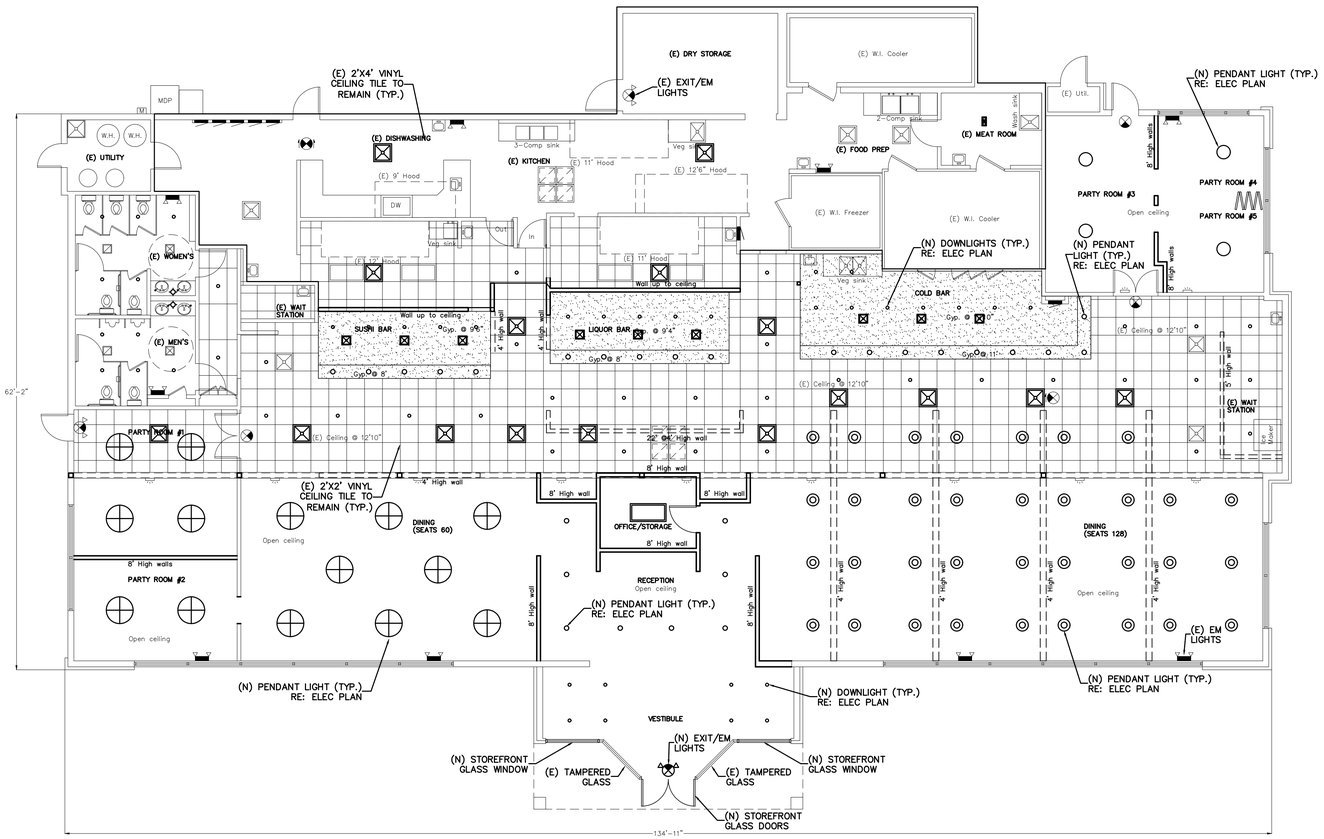

1 / A-1 REFLECTED CEILING PLAN

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

ALL LIGHTS ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.

NOTE: REFER TO MECH DRAWINGS FOR DIFFUSER LOCATIONS.

DEFERRED SUBMITTAL BY CONTRACTORS:

EXTERIOR SIGN, FIRE ALARM & SPRINKLER SYSTEM AS REQUIRED.

CODE INFORMATION:

APPLICABLE CODES:
- 2018 INTERNATIONAL BUILDING CODE
- 2018 INTERNATIONAL MECHANICAL CODE
- 2021 INTERNATIONAL PLUMBING CODE
- 2021 INTERNATIONAL FIRE CODE
- 2021 INTERNATIONAL FUEL GAS CODE
- 2018 INTERNATIONAL ENERGY CONSERVATION CODE
- 2018 INTERNATIONAL EXISTING BUILDING CODE
- 2017 ICC A117.1 (ACCESSIBILITY)
- 2023 NATIONAL ELECTRIC CODE

PREVIOUS OCCUPANCY:	A-2 (GOLDEN CORRAL)
PROPOSED OCCUPANCY:	A-2 (RESTAURANT) – NO CHANGE OF USE
NEXT DOOR TENANT:	N/A (STAND ALONE BUILDING)
CONSTRUCTION TYPE:	V-B
TOTAL FLOOR AREA:	9,200 S.F.
TOTAL BUILDING AREA:	EXISTING 9,200 S.F.
FIRE SPRINKLER:	SPRINKLED PER NFPA 13
FIRE ALARM SYSTEM:	YES
NO. STORIES:	1 STORY
MAX. TRAVEL DISTANCE:	LESS THAN 75'

OCCUPANT LOAD: (TABLE 1004.5)

KITCHEN: (2297 @ 200 S.F./PERSON)	12
OFFICE: (86 S.F. @ 100 S.F./PER.)	1
DINING AREA: (3731 S.F. @ 15 S.F./PER.)	249
TOTAL:	262
NO. OF EXIT REQUIRED: (LESS THAN 500)	2 (5 EXISTING EXITS PROVIDED)

MINIMUM PLUMBING FIXTURE (TABLE 2902.1)

	REQUIRED	PROVIDED (EXISTING)
WATER CLOSETS: (1/40 M & F)	8 (4-M & 4-F)	9 (4-MALE & 5-FEMALE)
LAVATORIES: (1/75 M & F)	4 (2-M & 2-F)	4 (2-MALE & 2-FEMALE)
SERVICE SINK:	1	1
DRINKING FOUNTAINS: (PER SECTION 410.4)	NOT REQUIRED	WATER PROVIDED

GENERAL NOTES:

1. DO NOT SCALE THE DRAWINGS.
2. AS A MINIMUM STANDARD, ALL WORK PERFORMED AND MATERIALS INSTALLED SHALL BE IN STRICT CONFORMANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES OF AGENCIES HAVING JURIDICTION.
3. CONTRACTOR SHALL VISIT THE SITE AND VERIFY EXISTING CONDITIONS PRIOR TO INSTALLATION. NOTIFY ARCHITECT/ENGINEER OF ANY CONFLICTS/DISCREPANCIES.
4. INSTALL ALL MANUFACTURED ITEMS, MATERIALS AND EQUIPMENT IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION SPECIFICATIONS.
5. NO MODIFICATION TO EXISTING STRUCTURAL COLUMNS AND WALLS.
6. EXISTING EXTERIOR WALLS, WINDOWS AND DOORS TO REMAIN UNLESS INDICATED OTHERWISE.
7. RESTROOM:
   FLOOR: (E) CERAMIC TILE
   WALL: (E) CERAMIC TILE/FRP
8. THE CONTRACTOR SHALL MAINTAIN THE EXISTING STRUCTURAL & FIREPROOFING INTEGRITY THROUGHOUT THE ENTIRE PROJECT AREA.
9. PROVIDE SIGN ON DOOR: 'THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED'.
10. ABBREVIATIONS:

@	AT
AFF	ABOVE FINISHED FLOOR
E OR (E)	EXISTING TO REMAIN
F.D.	FLOOR DRAIN
dia.	DIAMETER
TYP.	TYPICAL
CD	CEILING DIFFUSER
CR	CEILING REGISTER
AC	ABOVE COUNTER
D.F.	DRINKING FOUNTAIN

SCOPE OF WORK:

RESTAURANT INTERIOR REMODEL. EXISTING KITCHEN AREA, KITCHEN HOODS, WALK-IN COOLERS/ FREEZERS AND RESTROOMS TO REMAIN. DEMO BUFFET AREA AND REPLACED WITH NEW SUSHI BAR, LIQUOR BAR AND COLD BAR FOR HOTPOT BUFFET. SCOPE INCLUDE CONSTRUCTION FINISHES, ELECTRICAL, MECHANICAL FOR HOTPOT & MINOR PLUMBING.

WALL CONSTRUCTION:

INTERIOR WALLS: 25 GA. (MIN.) 3-5/8" METAL STUDS WITH 1/2" GYPBOARD ON EACH SIDE UP TO 8'-0" ABOVE FINISHED FLOOR.

ROOM FINISHES:

FLOOR: CONCRETE/CERAMIC TILE/QUARRY TILE
BASE: RUBBER/CERAMIC TILE
WALL: GYPBOARD/FRP
RESTROOM WALLS: MIN. 48" AFF CERAMIC TILE/FRP
KITCHEN WALLS: STAINLESS STEEL/FRP
KITCHEN BASE: QUARRY TILE

DOOR SCHEDULE:

INTERIOR DOORS:
1-3/4" HOLLOW WOOD DOOR IN SOLID FRAME (PAINTED) WITH LOCKSET.
1-1/2" PR. HINGES. LEVEL TYPE DOOR KNOB AND 1 DOOR STOP.
ALL DOOR SIZE 3'-0" X 7'-0".

ENTRY/EGRESS DOORS:
EXISTING DOORS SHALL BE READILY OPENABLE FROM EGRESS SIDE WITHOUT USE OF KEY OR SPECIAL KNOWLEDGE OR EFFORT.
PROVIDE VISIBLE SIGNS AT FRONT DOOR STATING: "THIS DOOR TO REMAIN UNLOCK WHEN BUILDING IS OCCUPIED".
TEXT SIZE SHALL NOT BE LESS THAN 1" HIGH.

ALL DOOR HARDWARE SHALL COMPLY WITH ANSI A 117.1-2010 AND ADA ACCESSIBILITY GUIDELINES. RESTROOM DOOR SHALL HAVE PRIVACY LOCK.

04-01-24 PERMIT SET

Skyview Engineering, Inc.
6212 W. ROC AVE.
LITTLETON, CO 80123
PH: (303) 350-5541
skyview1889@yhoo.com

SURF TO TURF
TENANT FINISH
1100 INDEPENDENCE AVE.
GRAND JUNCTION, COLORADO 81505

Drawing Title: ARCHITECTURAL PLAN

Stamp

COLORADO REGISTERED KEVIN T. LIEVEN 35728 PROFESSIONAL ENGINEER

04-01-24

Designed	KL
Drawn	KL
Checked	KL
Reviewed	
Date	04-01-24
Project No.	P2404
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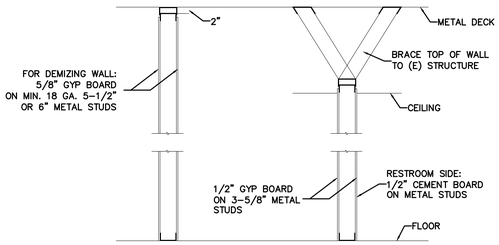
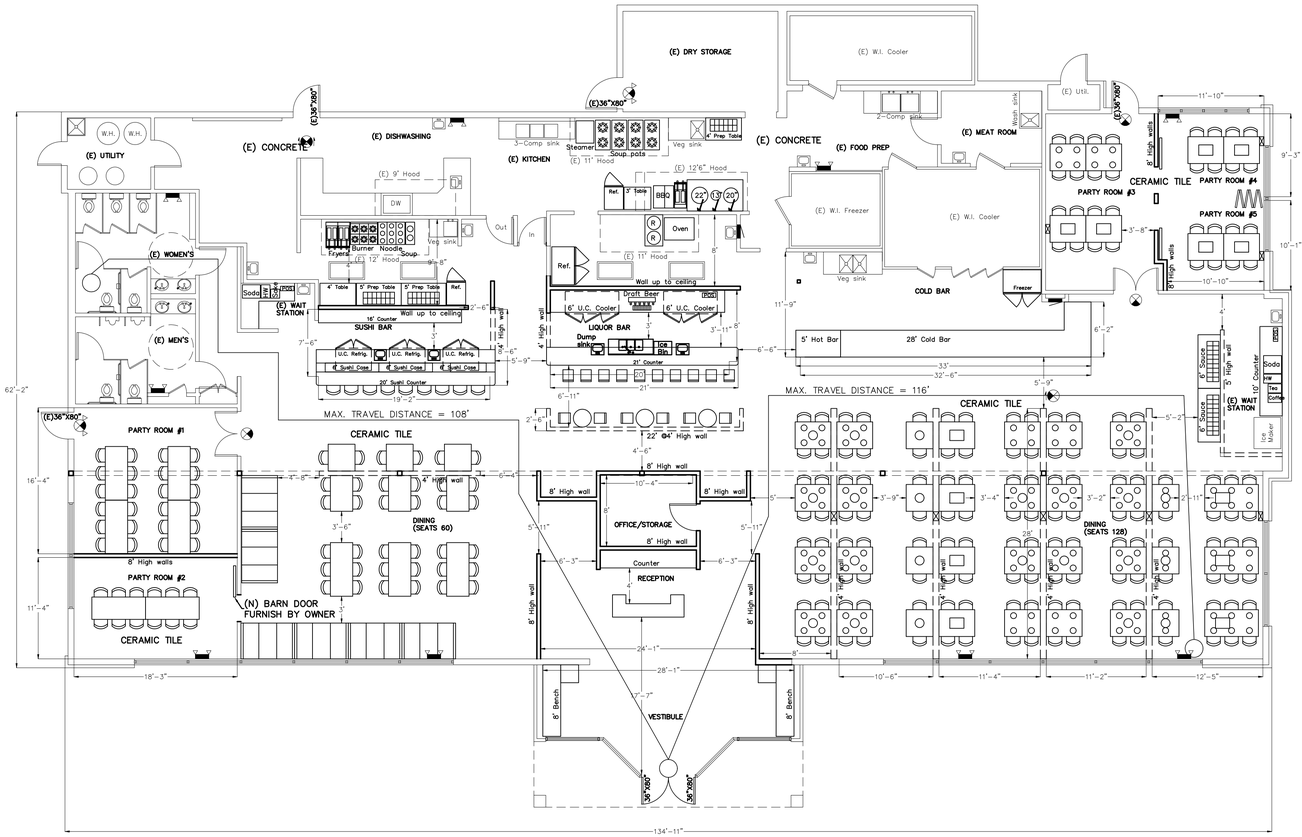


WALL TYPES DETAILS



1 A-2 FLOOR PLAN
SCALE: 1/8" = 1'-0"

04-01-24 PERMIT SET

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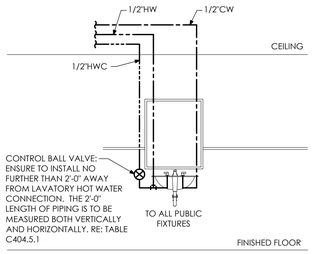
Drawing Title: FLOOR PLAN

Stamp

COLORADO REGISTERED KEVIN T. LIEN 35728 PROFESSIONAL ENGINEER

04-01-24

Designed	KL
Drawn	KL
Checked	KL
Reviewed	
Date	04-01-24
Project No.	P2404
Sheet No.	A-2 of



CONTROL VALVE INSTALLATION DETAIL

SCALE: NONE

TYPICAL AT EACH LAVATORY AND HAND SINK, AND WHERE CONTROL VALVE IS SHOWN.

TABLE C404.5.1
PIPING VOLUME AND MAXIMUM PIPING LENGTHS

NOMINAL PIPE SIZE (inches)	VOLUME (liquid ounces per foot length)	MAXIMUM PIPING LENGTH (feet)	
		Public lavatory faucets	Other fixtures and appliances
1/4	0.33	6	50
5/16	0.5	4	50
3/8	0.75	3	50
1/2	1.5	2	43
5/8	2	1	32
3/4	3	0.5	21
7/8	4	0.5	16
1	5	0.5	13
1-1/4	8	0.5	8
1-1/2	11	0.5	6
2 or larger	18	0.5	4

TABLE C403.11.3
MINIMUM PIPE INSULATION THICKNESS (in inches)

FLUID OPERATING TEMP. RANGE USAGE (°F)	INSULATION CONDUCTIVITY		NOMINAL PIPE OR TUBE SIZE (INCHES)				
	CONDUCTIVITY BTU x IN/(H x FT2 x °F)	MEAN RATING TEMP. °F	< 1"	1" TO < 1.5"	1.5" TO < 4"	4" TO < 8"	≥ 8"
> 350	0.32 - 0.34	250	4.5	5	5	5	5
251-350	0.29 - 0.32	200	3	4	4.5	4.5	4.5
201-250	0.27 - 0.30	150	2.5	2.5	2.5	3	3
141-250	0.25 - 0.29	125	1.5	1.5	2	2	2
105-140	0.21-0.27	100	1	1	1.5	1.5	1.5
40-60	0.21 - 0.27	75	0.5	0.5	1	1	1
< 40	0.20 - 0.26	50	0.5	1	1	1	1.5

NOTE: PIPING SERVED AS PART OF A HEATING OR COOLING SYSTEM OR PIPING THAT CONVEYS FLUIDS THAT HAVE A DESIGN OPERATING TEMPERATURE RANGE GREATER THAN 105°F SHALL BE THERMALLY INSULATED IN ACCORDANCE WITH THE TABLE ABOVE.

BUILDING OUTLINE PLUMBING SPECIFICATIONS

1. SLEEVES AND COLLARS SHALL BE PROVIDED FOR ALL PIPING THROUGH WALLS, FLOORS, AND CEILINGS. PROVIDE CHROME PLATED ESCUTCHEONS FOR EXPOSED PIPING PENETRATIONS THROUGH CEILINGS, FLOORS, AND WALLS IN FINISHED AREAS. ALL WATER, SOIL, WASTE, AND VENT AND TRIM INCLUDING FITTINGS TO BE CHROME PLATED WHERE EXPOSED.
2. GUARANTEE ALL LABOR AND NEW EQUIPMENT FOR ONE YEAR FROM THE DATE OF ACCEPTANCE BY OWNER.
3. ALL WORK SHALL BE PERFORMED BY PROPERLY LICENSED PLUMBERS OR UNDER THEIR DIRECT SUPERVISION. ALL MATERIALS AND EQUIPMENT SHALL MEET THE REQUIREMENTS OF THE APPLICABLE STANDARDS OF UL AND SHALL BEAR THE UL LABEL AS EVIDENCE THAT THE MATERIAL AND/OR EQUIPMENT MEETS THIS REQUIREMENT. ALL WORK SHALL MEET THE REQUIREMENTS OF LOCAL CODES.
4. CUT AND PATCH TO MATCH ADJACENT AREAS. NO STRUCTURAL MEMBER SHALL BE CUT OR NOTCHED.
5. ALL WORK IN FINISHED AREAS SHALL BE CONCEALED UNLESS SPECIFICALLY NOTED AS EXPOSED ON PLANS. PRIOR TO THE INSTALLATION OF ANY EXPOSED WORK THE CONTRACTOR SHALL VERIFY AND OBTAIN ARCHITECTURAL APPROVAL OF THE EXACT LOCATION AND INTENT.
6. RFI'S FROM CONTRACTORS SHALL INCLUDE AT LEAST ONE PROPOSED SOLUTION WHICH COMPLIES WITH THE INTENT OF CONTRACT DOCUMENTS.
7. COORDINATE ACTUAL LOCATION OF PLUMBING FIXTURES AND ROUGH-INS WITH ARCHITECTURAL DRAWINGS PRIOR TO BEGINNING WORK.
8. CONTRACTOR SHALL FIELD VERIFY ALL PIPING AND PLUMBING LOCATIONS AND INVERTS PRIOR TO TRENCHING FOR OR INSTALLATION OF NEW PIPING. ALLOW FOR COST OF X-RAYING FLOOR AS REQUIRED FOR LOCATING ANY BURIED PIPING AND PRIOR TO MAKING ANY FLOOR PENETRATIONS.
9. EXCAVATE FOR ALL PLUMBING WORK, COMPACT TO 95% AASHO OR PROCTOR DENSITY IN 6" MAXIMUM LAYERS AT OPTIMUM MOISTURE CONTENT. REWORK IF ANY SETTLEMENT WITHIN THE FIRST YEAR GUARANTEE.
10. PROVIDE ISOLATION VALVES AT ALL PLUMBING FIXTURES REQUIRING HOT AND/OR COLD WATER. PROVIDE BALL VALVE LINE-SIZE RATED FOR 40 PSIG WOG.
11. ISOLATE EACH PIECE OF EQUIPMENT AND EACH ROUGH-IN EXCLUDING WASTE AND VENT.
12. ALL DOMESTIC HOT AND COLD WATER PIPING ABOVE GRADE SHALL BE TYPE L COPPER WITH NO-LEAD 95/5 SOLDERED FITTINGS. TYPE K SOFT COPPER SHALL BE USED BELOW GRADE. PEX TUBING CAN BE SUBSTITUTED WHERE LOCAL JURISDICTIONS ALLOW.
13. PLUMBING CONTRACTOR TO PROVIDE A WATER PRESSURE TEST ON SITE. WHERE WATER PRESSURE IS OVER 60 PSI THEN PROVIDE FULL SIZE PRZ VALVE ON THE SECONDARY SIDE OF THE RPBFP.
14. PROVIDE BRANCH SHUT-OFF VALVES ON ALL WATER LINES EXTENDING FROM MAINS.
15. ALL HEATING, CHILLED AND CONDENSER WATER PIPING 2" AND SMALLER SHALL BE TYPE L COPPER WITH SOLDERED FITTINGS. 2-1/2" AND LARGER SHALL BE SCHEDULE 40 WELDED BLACK STEEL.
16. ALL REFRIGERANT PIPING SHALL BE TYPE K HARD DRAWN COPPER TUBING WITH WROUGHT COPPER SILVER SOLDERED FITTINGS AND COUPLINGS OR TYPE L COPPER. REFRIGERANT GRADE, COLOR CODED AND MARKED ACR. SOFT-ANNEALED COPPER TUBING MAY BE USED IN SIZES UP TO 1-3/8", AND WHEN USED SHALL BE ENCLOSED IN IRON OR STEEL PIPING OR IN CONDUIT, MOLDING OR RACEWAY WHICH WILL PROTECT SAID TUBING AGAINST DAMAGE. INSULATE ALL NEW AND EXISTING REFRIGERANT SUCTION AND HOT GAS PIPING IN SAME MANNER AS SPECIFIED FOR DOMESTIC HOT AND COLD WATER PIPING, WITH THICKNESS IN ACCORDANCE WITH PIPING INSULATION SCHEDULE. PROVIDE JACKET WITH VAPOR BARRIER FOR SUCTION LINES.
17. ALL INTERIOR ABOVE-GRADE WASTE, VENT, AND STORM DRAIN PIPING SHALL BE PVC. ALL INTERIOR BELOW-GRADE WASTE, VENT, AND STORM DRAIN PIPING SHALL BE PVC. ALL HORIZONTAL WASTE, VENT, AND STORM DRAIN PIPING SHALL BE SLOPED AT A MINIMUM OF 1/8" PER FOOT OR AS OTHERWISE REQUIRED BY CODE. PIPING INSTALLED BELOW GRADE SHALL BE COATED. INSULATE ROOF DRAIN PIPING (ABOVE GRADE) IN SAME MANNER AS SPECIFIED FOR DOMESTIC HOT AND COLD WATER PIPING, WITH THICKNESS IN ACCORDANCE WITH PIPING INSULATION SCHEDULE, AND PROVIDE JACKET WITH VAPOR BARRIER.
18. PROVIDE FLOOR DRAIN TRAP PRIMERS, TO BE PRIME PERFECT WITH VALVED 1/2" CW TO EACH FLOOR DRAIN, WITH ACCESS PANELS WHERE REQUIRED. SUBSTITUTE PROSET TRAP GUARDS WHERE ALLOWED BY CODE.
19. PROVIDE SANITARY SEWER SYSTEM CLEANOUTS AS REQUIRED BY LOCAL CODES. ALL CLEANOUTS REQUIRED ARE NOT NECESSARILY SHOWN ON PLANS. CLEANOUTS TO BE AT A MINIMUM OF 100 FEET ON CENTER, AND AT THE BASE OF EACH WASTE STACK.
20. ALL EXTERIOR WASTE AND STORM DRAIN PIPING BEYOND 5'-0" OF FOUNDATION SHALL BE PVC, UNLESS OTHERWISE SHOWN ON CIVIL DRAWINGS.
21. ALL CONDENSATE DRAIN PIPING SHALL BE TYPE M COPPER.
22. PROVIDE DIELECTRIC COUPLINGS AT ALL CONNECTIONS BETWEEN DISSIMILAR METALS.
23. INSULATE ALL NEW AND EXISTING DOMESTIC HOT, COLD AND HOT WATER CIRCULATING WATER PIPING WITH FIBERGLASS HEAVY DENSITY PIPE INSULATION WITH FIRE RESISTANT JACKET AND SELF SEALING LAP. INSULATION THICKNESS SHALL BE IN ACCORDANCE WITH PIPING INSULATION SCHEDULE. INSULATE FITTINGS AND VALVE BODIES WITH MITERED SECTION FOR PIPE INSULATION OR WITH CEMENT TO A THICKNESS EQUAL TO ADJOINING PIPE INSULATION. FINISH FITTINGS AND VALVE BODIES WITH CANVAS AND SEIZE WITH LAGGING ADHESIVE. FLANGES AND UNIONS SHALL NOT BE COVERED. COVERING SHALL BE NEATLY TERMINATED ON EACH END OF SCREWED UNIONS WITH INSULATING CEMENT.
24. DO NOT LOCATE WATER PIPING IN EXTERIOR WALLS OR ATTICS. ROUTE PIPING INBOARD OF BUILDING INSULATION TO AVOID FREEZING. ELECTRIC HEAT TRACE ALL PIPING LOCATED IN UNHEATED AREAS WITH CHROMALOX 7.0 WATTS/FT, MI CABLE AND 1" THICK FIBERGLASS INSULATION COVER.
25. INSULATE ALL NEW AND EXISTING HEATING, CHILLED AND CONDENSER WATER PIPING IN SAME MANNER AS SPECIFIED FOR DOMESTIC HOT AND COLD WATER PIPING, WITH THICKNESS IN ACCORDANCE WITH PIPING INSULATION SCHEDULE. PROVIDE JACKET WITH VAPOR BARRIER FOR CHILLED WATER PIPING.
26. PRESSURE TEST ALL PIPING PER CODE BUT TO AT LEAST 150% MAXIMUM W.P.
27. ALL INTERIOR ABOVE GRADE GAS PIPING 2" AND SMALLER SHALL BE SCHEDULE 40 BLACK STEEL PIPE WITH 150 PSI O.W.G. BLACK BANDED MALLEABLE IRON SCREWED FITTINGS. ALL INTERIOR ABOVE GRADE GAS PIPING 2-1/2" AND LARGER, AND ALL BELOW GRADE INTERIOR GAS PIPING (ALL SIZES), SHALL BE WELDED SCHEDULE 40 BLACK STEEL. ALL BELOW GRADE INTERIOR BLACK STEEL GAS PIPING SHALL BE COATED. ALL BELOW GRADE GAS PIPING OUTSIDE OF THE BUILDING SHALL BE ASTM 2513 PLASTIC PIPE, TUBING, AND FITTINGS. ALL GAS PIPING INSTALLED ON ROOF SHALL BE SUPPORTED AT A MINIMUM OF EVERY 6 FEET, WITH 6" MINIMUM CLEARANCE FROM ROOF, EXCEPT WHERE GOVERNED BY MORE STRINGENT LOCAL CODES OR SPECIFICATIONS. ALL VISIBLE GAS PIPING SHALL BE LABELED WITH PRESSURE AT 6'-0" ON CENTERS. ALL PIPING EXPOSED TO WEATHER SHALL BE PAINTED.
28. PROVIDE FULL-SIZED SHUT-OFF VALVE AND 6" DIRT LEGS AT ALL CONNECTIONS TO GAS-FIRED EQUIPMENT. GAS PIPE TO BE CGA LISTED LINE-SIZE RATED FOR GAS PIPE.
29. ALL EQUIPMENT AND FIXTURES WHICH ARE CONNECTED TO A POTABLE WATER SUPPLY SHALL BE INSTALLED IN SUCH A MANNER AS TO ELIMINATE THE POSSIBILITY OF ANY PHYSICAL OR POTENTIAL CROSS-CONNECTION. VACUUM BREAKERS SHALL BE PROVIDED FOR ALL SUBMERGED/ENCLOSED OUTLETS, DISH MACHINE LINES, HOSE CONNECTIONS, ETC. VACUUM BREAKERS SHALL BE INSTALLED A MINIMUM OF 6" ABOVE THE OVERFLOW RIM AND LOCATED ON THE DISCHARGE SIDE OF THE LAST VALVE ON THE EQUIPMENT. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED ON ALL CONTINUOUS PRESSURE LINES SUPPLYING EQUIPMENT SUCH AS SODA CARBONATORS, ICE MACHINES, ETC.
30. ALL FLOOR DRAINS AND FLOOR SINKS SHALL BE FLUSH-MOUNTED, PROPERLY SEALED, AND EASILY ACCESSIBLE FOR CLEANING AND MAINTENANCE.
31. ALL WATER LINES, WASTE AND VENT LINES, SODA SYRUP LINES, ETC. SHALL BE CONCEALED WITHIN THE WALL, BELOW FLOOR, OR ABOVE CEILING SURFACES.
32. FURNISH AND INSTALL PLUMBING FIXTURES ON CARRIERS AS SCHEDULED ON THE PLANS. PROVIDE CHROME PLATED ACCESSORIES AND PIPE COVER ON ALL EXPOSED FIXTURE RUNOUTS. PROVIDE ANGLE STOPS ON ALL FIXTURE RUNOUTS. PROVIDE INSULATION AND ROUGH-IN AS REQUIRED FOR COMPLIANCE WITH ADA REQUIREMENTS. PROVIDE ALL ACCESSORIES AND SPECIALTY ITEMS AS REQUIRED FOR A COMPLETE FIXTURE INSTALLATION.
33. ALL PIPING SHALL BE PROPERLY SUPPORTED, WITH PROVISIONS FOR HORIZONTAL BRACING AND EXPANSION/CONTRACTION AS REQUIRED. FOR INSULATED PIPING, AT EACH SUPPORT LOCATION, PROVIDE SHEET METAL SHIELDS FOR PIPING 2" AND SMALLER (EXCEPT WHERE REQUIRED TO BE CLAMPED) AND CALCIUM SILICATE THERMAL INSERTS WITH SHEET METAL SHIELDS FOR PIPING LARGER THAN 2" AND FOR ALL SIZES OF INSULATED PIPING REQUIRED TO BE CLAMPED. PROVIDE SUPPLEMENTAL STEEL SUPPORTS AS REQUIRED FOR INSTALLATION OF ALL PLUMBING MATERIALS, EQUIPMENT, AND APPARATUSES.
34. SEAL ALL PIPING PENETRATIONS THROUGH FIRE-RATED WALLS WITH U.L. APPROVED FIRESTOPPING MATERIAL. SUBMIT SHOP DRAWINGS TO ENGINEER FOR REVIEW AND APPROVAL, INCLUDING DETAILS OF CONSTRUCTION AND PROPOSED FIRE-RATED ASSEMBLIES, MATERIALS AND PRODUCTS USED, AND VERIFICATION OF OVERALL SYSTEM COMPLIANCE.
35. ALL PIPING SYSTEMS SHALL BE TESTED AND PROVEN TIGHT PRIOR TO CONCEALMENT. THE TEST SHALL BE WITNESSED BY OWNER'S REPRESENTATIVE.
36. ALL PIPING SHALL BE CLEANED AND FLUSHED PRIOR TO SERVICE. (DOMESTIC WATER PIPING SHALL BE STERILIZED.)
37. ALL RATED RETURN AIR PLENUMS MUST HAVE PLENUM RATED PIPING, OR PLENUM RATED PIPING INSULATION.

PLUMBING EQUIPMENT SCHEDULE

FS	FLOOR SINK	ZURN #FD2375Y WITH 1/2 GRATE AND SEDIMENT BUCKET, OR EQUAL.
WCO	WALL CLEANOUT	SIOUX CHIEF MODEL 872 16 GAUGE CHROME PLATED ABS.

PLUMBING FIXTURE LIST

S-1	3-COMP BAR SINK	STAINLESS STEEL 3-COMPARTMENT BAR SINK, ADVANCED TABCO MODEL #SLB-73C, 14x14x10 BOWLS, 24" DRAIN BOARDS R&L.(OR EQUAL)
S-2	DUMP SINK	STAINLESS STEEL DUMP SINK, STEELTON MODEL #522CS11515, 15L x 15W x 12D BOWLS. (OR EQUAL)
HS	HAND SINK	STAINLESS STEEL HAND SINK PROVIDED BY PLUMBING CONTRACTOR.

FIXTURE CONNECTION SCHEDULE

FIXTURE	HW	CW	WASTE	VENT
WATER CLOSET	-	1/2"	3"	2"
LAVATORY/SINK	1/2"	1/2"	2"	2"
DRINKING FOUNTAIN	-	1/2"	2"	2"
UTILITY SINK	1/2"	1/2"	2"	2"

SIZES SHOWN ARE MINIMUM PIPE SIZES TO A SINGLE FIXTURE.

SURF TO TURF

IPC FIXTURE UNIT CALCULATIONS

FIXTURE:		Quantity	IPC Water F.U	IPC Waste FU	TOTAL WATER F.U.	TOTAL WASTE F.U.
Bath Group * (WC, 2L, BT/SH)	MultifamilyPrivate 3+	0	3.6	5	0	0
Bathtub	Private	0	1.4	2	0	0
Shower Head	Private	0	1.4	2	0	0
Bidet	Private	0	2.0	1	0	0
Lavatory	Private	0	0.7	1	0	0
Dish Washer	Private	0	1.4	2	0	0
Kitchen Sink w/Grinder	Private	0	1.4	2	0	0
Laundry Tray	Private	0	1.4	2	0	0
Clothes Washer 8lb	Private	0	1.4	2	0	0
Water Closet, 1.6 gpf Flush Valve	Private	0	6.0	4	0	0
Water Closet, 1.6 gpf Gravity Tank	Private	0	2.2	3	0	0
Pedicure Chair	Public	0	1.5	1	0	0
Urinal, Wall Flush Valve	Public	3	5.0	2	15	6
Waterless Urinal	Public	0	0.0	2	0	0
Prep Sink	Public	5	4.0	2	20	10
3-Comp Sink	Public	2	4.0	2	8	4
Dishwasher	Public	1	5.0	2	5	2
Soak Sink	Public	0	2.5	2	0	0
Dump Sink	Public	1	2.0	1	2	1
Hand Sink	Public	12	2.0	1	24	12
Lavatory	Public	4	2.0	1	8	4
Service Sink or Mop Basin	Public	1	3.0	2	3	2
Shower Head	Public	0	4.0	2	0	0
Clothes Washer 15lb	Public	0	4.0	3	0	0
Water Closet, Flushometer, Tank	Public	0	2.0	4	0	0
Water Closet, 1.6 gpf Flush Valve	Public	0	10.0	4	0	0
Water Closet, 1.6 gpf Gravity Tank	Public	7	5.0	4	35	28
Drinking Fountain	Public	0	0.025	0.5	0	0
Hose Bibb	Public	0	2.5	-	0	0
Hose Bibb, Each Additional	Public	0	1.0	-	0	0
2" Floor Drain	All	6	-	2	-	12
Floor Sink	All	10	-	2	-	20
TOTALS		52			120.0 Water FU	101 Waste FU

Estimated Probable Peak Demand Table E103.3(3) = 48.0 GPM

Does not include irrigation demand = 0 GPM

TOTAL GPM = 48.0 GPM

Minimum Tenant CW Pipe Size = 2" Service

WASTE SIZING:
4 " WASTE

BUILDING HAS EXISTING 2" CW LINE AND RPBFP. BUILDING IS STAND ALONE AND ONLY OUR TENANT WILL BE CONNECTED TO THIS WATER LINE.

Water Heater Calculations

SURF TO TURF

(E)WH-1,2

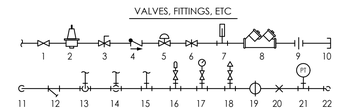
FIXTURE	GPH ea.	Quantity	Total GPH
3-Comp Sink	28.4	2	56.8
Prep-Veg Sink	9.5	5	47.5
Soak Sink	10.0	0	0.0
Service Sink or Mop Sink	7.0	1	7.0
Hand Sink	5.0	12	60.0
Dump Sink	2.0	1	2.0
Dishwasher	15.0	1	15.0
Residential Washer	2.5	0	0.0
Lavatory	5.0	4	20.0
Pedicure Sink	2.0	0	0.0
Hair Sink	2.0	0	0.0
Shower	5.0	0	0.0
Clothes Washer 8 Lb.	2.5	0	0.0
		26	208.1 GPH Recovery Required (Minimum)
			3.5 GPM Recovery Required (Minimum)
			3.47 GPM Hot Water
Output Required		120.287	BTU/H
Electrical Input		38.2	KW
Natural Gas SL Input		145	MBH SL Input
Natural Gas Input Alt		184	MBH at Altitude (4% per 1000 ft deration)

Temp Rise (F)	75
Recovery Efficiency	90%
Elevation (Alt)	5280

BUILDING HAS (2) EXISTING 85 GALLON, 365,000 BTUH WATER HEATERS. BUILDING IS STAND ALONE AND ONLY OUR TENANT WILL BE CONNECTED TO THESE WATER HEATERS.

PLUMBING LEGEND

VALVES, FITTINGS, ETC

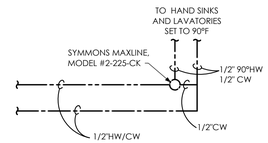


1. MANUAL STOP VALVE
2. PRV (PRESSURE REDUCING VALVE) FISHER OR EQUAL
3. BALANCE VALVE
4. CHECK VALVE
5. AUTOMATIC CONTROL VALVE
6. CGA LISTED GAS COCK
7. THERMOMETER WITH S/S WELL 8. RPBFP (REDUCED PRESS BACKFLOW PREVENTER)
9. UNION OR FLANGE
10. END CAP
11. ELBOW DOWN
12. STRAINER
13. TOP TEE CONNECTION
14. BOTTOM TEE CONNECTION
15. SIDE TEE CONNECTION
16. SHOCK ABSORBER
17. PRESSURE GAGE W/COCK
18. MANUAL AIR VENT
19. CIRCUIT SETTER
20. PIPE ANCHOR
21. 1/2" PRESSURE/TEMP TAP
22. ELBOW UP

SYMBOL	ABBREV.	DESCRIPTION
	CW	COLD WATER
	HW	HOT WATER
	HWC	HW CIRCULATING
V	V	VENT
G	G	NATURAL GAS LINE
W	W	SANITARY WASTE BURIED
W	W	SANITARY WASTE ABOVE GRADE
SR	SR	STEAM RETURN
SS	SS	STEAM SUPPLY
CA	CA	COMPRESSED AIR
DR	DR	CONDENSATE DRAIN

SYMBOL	ABBREV.	DESCRIPTION
	FD	FLOOR DRAIN
	WCO	WALL CLEANOUT
	FCO	FLOOR CLEANOUT
	VTR	VENT THRU ROOF

ABBREV.	DESCRIPTION
CI	CAST IRON
(N)	NEW DEVICE
(E)	EXISTING DEVICE
(R)	RELOCATED DEVICE
	WORK POINT (POINT OF CONNECTION)



TEMPERATURE LIMITING DEVICE CONNECTION

SCALE: NONE

CODES & DESIGN CRITERIA

JURISDICTION:	CITY OF GRAND JUNCTION
AMENDMENTS:	
ELECTRICAL CODE:	2023 NEC
ENERGY CODE:	2018 INTERNATIONAL ENERGY CODE
MECHANICAL CODE:	2018 INTERNATIONAL MECHANICAL CODE
PLUMBING CODE:	2021 INTERNATIONAL PLUMBING CODE

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SURF TO TURF
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GRAND JUNCTION, CO

DRAWN BY: JAF/RE

CHECKED BY: JOHN ELLIOTT

REVISIONS:

No.	Description	Date

ISSUE RECORD:

No.	Description	Date
1	ISSUED FOR PERMIT/CONST.	03-21-24

SHEET CONTENTS:

PLUMBING SPECIFICATIONS

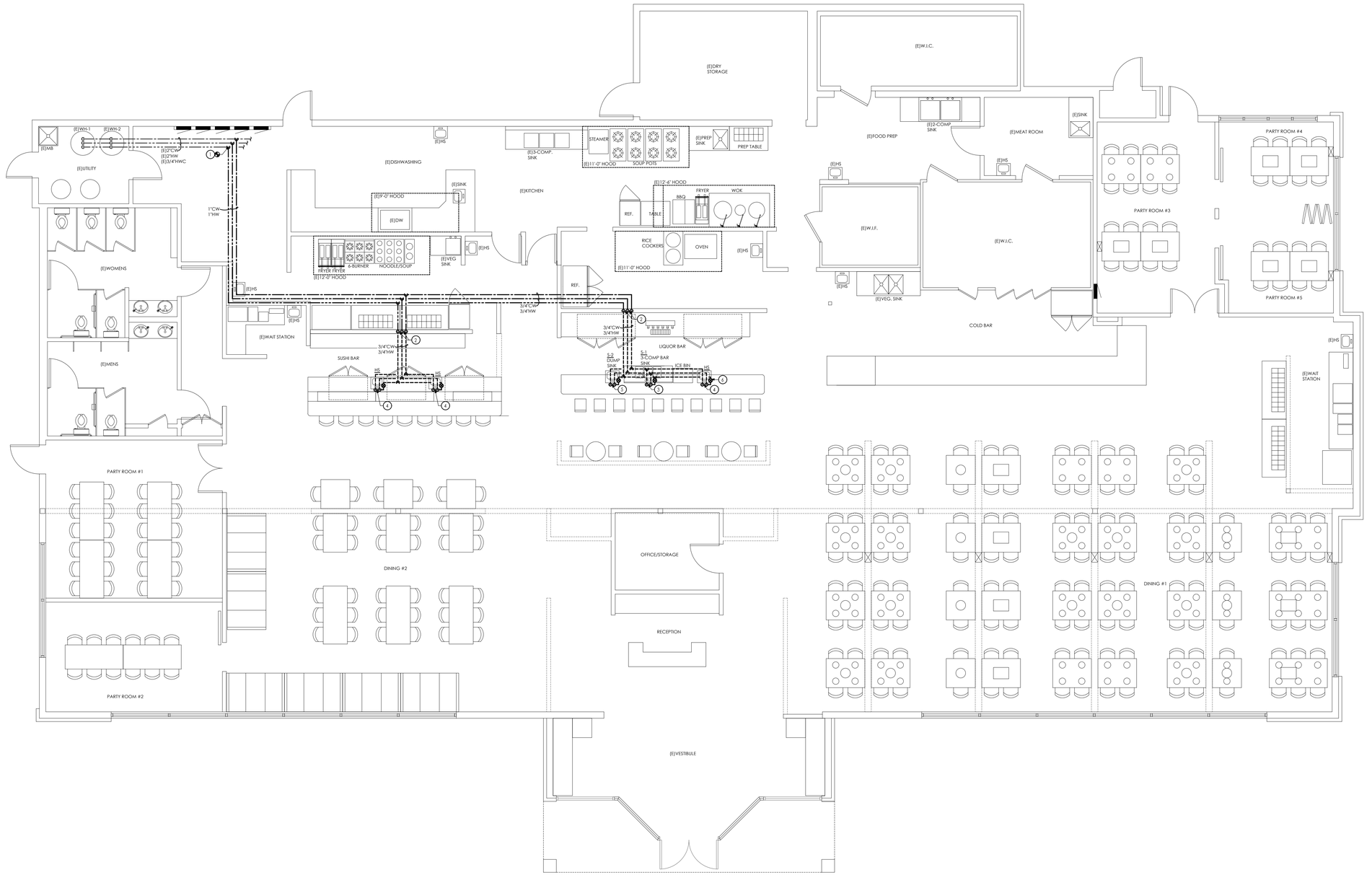
COLORADO LICENSED
JOHN A. ELLIOTT
43783
PROFESSIONAL ENGINEER
Apr 2 2024

PROJECT NO.:

DATE:

DRAWING NO.:

P-0.0



PLUMBING SHEET NOTES:

1. FIELD VERIFY ALL EXISTING PLUMBING PIPING LOCATIONS, SIZES, AND CONDITIONS PRIOR TO ANY ROUGH-IN'S.
2. EXACT SIZE, LOCATION, DIRECTION OF FLOW, AND INVERT ELEVATION OF SEWER LINE IS TO BE SCOPED BY A LICENSED PLUMBING CONTRACTOR PRIOR TO ANY ROUGH-IN'S.
3. ANNUAL INSPECTIONS ARE REQUIRED ON ALL BACK FLOW DEVICES. THE NEW BACKFLOW DEVICE SHALL BE TESTED IN ACCORDANCE WITH ONE OF THE FOLLOWING STANDARDS: ASSE 5013, ASSE 5015, ASSE 5020, ASSE 5047, ASSE 5048, ASSE 5052, ASSE 5056, CSA B64.10 OR CSA B64.10.1.

Ⓧ SHEET DETAIL NOTES:

1. PROVIDE NEW 1"CW/HW & 3/4"HWC CONNECTIONS AT EXISTING 2" CW/HW AND 3/4" HWC WATER LINES IN EXISTING KITCHEN. FIELD VERIFY EXACT SIZE AND LOCATION PRIOR TO ROUGH-IN.
2. RUN 3/4" CW/HW DOWN WALL AND INTO BAR CABINET SPACE TO FEED BAR FIXTURES AS SHOWN. RUN PIPING IN PROTECTIVE PVC TUBING TO AVOID BREAKING OR PUNCTURING.
3. PROVIDE 1/2" CW/HW/HWC TO 3-COMPARTMENT BAR SINK.
4. PROVIDE 1/2" CW/HW/HWC TO HAND SINK.
5. PRPVOIDE 1/2" CW/HW/HWC TO DUMP SINK.
6. CONTROL VALVE.

PLUMBING WATER PIPING PLAN

SCALE: 3/16" = 1'-0"

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PLUMBING WATER PIPING PLAN

COLORADO LICENSED ORGANIZATION
JOHN ELLIOTT
43783
Apr 2 2024
PROFESSIONAL ENGINEER

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DATE:

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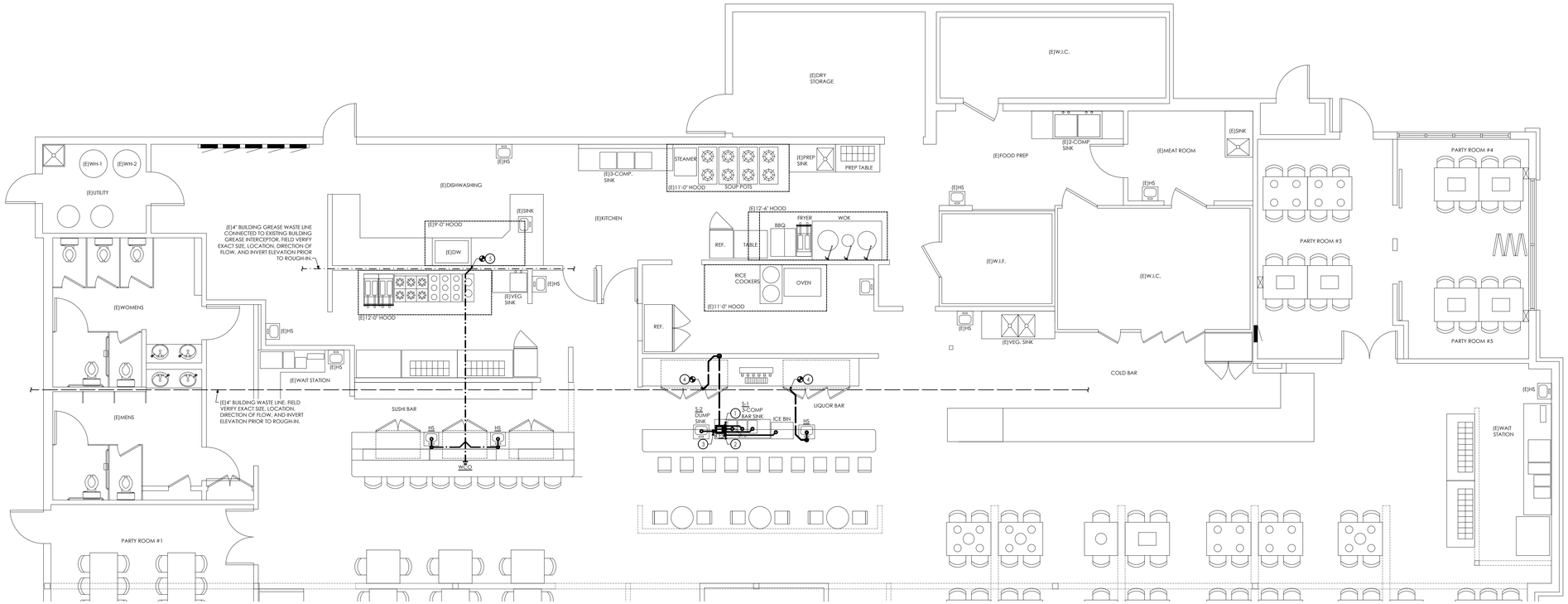
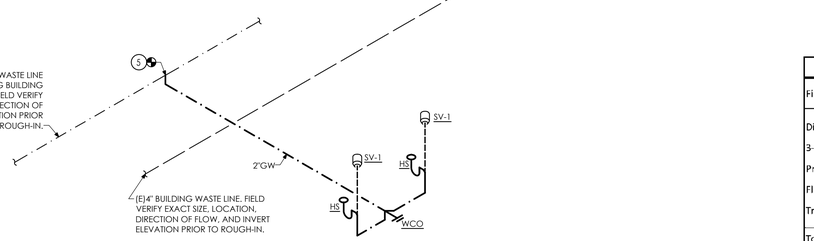
P-1.0



PLUMBING WASTE PIPING PLAN

SCALE: 3/16" = 1'-0"



WASTE & VENT RISER DIAGRAM

SCALE: NOT TO SCALE

PLUMBING SHEET NOTES:

1. FIELD VERIFY ALL EXISTING PLUMBING PIPING LOCATIONS, SIZES, AND CONDITIONS PRIOR TO ANY ROUGH-IN'S.
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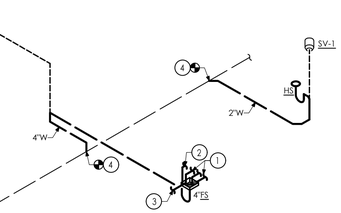
(X) SHEET DETAIL NOTES:

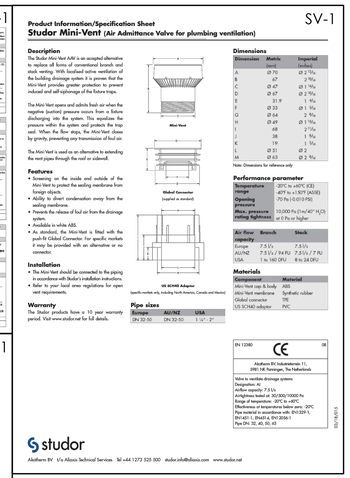
1. PROVIDE (3) INDEPENDENT 2" PVC INDIRECT DRAINS FROM EACH BOWL OF THE 3-COMPARTMENT BAR SINK INTO FLOOR SINK WITH 2" AIR GAPS.
2. PROVIDE 2" PVC INDIRECT DRAIN FROM ICE BIN INTO FS. PROVIDE WITH 2" AIR GAP.
3. PROVIDE 2" PVC INDIRECT DRAIN FROM DUMP SINK INTO FS. PROVIDE WITH 2" AIR GAP.
4. PROVIDE NEW 4" WASTE CONNECTION AT EXISTING 4" BUILDING WASTE LINE. FIELD VERIFY EXACT SIZE, LOCATION, DIRECTION OF FLOW, AND INVERT ELEVATION PRIOR TO ROUGH-IN. CONTRACTOR TO FIELD LOCATE AND VERIFY BEST TIE-IN POINT PRIOR TO ROUGH-IN.
5. PROVIDE NEW 4" GREASE WASTE CONNECTION AT EXISTING 4" BUILDING GREASE WASTE LINE. FIELD VERIFY EXACT SIZE, LOCATION, DIRECTION OF FLOW, AND INVERT ELEVATION PRIOR TO ROUGH-IN. CONTRACTOR TO FIELD LOCATE AND VERIFY BEST TIE-IN POINT PRIOR TO ROUGH-IN
6. CONNECT NEW 2" VENT TO NEAREST EXISTING 2" VENT LINE IN EXISTING SPACE. FIELD VERIFY EXACT SIZE AND LOCATION PRIOR TO ROUGH-IN.

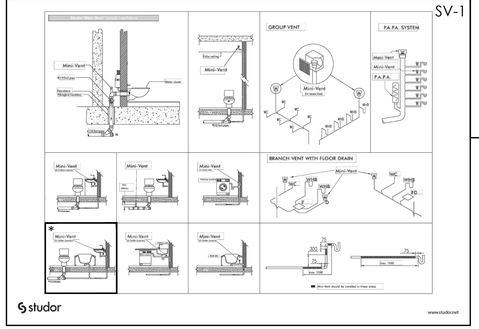


IPC PDI Method Sample No.2

Fixture Type	Qty	H	W	D	# of Bowls	CU Inches	Gallons	75%	GPM
Dishwasher	1								32
3-Comp Sink	1	16	14	18	3	12,096	52	39	39
Prep Sink	5	16	18	14	1	20,160	87	65	65
Floor Sinks @15 gpm	2								30
Trench Drains @15 gpm	4								60
Total GPM									227
Volume of Interceptor @ 7 minute retention time									1,587

NOTE: BUILDING HAS EXISTING 1000 GALLON GREASE INTERCEPTOR. BUILDING OWNER WOULD LIKE TO PROPOSE A MORE FREQUENT CLEANING SCHEDULE INSTEAD OF REPLACING GREASE INTERCEPTOR WITH A LARGER CAPACITY.





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PLUMBING WASTE PIPING PLAN

COLORADO LICENSED JOHN R. ELLIOTT 43783 PROFESSIONAL ENGINEER Apr 2 2024

PROJECT NO.:

DATE:

DRAWING NO.:

P-2.0

BUILDING OUTLINE MECHANICAL SPECIFICATIONS

1. ELECTRICAL COORDINATION: CONFIRM VOLTAGE, PHASE, AND AMPACITY WITH ELECTRICAL CONTRACTOR PRIOR TO ORDERING EQUIPMENT. ALL 24 VOLT CONTROLS INCLUDING INTERLOCK WIRING FOR MECHANICAL EQUIPMENT BY DIVISION 15 CONTRACTOR. PROVIDE MAGNETIC STARTERS FOR ALL 3-PHASE MOTORS WITH PROTECTION ON ALL THREE LEADS. CONTROL AND HEATING/COOLING EQUIPMENT TO AUTOMATICALLY RESTART AFTER POWER FAILURE. ALL WIRE TO BE INSTALLED IN CONDUIT PER NEC LATEST EDITION.
2. EXTRA COSTS OR CHANGES ALLOWED ONLY IF APPROVED IN WRITING TO THE ENGINEER WITH DOLLAR AMOUNT PRIOR TO ORDERING.
3. LOCAL AND STATE CODES AND ORDINANCES SHALL BE FOLLOWED.
4. LATEST VERSION OF THE ENERGY CODE SHALL BE FOLLOWED. ALL EQUIPMENT, INSULATION, AND CONTROLS SHALL CONFORM.
5. SUBSTITUTIONS WILL BE PROCESSED AND MUST BE SUBMITTED WITH SUBSTITUTED CUT SHEETS.
6. ALL WORK SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS.
7. THERMOSTATS TO BE PROVIDED WITH 7 DIFFERENT DAILY PROGRAMMABLE SCHEDULE, CAPABLE OF BEING PROGRAMMED ON A 7-DAY CYCLE WITH A SEPARATE WEEK-END SETTING, NIGHT SETBACK, TEMPERATURE HOLD SETTINGS, CAPABLE OF 2-HOUR OCCUPANT OVERRIDE, 10-HOUR BACKUP, AND 5 DEGREE F DEADBAND. THERMOSTATIC SET BACK CONTROLS SHALL HAVE THE CAPABILITY TO SET BACK OR TEMPORARILY OPERATE THE SYSTEM TO MAINTAIN ZONE TEMPERATURES DOWN TO 85°F.
8. CONTRACTOR TO PROVIDE AN INITIAL SITE VISIT TO VERIFY EXISTING CONDITIONS. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR VERIFICATION OF EXISTING JOB CONDITIONS PRIOR TO BID. NO ADDITIONAL COSTS SHALL BE AWARDED TO THE SUCCESSFUL CONTRACTOR OR HIS SUBCONTRACTORS, AFTER BIDS HAVE BEEN SUBMITTED AND CONTRACTS AWARDED, FOR FAILURE TO VERIFY EXISTING JOB CONDITIONS. DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR ALTERNATIVE METHODS OF INSTALLATION THREE (3) DAYS MINIMUM PRIOR TO BIDDING THIS JOB.
9. CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER TRADES AND STRUCTURE AND SHALL SUBMIT 1/4" SCALE COORDINATION/SHOP DRAWINGS SHOWING ALL DUCTWORK, PIPING, PLUMBING, ETC. COORDINATE WITH ALL OTHER TRADES FOR INSTALLATION WITH IN THE AVAILABLE SPACE. WHERE CROWDED CONDITIONS EXISTING PREPARE COORDINATION DRAWINGS SHOWING ALL TRADE CONFLICTS AND SUBMIT TO THE ARCHITECT FOR APPROVAL AND DIRECTION PRIOR TO ROUGH-IN OR INSTALLATION. RELOCATION OF INLETS, OUTLETS, AND/OR APPARATUS MADE PRIOR TO ROUGH-IN OR REQUIRED BY FIELD CONDITIONS FOR COORDINATION SHALL BE DONE AT NOT ADDITIONAL COST TO THE OWNER OR HIS AGENTS.
10. THE MECHANICAL DRAWINGS ARE DIAGRAMMATIC IN CHARACTER AND ARE NOT TO BE SCALED FOR ROUGH-IN MEASUREMENTS OR USED AS SHOP DRAWINGS. CONTRACTOR SHALL TAKE THE NECESSARY MEASUREMENTS. THESE DRAWINGS DO NOT NECESSARILY INDICATE EVERY REQUIRED OFFSET, VALVE, FITTING, ETC. FIELD VERIFY ALL MEASUREMENTS PRIOR TO ORDERING ANY EQUIPMENT, DUCTWORK, PIPING, ETC.
11. ALL BIDS SHALL INCLUDE ALL COSTS ASSOCIATED WITH THE PURCHASE AND DELIVERY OF NEW EQUIPMENT TO THE JOB SITE IN TIME TO MEET ALL DEADLINES. REPORT, PRIOR TO BID, ANY DELIVERY PROBLEMS WHICH MIGHT PREVENT TIMELY COMPLETION OF THIS PROJECT.
12. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR OBTAINING BUILDING DEPARTMENT PERMIT FOR HIS PORTION OF WORK PRIOR TO THE START OF CONSTRUCTION.
13. SUBMIT CUTS AND BROCHURES ON ANY EQUIPMENT FURNISHED UNDER THIS CONTRACT FOR ENGINEER'S REVIEW. PROVIDE TO THE ENGINEER A MINIMUM OF FOUR (4) HARD COPIES OF THE MECHANICAL SUBMITTALS FOR REVIEW, PRIOR TO ORDERING ANY EQUIPMENT. (EMAIL AND FACSIMILES OF SUBMITTALS WILL NOT BE ACCEPTED.)
14. MECHANICAL AND PLUMBING CONTRACTORS SHALL FIELD INSPECT ALL EXISTING EQUIPMENT/DEVICES TO ENSURE PROPER FUNCTIONALITY. ANY EQUIPMENT OR DEVICES NOT FUNCTIONING PROPERLY ARE TO BE DOCUMENTED AND BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
15. FIELD ROUTE ALL DUCTWORK AND PIPING, AS REQUIRED, TO AVOID CONFLICTS WITH EXISTING STRUCTURE, DUCTWORK, PIPING, ELECTRICAL CONDUITS, LIGHTS, ETC. RELOCATE ANY ITEMS AS REQUIRED TO ACCOMMODATE INSTALLATION OF NEW DUCTWORK, PIPING AND EQUIPMENT WHILE MAINTAINING ORIGINAL INTEGRITY OF ALL SYSTEMS. RUN ALL DUCTWORK AND PIPING AS HIGH AS POSSIBLE AND SUSPEND FROM STRUCTURE ABOVE.
16. ALL CURBS, SUPPORTS, AND ANCHORS SHALL BE PROVIDED FOR MECHANICAL WORK. NO CHAIN, TAPE, OR WIRE IS ALLOWED.
17. ALL EXISTING DUCTWORK, DIFFUSERS, GRILLES, THERMOSTATS, ETC., IN GOOD CONDITION SHALL BE RE-USED AFTER BEING THOROUGHLY CLEANED AND/OR REFINISHED TO MATCH NEW, UNLESS OTHERWISE NOTED ON DRAWINGS. ANY EQUIPMENT IN DETERIORATED CONDITION SHALL BE REPLACED WITH NEW EQUIPMENT. ENSURE ALL EXISTING EQUIPMENT MEETS THE CURRENT CODE.
18. ANY EXISTING EQUIPMENT, DUCTWORK, PIPING, PLUMBING, CONTROLS, ETC, NOT USED SHALL BE REMOVED AND DISCARDED PER OWNERS REQUEST. PROPERLY CAP AND SEAL ALL DUCTWORK AND PIPING TAPS NOT USED.
19. BASE BUILDING MECHANICAL EQUIPMENT THAT IS SCHEDULED ON THIS SET OF PLANS AND SHOWN ON THE MECHANICAL FLOOR PLAN(S) AND BASE BUILDING MECHANICAL SYSTEMS SHOWN OUTSIDE THE PROJECT AREA ARE EXISTING AND ARE SHOWN FOR REFERENCE PURPOSES ONLY.
20. ANY CONFLICTS DISCOVERED AFTER WORK HAS STARTED, NOT PREVIOUSLY BEING APPARENT AND NECESSITATING REVISIONS TO CONTRACT DOCUMENTS, SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR REVIEW AND APPROVAL OF ALTERNATIVE METHODS OF INSTALLATION.
21. CONTRACTOR SHALL REVIEW ELECTRICAL POWER REQUIREMENTS FOR ALL MECHANICAL EQUIPMENT PRIOR TO ORDERING. SUBMIT ONE COPY OF EQUIPMENT SUBMITTALS TO ELECTRICAL CONTRACTOR FOR COORDINATION.
22. MECHANICAL CONTRACTOR SHALL FURNISH STARTERS FOR ALL THREE-PHASE MECHANICAL EQUIPMENT (EXCEPT FOR STARTERS THAT ARE SHOWN TO BE PROVIDED IN MOTOR CONTROL CENTERS). STARTERS SHALL HAVE THREE-LEG CLASS 10 TRIP-FREE OVERLOAD PROTECTION, WITH MANUAL RESET, AND SHALL BE NEMA RATED. STARTERS SHALL BE INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR EXCEPT WHERE SUPPLIED INTEGRAL WITH MECHANICAL EQUIPMENT. MECHANICAL CONTRACTOR SHALL PROVIDE SAFETY DISCONNECT SWITCHES FOR ALL MECHANICAL EQUIPMENT WHERE NOT SPECIFICALLY INDICATED ON PLANS TO BE PROVIDED BY ELECTRICAL CONTRACTOR.
23. MECHANICAL CONTRACTOR SHALL EMPLOY THE SERVICES OF A QUALIFIED TEMPERATURE CONTROLS CONTRACTOR FOR INSTALLATION OF ALL CONTROLS WORK. SUBMIT CONTRACTOR'S QUALIFICATIONS TO ENGINEER FOR REVIEW.
24. TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE ALL WIRING ASSOCIATED WITH THE AUTOMATIC TEMPERATURE CONTROL SYSTEM, INCLUDING 120V FOR CONTROL PANELS, CONTROL VALVES, AND CONTROL DAMPERS. ELECTRICAL WIRING SHOWN ON ELECTRICAL DRAWINGS SHALL BE PERFORMED BY ELECTRICAL CONTRACTOR. SUBMIT CONTROL DIAGRAMS TO ENGINEER FOR REVIEW.
25. ALL NEW AND RELOCATED MATERIALS INSTALLED IN CEILING RETURN AIR PLENUM SHALL BE U.L. 181 CLASS 1 RATED, WITH A MAXIMUM FLAME SPREAD INDEX OF 25 AND A MAXIMUM SMOKE-DEVELOPED INDEX OF 50. REMOVE AND REPLACE, AS NECESSARY, ALL MATERIALS NOT IN COMPLIANCE WITH CURRENT CODE.
26. ALL MOTORIZED EQUIPMENT SHALL BE PROVIDED WITH SUITABLE VIBRATION ISOLATION. FLEXIBLE CONNECTORS SHALL BE PROVIDED AT ALL DUCTWORK AND PIPING CONNECTIONS TO SUCH MOTORIZED EQUIPMENT.
27. PROVIDE SEISMIC RESTRAINTS FOR ALL MECHANICAL SYSTEMS AND EQUIPMENT AS REQUIRED BY THE CURRENT APPLICABLE BUILDING CODE.
28. ALL FIRE DAMPERS, BALANCING DAMPERS, VALVES, EQUIPMENT, FILTERS AND CONTROLS SHALL BE ACCESSIBLE. MECHANICAL CONTRACTOR SHALL PROVIDE ACCESS PANELS AS REQUIRED TO FACILITATE MAINTENANCE, REPAIR AND ADJUSTMENT OF ANY CONCEALED EQUIPMENT, DAMPERS, VALVES, CONTROLS, ETC. COORDINATE LOCATIONS OF REQUIRED ACCESS PANELS WITH ARCHITECT.
29. ALL HVAC UNITS AND OTHER MECHANICAL EQUIPMENT SHALL BE FIELD LABELED WITH UNIT NUMBER AND AREA SERVED. IN ADDITION, ALL PIPING, VALVES AND CONTROL DEVICES SHALL BE IDENTIFIED WITH LABELS. ALL EQUIPMENT SHALL BE IDENTIFIED WITH LETTERS MINIMUM 2" HIGH, AND ADDITIONALLY, ALL PIPING SHALL BE IDENTIFIED WITH 6" LONG FLOW ARROWS. PIPE IDENTIFICATION MARKERS SHALL BE SPACED AT A MAXIMUM OF 20 FEET ON CENTERS ALONG EACH PIPING RUN. IDENTIFICATIONS SHALL MATCH THOSE ON THE EQUIPMENT SCHEDULES.
30. CHECK, VERIFY AND MAKE OPERABLE ALL NEW AND EXISTING EQUIPMENT TO COMPLY WITH MANUFACTURER'S SPECIFICATIONS. PROVIDE SERVICE AND MAINTENANCE ON ALL FAN-POWERED VAV UNITS, ETC., AS REQUIRED TO BRING THEM TO PROPER OPERATING CONDITION, INCLUDING, BUT NOT LIMITED TO, CLEANING OF COILS AND ENCLOSURES, LUBRICATION, AND INSTALLATION OF NEW FILTERS.
31. CHECK, VERIFY AND MAKE OPERABLE ALL CONTROL WORK AND TUBING OR WIRING FOR ALL SYSTEMS ASSOCIATED WITH THE PROJECT AREA.
32. MECHANICAL CONTRACTOR SHALL CONTACT THE ENGINEER 48 HOURS PRIOR TO SUBSTANTIAL COMPLETION OF CONSTRUCTION OR INSTALLATION OF CEILING TILE, TO SCHEDULE A FINAL PUNCH LIST WALK-THROUGH.
33. SUBMIT COMPLETE AS-BUILT DRAWINGS FOR THE ENTIRE PROJECT ON REPRODUCIBLE MEDIA OR ELECTRONIC FILES IN AUTOCAD VERSION 2015 OR LATER.MUST BE PROVIDED WITH-IN 90 DAYS.
34. ALL DUCTWORK SHALL BE MINIMUM 26 GAUGE SHEET METAL UNLESS OTHERWISE INDICATED. REFER TO SMACNA GUIDE FOR REQUIRED GAUGES AND REINFORCEMENT REQUIREMENTS.
35. ALL ELBOWS OF RECTANGULAR DUCTWORK EXCEEDING 45 DEGREES SHALL HAVE DOUBLE THICKNESS TURNING VANES OR SHALL BE LONG RADIUS TYPE. ALL ELBOWS OF ROUND DUCTWORK SHALL BE LONG RADIUS TYPE.
36. PROVIDE ALL TRANSITIONS REQUIRED FOR INSTALLING DUCTWORK PER DRAWINGS AND AS REQUIRED TO AVOID OBSTRUCTIONS. ALL TRANSITIONS SHALL MAINTAIN MINIMUM OF EQUIVALENT FREE AREA OF DUCTWORK TO WHICH THEY ARE ATTACHED.
37. PROVIDE SPIN-IN FITTINGS WITH BUTTERFLY DAMPERS FOR ALL NEW AND EXISTING ROUND SUPPLY RUN-OUT DUCTS TO DIFFUSERS AND ALL ROUND RETURN/EXHAUST RUN-OUT DUCTS TO RETURN/EXHAUST GRILLES. ANY DIFFUSERS OR GRILLES INSTALLED WHERE SAID BUTTERFLY DAMPERS WOULD BE INACCESSIBLE SHALL BE PROVIDED WITH INTEGRAL BALANCING DAMPERS.
38. ALL NEW DUCTWORK (HIGH PRESSURE AND LOW PRESSURE) SHALL BE SEALED AIR TIGHT. SEAL ALL DUCTWORK, JOINTS AND SEAMS WITH MASTIC NON-HARDENING DUCT SEALER. COORDINATE THIS WORK WITH THE BUILDING OPERATING PERSONNEL SO THAT THE MAIN HIGH AND MEDIUM PRESSURE DUCTWORK CAN BE SHUT OFF TO ALLOW MANUFACTURER'S REQUIRED CURE TIME FOR THE DUCT SEALER.
39. ALL NEW SUPPLY AIR DUCTWORK SHALL BE INSULATED. ALL SUPPLY AND OUTSIDE AIR INTAKE DUCTWORK SHALL BE VAPOR TIGHT. NEW RECTANGULAR DUCTWORK SHALL BE GALVANIZED SHEET METAL, INTERNALLY LINED WITH 1" THICK, 2.0 LB/CU FT DENSITY DUCT LINER EQUAL TO MANVILLE "LINACOUSTIC." ALL NEW ROUND DUCTWORK AND ALL EXISTING UNINSULATED ROUND AND RECTANGULAR DUCTWORK SHALL BE WRAPPED WITH 1-1/2" THICK, 1.0 LB/CU FT DENSITY DUCT WRAP EQUAL TO MANVILLE "MICROLITE." ALL WRAP INSULATION SEAMS AND JOINTS SHALL BE SEALED VAPOR-TIGHT WITH FOIL-SCRIM-KRAFT TAPE. ALL SUPPLY AIR AND OUTSIDE AIR DUCTWORK LOCATED WITHIN BUILDING ENVELOPE SHALL BE INSULATED WITH A MINIMUM OF R-8 INSULATION. ALL SUPPLY AIR AND RETURN AIR DUCTWORK LOCATED OUTSIDE THE BUILDING ENVELOPE SHALL BE INSULATED WITH A MINIMUM OF R-12 INSULATION AND COVERED WITH 22 GAUGE ALUMINUM JACKET SCREWED IN PLACE WITH ALL JOINTS CAULKED WATER TIGHT. EXCEPTION: ALL EXPOSED ROUND DUCTWORK (WITHIN CONDITIONED SPACE) SHALL BE UNINSULATED METAL SPIRAL TYPE.
40. ALL DUCT DIMENSIONS SHOWN ARE INSIDE CLEAR DIMENSIONS IN INCHES.
41. USE OF FLEXIBLE INSULATED DUCTWORK SHALL NOT EXCEED 6'-0" IN LENGTH FOR CONNECTING ANY INDIVIDUAL SUPPLY DIFFUSER OR RETURN GRILLE (6" W.G. RATED POSITIVE STATIC PRESSURE AND 0.5" W.G. RATED NEGATIVE STATIC PRESSURE). SUPPORT FLEXIBLE DUCTWORK AT NO GREATER THAN 3 FEET ON CENTERS WITH 1" WIDE 2- GAUGE GALVANIZED STEEL LOOPS. CONNECTIONS TO EXHAUST GRILLES SHALL BE MADE WITH RIGID DUCTWORK ONLY.
42. ALL NEW LOW PRESSURE/LOW VELOCITY (2" W.G. S.P. OR LESS) FLEXIBLE DUCTWORK SHALL BE EQUAL TO FLEXMASTER TYPE 5M WITH 1-1/2" THICK INSULATION AND ALUMINIZED INNER AND OUTER JACKET.
43. ALL NEW HIGH PRESSURE/HIGH VELOCITY (2"-6" W.G. S.P. MAX) FLEXIBLE DUCTWORK, WHERE ALLOWED BY CODE, SHALL BE EQUAL TO FLEXMASTER TYPE TL-M WITH 1-1/2" THICK INSULATION, ALUMINIZED OUTER JACKET AND FLEXIBLE ALUMINUM DUCTWORK CORE ON INSIDE. LENGTH OF CONNECTION SHALL NOT EXCEED 6'-0".
44. EXISTING FLEXIBLE DUCTWORK WHICH REMAINS IN PLACE MAY BE REUSED IF IT IS PROPERLY LABELED WITH U.L. 181 TAG. EXISTING FLEXIBLE DUCTWORK NOT U.L. APPROVED SHALL BE REMOVED AND REPLACED WITH THAT SPECIFIED IN NOTES ABOVE.
45. FINAL CONNECTION OF FLEXIBLE DUCTWORK TO RIGID RUN-OUT DUCTS AND TO CEILING DIFFUSERS SHALL BE MADE WITH 0.5" WIDE, POSITIVE-LOCKING STEEL STRAPS AND ADHESIVE. (APPLIES TO NEW FLEXIBLE DUCTWORK AND EXISTING FLEXIBLE DUCTWORK WHICH REMAINS.)
46. ALL 24" x 24" CEILING SUPPLY AIR DIFFUSERS SHALL BE ADJUSTED OR PROVIDED FOR 4-WAY THROW. EXCEPT AS NOTED OTHERWISE INDICATED BY DIRECTIONAL ARROWS ON DRAWINGS.
47. PROVIDE AND INSTALL U.L. LISTED TYPE "B" FIRE DAMPERS AT ALL PENETRATIONS IN NEW AND EXISTING FIRE RATED WALLS AS REQUIRED. FIELD VERIFY ALL EXISTING DUCTWORK TO VERIFY FIRE DAMPER LOCATION REQUIREMENTS. PROVIDE COMBINATION FIRE/SMOKE DAMPERS AS SHOWN ON DRAWINGS. CLASS II FOR VELOCITIES UP TO 1,500 FPM. CLASS I FOR VELOCITIES ABOVE 1,500 FPM. FIRE/SMOKE DAMPERS SHALL BE DYNAMIC RATED. PROVIDE INSTALLATION INSTRUCTIONS FOR FIRE/SMOKE DAMPERS TO FIELD INSPECTOR AT TIME OF INSPECTION.
48. FIRE CAULK FIRE RATED WALLS, CEILINGS, AND FLOOR PENETRATION OPENINGS WITH HILTI (OR EQUAL) FIRE RATED CAULKING.
49. MECHANICAL CONTRACTOR SHALL INSTALL DUCT SMOKE DETECTOR IN MAIN AIR DUCT OF ALL MECHANICAL AIR-MOVING SYSTEMS WHERE REQUIRED BY CODE OR LOCAL AUTHORITIES. DETECTORS SHALL BE FURNISHED AND CONNECTED TO THE FIRE ALARM SYSTEM (WHERE APPLICABLE) AND HARDWIRED TO THE FAN UNIT FOR AUTOMATIC SHUTDOWN BY ELECTRICAL/FIRE ALARM CONTRACTOR.
50. TYPE B DOUBLE-WALL FLUE VENTS U.L. LISTED SHALL BE PROVIDED FOR ALL GAS-FIRED EQUIPMENT WITH ATMOSPHERIC BURNERS. DOUBLE-WALL PRESSURIZED SYSTEMS SHALL BE PROVIDED FOR FORCED-DRAFT TYPE BURNERS.
51. UNIT HEATER: FURNISH AND INSTALL HOT WATER PIPED UNIT HEATERS COMPLETE WITH ALL TEMPERATURE AND SAFETY CONTROLS FOR A COMPLETE OPERATIONAL SYSTEM.
52. EXHAUST FANS: FURNISH AND INSTALL UNITS COMPLETE WITH ALL SWITCHING AND SAFETY CONTROLS NECESSARY FOR A COMPLETE OPERATIONAL SYSTEM, INSTALL BACKDRAFT DAMPER IF NOT INTEGRAL TO THE EXHAUST FAN.
53. PROVIDE OPERATING MANUALS TO THE OWNER AND ENGINEER FOR ALL SYSTEMS AND EQUIPMENT INCLUDING MANUFACTURERS MAINTENANCE MANUALS, INCLUDE LUBRICATION, FILTER TYPES, AND SIZES, STARTING AND STOPPING PROCEDURES. LIST CONTRACTORS CONTACT INFORMATION (PHONE NUMBER AND EMAIL).
54. PROVIDE ALL MECHANICAL SYSTEM CONTROLS, CONTROLLERS, CONTROL TRANSFORMERS, DISCONNECTS, STARTERS, CONTROL WIRING, ASSOCIATED CONTROL POWER WIRING, AND ALL WORK NECESSARY FOR A COMPLETE AND OPERATIONAL SYSTEM.
55. SLEEVES AND COLLARS SHALL BE PROVIDED FOR ALL DUCTWORK AND PIPES THROUGH WALLS, FLOORS, AND CEILINGS. PROVIDE CHROME PLATED ESCUTCHEONS FOR EXPOSED PIPING PENETRATIONS THROUGH CEILINGS, FLOORS, AND WALLS IN FINISHED AREAS. ALL WATER, SOIL, WASTE, AND VENT AND TRIM INCLUDING FITTINGS TO BE CHROME PLATED WHERE EXPOSED.
56. GUARANTEE ALL LABOR AND NEW EQUIPMENT FOR ONE YEAR FROM THE DATE OF ACCEPTANCE BY OWNER.
57. ALL WORK SHALL BE PERFORMED BY PROPERLY LICENSED MECHANICS OR UNDER THEIR DIRECT SUPERVISION. ALL MATERIALS AND EQUIPMENT SHALL MEET THE REQUIREMENTS OF THE APPLICABLE STANDARDS OF UL AND SHALL BEAR THE UL LABEL AS EVIDENCE THAT THE MATERIAL AND/OR EQUIPMENT MEETS THIS REQUIREMENT. ALL WORK SHALL MEET THE REQUIREMENTS OF LOCAL CODES.
58. CUT AND PATCH TO MATCH ADJACENT AREAS. NO STRUCTURAL MEMBER SHALL BE CUT OR NOTCHED.
59. ALL WORK IN FINISHED AREAS SHALL BE CONCEALED UNLESS SPECIFICALLY NOTED AS EXPOSED ON PLANS. PRIOR TO THE INSTALLATION OF ANY EXPOSED WORK THE CONTRACTOR SHALL VERIFY AND OBTAIN ARCHITECTURAL APPROVAL OF THE EXACT LOCATION AND INTENT.
60. RFI'S FROM CONTRACTORS SHALL INCLUDE AT LEAST ONE PROPOSED SOLUTION WHICH COMPLIES WITH THE INTENT OF CONTRACT DOCUMENTS.

TEST AND BALANCE REQUIREMENTS

ALL SYSTEMS SHALL BE TESTED AND BALANCED BY AN INDEPENDENT, APPROVED, TEST AND BALANCE COMPANY. COMPLY WITH BASE BUILDING SPECIFICATIONS. SUBMIT (2) COMPLETE REPORTS FOR REVIEW BY ENGINEER.

1. VERIFY AND SUBMIT VERIFICATION FOR EACH ZONE FULL COOLING, MINIMUM COOLING AND FULL HEATING CAPACITY AS REQUIRED. SUBMIT AIR QUANTITIES AT MINIMUM DESIGN STATIC PRESSURES AND ENTERING AND LEAVING TEMPERATURES FOR COOLING AND HEATING MODES.
2. ALL SUPPLY AIR DIFFUSERS AND EXHAUST REGISTERS SHALL BE BALANCED TO CFM SHOWN ON PLANS.
3. PROVIDE TEST AND BALANCE AND START-UP REPORT FOR ALL HVAC UNITS, AUX. AIR CONDITIONING SYSTEMS, AND EXHAUST FANS. REPORT SHALL INCLUDE ALL NAMEPLATE DATA, DESIGN DATA, MEASURED MOTOR AMP DRAW, VOLTAGE, CFM, SUCTION AND DISCHARGE STATIC PRESSURES, AND SUCTION AND DISCHARGE DRY BULB AND WET BULB TEMPERATURES.
4. MINIMUM OUTSIDE AIR CFM FOR ROOFTOP HVAC UNITS AND OTHER AIR HANDLING UNITS SHALL BE SET AS SCHEDULED.
5. CHECK AND CALIBRATE ALL THERMOSTATS. PROVIDE NOTIFICATION OF ANY MALFUNCTIONING THERMOSTATS TO THE MECHANICAL SUBCONTRACTOR, WHO SHALL REPAIR OR REPLACE THERMOSTATS AS REQUIRED.

   HEATING MODE - SET AND LOCK AT 72°F T-R +/- 2°F.
   COOLING MODE - SET AND LOCK AT 75°F T-R +/- 2°F.
6. TEST AND BALANCE REPORTS SHALL BE TYPEWRITTEN OR COMPUTER PRINTER GENERATED.

FIRE

1. HVAC SYSTEMS HANDLING 2,000 CFM OR MORE, OR MULTIPLE HVAC UNITS SERVING A SINGLE SPACE HANDLING 2,000 CFM OR MORE SHALL HAVE DUCT SMOKE DETECTORS TO SHUT DOWN THE HVAC UNIT(S). WHEN THE BUILDING HAS A FIRE ALARM SYSTEM THE SMOKE DETECTORS SHALL BE SUPERVISED BY THE FIRE ALARM SYSTEM. WHEN THE HVAC SYSTEM HAS A REMOTE TEST SWITCH, IT SHALL BE IN A FIRE DEPARTMENT APPROVED LOCATION AT A HEIGHT OF 5 TO 6 FEET ABOVE THE FINISHED FLOOR.

H.V.A.C. LEGEND

SYMBOL	DESCRIPTION
	SUPPLY DUCT UP
	SUPPLY DUCT DOWN
	RETURN OR EXHAUST DUCT UP
	RETURN OR EXHAUST DUCT DOWN
	ROUND DUCT SECTION UP
	ROUND DUCT SECTION DOWN
	TRUNK DUCT ELBOW (TURNING VANES REQ'D)
	CEILING SUPPLY REGISTER
	BOOT FOR REGISTER
	CEILING SUPPLY DIFFUSER
	CEILING RETURN AIR GRILLE
T	THERMOSTAT.
	WORK POINT (POINT OF CONNECTION)

SYMBOL	DESCRIPTION
	SIDE CONNECTION OF ROUND DUCT
	TOP (OR BOTTOM) CONN OF ROUND DUCT
	VOLUME DAMPER
2X4	SIDE CONNECTION OF RECTANGULAR DUCT
	GALV STEEL DUCT
	GALV STEEL DUCT ALT
	INSUL FLEX ROUND DUCT
(N)	NEW DEVICE
(E)	EXISTING DEVICE
(R)	RELOCATED DEVICE
BDD	BACK DRAFT DAMPER
UC 3/4"	DOOR UNDERCUT

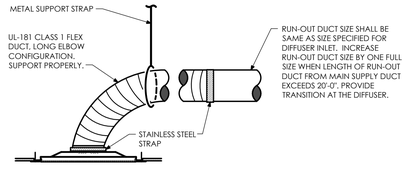
MECHANICAL EQUIPMENT SCHEDULE

RTU-1 15 TON	ROOF TOP UNIT	CARRIER MODEL #48FCDM1682A5-6U0A0, 174,000 BTUH COOLING, 2-SPEED, 10.8 EER, 14.5 IEER, 180,000 BTUH HEATING INPUT, 148,000 BTUH HEATING OUTPUT, 81.0% EFF., STANDARD STATIC HORIZONTAL SUPPLY AND RETURN, ULTRA LOW LEAK ECONOMIZER, HAIL GUARD, 14" CURB, LOW AMBIENT CONTROLLER, WINTER START KIT, RA SMOKE DETECTOR, 1408 LBS + 330 LBS = 1738 LBS, 208V, 3Ø, 60 HZ, 67 MCA, 80 MOCP.
EF-1	EXHAUST FAN	VENTILATION DIRECT MODEL #VXD200, 4140 CFM @ 1.500 ESP., 5-HP, 208V-3Ø, 15.0 FLA, 228 LBS. REFER TO VENTILATION DIRECT SHOP DRAWINGS. SHALL BE UL 762 LISTED. FAN MOTOR SHALL BE INSTALLED OUTSIDE OF GREASE EXHAUST AIR STREAM. PROVIDE WITH GREASE DRAIN. PROVIDE WITH HINGE AND HINGE RESTRAINT.
CD-1	SQUARE CEILING DIFFUSER	TITUS MODEL #TMS, STEEL, SQUARE, 24"x24" 4-WAY THROW DIFFUSER, WITH OBD, NECK SIZE AS NOTED ON DIFFUSER SCHEDULE. OR APPROVED EQUAL.
CD-2	CEILING DIFFUSER	TITUS MODEL #OMNI, STEEL ARCHITECTURAL DIFFUSER, WHITE FINISH,12"x12, NECK SIZE AS NOTED ON DIFFUSER NECK SCHEDULE. SIZE AS SHOWN ON PLANS (OR EQUAL).
SR-1	SUPPLY REGISTER	TITUS MODEL #300RL, 3/4" BLADE SPACING, OBD, STEEL, WHITE, SIZE AS SHOWN ON PLANS. (OR EQUAL).

DIFFUSER NECK SIZE SCHEDULE

CFM RANGE	DIFFUSER NECK SIZE
0 - 125	6"Ø
126 - 225	8"Ø
226 - 350	10"Ø
351 - 500	12"Ø

1. PROVIDE RIGID RUN-OUT DUCT AND FLEXIBLE DUCT CONNECTION OF SAME SIZE AS DIFFUSER NECK DIAMETER.
2. INCREASE RUN-OUT DUCT SIZE BY ONE FULL SIZE WHEN LENGTH OF RUN-OUT DUCT FROM MAIN SUPPLY DUCT EXCEEDS 20'-0". PROVIDE TRANSITION AT THE DIFFUSER.



LAY-IN DIFFUSER DETAIL

SCALE: NONE

CODES & DESIGN CRITERIA

JURISDICTION:	CITY OF GRAND JUNCTION
AMENDMENTS:	
ELECTRICAL CODE:	2023 NEC
ENERGY CODE:	2018 INTERNATIONAL ENERGY CODE
MECHANICAL CODE:	2018 INTERNATIONAL MECHANICAL CODE
PLUMBING CODE:	2021 INTERNATIONAL PLUMBING CODE

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CHECKED BY: JOHN ELLIOTT

REVISIONS:

No.	Description	Date

ISSUE RECORD:

No.	Description	Date
1	ISSUED FOR PERMIT/CONST.	03-21-24

SHEET CONTENTS:

MECHANICAL SPECIFICATIONS

COLORADO LICENSED
JOHN R. ELLIOTT
43783
Apr 2 2024
PROFESSIONAL ENGINEER

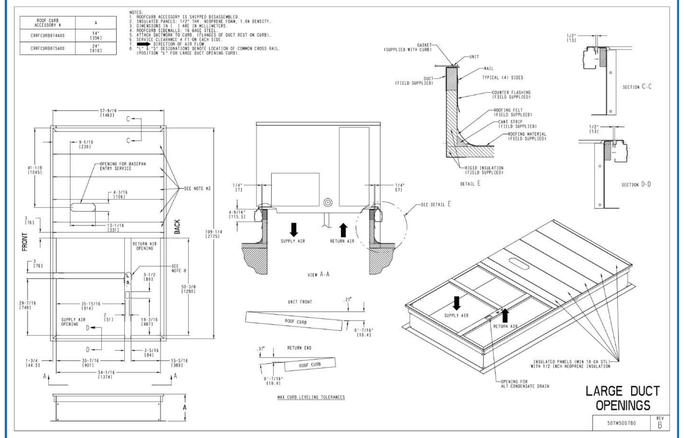
PROJECT NO.:
DATE:

DRAWING NO.:

M-0.0

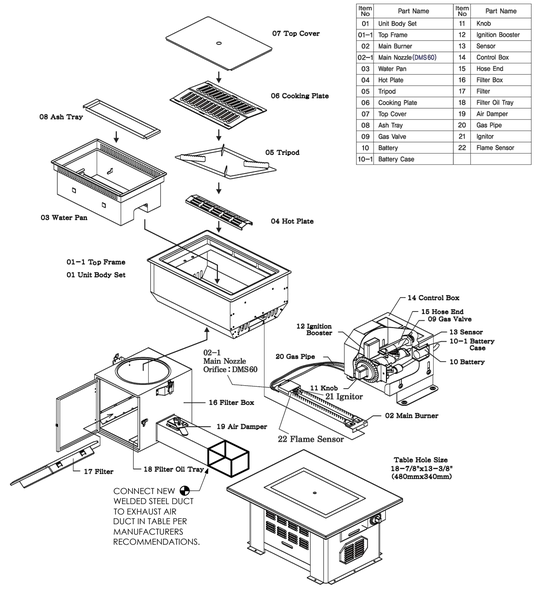
VENSTAR T4800 T-STAT

ROOF CURB DIMENSIONS — 48/50FC 16



Accessory dimensions (cont)

Item No	Part Name	Item No	Part Name
01	Unit Body Set	11	Knob
01-1	Top Frame	12	Ignition Booster
02	Main Burner	13	Sensor
02-1	Main Nozzle(DMS60)	14	Control Box
03	Water Pan	15	Hose End
04	Hot Plate	16	Filter Box
05	Tripod	17	Filter
06	Cooking Plate	18	Filter Oil Tray
07	Top Cover	19	Air Damper
08	Ash Tray	20	Gas Pipe
09	Gas Valve	21	Ignitor
10	Battery	22	Flame Sensor
10-1	Battery Case		



EXHAUST VENT CONNECTION DETAIL

SCALE: NONE

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MECHANICAL DETAILS

COLORADO LICENSED
JOHN R. ELLIOTT
43783
PROFESSIONAL ENGINEER
Apr 2 2024

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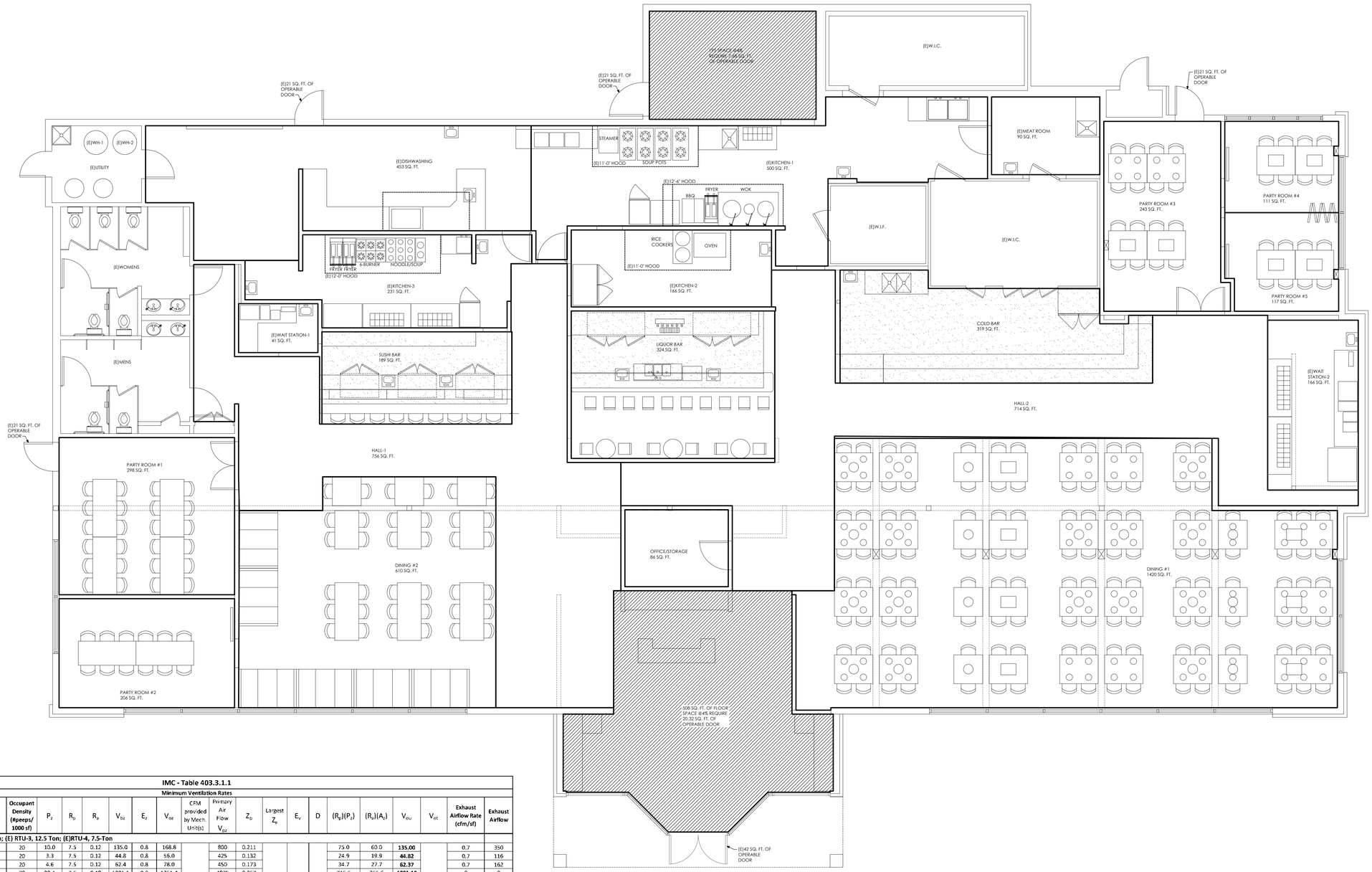

MECHANICAL O.A. CALCULATION PLAN

SCALE: 3/16" = 1'-0"

IMC - Table 403.3.1.1

Minimum Ventilation Rates

Zone	Area Sq. Ft. A_z	Occupant Density (#peeps/ 1000 sf)	P_z	R_p	R_a	V_{bz}	E_z	V_{oz}	CFM provided by Mech. Unit(s)	Primary Air Flow V_{pz}	Z_p	Largest Z_g	E_v	D	$(R_p)(P_z)$	$(R_a)(A_z)$	V_{ou}	V_{ot}	Exhaust Airflow Rate (cfm/sf)	Exhaust Airflow
(N)RTU-1, 15-Ton; (E)RTU-2, 8.5 Ton; (E) RTU-3, 12.5 Ton; (E)RTU-4, 7.5-Ton																				
Kitchen-1	**500**	20	10.0	7.5	0.12	135.0	0.8	168.8		800	0.211				75.0	60.0	**135.00**		0.7	350
Kitchen-2	**166**	20	3.3	7.5	0.12	44.8	0.8	56.0		425	0.132				24.9	19.9	**44.82**		0.7	116
Kitchen-3	**231**	20	4.6	7.5	0.12	62.4	0.8	78.0		450	0.173				34.7	27.7	**62.37**		0.7	162
Dining-1	**1420**	70	99.4	7.5	0.18	1001.1	0.8	1251.4		4875	0.257				745.5	255.6	**1001.10**		0	0
Dining-2	**610**	70	42.7	7.5	0.18	430.1	0.8	537.6		2200	0.244				320.3	109.8	**430.05**		0	0
Party Room-1	**298**	70	20.9	7.5	0.18	210.1	0.8	262.6		1100	0.239				156.5	53.6	**210.09**		0	0
Party Room-2	**206**	70	14.4	7.5	0.18	145.2	0.8	181.5		800	0.227				108.2	37.1	**145.23**		0	0
Party Room-3	**243**	70	17.0	7.5	0.18	171.3	0.8	214.1		700	0.305				127.6	43.7	**171.32**		0	0
Party Room-4	**111**	70	7.8	7.5	0.18	78.3	0.8	97.8		300	0.326				58.3	20.0	**78.26**		0	0
Party Room-5	**117**	70	8.2	7.5	0.18	82.5	0.8	103.1		300	0.344				61.4	21.1	**82.49**		0	0
Cold Bar	**319**	70	22.3	7.5	0.18	224.9	0.8	281.1	17400	825	0.341	0.350	0.8	1	167.5	57.4	**224.90**	4040	0	0
Sushi Bar	**189**	70	13.2	7.5	0.18	133.2	0.8	166.6		750	0.222				99.2	34.0	**133.25**		0	0
Office	**86**	5	0.4	5	0.06	7.3	0.8	9.1		50	0.183				2.2	5.2	**7.31**		0	0
Dishwashing	**453**	0	0.0	0	0.12	54.4	0.8	68.0		350	0.194				0.0	54.4	**54.36**		0	0
Hall-1	**756**	0	0.0	0	0.06	45.4	0.8	56.7		400	0.142				0.0	45.4	**45.36**		0	0
Hall-2	**714**	0	0.0	0	0.06	42.8	0.8	53.6		400	0.134				0.0	42.8	**42.84**		0	0
Meat Room	**90**	10	0.9	15	0.00	13.5	0.8	16.9		150	0.113				13.5	0.0	**13.50**		0	0
Wait Station-1	**41**	15	0.6	7.5	0.12	9.5	0.8	11.9		150	0.079				4.6	4.9	**9.53**		0	0
Wait Station-2	**166**	15	2.5	7.5	0.12	38.6	0.8	48.2		200	0.241				18.7	19.9	**38.60**		0	0
Liquor Bar	**324**	100	32.4	7.5	0.18	301.3	0.8	376.7		1075	0.350				243.0	58.3	**301.32**		0	0
Reception (Via Operable Doors)										600	0.000				0.0	0.0	**0.00**		0	0
Restrooms										500										
Totals	**7040.00**									**17400**							**3231.67**	**4040**		**628**

SET (E) RTU-1 TO 1200 CFM
SET (E) RTU-2 TO 830 CFM
SET (N) RTU-3 TO 1500 CFM
SET (E) RTU-4 TO 510 CFM

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SURF TO TURF

1100 INDEPENDENT AVE
GRAND JUNCTION, CO

DRAWN BY: JAF/RE
CHECKED BY: JOHN ELLIOTT

REVISIONS:

No.	Description	Date

ISSUE RECORD:

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1	ISSUED FOR PERMIT/CONST.	03-21-24

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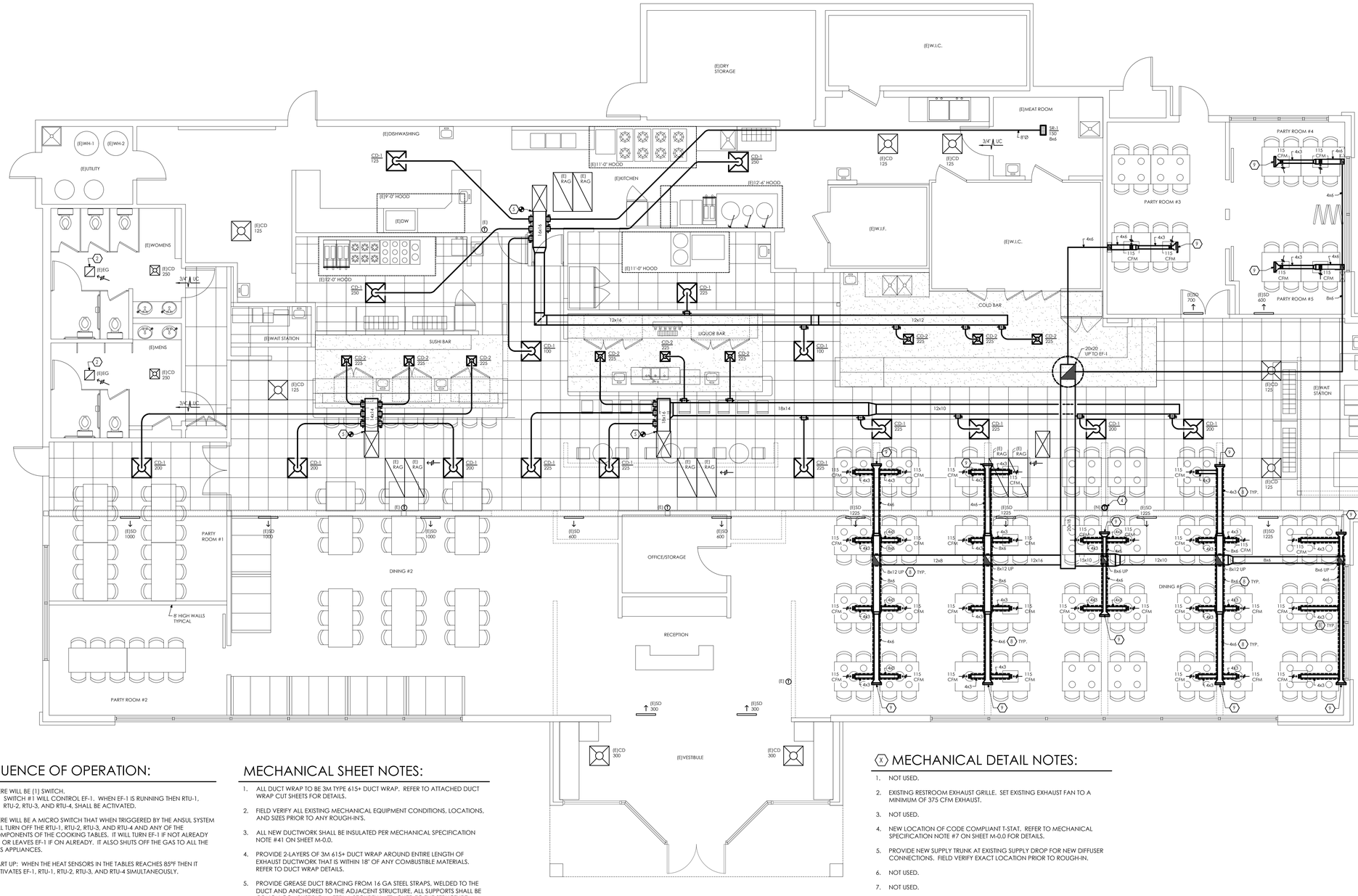
MECHANICAL OUTSIDE AIR CALCULATION PLAN

COLORADO LICENSED JOHN C. ELLIOTT 43783 PROFESSIONAL ENGINEER Apr 2 2024

PROJECT NO.:
DATE:
DRAWING NO.:

M-1.0



SEQUENCE OF OPERATION:

1. THERE WILL BE (1) SWITCH.
   1.1. SWITCH #1 WILL CONTROL EF-1. WHEN EF-1 IS RUNNING THEN RTU-1, RTU-2, RTU-3, AND RTU-4, SHALL BE ACTIVATED.
2. THERE WILL BE A MICRO SWITCH THAT WHEN TRIGGERED BY THE ANSUL SYSTEM WILL TURN OFF THE RTU-1, RTU-2, RTU-3, AND RTU-4 AND ANY OF THE COMPONENTS OF THE COOKING TABLES. IT WILL TURN EF-1 IF NOT ALREADY ON OR LEAVES EF-1 IF ON ALREADY. IT ALSO SHUTS OFF THE GAS TO ALL THE GAS APPLIANCES.
3. START UP: WHEN THE HEAT SENSORS IN THE TABLES REACHES 85°F THEN IT ACTIVATES EF-1, RTU-1, RTU-2, RTU-3, AND RTU-4 SIMULTANEOUSLY.

Air Balance Schedule

Unit Description	Outside Air Flow (CFM)	Exhaust Air Flow (CFM)	Building Pressure (CFM)
RTU-1	1300		
RTU-2	850		
RTU-3	1250		
RTU-4	500		
FF-1		-4140	
Totals	**4100**	**-4140**	**-40**

MECHANICAL SHEET NOTES:

1. ALL DUCT WRAP TO BE 3M TYPE 615+ DUCT WRAP. REFER TO ATTACHED DUCT WRAP CUT SHEETS FOR DETAILS.
2. FIELD VERIFY ALL EXISTING MECHANICAL EQUIPMENT CONDITIONS, LOCATIONS, AND SIZES PRIOR TO ANY ROUGH-IN'S.
3. ALL NEW DUCTWORK SHALL BE INSULATED PER MECHANICAL SPECIFICATION NOTE #41 ON SHEET M-0.0.
4. PROVIDE 2-LAYERS OF 3M 615+ DUCT WRAP AROUND ENTIRE LENGTH OF EXHAUST DUCTWORK THAT IS WITHIN 18" OF ANY COMBUSTIBLE MATERIALS. REFER TO DUCT WRAP DETAILS.
5. PROVIDE GREASE DUCT BRACING FROM 16 GA STEEL STRAPS, WELDED TO THE DUCT AND ANCHORED TO THE ADJACENT STRUCTURE. ALL SUPPORTS SHALL BE OF NON COMBUSTIBLE MATERIAL SECURELY ATTACHED TO THE STRUCTURE. BOLTS, SCREWS, RIVETS, AND OTHER MECHANICAL FASTENERS SHALL NOT PENETRATE DUCT WALL.
6. MECHANICAL CONTRACTOR SHALL PROVIDE A GREASE DUCT LEAKAGE TEST WHILE THE INSPECTOR IS PRESENT. THIS TEST SHALL INCLUDE THE HOOD TO DUCT CONNECTION.
7. MECHANICAL CONTRACTOR SHALL PROVIDE A CAPTURE CONTAINMENT TEST TO BE WITNESSED BY THE INSPECTOR.
8. MECHANICAL CONTRACTOR TO PROVIDE A BALANCE REPORT TO THE OWNER AND THE INSPECTOR.
9. FOR SLOPED GREASE DUCT PROVIDE A MINIMUM OF 1/4"/L.F. TOWARD THE TABLES.
15. DUCT JOINTS SHALL BE CONTINUOUS INTERNAL OR EXTERNAL LIQUID-TIGHT WELDED OR BRAZED FLANGE JOINTS. WELDED FLANGE JOINTS WITH A MAXIMUM FLANGE DEPTH OF 1/2 INCH (12.7 mm) OR OVERLAPPING DUCT JOINTS OF EITHER THE TELESCOPING OR BELL TYPE. OVERLAPPING JOINTS SHALL BE INSTALLED TO PREVENT LEDGES AND OBSTRUCTIONS FROM COLLECTING GREASE OR INTERFERING WITH GRAVITY DRAINAGE TO THE INTENDED COLLECTION POINT. THE DIFFERENCE BETWEEN THE INSIDE CROSS-SECTIONAL DIMENSIONS OF OVERLAPPING SECTIONS OF DUCT SHALL NO EXCEED 1/4 INCH (6 mm). THE LENGTH OF OVERLAP FOR OVERLAPPING DUCT JOINTS SHALL NOT EXCEED 2 INCHES.
16. DUCT-TO-HOOD JOINTS SHALL BE MADE WITH CONTINUOUS INTERNAL OR EXTERNAL LIQUID-TIGHT WELDED OR FLANGED BRAZED JOINTS. SUCH JOINTS SHALL BE SMOOTH, ACCESSIBLE FOR INSPECTION, AND WITHOUT GREASE TRAPS.
17. GREASE DUCT SHALL BE CONSTRUCTED OF WELDED STEEL HAVING A MINIMUM THICKNESS OF 0.0575 INCHES (16 GAUGE), OR 18 GAUGE STAINLESS STEEL.

MECHANICAL HVAC PLAN

SCALE: 3/16" = 1'-0"

⬡X MECHANICAL DETAIL NOTES:

1. NOT USED.
2. EXISTING RESTROOM EXHAUST GRILLE. SET EXISTING EXHAUST FAN TO A MINIMUM OF 375 CFM EXHAUST.
3. NOT USED.
4. NEW LOCATION OF CODE COMPLIANT T-STAT. REFER TO MECHANICAL SPECIFICATION NOTE #7 ON SHEET M-0.0 FOR DETAILS.
5. PROVIDE NEW SUPPLY TRUNK AT EXISTING SUPPLY DROP FOR NEW DIFFUSER CONNECTIONS. FIELD VERIFY EXACT LOCATION PRIOR TO ROUGH-IN.
6. NOT USED.
7. NOT USED.
8. PROVIDE 2-LAYERS OF 3M TYPE 615+ DUCT WRAP AROUND ENTIRE LENGTH OF GREASE EXHAUST DUCTWORK WHERE DUCT IS WITHIN 18" OF COMBUSTIBLE MATERIALS.
9. 12"x12" GREASE DUCT CLEAN OUT.
   9.1. TO BE SPACED NO MORE THAN 20' APART.
   9.2. BE LOCATED NO MORE THAN 10' FROM CHANGES IN DIRECTION THAT ARE GREATER THAN 45°.
   9.3. TO BE LOCATED VERTICALLY ON THE DUCT.
   9.4. NOT BE CLOSER THAN 1" FROM THE EDGES OF THE DUCT.
   9.5. HAVE AN OPENING NOT LESS THAN 12"x12". ONE SIDE SHALL BE LARGE ENOUGH TO PROVIDE ACCESS FOR CLEANING AND MAINTENANCE.
   9.6. CLEAN-OUT DOORS SHALL BE CONSTRUCTED TO COMPLY WITH SECTION 506.3.1.1. MUST HAVE LATCHING DEVICES TO HOLD THE DOOR TIGHTLY CLOSED. PROVIDE WITH GASKET AND SEALING MATERIALS THAT MUST BE RATED FOR TEMPERATURES OF NOT LESS THAN 1500°F.

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EMAIL: julie.ccce@gmail.com
ashley.ccce@gmail.com

SURF TO TURF

1100 INDEPENDENT AVE
GRAND JUNCTION, CO

DRAWN BY: JAF/RE

CHECKED BY: JOHN ELLIOTT

REVISIONS:

No.	Description	Date

ISSUE RECORD:

No.	Description	Date
1	ISSUED FOR PERMIT/CONST.	03-21-24

SHEET CONTENTS:

MECHANICAL HVAC PLAN

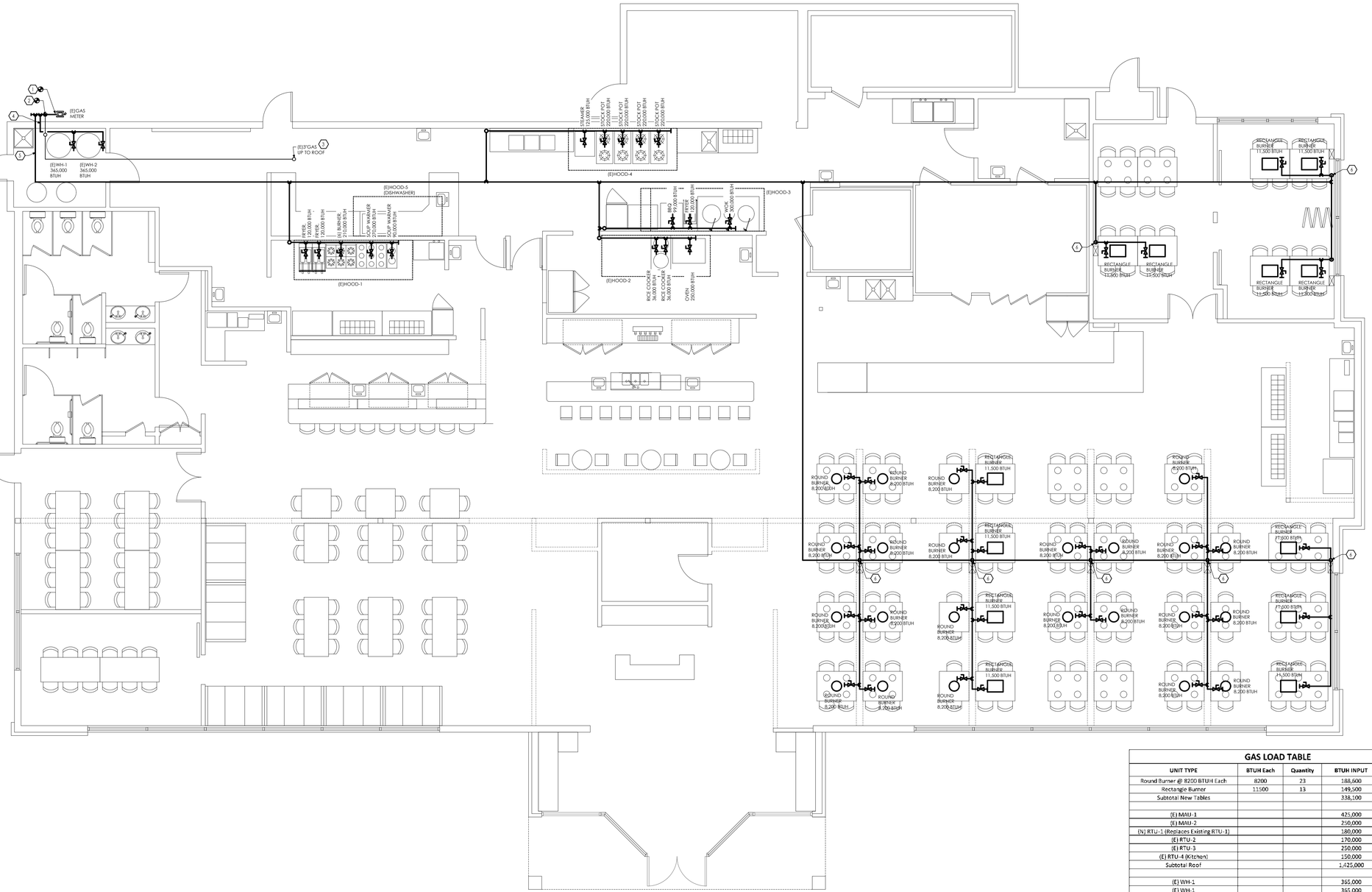
COLORADO LICENSED JOHN ELLIOTT 43783 PROFESSIONAL ENGINEER Apr 2 2024

PROJECT NO.:

DATE:

DRAWING NO.:

M-1.1



GAS PIPING PLAN

SCALE: 3/16" = 1'-0"

ⓧ MECHANICAL DETAIL NOTES:

1. PROVIDE NEW GAS HEADER TO EXISTING GAS METER. COORDINATE WITH LOCAL UTILITY COMPANY NEW GAS LOADS AND GAS HEADER CONNECTION.
2. RECONNECT EXISTING 3" GAS TO NEW GAS HEADER AS SHOWN.
3. EXISTING 3" GAS LINE TO ONLY SUPPLY ROOF EQUIPMENT. ALL OTHER GAS LINE CONNECTIONS TO BE DISCONNECTED.
4. PROVIDE NEW GAS LINE CONNECTIONS TO EXISTING WATER HEATERS AS SHOWN.
5. NEW GAS LINE TO KITCHEN EQUIPMENT AND GAS FIRED TABLES.
6. DROP GAS LINES DOWN TO TABLES.

GAS LOAD TABLE

UNIT TYPE	BTUH Each	Quantity	BTUH INPUT	CFH
Round Burner @ 8200 BTUH Each	8200	23	188,600	228
Rectangle Burner	11500	13	149,500	181
Subtotal New Tables			338,100	410
(E) MAU-1			425,000	515
(E) MAU-2			250,000	303
(N) RTU-1 (Replaces Existing RTU-1)			180,000	218
(E) RTU-2			170,000	206
(E) RTU-3			250,000	303
(E) RTU-4 (Kitchen)			150,000	182
Subtotal Roof			1,425,000	1726
(E) WH-1			365,000	442
(E) WH-1			365,000	442
Subtotal			730,000	884
Fryer			120,000	145
Fryer			120,000	145
(6) Burner Range			210,000	254
Soup Warmer			270,000	327
Soup Warmer			90,000	109
Subtotal Hood-1			810,000	981
Rice Cooker			36,000	44
Rice Cooker			36,000	44
Oven			250,000	303
Subtotal Hood-2			322,000	390
BBQ			99,000	120
Fryer			120,000	145
3 Hole Wok			300,000	363
Subtotal Hood-3			519,000	629
Steamer			125,000	151
2 Burner Stock Pot			220,000	266
2 Burner Stock Pot			220,000	266
2 Burner Stock Pot			220,000	266
2 Burner Stock Pot			220,000	266
Subtotal Hood-4			1,005,000	1217
TOTAL			5,149,100	6237

COLORADO COMFORT CONSULTING ENGINEERS, INC.
Mechanical
Electrical
Plumbing
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GAS PIPING PLAN

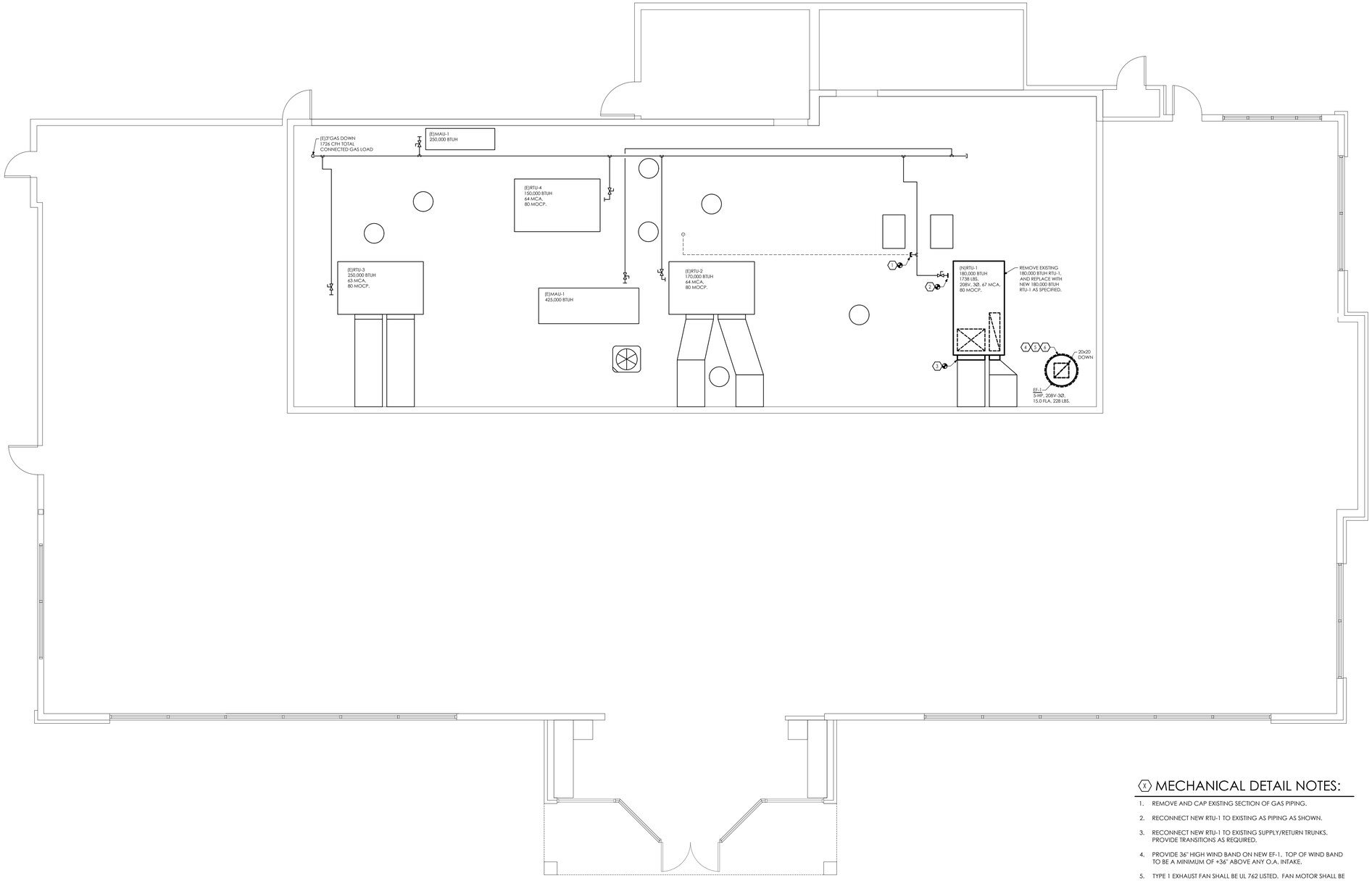
COLORADO LICENSED
JOHN ELLIOTT
43783
PROFESSIONAL ENGINEER
Apr 2 2024

PROJECT NO.:

DATE:

DRAWING NO.:

M-2.0



MECHANICAL ROOF/GAS PIPING PLAN

SCALE: 3/16" = 1'-0"

⟨X⟩ MECHANICAL DETAIL NOTES:

1. REMOVE AND CAP EXISTING SECTION OF GAS PIPING.
2. RECONNECT NEW RTU-1 TO EXISTING AS PIPING AS SHOWN.
3. RECONNECT NEW RTU-1 TO EXISTIING SUPPLY/RETURN TRUNKS. PROVIDE TRANSITIONS AS REQUIRED.
4. PROVIDE 36" HIGH WIND BAND ON NEW EF-1. TOP OF WIND BAND TO BE A MINIMUM OF +36" ABOVE ANY O.A. INTAKE.
5. TYPE 1 EXHAUST FAN SHALL BE UL 762 LISTED. FAN MOTOR SHALL BE INSTALLED OUTSIDE OF EXHAUST AIR STREAM. SHALL BE POSITIONED SO FAN WILL NOT IMPINGE ON ANY EQUIPMENT OR ROOF STRUCTURE. UP-BLAST EXHAUST FAN SHALL BE INSTALLED IN A VERTICAL POSITION AND WITH A HINGED CURB. HINGE TO BE PROVIDED WITH A RESTRAINT TO PREVENT THE FAN FROM SWINGING MORE THAN 90°. PROVIDE WITH WEATHER PROOF ELECTRICAL CABLE. EXHAUST FAN TO BE PROVIDED WITH A GREASE DRAIN.
6. DUCT TO EXHAUST FAN CONNECTION SHALL BE FLANGED AND GASKETED AT THE BASE OF THE FAN FOR VERTICAL DISCHARGE FANS. GASKET AND SEALING MATERIALS SHALL BE RATED FOR CONTINUOUS DUTY AT A TEMPERATURE OF NOT LESS THAN 1500°F.

COLORADO COMFORT CONSULTING ENGINEERS, INC.

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Plumbing

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ashley.ccce@gmail.com

SURF TO TURF

1100 INDEPENDENT AVE
GRAND JUNCTION, CO

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SHEET CONTENTS:

MECHANICAL
ROOF/GAS PIPING
PLAN

COLORADO LICENSED
JOHN MORGAN ELLIOTT
43783
Apr 2 2024
PROFESSIONAL ENGINEER

PROJECT NO.:

DATE:

DRAWING NO.:

M-2.1

DURA-BLOK rooftop solutions support

DURA-BLOK® supports are made of 100% recycled rubber and are designed to provide an economical way to support pipes, HVAC systems, rooftop walkway systems, ducting, conduit, cable tray, and more.

FEATURES & BENEFITS

- Made from 100% recycled rubber
- Qualifies for LEED credits
- Reflective strip on both sides allow for easy product visibility
- Channel is through bolted on all sizes for added strength
- 1" gap between blocks allows water to flow freely around longer assemblies
- No roof penetration required
- Product composition is not sharp or abrasive; helping to extend the roof life
- Resistant to freeze/thaw
- Dampens vibration
- No need for supplemental rubber pad
- Will not float or blow away
- UV resistant
- Suitable for any type roofing material or other flat surface
- For sloped roofs see adjustable hinge fitting (B634)
- Open ends allows for easier adjustments to DBE, DBR, and DBM series
- Drainage channel through center of block

Components & accessories

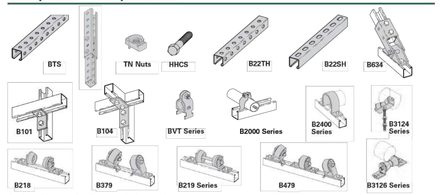
CLDP10 Load Distribution Plate
Material - steel
Increases ultimate uniform load capacity on DBE & DBR Series supports to 500 lbs. (2.22kN)

UPC/Part #	Cat. #	Thickness	Width	Length	Weight Each
782051 38110	**CLDP10**	11 Ga. (3.0mm)	1¾" (41mm)	9.5" (241mm)	0.53 (0.24kg)

Loosen hex nuts and slide plate under the flat washers

Retighten the hex nuts with plate in place

Compatible components

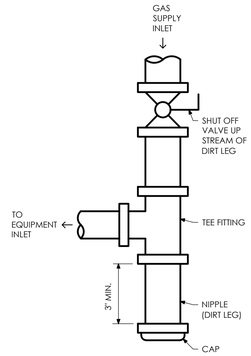


See Eaton's B-Line series Strut Systems Catalog for more information.

PROVIDE FLEXIBLE GAS LINE CONNECTORS, MIP FITTING, STAINLESS STEEL YELLOW EPOXY COATED CORROSION RESISTANT FOR GAS APPLIANCES. ANSI Z21.69 COMPLIANT, ANSI Z21.76/CSA 6.10 6.16 6.27).

FLEX GAS CONNECTION

SCALE: NONE

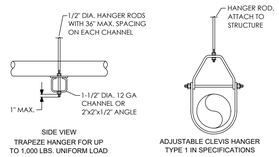


DIRT LEG DETAIL

SCALE: NONE

MAXIMUM PIPE/TUBING SUPPORT SPACING, FEET										
NOM SIZE	THRU 1"	1	1-1/4	1-1/2	2	2-1/2	3	4		
PIPE	7 FT	7	7	9	10	11	12	14		
TUBING	5 FT	6	7	8	8	9	10	12		

NOTE: FOR TRAPEZE HANGER TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.



PIPE HANGER DETAIL

SCALE: NONE

MECHANICAL DETAIL NOTES:

1. SOLENOID VALVE FOR FIRE SUPPRESSION. REFER TO ELECTRICAL PLANS.
2. MECHANICAL SHUT OFF VALVE, LOCATE NEAR EXHAUST HOOD IN EASILY ACCESSIBLE LOCATION.
3. PROVIDE NEW GAS HEADER TO EXISTING GAS METER. COORDINATE WITH LOCAL UTILITY COMPANY NEW GAS LOADS AND GAS HEADER CONNECTION.
4. RECONNECT EXISTING 3" GAS TO NEW GAS HEADER AS SHOWN.
5. EXISTING 3" GAS LINE TO ONLY SUPPLY ROOF EQUIPMENT. ALL OTHER GAS LINE CONNECTIONS TO BE DISCONNECTED.
6. PROVIDE NEW GAS LINE CONNECTIONS TO EXISTING WATER HEATERS AS SHOWN.

GAS PIPING SHEET NOTES:

1. TOTAL LENGTH OF GAS PIPE FROM GAS METER TO FURTHEST GAS APPLIANCE INCLUDING VERTICAL IS APPROXIMATELY 250 L.F.
2. NEW GAS PIPING SIZED PER IFGC TABLE 402.4(2). LESS THAN 2 PSI GAS PRESSURE.
3. PROVIDE GAS SHUT-OFF VALVE AND 6" DIRT LEG AND FLEXIBLE GAS LINE CONNECTION ANSI Z21.69 COMPLIANT AT EACH GAS APPLIANCE, TYPICAL. GAS PIPE TO BE CGA LISTED LINE-SIZE RATED FOR GAS PIPE.
4. PROVIDE CODE APPROVED GAS PIPING SUPPORTS. PER IFGC SECTION 407 WOODEN BLOCK SUPPORTS ARE NOT ALLOWED.
5. FIELD VERIFY EXISTING CONDITIONS PRIOR TO ROUGH-IN.
6. CONTRACTOR TO COORDINATE WITH LOCAL UTILITY COMPANY FOR NEW GAS HEADER AT EXISTING GAS METER.
7. ALL INTERIOR ABOVE GRADE GAS PIPING 3-1/2" AND SMALLER SHALL BE SCHEDULE 40 BLACK IRON PIPE WITH 150 PSI O.W.G. BLACK BANDED MALLEABLE IRON SCREWED OR WELDED FITTINGS.
8. ALL INTERIOR ABOVE GRADE GAS PIPING 4" AND LARGER SHALL BE WELDED SCHEDULE 40 BLACK IRON PIPE, WITH 150 PSI O.W.G. BLACK BANDED MALLEABLE IRON WELDED FITTINGS. ALL INTERIOR VISIBLE GAS PIPING SHALL BE LABELED WITH PRESSURE AT 6'-0" ON CENTERS.
9. ALL BELOW GRADE GAS PIPING (ALL SIZES), SHALL BE WELDED SCHEDULE 40 COATED BLACK IRON WITH 150 PSI O.W.G. BLACK BANDED MALLEABLE WELDED FITTINGS WITH APPROVED PROTECTIVE COATING.
   9.1. OR POLYETHYLENE (PE 2406) ASTM D 2513. ASTM D 2513, ASTM D 2683, AND/OR ASTM D 3261 FITTINGS. POLYETHYLENE PIPE SHALL BE LABELED "GAS" MARKINGS WITH A TRACER WIRE ATTACHED TO THE PIPE AT THE BEGINNING OF THE BURIED POINT. TRACER WIRE SHALL BE #18 AWG COPPER AND SHALL RUN THE FULL LENGTH OF THE BURIED PIPE AND TERMINATE ABOVE GRADE AT FINAL ABOVE GRADE TERMINATION POINT.
10. ALL GAS PIPING INSTALLED ON ROOF SHALL BE SUPPORTED AT A MINIMUM OF EVERY 6 FEET, WITH 6" MINIMUM CLEARANCE FROM ROOF, EXCEPT WHERE GOVERNED BY MORE STRINGENT LOCAL CODES OR SPECIFICATIONS. ALL PIPING EXPOSED TO WEATHER SHALL BE PAINTED.
11. GAS LINES CONNECTED TO COOKING EQUIPMENT MUST BE LONG ENOUGH SO THE EQUIPMENT CAN BE PULLED OUT. OR QUICK DISCONNECTS MUST BE PROVIDED ON THE GAS LINES TO ALLOW THE EQUIPMENT TO BE COMPLETELY DISCONNECTED AND PULL OUT SO SURFACES CAN BE CLEANED.
12. COORDINATE ALL NEW ROOFING PENETRATIONS WITH BUILDING OWNERS ROOFING CONTRACTOR.

GAS PIPING RISER DIAGRAM

SCALE: NONE

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Mechanical Electrical Plumbing
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SURF TO TURF
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GRAND JUNCTION, CO

DRAWN BY: JAF/RE
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REVISIONS:

No.	Description	Date

ISSUE RECORD:

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1	ISSUED FOR PERMIT/CONST.	03-21-24

SHEET CONTENTS:

GAS PIPING RISER DIAGRAM

COLORADO LICENSED JOHN GEORGE ELLIOTT 43783 PROFESSIONAL ENGINEER Apr 2 2024

PROJECT NO.:
DATE:
DRAWING NO.:

M-2.2

FOR QUESTIONS, CALL THE
Sales & Service
REGION 23
PHONE: (919) 573 - 1522
EMAIL: info@ventilationdirect.com

EXHAUST FAN INFORMATION – JOB#6696458

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		1	VXD200	VENTILATION DIRECT	4140	1.500	1326	ODP,PREMIUM	5.000	2.4340	3	208	15.0	1007 FPM	228	29.7

FAN OPTIONS

FAN UNIT NO	TAG	QTY	DESCRIPTION
1		1	GREASE BOX
		1	VAV PACKAGE W/ MANUAL CONTROL (VFD INCLUDED)
		1	VFD FACTORY MOUNTED AND WIRED IN EXHAUST FAN
		1	VFD MOUNTING BRACKET FOR DU/DR 180 - 200
		1	EXHAUST FAN HEAT BAFFLE
		1	2 YEAR PARTS WARRANTY

FAN ACCESSORIES

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

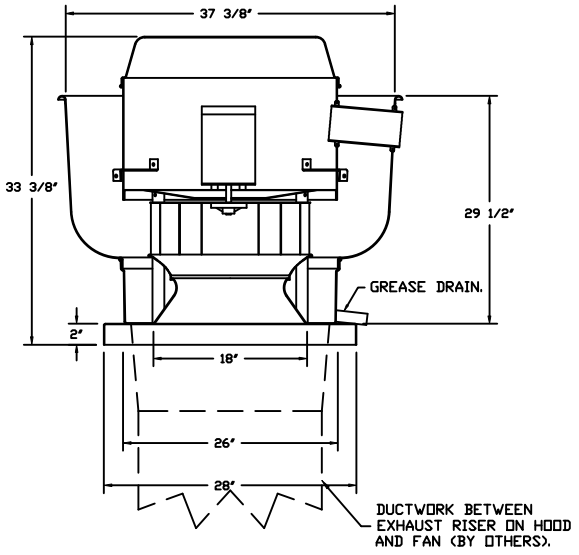
CURB ASSEMBLIES

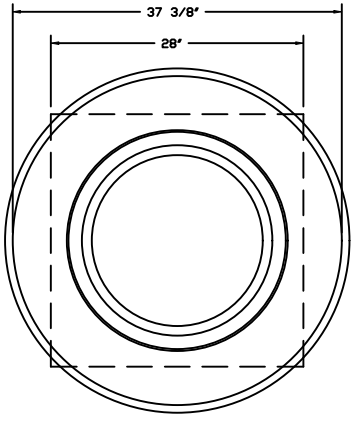
NO	ON FAN	WEIGHT	ITEM	SIZE
1	# 1	43 LBS	CURB	26.500"W X 26.500"L X 20.000"H VENTED HINGED.

Ventilation Direct

JOB Surt to Turf	
LOCATION Grand Junction, CO,	
DATE 3/22/2024	JOB # 6696458
DWG # 1	DRAWN BY WRB
REV.	SCALE 3/8" = 1'-0"

FAN #1 VXD200 - EXHAUST FAN





TOP VIEW

FEATURES:

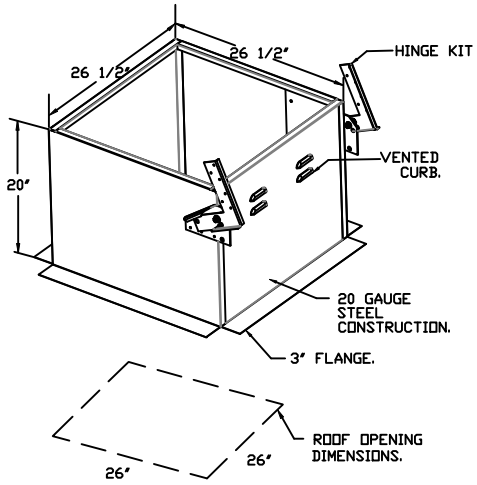
- DIRECT DRIVE CONSTRUCTION (NO BELTS/PULLEYS).
- ROOF MOUNTED FANS.
- RESTAURANT MODEL.
- UL705 AND UL762 AND ULC-S645
- VARIABLE SPEED CONTROL.
- INTERNAL WIRING.
- THERMAL OVERLOAD PROTECTION (SINGLE PHASE).
- HIGH HEAT OPERATION 300°F (149°C).
- GREASE CLASSIFICATION TESTING.
- NEMA 3R SAFETY DISCONNECT SWITCH.

NORMAL TEMPERATURE TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING AIR AT 300°F (149°C) UNTIL ALL FAN PARTS HAVE REACHED THERMAL EQUILIBRIUM, AND WITHOUT ANY DETERIORATING EFFECTS TO THE FAN WHICH WOULD CAUSE UNSAFE OPERATION.

ABNORMAL FLARE-UP TEST
EXHAUST FAN MUST OPERATE CONTINUOUSLY WHILE EXHAUSTING BURNING GREASE VAPORS AT 600°F (316°C) FOR A PERIOD OF 15 MINUTES WITHOUT THE FAN BECOMING DAMAGED TO ANY EXTENT THAT COULD CAUSE AN UNSAFE CONDITION.

OPTIONS

- GREASE BOX.
- VAV PACKAGE W/ MANUAL CONTROL (VFD INCLUDED).
- VFD FACTORY MOUNTED AND WIRED IN EXHAUST FAN.
- VFD MOUNTING BRACKET FOR DU/DR 180 - 200.
- EXHAUST FAN HEAT BAFFLE.
- 2 YEAR PARTS WARRANTY.



Ventilation Direct

JOB Surt to Turf	
LOCATION Grand Junction, CO,	
DATE 3/22/2024	JOB # 6696458
DWG # 2	DRAWN BY WRB
REV.	SCALE 3/8" = 1'-0"

GREASE DUCT & CHIMNEY SPECIFICATIONS:
PROVIDE GREASE DUCT EQUAL TO VENTILATION DIRECT MODEL "VDW" ROUND 20 GAUGE 430 STAINLESS STEEL DUCTWORK. MODEL "VDW" IS LISTED TO UL-1978 AND IS INSTALLED USING "V" CLAMP LOCKING CONNECTIONS SEALED WITH 3M FIRE BARRIER 2000 PLUS. MODEL "VDW" 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 "VDW" 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 VENTILATION DIRECT MODEL "VDW- 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 _____ _____

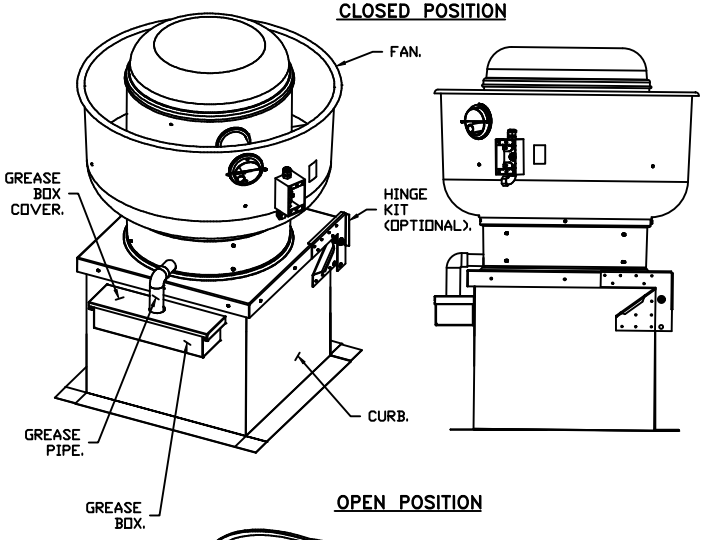
Ventilation Direct

JOB Surt to Turf	
LOCATION Grand Junction, CO,	
DATE 3/22/2024	*JOB #* 6696458
DWG # 3	*DRAWN BY* WRB
REV.	*SCALE* 3/8" = 1'-0"

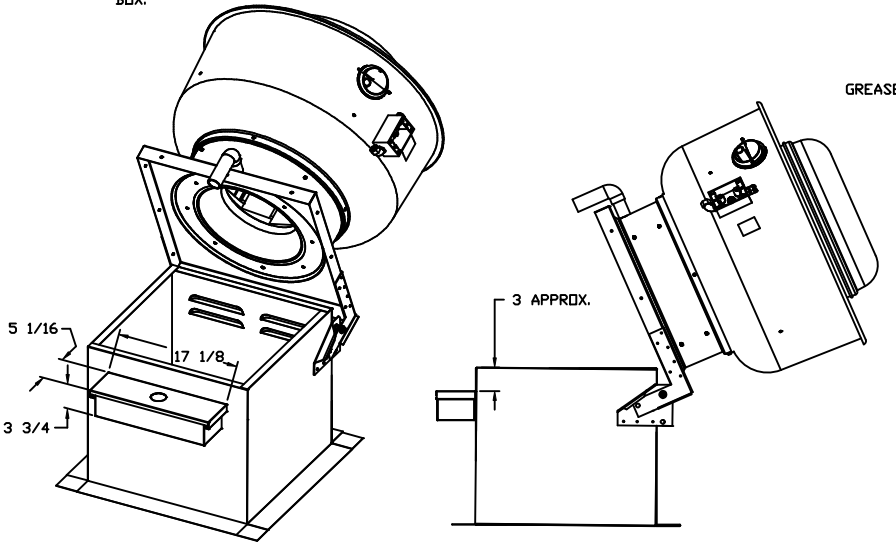
GREASEBOX
REV.#2 08/19/02

GREASE BOX INSTALLATION

CLOSED POSITION



OPEN POSITION



PARTS INCLUDED

GREASE BOX.
GREASE BOX COVER.
GREASE PIPE.

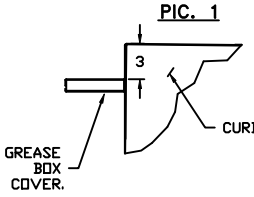
SHEET METAL SCREWS
3 - LONG (3/4" LG.).

GREASE BOX FIELD INSTALLATION

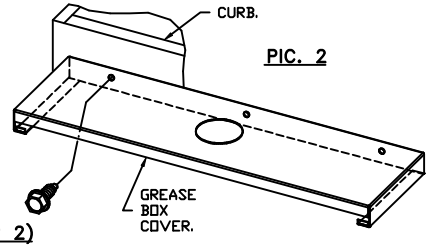
STEP 1)

ATTACH GREASE BOX COVER TO THE CURB,
HOLD 3" DIMENSION AS SHOWN ON PIC. 1.
SCREW GREASE BOX COVER TO CURB USING (3) LONG (3/4" LG.)
SCREWS AS SHOWN ON PIC. 2.

PIC. 1



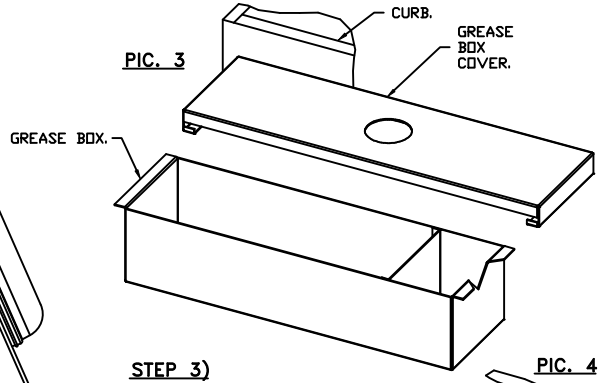
PIC. 2



STEP 2)

ATTACH GREASE BOX TO GREASE BOX COVER, SLIDE AND DROP.
AS SHOWN ON PIC. 3.

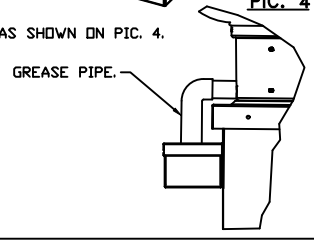
PIC. 3



STEP 3)

INSTALL GREASE PIPE AS SHOWN ON PIC. 4.

PIC. 4



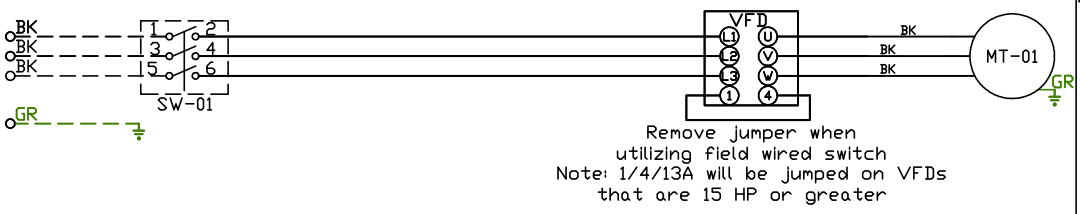
*NOTE: UL 705 INSTALL.

JOB Surt to Turf		
LOCATION Grand Junction, CO,		
DATE 3/22/2024	JOB #	6696458
DWG # 4	DRAWN BY	WRB
REV.	SCALE	3/8" = 1'-0"

Exhaust Fan Wiring

DRAWING NUMBER *EXH6696458-1*	SHIP DATE *3/22/2024*	MODEL **VXD200**

JOB *6696458 - Surt to Turf*



Remove jumper when
utilizing field wired switch
Note: 1/4/13A will be jumped on VFDs
that are 15 HP or greater

Installed Options

Component Identification

Label	Description	Location
MT-01	Fan Motor	[3]
SW-01	Main disconnect switch	[3]

MOTOR INFO

EXHAUST 5.0HP-208V-3P-15.0FLA
VFD PART: ESV402N02TXB

ELECTRICAL INFORMATION

MOTOR/CTRL MCA: 18.8A
MOTOR/CTRL MOP: 30A

NOTES

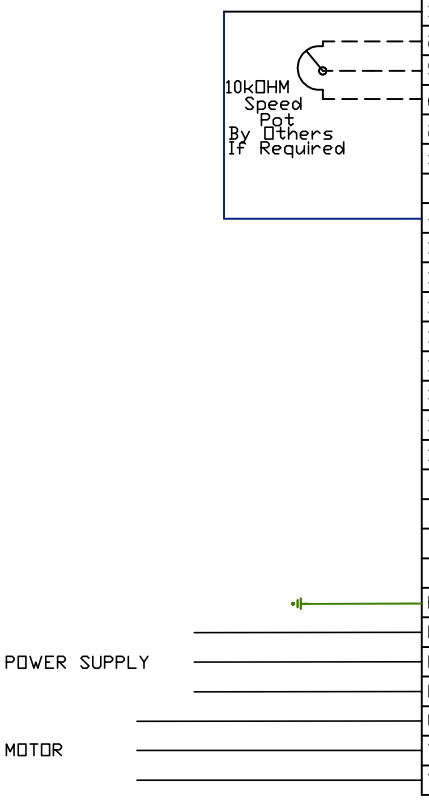
– – – – DENOTES FIELD WIRING
———— DENOTES INTERNAL WIRING

WIRE COLOR

BK - BLACK	YW - YELLOW
BL - BLUE	GR - GREEN
BR - BROWN	GY - GRAY
OR - ORANGE	PR - PURPLE
RD - RED	PK - PINK
WH - WHITE	

VFD Wiring	JOB 6696458 - Surt to Turf	
DRAWING NUMBER VFD6696458-1	SHIP DATE 3/22/2024	MODEL **VXD200**

SMV SERIES VARIABLE FREQUENCY DRIVE



TERMINAL	FUNCTION
1	Digital Input:(Start/Stop)
2	Analog Common
5	Analog Input: 0-10 VDC
6	Internal DC Supply for Speed Pot: +10 VDC
25	Analog Input: 4-20 mA
30	Analog Output
4	Digital Reference/Common
11	Internal 12VDC Supply for External Devices
13A	Digital Input: Configurable with P121
13B	Digital Input: Configurable with P122
13C	Digital Input: Configurable with P123
14	Digital Output: Configurable with P142
30	Analog Output: Configurable with P150...P155
16	Relay Output: Configurable with P140
17	
PE	Ground Terminal
L1	3 Phase Input or Single Phase Input
L2	3 Phase Input or Single Phase Input
L3 (N)	3 Phase input (Neutral for 120v)
U	3 Phase AC Motor
V	3 Phase AC Motor
W	3 Phase AC Motor

All external control wires to motor speed control should be 16-20 AWG shielded multiconductor cables and must not be run in the same conduit or raceway with any high power wiring. Ground Shielded Cable at the drive chasis ONLY.

PG. 11 OF THE DRIVE MANUAL DESCRIBES THE PROPER INSTALLATION PROCEDURE

PG. 19 OF THE DRIVE MANUAL DESCRIBES THE PROGRAMMING PROCEDURE OF THE DRIVE

PG. 23 OF THE DRIVE MANUAL DESCRIBES THE PARAMETER SETTINGS OF THE DRIVE

*NOTE: THE DEFAULT PASSWORD FROM THE FACTORY REQUIRED TO PROGRAM THE DRIVE IS "225".

VARIABLE FREQUENCY DRIVE PARAMETER SETTINGS*

EPM PROGRAM: VAV_MANUSE LG_HP EPM IF >= 15HP)
P100 (Start Source) = 01 (Terminal Strip)
P102 = **Minimum Frequency (Hz)
P103 = **Maximum Frequency (Hz)
(P103 is based on max wheel RPM)
P110 (Start Method) = 03 (Auto Re-start)
P140 (Form A [NO] Relay) = 01 (Run)
P144 (Relay Inversion) = 00 (None)
P166 (Carrier Frequency) = 00 (4 kHz)
P171 (Current Limit) = 150 (% of Max I)

Adjust manually on all drives
P107 - 00 (If 120 or 208 VAC)
or 01 (If 230, 480 or 575 VAC)
P108 - Motor FLA x 100 / Drive Output Rating
P165 (Base Voltage) = Set to Motor Voltage
(Preset@230V) P165 FOR STANDARD DRIVE ONLY
P167 (Base Frequency) = Calculated Per Fan

FOR KB PCU ONLY: P300 = 0

When Speed POT is Required the Following Parameters Must be Set:
P101 (Reference Source) = 01 (0-10 VDC)
P160 (Speed @ 0 VDC Signal) = Min Frequency
P161 (Speed @ 10 VDC Signal) = Max Frequency

IT MAY BE REQUIRED TO FULLY POWER DOWN THE DRIVE AND TURN BACK ON IN ORDER TO INIATIATE NEW PARAMETER SETTINGS.

**Min. and Max. Frequency Settings override all other Preset speeds/Parameters.

GENERAL NOTES

Installed Options
Manual Control

Component Identification

MOTOR INFO
EXHAUST 5.0HP-208V-3P-15.0FLA
VFD PART: ESV402N02TXB

ELECTRICAL INFORMATION
MOTOR/CTRL MCA: 18.8A
MOTOR/CTRL MOP: 30A

NOTES
- - - - DENOTES FIELD WIRING
———— DENOTES INTERNAL WIRING

WIRE COLOR
BK - BLACK
BL - BLUE
BR - BROWN
OR - ORANGE
RD - RED
WH - WHITE
YW - YELLOW
GR - GREEN
GY - GRAY
PR - PURPLE
PK - PINK

ELECTRICAL LEGEND

	2'X4' FLUOR. TROFFER		DUPLEX RECEPTACLE
	TRACK LIGHT, LENGTH PER PLAN		DOUBLE DUPLEX RECEPTACLE
o	DOWNLIGHT FIXTURE		SPECIAL OUTLET, AMPERAGE AS SHOWN
K	KEYLESS LIGHT FIXTURE	J	JUNCTION BOX
	EXIT SIGN W/ BATTERY PACK		3/4" TELE/DATA STUBBED ABOVE CEILING
$	SINGLE POLE SWITCH		DISCONNECT SWITCH
$3	THREE WAY SWITCH		PANELBOARD
$T	TIME SWITCH	EF	EXHAUST FAN
$D	DIMMER SWITCH, WATTAGE AS REQUIRED	AC	ABOVE COUNTER
	EMERGENCY LIGHT W/ BATTERY PACK	GFI	GROUND FAULT CIRCUIT INTERRUPTER
	COMBO EXIT/EM LIGHT W/ BATT. PACK		DUCT DETECTOR
	CORD DROP RECEPTACLE	OS	OCCUPANCY SENSOR

NOTE: NOT ALL DEVICES ARE USED.

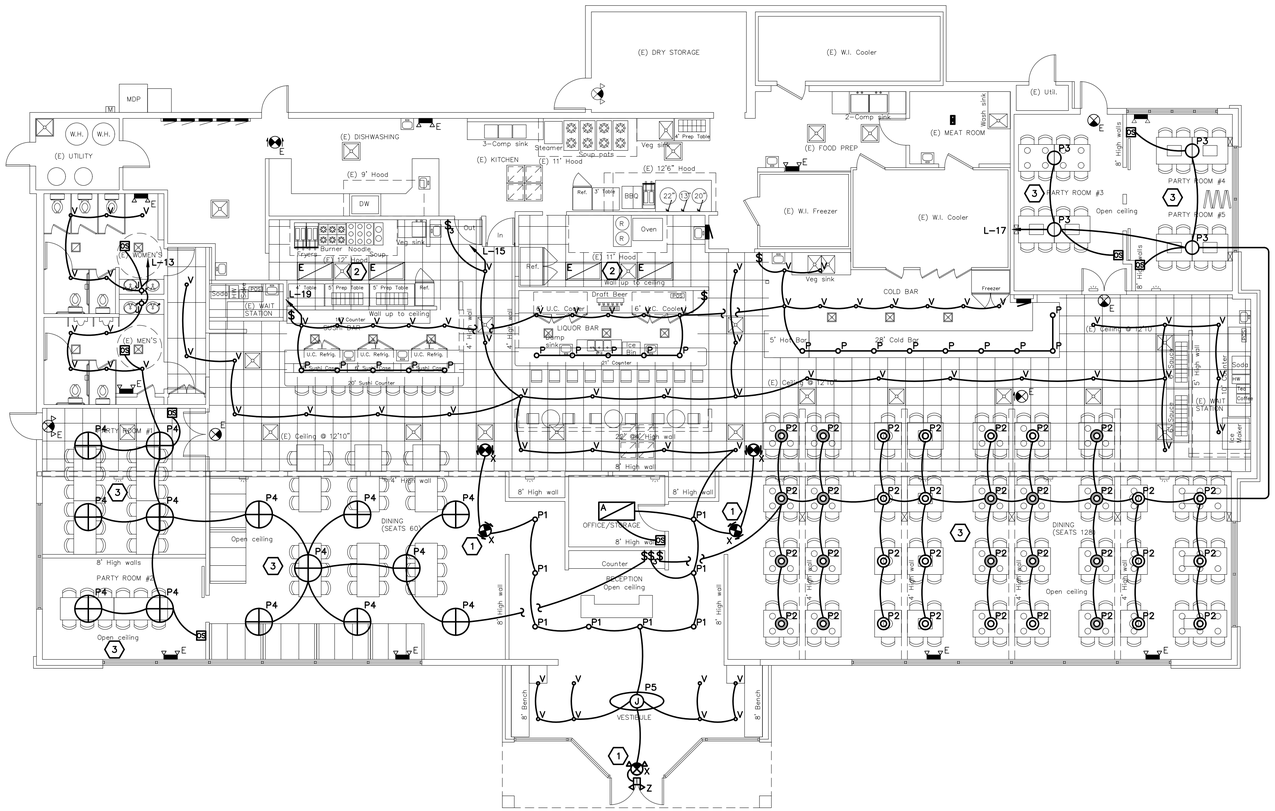
ELECTRICAL SPECIFICATIONS:

1. ALL WORK SHALL BE PERFORMED PER CURRENT ADOPTED NATIONAL ELECTRIC CODE AND ANY APPLICABLE FEDERAL, STATE AND LOCAL CODES.
2. ELECTRICAL CONTRACTOR (E.C.) SHALL PROVIDE ALL NECESSARY LABOR AND MATERIALS AS REQUIRED FOR A COMPLETE AND FUNCTIONAL ELECTRICAL SYSTEM.
3. E.C. SHALL OBTAIN AND PAY FOR ALL ELECTRICAL PERMITS, FEES, TAXES AND LICENSES AS NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE ELECTRICAL WORK.
4. E.C. SHALL EXAMINE ALL THE CONSTRUCTION DOCUMENTS AND VISIT THE SITE TO VERIFY EXISTING CONDITIONS PRIOR TO BID. REPORT ANY DISCREPANCIES AND/OR CONFLICTS TO THE DESIGN TEAM.
5. ALL MATERIALS AND EQUIPMENT SHALL BE U.L. LISTED OR RECOGNIZED TESTING AGENCIES. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND DIRECTIONS.
6. ALL CONDUITS SHALL BE RUN PERPENDICULAR OR PARALLEL AND CONCEALED IN CEILING AND WALLS. CONDUCTORS TO BE RATED 75°C AND #12 COPPER MINIMUM EXCEPT FOR NOTED CONTROL WIRING.
7. COORDINATE EXACT EQUIPMENT LOCATION AND REQUIREMENT WITH EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN AND PROVIDE ALL NECESSARY LINE VOLTAGE CONNECTION AS REQUIRED.
8. PROVIDE ENGRAVED PLAQUE LABELS FOR DISTRIBUTION BOARDS AND PANELBOARDS. IN ADDITION, EACH PANELBOARD SHALL HAVE A NEATLY LABELED PANEL DIRECTORY.
9. REFER TO ARCHITECTURAL PLANS FOR MOUNTING HEIGHTS, DETAILS OR ANY DEMOLITION REQUIRED SUCH AS ELECTRICAL DEVICES, CONDUITS AND WIRES IN WALLS AND CEILINGS TO BE REMOVED.
10. MOUNT THE CENTER OF LIGHT SWITCHES AT +48" AFF AND RECEPTACLES AT +18" AFF UNLESS NOTED OTHERWISE. PROVIDE WHITE PLATES UNLESS NOTED OTHERWISE.
11. MC CABLE SHALL NOT BE ALLOWED WHERE VISIBLE EXCEPT FOR LIGHT FIXTURE WHIP LESS THAN 6' ABOVE GRID CEILING.

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	LAMP	MTG. TYPE	MANUFACTURER & CATALOG NO.	VOLT	VA
A	2X4 LED LIGHT	LED	RECESSED	FURNISHED BY OWNER (INSTALL BY E.C.)	120	45
E	EXISTING LIGHT	–	–	EXISTING TO REMAIN	–	–
J	VANITY LIGHT	LED	SURFACE	FURNISHED BY OWNER (INSTALL BY E.C.)	120	20
P	PENDANT LIGHT	LED	SURFACE	FURNISHED BY OWNER (INSTALL BY E.C.)	120	10
P1	CYLINDER PENDANT LIGHT	LED	SURFACE	FURNISHED BY OWNER (INSTALL BY E.C.)	120	10
P2	LATERN PENDANT LIGHT	LED	SURFACE	FURNISHED BY OWNER (INSTALL BY E.C.)	120	10
P3	PARTY RM PENDANT LIGHT	LED	SURFACE	FURNISHED BY OWNER (INSTALL BY E.C.)	120	20
P4	LARGE PENDANT LIGHT	LED	SURFACE	FURNISHED BY OWNER (INSTALL BY E.C.)	120	30
P5	ENTRY DECORATIVE LIGHT	LED	SURFACE	FURNISHED BY OWNER (INSTALL BY E.C.)	120	50
V	LED DOWNLIGHT	LED	RECESSED	FURNISHED BY OWNER (INSTALL BY E.C.)	120	10
X	COMBO LED EXIT/EGRESS W/ EM	LED	SURFACE	LITHONIA LHQM-SW3G-120-ELN OR EQUIV.	120	5
Y	EMERG. EGRESS W/ EM BATT.	LED	SURFACE	LITHONIA ELM2 OR EQUIV.	120	–
Z	TWIN EMERG. LED REMOTE HEAD	LED	SURFACE	LITHONIA TEA-W-NX OR EQUIV.	120	–

NOTE: NOT ALL LIGHT FIXTURES WILL BE USED.



1 E-1 LIGHTING PLAN
SCALE: 1/8" = 1'-0"

WORK NOTES:

1. CONNECT EXIT/EM LIGHTS TO THE NEAREST CIRCUIT AHEAD OF LOCAL SWITCHING. (TYPICAL)
2. REPLACE EXISTING FLUORESCENT LAMPS WITH LED. (TYP.)
3. PROVIDE UNISTRUT OR REQUIRED MATERIALS TO SUPPORT PENDANT LIGHT IN THIS AREA. (TYP.)

GENERAL NOTES:

1. PROVIDE ADDITIONAL EGRESS LIGHTS IF REQUIRED BY FIELD INSPECTOR TO ACHIEVE A MINIMUM OF 1 FOOTCANDLE FOR EGRESS PATH PER BUILDING CODE.
2. ALL LIGHT FIXTURES IN FOOD PREPARATION AREAS SHALL HAVE PROTECTIVE SHIELDING. SHATTERPROOF BULBS OR PAR LAMPS ARE ACCEPTABLE.
3. LETTER NEXT TO ELECTRICAL DEVICES INDICATION:
   AW – ABOVE WINDOW
   E OR (E) – EXISTING TO REMAIN
   ER – EXISTING TO BE RELOCATE
   R OR (R) – RELOCATED (NEW LOCATION)
   D – DEVICE TO BE DEMOLISHED

CODE: 2023 NEC & 2018 IECC

04-01-24 PERMIT SET

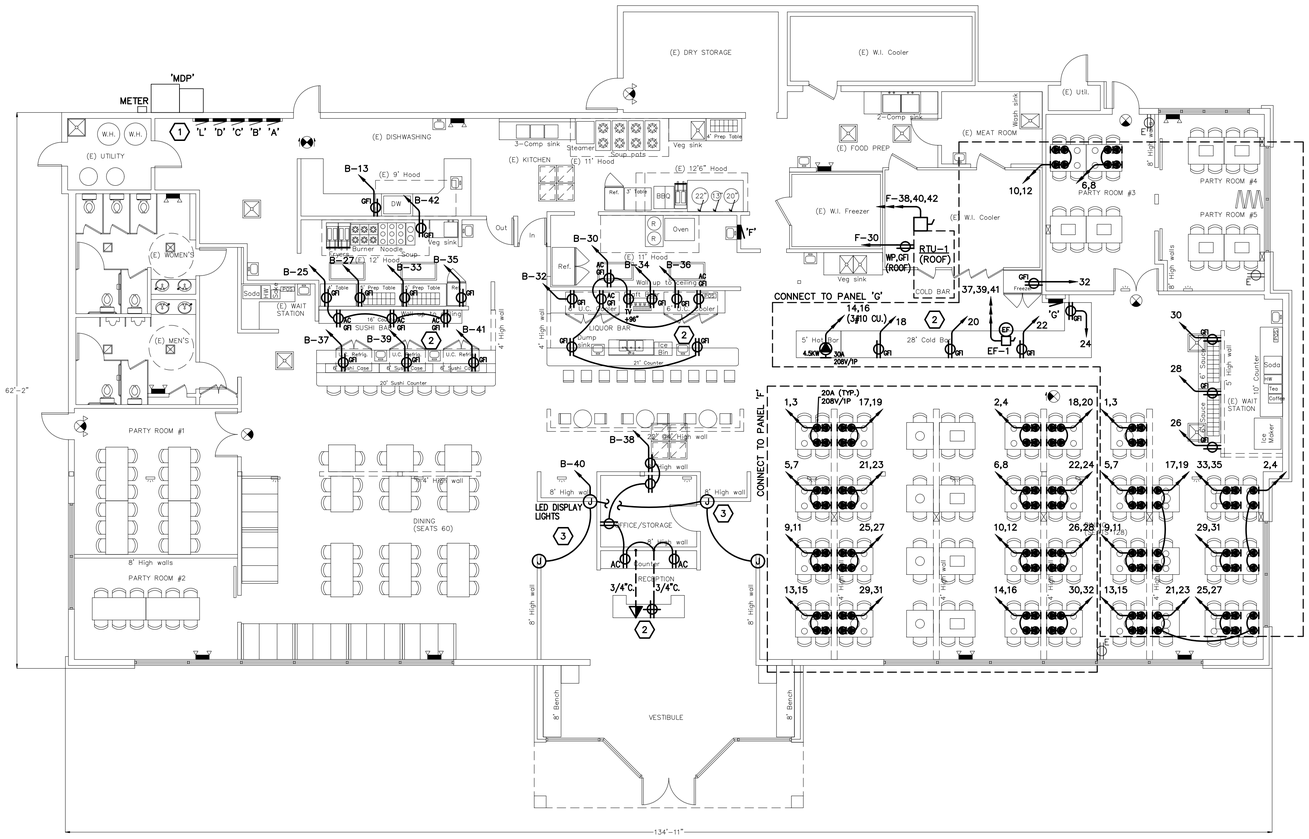
Skyview
ENGINEERING, INC.
6912 W. IOWA AVE.
LITTLETON, CO 80123
PH: (303) 250-5541
skyview1869@msn.com

SURF TO TURF
TENANT FINISH
1100 INDEPENDENCE AVE.
GRAND JUNCTION, COLORADO 81505

Drawing Title
ELEC. SPECS & LIGHTING PLAN

Stamp
COLORADO REGISTERED KEVIN T. LIEU 35728 PROFESSIONAL ENGINEER
04-01-24

Designed	KL
Drawn	KL
Checked	KL
Reviewed	
Date	04-01-24
Project No.	P2404
Sheet No.	E-1
	of



2 E-2 **POWER PLAN**
SCALE: 1/8" = 1'-0"

MECHANICAL EQUIPMENT SCHEDULE

TYPE	VOLT	PHASE	HP/KW	FLA/(MCA)	DISC.	MOCP	FEEDER	NOTES
RTU-1	208	3	–	(67)	100/3	80A	(3)#3 CU. & 1(#8G)1-1/4"C.	NEMA 3R DISC.
EF-1	208	3	5 HP	15	30/3	20A	(3)#12 CU. & 1(#12G)1/2"C.	NEMA 3R DISC.

WORK NOTES:

1. EXISTING ELECTRICAL SERVICE AND PANELS TO REMAIN.
2. COORDINATE AND MOUNT DEVICES IN MILLWORK.
3. COORDINATE AND PROVIDE POWER FOR LED DISPLAY LIGHTS.

GENERAL NOTES:

1. VERIFY EXISTING ROOF RECEPTACLE TO BE WITHIN 25' OF HVAC EQUIPMENT. PROVIDE ADDITIONAL RECEPTACLE IF REQUIRED.
2. ALL RECEPTACLES IN KITCHEN, RESTROOMS OR WITHIN 6' OF A SINK SHALL HAVE GFI PROTECTION. GFI RECEPTACLE SHALL BE READILY ACCESSIBLE OR PROVIDE GFI CIRCUIT BREAKER IN THE PANEL.
3. LETTER NEXT TO ELECTRICAL DEVICES INDICATION:
   AW – ABOVE WINDOW
   E OR (E) – EXISTING TO REMAIN
   ER – EXISTING TO BE RELOCATE
   R OR (R) – RELOCATED (NEW LOCATION)
   D – DEVICE TO BE DEMOLISHED

04-01-24 PERMIT SET

Skyview
ENGINEERING, INC.
2212 W. IRISE AVE.
LITTLETON, CO 80123
PH: (303) 250-3641
skyview1889@msn.com

SURF TO TURF
TENANT FINISH
1100 INDEPENDENCE AVE.
GRAND JUNCTION, COLORADO 81505

Drawing Title
POWER PLAN

Stamp
COLORADO REGISTERED
KEVIN T. LIEU
35728
PROFESSIONAL ENGINEER
04-01-24

Designed KL
Drawn KL
Checked KL
Reviewed
Date 04-01-24
Project No. P2404
Sheet No. E-2
of

Panel 'A' (EXISTING)

Service: 120/208 Volt, 3 Phase, 4 Wire
Panel Type:
Mounting: Surface
Mains: MLO
AIC: 22K
Bus: 400
Poles: 42
Comments:

Code	Description	Load	Bkr	P	Circuit	P	Bkr	Load	Description	Code
M	AHU-1	7560	90	3	1 A 2	3	80	6720	AHU-2	M
M	"	7560	/		3 B 4		/	6720	"	M
M	"	7560	/		5 C 6		/	6720	"	M
M	W.I. COOLER	2100	35	3	7 A 8	3	40	3036	W.I. FREEZER	M
M	"	2100	/		9 B 10		/	3036	"	M
M	"	2100	/		11 C 12		/	3036	"	M
	SPARE		20	2	13 A 14	3	60	5796	COMPACTOR	M
	"		/		15 B 16		/	5796	"	M
	SPARE		20	2	17 C 18		/	5796	"	M
	"		/		19 A 20	1	20	1500	FF-1	M
E	NU-VU BAKERY	2000	30	3	21 B 22	1	20	1500	FF-2	M
E	"	2000	/		23 C 24	1	20	1500	FF-3	M
E	"	2000	/		25 A 26	1	20	600	HOOD LIGHTS	L
E	ALTO-SHAM	2548	35	2	27 B 28	1	20	300	HOOD	X
E	"	2548	/		29 C 30	1	20	1127	EF-1	M
E	ICE MAKER	2100	30	3	31 A 32	1	20	1127	EF-2	M
E	"	2100	/		33 B 34	1	20	1127	EF-3	M
E	"	2100	/		35 C 36	1	20	1127	SF-1	M
E	HOT HOLDING	2000	30	2	37 A 38	1	20	1127	SF-2	M
E	"	2000	/		39 B 40	1	20	1127	SF-4	M
			20	1	41 C 42	1	20		SPARE	

Code	Description	Conn.	DF	NEC Demand	Load Summary	Balance
L	Lighting	0.60	125%	0.75 KVA		
R	Recpt up to 10 kVA	0.00	100%	0.00 KVA	Phase A	35.67 KVA 33%
	Recpt over 10 kVA	0.00	50%	0.00 KVA	Phase B	37.91 KVA 35%
M	Motor	79.34	100%	79.34 KVA	Phase C	35.61 KVA 33%
	Largest Motor	7.56	125%	9.45 KVA		
E	Equipment	21.40	100%	21.40 KVA	Connected	109.19 KVA
A	Appliances	0.00	65%	0.00 KVA	Design	144.00 KVA
X	Misc. Equipment / Mixed Loads	0.30	100%	0.30 KVA	Demand	111.23 KVA
	Connected Total	109.19 KVA		Demand Total 111.23 KVA	Spare	32.77 KVA
	Connected Load	303.32 Amps		Demand Load 308.98 Amps		
				Spare Load 91.02 Amps	NEC Demand	111.23 KVA
				Service Design Load 400 Amps	NEC Demand	308.98 Amps

SHOWN FOR REFERENCE ONLY.

Panel 'B' (EXISTING)

Service: 120/208 Volt, 3 Phase, 4 Wire
Panel Type: SIEMENS
Mounting: Surface
Mains: MLO
AIC: 22K
Bus: 400
Poles: 42
Comments:

Code	Description	Load	Bkr	P	Circuit	P	Bkr	Load	Description	Code
M	AHU-3	7452	80	3	1 A 2	3	60	5796	AHU-4	M
M	"	7452	/		3 B 4		/	5796	"	M
M	"	7452	/		5 C 6		/	5796	"	M
	SPARE (DISH WASHER)		70	3	7 A 8	3	40		SPARE (NU-VU BAKERY)	
	"		/		9 B 10		/		"	
	"		/		11 C 12		/		"	
E	* DISHWASHER	1800	20	1	13 A 14	2	20	1500	TEA BREWER	E
A	MICROWAVE	1500	20	1	15 B 16		/	5796	"	E
A	"	1500	/		17 C 18	2	20	1500	TEA BREWER	E
X	HOOD CONTROLS	300	30	1	19 A 20		/	1500	"	E
L	HOOD LIGHTS	600	20	1	21 B 22	2	20	1500	COFFEE BREWER	E
	SPARE		20	1	23 C 24		/	1500	"	E
R	* SUSHI - COUNTER RECEPT	720	20	1	25 A 26	2	20	1500	COFFEE BREWER	E
E	* SUSHI - PREP TABLE	897	20	1	27 B 28		/	1500	"	E
E	HOT WATER	6000	70	2	29 C 30	1	20	1080	* LIQ BAR - COUNTER REC	R
E	"	6000	/		31 A 32	1	20	978	* LIQ BAR - UC COOLER	E
E	* SUSHI - PREP TABLE	897	20	1	33 B 34	1	20	978	* LIQ BAR - UC COOLER	E
E	* SUSHI - REFRIG.	780	20	1	35 C 36	1	20	978	* LIQ BAR - UC COOLER	E
E	* SUSHI - UC REFRIG.	575	20	1	37 A 38	1	20	1260	* OFFICE/RECEPTION REC	R
E	* SUSHI - UC REFRIG.	575	20	1	39 B 40	1	20	960	* LED DISPLAY LIGHTS	L
E	* SUSHI - UC REFRIG.	575	20	1	41 C 42	1	20	600	* DED RECEPT	R

Code	Description	Conn.	DF	NEC Demand	Load Summary	Balance
L	Lighting	1.56	125%	1.95 KVA		
R	Recpt up to 10 kVA	3.66	100%	3.66 KVA	Phase A	29.38 KVA 36%
	Recpt over 10 kVA	0.00	50%	0.00 KVA	Phase B	24.16 KVA 30%
M	Motor	32.29	100%	32.29 KVA	Phase C	27.76 KVA 34%
	Largest Motor	7.45	125%	9.32 KVA		
E	Equipment	33.03	100%	33.03 KVA	Connected	81.30 KVA
A	Appliances	3.00	65%	1.95 KVA	Design	144.00 KVA
X	Misc. Equipment / Mixed Loads	0.30	100%	0.30 KVA	Demand	82.50 KVA
	Connected Total	81.30 KVA		Demand Total 82.50 KVA	Spare	61.50 KVA
	Connected Load	225.83 Amps		Demand Load 229.17 Amps		
	* NEW/REVISED LOADS			Spare Load 170.83 Amps	NEC Demand	82.50 KVA
				Service Design Load 400 Amps	NEC Demand	229.17 Amps

Panel 'C' (EXISTING)

Service: 120/208 Volt, 3 Phase, 4 Wire
Panel Type:
Mounting: Flush
Mains: MLO
AIC: 22K
Bus: 400
Poles: 42
Comments:

Code	Description	Load	Bkr	P	Circuit	P	Bkr	Load	Description	Code
M	AHU-5	5040	60	3	1 A 2	3	35		SPARE	
M	"	5040	/		3 B 4		/		"	
M	"	5040	/		5 C 6		/		"	
	SPARE (DESSERT BAR)		60	2	7 A 8	1	20	1127	TEA BREW/DISPOSAL	M
	"		/		9 B 10	1	20	1127	TEA BREW/DISPOSAL	M
	N/A		–		11 C 12	2	20	1248	WARMER CABINET	E
	"		100	3	13 A 14		/	1248	"	E
	"		/		15 B 16	1	20		SPARE	
			/		17 C 18	1	20	1500	TOILET WATER HEATER	X
	N/A		–		19 A 20	1	20	1127	MEAT SLICER	E
	SPARE		20	3	21 B 22	1	20	1127	MEAT CHOPPER	E
	"		/		23 C 24	1	20	1127	VEG CUTTER	E
	"		/		25 A 26	1	20	1200	FRONT SODA	E
	SPARE		60	3	27 B 28	1	20	1380	FREEZER	E
	"		/		29 C 30	1	20	100	SAFE	X
	"		/		31 A 32	1	20	1500	FOOD WARMER	E
	SPARE		40	3	33 B 34	1	20	1200	UC HOLD CABINET	E
	"		/		35 C 36	1	20	600	DRINK SYSTEM WEST	E
	"		/		37 A 38	3	20	1200	W.I. COOLER	M
	SPARE		20	1	39 B 40		/	1200	"	M
E	FREEZER	1380	20	1	41 C 42		/	1200	"	M

Code	Description	Conn.	DF	NEC Demand	Load Summary	Balance
L	Lighting	0.00	125%	0.00 KVA		
R	Recpt up to 10 kVA	0.00	100%	0.00 KVA	Phase A	12.44 KVA 35%
	Recpt over 10 kVA	0.00	50%	0.00 KVA	Phase B	11.07 KVA 31%
M	Motor	15.93	100%	15.93 KVA	Phase C	12.20 KVA 34%
	Largest Motor	0.00	125%	6.30 KVA		
E	Equipment	13.14	100%	13.14 KVA	Connected	35.71 KVA
A	Appliances	0.00	65%	0.00 KVA	Design	144.00 KVA
X	Misc. Equipment / Mixed Loads	1.60	100%	1.60 KVA	Demand	36.97 KVA
	Connected Total	35.71 KVA		Demand Total 36.97 KVA	Spare	107.03 KVA
	Connected Load	99.20 Amps		Demand Load 102.70 Amps		
				Spare Load 297.30 Amps	NEC Demand	36.97 KVA
				Service Design Load 400 Amps	NEC Demand	102.70 Amps

SHOWN FOR REFERENCE ONLY.

Panel 'D' (EXISTING)

Service: 120/208 Volt, 3 Phase, 4 Wire
Panel Type:
Mounting: Flush
Mains: MLO
AIC: 22K
Bus: 400
Poles: 42
Comments:

Code	Description	Load	Bkr	P	Circuit	P	Bkr	Load	Description	Code
	N/A		–		1 A 2	3	20		MIXER	E
	SPARE (BOOSTER HEATER)		50	3	3 B 4		/		"	E
	"		/		5 C 6		/		"	E
	"		/		7 A 8	3	35		SPARE (PIZZA OVEN)	
	SPARE (ROTTISSERIE)		20	1	9 B 10		/		"	
	SPARE (ROTTISSERIE)		20	1	11 C 12		/		"	
X	DISPOSAL	1040	20	2	13 A 14	3	30	1667	STEAMER	E
X	"	1040	/		15 B 16		/	1667	"	E
			20	1	17 C 18		/	1667	"	E
	N/A		–		19 A 20	2	20	1500	HOT WATER	E
	SPARE (STEAMER)		35	3	21 B 22		/	1500	"	E
	"		/		23 C 24	1	20	100	SHUNT	X
	"		/		25 A 26	2	20	1250	CONV. OVEN	E
	SPARE (MIXER)		20	2	27 B 28		/	1250	"	E
	"		/		29 C 30	1	20	1000	EXISTING	X
	SPARE (PASSTHRU HEAT)		20	2	31 A 32	1	20	1000	EXISTING	X
	"		/		33 B 34	1	20		SPARE	
	"		20	1	35 C 36	2	20	1200	EXISTING	X
	SPARE (STEAMER)		50	3	37 A 38		/	1200	"	X
	"		/		39 B 40	3	50		SPARE (STEAMER)	
	"		/		41 C 42		/		"	

Code	Description	Conn.	DF	NEC Demand	Load Summary	Balance
L	Lighting	0.00	125%	0.00 KVA		
R	Recpt up to 10 kVA	0.00	100%	0.00 KVA	Phase A	7.66 KVA 45%
	Recpt over 10 kVA	0.00	50%	0.00 KVA	Phase B	5.46 KVA 32%
M	Motor	0.00	100%	0.00 KVA	Phase C	3.97 KVA 23%
	Largest Motor	0.00	125%	0.00 KVA		
E	Equipment	10.50	100%	10.50 KVA	Connected	17.08 KVA
A	Appliances	0.00	65%	0.00 KVA	Design	108.00 KVA
X	Misc. Equipment / Mixed Loads	6.58	100%	6.58 KVA	Demand	17.08 KVA
	Connected Total	17.08 KVA		Demand Total 17.08 KVA	Spare	90.92 KVA
	Connected Load	47.45 Amps		Demand Load 47.45 Amps		
				Spare Load 252.55 Amps	NEC Demand	17.08 KVA
				Service Design Load 300 Amps	NEC Demand	47.45 Amps

SHOWN FOR REFERENCE ONLY.

Panel 'L' (EXISTING)

Service: 120/208 Volt, 3 Phase, 4 Wire
Panel Type:
Mounting: Flush
Mains: MLO
AIC: 10K
Bus: 225
Poles: 42
Comments:

Code	Description	Load	Bkr	P	Circuit	P	Bkr	Load	Description	Code
	SPARE		30	2	1 A 2	2	60		SPARE	
	"		/		3 B 4		/		"	
	SPARE (ICE MACHINE)		20	2	5 C 6	1	20	200	LED LIGHTS	L
	"		/		7 A 8	1	20	1200	BUILDING SIGN	X
	SPARE		30	2	9 B 10	1	20	1200	FRONT SIGN	X
	"		/		11 C 12	1	20	1000	BUILDING LIGHTS	L
L	* SUSHI DINING & RESTRM LTS	560	20	1	13 A 14	1	20		SPARE (TRACK LIGHTS)	
L	* ENTRY & HALL LIGHTS	590	20	1	15 B 16	1	20		SPARE (TRACK LIGHTS)	
L	* HOTPOT/GRILL AREA LTS	420	20	1	17 C 18	1	20		SPARE (TRACK LIGHTS)	
L	* SERVICE AREA LIGHTS	380	20	1	19 A 20	1	20		SPARE (TRACK LIGHTS)	
L	TOILET AREA	500	20	1	21 B 22	1	20		SPARE (BUFFET LIGHTS)	
L	EXT. WALL BRACKETS	600	20	1	23 C 24	1	20		SPARE (BAKERY/FOOD PREP)	
L	* ENTRY AREA		20	1	25 A 26	1	20	600	COOLER/FREEZER LIGHTS	L
L	WAIT STATION #2	192	20	1	27 B 28	1	20	384	COOK #2/DISH WASH	L
L	EMER/EXIT LIGHTS	200	20	1	29 C 30	1	20	384	COOK #1/DRY STORAGE	L
X	TELEPHONE EQUIP.	360	20	1	31 A 32	1	20	100	TIME CLOCKS	X
X	COMPUTERS	600	20	1	33 B 34	1	20	360	WAIT CALL/MUSAK	X
X	PRINTERS	600	20	1	35 C 36	1	20	360	DINING ROOM REC.	R
X	PHOTOCELL	100	20	1	37 A 38	3	20	828	EXHAUST FAN	M
L	SHOW WINDOW LIGHTS	1200	20	1	39 B 40		/	828	"	M
X	PHOTOCELL	100	20	1	41 C 42		/	828	"	M

Code	Description	Conn.	DF	NEC Demand	Load Summary	Balance
L	Lighting	7.21	125%	9.01 KVA		
R	Recpt up to 10 kVA	0.36	100%	0.36 KVA	Phase A	4.13 KVA 28%
	Recpt over 10 kVA	0.00	50%	0.00 KVA	Phase B	5.85 KVA 40%
M	Motor	1.66	100%	1.66 KVA	Phase C	4.69 KVA 32%
	Largest Motor	0.83	125%	1.04 KVA		
E	Equipment	0.00	100%	0.00 KVA	Connected	14.67 KVA
A	Appliances	0.00	65%	0.00 KVA	Design	54.00 KVA
X	Misc. Equipment / Mixed Loads	4.62	100%	4.62 KVA	Demand	16.68 KVA
	Connected Total	14.67 KVA		Demand Total 16.68 KVA	Spare	37.32 KVA
	Connected Load	40.76 Amps		Demand Load 46.34 Amps		
	* NEW/REVISED LOADS			Spare Load 103.66 Amps	NEC Demand	16.68 KVA
				Service Design Load 150 Amps	NEC Demand	46.34 Amps

Panel 'F' (NEW)

Service: 120/208 Volt, 3 Phase, 4 Wire
Panel Type:
Mounting: Flush
Mains: MLO
AIC: 22K
Bus: 400
Poles: 42
Comments:

Code	Description	Load	Bkr	P	Circuit	P	Bkr	Load	Description	Code
A	HOTPOT REC	1600	20	2	1 A 2	2	20	1600	HOTPOT REC	A
A	"	1600	/		3 B 4		/	1600	"	A
A	HOTPOT REC	1600	20	2	5 C 6	2	20	1600	HOTPOT REC	A
A	"	1600	/		7 A 8		/	1600	"	A
A	HOTPOT REC	1600	20	2	9 B 10	2	20	1600	HOTPOT REC	A
A	"	1600	/		11 C 12		/	1600	"	A
A	HOTPOT REC	1600	20	2	13 A 14	2	20	1600	HOTPOT REC	A
A	"	1600	/		15 B 16		/	1600	"	A
A	HOTPOT REC	1600	20	2	17 C 18	2	20	1600	HOTPOT REC	A
A	"	1600	/		19 A 20		/	1600	"	A
A	HOTPOT REC	1600	20	2	21 B 22	2	20	1600	HOTPOT REC	A
A	"	1600	/		23 C 24		/	1600	"	A
A	HOTPOT REC	1600	20	2	25 A 26	2	20	1600	HOTPOT REC	A
A	"	1600	/		27 B 28		/	1600	"	A
A	HOTPOT REC	1600	20	2	29 C 30	1	20	180	ROOFTOP REC	R
A	"	1600	/		31 A 32		–		"	
A	HOTPOT REC	1600	20	2	33 B 34		–		"	
A	"	1600	/		35 C 36		–		"	
X	PANEL 'G'	19730	200	3	37 A 38	3	80	6432	RTU-1	M
X	"	18530	/		39 B 40		/	6432	"	M
X	"	17180	/		41 C 42		/	6432	"	M

Code	Description	Conn.	DF	NEC Demand	Load Summary	Balance
L	Lighting	0.00	125%	0.00 KVA		
R	Recpt up to 10 kVA	0.18	100%	0.18 KVA	Phase A	43.76 KVA 35%
	Recpt over 10 kVA	0.00	50%	0.00 KVA	Phase B	42.56 KVA 34%
M	Motor	12.86	100%	12.86 KVA	Phase C	39.79 KVA 32%
	Largest Motor	6.43	125%	8.04 KVA		
E	Equipment	0.00	100%	0.00 KVA	Connected	126.12 KVA
A	Appliances	51.20	65%	33.28 KVA	Design	144.00 KVA
X	Misc. Equipment / Mixed Loads	55.44	100%	55.44 KVA	Demand	109.80 KVA
	Connected Total	126.12 KVA		Demand Total 109.80 KVA	Spare	34.20 KVA
	Connected Load	350.32 Amps		Demand Load 305.01 Amps		
				Spare Load 94.99 Amps	NEC Demand	109.80 KVA
				Service Design Load 400 Amps	NEC Demand	305.01 Amps

Panel 'G' (NEW)

Service: 120/208 Volt, 3 Phase, 4 Wire
Panel Type:
Mounting: Flush
Mains: MLO
AIC: 10K
Bus: 225
Poles: 42
Comments:

Code	Description	Load	Bkr	P	Circuit	P	Bkr	Load	Description	Code
R	HOTPOT REC	1600	20	2	1 A 2	2	20	1600	HOTPOT REC	R
R	"	1600	/		3 B 4		/	1600	"	R
R	HOTPOT REC	1600	20	2	5 C 6	2	20	1600	HOTPOT REC	R
R	"	1600	/		7 A 8		/	1600	"	R
R	HOTPOT REC	1600	20	2	9 B 10	2	20	1600	HOTPOT REC	R
R	"	1600	/		11 C 12		/	1600	"	R
R	HOTPOT REC	1600	20	2	13 A 14	2	30	2250	HOT BAR	E
R	"	1600	/		15 B 16		/	2250	"	E
R	HOTPOT REC	1600	20	2	17 C 18	1	20	900	COLD BAR	E
R	"	1600	/		19 A 20	1	20	900	COLD BAR	E
R	HOTPOT REC	1600	20	2	21 B 22	1	20	900	COLD BAR	E
R	"	1600	/		23 C 24	1	20	900	COLD BAR	E
R	HOTPOT REC	1600	20	2	25 A 26	1	20	600	DED. REC	R
R	"	1600	/		27 B 28	1	20	780	SAUCE TABLE	E
R	HOTPOT REC	1600	20	2	29 C 30	1	20	780	SAUCE TABLE	E
R	"	1600	/		31 A 32	1	20	1380	FREEZER	E
R	HOTPOT REC	1600	20	2	33 B 34	1	20		SPARE	
R	"	1600	/		35 C 36	1	20		SPARE	
M	EF-1	1800	20	3	37 A 38		–			
M	"	1800	/		39 B 40		–			
M	"	1800	/		41 C 42		–			

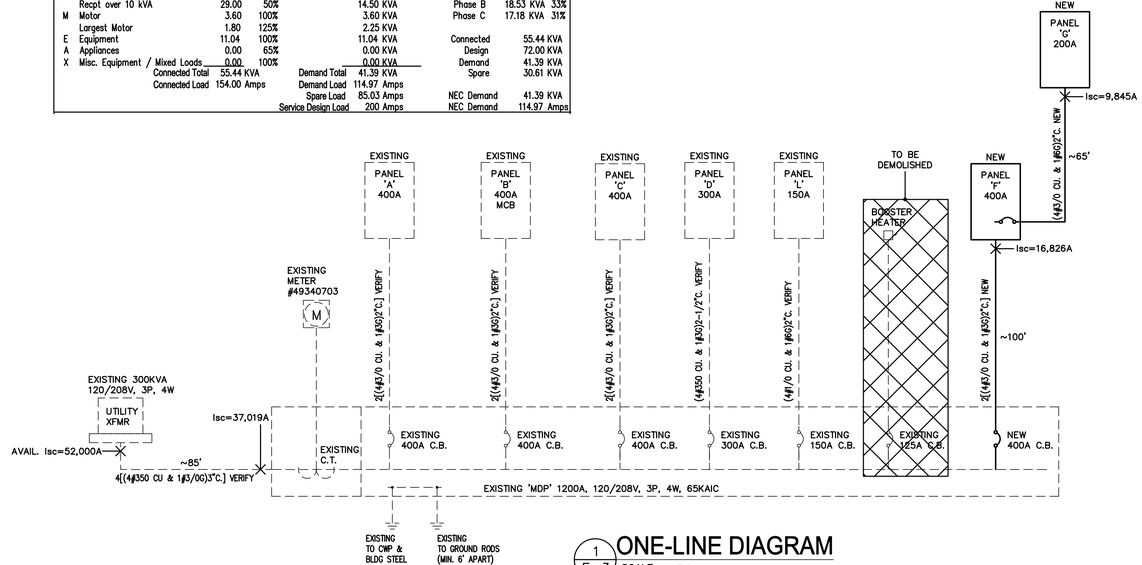
Code	Description	Conn.	DF	NEC Demand	Load Summary	Balance
L	Lighting	0.00	125%	0.00 KVA		
R	Recpt up to 10 kVA	10.00	100%	10.00 KVA	Phase A	19.73 KVA 36%
	Recpt over 10 kVA	29.00	50%	14.50 KVA	Phase B	18.53 KVA 33%
M	Motor	3.60	100%	3.60 KVA	Phase C	17.18 KVA 31%
	Largest Motor	1.80	125%	2.25 KVA		
E	Equipment	11.04	100%	11.04 KVA	Connected	55.44 KVA
A	Appliances	0.00	65%	0.00 KVA	Design	72.00 KVA
X	Misc. Equipment / Mixed Loads	0.00	100%	0.00 KVA	Demand	41.39 KVA
	Connected Total	55.44 KVA		Demand Total 41.39 KVA	Spare	30.61 KVA
	Connected Load	154.00 Amps		Demand Load 114.97 Amps		
				Spare Load 85.03 Amps	NEC Demand	41.39 KVA
				Service Design Load 200 Amps	NEC Demand	114.97 Amps

LOAD ANALYSIS

PANEL A	111 KVA
PANEL B	83 KVA
PANEL C	37 KVA
PANEL D	17 KVA
PANEL L	17 KVA
PANEL F	110 KVA
LARGEST MOTOR @ 25%	6 KVA
SPARE CAPACITY	18 KVA
TOTAL DESIGN LOAD	399 KVA

LOAD AMPERES = 399 KVA / (1.732 x 208 V) = 1108 AMPS

EXISTING SERVICE SIZE: 1200A



1 / E-3 ONE-LINE DIAGRAM
SCALE: N.T.S.

NOTE: LIGHT DASHED LINES INDICATE EXISTING AND DARK SOLID LINES INDICATE NEW.

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04-01-24 PERMIT SET

SURF TO TURF
TENANT FINISH
1100 INDEPENDENCE AVE.
GRAND JUNCTION, COLORADO 81505

ONE-LINE DIAGRAM & SCHEDULES

Drawing Title

Stamp

COLORADO REGISTERED KEVIN T. LIEU 35728 PROFESSIONAL ENGINEER
04-01-24

Designed: KL
Drawn: KL
Checked: KL
Reviewed:
Date: 04-01-24
Project No. P2404
Sheet No. E-3
of