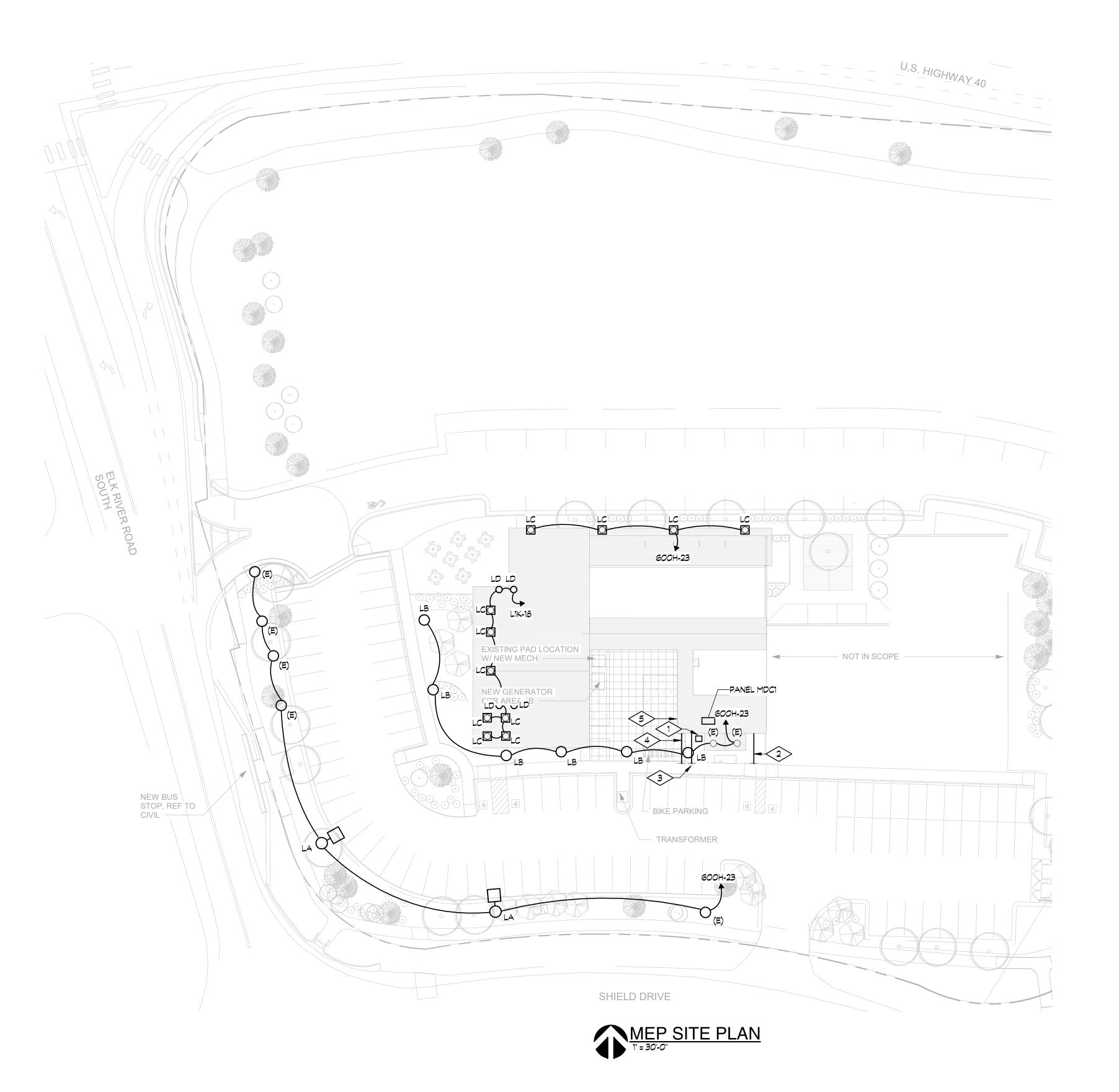
	MEP LEG	END	
	MAIN DISTRIBUTION CENTER		STORM - ABOVE FLOOR
	PANELBOARD	//-	STORM - BELOW FLOOR
\bigcirc	ELECTRICAL SERVICE METER		SANITARY - ABOVE FLOOR
(IIIII) [CT]	CURRENT TRANSFORMER		SANITARY - BELOW FLOOR
T	TRANSFORMER	——G ——	SANITARY TO GREASE
	CONCEALED CIRCUIT	CV	CIRCUIT VENT
	UNDERFLOOR / UNDERGROUND CIRCUIT	CW\$V	COMBINATION WASTE AND VENT
	EXPOSED CIRCUIT	W\	WET VENT
── ₩ ─	WIREMOLD (SURFACE WIREWAY		SANITARY VENT
 PM 	PLUGMOLD		DOMESTIC COLD WATER
→ P-3	HOMERUNTO PANELBOARD		DOMESTIC HOT WATER
4	(ONE ARROW / CKT, PNL & CKT #'S SHOWN)		DOM. HOT WATER, RECIRCULATING
(44,46)	CIRCUIT NUMBER(S) FOR SPECIFIED PANEL	<u> </u>	GAS
 •o	CONDUIT TURNS UP	——FS——	FIRE SPRINKLER
——•э	CONDUIT TURNS DOWN	—нws—	HOT WATER SUPPLY
O IJ	JUNCTION BOX / CARD READER	——HWR—	HOT WATER RETURN
_	PORCELAIN LAMP HOLDER	—-cws—	CHILLED WATER SUPPLY
⊗	(PC: PULL CHAIN)	CWR	CHILLED WATER RETURN
0	LIGHT FIXTURE: SURFACE MOUNTED	——c—	CONDENSATE
	RECESSED LIGHT FIXTURE	<u></u> s	STEAM
ОН	WALL MOUNTED LIGHT FIXTURE	0	PLUMBING POINT OF CONNECTION
፟	EXIT LIGHT: DIRECTIONAL ARROW	o 	RISER UP
4 N		G	RISER DOWN
	BATTERY PACK	.	
	SURFACE FLUORESCENT FIXTURE RECESSED FLUORESCENT FIXTURE	─ ₩─	BALL VALVE
Θ	SINGLE OUTLET: C-CLOCK (+70")	\longrightarrow	BUTTERFLY VALVE
=	DUPLEX RECEPTACLE IG: ISOLATED GROUND	─ \$	GATE VALVE
	S: SAFETY	─ ⋈─	GAS COCK (GAS ONLY)
©=	DUPLEX RECEPTACLE - GFCI	─ ₩─	BALANCING COCK
® =	DUPLEX RECEPTACLE - GFCI BREAKER	$\dashv \vdash$	CIRCUIT SETTER
()=	DUPLEX RECEPTACLE - TAMPER RESIST	→ →	CHECK VALVE
=	SPLIT WIRE DUPLEX	————	PRESSURE REDUCING VALVE
	QUADRAPLEX (DOUBLE DUPLEX)		HOSE BIBB/SILL COCK
SP	COMB. SWITCH / RECEPTACLE	" (
0	FLOOR MOUNTED RECEPTACLE	<u>_</u>	FLOOR DRAIN
(a)	SPECIAL PURPOSE (AS NOTED)		FLOOR SINK
Φ	TELEVISION OUTLET	③	ROOF DRAIN
w	MOTOR OUTLET	 	UNION
	sto - switched thermal overload	 ~~-	FLEXIBLE CONNECTOR
	TELEPHONE TERMINAL		THERMOMETER
∇	TELEPHONE OUTLET	_	
∇	FLOOR MTD. TELEPHONE OUTLET COMPUTER OUTLET	O	PRESSURE GAUGE
▽ c ▼	COMB. TELE/COMPUTER OUTLET		STRAINER
Š	TOGGLE SWITCH		FIRE DEPARTMENT CONNECTION
	a-switching p-pilot light 2-2 pole k-keyed		WATER METER
	3-3 way to-thermal overload 4-4 way t-timer	GAS	GAS METER
#	WALL MOUNTED LIGHTING CONTROL DEVICE RE: LIGHTING CONTROL DEVICE SCHEDULE		DUCT (INSIDE DIM. SIDE SHOWN
- (#)	CEILING MOUNTED LIGHTING CONTROL DEVICE	<u>}</u>	INSIDE DIM. SIDE NOT SHOWN)
Ť	RE: LIGHTING CONTROL DEVICE SCHEDULE	\triangleright	SUPPLY DUCT (SECTION)
① (TO)	THERMOSTAT		5011 2 1 5001 (520 Holly
TS	TIME SWITCH		RETURN DUCT (SECTION)
œ —	PHOTOCELL		EXHAUST DUCT (SECTION)
<u> </u>	PUSH-BUTTON STATION		
Ò	SAFETY SWITCH		ROUND DUCT, RIGID
\boxtimes	MOTOR STARTER /))))	FLEXIBLE DUCT
	LIGHTING CONTACTOR	⊢ı —	ELEVIDI E CONNECCTOR
M	COMBINATION MOTOR STARTER		FLEXIBLE CONNECTOR
R	RELAY	Cir.	TURNING VANES
FACP	FIRE ALARM CONTROL PANEL	т Т	
♦	ANNUNCIATOR PULL STATION	X	SUPPLY DIFFUSER (ARROWS INDICATE DISTRIBUTION)
∅ □4	PULL STATION HORN		•
Ľ 4	HORN / LIGHT COMBINATION		RETURN REGISTER / GRILLE
<u>L</u> N <u>S</u> 4	HORN / STROBE	— ⊕	MECHANICAL POINT OF CONNECTION
S	STROBE		I LO MINDAL FOINT OF CONNECTION
ф	BELL	Θ	FIRE DAMPER
=+	OS & Y VALVE	\text{\ti}\text{\ti}}\tint{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tin}\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\texi}}\tittt{\text{\text{\text{\text{\text{\text{\text{\ti}}\tittt{\text{\text{\text{\text{\text{\text{\text{\ti}}\tittt{\text{\ti}}}\titt{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tin}\}\tittt{\text{\texi}\tittt{\text{\text{\text{\texi}\text{\ti	SMOKE AND FIRE DAMPER
E	FLOW SWITCH	(T)	THERMOSTAT
•	ROOM DETECTOR (SMOKE)		DUCT DETECTOR
• т	ROOM DETECTOR (THERMAL)	<u>ь</u>	REMOTE INDICATING LIGHT
DE:	DUCT DETECTOR		
<u>Б</u>	REMOTE INDICATING		MANUAL BALANCING DAMPER
	LIGHT / TEST SWITCH DOOR HOLDER		MOTORIZED BALANCING DAMPER
_/ _/	CHIME		-
. ~ .	FUSED SWITCH	— HWS—	HOT WATER SUPPLY
		— HWR —	HOT WATER RETURN
	CIRCUIT BREAKER	—cws—	CHILLED WATER SUPPLY
⊪	GROUND CONNECTOR	—— CWR—	CHILLED WATER RETURN
\bigcirc	GRILLE / REGISTER / DIFFUSER	— c —	CONDENSATE
	MECHANICAL EQUIPMENT	<u> </u>	STEAM
\searrow		SA	SUPPLY AIR
\simeq	DETAIL NOTE	OA MA	OUTSIDE AIR
	KITCHEN / MEDICAL EQUIPMENT EXISTING TO REMAIN	MA RA	MIXED AIR RETURN AIR
(⊢ \	PAINTING IN THE MINE	EA	EXHAUST AIR
(E) (ER)	EXISTING TO BE RELOCATED	E A	EAFIAUST AIR
	EXISTING TO BE RELOCATED EXISTING TO BE DEMOLISHED	AD	ACCESS DOOR

KEY	LAMP	DESCRIPTION	MOUNTING HEIGHT	MANUFACTURER/#	VOL1
LA	3500K LED	ARM MOUNT WITH P3 SYMMETRIC DISTRIBUTION AND HOUSE- SIDE SHIELD. 7000 LUMENS WITH ROUND POLE MOUNTING AND TEXTURED BLACK FINISH.	POLE (20'-0" AFG)	LITHONIA RAD1 LED P3 35K SYM 277 RPA HS DBLBXD	277
LB	3000K LED	LED BOLLARD WITH BUTTON TYPE PHOTOELECTRIC CELL AND A 350mA DRIVER. 36" OVERALL HEIGHT AND TEXTURED BLACK FINISH.	36" BOLLARD	LITHONIA KBD8 LED 16C 350 30K SYM 277 PE H36 DBLBXD	277
LC	3500K LED	4" LED RECESSED WET LOCATION LISTED FIXTURE WITH 60 DEGREE WIDE FLOOD BEAM SPREAD AND SATIN REFLECTOR/WHITE RING.	20'-0" AFG	ALCON 14013-R WF60 35K SW	120
LD	LED	GOOSENECK 16" DIAMETER LED WALL SCONCE FIXTURE WITH TEXTURED BLACK FINISH AND ACRYLLIC DIFFUSER.	20'-0" AFG	BARN LIGHT BLE-G-DBW16"-105-G64-105-NA- ACR-NA-NA-NA-E26	120
LF	3000K LED	950 LUMEN LED SCONCE WITH TEXTURED BRONZE FINISH	20'-0" AFG	SONNEMAN LIGHTING MEZZA CUPOLA 5" LED SCONCE	120

DETAIL NOTES THIS SHEET

- 1. APPROXIMATE TRANSFORMER LOCATION. SEE ELECTRICAL ONELINE FOR ADDITIONAL INFORMATION.
- 2. EXISTING 4" SANITARY SEWER TO MAIN SEWER TO REMAIN. RE: CIVIL FOR CONTINUATION.
- 3. 2" CW SERVICE TO CONNECT TO MAIN. RE: CIVIL FOR CONTINUATION.
- 4. 4" FIRE SPRINKLER SERVICE TO CONNECT TO MAIN. RE: CIVIL FOR CONTINUATION.
- 5. GAS METER IN THIS LOCATION.



APPROVAL STAMPS:

REVIEWED FOR CODE **COMPLIANCE**

02/24/2023

4 12/12/22 ISSUED FOR PERMIT

No. Date Description

SUBMISSIONS & REVISIONS OWNER

MAY REIGLER PROPERTIES 2201 WISCONSIN AVE NW SUITE 200 WASHINGTON DC 20007

ARCHITECT



KEVIN & ASAKO SPERRY ARCHITECTURE 3318 N. Columbus Street Arlington, VA 22207 T.312.636.3248 / 312.636.4252 www.kasa-arch.com

GENERAL CONTRACTOR

CIVIL ENGINEER

LANDMARK ENGINEERING

141 9TH STREET, PO BOX 774943 STEAMBOAT SPRINGS, CO 80477 T: 970.879.1976

STRUCTURAL FRAMING ENGINEER

KL&A ENGINEERS & BUILDERS 1717 WASHINGTON AVE. GOLDEN, CO 80401 T: 303.384.9910

M.E.P. ENGINEERS

BOULDER ENGINEERING 1717 15TH STREET BOULDER, CO 80302 T: 303.444.6038

INTERIOR DESIGNER

JOHNSON NATHAN STROHE

1600 WYNKOOP ST., SUITE 100 DENVER, CO 80202 T: 303.892.7062

PROJECT LOCATION

STEAMBOAT BASECAMP PARTIAL RENOVATION & **TENANT FIT-OUT**

1901 CURVE PLAZA STEAMBOAT SPRINGS, CO 80487 DRAWING TITLE

MEP SITE PLAN

DATE: 10/24/2022 DRAWN BY:

CHECKED BY:

PROJECT NO: 20129

DRAWING NO:

MEP '

1.01 WORK INCLUDED

A. The work included by this division of the specifications includes furnishing all labor, materials, equipment, and services, including minor items omitted but necessary to construct and install the complete systems described by the Contract Documents and specified below. "Contractor" refers to the Fire Sprinkler Contractor. The general conditions of the specifications apply and are included in this part of this section.

1. Fire sprinkler systems

1.02 SEE SECTION 22 05 00 FOR BASIC MATERIALS AND METHODS

SECTION 21 13 00 - FIRE SUPPRESSION SPRINKLER SYSTEM

A. Provide complete automatic fire protection systems, including but not limited to inside piping, sprinkler heads, valves, hangers and supports, sleeves, fire department connections and accessories, fire hose cabinets, valves. Entire installation shall be as required by the local authorities. Consult with local authorities to determine all local requirements before

1. The sprinkler system(s) shall be as follows: Wet system throughout with dry system in the attic space. B. Secure and pay for all necessary permits and certificates of inspection, and present to Owner with the signed certificates of

final inspection.

C. Coordinate this work with all other trades so as to have a minimum of interference. INSTALLATION SHALL NOT BEGIN UNTIL DUCTWORK IS INSTALLED OR WRITTEN AUTHORIZATION IS MADE BY THE OWNER.

D. Accomplish all necessary cutting and patching for installation of piping and equipment, and provide all cutting as directed by Architect. Where necessary to cut chases in walls, reinforce walls as directed. After work is installed, patch holes to match original finish.

E. The system design including pipe sizing and location, configuration of branches and head connections, shall accommodate the installation of up/down heads in all areas which may or may not have a dropped ceiling. F. RELATED WORK: Basic materials and methods: Section 22 05 00.

2.02 QUALITY ASSURANCE

A. Sprinkler equipment and installation to be approved by local fire authority

B. Provide a complete automatic fire protection system as required. System shall be complete in all respects and in accordance with all applicable codes, ordinances, International Building Code, and NFPA Volume 2, Section 13 and NFPA Volume 2, Section 14.

C. The system shall be installed by a firm regularly engaged in the design and installation of automatic sprinkler systems in accordance with the requirements of the National Board of Fire Underwriters. Architect may require evidence to support the above qualifications and may reject any proposed installer who cannot show suitable experience.

D. All materials and equipment used in the installation of the sprinkler system shall be as approved in the Underwriters' Laboratories' list of inspected fire protection equipment and materials, or the Factory Mutual Laboratories' list of approved equipment and fire protection devices involving fire hazard, and shall be the latest product of the manufacturer.

2.03 SUBMITTALS

A. Submit shop drawings showing proposed layout of Fire Protection System, showing actual equipment to be used, complete with such dimensions as are required to accurately install the system, drawn to a minimum scale of 1/8" equals 1'0". Drawings shall be approved by Underwriters and local authority before submission to Architect and Engineer (four

B. Shop drawings shall show all proposed routing of piping. Piping shall be installed to clear all other items of equipment and Architectural and Structural components within the building. Show all details required to make a complete installation from the shop drawings. After approval of drawings has been obtained, install the system exactly as shown. Obtain approval from Architect/Engineer to make any changes from shop drawings.

C. Shop drawings shall clearly show any piping that will not be concealed in the building structure

3.01 ACCEPTABLE MANUFACTURER'S

A. Equipment shall be by Grinnell, Viking, Star, Reliable, Globe, Crocker-Standards, Central, Potter-Roemer, or approved

A. Pipe shall be schedule 40, black seamless steel, ASTM A120, ASTM 53. Pipe 1-1/2" or larger may be schedule 10, grooved black steel pipe. Fittings may be style 74 or 75 "Victaulic" mechanical coupling system for 300 PSI working

B. Fittings and joints shall be as follows:

1. 2-1/2" and larger: Welded with standard weight fittings or "Victaulic" fittings. 2. 2" and smaller: Screwed with 150 lb. malleable iron fittings.

3.03 FIRE DEPARTMENT SIAMESE CONNECTION

A. Provide a cast brass flush wall mounted fire department connection, adequately sized for the application with threads, fittings, etc acceptable to the local fire department. Connection shall include drop clapper, pin lug hose thread swivels, pin lug plugs and chain. The connection shall be labelled as directed by the local Fire Department. All components shall

3.04 WATER FLOW ALARMS

A. Water flow indicator shall be electric, vane-type detector with two sets of normally open contacts and a time retard to

3.05 AUTOMATIC SPRINKLERS

A. Sprinklers shall have temperature ratings as required by NFPA Standard No. 13 for the sprinkler location. Verify exact head types in finished areas with Architect. Provide specific head types as follows. The following are catalog numbers of

1. Finished areas (ceiling): Semi-recessed, polished chrome pendant heads. Heads shall be Model A with recessed

2. Finished areas (wall):Exposed sidewall (Universal Model A).

3. Unfinished areas (ceiling): Exposed pendant or upright head, as required by the application (Universal Model A). 4. Areas exposed to freezing temperatures: Dry pendant (Model F 960).

B. Provide steel sprinkler guards on heads, which are exposed to physical damage.

3.06 TAMPER SWITCH A. Provide an electric supervisory monitor switch at the required valves. Grinnell Model F640 or as required.

3.07 HORN/LIGHT A. Provide an electric combination horn/light, suitable for exterior application, rated for the appropriate voltage.

3.08 PIPING INSTALLATION

A. All piping shall be concealed wherever possible. Exceptions must be clearly marked on shop drawings and shall not be

installed until approved by Architect B. If exposed, piping shall be installed in the most direct, straight, and least obtrusive manner possible, and as close to walls

and ceilings as is consistent with good workmanship. C. Install piping graded to low points and in manner to make it possible to test and empty entire system.

D. Pipe and fittings shall be inspected for soundness and cleaned of all dirt and other foreign matter prior to being installed.

All damaged pipe and fittings shall be rejected. Heads shall be covered, and system shall be ready for painting.

E. Protect open pipe ends whenever work is suspended during construction, to prevent foreign bodies entering and lodging

therein. Use cast iron or malleable iron caps, or other methods as approved by the Architect 3.09 <u>VALVE IDENTIFICATION</u>

A. Drain valves, test valves, and control valves shall be identified with a stamped metal tag indicating their use.

A. A 1" inspector's test connection shall be installed at the farthest and most remote location in the system with discharge running to the exterior of the building.

B. All piping and equipment shall be tested and proved tight under a hydrostatic pressure of 150% of the main pressure or 200 psig, whichever is larger. The test shall be conducted for a six-hour continuous period, with not be more than 2 pounds of pressure loss during this period in any part of the system. Any leaks found shall be repaired and the pressure

C. All tests shall be performed in the presence of the Architect or authorized representative of the Owner.

3.11 FLUSHING A. Flush piping system thoroughly with clear water to placing automatic sprinkler system in operation.

3.12 SPRINKLER CABINET

A. Provide a reserve sprinkler cabinet with six spare sprinkler heads of each type used. Cabinet shall be equipped with two special sprinkler wrenches. Cabinet shall be a labeled, metal, wall-mounted type with red enamel finish and a rigid hinged and locked door. Two keys shall be provided.

DIVISION 22 - PLUMBING

SECTION 22 05 00 - COMMON WORK RESULTS FOR PLUMBING 1.01 WORK INCLUDED

A. The work included by this division of the specifications includes furnishing all labor, materials, equipment, and services, including minor items omitted but necessary to construct and install the complete systems described by the Contract Documents and specified below. "Contractor" refers to the Mechanical Contractor. The general conditions of the specifications apply and are included in this part of this section.

1. Gas piping system

2. Domestic hot and cold water systems 3. Interior sanitary sewer system

4. Interior storm sewer system and discharge

1.02 CODES AND REGULATIONS

A. Comply with state and local codes, and utility company regulations. Final interpretations will be made by the local inspection authority. The Contractor to verify the governance of the following Codes, including any local amendments and supplementary codes such as the Codes of the National Fire Protection Association:

1. Building Code: 2018 International Building Code 2. Plumbing Code: 2018 International Plumbing Code

3. Mechanical Code: 2018 International Mechanical Code

4. Fire Code: 2018 International Fire Code 5. Gas Code: 2018 International Fuel Gas Code

6. Energy Code: 2018 International Energy Conservation Code

1.03 EQUIPMENT AND MATERIALS STANDARDS

7. Electrical Code 2020 National Electrical Code

A. Equipment and materials shall be new, UL-listed for the use intended, and free from damage or defect. They shall comply with the latest industry standards.

A. Illustrate the general design and extent of performance required. All dimensions and locations shall be taken from the Architectural drawings. Consult with Architectural plans and locate all ceiling equipment where indicated on reflected

ceiling plans 1.05 <u>SHOP DRAWINGS</u>

A. Submit products data and/or shop drawings as required by the Architect for the following:

1. Insulation

2. Valves

3. Plumbing fixtures and appurtenances. 4. Pumps

B. Quality of specific equipment is established by manufacturer's catalog number. Alterations caused by any Substitution shall be accomplished at no additional expense to the Owner.

C. Manufacturers not listed may submit for acceptance as an "approved equivalent." Requests for an "equivalent" means "approved equivalent". Four copies of such submittal must be received by the Engineer seven (7) working days prior to

1.06 WARRANTY

A. The Contractor shall be responsible for the successful operation of mechanical systems, equipment, and materials installed under this Contract for a period of one year from the date of final acceptance. Defective equipment or materials shall be repaired or replaced at no expense to the Owner. Provide four complete service and maintenance calls spaced at equal intervals during the warranty period.

1.07 PRODUCT HANDLING AND CLEAN UP A. Equipment shall be left clean and undamaged, to the satisfaction of the Owner. The General Conditions take precedence.

A. The contractor shall be responsible for all cutting, drilling, welding, and repair required for his portion of the work. Coordinate with the Architect. The General Conditions take precedence.

1.09 OPERATING AND MAINTENANCE DATA

A. Provide the Owner with operating and maintenance instructions (four copies) required for operation of all mechanical systems. Bind the written instructions in a notebook. The General Conditions take precedence. The manuals shall

include the following items: 1. Operating manual and spare parts list for each piece of equipment.

2. Preventive maintenance schedule for lubricating and checking each piece of equipment.

3. Instructions on who to call for service during the warranty period. 1.10 PERMITS

A. The contractor shall pay for all fees, taxes, secure permits, licenses, and inspections required for the project. 1.11 <u>TEMPORARY SERVICES</u>

A. Provide temporary water service for construction, as required by the General Contractor.

A. Coordinate outlet device and equipment locations with the Architectural Plans and work of other trades. Locate on horizontal and vertical lines to avoid interference and to provide functional use of all equipment. Verify electrical power characteristics before ordering equipment.

B. Electrical work performed by this contractor will conform to the standards of Division 26-28. Mechanical equipment motors and controls shall be furnished, set in place, and wired according with the following schedule unless otherwise noted or specified MC = Division 21-23 EC = Division 26-28

loted or specified. $MC = DN$	/ision 2	21-23	EC =	DIVISIO
	Furn	Set	Power	Control
Item	By	By	Wiring	Wiring
Combination starters	MC	EC	EC	MC
Equipment motors	MC	MC	EC	
Motor starters & O.L. relays	MC	EC	EC	MC
Disconnect switches	EC	EC	EC	MC
Thermal overload heaters (1)	EC	EC	EC	
Variable Speed Drives	MC	EC	EC	MC
Control relays/transformers	MC	MC	EC	MC
Temperature control panels	MC	MC	EC	MC
Temp. Controls conduit/wiring	MC	MC		MC
Actuator and solenoid wiring	MC	MC		MC
Pushbuttons & pilot lights	MC	MC		MC
Room thermostats	MC	MC		MC
Thermostats: line voltage	EC	EC	EC	

C. The general guideline for the division between control (by MC) wiring and power wiring (by EC) is that power wiring carries the current which energizes a motor, control wiring does not. Control wiring may be 120V, which would be the responsibility of the MC. Control motors are wired by the MC.

D. Examine the site and become aware of existing conditions, utilities, and other issues affecting the satisfactory completion of the project.

1.13 DELIVERY, STORAGE, HANDLING

A. Provide necessary hauling and hoisting equipment. Protect the materials of this Division before, during, and after

1.14 AS-BUILT DRAWINGS

A. Keep a current set of "as-built" drawings on site. Upon completion of the work, furnish engineer with a reproducible prints showing the "as-built" installation.

1.15 PROJECT/SITE CONDITIONS A. Visit the site to become familiar with location and the various conditions affecting the work, including existing utilities.

1.16 PLAN VERIFICATION A. After completion of the bidding and selection process, prior to awarding the contract, the contractor must review and verify the contract documents in their entirety, including those of other trades. At this time, discrepancies, conflicts, omissions, etc in the contract documents must be documented. Alterations to the contract will be made at that time to

orders caused by discrepancies, conflicts, omissions in the contract documents will not be allowed.

2.01 EXPANSION JOINTS, GUIDES, AND ANCHORS A. Provide expansion joints or loops, guides, and anchors in piping to allow for expansion and contractions. Expansion joints shall be bellows type.

include such items, as well other modifications which might be made by the Owner. After award of the contract, change

2.02 <u>VALVES</u>

A. Gate valves 2" and smaller shall be cast bronze, rising stem, solid disc, 200 PSI WOG

E. Valves shall be domestically manufactured by Milwaukee, Powell, Nibco, or equivalent.

B. Ball valves 2" and smaller shall be cast bronze, full port, stainless steel ball, teflon sets, 400 PSI WOG. C. Butterfly valves 2" and smaller shall be cast bronze, stainless steel disc, surrounding fluorelastomer seal, 350 PSI WOG. D. Check valves shall be horizontal, swing-cast bronze, bronze disc, 200 PSI WOG.

A. Relief valves shall be all-bronze A.S.M.E. rated valves with external test levers, sized in accordance with the instructions of the appropriate manufacturer. Pipe discharge outside or to floor drain where possible and per code. Valves shall be manufactured by Watts or equivalent.

A. Connectors in piping shall be made with molded teflon or neoprene and nylon bellows, metal reinforcing rings, flanged ends and control rods, suitable for 40F to 200F temperature range and 125 lbs. pressure. Alternative shall be stainless steel inner hose with braided exterior sleeve for steel pipe or bronze inner hose with braided exterior sleeve for copper piping. Metra-flex Company, or equivalent.

A. P/T Plugs: 1/4" diameter, brass with Nordel core, Sisco or equivalent.

2.05 SPECIALTIES

B. Pressure Gauges: 4 1/2" dial type, aluminum housing. Ashcroft 1010 or equivalent. C. Thermometers: 7" red reading mercury type. Palmer Instruments or equivalent.

2.06 ELECTRICAL

A. Lugs: Lugs for wiring connections shall be rated for copper and aluminum, and shall have a minimum rating of 75C. B. Electric motors shall be rated for the appropriate application: wet location (TEFC); submersible; explosion proof, VFD's, 2.07 ACCESS PANELS

A. The Mechanical Contractor shall furnish and install access panels where required for access to equipment. Access panels shall be adequately sized, of a type approved by the Architect and shall be fire or smoke-rated as required. 2.08 EXCAVATION AND BACKFILLING

A. Provide excavating and backfilling for Mechanical Work. Backfill in 12" layers, mechanically tamp to 95% proctor

standards. Protect according to OSHA standards. The General Conditions take precedence. Verify the location of

underground utilities before excavation; the contractor is responsible for any damage to underground utilities. Restore

existing paving, curbs, sod, bushes, etc to match surroundings. 2.09 START-UP PROCEDURES

A. Follow manufacturer's recommended procedures in starting up the equipment; damage caused during start-up shall be replaced at no expense to the owner. 2.10 PIPING INSTALLATION

Provide drain valves at all low points, vents at all high points, to allow complete drainage. B. Material and methods per ASME, ASTM, ASA, AWS, and National Plumbing Code Handbook C. Provide unions or flanges in piping connections to each valve, device, or item of equipment. Install each union or flange to permit the removal of parts and equipment for inspection or cleaning, without disconnecting any piping, except unions

A. Install piping plumb and straight, parallel with walls and partitions. Conceal piping within structure whenever practical.

or flanges. Provide dielectric unions at locations with dissimilar materials.

D. Piping on the roof will be supported above the roof on roof pads. The pads shall be approximately 6"Wide by 6" high by the length as required. They shall be made of recycled rubber, rated for 500lbs/ft loading each. The pads will have galvanized steel "C" channel attached to the top, which can accommodate pipe clamps to secure the piping. This configuration of individual piping pads may be expanded to include two pads supporting a trapeze style support where multiple pipes are racked together. The pads are C-series manufactured by Cooper B-line, Erico, or approved equivalent.

2.11 HANGERS AND SUPPORTS A. Support piping and equipment from the structure to prevent sagging, pocketing, swaying, and vibrations, and arranged to provide for expansion and contraction. Brackets, clamps, and hangers shall be steel, except copper hangers will be used with copper piping. Hangers supporting vibrating equipment shall be provided with spring isolators. Chain, perforated iron or wire hangers are not permitted. Hangers will be of a type acceptable to the Engineer, and shall have a capacity and

spacing as required by code.

2.12 <u>SLEEVES AND PLATES</u> A. Provide sleeves and inserts for all mechanical piping. The contractor shall be responsible for the cost of cutting and patching required for piping where sleeves and inserts were not installed or where incorrectly located. Sheetrock joint compound may be used to seal openings in non-rated walls(insulation to be continuous through walls.

B. Drill holes as required for the installation of hangers required for the mechanical work. C. Where sleeves are placed in exterior walls below grade, the space between the pipe or conduit and the sleeves shall be made completely water-tight.

D. Seal all piping passing through fire-rated construction with approved material to maintain air-tight, fire-rated integrity, with a U.L. listed assembly compatible with the wall or floor assembly being penetrated.

A. All piping systems shall be tested and witnessed by the Owner prior to concealment. Protect equipment and fixtures or

equipment, isolating them during the test. DWV system shall be sealed and hold water without leaks for 24 hours. Domestic water and hydronic piping shall be air tested at 150 PSIG; natural gas piping shall be air tested at 30 PSIG. Air tests shall be held for one hour without loss of pressure.

2.14 <u>CLEANING AND STERILIZATION</u>

A. After testing, water piping systems shall be filled, operated for a sufficient length of time to completely remove all foreign

B. Sterilize the domestic hot and cold water piping in accordance with the local health authority standards. Flush the systems with clear water until the residual chlorine content is equal to that of clear water. C. Where there is no water treatment contractor sterilize piping system with chlorine for 24 hours to 50 PPM. Completely

flush to less than 1 PPM. Local health authority standards take precedence. 2.15 FLEXIBLE PIPE CONNECTIONS A. Provide flexible pipe connection suitable to connect to adjoining piping as specified for pipe joints. Use sized pipe units.

Install flexible pipe connectors on pipes connected to equipment supported by vibration isolation.

A. After completion of the piping or insulation, paint stenciled descriptive abbreviations, including directional arrows, on

SECTION 22 07 00 - PLUMBING INSULATION

1.01 QUALITY ASSURANCE

A. All insulation shall have a composite rating (insulation, jacket and adhesives) not exceeding flame spread 25 and smoke developed 50.

2.01 PIPE INSULATION FOR PIPING ABOVE GRADE

piping at equipment and approximately every 25'.

A. Insulation shall be closed-cell, elastomeric pipe insulation having a conductivity of 0.27 at 75 °F mean, with thicknesses as

Pipe Sizes	<1"	1" to 11/4"	> 11/2"
Dom. cold piping	1/2"	1/2"	1"
Roof drain sumps, & horiz. leaders	1/2"	1/2"	1"
Dom. hot & recirc. Piping	1-1/2"	1-1/2"	1-1/2"

B. Insulation shall be Armacell "Armaflex" or equivalent by Johns-Mansville, Owens-Corning.

C. Exterior piping insulation will be painted with a white solvent based alkyd finish (Armaflex AB or equivalent), including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions. Where exposed to physical damage, exterior piping insulation will be covered with aluminum jacket, including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions.

D. All interior underground water (domestic and hydronic) piping shall be insulated with 1" Armaflex, except where noted.

2.02 PIPE INSULATION FOR PIPING BELOW GRADE A. Insulation shall be closed-cell, elastomeric pipe insulation having a conductivity of 0.27 at 75F mean, with thicknesses as

Pipe Sizes	<1"	1" to 11/4"	> 11/2
Dom. cold piping	1/2"	1/2"	1"
Dom. hot & recirc. Piping	1"	1"	1"

B. Insulation shall be Armacell "Armaflex" or equivalent by Johns-Mansville, Owens-Corning.

C. Exterior piping insulation will be painted with a white solvent based alkyd finish (Armaflex AB or equivalent), including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions. Where exposed to physical damage, exterior piping insulation will be covered with aluminum jacket, including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions.

D. All interior underground water (domestic and hydronic) piping shall be insulated with 1" Armaflex, except where noted.

A. Secure cloth with adhesive applied to seal laps of cloth. Jacket overlap on longitudinal seams and ends of piping insulation shall be pasted down with a waterproof adhesive.

B. Provide pre-formed isocyanurate or calcium silicate rigid pipe support with metal shield at all pipe supports per manufacturers instructions. Insulation must not be interrupted for supports, etc.

C. Pipe saddles shall be type M-URSA as manufactured by Industrial Insulation Sales, or equivalent. 3.02 PIPE(ELASTOMERIC)

to manufacturer's instructions.

A. Insulation shall be solid slip-on installed prior to connection. Butt joints shall be sealed with manufacturer's adhesive. Where slit seams must be installed, seal the seam with manufacturer's adhesive. Fittings shall be insulated with meter-cut pieces of insulation according to manufacturer's instructions, or insulated with similar sheet insulation installed according

B. Provide wood blocks and metal hanger shields at support strap locations on horizontal pipe runs. Insulation will not be interrupted for supports, etc.

SECTION 22 10 00 - PLUMBING

1.01 WATER SERVICE A. Consult with local authorities to provide water service. Provide meter pit, meter yokes, valves, RPZ valves, PRV valves, etc. for complete installation. Connect to a point 5' from building. Coordinate exact point of connection with site

contractor before bidding.

1.02 SANITARY SEWER CONNECTION A. Consult with local authorities and connect to sewer main as required. Connect to a point 5' from building. Coordinate exact point of connection with site contractor before bidding.

2.01 <u>DOMESTIC WATER SYSTEM PIPING</u>

A. Domestic cold, hot, and recirculating hot water piping may be either copper, or PEX, as noted below: a. Above grade, piping shall be Type L, hard-drawn copper tubing with wrought copper fittings. Solder shall be

b. Below grade, piping shall be Type K, soft-drawn copper tubing with fittings only where specifically allowed by the architect. Where required, the fittings will be wrought copper. Solder shall be 95/5 tin/antimony, except underground, where it will be silver solder.

2. PEX Tubing: a. Tubing shall be cross-linked polyethylene using the Engel method of cross-linking. The tubing shall be rated for 80PSI at 200F, and shall be manufactured according to ASTM F 876 and ASTM F 877.

b. Fittings shall be APR(brass) "Pro-pex" style or equivalent. Manifolds may be copper, brass, or plastic, with

balancing controls. c. Stub outs to be copper with brass shutoff valves. Stub outs to be properly secured to wall. d. Tubing in return air plenums, or other areas designed as air handling plenums, shall be installed to a flame rating

e. Tubing shall be as manufactured by Wirsbo or equivalent. 2.02 SOIL, WASTE, AND STORM PIPING

of 25/50 according to ASTM E84, whether by spacing, insulation or other approved method.

A. Soil, waste, and vent piping, and storm piping shall be schedule 40 solid core PVC conforming to ASTM D2665 and

ASTM 3034 and utilizing push-on joints.

ASTM D1785 with solvent joints conforming to ASTMD2855, except as noted below. PVC buried below slab shall be installed in conformance with ASTM D2321 1. Hubless(No Hub), cast iron soil pipe conforming to CISPI 301 with stainless steel no-hub couplings conforming to CISPI 310 shall be used in return air plenums and other areas designed as air handling plenums, or where specifically

required by local code. All cast iron soil pipe and fittings shall be marked with the collective trademark of the Cast Iron Soil Pipe Institute and be listed by the NSF International. 2. 316 Stainless steel, conforming to AISI316L/EN1.4404, using push-on EPDM seals (with deduct alternate for Schedule 40 CPVC) shall be used in commercial kitchens to a point approximately 20' downstream of drains serving

B. Soil, waste, and storm piping below grade 5' beyond the building may be PVC SDR 35, installed in conformance with

C. Storm water piping shall be same as soil and waste piping when concealed and galvanized schedule 40 steel pipe when

exposed to physical damage. Fittings shall be cast iron, drainage type.

A. Provide plumbing fixtures as specified on the plans. Provide carriers, trim, bolts, caps, etc according to the manufacturer's instructions and as required for a complete installation. All fittings and appurtenances (p-traps, connections, etc) shall be brass; chrome plated brass where visible.

B. Provide carriers for wall hung or mounted fixtures such as water closets, lavatories, urinals, sinks, etc. The carriers shall be designed to fit in the wall structure available, and shall transmit the load to the floor. Fixtures will not be supported by the wall structure unless specifically indicated.

2.04 GAS PIPINO

A. Above grade in accessible locations, gas piping shall be schedule 40, black iron pipe with threaded fittings. Fittings shall be made of malleable iron. Gas piping run in return plenums, where allowed by local code, shall have welded joints. B. Regulators shall be Maxitrol, or equivalent, of size and capacity as required.

2.05 GAS WATER HEATER(SEALED COMBUSTION)

A. Water heater shall be as specified on the plans. Heaters shall be approved and listed by the American Gas Association as self-contained, vented water heaters. The tank shall be heavy-gauge, welded steel, glass-lined, foam insulated to conform to ASHRAE 90.1b-1992. The heater shall be rated for 150 PSI and shall have a five-year warranty. The power burner shall be sealed combustion, submerged with spiral internal flue. The controls shall be electronic microprocessor based with digital display and shall include high-limit control and safety shut off. The heater shall include two (2) magnesium anodes and a pressure and temperature relief valve. The heater will be furnished with integral heat traps. Where required by local code, provide ASME certification.

B. Water heater shall be provided with R 14 insulation. Where factory insulation does not meet insulation requirements, provide aftermarket insulated jacket as required to meet requirements.

C. Where flue is run thru uninsulated, unconditioned spaces (attics, crawlspaces, etc.), insulate the flue with R8 equivalent

D. The water heaters shall be manufactured by A.O. Smith, State, Polaris, Ruud or Bradford-White.

2.06 INSTANTANEOUS GAS WATER HEATER A. Install water heater per manufacturer's instructions.

B. Route the P/T relief valve full sized to approved receptor and discharge per code.

C. Install flue condensate drain per mfgr's instructions, route full sized discharge to receptor. D. Flue and combustion air ducts shall be provided by the mechanical contractor, unless otherwise noted. Where sealed

combustion water heaters are used, the Mechanical Contractor shall install PVC flue and combustion air piping. This piping will be of the size and type recommended by the manufacturer, and use factory recommended discharge/intake fittings as shown on the plans.

E. The water heaters shall be manufactured by Navian, Rinnai, Noritz, A.O. Smith or Takagi.

A. Neutralizer shall be inline type made from corrosion resistant material with replaceable neutralization media. Neutralizer shall be of appropriate size and type for appliance served.

B. Manufacturer shall be Dayton, Axiom, or equivalent.

2.08 DOMESTIC RECIRCULATING PUMP A. Pump shall be 2800 rpm, in-line, centrifugal oil-lubricated, sleeve-bearing pump with flanged piping connections, bronze body, plastic impeller, and having mechanical seals. Motors shall be non-overloading, open drip-proof type.

B. The pump shall be furnished with an automatic timer kit.

C. Manufacturer shall be Bell and Gossett, Paco, Taco, or approved equivalent.

2.07 CONDENSATE NEUTRALIZER

3.01 DOMESTIC WATER SYSTEM A. Provide drip cocks so that the entire system may be drained. Provide manual air vents at high points in the system where air may be trapped. Provide stops for all fixtures and appliances. Provide a full size ball valve on each branch serving a

B. Provide swing or swivel joints on connections as required to prevent noise or vibration of the piping. Provide fixture stops at all fixtures, hose bibbs, wall hydrants, and Owner-furnished fixtures. Run all piping on warm side of building insulation. Pipe insulation is not considered freeze protection. Provide water hammer arrestors where required. Locate to be

accessible or provide access panel.

3.02 SOIL, WASTE, AND STORM WATER PIPING A. Lay piping true to line and grade so that sewer will have smooth and uniform invert throughout its length. Verify elevations of existing sewer before starting work.

B. Install a clean-out at the base of each soil stack, at the base of each interior rain-water conductor, at each change in direction, at intervals not over 50 feet interior of building, and every 100 feet exterior to building and elsewhere as shown on the drawings or required by Code. Make clean-outs same size as pipe service, except they need be no larger than 4". Set tops and covers flush with floors and walls. Wall covers shall be round polished stainless steel with centered stainless steel securing screw (Josam 58710). Floor cleanouts shall be flush, cast iron, ABS plug with Nikalloy cover(Josam 56000). Provide floor clamps at each floor for uniform support of stacks.

C. The entire drain waste and vent, and storm sewer systems shall be watertight and odorproof, including sealing of floor drains and sinks, closet rings, etc. 3.03 WATER HEATER INSTALLATION

A. Install water heaters per manufacturer's instructions. Provide 24 gauge, galvanized steel drain pan, piped with minimum

3/4" drain, piped to an approved receptor with indirect waste connection per code. B. Route the P/T relief valve full sized to approved receptor and discharge per code. Provide expansion device, tank or valve, as required by code, and allowed by the local jurisdiction. C. Flue and combustion air ducts shall be provided by the mechanical contractor, unless otherwise noted. Where sealed

combustion water heaters are used, the Plumbing Contractor shall install PVC flue and combustion air piping. This piping

will be of the size and type recommended by the manufacturer, and use factory recommended discharge/intake fittings as

D. Condensing water heaters shall utilize an inline condensate neutralizer. Provide PVC drain from water heater and/or flue with a minimum ½" drain, piped to an approved receptor with indirect waste connection per code. Verify installation

shown on the plans

details with manufacturer. 3.04 PLUMBING FIXTURES AND TRIM A. Furnish and install a vacuum breaker at each hot and cold water service outlet to which a hose can be attached, including

B. Provide chrome-plated rigid or flexible supplies to fixtures with stops, reducers, and escutcheons. Insulate stops and supplies at handicapped sinks with Truebro lav guard or equivalent. Bag type covers are not allowed. C. Provide chrome plated brass P-traps with slip fittings for all exposed drains. Insulate P-traps at handicapped sinks with

D. Flush valve handles, and flush tank handles, on handicapped water closets shall be located on the wide side of the stall for convenient access and as required by code. E. Provide a flexible elastomeric sheet for flashing around all shower drains, roof drains, floor drains, floor sinks, etc except

for slabs on grade. The membrane shall be a minimum 0.40 inch thick, made of chlorinated polyethylene, installed per

manufacturer's instructions. The flashing membrane for roof drains, floor drains, etc shall be a minimum of 2'x2'. The flashing membrane for shower pans, service sink pans, etc shall have "pigs ear" folds in the corners, extending the

Truebro lav guard or equivalent. Bag type covers are not allowed.

membrane up at least 3" above the drain. The membranes shall be manufactured by Chloralloy or equivalent. F. Mount fixtures the following heights above finished floor:

1. Water closet: 14"-15" to top of bowl rim; Handicapped, 18" to top of bowl rim.

2. <u>Urinal</u>: 24" to top of bowl rim; Handicapped, 17" to top of bowl rim.

3. <u>Lavatory</u>: 31" to top of basin rim;

<u>Handicapped</u>, 32" to top of basin rim. 4. <u>Drinking fountain</u>: 40" to top of basin rim; Handicapped, 36" to spout.

5. Water closet flush valves: Standard, 11" minimum above bowl rim. Locate flush valves on "wide" side of 6. Floor drains: In finished areas, 1/4" - 1/2" below finished floor. In mechanical rooms and other unfinished areas, install at least 1" below floor, except where it would be a stumble hazard.

G. Rough-in fixture piping connections in accordance with the following table of minimum sizes or as required for particular

HW CW Waste Vent 1/2" 1/2" 1-1/2" 1-1/4" Lavatories 1/2" 1/2" 2" 1-1/2" Service sink -- 1/2" 1-1/4" 1-1/4" Drinking fountain -- 1" 3" 2" Water closet (Valve) -- 1/2" 3" 2" Water Closet (tank) -- 3/4" 2" 1-1/2" Floor drains -- -- 2" 1-1/2" -- 3/4" -- --Hose bibs 1/2" 1/2" 2" 1-1/2" Wash Mach Unit SEE SCHEDULE & PLANS Kitchen equipment

Owner furnished equipment SEE SCHEDULE & PLANS

A. Gas distribution system is based on both 2 PSI and a 6" W.C. natural gas pressure except where noted on plans. Provide all gas-fired equipment with gas pressure regulators or special orifices as required to operate at 5000 ft. elevation. Provide a gas cock and drip leg at each appliance. B. Gas piping on roof shall be secured to uv resistant Polyethylene foam block; Erico "Pipe Pier". Provide rubberized sheet

C. Piping exposed outside shall be painted with an exterior type latex paint which matches the adjacent roof or wall. D. Appliance connection piping to be per plans or same as appliance size, whichever is larger. Transition downstream of all shutoffs and regulators as close to appliance as possible when plans call for larger than appliance.

3.06 <u>KITCHEN</u> A. Provide final connections to all kitchen equipment in accordance with manufacturer's instructions. Provide stops or

shut-off valves for hot and cold water connection; plug cocks or quick- connect couplings for gas appliances. Indirect wastes shall be DWV copper, except at soda machines where plastic pipe shall be used.

APPROVAL STAMPS:

REVIEWED FOR CODE COMPLIANCE

02/24/2023

/12/22 ISSUED FOR PERMIT

Description

SUBMISSIONS & REVISIONS

No. Date

MAY REIGLER PROPERTIES 2201 WISCONSIN AVE NW SUITE 200

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DENVER, CO 80202 T: 303.892.7062 PROJECT LOCATION

1600 WYNKOOP ST., SUITE 100

JOHNSON NATHAN STROHE

STEAMBOAT SPRINGS, CO 80487 DRAWING TITLE

PLUMBING

SPECIFICATIONS

STEAMBOAT BASECAMP

PARTIAL RENOVATION &

TENANT FIT-OUT

1901 CURVE PLAZA

DRAWING NO:

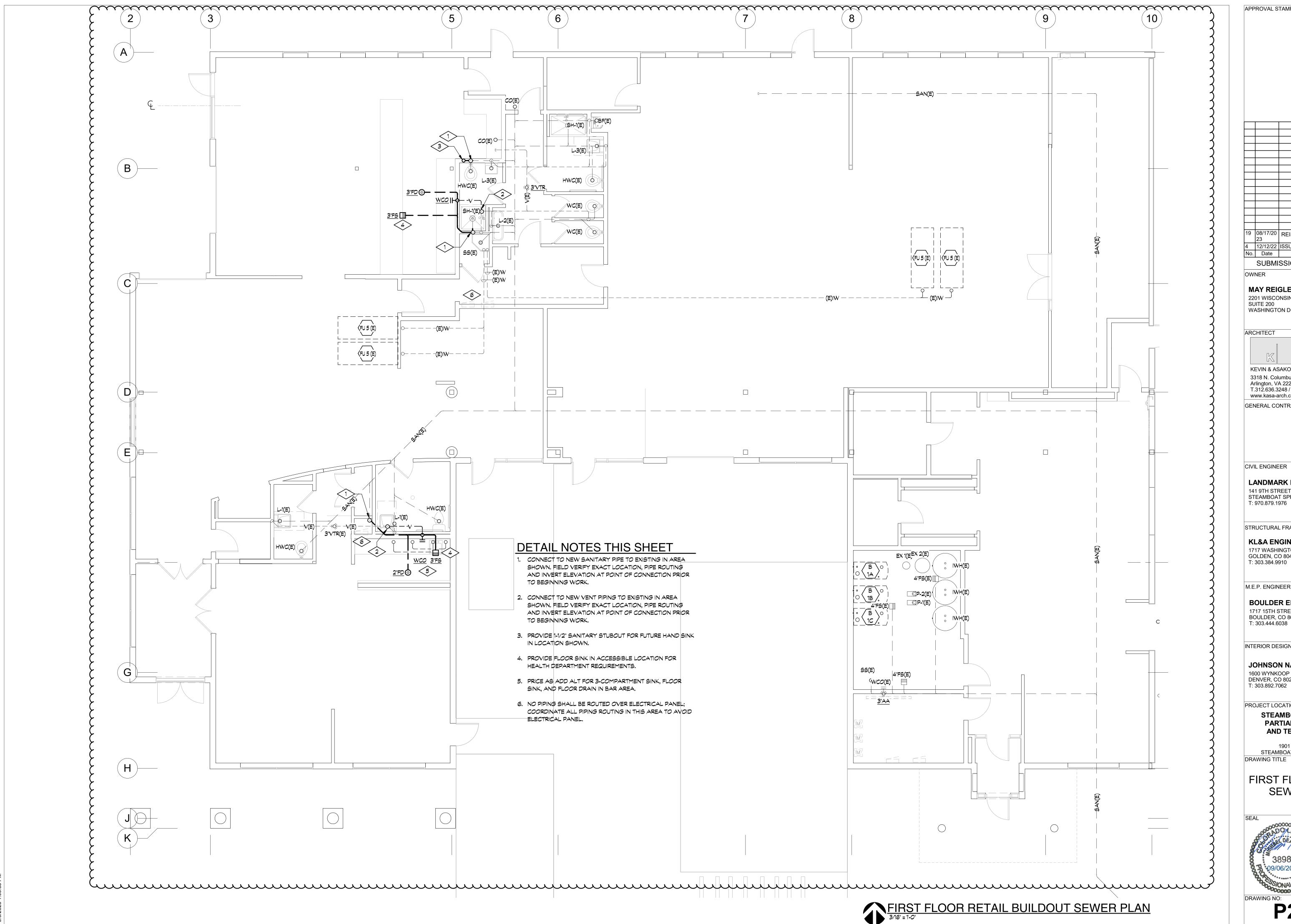
20129

DRAWN BY: CHECKED BY:

DATE:

10/24/2022

PROJECT NO:



19 08/17/20 REISSUED FOR PERMIT 4 12/12/22 ISSUED FOR PERMIT SUBMISSIONS & REVISIONS MAY REIGLER PROPERTIES 2201 WISCONSIN AVE NW SUITE 200 WASHINGTON DC 20007 **ARCHITECT KEVIN & ASAKO SPERRY ARCHITECTURE** 3318 N. Columbus Street Arlington, VA 22207 T.312.636.3248 / 312.636.4252 www.kasa-arch.com GENERAL CONTRACTOR

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PROJECT LOCATION

STEAMBOAT BASECAMP PARTIAL RENOVATION AND TENANT FIT-OUT

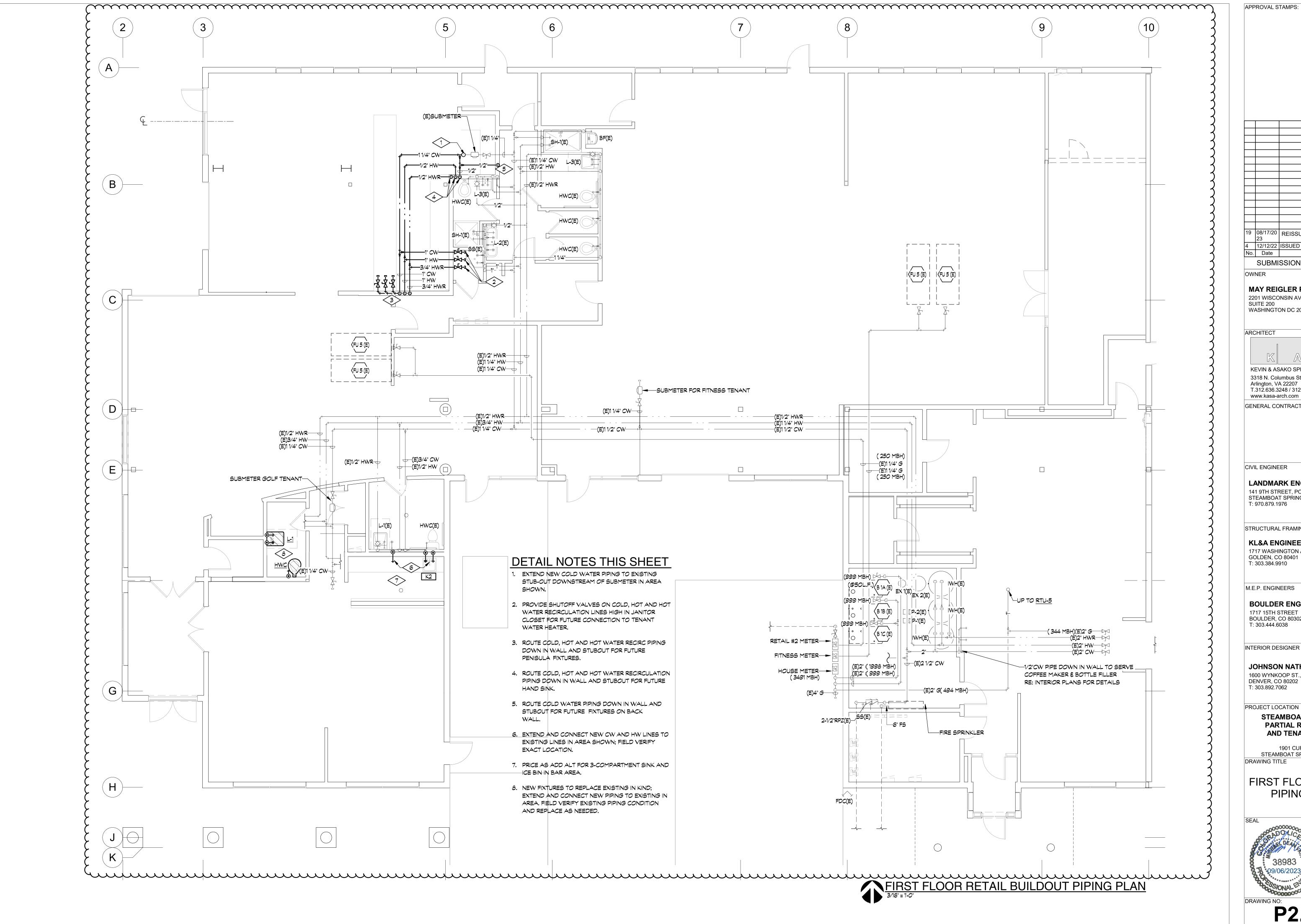
1901 CURVE PLAZA STEAMBOAT SPRINGS, CO 80487 DRAWING TITLE

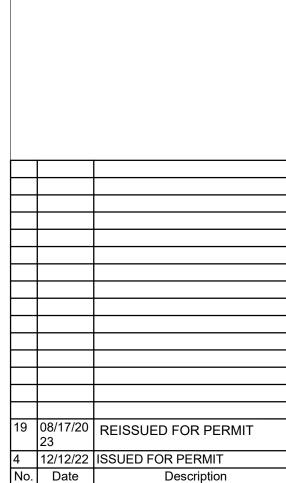
FIRST FLOOR RETAIL SEWER PLAN

PROJECT NO:

DATE: 08/22/23 DRAWN BY:

CHECKED BY:





SUBMISSIONS & REVISIONS

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STEAMBOAT BASECAMP PARTIAL RENOVATION AND TENANT FIT-OUT

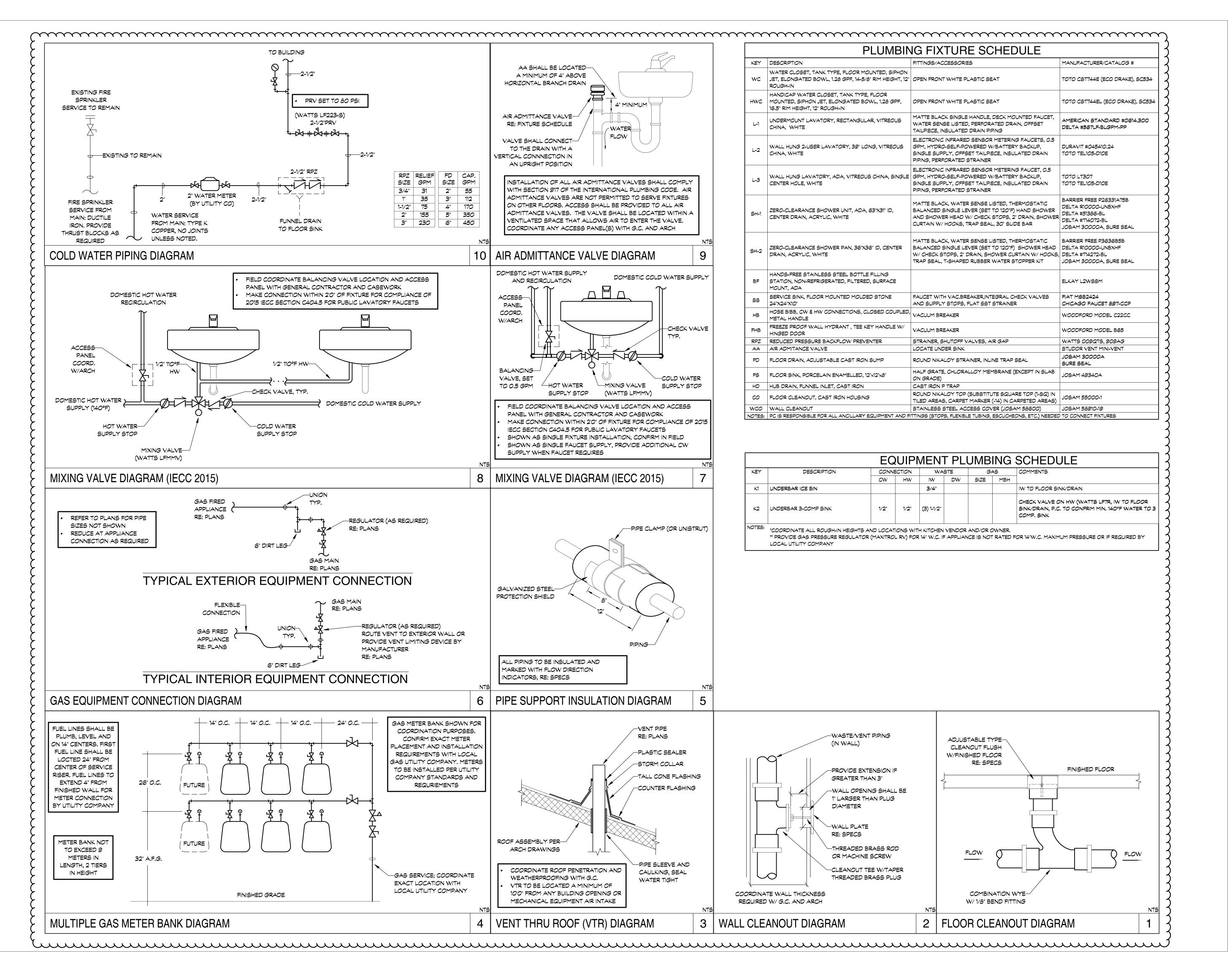
1901 CURVE PLAZA STEAMBOAT SPRINGS, CO 80487 DRAWING TITLE

FIRST FLOOR RETAIL PIPING PLAN

DRAWN BY: CHECKED BY: PROJECT NO: 20129

DATE: 08/22/23

DRAWING NO:



19 08/17/20 REISSUED FOR PERMIT

Description SUBMISSIONS & REVISIONS

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PROJECT LOCATION

STEAMBOAT BASECAMP PARTIAL RENOVATION AND TENANT FIT-OUT

1901 CURVE PLAZA STEAMBOAT SPRINGS, CO 80487 DRAWING TITLE

PLUMBING DETAILS & SCHEDULES

20129 DRAWING NO: P4.11

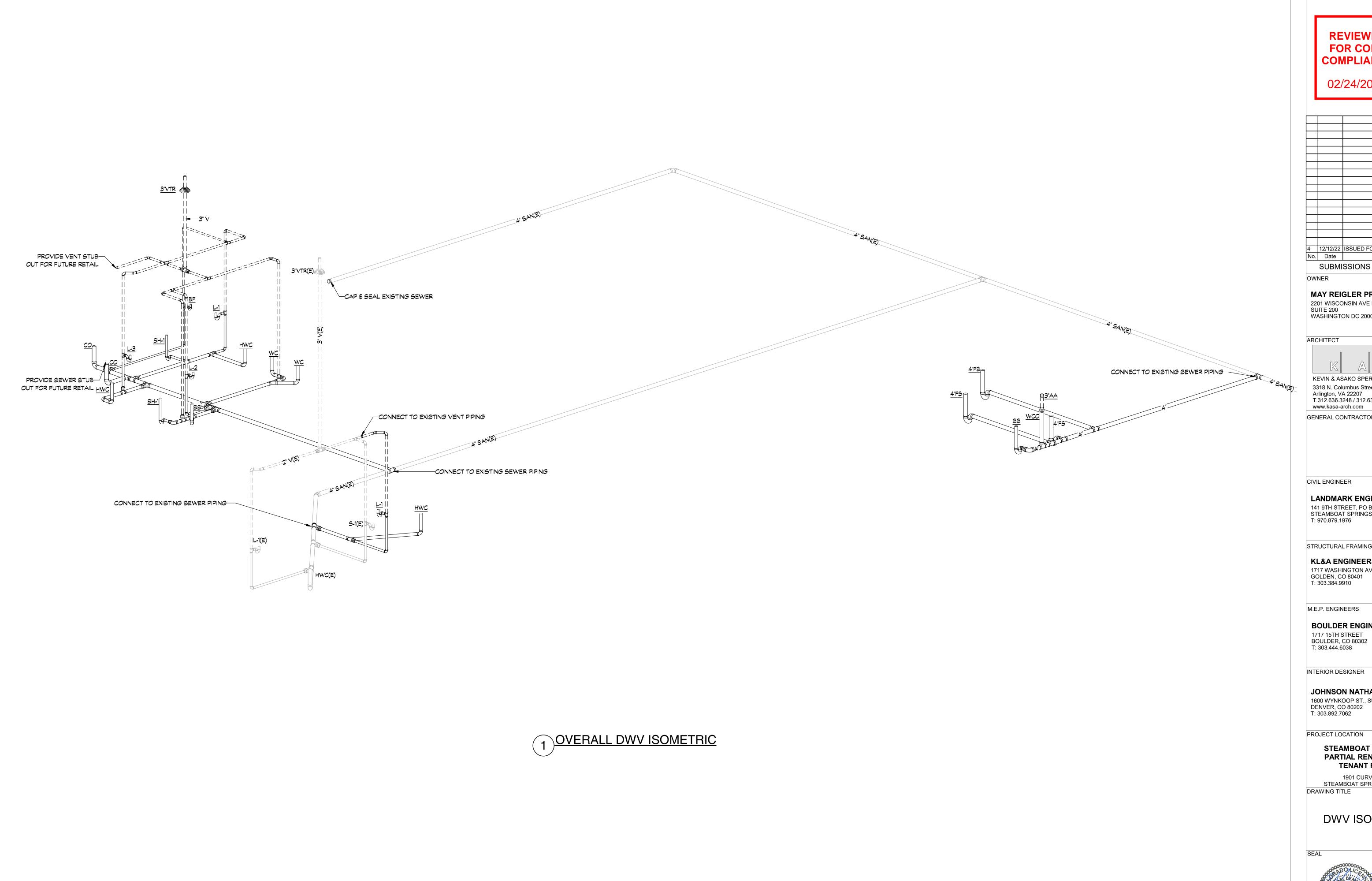
DATE:

08/22/23

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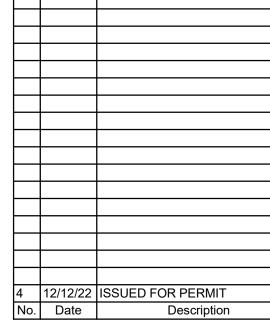
CHECKED BY

PROJECT NO:



REVIEWED FOR CODE **COMPLIANCE**

02/24/2023



SUBMISSIONS & REVISIONS

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PROJECT LOCATION

STEAMBOAT BASECAMP PARTIAL RENOVATION & **TENANT FIT-OUT**

1901 CURVE PLAZA STEAMBOAT SPRINGS, CO 80487 DRAWING TITLE

DWV ISOMETRIC

DRAWING NO:



10/24/2022 DRAWN BY: CHECKED BY:

DATE:

PROJECT NO:

20129

P4.12

1.02 CODES AND REGULATIONS A. Comply with state and local codes, and utility company regulations. Final interpretations will be made by the local inspection authority. The Contractor to verify the governance of the following Codes, including any local amendments and supplementary codes such as the Codes of the National Fire Protection Association: 1. Building Code: 2018 International Building Code

2. Plumbing Code: 2018 International Plumbing Code 3. Mechanical Code: 2018 International Mechanical Code 4. Fire Code: 2018 International Fire Code 5. Gas Code: 2018 International Fuel Gas Code 6. Energy Code: 2018 International Energy Conservation Code

1.03 EQUIPMENT AND MATERIALS STANDARDS A. Equipment and materials shall be new, UL-listed for the use intended, and free from damage or defect. They shall comply

with the latest industry standards. 1.04 CONTRACT DRAWINGS

7. Electrical Code 2020 National Electrical Code

A. Illustrate the general design and extent of performance required. All dimensions and locations shall be taken from the Architectural drawings. Consult with Architectural plans and locate all ceiling equipment where indicated on reflected ceiling plans

1.05 SHOP DRAWINGS

A. Submit products data and/or shop drawings as required by the Architect for the following:

1. Insulation

2. Air handling equipment 3. Grilles, registers, diffusers, louvers

4. Fire dampers 5. Temperature controls, systems, and components

Valves

shall be accomplished at no additional expense to the Owner. C. Manufacturers not listed may submit for acceptance as an "approved equivalent." Requests for an "equivalent" means "approved equivalent". Four copies of such submittal must be received by the Engineer seven (7) working days prior to

B. Quality of specific equipment is established by manufacturer's catalog number. Alterations caused by any Substitution

1.06 WARRANTY

A. The Contractor shall be responsible for the successful operation of mechanical systems, equipment, and materials installed under this Contract for a period of one year from the date of final acceptance. Defective equipment or materials shall be repaired or replaced at no expense to the Owner. Provide four complete service and maintenance calls spaced at equal intervals during the warranty period.

1.07 PRODUCT HANDLING AND CLEAN UP

A. Equipment shall be left clean and undamaged, to the satisfaction of the Owner. The General Conditions take precedence. B. HVAC equipment shall not be used during construction as a means to heat or cool the space, unless specific approval is given by the owner. If such equipment is used, it must be completely cleaned and repaired as necessary. Cleaning involves replacing all filters; cleaning all coils and heat exchangers; inspecting fans, plenums, and ductwork and cleaning as directed by the owner.

1.08 <u>CUTTING AND REPAIRING</u>

A. The contractor shall be responsible for all cutting, drilling, welding, and repair required for his portion of the work. Coordinate with the Architect. The General Conditions take precedence.

1.09 OPERATING AND MAINTENANCE DATA

A. Provide the Owner with operating and maintenance instructions (four copies) required for operation of all mechanical systems. Bind the written instructions in a notebook. The General Conditions take precedence. The manuals shall include the following items:

1. Operating manual and spare parts list for each piece of equipment. 2. Preventive maintenance schedule for lubricating and checking each piece of equipment.

1.10 PERMITS A. The contractor shall pay for all fees, taxes, secure permits, licenses, and inspections required for the project.

.11 <u>TEMPORARY SERVICES</u>

A. Provide temporary water service for construction, as required by the General Contractor.

3. Instructions on who to call for service during the warranty period.

1.12 COORDINATION

A. Coordinate outlet device and equipment locations with the Architectural Plans and work of other trades. Locate on

horizontal and vertical lines to avoid interference and to provide functional use of all equipment. Verify electrical power characteristics before ordering equipment.

B. Electrical work performed by this contractor will conform to the standards of Division 26-28. Mechanical equipment motors and controls shall be furnished, set in place, and wired according with the following schedule unless otherwise noted or specified. MC = Division 21-23 EC = Division 26-28

Furn Set Power Control By By Wiring Wiring MC EC EC MC Combination starters MC MC EC Equipment motors Motor starters & O.L. relays MC EC EC MC EC EC EC MC Disconnect switches Thermal overload heaters (1) EC EC EC Variable Speed Drives MC EC EC Control relays/transformers MC MC EC Temperature control panels MC MC EC Temp. Controls conduit/wiring MC MC --Actuator and solenoid wiring MC MC --Pushbuttons & pilot lights MC MC -- MC MC MC -- MC Room thermostats EC EC EC --Thermostats: line voltage

C. The general guideline for the division between control (by MC) wiring and power wiring (by EC) is that power wiring carries the current which energizes a motor, control wiring does not. Control wiring may be 120V, which would be the responsibility of the MC. Control motors are wired by the MC.

D. Examine the site and become aware of existing conditions, utilities, and other issues affecting the satisfactory completion

1.13 DELIVERY, STORAGE, HANDLING

A. Provide necessary hauling and hoisting equipment. Protect the materials of this Division before, during, and after installation.

1.14 <u>AS-BUILT DRAWINGS</u>

A. Keep a current set of "as-built" drawings on site. Upon completion of the work, furnish engineer with a reproducible prints showing the "as-built" installation.

1.15 PROJECT/SITE CONDITIONS

A. Visit the site to become familiar with location and the various conditions affecting the work, including existing utilities.

A. After completion of the bidding and selection process, prior to awarding the contract, the contractor must review and verify the contract documents in their entirety, including those of other trades. At this time, discrepancies, conflicts, omissions, etc in the contract documents must be documented. Alterations to the contract will be made at that time to include such items, as well other modifications which might be made by the Owner. After award of the contract, change orders caused by discrepancies, conflicts, omissions in the contract documents will not be allowed.

A. Provide expansion joints or loops, guides, and anchors in piping to allow for expansion and contractions. Expansion joints shall be bellows type.

A. Gate valves 2" and smaller shall be cast bronze, rising stem, solid disc, 200 PSI WOG B. Ball valves 2" and smaller shall be cast bronze, full port, stainless steel ball, teflon sets, 400 PSI WOG. C. Butterfly valves 2" and smaller shall be cast bronze, stainless steel disc, surrounding fluorelastomer seal, 350 PSI WOG. D. Check valves shall be horizontal, swing-cast bronze, bronze disc, 200 PSI WOG.

E. Valves shall be domestically manufactured by Milwaukee, Powell, Nibco, or equivalent. 2.03 <u>RELIEF VALVES</u>

A. Relief valves shall be all-bronze A.S.M.E. rated valves with external test levers, sized in accordance with the instructions of the appropriate manufacturer. Pipe discharge outside or to floor drain where possible and per code. Valves shall be manufactured by Watts or equivalent.

2.04 FLEXIBLE CONNECTORS

A. Connectors in piping shall be made with molded teflon or neoprene and nylon bellows, metal reinforcing rings, flanged ends and control rods, suitable for 40F to 200F temperature range and 125 lbs. pressure. Alternative shall be stainless steel inner hose with braided exterior sleeve for steel pipe or bronze inner hose with braided exterior sleeve for copper piping. Metra-flex Company, or equivalent.

A. Lugs: Lugs for wiring connections shall be rated for copper and aluminum, nad shall have a minimum rating of 75C. B. Electric motors shall be rated for the appropriate application: wet location (TEFC); submersible; explosion proof, VFD's, 2.03 REFRIGERANT PIPE INSULATION

2.04 DUCT INSULATION, WRAP

1. Supply air ducts:

A. Insulation shall be 1" thick, closed-cell, elastomeric pipe insulation having a conductivity of 0.27 at 75 °F mean:

valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions.

C. Insulation shall be Armacell "Armaflex" or equivalent by Johns-Mansville, Owens-Corning.

C. Wrap shall be Johns-Manville "Microlite" or equivalent by Owens-Corning, Certaineed or Knauf.

coated with black-coated mat surface. Liner shall have a "K" value of 0.24/inch at 75F mean.

C. Liner shall be Johns-Manville "Linacoustic" or equivalent by Owens-Corning, Certaineed or Knauf.

barrier. Insulation shall have a K-factor of .25 at 75 °F mean.

B. Duct wrap shall be installed as follows or as shown on the plans:

B. Duct liner shall be installed as follows or as shown on the plans:

B. Duct board shall be installed as follows or as shown on the plans:

insulation shall be pasted down with a waterproof adhesive.

SECTION 23 09 00 - AUTOMATIC TEMPERATURE CONTROLS

furnished by the specific equipment manufacturer.

and maintenance instruction booklets.

corrected at no charge to the Owner.

contractor may be the mechanical contractor or approved sub-contractor.

equipment, shall be the responsibility of the Electrical Contractor.

A. HVAC units shall each be controlled by a heating/cooling thermostat.

B. Toilet exhaust fans shall be controlled with associated lights.

commences (via thermostat in hood collar by hood vendor).

SECTION 23 21 00 - HYDRONIC PIPING SYSTEMS

system, using a boiler as the heat source and fintube.

E. Activation of a duct detector shall shut down its respective HVAC unit.

The tank fitting shall include an air purger, air vent, and fill valve.

casting with flanged piping connections, and having mechanical seals.

C. All pumps shall be by the same manufacturer, Bell & Gossett, Taco, Paco, or approved equal.

packaged with burner manifolds, main burners, base panels, and insulation board panels.

2. The boiler shall be equipped with intermittent electronic ignition pilot system.

drip-proof type. Provide motor controller for each pump.

A.G.A. certified gross output capacity at 100 percent firing rate.

working pressure. Maximum working pressure will be 15 psig.

construction. The burner shall modulate down to 10%.

4. Operating controls shall be as shown on the plans.

more than 7" water column.

C. Dishwasher hood exhaust fan shall be controlled manually.

manufacturers instructions. Insulation must not be interrupted for supports, etc.

C. Pipe saddles shall be type M-URSA as manufactured by Industrial Insulation Sales, or equivalent.

2. Exterior supply, return, or make up air ducts:

1. Supply air ducts(heated space): 1-1/2"

2. Supply air ducts(unheated space):

3. Return air ducts(within 15' of fan):

5. Treated make up air within space:

1. Supply air ducts(exterior): 2"3"

per manufacturer's recommendations.

3.01 PIPE(FIBERGLASS)

3.02 PIPE(ELASTOMERIC)

1.02 QUALITY ASSURANCE

1.03 <u>SERVICE AND GUARANTEE</u>

2.01 THERMOSTATS

2.03 <u>PUMPS:</u>

E. Controls:

manual override.

3.01 SEQUENCE OF OPERATION

3.03 <u>DUCT WRAP</u>

to manufacturer's instructions.

interrupted for supports, etc.

4. Outside air intakes within space:

2.06 EXTERIOR DUCT INSULATION, BOARD

B. Exterior piping insulation will be painted with a white solvent based alkyd finish(Armaflex AB or equivalent), including

all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions.

A. Duct wrap insulation shall be flexible fiberglass insulation, 1 pcf, with factory-applied, reinforced, aluminum foil vapor

D. At the contractor's option, the above specified duct wrap may be replaced with duct liner or equal or greater thickness.

A. Duct liner shall be 1-1/2 lb density (3.0lb for exterior ducts), constructed of glass fiber liner. The air stream surface is

(not insulated)

A. Duct insulation shall be ridge polystyrene board insulation. Insulation shall have a K-factor no greater than .23 at 75 °F

D. Or at the contractors discretion: cover insulation with a self-adhering weather proof membrane. Polyguard or equiv. Install

C. Cover insulation board with metal jacket, secure with screws or bands. Seal jacket weather tight with silicone caulk.

A. Secure cloth with adhesive applied to seal laps of cloth. Jacket overlap on longitudinal seams and ends of piping

B. Provide pre-formed isocyanurate or calcium silicate rigid pipe support with metal shield at all pipe supports per

A. Insulation shall be solid slip-on installed prior to connection. Butt joints shall be sealed with manufacturer's adhesive.

B. Provide wood blocks and metal hanger shields at support strap locations on horizontal pipe runs. Insulation will not be

A. Wrap the fiberglass blanket around the ductwork with 2" overlapping flanges stapled at 6" on center. Strip the lap of insulation and staple the facing directly to the overlapped foil. Secure the insulation to the ductwork with 18-gauge

A. Liner shall be secured to all duct surfaces by pressing into wet adhesive, applied to 100% of the duct surface. In addition,

liner shall be held in place with insulpins welded to duct and with clips slipped over the pins. Insulpins shall be located

per SMACNA Standards. Liner shall be lapped and compressed in all four corners of the duct. Both upstream and

A. Furnish, install, and place in operation a complete system of automatic temperature controls. The temperature control

B. Acceptable automatic temperature control equipment manufacturer's shall be Honeywell, Johnson Controls, or controls

C. The control system shall include all components and appurtenances necessary to provide a complete system. All wiring

for automatic temperature controls, regardless of voltage shall be the responsibility of the ATC Contractor. 120VAC

work shall be installed in conformance with requirements of Division 16. The Temperature Control Contractor shall

A. Upon completion of the work, instruct the building operating personnel and provide two (2) complete sets of operating

specification data sheets covering each control device proposed to be used, prior to installation of any equipment or part or

A. The Contractor shall guarantee the control system installed under this section of the specification to be free from defects in

Engineer or of beneficial occupancy of the building. Any defects in workmanship or material during this time shall be

A. HVAC unit thermostats shall be low-voltage, programmable, heating/cooling type with fan on-auto switch. Units shall be

Honeywell TB7100A (or equivalent) with seven day programmable, 10 year program retention, 5 degree deadband, and

D. Kitchen hood exhaust fans shall be interlocked with MUA unit for simultaneous operation. Provide fire alarm interlock as

signal from any hood fire protection system. Kitchen hood exhaust fans shall be automatically activated when cooking

A. The work required is indicated on the drawings and includes, but is not necessarily limited to, a complete hydronic heating

A. The expansion tank shall be a welded steel, diaphragm type tank, ASME rated, sized as shown and sized on the drawings.

A. Pumps shall be 1750 rpm single-stage, in-line, centrifugal oil-lubricated, sleeve-bearing pump bronze fitted with cast iron

B. Motor selections shall be such that they are non-overloading under all conditions of operation. Motors shall be open

A. The boiler will be of a sealed combustion low-pressure, 90%+ efficiency condensing boiler capable of developing full

B. The boiler shall be stamped with the required official ASME symbol, hydrostatically pressure tested for 160 psig, ASME

C. The boiler shall be furnished with a heavy-gauge aluminized steel base with aluminized steel curtain walls. The end, front,

and back base panels shall be protected with high-temperature insulation board panels. The boiler base shall be factory

1. All electrical safety controls are to be of accepted quality manufacture and shall be U.L. and A.G.A. design certified.

3. The inlet gas pressure to the boiler manual main shut-off gas valves should be no less than 5" water column or no

D. Gas burners: The boiler shall be provided with stainless steel main burners which shall be manufactured of one-piece

A. Piping shall be Type "L" copper with 50/50 solder joints or schedule 40 black steel with threaded or welded joints.

required by local inspector and/or fire chief. Unless otherwise required as mentioned above, all will be de-energized by a

workmanship and material under normal use, and agrees to provide service for one (1) year after acceptance by the

B. Submit copies of complete temperature control diagrams with written "sequence of control" and factory-printed

coordinate all electrical work associated with his installation with the Electrical Contractor. Power wiring for all

downstream transverse edges shall be coated with adhesive, coated a minimum of 1" over the edge in all places.

galvanized wire at 12" on center. On ducts larger than 48", use mechanical fasteners on the bottom of the duct.

B. Tape all joints with 3" wide foil reinforced kraft tape. Tape all pin penetrations or punctures in the facing.

Where slit seams must be installed, seal the seam with manufacturer's adhesive. Fittings shall be insulated with meter-cut

pieces of insulation according to manufacturer's instructions, or insulated with similar sheet insulation installed according

Where exposed to physical damage, exterior piping insulation will be covered with aluminum jacket, including all fittings,

A. The Mechanical Contractor shall furnish and General Contractor shall install access panels where required for access to equipment. The Mechanical Contractor shall include the cost of installation in his bid. Access panels shall be adequately sized, of a type approved by the Architect and shall be fire or smoke-rated as required.

A. Follow manufacturer's recommended procedures in starting up the equipment; damage caused during start-up shall be replaced at no expense to the owner.

3.02 HANGERS AND SUPPORTS

A. Support piping and equipment from the structure to prevent sagging, pocketing, swaying, and vibrations, and arranged to provide for expansion and contraction. Brackets, clamps, and hangers shall be steel, except copper hangers will be used with copper piping. Hangers supporting vibrating equipment shall be provided with spring isolators. Chain, perforated iron or wire hangers are not permitted. Hangers will be of a type acceptable to the Engineer, and shall have a capacity and spacing as required by code.

3.03 EXCAVATION AND BACKFILLING

A. Provide excavating and backfilling for Mechanical Work. Backfill in 12" layers, mechanically tamp to 95% proctor standards. Protect according to OSHA standards. The General Conditions take precedence. Verify the location of underground utilities before excavation; the contractor is responsible for any damage to underground utilities. Restore

existing paving, curbs, sod, bushes, etc to match surroundings. 3.04 PIPING INSTALLATION A. Install piping plumb and straight, parallel with walls and partitions. Conceal piping within structure whenever practical.

Provide drain valves at all low points, vents at all high points, to allow complete drainage. B. Material and methods per ASME, ASTM, ASA, AWS, and National Plumbing Code Handbook C. Provide unions or flanges in piping connections to each valve, device, or item of equipment. Install each union or flange to permit the removal of parts and equipment for inspection or cleaning, without disconnecting any piping, except unions

or flanges. D. Piping on the roof will be supported above the roof on roof pads. The pads shall be approximately 6"Wide by 6" high by the length as required. They shall be made of recycled rubber, rated for 500lbs/ft loading each. The pads will have galvanized steel "C" channel attached to the top, which can accommodate pipe clamps to secure the piping. This configuration of individual piping pads may be expanded to include two pads supporting a trapeze style support where multiple pipes are racked together. The pads are C-series manufactured by Cooper B-line, Erico, or approved equivalent.

A. All piping systems shall be tested and witnessed by the Owner prior to concealment. Protect equipment and fixtures or equipment, isolating them during the test. DWV system, including vents and vent stacks shall be sealed and hold water without leaks for 24 hours. Pressure piping shall be tested at the maximum pressure rating of the lesser of piping or fittings. Copper domestic water and hydronic piping may be air tested or hydrostatically tested; PEX or CPVC water

piping shall be hydrostatically tested; natural gas piping shall be air tested. 3.06 <u>CLEANING AND STERILIZATION</u>

A. After testing, water piping systems shall be filled, operated for a sufficient length of time to completely remove all foreign material, and flushed.

B. Sterilize the domestic hot and cold water piping in accordance with the local health authority standards. Flush the systems with clear water until the residual chlorine content is equal to that of clear water.

C. Where there is no water treatment contractor sterilize piping system with chlorine for 24 hours to 50 PPM. Completely flush to less than 1 PPM. Local health authority standards take precedence.

3.07 FLEXIBLE PIPE CONNECTIONS A. Provide flexible pipe connection suitable to connect to adjoining piping as specified for pipe joints. Use sized pipe units. Install flexible pipe connectors on pipes connected to equipment supported by vibration isolation.

3.08 PIPE IDENTIFICATION

A. After completion of the piping or insulation, paint stenciled descriptive abbreviations, including directional arrows, on piping at equipment and approximately every 25'.

A. Provide sleeves and inserts for all mechanical piping. The contractor shall be responsible for the cost of cutting and patching required for piping where sleeves and inserts were not installed or where incorrectly located. Sheetrock joint compound may be used to seal openings in non-rated walls(insulation to be continuous through walls.

B. Drill holes as required for the installation of hangers required for the mechanical work. C. Where sleeves are placed in exterior walls below grade, the space between the pipe or conduit and the sleeves shall be

D. Seal all piping passing through fire-rated construction with approved material to maintain air-tight, fire-rated integrity, with a U.L. listed assembly compatible with the wall or floor assembly being penetrated.

A. All sealants & adhesives required for the installation of mechanical & plumbing system within the building envelope shall meet the requirements for low emitting materials as set for in the South Coast Air Quality Management District (SCAQMD) Rule #1168 (or LEED new construction requirements), which includes but is not limited to:

1. Metal to Metal adhesive: VOC limit of 30g/L. 2. Fiberglass adhesive: VOC limit of 80g/L.

3. Multipurpose construction adhesive: VOC limit of 70 g/L.

SECTION 23 05 93-TESTING, ADJUSTING, AND BALANCING

A. Balancing shall be done by an independent firm specializing solely in the discipline of balancing air and water systems, and a member of NEBB. Firms desiring to furnish services for this project shall submit for written approval during bidding. All air and hydronic systems shall be balanced using applicable proportionate procedure.

2.01 TESTING CONDITIONS A. (Air) Before adjustments are made, check the system for such items as dirty filters, duct and damper leakage, vibrations, etc. All diffusers, duct sections, etc shall be adjusted to deliver design quantities within 5%. Air quantities shall be tested simulating filters being 50% loaded. Adjust/replace sheaves and belts as required to achieve design air quantities.

Replace thermal motor overloads as required. B. (Hydronic) Before adjustments are made, check the system to make water treatment has been completed and glycol added. Also check for leaks, vibrations, etc. All circuit setters shall be adjusted to deliver design fluid flows within 5%. Verify

that there is no pump cavitation, and that boilers and coolers are cycling at appropriate temperatures. 2.02 <u>REPORT</u>

A. After all adjustments are made, a detail written report shall be prepared and submitted for approval. Final acceptance of the project will not be made until a satisfactory report is received and field verified. The report shall detail the test equipment and balancing procedures being used; the general status of the system being tested including equipment details; provide data sheets indicating the required and actual CFM of all outlets and inlets.

SECTION 23 07 00 - INSULATION

1.01 QUALITY ASSURANCE

Chilled water

A. All insulation shall have a composite rating (insulation, jacket and adhesives) not exceeding flame spread 25 and smoke

2.01 PIPE INSULATION FOR PIPING ABOVE GRADE

A. Insulation shall be closed-cell, elastomeric pipe insulation having a conductivity of 0.27 at 75 °F mean, with thicknesses as

1/2" - 1-1/2" >1-1/2" Hydronic hot water 1" 2"

Refrigeration (Suction Lines) 1" B. Insulation shall be Armacell "Armaflex" or equivalent by Johns-Mansville, Owens-Corning.

C. Exterior piping insulation will be painted with a white solvent based alkyd finish(Armaflex AB or equivalent), including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions. Where exposed to physical damage, exterior piping insulation will be covered with aluminum jacket, including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions.

1-1/2"

D. All interior underground water(domestic and hydronic) piping shall be insulated with 1" Armaflex, except where noted. 2.02 PIPE INSULATION FOR PIPING BELOW GRADE A. Insulation shall be closed-cell, elastomeric pipe insulation having a conductivity of 0.27 at 75 °F mean, with thicknesses as

follows:

1/2" - 1-1/2" >1-1/2" Refrigeration (Suction Lines) 1"

B. Insulation shall be Armacell "Armaflex" or equivalent by Johns-Mansville, Owens-Corning.

C. Exterior piping insulation will be painted with a white solvent based alkyd finish(Armaflex AB or equivalent), including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions. Where exposed to physical damage, exterior piping insulation will be covered with aluminum jacket, including all fittings, valves, etc. Jacket and insulation will be sealed weathertight and installed per manufacturers instructions.

D. All interior underground water (domestic and hydronic) piping shall be insulated with 1" Armaflex, except where noted.

F. Water Boiler Standard Controls: 1. Low-limit (operating) and high-limit temperature controls. The low-limit control shall be set according to the design requirements of the heating system. The high-limit control should be set at least 20oF higher than the low-limit

2. ASME-certified pressure relief valves and the valves shall be set to relieve at the rated boiler ASME working

3. Low water cut-off with manual reset, per the state boiler code.

G. The boiler will be manufactured by Triangle Tube, Teledyne Laars, Raypak, or equivalent.

2.05 WATER HEATER (HYDRONIC):

A. Provide a hydronic water heater, sized as shown on the plans. The heater shall be constructed of a polyethylene tank, insulated with urethane foam insulation, with a steel outer shell. The heat exchanger shall be made of coiled copper tubes,

heater, piped full size to a nearby floor drain.

3.01 HYDRONIC HEAT PIPING SYSTEM: A. Provide air vents at all high points where air pocket might form and drain valves with hose ends at low points. B. No connections will be permitted that do not make ample and approved allowance for expansion, and provide for proper

completely immersed within the tank. An immersion thermostat shall be provided with adjustable temperature control,

including necessary interlocks and relays for the hydronic pump control interface. Provide a P/T relief, sized for the

C. Provide isolation valves and balancing cocks on each supply and return connection from branches. Install terminal units:

baseboard, fin tube, fan coil units, etc per manufacturers instructions. D. Provide dielectric unions at all points of connection between steel and copper piping.

3.02 <u>PUMPS:</u>

A. In-line pumps shall be supported by hanging or welded floor supports. They shall not be supported by connecting piping. B. Provide taps on the inlet and discharge of each pump to measure pressure differential.

A. The boiler shall be pre-assembled or assembled and installed per manufacturer's instructions.

SECTION 23 22 00 - WATER TREATMENT

1.01 WORK INCLUDED:

A. Provide materials, equipment, and services for the following systems: 1. Hydronic system: hot water

2. Chlorination of Domestic Water Lines:

3. See Section 23 05 00 - Common Work Results For HVAC. 1.02 QUALITY ASSURANCE:

A. Chemical Treatment Contractor shall specialize in Water Treatment Service and have laboratory facilities, both central and field, available to service the Owner's account.

A. The Water Treatment Contractor shall provide a written Engineering Report on the results of the water treatment for the first year. One copy to the Owner and one copy to the Engineer and Architect.

B. Technical literature shall be delivered at turnover to the Owner's designated representative in duplicate for each chemical and piece of equipment provided. 1.04 MAINTENANCE:

A. Provide monthly service calls to instruct Contractor's and Owner's personnel in treatment, testing, and maintenance of the chemical treatment program from one month prior to turnover until the end of the one-year guarantee.

B. Written chemical test report and recommendations shall be made at each visit with one copy to the Owner's designated representative and one copy to the mechanical engineer.

2.01 CLOSED SYSTEMS WITH GLYCOL:

A. A buffered nitrite corrosion inhibitor compatible with 20% glycol solution shall be provided to initially treat the closed systems listed above. The Water Treating Contractor shall add and maintain in the system 500 to 1000 ppm. NaNO2. B. After closed system has been cleaned and flushed it shall be filled with a solution of water and pure propylene glycol (20% by volume). The Water Treatment Contractor shall then add the Buffered Nitrite to the system to bring the residual up to

500 to 1000 ppm. NaNO2. C. Solution tests for Glycol and Nitrite shall be submitted to the engineer and architect after the system has been filled by the Water Treatment Contractor.

D. Standard automotive antifreeze or any other solution with oil-base additives shall not be used. 2.02 TEST EQUIPMENT

A. <u>Closed Systems</u>: Provide nitrite "Drop Test" test kit to test for nitrite in the closed systems.

3.01 CLEANING OF PIPE LINES: A. The Chemical Treatment Contractor shall be responsible for supervising and furnishing the proper chemical for

chemically cleaning the heating and domestic water lines water system. B. The systems to be cleaned shall first be drained and then refilled with a solution of 10% by weight of a heavy-duty alkaline cleaner, capable of wetting and penetrating heavy soil deposits of an oily or greasy nature, and removing them from the system. This solution shall be circulated for a period of 16 hours, drained, and then filled with treated water.

C. In no case shall the system being cleaned be left in an untreated condition for more than eight (8) hours. D. The Water Treatment Contractor shall certify that the system was cleaned as specified.

SECTION 23 30 00 - HVAC AIR DISTRIBUTION SYSTEMS

1.01 <u>DUCTWORK</u>

A. General All ductwork shall be constructed strictly according to the latest ASHRAE, SMACNA, and IMC standards. Duct sizes shown are inside clear dimensions; maintain sizes inside lining for lined ducts.

1. Sheet metal shall be constructed of coated galvanized steel of lock-forming grade conforming to ASTM Standards A-653/A653M and A-924. Reinforcement shall be constructed of galvanized steel.

2. Duct thickness shall conform to the above standards. Where there is a discrepancy, the greater thickness shall apply. Reinforcement, joint type, spacing and thicknesses may be varied at the contractors discretion, in conformance with the above standards, except where specifically noted. Transfer ducts across rated corridors shall be 26 gauge, or as

3. Round ductwork exposed to the public will be galvanized steel, spiral wound, maintaining in a clean, shiny appearance, and not utilizing visible sealing material. Concealed round ductwork may spiral wound, or snap lock type galvanized steel ductwork. 4. Sealing: All longitudinal and transverse joints in ductwork shall be sealed with Mon-Eco Industries Eco Duct Seal

44-50 or equivalent as follows: a. Main supply ductwork shall be sealed to SMACNA Class B Standards(3"W.G. or less). b. Return, exhaust, and supply ductwork shall be sealed to SMACNA Class B Standards(3"W.G. or less).

c. Return, exhaust, and supply ductwork downstream of coils and VAV boxes shall be sealed to SMACNA Class C. (2"W.G. or less).

5. Location: Sheet metal may be used throughout the project.

C. Flexible Ductwork (Polymer Liner): 1. Flexible ductwork shall be constructed of a spring steel helix supporting a plastic core. It shall be insulated with 1" fiberglass having a density of 1 lb./cu.ft. The insulation is sheathed in an copolymer vapor barrier jacket.

with UL Standard 181, Class 1. 3. Flexible duct shall be limited to a maximum length of 2', as a means of connecting boxes, diffusers, etc. to the duct system. Uninsulated flexduct may be used where the adjacent ductwork is uninsulated or unlined.

2. The duct shall be rated at 10" w.g., and a maximum velocity of 4000 fpm. The duct shall be listed in conformance

4. Flexduct shall be manufactured by Hart & Cooley, Clevaflex or equivalent.

1.02 SPECIAL DUCT SYSTEMS A. Kitchen hood exhaust.

> 1. Duct shall be constructed strictly according to the latest ASHRAE and SMACNA standards. All duct work shall be constructed of 16-gauge steel or 304 stainless steel, 18-gauge minimum. All duct, and duct to hood joints, with longitudinal seams and transverse joints continuously butt welded. Slope exhaust duct at not less than ½"/fft, except where other code requirements require a steeper slope. Duct connections to fans shall be flanged and gasketed to be

> 2. Ducts shall be wrapped with a two layers of foil encapsulated, alumina/silica fibrous blanket, in strict accordance with the manufacturer's instructions, and in conformance with ASTM std 2336. Joints shall be butt joints with overlaps. The blanket shall be firmly secured to the duct using carbon steel bands. Blanket shall be 3M Firemaster, Ductwrap or Firewrap, or equivalent.

3. Exterior ducts shall be painted with paint rated for 150F, color as selected by the Architect. The duct will be cleaned and primed prior to painting. B. Flue Piping:

outer wall shall be galvanized steel; inner wall shall be 1100 alloy aluminum with built-in 1" air space. All flues shall terminate in a roof cap, as required by code. 2. The flue vent piping shall be manufactured by Metalbestos. Approved equivalents are Heat-fab, Selkirk, or Hart and

1. All parts of flue vent system shall be Underwriter's Laboratories-listed, type B, double-wall, gas vent piping. The

C. Dishmachine: 1. The dishmachine exhaust duct shall be a waterproof duct system, suitable for use with saturated air. Where exposed in the kitchen, the duct system shall be constructed of burnished stainless steel with a smooth finish to match the

adjacent dishmachine. 2. The duct system shall used stainless steel with welded joints in all rectangular portions of the system.

3. After the rectangular SST portion of the system transitions to round duct, the system may be made of aluminum with Fernco couplings, PVC pipe with solvent joints, or stainless steel with welded joints. Vertical portions must also be watertight, but aluminum ducts need not use Ferenco couplings if properly configured. Submit alternate material or

systems to the engineer for approval. Silicone sealant on conventional aluminum or SST ductwork is not allowed.

1.03 <u>DUCT ACCESS DOORS</u> A. Where motorized dampers, fire dampers, control equipment, etc. are installed in ducts, and for cleaning ductwork, access

doors shall be provided in the ducts, made air-tight with gasketed edges. Use Ventlok, or equal, sponge rubber or felt gasketing material. The doors shall be double-wall construction with 1" of rigid insulation fill and shall be attached to the duct with cam latches. Omit access door insulation and double-wall construction if ducts are not specified to be insulated. Access doors shall be constructed of the same materials as the ductwork.

APPROVAL STAMPS:

REVIEWED FOR CODE **COMPLIANCE**

4 12/12/22 ISSUED FOR PERMIT

SUBMISSIONS & REVISIONS

Description

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BOULDER ENGINEERING 1717 15TH STREET

DENVER, CO 80202

JOHNSON NATHAN STROHE 1600 WYNKOOP ST., SUITE 100

PROJECT LOCATION

TENANT FIT-OUT

DRAWING TITLE **MECHANICAL**

DRAWN BY: CHECKED BY:

DRAWING NO:

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02/24/2023

MAY REIGLER PROPERTIES

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STEAMBOAT BASECAMP PARTIAL RENOVATION &

1901 CURVE PLAZA

STEAMBOAT SPRINGS, CO 80487

SPECIFICATIONS

10/24/2022

PROJECT NO: 20129

DATE:

1.04 FLEXIBLE CONNECTIONS

A. All supply and exhaust fans and other air handling units with inlet and outlet duct or casing connections shall have a flexible connector in each connection. Connector shall be made of at least one layer of Ventglas, two-side, neoprene-coated, heavy glass fabric, Underwriters' approved and labeled as manufactured by Ventfabrics, Inc.

2.01 GRILLES, REGISTERS, AND DIFFUSERS

A. Provide grilles, registers, and diffusers of the size and type shown on the plans. Grilles, registers, and diffusers shall be made of steel with a baked white enamel finish, or extruded aluminum with clear finish, as indicated for each grille, register, or diffuser. Secure GRD's to structure where connected by flex ductwork, or where required by local code. Paint ductwork visible behind GRD's flat black. GRD's shall be manufactured by Titus, Price, Metallaire, or equivalent.

2.02 FIRE DAMPERS

A. Provide approved fire dampers in ducts wherever they pass through fire-rated walls, floors, and shaft enclosures and in any other locations required by code. All fire dampers shall be U.L. approved and labeled for 1-1/2 hour rating unless otherwise indicated on drawings. Dampers shall be fabricated of galvanized steel and shall be of such design and length as to function as a wall-mounting sleeve, which shall be part of the fire damper. Frames shall be secured, bolted construction. Damper sleeves shall be secured in wall with 2" x 1" x No. 14-gauge retaining-angle irons on the top, both sides and bottom of wall sleeve, and on each side of the fire wall. Dampers shall be Ruskin, United Sheet Metal, National Controlled Air, Louvers and Dampers, Inc., or approved equivalent. Dampers shall be Type B unless otherwise indicated. 2.03 COMBINATION SMOKE/FIRE DAMPERS

A. Each combination smoke/fire damper shall be 1-1/2 hour rated under U.L. Std 555, and a leakage rated smoke damper under U.L. Std.555S. U.L. linkage rating shall apply to all damper sizes; elevated temperature ratings shall apply to

operators as well as dampers. B. The damper shall have a fusible link and electric operator. damper and operator shall be supplied as a single entity. C. Dampers shall be controlled by an adjacent duct or area detector, as appropriate to the situation. Installation shall include mounting of damper and detector, interconnecting wiring, etc. If there is a central building fire alarm system, the detector and interlock wiring will be provided by the electrical contractor. It is the responsibility of the mechanical contractor to

caused by incompatibility, will be the responsibility of the mechanical contractor. D. Damper shall be a class II leakage rated damper, maximum 6"WC and 4,000 FPM, at 250F temperature: Ruskin FSD60 or

assure that the damper operator is compatible with the fire alarm system; any modifications, transformers, relays, etc

E. Damper shall be a class III leakage rated damper, maximum 2.5"WC and 1,500 FPM, at 250F temperature: Ruskin FSD35

F. Dampers shall be manufactured by Prefco, Ruskin, National Controlled Air or equivalent.

G. Dampers shall be approved and listed by the State of California Fire Marshal. Provide State Fire Marshal with approval numbers before installation

2.04 <u>DUCT DETECTORS</u>

A. Duct smoke detectors shall be solid state photo-electric type. Detector shall include air sampling chamber with sampling tubes extending through the width of the air duct. LED Alarm status indicating lights shall be visible on the front of the detector. Key controller test and reset switches plus an easily accessible test jack shall be provided. They shall include alarm relay contacts (DPDT) capable of handling loads of up to five (5) amperes at 210 VAC or 28 VDC resistive. Unit shall have self-contained power supply requiring 120/220/240V power. Detector shall include a remote indicating light/test switch (this may be deleted if the unit is clearly visible and readily accessible). Provide necessary interlocks with air handlers, smoke dampers, etc as required by the local fire department, including relays, transformers, etc. Detectors Shall be listed by Underwriters' Laboratories for use in air conditioning and ventilating duct systems in compliance with the National Fire Protection Association and Underwriters' Laboratories, Standard UL 167.

A. The ceiling exhaust fan shall have a steel housing with a galvanized or baked enamel finish. An automatic back-draft damper shall be located within the duct connector and have cushioned stops. The fan wheels shall be balanced centrifugal and shall operate at less than 1200 rpm. Fans shall bear the AMCA certified rating seal and the U.L. label. The entire fan, motor, and wheel assembly shall be removable without disturbing the housing. Fan motors shall be grounded and mounted on vibration isolators. Fans shall be Penn Zephyr, Greenheck, Cook Gemini, or approved equivalent.

2.06 EXHAUST FAN, ROOF (UPBLAST)

A. The roof-mounted exhaust fans shall have a spun aluminum housing with up-discharge outlet. The fan wheels shall be dynamically balanced, aluminum, centrifugal BI. The motor shall be belt-drive, open drip-proof type, mounted internally on vibration isolators. Fans shall bear the AMCA certified ratings seal and the U.L. labels for rating under L.L. Std. 762. Fans shall be controlled as scheduled in Section 23 09 00 Controls. Provide grease trough where shown. Fans shall be Greenheck, Penn, Cook, Acme, Ilg, Carnes, or approved equivalent.

2.07 EXHAUST FAN, UTILITY SET

A. Fan shall be centrifugal, belt-driven, SWSI with non-overloading backward-inclined air foil, aluminum wheel. The housing shall be continuously-welded steel with drain connection. Configure for vertical discharge. Bearings shall be permanently lubricated, sealed ball bearing pillow blocks. Motor and sheaves will be protected in a weatherproof enclosure. Construction shall be non-sparking, listed for use with a Class I kitchen hood. Fan shall be mounted on spring vibration isolators. Assembly will be mounted on a roof curb with galvanized sheetmetal cap, with ½" lip all around. Fans shall be manufactured by Acme, Greenheck, Penn Ventilator, Supreme, or equivalent.

2.08 EXHAUST FAN, ROOF

A. The roof-mounted exhaust fans shall have a spun-aluminum housing. The fan wheels shall be dynamically balanced, aluminum, centrifugal BI. The motor shall be belt-drive, open drip-proof type, mounted internally on vibration isolators. Fans shall bear the AMCA certified ratings seal and the U.L. labels for rating under U.L. Std. 762. Fans shall be controlled as scheduled in Section 23 09 00 Controls. Fans shall be Greenheck, Penn, Cook, Acme, Ilg, Carnes, or approved equivalent.

2.09 AIR INTAKE AND DISCHARGE LOUVERS

A. Exterior stationary louvers shall be anodized aluminum 4" blades on 2-7/8" centers at 30 deg with return bends. Louvers shall be weatherproof. Set in frame, secure, and caulk into opening. Provide galvanized steel 1/2", 19-gauge wire mesh behind louver. Size per the plans. B. Approved manufacturer's shall be Louvers and Dampers, Airstream, Dowco, Ruskin, or Titus.

A. Provide air filters where shown on the drawings. Filters shall be rigid, throw-away type, constructed of pleated fiber materials with metal mesh support maze across both faces of the media. Thickness will be 2", unless 1" is the maximum thickness allowable. Filters shall have a UL listing of Class II and an average 30% efficiency rating of ASHRAE Std. 52-76. Filters shall be Farr 30-30 or approved equivalent by Air Filters, Inc., Eco-Air, Cambridge, or American Air Filter. 2.11 HVAC UNITS

A. Furnish and install gas heating, DX cooling rooftop units as shown on the drawings. The cabinet shall be 20 gauge galvanized with 1" thick, 1-1/2 lb. density insulation, baked acrylic enamel finish. Evaporator coil will have a condensate drain pan with PVC trap. Unit will use 2" thick throw-away filters.

B. The cooling section shall consist of a hermetic scroll compressor(s) with five year warranty, condenser fan and motor, evaporator coil. Units with multiple compressors will have separate refrigeration circuits. The unit shall be furnished with an R-410 operating charge, thermal expansion valve, Hi-Low pressure control, accumulator dryer and all necessary relays and starters. Provide a float in the condensate pan, interlocked with the blower, where required by the local

C. The heating section shall be furnished with an aluminized steel gas furnace, condensate drain, and 20 gauge weatherproof insulated cabinet, and limit controls. Furnace shall have a minimum efficiency of 80%, and shall be configured for use at altitudes above 5,000'.

D. The blower shall be a belt driven, forward curved, centrifugal fan, with oversize motor and drive kit. Blower controls shall be through a time delay blower relay. Single stage heating and cooling shall be available by means of the necessary controls, valves, and relays.

E. Provide economizer package as shown and specified on the drawings. Economizer shall have barometric relief F. Provide a factory furnished hail guard.

G. Provide a 14" high, galvanized steel factory roof curb; mount unit perfectly level. Provide an automatic setback thermostat with fan on/auto switch as specified in Section 23 09 00. H. The roof opening beneath the unit will be closed up and sealed tight; caulk or silicone duct penetrations.

I. Unit shall be manufactured by Lennox, Trane, or York. Alternate manufacturer's will be accepted if heating and cooling efficiencies meet or exceed that of the specified product.

2.12 WALL MOUNTED HEAT PUMP

A. Provide a factory assembled, single piece, through-the-wall heating and cooling heat pump, rated in accordance ARI standards and UL listed.

B. The compressor shall be hermetically sealed, with vibration isolation. The coils shall be copper with aluminum fins

mechanically bonded, with all joints brazed. C. Indoor fan shall be single-inlet, squirrel cage blower, dynamically balanced, with vertical discharge. Outdoor fan shall be

dynamically balanced propeller type fan. Motors shall be totally enclosed, permanently lubricated, multiple speed. D. Controls shall consist of automatic rest over temperature and overcurrent compressor protection. The heater shall have 2

overtemperature protectors. There will manual off/on switch in the unit. Control will occur from a remote thermostat. E. The heat pump shall be as manufactured by Amana, Trane, Carrier, G.E., Singer or approved equivalent. 2.13 VENTILATING UNIT (CLIMATE WIZARD)

A. Provide a roof-mounted, air to air heat exchanger, 'dry" evaporative cooler. The unit uses a Maisotenko cycle heat

exchanger. The heat exchanger is made of cellulose blended fibers in ethyl vinyl acetate channels. B. The housing is 22 gauge electro-plated steel. All components touching water are SST, with a 18ga. pan, and 16 gauge

C. The unit will be provided with a removable filter.

D. The unit will have a water supply and drain. The supply will have a PRV valve and solenoid valve. There will be a discharge pipe available for extension to a drain. E. The intake fan is a centrifugal single inlet fan mounted in a plug fan configuration. Provide the fan with an intake rain

F. The exhaust discharge(working air stream) shall be provided with a weatherproof rain shield and ½" birdscreen.

G. The building air shall discharge to a plenum for connection to ductwork in various configurations.

H. The unit will be provided with a motorized discharge damper, which opens when the fan is energized, and fails closed. I. The unit will be curb mounted on a field built curb. The unit must be mounted perfectly level to assure proper drainage. J. Provide a fill-drain kit.

K. The unit will be as manufactured by Coolerado LLC, Arvada, Co. (303-375-0878)]

2.14 EVAPORATIVE COOLER

A. Air capacity shall have been established by actual air performance tests meeting the Air Movement and Control Association's Standard 210-74.

B. Cabinet, blower housing, support arms, blower wheel, and pad frames shall be constructed of hot-dipped, galvanized steel. The blower shall be a forward-curved blower wheel. Blower pulleys shall be cast iron. Bearings shall be permanently lubricated, sealed type. Single-phase motors shall be thermally protected (three-phase motors require a starter). Motor mounts shall be adjustable. Blower motors shall be two-speed

C. Each pad section shall consist of a trough, media filter, and a rigid frame. The evaporative media shall be pads of chemically treated, compacted white aspen wood fibers enclosed in mesh netting, together with a layer of additional Microglass filtration. The evaporative media shall be (6")(12") thick impregnated cellulose modules. Pumps shall be evaporative cooler pumps which are UL-listed components. Pumps shall be grounded and overload protected. They shall be encased in corrosion-resistant, flame-retardant plastic.

D. Provide a manual control station, as furnished by the manufacturer. Provide a fill and drain kit, complete with all valves, sensors and controls

E. Evaporative coolers will be manufactured by Phoenix, MasterCool, Adobe Air, Universal, Arctic Circle or equivalent. 2.15 MAKE-UP AIR UNIT (INDIRECT FIRED)

A. Provide a roof-mounted, natural gas, natural draft, down discharge, indirect fired make-up air unit, as shown on the plans. Housing shall be aluminized steel with painted enamel, and down discharge plenum. B. Blower shall be centrifugal type with forward curved DWDI wheel, dynamically balanced. The drive sheave shall be

adjustable. Motor shall be 1800 RPM, open drip-proof type. Bearings shall be permanently lubricated. C. Furnace(s) shall be type 409 stainless steel. Burners shall be aluminized steel. Gas train shall consist of main gas cock, pressure regulator, and solenoid valve; pilot gas cock, pressure regulator, and solenoid valve. Provide spark ignition, high limit and control transformer. Main gas valve shall be modulating type, down to 30%.

D. Unit will have a factory furnsished curb. E. Unit will have a free-standing evaporative cooling section with 12" thick "munters fill" media, pump, float, fill/drain kit, and mesh intake screen. Intake section shall have a birdscreen and extended surface 2" filter. Unit intake will be a factory

F. Provide a remote control module, recessed mounted. The module will contain "burner on" and "blower on" indicating lamps. It will also contain a "heat-vent-cool" mode switch. The leaving air temperature control dial shall be mounted on the control module. The room override thermostat shall be mounted as shown on the drawings.

G. Provide a fill and drain kit, complete with all valves, sensors and controls. H. Make-up air unit shall be RGB series, manufactured by Reznor or equivalent by Modine, Greenheck, or Captive Air.

2.16 MAKE-UP AIR UNIT (DIRECT FIRED)

A. Provide a roof-mounted, natural gas, horizontal or down discharge, direct fired make-up air unit, as shown on the plans. Housing shall be aluminized steel with painted enamel, and down discharge plenum

B. Blower shall be centrifugal type with forward curved DWDI wheel, dynamically balanced. The drive sheave shall be adjustable. Motor shall be 1800 RPM, open drip-proof type. Bearings shall be permanently lubricated. C. The burner shall be a cast iron burner with stainless steel mixing plate, and shall use a self contained or motorized

modulating gas valve with a turn down ratio of 25:1. Burner shall limit the products of combustion to a maximum of 5 ppm carbon monoxide, and 0.5 ppm nitrogen dioxide. Provide an observation in the burner cabinet. Profile plates shall control proper air velocity across the burner. Unit shall have spark ignition. D. Unit will have a factory furnished curb.

E. Unit will have a free-standing evaporative cooling section with 12" thick "munters fill" media, pump, float, fill/drain kit, and mesh intake screen. Intake section shall have a birdscreen and extended surface 2" filter. Unit intake will be a factory provided intake cowling.

F. Provide a remote control module, recessed mounted. The module will contain "burner on" and "blower on" indicating lamps. It will also contain a "heat-vent-cool" mode switch. The leaving air temperature control dial shall be mounted on the control module. The room override thermostat shall be mounted as shown on the drawings. G. Provide a fill and drain kit, complete with all valves, sensors and controls.

H. Make-up air unit shall be ADF series, manufactured by Reznor or equivalent by Modine, Greenheck, or Captive Air.

2.17 FAN COIL UNIT(HEAT PUMP):

A. Provide a low profile, horizontal mounted air handler consisting of a cabinet, blower, DX coil, air filter, pump and controls as shown on the plans and specified below. The unit will be rated for use at 6,700' elevation.

B. The casing shall be designed for indoor installation, insulated with 1/2" insulation, and integral hinged access door with self-retained screws. The unit shall be completely factory assembled. C. The fan shall consist of two forward curved DWDI centrifugal fans on a common shaft using one blower. It shall be

dynamically balanced with vibration isolators. The blower shall be two speed(high cool; low-heat). D. Refrigerant coil shall be copper with aluminum fins mechanically bonded to the tubes. The coil section is completely

insulated and has a drain pan. E. The unit shall have a filter rack with 1" pleated filters. Access to filters shall be through the hinged access door.

F. The unit will be furnished with electrical disconnect and all electrical connections. G. The air handler shall be manufactured by Mitsubishi, Samsung, or equivalent.

A. Provide a DX cooling coil and condensing unit to be used in conjunction with the furnace(s) specified above, and as shown on the drawings. SEER shall be 15.0 or greater. The condenser shall consist of a hermetic scroll compressor(s) with five year warranty, vertical discharge direct drive condenser fan and motor, and copper condenser coil with

B. The compressor shall have high-low pressure control, 5 minute anti-short circuit timer, and crankcase heat. The unit shall The cabinet shall be 18 gauge galvanized with baked acrylic enamel finish. The compressor shall be pre-charged.

C. Single stage cooling shall be available by means of the necessary controls, valves, and relays. Refrigeration system shall use an expansion valve for refrigerant flow control. D. Provide a factory furnished hail guard.

E. Provide a low ambient kit for operation down to 30F.

F. Unit shall be manufactured by Lennox, Trane, Carrier, or York. Alternate manufacturer's will be accepted if heating and cooling efficiencies meet or exceed that of the specified product.

3.01 <u>DUCTWORK</u>

A. Provide duct system, connections, air balancing dampers (opposed blade dampers where the take-off is in inaccessible ceiling), dampers, duct turns, housing, hinged sheet metal doors, and necessary removable access doors for the complete supply, return, and exhaust systems. Provide access doors in ductwork wherever required for observation and maintenance of dampers.

B. Duct workmanship. Ductwork shall be constructed and erected in a workmanlike manner. Ducts shall be straight and smooth on the inside with neatly finished joints, air-tight, and free from vibration. The internal ends of slip joints shall be made in the direction of the air flow. The ducts shall be securely attached to the building construction in an approved manner. Changes in dimensions and shape of the ducts shall be gradual. Duct sizes fall within the limiting dimensions indicated on the drawings unless otherwise approved. C. Duct turns. 900 elbows up to 18" wide and 450 elbows shall consist of an inside radius of not less than half the width of

the duct, or be furnished with air foil type duct vanes with 2-1/4" blade spacing. Shop fabricated duct vanes shall conform to details of the Sheet Metal and Air Conditioning Contractors National Association manual.

D. All dimensions shown on drawing are inside dimensions. Contractor shall make allowances for internal lining where called for on drawings or elsewhere in this specification.

E. All junctions, bends, turns, or elbows in all ducts shall have a large radius (centerline radius equal to 1-1/2 times duct width) in the throat in order to minimize the frictional resistance. No short radius turn or junction will be allowed unless turning blades of approved design are provided. Single vane-turning vanes shall be provided for all square turns.

F. Galvanized or aluminum angle iron strips shall be installed at points where ducts penetrate walls to close off the space between the wall opening and the duct. G. All fittings shall be tack welded on 3" centers and sealed with neoprene sealer to ensure that they do not leak more than 1% when transverse joints are sealed. Areas where galvanize has been burned off shall be painted. Branch takeoffs of

main shall be 45 degree "wye" type where possible. Conical takeoffs allowed where "wye" won't fit. Paint the inside of

ducts flat black, where visible through grilles, registers or diffusers. H. Fittings for round or oval spiral wound ductwork shall be installed per the manufacturer's instructions.

3.02 ROOFTOP UNITS(HVAC, MUA, COND, ETC)

A. Mount rooftop units on 14" H curbs or as noted. Units will be mounted level. Where unit does not completely cover curb, provide galvanized metal cap for weatherproof seal. B. For units with compressors (including HVAC units, condensing units, kitchen condensing units, etc) install at least two

layers of ½" gypboard layered with R13 batt insulation for sound attenuation within the roofcurb, beneath the compressor section. Where curbs have been provided over concrete pads, this is not required. C. For units with condensate drains, provide full size PVC traps. Route discharge so condensate freely drains away from

D. For units with water and/or drain connections, route up within unit or curb where possible.

E. The roof opening beneath the unit will be closed up and sealed tight; caulk or silicone duct penetrations. F. Provide flat working surface adjacent to unit, as required by code, including handrails, access doors, etc.

G. Label all units per the plans, or as directed by the Owner, using spray paint and 3" high stencils, or as directed by the building owner.

A. Provide a grease protection system around grease fans. This system shall be at least 15" wide, completely around the fan. The system shall be Facilitec G2 Grease Guard XD or equivalent.

3.03 GREASE PROTECTION SYSTEM

3.04 <u>AIR FILTERS</u> A. Provide three complete sets of pleated, 30% efficient filters: construction phase, replacement just prior to balancing, and

replacement set to the Owner. B. Air handlers are not intended to be used during construction for heating or cooling. The construction set is intended to

protect the equipment during initial startup and preliminary testing. C. Filters shall be installed in factory-assembled filter banks. Enclosure shall be provided with access doors, gaskets to provide air-tight seal, and duct or equipment connections.

D. Filters shall be manufactured by Farr or American Air Filter. 3.05 CONDENSATE DRAIN

A. Provide condensate drain & overflow piping or provide condensate drain piping & overflow float in condensate pan, interlocked with the blower. Size condensate piping as noted on plans, or to match equipment drain outlet size, whichever is larger.

3.06 SPECIAL DUCT SYSTEMS

A. Kitchen:

1. Kitchen exhaust duct system shall comply with NFPA-96, and ASTM std 2336. Slope at a minimum of 1/4" per foot toward the hood to provide for drainage; for horizontal runs in excess of 75', slope at 1" per foot as required by code. Provide for expansion of 2.2"/10 feet. Provide a cleanout at each change of direction and at each floor. Cleanout door

shall be tight fitting, gasketed, constructed to the standard as the ductwork, listed for the use. 2. Duct from kitchen hood shall be routed in a code-approved, fire-rated chase. Provide access door at each cleanout.

3. Supports shall be non-combustible, rigid and securely attached to structure, designed for gravity and seismic loads. Fasteners shall not penetrate the duct wall.

4. Paint exterior welded black steel with exterior grade paint, to match adjacent walls, or flat black.

5. Ducts exposed to view in the restaurant shall be stainless steel. 6. Ducts shall be installed in rated shafts, or wrapped with ductwrap. Ductwrap shall be installed in strict conformance with manufacturer's instructions, providing pins, sealing tape, through-penetration materials, access door protection,

bands, packing materials, etc. B. Flue Piping:

1. The gas vent piping shall be installed in full compliance with the terms of its listing, with the manufacturer's

installation instructions. Maintain minimum clearance to combustibles 2. Provide a vent cap above the roof as required by code.

3. Slope and offset flue pipe per code. Route in fire rated shafts where required. Provide a barometric damper where shown or required.

3.07 <u>DUCTWORK TESTING</u>

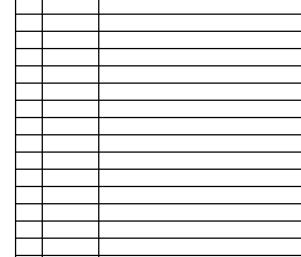
A. If leakage in excess of 5% of the system design flow is indicated after a balance and adjustment, reseal to eliminate excess leakage. Replace defective material or workmanship at the Contractor's expense and test until the same has met the

B. All ductwork operating at static pressure in excess of 3" W.G. and exterior ductwork shall be leak-tested per SMACNA standards. A minimum 25% of all ductwork shall be tested and the maximum permitted leakage shall be LMAX =

APPROVAL STAMPS:

REVIEWED FOR CODE **COMPLIANCE**





12/22 ISSUED FOR PERMIT No. Date Description SUBMISSIONS & REVISIONS

MAY REIGLER PROPERTIES 2201 WISCONSIN AVE NW SUITE 200 WASHINGTON DC 20007

ARCHITEC^{*}

KEVIN & ASAKO SPERRY ARCHITECTURE 3318 N. Columbus Street Arlington, VA 22207 T.312.636.3248 / 312.636.4252 www.kasa-arch.com

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CIVIL ENGINEER

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BOULDER ENGINEERING 1717 15TH STREET

INTERIOR DESIGNER

T: 303.444.6038

BOULDER, CO 80302

JOHNSON NATHAN STROHE 1600 WYNKOOP ST., SUITE 100 **DENVER, CO 80202**

PROJECT LOCATION

DRAWING TITLE

T: 303.892.7062

STEAMBOAT BASECAMP PARTIAL RENOVATION & TENANT FIT-OUT

MECHANICAL **SPECIFICATIONS**

1901 CURVE PLAZA

STEAMBOAT SPRINGS, CO 80487

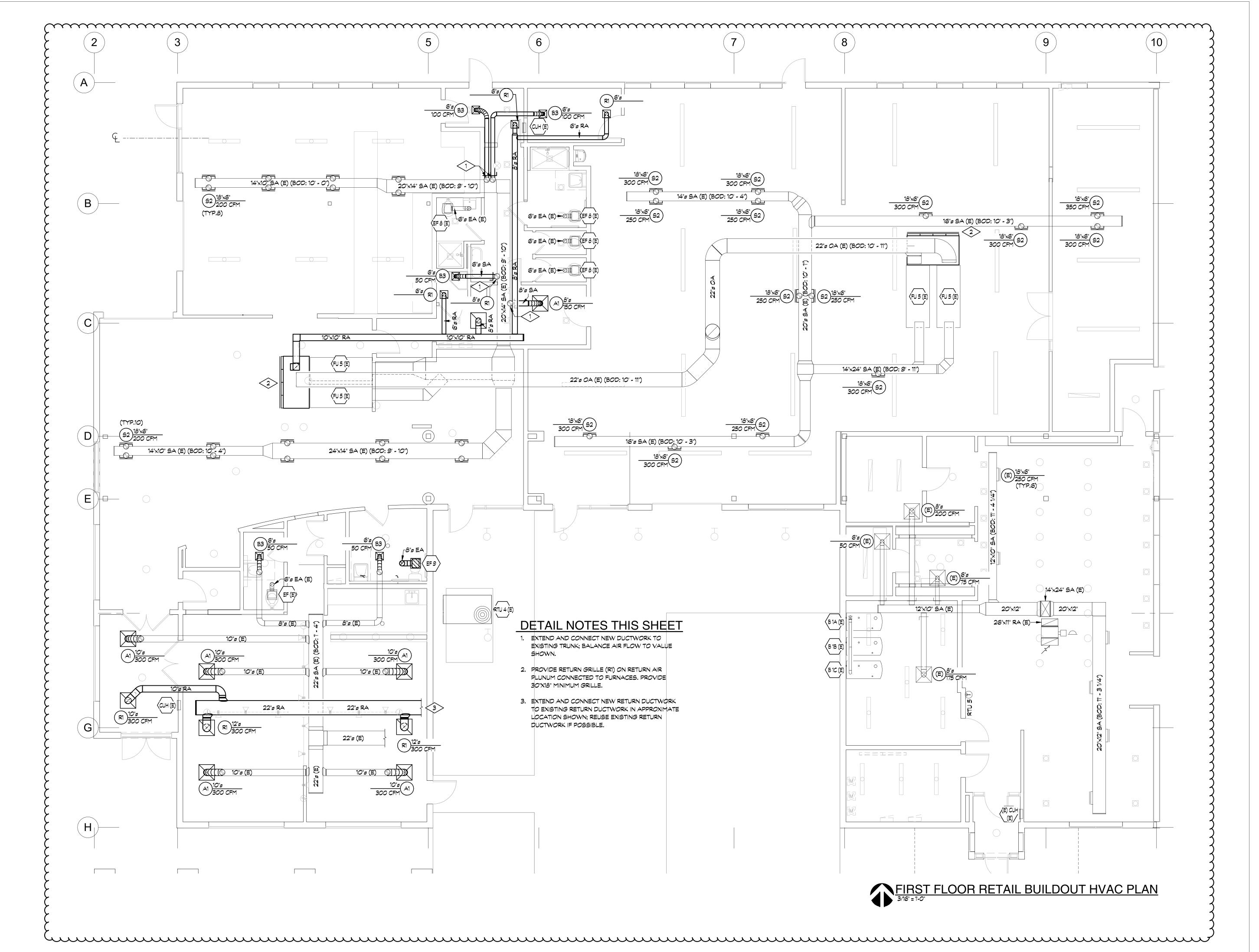


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10/24/2022 DRAWN BY: CHECKED BY:

DATE:

PROJECT NO: 20129



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19 08/17/20 REISSUED FOR PERMIT 23
4 12/12/22 ISSUED FOR PERMIT

SUBMISSIONS & REVISIONS
OWNER

MAY REIGLER PROPERTIES
2201 WISCONSIN AVE NW
SUITE 200
WASHINGTON DC 20007

ARCHITECT



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INTERIOR DESIGNER

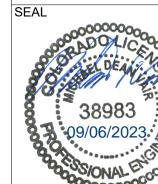
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PROJECT LOCATION

STEAMBOAT BASECAMP PARTIAL RENOVATION AND TENANT FIT-OUT

1901 CURVE PLAZA STEAMBOAT SPRINGS, CO 80487 DRAWING TITLE

FIRST FLOOR RETAIL HVAC PLAN



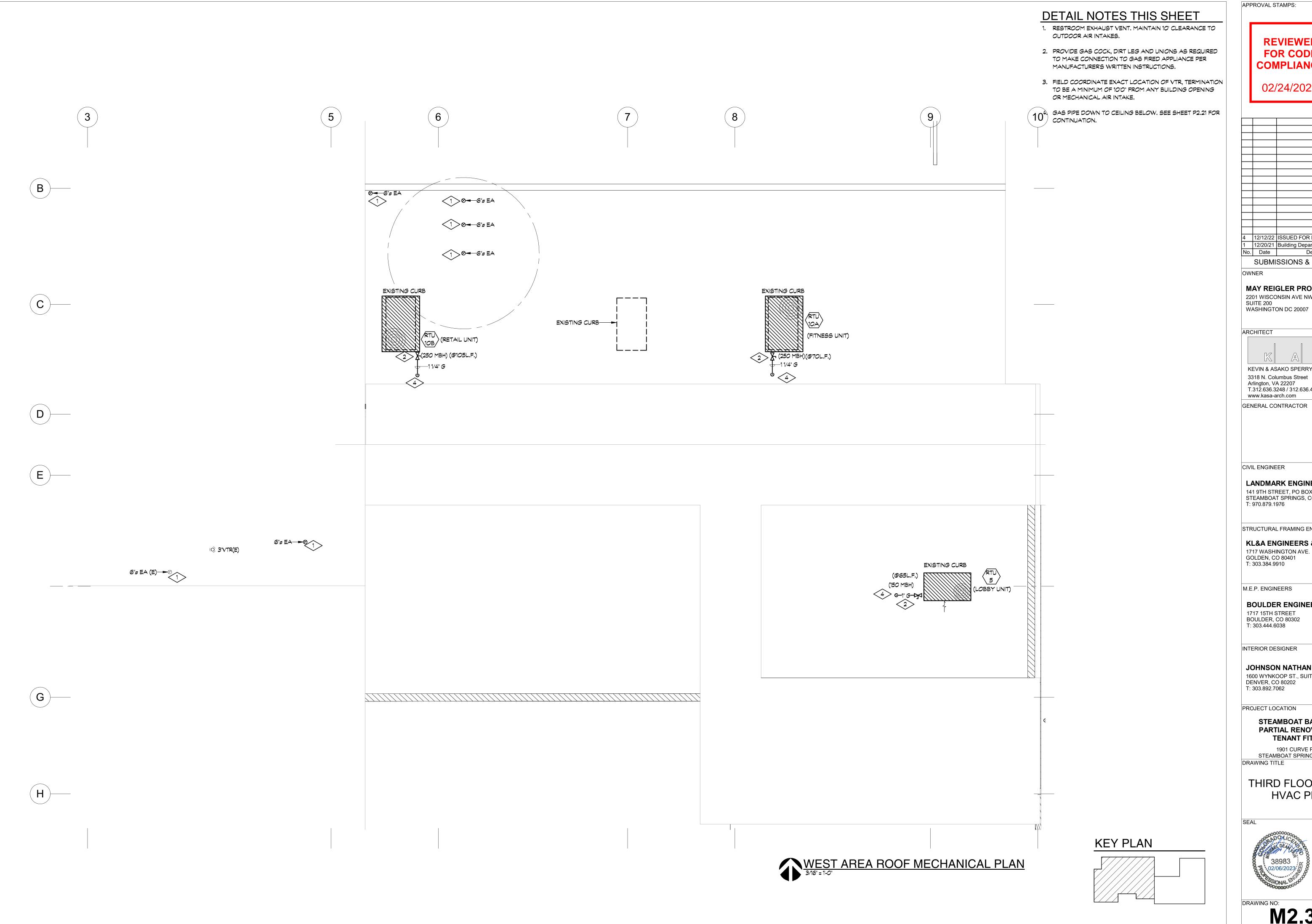
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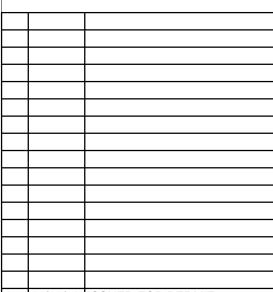
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DRAWING NO: M2.11



REVIEWED FOR CODE **COMPLIANCE**

02/24/2023



4 12/12/22 ISSUED FOR PERMIT
1 12/20/21 Building Department Comments
No. Date Description

SUBMISSIONS & REVISIONS

MAY REIGLER PROPERTIES 2201 WISCONSIN AVE NW



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PROJECT LOCATION

STEAMBOAT BASECAMP PARTIAL RENOVATION & **TENANT FIT-OUT**

1901 CURVE PLAZA STEAMBOAT SPRINGS, CO 80487 DRAWING TITLE

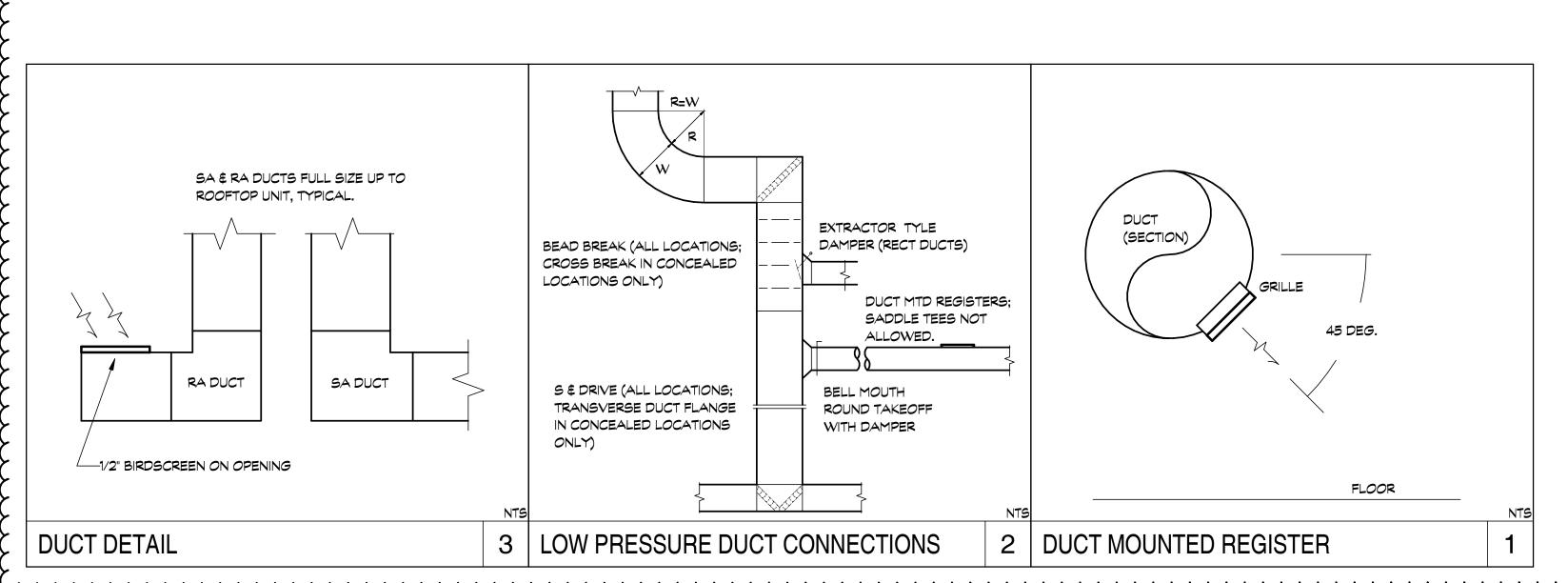
THIRD FLOOR WEST **HVAC PLAN**

DATE: 10/24/2022 DRAWN BY:

CHECKED BY:

PROJECT NO: 20129

M2.31



HVAC SCHEDULE
KEY UNIT TYPE DESCRIPTION HEAT'S COOL FLOW PRES. WEIGH PWR VOLT MANUFACTURER/CAT. #
RTU ROOFTOP UNIT GAS HEATING, DX COOLING, SETBACK T-STAT, ECONOMIZER / BAR. RELIEF W/MIN 15% O.A., HAIL GUARD, 15.6 SEER 150 4 TON 1600 (NOM) CFM 0.5" 617 LBS MCA 208/3 (OFFICE REPLACEMENT)
RTU 5 ROOFTOP UNIT GAS HEATING, DX COOLING, SETBACK T-STAT, ECONOMIZER / BAR. RELIEF W/MIN 15% O.A., HAIL GUARD, 13 SEER 150 MBH (NOM) CFM 0.5" 569 LBS MCA 208/3 CARRIER 48TCFA06 (LOBBY)
RTU 10A ROOFTOP UNIT GAS HEATING, DX COOLING, SETBACK T-STAT, ECONOMIZER / BAR. RELIEF W/MIN 15% O.A., HAIL GUARD, 11 EER 250 MBH (NOM) CFM 0.5" 930 LBS MCA 208/3 CARRIER 48TCFA12 (FITNESS)
RTU 10B ROOFTOP UNIT GAS HEATING, DX COOLING, SETBACK T-STAT, ECONOMIZER / BAR. RELIEF W/MIN 15% O.A., HAIL GUARD, 11 EER 250 MBH (NOM) CFM 0.5" 930 52 MCA 208/3 48TCFA12 (RETAIL)
EF 8 CEILING ENERGY STAR RATED, CONNECTED TO OCCUPANCY SENSOR TO RUN WHILE OCCUPIED BACK DRAFT DAMPER, 1127 RPM, ENERGY STAR RATED, CONNECTED TO OCCUPANCY SENSOR TO RUN WHILE OCCUPIED 75 CFM 0.25" 23 W 120/1 PANASONIC FV-0511VQ1 (UNISEX BATHROOM)
EF 9 CEILING BACK DRAFT DAMPER, 1400 RPM 150 CFM 0.25" 54 W 120/1 GREENHECK SP-A190 (RESTROOM)
ELECTRIC FLUSH MOUNTED, 14 GAUGE COVER. CUH CABINET INTEGRAL DISCONNECT, INTEGRAL T- 4KW WALL HEATER STAT ELECTRIC FLUSH MOUNTED, 14 GAUGE COVER. 4 KW 208/1 QMARK AWH-4408 LFK-SFC

KEY	DESCRIPTION	CEIL'G	ACCESSORIES	MANUFACTURER/CAT #
A1	SQUARE CEILING DIFFUSER: 2'X2' FULLY LOUVERED FACE, 4 WAY, ROUND NECK, WHITE	GRID	OB DAMPER	TITUS TMS/3
В3	SQUARE CEILING DIFFUSER: 1'X1' LOUVERED FACE, ROUND NECK, DIRECTIONS OF THROW PER PLAN, WHITE	GYP		TITUS TDC/1
R1	GRID CORE RETURN GRILLE 1/2"X 1/2"X 1/2", ALUMINUM WHITE	GRID	SQ. TO ROUND FITTING	TITUS 50F/3
R6	GRID CORE RETURN GRILLE 1/2"X 1/2"X 1/2", FILTER, ALUMINUM WHITE.	GRID		TITUS 50FF/3
S 1	DOUBLE DEFLECTION SUPPLY REGISTER, FRONT BLADES PARALLEL TO SHORT DIMENSION, WHITE	GYP	OB DAMPER	TITUS 272
5 2	DOUBLE DEFLECTION SUPPLY REGISTER, FRONT BLADES PARALLEL TO SHORT DIMENSION. MOUNTED TO RECTANGULAR DUCT, CLEAR ANODIZED ALUMINUM	DUCT MTD	EXTRACTOR	TITUS S300FS

IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE ELECTRICAL CHANGES DUE TO EQUIPMENT SUBSTITUTIONS WITH EC.

19 08/17/20 REISSUED FOR PERMIT 23

APPROVAL STAMPS:

SUBMISSIONS & REVISIONS OWNER

MAY REIGLER PROPERTIES 2201 WISCONSIN AVE NW SUITE 200 WASHINGTON DC 20007

No. Date



Description

KEVIN & ASAKO SPERRY ARCHITECTURE 3318 N. Columbus Street Arlington, VA 22207 T.312.636.3248 / 312.636.4252 www.kasa-arch.com

GENERAL CONTRACTOR

CIVIL ENGINEER

LANDMARK ENGINEERING 141 9TH STREET, PO BOX 774943 STEAMBOAT SPRINGS, CO 80477 T: 970.879.1976

STRUCTURAL FRAMING ENGINEER

KL&A ENGINEERS & BUILDERS 1717 WASHINGTON AVE. GOLDEN, CO 80401 T: 303.384.9910

M.E.P. ENGINEERS

BOULDER ENGINEERING 1717 15TH STREET BOULDER, CO 80302 T: 303.444.6038

INTERIOR DESIGNER

JOHNSON NATHAN STROHE 1600 WYNKOOP ST., SUITE 100 DENVER, CO 80202 T: 303.892.7062

PROJECT LOCATION

STEAMBOAT BASECAMP PARTIAL RENOVATION AND TENANT FIT-OUT

1901 CURVE PLAZA STEAMBOAT SPRINGS, CO 80487 DRAWING TITLE

MECHANICAL DETAILS & SCHEDULES

DATE: 08/22/23 DRAWN BY: CHECKED BY: PROJECT NO: 20129

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DRAWING NO:

M4.11

1.01 WORK INCLUDED:

A. The work included by this division of the specifications includes furnishing all labor, materials, equipment, and services, including minor items omitted but necessary to construct and install the complete systems described by the Contract Documents and specified below. "Contractor" refers to the Electrical Contractor. The general conditions of the

1. Power Distribution System

3. Telephone Raceway System

4. Data Raceway System 5. Fire Alarm System

6. Emergency Lighting System

1.02 CODES AND REGULATIONS

inspection authority. The Contractor to verify the governance of the following Codes, including any local amendments and supplementary codes such as the Codes of the National Fire Protection Association:

1. Building Code: 2018 International Building Code

4. Fire Code: 2018 International Fire Code 5. Gas Code: 2018 International Fuel Gas Code

1.03 EQUIPMENT AND MATERIALS STANDARDS:

A. Equipment and materials shall be new, UL-listed for the use intended, and free from damage or defect. They shall comply with the latest industry standards.

A. Illustrate the general design and extent of performance required. All dimensions and locations shall be taken from the Architectural drawings. Consult with Architectural plans and locate all ceiling equipment where indicated on reflected

1. Switches, dimmers, receptacles and coverplates

2. Switchboards, Panelboards/Loadcenters

3. Disconnect switches

4. Fuses Light fixtures

Light poles

shall be accomplished at no additional expense to the Owner C. Manufacturers not listed may submit for acceptance as an "approved equivalent." Requests for an "equivalent" means

"approved equivalent". Four copies of such submittal must be received by the Engineer seven (7) working days prior to

1.06 WARRANTY:

A. The contractor shall be responsible for the successful operation of electrical systems, equipment, and materials installed under this Contract for a period of one year from the date of final acceptance. Defective equipment or materials shall be repaired or replaced at no expense to the Owner.

1.07 PRODUCT HANDLING AND CLEAN UP:

A. Equipment shall be left clean and undamaged, to the satisfaction of the Owner. The General Conditions take precedence. 1.08 CUTTING AND REPAIRING:

A. The contractor shall be responsible for all cutting, drilling, welding, and repair required for his portion of the work.

Coordinate with the Architect. The General Conditions take precedence.

systems. Bind the written instructions in a notebook. The General Conditions take precedence. 1.10 <u>PERMITS:</u>

A. The contractor shall pay for all fees, taxes, secure permits, licenses, and inspections required for the project.

1.11 TEMPORARY SERVICES: A. Provide temporary power and lighting as required by the General Contractor, in accordance with OSHA and N.E.C.

1.12 <u>COORDINATION</u>

A. Coordinate outlet device and equipment locations with the Architectural Plans and work of other trades. Locate on horizontal and vertical lines to avoid interference and to provide functional use of all equipment. Verify electrical power

B. Mechanical work performed by this contractor will conform to the standards of Division 21-23. Mechanical equipment motors and controls shall be furnished, set in place, and wired according with the following schedule unless otherwise

ored of specifica. Me – Di	VISIOII .	21-23	LC -	DIVISIO	•
	Furn	Set	Power	Control	
Item	By	By	Wiring	Wiring	
Combination starters	MC	EC	EC	MC	
Equipment motors	MC	MC	EC		
Motor starters & O.L. relays	MC	EC	EC	MC	
Disconnect switches	EC	EC	EC	MC	
Thermal overload heaters (1)	EC	EC	EC		
Variable Speed Drives	MC	EC	EC	MC	
Control relays/transformers	MC	MC	EC	MC	
Temperature control panels	MC	MC	EC	MC	
Temp. Controls conduit/wiring	MC	MC		MC	
Actuator and solenoid wiring	MC	MC		MC	
Pushbuttons & pilot lights	MC	MC		MC	

C. The general guideline for the division between control(by MC) wiring and power wiring(by EC) is that power wiring carries the current which energizes a motor, control wiring does not. Control wiring may be 120V, which would be the responsibility of the MC. Control motors are wired by the MC.

D. Examine the site and become aware of existing conditions, utilities, and other issues affecting the satisfactory completion

1.13 <u>DELIVERY, STORAGE, HANDLING:</u>

A. Provide necessary hauling and hoisting equipment. Protect the materials of this Division before, during, and after

1.14 <u>AS-BUILT DRAWINGS</u>

A. Keep a current set of "as-built" drawings on site. Upon completion of the work, furnish engineer with a reproducible prints showing the "as-built" installation.

1.15 PROJECT/SITE CONDITIONS:

A. The electrical Contractor shall furnish and General Contractor shall install access panels where required for access to equipment. The electrical Contractor shall include the cost of installation in his bid. Access panels shall be adequately sized, of a type approved by the Architect and shall be fire or smoke-rated as required.

3.01 EXCAVATION AND BACKFILLING:

underground utilities. Provide excavating and backfilling for electrical work. Backfill in 12" layers, mechanically tamp to 95% proctor standards. Protect according to OSHA standards. The General Conditions take precedence. B. Provide marker tape 12" above exterior underground service conduits(power, telephone, television).

3.02 START-UP PROCEDURES:

A. Follow manufacturer's recommended procedures in starting up the equipment; damage caused during start-up shall be

3.03 HANGERS AND SUPPORTS:

A. Support conduit and equipment from the structure to prevent sagging, pocketing, swaying, and vibrations, and arranged to provide for expansion and contraction. Brackets, clamps, and hangers shall be steel or copper of a type, acceptable to the

Engineer. Chain, perforated iron or wire hangers are not permitted. B. Conduit on the roof will be supported above the roof on roof pads. The pads shall be approximately 6"Wide by 6" high by the length as required. They shall be made of recycled rubber, rated for 500lbs/ft loading each. The pads will have galvanized steel "C" channel attached to the top, which can accommodate pipe clamps to secure the conduit. This

multiple conduits are racked together. The pads are C-series manufactured by Cooper B-line or approved equivalent. 3.04 SLEEVES AND PLATES

A. Provide sleeves and inserts for all conduit. The contractor shall be responsible for the cost of cutting and patching required for piping where sleeves and inserts were not installed or where incorrectly located. Sheetrock joint compound may be used to seal openings in non-rated walls(insulation to be continuous through walls.

D. Seal all piping passing through fire-rated construction with approved material to maintain air-tight, fire-rated integrity, with a U.L. listed assembly compatible with the wall or floor assembly being penetrated.

SECTION 26 05 00 - COMMON WORK RESULTS FOR ELECTRICAL

A. Provide complete systems of conductors and raceways using conduit and/or cable assemblies appropriate to the function and location, and specifically approved in chapter three of the N.E.C..

A. The following raceways are approved for use on this project, where approved by the N.E.C.:

1. EMT: Electrical metallic tubing, galvanized

2. GRC: Rigid steel conduit, galvanized 3. PVC: Polyvinyl chloride conduit, schedule 40

4. IMC: Intermediate metal conduit, galvanized

2.02 <u>CABLE ASSEMBLIES:</u> A. The following cable assemblies may be used in the power distribution system in concealed locations, where approved by

the N.E.C.: 1. MC: Metal clad cable

Non-metallic sheathed cable 2. NM/NMC: 3. SE/SER: Service entrance cable (From MDC to residences)

2.03 <u>BOXES:</u>

A. Provide galvanized steel outlet and junction boxes, except where otherwise indicated. Boxes shall be a minimum 4" square or octagonal, depth as required. Provide weather-proof type cast boxes with gasket and cast coverplate for exterior outlets or wet locations. Outlet boxes shall be of the proper type and design for the fixture or device to be installed. Through the wall boxes are not permitted. Provide plaster or tile rings for all flush outlets installed where required. Boxes

shall be manufactured by Raco, Steel City, National or equivalent. B. Interior floor boxes shall be non-metallic or cast steel in concrete or slab on grade installations, and shall be rated for the use. Floor boxes above grade shall be non-metallic or stamped steel, rated for the use. Multi-gang boxes shall be used where specified. Coverplates shall be polished brass with 'flip lids' for receptacles and connectors. Provide carpet flanges where appropriate.

2.04 CONDUCTORS:

A. Provide a complete set of power conductors, rated 600 volts, of the quantity, size and type required for the function. 1. Conductors shall be copper, except where specifically noted. Conductors shall be solid for wire sizes No. 10 AWG

and smaller; stranded for No. 8 AWG and larger. 2. Aluminum conductors will be accepted only where specifically indicated by the Contract Documents. Aluminum conductors must be terminated according to the manufacturers instructions, including use of proper joint compound, use with aluminum rated lugs, and proper torqueing of the lugs.

2.05 <u>INSULATION:</u> A. Provide wire with the following minimum insulation standards:

1. Branch circuits, panelboard feeders, service entrance conductors: THWN-2, XHHW(90C). The conductors shall be applied using the 75C rating.

2. Connections to fixture ballasts, and wiring runs in or through fixture wiring channels: Insulations listed in table 402.5 of the N.E.C., except for wiring made with asbestos.

3. Cord connections: Cords listed in table 400.4 of the N.E.C., except for wiring made with asbestos. 2.06 <u>LUGS</u>:

A. Lugs for all equipment will be rated for the use. Lugs will be suitable for copper or aluminum conductors, rated for 75C. 2.07 <u>SWITCHES AND RECEPTACLES:</u>

A. Provide specification grade devices throughout. Switches and duplex receptacles may be commercial grade. Devices shall be manufactured by Hubbell, Leviton, General Electric, Bryant, Slater, Pass & Seymour, Inc., Sierra, or Arrow-Hart. B. Except where noted, plates shall be plastic, color to match the devices with matching screws for receptacles, switches,

telephone, and TV outlets. Provide blank coverplates for unused outlets. Coverplates for multi-gang boxes shall be sized for the box it covers

C. Devices and their coverplates colors shall be coordinated with Architect and Owner. In mechanical rooms, etc, the coverplates may be galvanized steel

D. In kitchens, and other back of house areas, and in areas with adjacent stainless steel equipment, they shall be brushed aluminum coverplates with white devices. Field verify any areas of doubt with the architect. 2.08 <u>DIMMERS:</u>

A. Incandescent dimmers shall be the linear slide-type with aluminum fins. Dimmers shall be Lutron Nova series or B. Fluorescent dimmers shall be the linear slide-type with aluminum fins. The dimmers shall be closely coordinated with the

ballast type of the specific fixture being controlled and must be field coordinated before ordering. Dimmers shall be Lutron Nova series or equivalent. C. LED dimmers must be selected by, or specifically approved by, the specific fixture manufacturer or supplier. Slide type

dimmers are preferred where available. D. When switches and dimmers are located side by side, switches shall have identical appearance as dimmers. Dimmers shall

in no case have heat fins removed or modified. E. Dimmers shall be manufactured by Lutron, Hunt, Prescolite, or equivalent

3.01 <u>WIRING:</u> A. The drawings are schematic in nature; alternative wiring paths, different conduit fill, etc, installed in conformance with the N.E.C. are allowed. Conductors must be derated per code.

B. Branch circuits shall use minimum No. 12 AWG wiring for branch circuits, protected by 20 ampere circuit breakers. Control wiring may be No. 14 minimum. If distance from panel to first outlet is 75 feet or greater (for 120-volt circuits) or 150 feet or greater (for 277-volt circuits), provide No. 10 AWG.

C. Use PVC in earth or in slabs in contact with earth. Outside the building, install a minimum of 30" below finished grade. D. Where mechanical damage occur, use galvanized rigid steel or intermediate metal conduit.

E. Electric metallic tubing may be used in all applications, except where prohibited by code or otherwise noted. F. Do not install exposed conduit in areas open to the public. Exposed conduit may be installed at surface-mounted equipment and other locations acceptable to the Architect. Run exposed conduit parallel to, and at right angles with, the

building lines. G. Direct burial wiring shall not be used.

H. Use flexible metallic conduit for connections to motors, fixtures, or other equipment where vibration is encountered. Provide sealtite flexible metallic conduit in wet areas such as kitchens, equipment rooms, on roofs, etc. I. Provide a ground wire in non-metallic conduit and flexible conduit. Ground wires shall be increased in size where circuit wiring is increased for voltage drop.

J. Circuits fed through AFCI breakers shall have separate neutrals with no cross or ground connections; wiring shall be installed per the breaker manufacturers instructions. K. Multi-wire branch circuits shall utilize handle ties on breakers, or other grouped disconnecting means per NEC 210.4(B).

3.02 OUTLET BOXES, DEVICES AND FITTINGS: A. Install receptacle and telephone outlets 18" to center-line above floor in general locations; install at switch height where

shown in combination; install 46"to center-line in mechanical equipment rooms. B. Install receptacles vertically, ground pole down. C. Install switch outlets 46" to center-line above floor on latch side of door. Verify door swing prior to installation. Use

gang boxes for multiple-device installation as required. D. Install outlets shown on the drawings "back-to-back" with a minimum of 6" lateral separation between them.

SECTION 26 20 00 - SERVICE AND DISTRIBUTION

A. Power will be available from the secondary side of transformer(s) provided by the utility company. This service shall be 277/480 volts and 120/208 volt, 3 phase, 4 wire, 60 hertz A.C. for normal power and lighting requirements. General arrangement of the service equipment is shown on the drawings. Load balance the entire system to within 15% per phase. 1.02 <u>GROUNDING:</u>

A. Provide a complete grounding system in accordance with Section 250 of the N.E.C.

B. Supplemental electrode to be installed unless resistance of 25 ohms to earth can be documented.

A. Provide circuit breaker-type panelboards as detailed on the drawings. Provide separate ground bus. Provide fronts with door and latch with locks keyed alike. Install panels 6'6" above finished floor to top of trim. Where panels are mounted side by side, align tops of panels. Mount a typed directory, identifying each circuit, in a directory frame. Provide typed source label identifying source of power for each panel. Install trims and doors with primer coats in finished areas. Provide one spare 3/4" conduit for each 3 unused poles in flush-mounted panelboards; extend from to an accessible point above a hung ceiling; cap and identify.

B. Breakers shall be full width, thermal magnetic, bolt-on type. Provide multi-pole breakers with common trip and single operating handle; handle ties are acceptable for multi-wire branch circuits. 1. Breakers serving restaurant kitchens and bars, or where required by code, shall be GFCI breakers. GFCI receptacles may be used only where the receptacles are not located behind equipment.

2. HACR breakers shall be used for HVAC equipment in accordance with the equipment manufacturer. 3. HID breakers shall be used where HID or fluorescent fixtures are normally panel switched. C. Lugs on mains and branch breakers shall be rated for 75C or 60C, copper or aluminum wiring.

D. Panelboards(240VAC) shall be Square D type NQOD or equivalent by I.T.E., G.E., or Cutler Hammer. E. Panelboards(480VAC) shall be Square D type NEHB or equivalent by I.T.E., G.E., or Cutler Hammer.

2.02 LOADCENTERS:

A. Provide circuit breaker-type loadcenters as detailed on the drawings. Provide separate ground bus. Provide fronts with door and latch with locks keyed alike. Install panels 6'6" above finished floor to top of trim. Where panels are mounted side by side, align tops of panels. Mount a typed directory, identifying each circuit, in a directory frame. Provide typed source label identifying source of power for each panel. Install trims and doors with primer coats in finished areas. Provide one spare 3/4" conduit for each 3 unused poles in flush-mounted loadcenters; extend from to an accessible point above a hung ceiling; cap and identify.

B. Breakers shall be full width, thermal magnetic, plug-in type. Provide multi-pole breakers with common trip and single operating handle; handle ties are acceptable for multi-wire branch circuits.

1. Breakers serving residential projects shall be AFCI breakers per NEC 210.12.

2. Breakers serving restaurant kitchens and bars, or where required by code, shall be GFCI breakers. GFCI receptacles may be used only where the receptacles are not located behind equipment.

3. HACR breakers shall be used for HVAC equipment in accordance with the equipment manufacturer. 4. HID breakers shall be used where HID or fluorescent fixtures are normally panel switched.

C. Lugs on mains and branch breakers shall be rated for 75C or 60C, copper or aluminum wiring.

D. Load centers shall be Square D type QO or equivalent by I.T.E., G.E., or Cutler Hammer. 2.03 FUSIBLE DISTRIBUTION SWITCHGEAR:

A. Provide free-standing, floor-mounted, fusible type switchboard as shown on the plans. B. Switchboard shall be 90" high, depth as indicated, constructed so rear sections align, with internal components removable

C. Buses shall be copper or tin-plated aluminum, braced for short- circuit currents of 100,000 RMS symmetrical amperes. Horizontal bars shall be tape-wrapped and insulated. Maximum temperature rise shall be 55C over 25C ambient. Provide full length and sized horizontal busses, including neutral and ground. Vertical sections shall be fully bussed. All lugs shall be rated for 75C or 60C copper or aluminum wiring.

D. Manufacturers shall be General Electric "AV line" with QMR construction or equivalent by Square D, I.T.E., or Westinghouse.

2.04 <u>FUSIBLE DISTRIBUTION PANELBOARD:</u>

A. Provide wall hung fusible type panelboard as shown on the plans.

B. Rear sections shall constructed with internal components removable from the front. C. Buses shall be copper or tin-plated aluminum, braced for short-circuit currents of 100,000 RMS symmetrical amperes. Horizontal bars shall be tape-wrapped and insulated. Maximum temperature rise shall be 55C over 25C ambient. Provide full length and sized busses, including neutral and ground. Vertical sections shall be fully bussed. All lugs shall be rated for 75C or 60C copper or aluminum wiring.

D. Manufacturers shall be Square D type QMD construction or equivalent by General Electric, I.T.E., or Westinghouse. 2.05 <u>CURRENT TRANSFORMER CABINETS:</u>

A. Provide current transformer cabinets, including interior lugs and bussing, as required to accommodate the requirements of the utility company. The cabinets shall be U.L. listed, weatherproof as required. All lugs shall be rated for 75C or 60C

2.06 METER STACK:

A. Provide wall mounted modular meter stacks where shown on the plans. The unit shall be NEMA 3(NEMA 1), made of galvanized steel. The incoming section shall use a fused switch.

B. The busses shall be copper or tin-plated aluminum, braced for short-circuit currents of 65,000AIC symmetrical amperes. Vertical sections shall be fully bussed top to bottom. Provide full length and sized horizontal busses, including neutral and ground. All lugs shall be rated for 75C or 60C copper or aluminum wiring.

C. Meter stack shall accommodate both single phase and three phase, 100Amp and 200Amp meters and breakers. Additional sections shall be capable of simple connection. D. The meter stack shall be manufactured by American Midwest Power (AMP), Square D, G.E., Westinghouse ITE or

equivalent. 2.07 SAFETY SWITCHES:

A. Provide normal duty, enclosed, fusible and non-fusible safety switches as indicated on the plans. All lugs shall be rated for 75C or 60C copper or aluminum wiring. Provide enclosures suitable for the surrounding area and conditions. Label switches for feeder or motor supplied. The switches shall be manufactured by Square D, I.T.E., G.E., Cutler Hammer, or equivalent

A. Provide power fuses of the time-delay type unless otherwise indicated. Fuses shall be manufactured by Bussman, Gould Shawmut, or equivalent. Provide one (1) complete set of fuses for fuse-holding devices, sized according to the motor and/or conductor to be protected. Provide a hinged cover cabinet for storage of spare fuses: three spare fuses of each fuse

2.09 DRY TYPE TRANSFORMERS: A. Transformers shall be 480 Volt, 3 phase, 3 wire, 60 HZ primary; 120/208 volt 3 phase, 4 wire secondary. Transformer shall be provided with four 2.5% taps below and two 2.5% taps above.

B. Dry type transformers shall have Class 155 or higher insulation. Housing shall be metal, NEMA 1 for indoor application.

Transformers shall be encapsulated or have raintight enclosures for outdoor use. C. Transformers shall meet the minimum efficiency requirements of Table C405.6 of the 2018 International Energy Conservation Code. D. Transformers shall be floor mounted unless otherwise indicated. Mount transformers so that sound transmission is a

minimum. Provide pads: Korfund "Elasti-rib" or equivalent for this purpose. Conduit connections shall be made using flexible conduit, suitable for the application. E. Provide all necessary supports such as Unistrut hangers, rods, etc. Transformers which are hung shall be hung from at least two trapeze hangers, each supported by at least one 1/2" threaded rod at each corner. Rods shall extend to the

structure. Provide additional support, including lateral bracing for wall hangers as required. F. All lugs shall be rated for 75C or 60C wiring. G. Transformers shall be Siemens Distribution Dry Type, Square D Quiet Quality, GE QHT, Westinghouse DT#, or

equivalent.

A. Provide branch circuits, feeders, junction boxes, disconnect switches, etc as required for a complete system; make power connections to motors and controls for heating, ventilating, air conditioning, plumbing, owner furnished and fire

protection equipment as required. B. Kitchen equipment. Refer to the Kitchen Equipment Contractor's drawings for final sizing, locations, and rough-in heights. The Electrical Contractor shall provide final circuits and connections to kitchen electrical equipment. Sealtite conduit and fittings shall be used on runs inside refrigerated bases and at dish tables.

C. Provide connections to hood fire suppression system(s). The electrical contractor is responsible for wiring the interlock controls for hood related air handling equipment, including low voltage interlocks, and interlocks within building HVAC equipment where required.

SECTION 26 50 00 - LIGHTING

1.01 EXTERIOR LIGHTING FIXTURES A. Provide weather-proof luminaires for mounting as shown. Provide lamps of size and wattage as indicated on the drawings. Provide underground wiring to exterior lighting as shown on the drawings.

2.01 INTERIOR LIGHTING FIXTURES

2.05 POLES AND STANDARDS:

A. Securely support and anchor fixtures and outlet boxes. Where lighting fixtures are installed in a lay-in grid ceiling system, secure fixtures to tees by installing earthquake clips at each corner of the fixture. Provide supports required, including structural members if needed. Provide separate junction boxes and wire to recessed fixtures in flexible conduit with Type AF wire, unless acceptable pre-wired fixtures are used. Conceal openings cut in ceilings for recessed fixtures with fixture trim installed. Coordinate installation of recessed fixtures with ceiling installer.

2.02 EXTERIOR LIGHTING FIXTURES: A. Exterior lighting fixtures, raceways, equipment, etc. shall be weather-proof and suitable for temperatures down to -20F. B. Ballast type, lamp wattage, and rated voltage shall be as indicated on the plans. Each ballast shall be of the separatecomponent type, capable of reliable lamp starting down to -20F, and shall have a minimum power factor of .90.

A. Incandescent lamps shall be rated at 130V. H.I.D. and fluorescent lamps shall be as specified on plans with ballasts as

specified in the following specifications. Lamp codes listed are ANSI. All lamps shall be Sylvania, General Electric, or approved equivalent. B. In porcelain keyless fixtures, provide medium base, self ballasted, A-line shape, fluorescent lamps, GE FLE15/2/A21 or equivalent.

2.04 <u>DRIVERS</u>: A. LED drivers shall be electronic-type, labeled as compliant with radio frequency interference (RFI) requirements of FCC Title 47 Part 15, and comply with NEMA SSL 1 "Electronic Drivers for LED Devices, Arrays, or Systems". LED drivers

shall have a sound rating of "A", have a minimum efficiency of 85%, and be rated for a THD of less than 20 percent at all B. Dimmable LED drivers shall be 0-10V type. Dimmable LED drivers shall be capable of dimming without LED strobing or flicker across their full dimming range.

C. Ballasts and drivers shall be rated for the ambient temperatures in which they are located. Outdoor fixtures shall be equipped with ballasts or drivers rated for reliable starting to -20 degrees F. Indoor fixtures located in areas with direct sunlight or above normal ambient temperatures shall have ballasts or drivers rated at 65 degrees C minimum.

A. Each pole shall contain a hand-hole at the base, with an accessible ground lug capable of accepting up to #4 AWG stranded wire. Pole shall be furnished complete with base, anchor bolts, template, and other hardware necessary for the pole/luminaire and/or pole/base connections. B. Concrete pole bases shall be provided by the General Contractor. The Electrical Contractor shall be responsible for the

coordination of conduit and anchor bolts. An anchor bolt template shall be furnished to the Architect within 30 days of the

signing of the Contract. Provide conduit in and out to a point 5' beyond the base. C. The entire assembly (base, pole, brackets, luminaires) shall be designed to withstand 100 MPH winds. 2.06 <u>INDOOR LIGHTING CONTROLS (Commercial space only):</u>

A. Provide combination daylight and occupancy, lighting control system as shown on drawings. Include power packs, sensors, controllers, transformers, relays, wiring, etc. as required. B. Sequence of operations:

a. Lights will be turned on with occupancy detection. b. Daylight sensors will dim fixtures to maintain 50 foot candles on working surface of desk. c. Lights will be turned off after 10 minutes with no occupancy detection. 2. Occupancy control areas(All interior areas):

b. Lights will be turned off after 10 minutes with no occupancy detection.

a. Lights will be turned on with occupancy detection.

1. Daylight control areas(All perimeter offices within 15' of exterior windows):

2.07 OUTDOOR LIGHTING CONTROLS: A. Provide combination photo-cell time switch, lighting control system as shown on drawings. Include contactors,

photo-electric cells, time switches, transformers, selector switches, relays, wiring, etc. as required. B. Mount photo-electric cell facing north on roof in a protected area, shielded so artificial light does not affect proper operation. Set photo-electric cells to close their relay contacts at approximately two (2) foot candles.

C. Set time clock(s) to operate contacts as scheduled hours by Owner. D. Time clock shall be seven day type with spring carry over. Provide (2)40A2P contacts. Time clock shall be readily

SECTION 27 20 00 - COMPUTER SYSTEM

DIVISION 27 - COMMUNICATIONS

A. Provide a complete system of raceways, pull boxes, outlet boxes, and terminals. Raceways shall form a complete path up walls and across inaccessible ceilings. Computer wiring may be run wild above accessible ceiling.

A. Conduit in the building shall be galvanized EMT, with plastic bushings on ends which are not terminated in a box.

2.02 WALL OUTLETS: A. Wall outlets shall be 4" square pressed steel boxes, with single gang plaster ring. Connectors and coverplates are to be

provided by the computer system installer. B. Provide an alternate price for plaster rings at outlet location, and pullstrings in wall up to accessible ceiling, in lieu of conduit and boxes.

A. Wiring shall be provided by the computer system installer. Wiring run wild in air plenums shall be teflon coated or similarly rated for the application.

3.01 EXECUTION:

A. Provide pull strings in all conduit.

B. Field verify all computer outlet locations. Final locations and heights shall be as designated by the Architect or Owner's representative.

SECTION 27 30 00 - TELEPHONE SYSTEM

1.01 <u>DESCRIPTION:</u>

A. Provide a complete system of raceways, pull boxes, outlet boxes, and terminals. Raceways shall form a complete path up walls and across inaccessible ceilings. Telephone wiring may be run wild above accessible ceiling. B. System will include exterior underground conduit routed to a point of connection(usually a pedestal or a power pole) as

directed by the telephone company. Exterior conduit shall be sized and installed as directed by the telephone company.

Exterior underground conduit shall be schedule 40 PVC with solvent joints. B. Wall outlets shall be 4" square pressed steel boxes, with single gang plaster ring. Connectors and coverplates are to be provided by the telephone system installer. C. Provide an alternate price for plaster rings at outlet location, and pullstrings in wall up to accessible ceiling, in lieu of

A. Conduit in the building shall be galvanized EMT, with plastic bushings on ends which are not terminated in a box.

2.02 <u>TERMINALS</u> A. Telephone terminals shall be constructed of 1/2" thick, fire resistant, interior finish plywood, painted white, sized as shown or required. Provide power and ground connection as required or shown on the plans.

A. Wiring shall be provided by the telephone system installer. Wiring run in air plenums shall be teflon coated or similarly

rated for the application.

conduit and boxes.

3.01 EXECUTION A. Provide pull strings in all conduit. B. Exterior underground conduit shall use long radius, sweep ells. These elbows shall be schedule 80 PVC, or PVC coated

C. Field verify all telephone outlet locations. Final locations and heights shall be as designated by the Architect or Owner's representative.

SECTION 27 40 00 - VIDEO SYSTEM

A. Provide a complete system of raceways, pull boxes, outlet boxes, and terminals. Raceways shall form a complete path up walls and across inaccessible ceilings. Video wiring may be run wild above accessible ceiling.

A. Conduit in the building shall be galvanized EMT, with plastic bushings on ends which are not terminated in a box.

Exterior underground conduit shall be schedule 40 PVC (schedule 80 PVC radius elbows) with solvent joints. A. Wall outlets shall be 4" square pressed steel boxes, with single gang plaster ring. Connectors and coverplates are to be provided by the video system installer. Provide an alternate price for plaster rings at outlet location, and pullstrings in wall

B. Terminal shall contain one type F connector mounted on a brushed aluminum plate. "CATV" will be engraved on plate above each connector in 1/"4 high black letters. 2.03 <u>WIRING:</u> A. Wiring shall be provided by the video system installer. Wiring run in air plenums shall be teflon coated or similarly rated

B. Exterior underground conduit shall use long radius, sweep ells. These elbows shall be schedule 80 PVC conduit.

C. Field verify all television outlet locations. Final locations and heights shall be as designated by the Architect or Owner's

for the application. 3.01 EXECUTION:

A. Provide pull strings in all conduit.

representative.

DIVISION 28 - ELECTRONIC SAFETY AND SECURITY

up to accessible ceiling, in lieu of conduit and boxes.

SECTION 28 10 00 - SECURITY ALARM SYSTEM

mounting frame.

2.02 CONTROL UNIT:

1.01 <u>DESCRIPTION:</u> A. Provide a complete door security alarm system to audibly and visually annunciate door entry/exit at a master control panel. The door alarms may be individually reset at the master control panel as well as by-passed during certain hours of the day.

A. The annunciator panel shall be comprised of (3) 4 door modules each with individual door reset/bypass pushbuttons with associated LED's. The annunciator shall contain a common call placed LED, and alarm tone speaker, momentary action tone silencing push button. The tone silencing circuitry shall automatically reset after the alarm is reset. Each button cap shall be marked with the door identity. The panel shall be constructed of anodized aluminum, supplied with a recessed

A. The control unit shall include a volume control and be configured for pulsating alarm signal. A power supply shall be

A. Wiring shall be low voltage 18 AWG, run per the manufacturers instructions. Wiring may be run wild above accessible

provided in conjunction with the control unit. 2.03 <u>DOOR CONTACTS:</u> A. Door contacts shall be normally closed mechanical door contacts.

ceilings, in raceways in inaccessible locations. 2.05 MANUFACTURER:

A. Fire Alarm system shall comply with NFPA 72(1999 edition).

supervised annunciator circuits, automatic battery charger and standby batteries.

B. The fire alarm control panel shall be Simplex Series 4010 or equivalent.

A. The equipment shall be manufactured by Auth-Florence, Dukane or approved equivalent.

A. Install the security alarm system in accordance with the manufacturers instructions.

1.01 GENERAL: A. Provide an electronically-operated, double-supervised, closed-circuit, addressable type fire alarm system consisting of a control unit, manual-pull stations, alarm signals, automatic smoke and heat detectors, sprinkler monitor modules, and control relays as required, located as shown on the drawings and wired in accordance with the manufacturer's instructions

to make a complete and workable system as hereinafter described. B. Add, remove, move or change devices as required to provide a fire alarm system meeting the requirements of the authority C. Provide equipment manufactured by Simplex Time Recorder Company (System 4000), or equivalent by Fire Lite, Notifier,

or Silent Knight. 1.02 CODES AND REGULATIONS:

SECTION 28 30 00 - FIRE ALARM SYSTEM

2.01 <u>CONTROL PANEL:</u> A. The control panel shall be modular with solid state, microprocessor based electronics. Panel shall contain an 80-character LCD display to indicate panel status. The panel shall include initiation device circuits, alarm indicating appliance circuit,

2.02 <u>ANNUNCIATOR:</u>

A. The annunciator shall be flush mounted and back lit using LED lights for power on, trouble and alarm indication. Remote annunciator shall have an 80-character LCD display. Units may be stacked within one enclosure to accommodate the proper number of zones. The annunciator shall include trouble silence, alarm silence, and system reset switches. The remote annunciator shall be electrically supervised from the control panel. B. The annunciator shall be Simplex 4602 Series or equivalent.

APPROVAL STAMPS:

REVIEWED FOR CODE **COMPLIANCE**

02/24/2023

12/12/22 ISSUED FOR PERMIT No. Date Description SUBMISSIONS & REVISIONS

MAY REIGLER PROPERTIES 2201 WISCONSIN AVE NW SUITE 200

WASHINGTON DC 20007

ARCHITEC^{*}

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1717 15TH STREET

INTERIOR DESIGNER

JOHNSON NATHAN STROHE

1600 WYNKOOP ST., SUITE 100

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PROJECT LOCATION

DRAWING TITLE

DENVER, CO 80202

STEAMBOAT BASECAMP PARTIAL RENOVATION & **TENANT FIT-OUT**

> 1901 CURVE PLAZA STEAMBOAT SPRINGS, CO 80487

ELECTRICAL SPECIFICATIONS

DRAWING NO:

DRAWN BY: CHECKED BY:

DATE:

10/24/2022

PROJECT NO:

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20129

specifications apply and are included in this part of this section.

2. Interior and Exterior Lighting System

7. Electric Heating System

A. Comply with state and local codes, and utility company regulations. Final interpretations will be made by the local

2. Plumbing Code: 2018 International Plumbing Code 3. Mechanical Code: 2018 International Mechanical Code

6. Energy Code: 2018 International Energy Conservation Code 7. Electrical Code 2020 National Electrical Code

1.04 CONTRACT DRAWINGS:

ceiling plans.

1.05 SHOP DRAWINGS A. Submit products data and/or shop drawings as required by the Architect for the following:

7. Fire alarm system and equipment B. Quality of specific equipment is established by manufacturer's catalog number. Alterations caused by any Substitution

1.09 OPERATING AND MAINTENANCE DATA: A. Provide the Owner with operating and maintenance instructions(four copies) required for operation of all electrical

characteristics before ordering fixtures, equipment, etc.

Room thermostats MC MC -- MC EC EC EC --Thermostats: line voltage

A. Visit the site to become familiar with location and the various conditions affecting the work, including existing utilities.

A. Verify the location of underground utilities before excavation; the contractor is responsible for any damage to

replaced at no expense to the owner.

configuration of individual piping pads may be expanded to include two pads supporting a trapeze style support where

B. Drill holes as required for the installation of hangers required for the mechanical work. C. Where sleeves are placed in exterior walls below grade, the space between the pipe or conduit and the sleeves shall be made completely water-tight.

2.03 MANUAL PULL STATIONS: A. Manual pull stations shall be double action type made of red lexan with raised white letter; activation shall require two separate and distinct actions. Reset shall require a key common to the control panel. B. Pull stations shall be Simplex 4099-series or equivalent. 2.04 SMOKE DETECTORS: A. Smoke Detectors shall be a dual-chamber, photoelectric type detectors, complete with flashing status-indicating LED for visual supervision. When the detector is actuated, the flashing LED will latch on steady and at full brilliance. The detector may be reset by actuating the control panel reset switch. B. The detectors shall be Simplex 4098 Series or equivalent. 2.05 <u>AUTOMATIC HEAT DETECTORS:</u> A. Automatic heat detectors shall be combination rate-of-rise and fixed-temperature type. When the fixed temperature portion is activated, the units shall be non-restorable and give visual evidence of the operation. B. The detectors shall be Simplex 4098 Series or equivalent. 2.06 <u>DUCT SMOKE DETECTORS:</u> A. Duct smoke detectors shall be solid-state photoelectric type and shall operate on the light scattering principle. Detector construction shall be of the split type, a mounting base with twist-lock detecting head. Removal of the detector head shall interrupt the supervisory circuit. Detector shall be compatible with normally open fire alarm detection devices. Detector shall have an alarm LED visible through a transparent front cover. B. The detectors shall be Simplex 4098 Series or equivalent. 2.07 ALARM HORN/ STROBE: A. Alarm horn/strobe shall be combination devices. They shall be polarized and operated by 24VDC. Each horn shall include separate wire lead for in/out wiring. The strobe shall be a xenon flashtube. The lexan lens shall be pyramidal in shape. The units shall have panel module and wiring installed to operate strobes independently when horns are turned off. B. The alarms shall be Simplex 4903 Series or equivalent. 2.08 <u>AL</u>ARM STROBE: A. Alarm strobe shall be a xenon flashtube. The lexan lens shall be pyramidal in shape. B. The alarms shall be Simplex 4904 Series or equivalent. A. Door Holders shall be low voltage magnetic type with a minimum holding force of 25 lbs. The holders will be flush mounted wherever possible. Coordinate the exact location, voltage, etc with the door supplier to assure compatibility if the holders are provided by others. B. The holders shall be Simplex 2088 Series or equivalent. 2.10 REMOTE ALARM INDICATORS: A. Remote alarm indicators shall be provided for detectors, which are concealed above ceilings or in locked rooms. The indicators shall include test station switch for detectors above ceilings or in areas difficult to access. The remote alarm or remote alarm/test stations shall be Simplex series 2098 or equivalent. 2.11 <u>AUTODIALER:</u> A. Install and wire an auto dialer unit for communication to a central station over leased phone wires. Field coordinate exact details with the Owner or Owner's representative. 2.12 MONITOR MODULE: A. Provide an addressable monitor module for supervision of waterflow and tamper switches. B. Simplex IAM or equivalent. 2.13 <u>WIRING:</u> A. Provide a complete system of raceways, pull boxes, and outlet boxes. Raceways shall form a complete path up walls and across inaccessible ceilings. Wiring may be run wild above accessible ceilings. 3.01 <u>INITIATION:</u> A. Upon the operation of any manual pull station or automatic initiating device (smoke detector, sprinkler flow switch, etc.): 1. Sound a continuous, audible and visible alarm in the entire building 2. Provide description of alarm condition via LCD display at FACP and remote annunciator. 3. In addition, provide controls and wiring required for the following functions: a. Shut down all air handling units, except exhaust fans. b. Send a signal to a remote monitoring station. 3.02 <u>SYSTEM REPRESENTATIVE:</u> A. All system representative shall be an authorized engineered systems distributor located within a 50 mile radius of the 3.03 <u>REMOTE INDICATING LIGHTS:</u> A. Remote indicating lights shall be provided for existing detectors obscured from view in locked rooms. 3.04 <u>COMPONENT PROTECTION:</u> A. Provide a wire guard over any detector or horn in an area susceptible to physical damage. 3.05 FLOW AND TAMPER SWITCHES: A. Wire all flow switches and tamper switches installed by the fire sprinkler contractor to monitor modules. Determine exact quantity and location before bidding and include the costs of any wiring and conduit. A. Wire the exterior fire protection horn light where shown on the plans or as required by the Fire Department. T: 303.892.7062

APPROVAL STAMPS:

REVIEWED FOR CODE **COMPLIANCE**

02/24/2023

4	12/12/22	ISSUED FOR PERMIT

SUBMISSIONS & REVISIONS

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PROJECT LOCATION

STEAMBOAT BASECAMP PARTIAL RENOVATION & **TENANT FIT-OUT**

1901 CURVE PLAZA STEAMBOAT SPRINGS, CO 80487 DRAWING TITLE

ELECTRICAL **SPECIFICATIONS**

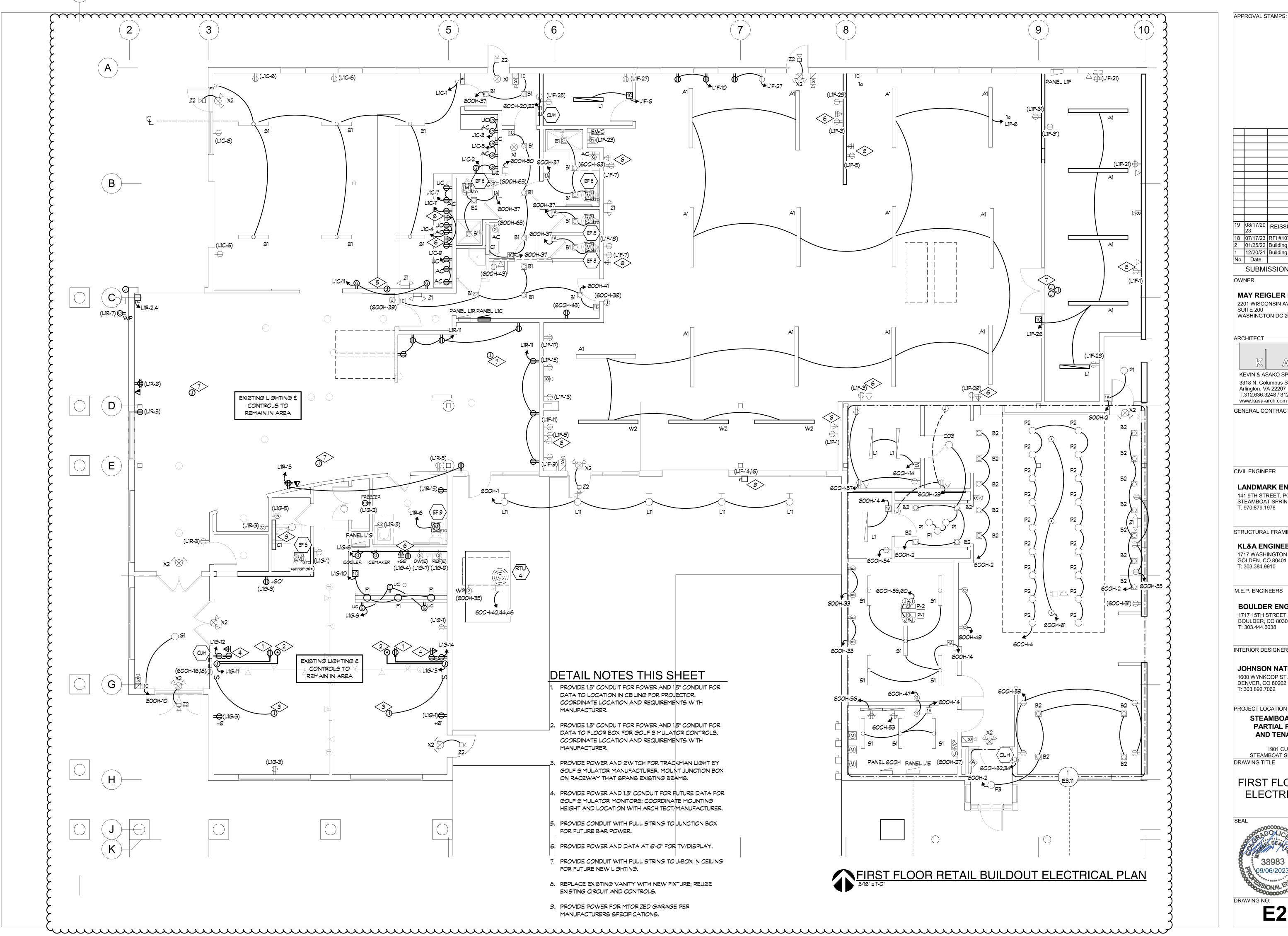
PROJECT NO:

CHECKED BY:

DATE:

10/24/2022 DRAWN BY:

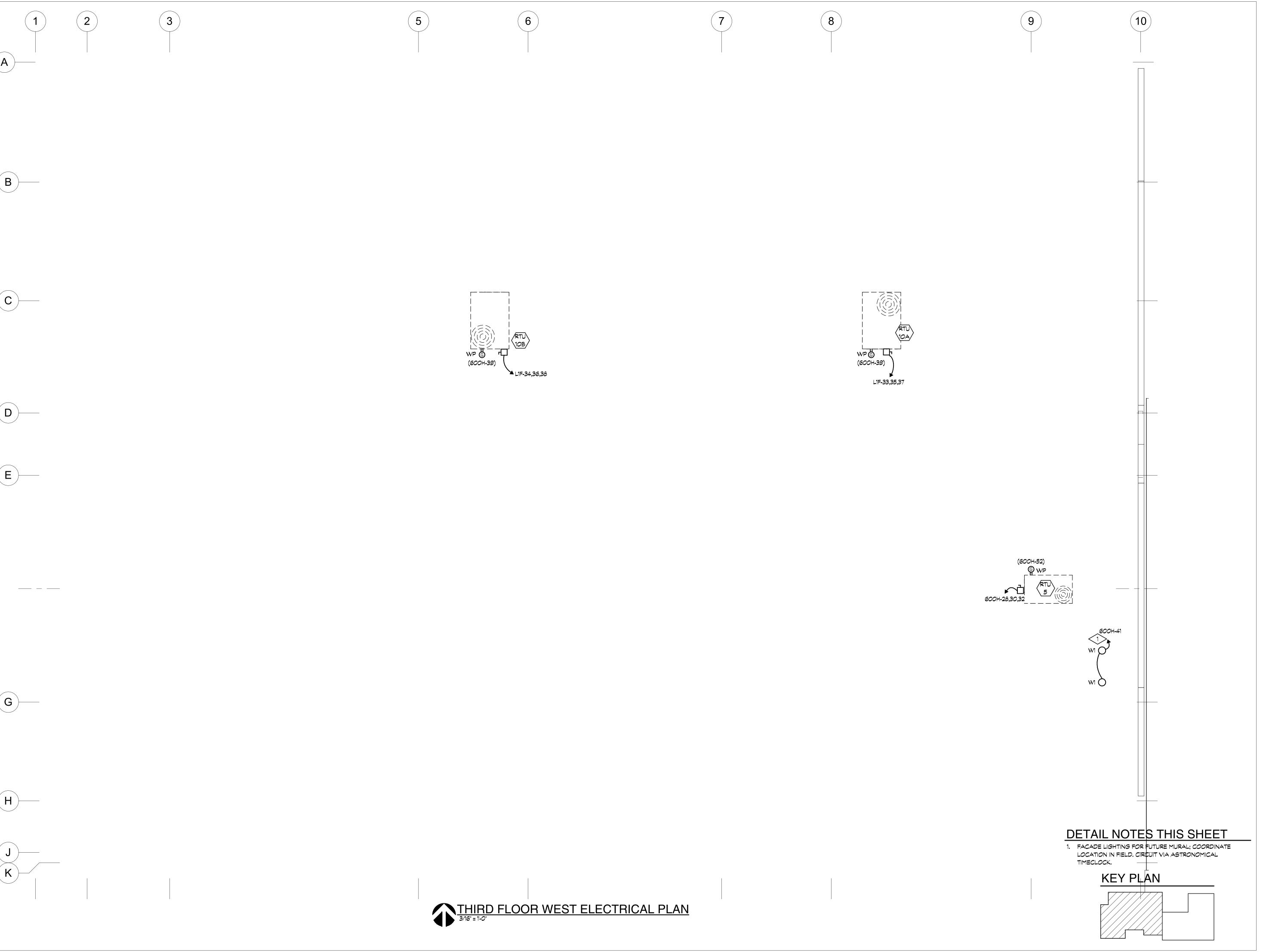
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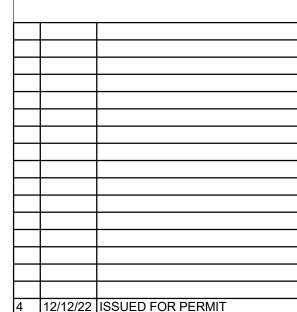
19 08/17/20 REISSUED FOR PERMIT 01/25/22 Building Department Comments
12/20/21 Building Department Comments Description SUBMISSIONS & REVISIONS MAY REIGLER PROPERTIES 2201 WISCONSIN AVE NW SUITE 200 WASHINGTON DC 20007 **ARCHITECT KEVIN & ASAKO SPERRY ARCHITECTURE** 3318 N. Columbus Street Arlington, VA 22207 T.312.636.3248 / 312.636.4252 www.kasa-arch.com GENERAL CONTRACTOR CIVIL ENGINEER LANDMARK ENGINEERING 141 9TH STREET, PO BOX 774943 STEAMBOAT SPRINGS, CO 80477 T: 970.879.1976 STRUCTURAL FRAMING ENGINEER **KL&A ENGINEERS & BUILDERS** 1717 WASHINGTON AVE. **GOLDEN, CO 80401** T: 303.384.9910 M.E.P. ENGINEERS **BOULDER ENGINEERING** 1717 15TH STREET BOULDER, CO 80302 T: 303.444.6038 INTERIOR DESIGNER **JOHNSON NATHAN STROHE** 1600 WYNKOOP ST., SUITE 100 DENVER, CO 80202 T: 303.892.7062 PROJECT LOCATION DRAWING TITLE FIRST FLOOR RETAIL

STEAMBOAT BASECAMP PARTIAL RENOVATION AND TENANT FIT-OUT 1901 CURVE PLAZA STEAMBOAT SPRINGS, CO 80487 ELECTRICAL PLAN DATE: 08/22/23 DRAWN BY: CHECKED BY: PROJECT NO:

E2.11



REVIEWED FOR CODE COMPLIANCE



4 12/12/22 ISSUED FOR PERMIT
2 01/25/22 Building Department Comments
No. Date Description
SUBMISSIONS & REVISIONS

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PROJECT LOCATION

STEAMBOAT BASECAMP PARTIAL RENOVATION & TENANT FIT-OUT

1901 CURVE PLAZA STEAMBOAT SPRINGS, CO 80487 DRAWING TITLE

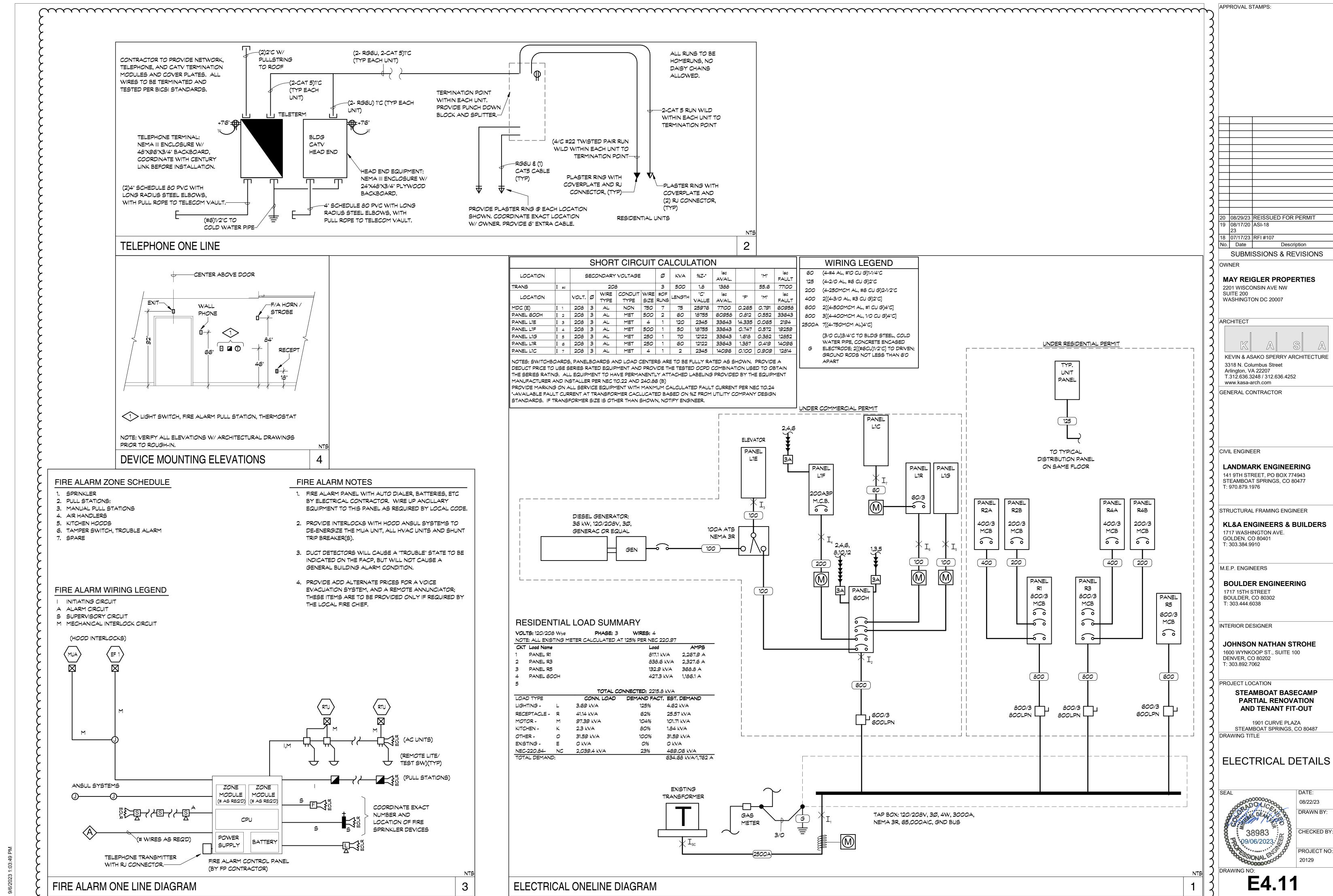
THIRD FLOOR WEST ELECTRICAL PLAN

38983 02/06/202 DATE: 10/24/2022 DRAWN BY: CHECKED BY

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PROJECT NO:

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KEY	LAMP	DESCRIPTION	CEIL'G (DEPTH)	MANUFACTURER/#	VOL-
A1	80W LED 3500K 8000 LUM	8' LONG 3-3/8" SLOT ARCHITECTURAL LINEAR (COLOR BY ARCH)	PENDANT	RAB LIGHTING / BOAO8P-80D10-40YN-XX	120
B 1	14.5W LED 4000K 900 LUM	4" SQUARE REGRESSED DOWNLIGHT (COLOR BY ARCH)	GRID/GYP (2")	LOTUS / LL4SR-4OK-XX	120
В2	14.5W LED 4000K 900 LUM	4" SQUARE REGRESSED DOWNLIGHT, WET LOCATION (COLOR BY ARCH)	GRID/GYP (2")	LOTUS / LL4SR-4OK-XX	120
F1	40W LED 3000K 2864 LUM	LARGE SPUN METAL DOME	PENDANT	MODERN FORMS / PD-5573	120
<i>G</i> 1	42W LED 3000K 3565 LUM	REGRESSED DOME CEILING PENDANT	PENDANT	KUZCO ESSEX / FM43920	120
L1	42W LED 3500K 6500 LUM	4'-O" FLUSH LINEAR	GYP (4.6")	COOPER LIGHTING / QS-CL4DR-F-80D-835-1-UNV	120
P2	40W LED (MAX)	DECORATIVE PENDANT BY OWNER	PENDANT	тво	120
S 1	42W LED 3500K 6500 LUM	4'-0" LONG DIE FORMED INDUSTRIAL STRIP W/ DROP ROUND/SQUARE LENS	SURFACE / PENDANT	H. E. WILLIAMS / 75(R/S)-4-L65835-X-DIM-UNV	120
W1	40W LED 3000K 3753 LUM	4' WALL MOUNTED MURAL LIGHT	WALL	LUMENPULSE LTG / LFP-120-48-10W-30K-HFR	120
X 1	FURN	EXIT SIGN, GREEN LED EDGE LIT FACE, UNIVERSAL MOUNTING, 90 MIN BATTERY PACK, FINISH BY ARCHITECT	UNIVERSAL	EELP / EDG-1GC-X-EM	UNV
X2	FURN	EXIT SIGN W/ DOUBLE FROG EYE, GREEN LED STENCIL FACE, 90 MIN BATTERY PACK, FINISH BY ARCHITECT	UNIVERSAL	EELP / XC-2-G-X-EM	UNV
<i>Z</i> 1	FURN	DOUBLE FROG EYE BATTERY PACK	WALL	EELP / EM20-E-HO-BLK-SD	UNV
Z 2	FURN	DIE CAST EMERGENCY LIGHTING UNIT, WET LOCATION, COLD WEATHER	WALL	EELP / DEM-LED-BK-ACEM-CW	UNV

1.756.4						
KEY	DESCRIPTION	LOAD	VOLT	CIRCUIT	CONNECTION	REMARKS
RTU 4	ROOFTOP UNIT	24 MCA	208/3	(3-#10,#10G) 1/2"C	30/3; 25 FRN	
RTU 5	ROOFTOP UNIT	28 MCA	208/3	(3-#10,#10G) 1/2"C	30/3; 30 FRN	
RTU 10A	ROOFTOP UNIT	54 MCA	208/3	(3-#6,#10G) 1"C	60/3; 60 FRN	
RTU 10B	ROOFTOP UNIT	54 MCA	208/3	(3-#6,#10G) 1"C	60/3; 60 FRN	
EF8	CEILING EXHAUST FAN	23 W	120/1	(2-#12,#12 <i>G</i>) 1/2"C	THERMAL O.L.	
EF 9	CEILING EXHAUST FAN	54 W	120/1	(2-#12,#12 <i>G</i>) 1/2"C	THERMAL O.L.	
CUH	ELECTRIC CABINET WALL HEATER	4 KW	208/1	(2-#10,#10G) 1/2"C	J-BOX	

*COORDINATE ALL SPECS WITH LIGHTING CONSULTANT

								<u>PAN</u>												
	SUPPLY FROM: 6	500H									08 Wye						ATING			
	MOUNTING:								HASES:						MAINS TYPE: MLO MAINS RATINGS: 100 A					
	ENCLOSURE:								WIRES:	4				M						
CIRCUIT D	ESCRIPTION	L	TRIP	P	вт			Ą	1	В	(5		вт	P	TRIP	L	CIRCUIT DESCRIPTION		
TEM	IP LTG		20	1	S	1	54	960					2	s	2	20	M	GARAGE DOOR OPENER		
GENERA	L RECEPTS	R	20	1	S	3			960	960			4			20	' '			
	L RECEPTS	R	20	1	S	5					780	54	6	S	1	20	M	EF 8		
EXTERIOR	R RECEPTS	R	20	1	S	7	180						8		1			SPACE		
QI	UAD	R	20	1	S	9			360				10		1			SPACE		
REC	CEPTS	R	20	1	S	11					1260		12		1			SPACE		
REC	EPTS	R	20	1	S	13	540						14		1			SPACE		
AIR COM	1PRESSOR	R	20	1	S	15			180				16		1			SPACE		
SP	PACE			1		17							18		1			SPACE		
SP	PACE			1		19							20		1			SPACE		
SP	PACE			1		21							22		1			SPACE		
SP	PACE			1		23							24		1			SPACE		
SP	PACE			1		25							26		1			SPACE		
SP	PACE			1		27							28		1			SPACE		
SP	PACE			1		29							30		1			SPACE		
SP	PACE			1		31							32							
SP	PACE			1		33							34		3			EGUAGE REFERENCE		
SP	PACE			1		35							36							
SP	PACE			1		37		2340					38							
SF	PACE			1		39				2040)		40	s	3	60	R; L	PANEL LIC		
SF	PACE			1		41						1800	42							
		١.	TOTAI	_ _ L(DAD:		4.07	7 kVA	4.5	kVA	3.89									
		7	[OTAI	- Al	MPS	:	34	4 A	38	3 A	32	A								
OAD TYPE	CONN.LC	DAD	DE	EM/	ND	FAC	ACT. EST. DEMAND			7	BREAK	ER TYF	E					PANEL TOTALS		
IGHTING -	L 0.06 k	VA			125%	% 0.08			3 kVA	s	HUNT TR	P -	s.	Т						
ECEPTACLE -	R 10.38 k	VA			98%			10.19	9 kVA	G	GFCI - G				TOTAL CONN. LOAD: 12.47 kVA					
10TOR -	M 1.97 KV	/ <u>A</u>			124%	,		2.45	5 kVA	Н	ANDLE E	BLOCK	- H	٦	OT	AL E	ST. DE	MAND: 12.77 kVA		
STCHEN -							HANDLE TIE - T			_	- '			CONN.: 35 A						
OTHER -	0 0 kV		0%						FCI -			A TOTAL EST. DEMAND: 35 A								
/ II III = -	J 3 NV/	1	0%				O RVA APOI - A													

									PAN	IEL	L1	E								
9	SUPPL	Y FROM: 0	500H						1	VOLTS:	120/2	.08 Wye				A.I.C. RATING: 10000				
	MOUNTING: SURFACE								P	HASES:	3					M	AINS	TYPE	: MLO	
	ENC	LOSURE: N	NEMA	1			WIRES: 4							MAINS RATINGS: 100 A						
CIRCUIT DE	CIRCUIT DESCRIPTION L TRIP P B1				вт		,	АВ		3	c			вт	P	TRIP	L	CIRCUIT DESCRIPTION		
							1	5764	0					2		1	20		SPARE	
ELEV N	10T0F	2	M	100	3	S	3			5764	0			4		1	20		SPARE	
							5					5764	0	6		1	20		SPARE	
ELEV 120	V POV	VER	0	20	1	S	7	500	0					8		1	20		SPARE	
ELEV SER	/ICE E	QUIP	R; L	20	1	S	9			380	0			10		1	20		SPARE	
SPA	ARE			20	1	S	11					0		12		1			SPACE	
SPA	ACE				1		13							14		1			SPACE	
SPA	ACE				1		15							16		1			SPACE	
SPA	ACE				1		17							18		1			SPACE	
				TOTA	ا ا	DAD:		6.26	kVA	6.14	kVA	5.76	kVA							
			7	OTAI	- Al	MPS	:	53	3 A	52	A	48	A							
OAD TYPE		CONN.LO	DAD	DE	EMA	ND	FAC	т.	EST. D	EMAND	1	BREAK	ER TYP	E				í	PANEL TOTALS	
IGHTING -	L	0.02 k	VA			125%			0.0	3 kVA	9	HUNT TR	IP -	S.	Γ					
RECEPTACLE -	R	0.36 k	VA		1	00%	ó		0.30	6 kVA	G	FCI -		G		TO	TAL C	ONN.	LOAD: 18.17 kVA	
10TOR -	M	17.29 k	VA			125%			21.6	2 kVA	F	ANDLE E	BLOCK	- H	TOTAL EST. DEMAND: 22.5 kVA				MAND: 22.5 kVA	
ITCHEN -	K	O kV	4			0%			0	kVA	F	HANDLE TIE - T TOTAL CONN.: 50 A				CONN.: 50 A				
OTHER -	0	0.5 kV	/A		1	00%	,		0.5	5 kVA		FCI -		A	TOTAL EST. DEMAND: 62 A					
EXISTING -	E	O kV/	4			0%			0	kVA	9	STANDARD -		s						
NEC-220.84-					LOCKOUT -				L											

			LIGHTING CONTROL DEVI	CE SCHE	EDULE	
	KEY	MODE	DESCRIPTION	MOUNTING	MANUFACTURER/#	VOLT
	14	VACANCY	WALL SWITCH, VACANCY SENSOR, DUAL TECHNOLOGY, 20' RANGE (MANUAL ON / AUTO OFF)	WALL MOUNT	ACUITY WSX PDT SA XX	120
,	10	OVERRIDE	REMOTE OVERRIDE SWITCH	WALL MOUNT	-	LV
	3A	TIMECLOCK	ASTRONOMICAL TIMECLOCK, POLES AS NEEDED	WALL MOUNT	INTERMATIC / 9000 SERIES	120
	NOTES		OF ANY DISCREPANCIES BETWEEN MODEL NUMBERS AND DESC			•
, –		VERIFT DIMMING C	COMPATIBILITY W/ LIGHT FIXTURES AND NOTIFY ENGINEER OF AN	T CONFLIC IS PRIOR	K 10 OKDEKING	

The summent of the property of

	PANEL 60	0H				PANEL L1	R			PANEL L1C						
SUPPLY FROM: RE MOUNTING: FL ENCLOSURE: NE	JSH PHASES: 3	08 Wye A.I.C. RATING: MAINS TYPE: MAINS RATINGS:	МСВ	SUPPLY FROI MOUNTIN ENCLOSUR	lG:	VOLTS: 120/2 PHASES: 3 WIRES: 4	,	A.I.C. RATING: MAINS TYPE: MLO NNS RATINGS: 100 A	1 1	LY FROM: L1R OUNTING: FLUS CLOSURE: NEMA		VOLTS: 120/ PHASES: 3 WIRES: 4	,	A.I.C. RATING: 22 MAINS TYPE: ML MAINS RATINGS: 60	ĹO	
CIRCUIT DESCRIPTION	L TRIP P BT A B	C BT P TRIP L	CIRCUIT DESCRIPTION	CIRCUIT DESCRIPTION	L TRIP P BT	В	C BT F	P TRIP L CIRCUIT DESCRIPTION	CIRCUIT DESCR	IPTION L	TRIP P BT	АВ	СВТ	T P TRIP L	CIRCUIT DESC	
EXTERIOR LIGHTING	L 20 1 5 1 520 310	2 S 1 20 L	GENERAL LTG - LOBBY	TEMP LTG	20 1 5 1 54	960	2 6	2 20 M GARAGE DOOR OPENIE	TEMP LTO	, L	20 1 5 1 60	0 360	2 5	5 1 20 R	COFFEE EC	
EXTERIOR LIGHTING (N)	L 20 1 S 3 190 180	4 S 1 20 L	GENERAL LTG - LOBBY	GENERAL RECEPTS	R 20 1 5 3	960 960	4 9 2	2 20 M GARAGE DOOR OPENE	COFFEE EG		20 1 5 3	360 360	0 4 5	1 20 R	COFFEE EC	
MURAL LTG	L 20 1 S 5	320 1009 6 5 2 20 0	HEAT TRACE	GENERAL RECEPTS	R 20 1 5 5		780 54 6 5	1 20 M EF 8	COOLERS	R	20 1 5 5		360 720 6 5	5 1 20 R	GENERAL RE	
COURTYARD FESTOON LTG	R 20 1 5 7 180 1009		HEAT TRACE	EXTERIOR RECEPTS	R 20 1 S 7 180		8 .	1 SPACE	COFFEE EG		20 1 5 7 192	20	8	1	SPACE	
	9 6264 10	10 S 1 20 L	VESTIBULE LTG	QUAD	R 20 1 5 9	360	10	1 SPACE	COOLERS	R	20 1 5 9	1320	. 10	1	SPACE	
PANEL L1E	[100 3 5 11 1 1 1 1 1 1 1 1	6144 0 12 1 20	SPARE	RECEPTS	R 20 1 5 11		1260 12	1 SPACE	TVs	R	20 1 5 11		720 12	1	SPACE	
	13 5764 110	14 S 1 20 L	OCC LIGHTING	RECEPTS	R 20 1 S 13 540			1 SPACE	SPACE		1 13			1	SPACE	
	p. 15 14416 2000		CUH	AIR COMPRESSOR	R 20 1 5 15	180	16	1 SPACE	SPACE		1 15		. 16	1	SPACE	
PANEL LIF	K; 200 3 5 17	14916 2000 18 3 2 23 11		SPACE	1 17		18 1	1 SPACE	SPACE		1 17		18	1	SPACE	
	19 13286 2000	20 S 2 25 M	CUH	SPACE	1 19		20	1 SPACE	SPACE		1 19		20	1	SPACE	
	p. 21 2340 2000	22 3 2 23 11		SPACE	1 21			1 SPACE	SPACE		1 21		- 22	1	SPACE	
PANLEL LIG	K; 100 3 S 23	930 2000 24 S 2 25 M	CUH	SPACE	1 23		24	1 SPACE	SPACE		1 23		24	1	SPACE	
	25 1860 2000	26 5 2 25 11		SPACE	1 25		26	1 SPACE	SPACE		1 25		26	1	SPACE	
FACP	0 20 1 5 27 288 2000		CUH	SPACE	1 27		28 1	1 SPACE	SPACE		1 27		- 28	1	SPACE	
PACKAGE LOCKER	R 20 1 5 29	180 2000 30 3 2 23 11		SPACE	1 29		30	1 SPACE	SPACE		1 29		30	1	SPACE	
AV POWER	R 20 1 S 31 180 2000	32 S 2 25 M	CUH (E)	SPACE	1 31		32		SPACE		1 31		32	1	SPACE	
B 1A/1B	M 20 1 G 33 480 2000	34 5 2 25 11	COFF (L)	SPACE	1 33		34 3	3 EGUAGE REFERENCE	SPACE		1 33		. 34	1	SPACE	
HVAC SERVICE RECEPT	R 20 1 5 35	960 2690 36		SPACE	1 35		36		SPACE		1 35		36	1	SPACE	
RESTRM LTG	_; 20 1 S 37 320 2690	38 S 3 40 M	RTU 5	SPACE	1 37	2340	38		SPACE		1 37		38	1	SPACE	
LOCKER DOOR ACCESS	0 20 1 5 39 360 2690	40		SPACE	1 39	2040	9 40 5 3	3 60 R; L PANEL L1C	SPACE		1 39		. 40	1	SPACE	
LOCKER RM LTG	L 20 1 S 41	40 2306 42		SPACE	1 41		1800 42		SPACE		1 41		42	1	SPACE	
	R 20 1 A 43 360 2306	44 S 3 30 M	RTU 4		TOTAL LOAD: 4.07	kVA 4.5 kVA	3.89 kVA				TOTAL LOAD: 2	2.34 kVA 2.04 kVA	A 1.8 KVA			
SPACE	1 45 2306						22.4		1 1				4 - A			
	R 20 1 5 47	360 1176 48 S 1 20 M	SP-1	<u> </u>	1017127111101	· A 38 A	32 A				TOTAL AMPS:	20 A 17 A	15 A			
	R 20 1 5 49 360 600	50 1 20 M	GWH			EST. DEMAND	BREAKER TYPE	PANEL TOTALS	LOAD TYPE	CONN.LOAD		EST. DEMAND	BREAKER TYPE	PAN	NEL TOTALS	
0.7.02	1 51 180	52 S 1 20 R	HVAC SERVICE RECEPT		06 kVA 125%		SHUNT TRIP - ST		LIGHTING - L	0.06 kVA	125%		SHUNT TRIP - ST			
	R 20 1 5 53	360 360 54 S 1 20 R	SERVICE RECEPT		38 kVA 98%	= =		TOTAL CONN. LOAD: 12.47 kVA	RECEPTACLE - R	6.12 kVA	100%		GFCI - G	TOTAL CONN. LOA		
DJ POWER	R 20 1 S 55 540 360	56 S 1 20 R	AC RECEPT	-	97 kVA 124%			OTAL EST. DEMAND: 12.77 kVA	MOTOR - M	0 kVA	0%			TOTAL EST. DEMAN		
OFFICE POWER	R 20 1 5 57 540 1360	58 S 2 20 M	P1 & P2 A/B	KITCHEN - K O	O kVA O%	O kVA H	ANDLE TIE - T	TOTAL CONN.: 35 A	KITCHEN - K	O kVA	0%	O kVA	HANDLE TIE - T	TOTAL CON	NN.: 17 A	
GEN. RECEPT - LOBBY	R 20 1 S 59	900 1360 60 5 2 20 11	11412/10	OTHER - O O	O kVA O%	O kVA A	AFCI - A TO	OTAL EST. DEMAND: 35 A	OTHER - O	O kVA	0%	O kVA	AFCI - A	TOTAL EST. DEMAN	ND: 17 A	
GEN. RECEPT - LOBBY	R 20 1 5 61 720 756	62 5 2 20 0	HEAT TRACE	EXISTING - E O	D kVA 0%	O KVA S	STANDARD - S		EXISTING - E	O kVA	0%	O kVA	STANDARD - S			
RESTRM RECEPTS - 1ST FLR	R 20 1 S 63 1800 756			NEC-220.84-			OCKOUT - L		NEC-220.84-	- 1177	+ 3,0		LOCKOUT - L			

							PAN	1EL	L1F	_								
SUPPLY FROM:	600H					-	1	VOLTS:	120/20	8 Wye				A.I	.C. R/	TING	9 : 22,000	
MOUNTING:	MOUNTING: SURFACE							IASES:	3					Μ	AINS	TYP	E: MLO	
ENCLOSURE:	NEMA	1				WIRES: 4						MAINS RATINGS: 200 A						
CIRCUIT DESCRIPTION	L	TRIP	P	ВТ		,	4	E	3	,	c		вт	P	TRIP	L	CIRCUIT DESCRIPTION	
TV RECEPTS	R	20	1	S	1	600						2						
TV RECEPTS	R	20	1	S	3			600				4						
TV RECEPTS	R	20	1	S	5					600	170	6	S	1	20	L	GENERAL LTG	
TV RECEPTS	R	20	1	S	7	600	110					8	S	1	20	L	EXTERIOR LIGHTING	
TENNANT EQ. (CLMBR)	R	20	1	S	9			500	600			10	S	1	20	R	CARDIO MACHINES	
TENNANT EQ. (CLMBR)	R	20	1	S	11					500		12						
TENNANT EQ. (CLMBR)	R	20	1	S	13	500	960					14	s	2	20	м	GARAGE DOOR	
TENNANT EQ. (CLMBR)	R	20	1	S	15			500	960			16	<u>כ</u>		20	1,1	GARAGE DOOR	
TENNANT EQ. (CLMBR)	R	20	1	S	17					500		18		1			SPACE	
TENNANT EQ. (CLMBR)	R	20	1	S	19	500						20		1			SPACE	
ENTRANCE RECEPTS	R	20	1	S	21			720				22		1			SPACE	
EWC	R	20	1	S	23					600		24		1			SPACE	
CONV. RECEPT	R	20	1	S	25	180	50					26		1	20	L	OFFICE LTG	
CONV. RECEPT	R	20	1	S	27			660	0			28		1	20		SPARE	
CONV. RECEPT	R	20	1	S	29					540	0	30		1	20		SPARE	
TEMP POWER	R	20	1	S	31	540	0					32		1	20		SPARE	
					33			5188	5188			34						
RTU 10B	M	60	3	s	35					5188	5188	36	S	3	60	M	RTU 10A	
					37	5188	5188					38						
SPACE			1		39							40		1			SPACE	
SPACE			1		41							42		1			SPACE	

		To	OTAL LOAD:	14.42 kVA	14.92 kVA	13.29 kVA		
		To	OTAL AMPS:	122 A	126 A	111 A		
LOAD TYPE		CONN.LOAD	DEMAND FACT.	. EST. D	EMAND	BREAKER TY	PE	PANEL TOTALS
LIGHTING -	L	0.33 kVA	125%	0.41	kVA	SHUNT TRIP -	ST	
RECEPTACLE -	R	9.24 kVA	100%	9.24	kVA	GFCI -	G	TOTAL CONN. LOAD: 42.62 kVA
MOTOR -	M	33.05 kVA	112%	36.9	4 kVA	HANDLE BLOCK	- H	TOTAL EST. DEMAND: 46.59 kVA
KITCHEN -	K	0 kVA	0%	01	<va< td=""><td>HANDLE TIE -</td><td>Т</td><td>TOTAL CONN.: 118 A</td></va<>	HANDLE TIE -	Т	TOTAL CONN.: 118 A
OTHER -	0	0 kVA	0%	01	<va< td=""><td>AFCI -</td><td>A</td><td>TOTAL EST. DEMAND: 129 A</td></va<>	AFCI -	A	TOTAL EST. DEMAND: 129 A
EXISTING -	E	O kVA	0%	01	<va< td=""><td>STANDARD -</td><td>s</td><td></td></va<>	STANDARD -	s	
NEC-220.84-						LOCKOUT -	L	

GENERAL RECEPTS R 20 1 S 3 540 180 KITCHEN/BATHROOM GFCI R 20 1 S 5 600 360 DISHWASHER R 20 1 S 7 180 540 360 REFRIGERATOR R 20 1 S 9 180 30 9 GOLF SIMULATOR R; 20 1 S 11 540 360 GPACE 1 15 SPACE 1 17 SPACE 1 19 SPACE 1 23					
CIRCUIT DESCRIPTION L TRIP P BT		A.	I.C. R	ATIN	G: 22,000
CIRCUIT DESCRIPTION L TRIP P BT A B C		!	1AINS	TYP	PE: MLO
GENERAL RECPTS R 20 1 5 1 540 180		MAIN	IS RA	TING	SS: 100 A
GENERAL RECEPTS R 20 1 5 3 540 180 600 360	E	вт Р	TRIP) L	CIRCUIT DESCRIPTION
KITCHEN/BATHROOM GFC R 20 1 S 5 600 360 DISHWASHER R 20 1 S 7 180 540 600 360 REFRICERATOR R 20 1 S 9 180 30 540 GOLF SIMULATOR R; 20 1 S 11 540 360 GOLF SIMULATOR R; 20 1 S 13 540 360 SPACE	2	S 1	20	R	FREEZER
DISHWASHER R 20 1 S 7 180 540	4	S 1	20	R	TV
REFRIGERATOR R 20 1 5 9	6	S 1	20	R	COOLER / ICE MAKER
GOLF SIMULATOR R; 20 1 S 11	8	S 1	20	R	BAR RECEPTS
GOLF SIMULATOR R; 20 1 S 13 540 360	10	S 1	20	L	GOLF BAR LTG
SPACE 1 15 SPACE 1 17 1 17 1 17	12	S 1	20	R	GOLF SIMULATOR DISPLAY
SPACE 1 17 -	14	S 1	20	R	GOLF SIMULATOR DISPLAY
SPACE 1 19 1 21	16	1			SPACE
SPACE 1 21 <	18	1			SPACE
SPACE 1 23 <	20	1			SPACE
SPACE 1 25 2 SPACE 1 29 2 SPACE 1 29 3 SPACE 1 31 3 SPACE 1 33 3 SPACE 1 35 3 SPACE 1 35 3 SPACE 1 37 3 SPACE 1 39 3 SPACE 1 39 4 SPACE 1 41 4 SPACE 1 29 3 SPACE 1 38 3 SPACE 1 35 3 SPACE 1 39 3 SPACE 1 39 4 SPACE 1 41 4 SPACE 1 39 4 SPACE 1 39 4 SPACE 1 39 3 SPACE 1 1 37 3 SPACE 1 1 37 1 SPACE 1 1 39 1 SPACE	22	1			SPACE
SPACE 1 27 1 29 29 29 29 29 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20	24	1			SPACE
SPACE 1 29 3 SPACE 1 31 3 SPACE 1 35 3 SPACE 1 37 3 SPACE 1 39 -	26	1			SPACE
SPACE 1 31 1 3 1 3 1 3	28	1			SPACE
SPACE 1 33 1 3 1 3 1 3 <	30	1			SPACE
SPACE 1 35 -	32	1			SPACE
SPACE 1 37 -	34	1			SPACE
SPACE 1 39 4 TOTAL LOAD: 2.34 kVA 0.93 kVA 1.86 kVA TOTAL AMPS: 21 A 8 A 17 A LOAD TYPE CONN.LOAD DEMAND FACT. EST. DEMAND BREAKER TYPE LIGHTING - L 0.03 kVA 125% 0.04 kVA SHUNT TRIP - RECEPTACLE - R 5.1 kVA 100% 5.1 kVA GFCI - MOTOR - M 0 kVA 0% 0 kVA HANDLE BLOCK -	36	1			SPACE
SPACE 1 41	38	1			SPACE
TOTAL LOAD: 2.34 kVA 0.93 kVA 1.86 kVA TOTAL AMPS: 21 A 8 A 17 A LOAD TYPE CONN.LOAD DEMAND FACT. EST. DEMAND BREAKER TYPE LIGHTING - L 0.03 kVA 125% 0.04 kVA SHUNT TRIP - RECEPTACLE - R 5.1 kVA 100% 5.1 kVA GFCI - MOTOR - M 0 kVA 0% 0 kVA HANDLE BLOCK -	40	1			SPACE
TOTAL AMPS: 21 A 8 A 17 A LOAD TYPE CONN.LOAD DEMAND FACT. EST. DEMAND BREAKER TYPE LIGHTING - L 0.03 kVA 125% 0.04 kVA SHUNT TRIP - RECEPTACLE - R 5.1 kVA 100% 5.1 kVA GFCI - MOTOR - M 0 kVA 0% 0 kVA HANDLE BLOCK -	42	1			SPACE
LOAD TYPE CONN.LOAD DEMAND FACT. EST. DEMAND BREAKER TYPE LIGHTING - L 0.03 kVA 125% 0.04 kVA SHUNT TRIP - RECEPTACLE - R 5.1 kVA 100% 5.1 kVA GFCI - MOTOR - M 0 kVA 0% 0 kVA HANDLE BLOCK -					
LIGHTING - L 0.03 kVA 125% 0.04 kVA SHUNT TRIP - RECEPTACLE - R 5.1 kVA 100% 5.1 kVA GFCI - MOTOR - M 0 kVA 0% 0 kVA HANDLE BLOCK -					
RECEPTACLE - R 5.1 kVA 100% 5.1 kVA GFCI - MOTOR - M 0 kVA 0% 0 kVA HANDLE BLOCK -					
MOTOR - M O KVA 0% O KVA HANDLE BLOCK -	ST CONN LOAD: 513 12/A				
	G				
KITCHEN - K O KVA O% O KVA HANDLE TIE -		T01			DEMAND: 5.14 kVA
	T TOTAL CONN.: 14 A				
OTHER - O O kVA O% O kVA AFCI -	A TOTAL EST. DEMAND: 14 A				
EXISTING - E O KVA 0% O KVA STANDARD -	STANDARD - S				

20 08/29/23 REISSUED FOR PERMIT 19 08/17/20 ASI-18 Description SUBMISSIONS & REVISIONS

OWNER MAY REIGLER PROPERTIES

2201 WISCONSIN AVE NW SUITE 200 WASHINGTON DC 20007

ARCHITECT

KEVIN & ASAKO SPERRY ARCHITECTURE 3318 N. Columbus Street Arlington, VA 22207 T.312.636.3248 / 312.636.4252 www.kasa-arch.com

GENERAL CONTRACTOR

CIVIL ENGINEER

LANDMARK ENGINEERING 141 9TH STREET, PO BOX 774943 STEAMBOAT SPRINGS, CO 80477 T: 970.879.1976

STRUCTURAL FRAMING ENGINEER

KL&A ENGINEERS & BUILDERS 1717 WASHINGTON AVE. GOLDEN, CO 80401 T: 303.384.9910

M.E.P. ENGINEERS

BOULDER ENGINEERING 1717 15TH STREET BOULDER, CO 80302 T: 303.444.6038

INTERIOR DESIGNER

JOHNSON NATHAN STROHE 1600 WYNKOOP ST., SUITE 100 DENVER, CO 80202 T: 303.892.7062

PROJECT LOCATION

STEAMBOAT BASECAMP PARTIAL RENOVATION AND TENANT FIT-OUT

1901 CURVE PLAZA STEAMBOAT SPRINGS, CO 80487 DRAWING TITLE

ELECTRICAL DETAILS AND SCHEDULES



08/22/23 DRAWN BY: CHECKED BY:

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DATE:

E4.12



Project Information

Energy Code: 2018 IECC
Project Title: 20129-1A Steamboat Basecamp
Project Type: Addition

Construction Site: Owner/Agent: Designer/Contractor:

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts
1-Locker room (Common Space Types:Locker Room)	437	0.48	210
2-Restrooms (Common Space Types:Restrooms)	750	0.85	638
3-Retail 1 (Common Space Types:Sales Area)	1008	1.59	1603
4-Retail 2 (Common Space Types:Sales Area)	1533	1.59	2437
5-Fitness Studio (Gymnasium/Fitness Center:Exercise Area)	3492	0.50	1746
6-fitness office (Common Space Types:Office - Enclosed)	146	0.93	136
7-Vestibule (Common Space Types:Office - Open Plan)	350	0.81	284

Total Allowed Watts = 7053

Total Proposed Watts = 2330

Proposed Interior Lighting Power				
A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	(C X D)
1-Locker room (Common Space Types:Locker Room)				
LED: B1: Other:	1	4	14	58
<u>2-Restrooms (Common Space Types:Restrooms)</u> LED: B1: Other:	1	11	14	160
3-Retail 1 (Common Space Types:Sales Area) LED: S1: Other:	1	6	42	252
4-Retail 2 (Common Space Types:Sales Area) LED: S1: Other:	1	7	42	294
5-Fitness Studio (Gymnasium/Fitness Center:Exercise Area)				
LED: A1: Other:	1	14	80	1120
LED: P2: Other:	1	5	40	200
LED: F1: Other:	1	3	40	120
6-fitness office (Common Space Types:Office - Enclosed)				
LED: L1: Other:	1	2	42	84
7-Vestibule (Common Space Types:Office - Open Plan)				
LED: G1: Other:	1	1	42	42

Project Title: 20129-1A Steamboat Basecamp Report date: 02/06/23

Interior Lighting PASSES: Design 67% better than code

Interior Lighting Compliance
Statement

Name - Title

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

mandatory requirements listed in the Inspection Checklist.

Michael Vair - PE

02-06-2023

Exterio

► COM*check* Software Version COMcheckWeb

Exterior Lighting Compliance Certificate

Project Information

Energy Code: 2018 IECC

Project Title: 20129-1A Steamboat Basecamp
Project Type: Addition
Exterior Lighting Zone 2 (Residential mixed use area (LZ2))

Construction Site: Owner/Agent: Designer/Contractor:

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts /	D Tradable Wattage	E Allowed Watts (B X C)
Parking Lot (Parking area)	37300 ft2	0.04	Yes	1492
Entry area (Plaza area)	4068 ft2	0.1	Yes	407
Back Plaza area (Plaza area)	2925 ft2	0.1	Yes	292
		Total Trada	able Watts (a) =	2191
		Total A	Allowed Watts =	2191

Total Allowed Supplemental Watts (b) = 400

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.

(b) A supplemental allowance equal to 400 watts may be applied toward compliance of both non-tradable and tradable

Proposed Exterior Lighting Power

areas/surfaces.

Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture		D Fixture Watt.	(C X D)
Parking Lot (Parking area, 37300 ft2): Tradable Wattage LED: LA: Other:	1	2	54	108
Entry area (Plaza area, 4068 ft2): Tradable Wattage LED: LB: Other: LED: LC: Other: LED: LD: Other:	1 1	6 7 4	20 12 16	120 84 64
Back Plaza area (Plaza area, 2925 ft2): Tradable Wattage LED: LC: Other:	1	4	12	48
	Total Trad	dable Propos	sed Watts =	424

xterior Lighting PASSES: Design 84% better than code

Exterior Lighting Compliance Statement

Data filename:

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

02-06-2023

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Michael Vair - PE
me - Title

Signature

Project Title: 20129-1A Steamboat Basecamp Report date: 02/06/23

APPROVAL STAMPS:

REVIEWED FOR CODE COMPLIANCE

02/24/2023

10	02/06/22	Duilding Donartment Comments

SUBMISSIONS & REVISIONS

OWNER

MAY REIGLER PROPERTIES
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T: 970.879.1976

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STRUCTURAL FRAMING ENGINEER

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M.E.P. ENGINEERS

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T: 303.444.6038

INTERIOR DESIGNER

JOHNSON NATHAN STROHE

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DENVER, CO 80202

PROJECT LOCATION

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STEAMBOAT BASECAMP PARTIAL RENOVATION & TENANT FIT-OUT

1901 CURVE PLAZA STEAMBOAT SPRINGS, CO 80487 DRAWING TITLE

ELECTRICAL DETAILS

DIAWING TITLE

SEAL



02/06/23

DRAWN BY:

CHECKED BY:

DATE:

PROJECT NO: 20129

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Project Title: 20129-1A Steamboat Basecamp
Data filename:

Report date: 02/06/23 Page 3 of 18