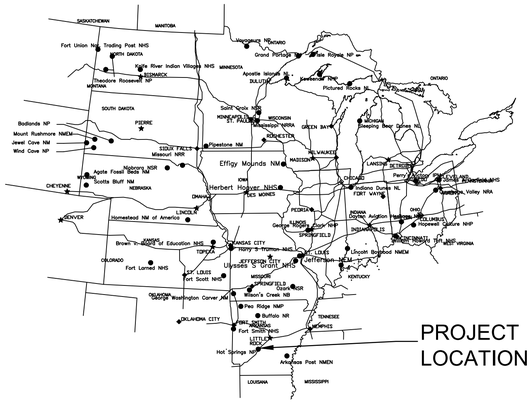
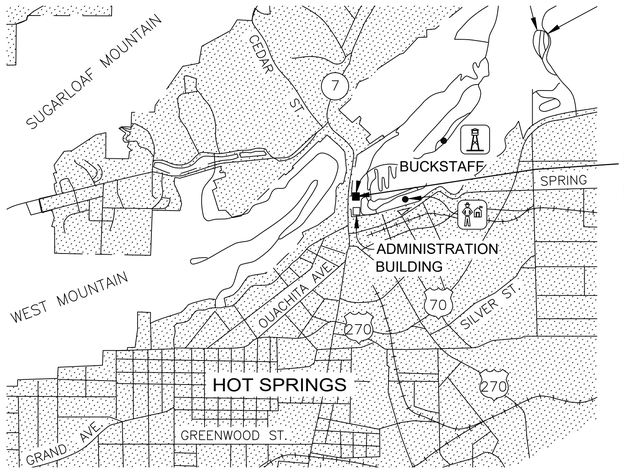
BUCKSTAFF BATHHOUSE HVAC

HOT SPRINGS, ARKANSAS

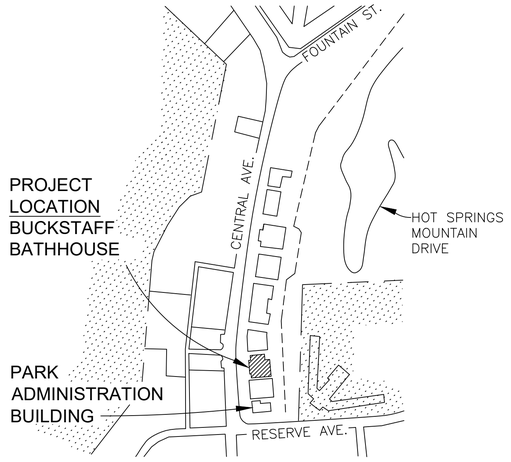
HOT SPRINGS NATIONAL PARK



REGIONAL MAP



AREA MAP



PROJECT LOCATION
BATHHOUSE ROW

SCHEDULE OF DRAWINGS

	GENERAL		
1.	G1	COVER SHEET	
2.	G2	GENERAL NOTES, LEGEND AND ABBREVIATIONS	
	STRUCTURAL		
3.	S-100	GENERAL NOTES, PLATFORM FRAMING PLAN & DETAILS	
4.	S-101	DETAILS & SECTIONS	
	ARCHITECTURAL		
5.	AD1	BASEMENT DEMOLITION PLAN	
6.	A1	BASEMENT PLAN	
7.	A2	GROUND FLOOR PLAN	
8.	A3	2ND FLOOR PLAN	
9.	A4	3RD FLOOR REFLECTED CEILING PLAN	
10.	A5	ROOF PLAN	
11.	A6	DETAILS, ELEVATIONS, SECTIONS	
	MECHANICAL		
12.	M0-0	MECHANICAL SYMBOL LEGEND AND ABBREVIATIONS	
13.	M0-1	MECHANICAL GENERAL NOTES	
14.	M1-1	BASEMENT FLOOR PLAN - MECHANICAL DEMOLITION	
15.	M1-2	GROUND FLOOR PLAN - MECHANICAL DEMOLITION	
16.	M1-3	SECOND FLOOR PLAN - MECHANICAL DEMOLITION	
17.	M1-4	THIRD FLOOR PLAN - MECHANICAL DEMOLITION	
18.	M1-5	ROOF PLAN - MECHANICAL DEMOLITION	
19.	M2-1	BASEMENT FLOOR PLAN - HVAC	
20.	M2-2	GROUND FLOOR PLAN - HVAC	
21.	M2-3	SECOND FLOOR PLAN - HVAC	
22.	M2-4	THIRD FLOOR PLAN - HVAC	
23.	M2-5	ROOF PLAN-HVAC	
24.	M3-1	BASEMENT FLOOR PLAN - HVAC PIPING	
25.	M3-2	GROUND FLOOR PLAN - HVAC PIPING	
26.	M3-3	SECOND FLOOR OPLAN - HVAC PIPIN	
27.	M3-4	THIRD FLOOR PLAN - HVAC PIPING	
28.	M4-1	ENLARGED MECHANICAL ROOM PLANS	
29.	M5-1	CHILLED WATER PIPING SCHEMATIC	
30.	M5-2	HEATING WATER PIPING SCHEMATIC	
31.	M6-1	MECHANICAL DETAI	
32.	M6-2	MECHANICAL SECTIONS AND DETAILS	
33.	M7-1	MECHANICAL SCHEDULES	
34.	M7-2	MECHANICAL SCHEDULES	
35.	M7-3	MECHANICAL SCHEDULES	
	ELECTRICAL		
36.	E0-0	ELECTRICAL SYMBOL LEGEND AND ABBREVIATIONS	
37.	E1-1	BASEMENT FLOOR PLAN - ELECTRICAL DEMOLITION	
38.	E1-2	GROUND FLOOR PLAN - ELECTRICAL DEMOLITION	
39.	E1-3	SECOND FLOOR PLAN - ELECTRICAL DEMOLITION	
40.	E1-4	THIRD FLOOR PLAN - ELECTRICAL DEMOLITION	
41.	E2-1	BASEMENT FLOOR PLAN - LIGHTING	
42.	E2-2	THIRD FLOOR PLAN-LIGHTING	
43.	E3-1	BASEMENT FLOOR PLAN - POWER	
44.	E3-2	GROUND FLOOR PLAN - POWER	
45.	E3-3	SECOND FLOOR OPLAN - POWER	
46.	E3-4	THIRD FLOOR PLAN - POWER	
47.	E4-1	ONE LINE DIAGRAM	
48.	E5-1	ELECTRICAL DETAILS	
49.	E6-1	ELECTRICAL SCHEDULES	
50.	E6-2	ELECTRICAL SCHEDULES	
51.	E6-3	ELECTRICAL SCHEDULES	
	SCADA		
52.	Y0-01	SCADA INSTUMENTATION LEGEND	
53.	Y4-01	SCADA CONTROL PANEL	
54.	Y4-02	TYPICAL POWER SCHEMATIC	
55.	Y4-03	TYPICAL DI WIRING	
56.	Y4-04	TYPICAL AI WIRING	
57.	Y4-05	TYPICAL DO WIRING	
58.	Y6-01	P&ID	
59.	Y6-02	HVAC - SCADA NETWORK	
60.	Y6-03	SCADA FIBER DIAGRAM	

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Arkansas.

2/15/2024

Andric P. Hofrichter, PE
Olsson, Inc.
Professional Engineer

Pages or Sheets covered by this seal: S-100 and S-101.

STATE OF ARKANSAS — LICENSED PROFESSIONAL ENGINEER — No. 18289 — ANDRIC P. HOFRICHTER — 02/15/24

CERTIFICATE OF AUTHORIZATION — ALVINE & ASSOCIATES INC — No. 2094 — ARKANSAS

STATE OF ARKANSAS — LICENSED PROFESSIONAL ENGINEER — No. 21779 — BRANDON D. RICK — 02/15/2024

STATE OF ARKANSAS — LICENSED PROFESSIONAL ENGINEER — No. 21073 — BRIAN A. HADFIELD — 02/15/2024

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 20022 — WILLIAM PAUL CASSITY — 2/15/24 — SCADA

A/E FIRM	Mark	Sheet	REVISION	Date	Initial
PRIME/ARCH: KENNETH HAHN ARCHITECTS OMAHA, NE	REV1	TS-1	UPDATE INDEX 2024.2.22		TWM
MECHANICAL ENGINEER: ALVINE ENGINEERING OMAHA, NE					
ELECTRICAL ENGINEER: ALVINE ENGINEERING OMAHA, NE					

PREPARED KJH
DESIGNED TWM
DRAWN CLZ
CHECKED 2/15/2024 DATE

RECOMMENDED — PARK SUPERINTENDENT — DATE
CONCURRED — CHIEF DESIGN AND FACILITY MANAGEMENT — DATE
CONCURRED — ARD OPERATIONS — DATE
APPROVED — REGIONAL DIRECTOR — DATE

NATIONAL PARK SERVICE — Department of the Interior

FINAL CONSTRUCTION DOCUMENTS

UNITED STATES
DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE
DENVER SERVICE CENTER

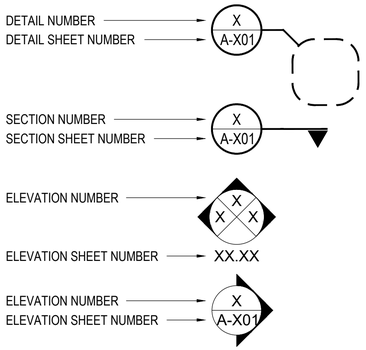
TITLE OF DRAWING
COVER SHEET
LOCATION WITHIN PARK
BATHHOUSE ROW
NAME OF PARK
HOT SPRINGS NATIONAL PARK
REGION MIDWEST | COUNTY GARLAND | STATE ARKANSAS

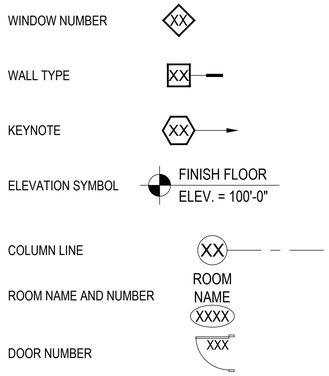
DRAWING NO. XXX XXXXX
PMIS NO. 17 74 25
SHEET 1 OF 60

ABBREVIATIONS

ABOVE FINISHED FLOOR	AFF
ACOUSTIC TILE CEILING	ATC
ADJACENT	ADJ
AIR CONDITIONING	AC
ALTERNATE	ALT
ALUMINUM	ALUM
ANCHOR BOLT	AB
ANGLE	L
APPROXIMATELY	APPROX
ARCHITECT	ARCH
ARCHITECT / ENGINEER	A/E
AT	@
BASEMENT	BSMT
BEAM	BM
BEARING	BRG
BLOCKING	BLKG
BOARD	BD
BOTTOM	BOT
BOTTOM OF	B.O.
BUILDING	BLDG
CARPET	CPT
CAST IRON	CI
CEILING	CLG
CENTERLINE	CL
CERAMIC TILE	CT
CHANNEL	CH
CIRCUIT	CKT
CLEANOUT	CO
CLEAR	CLR
CLOSET	CLO
COMPACTED	COMP
COMPRESSIBLE	COMPR
CONCRETE	CONC
CONCRETE MASONRY UNIT	CMU
CONSTRUCTION	CONST
CONTINUOUS	CONT
CONTRACTOR	CONTR
CONTROL JOINT	CJ
CORRIDOR	CORR
COUNTERSUNK	CTSK
CURB	C
DEAD LOAD	DL
DETAIL	DET
DIAMETER	DIA
DIMENSION	DIM
DISPENSER	DISP
DISHWASHER	DW
DOOR	DR
DOUBLE	DBL
DOWN	DN
DOWNSPOUT	DS
DRAWING	DWG
DRINKING FOUNTAIN	DF
EACH	EA
ELECTRICAL	ELEC
ELECTRIC WATER COOLER	EWC
ELEVATION	EL
ELEVATOR	ELEV
ENGINEER	ENGR
EQUAL	EQ
EQUIPMENT	EQUIP
EXHAUST FAN	EF
EXISTING	EXIST
EXPANSION	EXP
EXPANSION JOINT	EJ
EXTERIOR	EXT
EXTERIOR INSULATION FINISH SYSTEM	EIFS
FIELD VERIFY	F.V.
FINISH	FIN
FIRE ALARM	FA
FIRE EXTINGUISHER	FE
FIRE EXTINGUISHER CABINET	FEC
FLATHEAD	FH
FLEXIBLE	FLEX
FLOOR	FL
FLOORING	FLRG
FLOOR DRAIN	FD
FLUORESCENT	FLUOR
FOOTING	FTG
FOUNDATION	FNDN
FRAME	FR
FURRING	FUR
GALVANIZED	GALV
GAUGE	GA
GLASS	GL
GLASS FIBER REINFORCED PANEL	GFRP
GLAZING	GLZ
GRANULAR	GRAN
GUTTER	G
GYPSUM WALLBOARD	GWB
HANDICAP	HC
HARDWARE	HDWE
HARDWOOD	HDWD
HEIGHT	HT
HIGH POINT	HP
HOLLOW CORE	HC
HOLLOW METAL	HM
HORIZONTAL	HORIZ
INSIDE DIAMETER	ID
INSULATION	INSUL
INTERIOR	INT
JOINT	JT
JOIST	JST
KNEE SPACE	KS
LAVATORY	LAV
LIGHT	LT
LIGHTWEIGHT	LTWT
LIVE LOAD	LL
LOW POINT	LP
LUXURY VINYL TILE	LVT
MARKERBOARD	MB.
MANHOLE	MH
MANUFACTURER	MFR
MATERIAL	MATL, MAT
MECHANICAL	MECH
MEDICINE CABINET	MC
METAL	MET
METAL BUILDING PANEL	MBP
METAL WALL PANEL	MWP
MINIMUM	MIN
MISCELLANEOUS	MISC
MOUNT	MT
NOT IN CONTRACT	NIC
NOT TO SCALE	NTS
NUMBER	NO.
ON CENTER	O.C.
OPENING	OPNG
OPPOSITE	OPP
ORIENTED STRAND BOARD	OSB
OUTSIDE AIR	OA
OUTSIDE DIAMETER	OD
PAINT	PT
PANEL	PNL
PARTITION	PART
PLASTER	PLAS
PLASTIC LAMINATE	PLAM
PLATE	PL
PLYWOOD	PLYWD
POLISHED	POL
POUND	LB
PROPERTY	PROP
QUARRY TILE	QT
RADIUS	R
RECESSED	REC
REFERENCE	REF
REFRIGERATOR	REFRIG, REF
REGARDING	RE:
REINFORCE	REINF
REQUIRED	REQ
RESILIENT BASE	RB
RETURN AIR	RA
REVERSE	REV
RISER	R
ROOF DRAIN	RD
ROOM	RM
ROUGH OPENING	RO
ROUND	RND
SCHEDULE	SCHED
SECTION	SET
SHEET	SHT
SHEET METAL	SM
SHEET VINYL	SV
SHEET VINYL BASE	SVB
SIMILAR	SIM
SLAB-ON-GRADE	SOG
SPECIFICATIONS	SPEC
SQUARE	SQ
SQUARE FOOT	SF
STEEL	STL
STORAGE	STOR
STRUCTURAL	STRUCT
SUPPLY AIR	SA
SUSPENDED	SUSP
TACKBOARD	TB.
TELEPHONE	TELE
TEMPERATURE	TEMP
TERRAZZO	TERR
TOILET	TLT
TONGUE & GROOVE	T&G
TOP OF	T.O.
TOP OF STEEL	TOS
TREAD	T
TYPICAL	TYP
UNDERGROUND	UG
UNLESS NOTED OTHERWISE	UNO
URINAL	UR
VERTICAL	VERT
VESTIBULE	VEST
VINYL COMPOSITION TILE	VCT
VINYL WALLCOVERING	VWC
WATER CLOSET	WC
WATER HEATER	WH
WEIGHT	WT
WELDED WIRE FABRIC	WWF
WHERE OCCURRING	W.O.
WOOD	WD

REFERENCES





GENERAL NOTES

1. THE CONTRACTOR SHALL PROTECT EXISTING BUILDING AND SITE MATERIALS SCHEDULED TO REMAIN, AND SHALL BE RESPONSIBLE FOR DAMAGE TO SAME RESULTING FROM WORK UNDER THIS CONTRACT. THE CONTRACTOR SHALL RESTORE DAMAGED EXISTING BUILDING AND SITE MATERIALS TO THEIR ORIGINAL CONDITION.
2. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND SHALL BE RESPONSIBLE FOR THE SAME. COORDINATE ALL WORK AND SHOP DRAWINGS WITH OTHER TRADES.
3. INFORMATION PERTAINING TO THE EXISTING BUILDING HAS BEEN OBTAINED THROUGH THE BUILDING'S ORIGINAL DRAWINGS, WHERE AVAILABLE, AND LIMITED ON-SITE VERIFICATION. REPORT DISCREPANCIES TO THE CONTRACTING OFFICER PRIOR TO ANY DEMOLITION. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO COMMENCING WORK.
4. THE CONTRACTOR SHALL COORDINATE ALL TESTING AND INSPECTIONS AS SPECIFIED, OR AS NECESSARY TO DEMONSTRATE A COMPLETE AND SATISFACTORY INSTALLATION.
5. THE CONTRACTOR SHALL COORDINATE ON-SITE STORAGE OF BUILDING MATERIALS, EQUIPMENT, AND TRASH CONTAINERS WITH THE PARK.
6. ALL WORK SHALL COMPLY WITH LOCAL CODES AND ALL OTHER APPLICABLE CODES, REGULATIONS, AND ORDINANCES.
7. ALL MATERIALS AND EQUIPMENT OF THE SAME TYPE SHALL BE SUPPLIED BY THE SAME MANUFACTURER, AND SHALL BE NEW, OF THE BEST QUALITY AND DESIGN, AND FREE FROM DEFECTS.
8. ALL ITEMS ARE NEW UNLESS SPECIFICALLY IDENTIFIED AS EXISTING.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL WORK. CONTRACTOR SHALL ANTICIPATE AREAS WHERE THE INSTALLATION OF MECHANICAL AND ELECTRICAL WORK WILL BE RESTRICTED, CONGESTED, OR DIFFICULT TO INSTALL, AND SHALL COORDINATE INSTALLATION BETWEEN THE TRADES.
10. CONTRACTOR SHALL COORDINATE LOCATIONS FOR ALL MECHANICAL AND ELECTRICAL ITEMS WITH EXISTING CONDITIONS AND NEW WORK. CONTRACTOR SHALL NOTIFY THE CONTRACTING OFFICER OF ANY DISCREPANCIES PRIOR TO INSTALLATION AND/OR FABRICATION.
11. IT IS THE INTENT OF THIS CONTRACT THAT ALL AREAS AFFECTED BY CONSTRUCTION SHALL PROVIDE A FINISHED AND COMPLETE PROJECT, UNLESS NOTED OTHERWISE. CONTRACTOR SHALL PATCH, REPAIR, AND ADJUST AS REQUIRED TO ACHIEVE THIS FINISHED PROJECT.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING ALL WORK AND PROVIDING ALL MATERIALS REQUIRED TO ACHIEVE THE DESIGN INTENT SHOWN ON THESE DRAWINGS.
13. THE BUILDING, LANDSCAPE AND SURROUNDINGS ARE ON THE NATIONAL REGISTER OF HISTORIC PLACES. THE ENTIRE SITE IS A HISTORIC PROPERTY AND ALL REASONABLE PRECAUTIONS SHALL BE TAKEN TO PREVENT COLLATERAL DAMAGE TO HISTORIC MATERIALS SURROUNDING THE WORK AREA. IF DAMAGE OCCURS, REPAIRS SHALL BE MADE AT NO ADDITIONAL COST TO THE GOVERNMENT TO THE SATISFACTION OF THE CONTRACTING OFFICER. EVERY OPPORTUNITY SHOULD BE TAKEN TO PRESERVE, REPAIR AND CONSERVE HISTORIC MATERIALS AND DESIGNS. COORDINATE ALL NEW PENETRATIONS AND ANY ALTERATIONS TO THE BUILDING WHICH MIGHT AFFECT THE HISTORIC INTEGRITY OF THE BUILDING WITH THE CONTRACTING OFFICER PRIOR TO BEGINNING WORK.
14. "REMOVE" MEANS TO DEMOLISH AND DISPOSE OF AN ITEM OFF OF NPS PROPERTY.

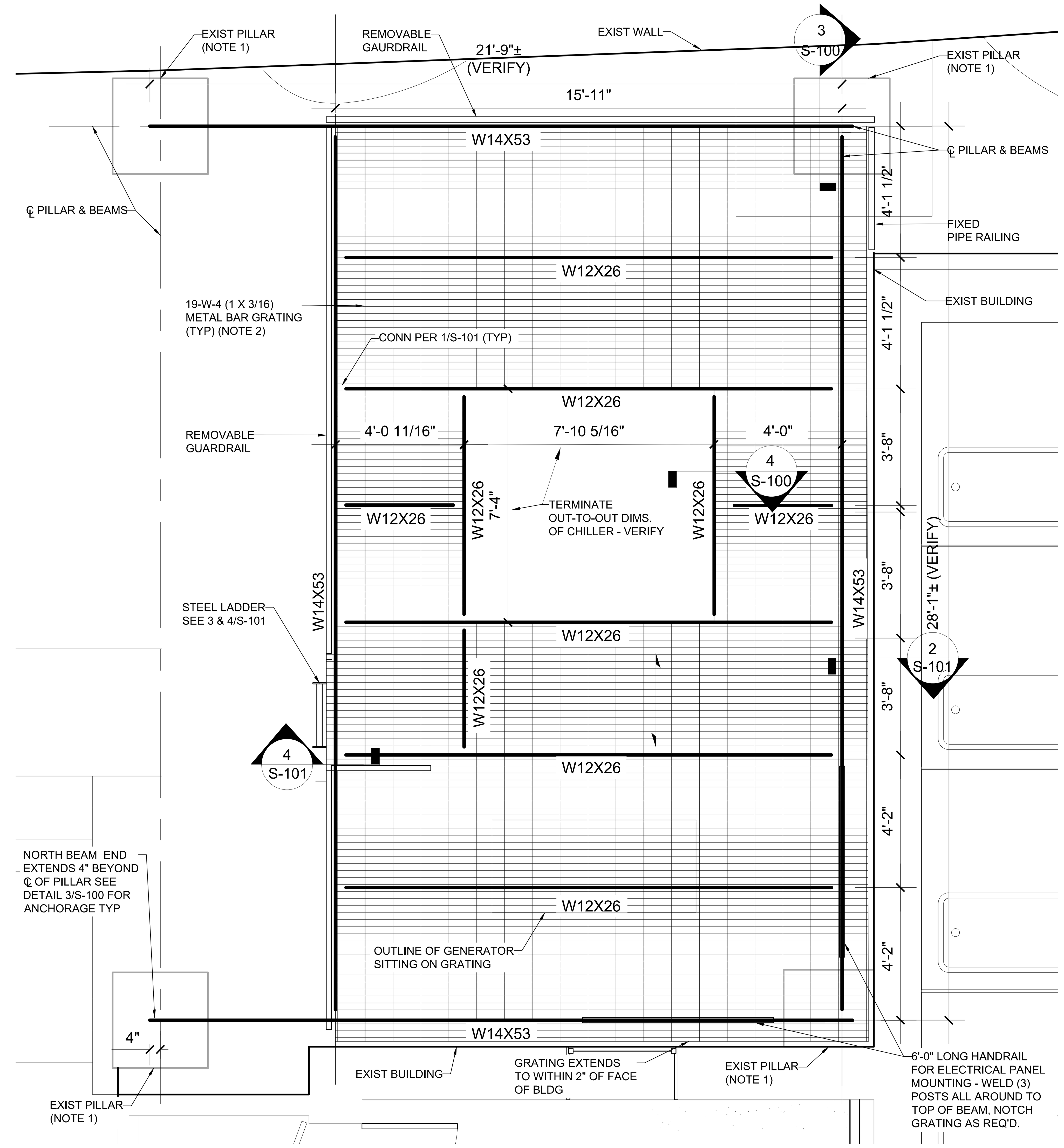
THE GOVERNMENT WILL NOT BE RESPONSIBLE FOR ANY ADDITIONAL EXPENSE TO THE CONTRACTOR IF THE CONDITIONS CAUSING THOSE EXPENSES COULD HAVE BEEN DISCOVERED IN AN ON-SITE INSPECTION PRIOR TO BID SUBMITTAL.

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: KJH DRAWN BY: TWM TECH. REVIEW: CLZ DATE: 2/15/2024	SUB SHEET NO. G2	TITLE OF SHEET GENERAL NOTES, LEGEND AND ABBREVIATIONS BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 2 OF 60

STRUCTURAL GENERAL NOTES:

1. BUILDING CODE - 2018 INTERNATIONAL BUILDING CODE (IBC).
2. 100 PSF LIVE LOAD USED FOR DESIGN.
3. CONTRACTOR MUST VERIFY ALL EQUIPMENT SIZES AND EXISTING CONDITIONS. STRUCTURAL ENGINEER WILL NEED TO VERIFY BEAM SIZES, GRATING SPAN AND SIZE.
4. ALL W-SHAPE SECTIONS SHALL CONFORM TO ASTM A992 (Fy = 50 KSI).
5. BOLTS FOR STRUCTURAL CONNECTIONS SHALL BE 3/4-INCH DIAMETER ASTM F3125 GRADE A325, TYPE 1 IN BEARING-TYPE CONNECTIONS, TIGHTENED TO SNUG TIGHT, UNLESS OTHERWISE NOTED.
6. ANCHOR RODS SHALL BE SPECIFIED IN DETAIL 3/S-100.
7. CONNECTIONS NOT SPECIFICALLY DETAILED SHALL BE PER DETAIL 1/S-101.
8. HOT-DIP GALVANIZE ALL STEEL BEAM ANCHORS, GRATING, LADDER, ETC. SEE ARCH DWGS FOR ANY PAINTING REQUIREMENTS IN ADDITION TO GALVANIZING.
9. SPECIAL INSPECTIONS AS DEFINED AND REQUIRED BY THE CODE SHALL BE PERFORMED BY AN INDEPENDENT INSPECTION AGENCY APPROVED BY THE BUILDING OFFICIAL TO PERFORM SUCH WORK. THE DESIGNATED INSPECTOR SHALL ALSO BE APPROVED BY THE ARCHITECT AND ENGINEER OF RECORD AND SHALL BE PAID FOR BY THE TESTING ALLOWANCE.
10. THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK HEREIN AFTER ASSIGNED FOR CONFORMANCE WITH APPROVED DESIGN DRAWINGS AND SPECIFICATIONS AND SHALL BRING ALL DISCREPANCIES TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. UNCORRECTED DISCREPANCIES SHALL BE REPORTED TO THE BUILDING OFFICIAL AND ARCHITECT/ENGINEER OF RECORD.
11. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL AND THE ARCHITECT/ENGINEER OF RECORD AT MONTHLY INTERVALS AND SHALL SUBMIT A FINAL SIGNED REPORT AT THE PROJECT COMPLETION STATING WHETHER THE WORK INSPECTED WAS, TO THE BEST OF THEIR KNOWLEDGE, IN ACCORDANCE WITH APPROVED DESIGN DRAWINGS AND SPECIFICATIONS.
12. ITEMS FABRICATED IN FABRICATOR'S SHOP SHALL BE INSPECTED PER ALL APPLICABLE PORTIONS OF IBC SECTION 1704.2.5, EXCEPT WHEN FABRICATOR IS APPROVED IN ACCORDANCE WITH SECTION 1704.2.5.1. THE CONTRACTOR SHALL FURNISH CERTIFICATES OF COMPLIANCE TO THE BUILDING OFFICIAL FOR ALL PREFABRICATED STRUCTURAL STEEL MEMBERS AS REQUIRED BY SECTIONS 1704.2.5.1 & 1704.5.
13. STEEL ELEMENTS SHALL BE INSPECTED PER QUALITY ASSURANCE INSPECTION REQUIREMENTS OF AISC 360.
14. STEEL GRATING SHALL BE ATTACHED TO STEEL BEAMS WITH GALVANIZED "G" CLIPS INSTALLED FROM THE TOP SIDE. CLIPS SHALL BE PLACED AT INTERMEDIATE SUPPORTS IN THE MIDDLE OF THE GRATING PANELS AND AT THE FOUR CORNERS OF EACH GRATING PANEL, 6" FROM EACH SIDE OF PANEL.



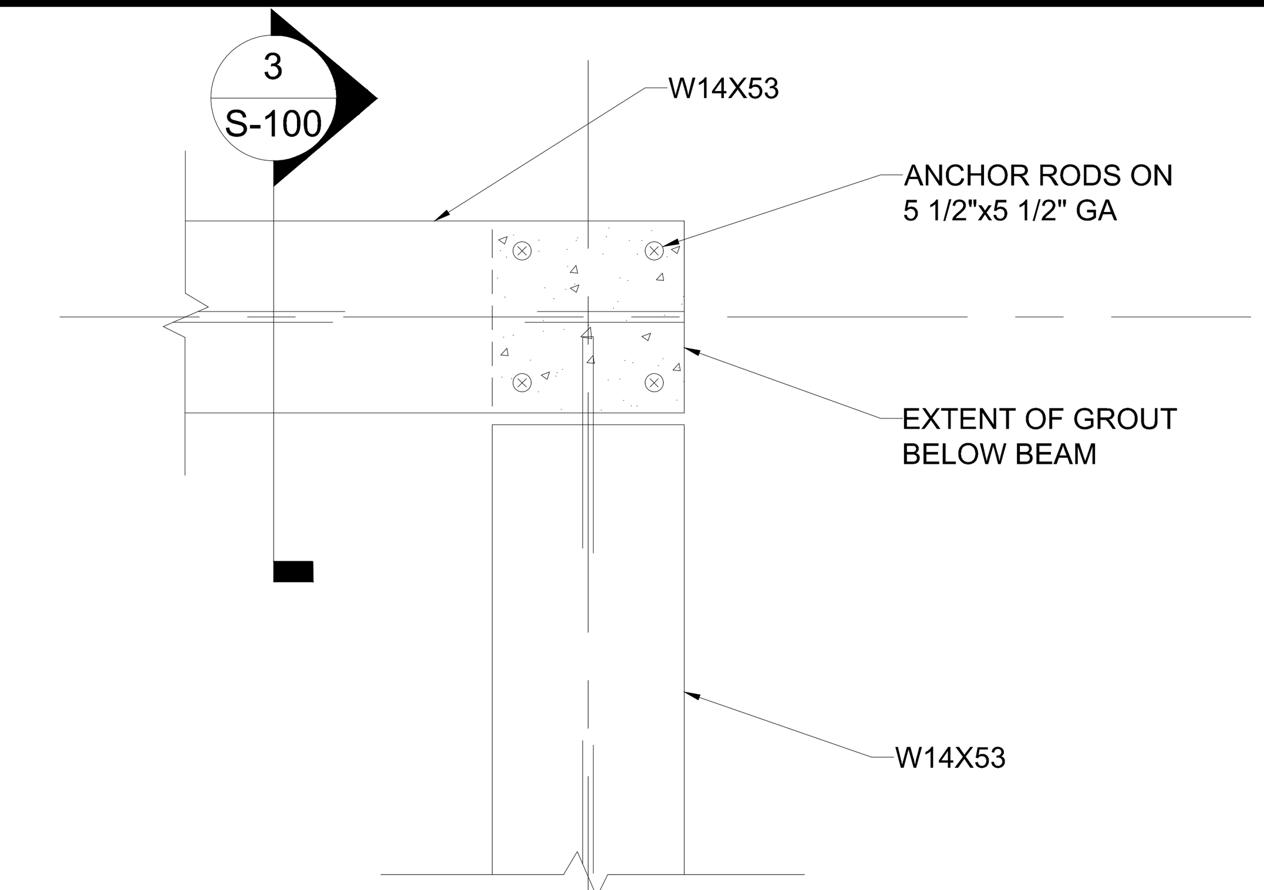
1 PLATFORM FRAMING PLAN

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

FRAMING PLAN NOTES:

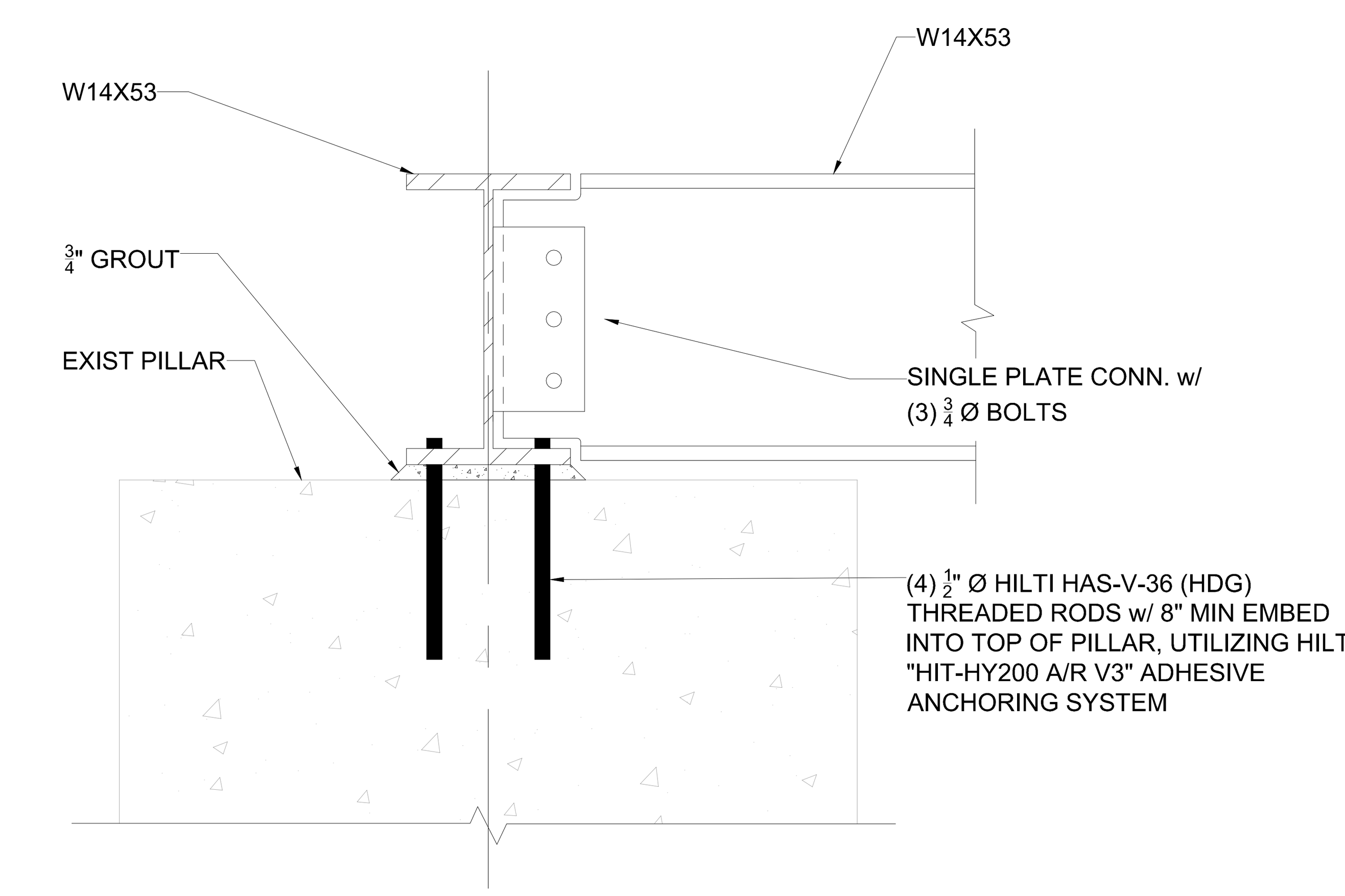
NORTH

1. EXISTING CONCRETE PILLAR AT NORTHEAST, NORTHWEST, AND SOUTHEAST CORNERS ARE APPROXIMATELY 3'-0"X3'-0" IN PLAN AT THE TOP, TAPERING TO A WIDER DIMENSION AT THE BOTTOM. FIELD VERIFY PILLAR SIZE @ SOUTHWEST CORNER. PLAN DIMENSIONS BETWEEN PILLAR CENTERLINES ARE APPROXIMATE, TO BE VERIFIED BY CONTRACTOR.
2. ⟷ INDICATES GALVANIZED STEEL GRATING (19-W-4, w/ 1"X3/16" BEARING BARS). SEE STRUCTURAL GENERAL NOTES FOR CONNECTION TO BEAMS.



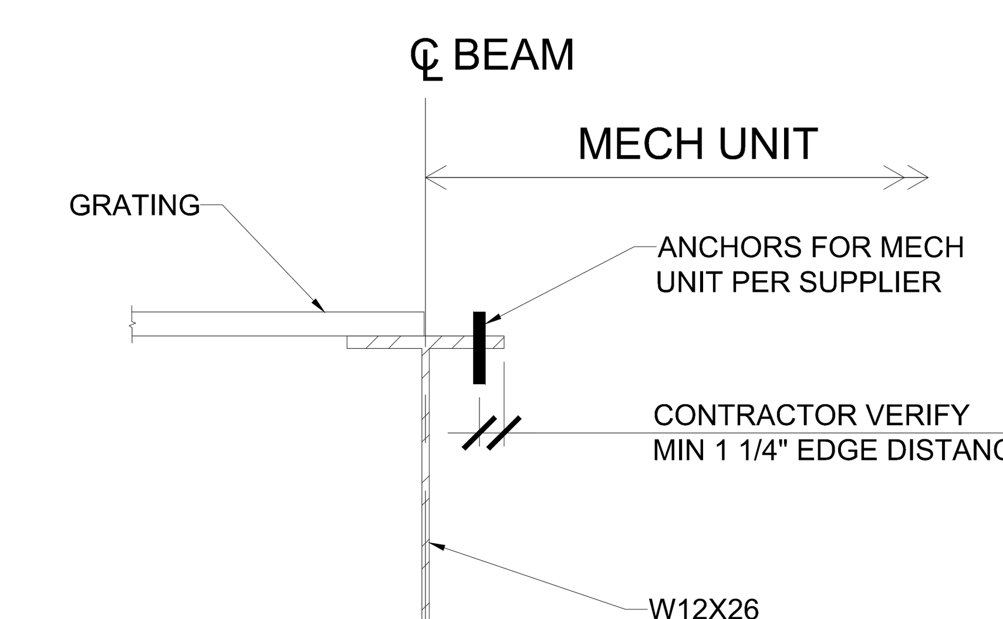
2 BEAM ANCHORS

SCALE: 1 1/2" = 1'-0"



3 SECTION

SCALE: 1 1/2" = 1'-0"



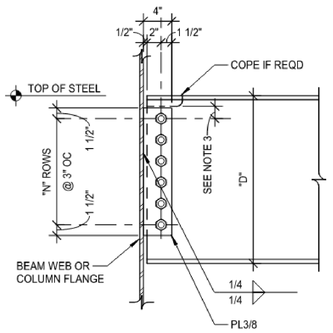
NOTE:
DETAIL IS TYP @ (4) SIDES OF CHILLER

4 SECTION

SCALE: 1 1/2" = 1'-0"

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE.	NRJ	S-100	STRUCTURAL GENERAL NOTES, PLATFORM FRAMING PLAN & DETAILS	PMIS NO. 177425
SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DRAWN BY: MF		BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	SHEET 3 OF 60
	TECH. REVIEW: NRJ			
	DATE: 2/15/2024			

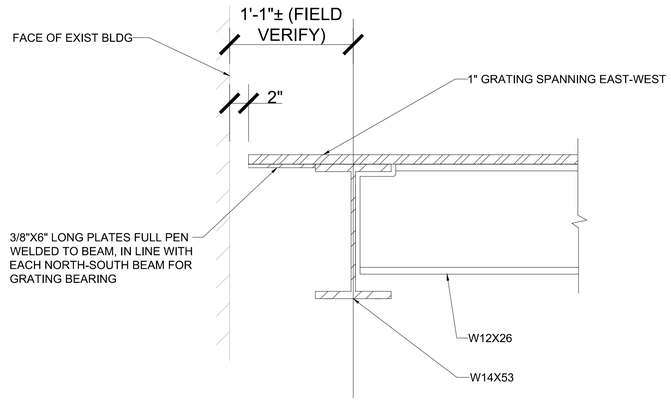


SINGLE PLATE BEAM CONN SCHEDULE	
NOMINAL BEAM SIZE "D"	NUMBER OF BOLT ROWS "N"
W8	2
W10	2
W12	3
W14	3
W16	4
W18	5
W21	6
W24	6
W27	7
W30	8
W33	9
W36	10

NOTES:
1. ALL BOLTS SHALL BE F3125, GRADE A325 UNLESS NOTED OTHERWISE.
2. PROVIDE MINIMUM BOLT NUMBER BOLTS TYPICAL. WHERE BOLT ROWS AND/OR BOLT DIAMETER AS INDICATED I.E. 4'-1"Ø AT CONNECTION, INCREASE NUMBER OF ROWS AND/OR BOLT DIAMETER AS INDICATED.
3. MINIMUM DISTANCE FROM TOP BOLT TO A COPE SHALL BE 1 1/2". INCREASE DISTANCE FROM TOP OF BEAM TO TOP OF BOLT, IF REQUIRED.
4. USE ONLY SHORT HORIZONTAL SLOTTED HOLES.

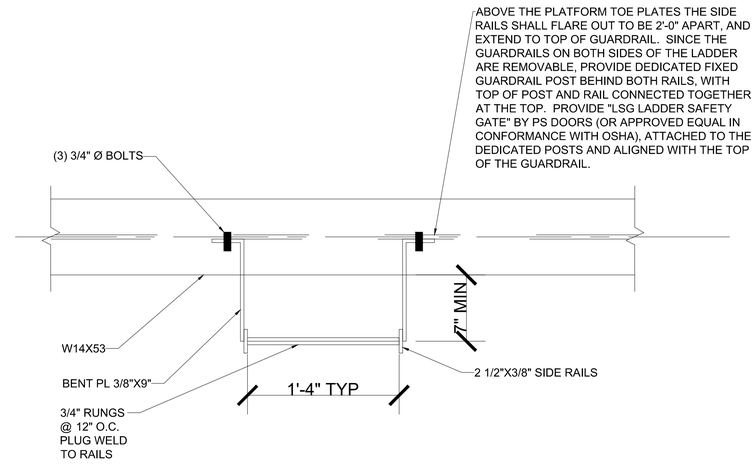
1 TYPICAL SINGLE PLATE SHEAR CONNECTION (SHEAR TAB) W/ 3/4" Ø BOLTS

SCALE: 1" = 1'-0"



2 SECTION

SCALE: 1 1/2" = 1'-0"

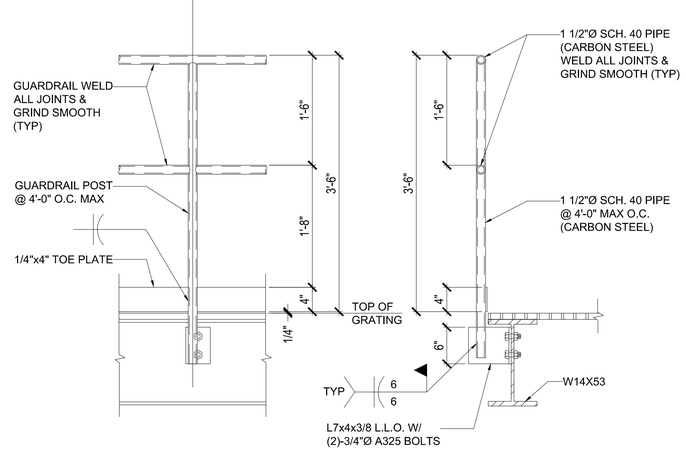


3 TOP LADDER CONNECTION DETAIL

SCALE: 1 1/2" = 1'-0"

4 SECTION

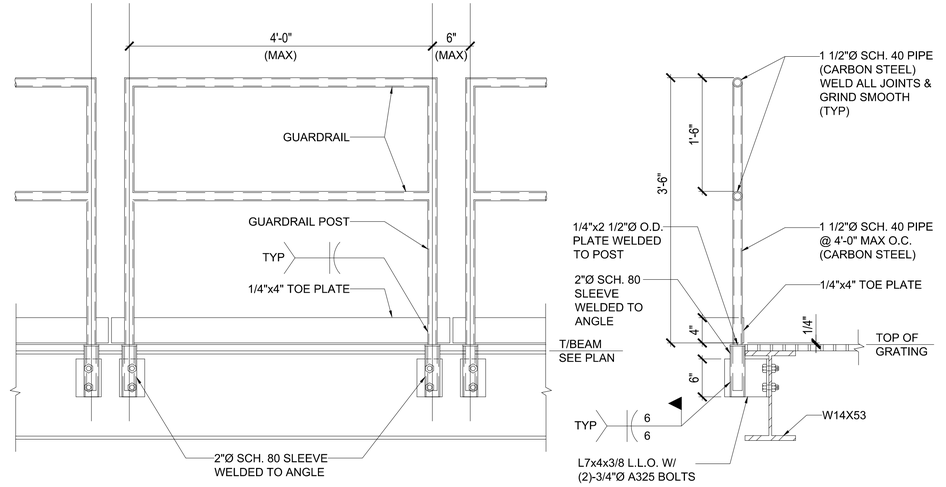
SCALE: 1 1/2" = 1'-0"



NOTES:
1. ALL RAILS AND POST = 1 1/2"Ø SCH. 40 PIPE, GALVANIZED.
2. TOUCH UP GALVANIZED SURFACES DAMAGED BY FIELD WELDING WITH ZRC COLD GALVANIZING PAINT.

5 FIXED GUARDRAIL DETAILS

SCALE: 1" = 1'-0"

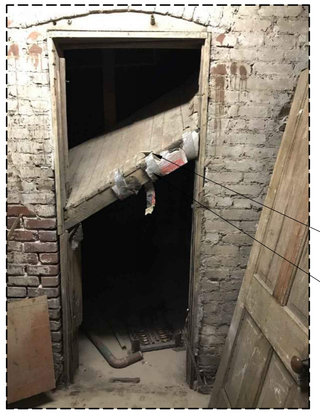


6 REMOVABLE GUARDRAIL DETAILS

SCALE: 1" = 1'-0"

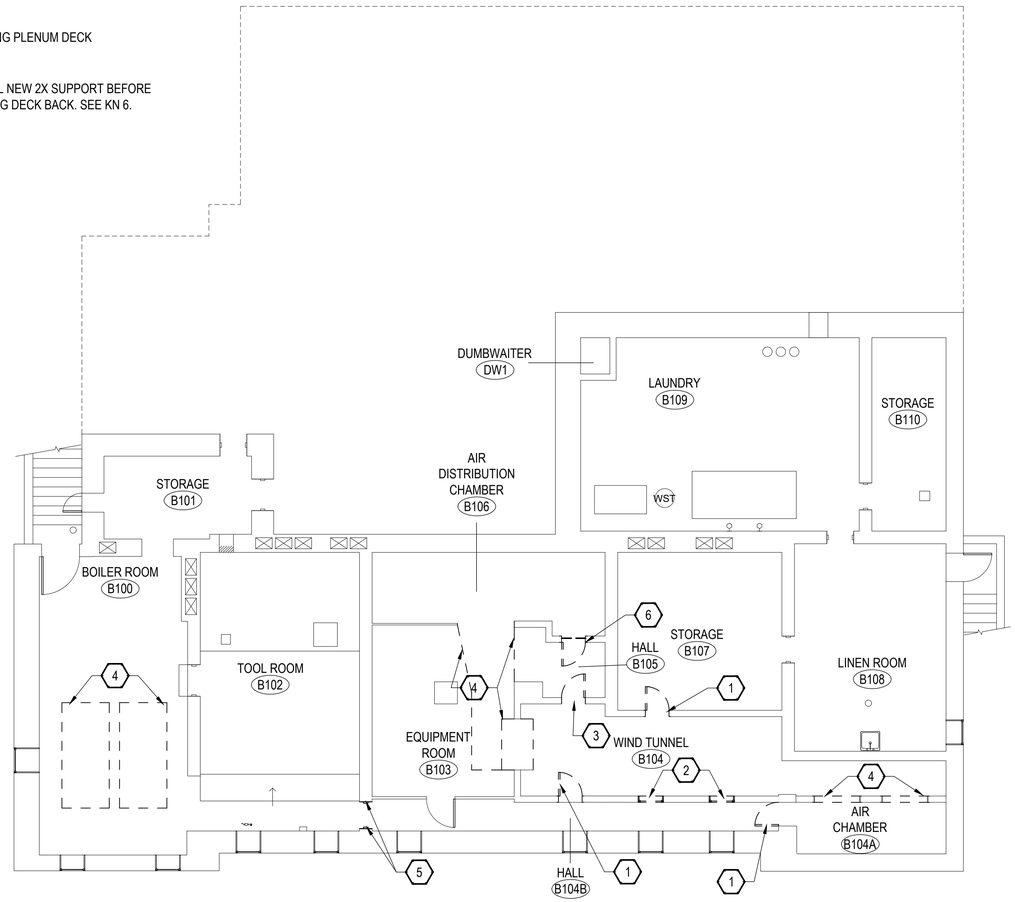
FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: NRJ DRAWN BY: MF TECH. REVIEW: NRJ DATE: 2/15/2024	SUB SHEET NO. S-101	TITLE OF SHEET DETAILS & SECTIONS BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. PMIS NO. 177425 SHEET 4 OF 60



2 EXISTING PLENUM DECK

NOT TO SCALE



1 BASEMENT DEMOLITION PLAN

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

8' 4' 0 8'

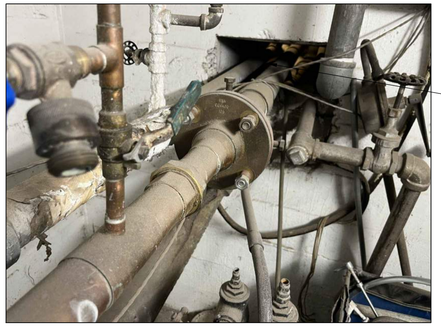
N

DEMOLITION PLAN KEYNOTES (KN)

1. REMOVE DOOR AND FRAME. PREP OPENING FOR NEW WORK.
2. REMOVE WINDOW AND FRAME. PREP OPENING FOR NEW WORK.
3. REMOVE DOOR AND FRAME. PATCH WALL TO MATCH ADJACENT.
4. SEE MECHANICAL DEMOLITION PLAN. PREP AREA FOR NEW WORK.
5. REMOVE WOOD DOOR FRAME. PATCH AREA AS NEEDED.
6. REMOVE DOOR AND FRAME. PREP OPENING FOR NEW WORK. CUT PLENUM DECK BACK ONLY AS NEEDED TO ACCOMMODATE NEW DOOR AND FRAME. INSTALL 2X SUPPORT UNDER EDGE OF PLENUM DECK TO STABILIZE. SEE 2/AD-1.

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: KJH DRAWN BY: TWM TECH. REVIEW: CLZ DATE: 2/15/2024	SUB SHEET NO. AD1	TITLE OF SHEET BASEMENT DEMOLITION PLAN BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 5 OF 60



8

2 WALL PENETRATION

NOT TO SCALE

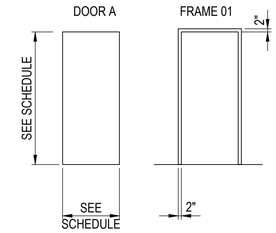
DOOR AND FRAME SCHEDULE

NO.	DOOR SIZE	DOOR TYPE	DOOR MAT.	FRAME TYPE	FRAME MAT.	FRAME DEPTH	FIRE RATING	DETAIL	NOTES
B100	2'-10" x 6'-4" x 1-3/4"	A	HM	F01	HM	5-7/8"	45 MIN.	3, 5SIM /A1	A, D
B102	2'-2" x 6'-4" x 1-3/4"	A	HM	F01	HM	5-7/8"	45 MIN.	3, 5/A1	A, B, D
B104	2'-6" x 6'-8" x 1-3/4"	A	HM	F01	HM	5-7/8"	NA	3, 4/A1	A,C
B105	2'-6" x 6'-8" x 1-3/4"	A	HM	F01	HM	5-7/8"	NA	3, 4/A1	A,C
B107	2'-6" x 6'-2" x 1-3/4"	A	HM	F01	HM	5-7/8"	NA	3, 4/A1	A,C

NOTES:
A. FEILD VERIFY ALL DOOR AND FRAME SIZES AFTER DEMOLITION AND PATCHING.
B. FRAME AND DOOR TO FIT UNDER AIR DUCT. SEE MECHANICAL.
C. PROVIDE SEALANT AT PERIMETER OF FRAMES.
D. PROVIDE FIRE-RATED CAULK AT RATED DOORS.

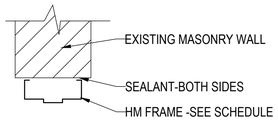
LEGEND

HM GALVANIZED HOLLOW METAL



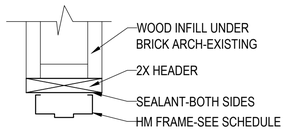
FLOOR PLAN KEYNOTES:

1. NEW DOOR AND FRAME-PAINT. SEE SHEET A1.
2. INFILL OPENING PER 7/A6. PROVIDE SEALANT AT PERIMETER-BOTH SIDES, PRIME AND PAINT. USE 6" STUDS WHERE ABLE DUE TO WALL THICKNESS.
3. AS NEEDED-PATCH AND REPAIR WHERE FRAME WAS REMOVED. MATCH ADJACENT AREA.
4. NEW CONCRETE HOUSEKEEPING PADS- SEE MECHANICAL.
5. PATCH AND REPAIR AIR DISTRIBUTION CHAMBER AS NEEDED TO BE REASONABLY AIRTIGHT. COORDINATE WITH CO/COR.
6. INFILL OPENING WITH GALVANIZED SHEET METAL ON METAL STUD FRAMING. SEE 9/A6.
7. NEW DOOR AND FRAME, 1-HOUR RATED -PAINT. SECURE FRAME AT JAMBS. PROVIDE FIRE STOP BRICK AND FIRE PUTTY INFILL ABOVE FRAME AT CONDUITS TO ACHIEVE 1-HR RATING. FOLLOW MANUFACTURER'S RECOMMENDATIONS. PROVIDE FIRE SEALANT AND FIRE BARRIER FOAM AT DOOR HEAD AND JAMBS. SEE 5/A1.
8. EXISTING PENETRATION, APPROX. 18" H X 18" W, OF MULTIPLE PIPES THROUGH CONCRETE WALL. INFILL OPENING WITH FIRE STOP BRICKS AND FIRE PUTTY TO ACHIEVE 1-HR RATING. FOLLOW MANUFACTURER'S RECOMMENDATIONS. SEE 2/A1.
9. NEW DOOR AND FRAME-PAINT. INSTALL 2X SUPPORT UNDER EDGE OF PLENUM DECK TO STABILIZE. SEE AD-1.



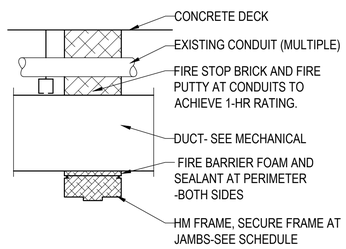
3 DOOR JAMB/HEAD @ MASONRY

SCALE: 1-1/2" = 1'-0" 0 4" 8" 16"



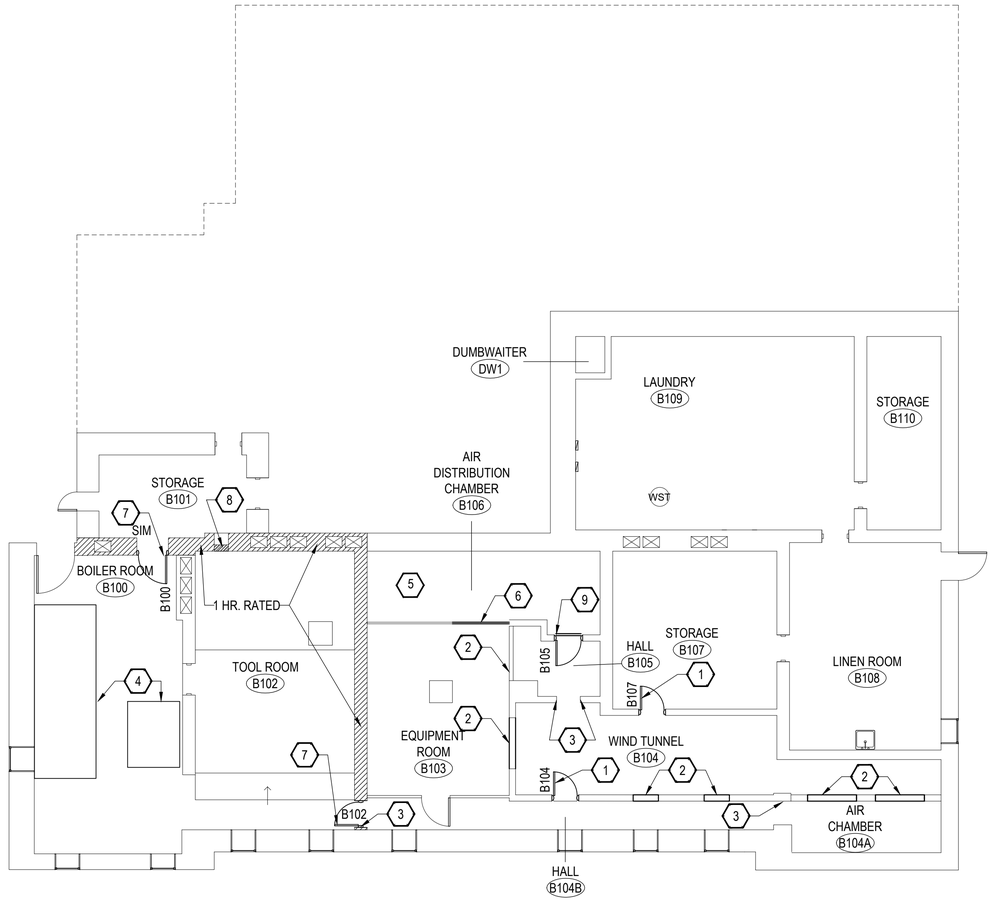
4 DOOR HEAD @ WOOD INFILL

SCALE: 1-1/2" = 1'-0" 0 4" 8" 16"



5 FRAME HEAD -1 HOUR-RATED

SCALE: 1-1/2" = 1'-0" 0 4" 8" 16"



1 BASEMENT PLAN

SCALE: 1/8" = 1'-0" 8' 4' 0 8' N

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: KJH DRAWN BY: TWM TECH. REVIEW: CLZ DATE: 2/15/2024	SUB SHEET NO. A1	TITLE OF SHEET BASEMENT PLAN BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 6 OF 60

GENERAL NOTES

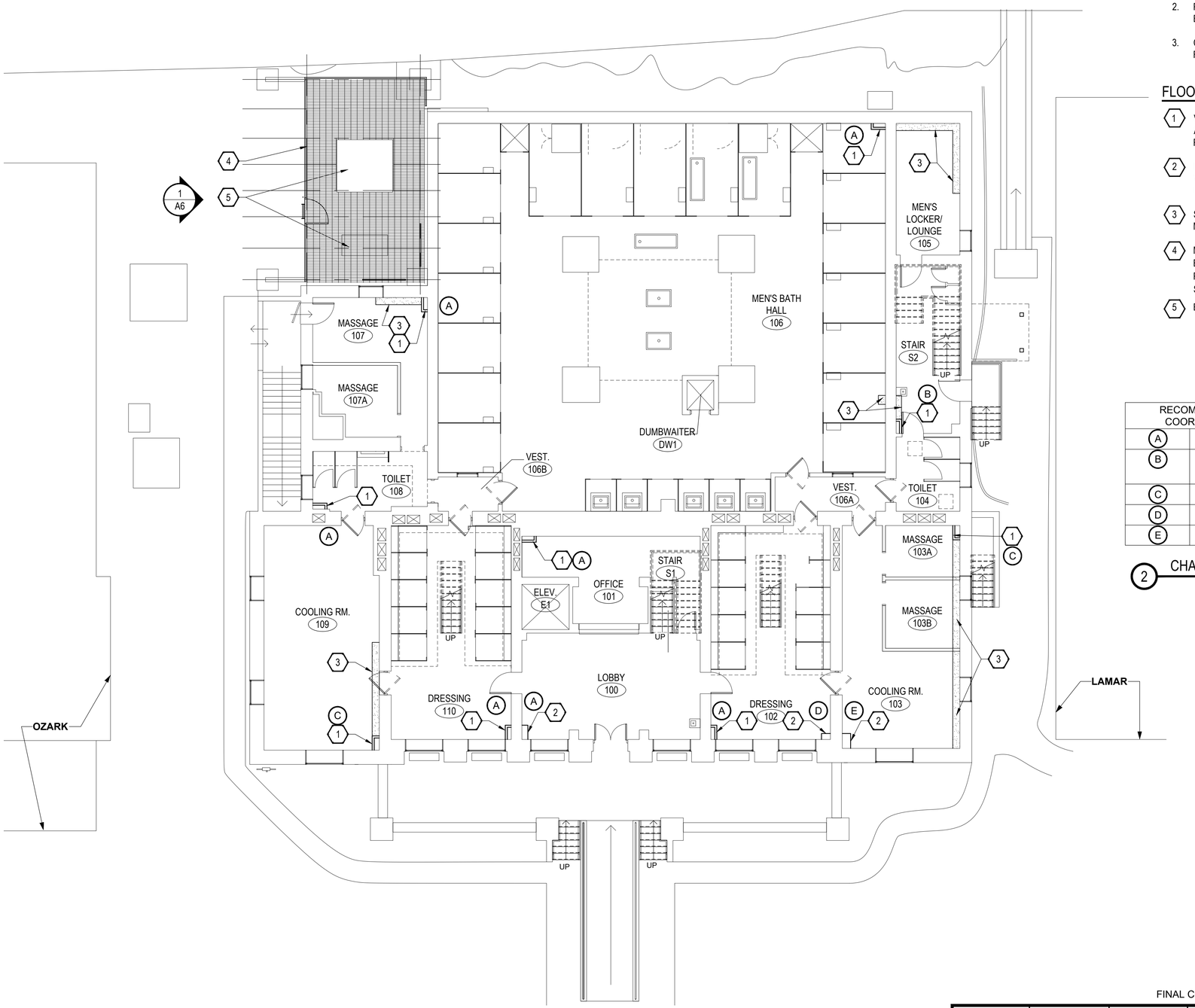
1. PATCH/REPAIR FLOOR AS REQUIRED TO MATCH ADJACENT AREA WHERE NEW FCU DOES NOT COMPLETELY COVER OLD LOCATIONS.
2. PATCH AND REPAIR FLOOR AND WALL TO MATCH ADJACENT AREA WHERE EQUIPMENT IS PERMANENTLY REMOVED.
3. CLEAN FLOOR AND WALL AT FCUs AS NEEDED AS PART OF PREP FOR NEW FCUs.

FLOOR PLAN KEYNOTES:

1. VERTICAL PIPE CHASE-FULL HEIGHT WITH SOLID-SURFACE WAINSCOT- PRIME AND PAINT EXPOSED GWB. SEE 2 & 5 /A6. SEE MECHANICAL. SEE 2/A2 FOR RECOMMENDED SIZE.
2. PARTIAL HEIGHT VERTICAL PIPE CHASE- HEIGHT TO MATCH FCU. INSTALL WAINSCOT AND CAP OF SOLID SURFACE MATERIAL. SEE 4 & 5 /A6. SEE MECHANICAL. SEE 2/A2 FOR RECOMMENDED SIZE.
3. SOFFIT-HORIZONTAL PIPE CHASE- PRIME AND PAINT. SEE 3/A6 AND MECHANICAL.
4. MECHANICAL EQUIPMENT PLATFORM WITH GALVANIZED STRUCTURAL STEEL BEAMS-PAINT, GALVANIZED STEEL PIPE RAILINGS AND SPRING-LOADED GATE-PAINT, AND GALVANIZED BAR STEEL LADDER WITH EXTENSIONS-PAINT. SEE STRUCTURAL. NOTE PAINT IS HIGH-PERFORMANCE PRODUCTS.
5. EQUIPMENT- SEE ELECTRICAL AND MECHANICAL.

RECOMMENDED OUTSIDE DIMENSION. COORDINATE VARIANCE W/ CO/COR	
A	10" X 2'-0"
B	9" X 2'-0" -WIDTH AS NEEDED TO FIT BEHIND DOOR
C	1'-0" X 2'-0"
D	10" X 1'-3"
E	1'-2" X 2'-0"

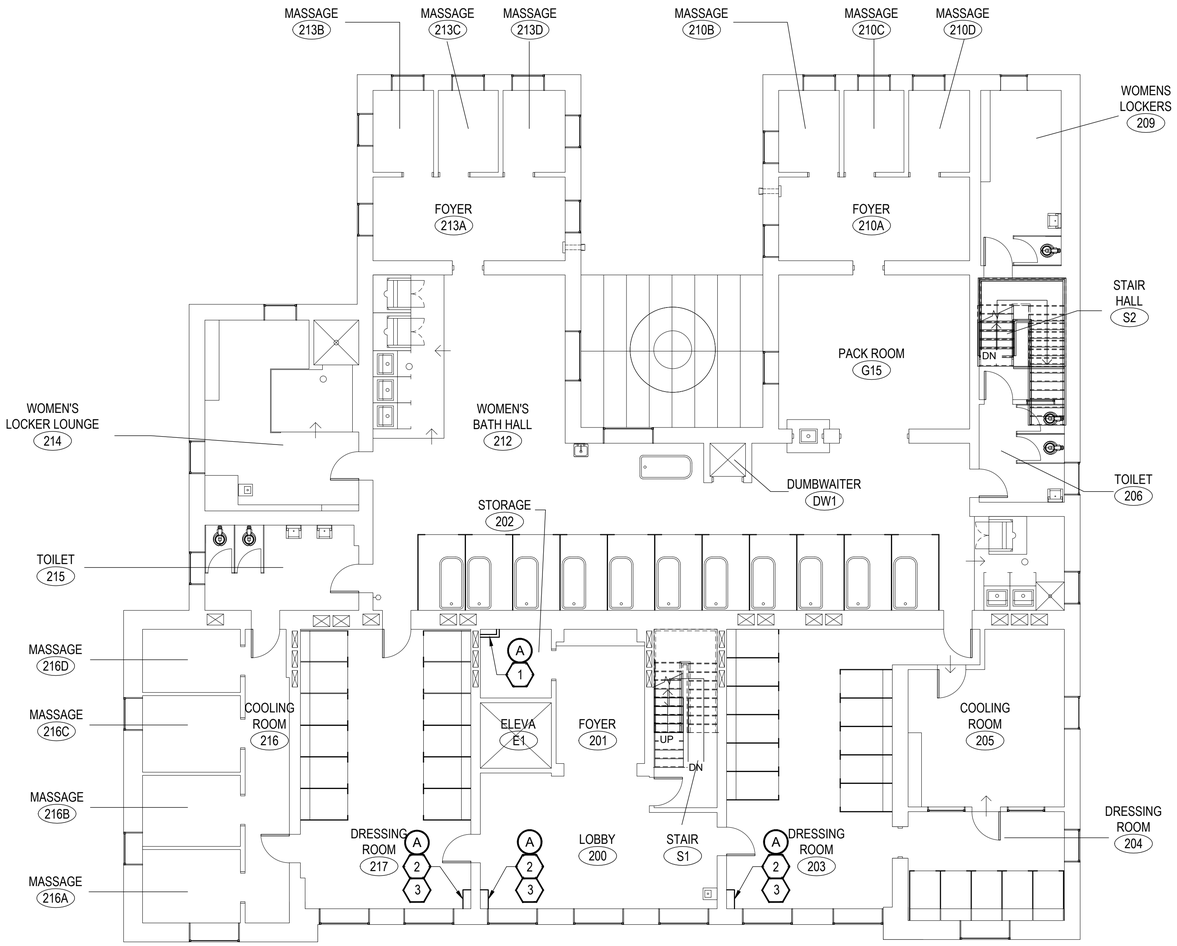
2 CHASE SIZE SCHEDULE



1 GROUND FLOOR PLAN
SCALE: 1/8" = 1'-0"
8' 4' 0 8'
N

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: KJH DRAWN BY: TWM TECH. REVIEW: CLZ DATE: 2/15/2024	SUB SHEET NO. A2	TITLE OF SHEET GROUND FLOOR PLAN BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 7 OF 60



GENERAL NOTES

1. PATCH/REPAIR FLOOR AS REQUIRED TO MATCH ADJACENT AREA WHERE NEW FCU DOES NOT COMPLETELY COVER OLD LOCATIONS.
2. PATCH AND REPAIR FLOOR AND WALL TO MATCH ADJACENT AREA WHERE EQUIPMENT IS PERMANENTLY REMOVED.
3. CLEAN FLOOR AND WALL AT FCUs AS NEEDED AS PART OF PREP FOR NEW FCUs.

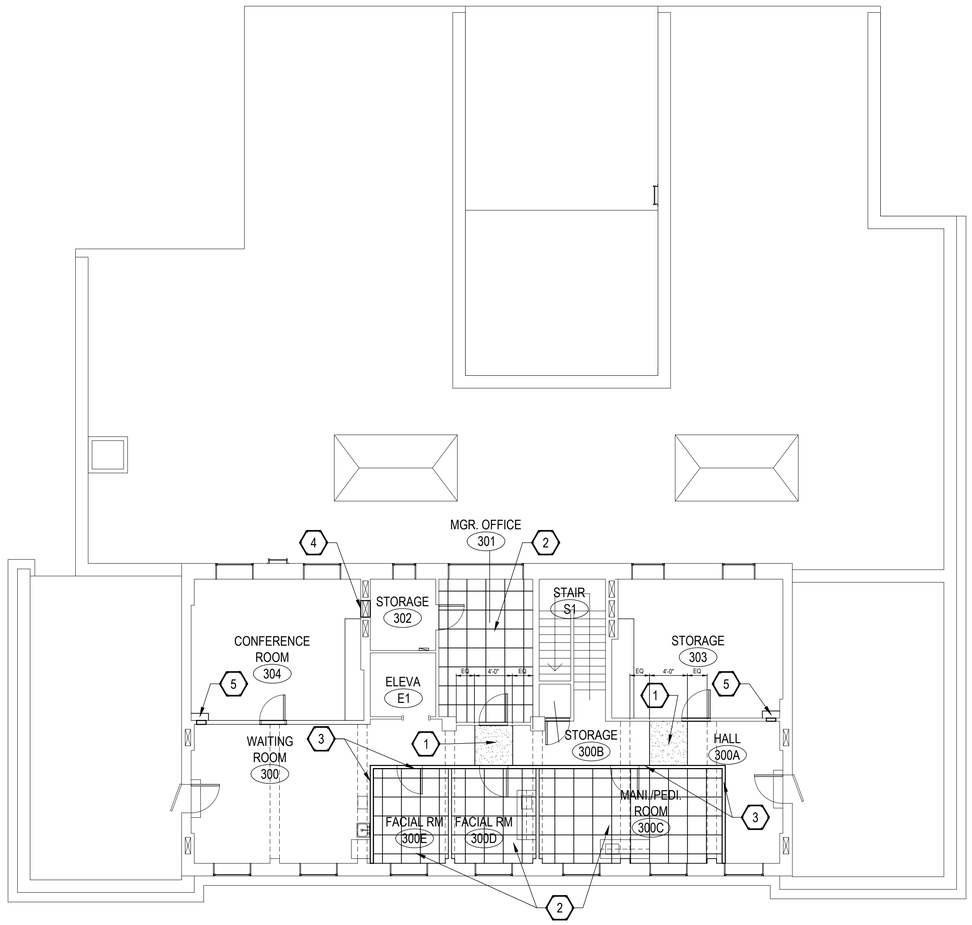
FLOOR PLAN KEYNOTES:

1. VERTICAL PIPE CHASE-FULL HEIGHT-PRIME AND PAINT GWB. PROVIDE BASE MATERIAL TO MATCH EXISTING. SEE 2 & 5 /A6. SEE MECHANICAL. SEE 2/A2 CHASE SIZE SCHEDULE FOR RECOMMENDED SIZE.
2. PARTIAL HEIGHT VERTICAL PIPE CHASE- HEIGHT TO MATCH FCU. INSTALL WAINSCOT AND CAP OF SOLID SURFACE MATERIAL. SEE 4 & 5 /A6. SEE MECHANICAL. SEE 2/A2 CHASE SIZE SCHEDULE FOR RECOMMENDED SIZE. ALIGN FACE OF CHASE WITH THE FACE OF THE FCU.
3. AT THE FCU INSTALLED IN FRONT OF THE WINDOW INSTALL SOLID-SURFACE MATERIAL SPACER FLATWISE AGAINST THE WALL. THE TOP OF THE FCU WILL BE AT THE SAME LEVEL AS THE LIP OF THE MARBLE SILL LEAVING A GAP BETWEEN THE FCU AND THE WALL. SIZE THE SPACER 1/4" LARGER THAN THE FCU AND NOTCH THE SPACER AT THE SILL.

1 2ND FLOOR PLAN
SCALE: 1/8" = 1'-0"
8' 4' 0 8'
N

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: KJH DRAWN BY: TWM TECH. REVIEW: CLZ DATE: 2/15/2024	SUB SHEET NO. A3	TITLE OF SHEET 2ND FLOOR PLAN BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 8 OF 60



1 3RD FLOOR - REFLECTED CEILING PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. PATCH/REPAIR FLOOR AS REQUIRED TO MATCH ADJACENT AREA WHERE NEW FCU DOES NOT COMPLETELY COVER OLD LOCATION.
2. PATCH AND REPAIR FLOOR AND WALL TO MATCH ADJACENT AREA WHERE EQUIPMENT IS PERMANENTLY REMOVED.
3. CLEAN FLOOR AND WALL AT FCUs AS NEEDED AS PART OF PREP FOR NEW FCUs.
4. PATCH AND REPAIR AT NEW WORK TYING INTO ADJACENT AREAS.

FLOOR PLAN KEYNOTES:

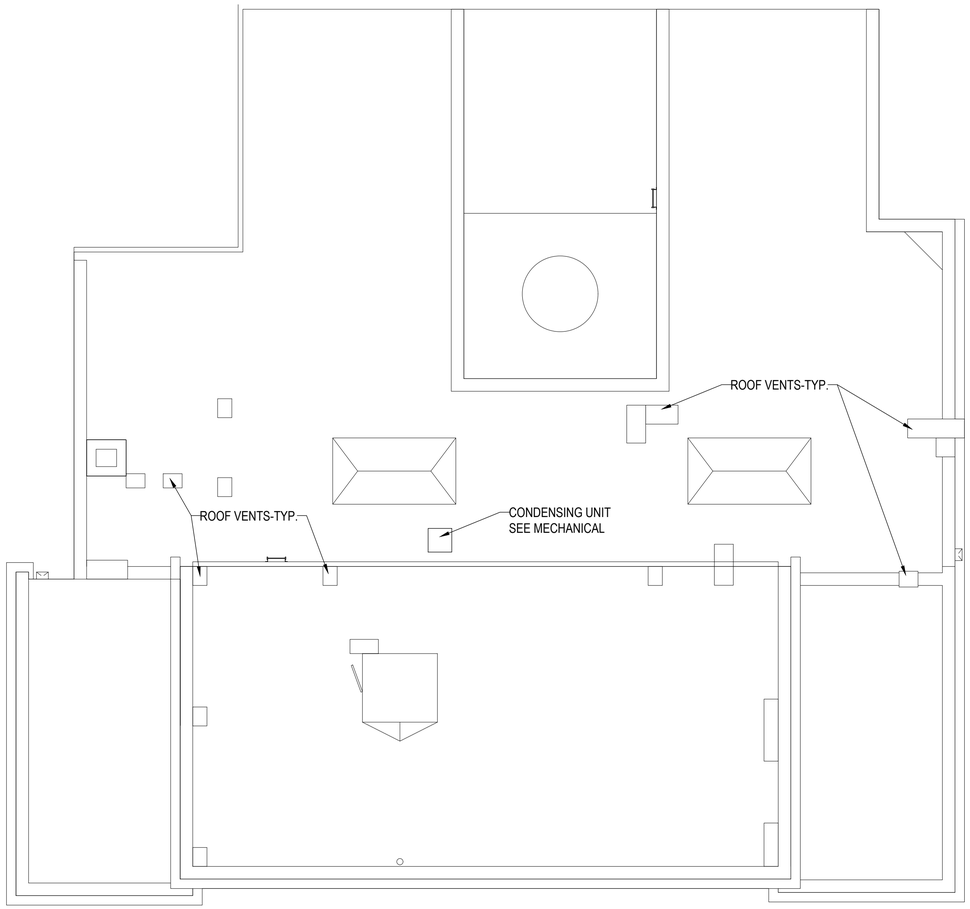
1. SOFFIT-HORIZONTAL DUCT CHASE- PRIME AND PAINT. SEE 8/A6.
2. 2' X 2' ACOUSTICAL CEILING TILE IN 15/16" ALUMINUM GRID. INSTALL AT 8'-1" A.F.F., INSTALL AS HIGH AS POSSIBLE UNDER DUCTWORK IN MGR. OFFICE 301.
3. EXTEND EXISTING WALL TO DECK. KEEP LOWER CROWN MOLDING IN PLACE, REMOVE UPPER CROWN MOLDING-PATCH. ADD MATCHING CROWN MOLDING AT DECK. PRIME NEW GWB AND PAINT FULL WALL-BOTH SIDES. SEE 6/A6.
4. LOWER EXISTING GRILL IN RM. 304. PROVIDE NEW THRU-WALL OPENING FOR NEW DUCT AND DIFFUSER. SEE MECHANICAL.
5. NEW THRU-WALL OPENING FOR TRANSFER DUCT. SEE MECHANICAL. PROVIDE SOFFIT TO ENCLOSE TRANSFER DUCT. CONSTRUCTION BOTH SOFFITS IN A SIMILAR MANNER AT SIMILAR HEIGHTS. SEE 3/A6 SIM.

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: KJH DRAWN BY: TWM TECH. REVIEW: CLZ DATE: 2/15/2024	SUB SHEET NO. A4	TITLE OF SHEET 3RD FLOOR REFLECTED CEILING PLAN BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 9 OF 60

GENERAL NOTES

1. CAP ROOF VENTS AS DIRECTED. SEE MECHANICAL.
2. PATCH AND REPAIR ROOF AS NEEDED AS A RESULT OF INSTALLING CONDENSING UNIT. SEE MECHANICAL.



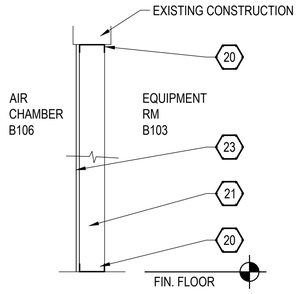
1 ROOF PLAN
SCALE: 1/8" = 1'-0"

8' 4' 0 8'

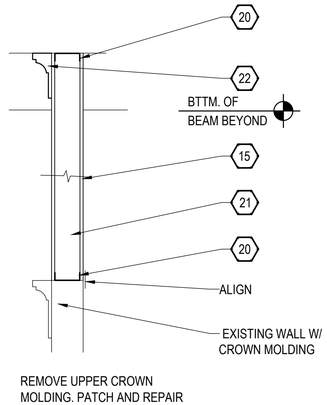
N

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: KJH DRAWN BY: TWM TECH. REVIEW: CLZ DATE: 2/15/2024	SUB SHEET NO. A5	TITLE OF SHEET ROOF PLAN BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 10 OF 60

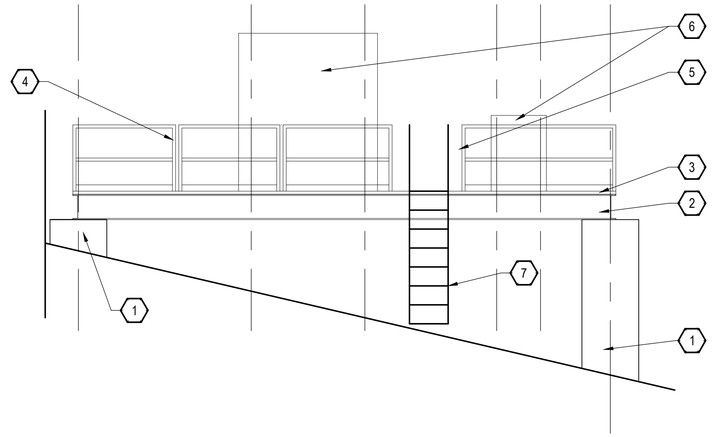


9 WALL EXTENSION DETAIL
NOT TO SCALE

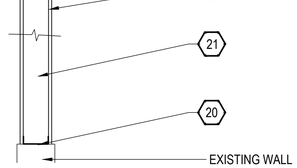


REMOVE UPPER CROWN
MOLDING. PATCH AND REPAIR

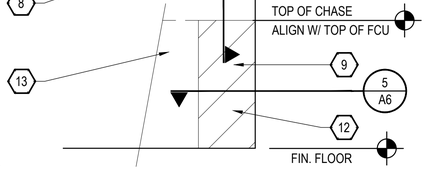
6 WALL EXTENSION DETAIL
NOT TO SCALE



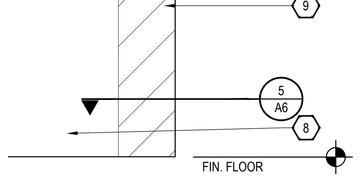
1 ELEVATION- MECHANICAL PLATFORM
SCALE: 1/4" = 1'-0"



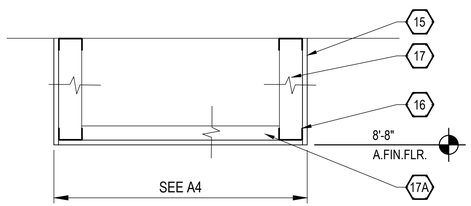
7 INFILL DETAIL
NOT TO SCALE



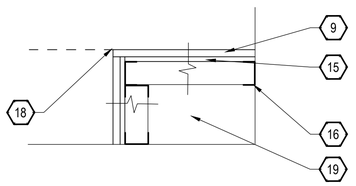
4 ELEVATION- PARTIAL HEIGHT
PIPE CHASE (TYP.)
NOT TO SCALE



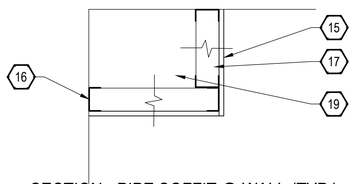
2 ELEVATION- PIPE CHASE (TYP.)
NOT TO SCALE



8 SECTION - PIPE SOFFIT @ 3RD FLR.
NOT TO SCALE



PLAN DETAIL-PIPE CHASE (TYP.)
SECTION-SIM.
5 NOT TO SCALE



3 SECTION - PIPE SOFFIT @ WALL (TYP.)
NOT TO SCALE

FLOOR PLAN KEYNOTES:

1. EXISTING CONCRETE COLUMN
2. WIDE-FLANGE BEAM- HP PAINT. SEE STRUCTURAL
3. 2" STEEL OPEN GRATING- SEE STRUCTURAL
4. 42"H PIPE RAILING W/ REMOVEABLE SECTIONS- HP PAINT. SEE STRUCTURAL
5. SPRING-LOADED GATE- HP PAINT (IF NOT PREVIOUSLY FINISHED). SEE STRUCTURAL.
6. EQUIPMENT BEYOND. SEE MECHANICAL & ELECTRICAL.
7. BAR-STEEL LADDER W/ EXTENSIONS, BRACED- HP PAINT. SEE STRUCTURAL
8. EXISTING MARBLE WAINSCOT
9. 3/4" SOLID-SURFACE MATERIAL WAINSCOT -MATCH HEIGHT (U.N.O.) AND HORIZONTAL JOINTING OF EXISTING WAINSCOT. NOTCH AS NEEDED TO ABUT EXISTING WAINSCOT.
10. NEW GWB PIPE CHASE. SEE 5/A6.
11. EXISTING PLASTER WALL BEYOND
12. PARTIAL HEIGHT PIPE CHASE- HEIGHT TO ALIGN WITH TOP OF FCU. CAP CHASE W/ SOLID SURFACE MATERIAL. FLATWISE PIECE TO 'CAP' VERT. WALL PIECE. SEE 5/A6.
13. FCU- SEE MECHANICAL
14. NOT USED
15. 1/2" MR TYPE 'X' GYPSUM DRYWALL-BOTH SIDES
16. 2-1/2" 25-GAUGE C-CHANNEL (TYP.)
17. 17A 2-1/2" 25 -GAUGE METAL STUD @ 16" O.C. 17A -FLATWISE
18. ALIGN FACE OF CHASE WITH FACE OF FCU.
19. SIZE CHASE/SOFFIT TO ACCOMMODATE MECHANICAL PIPING- SEE 2/A2 CHASE SIZE SCHEDULE. SEE MECHANICAL
20. 3-5/8" 25-GAUGE C-CHANNEL (TYP.) INSTALL C-CHANNEL AROUND PERIMETER AT INFILL AND AT 9/A6.
21. 3-5/8" 25 -GAUGE METAL STUD @ 16" O.C.
22. WOOD CROWN MOLDING W/ FRIEZE BOARD- MATCH EXISTING. INSTALL MOLDING ALONG CEILING ONLY.
23. INFILL OPENING WITH 16 GAUGE GALVANIZED SHEET METAL ON METAL STUD FRAMING. USE FULL SHEETS. INSTALL SEALANT AT PERIMETER. OVERLAP THE GALVANIZED STEEL SHEETS 3" WITH SEALANT BEAD BETWEEN SHEETS AND SEALANT BEAD BETWEEN PERIMETER CHANNEL AND SHEET. MAKE AIRTIGHT.

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: KJH DRAWN BY: TWM TECH. REVIEW: CLZ DATE: 2/15/2024	SUB SHEET NO. A6	TITLE OF SHEET DETAILS,ELEVATIONS, SECTIONS BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 11 OF 60

MECHANICAL SYMBOLS

PLUMBING

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
AV	ACID VENT	140°	HOT WATER 140°	GCO	GRADE CLEAN OUT
AW	ACID WASTE (ABOVE FLOOR)	140°	HOT WATER CIRCULATING 140°		DOUBLE GRADE CLEAN-OUT
AW	ACID WASTE (BELOW FLOOR)	G	NATURAL GAS	HB	HOSE BIBB
	COLD WATER (CW)	OF	OVERFLOW STORM DRAIN (ABOVE FLOOR)	WH	WALL HYDRANT (NON-FREEZE TYPE)
S	COLD SOFT WATER	OF	OVERFLOW STORM DRAIN (BELOW FLOOR)	Y.H.	YARD HYDRANT
A	COMPRESSED AIR		SANITARY DRAIN (ABOVE FLOOR)	BFP	BACK FLOW PREVENTER
	EXISTING SANITARY DRAIN (ABOVE FLOOR)		SANITARY SEWER (BELOW FLOOR)	FD-X	FLOOR DRAIN SIZE-TYPE
	EXISTING SANITARY SEWER (BELOW FLOOR)	SS	SITE STORM SEWER	FS-X	FLOOR SINK SIZE-TYPE
S	EXISTING STORM DRAIN (ABOVE FLOOR)	S	STORM DRAIN (ABOVE FLOOR)	RD-X	ROOF DRAIN SIZE-TYPE
S	EXISTING STORM DRAIN (BELOW FLOOR)	S	STORM DRAIN (BELOW FLOOR)	DS	DOWN SPOUT
SS	EXISTING SUB SOIL DRAIN	SS	SUB SOIL DRAIN	MH	MANHOLE
AW	EXISTING ACID WASTE (ABOVE FLOOR)	V	VENT	VTR	VENT THROUGH ROOF ON RISER
AW	EXISTING ACID WASTE (BELOW FLOOR)	W	SITE WATER PIPING		
	HOT WATER (HW)	V	VACUUM BREAKER	1	PLUMBING RISER NUMBER
	HOT WATER CIRCULATING (HWC)		GAS COCK		
S	HOT SOFT WATER		RUNNING TRAP	SH	SHOWER
S	HOT SOFT WATER RECIRCULATING	CO OR CO	CLEAN OUT		

HEATING - VENTILATING - AIR-CONDITIONING

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
CWS	CHILLED WATER SUPPLY		AUTOMATIC CONTROL VALVE, 2-WAY		TURNING VANES
CWR	CHILLED WATER RETURN		AUTOMATIC CONTROL VALVE, 3-WAY		SUPPLY, OUTDOOR, OR MIXED AIR DUCT END OR RISER (SA) (OA) (MA)
PC	CONDENSATE OR BOILER FEED PUMP DISCHARGE		PRESSURE REGULATING VALVE (PRV)		RETURN EXHAUST OR RELIEF AIR DUCT END OR RISER (RA) (EA) (RLFA)
CS	CONDENSER WATER SUPPLY FROM TOWER		PIPE IN SLEEVE	X/X	RECTANGULAR DUCTWORK (FIRST NUMBER IS SIDE SHOWN)
CR	CONDENSER WATER RETURN TO TOWER		VALVE IN VERTICAL PIPE	XØ	ROUND DUCT
CD	COIL OR EQUIPMENT DRAIN		F AND T TRAP CAP LBS/HR	X/X Φ	FLAT OVAL (FIRST NUMBER IS THE SIDE SHOWN)
THW	THERMAL HOT WATER		BUCKET TRAP CAP LBS/HR		VOLUME DAMPER
TCW	THERMAL COLD WATER	AQ	AIR QUALITY SENSOR	M	MOTORIZED DAMPER
FOS	FUEL OIL SUPPLY	A	AQUASTAT		
FOR	FUEL OIL RETURN	CO2	C02 SENSOR	FRD	FIRE DAMPER WITH ACCESS DOOR
FOV	FUEL OIL VENT	H	HUMIDISTAT		
G	NATURAL GAS	S	REMOTE SENSOR	FSD M	COMBINATION FIRE AND SMOKE DAMPER WITH ACCESS DOOR
HPWS	HEAT PUMP WATER SUPPLY	T T	THERMOSTAT		
HPWR	HEAT PUMP WATER RETURN	T RS	THERMOSTAT WITH REMOTE SENSOR	SD M	SMOKE DAMPER WITH ACCESS DOOR
HPR	HIGH PRESSURE CONDENSATE RETURN		SOLENOID VALVE (REFRIGERANT)		
HPS	HIGH PRESSURE STEAM		THERMOSTATIC EXPANSION VALVE (REFRIGERANT)		
HWS	HOT WATER SUPPLY		SIGHT GLASS	SA	SOUND ATTENUATOR
HWR	HOT WATER RETURN		MANUAL AIR VENT		FLEX CONNECTION
LPR	LOW PRESSURE CONDENSATE RETURN	P T	PRESSURE OR TEMPERATURE MEASURING POINTS	SIZE TYPE CFM	SUPPLY REGISTER OR GRILLE
LPS	LOW PRESSURE STEAM	FS	FLOW SWITCH		
MPR	MEDIUM PRESSURE CONDENSATE RETURN	1	HEATING RISER	SIZE TYPE CFM	RETURN REGISTER OR GRILLE
MPS	MEDIUM PRESSURE STEAM	AD	ACCESS DOOR - SIZE AS SHOWN OR PER SPEC.		
RL	REFRIGERANT LIQUID	L D	EXPANSION LOOP, LENGTH AND DEPTH	X X X	TYP DIFFUSER NECK SIZE, MARK / CFM
RS	REFRIGERANT SUCTION	FT-1 MBH	FINTUBE-TYPE CAPACITY MBH (SHADED AREA INDICATES ELEMENT LOCATION)		
RD	REFRIGERANT HOT GAS DISCHARGE			X X X	TYP EXHAUST/RETURN GRILLE NECK SIZE, MARK / CFM
B.D.D.	BACK-DRAFT DAMPER (COUNTER BALANCED)		NEW TO EXISTING CONNECTION	X X	MECHANICAL EQUIPMENT WITH ELEC CONNECTION SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE
			POINT OF DISCONNECT	OR	BREAK / CONTINUATION

MECHANICAL SYMBOLS

PIPING

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	TEE		GLOBE VALVE		CONCENTRIC REDUCER
	ELBOW	PTT	PRESS / TEMP TEST PORT		ECCENTRIC REDUCER
	UNION		GATE VALVE		PRESSURE GAUGE WITH GAUGE COCK
	STRAINER WITH DRAIN VALVE AND HOSE END		CHECK VALVE (ARROW INDICATES FLOW)		THERMOMETER, SIDE FEED
	BALANCING VALVE		FLEXIBLE PIPING		THERMOMETER, BOTTOM FEED
	ISOLATION VALVE (BALL OR BUTTERFLY)		AUTOMATIC AIR VENT		ARROW INDICATES FLOW DIRECTION
	PRESSURE RELIEF VALVE				ARROW INDICATES DOWNWARD PIPE PITCH
	ELBOW UP		MANUAL AIR VENT WITH ISOLATION VALVE	M	WATER METER
	ELBOW DOWN				

FIRE PROTECTION

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
F	FIRE LINE	PA	PRE-ACTION RELEASING PANEL		FIRE DEPARTMENT HOSE VALVE
SM	SPRINKLER MAIN		CEILING CLEAN AGENT NOZZLE		FLUSH FIRE PUMP TEST HEADER
CA	CLEAN AGENT		SUB-FLOOR CLEAN AGENT NOZZLE		FREE-STANDING FIRE PUMP TEST HEADER
	SPRINKLER BRANCH AND HEADS		CEILING DETECTOR		FREE-STANDING FIRE DEPARTMENT CONNECTION
	RECESSED PENDANT SPRINKLER		SUB-FLOOR DETECTOR		FLUSH FIRE DEPARTMENT CONNECTION
	CONCEALED PENDANT SPRINKLER		CLEAN AGENT ALARM BELL		FIRE DEPARTMENT CONNECTION
	UPRIGHT SPRINKLER		CLEAN AGENT HORN WITH STROBE	FHC	FIRE HOSE CABINET
	DRY PENDANT SPRINKLER		ELECTRIC PULL STATION	FVC	FIRE HOSE VALVE CABINET
	HORIZONTAL SIDEWALL SPRINKLER		ABORT PULL STATION	PIV	POST INDICATOR VALVE
	DRY HORIZONTAL SIDEWALL SPRINKLER		CLEAN AGENT PRESSURE SWITCH		ISOLATION VALVE WITH TAMPER SWITCH
	PRE-ACTION HEAT DETECTOR		WARNING LIGHT		ALARM CHECK VALVE
	PRE-ACTION PULL STATION	CAP	CLEAN AGENT PANEL		DRY PIPE VALVE
	PRE-ACTION ALARM BELL		FIRE HYDRANT	FS	FLOW SWITCH
	PRE-ACTION TROUBLE STROBE		ALARM BELL		WATER FLOW SWITCH
	DELUGE VALVE FOR PRE-ACTION SYSTEM		ALARM STROBE		

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASTM	STANDARD SPECIFICATIONS OF THE AMERICAN SOCIETY FOR TESTING MATERIALS
AUX	AUXILIARY
AV	ACID VENT
AVG	AVERAGE
AW	ACID WASTE
AWG	AMERICAN WIRE GAUGE
BMCS	BUILDING MANAGEMENT CONTROL SYSTEM
BFP	DOUBLE CHECK BACKFLOW PREVENTER
BLDG	BUILDING
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CL	CENTER LINE
CLG	CEILING
CLR	CLEAR
CPVC	CHLORINATED POLYVINYL CHLORIDE
CRAC	COMPUTER ROOM AIR CONDITIONER
CV	CONSTANT VOLUME
DDCV	DOUBLE DETECTOR CHECK VALVE ASSEMBLY BACKFLOW PREVENTER
DIA	DIAMETER
DISC	DISCONNECT
DIST	DISTRIBUTION
DN	DOWN
DPAC	DRY PIPE AIR COMPRESSOR
DPV	DRY PIPE VALVE
DWG	DRAWING
DX	DIRECT EXPANSION
EA	EXHAUST AIR
EHC	ELECTRIC HEATING COIL
EL	ELEVATION
ELEC	ELECTRICAL
EMS	ENERGY MANAGEMENT SYSTEM
EOA	ECONOMIZER OUTDOOR AIR
EPO	EMERGENCY POWER OFF
EQUIP	EQUIPMENT
EXH	EXHAUST
EXIST	EXISTING
F	FIRE WATER
FA	FIRE ALARM
FCO	FLOOR CLEAN OUT
FDC	FIRE DEPARTMENT CONNECTION
FHC	FIRE HOSE CABINET
FHV	FIRE HOSE VALVE
FL	FLOOR
FT	FEET
FW	FILTERED WATER
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GEN	GENERATOR
GPM	GALLONS PER MINUTE
GW	GARAGE WASTE
HGT	HEIGHT
HP	HORSEPOWER
HTG	HEATING
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HZ	HERTZ, HIGH ZONE WET STANDPIPE
IE	INVERT ELEVATION
IP	INTERNET PROTOCOL
KW	KILOWATT
LBS	POUNDS
LZ	LOW ZONE WET STANDPIPE
MA	MIXED AIR
MAX	MAXIMUM
MBH	1000 BTU/HOUR
MECH	MECHANICAL
MERV	MINIMUM EFFICIENCY REPORTING VALUE
MIN	MINIMUM
MISC	MISCELLANEOUS
MOA	MINIMUM OUTDOOR AIR
MTD	MOUNTED
NC	NORMALLY CLOSED
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NOM	NOMINAL
NPW	NON-POTABLE WATER
NTS	NOT TO SCALE
OA	OUTDOOR AIR
OC	ON CENTER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
PERP	PERPENDICULAR
PIV	POST INDICATOR VALVE
PLBG	PLUMBING
PNL	PANEL
PS	PLASTER SINK
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
PWR	POWER
RA	RETURN AIR
REQD	REQUIRED
RGS	RIGID GALVANIZED STEEL
RH	RELATIVE HUMIDITY
RLFA	RELIEF AIR
RM	ROOM
RO	REVERSE OSMOSIS WATER
RPZ	REDUCED PRESSURE ZONE BACKFLOW PREVENTER
SA	SUPPLY AIR
SAN	SANITARY
SCHD	SCHEDULE
SCW	SOFT COLD WATER
SHW	SOFT HOT WATER
SIM	SIMILAR
SM	SPRINKLER MAIN
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION
SPECS	SPECIFICATIONS
SS	STAINLESS STEEL
STD	STANDARD
TEMP	TEMPERATURE
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
VA	VOLT-AMPS
VERT	VERTICAL
VFC	VARIABLE FREQUENCY CONTROL
VTR	VENT THROUGH ROOF
W	WATT
WG	WATER GAUGE
WP	WEATHERPROOF
XFMR	TRANSFORMER

SYMBOLS INDICATED HERE AND NOT USED IN THE CONTRACT DOCUMENTS DO NOT APPLY TO THIS PROJECT. ADDITIONAL SYMBOLS AND ABBREVIATIONS MAY BE INDICATED IN THE CONTRACT DOCUMENTS.

NOTE:

DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawing or at site. lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE.	MRG	M0-0	MECHANICAL SYMBOLS AND ABBREVIATIONS	XXX/XXXX
	DRAWN BY: MRG		BUCKSTAFF BATHHOUSE HVAC	PMIS NO. 177425
SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	TECH. REVIEW: BAH		HOT SPRINGS NATIONAL PARK	SHEET
	DATE: 2/15/2024		HOT SPRINGS, AK	12 OF 60

M-Lg Mechanical 2020-07-22

February 16, 2024 7:36am M0-0.dwg mgregory

DEMOLITION NOTES:

1. THE OWNER SHALL HAVE THE FIRST RIGHT OF SALVAGE FOR ALL MECHANICAL, ELECTRICAL, AND PLUMBING ITEMS BEING REMOVED. IF OWNER DECLINES, THE CONTRACTOR SHALL REMOVE FROM THE PREMISES AND DISPOSE OF PROPERLY. VERIFY OWNER'S INTENT PRIOR TO REMOVAL OR DEMOLITION.
2. INFORMATION PERTAINING TO THE EXISTING BUILDING HAS BEEN OBTAINED THROUGH ON-SITE FIELD VERIFICATION. REPORT DISCREPANCIES TO THE ARCHITECT/ENGINEER PRIOR TO ANY DEMOLITION. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO COMMENCING WORK.
3. COORDINATE SHUT DOWN OF ALL UTILITIES FOR DEMOLITION WORK WITH THE OWNER.
4. DISCONNECT AND REMOVE MECHANICAL SYSTEMS, EQUIPMENT, AND COMPONENTS AS INDICATED TO BE REMOVED.
   PIPING TO BE REMOVED: REMOVE PORTION OF PIPING INDICATED TO BE REMOVED AND CAP REMAINING PIPING WITH THE SAME OR COMPATIBLE PIPING MATERIAL.
   PIPING TO BE ABANDONED IN PLACE: DRAIN PIPING AND CAP WITH THE SAME OR COMPATIBLE PIPING MATERIAL.
   DUCTS TO BE REMOVED: REMOVE PORTIONS OF DUCT AND CAP REMAINING DUCTS WITH THE SAME OR COMPATIBLE DUCTWORK MATERIAL.
   DUCTS TO BE ABANDONED IN PLACE: CAP DUCTS WITH THE SAME OR COMPATIBLE DUCTWORK MATERIAL.
   EQUIPMENT TO BE REMOVED: DISCONNECT AND CAP SERVICES AND REMOVE EQUIPMENT.
   EQUIPMENT TO BE REMOVED AND REINSTALLED: DISCONNECT AND CAP SERVICES AND REMOVE, CLEAN, AND STORE EQUIPMENT. WHEN APPROPRIATE, REINSTALL, RECONNECT, AND MAKE EQUIPMENT FULLY OPERATIONAL.
   EQUIPMENT TO BE REMOVED AND SALVAGED: DISCONNECT AND CAP SERVICES AND REMOVE EQUIPMENT AND DELIVER TO OWNER.
5. IF PIPE OR EQUIPMENT INSULATION TO REMAIN IS DAMAGED IN APPEARANCE OR IS UNSERVICEABLE, REMOVE DAMAGED OR UNSERVICEABLE PORTIONS AND REPLACE WITH NEW PRODUCTS OF EQUAL CAPACITY AND QUALITY.
6. CONTRACTOR IS REQUIRED TO VISIT SITE AND FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO BIDDING PROJECT.
7. COORDINATE DEMOLITION WITH THE WORK OF OTHER TRADES. PROVIDE TEMPORARY UTILITIES AS REQUIRED TO ALLOW THE WORK OF OTHER TRADES TO PROCEED.
8. DUCTWORK, PIPING, PLUMBING, AND EQUIPMENT SHOWN BOLD SHALL BE REMOVED TO THE EXTENTS INDICATED.

HVAC GENERAL NOTES:

1. DO NOT RUN DUCTWORK , PIPING, AND PLUMBING ABOVE ELECTRICAL PANELS OR IN CODE REQUIRED CLEARANCE SPACES. COORDINATE ALL ROUTING WORK WITH ALL OTHER TRADES.
2. DRAWINGS, PLANS, SCHEMATICS, AND DIAGRAMS INDICATE THE GENERAL LOCATIONS AND THE ARRANGEMENT OF SYSTEMS. WHEREVER PRACTICAL, INSTALL SYSTEMS AS INDICATED. PROVIDE OFFSETS AND ELEVATION CHANGES TO DUCTWORK, PIPING, AND PLUMBING AS REQUIRED TO COMPLETE THE LAYOUT AND COORDINATION PROCESS AS WELL AS MEET ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS.
3. SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR DIFFUSER, REGISTER, GRILLE, AND CEILING MOUNTED DEVICE LOCATIONS.
4. CONTRACTOR SHALL COORDINATE LOCATION OF DUCTWORK IN CEILING SPACE WITH ALL TRADES PRIOR TO FABRICATION AND INSTALLATION OF DUCTWORK.
5. FOR GENERAL DUCTWORK CONSTRUCTION, SEE DUCT FITTING DETAILS.
6. DUCTWORK AND EQUIPMENT SHOWN WITH THIN LINES INDICATES EXISTING TO REMAIN. DUCTWORK AND EQUIPMENT SHOWN WITH BOLD LINES INDICATES NEW.
7. PROVIDE VOLUME DAMPER IN ALL BRANCH TAKEOFFS CONNECTING TO DIFFUSERS, REGISTERS, OR GRILLES AND IN LOCATIONS INDICATED.
8. PROVIDE REMOTE VOLUME DAMPER BALANCING POSITION CONTROL FOR ALL VOLUME DAMPERS MOUNTED ABOVE NON-ACCESSIBLE CEILINGS.
9. PROVIDE CLEARANCES TO ALL EQUIPMENT AS REQUIRED BY MANUFACTURERS' INSTALLATION AND OPERATION REQUIREMENTS AND/OR BY CODE.
10. INSTALL ALL DUCT AND PIPING IN MECHANICAL ROOMS AS HIGH AS POSSIBLE. PROVIDE 7'-6" MINIMUM HIGH ACCESS PATHWAYS TO ALL EQUIPMENT WHERE POSSIBLE.
11. COORDINATE LOCATIONS OF ALL EQUIPMENT HOUSEKEEPING PADS WITH GENERAL CONTRACTOR. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF EQUIPMENT HOUSEKEEPING PADS.
12. CAP ENDS OF ALL INSTALLED DUCTWORK DURING CONSTRUCTION TO MINIMIZE DIRT, DEBRIS, AND FOREIGN OBJECTS FROM ENTERING THE DUCT SYSTEM.
13. COORDINATE SCHEDULE OF SHUTDOWN FOR EXISTING HVAC SYSTEMS, FOR INSTALLATION OF NEW HVAC SYSTEMS, WITH THE OWNER'S REPRESENTATIVE PRIOR TO SHUTDOWN.
14. ALL INSULATION SHALL MEET THE ENERGY CODE'S INSTALLED R VALUE REQUIREMENTS.
15. PERFORM FUNCTIONAL PERFORMANCE TESTING FOR HVAC SYSTEM AND SUBMIT DOCUMENTATION REQUIRED BY 2018 IECC SECTION C408.2 TO THE BUILDING OWNER OR OWNER'S AUTHORIZED AGENT WITHIN 90 DAYS OF THE RECEIPT OF CERTIFICATE OF OCCUPANCY.

PIPING GENERAL NOTES:

1. DO NOT RUN PIPING, PLUMBING, AND DUCTWORK ABOVE ELECTRICAL PANELS OR IN CODE REQUIRED CLEARANCE SPACES. COORDINATE ALL ROUTING WORK WITH ALL OTHER TRADES.
2. DRAWINGS, PLANS, SCHEMATICS, AND DIAGRAMS INDICATE THE GENERAL LOCATIONS AND THE ARRANGEMENT OF SYSTEMS. WHEREVER PRACTICAL, INSTALL SYSTEMS AS INDICATED. PROVIDE OFFSETS AND ELEVATION CHANGES TO PIPING, PLUMBING, AND DUCTWORK AS REQUIRED TO COMPLETE THE LAYOUT AND COORDINATION PROCESS AS WELL AS MEET ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS.
3. SIZE AND ROUTE REFRIGERANT PIPING PER MANUFACTURERS' RECOMMENDATIONS.
4. ROUTE ALL HORIZONTAL HVAC PIPING IN MECHANICAL ROOMS AT A MINIMUM OF 7'-6" ABOVE FINISHED FLOOR WHERE POSSIBLE.
5. PIPING AND EQUIPMENT SHOWN WITH THIN LINES INDICATES EXISTING TO REMAIN. PIPING AND EQUIPMENT SHOWN WITH BOLD LINES INDICATES NEW.
6. SEE SCHEDULES FOR SIZES OF BRANCH RUNOUTS TO EQUIPMENT.
7. ALL PIPING INSULATION SHALL MEET THE ENERGY CODE'S INSTALLED R VALUE REQUIREMENTS.
8. DIELECTRIC NIPPLES OR FLANGE INSULATION KITS SHALL BE UTILIZED FOR ALL DISSIMILAR PIPE CONNECTIONS. DIELECTRIC UNIONS WILL NOT BE ACCEPTED.

GENERAL NOTES:

1. THIN LINE ITEMS INDICATE EXISTING TO REMAIN. BOLD LINE ITEMS INDICATE NEW WORK.
2. CONTRACTOR IS RESPONSIBLE FOR ANY CUTTING AND PATCHING NEEDED FOR MECHANICAL INSTALLATION. PATCHING MUST MATCH EXISTING.

NOTE:
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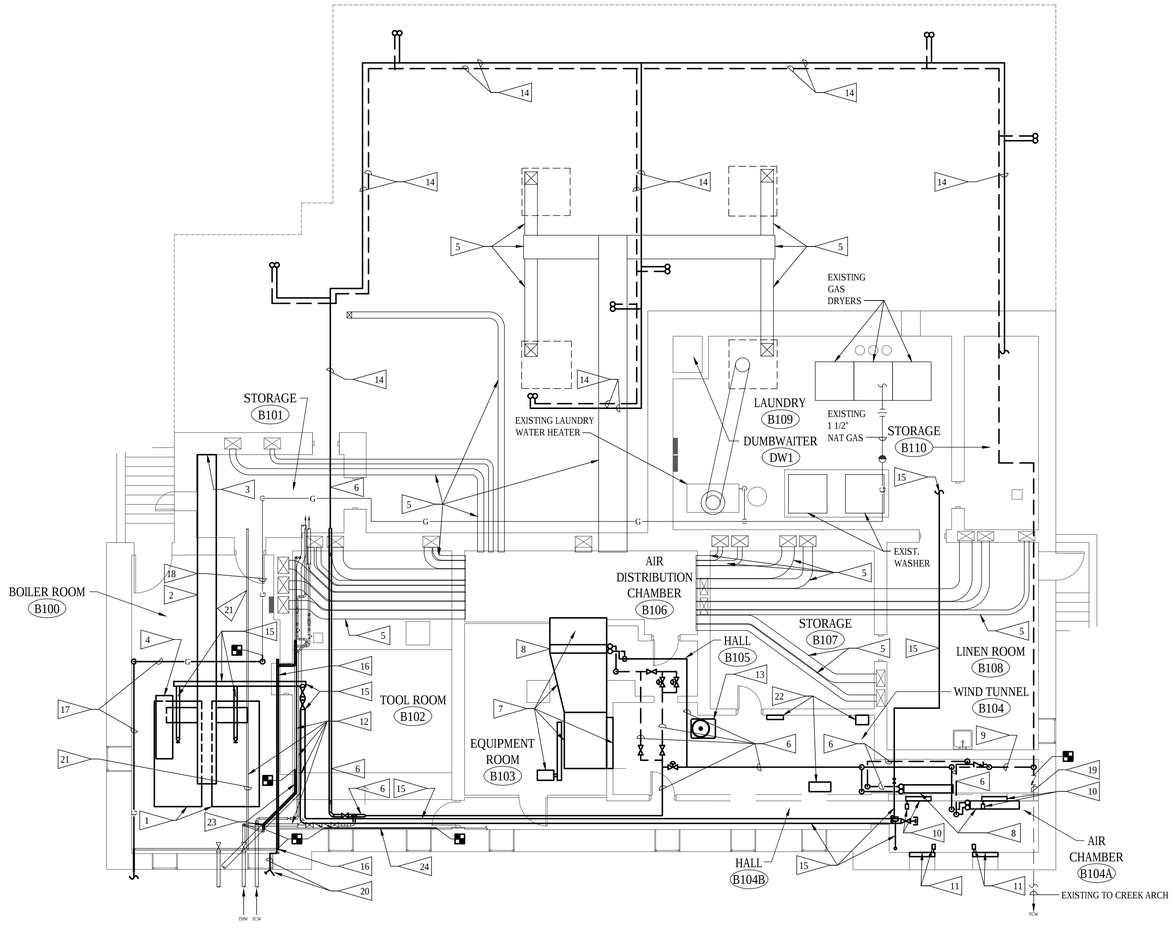
FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: MRG DRAWN BY: MRG TECH. REVIEW: BAH DATE: 2/15/2024	SUB SHEET NO. M0 - 1	TITLE OF SHEET MECHANICAL GENERAL NOTES BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 13 OF 60



BASEMENT FLOOR PLAN - MECHANICAL DEMOLITION

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

FLAG NOTES

1. REMOVE EXISTING BOILER COMPLETE INCLUDING ALL ASSOCIATED ABANDONED STEAM AND CONDENSATE RETURN PIPING COMPLETE SHOWN BOLD. VERIFY PIPING IN FIELD.
2. REMOVE EXISTING BOILER BREACHING SHOWN BOLD COMPLETE.
3. COORDINATE WITH GENERAL CONTRACTOR INFILL OF EXISTING REMAINING OPENING IN CHIMNEY WALL ONCE BREACHING IS REMOVED.
4. REMOVE ABANDONED TANK ABOVE NORTH BOILER SHOWN BOLD COMPLETE INCLUDING ASSOCIATED PIPING. PIPING NOT SHOWN FOR CLARITY.
5. EXISTING VENTILATION DUCTWORK SHOWN TO REMAIN AND BE REUSED.
6. REMOVE EXISTING 3" THERMAL HOT WATER PIPING SHOWN BOLD COMPLETE.
7. REMOVE EXISTING VENTILATION FAN SHOWN BOLD. COMPLETE INCLUDING BELT & GUARD AND FAN MOTOR.
8. REMOVE EXISTING HEAT COIL INCLUDING COIL BASE AND ASSOCIATED VENTILATION DUCTWORK SHOWN BOLD COMPLETE.
9. REMOVE EXISTING 3" THERMAL HOT WATER PIPING SHOWN BOLD. CAP REMAINING PIPING WHERE SHOWN.
10. REMOVE EXISTING DAMPER ASSEMBLIES IN WALL BELOW COIL SHOWN BOLD COMPLETE. REMOVE DAMPER ACTUATOR AND TEMPERATURE CONTROL AIR LINES AND DEVICE WIRING SERVING DAMPER ACTUATOR.
11. REMOVE EXISTING DAMPER ASSEMBLIES IN EXTERIOR WALL SHOWN BOLD COMPLETE. REMOVE DAMPER ACTUATOR AND TEMPERATURE CONTROL AIR LINES AND DEVICE WIRING SERVING DAMPER ACTUATOR.
12. EXISTING THERMAL HOT AND THERMAL COLD WATER PIPING SHALL REMAIN.
13. REMOVE EXISTING CONDENSING UNIT SHOWN BOLD SERVING GROUND FLOOR FURNACE. TURN OVER REMOVED EQUIPMENT TO GOVERNMENT'S REPRESENTATIVE.
14. REMOVE EXISTING THERMAL HOT WATER SUPPLY AND RETURN PIPING IN CRAWLSPACE SHOWN DARK WHICH SERVES EXISTING FAN COIL UNIT SYSTEM. PIPING INDICATED ON PLAN IS DIAGRAMMATIC. CONTRACTOR SHALL VERIFY PIPE SIZES AND EXTENT OF EXISTING ROUTING IN FIELD.
15. REMOVE ABANDONED 6" STEAM PIPING INCLUDING VALVES AND FITTINGS SHOWN DARK COMPLETE.
16. REMOVE ABANDONED 2" WATER PIPING SHOWN BOLD BACK TO MAIN AND CAP. FIELD VERIFY EXISTING CONDITIONS.
17. REMOVE EXISTING 2" NATURAL GAS PIPING SHOWN BOLD. REMOVE OUT TO EXISTING GAS METER LOCATED AT WEST SIDE OF BUILDING.
18. EXISTING 2" GAS PIPING TO REMAIN AND BE REUSED. CONTRACTOR TO VERIFY PIPE SIZE FOR RECONNECTION TO NEW GAS UTILITY PIPING.
19. EXISTING 3" THERMAL HOT WATER RETURN TO CREEK OUTSIDE OF BUILDING TO REMAIN AND BE REUSED.
20. REMOVE EXTERIOR HOSE BIBB AND WATER LINE SERVING HOSE BIBB BACK TO MAIN AND CAP. FIELD VERIFY EXISTING CONDITIONS.
21. EXISTING COLD WATER LINE SHALL BE REMOVED AND RELOCATED WITH NEW LOCATION TO BE DETERMINED IN THE FIELD. COORDINATE RELOCATING THIS LINE BASED ON FINAL DUCTWORK AND PIPING TO BE INSTALLED THROUGH EXISTING BOILER ROOM. FINAL LOCATION OF RELOCATED WATER LINE SHALL BE MADE ONCE DUCTWORK AND PIPING IS INSTALLED IN SPACE.
22. REMOVE EXISTING PNEUMATIC TEMPERATURE CONTROL AIR COMPRESSOR, CONTROL AIR REFRIGERATED AIR DRYER AND EXISTING PNEUMATIC TEMPERATURE CONTROL PANEL COMPLETE INCLUDING CONTROL WIRING AND CONTROL AIR LINES SHOWN BOLD.
23. REMOVE PORTION OF EXISTING 2" THERMAL HOT WATER PIPING SHOWN BOLD TO MAKE ROOM FOR NEW HVAC DUCTWORK AT EXISTING WALL OPENING AT WEST END OF ROOM.
24. REMOVE PORTION OF EXISTING 3/4" COLD WATER PIPING SHOWN BOLD.

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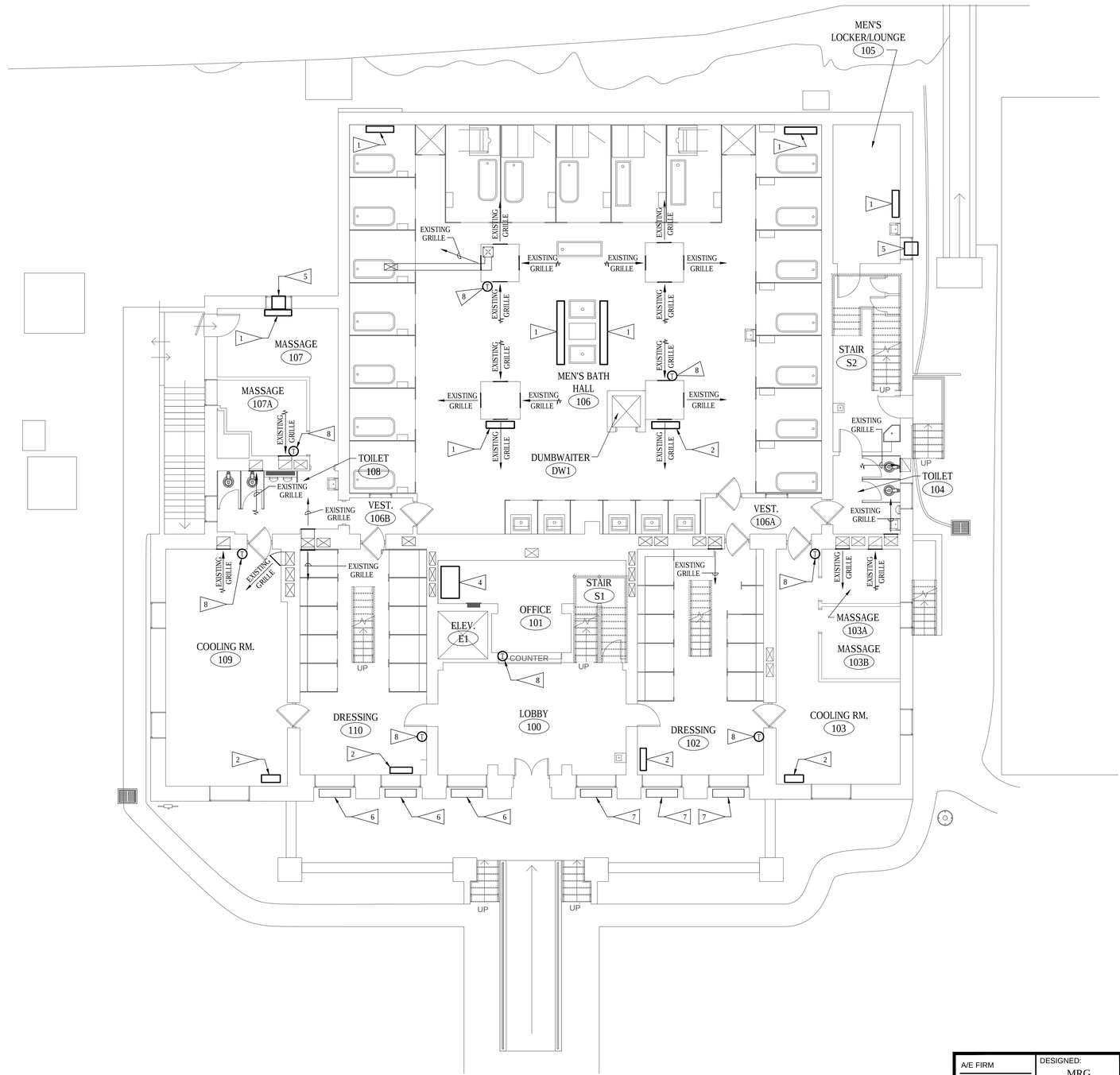
FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: MRG DRAWN BY: MRG TECH. REVIEW: BAH DATE: 2/15/2024	SUB SHEET NO. M1-1	TITLE OF SHEET BASEMENT FLOOR PLAN - MECHANICAL DEMOLITION BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 14 OF 60

February 16, 2024 7:36am M1-1.dwg mgregory



GROUND FLOOR PLAN - MECHANICAL DEMOLITION

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

FLAG NOTES

1. REMOVE EXISTING HEATING ONLY FAN COIL UNIT AND ASSOCIATED HEATING HOT WATER SUPPLY AND RETURN PIPING UP THROUGH FLOOR BELOW SERVING FAN COIL UNIT COMPLETE.
2. REMOVE EXISTING ABANDONED RADIATOR AND ANY ASSOCIATED PIPING DOWN THROUGH FLOOR.
3. EXISTING ABANDONED RADIATOR TO REMAIN.
4. REMOVE EXISTING FURNACE SHOWN DARK COMPLETE. REMOVE ANY ASSOCIATED SUPPLY AND RETURN DUCTWORK, CONDENSATE PIPING FROM UNIT DOWN TO BASEMENT, REFRIGERANT PIPING ROM UNIT DOWN TO BASEMENT LOCATED CONDENSING UNIT, AND ASSOCIATED CONTROLS. CONTRACTOR SHALL RECLAIM REFRIGERANT BEFORE REMOVING REFRIGERANT PIPING.
5. REMOVE EXISTING WINDOW AIR CONDITIONING UNIT AND TURN OVER TO GOVERNMENTS REPRESENTATIVE.
6. EXISTING OUTSIDE AIR INTAKE GRILLES SHALL REMAIN AND BE REUSED FOR INTAKE AIR.
7. EXISTING OUTSIDE AIR INTAKE GRILLES SHALL REMAIN AND BE REUSED FOR RELIEF AIR.
8. REMOVE EXISTING CONTROL THERMOSTAT SHOWN BOLD COMPLETE. REMOVE CONTROL AIR TUBING BACK INTO WALL AND ABANDON IN PLACE.

NOTE:
DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawing or at site. lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

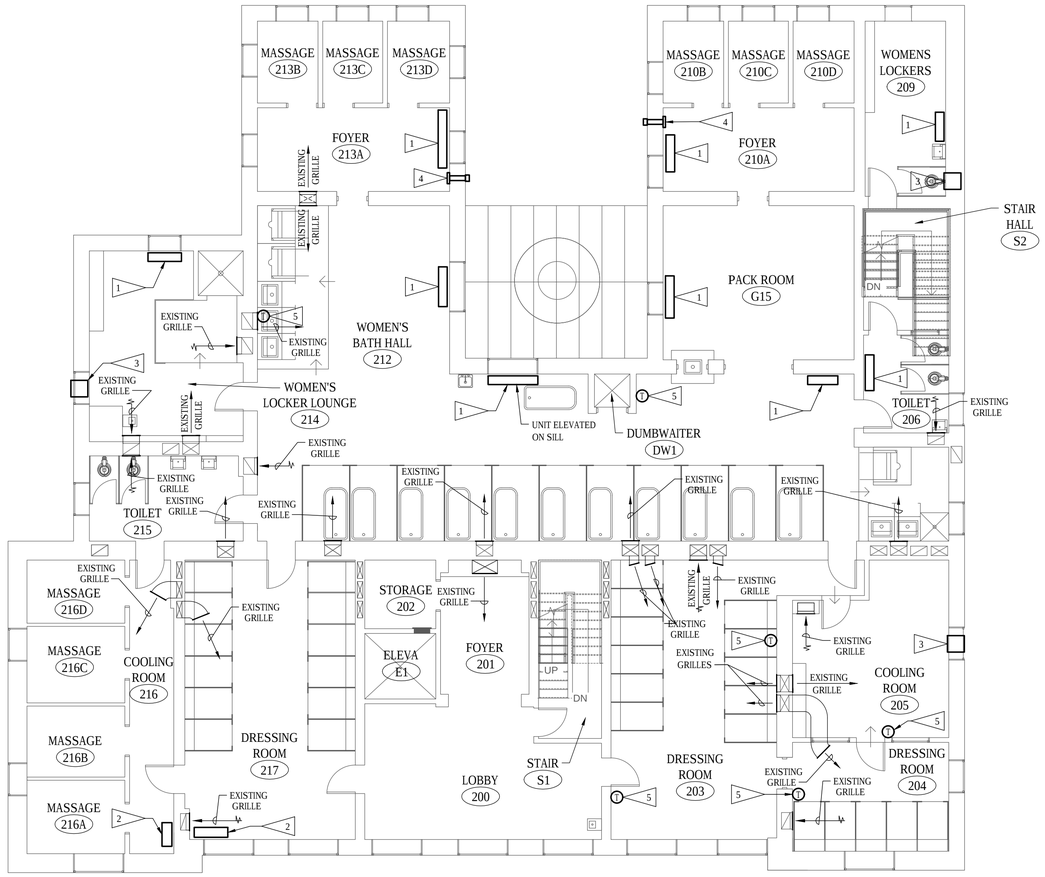
FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: MRG DRAWN BY: MRG TECH. REVIEW: BAH DATE: 2/15/2024	SUB SHEET NO. M1 - 2	TITLE OF SHEET GROUND FLOOR PLAN - MECHANICAL DEMOLITION BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 15 OF 60

February 16, 2024 7:36am M1-1.dwg mgregory

FLAG NOTES

1. REMOVE EXISTING HEATING ONLY FAN COIL UNIT AND ASSOCIATED HEATING HOT WATER SUPPLY AND RETURN PIPING UP THROUGH FLOOR BELOW SERVING FAN COIL UNIT COMPLETE.
2. REMOVE EXISTING ABANDONED RADIATOR AND ASSOCIATED PIPING.
3. REMOVE EXISTING WINDOW AIR CONDITIONING UNIT AND TURN OVER TO GOVERNMENTS REPRESENTATIVE.
4. REMOVE WALL EXHAUST FAN, EXHAUST DUCT AND EXTERIOR EXHAUST HOOD SHOWN BOLD COMPLETE. PATCH WALL TO MATCH ADJACENT SURFACES.
5. REMOVE EXISTING CONTROL THERMOSTAT SHOWN BOLD COMPLETE. REMOVE CONTROL AIR TUBING BACK INTO WALL AND ABANDON IN PLACE.



SECOND FLOOR PLAN - MECHANICAL DEMOLITION

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

NOTE:
DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawing or at site. lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verily non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

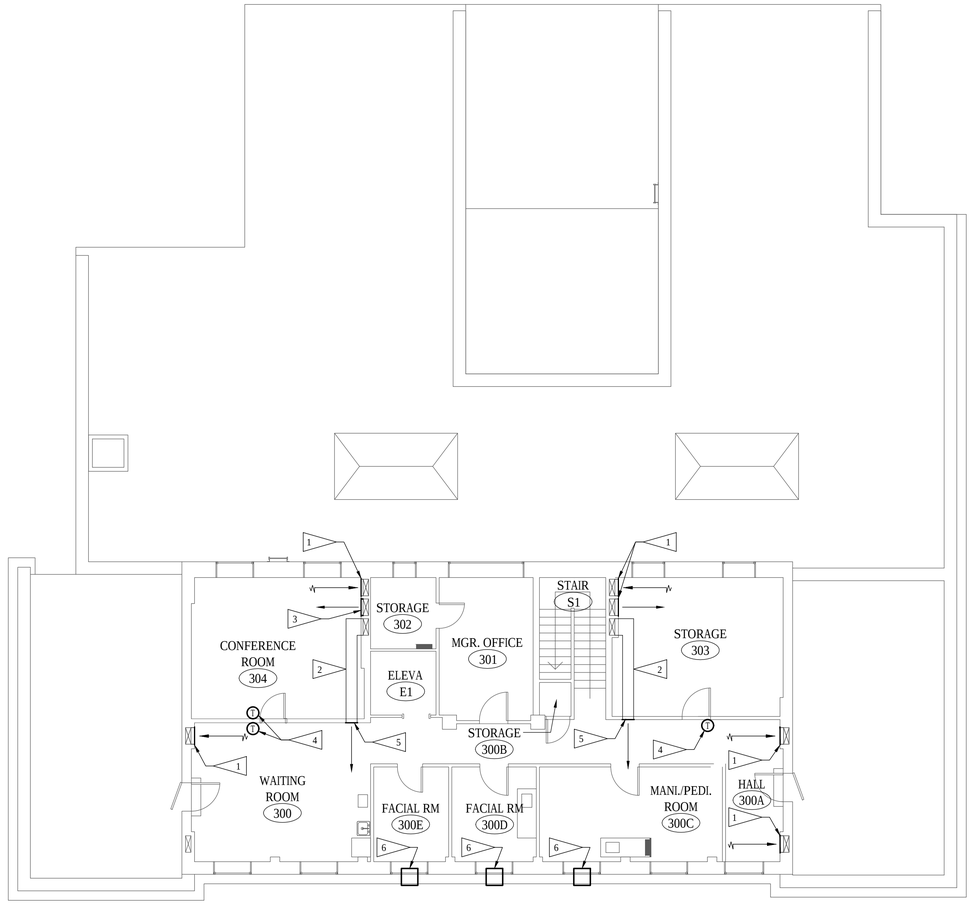
FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: MRG DRAWN BY: MRG TECH. REVIEW: BAH DATE: 2/15/2024	SUB SHEET NO. M1-3	TITLE OF SHEET SECOND FLOOR PLAN - MECHANICAL DEMOLITION BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 16 OF 60

February 16, 2024 7:57am M1-1.dwg mrgrigsby

FLAG NOTES

1. EXISTING GRILLE AT WALL TO REMAIN.
2. EXISTING VENTILATION AIR DUCTWORK IN HORIZONTAL SOFFIT TO REMAIN.
3. CONTRACTOR TO REMOVE EXISTING GRILLE AND PROVIDE NEW OPENING IN WALL TO VENTILATION SHAFT AT A LOWER ELEVATION ALLOWING NEW DUCTWORK TO BE INSTALLED AT EXISTING SHAFT WALL AT SAME ELEVATION AS GRILLE BEING REMOVED AND RELOCATED. SEE THIRD FLOOR HVAC FLOOR PLAN ON SHEET M2-4 FOR NEW WORK.
4. REMOVE EXISTING CONTROL THERMOSTAT SHOWN BOLD COMPLETE. REMOVE CONTROL AIR TUBING OR WIRING BACK INTO WALL AND ABANDON IN PLACE.
5. REMOVE EXISTING SIDEWALL VENTILATION AIR DISCHARGE GRILLES AT CORRIDOR SIDE OF WALL. DUCTWORK SERVING GRILLES WILL REMAIN AND BE REUSED.
6. REMOVE EXISTING WINDOW AIR CONDITIONING UNIT AND TURN OVER TO GOVERNMENTS REPRESENTATIVE. COORDINATE WITH GENERAL CONTRACTOR WINDOW GLASS THAT NEEDS TO BE PROVIDED ONCE WINDOW AIR CONDITIONING UNITS HAVE BEEN REMOVED.



THIRD FLOOR PLAN - MECHANICAL DEMOLITION

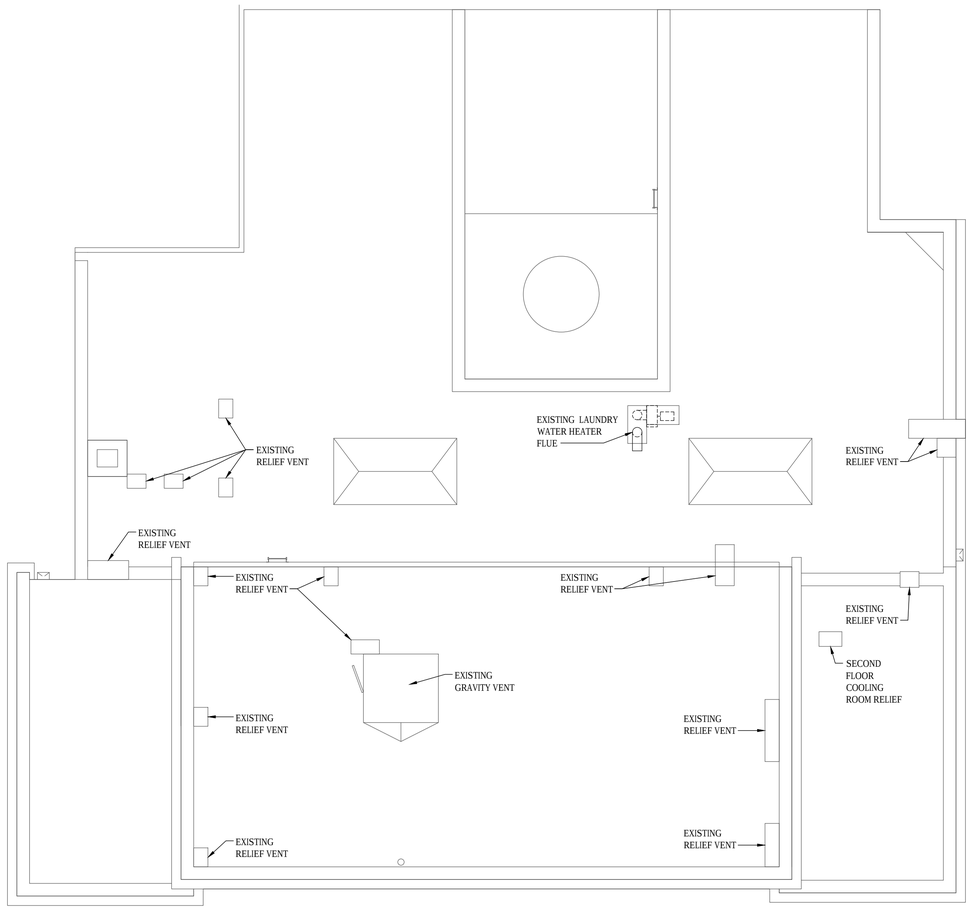
SCALE: 1/8" = 1'-0"

NOTE:
DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawing or at site. lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: MRG DRAWN BY: MRG TECH. REVIEW: BAH DATE: 2/15/2024	SUB SHEET NO. M1 - 4	TITLE OF SHEET THIRD FLOOR PLAN - MECHANICAL DEMOLITION BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 17 OF 60

February 16, 2024 7:37:pm M1-1.dwg mgregory



ROOF PLAN - MECHANICAL DEMOLITION

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

NOTE:
DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawing or at site. lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

FINAL CONSTRUCTION DOCUMENTS

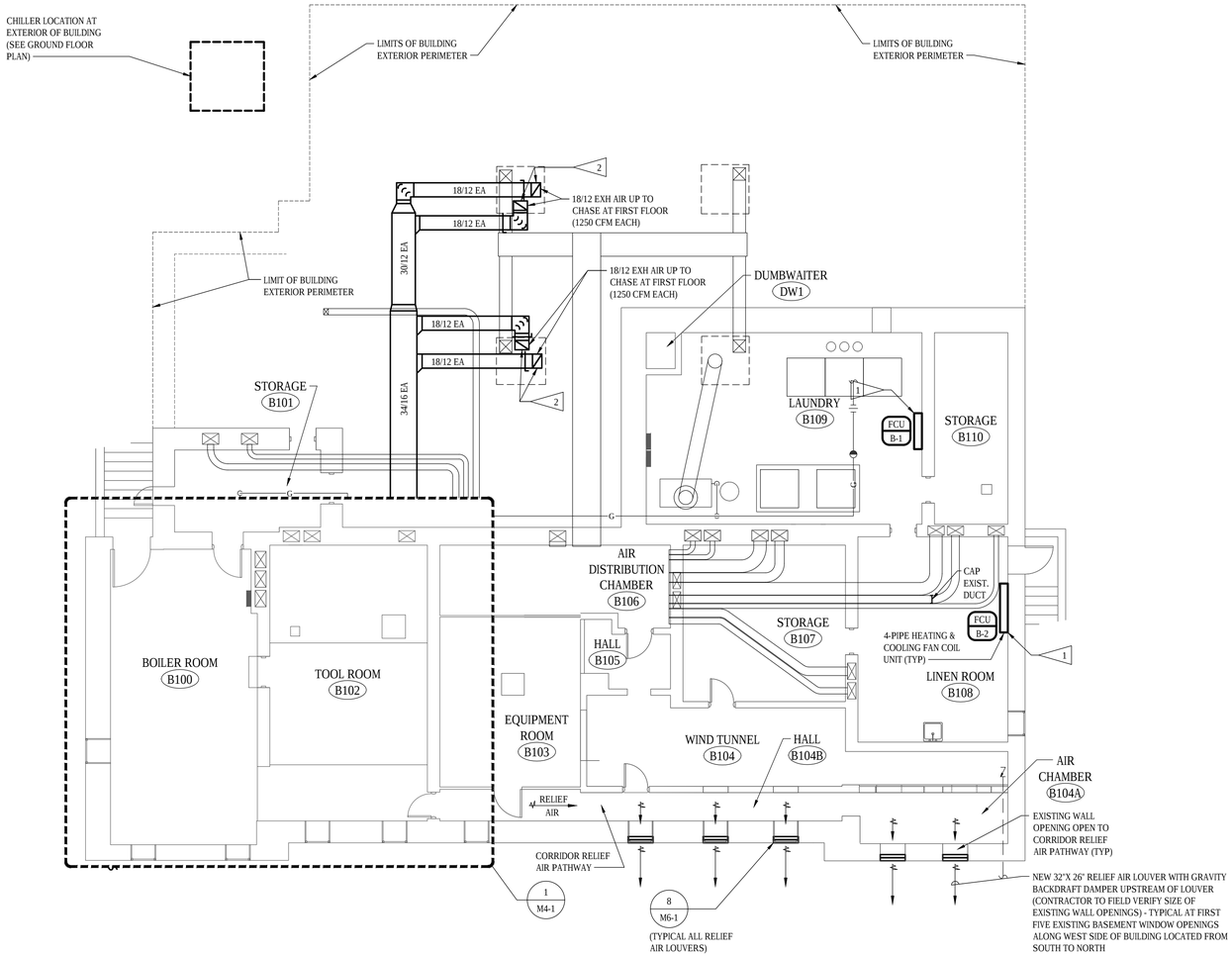
A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: MRG DRAWN BY: MRG TECH. REVIEW: BAH DATE: 2/15/2024	SUB SHEET NO. M1-5	TITLE OF SHEET ROOF PLAN - MECHANICAL DEMOLITION BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 18 OF 60

February 16, 2024 7:37am M1-1.dwg mgregory

FLAG NOTES

1. EACH FAN COIL UNIT SHALL BE PROVIDED WITH A CONTROLLER AND ON-BOARD TEMPERATURE SENSOR. SPACE TEMPERATURE SETPOINT SHALL BE SET THROUGH BUILDING AUTOMATION SYSTEM. SPACE TEMPERATURE OVERRIDE WILL BE POSSIBLE THROUGH MANUAL SPACE TEMPERATURE ADJUSTMENT AT EACH FAN COIL UNIT.

2. ROUTE NEW EXHAUST AIR DUCTS UP TO GROUND FLOOR ENCLOSURES AT GROUND FLOOR ABOVE. COORDINATE NEW EXHAUST DUCT ROUTING WITHIN EXISTING CRAWLSPACE WITH EXISTING VENTILATION DUCTWORK ROUTING TO SAME ENCLOSURES AT GROUND FLOOR.



BASEMENT FLOOR PLAN - HVAC

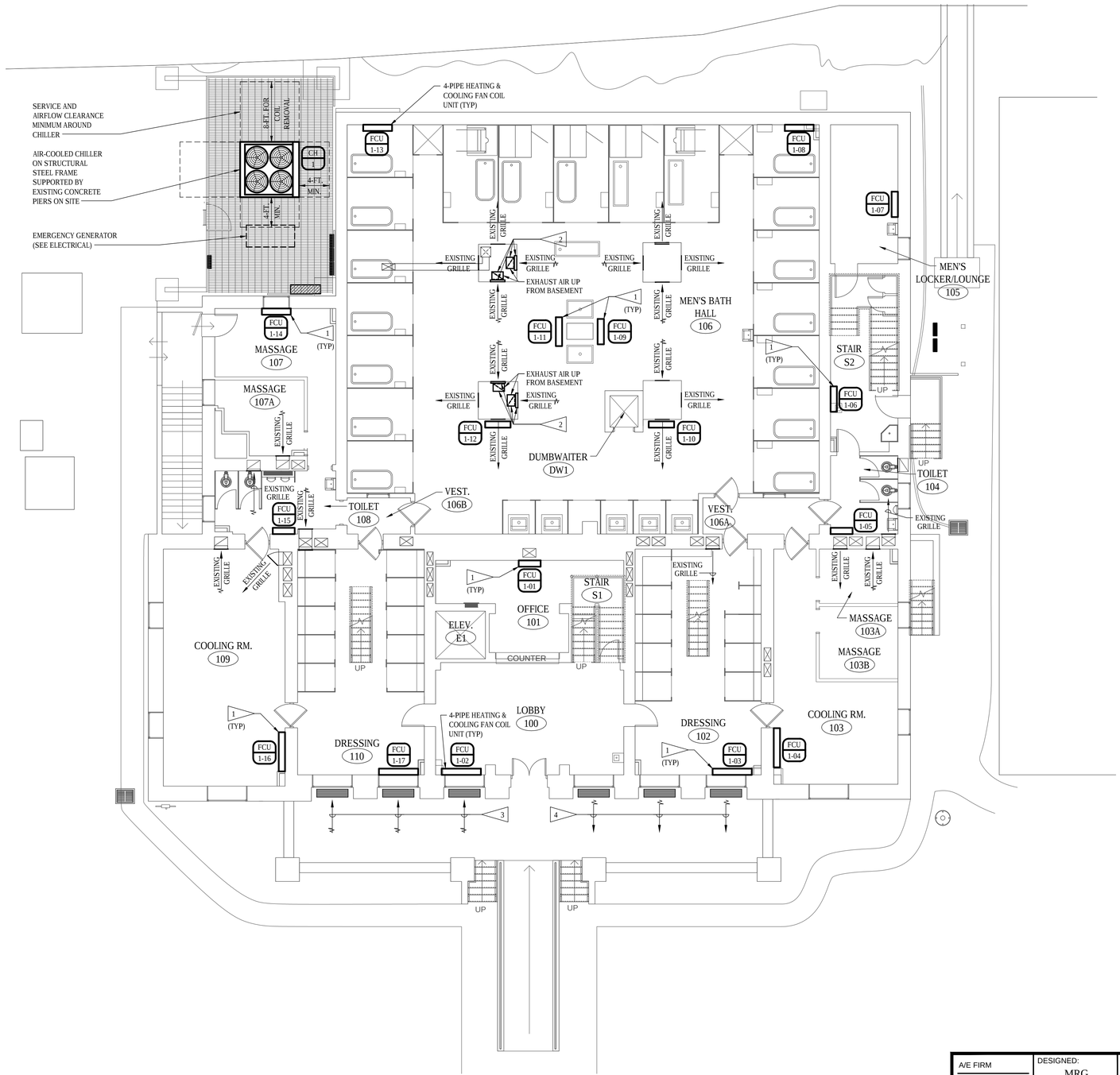
SCALE: 1/8" = 1'-0"

NOTE:
DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawing or at site. lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: MRG DRAWN BY: MRG TECH. REVIEW: BAH DATE: 2/15/2024	SUB SHEET NO. M2 - 1	TITLE OF SHEET BASEMENT FLOOR PLAN - HVAC BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 19 OF 60

February 16, 2024 7:57am M2-1.dwg mergeary



GROUND FLOOR PLAN - HVAC

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

FLAG NOTES

1. EACH FAN COIL UNIT SHALL BE PROVIDED WITH A CONTROLLER AND ON-BOARD TEMPERATURE SENSOR. SPACE TEMPERATURE SETPOINT SHALL BE SET THROUGH BUILDING AUTOMATION SYSTEM. SPACE TEMPERATURE OVERRIDE WILL BE POSSIBLE THROUGH MANUAL SPACE TEMPERATURE ADJUSTMENT AT EACH FAN COIL UNIT.
2. 18"X12" EXHAUST AIR DUCT UP FROM BASEMENT CRAWLSPACE BELOW. OFFSET AND CONNECT DUCT TO NEW SHEET METAL DUCT SIZED TO MATCH EXISTING GRILLE SIZE (FIELD VERIFY SIZE). PAINT INSIDE OF NEW DUCTWORK BEHIND GRILLE BLACK.
3. CONTRACTOR TO COMPLETELY CLEAN EXISTING EXTERIOR PORCH DECK GRILLE AS GRILLE WILL BE USED FOR NEW OUTSIDE AIR INTAKE.
4. CONTRACTOR TO COMPLETELY CLEAN EXISTING EXTERIOR PORCH DECK GRILLE AS GRILLE WILL BE USED FOR NEW RELIEF AIR OUTLET.

NOTE:
DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawing or at site. lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

FINAL CONSTRUCTION DOCUMENTS

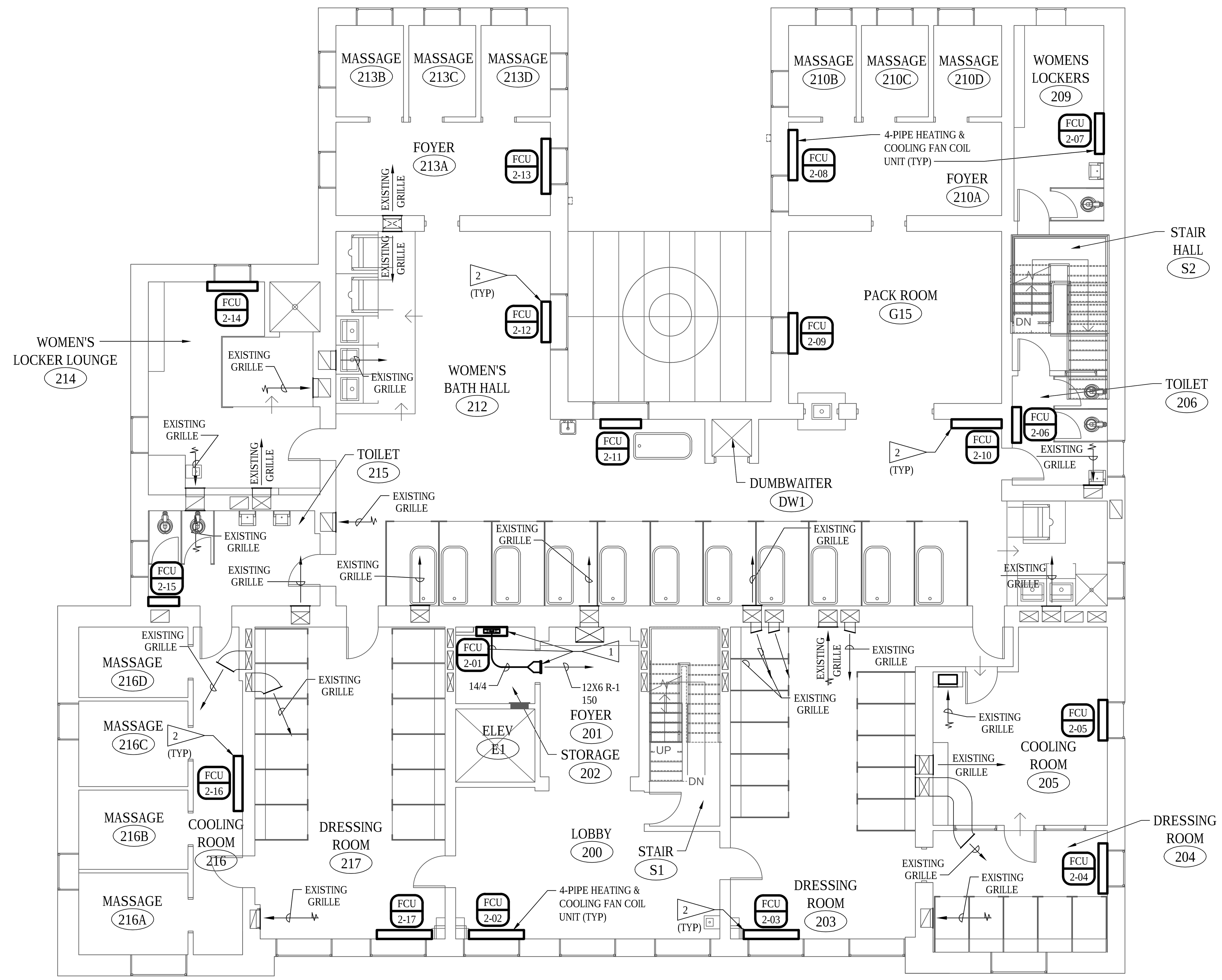
A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: MRG DRAWN BY: MRG TECH. REVIEW: BAH DATE: 2/15/2024	SUB SHEET NO. M2 - 2	TITLE OF SHEET GROUND FLOOR PLAN - HVAC BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 20 OF 60

February 16, 2024 7:37am MJ-LAeg mgrigsby

FLAG NOTES

1. CONNECT RIGID SUPPLY AIR DUCT TO FAN COIL UNIT DISCHARGE WITH FLEXIBLE DUCT CONNECTION. ROUTE DUCTWORK UP HIGH THROUGH ROOM TO SIDEWALL SUPPLY AIR REGISTER LOCATED AT OPPOSITE SIDE OF WALL TO SERVE EXISTING LOBBY SITTING AREA.

2. EACH FAN COIL UNIT SHALL BE PROVIDED WITH A CONTROLLER AND ON-BOARD TEMPERATURE SENSOR. SPACE TEMPERATURE SETPOINT SHALL BE SET THROUGH BUILDING AUTOMATION SYSTEM. SPACE TEMPERATURE OVERRIDE WILL BE POSSIBLE THROUGH MANUAL SPACE TEMPERATURE ADJUSTMENT AT EACH FAN COIL UNIT.



SECOND FLOOR PLAN - HVAC

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

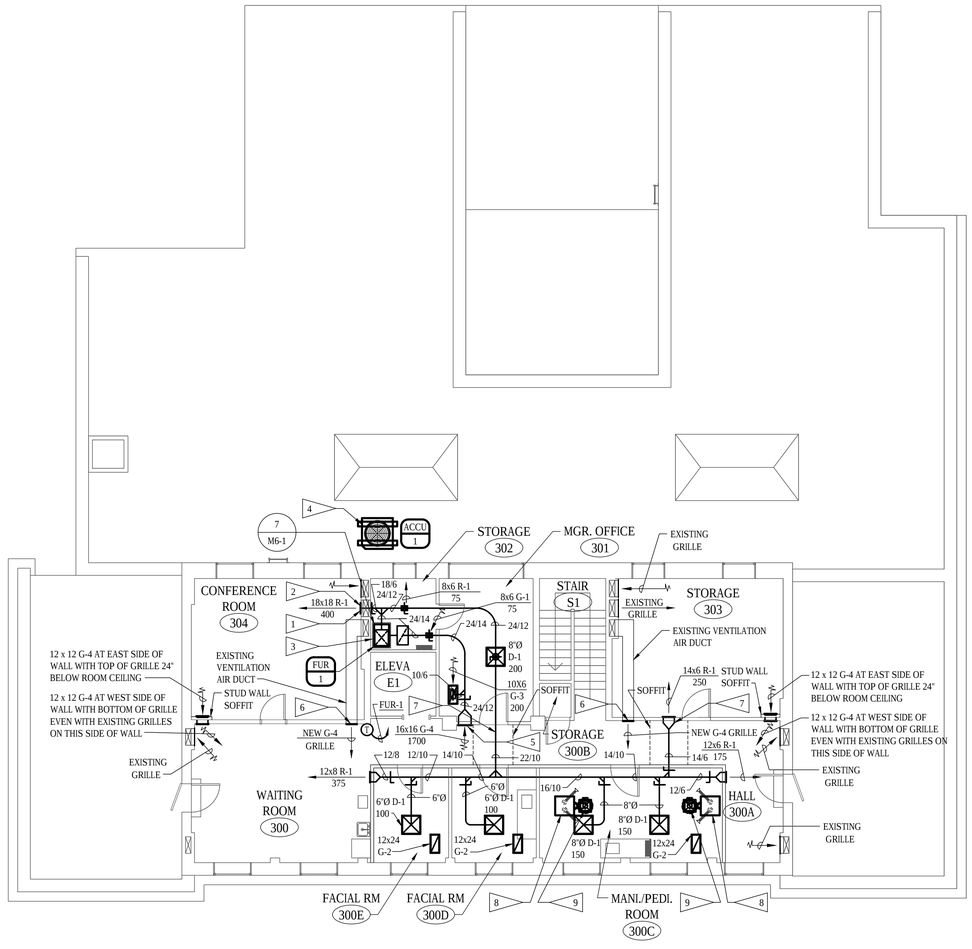
FINAL CONSTRUCTION DOCUMENTS

NOTE:
DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawing or at site. lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

A/E FIRM	DESIGNED: MRG	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO. XXX/XXXX
PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE.	DRAWN BY: MRG	M2 - 3	SECOND FLOOR PLAN - HVAC	PMIS NO. 177425
SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	TECH. REVIEW: BAH		BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	
	DATE: 2/15/2024			SHEET 21 OF 60

FLAG NOTES

1. CONTRACTOR TO REMOVE EXISTING GRILLE AND PROVIDE NEW OPENING IN WALL TO VENTILATION SHAFT AT AN ELEVATION AT 6'-6" ABOVE FLOOR. REINSTALL EXISTING GRILLE AT NEW OPENING IN WALL. NEW OPENING IN WALL TO MATCH EXISTING OPENING (FIELD VERIFY SIZE).
2. INSTALL NEW DUCTWORK THROUGH EXISTING SHAFT WALL. LOCATE NEW SIDEWALL SUPPLY GRILLE AT SAME BOTTOM ELEVATION AS GRILLE REMOVED AND RELOCATED. PATCH EXISTING OPENING IN WALL AS REQUIRED SO NO OPENING IS VISIBLE AFTER NEW GRILLE IS INSTALLED AT OPENING.
3. NEW VERTICALLY CONFIGURED, HI-EFFICIENCY GAS-FIRED, FURNACE WITH DX COOLING COIL - MOUNT FURNACE IN AUXILIARY DRAIN PAN ON FLOOR. PROVIDE FURNACE WITH BOTTOM RETURN AIR BASE ALLOWING BOTH SIDE AND BOTTOM RETURN AIR CONNECTION.
4. AIR-COOLED CONDENSING UNIT LOCATED AT ROOF ADJACENT TO THIRD LEVEL - SUPPORT ON PREFABRICATED ROOF EQUIPMENT SUPPORT.
5. SIDEWALL RETURN AIR GRILLE AT CORRIDOR WALL.
6. PROVIDE NEW SIDEWALL VENTILATION AIR DISCHARGE GRILLES AT CORRIDOR WALL. CONTRACTOR SHALL VERIFY SIZE OF EXISTING GRILLES REMOVED AS PART OF DEMOLITION WORK AND PROVIDE NEW GRILLES WITH SIZE TO MATCH GRILLES REMOVED.
7. ROUTE DUCT ACROSS CORRIDOR IN ARCHITECTURAL SOFFIT AS HIGH AS POSSIBLE AS DUCTWORK PASSES BELOW EXISTING BEAM AT DOORWAY OF MANAGERS OFFICE.
8. PROVIDE AIR PURIFICATION SYSTEM FOR PEDICURE AND MANICURE STATIONS. SYSTEMS SHALL BE "HEALTHY AIR" MODEL HA-CMSC-G2-3-WD OVERHEAD SUPPORTED SOURCE CAPTURE SYSTEMS. PROVIDE EACH SYSTEM WITH 2-QTY. 7-FOOT LONG x 3" DIAMETER SELF-SUPPORTING EXTRACTION HOSES WITH RECTANGULAR INLET HOODS WITH 50 CFM AIRFLOW PER HOOD. UNIT OPERATION SHALL BE THROUGH REMOTE CONTROL OPERATORS. EACH SYSTEM SHALL BE PROVIDED WITH PRE-FILTERS, HEPA FILTERS, CARBON ACTIVATED FILTERS AND 10 KV ELECTROSTATIC FIELD. SUSPEND/SUPPORT EACH UNIT FROM CONCRETE STRUCTURE ABOVE PER MANUFACTURER'S RECOMMENDATIONS (COORDINATE LOCATION WITH END USER). PROVIDE EACH AIR PURIFICATION SYSTEM OUTLET TRANSITION ALLOWING DUCTED CONDITION TO TO 6" DIAMETER EXHAUST DUCT.
9. PROVIDE EACH 6" DIAMETER EXHAUST DUCT WITH 120-VOLT MOTORIZED DAMPER TO OPEN WHEN AIR PURIFICATION SYSTEM IS ON AND CLOSE WHEN AIR PURIFICATION SYSTEM IS OFF. ROUTE EXHAUST AIR DUCTS UP TO EXHAUST HOOD HD-1 ON ROOF ABOVE. PROVIDE DUCT TRANSITION FROM ROUND DUCT TO CURB INLET AS REQUIRED.



THIRD FLOOR PLAN - HVAC

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

NOTE:
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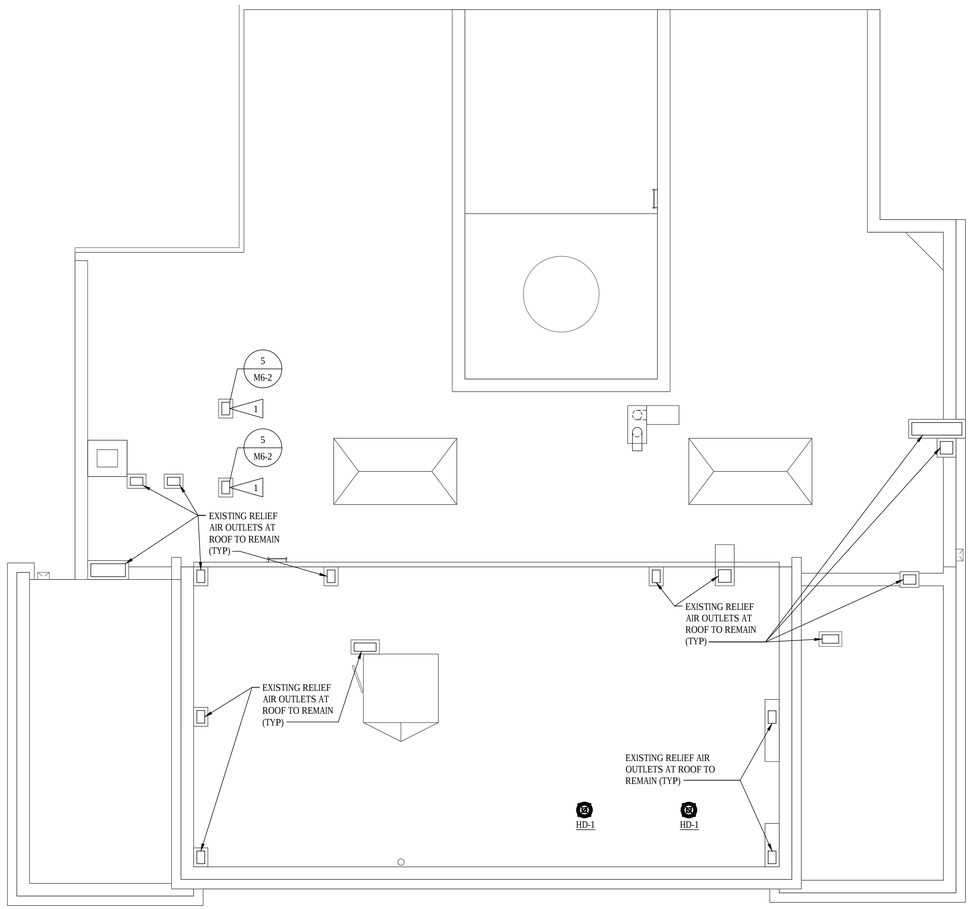
FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: MRG DRAWN BY: MRG TECH. REVIEW: BAH DATE: 2/15/2024	SUB SHEET NO. M2 - 4	TITLE OF SHEET THIRD FLOOR PLAN - HVAC BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 22 OF 60

February 16, 2024 7:37:pm M2-1-Aug mgregory

FLAG NOTES

1. CONTRACTOR TO REMOVE CAREFULLY REMOVE EXISTING RAIN CAP OR SHEET METAL ENCLOSURE AT ROOF RELIEF AIR OUTLET AND PROVIDE NEW 2" SANDWICH PANEL TO CLOSE-OFF EXISTING TOP OF OUTLET PROVIDING AIRTIGHT CONDITION. UPON COMPLETION OF INSTALLATION OF SANDWICH PANEL, CONTRACTOR SHALL RE-INSTALL RAIN CAP OR METAL ENCLOSURE. FILED VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING WORK.



ROOF PLAN - HVAC

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

NOTE:
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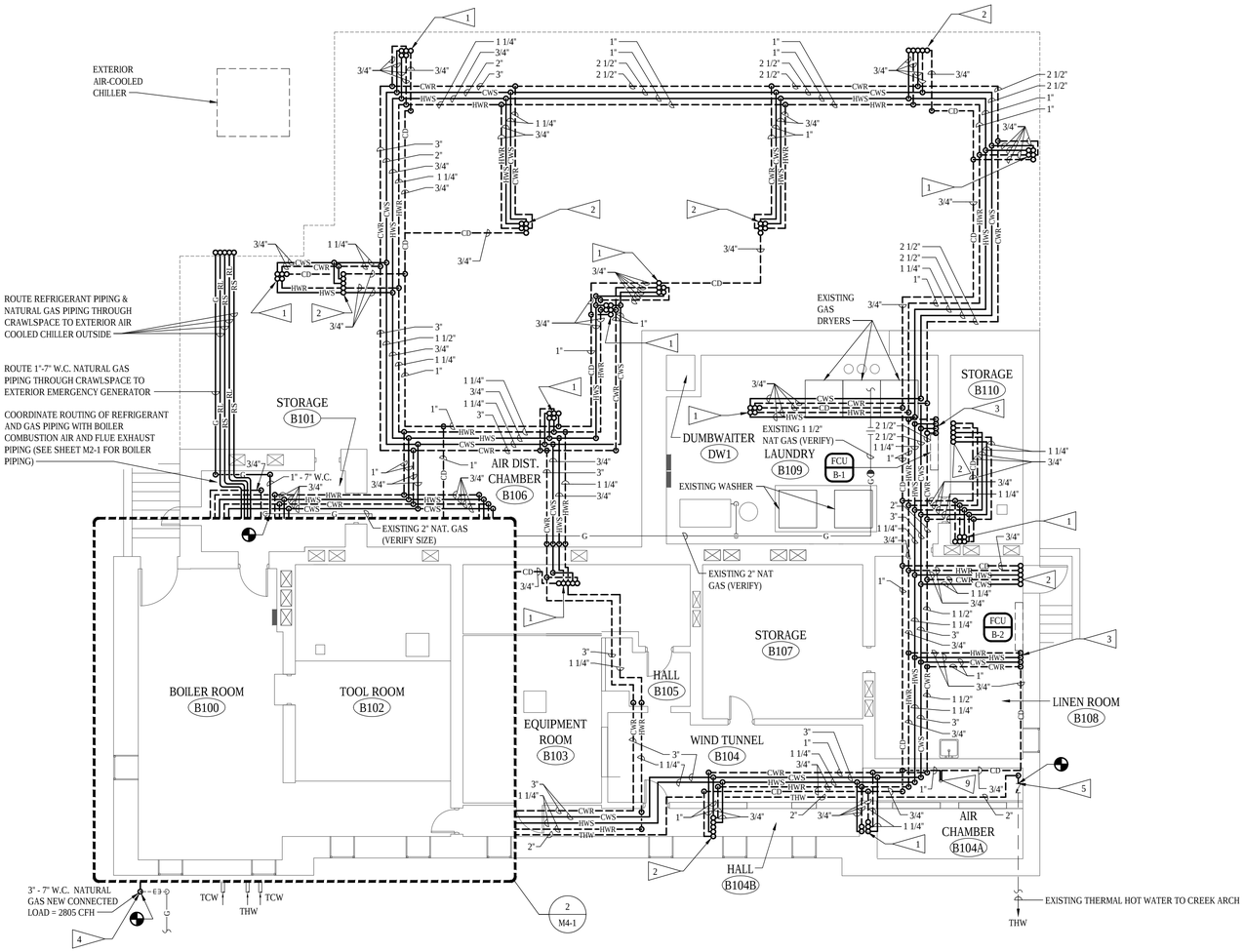
FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: MRG DRAWN BY: MRG TECH. REVIEW: BAH DATE: 2/15/2024	SUB SHEET NO. M2-5	TITLE OF SHEET ROOF PLAN - HVAC BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 23 OF 60

February 16, 2024 7:37:am M2-1.dwg mpopov

FLAG NOTES

1. 3/4" CHILLED WATER SUPPLY & RETURN, 3/4" HEATING HOT WATER SUPPLY & RETURN AND 3/4" CONDENSATE DRAIN PIPING UP TO FAN COIL UNIT AT FIRST FLOOR.
2. 1" CHILLED WATER SUPPLY & RETURN, 1" HEATING HOT WATER SUPPLY & RETURN AND 1" CONDENSATE DRAIN PIPING UP.
3. 3/4" CHILLED WATER SUPPLY & RETURN, 3/4" HEATING HOT WATER SUPPLY & RETURN DOWN TO FAN COIL UNIT AT BASEMENT FLOOR.
4. ROUTE NEW 3" - 7" W.C. NATURAL GAS UP TO EXISTING GAS UTILITY PIPING AT OUTLET OF EXISTING GAS METER AND PRESSURE REGULATOR AND CONNECT WITH NEW PIPE TRANSITION.
5. CONNECT NEW 2" THERMAL WATER RETURN TO EXISTING THERMAL WATER RETURN OUT CREEK ARCH. PROVIDE REDUCER FITTING AHEAD OF CONNECTION TO EXISTING 3" CHECK VALVE.
6. DISCHARGE NEW CONDENSATE DRAINS OVER EXISTING FLOOR DRAIN. CONTRACTOR SHALL CLEAN FLOOR DRAIN GRATE AND POWER AUGER DRAIN LINE FOR A MINIMUM OF 50-FEET TO ENSURE FREE FLOW.



BASEMENT FLOOR PLAN - HVAC PIPING

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

NOTE:
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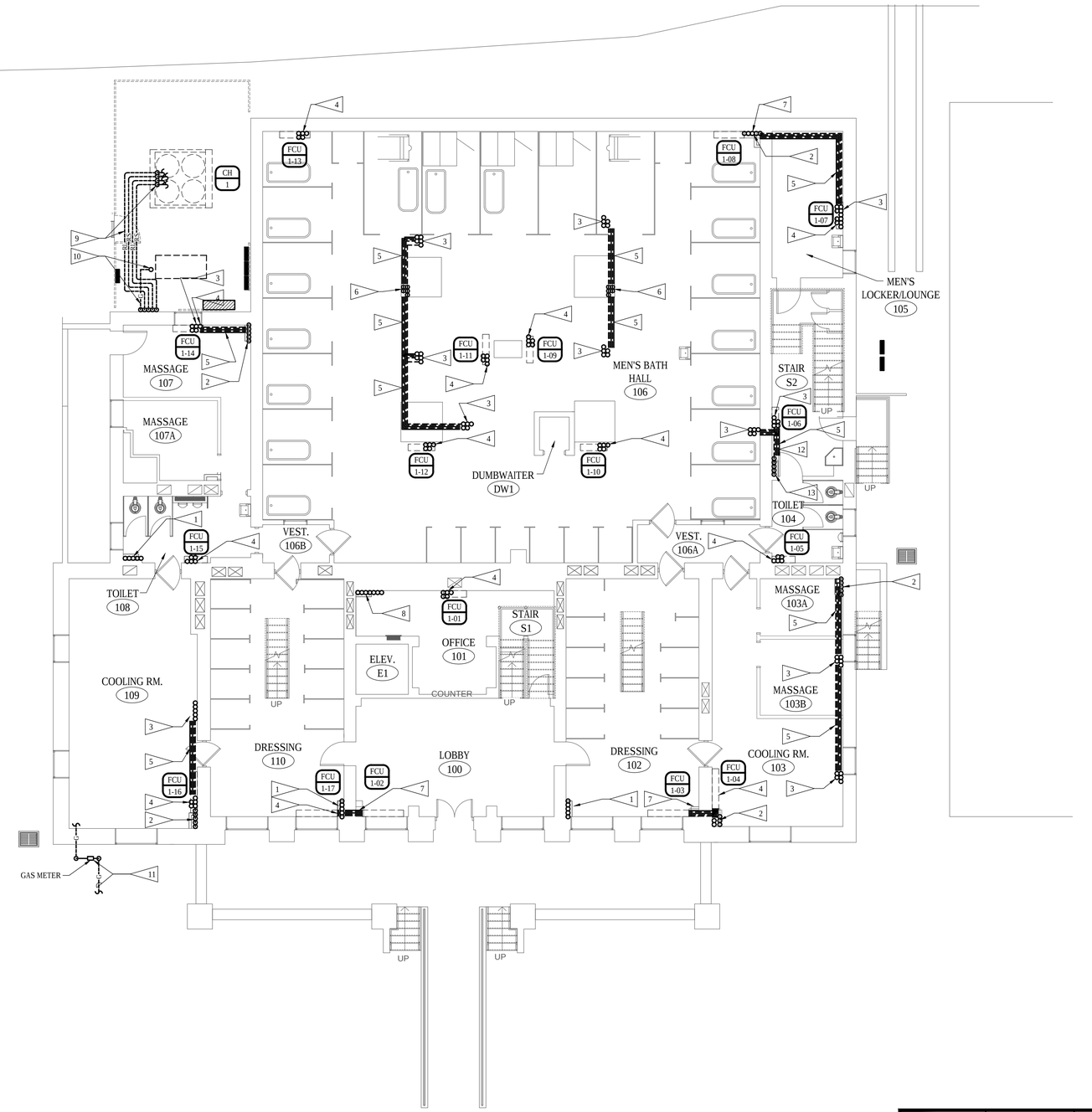
FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: MRG DRAWN BY: MRG TECH. REVIEW: BAH DATE: 2/15/2024	SUB SHEET NO. M3 - 1	TITLE OF SHEET BASEMENT FLOOR PLAN - HVAC PIPING BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 24 OF 60

February 16, 2024 7:37:am M3-1.dwg mgregory



GROUND FLOOR PLAN - HVAC PIPING

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

FLAG NOTES

1. 3/4" CHILLED WATER SUPPLY & RETURN, 3/4" HEATING HOT WATER SUPPLY & RETURN, AND 3/4" CONDENSATE DRAIN PIPING DOWN IN NEW CHASE AND UP TO FAN COIL UNIT AT SECOND FLOOR.
2. 3/4" CHILLED WATER SUPPLY & RETURN, 3/4" HEATING HOT WATER SUPPLY & RETURN, AND 3/4" CONDENSATE DRAIN PIPING DOWN IN NEW CHASE.
3. 3/4" CHILLED WATER SUPPLY & RETURN, 3/4" HEATING HOT WATER SUPPLY & RETURN, AND 3/4" CONDENSATE DRAIN PIPING UP TO FAN COIL UNIT AT SECOND FLOOR.
4. 3/4" CHILLED WATER SUPPLY & RETURN, 3/4" HEATING HOT WATER SUPPLY & RETURN, AND 3/4" CONDENSATE DRAIN PIPING FROM FAN COIL UNIT AT FIRST FLOOR DOWN TO BASEMENT FLOOR.
5. ROUTE 3/4" CHILLED WATER SUPPLY AND RETURN , 3/4" HEATING HOT WATER SUPPLY AND RETURN, AND 3/4" CONDENSATE DRAIN PIPING IN SOFFIT RACKED ALONG WALL (SEE ARCHITECTURAL DRAWINGS FOR SOFFIT).
6. 1" CHILLED WATER SUPPLY & RETURN, 1" HEATING HOT WATER SUPPLY & RETURN, AND 1" CONDENSATE DRAIN PIPING DOWN IN EXISTING CHASE TO BASEMENT FLOOR.
7. ROUTE 3/4" CHILLED WATER SUPPLY & RETURN, 3/4" HEATING HOT WATER SUPPLY & RETURN, AND 3/4" CONDENSATE PIPING TO FAN COIL ON FIRST FLOOR FROM RISERS AT ADJACENT CHASE.
8. 1" - 7" W.C. NATURAL GAS, 3/4" DRAIN PAN DRAIN, 3/4" CONDENSATE DRAIN, 3/4" CHILLED WATER SUPPLY & RETURN, AND 3/4" HEATING HOT WATER SUPPLY & RETURN PIPING UP AND DOWN IN CHASE.
9. SUPPORT REFRIGERANT PIPING BELOW CHILLER SUPPORT STRUCTURE. OFFSET PIPING UP TO ABOVE CHILLER SUPPORT STRUCTURE AND CONTINUE PIPING TO CHILLER CONNECTION LOCATIONS.
10. SUPPORT NATURAL GAS PIPING BELOW CHILLER SUPPORT STRUCTURE. OFFSET PIPING UP TO ABOVE CHILLER SUPPORT STRUCTURE AND CONTINUE PIPING TO EMERGENCY ENGINE GENERATOR.
11. NATURAL GAS METER AND UNDERGROUND GAS UTILITY TO BE PROVIDED BY LOCAL GAS COMPANY. GAS COMPANY TO DETERMINE IF EXISTING GAS UTILITY HAS THE CAPACITY TO SERVE BUILDING CONNECTED LOAD ESTIMATED AT 3055 CFH.
12. 3/4" CHILLED WATER SUPPLY & RETURN, 3/4" HEATING HOT WATER SUPPLY & RETURN, AND 3/4" CONDENSATE DRAIN PIPING FROM VERTICAL CHASE TO FAN COIL UNIT AT FIRST FLOOR. RACK PIPING ALONG WALL FROM WALL WITH UNISTRUT AND PIPE CLAMPS. HIDE PIPING AT WALL WITH METAL ENCLOSURE HUNG FROM WALL WITH METAL CLIPS. PROVIDE ENCLOSURE WITH A MINIMUM DEPTH OF 5" AND A HEIGHT MATCHING ADJACENT FAN COIL UNIT. CONTRACTOR SHALL PROVIDE KYNAR FINISH OVER ENCLOSURE WITH COLOR TO MATCH ADJACENT FAN COIL UNIT.
13. ROUTE 3/4" CHILLED WATER SUPPLY & RETURN, 3/4" HEATING HOT WATER SUPPLY & RETURN, AND 3/4" CONDENSATE DRAIN PIPING IN VERTICAL CHASE ROUTING FROM BELOW FLOOR TO SOFFIT BELOW SECOND FLOOR. PROVIDE BRANCH PIPING TO FAN COIL AT FIRST FLOOR FROM VERTICAL RISERS IN CHASE.

NOTE:
DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawing or at site. lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

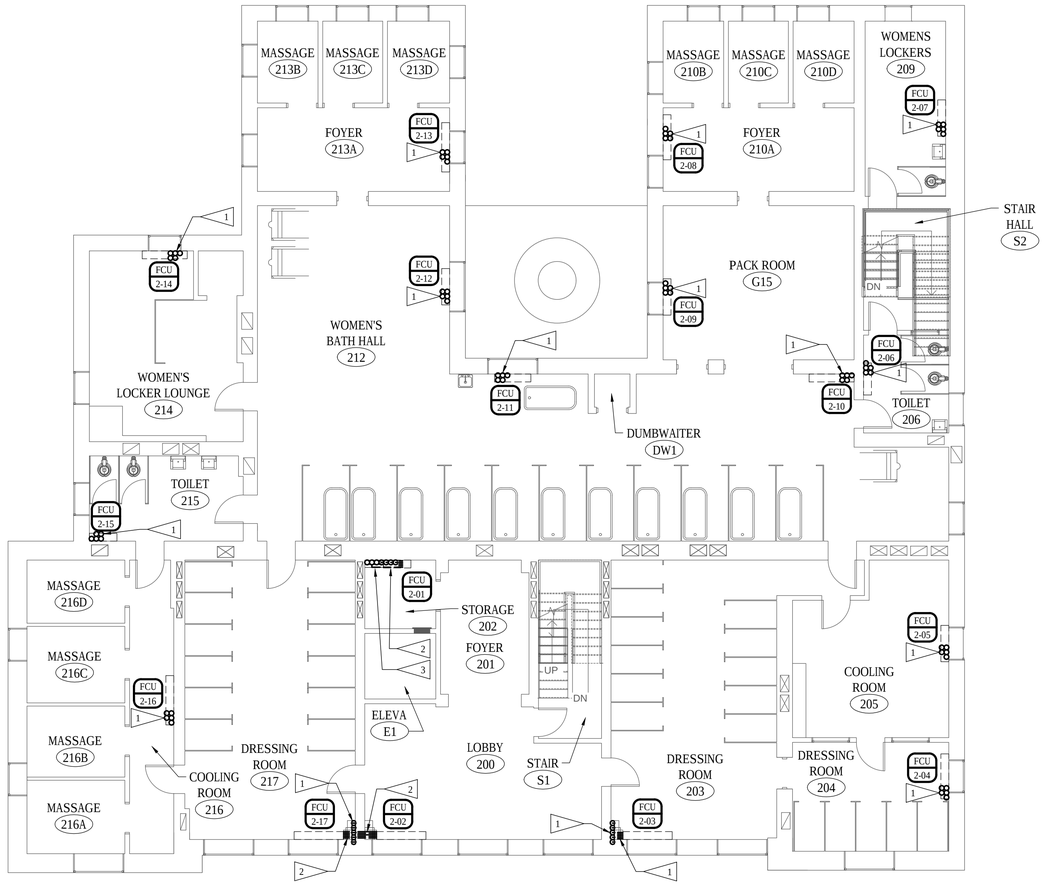
FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: MRG DRAWN BY: MRG TECH. REVIEW: BAH DATE: 2/15/2024	SUB SHEET NO. M3 - 2	TITLE OF SHEET GROUND FLOOR PLAN - HVAC PIPING BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 25 OF 60

February 16, 2024 7:37am M3-1.dwg mgregory

FLAG NOTES

1. 3/4" CHILLED WATER SUPPLY & RETURN, 3/4" HEATING HOT WATER SUPPLY & RETURN AND 3/4" CONDENSATE DRAIN PIPING DOWN TO FIRST FLOOR CHASE.
2. ROUTE 3/4" CHILLED WATER SUPPLY & RETURN, 3/4" HEATING HOT WATER SUPPLY & RETURN AND 3/4" CONDENSATE DRAIN PIPED HORIZONTALLY FROM VERTICAL RISERS AT CHASE TO FAN COIL UNIT ON THIS FLOOR.
3. 1" - 7" W.C. NATURAL GAS, 3/4" DRAIN PAN DRAIN, AND 3/4" CONDENSATE DRAIN UP AND DOWN IN CHASE. 3/4" CHILLED WATER SUPPLY & RETURN, AND 3/4" HEATING HOT WATER SUPPLY & RETURN PIPING DOWN IN CHASE.



SECOND FLOOR PLAN - HVAC PIPING

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

NOTE:
DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawing or at site. lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

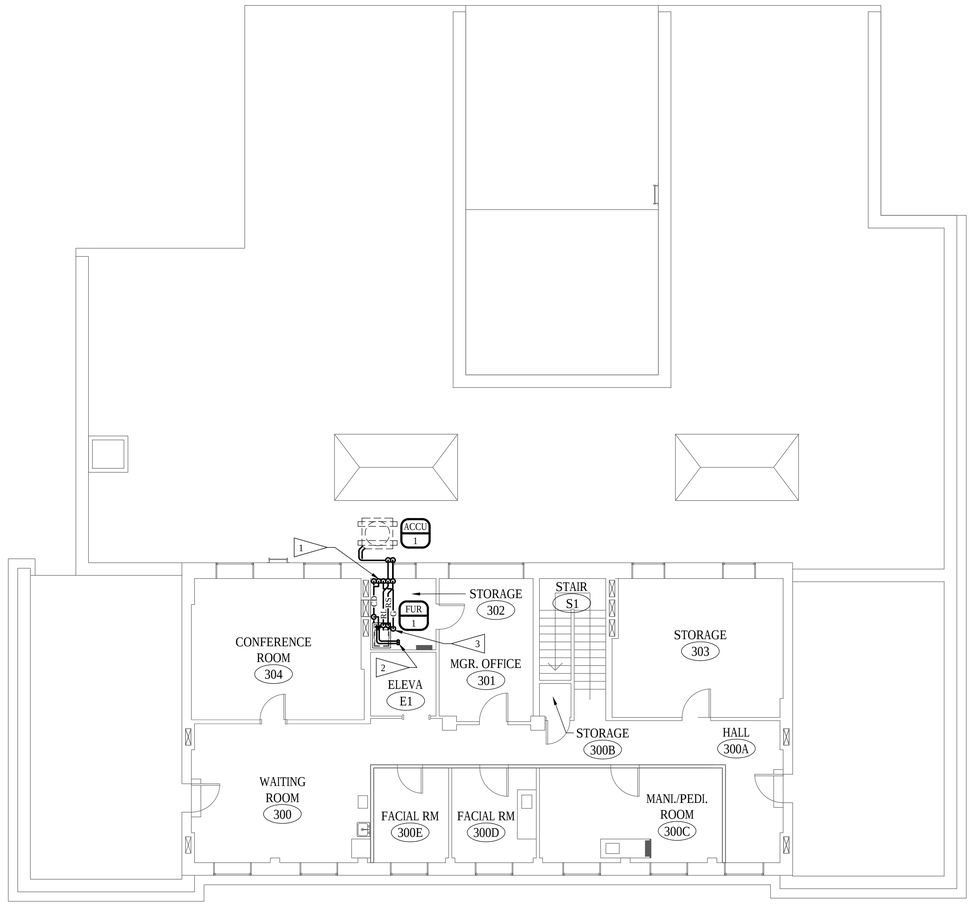
FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: MRG DRAWN BY: MRG TECH. REVIEW: BAH DATE: 2/15/2024	SUB SHEET NO. M3 - 3	TITLE OF SHEET SECOND FLOOR PLAN - HVAC PIPING BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 26 OF 60

February 16, 2024 7:37am M3-1.dwg mgregory

FLAG NOTES

1. 3/4" DRAIN PAN DRAIN, 3/4" CONDENSATE DRAIN, AND 1" - 7" W.C. NATURAL GAS PIPING DOWN FROM NEW FURNACE LOCATION.
2. 3" PVC COMBUSTION AIR AND 3" FLUE EXHAUST PIPING UP THROUGH ROOF. TERMINATE WITH FURNACE MANUFACTURER'S COMBINATION COMBUSTION AIR - EXHAUST FLUE FITTING.
3. PROVIDE GAS PIPE SIZE TRANSITION AT FURNACE TO MATCH FURNACE CONNECTION SIZE AS REQUIRED.



THIRD FLOOR PLAN - HVAC PIPING

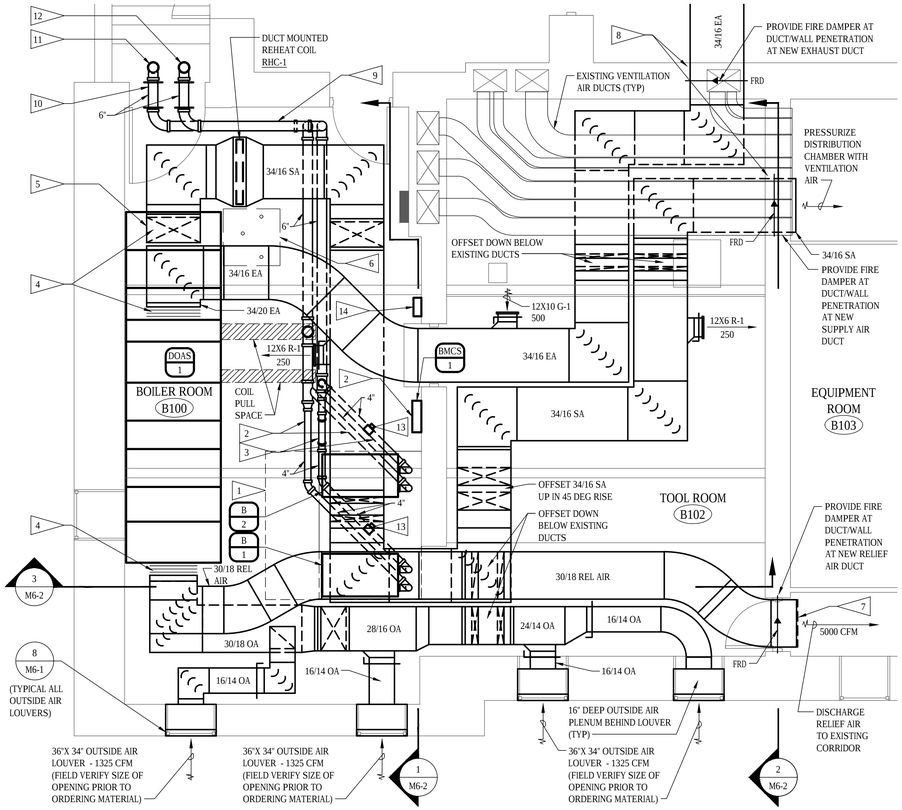
SCALE: 1/8" = 1'-0"

NOTE:
DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawing or at site. lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: MRG DRAWN BY: MRG TECH. REVIEW: BAH DATE: 2/15/2024	SUB SHEET NO. M3 - 4	TITLE OF SHEET THIRD FLOOR PLAN - HVAC PIPING BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 27 OF 60

February 16, 2024 7:37:pm M3-1-Aug mgregory

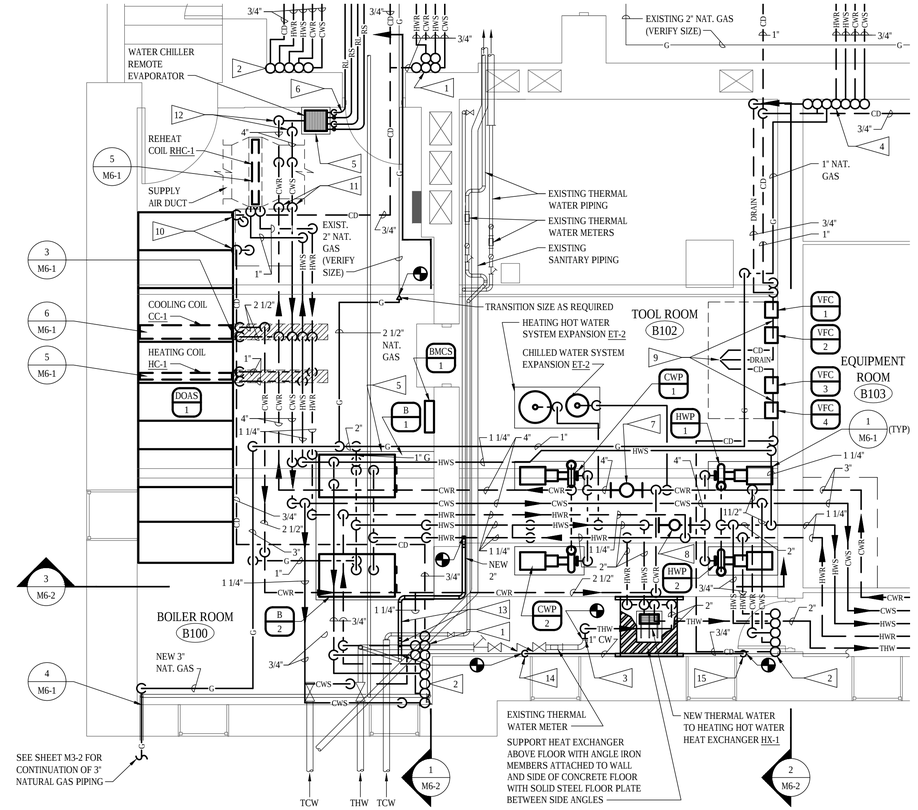


BASEMENT FLOOR PLAN - HVAC

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

DETAIL REFERENCES

FOR DUCT FITTINGS, SEE DETAIL 4/M6-2



BASEMENT FLOOR PLAN - HVAC PIPING

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

DETAIL REFERENCES

FOR ADDITIONAL PIPE INFORMATION AT BOILER, SEE DETAIL 2/M6-1

SEE GAS PIPING RISER DIAGRAM 9/M6-1

FLAG NOTES

1. MAINTENANCE CLEARANCE SPACE.
2. 6" BOILER COMBUSTION AIR PIPING / VENT WITH PIPE JOINTS PER MANUFACTURER'S RECOMMENDATIONS. ROUTE PER MANUFACTURER'S RECOMMENDATIONS.
3. 6" BOILER FLUE VENT PIPING / VENT WITH PIPE JOINTS PER MANUFACTURER'S RECOMMENDATIONS. ROUTE AND MAINTAIN PIPING SLOPE PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE REQUIRED PIPING JOINTS
4. FLEXIBLE CANVAS CONNECTION AT DUCT CONNECTIONS TO DOAS UNIT.
5. TRANSITION FROM 34/20 OUTLET SIZE TO 34/16 IMMEDIATELY AFTER TAKE-OFF FROM UNIT.
6. EXISTING SUMP PIT AND SUMP PUMPS.
7. INSTALL RELIEF AIR DUCT AS HIGH AS POSSIBLE BELOW EXISTING CONDUIT AND PROVIDE EXPANDED METAL SCREEN OVER DUCT OPENING AT CORRIDOR SIDE OF WALL.
8. PROVIDE NEW OPENING IN EXISTING MASONRY WALL TO ALLOW DUCTS TO PASS THROUGH WALL. PROVIDE WALL REINFORCING AT OPENING AS REQUIRED.
9. OFFSET BOILER COMBUSTION AIR INLET AND FLUE EXHAUST PIPING UP AS HIGH AS POSSIBLE.
10. ROUTE BOILER COMBUSTION AIR AND FLUE VENT PIPING THROUGH BUILDING WALL. SEAL AROUND PIPE WALL PENETRATIONS WITH METAL WALL PLATES AT INTERIOR AND EXTERIOR SIDES OF BUILDING WALL PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE GASKET MATERIAL AT EXTERIOR SIDE OF BUILDING WALL WHERE PIPE PENETRATES EXTERIOR WALL PLATE.
11. TERMINATE BOILER COMBUSTION AIR PIPING WITH TURNED DOWN ELBOW WITH BUG SCREEN OVER OPENING.
12. ROUTE BOILER FLUE EXHAUST PIPING UP SIDE OF BUILDING TO ELEVATION 2-FEET ABOVE ROOF ELEVATION. ANCHOR PIPING TO SIDE OF BUILDING WITH STRAPS AS RECOMMENDED BY VENT PIPING MANUFACTURER. TERMINATE PIPING AT TOP PER BOILER MANUFACTURER'S RECOMMENDATIONS.
13. BOILER FLUE EXHAUST PRESSURE CONTROL DAMPERS. DAMPERS TO BE US DRAFT MODEL CDS2 OR APPROVED EQUAL. DAMPERS TO BE FIELD INSTALLED IN FLUE VENT. CONTRACTOR TO WIRE BETWEEN CONTROLLER MOUNTED ON MECHANICAL ROOM WALL AND DAMPER ACTUATOR PER MANUFACTURER'S RECOMMENDATIONS.
14. BOILER FLUE VENT PIPE PRESSURE CONTROLLER, US DRAFT MODEL V250 OR APPROVED EQUAL. CONTRACTOR TO PROVIDE ALL NECESSARY WIRING BETWEEN CONTROLLER AND BOILER FLUE VENT DAMPER ACTUATOR, BOILER INTERLOCKS, PRESSURE SWITCH, AND FLUE PRESSURE TRANSDUCER PER CONTROLLER MANUFACTURER'S RECOMMENDATIONS.
15. CONTRACTOR TO PROVIDE BOILER FLUE VENT FAN AT TOP OF BOILER FLUE VENT AT OUTSIDE OF BUILDING. FAN TO BE US DRAFT MODEL CBX13 OR APPROVED EQUAL WITH 1/2 HP, 120-VOLT, 1-PHASE MOTOR CAPABLE OF EXHAUSTING 278 CFM AT 1.33 IN. W.C. CONTRACTOR TO PROVIDE POWER / CONTROL WIRING BETWEEN VENT FAN AND BOILERS TO ALLOW FAN TO OPERATE WHEN BOILERS OPERATE.

FLAG NOTES

1. CHILLED WATER SUPPLY & RETURN, HEATING HOT WATER SUPPLY & RETURN AND CONDENSATE DRAIN PIPING UP TO FAN COIL UNIT AT FIRST FLOOR.
2. CHILLED WATER SUPPLY & RETURN, HEATING HOT WATER SUPPLY & RETURN AND CONDENSATE DRAIN PIPING UP.
3. CONNECT NEW 2" THERMAL HOT WATER TO EXISTING 3". FIELD VERIFY SIZE OF EXISTING.
4. 3/4" NATURAL GAS, 3/4" DRAIN PAN DRAIN, 3/4" CONDENSATE DRAIN, 3/4" CHILLED WATER SUPPLY & RETURN, AND 3/4" HEATING HOT WATER SUPPLY & RETURN PIPING UP TO CHASE AT FIRST FLOOR.
5. 4" THICK CONCRETE HOUSEKEEPING PAD.
6. COORDINATE ROUTING OF CHILLER REFRIGERANT PIPING WITH BOILER COMBUSTION AIR INLET AND FLUE EXHAUST PIPING. SEE LARGE SCALE HVAC PLAN ON THIS SHEET FOR BOILER PIPING.
7. CHILLED WATER SYSTEM AIR / DIRT SEPARATOR.
8. HEATING HOT WATER SYSTEM AIR / DIRT SEPARATOR.
9. ROUTE CONDENSATE DRAINS AND DRAIN PAN DRAIN ALONG FLOOR BELOW VARIABLE FREQUENCY CONTROLLERS WHILE MAINTAINING A MINIMUM 1/8" PER FOOT SLOPE AND CONTINUE TO EXISTING FLOOR DRAIN. CONTRACTOR SHALL COMPLETELY CLEAN EXISTING FLOOR DRAIN STRAINER GRID AND SHALL SNAKE EXISTING DRAIN LINE TO ENSURE FREE FLOWING DRAIN.
10. ROUTE CONDENSATE DRAINS DOWN NEAR AIR HANDLING UNIT AND OFFSET ABOVE FLOOR TO OVER SUMP PIT.
11. OFFSET CHILLED WATER SUPPLY AND RETURN PIPING DOWN TO BELOW DUCTWORK.
12. OFFSET CHILLED WATER SUPPLY AND RETURN PIPING DOWN TO HEAT EXCHANGER.
13. NEW 2" THERMAL HOT WATER PIPING ROUTED TO ALLOW DUCTWORK TO PASS THROUGH EXISTING OPENING AT WEST END OF ROOM. OFFSET DOWN TO A LOWER ELEVATION TO ALLOW DUCTWORK TO ROUTE ABOVE (VERIFY REQUIRED ELEVATION IN FIELD).
14. CONNECT NEW 1" COLD WATER TO EXISTING AND OFFSET TO ELEVATION ABOVE WINDOW TO ALLOW DUCTWORK TO PASS BELOW TO NEW LOUVER AT WINDOW OPENING. FIELD VERIFY EXISTING PIPE SIZE.
15. OFFSET NEW COLD WATER DOWN TO EXISTING PIPING ELEVATION AND RE-CONNECT TO EXISTING. FIELD VERIFY EXISTING PIPE SIZE.

SCADA SYSTEM INTERFACE AND COORDINATION

THE EXISTING THERMAL WATER SERVING THE BUCKSTAFF BATH HOUSE BUILDING THERMAL / HEATING HOT WATER HEAT EXCHANGER HX-1 WILL BE ISOLATED WITH A MOTORIZED VALVE AND THE THERMAL WATER FLOW WILL BE METERED THROUGH AN EXISTING MAGNETIC FLOW METER. THE VALVE AND FLOW METER WILL BE CONNECTED TO THE NEW BUILDING DIRECT DIGITAL CONTROL (DDC) SYSTEM UTILIZING THE NPS HOSP SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) SYSTEM INSTALLED IN 2022.

THE NEW BUILDING DDC SYSTEM SHALL INTERFACE WITH THE HOSP SCADA THROUGH A PROTOCOL CONVERTER AND REMOTE I/O MODULES USING ALLEN BRADLEY ETHERNET / IP INTERFACE. THIS DESIGN APPROACH IS INTENDED TO PREVENT DIRECT HVAC TO SCADA CONNECTIONS TO MAINTAIN CYBER-SECURITY. THE COMMUNICATIONS FROM THE BUILDING DDC CONTROL SYSTEM WILL BE REQUIRED TO BE BACNET / IP AND WILL CONVERT TO ALLEN BRADLEY ETHERNET / IP. THE ADMINISTRATION BUILDING PLC WILL BE THE INTERCHANGE BETWEEN THE HARDWIRED AND DDC DATA SIGNALS. THE PLC WILL THEN SEND THIS DATA TO THE NPS SCADA HUMAN MACHINE INTERFACE AND HISTORIAN.

THIS DESIGN WILL MINIMIZE CYBER-SECURITY FACES BY PREVENTING A DIRECT DDC TO SCADA CONNECTION. THE MANAGED SWITCH WILL FURTHER RESTRICT ALLOWABLE IP ACCESS TO A MINIMUM.

REFER TO "I" SHEETS FOR ADDITIONAL INFORMATION.

NOTE:
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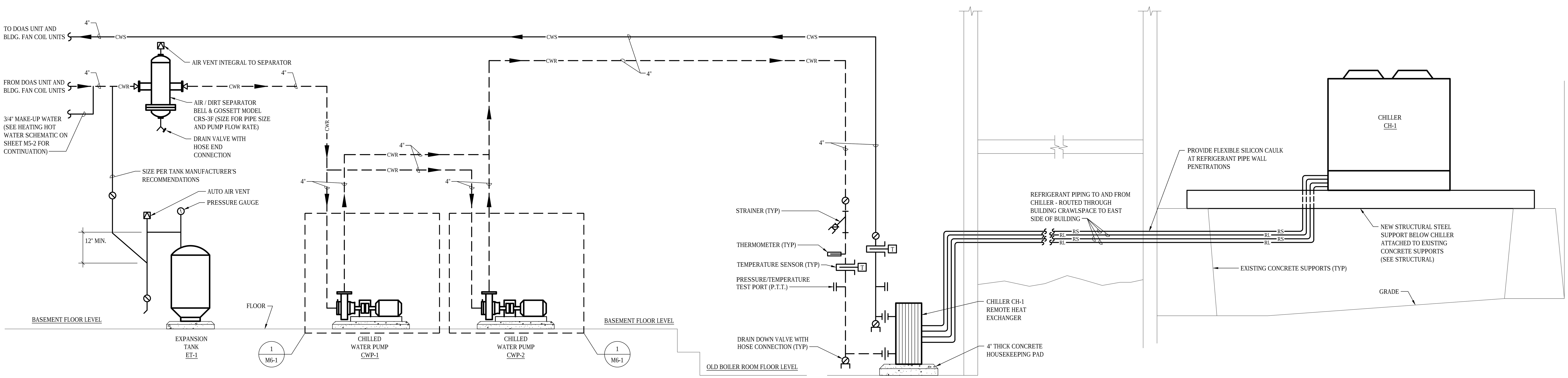
FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: MRG DRAWN BY: MRG TECH. REVIEW: BAH DATE: 2/15/2024	SUB SHEET NO. M4 - 1	TITLE OF SHEET ENLARGED MECHANICAL ROOM PLANS BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK

DRAWING NO. XXX/XXXX
PMIS NO. 177425
SHEET 28 OF 60

February 16, 2024 7:37am M4-1.dwg mgregory



CHILLED WATER PIPING SCHEMATIC (1 / M5-1)

NO SCALE

NOTE:
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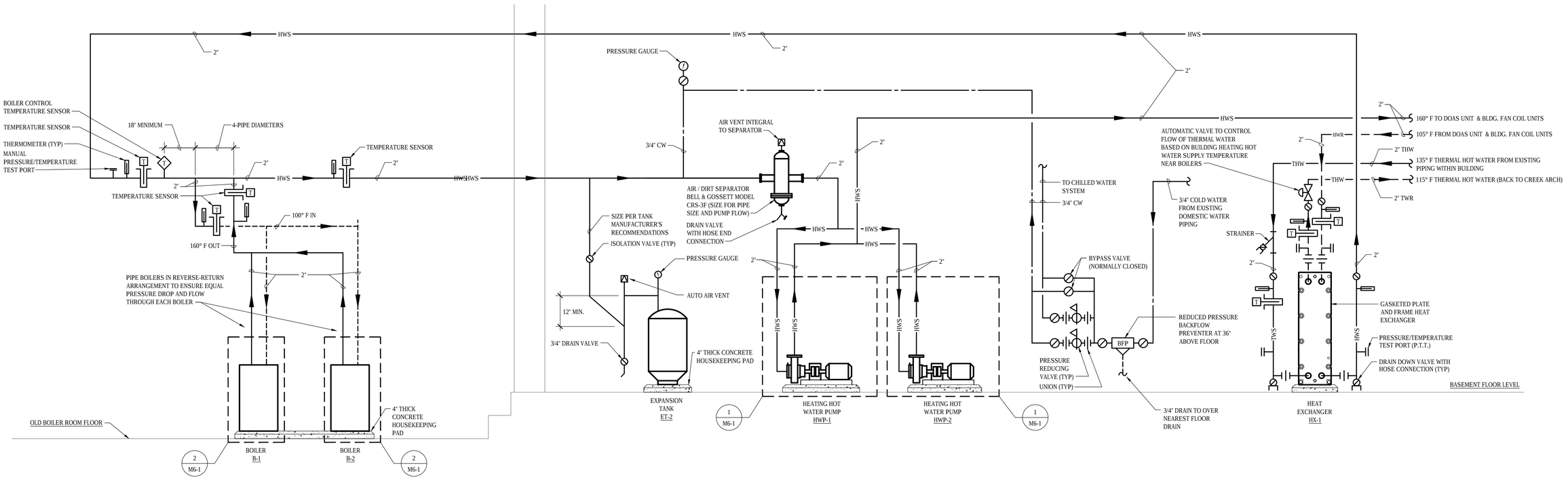
FINAL CONSTRUCTION DOCUMENTS

A/E FIRM	DESIGNED: MRG	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO. XXX/XXXX
PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE.	DRAWN BY: MRG	M5-1	CHILLED WATER PIPING SCHEMATIC	PMIS NO. 177425
SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	TECH. REVIEW: BAH		BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	SHEET 29 OF 60
	DATE: 2/15/2024			

February 16, 2024 7:37am M5-1.dwg mgregory



HEATING WATER PIPING SCHEMATIC

1 M5-2

NO SCALE

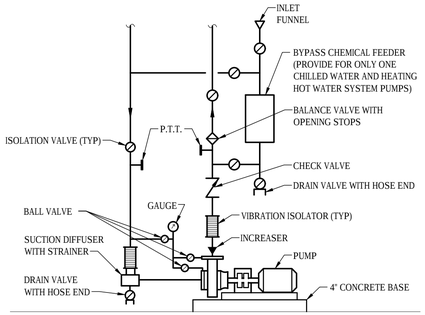
NOTE:

DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawing or at site. lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: MRG DRAWN BY: MRG TECH. REVIEW: BAH DATE: 2/15/2024	SUB SHEET NO. M5-2	TITLE OF SHEET HEATING WATER PIPING SCHEMATIC BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 30 OF 60

February 16, 2024 7:37am M5-2.dwg mgregory



NOTE:

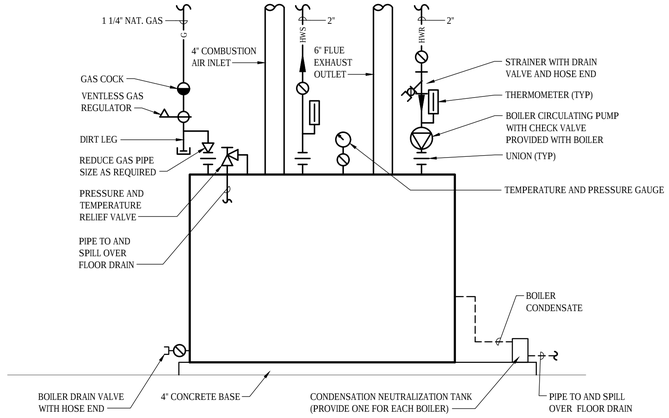
1. PROVIDE SUCTION DIFFUSER WITH STRAINER OR 5 DIAMETERS OF STRAIGHT PIPE AND STRAINER WITH DRAIN VALVE AND HOSE END.
2. END SUCTION SHOWN FOR CLARITY. TYPICAL FOR ALL BASE MOUNTED PUMPS.
3. COMBINATION VALVE MAY BE USED IN LIEU OF CHECK AND BALANCE VALVES.

END SUCTION PUMP PIPING

1 M6-1

NO SCALE

M-MD-EndSuctionPumpPiping 2022-03-10

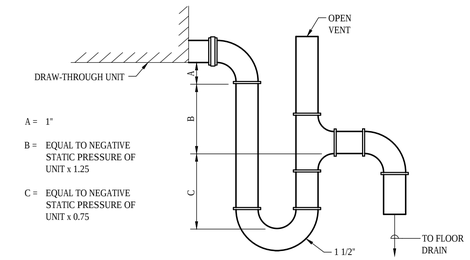


CONDENSING BOILER PIPING CONNECTION

2 M6-1

NO SCALE

M-MD-CondensingBoilerPipingConnection 2022-03-13



A = 1"

B = EQUAL TO NEGATIVE STATIC PRESSURE OF UNIT x 1.25

C = EQUAL TO NEGATIVE STATIC PRESSURE OF UNIT x 0.75

NOTE:

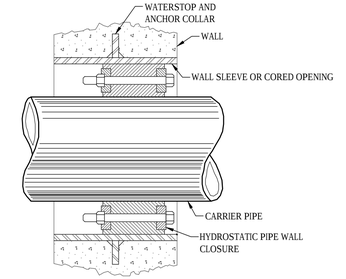
1. THIS DETAIL COVERS THE NEW DEDICATED OUTSIDE AIR (DOAS) UNIT. DETAIL WOULD BE TYPICAL FOR DRAIN PAN OR SECTION DRAINS.

AIR HANDLING UNIT CONDENSATE DRAIN

3 M6-1

NO SCALE

M-MD-CondensateDrain 2017-02-15

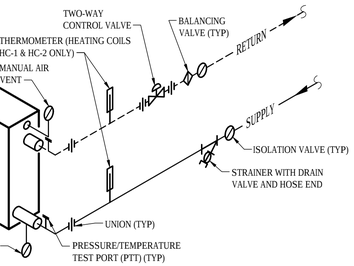


PIPE THROUGH FOUNDATION WALL

4 M6-1

NO SCALE

M-MD-PipeThroughFoundationWall 2017-02-15

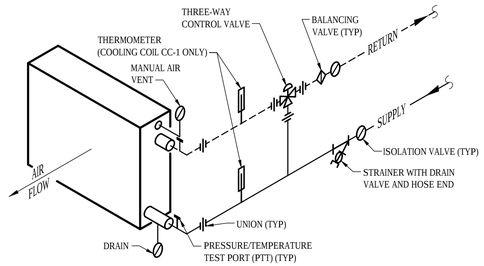


FAN COIL UNIT & HEATING COIL WITH 2-WAY CONTROL VALVE COIL PIPING

5 M6-1

NO SCALE

ALL HEATING COILS AND FAN COIL UNIT COOLING AND HEATING COILS NOT DESIGNATED TO BE PIPED WITH 3-WAY VALVES (SEE 3-WAY VALVE PIPING DETAIL THIS SHEET FOR FAN COIL UNIT COOLING COILS TO RECEIVE 3-WAY VALVES)

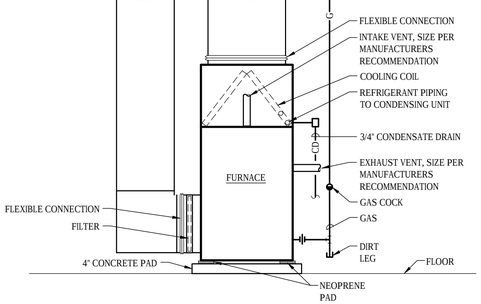


FAN COIL UNIT & COOLING COIL WITH 3-WAY CONTROL VALVE COIL PIPING

6 M6-1

NO SCALE

COIL CC-1 AND FAN COIL UNIT COOLING COILS FOR FCU 1-02, FCU 1-03, FCU 1-17, FCU 2-10, FCU 2-13, FCU 2-14



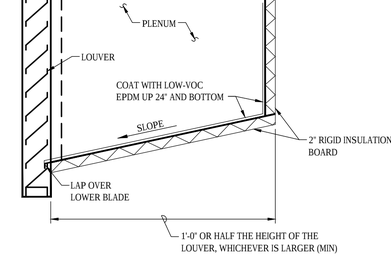
HIGH EFFICIENCY FURNACE

7

NO SCALE

M-MD-HighEfficiencyFurnace 2017-04-10

M6-1



NOTES:

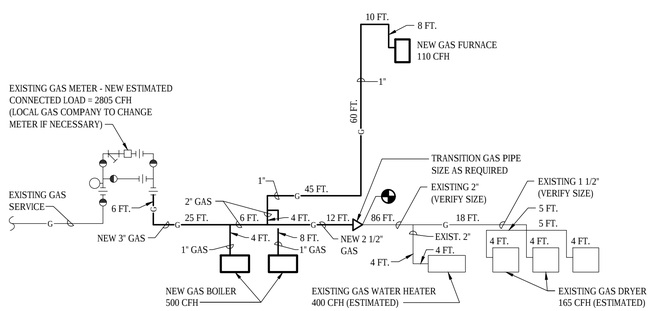
1. PROVIDE OUTSIDE AIR LOUVERS WITH INSULATED SHEET METAL PLENUMS.
2. PROVIDE RELIEF AIR LOUVERS WITHOUT INSULATED SHEET METAL PLENUMS BUT WITH COUNTER-BALANCED BACKDRAFT DAMPERS AT INLET.

LOUVER

8 M6-1

NO SCALE

M-MD-Louver 2014-06-13



NATURAL GAS RISER DIAGRAM

9 M6-1

NO SCALE

M-MD-HighEfficiencyFurnace 2017-04-10

NOTE:

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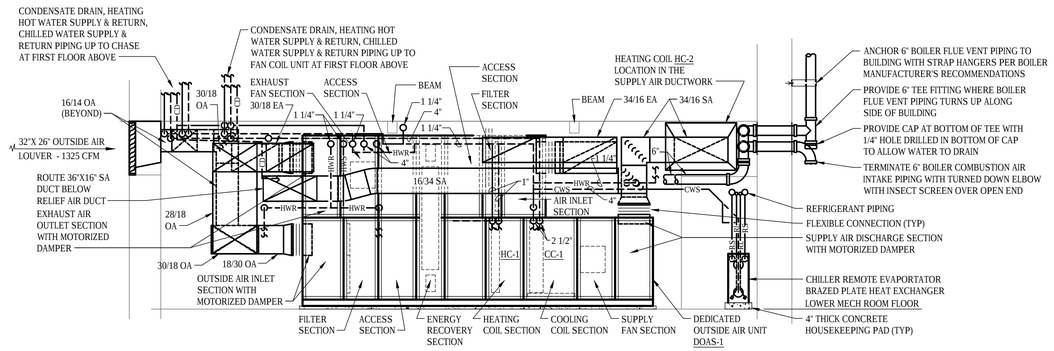
FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: MRG DRAWN BY: MRG TECH. REVIEW: BAH DATE: 2/15/2024	SUB SHEET NO. M6-1	TITLE OF SHEET MECHANICAL DETAILS BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 31 OF 60

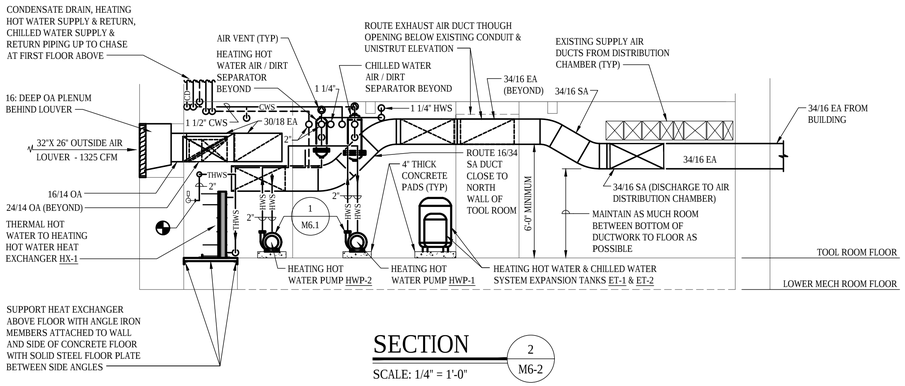
February 16, 2024 7:37am MG-1.dwg mgregory



SECTION

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

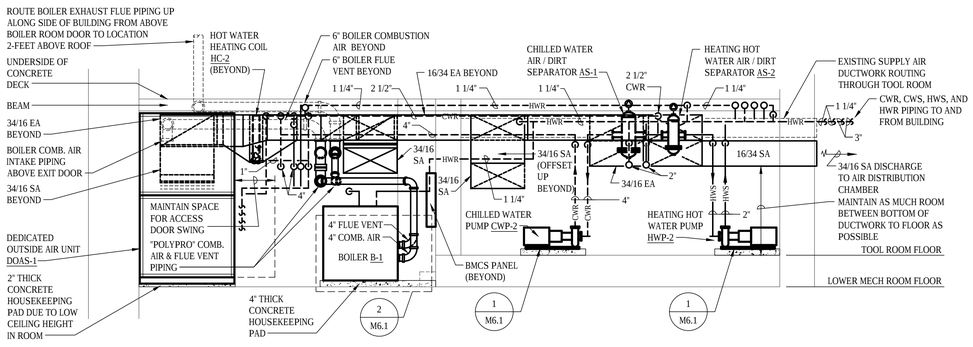
1 / M6-2



SECTION

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

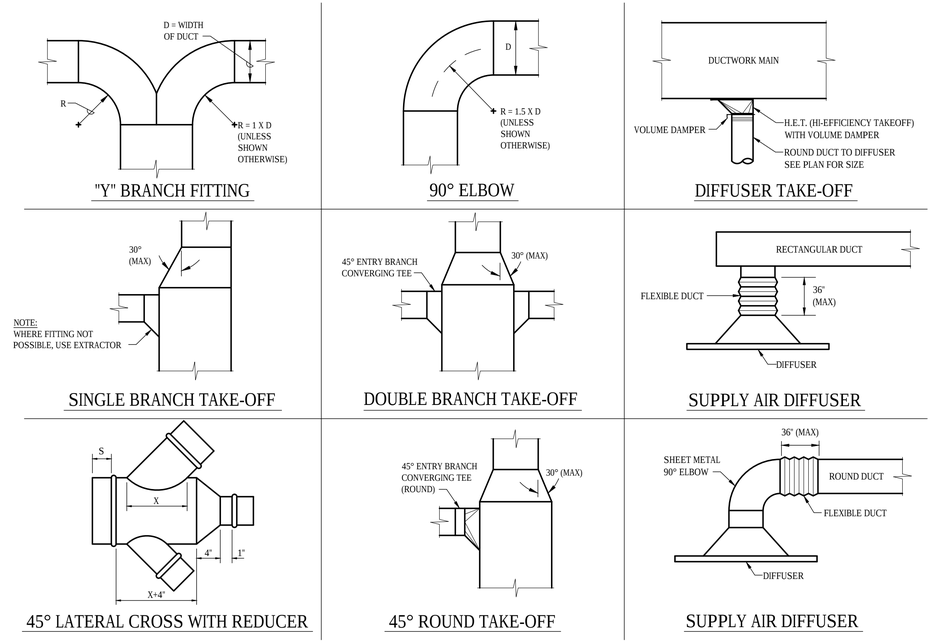
2 / M6-2



SECTION

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

3 / M6-2

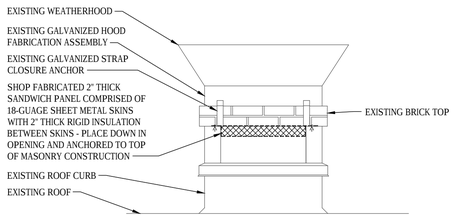


DUCT FITTING DETAILS

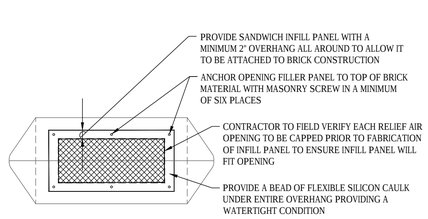
NO SCALE

M-MD-DuctFittingDetails2020-09-07

4 / M6-2



SIDE ELEVATION



TOP PLAN VIEW

TYPICAL RELIEF OPENING CAP DETAIL

NO SCALE

5 / M6-2

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: MRG DRAWN BY: MRG TECH. REVIEW: BAH DATE: 2/15/2024	SUB SHEET NO. M6-2	TITLE OF SHEET MECHANICAL SECTIONS AND DETAILS BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 32 OF 60

February 16, 2024 7:37:am M6-2.dwg mgregory

DEDICATED OUTSIDE AIR SYSTEM SCHEDULE

MARK	SERVES	LOCATION	ENERGY RECOVERY TYPE	ENERGY RECOVERY OUTSIDE/SUPPLY AIR						ENERGY RECOVERY EXHAUST AIR						MIN EFFECTIVNESS % (SUMMER/WINTER) [2]	SUPPLY FANS					EXHAUST FANS					DIMENSIONS (LxWxH) (IN)	OPERATING WEIGHT (LBS)	BASIS OF DESIGN OR EQUAL		REMARKS
				AIRFLOW (CFM)	EXT S.P. (IN. W.G.)	SUMMER		WINTER		UNIT AIRFLOW (CFM)	EXT S.P. (IN. W.G.)	SUMMER		WINTER			FAN QTY.	WHEEL DIA. (IN.)	TYPE	FAN AIRFLOW (CFM)	FAN SHAFT POWER BHP	FAN QTY.	WHEEL DIA. (IN.)	TYPE	FAN AIRFLOW (CFM)	FAN SHAFT POWER BHP			MANUFACTURER	MODEL	
						EAT (DB/WB) (°F)	LAT (DB/WB) (°F)	EAT (DB/WB) (°F)	LAT (DB/WB) (°F)			EAT (DB/WB) (°F)	LAT (DB/WB) (°F)	EAT (DB/WB) (°F)	LAT (DB/WB) (°F)														
DOAS-1	VENT. AIR	MECH. ROOM	ENERGY WHEEL	5300	2.00	99 / 76	84.2 / 68.2	21 / 18	53.5 / 47.3	5000	2.00	75 / 62	91 / 71.4	75 / 62	37.6 / 36	63.69 / 67.11	2	13.98	PLENUM	2750	2.98	2	13.98	PLENUM	2500	2.25	222 X 68 X 104	5400	DAIKIN	CAH015GDCM	(1) (2) (3) (4) (5)

REMARKS:

1. SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE ON SHEET E6-1 FOR ELECTRICAL DATA.
2. EFFECTIVENESS RATINGS BASED ON ASHRAE 84-91 AND ARI 1060 STANDARDS.
3. PROVIDE UNIT WITH NON-FUSED DISCONNECT SWITCH, SINGLE POINT POWER CONNECTION, 2" THICK MERV 8 EXHAUST AIR AND 2" THICK MERV 13 OUTSIDE AIR FILTERS, CHILLED WATER COOLING COIL (SEE COOLING COIL SCHEDULE). HOT WATER HEATING COIL (SEE HEATING COIL SCHEDULE), EXHAUST FAN SECTION HOUSING A 2-FAN EXHAUST FAN ARRAY WITH EACH EXHAUST FAN AT 2.25 BHP, SUPPLY FAN SECTION HOUSING A 2-FAN SUPPLY FAN ARRAY WITH EACH SUPPLY FAN AT 2.98 BHP, AND 48" DIAMETER SYNTHETIC FIBER 3-ANGSTROM MEDIA NON-SEGMENTED ENERGY WHEEL SPEED CONTROLLED BY A VARIABLE FREQUENCY CONTROLLER. UNIT SHALL BE CAPABLE OF BEING COMPLETELY BROKEN DOWN IN THE FIELD ALLOWING SECTIONS TO BE INTRODUCED INTO THE BUILDING THROUGH A 4-FOOT WIDE DOOR AND THEN REASSEMBLED ONCE INSIDE THE BUILDING.
4. EXHAUST AIR FLOW DOES NOT INCLUDE PURGE VOLUME.
5. CONTROL OF DOAS UNIT SHALL BE THROUGH BUILDING MANAGEMENT CONTROL SYSTEM (BMCS).

CHILLED WATER COOLING COIL SCHEDULE

MARK	SERVES	LOCATION	AIRFLOW (CFM)	MIN ROWS	MAX FINS PER IN	MAXIMUM FACE VELOCITY (FPM)	ENTERING AIR CONDITIONS		LEAVING AIR CONDITIONS		SENSIBLE CAPACITY (MBH)	TOTAL CAPACITY (MBH)	MAXIMUM APD (IN. W.C.)	FLUID DATA					DIMENSIONS (LxWxH) (IN)	BASIS OF DESIGN OR EQUAL		REMARKS
							DB (°F)	WB (°F)	DB (°F)	WB (°F)				FLUID TYPE	EWT (°F)	LWT (°F)	GPM	MAX WPD (FT)		MANUFACTURER	MODEL	
CC-1	BUILDING VENTILATION AIR	DOAS-1	5300	5	12	387	84.2	68.2	54.4	53.8	172.45	236.78	0.5	WATER	44	56.1	39.1	5.9	47 x 8 x 42	DAIKIN	5WH1205B	(1)

REMARKS:

1. COOLING COIL PROVIDED WITH DOAS UNIT.

HOT WATER HEATING COIL SCHEDULE

MARK	SERVES	LOCATION	AIRFLOW (CFM)	MIN ROWS	MAX FINS/IN	MAX FACE VELOCITY (FPM)	ENTERING AIR CONDITIONS	LEAVING AIR CONDITIONS	TOTAL CAPACITY (MBH)	MAX APD (IN. W.C.)	FLUID DATA					DIMENSIONS (LxWxH) (IN)	BASIS OF DESIGN OR EQUAL		REMARKS
							DB (°F)	DB (°F)			FLUID TYPE	EWT (°F)	LWT (°F)	GPM	MAX WPD (FT)		MANUFACTURER	MODEL	
HC-1	BUILDING VENTILATION AIR	DOAS-1	5300	1	12	600	54	72.4	113.74	0.40	WATER	160	104	4.0	0.26	30 x 4 x 44	DAIKIN	5WQ1201C	(1)
RHC-1	BUILDING VENTILATION AIR REHEAT	DUCT MOUNTED	5300	3	8	883	55	85.0	174.09	0.64	WATER	160	105	6.3	1.20	42.12 x 6 x 29	DAIKIN	5WQ0803B	(2) (3)

REMARKS:

1. HEATING COIL PROVIDED WITH DOAS UNIT.
2. HEATING COIL PROVIDED SHIPPED LOOSE AND INSTALLED BY MECHANICAL CONTRACTOR IN DUCTWORK.
3. DIMENSIONS OF REHEAT COIL RHC-1 INCLUDES HEADERS AND RETRUN BENDS. COIL FACE SIZE: 27" HIGH x 32" LONG.

AIR COOLED CHILLER SCHEDULE

MARK	TYPE	SERVES	LOCATION	CAPACITY (TONS)	COMPRESSOR TYPE	NO. COMPRESSORS	STEPS UNLOADING	REFRIGERANT	AMBIENT TEMP (°F)	MIN EER (AHRI)	SOUND POWER (DBA)	CHILLED WATER DATA						DIMENSIONS (LxWxH) (IN)	WEIGHT (LBS)	BASIS OF DESIGN OR EQUAL		REMARKS
												EWT (°F)	LWT (°F)	WPD (FT)	FLOW (GPM)	MIN. FLOW (GPM)	FOULING FACTOR			MANUFACTURER	MODEL	
CH-1	AIR COOLED	BUILDING CHILLED WATER	GRADE	60.0	SCROLL	4	8	R-32	105	9.0	91	56.0	44.0	10.5	125.0	65.9	0.0001	85.3 X 87.6 X 100.1	4040	DAIKIN	AGZ004F	(1) (2)

REMARKS:

1. SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE ON SHEET E6.1 FOR ELECTRICAL DATA.
2. PROVIDE UNIT WITH REMOTE BRAZED PLATE EVAPORATOR, SINGLE POINT FACTORY DISCONNECT SWITCH WITH CIRCUIT PROTECTION, UNIT GROUND FAULT PROTECTION, SERVICE OUTLET,

PLATE AND FRAME HEAT EXCHANGER SCHEDULE

MARK	SERVES	LOCATION	WARM SIDE DATA					COOL SIDE DATA					TOTAL HEAT EXCHANGED (MBH)	LMTD (Deg F)	FOULING FACTOR	DIMENSIONS (LxWxH) (IN)	OPERATING WEIGHT (LBS)	BASIS OF DESIGN OR EQUAL		REMARKS
			FLUID	GPM	EWT (°F)	LWT (°F)	MAX WPD (FT)	FLUID	GPM	EWT (°F)	LWT (°F)	MAX WPD (FT)						MANUFACTURER	MODEL	
HX-1	BUILDING HEATING HOT WATER	BASEMENT MECHANICAL ROOM	WATER	25	135	110	15.0	WATER	25	105	129	15.0	309.24	5.02	0.00010	15.75 X 12.12 X 42	500	BELL & GOSSETT	AP20	(1)

REMARKS:

1. PROVIDE HEAT EXCHANGER WITH TYPE 316 STAINLESS STEEL PLATES, NITRILE HT GASKET MATERIAL, AND 2" CONNECTION SIZES.

GAS FIRED CONDENSING BOILER SCHEDULE

MARK	SERVES	LOCATION	TYPE	OPERATING PRESSURE (PSIG)	INPUT (MBH)	OUTPUT (MBH)	FUEL TYPE	FLUE GAS VENT CONNECTION (IN)	COMBUSTION AIR CONNECTION (IN)	DIMENSIONS (LxWxH) (IN)	OPERATING WEIGHT (LBS)	BASIS OF DESIGN OR EQUAL		REMARKS
				WATER								MANUFACTURER	MODEL	
B-1	BUILDING HEATING HOT WATER	BASEMENT MECHANICAL ROOM	HYDRONIC	160	500	483	NATURAL GAS	4	4	41.5 X 27 X 52.75	445	LAARS	XTR-500	(1) (2) (3)
B-2	BUILDING HEATING HOT WATER	BASEMENT MECHANICAL ROOM	HYDRONIC	160	500	483	NATURAL GAS	4	4	41.5 X 27 X 52.75	445	LAARS	XTR-500	(1) (2) (3)

REMARKS:

1. SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE ON SHEET E6-1 FOR ELECTRICAL DATA.
2. PROVIDE BOILER WITH INTEGRATED TEMPERATURE /IGNITION CONTROL WITH ON-BOARD PID CONTROL WITH TOUCHSCREEN AND COLOR DISPLAY, BOILER CONTROLLER CAPABLE OF SENDING AND RECEIVING INFORMATION THROUGH A MODBUS OR BACNET MSTP INTERFACE, BOILER CIRCULATING PUMP (FIELD INSTALLED AT BOILER INLET), MODULATING GAS FIRING WITH 10:1 TURNDOWN, STAINLESS STEEL HEAT EXCHANGER, LOW NOX SYSYTEM, BUILT-IN CONDENSATE TRAP, SPARK IGNITION, ASME "H" STAMP, 75 PSI ASME RATED PRESSURE RELIEF VALVE, DRAIN VALVE, TEMPERATURE AND PRESSURE GAUGE, ALARM OUTPUT, 4-20 mA MODULATION CONTROL, OUTDOOR RESET WITH SENSOR, MANUAL HIGH LIMIT RESET, AND BURNER SIGHT GLASS.
3. PROVIDE EACH BOILER WITH A U.S. DRAFT COMPANY MODEL "CDS2" CONSTANT PRESSURE CONTROL DAMPER (FIELD INSTALLED), A SINGLE US DRAFT MODEL V250 PRESSURE CONTROLLER (FILED INSTALLED) AND A SINGLE US DRAFT MODEL CBX13 FLUE VENT EXHAUST FAN (FIELD INSTALLED) AT TOP OF FLUE VENT OUTSIDE.

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: MRG DRAWN BY: MRG TECH. REVIEW: BAH DATE: 2/15/2024	SUB SHEET NO. M7-1	TITLE OF SHEET MECHANICAL SCHEDULES BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 33 OF 51

FAN COIL UNIT SCHEDULE

MARK	SERVES	LOCATION	ARRANGEMENT	CFM	EXT S.P. (IN. W.G.)	COOLING COIL								HEATING COIL							DIMENSIONS (LxWxH) (IN)	OPERATING WEIGHT (LBS)	BASIS OF DESIGN OR EQUAL		REMARKS
						EAT (DB/WB) (°F)	LAT (DB/WB) (°F)	CAPACITY (BTUH)		MAX. ROWS	MAX WPD (FT)	FLUID DATA			EAT (DB) (°F)	LAT (DB) (°F)	TOTAL CAPACITY (BTUH)	MAX. ROWS	MAX WPD (FT)	FLUID DATA						
								TOTAL	SENSIBLE			EWT (°F)	LWT (°F)	GPM						EWT (°F)	LWT (°F)	GPM			MANUFACTURER	MODEL	
FCU B-1	SEE PLANS	SEE PLANS	VERTICAL	335	0	80 / 67	55.3 / 55.1	12379	9039	3	0.6	44	52.3	1.25	70	90.6	7547	1	0.31	160	105.2	0.3	46 X 10 X 25	110	DAIKIN	FCVC104	(1) (2) (4) (5)
FCU B-2	SEE PLANS	SEE PLANS	VERTICAL	600	0	80 / 67	57.5 / 55.5	21367	18053	3	6.5	44	54.7	4.0	70	92.8	14967	1	1.42	160	105.2	0.5	62.5 X 10 X 25	155	DAIKIN	FCVC108	(1) (3) (4) (5)
FCU 1-01	SEE PLANS	SEE PLANS	VERTICAL	320	0	80 / 67	56.4 / 55.2	11739	8246	4	2.2	44	53.4	2.5	70	84.1	9440	1	0.12	160	104.9	0.2	35 X 10 X 25	85	DAIKIN	FCVC102	(1) (3) (4) (5)
FCU 1-02	SEE PLANS	SEE PLANS	VERTICAL	875	0	80 / 67	57.3 / 56	30112	21758	4	10	44	57.4	4.5	70	88.1	17323	1	1.81	160	104.9	0.6	62.5 X 10 X 25	180	DAIKIN	FCVC108	(1) (2) (4) (5)
FCU 1-03	SEE PLANS	SEE PLANS	VERTICAL	875	0	80 / 67	57.3 / 56	30112	21758	4	10	44	57.4	4.5	70	88.1	17323	1	1.81	160	104.6	0.6	62.5 X 10 X 25	155	DAIKIN	FCVC108	(1) (2) (4) (5)
FCU 1-04	SEE PLANS	SEE PLANS	VERTICAL	800	0	80 / 67	57.2 / 56	27598	19955	4	8.2	44	57.8	4.0	70	89.2	16815	1	1.73	160	105.0	0.6	62.5 X 10 X 25	155	DAIKIN	FCVC108	(1) (2) (4) (5)
FCU 1-05	SEE PLANS	SEE PLANS	VERTICAL	160	0	80 / 67	57.3 / 55.9	5553	4845	3	0.4	44	55.1	1.0	70	97.4	4798	1	0.17	160	120.0	0.2	35 X 10 X 25	85	DAIKIN	FCVC102	(1) (2) (4) (5)
FCU 1-06	SEE PLANS	SEE PLANS	VERTICAL	200	0	80 / 67	56.0 / 55.4	7260	5240	3	1.4	44	51.3	2.0	70	98.4	6203	1	0.3	160	115.0	0.3	40.5 X 10 X 25	95	DAIKIN	FCVC103	(1) (2) (4) (5)
FCU 1-07	SEE PLANS	SEE PLANS	VERTICAL	280	0	80 / 67	55.4 / 54.2	11029	7542	4	2.4	44	52.8	2.5	70	97.3	8352	1	0.54	160	120.3	0.4	40.5 X 10 X 25	95	DAIKIN	FCVC103	(1) (2) (4) (5)
FCU 1-08	SEE PLANS	SEE PLANS	VERTICAL	300	0	80 / 67	55.0 / 54.8	11353	8200	4	1.8	44	55.4	2.0	70	91.0	6897	1	0.26	160	104.7	0.2	46 X 10 X 25	110	DAIKIN	FCVC104	(1) (2) (4) (5)
FCU 1-09	SEE PLANS	SEE PLANS	VERTICAL	265	0	80 / 67	57.1 / 55.6	9431	8098	3	2.4	44	51.5	2.5	70	85.0	4351	1	0.1	160	104.9	0.2	40.5 X 10 X 25	95	DAIKIN	FCVC103	(1) (2) (4) (5)
FCU 1-10	SEE PLANS	SEE PLANS	VERTICAL	185	0	80 / 67	55.5 / 54.4	7187	5974	3	1.4	44	51.2	2.0	70	87.6	3566	1	0.1	160	105.2	0.1	40.5 X 10 X 25	95	DAIKIN	FCVC103	(1) (2) (4) (5)
FCU 1-11	SEE PLANS	SEE PLANS	VERTICAL	300	0	80 / 67	55.2 / 54.9	11249	9783	3	2.2	44	53.0	2.5	70	91.0	6897	1	0.26	160	104.78	0.2	46 X 10 X 25	110	DAIKIN	FCVC104	(1) (2) (4) (5)
FCU 1-12	SEE PLANS	SEE PLANS	VERTICAL	185	0	80 / 67	55.5 / 54.4	7187	5974	3	1.4	44	51.2	2.0	70	87.6	3566	1	0.1	160	105.2	0.1	40.5 X 10 X 25	95	DAIKIN	FCVC103	(1) (2) (4) (5)
FCU 1-13	SEE PLANS	SEE PLANS	VERTICAL	355	0	80 / 67	55.6 / 55.1	13090	11423	3	3	44	52.7	3.0	70	98.2	10928	1	1.0	160	119.8	0.5	46 X 10 X 25	110	DAIKIN	FCVC104	(1) (2) (4) (5)
FCU 1-14	SEE PLANS	SEE PLANS	VERTICAL	415	0	80 / 67	56.1 / 55.4	14933	13112	3	3.9	44	52.5	3.5	70	95.9	11756	1	1.13	160	120.2	0.6	46 X 10 X 25	110	DAIKIN	FCVC104	(1) (2) (4) (5)
FCU 1-15	SEE PLANS	SEE PLANS	VERTICAL	150	0	80 / 67	56.7 / 55.4	5409	4647	3	0.4	44	54.8	1.0	70	98.5	4683	1	0.16	160	120.1	0.2	35 X 10 X 25	85	DAIKIN	FCVC102	(1) (2) (4) (5)
FCU 1-16	SEE PLANS	SEE PLANS	VERTICAL	620	0	80 / 67	55.9 / 54.3	24160	19700	4	6.6	44	57.8	3.5	70	92.3	15089	1	1.4	160	104.8	0.5	62.5 X 10 X 25	155	DAIKIN	FCVC108	(1) (2) (4) (5)
FCU 1-17	SEE PLANS	SEE PLANS	VERTICAL	875	0	80 / 67	57.2 / 55.3	31834	26599	4	10.9	44	57.5	4.7	70	88.1	17323	1	1.8	160	104.6	0.6	62.5 X 10 X 25	155	DAIKIN	FCVC108	(1) (3) (4) (5)
FCU 2-01	SEE PLANS	SEE PLANS	VERTICAL	150	0.03	80 / 67	55.2 / 54.3	5865	4062	3	0.7	44	51.8	1.5	70	97.2	2815	1	0.04	160	105.0	0.1	35 X 10 X 25	85	DAIKIN	FCVC102	(1) (2) (4) (5)
FCU 2-02	SEE PLANS	SEE PLANS	VERTICAL	715	0	80 / 67	56.3 / 55.2	26269	18551	4	8.2	44	57.1	4.0	70	90.6	16121	1	1.6	160	105.2	0.6	62.5 X 10 X 25	155	DAIKIN	FCVC108	(1) (2) (4) (5)
FCU 2-03	SEE PLANS	SEE PLANS	VERTICAL	675	0	80 / 67	55.9 / 54.3	26444	21484	4	8.3	44	57.2	4.0	70	91.3	15727	1	1.6	160	105.1	0.6	62.5 X 10 X 25	155	DAIKIN	FCVC108	(1) (2) (4) (5)
FCU 2-04	SEE PLANS	SEE PLANS	VERTICAL	570	0	80 / 67	55.4 / 53.7	23133	18448	3	7.6	44	55.6	4.0	70	89.7	12276	1	0.91	160	105.2	0.4	57 X 10 X 25	135	DAIKIN	FCVC106	(1) (2) (4) (5)
FCU 2-05	SEE PLANS	SEE PLANS	VERTICAL	320	0	80 / 67	55.8 / 55.3	11592	10228	3	2.2	44	53.3	2.5	70	90.8	7274	1	0.3	160	105.0	0.3	46 X 10 X 25	110	DAIKIN	FCVC104	(1) (2) (4) (5)
FCU 2-06	SEE PLANS	SEE PLANS	VERTICAL	150	0	80 / 67	55.8 / 54.6	5715	4788	3	0.6	44	52.8	1.3	70	98.5	4683	1	0.16	160	120.1	0.2	40.5 X 10 X 25	95	DAIKIN	FCVC103	(1) (2) (4) (5)
FCU 2-07	SEE PLANS	SEE PLANS	VERTICAL	250	0	80 / 67	56.1 / 55.8	8753	7896	3	1.2	44	54.0	1.8	70	104.0	9308	1	0.74	160	119.9	0.5	46 X 10 X 25	110	DAIKIN	FCVC104	(1) (2) (4) (5)
FCU 2-08	SEE PLANS	SEE PLANS	VERTICAL	580	0	80 / 67	55.8 / 54.1	22978	18514	4	7	44	56.1	3.8	70	91.4	13599	1	1.27	160	110.2	0.5	57 X 10 X 25	135	DAIKIN	FCVC106	(1) (2) (4) (5)
FCU 2-09	SEE PLANS	SEE PLANS	VERTICAL	275	0	80 / 67	55.0 / 54.8	10394	9025	3	1.9	44	53.0	2.3	70	91.3	6419	1	0.2	160	104.1	0.2	46 X 10 X 25	110	DAIKIN	FCVC104	(1) (2) (4) (5)
FCU 2-10	SEE PLANS	SEE PLANS	VERTICAL	470	0	80 / 67	55.8 / 54.3	18356	14983	3	7.54	44	52.2	4.5	70	91.8	11185	1	0.8	160	104.8	0.4	57 X 10 X 25	135	DAIKIN	FCVC106	(1) (3) (4) (5)
FCU 2-11	SEE PLANS	SEE PLANS	VERTICAL	300	0	80 / 67	55.2 / 54.9	11249	9783	3	2.2	44	53.0	2.5	70	91.0	6897	1	0.3	160	104.7	0.2	46 X 10 X 25	110	DAIKIN	FCVC104	(1) (2) (4) (5)
FCU 2-12	SEE PLANS	SEE PLANS	VERTICAL	400	0	80 / 67	55.3 / 54.8	15076	12976	3	4.5	44	51.9	3.8	70	91.2	9261	1	0.5	160	190.4	0.4	46 X 10 X 25	110	DAIKIN	FCVC104	(1) (2) (4) (5)
FCU 2-13	SEE PLANS	SEE PLANS	VERTICAL	750	0	80 / 67	56.1 / 54.4	29034	23672	4	10.2	44	56.9	4.5	70	95.4	20811	1	4.3	160	120.3	1.0	62.5 X 10 X 25	155	DAIKIN	FCVC108	(1) (3) (4) (5)
FCU 2-14	SEE PLANS	SEE PLANS	VERTICAL	450	0	80 / 67	55.5 / 54.0	17903	14511	3	7.4	44	52.0	4.5	70	96.7	13145	1	1.4	160	114.8	0.6	57 X 10 X 25	155	DAIKIN	FCVC106	(1) (3) (4) (5)
FCU 2-15	SEE PLANS	SEE PLANS	VERTICAL	150	0	80 / 67	54.7 / 53.6	6132	4964	3	0.7	44	52.2	1.5	70	98.5	4683	1	0.16	160	120.1	0.2	35 X 10 X 25	85	DAIKIN	FCVC102	(1) (2) (4) (5)
FCU 2-16	SEE PLANS	SEE PLANS	VERTICAL	700	0	80 / 67	55.6 / 54.0	27987	22523	4	10.2	44	56.4	4.5	70	94.6	18849	1	3.0	160	115.3	0.8	62.5 X 10 X 25	155	DAIKIN	FCVC108	(1) (2) (4) (5)
FCU 2-17	SEE PLANS	SEE PLANS	VERTICAL	780	0	80 / 67	55.9 / 54.3	26444	21484	4	8.3		57.2	4.0	70	91.3	15757	1	1.6	160	105.1	0.6	62.5 X 10 X 25	155	DAIKIN	FCVC108	(1) (2) (4) (5)

REMARKS:

1. SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE ON SHEET E6-1 FOR ELECTRICAL DATA.
2. PROVIDE FAN COIL UNIT WITH SAME END CONNECTIONS WITH 2-WAY MODULATING CONTROL VALVE PACKAGE FOR COOLING COIL AND 2-WAY MODULATING VALVE PACKAGE FOR HEATING COIL. PROVIDE HEATING COIL IN REHEAT POSITION.
3. PROVIDE FAN COIL UNIT WITH SAME END CONNECTIONS WITH 3-WAY MODULATING CONTROL VALVE PACKAGE FOR COOLING COIL AND 2-WAY MODULATING VALVE PACKAGE FOR HEATING COIL. PROVIDE HEATING COIL IN REHEAT POSITION.
4. PROVIDE EACH FAN COIL UNIT WITH CONTROLLER WHICH WILL BE CONNECTED TO BUILDING AUTOMTION SYSTEM.
5. PROVIDE EACH FAN COIL UNIT WITH ON-BOARD TEMPERATURE SENSOR/THERMOSTAT ALLOWING SPACE TEMPERATURE ADJUSTMENT FROM SPACE TEMPERATURE SETPOINT.

HYDRONIC PUMP SCHEDULE

MARK	SERVES	LOCATION	TYPE	FLOW (GPM)	TOTAL HEAD (FT)	SHUT-OFF HEAD (FT)	MIN NPSH (FT)	MINIMUM EFFICIENCY	FLUID	MAX FLUID TEMP (F)	MAX BHP	SUCTION SIZE (IN)	DISCHARGE SIZE (IN)	MAX IMPELLER DIAMETER (IN)	MAX RPM	OPERATING WEIGHT (LBS)	BASIS OF DESIGN OR EQUAL		REMARKS
																	MANUFACTURER	MODEL	
CWP-1	CHILLED WATER	BASEMENT MECHANICAL ROOM	END SUCTION	125	80	91.9	7.6	62.3	WATER	70	4.05	2.0	1.5	9.5	1716	225	BELL & GOSSETT	1510 1.5BC	(1)
CWP-2	CHILLED WATER	BASEMENT MECHANICAL ROOM	END SUCTION	125	80	91.9	7.6	62.3	WATER	70	4.05	2.0	1.5	9.5	1716	225	BELL & GOSSETT	1510 1.5BC	(1)
HWP-1	HEATING HOT WATER	BASEMENT MECHANICAL ROOM	END SUCTION	30	70	71.0	5.1	42.5	WATER	160	1.22	1.5	1.25	9.5	1579	220	BELL & GOSSETT	1510 1.25BC	(1)
HWP-2	HEATING HOT WATER	BASEMENT MECHANICAL ROOM	END SUCTION	30	70	71.0	5.1	42.5	WATER	160	1.22	1.5	1.25	9.5	1579	220	BELL & GOSSETT	1510 1.25BC	(1)

REMARKS:

1. SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE ON SHEET E6-1 FOR ELECTRICAL DATA.

VARIABLE FREQUENCY CONTROLLER SCHEDULE

MARK	SERVES	LOCATION	MOUNTING LOCATION	ENCLOSURE	DISCONNECT TYPE	BYPASS	REDUNDANT VFC	BASIS OF DESIGN OR EQUAL		REMARKS
								MANUFACTURER	MODEL	
VFC-1	CWP-1	MECH ROOM	WALL/INDOORS	NEMA-1	INTEGRAL CIRCUIT BKR	NO	NO	ABB	-	(1)
VFC-2	CWP-2	MECH ROOM	WALL/INDOORS	NEMA-1	INTEGRAL CIRCUIT BKR	NO	NO	ABB	-	(1)
VFC-3	HWP-1	MECH ROOM	WALL/INDOORS	NEMA-1	INTEGRAL CIRCUIT BKR	NO	NO	ABB	-	(1)
VFC-4	HWP-2	MECH ROOM	WALL/INDOORS	NEMA-1	INTEGRAL CIRCUIT BKR	NO	NO	ABB	-	(1)

REMARKS:

1. SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE ON SHEET E6-1 FOR ELECTRICAL DATA.

EXPANSION TANK SCHEDULE

MARK	SERVES	LOCATION	TYPE	SYSTEM VOLUME (GALLONS)	CAPACITY (GALLONS)		DIMENSIONS (DIA X H) (IN)	BASIS OF DESIGN OR EQUAL		REMARKS
					TANK	ACCEPT		MANUFACTURER	MODEL	
ET-1	CHILLED WATER	BASEMENT MECHANICAL ROOM	REPLACEABLE BLADDER	532.5	10.0	10.0	12 X 23.5	BELL & GOSSETT	B35	(1)
ET-2	HEATING HOT WATER	BASEMENT MECHANICAL ROOM	REPLACEABLE BLADDER	181.0	13.0	13.0	14 X 24	BELL & GOSSETT	B50	(1)

REMARKS:

1. PROVIDE TANK WITH REPLACEABLE BLADDER AND INTEGRATED BLADDER INTEGRITY MONITOR.

NOTE:
DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawing or at site. lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM

PRIME:
KENNETH HAHN ARCHITECTS, INC.
OMAHA, NE.

SUBCONTRACTOR:
ALVINE ENGINEERING
OMAHA, NE.

DESIGNED: MRG
DRAWN BY: MRG
TECH. REVIEW: BAH
DATE: 2/15/2024

SUB SHEET NO. M7-2

TITLE OF SHEET
MECHANICAL SCHEDULES

BUCKSTAFF BATHHOUSE HVAC
HOT SPRINGS NATIONAL PARK
HOT SPRINGS, AK

DRAWING NO. XXX/XXXX
PMIS NO. 177425
SHEET 34 OF 51

TWO-STAGE HEAT GAS FIRED FURNACE SCHEDULE

MARK	SERVES	LOCATION	CONFIGURATION	AIRFLOW (CFM)	OUTDOOR AIR (CFM)	EXT S.P. (IN. W.C.)	INPUT (MBH)	OUTPUT (MBH)	EFFICIENCY	COMB AIR / FLUE SIZE (IN)	DIMENSIONS (LxWxH) (IN)	OPERATING WEIGHT (LBS)	BASIS OF DESIGN OR EQUAL		CONDENSATE DRAIN SIZE (IN)	GAS PIPING BRANCH SIZE (IN)	REMARKS
													MANUFACTURER	MODEL			
FUR-1	BUILDING THIRD FLOOR	THIRD FLOOR STORAGE ROOM	VERTICAL UPFLOW	1995	SEE REMARK 4	0.6	57 / 110	55 / 106	96%	2	28.75 X 21 X 64.5	225	LENNOX	ML296UH110	3/4	3/4	(1) (2) (3)

REMARKS:

1. SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE ON SHEET E6-1 FOR ELECTRICAL DATA.
2. DIMENSIONS AND WEIGHT INCLUDE UPFLOW REFRIGERANT COOLING COIL.
3. PROVIDE FURANCE WITH MODEL CX35-60 COOLING COIL MATCHED WITH CONDENSING UNIT CAPACITY AND PROVIDE WITH LENNOX MODEL E30 PROGRAMMABLE SMART THERMOSTAT WITH DIGITAL TOUCHSCREEN WITH HIGH DEFINITION COLOR DISPLAY, 7-DAY SCHEDULING, AND AUTO-CHANGEOVER.
4. OUTSIDE AIR USED FOR VENTILATION WILL BE INTRODUCED TO THIRD FLOOR SPACES BY MEANS OF EXISTING VERTICAL SHAFTS IN WALLS WITH EXISTING GRILLES PROVIDING DISCHARGE TO SPACES. VENTILATION AIR PROVIDED BY DOAS UNIT LOCATED AT BASEMENT FLOOR.

AIR COOLED CONDENSING UNIT SCHEDULE

MARK	SERVES	LOCATION	CAPACITY (TONS)	COMPRESSOR TYPE	NO. COMPRESSORS	STEPS UNLOADING	REFRIGERANT	AMBIENT TEMP (°F)	SOUND POWER	MIN SEER2	DIMENSIONS (LxWxH) (IN)	OPERATING WEIGHT (LBS)	BASIS OF DESIGN OR EQUAL		REMARKS
													MANUFACTURER	MODEL	
ACCU-1	FUR-1	ROOF	5	SCROLL	1	-	R-410A	105	68	22.4	39.25 X 35.5 X 45	300	LENNOX	EL23XCV-060	(1) (2) (3)

REMARKS:

1. SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE ON SHEET E6-1 FOR ELECTRICAL DATA.
2. PROVIDE CONDENSING UNIT VARIABLE SPEED SCROLL COMPRESSOR WITH UNIT CAPACITY TO MATCH FURNACE UPFLOW COOLING COIL CAPACITY.
3. SOUND POWER RATING OF CONDENSING UNIT BASED ON THIRD OCTAVE BAND.

HOOD SCHEDULE

MARK	SERVES	AIRFLOW (CFM)	AIR PD (IN. W.C.)	ROOF OPENING SIZE (IN)	OVERALL SIZE (IN)	MAX FREE AREA VELOCITY (FPM)	WEIGHT (LBS)	BASIS OF DESIGN OR EQUAL		REMARKS
								MANUFACTURER	MODEL	
HD-1	EXHAUST	100	0.1	13.5 X 13.5	18.25 DIA.	2	25	LOREN COOK	PR-8	(1)

REMARKS:

1. PROVIDE WITH LOREN COOK MODEL RCA-16, 13.5" TALL, PRE-FABRICATED INSULATED ROOF CURB.

DIFFUSER REGISTER AND GRILLE SCHEDULE

MARK	DESCRIPTION	DEFLECTION	MAX S. P. (IN. W.C.)	MAX NC LEVEL	CONSTRUCTION MATERIAL	FINISH	FACE SIZE (IN)	BASIS OF DESIGN OR EQUAL		ACCESSORIES	REMARKS
								MANUFACTURER	MODEL		
D-1	LOUVER FACE SUPPLY AIR	4-WAY	0.1	30	STEEL	WHITE	24 X 24	KRUEGER	1400	-	(1)
R-1	LOUVER FACE SUPPLY AIR	2-WAY	0.1	30	STEEL	WHITE	SEE PLANS	KRUEGER	S-880H	-	(1)
G-1	LOUVER FACE RETURN AIR	1-WAY	0.1	30	STEEL	WHITE	SEE PLANS	KRUEGER	S-80H	-	(1)
G-2	PERFORATED RETURN AIR	1-WAY	0.1	30	STEEL	WHITE	24 X 12	KRUEGER	6490	-	(1) (2)
G-3	PERFORATED RETURN AIR	1-WAY	0.1	30	STEEL	WHITE	24 X 12	KRUEGER	6790	-	(1)
G-4	EGGCRATE RETURN AIR	1-WAY	0.1	30	STEEL	WHITE	SEE PLANS	KRUEGER	EGC-5	-	(1)

REMARKS:

1. CONTRACTOR SHALL VERIFY CEILING CONSTRUCTION PRIOR TO FURNISHING MATERIAL.
2. PROVIDE WITH 10"X6" NECK AND 12"x24" OVERALL GRILLE SIZE FOR LAY-IN CEILING.

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM
PRIME:
KENNETH HAHN ARCHITECTS, INC.
OMAHA, NE.
SUBCONTRACTOR:
ALVINE ENGINEERING
OMAHA, NE.

DESIGNED: MRG
DRAWN BY: MRG
TECH. REVIEW: BAH
DATE: 2/15/2024

SUB SHEET NO. M7-3

TITLE OF SHEET
MECHANICAL SCHEDULES

BUCKSTAFF BATHHOUSE HVAC
HOT SPRINGS NATIONAL PARK
HOT SPRINGS, AK

DRAWING NO. XXX/XXXX
PMIS NO. 177425
SHEET 35 OF 51

ELECTRICAL SYMBOLS

LIGHTING AND POWER

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
#	SURFACE MOUNTED CEILING LUMINAIRE (# INDICATES LUMINAIRE NUMBER IN SCHEDULE)	#	SURFACE MOUNTED WALL LUMINAIRE (# INDICATES LUMINAIRE NUMBER IN SCHEDULE)	#	CEILING MOUNTED EXIT LIGHT WITH DIRECTIONAL ARROW, SHADING INDICATES FACE (# INDICATES LUMINAIRE NUMBER IN SCHEDULE)
				#	WALL OR END MOUNTED EXIT LIGHT WITH DIRECTIONAL ARROW, SHADING INDICATES FACE (# INDICATES LUMINAIRE NUMBER IN SCHEDULE)
#	RECESSED MOUNTED CEILING LUMINAIRE (# INDICATES LUMINAIRE NUMBER IN SCHEDULE)	#	RECESSED MOUNTED WALL LUMINAIRE (# INDICATES LUMINAIRE NUMBER IN SCHEDULE)	#	COMBINATION CEILING MOUNTED EXIT/ EMERGENCY BATTERY LIGHT WITH DIRECTIONAL ARROW, SHADING INDICATES FACE (# INDICATES LUMINAIRE NUMBER IN SCHEDULE)
#	PENDANT MOUNTED CEILING LUMINAIRE (# INDICATES LUMINAIRE NUMBER IN SCHEDULE)	#	LIGHTING TRACK (# INDICATES LUMINAIRE NUMBER IN SCHEDULE)	#	COMBINATION WALL MOUNTED EXIT/EMERGENCY BATTERY LIGHT WITH DIRECTIONAL ARROW, SHADING INDICATES FACE (# INDICATES LUMINAIRE NUMBER IN SCHEDULE)
		#	TRACK MOUNTED LUMINAIRE (# INDICATES LUMINAIRE NUMBER IN SCHEDULE)		
#	IN GRADE/FLOOR LUMINAIRE (# INDICATES LUMINAIRE NUMBER IN SCHEDULE)	#	CEILING FAN - NUMBER OF BLADES IN SCHEDULE (# INDICATES LUMINAIRE NUMBER IN SCHEDULE)	#	EMERGENCY BATTERY LIGHT (# INDICATES LUMINAIRE NUMBER IN SCHEDULE)
	SHADING INDICATES LUMINAIRE ON EMERGENCY CIRCUIT OR WITH BATTERY BACKUP	#	THEATER SPOT LIGHT (# INDICATES LUMINAIRE NUMBER IN SCHEDULE)	#	ABOVE GRADE LUMINAIRE (# INDICATES LUMINAIRE NUMBER IN SCHEDULE)
	LINES INDICATE ORIENTATION OF LUMINAIRE, WHERE INDICATED	D / SD	PRIMARY DAYLIGHT ZONE BOUNDARY SECONDARY DAYLIGHT ZONE BOUNDARY	S# P#	POLE LUMINAIRE(S) (P# AND S# INDICATE POLE AND LUMINAIRE NUMBERS IN RESPECTIVE SCHEDULES)
#	UNDERCABINET LIGHT (# INDICATES LUMINAIRE NUMBER IN SCHEDULE)		LIGHTING CONTROL ZONE BOUNDARY		LIGHTING PANEL - FLUSH MOUNTED
	ARROW INDICATES WALL WASH LUMINAIRE AIMING		LIGHTING CIRCUIT/ZONE BOUNDARY		LIGHTING PANEL - SURFACE MOUNTED
S	SINGLE POLE SWITCH		SIMPLEX RECEPTACLE		DIMMING/RELAY PANEL
$	LOW VOLTAGE SWITCH/CONTROL	G,T,U	DUPLEX RECEPTACLE "G" SUBSCRIPT INDICATES GFCI, "T" SUBSCRIPT INDICATES TAMPER RESISTANT TYPE, "U" SUBSCRIPT INDICATES COMBINATION USB CHARGING STATION		DISTRIBUTION PANEL, SWITCHBOARD, OR MOTOR CONTROL CENTER
S_2	DOUBLE POLE SWITCH			T	TRANSFORMER
S_3	3-WAY SWITCH		AUTOMATICALLY CONTROLLED DUPLEX RECEPTACLE	ATS	AUTOMATIC TRANSFER SWITCH
S_4	4-WAY SWITCH		ISOLATED GROUND DUPLEX RECEPTACLE		ENCLOSED CIRCUIT BREAKER
S_D	DOOR SWITCH		HOSPITAL GRADE DUPLEX RECEPTACLE		SINGLE PHASE MAGNETIC MOTOR STARTER
S_{MC}	MOMENTARY CONTACT SWITCH		RED DUPLEX RECEPTACLE		THREE PHASE MAGNETIC MOTOR STARTER
S_T	TIMER SWITCH		DUPLEX RECEPTACLE - SPLIT WIRED		COMBINATION MAGNETIC STARTER/DISCONNECT
S_{TE}	SINGLE POLE MANUAL MOTOR STARTER WITH THERMAL OVERLOAD AND PILOT LIGHT		AUTOMATICALLY CONTROLLED DUPLEX RECEPTACLE - SPLIT WIRED	A/B/C/D	SAFETY SWITCH (FUSED UNLESS OTHERWISE NOTED) "A"=AMP RATING, "B"=POLES, "C"=FUSE SIZE, "D"=NEMA ENCLOSURE; FOR FUSE SIZE, "MR"=MFGR RECOMMENDATIONS AND "NF"=NON-FUSE
	SWITCH AND FUSE		DRYER RECEPTACLE NEMA 14-30 (125/250V 30A)		
	SWITCH AND FUSTAT		SPECIAL PURPOSE RECEPTACLE (NEMA CONFIGURATION AS NOTED)	M	MOTOR
F	MANUAL DIMMER OR FAN SPEED CONTROL ("F" INDICATES FAN SPEED CONTROL)		HORIZONTAL MOUNTED DUPLEX RECEPTACLE	PB	PULL BOX
#	CEILING MOUNTED OCCUPANCY SENSOR (# INDICATES FIXTURE NUMBER IN SCHEDULE)		RANGE RECEPTACLE NEMA 14-50 (125/250V 50A)	J	WALL MOUNTED JUNCTION BOX
#	WALL MOUNTED OCCUPANCY SENSOR/SWITCH (# INDICATES FIXTURE NUMBER IN SCHEDULE)	W	WELDER RECEPTACLE NEMA 6-50 (250V 50A)	J #	JUNCTION BOX ("F" INDICATES FLOOR, "C" INDICATES CEILING)
	PUSH BUTTON STATION		DOUBLE DUPLEX RECEPTACLE		BRANCH CIRCUIT
P	PHOTOCELL CEILING MOUNTED		(1) DUPLEX, (1) DUPLEX AUTOMATICALLY CONTROLLED		BRANCH CIRCUIT - CONCEALED BELOW FLOOR (UNDERGROUND IF EXTERIOR)
P	PHOTOCELL WALL MOUNTED		ISOLATED GROUND DOUBLE DUPLEX RECEPTACLE		HOMERUN TO PANEL (NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS)
	TIME SWITCH		RED DOUBLE DUPLEX RECEPTACLE		SPECIAL PURPOSE HOMERUN AS INDICATED
R	RELAY		RECEPTACLE IN AV BACKBOX		CONDUIT SEAL
ER	EMERGENCY LIGHTING RELAY		WALL CLOCK HANGER RECEPTACLE		CIRCUIT DOWN
	LIGHTING CONTACTOR		CEILING MOUNTED DUPLEX RECEPTACLE		CIRCUIT UP
#	COMBINATION POWER/DATA FLOOR OUTLET ("#" INDICATES DEVICE TYPE IN SCHEDULE)		CEILING MOUNTED DOUBLE DUPLEX RECEPTACLE		CONDUIT STUB-OUT
#	COMBINATION POWER/AV FLOOR OUTLET ("#" INDICATES DEVICE TYPE IN SCHEDULE)		CEILING MOUNTED RED DUPLEX RECEPTACLE		CIRCUIT BREAK
#	COMBINATION POWER/DATA/AV FLOOR OUTLET ("#" INDICATES DEVICE TYPE IN SCHEDULE)		CEILING MOUNTED SPECIAL PURPOSE RECEPTACLE		CORD AND PLUG
TB #	COMBINATION POWER/DATA/AV TABLETOP OUTLET ("#" INDICATES DEVICE TYPE IN SCHEDULE)		CEILING MOUNTED SIMPLEX RECEPTACLE	#	LIGHTING CONTROL TYPE. SEE LIGHTING CONTROL SCHEDULE
	MULTI-OUTLET ASSEMBLY ~ LENGTH AS INDICATED		POWER FLOOR OUTLET ("#" INDICATES DEVICE TYPE IN SCHEDULE)	#	BRANCH CIRCUIT/FEEDER TAG. SEE BRANCH CIRCUIT/FEEDER SCHEDULE
	MECH EQUIPMENT WITH ELEC CONNECTION SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE		RECEPTACLE IN CEILING AV BACKBOX	XX-##	LIGHTING ZONE CIRCUIT DESIGNATION, "XX" INDICATES PANEL NAME, "##" INDICATES CIRCUIT NUMBER

FIRE DETECTION AND ALARM

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	FIRE ALARM AUTOMATIC SMOKE DETECTOR	F CM	FIRE ALARM CONTROL MODULE	F	WALL FIRE ALARM SPEAKER
SB	FIRE ALARM AUTOMATIC SMOKE DETECTOR WITH SOUNDER BASE	F MM	FIRE ALARM MONITOR MODULE	F #	CEILING FIRE ALARM LIGHT (# INDICATES CANDELA RATING WHERE INDICATED)
	FIRE ALARM AUTOMATIC WALL SMOKE DETECTOR	F	FIRE SPRINKLER VALVE TAMPER SWITCH	F #	WALL FIRE ALARM LIGHT (# INDICATES CANDELA RATING WHERE INDICATED)
	FIRE ALARM BEAM DETECTOR AND REFLECTOR	F	FIRE SPRINKLER FLOW SWITCH	FAA	FIRE ALARM ANNUNCIATOR PANEL
	SAMPLING TUBE TYPE SMOKE DETECTOR	F	FIRE ALARM HORN AND LIGHT COMBINATION	FACP	FIRE ALARM CONTROL PANEL
	FIRE ALARM AUTOMATIC CEILING HEAT DETECTOR	F #	FIRE ALARM HORN ("C" INDICATES CEILING)	F	FIRE FIGHTER'S TELEPHONE JACK
	FIRE ALARM AUTOMATIC WALL HEAT DETECTOR	F #	CEILING FIRE ALARM HORN AND LIGHT COMBINATION (# INDICATES CANDELA RATING WHERE INDICATED)		FIRE ALARM MAGNETIC DOOR HOLDER
CO	CARBON MONOXIDE DETECTOR	F #	CEILING FIRE ALARM SPEAKER AND LIGHT COMBINATION (# INDICATES CANDELA RATING WHERE INDICATED)	FS.D. M	COMBINATION FIRE/SMOKE DAMPER
CO	CARBON MONOXIDE/SMOKE DETECTOR	F #	WALL FIRE ALARM SPEAKER AND LIGHT COMBINATION (# INDICATES CANDELA RATING WHERE INDICATED)	S.D. M	SMOKE DAMPER
F	FIRE ALARM MANUAL STATION	F	CEILING FIRE ALARM SPEAKER		

ELECTRICAL SYMBOLS

SUBSCRIPTS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
EP	SUBSCRIPT "EP" APPLIED TO ANY SYMBOL INDICATES EXPLOSION PROOF, CLASS, GROUP AND DIVISION AS NOTED	K	SUBSCRIPT "K" ADDED TO ANY SYMBOL INDICATES KEY OPERATED	WP	SUBSCRIPT "WP" APPLIED TO ANY SYMBOL INDICATES WEATHERPROOF NEMA 3R OR EQUIVALENT
E	SUBSCRIPT "E" ADDED TO ANY SYMBOL INDICATES EXISTING	WG	SUBSCRIPT "WG" ADDED TO ANY SYMBOL INDICATES WIRE GUARD	P	SUBSCRIPT "P" ADDED TO ANY SYMBOL INDICATES PILOT LIGHT
PD	SUBSCRIPT "PD" ADDED TO ANY FLOOR OUTLET INDICATES PEDESTAL MOUNTED			NL	SUBSCRIPT "NL" ADDED TO ANY SYMBOL INDICATES AN UNSWITCHED LUMINAIRE OPERATING AS A NIGHT LIGHT
AC	SUBSCRIPT "AC" ADDED TO ANY SYMBOL INDICATES ABOVE COUNTER. LOCATE CENTER OF DEVICE 4" ABOVE COUNTER SURFACE OR WHERE PRESENT, 4" ABOVE BACKSPLASH. WHERE INDICATED ADJACENT TO LAVATORY WITHOUT COUNTER, LOCATE CENTER OF DEVICE 8" ABOVE RIM OF LAVATORY.				

SYMBOLS INDICATED HERE AND NOT USED IN THE CONTRACT DOCUMENTS DO NOT APPLY TO THIS PROJECT. ADDITIONAL SYMBOLS AND ABBREVIATIONS MAY BE INDICATED IN THE CONTRACT DOCUMENTS.

ABBREVIATIONS

A	AMP	ELEC	ELECTRICAL	LTG	LIGHTING	REQD	REQUIRED
AC	ALTERNATING CURRENT	EMD	ESTIMATED MAXIMUM DEMAND	MATV	MASTER ANTENNA TELEVISION	RM	ROOM
AFF	ABOVE FINISHED FLOOR	EMI	ELECTROMAGNETIC INTERFERENCE	MAX	MAXIMUM	SBB	SECONDARY BONDING BUSBAR
AHJ	AUTHORITY HAVING JURISDICTION	EPO	EMERGENCY POWER OFF	MCB	MAIN CIRCUIT BREAKER	SCHD	SCHEDULE
APPROX	APPROXIMATELY	EQUIP	EQUIPMENT	MECH	MECHANICAL	SIM	SIMILAR
ATS	AUTOMATIC TRANSFER SWITCH	EXIST	EXISTING	MGB	MAIN GROUND BAR	SPD	SURGE PROTECTIVE DEVICE
AUX	AUXILIARY	FA	FIRE ALARM	MIN	MINIMUM	SPECS	SPECIFICATIONS
AV	AUDIOVISUAL	FAA	FIRE ALARM ANNUNCIATOR PANEL	MISC	MISCELLANEOUS	SS	STAINLESS STEEL
AVG	AVERAGE	FACP	FIRE ALARM CONTROL PANEL	MLO	MAIN LUGS ONLY	STD	STANDARD
AWG	AMERICAN WIRE GAUGE	FB	FLOOR BOX	MTD	MOUNTED	SW	SWITCH
BMCS	BUILDING MANAGEMENT CONTROL SYSTEMS	FL	FLOOR	MTG	MOUNTING	SWBD	SWITCHBOARD
		FLA	FULL LOAD AMPS	N1	NEMA 1 ENCLOSURE	SWGR	SWITCHGEAR
BLDG	BUILDING	FT	FEET	N3R	NEMA 3R ENCLOSURE	TELECOM	TELECOMMUNICATIONS
C	CONDUIT	FSAE	FIRE SERVICE ACCESS ELEVATOR	N4X	NEMA 4X ENCLOSURE	TEMP	TEMPERATURE
CATV	CABLE TELEVISION	GALV	GALVANIZED	NC	NORMALLY CLOSED	TTB	TELEPHONE TERMINAL BOARD
CB	CIRCUIT BREAKER	GC	GENERAL CONTRACTOR	NIC	NOT IN CONTRACT	TV	TELEVISION
CCTV	CLOSED CIRCUIT TELEVISION	GEC	GROUNDING ELECTRODE CONDUCTOR	NO	NORMALLY OPEN	TYP	TYPICAL
CKT	CIRCUIT	GEN	GENERATOR	NTS	NOT TO SCALE	UG	UNDERGROUND
CL	CENTER LINE	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	OC	ON CENTER	UNO	UNLESS NOTED OTHERWISE
CLG	CEILING	GND	GROUND	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED	UPS	UNINTERRUPTIBLE POWER SUPPLY
CRAC	COMPUTER RM AIR CONDITIONER	HP	HORSEPOWER			VA	VOLT-AMPS
DIA	DIAMETER	HZ	HERTZ	PB	PULLBOX	W	WATT
DISC	DISCONNECT	IC	INTERCOM	PBB	PRIMARY BONDING BUSBAR	XFMR	TRANSFORMER
DIST	DISTRIBUTION	JB	JUNCTION BOX	PDU	POWER DISTRIBUTION UNIT		
DN	DOWN	KCMIL	THOUSAND CIRCULAR MILS	PERP	PERPENDICULAR		
DWG	DRAWING	KV	KILOVOLT	PIV	POST INDICATOR VALVE		
EC	ELECTRICAL CONTRACTOR	KVA	KILOVOLT AMPERE	PNL	PANEL		
EGB	ELECTRICAL GROUND BAR	KW	KILOWATT	PWR	POWER		

GENERAL NOTES

1. INSTALL GREEN INSULATED GROUND WIRE WITH EACH LIGHTING, RECEPTACLE, AND EQUIPMENT BRANCH CIRCUIT.
2. PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR EACH BRANCH CIRCUIT REQUIRING A NEUTRAL, UNLESS OTHERWISE NOTED.
3. CONCEAL CONDUITS INSTALLED IN AREAS WITH SUSPENDED CEILINGS.
4. REPAIR OR REPLACE BUILDING ELEMENTS THAT ARE DAMAGED AS PART OF ELECTRICAL WORK.
5. SPECIFICATIONS LIST ACCEPTABLE WIRING METHODS AND MATERIALS. OTHER WIRING METHODS AND MATERIALS NOT LISTED IN THE SPECIFICATIONS (SUCH AS MC CABLE, ETC.) ARE NOT ACCEPTABLE.
6. SEAL PENETRATIONS IN FIRE RATED CONSTRUCTION TO MAINTAIN RATINGS.
7. WIRING DEVICES CONNECTED TO THE EMERGENCY GENERATOR SHALL BE RED.
8. LABELING FOR PANELBOARD DIRECTORIES SHALL USE ROOM NUMBERS ASSIGNED BY CONTRACTING OFFICER REPRESENTATIVE AND NOT ROOM NUMBERS LISTED ON DRAWINGS. LABELS ON PANELBOARD DIRECTORY SHALL INCLUDE A DESCRIPTION OF LOAD SUCH AS LIGHTS, RECEPTACLES, MECHANICAL UNIT LOCATIONS, ETC.
9. REFER TO ARCHITECTURAL ELEVATIONS AND SECTIONS (AS APPLICABLE) FOR EXACT DEVICE LOCATIONS.
10. COORDINATE PHASING REQUIREMENTS, BOUNDARIES, ETC., WITH ARCHITECTURAL DRAWINGS AND DETAILS.

POWER GENERAL NOTES:

1. PROVIDE POWER CONNECTION TO CONTROL PANELS, TRANSFORMERS AND OTHER ITEMS FURNISHED BY MECHANICAL CONTRACTOR. COORDINATE LOCATIONS OF DEVICES REQUIRING POWER CONNECTIONS WITH MECHANICAL CONTRACTOR.

DEMOLITION NOTES:

1. THE PARK SHALL HAVE FIRST SALVAGE RIGHTS TO ALL FIXTURES, DEVICES AND EQUIPMENT REMOVED. COORDINATE WITH CONTRACTING OFFICER OR CONTRACTING OFFICER REPRESENTATIVE PRIOR TO DEMOLITION.
2. UNLESS NOTED OTHERWISE, ABANDON CONCEALED CONDUITS IN WALLS WHICH ARE NOT REMOVED. WHERE AN EXISTING RACEWAY TO BE REMOVED IS STUBBED FROM A CONCRETE FLOOR OR WALL, CHISEL 2 INCHES BELOW SURFACE OF FLOOR, CUT CONDUIT, AND GROUT FLOOR TO MATCH ADJACENT SURFACE. PROVIDE BLANK PLATES FOR ABANDONED BOXES.
3. REPAIR OR REPLACE BUILDING ELEMENTS WHICH ARE DAMAGED AS PART OF DEMOLITION WORK.
4. DEMOLITION DRAWINGS INDICATE FIXTURES, DEVICES AND MAJOR PIECES OF EQUIPMENT WHICH ARE TO BE REMOVED OR RECONNECTED. REMOVE INDICATED ITEMS AND ASSOCIATED ITEMS NOT INDICATED BUT WHICH MUST BE REMOVED TO ACCOMMODATE REMODELING. THE ITEMS INDICATED SPECIFICALLY ON THE DRAWINGS TO BE REMOVED ARE ONLY TO INDICATE IN GENERAL TO THE CONTRACTOR THE AMOUNT OF DEMOLITION WORK REQUIRED. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. DISCONNECT MECHANICAL EQUIPMENT BEING REMOVED BY MECHANICAL CONTRACTOR. COORDINATE EQUIPMENT REMOVAL LOCATIONS WITH MECHANICAL DRAWINGS.
6. COORDINATE AND SCHEDULE ELECTRICAL OUTAGES WITH THE CONTRACTING OFFICER OR CONTRACTING OFFICER REPRESENTATIVE.
7. COORDINATE DEMOLITION WITH THE WORK OF OTHER TRADES. PROVIDE TEMPORARY POWER AS REQUIRED TO ALLOW THE WORK OF OTHER TRADES TO PROCEED OR AS REQUIRED TO ALLOW THE OWNER TO OCCUPY THE SPACE.
8. REMOVE DEMOLISHED ITEMS FROM PROJECT SITE. PROPERLY DISPOSE OF ITEMS INCLUDING LAMPS AND BALLASTS.

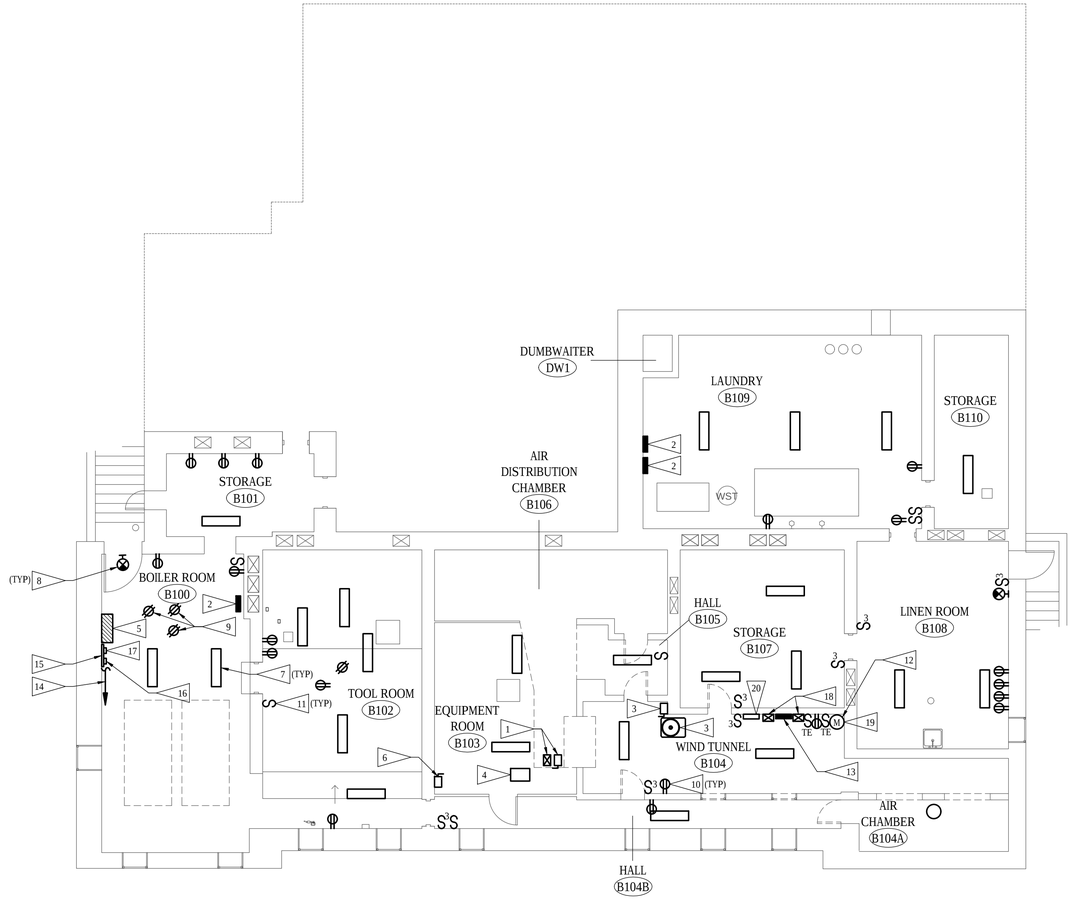
NOTE:
DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawing or at site. lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM	DESIGNED: RCF	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE.	DRAWN BY: JAS	E0-0	ELECTRICAL SYMBOLS AND ABBREVIATIONS	XXX/XXXX
SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	TECH. REVIEW: GAN		BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	PMIS NO. 177425
	DATE: 2/15/2024			SHEET 36 OF 60

FLAG NOTES

1. REMOVE WIRING TO EXISTING VENTILATION FAN MOTOR STARTER AND DISCONNECT.
2. REMOVE LUGS, BUSBARS AND BREAKERS FROM EXISTING PANEL AND CONVERT INTO A JUNCTION BOX.
3. REMOVE WIRING TO EXISTING CONDENSING UNIT AND DISCONNECT.
4. REMOVE WIRING TO EXISTING VENTILATION FAN.
5. REMOVE EXISTING MAIN DISTRIBUTION PANEL.
6. REMOVE ELEVATOR DISCONNECT SWITCH.
7. REMOVE EXISTING LIGHTING FIXTURE AND WIRING.
8. REMOVE EXISTING EXIT LIGHT AND WIRING.
9. REMOVE EXISTING RECEPTACLES AND WIRING TO EXISTING SUMP PUMPS.
10. REMOVE EXISTING RECEPTACLE DEVICE. EXISTING BOX AND WIRING TO REMAIN FOR REUSE.
11. REMOVE EXISTING SWITCH AND WIRING.
12. REMOVE WIRING TO EXISTING AIR DRYER.
13. REMOVE EXISTING LOAD CENTER AND WIRING.
14. RELOCATE EXISTING INCOMING TELEPHONE SERVICE PROVIDER TELEPHONE LINE, COORDINATE WITH SERVICE PROVIDER.
15. RELOCATE EXISTING TELEPHONE TERMINAL BOARD.
16. RELOCATE EXISTING TELEPHONE DEMARCATION EQUIPMENT.
17. RELOCATE EXISTING TELEPHONE 110 BLOCK. RELOCATE EXISTING AND EXTEND EXISTING TELEPHONE WIRING.
18. REMOVE EXISTING MOTOR STARTERS AND WIRING.
19. REMOVE WIRING TO EXISTING TEMPERATURE CONTROL AIR COMPRESSOR.
20. REMOVE WIRING TO EXISTING TEMPERATURE CONTROL PANEL.



BASEMENT FLOOR PLAN - ELECTRICAL DEMOLITION

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

FINAL CONSTRUCTION DOCUMENTS

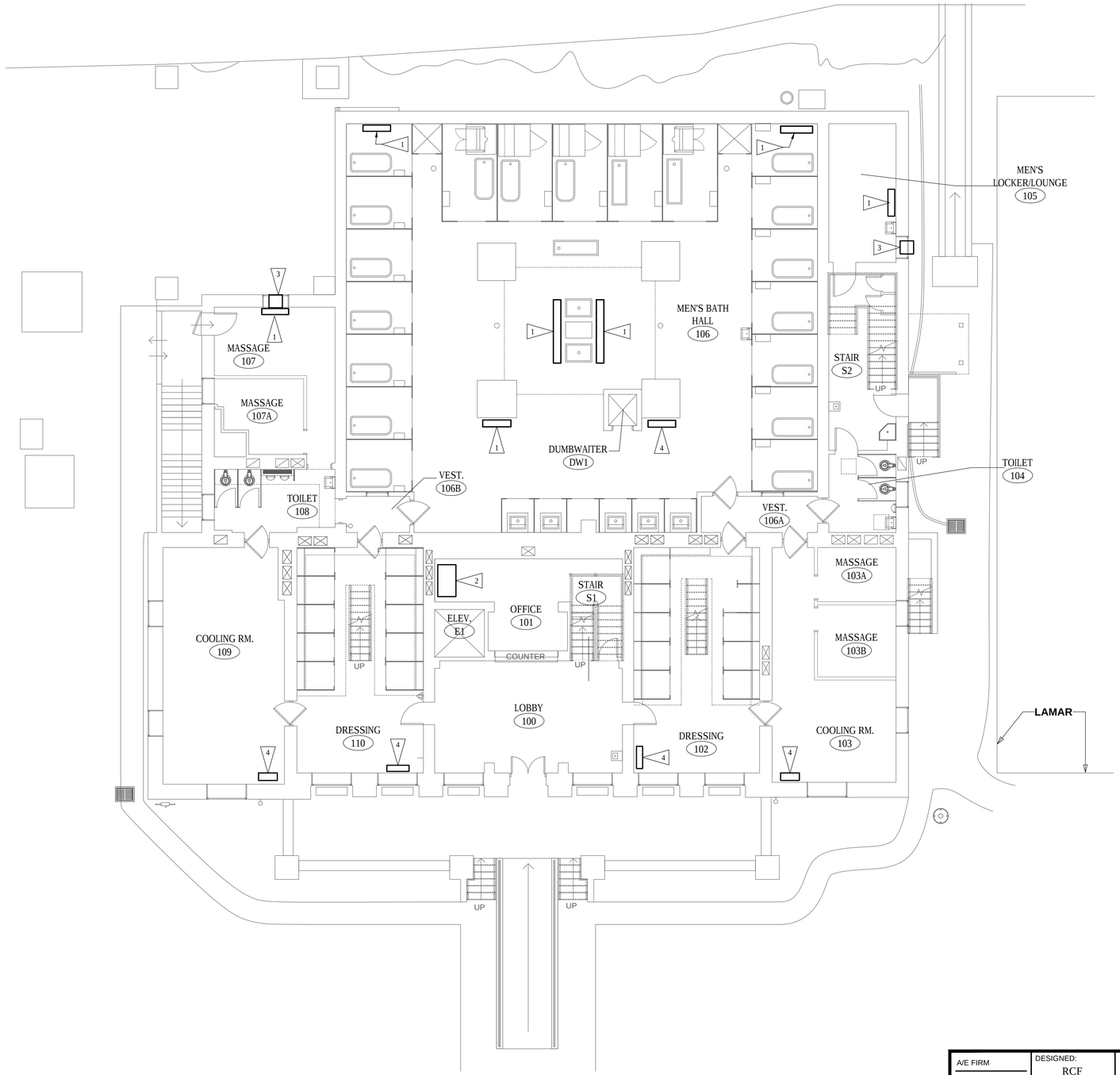
NOTE:
DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawing or at site. lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: RCF DRAWN BY: JAS TECH. REVIEW: GAN DATE: 2/15/2024	SUB SHEET NO. E1-1	TITLE OF SHEET BASEMENT FLOOR PLAN - ELECTRICAL DEMOLITION BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 37 OF 60

February 16, 2024 10:58am 20239955 E1-1.dwg sgutierrez

FLAG NOTES

1. REMOVE WIRING TO EXISTING FAN COIL UNIT.
2. REMOVE WIRING TO EXISTING FURNACE.
3. REMOVE WIRING TO EXISTING WINDOW/PORTABLE AIR CONDITIONER.
4. EXISTING RADIATOR REMOVE BY MECHANICAL CONTRACTOR.



GROUND FLOOR PLAN - ELECTRICAL DEMOLITION

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

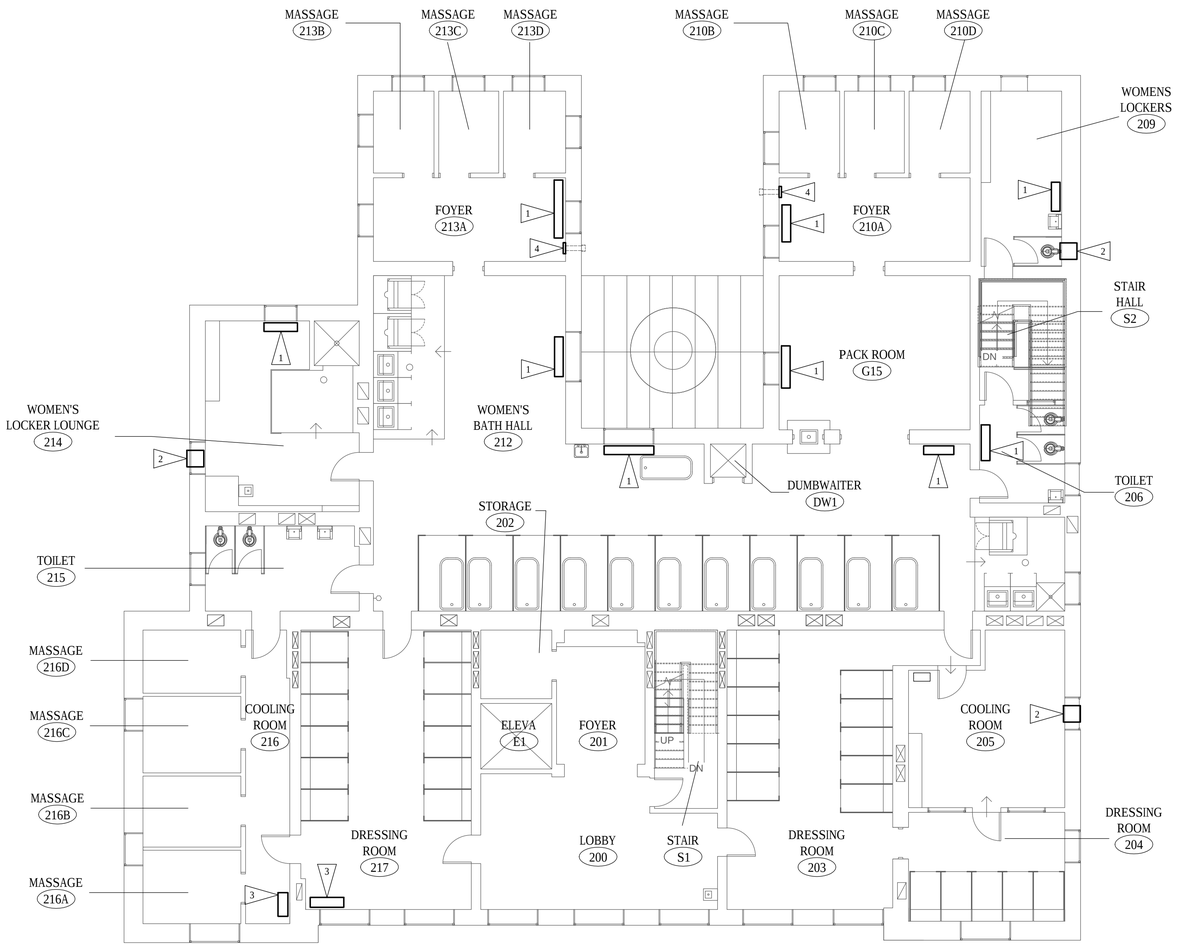
NOTE:
DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawing or at site. lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: RCF DRAWN BY: JAS TECH. REVIEW: GAN DATE: 2/15/2024	SUB SHEET NO. E1 - 2	TITLE OF SHEET GROUND FLOOR PLAN - ELECTRICAL DEMOLITION BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 38 OF 60

FLAG NOTES

1. REMOVE WIRING TO EXISTING FAN COIL UNIT.
2. REMOVE WIRING TO EXISTING WINDOW/PORTABLE AIR CONDITIONER.
3. EXISTING RADIATOR REMOVED BY MECHANICAL CONTRACTOR.
4. REMOVE WIRING TO EXISTING EXHAUST FAN.



SECOND FLOOR PLAN - ELECTRICAL DEMOLITION

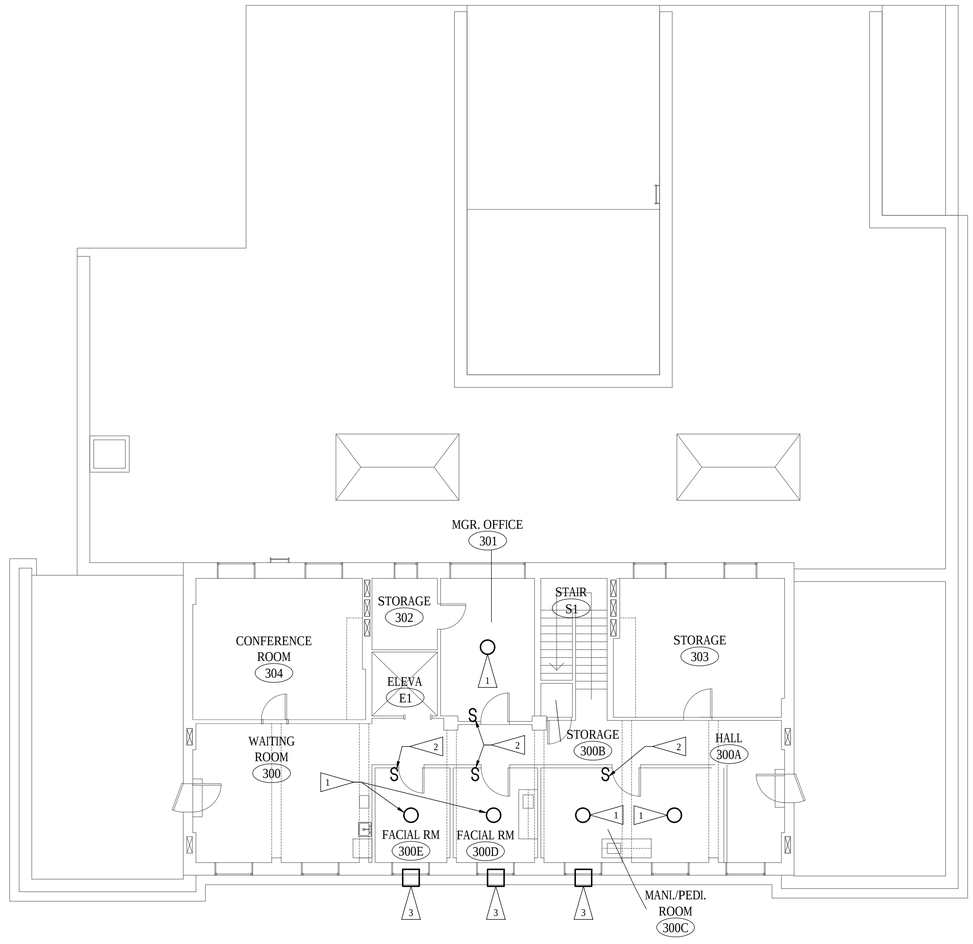
SCALE: 1/8" = 1'-0"

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: RCF DRAWN BY: JAS TECH. REVIEW: GAN DATE: 2/15/2024	SUB SHEET NO. E1-3	TITLE OF SHEET SECOND FLOOR PLAN - ELECTRICAL DEMOLITION BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 39 OF 60

FLAG NOTES

1. REMOVE EXISTING LIGHTING FIXTURE AND WIRING.
2. REMOVE EXISTING SWITCH AND WIRING.
3. REMOVE WIRING TO EXISTING WINDOW AIR CONDITIONER.



THIRD FLOOR PLAN - ELECTRICAL DEMOLITION

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

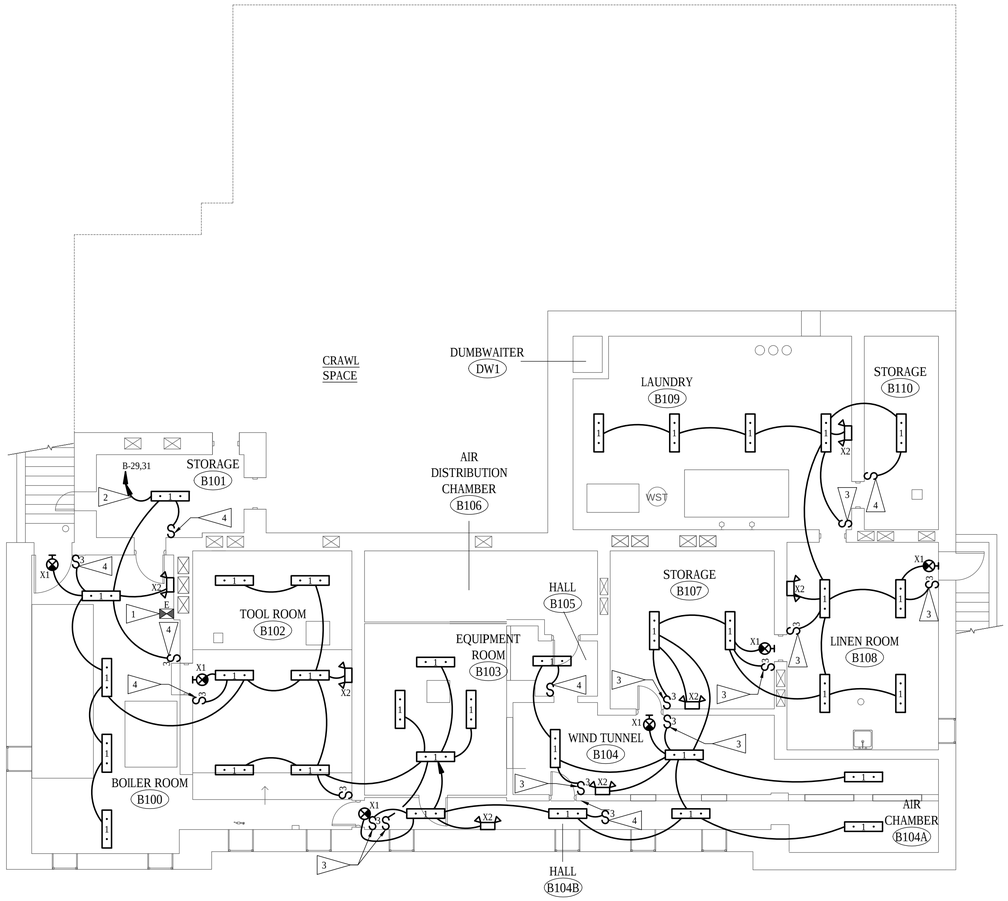
NOTE:
DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawing or at site. lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: RCF DRAWN BY: JAS TECH. REVIEW: GAN DATE: 2/15/2024	SUB SHEET NO. E1-4	TITLE OF SHEET THIRD FLOOR PLAN - ELECTRICAL DEMOLITION BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 40 OF 60

FLAG NOTES

1. EXISTING CONTACTOR FOR EXISTING YARD LIGHTING. EXISTING WIRING TO YARD LIGHTS TO REMAIN. PROVIDE NEW SUPPLY WIRING TO CONTACTOR FROM PANEL 'B'.
2. PROVIDE #10 CONDUCTORS IN 3/4"C ENTIRE LENGTH OF CIRCUIT.
3. EXISTING SWITCH BOX LOCATION, REUSE EXISTING BOX.
4. NEW SWITCH BOX LOCATION, PROVIDE NEW BOX.



BASEMENT FLOOR PLAN - LIGHTING

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

FINAL CONSTRUCTION DOCUMENTS

NOTE:
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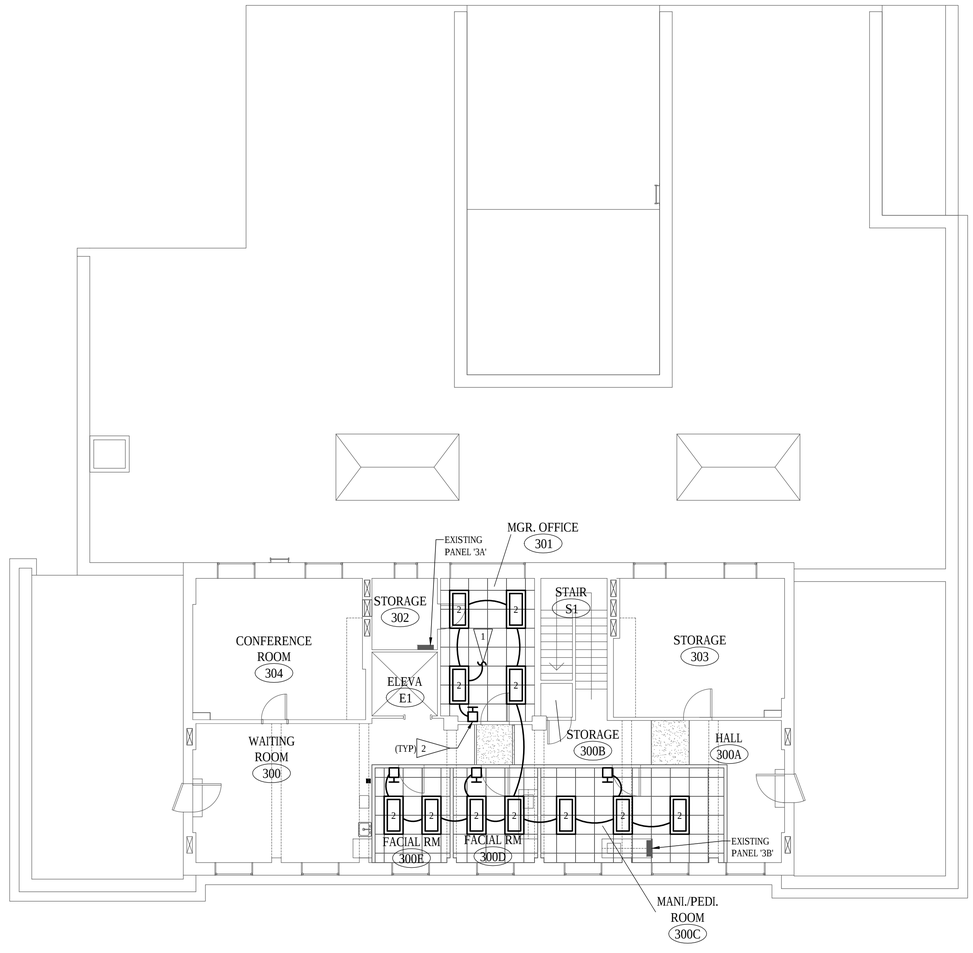
A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: RCF DRAWN BY: JAS TECH. REVIEW: GAN DATE: 2/15/2024	SUB SHEET NO. E2-1	TITLE OF SHEET BASEMENT FLOOR PLAN - LIGHTING BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 41 OF 60

FLAG NOTES

1. CONNECT TO EXISTING UNSWITCHED LIGHTING CIRCUIT.
2. PROVIDE 0-10V LED WALL DIMMER SWITCH.



THIRD FLOOR PLAN - LIGHTING

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

NOTE:
DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawing or at site. lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: RCF DRAWN BY: JAS TECH. REVIEW: GAN DATE: 2/15/2024	SUB SHEET NO. E2 - 2	TITLE OF SHEET THIRD FLOOR PLAN - LIGHTING BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 42 OF 60

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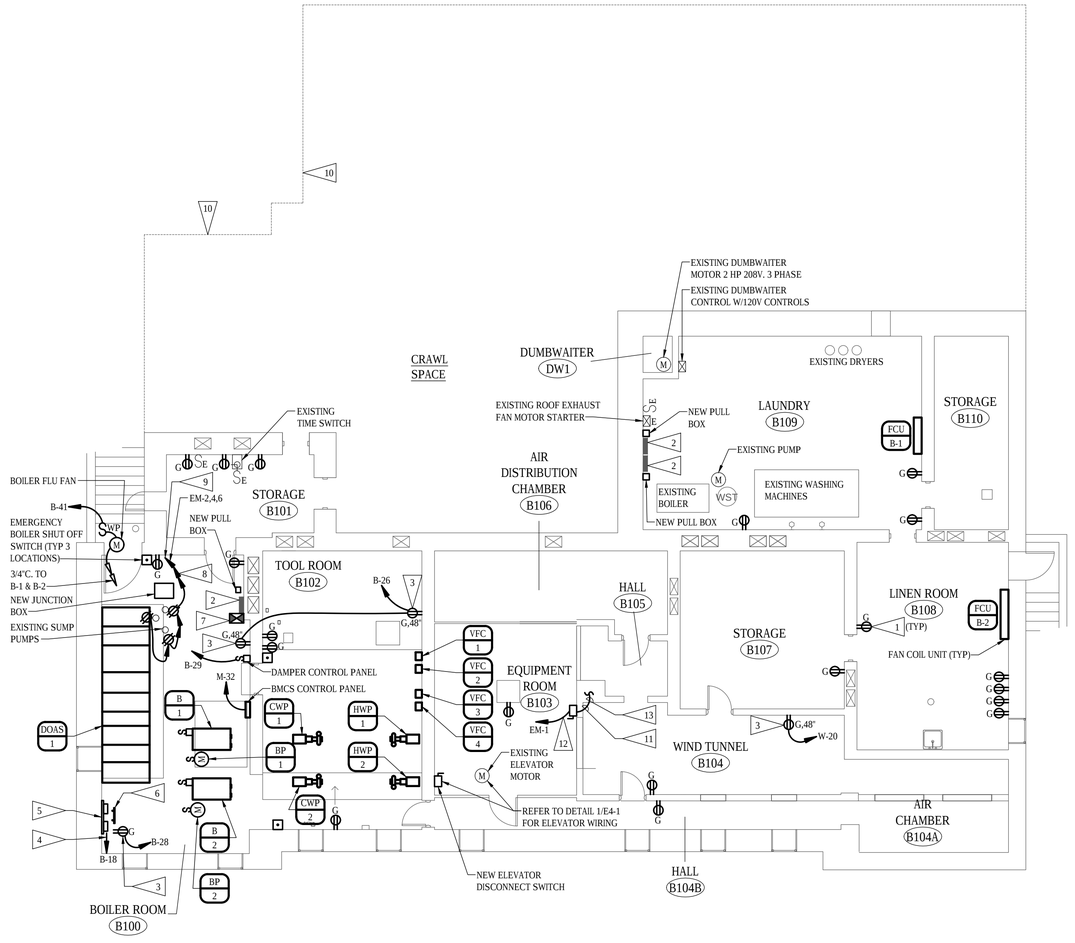
FLAG NOTES

1. PROVIDE NEW GFCI RECEPTACLE DEVICE AND COVERPLATE. CONNECT TO EXISTING WIRING.
2. ORIGINAL PANEL CONVERTED IN TO A JUNCTION BOX.
3. NEW GFCI RECEPTACLE IN NEW LOCATION.
4. RELOCATED TELEPHONE SERVICE PROVIDER INCOMING LINE. COORDINATE WITH TELEPHONE SERVICE PROVIDER COMPANY.
5. RELOCATED TELEPHONE TERMINAL BOARD, DEMARCATION EQUIPMENT, 110 BLOCKS, AND TELEPHONE LINES.
6. PROVIDE INTERSYSTEM GROUND BAR ARLINGTON CAT. NO. GB5-1 OR EQUIVALENT WITH #6 INSULATED GROUND WIRE IN 3/4"C TO NEW MAIN GROUND BAR.
7. EXISTING CONTACTOR FOR RADIATORS. EXISTING WIRING TO RADIATORS TO REMAIN. PROVIDE NEW SUPPLY WIRING FROM NEW PANEL 'B'.
8. 6 #10, 1 #10 GND IN 1"C.
9. ROUTE TO PANEL 'EM' CIRCUITS EM-2,4,6.
10. ROUTE NEW UNDERGROUND CONDUITS FROM NEW EXTERIOR ELECTRICAL GEAR THROUGH THE WALL INTO THE CRAWL SPACE ON THIS WALL. CORE DRILL THE WALL AND PROVIDE LINK SEALS AROUND EACH CONDUIT.
11. PROVIDE A 30 AMP, 1 POLE, FUSIBLE, DISCONNECT SWITCH. FUSED AT 20 AMPS. PROVIDE LABEL 'ELEVATOR CAB LIGHTING'. COORDINATE MOUNTING LOCATION WITH CONTRACTING OFFICER OR CONTRACTING OFFICER REPRESENTATIVE.
12. 2 #10, 1 #10 GND IN 3/4"C.
13. CONNECT TO EXISTING ELEVATOR LIGHTING CIRCUIT.



BASEMENT FLOOR PLAN - POWER

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

NOTE:
DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawing or at site. lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: RCF DRAWN BY: JAS TECH. REVIEW: GAN DATE: 2/15/2024	SUB SHEET NO. E3-1	TITLE OF SHEET BASEMENT FLOOR PLAN - POWER BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 43 OF 60

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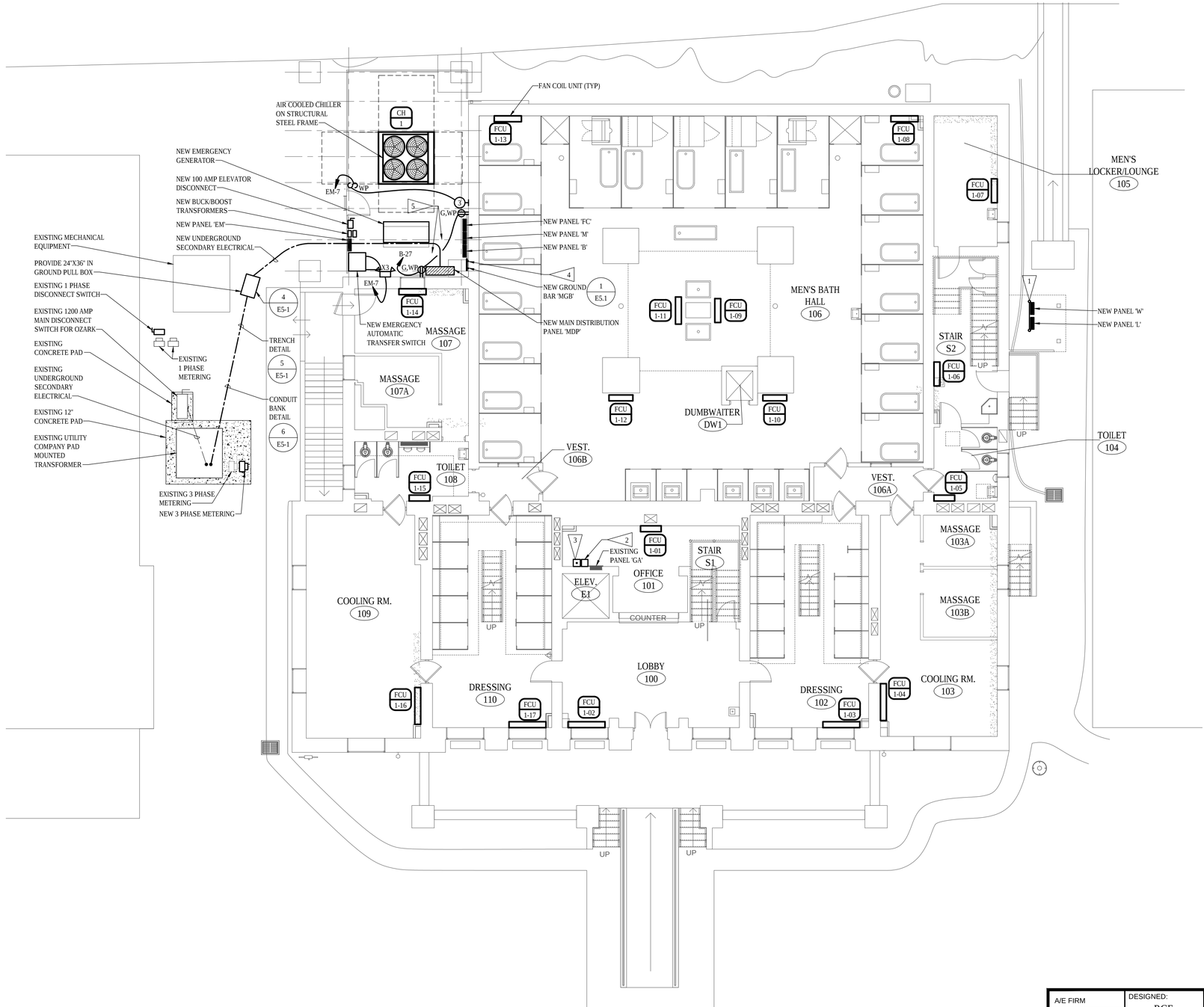
FLAG NOTES

1. MOUNT ON GROUND MOUNTED UNISTRUT FRAMEWORK, SEE DETAIL 7/E5-1.
2. REMOTE GENERATOR STATUS ANNUNCIATOR PANEL.
3. REMOTE GENERATOR EMERGENCY STOP SWITCH.
4. PROVIDE NEMA 3R ENCLOSURE AROUND GROUND BAR.
5. PROVIDE MINIMUM OF 3'-0" BETWEEN GENERATOR AND ELECTRICAL PANELS.



GROUND FLOOR PLAN - POWER

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

NOTE:
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FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: RCF DRAWN BY: JAS TECH. REVIEW: GAN DATE: 2/15/2024	SUB SHEET NO. E3 - 2	TITLE OF SHEET GROUND FLOOR PLAN - POWER BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 44 OF 60

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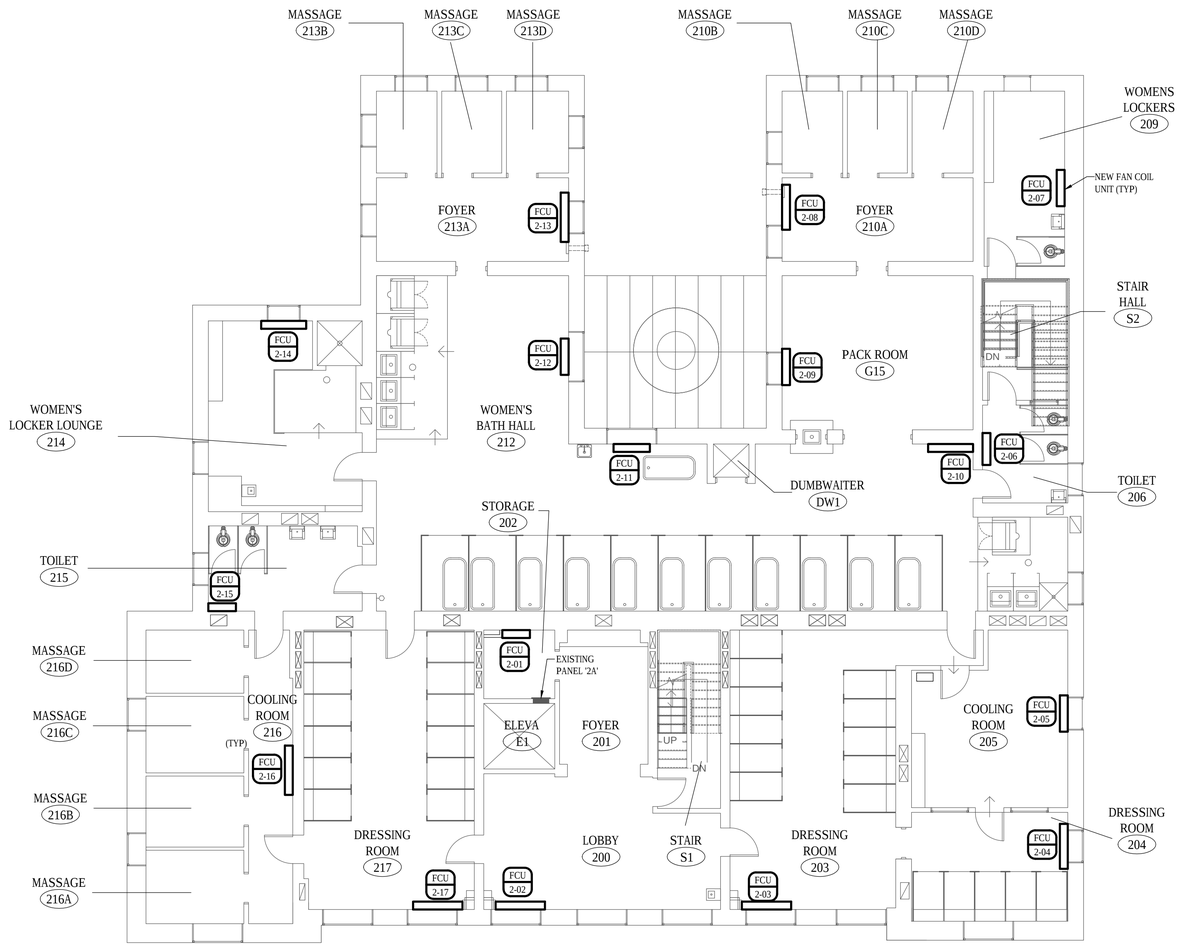

SECOND FLOOR PLAN - POWER

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

FINAL CONSTRUCTION DOCUMENTS

NOTE:
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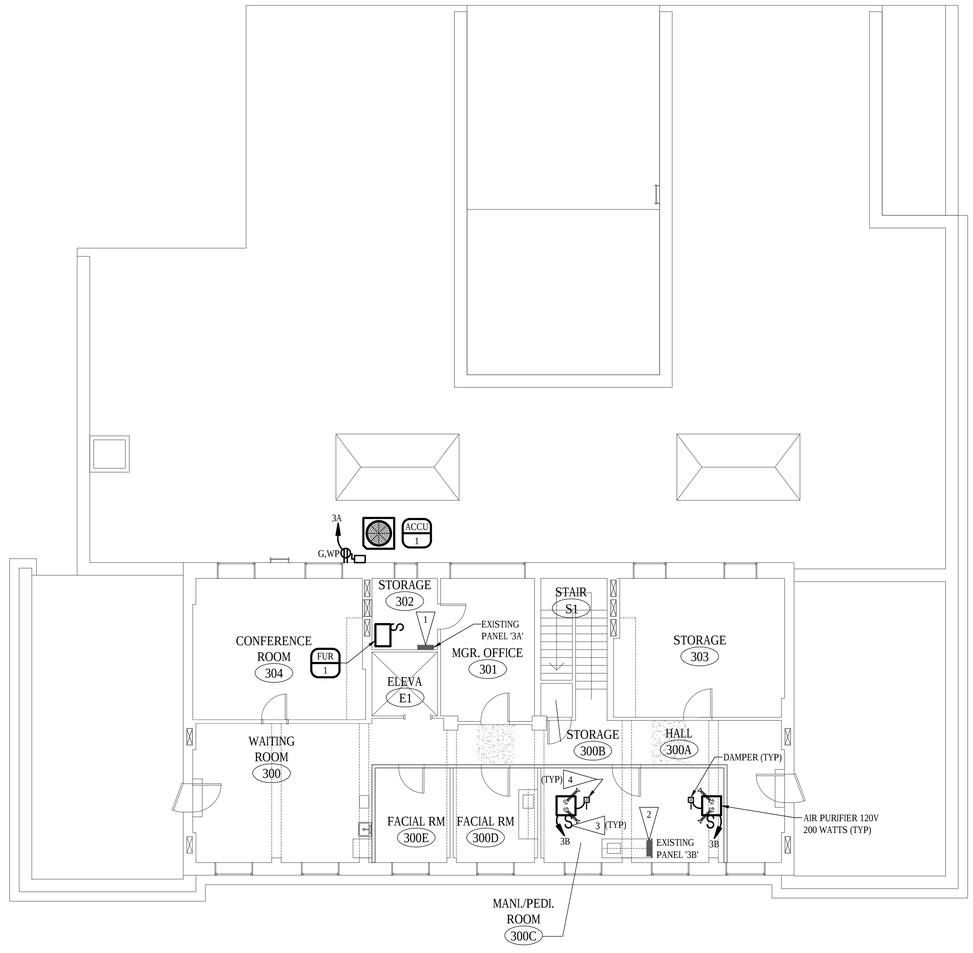
A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: RCF DRAWN BY: JAS TECH. REVIEW: GAN DATE: 2/15/2024	SUB SHEET NO. E3-3	TITLE OF SHEET SECOND FLOOR PLAN - POWER BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 45 OF 60

FLAG NOTES

1. PROVIDE THE FOLLOWING NEW BREAKERS: 1-20/1, 1-45/2.
2. PROVIDE THE FOLLOWING NEW BREAKERS: 2-20/1.
3. PROVIDE A TOGGLE SWITCH DISCONNECT.
4. PROVIDE 120V INTERLOCK WIRING TO DAMPER.



THIRD FLOOR PLAN - POWER

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

NOTE:
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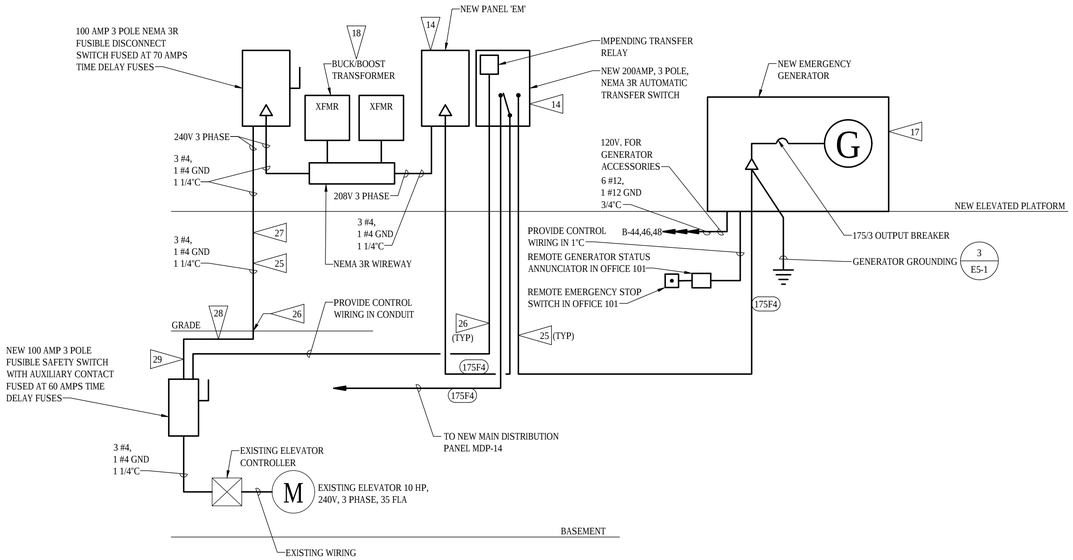
FINAL CONSTRUCTION DOCUMENTS

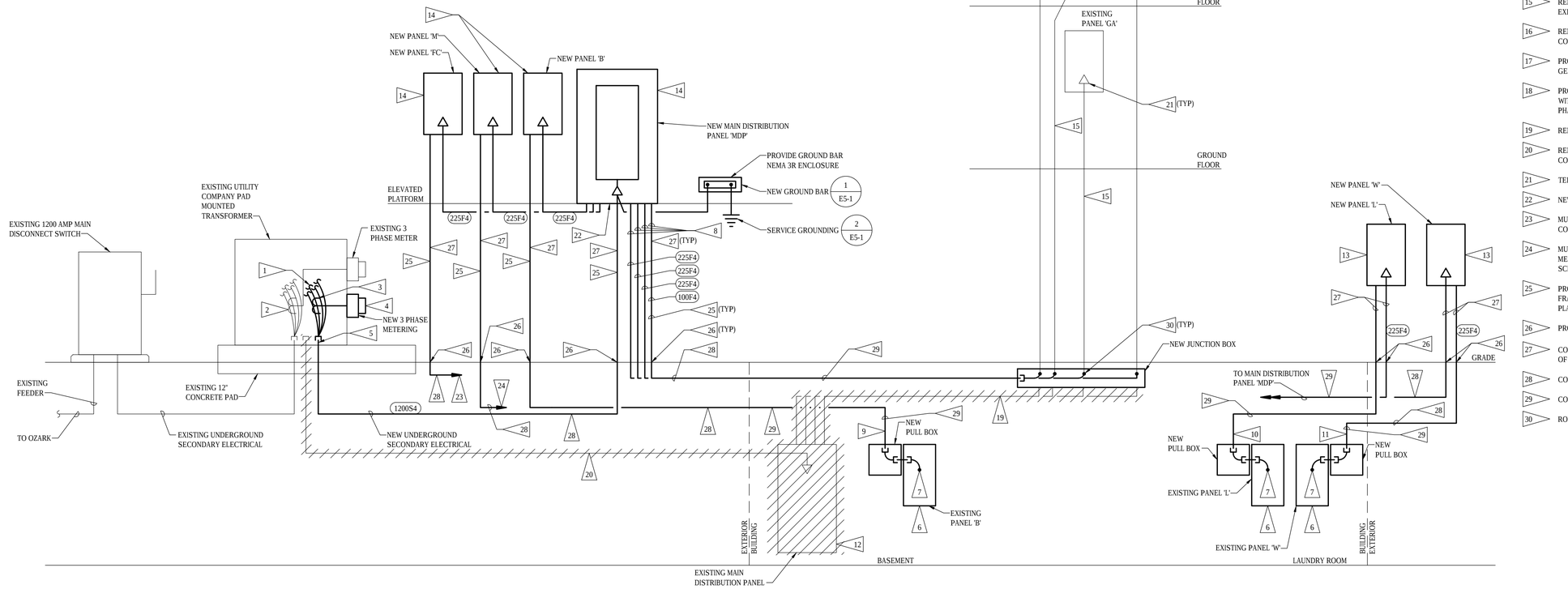
A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: RCF DRAWN BY: JAS TECH. REVIEW: GAN DATE: 2/15/2024	SUB SHEET NO. E3-4	TITLE OF SHEET THIRD FLOOR PLAN - POWER BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 46 OF 60



EMERGENCY ONE LINE DIAGRAM

1
E4-1

NO SCALE



ONE LINE DIAGRAM

2
E4-1

NO SCALE

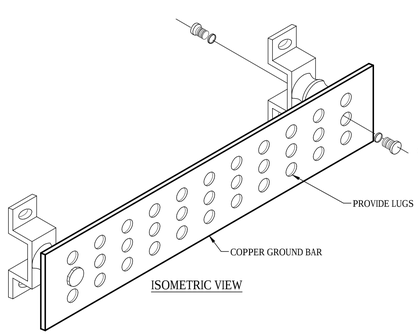
FLAG NOTES

1. UTILITY COMPANY TO MAKE FINAL CONNECTION OF SECONDARY ELECTRICAL CONDUCTORS.
2. EXISTING CURRENT TRANSFORMERS.
3. NEW CURRENT TRANSFORMERS PROVIDED BY UTILITY COMPANY.
4. NEW METERING PROVIDED BY UTILITY COMPANY.
5. PROVIDE OPENING IN EXISTING 12" THICK CONCRETE PAD FOR ADDITIONAL SECONDARY ELECTRICAL CONDUITS.
6. REMOVE EXISTING LUGS, BUSBARS, AND CIRCUIT BREAKERS FROM EXISTING PANEL AND CONVERT INTO A JUNCTION BOX. EXISTING BRANCH FEEDERS AND CIRCUITS TO REMAIN.
7. SPLICE NEW CONDUCTORS TO EXISTING CONDUCTORS.
8. PROVIDE THE FOLLOWING FEEDERS FOR EXISTING LOADS:
   1-100/3 THIRD FLOOR PANEL '3B' 100F4
   1-225/3 FIRST FLOOR PANEL 'GA' 225F4
   1-225/3 SECOND FLOOR PANEL '2A' 225F4
   1-225/3 THIRD FLOOR PANEL '3A' 225F4
9. PROVIDE THE FOLLOWING BRANCH CIRCUITS FOR EXISTING LOADS:
   10-20/1 20 #10, 1 #10 GROUND IN 2"C
   10-20/1 20 #10, 1 #10 GROUND IN 2"C
   10-20/1 20 #10, 1 #10 GROUND IN 2"C
   1-40/2, 1-30/2, 1-20/1 GFCI, 1-20/1 SPARE 2 #6, 2 #8, 4 #10, 1 #8 GROUND IN 2"C
   3-20/2, 6 #12, 1 #12 GROUND IN 3/4"C
10. PROVIDE THE FOLLOWING BRANCH CIRCUITS FOR EXISTING LOADS:
    8-20/1 GFCI 16 #10, 1 #10 GROUND IN 2"C
    8-20/1 GFCI 16 #10, 1 #10 GROUND IN 2"C
    6-20/1 SPARES 12 #10, 1 #10 GROUND IN 1 1/2"C
    1-20/2, 1-20/1 4 #12, 1 #12 GROUND IN 3/4"C
11. PROVIDE THE FOLLOWING BRANCH CIRCUITS FOR EXISTING LOADS:
    2-30/3 6 #10, 1 #10 GROUND IN 1 1/4"C
    5-20-3 15 #10, 1 #10 GROUND IN 2"C
    1-30/3 SPARE, 1-20/3 SPARE 6 #10, 1 #10 GROUND IN 1 1/4"C
12. REMOVE EXISTING MAIN DISTRIBUTION PANEL.
13. MOUNT ON GROUND MOUNTED UNISTRUT FRAMEWORK, SEE DETAIL 7/E5-1.
14. MOUNT ON UNISTRUT FRAMEWORK, ATTACHED TO ELEVATED PLATFORM AND RAILING.
15. REMOVE EXISTING FEEDER CONDUCTORS, PROVIDE 4 #4/0, 1 #4 GROUND IN EXISTING CONDUIT.
16. REMOVE EXISTING FEEDER CONDUCTORS, PROVIDE 4 #2, 1 #6 GROUND IN EXISTING CONDUIT.
17. PROVIDE A NATURAL GAS POWERED 45KW, 208//120V 3 PHASE 4 WIRE EMERGENCY GENERATOR WITH WEATHERPROOF ENCLOSURE.
18. PROVIDE TWO 120X240 INPUT, 16X32 OUTPUT 12 KVA BUCK/BOOST TRANSFORMERS WITH NEMA 3R ENCLOSURE TO BOOST VOLTAGE FROM 208V 3 PHASE TO 236V 3 PHASE OUTPUT.
19. REMOVE EXISTING FEEDER CONDUCTORS AND CONDUITS.
20. REMOVE EXISTING SERVICE ENTRANCE CONDUCTORS, ABANDON UNDERGROUND CONDUIT.
21. TERMINATE NEW FEEDER CONDUCTORS ON EXISTING LUGS.
22. NEW DISTRIBUTION PANEL SHALL HAVE A FACTORY INSTALLED BOTTOM.
23. MULTIPLE CIRCUITS TO NEW FAN COIL UNITS. REFER TO MECHANICAL/ELECTRICAL COORDINATE SCHEDULE ON SHEET E6-1 AND PANEL 'FC' SCHEDULE ON SHEET E6-2.
24. MULTIPLE CIRCUITS TO NEW MECHANICAL EQUIPMENT. REFER TO MECHANICAL/ELECTRICAL COORDINATE SCHEDULE ON SHEET E6-1 AND PANEL SCHEDULE 'M' ON SHEET E6-3.
25. PROVIDE GROUND MOUNTED AND ELEVATED PLATFORM MOUNTED UNISTRUT FRAMEWORK TO SUPPORT VERTICAL CONDUIT FROM GRADE UP TO ELEVATED PLATFORM.
26. PROVIDE FIBERGLASS CONDUIT EXPANSION FITTING(S).
27. CONDUIT ABOVE GRADE SHALL BE FIBERGLASS, PRIME AND PAINT WITH TWO COATS OF BLACK PAINT AS RECOMMENDED BY THE MANUFACTURER.
28. CONDUIT BELOW GRADE SHALL BE FIBERGLASS.
29. CONDUIT INSIDE THE BUILDING SHALL BE ELECTRICAL METALLIC TUBING EMT.
30. ROUTE NEW FEEDER CONDUCTORS INTO EXISTING FEEDER CONDUIT.

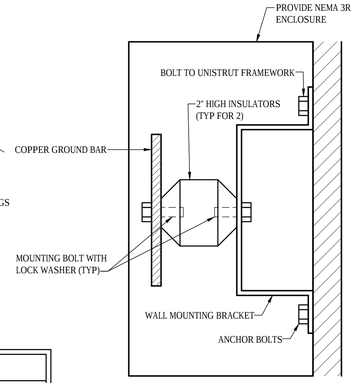
NOTE:
DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, shop and other appropriate drawing or at site. lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: RCF DRAWN BY: JAS TECH. REVIEW: GAN DATE: 2/15/2024	SUB SHEET NO. E4-1	TITLE OF SHEET ONE LINE DIAGRAMS BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 47 OF 60



ISOMETRIC VIEW



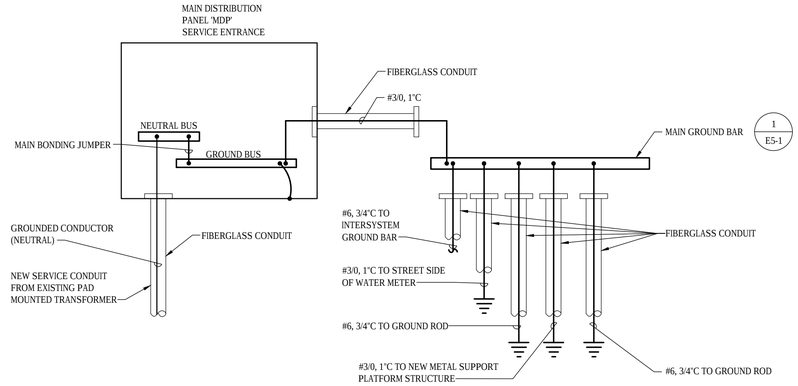
SECTION

GROUND BAR SCHEDULE		
MARK	NOMINAL SIZE	ERICO CAT #
MAIN GROUND BAR	1/4" x 4" x 20"	EGBA14420CCT

GROUND BAR

1 / E5-1

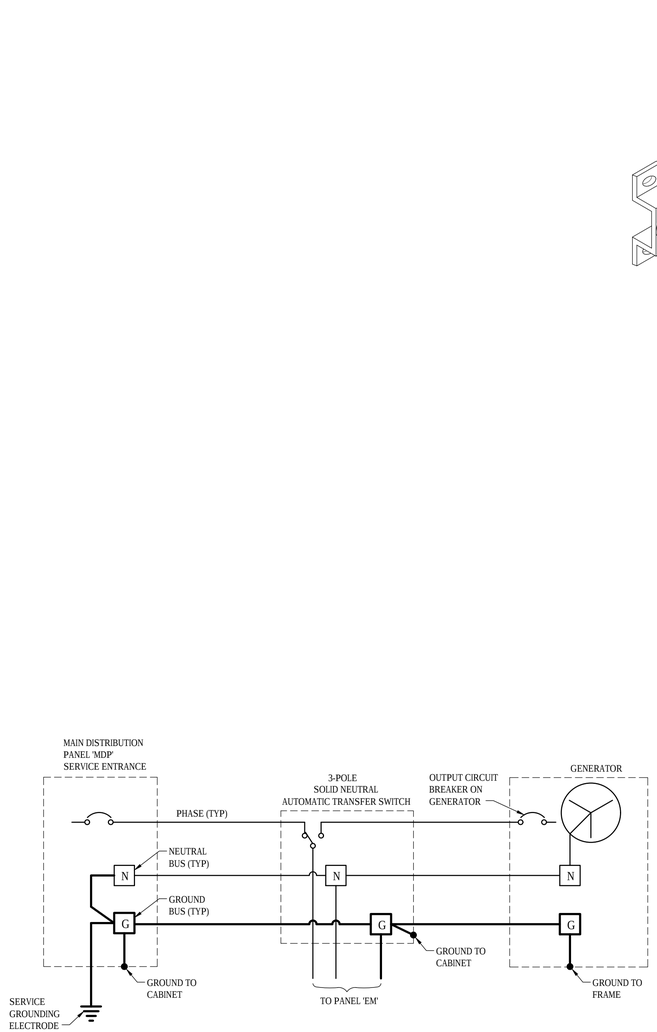
NO SCALE



SERVICE GROUNDING

2 / E5-1

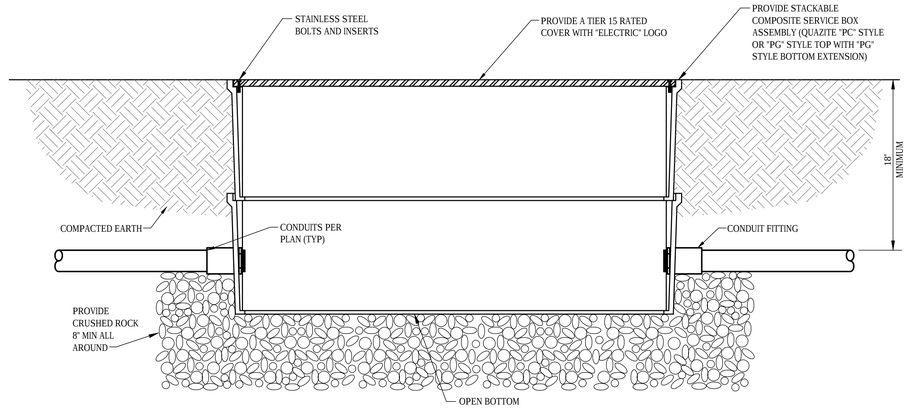
NO SCALE



GENERATOR GROUNDING WITH 3-POLE A.T.S

3 / E5-1

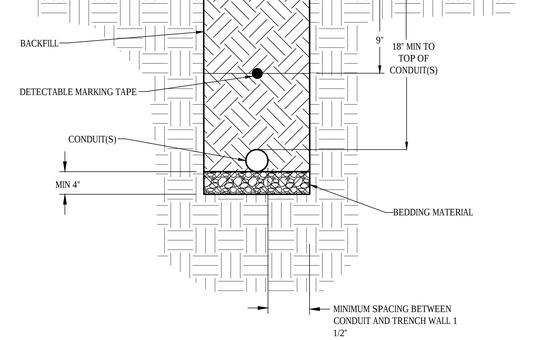
NO SCALE



PULLBOX

4 / E5-1

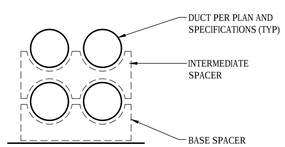
NO SCALE



TRENCH DETAIL

5 / E5-1

NO SCALE

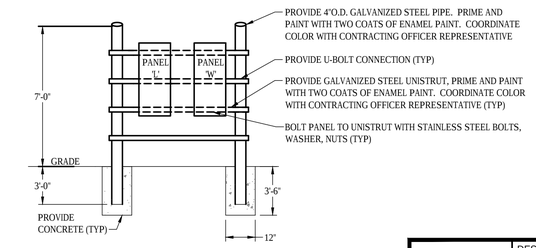


UNDERGROUND SECONDARY ELECTRICAL CONDUIT CONDUIT BANK

6 / E5-1

NO SCALE

NOTES:
1. DETAIL INDICATES GENERAL LAYOUT OF BANKS. ADJUST AS REQUIRED FOR CONDUITS INSTALLED.
2. PROVIDE NON-METALLIC CONDUIT SPACERS LOCATED A MAXIMUM OF 6 FEET ON CENTER. LOCATED AS REQUIRED BY NEC TABLE 352.30.
3. PROVIDE MARKER TAPE ABOVE CONDUIT BANK. SEE SPECIFICATIONS.



PANEL MOUNTING DETAIL

7 / E5-1

NO SCALE

NOTE:
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FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE.	DESIGNED: RCF DRAWN BY: JAS TECH. REVIEW: GAN DATE: 2/15/2024	SUB SHEET NO. E5-1	TITLE OF SHEET ELECTRICAL DETAILS BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. XXX/XXXX PMIS NO. 177425 SHEET 48 OF 60

February 16, 2024 11:02am 20239955_E5-1.dwg sguerrero

LUMINAIRE SALIENT CHARACTERISTICS SCHEDULE

MARK	SALIENT CHARACTERISTICS	SOURCE DATA		COLOR TEMP (K)	DIMMING PROTOCOL	VOLTAGE	MOUNTING	FINISH	REMARKS
		LUMENS	LOAD (VA)						
1	4 FOOT LED VAPOR TIGHT, POLYCARBONATE HOUSING, IP65 RATED, 80 CRI, 6 INCHES WIDE OR LESS	4946	42	40	NONE	120	CEILING	LIGHT GRAY	1
2	LED 2X4 FLAT PANEL LENSED, METAL FRAME, SATIN WHITE LENS, 3 INCHES DEEP OR LESS	3200	25	35	NONE	120	RECESSED GRID	WHITE	
3	LED VANDAL RESISTANT WALL PACK, UV STABILIZED POLYCARBONATE REFRACTOR, DIE-CAST ALUMINUM HOUSING, IP65 RATED	3150	11	40	NONE	120	REMARK 2	DARK BRONZE	2,4
X1	LED WET LOCATION EXIT LIGHT GRAY THERMO PLASTIC HOUSING, SINGLE FACE, NICKEL-CADMIUM BATTERY, SELF-DIAGNOSTICS, RED LETTERS 6 INCHES HIGH BY 3/4" WIDE	NA	3	–	NONE	120	WALL	GRAY	
X2	LED WET LOCATION EMERGENCY LIGHT GRAY COMPACT, LOW PROFILE, THERMO PLASTIC HOUSING, SEALED LEAD-CALCIUM BATTERY, 2-HALOGEN 7 WATT LAMPS	NA	6	–	NONE	120	WALL	GRAY	
X3	LED WET LOCATION EMERGENCY LIGHT GRAY THERMO PLASTIC HOUSING, SEALED NICKEL-CADMIUM BATTERY, 2-LED 1.9 WATT LAMPS, 32 DEGREE F. TO 122 DEGREE F. RATED	NA	6	–	NONE	120	REMARK 3	GRAY	2,3

GENERAL NOTES
- a SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- b CONTRACTOR TO VERIFY INSTALLATION REQUIREMENTS PRIOR TO ORDERING.

REMARKS
1. CHAIN HUNG.
2. MOUNT ON GALVANIZED UNISTRUT FRAMEWORK AT 7'-6" ABOVE PLATFORM.
3. COLD WEATHER RATED DOWN TO 32 DEGREE FAHRENHEIT.
4. MOUNT ON WEATHERPROOF BOX.

TRANSFER SWITCH SCHEDULE

MARK	VOLTAGE	POLES	AMPS	TRANSITION TYPE	SERVICE ENTRANCE RATED	TRANSFER SEQUENCE	NEMA ENCLOSURE	A.I.C. RATING	POWER SYSTEM BRANCH	REMARKS
	120/208V	3	200	AUTO, OPEN	NO	–	N3R	65,000	EMERGENCY (ART 700)	

GENERAL NOTES
- a. WITHSTAND AND CLOSING RATING (WCR) OF EQUIPMENT SHALL BE EQUAL TO OR GREATER THAN THE AVAILABLE FAULT CURRENT WHEN PROTECTED BY THE OVERCURRENT DEVICES FURNISHED.
- b. GENERATOR START DELAY SHALL BE EQUAL TO OR GREATER THAN 1 SECOND.

FEEDER AND BRANCH CIRCUIT SCHEDULE

MARK	CONDUCTORS AND CONDUIT
	2 WIRE PLUS GROUND
20F2	2 #12, #12 GND. 1/2" C.
30F2	2 #10, #10 GND. 3/4" C.
40F2	2 #8, #10 GND. 3/4" C.
	3 WIRE PLUS GROUND
20F3	3 #12, #12 GND. 1/2" C.
30F3	3 #10, #10 GND. 3/4" C.
40F3	3 #8, #10 GND. 1" C.
450F3	3 #4/0, #2 GND. IN EACH OF (2) 2" C.
	4 WIRE PLUS GROUND
100F4	4 #2, #8 GND. 1-1/4" C.
175F4	4 #2/0, #6 GND. 2" C.
225F4	4 #4/0, #4 GND. 2-1/2" C.
	SERVICE CONDUCTORS
1200S4	4 600 KCMIL IN EACH OF (3) 4" C.

MECHANICAL / ELECTRICAL COORDINATION SCHEDULE

ABBREVIATIONS:

A	AMPS	C	COMBINATION STARTER AND SAFETY SWITCH	S	SWITCH	N1	NEMA 1
ENCL	ENCLOSURE	CB	CIRCUIT BREAKER	SF	SWITCH AND FUSTAT	N3R	NEMA 3R
HP	HORSEPOWER	CP	CONTROL PANEL	SS	SAFETY SWITCH	N4X	NEMA 4X
KW	KILOWATTS	C+P	CORD AND PLUG	T	LINE VOLTAGE THERMOSTAT		
PH	PHASE	I	INTEGRAL WITH EQUIPMENT	VFC	VARIABLE FREQUENCY CONTROLLER	SCCR	SHORT CIRCUIT CURRENT RATING
V	VOLTAGE	NF	NON-FUSED				
W	WATTS	OS	OCCUPANCY SENSOR	EC	ELECTRICAL CONTRACTOR		
				MC	MECHANICAL CONTRACTOR		

EQUIPMENT			ELECTRICAL SYSTEM				DISCONNECT				LINE VOLTAGE CONTROLLER				
MARK	DESCRIPTION	LOAD	V	PH	FEEDER OR BRANCH CIRCUIT	PANEL - CIRCUIT	FURNISHED BY/ INSTALLED BY	TYPE	RATING (AMPS)	ENCL	FURNISHED BY/ INSTALLED BY	TYPE	ENCL	AVAILABLE FAULT CURRENT (AMPS)	REMARKS
ACCU-1	CONDENSING UNIT	27.4 MCA	208	1	40F2	3A	EC/EC	SS	60	N3R	MC/–	–	–	>5000	6
B-1	BOILER	5 A	120	1	20F2	M-25	EC/EC	SF	20	N1	MC/–	–	–	–	5
B-2	BOILER	5 A	120	1	20F2	M-26	EC/EC	SF	20	N1	MC/–	–	–	–	5
BP-1	BOILER PUMP	12 A	120	1	30F2	M-29	EC/EC	S	30	N1				–	
BP-2	BOILER PUMP	12 A	120	1	30F2	M-30	EC/EC	S	30	N1				–	
CH-1	CHILLER	364 MCA	208	3	450F3	MDP-15	MC/–	I	–	–	MC/–	–	–	<65,000	4
CH-1	CHILLER CONTROLS		120	1	20F2	M-28	EC/EC	S	20	N3R	–	–	–	–	
CWP-1	COLD WATER PUMP	5 HP	208	3	30F3	–	–	–	–	–	MC/MC	VFC	N1	–	
CWP-2	COLD WATER PUMP	5 HP	208	3	30F3	–	–	–	–	–	MC/MC	VFC	N1	–	
FU-1	FURNACE	12.8 A	120	1	20F2	3A	EC/EC	S	20	N1	MC/–	–	–	–	6
HWP-1	HOT WATER PUMP	3 HP	208	3	20F3	–	–	–	–	–	MC/–	VFC	N1	–	
HWP-2	HOT WATER PUMP	3 HP	208	3	20F3	–	–	–	–	–	MC/–	VFC	N1	–	
VFC-1	CWP VARIABLE FREQUENCY CONTROLLER	5 HP	208	3	40F3	M-7	MC/–	I	–	–	–	–	–	22,000	
VFC-2	CWP VARIABLE FREQUENCY CONTROLLER	5 HP	208	3	40F3	M-8	MC/–	I	–	–	–	–	–	22,000	
VFC-1	HWP VARIABLE FREQUENCY CONTROLLER	3 HP	208	3	30F3	M-1	MC/–	I	–	–	–	–	–	22,000	
VFC-2	HWP VARIABLE FREQUENCY CONTROLLER	3 HP	208	3	30F3	M-2	MC/–	I	–	–	–	–	–	22,000	
DOAS-1	DEDICATED OUTSIDE AIR SYSTEM SUPPLY FANS	2-3.5 HP	208	3	40F3	M-13	MC/–	I	–	–	MC/–	–	–	–	4
DOAS-1	DEDICATED OUTSIDE AIR SYSTEM EXHAUST FAN	2-3.5 HP	208	3	40F3	M-14	MC/–	I	–	–	MC/–	–	–	–	4
DOAS-1	DEDICATED OUTSIDE AIR SYSTEM	1/2 HP	120	1	20F2	M-27	EC/EC	S	20	N1	MC/–	–	–	–	
FCUB-1	FAN COIL UNIT	0.68 A	120	1	20F2	FC-1	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCUB-2	FAN COIL UNIT	1.2 A	120	1	20F2	FC-1	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU1-01	FAN COIL UNIT	0.48 A	120	1	20F2	FC-3	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU1-02	FAN COIL UNIT	1.17 A	120	1	20F2	FC-3	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU1-03	FAN COIL UNIT	1.17 A	120	1	20F2	FC-3	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU1-04	FAN COIL UNIT	1.17 A	120	1	20F2	FC-3	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU1-05	FAN COIL UNIT	0.48 A	120	1	20F2	FC-9	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU1-06	FAN COIL UNIT	0.55 A	120	1	20F2	FC-9	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU1-07	FAN COIL UNIT	0.54 A	120	1	20F2	FC-9	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU1-08	FAN COIL UNIT	0.68 A	120	1	20F2	FC-7	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU1-09	FAN COIL UNIT	0.55 A	120	1	20F2	FC-7	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU1-10	FAN COIL UNIT	0.55 A	120	1	20F2	FC-7	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU1-11	FAN COIL UNIT	0.68 A	120	1	20F2	FC-7	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU1-12	FAN COIL UNIT	0.55 A	120	1	20F2	FC-7	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU1-13	FAN COIL UNIT	0.68 A	120	1	20F2	FC-7	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU1-14	FAN COIL UNIT	0.68 A	120	1	20F2	FC-5	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU1-15	FAN COIL UNIT	0.55 A	120	1	20F2	FC-5	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU1-16	FAN COIL UNIT	1.17 A	120	1	20F2	FC-3	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU1-17	FAN COIL UNIT	1.17 A	120	1	20F2	FC-3	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU2-01	FAN COIL UNIT	0.48 A	120	1	20F2	FC-2	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU2-02	FAN COIL UNIT	1.17 A	120	1	20F2	FC-2	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU2-03	FAN COIL UNIT	1.29 A	120	1	20F2	FC-2	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU2-04	FAN COIL UNIT	0.68 A	120	1	20F2	FC-2	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU2-05	FAN COIL UNIT	0.55 A	120	1	20F2	FC-2	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU2-06	FAN COIL UNIT	0.68 A	120	1	20F2	FC-8	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU2-07	FAN COIL UNIT	0.68 A	120	1	20F2	FC-8	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU2-08	FAN COIL UNIT	1.28 A	120	1	20F2	FC-6	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU2-09	FAN COIL UNIT	0.68 A	120	1	20F2	FC-6	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU2-10	FAN COIL UNIT	1.29 A	120	1	20F2	FC-6	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU2-11	FAN COIL UNIT	0.68 A	120	1	20F2	FC-6	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU2-12	FAN COIL UNIT	0.68 A	120	1	20F2	FC-6	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU2-13	FAN COIL UNIT	1.17 A	120	1	20F2	FC-6	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU2-14	FAN COIL UNIT	1.29 A	120	1	20F2	FC-4	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU2-15	FAN COIL UNIT	0.48 A	120	1	20F2	FC-4	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU2-16	FAN COIL UNIT	1.17 A	120	1	20F2	FC-2	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3
FCU2-17	FAN COIL UNIT	1.17 A	120	1	20F2	FC-2	MC/–	I / C+P	–	–	MC/–	–	–	–	1, 2, 3

GENERAL NOTES:
- a VERIFY/COORDINATE RATINGS FOR EQUIPMENT SUPPLIED BY THE SELECTED MANUFACTURER. WHERE RATINGS ARE OTHER THAN AS REQUIRED FOR SPECIFIED UNIT, DISCONNECTS, MOTOR STARTERS, OVERCURRENT DEVICES AND RELATED REVISIONS SHALL BE PROVIDED ACCORDINGLY. THE CONTRACTOR THAT FURNISHES EQUIPMENT WITH RATINGS OTHER THAN AS NOTED SHALL BE RESPONSIBLE FOR COORDINATION AND COSTS FOR REVISIONS TO ACCOMMODATE SELECTED EQUIPMENT.
- b SHORT CIRCUIT CURRENT RATING (SCCR) OF EQUIPMENT SHALL BE EQUAL TO OR GREATER THAN THE AVAILABLE FAULT CURRENT LISTED. SHORT CIRCUIT CURRENT RATING APPLIES TO EQUIPMENT AND DISCONNECT.
- c FRACTIONAL HORSEPOWER SINGLE PHASE MOTORS SHALL BE PROVIDED WITH INTEGRAL OVERLOAD PROTECTION.
- d DISCONNECTS SHALL BE FUSIBLE UNLESS NOTED OTHERWISE.
- e ELECTRICAL CONTRACTOR SHALL PROVIDE CIRCUIT TO EQUIPMENT AS INDICATED.
- f WHERE DISCONNECT IS NOT INDICATED ON PLANS, LOCATE AT EQUIPMENT PER NEC.

REMARKS
1. CONNECT MULTIPLE FAN COIL UNITS TO ONE 120V 15 AMP CIRCUIT, REFER TO PANEL 'FC' SCHEDULE ON SHEET E6-2.
2. BETWEEN PANEL 'FC' AND THE FIRST FAN COIL UNIT IN CIRCUIT PROVIDE BRANCH CIRCUIT SIZE 30F2.
3. ROUTE BRANCH CIRCUIT WIRING TO FAN COIL UNITS IN THE SAME PATH AS THE MECHANICAL PIPING.
4. PROVIDE FUSES IN FACTORY FURNISHED DISCONNECT SWITCH PER MANUFACTURER RECOMMENDATIONS.
5. PROVIDE EMERGENCY BOILER SHUT OFF SWITCHES AND WIRING.
6. PROVIDE CONTROL WIRING IN 3/4" CONDUIT BETWEEN ACCU-1 AND FU-1.

NOTE:
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FINAL CONSTRUCTION DOCUMENTS

A/E FIRM
PRIME:
KENNETH HAHN ARCHITECTS, INC.
OMAHA, NE.
SUBCONTRACTOR:
ALVINE ENGINEERING
OMAHA, NE.

DESIGNED: RCF
DRAWN BY: JAS
TECH. REVIEW: GAN
DATE: 2/15/2024

SUB SHEET NO. E6-1

TITLE OF SHEET
ELECTRICAL SCHEDULES
BUCKSTAFF BATHHOUSE HVAC
HOT SPRINGS NATIONAL PARK
HOT SPRINGS, AK

DRAWING NO. XXX/XXXX
PMIS NO. 177425
SHEET 49 OF 51

October 07, 2024 9:48am 20239955_E6-1.dwg bjurik

PANEL B

208/120V 3 PHASE 4 WIRE W/ GND BAR SURFACE MOUNTED NEMA 3R
225 AMP MLO
65000 AIC
54 POLES ONE SECTION

DESCRIPTION	LOAD VA	REMARKS	O/C	CKT #	PH	CKT #	O/C	REMARKS	LOAD VA	DESCRIPTION
SPARE			20/1	1	A	2	20/1		EXISTING	EXISTING YARD RECEPT
EXIST. CONTROLLER & YARD LTS	EXISTING		20/1	3	B	4	20/2		EXISTING	EXISTING YARD LIGHTS
EXIST. ELEV. RECEPT.	EXISTING		20/1	5	C	6	.			-
EXISTING BASEMENT RECEPT	EXISTING		20/1	7	A	8	20/1		EXISTING	EXISTING YARD RECEPT
SPARE			20/1	9	B	10	20/2		EXISTING	EXISTING YARD LIGHTS
EXIST. CHRISTMAS LIGHTING RECEPT	EXISTING		20/1	11	C	12	.			-
EXISTING WATER COOLER BSMT	EXISTING	GFCI	20/1	13	A	14	20/1		EXISTING	EXISTING BASEMENT RECEPT
EXISTING WATER COOLER BSMT	EXISTING	GFCI	20/1	15	B	16	20/1			SPARE
EXISTING BELL TRANSFORMER	EXISTING		15/1	17	C	18	20/1		180	TELE BOARD
EXISTING RECEPT MENS MASSAGE	EXISTING		20/1	19	A	20	20/1	GFCI	EXISTING	EXISTING WATER COOLER 3RD
EXISTING RECEPT MENS MASSAGE	EXISTING		20/1	21	B	22	20/1	GFCI	EXISTING	EXISTING WATER COOLER 1ST
EXISTING RECEPT MENS MASSAGE	EXISTING		20/1	23	C	24	20/1	GFCI	EXISTING	EXISTING WATER COOLER 2ND
EXISTING METER BASEMENT	EXISTING		20/1	25	A	26	20/1		360	BASEMENT RECEPT
PLATFORM RECEPT	360		20/1	27	B	28	20/1		180	BASEMENT RECEPT
BASEMENT LIGHTING	750		20/1	29	C	30	30/2			EXISTING AIR COMP./SPARE
BASEMENT LIGHTING	950		20/1	31	A	32	.			-
SPARE		GFCI	20/1	33	B	34	40/2			EXISTING OFFICE A/C/SPARE
SPARE		GFCI	20/1	35	C	36	.			-
SPARE		GFCI	20/1	37	A	38	20/1		EXISTING	EXISTING RADIATORS
DAMPER PANEL	100		20/1	39	B	40	20/1		EXISTING	EXISTING RADIATORS
BOILER FLU FAN	500		20/1	41	C	42	20/1		EXISTING	EXISTING RADIATORS
SPARE			15/1	43	A	44	20/1		1500	GENERATOR ACCESSORIES
SPARE		GFCI	20/1	45	B	46	20/1		1000	GENERATOR ACCESSORIES
SPARE		GFCI	20/1	47	C	48	20/1		1000	GENERATOR ACCESSORIES
SPARE			20/3	49	A	50	15/3			SPARE
.			.	51	B	52	.			-
.			.	53	C	54	.			-

PANEL FC

208/120V 3 PHASE 4 WIRE W/ GND BAR SURFACE MOUNTED NEMA 3R
225 AMP MLO
65000 AIC
30 POLES ONE SECTION

DESCRIPTION	LOAD VA	REMARKS	O/C	CKT #	PH	CKT #	O/C	REMARKS	LOAD VA	DESCRIPTION
FCUB-1, FCUB-2	225		15/1	1	A	2	15/1		661	FCU-2-01,2-02,2-03,2-04,2-05,2-16,-2-17
FCU-1-01,1-02,1-03,1-04,1-16,1-17	760		15/1	3	B	4	15/1		212	FCU-2-14,2-15
FCU-1-14,1-15	148		15/1	5	C	6	15/1		694	FCU-2-08,2-09,2-10,2-11,2-12,2-13
FCU-1-09,1-10,1-11,1-12,1-08,1-13	443		15/1	7	A	8	15/1		163	FCU-2-06,2-07
FCU-1-05,1-06,1-07	188		15/1	9	B	10	15/1			SPARE
SPARE			15/1	11	C	12	15/1			SPARE
SPARE			20/1	13	A	14	20/1			SPARE
SPARE			20/1	15	B	16	20/1			SPARE
SPARE			20/1	17	C	18	20/1			SPARE
SPARE			20/1	19	A	20	20/1			SPARE
				21	B	22				
				23	C	24				
				25	A	26				
				27	B	28				
				29	C	30				

DISTRIBUTION PANEL MDP

208/120V 3 PHASE 4 WIRE W/ GND BAR
1200 AMP MCB INTEGRAL SPD
65000 AIC SERVICE ENTRANCE RATED
BREAKER DISTRIBUTION NEMA 3R
FACTORY INSTALLED BOTTOM

CKT #	O/C	REMARKS	LOAD VA	DESCRIPTION
1	80/3			SPARE
2	60/3			SPARE
3	100/3		EXISTING	EXISTING PANEL '3B'
4	100/3			SPARE
5	225/3			NEW PANEL 'B'
6	225/3		3494	NEW PANEL 'FC'
7	225/3		EXISTING	EXISTING PANEL 'GA'
8	225/3		EXISTING	EXISTING PANEL '2A'
9	225/3		EXISTING	EXISTING PANEL '3A'
10	225/3		EXISTING	NEW PANEL 'W'
11	225/3		EXISTING	NEW PANEL 'L'
12	225/3		33170	NEW PANEL 'M'
13	100/3			SPARE
14	175/3		14750	NEW PANEL 'EM'
15	450/3			CHILLER

PANEL KEY

B	MDP
FC	

NOTE:
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FINAL CONSTRUCTION DOCUMENTS

A/E FIRM
PRIME:
KENNETH HAHN ARCHITECTS, INC.
OMAHA, NE.
SUBCONTRACTOR:
ALVINE ENGINEERING
OMAHA, NE.

DESIGNED: RCF
DRAWN BY: JAS
TECH. REVIEW: GAN
DATE: 2/15/2024

SUB SHEET NO. E6-2

TITLE OF SHEET
ELECTRICAL SCHEDULES
BUCKSTAFF BATHHOUSE HVAC
HOT SPRINGS NATIONAL PARK
HOT SPRINGS, AK

DRAWING NO. XXX/XXXX
PMIS NO. 177425
SHEET 50 OF 60

PANEL W

208/120V 3 PHASE 4 WIRE W/ GND BAR SURFACE MOUNTED NEMA 3R
225 AMP MLO
22000 AIC
42 POLES ONE SECTION

DESCRIPTION	LOAD VA	REMARKS	O/C	CKT #	PH	CKT #	O/C	REMARKS	LOAD VA	DESCRIPTION
EXISTING WHIRLPOOL	EXISTING	GFCI	20/1	1	A	2	20/1	GFCI	EXISTING	EXISTING WHIRLPOOL
EXISTING WHIRLPOOL	EXISTING	GFCI	20/1	3	B	4	20/1	GFCI	EXISTING	EXISTING WHIRLPOOL
EXISTING WHIRLPOOL	EXISTING	GFCI	20/1	5	C	6	20/1	GFCI	EXISTING	EXISTING WHIRLPOOL
EXISTING WHIRLPOOL	EXISTING	GFCI	20/1	7	A	8	20/1	GFCI	EXISTING	EXISTING WHIRLPOOL
EXISTING WHIRLPOOL	EXISTING	GFCI	20/1	9	B	10	20/1	GFCI	EXISTING	EXISTING WHIRLPOOL
EXISTING WHIRLPOOL	EXISTING	GFCI	20/1	11	C	12	20/1	GFCI	EXISTING	EXISTING WHIRLPOOL
EXISTING WHIRLPOOL	EXISTING	GFCI	20/1	13	A	14	20/1	GFCI	EXISTING	EXISTING WHIRLPOOL
EXISTING WHIRLPOOL	EXISTING	GFCI	20/1	15	B	16	20/1	GFCI	EXISTING	EXISTING WHIRLPOOL
SPARE		GFCI	20/1	17	C	18	20/1			EXISTING FAN
SPARE		GFCI	20/1	19	A	20	20/1		180	BASEMENT RECEPT
SPARE		GFCI	20/1	21	B	22	20/1			SPARE
SPARE		GFCI	20/1	23	C	24	20/1			SPARE
SPARE		GFCI	20/1	25	A	26	20/1			SPARE
SPARE		GFCI	20/1	27	B	28	20/1			SPARE
SPARE		GFCI	20/1	29	C	30	20/1			SPARE
SPARE		GFCI	20/1	31	A	32	20/1			SPARE
SPARE		GFCI	20/1	33	B	34	20/1			SPARE
SPARE		GFCI	20/1	35	C	36	20/1			SPARE
SPARE			20/3	37	A	38	20/1			SPARE
.			.	39	B	40	20/2			VERIFY EXISTING LOAD
.			.	41	C	42	.			.

PANEL L

208/120V 3 PHASE 4 WIRE W/ GND BAR SURFACE MOUNTED NEMA 3R
225 AMP MLO
22000 AIC
42 POLES ONE SECTION

DESCRIPTION	LOAD VA	REMARKS	O/C	CKT #	PH	CKT #	O/C	REMARKS	LOAD VA	DESCRIPTION
EXISTING XMAS LIGHTS	EXISTING		20/1	1	A	2	20/1		EXISTING	EXISTING WALL EXHAUST FAN
EXISTING RECEPT MENS MASSAGE	EXISTING		20/1	3	B	4	20/1		EXISTING	EXISTING MICROWAVE MENS L.R.
EXISTING RECEPT MENS MASSAGE	EXISTING		20/1	5	C	6	20/1		EXISTING	EXISTING TIME CLOCK
EXISTING LAUNDRY RECEPT	EXISTING		20/1	7	A	8	20/1		EXISTING	EXISTING A/C LADIES LUNCH RM
EXISTING LAUNDRY RECEPT	EXISTING		20/1	9	B	10	20/1		EXISTING	EXISTING MICROWAVE LADIES L.R.
EXISTING LAUNDRY LIGHTS	EXISTING		20/1	11	C	12	20/1		EXISTING	EXISTING RECEPT LADIES L.R.
EXISTING A/C MENS LUNCH RM	EXISTING		20/1	13	A	14	20/1		EXISTING	EXISTING REFRIG. LADIES L.R.
EXISTING LIGHTS MENS/LADIES	EXISTING		20/1	15	B	16	20/1	GFCI	EXISTING	EXISTING WATER COOLER
EXISTING REFRIG. MENS L.R.	EXISTING		20/1	17	C	18	20/1		EXISTING	EXISTING LIGHT HALL MENS L.R.
SPARE		GFCI	20/1	19	A	20	20/3		EXISTING	EXISTING ROOF EXHAUST FAN
SPARE			20/2	21	B	22	.			-
.			.	23	C	24	.			-
EXISTING DUMB WAITER	EXISTING		20/3	25	A	26	20/3	GFCI	EXISTING	EXISTING DRYER #1
.			.	27	B	28	.			-
.			.	29	C	30	.			-
EXISTING DRYER #3	EXISTING	GFCI	20/3	31	A	32	20/3	GFCI	EXISTING	EXISTING DRYER #2
.			.	33	B	34	.			-
.			.	35	C	36	.			-
EXISTING WASHER #1	EXISTING		30/3	37	A	38	30/3		EXISTING	EXISTING WASHER #2
.			.	39	B	40	.			-
.			.	41	C	42	.			-

PANEL EM

208/120V 3 PHASE 4 WIRE W/ GND BAR SURFACE MOUNTED NEMA 3R
225 AMP MLO INTEGRAL SPD
65000 AIC
24 POLES ONE SECTION

DESCRIPTION	LOAD VA	REMARKS	O/C	CKT #	PH	CKT #	O/C	REMARKS	LOAD VA	DESCRIPTION
EXIST. ELEVATOR CAB LIGHTS	100		20/1	1	A	2	20/1		1200	EXISTING SUMP PUMP
SPARE			20/1	3	B	4	20/1		1200	EXISTING SUMP PUMP
SPARE			20/1	5	C	6	20/1		1200	EXISTING SUMP PUMP
LIGHT FIXTURE TYPE 3 AND X3	17		15/1	7	A	8	15/1			SPARE
				9	B	10				
				11	C	12				
				13	A	14				
				15	B	16				
				17	C	18				
				19	A	20	80/3		11150	EXISTING ELEVATOR
				21	B	22	.			.
				23	C	24	.			.

PANEL M

208/120V 3 PHASE 4 WIRE W/ GND BAR SURFACE MOUNTED NEMA 3R
225 AMP MLO INTEGRAL SPD
65000 AIC
42 POLES ONE SECTION

DESCRIPTION	LOAD VA	REMARKS	O/C	CKT #	PH	CKT #	O/C	REMARKS	LOAD VA	DESCRIPTION
HWP-1	3990		30/3	1	A	2	30/3		3990	HWP-2
.			.	3	B	4	.			.
.			.	5	C	6	.			.
CWP-1	6320		40/3	7	A	8	40/3		6320	CWP-2
.			.	9	B	10	.			.
.			.	11	C	12	.			.
DOAS-1 SUPPLY	8500		40/3	13	A	14	40/3		8500	DOAS-1 EXHAUST
.			.	15	B	16	.			.
.			.	17	C	18	.			.
SPARE			30/3	19	A	20	20/3			SPARE
.			.	21	B	22	.			.
.			.	23	C	24	.			.
BOILER B-1	600		15/1	25	A	26	15/1		600	BOILER B-2
DOAS-1 SUPPLY	1200		20/1	27	B	28	20/1		100	CHILLER CONTROLS
BOILER PUMP BP-1	1680		30/1	29	C	30	30/1		1680	BOILER PUMP BP-2
SPARE			20/1	31	A	32	20/1		100	BMCS CONTROL PANEL
SPARE			15/1	33	B	34	15/1			SPARE
SPARE			20/1	35	C	36	30/1			SPARE
SPARE			20/1	37	A	38	60/3			SPARE
SPARE			20/1	39	B	40	.			.
				41	C	42	.			.

PANEL KEY

W	L
EM	M

FINAL CONSTRUCTION DOCUMENTS

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OMAHA, NE.

DESIGNED: RCF
DRAWN BY: JAS
TECH. REVIEW: GAN
DATE: 2/15/2024

SUB SHEET NO. E6-3

TITLE OF SHEET
ELECTRICAL SCHEDULES
BUCKSTAFF BATHHOUSE HVAC
HOT SPRINGS NATIONAL PARK
HOT SPRINGS, AK

DRAWING NO. XXX/XXXX
PMIS NO. 177425
SHEET 51 OF 60

LINE TYPES

- MAIN PROCESS LINE
- SECONDARY PROCESS LINE
- AUXILIARY PROCESS LINE
- CH — CHANNEL
- DIRECTION OF FLOW
- ANALOG SIGNAL
- DISCRETE SIGNAL
- FIELDBUS SIGNAL
- PNEUMATIC SIGNAL
- ELECTRICAL SIGNAL
- HYDRAULIC SIGNAL
- SOFTWARE OR ETHERNET
- SIGNAL CONNECTION
- CROSSOVER — NO CONNECTION
- CAPILLARY
- DOUBLE CONTAINMENT PIPING

VALVE SYMBOLOGY

- MUD VALVE
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- DOUBLE–DISK CHECK VALVE
- BALL CHECK VALVE
- DUCKBILL CHECK VALVE
- DIAPHRAGM VALVE
- GATE VALVE
- GLOBE VALVE
- KNIFE GATE VALVE
- NEEDLE VALVE
- PINCH VALVE
- PLUG VALVE
- PRESSURE–REDUCING VALVE
- PRESSURE–REGULATING VALVE
- THREE–WAY CONTROL VALVE
- OR — PRESSURE–RELIEF VALVE
- X — AIR–RELEASE VACUUM VALVE
  A = AIR RELEASE
  VAC = VACUUM
- S — SOLENOID VALVE

CROSS REFERENCE SYMBOLOGY

- B | 01Y105 — CONTINUATION ON SHEET 01Y105
- 01Y103 | B — CONTINUATION ON SHEET 01Y103

INSTRUMENT SYMBOLOGY

- LOCALLY MOUNTED FIELD INSTRUMENTATION
- MOUNTED ON PANEL FRONT
- MOUNTED INSIDE PANEL
- XXX — FRONT PANEL MOUNTED ON AUXILIARY PANEL (SUBSCRIPT INDICATES PANEL)
- MOUNTED INSIDE AUXILIARY PANEL
- PILOT LIGHT
- INSTRUMENT FUNCTIONS SHARING COMMON HOUSING
- COMPLEX INTERLOCK AS DEFINED IN CONTROL DIAGRAM OR IN SPECIFICATIONS
- SHARED DISPLAY, SHARED CONTROL, FIELD MOUNTED
- SHARED DISPLAY, SHARED CONTROL, PRIMARY LOCATION — NORMALLY ACCESSIBLE TO OPERATOR
- PROGRAMMABLE LOGIC CONTROL, PRIMARY LOCATION — NORMALLY ACCESSIBLE TO OPERATOR
- PROGRAMMABLE LOGIC CONTROL, FIELD MOUNTED

ACTUATOR SYMBOLOGY

- OPERATOR ABBREVIATIONS:
  M = MOTOR
  P = PNEUMATIC
  S = SOLENOID
- FLOAT OPERATOR
- SPRING–OPPOSED SINGLE–ACTING PNEUMATIC CYLINDER
- DOUBLE–ACTING PNEUMATIC CYLINDER
- PNEUMATIC DIAPHRAGM
- PNEUMATIC DIAPHRAGM WITH POSITIONER

TYPES OF POWER SUPPLY

A	PLANT COMPRESSED AIR
IA	INSTRUMENTATION AIR
ES	ELECTRIC SUPPLY
NG	NATURAL GAS
HYD	HYDRAULIC

INSTRUMENT IDENTIFICATION LETTERS

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	USERS CHOICE			CONTROL	CLOSED
D	USERS CHOICE	DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE		GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME; RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	USER'S CHOICE	MOMENTARY			MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECH. ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

MISCELLANEOUS INSTRUMENTATION ABBREVIATIONS

AI	ANALOG INPUT
AO	ANALOG OUTPUT
CB	CIRCUIT BREAKER
CP	CONTROL PANEL
CR	CONTROL RELAYS
CTW	COLD THERMAL WATER
CW	COLD WATER
DEN	DENSITY (ANALYZER MODIFIER)
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
(E)	EXISTING
E/P	VOLTAGE TO PNEUMATIC
(F)	FUTURE
FNVR	FULL VOLTAGE NON–REVERSING STARTER
FO	FIBER OPTIC
HHS	HAPPY HOLLOW SPRINGS
HMI	HUMAN MACHINE INTERFACE
HTW	HOT THERMAL WATER
HW	HOT WATER
I/O	INPUT/OUTPUT
I/P	CURRENT TO PNEUMATIC
LE	LOWER ELEVATION
MCC	MOTOR CONTROL CENTER
MS	MOTOR STARTER
MSW	MANAGED ETHERNET SWITCH
MT	MOUNTAIN TOWER
(N)	NEW
NOX	NITROGEN OXIDE (ANALYZER MODIFIER)
OIT	OPERATOR INTERFACE TERMINAL
P&ID	PROCESS AND INSTRUMENTATION DIAGRAM
PLC	PROGRAMMABLE LOGIC CONTROLLER
PS	POWER SUPPLY
PTT	PUSH TO TEST
PW	POTABLE WATER
(R)	REPLACE
SC	STREAMING CURRENT (ANALYZER MODIFIER)
SPD	SURGE PROTECTION DEVICES
TB	TERMINAL BLOCKS
TURB	TURBIDITY (ANALYZER MODIFIER)
UPS	UNINTERRUPTABLE POWER SUPPLY
VFD	VARIABLE FREQUENCY DRIVE
WAN	WIDE AREA NETWORK
WS	WHITTINGTON SPRINGS

CONTROL SWITCH NOTATION ABBREVIATIONS

XXX / XXXX — XXX

ACK	ACKNOWLEDGE
CMD	COMMAND
ESTOP	EMERGENCY STOP
FAIL	FAILURE
FOR	FORWARD–OFF–REVERSE
FQI	FLOW TOTALIZER INDICATING
FR	FORWARD–REVERSE
FS	FAST–SLOW
HA	HAND–AUTO
HOA	HAND–OFF–AUTO
HOR	HAND–OFF–REMOTE
LL	LEAD–LAG
LLS	LEAD–LAG–STANDBY
LOR	LOCAL–OFF–REMOTE
LR	LOCAL–REMOTE
LS	LEAD–STANDBY
MA	MANUAL–AUTO
OAC	OPEN–AUTO–CLOSE
OC	OPEN–CLOSE
OOR	ON–OFF–READY
OSC	OPEN–STOP–CLOSE
RJ	RUN–JOG
RJR	RUN–JOG–REVERSE
SIL	SILENCE
SS	START–STOP

PRIMARY ELEMENT SYMBOLOGY

- ORIFICE PLATE
- SONIC OR ULTRASONIC ELEMENT
- M — MAGNETIC FLOW ELEMENT
- PROPELLER OR TURBINE ELEMENT
- FLUME
- WEIR
- VENTURI TUBE
- M — MOTOR
- THERMOWELL
- DIAPHRAGM SEAL
- BUBBLER LEVEL TUBE
- ULTRASONIC LEVEL SENSOR
- RADAR LEVEL SENSOR
- CABLE SUSPENDED PRESSURE TRANSMITTER
- IN–LINE FLANGED DIAPHRAGM SEAL
- PITOT TUBE OR ANNUBAR
- FG — SIGHT FLOW GLASS
- FT — MASS DISPERSION FLOWMETER
- TE — TEMPERATURE ELEMENT WITH THERMOWELL
- FIC — ROTOMETER
- FLOAT SWITCH
- MS2 — MOTOR STARTER
- UNION
- ETHERNET PORT
- I/R — I = CURRENT, R = RESISTANCE

MISCELLANEOUS SYMBOLOGY

SYMBOLOGY

- CENTRIFUGAL PUMP
- SHELL& TUBE HEAT EXCHANGER

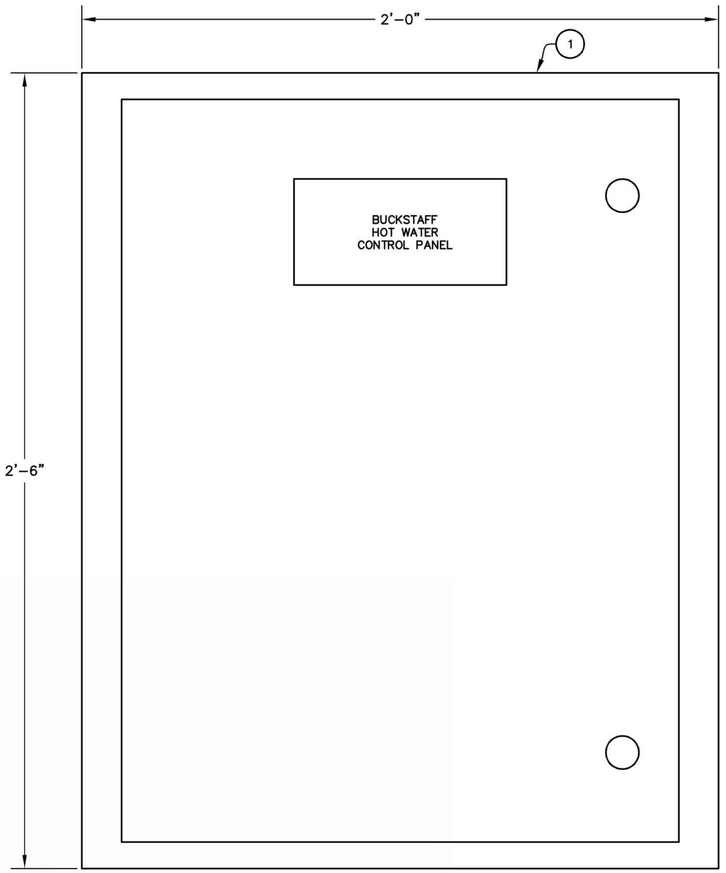
GENERAL NOTES:

1. THIS IS A STANDARD INSTRUMENTATION SYMBOLOGY AND ABBREVIATIONS SHEET. LISTING OF SYMBOLS AND ABBREVIATIONS DOES NOT IMPLY ALL SYMBOLS AND ABBREVIATIONS HAVE BEEN USED ON THIS PROJECT.
2. SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE–EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE.

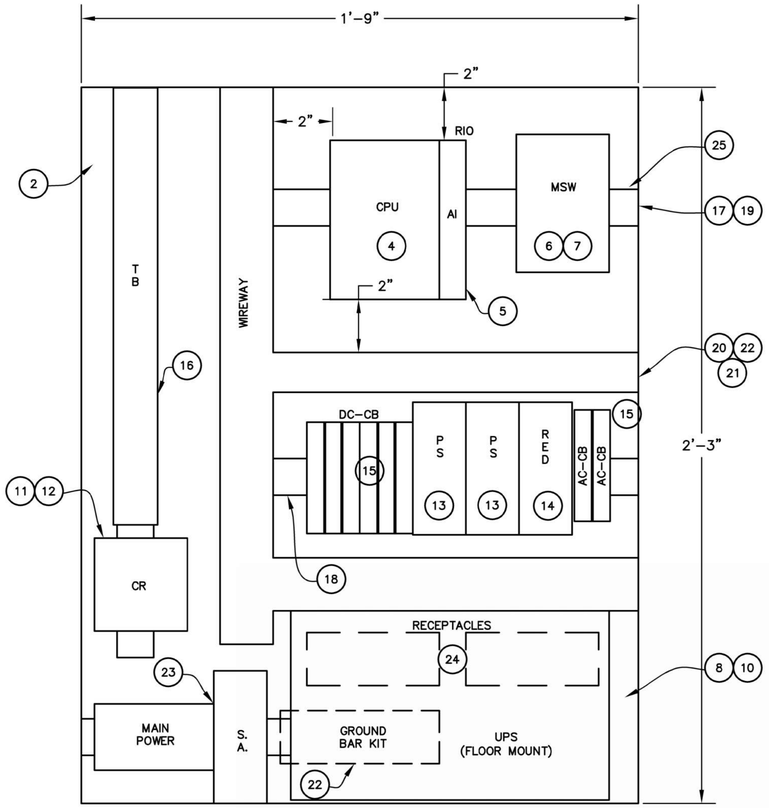
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 20022
WILLIAM PAUL CASSITY
2/21/24

FINAL CONSTRUCTION DOCUMENTS

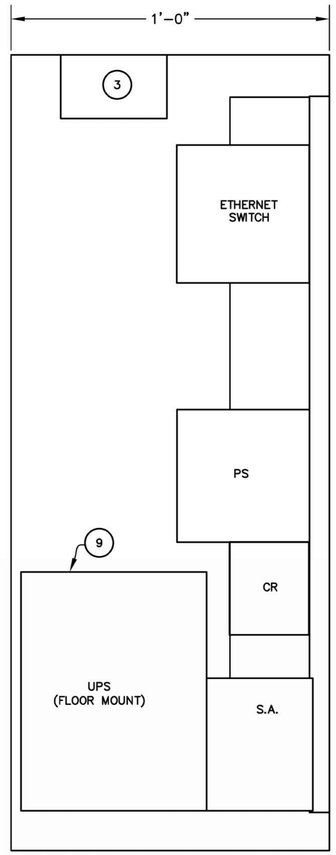
A/E FIRM PRIME: KENNETH HAHN ARCH/TECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE. HDR DENVER, CO.	DESIGNED: B. CASSITY DRAWN BY: N. LYNCH TECH. REVIEW: DATE:	SUB SHEET NO. Y0-01	TITLE OF SHEET SCADA INSTRUMENTATION LEGEND BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. — PMIS/PKG NO. 177425 SHEET 52 OF 60



FRONT PANEL
EXTERIOR



BACK PANEL



SIDE VIEW

BILL OF MATERIALS — PLC CONTROL PANEL

ITEM	QUANTITY	PART NUMBER	MANUFACTURER	DESCRIPTION / REQUIREMENTS / OPTIONS (REF TECH SPECIFICATIONS)	OR EQUAL
1	1	SCE—30EL2412LP	SCE / HOFFMAN	NEMA 4X ENCLOSURE	YES
2	1	SCE—42P30	SCE / HOFFMAN	ENCLOSURE BACKPANEL	YES
3	1	SCE—LF24	SCE / HOFFMAN	LED PANEL LIGHT W/ OUTLET	YES
4	1	CPU 1769—L16R—BB1B	ALLEN—BRADLEY	CONTROLLER, DUAL ETHERNET PORTS, 6 EXPANSION I/O, 1GB SD CARD	YES
5	AS REQ.	AI—1734—IE8C	ALLEN—BRADLEY	ANALOG INPUT (AI) 8 CHANNEL—0/10, 0/5VDC, I—20MA	YES
6	1	1783—BMS06SA	ALLEN—BRADLEY	MANAGED SWITCH 6 PORT, 4 COPPER (RJ45) AND 2 SFP	YES
7	2	1783-SFP100FX	ALLEN—BRADLEY	MULTIMODE 100 MBS SFP MODULE	YES
8	1	1609—B600N	ALLEN—BRADLEY	INDUSTRIAL UPS 600 VA	YES
9	2	1609-SBAT	ALLEN—BRADLEY	UPS BATTERIES	YES
10	1	1609-BRK	ALLEN—BRADLEY	UPS MOUNTING BRACKET	YES
11	AS REQ.	700-HKX6Z24-4	ALLEN—BRADLEY	CONTROL RELAYS- 24VDC SPDT 16A CONTACT	YES
12	AS REQ.	700-HN121	ALLEN—BRADLEY	RELAY SOCKET - 1 POLE SPDT 10 A	YES
13	2	SDN 5—24—100C	SOLA HEVI—DUTY	120VAC IN / 24VDC POWER SUPPLY WITH 120W OUTPUT	YES
14	1	SDN 2.5—20RED	SOLA HEVI—DUTY	REDUNDANCY MODULE—(2) 24VDC INPUT, 1 OUTPUT, ALARM CONTACT	YES
15	AS REQ.	FAZ C1 TO C15	EATON	CIRCUIT BREAKERS FAZ SERIES 1-SP (1-15A)	YES
16	AS REQ.	*	*	TERMINAL BLOCK AND SURGE PROTECTION DEVICE	YES
17	AS REQ.	08 01 73 3	PHOENIX CONTACT	MOUNTING RAIL	YES
18	AS REQ.	08 00 8B 6	PHOENIX CONTACT	DIN RAIL ANCHOR	YES
19	AS REQ.	12 06 56 0	PHOENIX CONTACT	RAIL END CAP	YES
20	AS REQ.	C2LG6 OR C1.5LG6	PANDUIT	WIRE DUCT COVER	YES
21	AS REQ.	F2X3LG6 OR F1.5X3LG6	PANDUIT	WIRE DUCT	YES
22	1	PK7GTA	SQUARE D	SMALL GROUND BAR KIT	YES
23	1	ADPH12010	CUTLER-HAMMER	SURGE ARRESTER	YES
24	2	*	PHOENIX CONTACT	UPS RECEPTACLE/RECEPTACLE	YES
25	1	PS-QS-2x10-F	PROSOFT	BACNET TO ETHERNETIP PROTOCOL CONVERTER	YES

* Reference Specifications

STATE OF ARKANSAS
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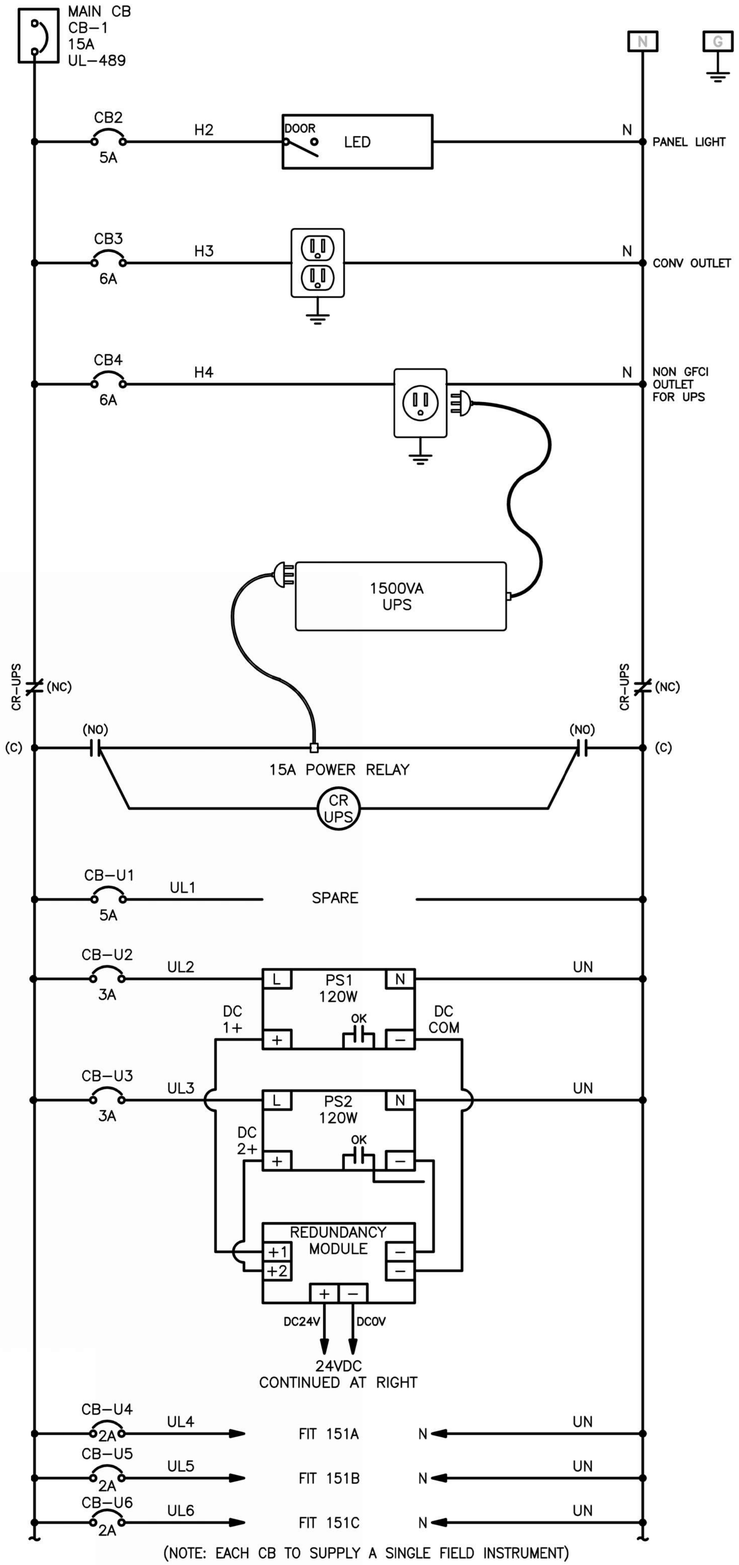
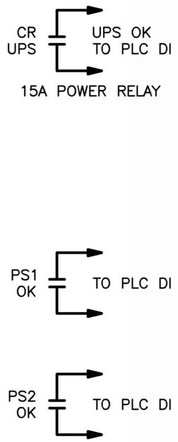
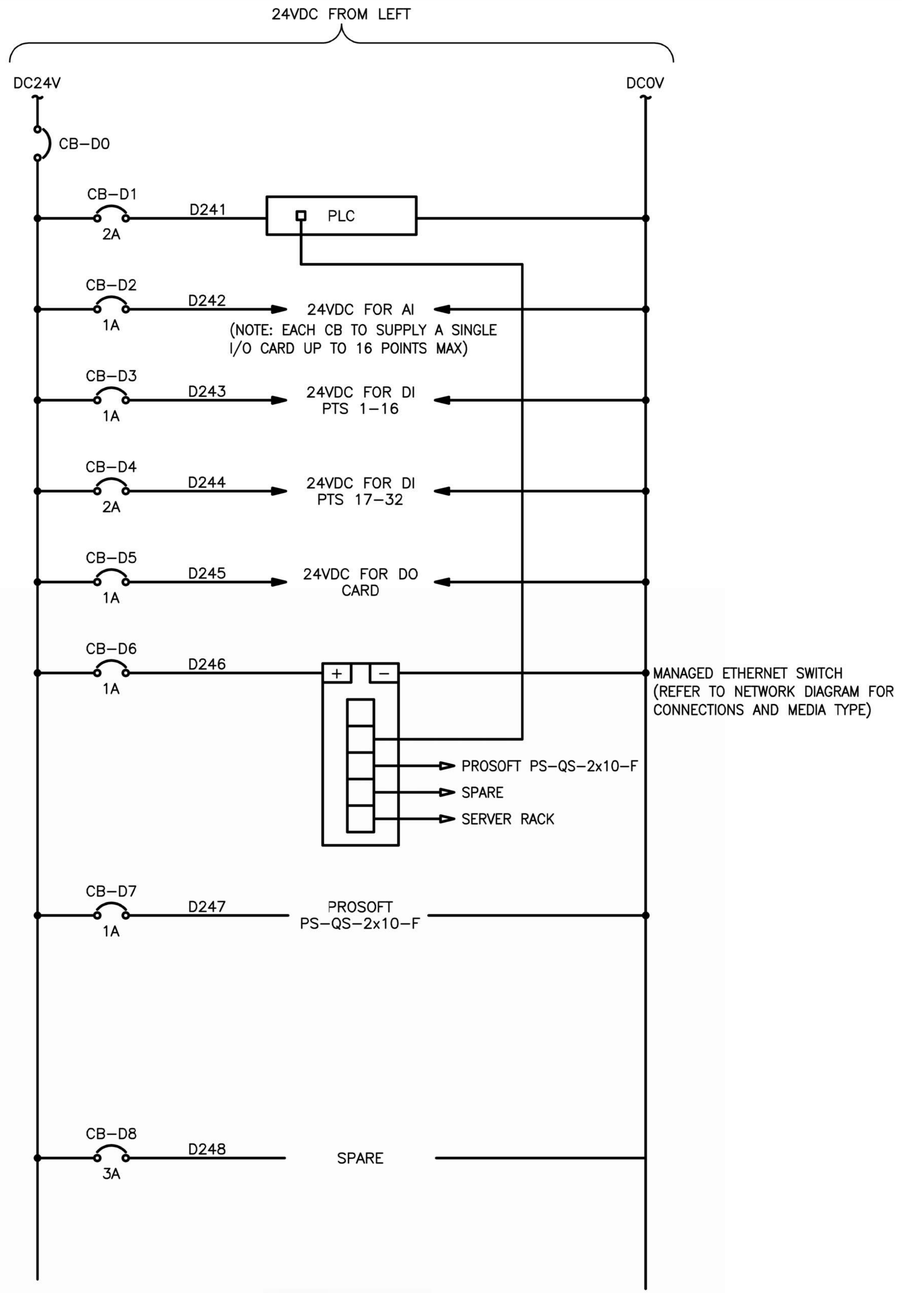
No. 20022
WILLIAM PAUL CASSITY
8/21/24

FINAL CONSTRUCTION DOCUMENTS

A/E FIRM PRIME: KENNETH HAHN ARCHITECTS, INC. OMAHA, NE. SUBCONTRACTOR: ALVINE ENGINEERING OMAHA, NE. HDR DENVER, CO.	DESIGNED: B. CASSITY DRAWN BY: N. LYNCH TECH. REVIEW: DATE:	SUB SHEET NO. Y4-01	TITLE OF SHEET SCADA CONTROL PANEL BUCKSTAFF BATHHOUSE HVAC HOT SPRINGS NATIONAL PARK HOT SPRINGS, AK	DRAWING NO. PMIS/PKG NO. 177425 SHEET 53 OF 60







NOTES:

1. SCHEMATIC IS DIAGRAMMATIC. ACTUAL DEVICES & WIRES TO BE INSTALLED PER MANUFACTURERS INSTRUCTIONS.

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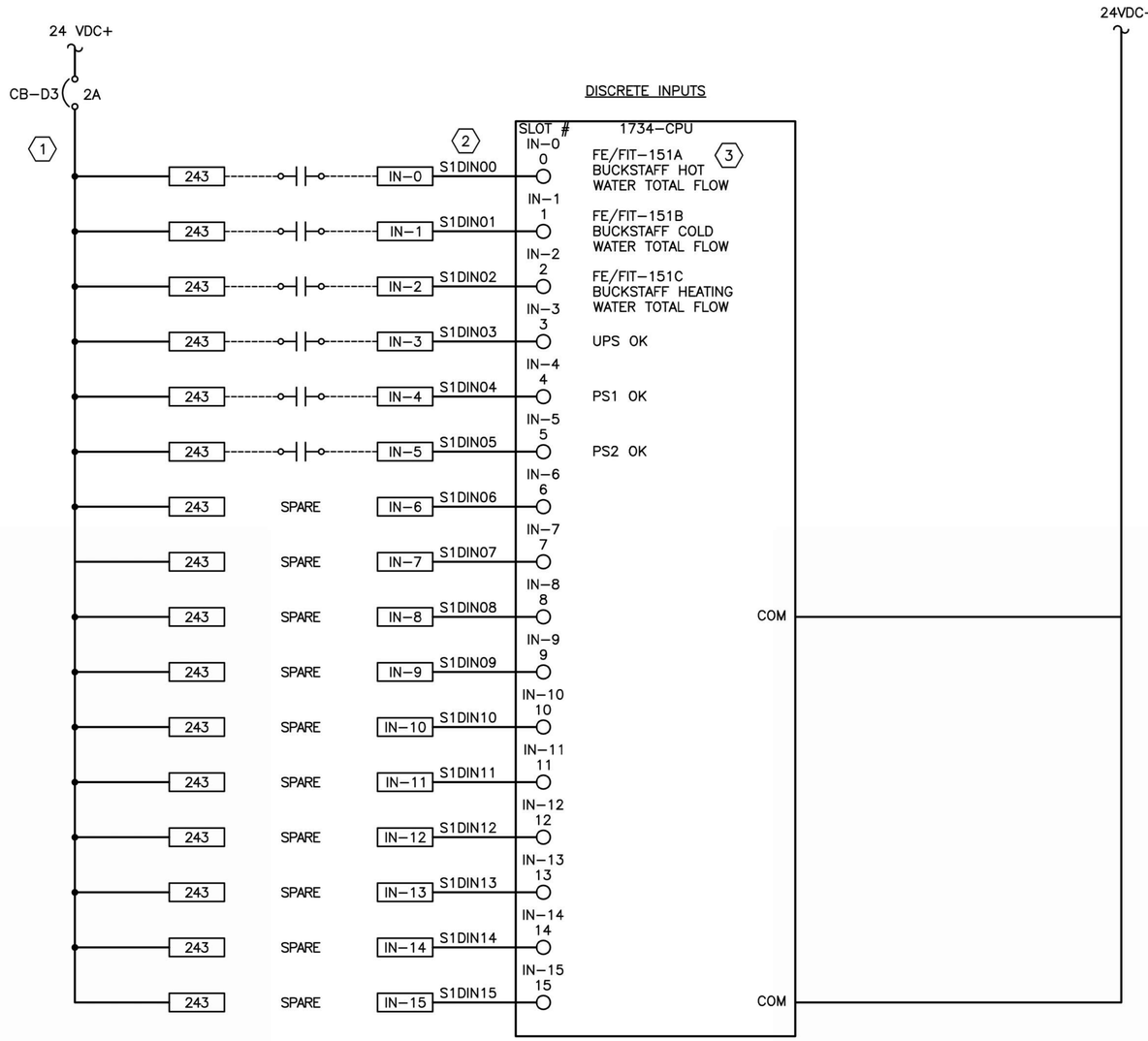

GENERAL NOTES:

A. SCHEMATIC TO ILLUSTRATE WIRING REQUIREMENTS FOR CONTROL PANEL. REFER TO IO LIST FOR ASSIGNED IO.

KEY NOTES: (X)

1. WIRE NUMBER IS COMPRISED OF 24 (24 VDC) + CB NUMBER. IN THIS CASE THE 3RD CB PROVIDES POWER SO WIRE NUMBER IS 243.
2. WIRE NUMBER IS SLOT (S) NUMBER, POINT (DIN) NUMBER
3. FIELD TO VERIFY IF FLOWMETERS HAVE DRY CONTACTS FOR FLOW TOTALIZER SIGNAL

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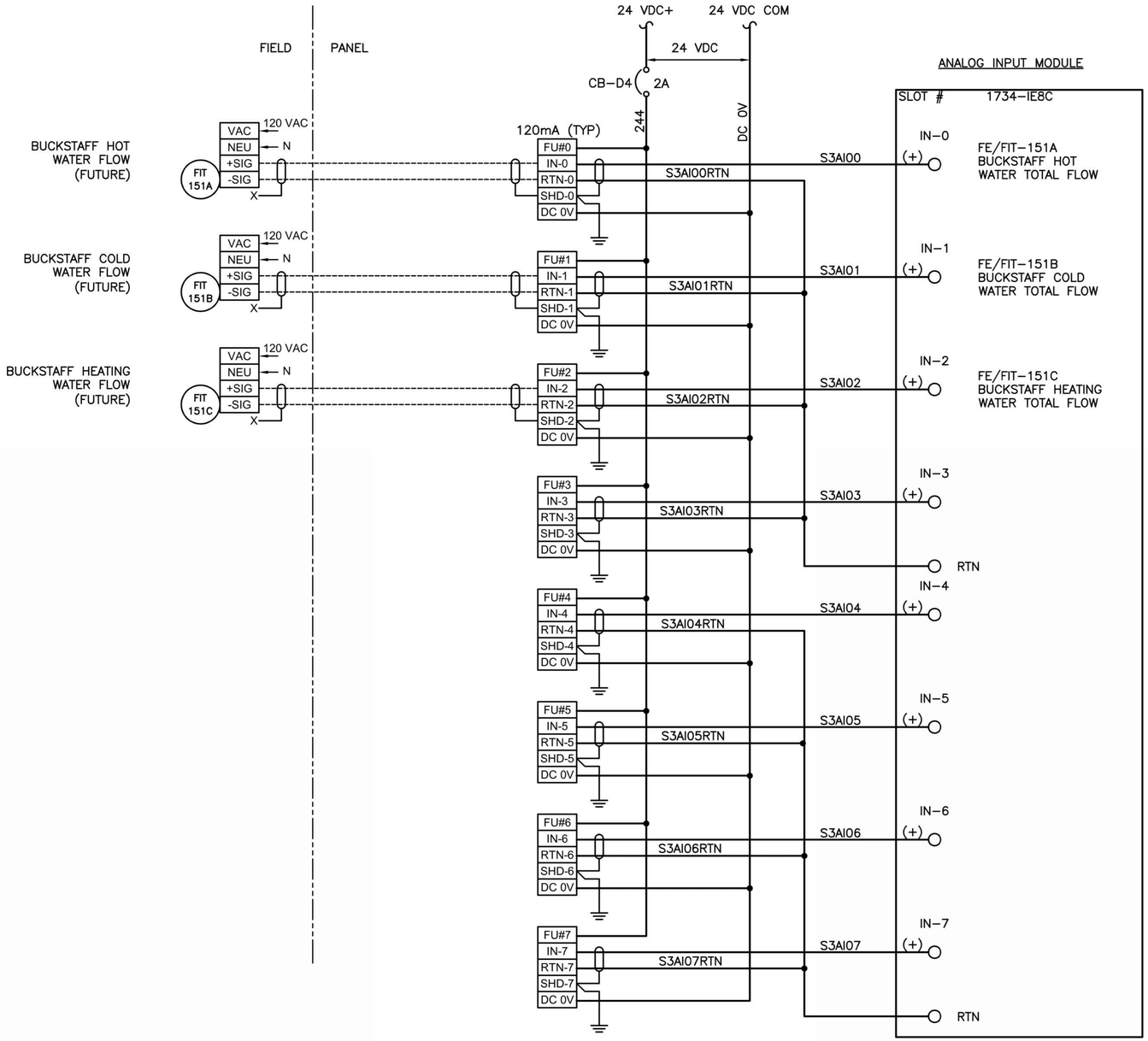
GENERAL NOTES:

A. SCHEMATIC TO ILLUSTRATE WIRING REQUIREMENTS FOR CONTROL PANEL. REFER TO IO LIST FOR ASSIGNED IO.

B. CONTRACTOR RESPONSIBLE TO PROVIDE SURGE PROTECTION DEVICES



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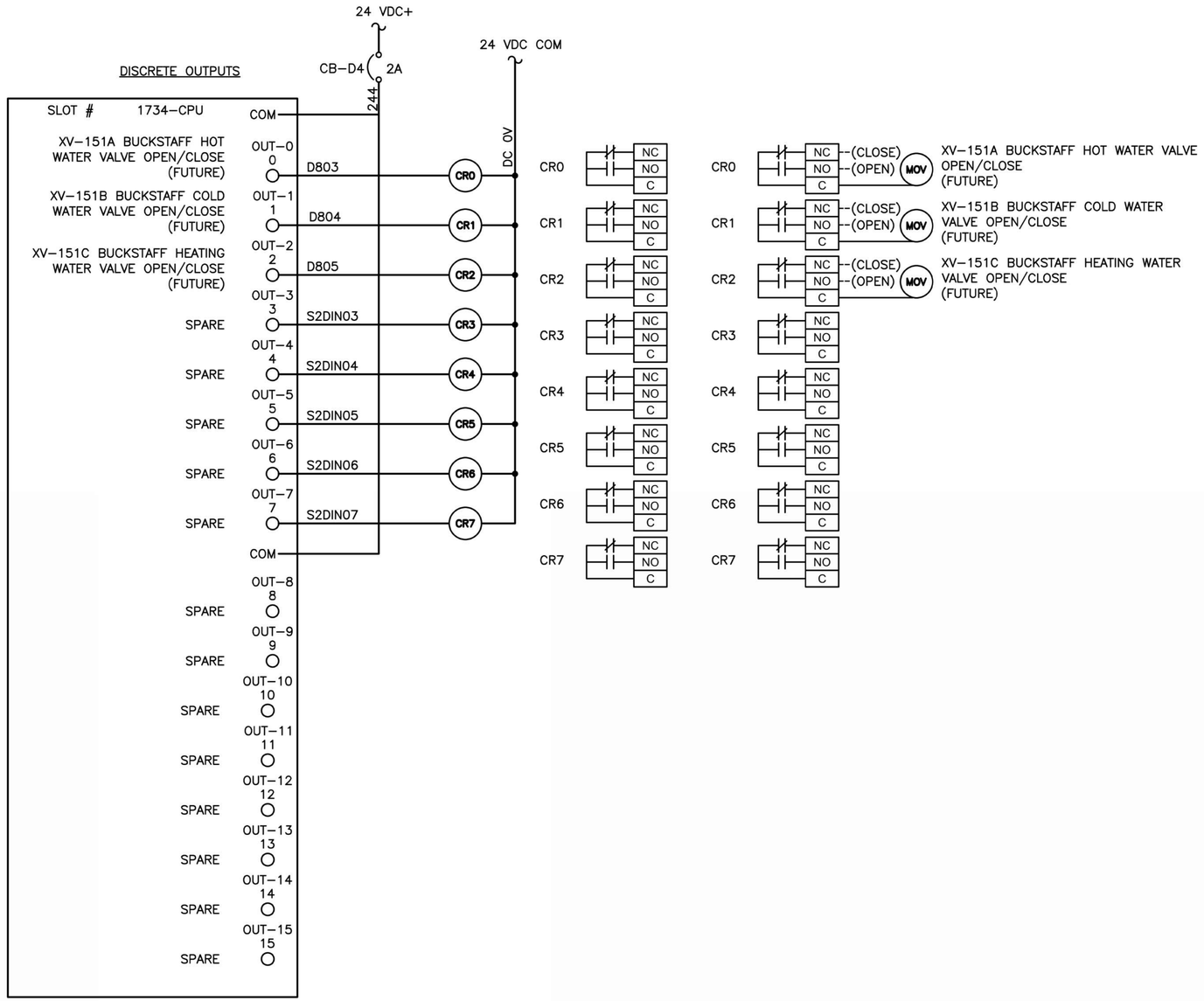
GENERAL NOTES:

A. SCHEMATIC TO ILLUSTRATE WIRING REQUIREMENTS FOR CONTROL PANEL. REFER TO IO LIST FOR ASSIGNED IO.



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HMI/OIT

HMI/OIT

ADMIN BLDG
PLC (HW PLC)
MAIN PLC CP

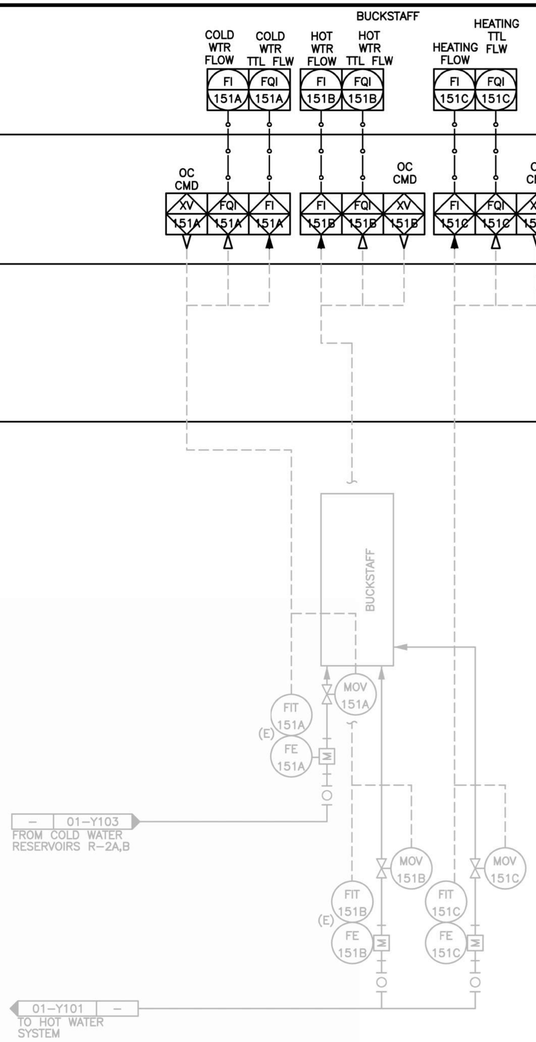
COLD WATER
STATION PLC
(CW PLC)

VFD/MCC/CP

VFD/MCC/CP

FIELD/PROCESS

FIELD/PROCESS



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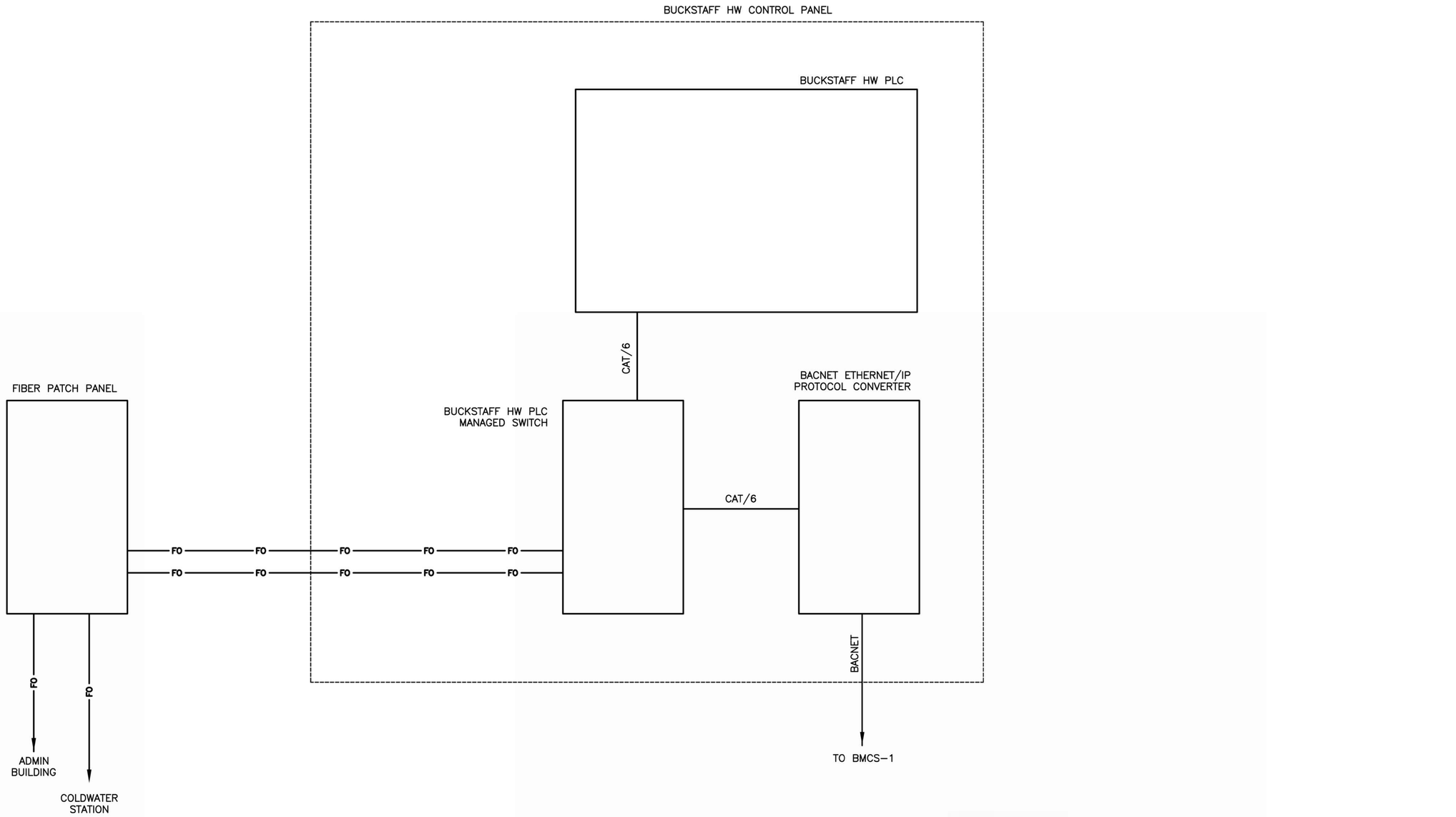

STATE OF ARKANSAS
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STATE OF ARKANSAS
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12/21/24

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