

## Addendum # 2

Re: Jackson Hole Fire/EMS Pavilion Temporary Fire Station Bid

Date: October 19, 2017

### Clarifications, Questions & Answers:

- 1) Standard Contract form found on the Jackson Hole Fire/EMS website and in the bid documents is a “typical” Teton County construction contract. This typical contract will be modified as needed, and in agreed with both Teton Co. and the selected contractor.
- 2) Stock pens will be removed by the Teton Co. Fair staff. The construction site will be cleared and ready for construction by the Owner
- 3) Construction time is expected to be between 4 and 6 months. Once a contractor is selected a final completion date will be agreed upon and liquidated damages will be enforced after that date.
- 4) Steel studs are ok to be used on the construction of all walls as long as they meet all codes and structural requirements. All changes are the responsibility of the contractor
- 5) Interior trim is to match the existing at the Fair Grounds. That said;
  - Sheetrock walls will match the Fair Grounds office trim
  - Metal walls will match the Heritage Arena trim
  - Existing red steel beams will not be painted
- 6) Fire alarm wiring needs to meet the latest NEC book requirements. If by code, the fire alarm wiring doesn't have to be in conduit that is considered an approved method
- 7) A bid bond is a required part of the bid paperwork
- 8) Parking lot grading will keep the existing packed rock/gravel base. The only work on the parking lot will be to clean-up and re-grade anything that was disturbed during construction. The jersey barriers and signage that will define the parking lot will be provided and installed by the owner
- 9) Grease trap doesn't have to be traffic rated
- 10) Roof insulation is continuous throughout the entire roof to keep the new wet fire sprinkler system from freezing above the existing office area.
- 11) Foundation insulation blue board runs around the entire exterior concrete stem wall of the new construction area

## Addendum # 2

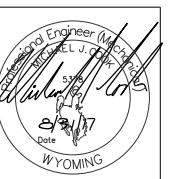
12) Buried interior utilities will have to work around existing buried tension lines as needed

13) Roof condition is in satisfactory condition for this project per our consultant

14) CN Engineers notes and drawing clarifications are described below and attached;

### MECHANICAL:

- 1) Exhaust fan in training room shall be labeled PF-2. This fan and control damper shall be controlled by a timer switch. See exhaust fan schedule on sheet M-301.
- 2) Exhaust fans and control dampers in equipment room shall be controlled by the Toxalert GVU-6 control panel and relay. See electrical drawings.
- 3) Exhaust fan EF-3 in equipment room shall be labeled EF-2. This fan shall operate continuously, switched from the breaker switch.
- 4) All PEX piping shall be installed with fittings above grade.
- 5) The 3/4" 2 PSI gas line shall be changed to 1". See sheet M-200.
- 6) Install 3/4" gas line up to rooftop make-up air unit.
- 7) All gas piping to equipment shall be installed with regulators reducing the pressure from 2 psi down to the equipment's operating pressure.
- 8) Domestic water recirculation pump shall be eliminated in west bathroom. Rough-in recirculation line to future kitchen for future use.
- 9) Eliminate mixing valve on west water heater.
- 10) Shower models are specified in schedule on sheet M-301
- 11) There are two thermostats in the equipment room, one for each gas unit heater.
- 12) There are two cleanouts at sewer leaving building. Refer to town details.
- 13) Provide Twin City weather hood and bird screen on intake air and generator exhaust air.
- 14) Roof curb on kitchen makeup air unit shall be custom manufactured.
- 15) See kitchen hood sheets attached for all fire suppression and controls.



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## MECHANICAL LEGEND

ALL SYMBOLS SHOWN ON LEGEND  
ARE NECESSARILY USED.

## ROUND DUCT TAKE-OFF

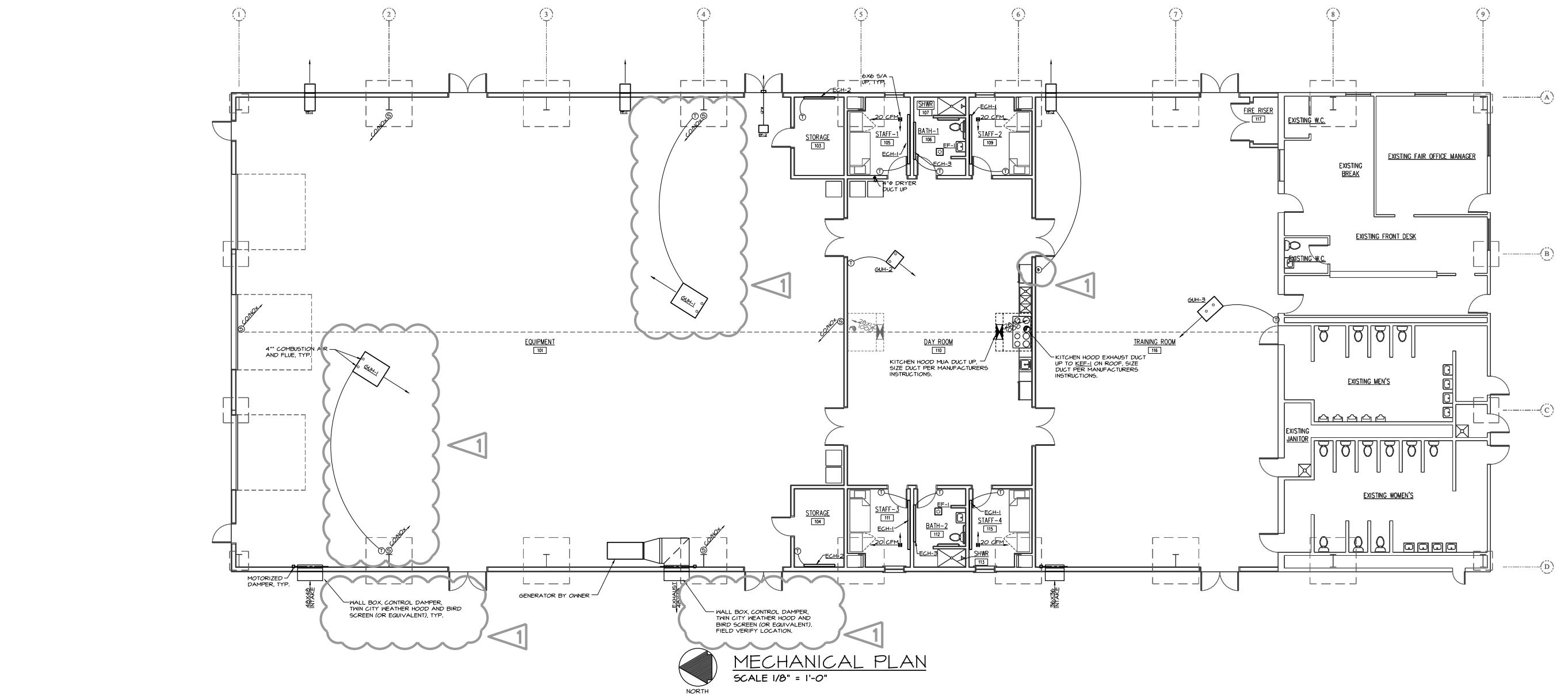
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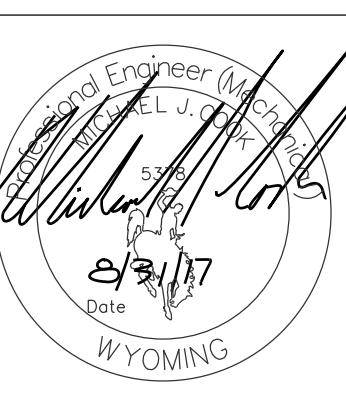
## DUCT FITTING DETAIL

NO SCAL

## DUCT ELBOW DETAIL

NO SCALE



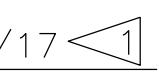


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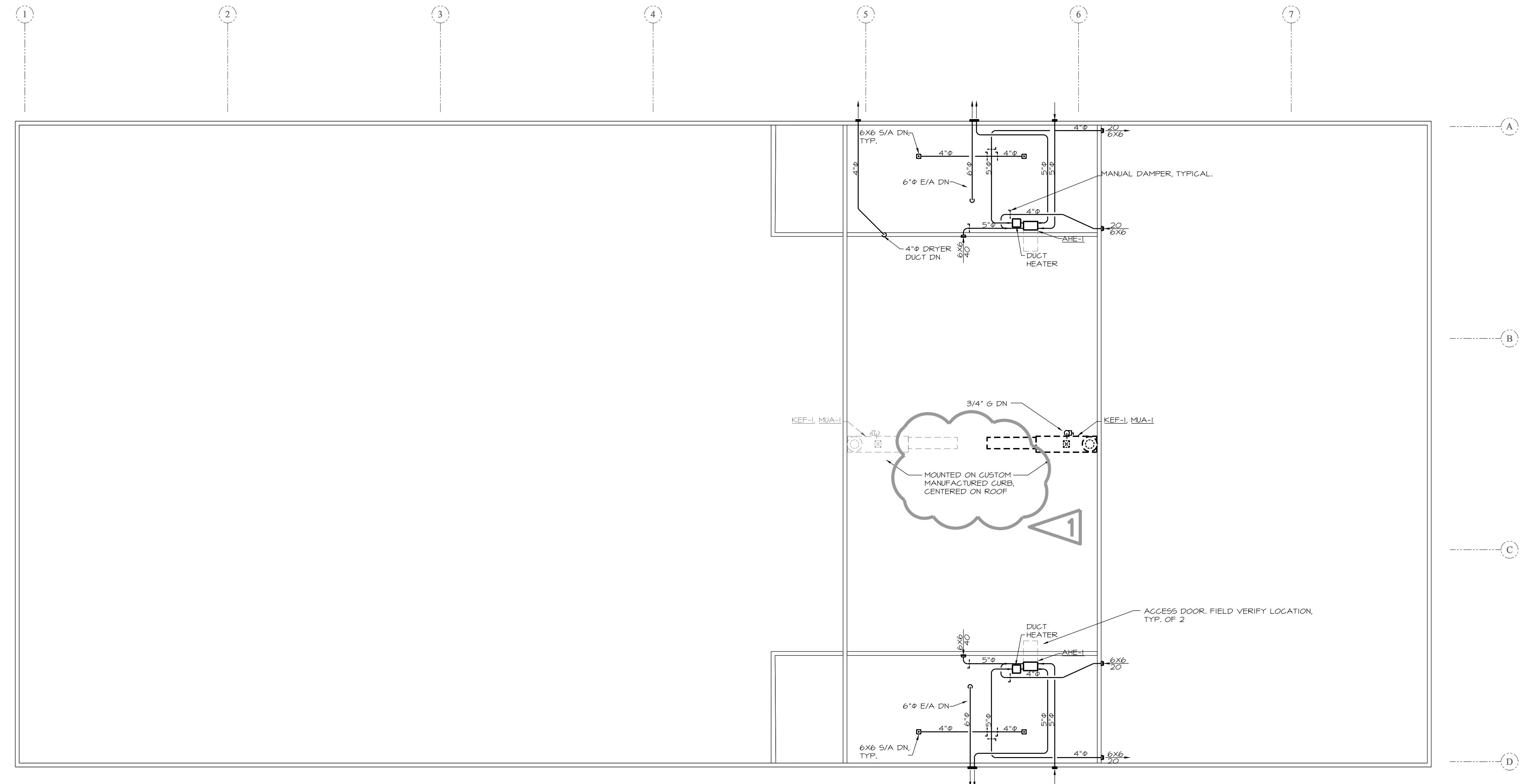
## PAVILION/TEMPORARY FIRE STATION

JACKSON, WYOMING

Date:  
8/31/17  
Revisions:

10/18/17 

M-101





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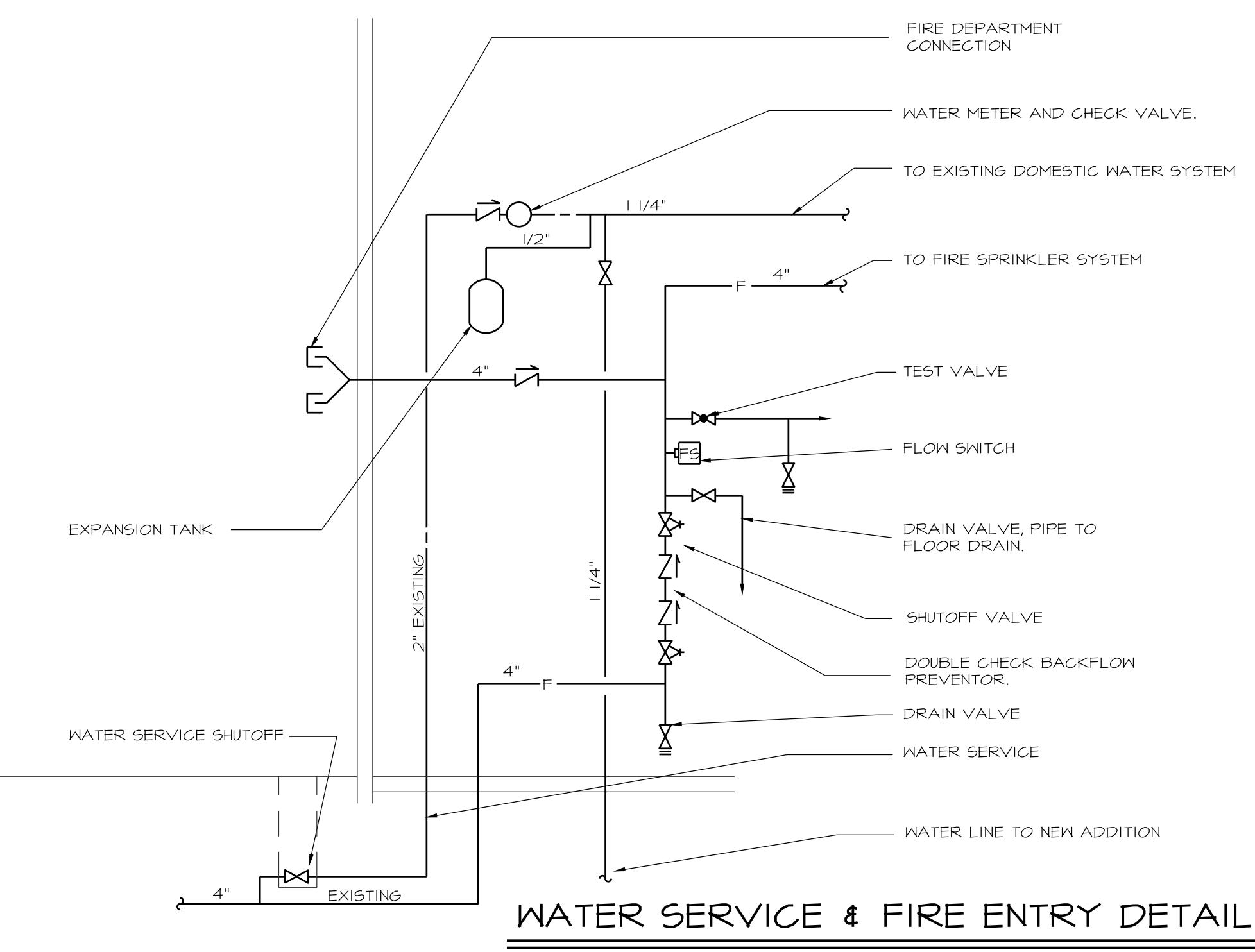
## PAVILION/TEMPORARY FIRE STATION

JACKSON, WYOMING

MECHANICAL ENGINEERS:  
CN ENGINEERS  
P.O. BOX 4195  
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Date:  
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Revisions:  
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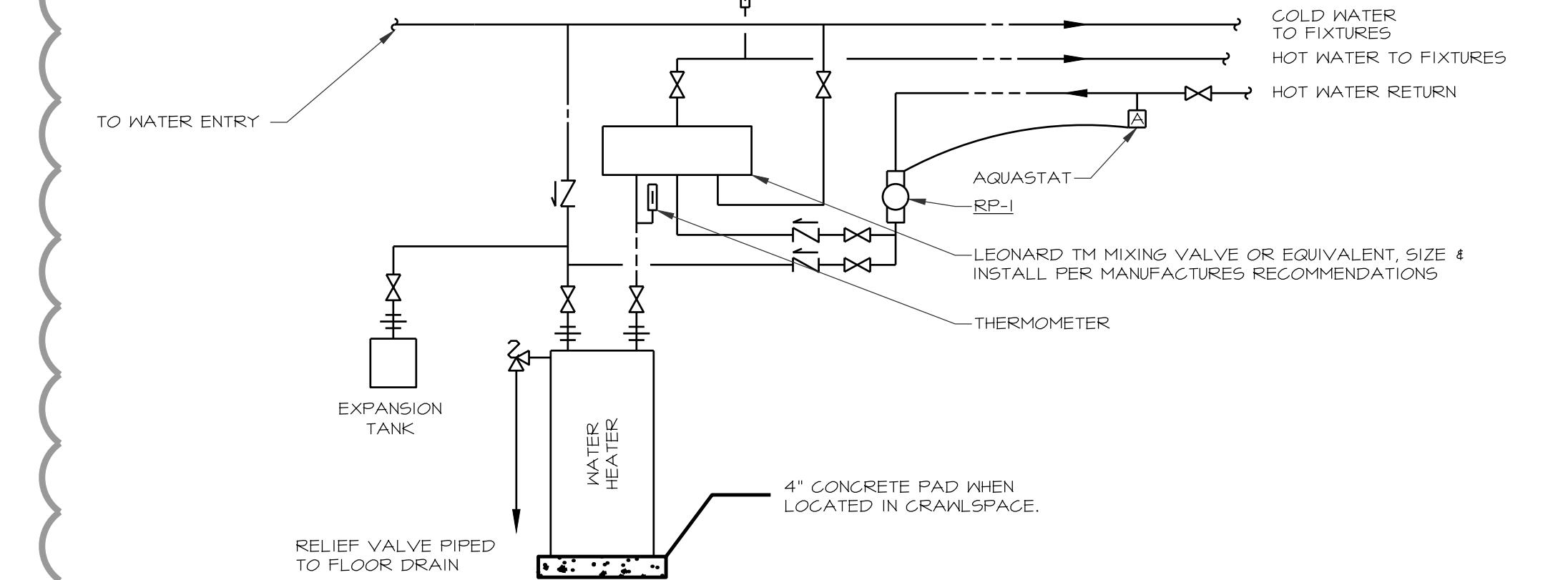
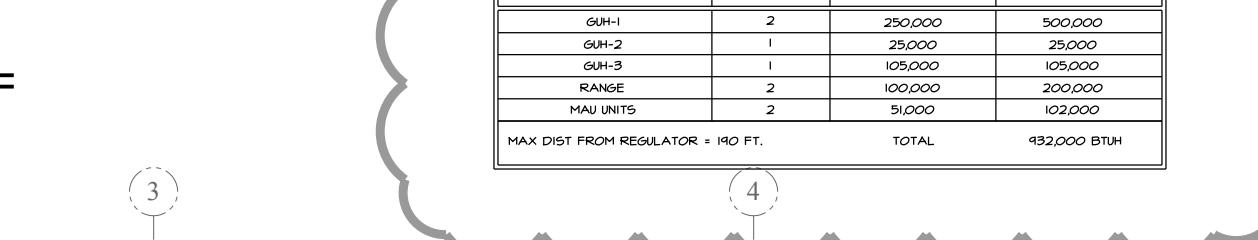
M-200



**FLOOR SINK DETAIL**

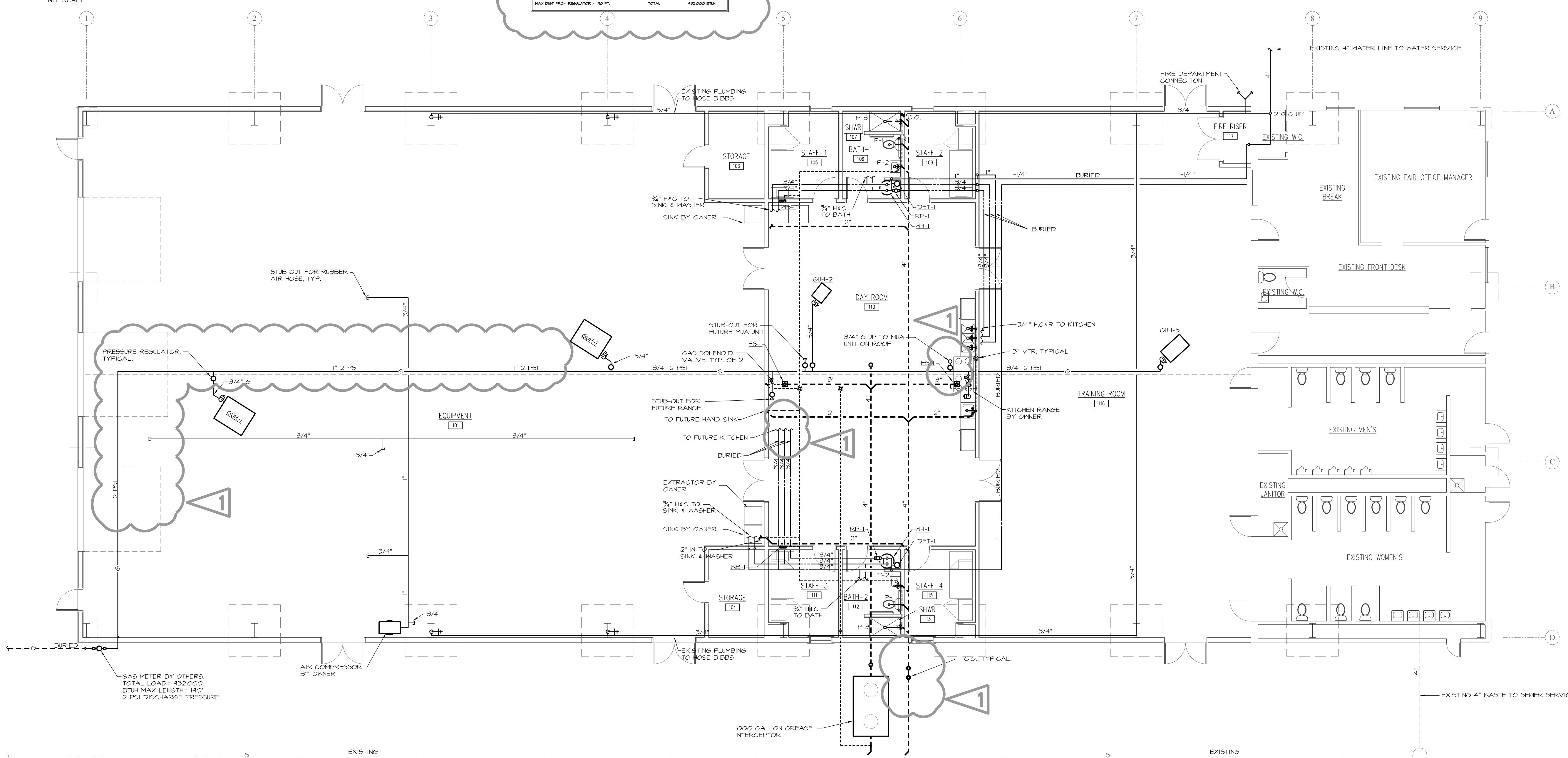
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TEMPORARY FIRE HOUSE NATURAL GAS LOADS			
EQUIPMENT	QUANTITY	BTU RATING, INPUT	SUBTOTAL BTU RATING
GHM-1	2	250,000	500,000
GHM-2	1	250,000	250,000
GHM-3	1	625,000	625,000
RANGE	2	100,000	200,000
GHM-4	2	50,000	100,000
MAX DIST FROM REGULATOR = 100 FT			TOTAL 1,922,000 BTUH

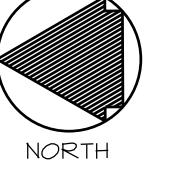


**WATER HEATER DETAIL**

NO SCALE



**PLUMBING PLAN**  
SCALE 1/8" = 1'-0"

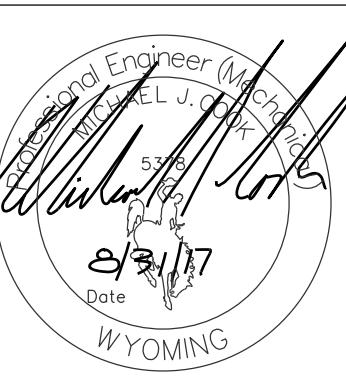


Date:  
8/31/17

Revisions:

10/18/17

M-300



TEMPERATURE AND PRESSURE RELIEF VALVE FOR WATER HEATER. DRAIN PIPING TO BE SAME SIZE AS RELIEF VALVE OUTLET.

3.06 FLASHINGS:  
A. PROVIDE FLASHING AS RECOMMENDED BY ROOFING MANUFACTURER FOR EACH VENT OR STACK.

3.07 ADJUSTING AND CLEANING:  
A. CLEAN STRAINERS, TRAPS, AERATORS AND VALVES OF DEBRIS, SAND AND DIRT.

B. AT COMPLETION, THOROUGHLY CLEAN PLUMBING FIXTURES AND EQUIPMENT.

C. ADJUST FAUCETS, SHOWER AND TOILETS FOR PROPER FLOW AFTER CLEANING AND FLUSHING OPERATING DRAWS ARE ACCOMPLISHED.

D. UPON COMPLETION OF WATER HEATER INSTALLATION, VERIFY SATISFACTORY CONTROL OPERATION UNDER MAXIMUM DEMAND OPERATION AS RECOMMENDED BY MANUFACTURER. ADJUST DISCHARGE WATER TEMPERATURE.

E. ADJUST BALANCING VALVES IN DOMESTIC HOT WATER RECIRCULATION LINES TO INSURE QUICK DELIVERY OF HOT WATER TO FIXTURES. SET MEMORY STOPS.

3.08 PROTECTION:  
PROTECT FIXTURES AND RELATED COMPONENTS FROM DAMAGE BEFORE, DURING AND AFTER INSTALLATION TO DATE OF FINAL ACCEPTANCE OR OWNER MOVE-IN. PROVIDE PROTECTIVE COVERINGS OR OTHER PROTECTION AS REQUIRED.

END OF SECTION 15400

SECTION 15800 AIR DISTRIBUTION, HEATING VENTILATING AND AIR CONDITIONING

PART 1 GENERAL

1.01 WORK INCLUDED:  
PROVIDE ALL LABOR, MATERIAL, EQUIPMENT, ACCESSORIES AND TESTS NECESSARY TO COMPLETELY EXECUTE ALL WORK WHICH SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

AIR HANDLING UNIT  
EXHAUST FANS  
LOUVERS  
AIR FILTERS  
REGISTERS, GRILLES AND DIFFUSERS  
DUCTWORK AND ACCESSORIES

PART 2 PRODUCTS

2.01 MATERIALS AND EQUIPMENT:

A. GENERAL:  
1. STEEL DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED SHEET STEEL. DUCT SYSTEMS GAUGES SHALL BE IN ACCORDANCE WITH SMAGNA HYAC DUCT CONSTRUCTION STANDARDS MANUAL.

2. ALUMINUM DUCT SHALL BE CONSTRUCTED OF COMMERCIAL DESIGNATION 3003 TEMPER H14, SHEET ALUMINUM.

B. DUCT PRESSURE CLASSES (SMAGNA):  
1. SUPPLY SYSTEMS: FROM THE SUPPLY DIFFUSER OR REGISTER TO THE SUPPLY FAN INLET, DUCTWORK PRESSURE CLASS SHALL NOT BE LESS THAN 1/2" TOTAL STATIC PRESSURE.

2. RETURN AIR DUCTWORK: -1/2" W.G. PRESSURE CLASS.

3. SPIRAL SEAM DUCTS: ROUND AND OVAL SPIRAL SEAM DUCTS AND FITTINGS. UNITED SHEET METAL COMPANY, SHEET METAL PRODUCTS COMPANY, OR SENCO.

4. SPIN-IN FITTINGS: FACTORY FABRICATED CONICAL GALV. FOR INSULATED DUCTS, INTEGRAL BUTTERFLY DAMPER WITH QUADRANT OPERATOR AND LOCK NUT ON ALL APPLICATIONS.

5. FLEXIBLE CONNECTIONS: CONNECTORS SHALL BE UL APPROVED 32 OZ. PER YARD, FIRE-RETARDANT, NEOPRENE COATED FIBERGLASS.

6. TURNING VANE: FORMED DOUBLE WALL BLADES CONSTRUCTED OF MINIMUM 20-GAUGE GALVANIZED STEEL. FOR METAL DUCTWORK OTHER THAN STEEL, USE SAME TYPE OF MATERIAL AS DUCT. VANE ON 3-1/4" CENTERS.

7. DUCT LINERS: LINER SHALL BE 1" THICK, RESIN BONDED GLASS FIBER, BLACK COATING ON AIR STREAM SURFACE, RATED BY MANUFACTURER FOR AT LEAST 4000 HRS. FIRE RESISTANCE SHALL NOT EXCEED 1/2 HOUR. MAX. RATING OF 1000°F. MAX. DUCT CONDUCTION COEFFICIENT (NRC) OF NOT LESS THAN .70 WHEN TESTED IN ACCORDANCE WITH ASTM TYPE F-25. MOUNTING V-NUTS SHALL BE APPROVED 0.004" THICK, 0.004" DIAMETER PER DEG. F AT 75 DEG. F, MAXIMUM ABSOLUTE ROUGHNESS FACTOR OF FOOT PER DEG. F .004 FT.

8. DUCT SEALANT: NON-HARDENING, WATER RESISTANT, NON-COMBUSTIBLE, LIQUID OR MASTIC OR TAME AS RECOMMENDED BY MANUFACTURER. ALL SEALANTS SHALL HAVE APPROVED FIRE RATING FOR PLUMB APPLICATION AS REQUIRED BY CODE AUTHORITY.

9. LOUVER: 0.081" THICK EXTRUDED ALUMINUM, 4" BLADES SET IN ALUMINUM FRAME. 1/2" ALUMINUM MESH INTERIOR OF LOUVER. COLOR TO BE SELECTED BY ARCHITECT.

AMERICAN WARMING LE-49 OR EQUIVALENT.

C. EQUIPMENT SCHEDULE:  
SEE SCHEDULES ON DRAWINGS.

PART 3 EXECUTION

3.01 DUCTWORK:

A. GENERAL: DUCT SIZES SHOWN ON THE DRAWINGS ARE OUTSIDE (SHEET METAL) DUCT AS A GUIDE. DUCTWORK SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH SMAGNA HYAC DUCT CONSTRUCTION STANDARDS MANUAL. ALSO COMPLY WITH MORE RIGID REQUIREMENTS SPECIFIED HEREIN.

B. DUCT SEALING: ALL DUCTS SHALL BE SEALED BY USING DUCT SEALANT AS RECOMMENDED BY MANUFACTURER. THIS INCLUDES THE SEALING OF ALL TRANSVERSE JOINT AND FITTING CONNECTIONS AND SNAPLOCK SEAMS.

C. DUCTWORK APPLICATION:

1. ALL SUPPLY AND RETURN DUCTWORK TO BE GALVANIZED STEEL.  
2. ALL DRY EXHAUST DUCTS TO OUTSIDE OF BUILDING TO BE ALUMINUM. FLEXIBLE DUCTS WILL NOT BE ALLOWED.

3. ALL ROUND AND OVAL DUCTS EXPOSED TO VENIR SHALL BE SPIRAL SEAM, CONCEALED ROUND AND OVAL DUCTS MAY BE FABRICATED WITH LOCK TYPE LONGITUDINAL SEAMS. ALL ELBOWS TO BE PRESSED STEEL ELBOWS OR FIVE PIECE WELDED ELBOWS.

D. TAKEOFFS: DO NOT INSTALL TAKEOFFS ON ELBOWS OR OTHER POINTS OF THE SYSTEM WHERE AIR VELOCITY IS NOT UNIFORM.

E. DUCTWORK HANGERS, CONNECTIONS AND CONSTRUCTION:

1. SUSPEND DUCTS FROM STRUCTURE WITH PROPER HANGERS AT INTERVALS RECOMMENDED BY SMAGNA.

2. MAKE ALL DUCT CONNECTIONS TO MOTOR DRIVEN EQUIPMENT WITH FLEXIBLE CONNECTIONS, UNLESS SPECIFICALLY INDICATED OTHERWISE.

3. MAKE ALL RADIUS ELBOWS WITH RADIUS OF 1-1/2 TIMES THE DIAMETER OR WIDTH OF DUCT AS A GUIDE. INSIDE RADIUS OF 1-1/2 TIMES THE DIAMETER OR WIDTH. ALL 90 DEG. SQUARE ELBOWS ARE TO HAVE TURNING VANE. THIS INCLUDES SUPPLY AND RETURN DUCTS.

4. ALL DIFFUSERS AND REGISTERS TO BE EQUIPPED WITH OPPOSED BLADE DAMPERS, WHERE NOTED AS GRILLE OR PLATE. OPPOSED BLADE DAMPERS NOT REQUIRED. DAMPER TO BE ADJUSTABLE THRU FACE OF DIFFUSER OR REGISTER.

5. PROVIDE 45 DEG. TAKEOFFS AT ALL RECTANGULAR DUCT TAKEOFFS EXCEPT AS INDICATED ON DRAWINGS.

6. MAKE ALL DUCT OFFSETS WITH 15 DEG. TRANSITIONS. SHARPER TRANSITIONS CAN BE MADE ONLY WHEN SPACE DOES NOT ALLOW 15 DEG. OFFSETS, 30 DEG. OFFSETS MAXIMUM.

F. INSIDE DUCT LINER:  
1. RECTANGULAR DUCTS ARE INSULATED ON THE INSIDE OF THE DUCT TO PROVIDE AN INSULATION BARRIER AND TO HELP ATTENUATE FAN NOISE. DUCT MAINS WITH DUCT WRAP ARE NOT INSULATED. INSULATION IS TO BE APPLIED TO THE INSIDE OF THE DUCT.

2. THE LINER SHALL BE APPLIED TO THE INSIDE OF THE DUCT, WITH THE SPRAY FACE TO THE AIR STREAM, WITH NON-FLAMMABLE, SPRAYABLE, DUCT LINER ADHESIVE COMPLETELY COATING THE CLEAN SHEETMETAL. THE LINER SHALL FURTHER BE FASTENED WITH STUD WELD OR GLUE ON TYPE PINS AND CLIPS, SPACING NOT TO EXCEED 3/4" UPSTREAM FROM THE EDGE OF THE LINER AND SPACED AT A MAXIMUM OF 15" IN CENTER AND 15" IN LONG TRANSITION POINTS. THE UPSTREAM TRANSVERSE EDGES AND CLIPS SHALL BE SEALED WITH VAPOR BARRIER ADHESIVE.

3. ALL JOINTS IN THE LINER SHALL BE TIGHTLY BUTTED AND SEALED WITH ADHESIVE COVER.

4. LEADING EDGES OF INSULATION AT FAN DISCHARGE SHALL BE PROVIDED WITH SHEET METAL EDGE COVER.

5. ROUND SUPPLY AND RETURN DUCTS, EXHAUST DUCTS AND OUTSIDE AIR DUCTS SHALL BE INSULATED ON THE OUTSIDE. SEE SECTION 15250: INSULATION.

6. INSULATE THE OUTSIDE OF ALL EXHAUST DUCTS.

7. INSULATE THE OUTSIDE OF ALL SUPPLY DUCTS FOR SWIMMING POOL AND HOT TUB ROOMS.

END OF SECTION 15800

### AIR-TO-AIR HEAT EXCHANGER (AHE)

NO.	CAPACITY CFM " IN.	MANUFACTURER AND MODEL	ELECTRICAL REQUIREMENTS
AHE-1	56 0.4"	FANTECH SHT04 • THERMO-AIR TER-6-2-240	AHE HEATER 120V, 0.4A, 40W 240V, 8.3A, 2kW

#### NOTES

- CONTINUOUSLY RUNNING HEAT RECOVERY VENTILATOR WITH AUTOMATIC DEFROST CYCLE.
- HEATER SHALL BE UL LISTED AND MEET ALL NEC REQUIREMENTS
- SYSTEM SHALL HAVE A DUCT HEATER WITH SCR CONTROLS FOR FULL MODULATION OF THE HEATING ELEMENT, DUCT TEMPERATURE SENSOR (SET TO 70 DEGREES F) & MOTORIZED DAMPER.

### GRILLES AND REGISTERS

TYPE	MANUFACTURER AND MODEL
WALL RETURN AIR GRILLE & REGISTER	HART AND COOLEY 94A

#### NOTES

- ALL SUPPLY REGISTERS SHALL HAVE OPPOSED BLADE DAMPERS.
- SIZE AND CFM AS SHOWN ON DRAWINGS.
- CLEAN ANODIZED FINISH ON ALUMINUM GRILLES AND REGISTERS.
- PRIME FINISH ON STEEL REGISTERS.
- IF REGISTER MANUFACTURER & MODEL IS CHANGED, BOOT SIZE MAY CHANGE. VERIFY REGISTER TYPE WITH OWNER.
- PAINT THE INSIDE OF DUCTS FLAT BLACK BEHIND SUPPLY REGISTERS AND RETURN AIR GRILLES

### KITCHEN EXHAUST FANS (KEF)

NO.	SERVING	CFM	SP"	ELECTRICAL DATA	MANUFACTURER AND MODEL NO.	COMMENTS
KEF-1	KITCHEN HOOD	1000	1.0	240V, 1PH, 1/2HP	ECON-AIR EADUS0H	

#### NOTES

- ROOF MOUNTED UPBLAST CENTRIFUGAL FAN DESIGNED TO OPERATE CONTINUOUSLY AT 300 DEG. F WHILE EXHAUSTING GREASE LADEN VAPORS AND FUMES.
- UL AND AMCA LISTED AND RATED, MEETING NFPA 96 REQUIREMENTS.
- WEATHER PROOF CONSTRUCTION; MOTOR BEARING AND DRIVE OUT OF AIR STREAM IN POSITIVELY VENTILATED COMPARTMENT; MOTOR TO BE FACTORY WIRED TO EXTERIOR POWER SOURCE; OIL RESISTANT, NON-SPARKING, NON-STATIC BELTS WITH 24,000 HOUR ENDURANCE; ADJUSTABLE V-BELT DRIVE; MOTOR AND DRIVE ASSEMBLY MOUNTED ON THE EXTERIOR; MOTOR AND DRIVE ASSEMBLY SHALL BE PERMANENTLY LUBRICATED SEALED BALL BEARING; FAN DRIVE BEARINGS SHALL BE PERMANENTLY LUBRICATED SEALED BALL BEARINGS RATED FOR 200,000 HOURS MIN. LIFE. DRIVE ASSEMBLY TO BE REMOVABLE AS A UNIT FOR EASY ACCESS TO SERVICE AND FOR CLEANING FAN HOUSING AND DUCTS. B. NON-OVERLOADING ALUMINUM WHEEL STATICALLY AND DYNAMICALLY BALANCED. ROOF CURB SHALL BE FIELD FABRICATED BY OTHERS.

### EXHAUST FANS (EF)

NO.	SERVING	CFM	ELECTRICAL DATA	SONES	MANUFACTURER AND MODEL NO.	COMMENTS
EF-1	REST ROOMS	110	120V, 0.2, 2IN	0.3	PANASONIC FV-1IVQ5	2 UNITS
EF-2	APPARATUS BAY	450	120V, 1.6A, 155W	4.0	PENNBARRY Z101S	CONTINUOUSLY EXHAUSTING

#### NOTES

- CENTRIFUGAL FORWARD CURVE FAN IN SOUND INSULATED CABINET WITH DIRECT FIRED NATURAL GAS HEATING SECTION, 45 TURN DOWN AND FILTER SECTION. PROVIDE OUTSIDE AIR DAMPER AND TWO POSITION DAMPER MOTOR.
- CABINET WILL BE INSULATED AND CONSTRUCTED OF 16 GAUGE GALVANIZED STEEL WITH BAKED ENAMEL FINISH OR ALUMINIZED STEEL. PROVIDE ACCESS PANELS TO BURNERS AND CONTROLS.
- BLOWER TO HAVE SELF ALIGNING BALL BEARINGS, PERMANENTLY LUBRICATED AND SEALED. BLOWER TO BE FORWARD CURVED CENTRIFUGAL TYPE CONSTRUCTION OF GALVANIZED STEEL. UNIT TO BE BELT DRIVE USING VARIABLE PITCH TYPE PULLEY.
- DIRECT GAS FIRED, 400 STAINLESS STEEL HEAT EXCHANGER WITH STAINLESS STEEL BURNERS. BURNER SHALL BE ASA APPROVED AND SHALL PROVIDE MODULATING HEATING EQUIPMENT SHALL INCLUDE GAS SHUTOFF VALVE, AUTOMATIC GAS VALVE, PRESSURE REGULATOR, PILOT SAFETY SYSTEM WITH SPARK IGNITION, HIGH LIMIT CONTROL AND REVERSE AIR FLOW SAFETY CONTROL AND AUTOMATIC FAN SWITCH.
- PROVIDE REMOTE CONTROL CONSOLE WITH DISCHARGE AIR TEMPERATURE SENSOR AND REMOTE SET POINT, SUMMER-OFF-WINTER CONTROL SWITCH, PROVIDE OUTSIDE AIR DAMPER AND TWO POSITION DAMPER MOTOR. WHEN SYSTEM IS ON, THE OUTSIDE AIR DAMPER SHALL OPEN. IN THE WINTER POSITION, A DISCHARGE AIR THERMOSTAT SHALL MODULATE THE GAS VALVE TO MAINTAIN ITS SETTING. IN THE SUMMER POSITION, THE BURNERS SHALL BE OFF. THE KITCHEN EXHAUST FAN SHALL BE INTERLOCKED TO OPERATE AT TIME THE SWITCH IS ON. PROVIDE ALL NECESSARY RELAYS, CONTACTORS AND TRANSFORMERS. PROVIDE MOTOR STARTER, AUXILIARY CONTACTS FOR CONTROL INTERLOCKS AND CONTROL TRANSFORMERS.

### PLUMBING FIXTURE FITTING SCHEDULE

FIT. NO.	FIX. TYPE	MANUFACTURER AND MODEL NO.	FINISH	COMMENTS
1	TOILET SEAT ANGLE SUPPLY	KOHLER K-4650-0 KOHLER K-1631-CP	WHITE CHROME PLATED	
2	FAUCET P-TRAP ANGLE SUPPLY	KOHLER K-97283-4-CP KOHLER K-8498-CP KOHLER K-1805-CP	CHROME PLATED	INSULATED P-TRAP AND WATER LINES
3	SHOWER HEAD & VALVE	KOHLER K-T56910-4A-CP	POLISHED CHROME	

### PLUMBING FIXTURE SCHEDULE

FIX. NO.	FIX. TYPE	MANUFACTURER AND MODEL NO.	COLOR	FIT. NO.	COMMENTS




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**HOOD INFORMATION - Job#3117501**

HOOD NO.	TAG	MODEL	LENGTH	MAX COOKING TEMP.	EXHAUST PLENUM RISER(S)					TOTAL SUPPLY CFM	HOOD CONSTRUCTION	HOOD CONFIG.				
					TOTAL EXH. CFM	WIDTH	LENG.	HEIGHT	DIA.	CFM	VEL.	S.P.				
1		5424 EX-2-PSP-F	5' 0"	450 Deg.	1000			4"	10"	1000	1833	-0.545"	800	430 SS Where Exposed	ALONE	ALONE

**HOOD INFORMATION**

HOOD NO.	TAG	FILTER(S)				LIGHT(S)				UTILITY CABINET(S)				FIRE SYSTEM	ELECTRICAL	SWITCHES	HOOD PIPING
		TYPE	QTY.	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QTY.	TYPE	WIRE GUARD	LOCATION	SIZE	TYPE	SIZE	MODEL #	QUANTITY		
1		Captrate Solo Filter	3	20"	16"	85% See Filter Spec.	2	L55 Series E26	NO	Right	12"x54"x24"	Ansul R102	1.5	SC-211110FP	1 Light 1 Fan	YES	503 LBS

**HOOD OPTIONS**

HOOD NO.	TAG	OPTION									
		FIELD WRAPPER	18.00"	High	Front, Left, Right	BACKSPLASH	120.00"	High	X 96.00"	Long	430 SS
1		LEFT QUARTER END PANEL	23"	Top Width,	0"	Bottom Width,	23"	High	430 SS		
		RIGHT QUARTER END PANEL	23"	Top Width,	0"	Bottom Width,	23"	High	430 SS		
		SENSOR-CV									

**PERFORATED SUPPLY PLENUM(S)**

HOOD NO.	TAG	POS.	LENGTH	WIDTH	HEIGHT	TYPE	RISER(S)				
							WIDTH	LENG.	DIA.	CFM	S.P.
1		Front	72"	14"	12"	MUA	12"	28"		794	0.189"

**SPECIFICATION: CAPTRATE® GREASE-STOP® SOLO FILTER**

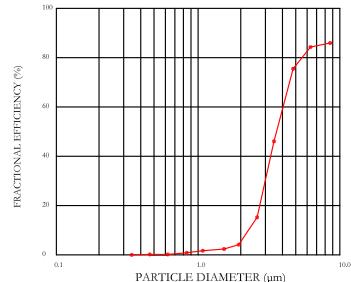
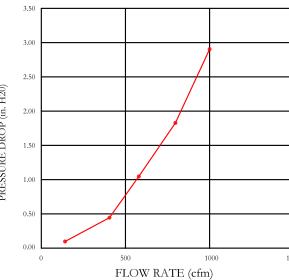
THE CAPTRATE GREASE-STOP SOLO FILTER IS A SINGLE-STAGE FILTER FEATURING A UNIQUE S-BAFFLE DESIGN IN CONJUNCTION WITH A SLOTTED REAR BAFFLE DESIGN, TO DELIVER EXCEPTIONAL FILTRATION EFFICIENCY.

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

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

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

THE CAPTRATE GREASE-STOP SOLO WAS TESTED TO ASTM STANDARD ASTM F2519-05.

**EFFICIENCY VS. PARTICLE DIAMETER**

**PRESSURE DROP VS. FLOW RATE**


CAPTRATE FILTERS ARE BUILT IN COMPLIANCE WITH:

NFPA #96  
NSF STANDARD #2  
UL STANDARD #1046  
INT. MECH. CODE (IMC)  
ULC-S649



JOB Jackson Fire Station Temp Kitchen	
LOCATION SALT LAKE CITY, UT,	
DATE 8/16/2017	JOB # 3117501
DWG # 1	DRAWN BY TT-72
REV.	SCALE 3/8" = 1'-0"



#### GREASE DUCT SPECIFICATIONS:

PROVIDE GREASE DUCT EQUAL TO ECON-AIR MODEL "EDW"

ROUND 20 GAUGE 430 STAINLESS STEEL DUCTWORK. MODEL "EDW" IS LISTED TO UL-1978 AND IS INSTALLED USING "V" CLAMP LOCKING CONNECTIONS SEALED WITH 3M FIRE BARRIER 2000 PLUS. MODEL "EDW" 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 "EDW" 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 IS WITHIN 18 INCHES OF COMBUSTIBLE MATERIAL, PROVIDE UL-2221 LISTED DOUBLE WALL GREASE DUCT EQUAL TO ECON-AIR MODEL "EDW- 2R, 3R, OR 3Z" ROUND 20 GAUGE 430 STAINLESS INNER DUCT INSULATED WITH A 24 GAUGE 430 STAINLESS OUTER SHELL.

#### PATENT NUMBERS

AC-PSP (United States) - US Patent 7963830 B2

AC-PSP Wall (Canada) - CA Patent 2820509

AC-PSP Island (Canada) - CA Patent 2520330

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

#### HVAC DISTRIBUTION NOTE

IT IS RECOMMENDED NOT TO INSTALL HIGH VELOCITY DIFFUSERS OR HVAC RETURNS WITHIN TEN (10) FEET OF THE EXHAUST HOOD. PERFORATED DIFFUSERS ARE RECOMMENDED.

#### VERIFY CEILING HEIGHT

  ' -   "

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

#### CUSTOMER APPROVAL TO MANUFACTURE:

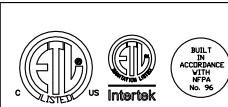
Approved as Noted

Approved with NO Exception Taken

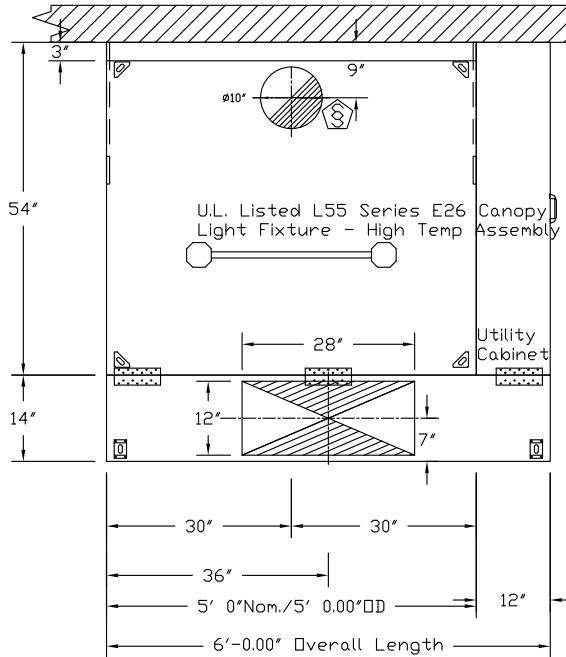
Revise and Resubmit

SIGNATURE \_\_\_\_\_

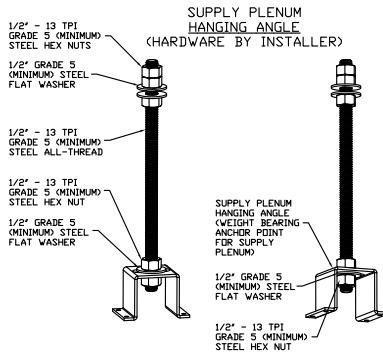
Your Title \_\_\_\_\_ Date \_\_\_\_\_



JOB Jackson Fire Station Temp Kitchen	
LOCATION SALT LAKE CITY, UT,	
DATE 8/16/2017	JOB # 3117501
DWG # 2	DRAWN BY TT-72
REV.	SCALE 3/8" = 1'-0"

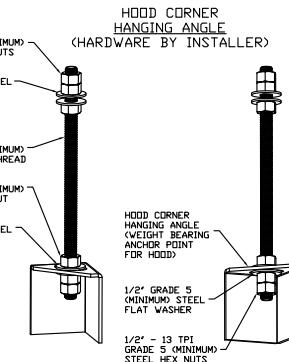


**PLAN VIEW – Hood #1**  
**5' 0.00" LONG 5424EX-2-PSP-F**



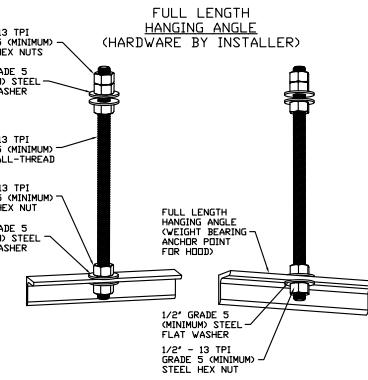
**ASSEMBLY INSTRUCTIONS**

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION ABOVE CEILING ANCHORS, SINGLE HEX NUT BEHIND HANGING ANGLE IS ACCEPTABLE FOR PSP HANGING ANGLES. MAINTAIN 1/4" OF EXPOSED THREADS BEHIND BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.



**ASSEMBLY INSTRUCTIONS**

HANGING ANGLE MUST BE SUPPORTED WITH 1/2" - 13 TPI GRADE 5 (MINIMUM) ALL-THREAD. SANDWICH HANGING ANGLES AND CEILING ANCHOR POINTS WITH 1/2" GRADE 5 (MINIMUM) STEEL FLAT WASHERS AND 1/2" - 13 TPI GRADE 5 (MINIMUM) HEX NUTS AS SHOWN. MUST USE DOUBLED HEX NUT CONFIGURATION BEHIND HANGING ANGLES AND ABOVE CEILING ANCHORS. MAINTAIN 1/4" OF EXPOSED THREADS BEHIND BOTTOM HEX NUT. TORQUE ALL HEX NUTS TO 57 FT-LBS.



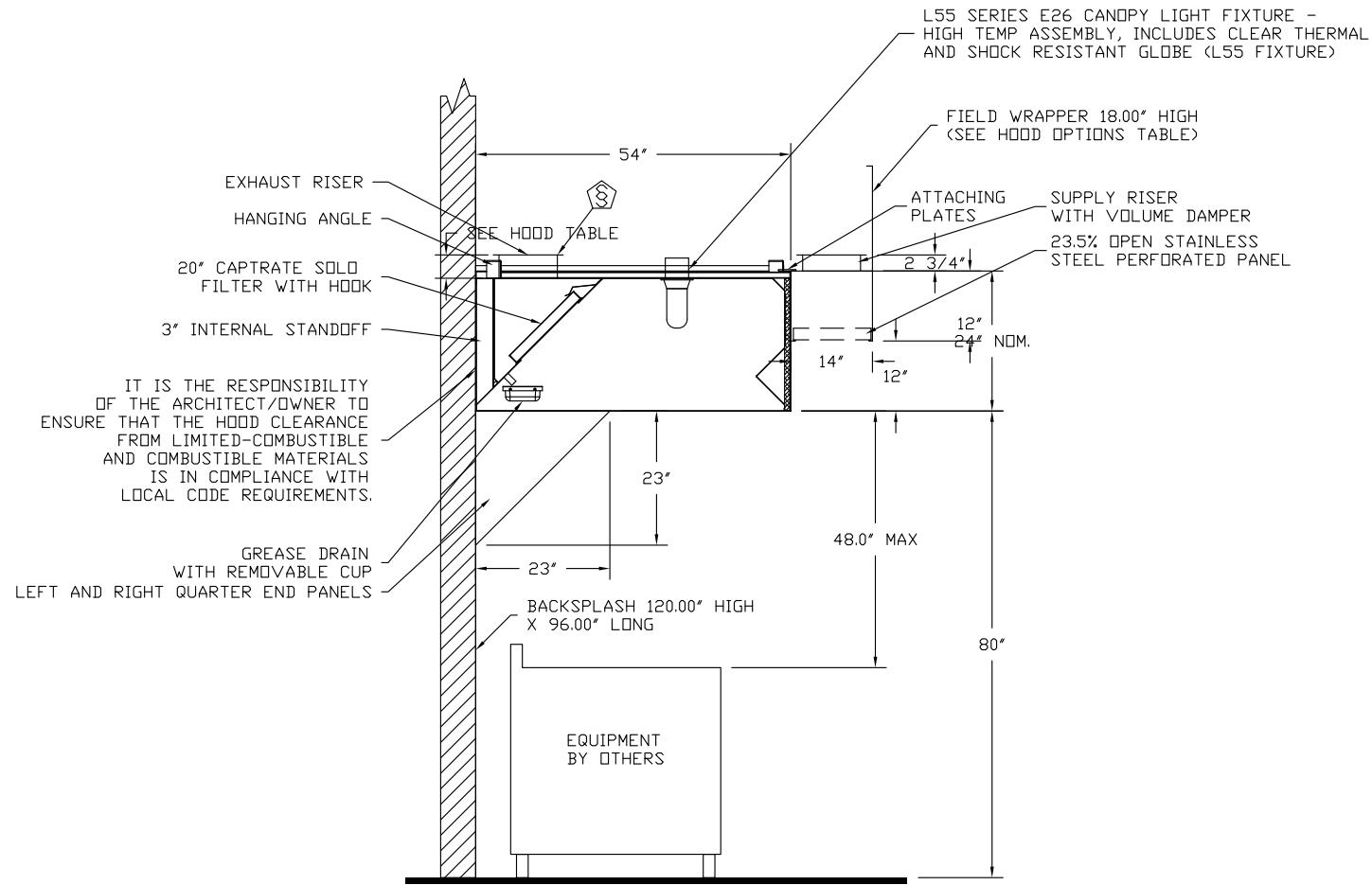
**ASSEMBLY INSTRUCTIONS**

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**ECON-AIR**

<b>JOB</b> Jackson Fire Station Temp Kitchen	
<b>LOCATION</b>	SALT LAKE CITY, UT,
<b>DATE</b>	8/16/2017
<b>JOB #</b>	3117501
<b>DWG #</b>	3
<b>DRAWN BY</b>	TT-72
<b>REV.</b>	
<b>SCALE</b> 3/8" = 1'-0"	



SECTION VIEW - MODEL 5424EX-2-PSP-F  
HOOD - #1



**ECON-AIR**

JOB Jackson Fire Station Temp Kitchen	
LOCATION SALT LAKE CITY, UT,	
DATE 8/16/2017	JOB # 3117501
DWG # 4	DRAWN BY TT-72
REV.	SCALE 3/8" = 1'-0"

Fire System Information – Job#3117501

FIRE SYSTEM NO.	TAG	TYPE	SIZE	FLOW POINTS	INSTALLATION	
					SYSTEM	LOCATION ON HOOD
1		Ansul R102	1.5	2	Fire Cabinet Right	Right

GAS VALVE(S)

FIRE SYSTEM NO.	TAG	TYPE	SIZE	SUPPLIED BY
1		Mechanical	2.000	Distributor

Fire System Parts List Key

FIRE SYSTEM NO.	TAG	KEY NUMBER – PART DESCRIPTION	QTY. BY FACTORY	QTY. BY DIST.
		0 - 0 - 43-15733 AIR CYLINDER ASSEMBLY - Air Cylinder and Tubing for Mechanical Gas Valves (Ansul Part #15733)	0	1
		1 - 1 - AT - 1.5 TANK(#1A) - 1.5 Gallon SS Tank (for use with Automan Release, Actuator, or SS Enclosure (UL/ULC) Macola # 02-429864	1	0
		3 - 3 - ANS-DEM REGULATED RELEASE - Ansul Regulated Mechanical Release/Bracket Assembly, OEM, R-102, Cartridge Detection Included, Ansul Part # 79493	1	0
		6 - 6 - LIO-15 AGENT - Ansul Low PH Wet Chemical Agent, 1.5 Gallon (UL) 79694	0	1
		8 - 8 - 10I-10 CARTRIDGE - Carbon Dioxide, 10I-10, 1.5 Gallon Cartridge (R-102, PIRANHA)	0	1
		10 - 10 - TLINK LINK - Test Link ( test link) Ansul Part # 24916, Macola # 20-24916	0	1
		11 - 11 - MICRO-SDA MICROSWITCH KIT- Includes 2 switches and Mounting Hardware. Single Dual Electric Switch, One Standard Switch, One Alarm Duty Switch Ansul Part # 437155, Macola # 08-437155	1	0
		27 - 27 - QPSA-1/2 PULLEY SEAL - 1/2" Hood Seal (UL) Ansul Part # 423253, Macola # 32-79768	1	0
		34 - 34 - RPS-A REMOTE PULL STATION - Red composite (without wire rope) 434618 (Old Macola #06-4835)	1	0
		35 - 35 - PE-LT PULLEY ELBOW - Low Temp. Pulley Elbow, Set Screw Type Ansul Part # 415670, Macola # 11-415671	2	0
		36 - 36 - PE-HT PULLEY ELBOW - High Temp Pulley Elbow, Compression Type, Ansul Part # 423251, Macola # 10-45771	1	0
		ADDITIONAL PARTS TO BE DETERMINED...		



JOB Jackson Fire Station Temp Kitchen	
LOCATION SALT LAKE CITY, UT,	
DATE 8/16/2017	JOB # 3117501
DWG # 5	DRAWN BY TT-72
REV.	SCALE 3/8" = 1'-0"

**EXHAUST FAN INFORMATION – Job#3117501**

FAN UNIT NO.	TAG	FAN UNIT MODEL #	CFM	ESP.	RPM	H.P.	B.H.P.	Ø	VOLT	FLA	DISCHARGE VELOCITY	WEIGHT (LBS.)	SONES
1		NRTPA-E76-EADU50H	1000	1.000	1548	0.500	0.3590	1	230	4.2	380 FPM	427	16.8

**MUA FAN INFORMATION – Job#3117501**

FAN UNIT NO.	TAG	FAN UNIT MODEL #	BLOWER	HOUSING	DESIGN CFM	ESP.	RPM	H.P.	B.H.P.	Ø	VOLT	FLA	WEIGHT (LBS.)	SONES
1		NRTPA-E76-EADU50H	G7	D.6A	800	0.500	1498	0.500	0.3850	1	230	3.9	427	16.2

**GAS FIRED MAKE-UP AIR UNIT(S)**

FAN UNIT NO.	TAG	INPUT BTUS	OUTPUT BTUS	TEMP. RISE	REQUIRED INPUT GAS PRESSURE	GAS TYPE
1		51652	47520	55 deg F	7 in. w.c. - 14 in. w.c.	Natural

**FAN OPTIONS**

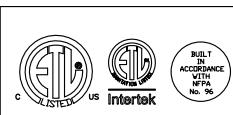
FAN UNIT NO.	TAG	OPTION (Qty. - Descr.)
1		1 - Grease Box
		1 - AC Interlock Relay - 24VAC Coil
		1 - Inlet Pressure Gauge, 0-35"
		1 - Manifold Pressure Gauge, -5 to 15" wc
		1 - High Profile Lid

**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**

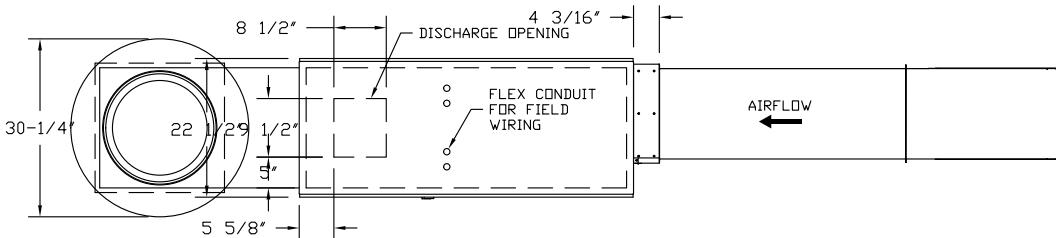
NO.	ON FAN	WEIGHT	ITEM	SIZE			
1	# 1	84 LBS	Curb	19.500"W x 85.500)L x 20.000/20.000"H	Insulated	Vented	Hinged
	# 1		Rail	4.000"W x 4.000)L x 36.000"H			


**ECON-AIR**

JOB Jackson Fire Station Temp Kitchen	
LOCATION SALT LAKE CITY, UT,	
DATE 8/16/2017	JOB # 3117501
DWG # 6	DRAWN BY TT-72
REV.	SCALE 3/8" = 1'-0"

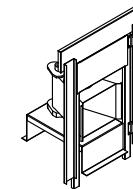
FAN #1 NRTP.A-E76-EADU50H - COMBINATION UNIT W/ HEATER

1. COMBINATION UNIT WITH A HIGH SPEED DIRECT DRIVE UPLAST CENTRIFUGAL EXHAUST FAN WITH A 13.75" WHEEL AND A LOW CFM DIRECT-FIRED MAKE-UP AIR UNIT
2. TRUNKLINE W/INTAKE HOOD W/EZ FILTERS
3. DOWN DISCHARGE - AIR FLOW RIGHT → LEFT
4. GREASE CUP FOR KITCHEN-DUTY CENTRIFUGAL EXHAUST FANS, BOX DIMENSIONS 17-1/8 L X 5-1/16 W X 3-3/4 H (18 GA.) (INCLUDES DOWN SPOUT)
5. COOLING INTERLOCK RELAY, 24VAC COIL, 120V CONTACTS, LOCKS OUT BURNER CIRCUIT WHEN AC IS ENERGIZED.
6. GAS PRESSURE GAUGE, 0-35", 2.5" DIAMETER, 1/4" THREAD SIZE
7. GAS PRESSURE GAUGE, -5 TO +15 INCHES WC, 2.5" DIAMETER, 1/4" THREAD SIZE
8. HIGH PROFILE LID OPTION FOR D76. REQUIRED WITH BELT DRIVE, SINGLE PHASE MOTORS.



#### SUPPLY SIDE HEATER INFORMATION:

WINTER TEMPERATURE = 20°F. TEMP. RISE = 55°F.  
 BTUs CALCULATED OFF STANDARD AIR DENSITY  
 OUTPUT BTUs AT ALTITUDE OF 0.0 ft. = 47520  
 INPUT BTUs AT ALTITUDE OF 0.0 ft. = 51652



Direct Fired (DF) Profile Plate Assembly

#### Direct Fired Profile Plate Specifications:

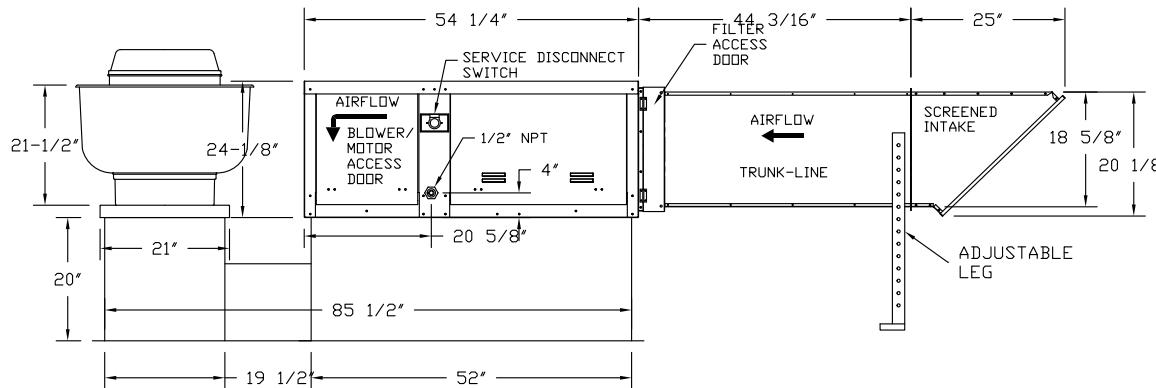
**Design:**  
 Direct Fired burners shall have patented US Patent No. US629523B2, self-adjusting profile plates designed to ensure proper air velocity and pressure drop across the burner. Profile plates shall allow burners to achieve clean combustion by limiting by-product levels to a maximum of 5ppm of carbon monoxide (CO), and 0.05ppm of nitrogen dioxide (NO2).

**Application:**  
 Spring-loaded burner profile plates are engineered to automatically react to the momentum of a fresh air stream, without the need for any motors or actuators to mechanically adjust them. With this feature, all DF units are designed for demand control ventilation (DCV) requirements.

**Construction:**  
 All profile plate assemblies shall be included in the DF unit's ETL listing and comply with combined safety standards ANSI Z83.4 and CSA 3.7 (non-recirculating DF heaters) and ANSI Z83.18 (recirculating DF heaters).

**General Construction:**  

- Profile plates shall be formed from 6061 galvanized steel.
- Profile plates shall vary in size per unit.
- Profile plates shall be mounted along the same plane as the discharge of the burner.
- Design shall incorporate properly torqued, permanently mounted spring hinges.
- Spring hinges shall be made from plated steel.



**ECON-AIR**

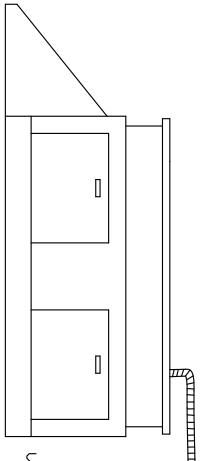
JOB Jackson Fire Station Temp Kitchen	
LOCATION SALT LAKE CITY, UT,	
DATE 8/16/2017	JOB # 3117501
DWG # 7	DRAWN BY TT-72
REV.	SCALE 3/8" = 1'-0"



Installation Wiring		JOB 3117501 - Jackson Fire Station Temp Kitchen		SHIP DATE 8/16/2017		MODEL NRPP-A-E76-FADU50H	Installed Options		NOTES	
DRAWING NUMBER RP3117501-1	120 V 1 PH. Disconnect Switch	240 V 1 PH. Disconnect Switch	Gal-flex conduit (in unit)	Gal-flex conduit (in unit)	Factory wiring	208/460/600 V 3 PH. Disconnect Switch	GR	Customer supplied 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	



See above details. Power Connection

## Exhaust Fan Wiring

DRAWING NUMBER EXH3117501-1

SHIP DATE 8/16/2017

MODEL NRTPA-E76-EADU50H

JOB 3117501 - Jackson Fire Station Temp Kitchen

NOTES

EXHAUST

MOTOR INFO  
0.5HP-230V-1P-4.2FLA

MOTOR/CTRL MOP: 15A

ELECTRICAL INFORMATION

WIRE COLOR

- - - - - DENOTES FIELD WIRING

- - - - - DENOTES INTERNAL WIRING

BK - BLACK

BL - BLUE

BR - BROWN

OR - ORANGE

RD - RED

WH - WHITE

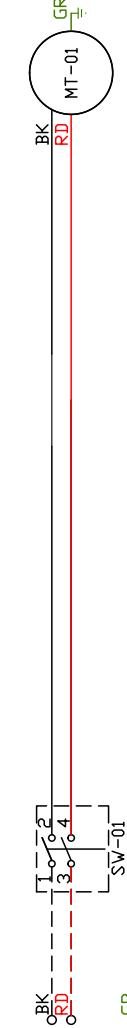
Y - YELLOW

G - GREEN

GY - GRAY

P - PURPLE

PK - PINK



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ELECTRICAL PACKAGES – Job#3117501

NO.	TAG	PACKAGE #	LOCATION	SWITCHES		OPTION	FANS CONTROLLED				
				LOCATION	QUANTITY		TYPE	?	H.P.	VOLT	FLA
1		SC-211110FP	Utility Cabinet Right	U4 - Utility Cabinet Right	1 Light	Smart Controls Thermostatic Control	Exhaust	1	0.500	230	4.2
				Hood # 1	1 Fan		Supply	1	0.500	230	3.9



 **ECON-AIR**

JOB Jackson Fire Station Temp Kitchen	
LOCATION SALT LAKE CITY, UT,	
DATE 8/16/2017	JOB # 3117501
DWG # 11	DRAWN BY TT-72
REV.	SCALE 3/8" = 1'-0"

JOB NO  
3117501MODEL NUMBER  
SC-211110FP

DRAWN BY

SCHEMATIC TYPE  
INSTALL

DESCRIPTION OF OPERATION:

220V 1 Phase w/ control for 1 Exhaust Fan, 1 Supply Fan, Exhaust on in Fire, Lights out in Fire, Fan(s) On/Off Thermostatically Controlled. Room temperature sensor shipped loose for field installation.

JOB NAME  
Jackson Fire Station Temp Kit...DATE  
8/16/2017DWG NO  
ECP #1-1

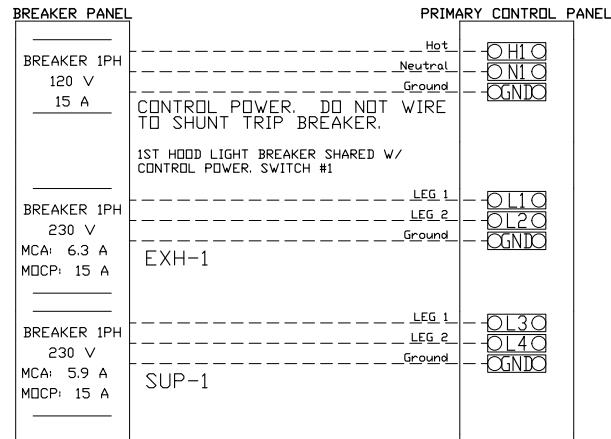
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## BREAKER PANEL TO PRIMARY CONTROL PANEL

Responsibility: Electrician

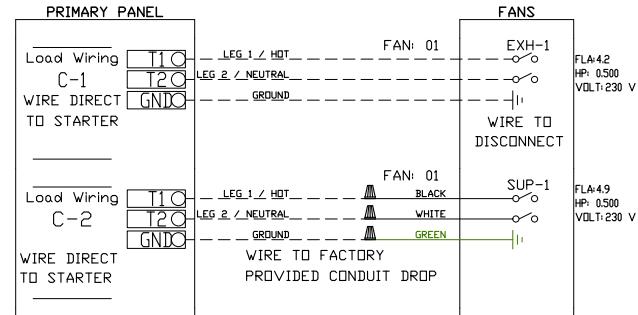
BREAKER SIZE SHOWN IS THE MAXIMUM ALLOWED



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## CONTROL PANEL TO FANS

Responsibility: Electrician



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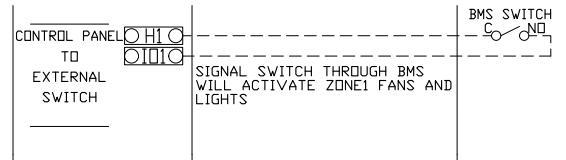
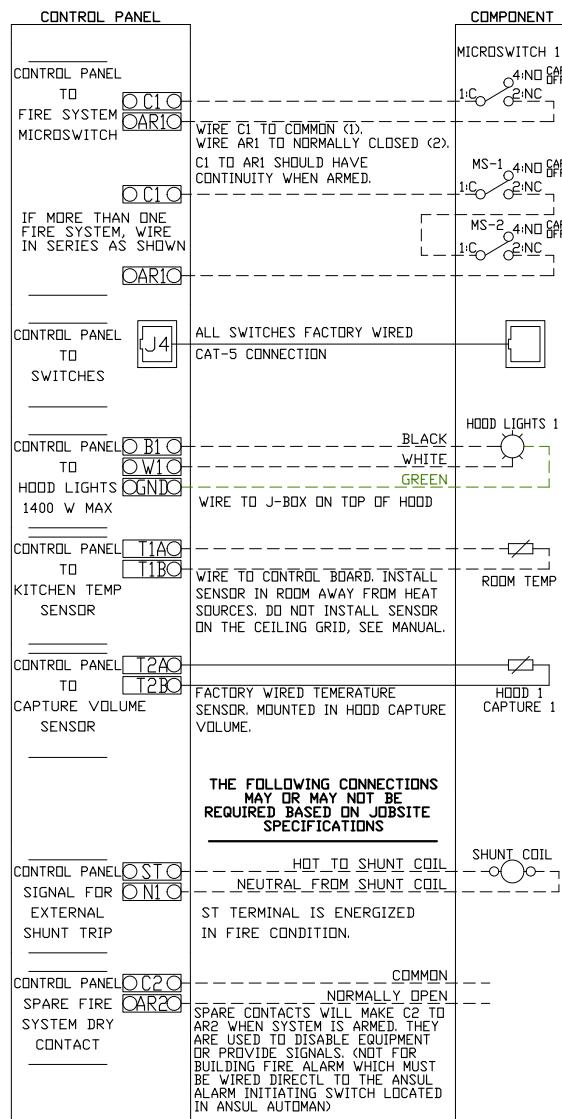
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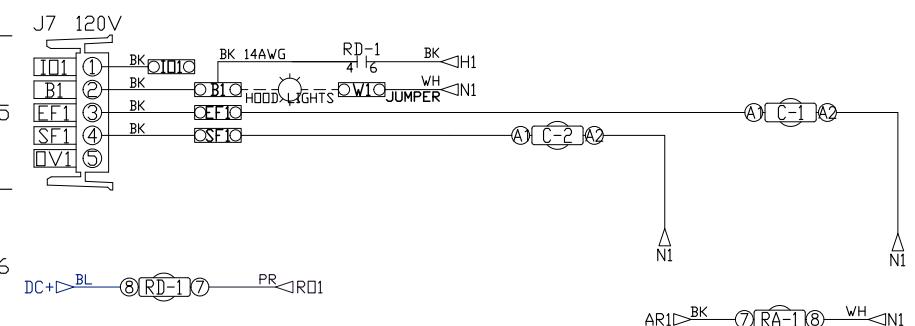
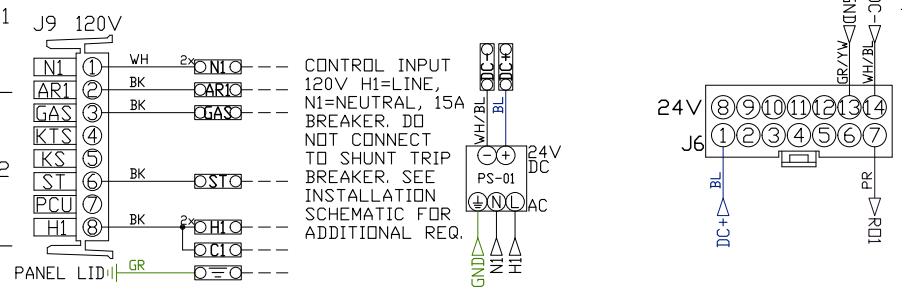
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## CONTROL PANEL TO ACCESSORY ITEMS

Responsibility: Electrician



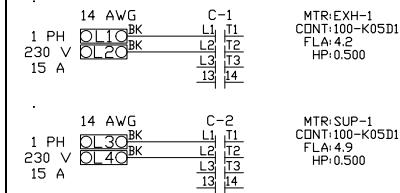
UNLESS SPECIFIED OTHERWISE, ALL FACTORY AC WIRING 16 AWG. ALL FACTORY DC WIRING 18 AWG.



MAKE UP AIR INTERLOCK  
JUMPER



## MOTOR POWER CIRCUIT



FACTORY WIRING  
SCHEMATIC  
CIRCUIT BOARDS  
DCV Rev. 2.06.00  
HMI Rev. 2.06.00

RA-x 120 VAC RELAY	RD-x 24 VDC RELAY																
NO <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>4</td><td>3</td></tr> <tr><td>NC</td><td>1</td></tr> <tr><td>COIL</td><td>8 7</td></tr> <tr><td>COM</td><td>6 5</td></tr> </table>	4	3	NC	1	COIL	8 7	COM	6 5	NO <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>4</td><td>3</td></tr> <tr><td>NC</td><td>2 1</td></tr> <tr><td>COIL</td><td>8 7</td></tr> <tr><td>COM</td><td>6 5</td></tr> </table>	4	3	NC	2 1	COIL	8 7	COM	6 5
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NC	1																
COIL	8 7																
COM	6 5																
4	3																
NC	2 1																
COIL	8 7																
COM	6 5																

## COMPONENT LIST

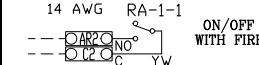
LABEL	DESCRIPTION
ST-X	Starter PN:Varies
OL-X	Overload PN:Varies
C-X	Contactor PN:Varies
PS-1	Power Sup. 24VDC PN:MDP-124-1C
RA-x	120V Relay DPDT PN:34.10.0184.0
RD-x	24VDC Light Relay PN:34.10.0188.0
TS-x	Duct Thermostat PN:CAP-DP-14-EXP

## LEGEND

— FIELD WIRING  
FACTORY WIRING

- BLACK YW- YELLOW
- BLUE GY- GREY
- BROWN PR- PURPLE
- ORANGE RD- RED
- WHITE GR- GREEN
- BL- OR/BL STRIPE
- RD- BL/RD STRIPE
- GN- RD/GN STRIPE
- YBL- WH/BL STRIPE

DRY CONTACTS (SHOWN DE-ENERGIZED)



JOB NAME  
ackson Fire Sta...

1. DRAWING TITLE  
2. C-311110ER

## **DESCRIPTION OF OPERATION**

V 1 Phase w/ control  
1 Exhaust Fan, 1  
Supply Fan, Exhaust on  
Fire, Lights out in  
e, Fan(s) On/Off  
thermostatically  
controlled. Room  
temperature sensor  
loose for field  
calibration

NO DRAWN BY

NO DRAWN BY  
17501

E DATE  
СТПРУ 8/16/2017

REG NO ECP #1-2

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