIRE-BRAID COVERING; WORKING PRESSURE OF 200 PSIG WITH FLANGED ENDS
1. JOIN DISSIMILAR MATERIALS WITH DIELECTRIC FITTINGS 2. INSTALL FLEXIBLE CONNECTORS TO SUCTION AND DISCHARGE OF WATER PUMPS 3. INSTALL SUPPLY PIPING LEVEL AND PLUMB UNLESS INDICATED OTHERWISE AND WITH RIGHT ANGLES PARALLEL TO WALLS 4.INSTALL SCH. 40 PVC PIPE SLEEVES FOR PIPING PASSING THROUGH FLOORS, ROOFS, AND WALLS. INSTALL FLUSH EXCEPT IN MECHANICAL ROOMS AND THEN EXTEND 2" ABOVE THE FINISHED FLOOR. 5. IF APPLICABLE, MAINTAIN FIRE RATING AROUND PIPE PENETRATIONS		

VALVES

	2" & SMALLER	2 1/2" & BIGGER
SHUT-OFF VALVE	BALL	BUTTERFLY
THROTTLING SERVICE	GLOBE OR BUTTERFLY	
HOT WATER - BALANCING	MEMORY STOP VALVE	
DRAIN DUTY	HOSE-END DRAIN VALVES	
COMPRESSED AIR	BRONZE OR BRASS - SOLDERED OR THREADED	IRON VALVES - THREADED OR FLANGED
	BALL - TWO OR THREE PIECE; FULL PORT BRASS OR BRONZE WITH BRASS TRIM	IRON, GROOVED BUTTERFLY - 300 CWP
	BRONZE LIFT CHECK - CLASS 125 WITH BRONZE DISC	IRON SWING CHECK VALVES - CLASS 250, WITH METAL OR NONMETALLIC-TO-METAL SEATS
	BRONZE SWING CHECK VALVE - CLASS 150, BRONZE DISC	IRON, GROOVED-END SWING CHECK VALVES - 300 CWP
	BRONZE GATE VALVES - CLASS 150, NON RISING STEM OR RISING STEM	IRON GATE VALVES - CLASS 250, NON-RISING STEM OR OS&Y
HOT & COLD WATER	BRONZE OR BRASS - SOLDERED OR THREADED	IRON VALVES - THREADED OR FLANGED
	BALL - TWO OR THREE PIECE; FULL PORT BRASS OR BRONZE WITH BRASS TRIM	IRON, GROOVED BUTTERFLY - 300 CWP
	BRONZE SWING CHECK VALVE - CLASS 150, BRONZE DISC	IRON SWING CHECK VALVES - CLASS 250, WITH METAL OR NONMETALLIC-TO-METAL SEATS
	BRONZE GATE VALVES - CLASS 150, NON RISING STEM OR RISING STEM	IRON, GROOVED-END SWING CHECK VALVES - 300 CWP
	BRONZE GLOBE VALVE - CLASS 125, BRONZE DISC	IRON GATE VALVES - CLASS 250, NON-RISING STEM OR OS&Y
		IRON GLOBE VALVE - CLASS 125
1. DO NOT ATTEMPT TO REPAIR DAMAGED VALVES 2. INSTALL VALVES TO ALLOW FOR SERVICE 3.INSTALL VALVE STEMS AT OR ABOVE CENTER OF HORIZONTAL PIPE 4. INSTALL TO ALLOW FOR FULL STEM MOVEMENT		

SEWER AND VENT PIPING

	4" AND SMALLER	6" AND BIGGER
ABOVEGROUND SOIL AND WASTE PIPING	HUBLESS, CAST-IRON, CISPI COUPLINGS AND COUPLED JOINTS SOLID WALL PVC	HUBLESS, CAST-IRON, CISPI COUPLINGS AND COUPLED JOINTS SOLID WALL PVC
ABOVEGROUND VENT PIPING	HUBLESS, CAST-IRON, CISPI COUPLINGS AND COUPLED JOINTS SOLID WALL PVC	HUBLESS, CAST-IRON, CISPI COUPLINGS AND COUPLED JOINTS SOLID WALL PVC
UNDERGROUND SOIL AND WASTE PIPING	HUBLESS, CAST-IRON, CISPI COUPLINGS AND COUPLED JOINTS SOLID WALL PVC	HUBLESS, CAST-IRON, CISPI COUPLINGS AND COUPLED JOINTS SOLID WALL PVC
ABOVEGROUND SANITARY SEWER FORCE MAIN	GALVANIZED-STEEL PIPE , PRESSURE FITTINGS AND THREADED JOINTS	GROOVED-END, GALVANIZED-STEEL PIPE
1. JOIN DISSIMILAR MATERIALS WITH DIELECTRIC FITTINGS 2. IF APPLICABLE, MAINTAIN FIRE RATING AROUND PIPE PENETRATIONS		

HANGER SPACING

	3/4"	1	1 1/4	1 1/2	2	2 1/2	3	4	6	8	10-12	VERTICAL SPACING
COPPER TUBING	5' (3/8" ROD)	6' (3/8" ROD)	6' (3/8" ROD)	8' (3/8" ROD)	8' (3/8" ROD)	9' (1/2" ROD)	10' (1/2" ROD)	10' (1/2" ROD)	10' (5/8" ROD)	10' (3/4" ROD)		SUPPORT VERTICAL PIPE EVERY 10'
STEEL PIPING	7' (3/8" ROD)	7' (3/8" ROD)	7' (3/8" ROD)	9' (3/8" ROD)	10' (3/8" ROD)	11' (3/8" ROD)	12' (1/2" ROD)	12' (5/8" ROD)	12' (3/4" ROD)	12' (7/8" ROD)		SUPPORT VERTICAL PIPE EVERY 15'
PEX	32" (3/8" ROD)	32" (3/8" ROD)	32" (3/8" ROD)	32" (3/8" ROD)	32" (3/8" ROD)							SUPPORT VERTICAL PIPE EVERY 48"
CAST IRON DRAINAGE PIPING				5' (3/8" ROD)	5' (3/8" ROD)		5' (1/2" ROD)	5' (5/8" ROD)	5' (3/4" ROD)	5' (3/4" ROD)	5' (7/8" ROD)	SUPPORT VERICAL PIPE EVERY 15'
PVC DRAINAGE PIPING				4' (3/8" ROD)	4' (3/8" ROD)		4' (1/2" ROD)	4' (5/8" ROD)	4' (3/4" ROD)	4' (3/4" ROD)	4' (7/8" ROD)	SUPPORT VERICAL PIPE EVERY 4'
CORRUGATED STAINLESS STEEL TUBING	7' (3/8" ROD)											
1. SUPPORT ALL OTHER PIPING AND TUBING PER MSS SP-69												

PIPING INSULATION SCHEDULE (INDOOR)

	SYSTEM	REFRIGERANT (SEE NOTE 4)	DOMESTIC HOT WATER & RETURN	DOMESTIC COLD WATER	HORIZONTAL STORM WATER (NOTE 3& 5)	CONDENSATE DRAIN
	FLUID TEMP. RANGE (°F)	40 & BELOW	100-300	40-75	40-75	40-55
	INSULATION TYPE	MF OR FE	MF OR FE	MF OR FE	MF OR FE	MF OR FE
	JACKET TYPE	FP	FP	FP	FP	FP
	VAPOR BARRIER REQ'D	–	–	–	–	–
INSULATION THICKNESS (IN)	RUNOUTS (NOTE 1& 2	1.0	0.5	–	–	–
	1" & LESS	1.0	0.5	0.5	–	0.5
	1.25" TO 2"	1.5	0.5	0.5	1.0	0.5
	2.5" TO 4"	1.5	1.0		1.0	0.5
	5" & ABOVE	–	–	–	–	–

NOTES:
1. INDOOR INSTALLATION – FLAME SPREAD INDEX OF 25 OR LESS AND SMOKE-DEVELOPED INDEX OF 50 OR LESS.
2. OUTDOOR INSTALLATION – FLAME SPREAD INDEX OF 75 OR LESS AND SMOKE-DEVELOPED INDEX OF 150 OR LESS.
3. MATERIALS MAY NOT CONTAIN ASBESTOS, LEAD, MERCURY OR MERCURY COMPOUNDS.
4. LONGITUDINAL SEAMS INSTALLED AT TOP AND BOTTOM OF HORIZONTAL RUNS.
5. MULTIPLE LAYERS SHALL HAVE STAGGERED SEAMS.
6. INSTALL WITH MINIMAL AMOUNT OF JOINTS.
7. AVOID COMPRESSING INSULATION TO 75% OR MORE OF ITS NOMINAL THICKNESS.
8. REPAIR ALL DAMAGED PRODUCT AS NECESSARY.
9. RUNOUTS NOT EXCEEDING 12 FEET IN LENGTH AND 2" PIPE TO INDIVIDUAL HVAC TERMINAL UNITS.
10. RUNOUTS THAT ARE NOT LARGER THAN 1" AND NON-CIRCULATING TO INDIVIDUAL PLUMBING UNITS.
11. INCLUDES ROOF DRAIN BODY AND VERTICAL RUN UP TO THE ROOF DRAIN BODY.
12. PROVIDE PVC JACKET ON EXTERIOR REFRIGERANT PIPING.
13. INSTALL 3"X3"X1" ARMAFLEX GLUED TO BOTTOM OF RD AND OFD BODY'S. (EXISTING & NEW

INSULATION TYPES

FE FLEXIBLE ELASTOMERIC – COMPLYING WITH ASTM C 534, TYPE 1
MF MINERAL FIBER BLANKET (FIBERGLASS) – COMPLYING WITH ASTM C 553, TYPE II AND ASTM C 1290, TYPE I
FP MINERAL FIBER, PREFORMED PIPE INSULATION – COMPLYING WITH ASTM C 547, TYPE I , GRADE A WITH FACTORY APPLIED ASJ-SSL
SS FOIL & KRAFT PAPER – COMPLYING WITH ASTM C 1136, TYPE I
STAINLESS STEEL

ESCUTCHEONS	
	TYPE
NEW PIPE	
PROTRUDING FROM WALL	ONE-PIECE, DEEP PATTERN
INSULATED PIPING	ONE-PIECE, STAMPED-STEEL
BARE PIPE	ONE-PIECE CAST BRASS - POLISHED CHROME-PLATED FINISH
FOR THE FLOOR	ONE-PIECE, FLOOR-PLATE
EXISTING PIPE	
ALL PIPE	SPLIT-PLATE STAMPED STEEL WITH POLISHED CHROME-PLATED FINISH
FOR THE FLOOR	SPLIT-CASTING, FLOOR-PLATE
1 REPLACE BROKEN AND DAMAGED ESCHTCHEONS AND FLOOR PLATES USING NEW MATERIALS 2 SUBMITT EACH TYPE FOR REVIEW	

NOTES:

A. CONTRACTOR SHALL INSTALL GAS PRESSURE REDUCING VALVES AS REQUIRED FOR ALL EQUIPMENT. CONTRACTOR SHALL FIELD VERIFY INCOMING PRESSURE SERVICE.

NATURAL GAS LOAD

TAG	BTU/HR
FUR-1-5	400,000
WH-1-2	398,000
DOAS	463,110
RH-1-2	68,000
RANGE	325,000
BROILER	40,000
HD RANGE 36	295,000
CHARBROILER	80,000
GRIDDLE	60,000
FRYERS (2)	244,000
CONVENTION OVEN - UPPER OVEN	50,000
CONVENTION OVEN - LOWER OVEN	50,000
PASTA COOKER	160,370
RADIANT HEATER (2)	68,000
TOTAL	2,589,370

Rev. No.	Date	Description
-	05-28-26	REVIEW SET
-	09-23-26	REVIEW SET
-	11-18-26	CITY SUBMITTAL

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REGISTERED
No. 10505427
STATE OF INDIANA
PROFESSIONAL ENGINEER

CUSTOMER: Tre Ragazzi Restaurants
PROJECT NAME: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: PLUMBING SPECIFICATIONS
DRAWN BY: DAE
PROJECT No: 26010

P004
05/28/2026

DOMESTIC WATER PIPING

1.1 COPPER TUBE AND FITTINGS

A. ASTM B 88, TYPE L (ASTM B 88M, TYPE B) HARD COPPER TUBE, WATER TUBE, DRAWN TEMPER WITH SOLDER OR PUSH-ON JOINT FITTINGS, BRONZE FLANGES, COPPER UNIONS WITH EPDM-RUBBER O-RING SEALS AND GROOVED-END FITTINGS AND COUPLINGS.

B. ASTM B 88, TYPE K (ASTM B 88M, TYPE A), SOFT COPPER TUBE, WATER TUBE, ANNEALED TEMPER WITH WROUGHT-COPPER PRESSURE FITTINGS OR PRESSURE-SEAL-JOINT FITTINGS WITH EPDM-RUBBER O-RING SEALS.

1.2 PIPING JOINING MATERIALS

A. PIPE-FLANGE GASKET MATERIALS SHALL BE, NONMETALLIC AND ASBESTOS FREE, FULL-FACE OR RING TYPE.

B. METAL PIPE-FLANGE BOLTS AND NUTS ARE CARBON STEEL.

C. SOLDER FILLER METALS SHALL BE LEAD FREE ALLOYS WITH WATER-FLUSHABLE FLUX.

1.3 TRANSITION FITTINGS

A. TRANSITION FITTING SHALL BE THE SAME SIZE, PRESSURE RATING AND END CONNECTIONS AS THE ADJOINING PIPES.

1.4 DIELECTRIC FITTINGS

A. SEPARATE DISSIMILAR PIPE MATERIALS WITH NONCONDUCTIVE INSULATING MATERIAL THAT IS COMPATIBLE WITH THE FLUID AND ITS CHARACTERISTICS.

1.5 FLEXIBLE CONNECTORS

A. CORRUGATED-BRONZE TUBING WITH BRONZE WIRE-BRAID COVERING AND ENDS BRAZED TO INNER TUBING, MINIMUM OF 200 PSIG WORKING PRESSURE AND PLAIN ENDS.

B. CORRUGATED-STAINLESS-STEEL TUBING WITH STAINLESS-STEEL WIRE-BRAID COVERING AND ENDS WELDED TO INNER TUBING, MINIMUM OF 200 PSIG WORKING PRESSURE AND THREADED OR FLANGED ENDS.

1.10 PIPING INSTALLATION

A. INSTALL SHUTOFF VALVE IMMEDIATELY UPSTREAM OF EACH DIELECTRIC FITTING.

B. INSTALL UNIONS IN COPPER TUBING AT FINAL CONNECTION TO EACH PIECE OF EQUIPMENT, MACHINE, AND SPECIALTY.

C. IDENTIFY ALL PIPING USING PIPE LABELS.

1.11 HANGER AND SUPPORT INSTALLATION

A. INSTALL MSS TYPE 8 OR 42 CLAMPS FOR VERTICAL PIPING.

B. INSTALL MSS TYPE 1, ADJUSTABLE STEEL CLEVIS HANGERS FOR PIPING RUNS LESS THAN 100 FEET.

C. INSTALL MSS TYPE 43 ADJUSTABLE ROLLER HANGERS OR MSS TYPE 49 SPRING CUSHION ROLLS FOR PIPING RUNS GREATER THAN 100 FEET.

D. INSTALL MSS TYPE 44 PIPE ROLLS FOR MULTIPLE, STRAIGHT, HORIZONTAL PIPE RUNS 100 FEET OR LONGER. SUPPORT PIPE ROLLS ON TRAPEZE.

E. BASE OF VERTICAL PIPING: MSS TYPE 52, SPRING HANGERS.

F. SUPPORT VERTICAL PIPING AND TUBING AT BASE AND AT EACH FLOOR.

G. ROD DIAMETER MAY BE REDUCED ONE SIZE FOR DOUBLE-ROD HANGERS, TO A MINIMUM OF 3/8 INCH.

1.12 FIELD QUALITY CONTROL

A. PERFORM TESTS AND INSPECTIONS.

B. COMPLY WITH AUTHORITIES HAVING JURISDICTION ON APPROPRIATE TESTING AND INSPECTIONS. PREPARE INSPECTION REPORTS AS REQUIRED.

C. PIPING TESTS:

1. FILL DOMESTIC WATER PIPING. CHECK COMPONENTS TO DETERMINE THAT THEY ARE NOT AIR BOUND AND THAT PIPING IS FULL OF WATER.
2. TEST FOR LEAKS AND DEFECTS IN NEW PIPING AND PARTS OF EXISTING PIPING THAT HAVE BEEN ALTERED, EXTENDED, OR REPAIRED. IF TESTING IS PERFORMED IN SEGMENTS, SUBMIT A SEPARATE REPORT FOR EACH TEST, COMPLETE WITH DIAGRAM OF PORTION OF PIPING TESTED.
3. LEAVE NEW, ALTERED, EXTENDED, OR REPLACED DOMESTIC WATER PIPING UNCOVERED AND UNCONCEALED UNTIL IT HAS BEEN TESTED AND APPROVED. EXPOSE WORK THAT WAS COVERED OR CONCEALED BEFORE IT WAS TESTED.
4. CAP AND SUBJECT PIPING TO STATIC WATER PRESSURE OF 50 PSIG ABOVE OPERATING PRESSURE, WITHOUT EXCEEDING PRESSURE RATING OF PIPING SYSTEM MATERIALS. ISOLATE TEST SOURCE AND ALLOW TO STAND FOR FOUR HOURS. LEAKS AND LOSS IN TEST PRESSURE CONSTITUTE DEFECTS THAT MUST BE REPAIRED.
5. REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS AND RETEST PIPING UNTIL ACCEPTABLE RESULTS ARE OBTAINED.
6. PREPARE REPORTS FOR TESTS AND FOR CORRECTIVE ACTION REQUIRED.

D. DOMESTIC WATER PIPING WILL BE CONSIDERED DEFECTIVE IF IT DOES NOT PASS TESTS AND INSPECTIONS.

E. PREPARE TEST AND INSPECTION REPORTS.

F. PERFORM ADJUSTMENTS AS NECESSARY TO ALL VALVES, HYDRANTS, HOSE BIBBS.

G. CLEAN AND DISINFECT POTABLE AND NON-POTABLE DOMESTIC WATER PIPING PER AWWA PROCEDURES.

SANITARY WASTE AND VENT PIPING

1.1 PVC PIPE AND FITTINGS

A. SCHEDULE 40 CELLULAR-CORE PVC PIPE WITH CORRESPONDING ADHESIVE PRIMER AND SOLVENT CEMENT.

1.2 SPECIALTY PIPE FITTINGS

A. TRANSITION COUPLINGS:

1. FITTING OR DEVICE FOR JOINING PIPING WITH SMALL DIFFERENCES IN OD'S OR OF DIFFERENT MATERIALS. INCLUDE END CONNECTIONS SAME SIZE AS AND COMPATIBLE WITH PIPES TO BE JOINED.
2. FITTING-TYPE TRANSITION COUPLINGS SHALL BE MANUFACTURED PIPING COUPLING OR SPECIFIED PIPING SYSTEM FITTING.
3. SHIELDED, NONPRESSURE TRANSITION COUPLINGS SHALL BE ELASTOMERIC OR RUBBER SLEEVE WITH FULL-LENGTH, CORROSION-RESISTANT OUTER SHIELD AND CORROSION-RESISTANT-METAL TENSION BAND AND TIGHTENING MECHANISM ON EACH END.
4. PRESSURE TRANSITION COUPLINGS SHALL BE METAL SLEEVE-TYPE AND THE SAME MATERIAL AND JOINING ENDS AS THE PIPE.

1.3 PERFORMANCE REQUIREMENTS

A. MINIMUM WORKING PRESSURE FOR SOIL, WASTE AND VENT PIPING SHALL BE 10-FOOT HEAD OF WATER.

1.4 PIPING INSTALLATION

A. INSTALL PIPING FREE OF SAGS AND BENDS.

B. INSTALL ONLY SANITARY FITTINGS APPROPRIATE TO THE APPLICATION.

C. INSTALL BUILDING SANITARY DRAIN: WITH A 2 PERCENT DOWNWARD IN DIRECTION OF FLOW FOR PIPING NPS 3 AND SMALLER AND 1 PERCENT DOWNWARD IN DIRECTION OF FLOW FOR PIPING NPS 4 AND LARGER.

D. DO NOT ENCLOSE, COVER, OR PUT PIPING INTO OPERATION UNTIL IT IS INSPECTED AND APPROVED BY AUTHORITIES HAVING JURISDICTION.

E. INSTALL SLEEVES FOR PIPING PENETRATIONS OF WALLS, CEILINGS, AND FLOORS.

1.5 SPECIALTY PIPE FITTING INSTALLATION

A. INSTALL TRANSITION COUPLINGS WHEN THERE ARE SMALL DIFFERENCES IN OD'S, IN SHIELDED NONPRESSURE DRAINAGE PIPING, AND FORCE MAIN PIPING.

B. INSTALL DIELECTRIC FITTINGS IN PIPING AT CONNECTIONS OF DISSIMILAR METAL PIPING AND TUBING.

1.6 HANGER AND SUPPORT INSTALLATION

A. INSTALL CARBON-STEEL PIPE HANGERS FOR HORIZONTAL PIPING IN NONCORROSIVE ENVIRONMENTS.

B. INSTALL FIBERGLASS PIPE HANGERS FOR HORIZONTAL PIPING IN CORROSIVE ENVIRONMENTS.

C. SUPPORT HORIZONTAL PIPING AND TUBING WITHIN 12 INCHES OF EACH FITTING AND COUPLING.

D. SUPPORT VERTICAL PIPING AND TUBING AT BASE AND AT EACH FLOOR.

E. ROD DIAMETER MAY BE REDUCED ONE SIZE FOR DOUBLE-ROD HANGERS, WITH 3/8-INCH MINIMUM RODS.

1.7 CONNECTIONS

A. CONNECT SANITARY AND VENT PIPING TO ALL INDICATED FIXTURES.

B. CONNECT WITH UNION IN PIPING THAT IS NPS 2 AND SMALLER.

C. CONNECT WITH FLANGES IN PIPING THAT NPS 2 ½ AND LARGER.

1.8 TESTING

A. DURING INSTALLATION, NOTIFY AUTHORITIES HAVING JURISDICTION AT LEAST 24 HOURS BEFORE INSPECTION MUST BE MADE. PERFORM ALL TESTS SPECIFIED BY AND IN THE PRESENCE OF AUTHORITIES HAVING JURISDICTION.

B. PREPARE INSPECTION REPORTS AND HAVE THEM SIGNED BY AUTHORITIES HAVING JURISDICTION.

C. REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS AND RETEST PIPING UNTIL PIPES HAVE PASSING RESULTS.

1.9 CLEANING AND PROTECTION

A. STORE AND PROTECT ALL MATERIALS DURING THE ENTIRE CONSTRUCTION PROCESS.

PLUMBING IDENTIFICATION

1.1 EQUIPMENT LABELS

A. METAL LABELS FOR EQUIPMENT SHALL BE A MINIMUM OF 2.5"X 0.75"X 0.025" THICK STAINLESS STEEL WITH PREDRILLED OR STAMPED HOLES FOR ATTACHMENT AND STAINLESS STEEL RIVETS OR SELF-TAPPING SCREWS. LETTER SIZING SHALL BE A MINIMUM OF 0.5" TALL. AT A MINIMUM THE LABEL SHALL INCLUDE THE UNIQUE EQUIPMENT NUMBER DESIGNATION AS SHOWN ON THE DRAWINGS OR SPECIFICATIONS. PROVIDE AN EQUIPMENT SCHEDULE FOR THE OWNER.

1.2 WARNING SIGNS AND LABELS

A. WARNING SIGNS AND LABELS SHALL BE MULTILAYERED, MULTICOLORED, PLASTIC LABELS FOR MECHANICAL ENGRAVING, **1/8"** THICK, AND HAVE PREDRILLED HOLES FOR ATTACHMENT HARDWARE. LETTERING SHALL BE RED WITH A WHITE BACKGROUND. THE MINIMUM SIZE SHALL BE 2.5" X 0.75" WITH LETTERING A MINIMUM 0.5" TALL. FASTENERS STALL BE STAINLESS STEEL RIVETS OR SELF-TAPPING SCREWS. INFORMATION SHOULD INCLUDE CAUTION AND WARNING INFORMATION AND EMERGENCY INSTRUCTIONS.

1.3 PIPE LABELS

A. ALL PIPE LABELS SHALL BE PREPRINTED, COLOR-CODED WITH LETTERING INDICATING SERVICE AND FLOW DIRECTION. LETTERING SIZE SHALL BE AT LEAST 1.5" TALL.

B. SELF-ADHESIVE PIPE LABELS SHALL BE PRINTED PLASTIC WITH CONTACT-TYPE, PERMANENT-ADHESIVE BACKING.

1.4 VALVE TAGS

A. VALVE TAGS SHALL BE STAINLESS STEEL, 0.025" THICK WITH PREDRILLED OR STAMPED HOLES FOR BRASS WIRE-LINK, BEADED CHAIN OR S-HOOK AND STAMPED OR ENGRAVED WITH 0.25" LETTERS FOR PIPING SYSTEM ABBREVIATION AND 0.5" NUMBERS. VALVE TAGS SHALL BE 2" ROUND WITH BLACK LETTERING. PROVIDE A VALVE SCHEDULE FOR OWNER.

1.5 WARNING TAGS

A. WARNING TAGS SHALL BE A MINIMUM OF 3"X5.25" AND PREPRINTED OR PARTIALLY PREPRINTED, ACCIDENT-PREVENTION TAGS, OF PLASTICIZED CARD STOCK WITH MATTE FINISH SUITABLE FOR WRITING. INCLUDE BRASS GROMMET AND WIRES FOR FASTENING. WRITING SHALL BE LARGE-SIZE WITH WORDS SUCH AS "DANGER" OR "CAUTION". USE BLACK LETTERING WITH A YELLOW BACKGROUND.

1.6 INSTALLATION

A. ENSURE THAT SURFACES ARE CLEAN AND READY TO ACCEPT LABEL.

B. LOCATE LABELS WHERE ACCESSIBLE AND VISIBLE.

C. LOCATE PIPE LABELS WHERE PIPING IS EXPOSED OR ABOVE ACCESSIBLE CEILINGS IN FINISHED SPACES. LOCATE A MAXIMUM OF 50' INTERVALS AND 25' IF IN CONGESTED AREAS. ALWAYS LOCATE NEAR EQUIPMENT AND DEVICES.

D. PIPE LABEL COLOR SCHEDULE:

1. LOW-PRESSURE, COMPRESSED-AIR PIPING WITH WHITE BACKGROUND AND BLACK LETTERING
2. MEDIUM-PRESSURE, COMPRESSED-AIR PIPING WITH WHITE BACKGROUND AND BLACK LETTERING.
3. DOMESTIC WATER PIPING WITH WHITE BACKGROUND AND BLUE LETTERING.
4. SANITARY WASTE PIPING WITH BLACK BACKGROUND AND WHITE LETTERING.

E. ON WARNING TAGS WRITE REQUIRED MESSAGE ON, AND ATTACH WARNING TAGS TO, EQUIPMENT AND OTHER ITEMS REQUIRED BY OWNER.

PIPING INSULATION

1.1 INSULATION MATERIALS

A. FLEXIBLE ELASTOMERIC INSULATION:

B. MINERAL-FIBER BLANKET INSULATION:

C. MINERAL-FIBER, PREFORMED PIPE INSULATION:

1.2 INSULATING CEMENTS

A. MINERAL-FIBER INSULATING CEMENT

B. EXPANDED OR EXFOLIATED VERMICULITE INSULATING CEMENT

C. MINERAL-FIBER, HYDRAULIC-SETTING INSULATING AND FINISHING CEMENT

1.3 ADHESIVES

A. MATERIALS SHALL BE COMPATIBLE WITH INSULATION MATERIALS, JACKETS, AND SUBSTRATES AND FOR BONDING INSULATION TO ITSELF AND TO SURFACES TO BE INSULATED, UNLESS OTHERWISE INDICATED.

B. FLEXIBLE ELASTOMERIC ADHESIVE: COMPLY WITH MIL-A-24179A, TYPE II, CLASS I.

C. MINERAL-FIBER ADHESIVE: COMPLY WITH MIL-A-3316C, CLASS 2, GRADE A.

D. ASJ ADHESIVE, AND FSK JACKET ADHESIVE: COMPLY WITH MIL-A-3316C, CLASS 2, GRADE A FOR BONDING INSULATION JACKET LAP SEAMS AND JOINTS.

E. PVC JACKET ADHESIVE: COMPATIBLE WITH PVC JACKET.

1.4 SEALANTS

A. ASJ FLASHING SEALANTS AND PVC JACKET FLASHING SEALANTS SHALL BE WHITE WITH FIRE AND WATER RESISTANT ELASTOMERIC AND SERVICE TEMPERATURE RATING OF -40 TO +250 DEG F.

1.5 FACTORY-APPLIED JACKETS

A. ASJ IS WHITE WITH KRAFT-PAPER AND FIBERGLASS-REINFORCED SCRIM WITH ALUMINUM-FOIL BACKING.

B. ASJ-SSL IS SELF-SEALING ASJ WITH PRESSURE-SENSITIVE, ACRYLIC-BASED ADHESIVE COVERED BY A REMOVABLE PROTECTIVE STRIP.

1.6 FIELD-APPLIED JACKETS

A. PVC JACKET SHALL BE HIGH-IMPACT-RESISTANT, UV-RESISTANT. FINISH COLOR SHALL BE CHOSEN BY THE OWNER. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

1.7 TAPES

A. ASJ TAPE SHALL BE 3" WIDE WHITE VAPOR-RETARDER TAPE MATCHING FACTORY-APPLIED JACKET WITH ACRYLIC ADHESIVE; 11.5 MILS THICK WITH A TENSILE STRENGTH OF 40LBF/INCH WIDTH AND USE PRECUT DISKS OR SQUARES.

B. PVC TAPE SHALL BE 2" WIDE WHITE VAPOR-RETARDER TAPE MATCHING FIELD-APPLIED PVC JACKET WITH ACRYLIC ADHESIVE AND SUITABLE FOR INDOOR AND OUTDOOR APPLICATIONS; 6 MILS THICK WITH A TENSILE STRENGTH OF 18 LBF/INCH IN WIDTH.

1.8 SECUREMENTS

A. 304 STAINLESS STEEL BANDS 0.015", ½" WIDE WITH WING SEAL.

B. STAPLES SHALL BE OUTWARD-CLINCHING INSULATION STAPLES, NOMINAL 3/4-INCH- WIDE, STAINLESS STEEL.

C. WIRE SHALL BE 0.062-INCH SOFT-ANNEALED, STAINLESS STEEL.

1.9 INSTALLATION

A. REVIEW CONDITIONS OF SUBSTRATES BEFORE BEGINNING INSTALLATION FOR COMPLIANCE WITH TOLERANCES, ETC.

B. INSTALL ACCESSORIES COMPATIBLE WITH INSULATION MATERIALS AND SUITABLE FOR THE SERVICE.

C. DO NOT WELD BRACKETS, CLIPS, OR OTHER ATTACHMENT DEVICES TO PIPING, FITTINGS, AND SPECIALTIES.

D. APPLY ADHESIVES, MASTICS, AND SEALANTS AT MANUFACTURER'S RECOMMENDED COVERAGE RATE AND WET AND DRY FILM THICKNESSES.

E. INSTALL INSULATION WITH FACTORY-APPLIED JACKETS PER MANUFACTURER'S RECOMMENDATIONS.

F. FINISH INSTALLATION WITH SYSTEMS AT OPERATING CONDITIONS. REPAIR JOINT SEPARATIONS AND CRACKING DUE TO THERMAL MOVEMENT.

G. REPAIR DAMAGED INSULATION FACINGS BY APPLYING SAME FACING MATERIAL OVER DAMAGED AREAS. EXTEND PATCHES AT LEAST 4 INCHES BEYOND DAMAGED AREAS. ADHERE, STAPLE, AND SEAL PATCHES SIMILAR TO BUTT JOINTS.

H. FOR ABOVE-AMBIENT SERVICES, DO NOT INSTALL INSULATION TO VIBRATION-CONTROL DEVICES, TESTING AGENCY LABELS AND STAMPS, NAMEPLATES AND DATA PLATES AND CLEANOUTS.

I. INSTALL INSULATION ON FITTINGS, VALVES, STRAINERS, FLANGES, AND UNIONS.

J. INSULATE INSTRUMENT CONNECTIONS FOR THERMOMETERS, PRESSURE GAGES, PRESSURE TEMPERATURE TAPS, TEST CONNECTIONS, FLOW METERS, SENSORS, SWITCHES, AND TRANSMITTERS ON INSULATED PIPES. SHAPE INSULATION AT THESE CONNECTIONS BY TAPERING IT TO AND AROUND THE CONNECTION WITH INSULATING CEMENT AND FINISH WITH FINISHING CEMENT, MASTIC, AND FLASHING SEALANT.

1.10 PENETRATIONS

A. INSTALL INSULATION CONTINUOUSLY THROUGH ROOF PENETRATIONS AND ABOVE GROUND EXTERIOR WALL PENETRATIONS. SEAL PENETRATIONS WITH FLASHING SEALANT. IF INSULATION IS ONLY REQUIRED INDOORS THEN TERMINATE INSULATION ABOVE ROOF SURFACE. IF REQUIRED OUTDOOR AS WELL THEN INSTALL INSULATION TIGHTLY JOINED TO INDOOR INSULATION AND SEAL THE JOINT WITH SEALANT.

B. INSTALL INSULATION AT UNDERGROUND EXTERIOR WALL PENETRATIONS AND TERMINATE INSULATION FLUSH WITH SLEEVE SEAL. SEAL TERMINATIONS WITH FLASHING SEALANT.

C. INSTALL INSULATION CONTINUOUSLY THROUGH WALLS AND PARTITIONS.

D. INSTALL INSULATION CONTINUOUSLY THROUGH FIRE-RATED WALL PARTITION PENETRATIONS AND FLOORS. SEAL WITH FIRE RATED SEALANT.

1.11 FIELD-APPLIED JACKET INSTALLATION

A. WHERE PVC JACKETS ARE INDICATED, INSTALL WITH 1-INCH (25-MM) OVERLAP AT LONGITUDINAL SEAMS AND END JOINTS. SEAL WITH MANUFACTURER'S RECOMMENDED ADHESIVE.

B. WHERE METAL JACKETS ARE INDICATED, INSTALL WITH 2-INCH (50-MM) OVERLAP AT LONGITUDINAL SEAMS AND END JOINTS. OVERLAP LONGITUDINAL SEAMS ARRANGED TO SHED WATER. SEAL END JOINTS WITH WEATHERPROOF SEALANT RECOMMENDED BY INSULATION MANUFACTURER. SECURE JACKET WITH STAINLESS-STEEL BANDS 12 INCHES (300 MM) O.C. AND AT END JOINTS.

1.12 FINISHES

A. INSULATION WITH ASJ SHALL HAVE TWO FINISH COATS OF FLAT ACRYLIC OVER A PRIMER THAT HAS A FUNGICIDAL AGENT.

B. FOR FLEXIBLE ELASTOMERIC THERMAL INSULATION APPLY TWO COATS OF MANUFACTURER'S RECOMMENDED PROTECTIVE COATING AFTER THE ADHESIVE HAS FULLY CURE.

C. DO NOT FIELD PAINT ALUMINUM OR STAINLESS-STEEL JACKETS.

1.13 FIELD QUALITY CONTROL

D. PERFORM TESTS AND INSPECTIONS. REPAIR ANY INSULATION THAT FAILS.

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CUSTOMER: **Tre Ragazzi Restaurants**
PROJECT NAME: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: PLUMBING SPECIFICATIONS
DRAWN BY: DAE
PROJECT No. 26010

P005
05/28/2026

KEYED PLAN NOTES:

1. 4" SANITARY PIPE FROM THE FLOOR ABOVE
2. 4" SANITARY SEWER FROM CLEANOUT.
3. 2" SANITARY SEWER AND 2" VENT FROM LAVATORY OR SINK.
4. 3" SANITARY SEWER AND 2" VENT FROM WATER CLOSET.
5. 2" SANITARY SEWER AND 2" VENT FROM URINAL.
6. 3" SANITARY SEWER AND 2" VENT FROM MOP SINK.
7. ROUTE DRAIN FROM WATER HEATER TO FLOOR DRAIN.
8. DISHWASHER TROUGH MUST BE MADE OF METAL AND THE SANITARY CONNECTING IT MUST BE MADE OUT OF CAST IRON UNTIL IT REACHES THE MAIN SANITARY LINE.

NE 7.4 NE 8.2 NE 8.7 NE 9.5 NE 9.9 NE 10.3 NE 11.1

INCOMING GREASE WASTE FROM EXISTING GREASE INTERCEPTOR

2'V UPTO THE NEXT FLOOR ABOVE

3'V UP THROUGH ROOF

NIC

UP

DN

FIRST FLOOR SANITARY PLAN
SCALE: 1/4"= 1'-0"

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PROJECT: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: FIRST FLOOR SANITARY PLAN
DRAWN BY: DAE
PROJECT No. 26010

P100
05/28/2026

GENERAL NOTES:

A. TERMINATE ALL CONDENSATE DRAINS TO THE SINK TRAP
B. DISHWASHER TROUGH TO BE METAL AND THE DRAIN LEG SHALL BE CAST IRON

(#) KEYED PLAN NOTES:

1. 3/4" COLD AND HOT WATER DOWN TO UNDERBAR GLASS WASHER.
2. 1" COLD WATER DOWN TO WATER CLOSET.
3. 3/4" COLD WATER AND 3/4" HOT WATER DOWN TO LAVATORY OR SINK.
4. 3/4" COLD WATER DOWN TO URINAL.
5. 1/2" COLD WATER DOWN.
6. 3/4" COLD WATER DOWN.
7. 3/4" HOT WATER DOWN.
8. 3/4" COLD WATER UP.
9. 3/4" HOT WATER UP.
10. WATER HAMMER ARRESTOR. SIMILAR TO WATTS, INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
11. 3/4" NATURAL GAS PIPING TO FRYER (#56)
12. 3/4" NATURAL GAS PIPING TO GRIDDLE (#58)
13. 3/4" NATURAL GAS PIPING TO CHARBROILER (#59)
14. 3/4" NATURAL GAS PIPING TO HD RANGE (#60)
15. 3/4" NATURAL GAS PIPING TO PASTA COOKER (#53)
16. 3/4" NATURAL GAS PIPING TO 48" HD RANGE (#62)
17. REDUCE GAS TO 15" WC
18. VALVE MUST BE ACCESSIBLE FROM THE ACCESS PANEL

NE 7.4 NE 8.2 NE 8.7 NE 9.5 NE 9.9 NE 11.1

RH-1 RH-2 3/4" NG 34 MBH
FUR-2 3/4" NG 80 MBH 3/4" NG 68 MBH 3/4" NG 148 MBH
FUR-3 3/4" NG 80 MBH 3/4" CD
3/4" NG 225 MBH
3/4" CW
FUR-3 3/4" NG 80 MBH
1" HW 3/4" CD 3/4" CW 3/4" CW
3/4" CW 3/4" CW
3/4" CW
FUR- 1
1" CW 3/4" CD 1-1/4" CW 3/4" CW 1" HW 1-1/4" HW 3/4" HW 3/4" CW 3/4" CW 3/4" FW 1-1/4" CW 2" CW 3/4" CW 3/4" FW 1" CW 1-1/4" CW (TYP.) 1" CW 3/4" CW
3/4" NG 80 MBH
MS-1
FUR- 5
3/4" CD
3/4" NG 80 MBH
WC-1
3/4" CD
3/4" NG 308 MBH
1" HW
3/4" CW
3/4" CD 558 MBH 1" NG
3/4" CW
10 1" NG 463 MBH
1-1/4" NG 1021 MBH
FUR- 4
3/4" CD 3/4" NG 80 MBH 1" NG 478 MBH 3/4" HWR 1" NG 398 MBH 1-1/4" HW 2" CW
3/4" NG 199 MBH
WH-1 WH-2
3/4" CW 3/4" HWR
2" CW
1-1/2" NG 1064.23 MBH 3/4" HW 3/4" CW 3/4" CW 3/4" HW 3/4" CW 1-1/2" NG 1472.37 MBH
1-1/2" NG (2,589,370 BTU/HR)
INCOMING DOMESTIC WATER SUPPLY FROM ABOVE SPACE
INCOMING GAS SERVICE FROM ABOVE SPACE
3/4" NG 80 MBH 1" NG 392 MBH
3/4" CW&HW
UP DN
NIC

FIRST FLOOR - DOMESTIC WATER SUPPLY PLAN
SCALE: 1/4"= 1'-0"

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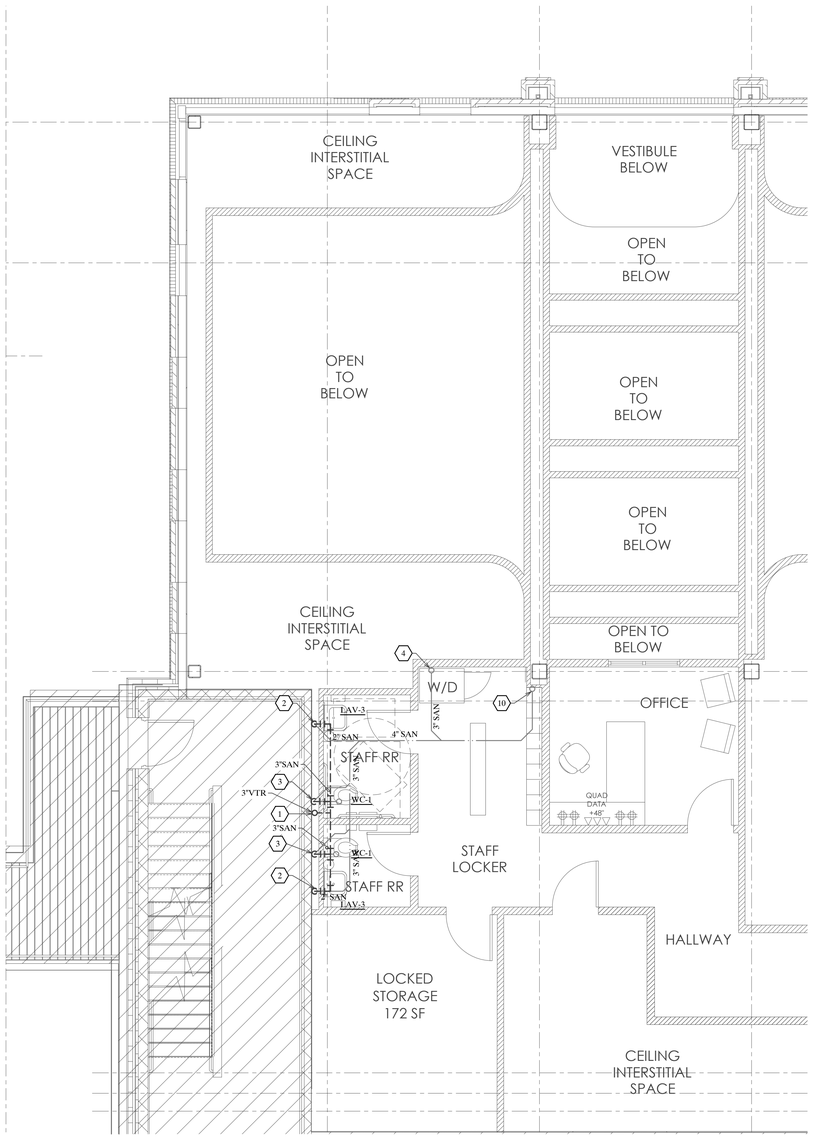
PROJECT: TRE RAGAZZI RESTAURANT
LOCATION: CARMEL, IN
DRAWING TITLE: FIRST FLOOR - DOMESTIC WATER SUPPLY PLAN
DRAWN BY: DAE
PROJECT No. 26010

P102
05/28/2026

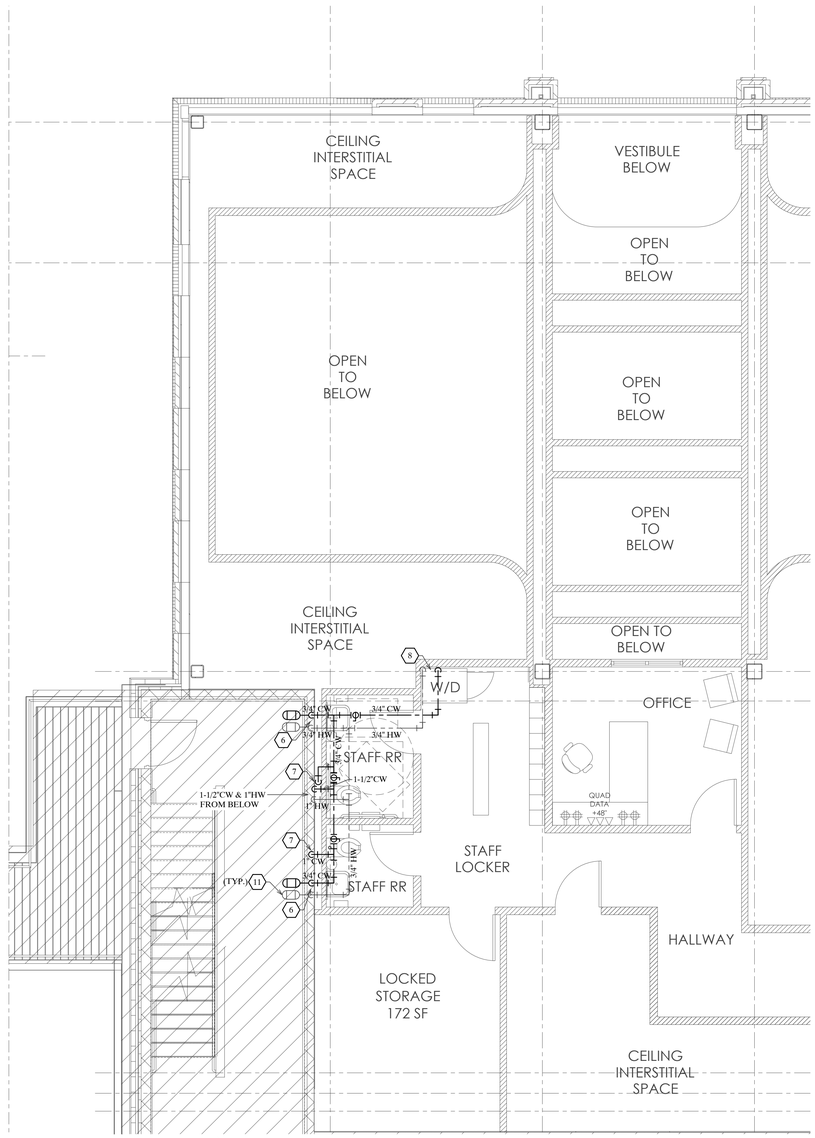
KEYED PLAN NOTES:

1. 3" VENT THROUGH ROOF.
2. 2" SANITARY SEWER AND 2" VENT FROM LAVATORY OR SINK.
3. 3" SANITARY SEWER AND 2" VENT FROM WATER CLOSET.
4. 3" SANITARY AND 2" VENT FROM WASHER.

5. ISOLATION VALVE.
6. 3/4" COLD WATER AND 3/4" HOT WATER DOWN TO LAVATORY OR SINK.
7. 1" COLD WATER DOWN TO WATER CLOSET.
8. 3/4" CW AND 3/4" HW DOWN TO WASHER BOX.
9. WATER HAMMER ARRESTOR. SIMILAR TO WATTS, INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
10. 4" SANITARY DOWN TO THE FLOOR BELOW
11. WATER HAMMER ARRESTOR. SIMILAR TO WATTS, INSTALL PER MANUFACTURER'S RECOMMENDATIONS.



SECOND FLOOR - SANITARY SEWER AND VENT PLAN
SCALE: 1/4"= 1'-0"



SECOND FLOOR - DOMESTIC WATER SUPPLY PLAN
SCALE: 1/4"= 1'-0"

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