

AUGUSTUS BROWN SWIMMING POOL

DDC CONTROLS CONVERSION

CBJ PROJECT NO. E16-078

JUNEAU ALASKA

CONSTRUCTION DOCUMENTS - OCTOBER, 2015

MECHANICAL ENGINEER

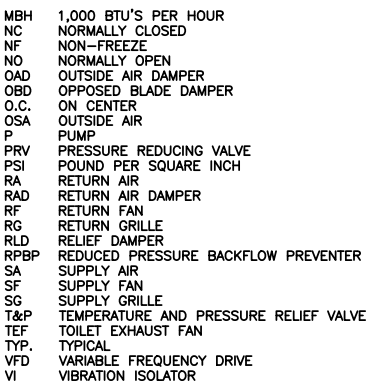
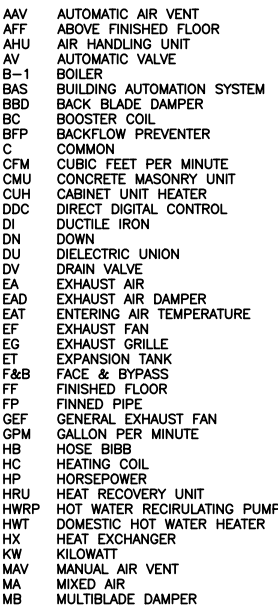
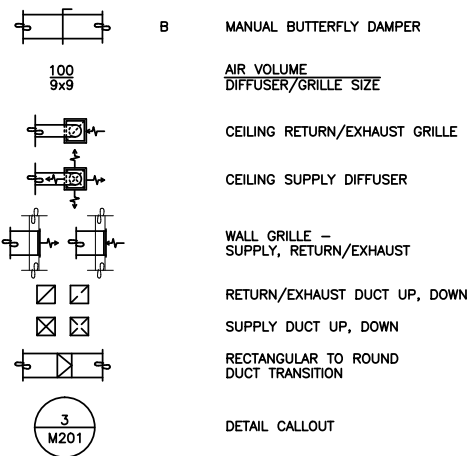
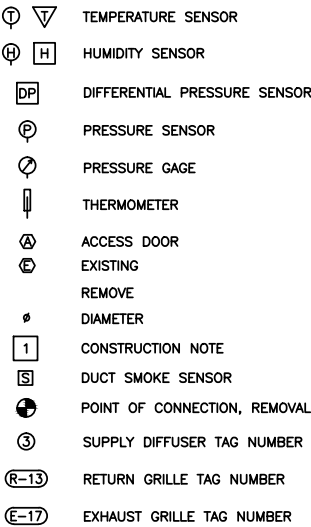
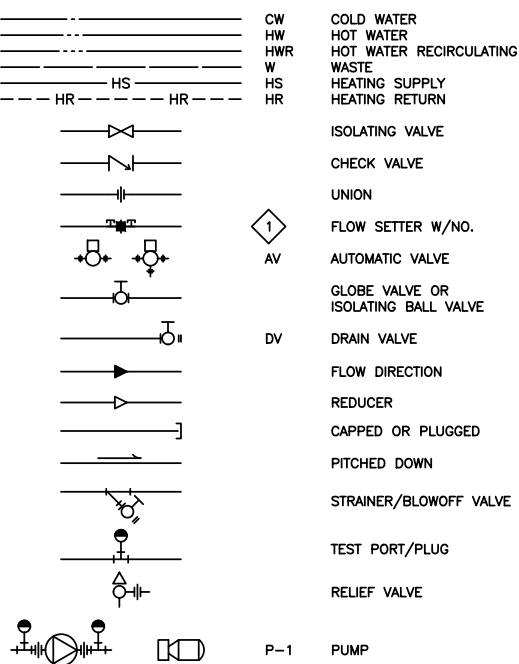
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DRAWINGS

- M001 SCHEDULES & DETAIL
- M101 FLOOR PLANS
- M201 ENLARGED PLANS
- M301 PIPING DIAGRAMS
- M302 PIPING DIAGRAMS
- M401 CONTROLS
- M402 CONTROLS

SYMBOLS



CODE NOTES:

1. CODES & REGULATIONS: ALL WORK SHALL BE STRICTLY IN CONFORMANCE WITH APPLICABLE CODES AND REGULATIONS. ALL WORK SHALL BE IN ACCORDANCE WITH SPECIFICATIONS, DRAWINGS, THE 2009 INTERNATIONAL CODES, 2009 UNIFORM PLUMBING CODE, AND CBJ AND STATE OF ALASKA MODIFICATIONS. ALL ELECTRICAL EQUIPMENT SHALL BEAR THE UL LABEL. ALL SHEET METAL WORK TO BE DONE IN ACCORDANCE WITH SMACNA REQUIREMENTS. PROVIDE ALL TESTING REQUIREMENTS FOR MECHANICAL SYSTEMS AS REQUIRED AND WITNESSED BY ADMINISTRATIVE AUTHORITY.

AIR VOLUME SCHEDULES

AHU-3 (LOBBY AND OFFICES)

ROOM #	ROOM	SUPPLY			RETURN		
		MARK	SIZE	SA CFM	MARK	SIZE	RA CFM
3	POOL DECK	SG	36x20	400	—	—	—
4	STAFF	SG	24x24	350	—	—	—
5	WAITING	SG	24x24	350	—	—	—
6	LOBBY (DESK)	SG	20x20	350	RG(R-6)	20x20	375
7	LOBBY	SG	20x20	350	RG(R-7)	36x12	375
8	STAFF OFFICE	SG	12x12	120	RG(R-8)	5'Dia	100
9	STAFF OFFICE	SG	12x12	120	RG(R-9)	8x8	100
				2040			
AHU-3 MINIMUM OSA				1090	CFM		

AHU-4 (MEN'S AND WOMEN'S LOCKER ROOMS)

TRANE TORRVENT T-8								2.0 HP, 200V/3	
ROOM #	ROOM	SUPPLY			RETURN				
		MARK	Size	SA CFM	MARK	Size	RA CFM		
10	WOMENS STAFF	SG	12x12	120	—	—	—		
11	MENS STAFF	SG	12x12	120	—	—	—		
12	FAMILY	SG	8x6	120	—	—	—		
13	WOMENS LOCKERS	SG	16x16	300	RG(R-13)	18x16	700		
14	WOMENS LOCKERS	SG	16x8	300	RG(R-14)	8x8	50		
15	WOMENS LOCKERS	SG	16x8	300	RG(R-15)	8x8	50		
16	WOMENS LOCKERS	SG	20x20	300	—	—	—		
17	MENS LOCKERS	SG	20x20	400	RG(R-17)	18x18	550		
18	MENS LOCKERS	SG	16x8	300	—	—	—		
19	MENS LOCKERS	SG	16x8	300	—	—	—		
20	UPSTAIRS OFFICE	SG	16x8	40	—	—	—		
				2600	1350				
AHU-4 MINIMUM OSA		1210		CFM					
SA TO EACH LOCKER ROOM SHALL EQUAL RA PLUS EA VOLUME FROM EACH LOCKER ROOM									

TEF-2 (PUBLIC RESTROOMS, OFFICES, LOBBY)

ROOM #	ROOM	EXHAUST		
		MARK	SIZE	EA CFM
E-12	JANITOR A	EG	4x4	50
E-13	STORAGE A	EG	4x4	40
E-14	WOMEN	EG	8x8	180
E-15	MEN	EG	8x8	180
E-16	STORAGE C	EG	6x6	50
E-17	STORAGE D	EG	6x6	50
E-18	JANITOR B	EG	6x6	50
				600

TEF-1 (MEN'S AND WOMEN'S LOCKER ROOMS AND SHOWERS)

ROOM #	ROOM	EXHAUST		
		MARK	Size	EA CFM
E-1	FAMILY	EG	8x6	120
E-2	WOMENS IND SHOWER	EG	8x8	—
E-3	WOMENS IND SHOWER	EG	8x8	—
E-4	WOMENS GANG SHOWER	EG	12x12	200
E-5	WOMENS TOILET	EG	8x8	100
E-6	WOMENS TOILET	EG	8x8	100
E-7	MENS TOILET	EG	8x8	100
E-8	MENS TOILET	EG	8x8	100
E-9	MENS SHOWER	EG	8x8	125
E-10	MENS SHOWER	EG	8x8	125
				970

TESTING, ADJUSTING, AND BALANCING NOTES:

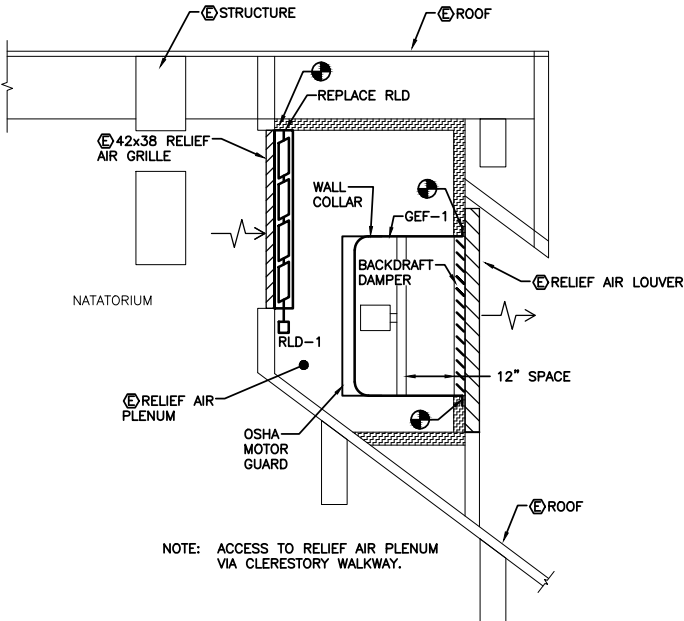
- FAN, MOTOR, SHEAVE DATA WILL BE AVAILABLE UPON REQUEST DURING CONSTRUCTION.
- 1981, 2000, AND 2010 BALANCE REPORTS WILL BE AVAILABLE UPON REQUEST DURING CONSTRUCTION.
- EACH LOCKER ROOM SHALL BE BALANCED TO NEUTRAL PRESSURE WITH EA AND RA EQUAL TO SA VOLUMES
- LOBBY SHALL BE POSITIVE TO NATATORIUM AND LOCKER ROOMS. LOBBY WILL PROVIDE MAKE-UP AIR TO LOCKERS AND NATATORIUM
- LOCKER ROOMS SHALL BE NEUTRAL. LOCKERS SHALL BE POSITIVE TO NATATORIUM AND NEGATIVE TO LOBBY.
- NATATORIUM SHALL BE NEGATIVE TO LOBBY AND LOCKERS
- TAB CONTRACTOR SHALL PROVIDE INITIAL WALKTHROUGH PRIOR TO BEGINNING WORK AND NOTIFY OWNER IMMEDIATELY WHERE MISSING DAMPERS ARE REQUIRED TO PROVIDE PROPER ADJUSTMENT.
- FLOW LIMITING VALVES ARE TO BE USED FOR ALL FP AND CUH HEATERS ONLY. FLOW LIMITING VALVES CAN BE COMBINED WITH MODULATING CONTROL VALVES FOR FP & CUH UNITS.

FAN SCHEDULE

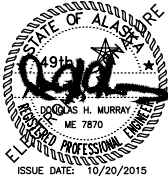
EQUIPMENT	AREA SERVED	CFM	TSP, INCHES OF WATER	DESIGN MANUFACTURER AND MODEL	MINIMUM HORSEPOWER ELECTRICAL CHARACTERISTICS	FEATURES AND ACCESSORIES
GEF-1	NATATORIUM RELIEF	3500	0.30	GREENHECK SCE-3-24-407	208V/3ø 3/4 HP VFD	DIRECT DRIVE AXIAL TYPE SIDEWALL FAN. CAST ALUMINUM BLADES. TEFC MOTOR. VARIABLE FREQUENCY DRIVES. OUTLET BACKDRAFT DAMPER. WALL COLLAR. STEEL PARTS SHALL BE COATED TO PROTECT FROM CORROSIVE POOL AIR.
GEF-2	NATATORIUM RELIEF	3500	0.30	GREENHECK SCE-3-24-407	208V/3ø 3/4 HP VFD	DIRECT DRIVE AXIAL TYPE SIDEWALL FAN. CAST ALUMINUM BLADES. TEFC MOTOR. VARIABLE FREQUENCY DRIVES. OUTLET BACKDRAFT DAMPER. WALL COLLAR. STEEL PARTS SHALL BE COATED TO PROTECT FROM CORROSIVE POOL AIR.
GEF-3	NATATORIUM RELIEF	3500	0.30	GREENHECK SCE-3-24-407	208V/3ø 3/4 HP VFD	DIRECT DRIVE AXIAL TYPE SIDEWALL FAN. CAST ALUMINUM BLADES. TEFC MOTOR. VARIABLE FREQUENCY DRIVES. OUTLET BACKDRAFT DAMPER. WALL COLLAR. STEEL PARTS SHALL BE COATED TO PROTECT FROM CORROSIVE POOL AIR.

AUTOMATIC VALVE & FLOWSETTER SCHEDULE

NUMBER	UNIT SERVED	AREA SERVED	LOCATION	DESIGN GPM	FLOW SETTER SIZE (INCHES)	AUTOMATIC VALVE PRESSURE DROP (PSI)	AUTOMATIC VALVE TYPE	AUTOMATIC VALVE OPERATION	CONTROL TYPE	NORMAL POSITION
1	PUMP P-1 FLOW	POOL HEATING	MECHANICAL	75	EXIST 1-1/2	—	—	—	—	—
2	PUMP P-2 FLOW	RADIATION SYSTEM	MECHANICAL	25	EXIST 2	2.5 PSI	3-WAY	MODULATING	DDC	NO
3	PUMP P-3 FLOW	HEATING COILS	MECHANICAL	115	EXIST 3	—	—	—	—	—
PUMP P-1 POOL HEATING										
4	HX-1	LAP POOL HEATING	POOL MECHANICAL	45	2	2.5 PSI	3-WAY	MODULATING	DDC	NO
5	HX-2	RECREATION POOL HEATING	POOL MECHANICAL	30	1-1/2	2.5 PSI	3-WAY	MODULATING	DDC	NO
PUMP P-3 COILS										
6	AHU-1 HC (NOT USED)	POOL DECK RECIRCULATION	FAN ROOM A	20	—	—	—	—	—	—
7	AHU-2 HC	POOL DECK HEAT/DEHUMIDIFICATION	FAN ROOM B	—	1-1/2	2.5 PSI	3-WAY	MODULATING	DDC	NO
8	AHU-3 HC	LOBBY, OFFICES, WAITING	FAN ROOM A	12	1-1/4	2.5 PSI	3-WAY	MODULATING	DDC	NO
9	AHU-4 HC	LOCKERS ROOMS	FAN ROOM B	10	1-1/4	2.5 PSI	3-WAY	MODULATING	DDC	NO
10	HRV (POOL UNIT)	NATATORIUM	STORAGE G	52	EXIST 2-1/2	2.5 PSI	3-WAY	MODULATING	DDC	NO
11	BC-C1	FAMILY CHANGING ROOM	WOMEN LOCKER ENTRANCE	0.5	1/2	2.5 PSI	2-WAY	MODULATING	DDC	NO
12	BC-C2	STAFF LOCKERS	WOMEN LOCKER ENTRANCE	1	1/2	2.5 PSI	2-WAY	MODULATING	DDC	NO
13	BC-C3	WOMEN LOCKERS	WOMENS LOCKERS	6	1	2.5 PSI	2-WAY	MODULATING	DDC	NO
14	BC-C4	MEN LOCKERS	MENS LOCKERS	3.5	1	2.5 PSI	2-WAY	MODULATING	DDC	NO
15	BC-C5	STAFF OFFICE	STAFF OFFICE	1	1/2	2.5 PSI	2-WAY	MODULATING	DDC	NO
16	BC-C6	LOBBY DESK	FAN ROOM A	3	3/4	2.5 PSI	2-WAY	MODULATING	DDC	NO
17	BC-C7	WAITING	WAITING	3	3/4	2.5 PSI	2-WAY	MODULATING	DDC	NO
18	BC-C8	POOL DECK	WAITING	2	3/4	2.5 PSI	2-WAY	MODULATING	DDC	NO
19	BC-C9	UPSTAIRS OFFICE	FAN ROOM B	1	1/2	2.5 PSI	2-WAY	MODULATING	DDC	NO
PUMP P-2 RADIATION										
20	FP	NATATORIUM -- EAST WALL	STORAGE F	3.5	3/4	1-2 PSI	3-WAY	ON-OFF	DDC	NO
21	FP	CHLORINE	STORAGE F	1	1/2	1-2 PSI	2-WAY	ON-OFF	DDC	NO
22	FP	POOL SYSTEMS	POOL SYSTEMS	1	1/2	1-2 PSI	2-WAY	ON-OFF	DDC	NO
23	FP	STORAGE G	STORAGE G	1	1/2	1-2 PSI	2-WAY	ON-OFF	DDC	NO
24	FP	STORAGE G	STORAGE G	1	1/2	1-2 PSI	2-WAY	ON-OFF	DDC	NO
25	FP	MENS STAFF	MENS STAFF	1	1/2	1-2 PSI	2-WAY	ON-OFF	DDC	NO
26	FP	WOMENS STAFF	WOMENS STAFF	1	1/2	1-2 PSI	2-WAY	ON-OFF	DDC	NO
27	FP	WOMENS LOCKER	WOMENS LOCKER	2	3/4	1-2 PSI	2-WAY	ON-OFF	DDC	NO
28	FP	WOMENS LOCKER	WOMENS LOCKER	2	3/4	1-2 PSI	2-WAY	ON-OFF	DDC	NO
29	FP	WOMEN	WOMEN	1.5	1/2	1-2 PSI	2-WAY	ON-OFF	DDC	NO
30	FP	MEN	MEN	1	1/2	1-2 PSI	2-WAY	ON-OFF	DDC	NO
31	CUH	FOYER	FOYER	3.5	3/4	1-2 PSI	2-WAY	ON-OFF	DDC	NO
32	FP	STORAGE B, C, D	STORAGE D	1	1/2	1-2 PSI	2-WAY	ON-OFF	DDC	NO
33	CUH	STAFF	STAFF	1	1/2	1-2 PSI	2-WAY	ON-OFF	DDC	NO
34	FP	NATATORIUM DECK -- NORTH WALL	205-MECH	3.5	3/4	1-2 PSI	2-WAY	ON-OFF	DDC	NO
				25						



1 GEF FAN UNIT DETAIL - TYP. OF GEF-1, GEF-2, GEF-3
NO SCALE



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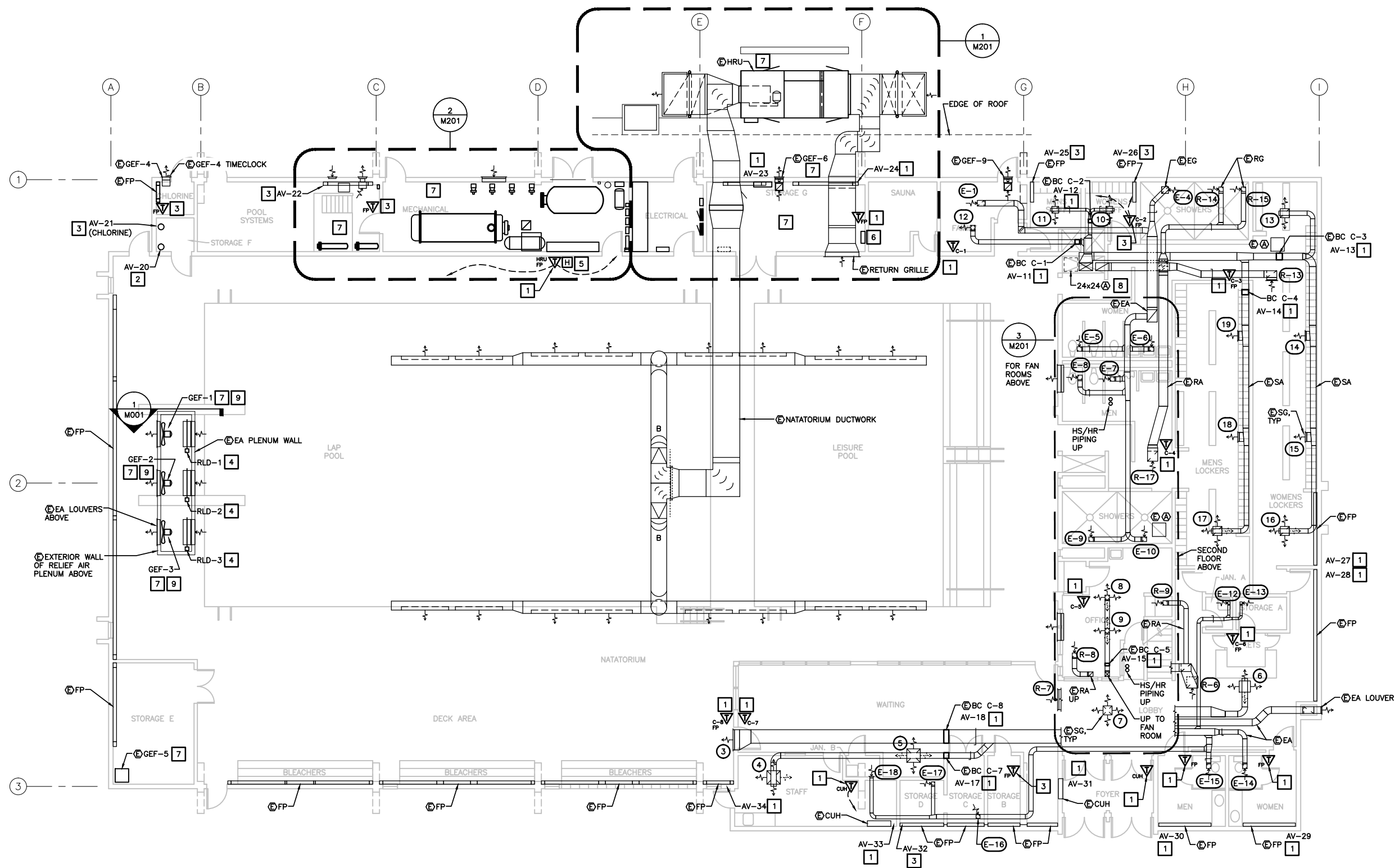
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SCHEDULES &
DETAIL

SCALE: AS SHOWN:
DATE: 10/20/2015
DRAWN: KB
DESIGNED: RS
CHECKED: DM

SHEET NO.

M001

JOB NO. 15-115



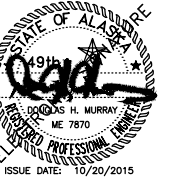
1 FLOOR PLANS

SHEET NOTES:

- WALLS IN POOL AREA, LOCKER ROOMS, POOL STORAGE ROOMS, BOILER ROOM ARE TYPICALLY CMU FULL HEIGHT. CONCRETE CORE DRILLING REQUIRED FOR PENETRATIONS.
- SEAL ALL FLOOR, WALL, AND CEILING PENETRATIONS INTO OCCUPIED SPACES (LOCKER ROOMS, RESTROOMS, PUBLIC SPACES) WITH FIRE RATED SEALANT.

CONSTRUCTION NOTES:

- REPLACE THERMOSTAT AND AUTOMATIC VALVE WITH DDC TYPE. REPLACE/INSTALL FLOWSETTER.
- REPLACE 3-WAY AUTOMATIC VALVE SERVING FINNED PIPE CONVECTOR AT EAST WALL. INSTALL FLOWSETTER.
- INSTALL DDC THERMOSTAT AND AUTOMATIC VALVE, REPLACE/INSTALL FLOWSETTER.
- REPLACE AUTOMATIC RELIEF AIR DAMPER AND ACTUATOR.
- REPLACE HUMIDITY SENSOR.
- SAUNA CONTROL PANEL ENABLE FROM BAS.
- REPLACE AUTOMATIC CONTROLS.
- REPLACE CEILING ACCESS DOOR.
- REPLACE GEF-1, GEF-2, GEF-3 FAN UNITS. INSTALL VFD FOR EACH.



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**E16-078
Juneau, Alaska**

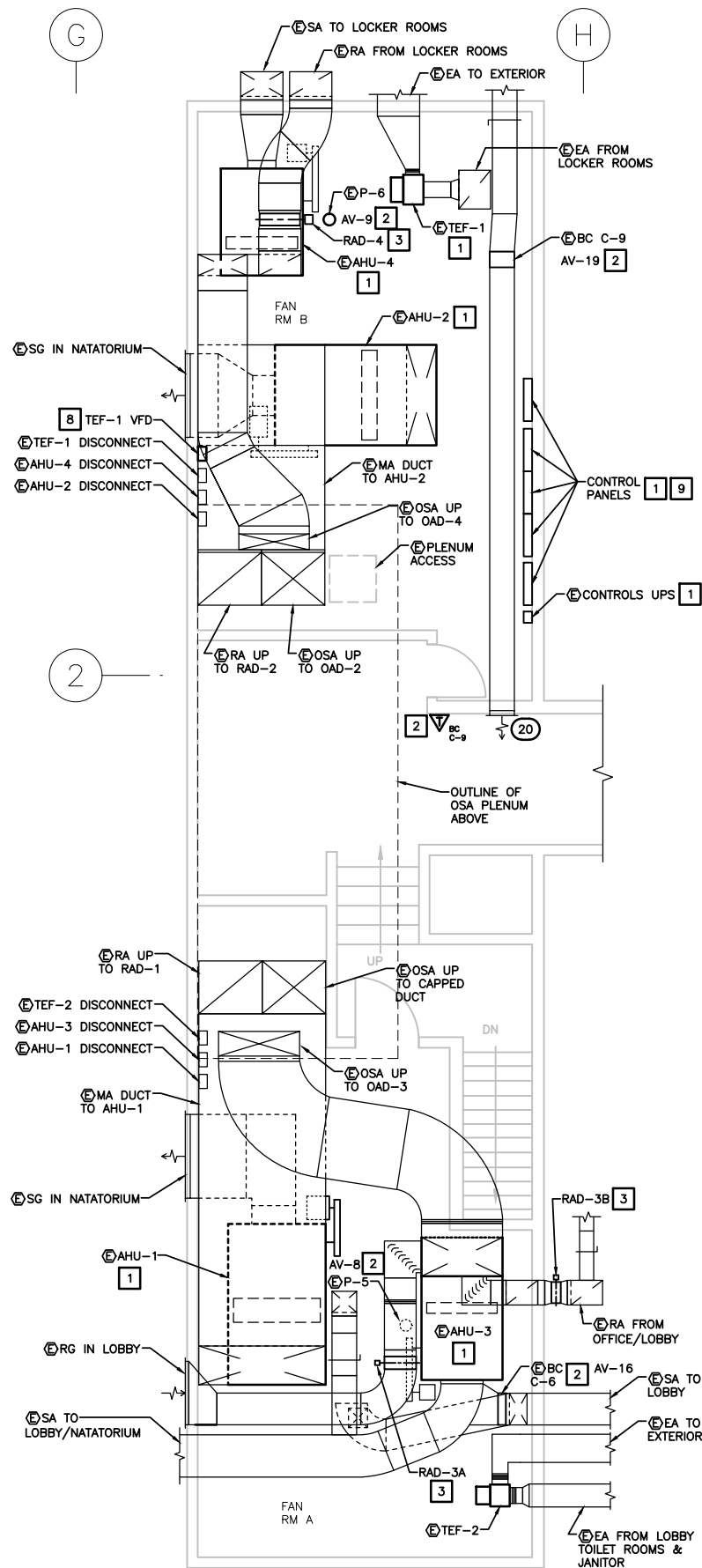
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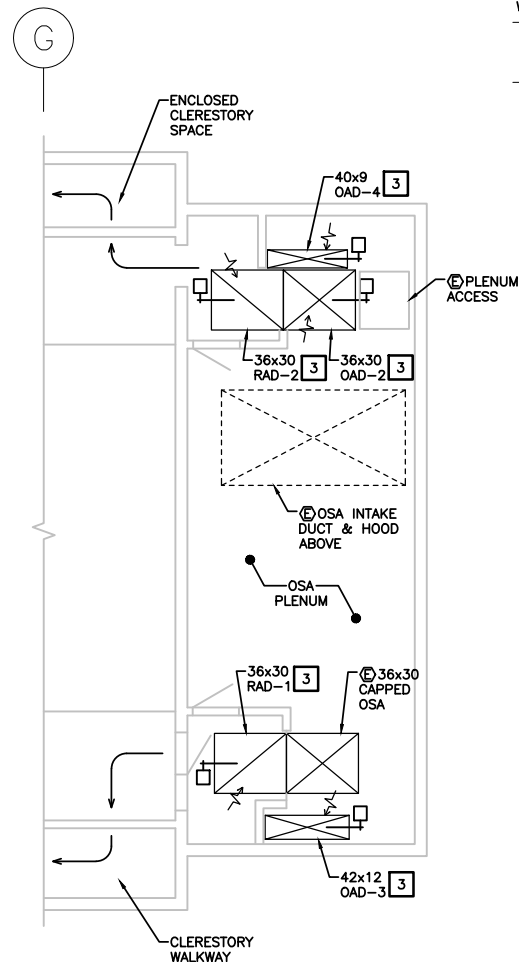
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M101

JOB NO. 15-115



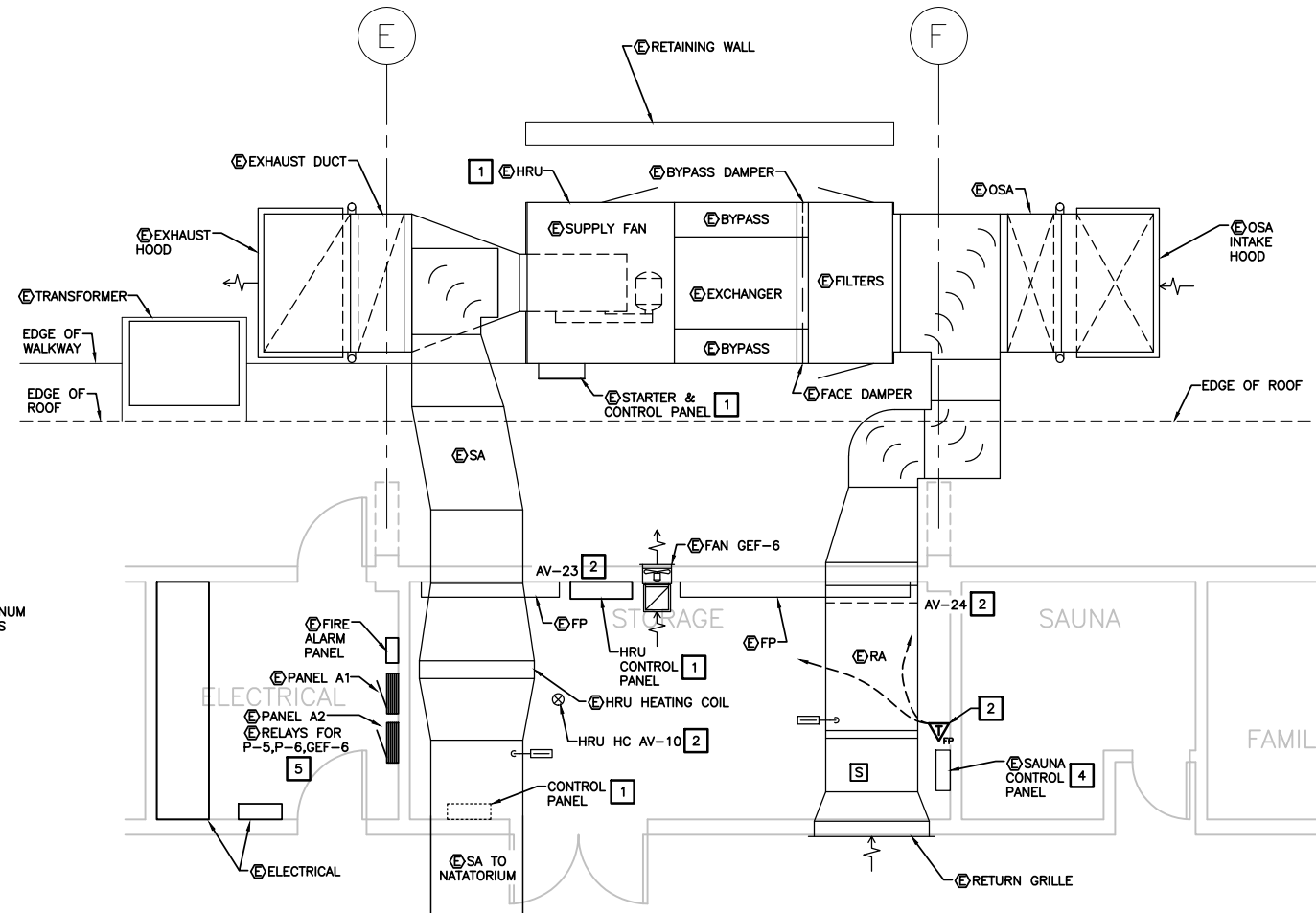
3 ENLARGED PLAN - FAN ROOM
SCALE: 0 2' 4' 8'



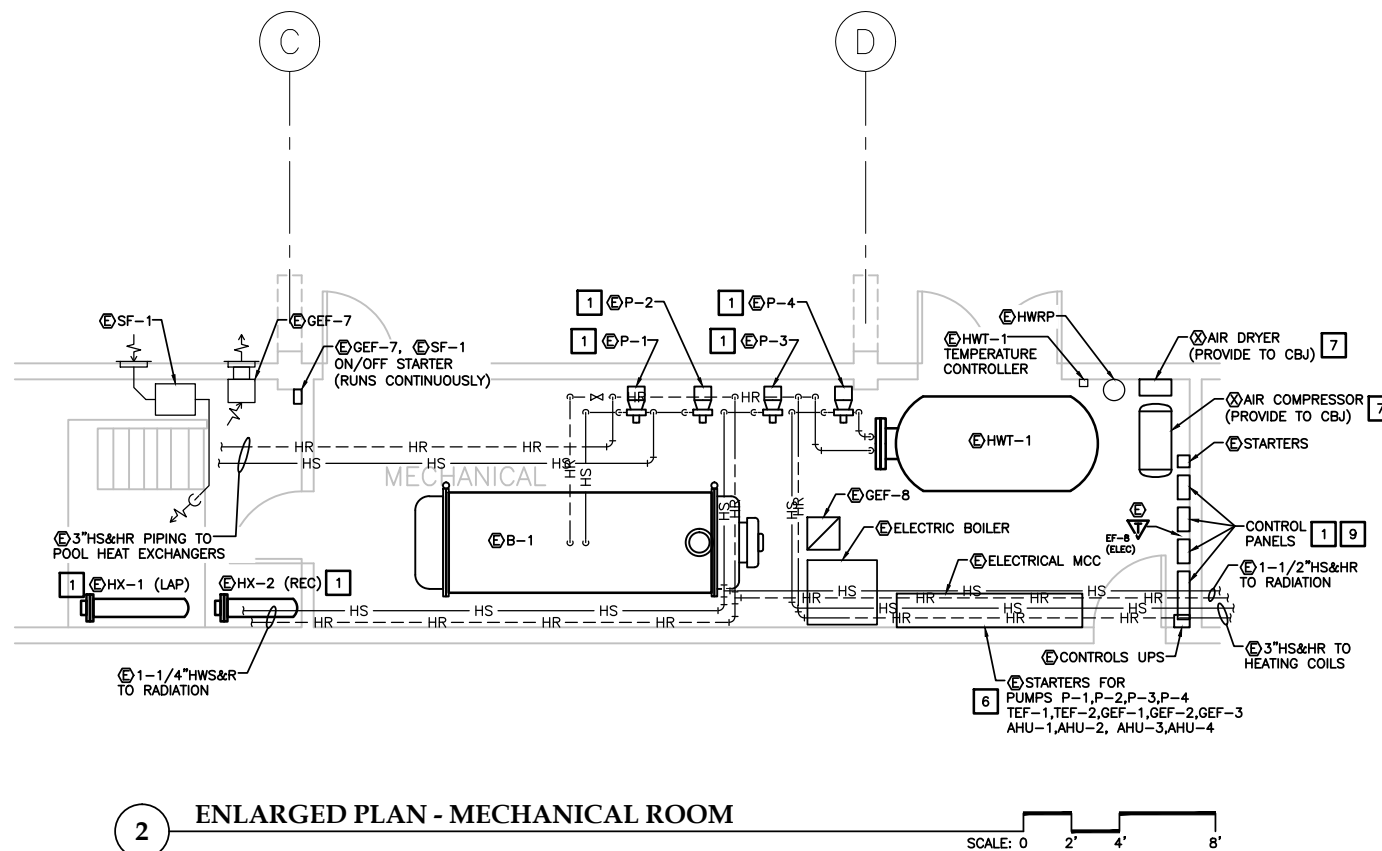
4 ENLARGED PLAN - OUTSIDE AIR INTAKE PLENUM
SCALE: 0 2' 4' 8'

CONSTRUCTION NOTES:

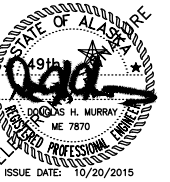
- 1 REPLACE AUTOMATIC CONTROLS.
- 2 REPLACE AUTOMATIC VALVE AND RESPECTIVE THERMOSTAT/SENSORS.
- 3 REPLACE AUTOMATIC DAMPER AND ACTUATOR.
- 4 SAUNA CONTROL PANEL ENABLE FROM BAS.
- 5 PUMP P-5, P-6, AND GEF-6 RELAYS, PROVIDE ENABLE AND STATUS TO BAS.
- 6 PROVIDE ENABLE AND STATUS TO BAS.
- 7 REMOVE AIR COMPRESSOR, AIR DRYER, RELATED ACCESSORIES, CONTROLS, AND ELECTRICAL. PROVIDE AIR COMPRESSOR AND AIR DRYER TO OWNER.
- 8 PROVIDE AND INSTALL VFD FOR EXISTING TEF-1 FAN.
- 9 PROVIDE GCM AND LCM PANELS TO OWNER.



1 ENLARGED PLAN - HRU
SCALE: 0 2' 4' 8'



2 ENLARGED PLAN - MECHANICAL ROOM
SCALE: 0 2' 4' 8'



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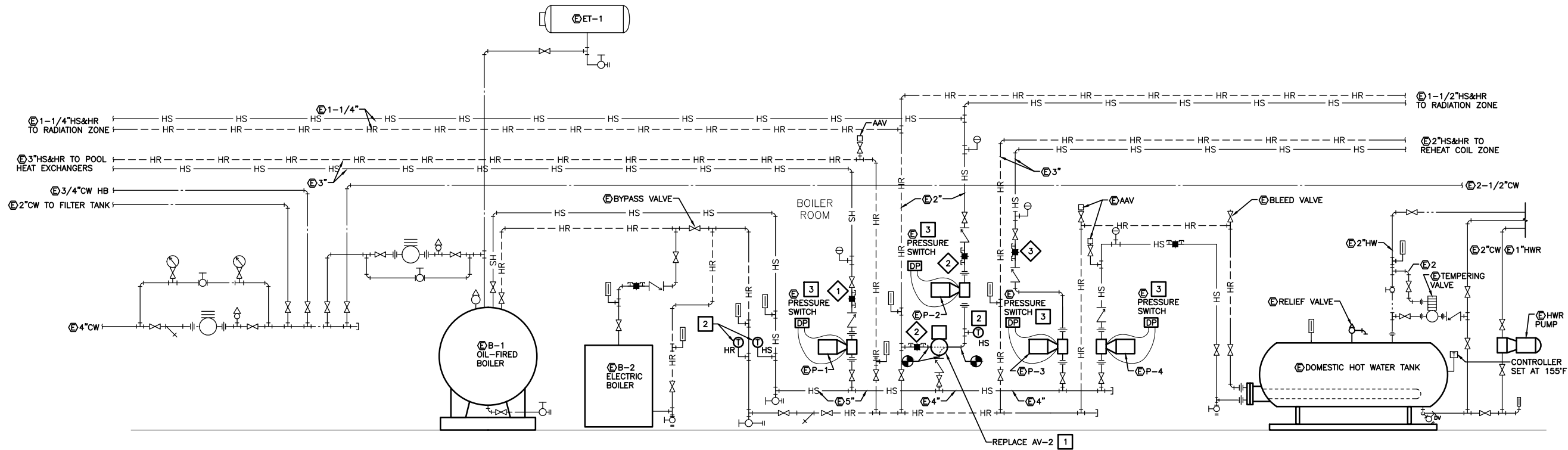
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ENLARGED PLANS

SCALE: AS SHOWN
DATE: 10/20/2015
DRAWN: KB
DESIGNED: RS
CHECKED: DM

SHEET NO.

M201

JOB NO. 15-115

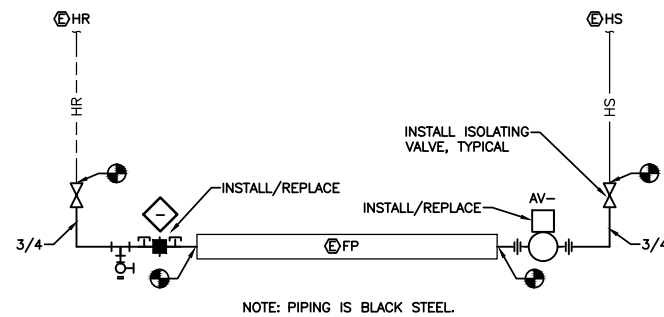


CONSTRUCTION NOTES:

- 1 REPLACE 3-WAY AUTOMATIC VALVE. MODIFY PIPING AS REQUIRED. EXISTING PIPING IS BLACK STEEL.
- 2 REPLACE HS/HR IMMERSION SENSORS.
- 3 EXISTING DIFFERENTIAL PRESSURE SWITCH. VERIFY PROPER OPERATION AND REPLACE IF NECESSARY. CURRENT SENSORS MAY BE USED AS AN ALTERNATIVE FOR PUMP STATUS IF DESIRED.

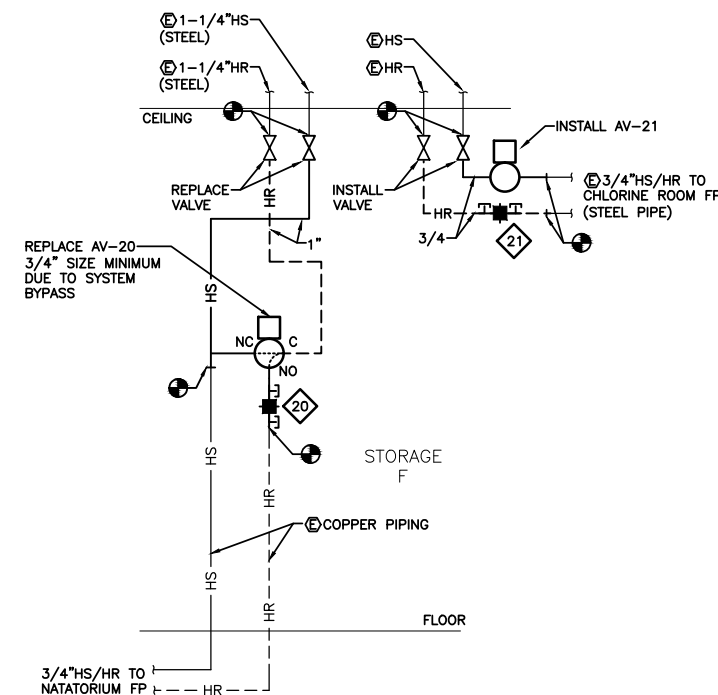
1 HEATING PLANT PIPING DIAGRAM

SCALE: NONE



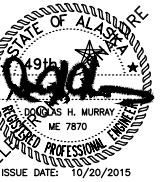
2 FINNED PIPE CONVECTOR PIPING DIAGRAM

SCALE: NONE



3 STORAGE F 3-WAY AUTOMATIC VALVE PIPING DIAGRAM

SCALE: NONE



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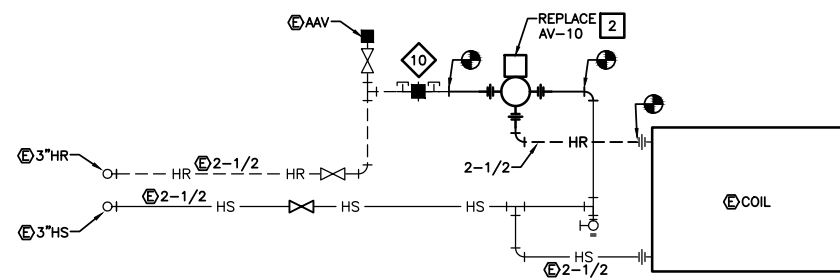
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PIPING DIAGRAMS

SCALE: AS SHOWN
DATE: 10/20/2015
DRAWN: KB
DESIGNED: RS
CHECKED: DM

SHEET NO.

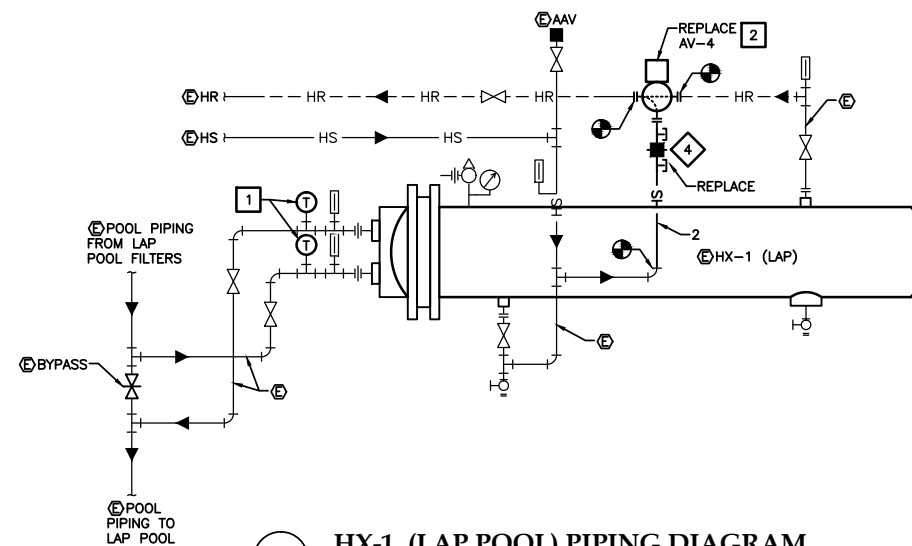
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JOB NO. 15-115

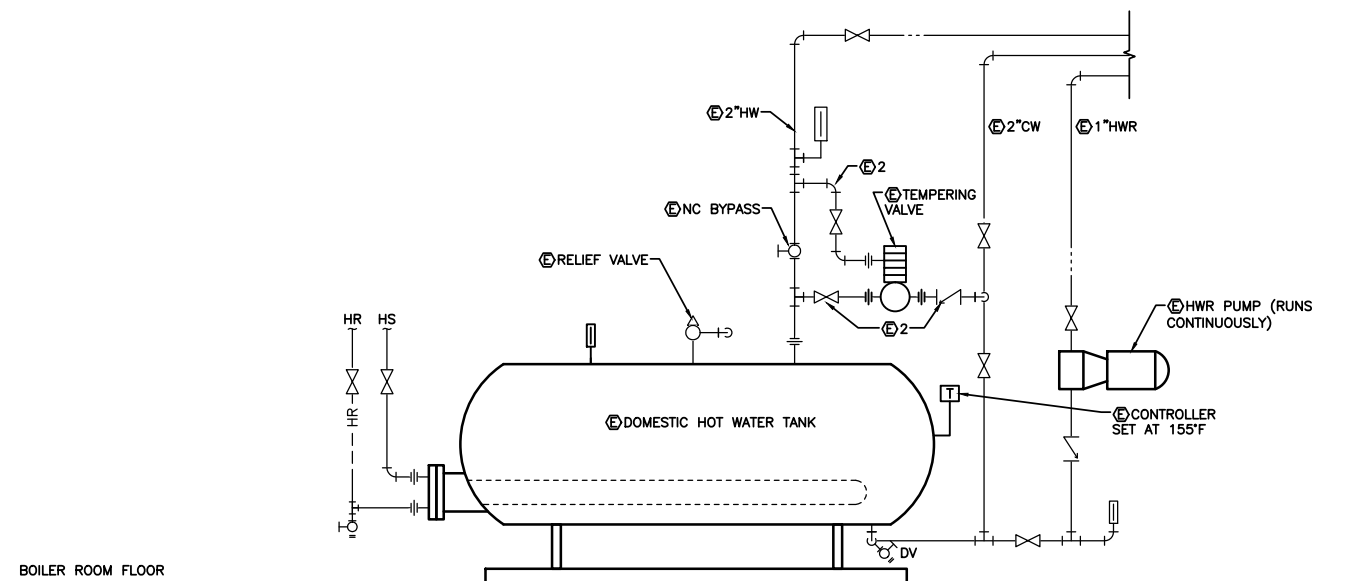


1 HRU COIL PIPING DIAGRAM
SCALE: NONE

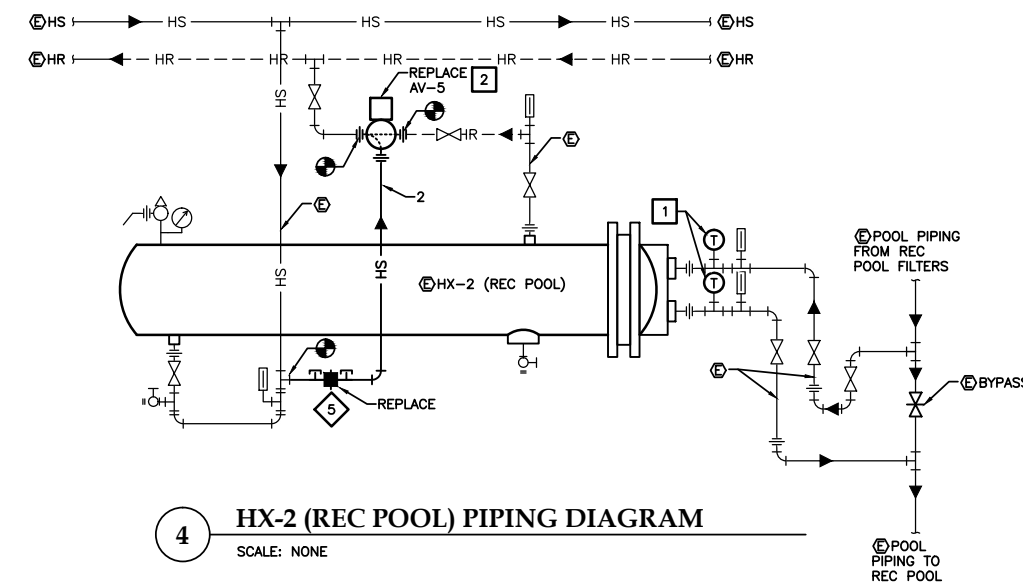
- CONSTRUCTION NOTES:**
- 1 REPLACE IMMERSION SENSORS AND CONTROLS.
 - 2 REPLACE AUTOMATIC VALVE. MODIFY EXISTING PIPING AS REQUIRED. REPLACE FLOWSETTER. REPLACE ISOLATING VALVES WHERE SHOWN.
- SHEET NOTES:**
1. VERIFY EXISTING PIPE SIZES ON-SITE.
 2. EXISTING PIPING IS TYPICALLY BLACK STEEL.



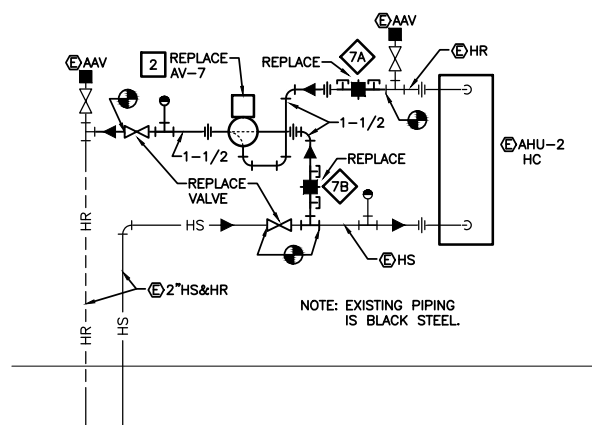
2 HX-1 (LAP POOL) PIPING DIAGRAM
SCALE: NONE



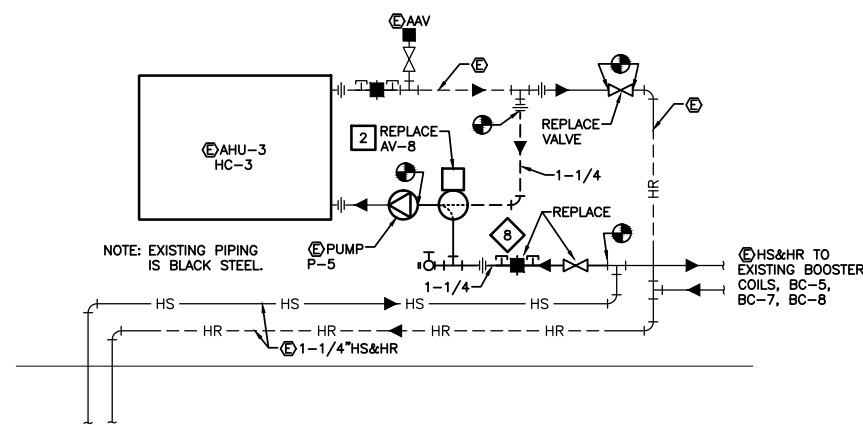
3 DOMESTIC HOT WATER PIPING DIAGRAM
SCALE: NONE



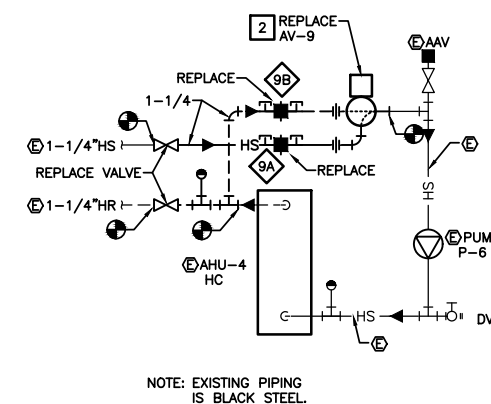
4 HX-2 (REC POOL) PIPING DIAGRAM
SCALE: NONE



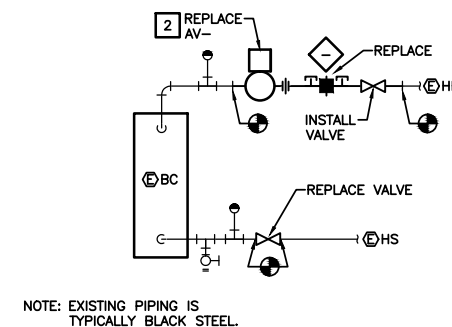
5 AHU-2 HEATING COIL DIAGRAM
SCALE: NONE



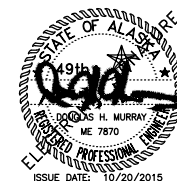
6 AHU-3 HEATING COIL DIAGRAM
SCALE: NONE



7 AHU-4 HEATING COIL DIAGRAM
SCALE: NONE



8 BOOSTER COIL PIPING DIAGRAM
SCALE: NONE



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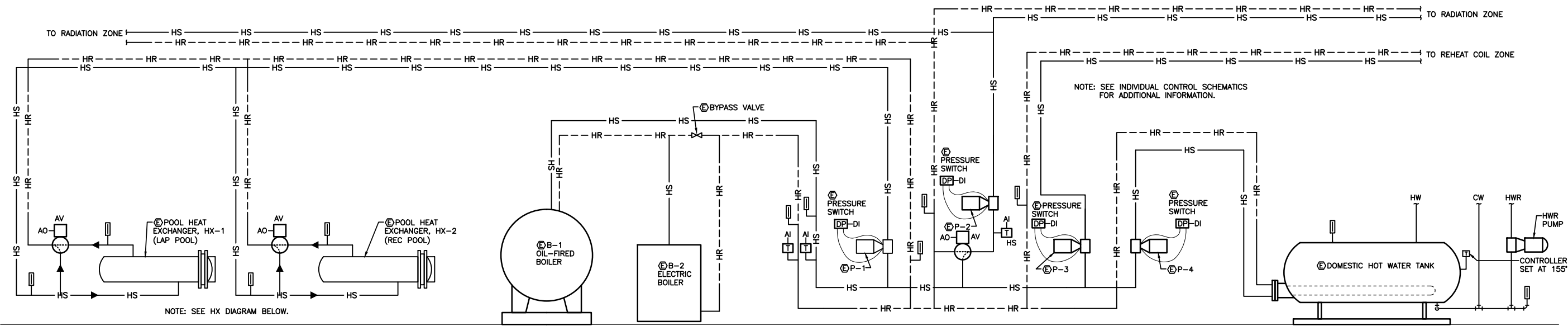
CITY AND BOROUGH OF JUNEAU
AUGUSTUS BROWN SWIMMING POOL
DDC CONTROLS CONVERSION

E16-078
Juneau, Alaska

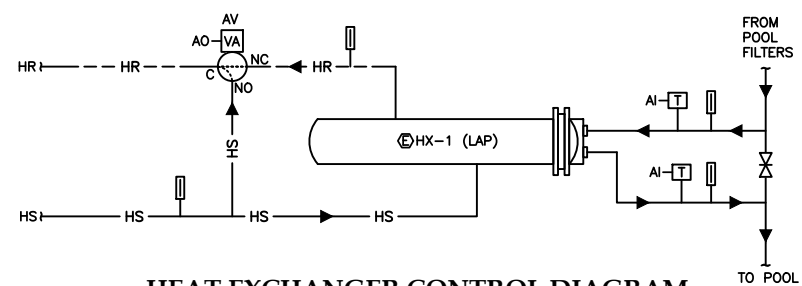
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PIPING DIAGRAMS

SCALE: AS SHOWN:
DATE: 10/20/2015
DRAWN: KB
DESIGNED: RS
CHECKED: DM

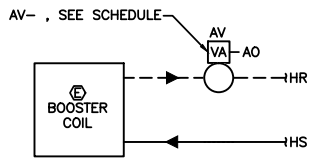
SHEET NO.
M302
JOB NO. 15-115



1 HEATING PLANT CONTROL DIAGRAM
SCALE: NONE



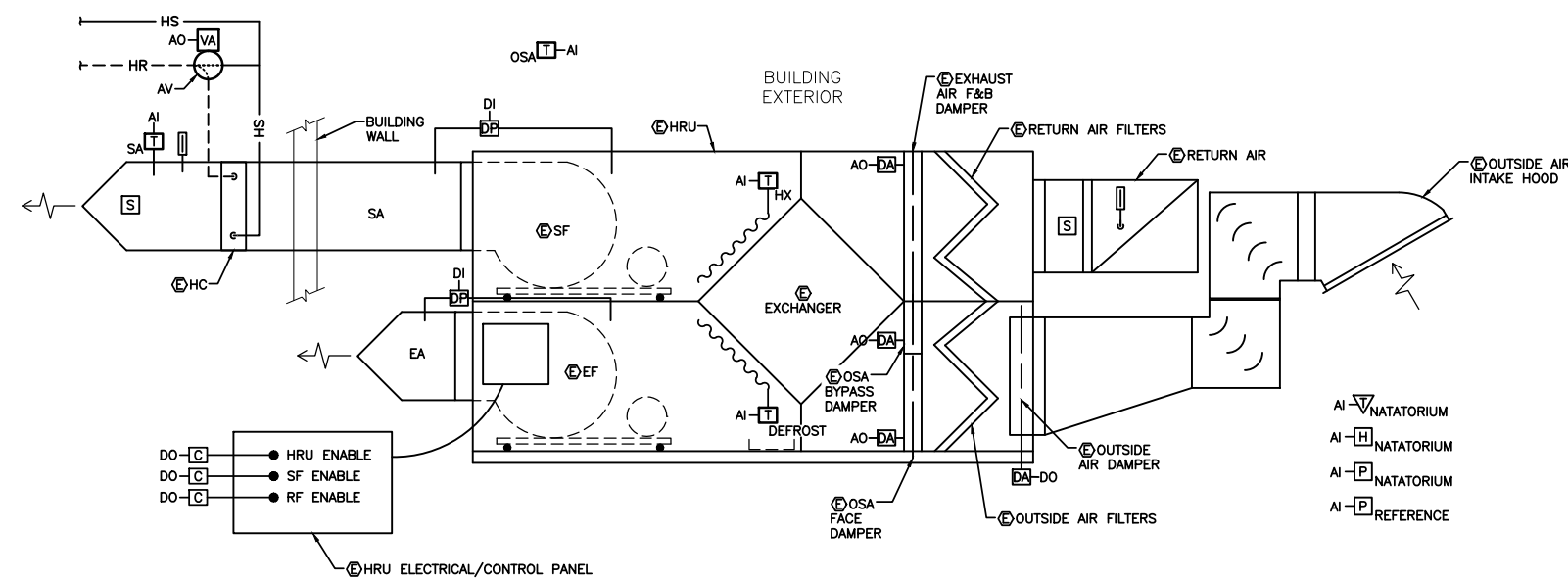
2 HEAT EXCHANGER CONTROL DIAGRAM
TYP OF HX-1, HX-2
SCALE: NONE



3 BOOSTER COIL CONTROL DIAGRAM
SCALE: NONE

CONTROLS LEGEND

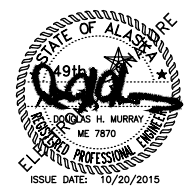
AMS	AIR MEASURING STATION	AHU	AIR HANDLING UNIT
C	CONTROLLER	AI	ANALOG INPUT
H	HUMIDITY	AO	ANALOG OUTPUT
P	PRESSURE SENSOR	AV	AUTOMATIC VALVE
S	SMOKE SENSOR	B-1	BOILER
T	IMMERSION THERMOSTAT OR THERMOSTATIC SENSOR	BC	BOOSTER COIL
VA	VALVE ACTUATOR	CD	CARBON DIOXIDE SENSOR
DA	DAMPER ACTUATOR	COM	COMMON
F	FLOW SWITCH	CUH	CABINET UNIT HEATER
CS	CARBON DIOXIDE SENSOR	DI	DIGITAL INPUT
DP	DIFFERENTIAL PRESSURE SENSOR	DO	DIGITAL OUTPUT
CS	CURRENT SENSOR	EAD	EXHAUST AIR DAMPER
FM	FLOW METER	EF	EXHAUST FAN
P	PUMP	FP	FINNED PIPE
▽	ROOM THERMOSTAT	GEF	GENERAL EXHAUST FAN
↔	AIR DIRECTION	HC	HEATING COIL
⊙	THERMOMETER	HR	HEATING RETURN
⊙	MOTOR	HS	HEATING SUPPLY
\$	CONTROL SWITCH	HWR	HOT WATER RECIRCULATING
		HX	HEAT EXCHANGER
		HWT	DOMESTIC HOT WATER HEATER
		LL	LOW LIMIT CONTROL
		MA	MIXED AIR
		NO	NORMALLY OPEN
		NC	NORMALLY CLOSED
		NF	NON-FREEZE
		OAD	OUTSIDE AIR DAMPER
		OSA	OUTSIDE AIR
		P-1	PUMP
		RA	RETURN AIR
		RAD	RETURN AIR DAMPER
		RF	RETURN FAN
		SA	SUPPLY AIR
		SF	SUPPLY FAN
		TEF	TOILET EXHAUST FAN
		TYP	TYPICAL
		VFD	VARIABLE FREQUENCY DRIVE



4 HRU (AHU-5) CONTROL DIAGRAM
SCALE: NONE

GENERAL NOTES:

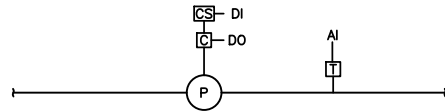
- THE DIAGRAMS AND POINTS SHOWN HERE ARE SCHEMATIC ONLY. REFER TO SEQUENCE OF OPERATIONS, SPECIFICATIONS, AND ALL CONTRACT DRAWINGS FOR COMPLETE CONFIGURATION OF THE SYSTEMS. COORDINATE WITH ALL OTHER DISCIPLINES TO ACHIEVE RESULTS AS SHOWN AND INTENDED HEREUNDER IN THE DOCUMENTS. GENERAL NOTES APPLY TO ALL CONTROLS DRAWINGS HEREUNDER.
- SEE FLOOR PLANS AND PIPING DIAGRAMS FOR RESPECTIVE ROOM THERMOSTAT, IMMERSION THERMOSTAT, HUMIDISTAT, PRESSURE SWITCH, AND OTHER CONTROL DEVICE LOCATIONS. SEE PLANS FOR OTHER CONTROL EQUIPMENT LOCATIONS. PROVIDE HEREUNDER FOR EQUIPMENT INTERFACE REQUIREMENTS, INCLUDING PIPING TEES AND WELLS, SENSOR LOCATIONS, AND INTERCONNECTIONS.
- ALL SYSTEMS ABBREVIATIONS, FUNCTIONS, AND EQUIPMENT NAMES SHALL BE LISTED IN ALL SUBMITTAL DATA, O&M DATA, AND AS-BUILTS, AS SHOWN HEREUNDER.
- ALL ROOM THERMOSTATS SHALL HAVE DIGITAL THERMOMETER ON COVER, AND SHALL BE MONITORED AND CONTROLLED BY THE BAS SYSTEM.
- INSTALL SENSING DEVICES ADJACENT TO MECHANICAL THERMOMETERS AND GAGES.
- PROVIDE ALL LOW VOLTAGE AND LINE VOLTAGE WIRING AS REQUIRED FOR A COMPLETE, OPERATING AUTOMATIC CONTROL SYSTEM. ALL WIRING SHALL BE ENCLOSED IN CONDUIT.
- FOR SEQUENCE OF OPERATIONS, SEE SPECIFICATION SECTION 230926 3.9.



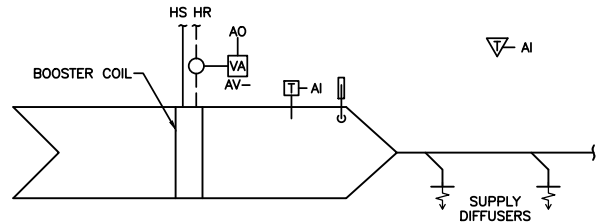
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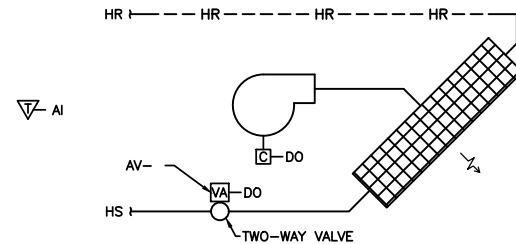
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CONTROLS
SCALE: AS SHOWN
DATE: 10/20/2015
DRAWN: KB
DESIGNED: RS
CHECKED: DM
SHEET NO.
M401
JOB NO. 15-115



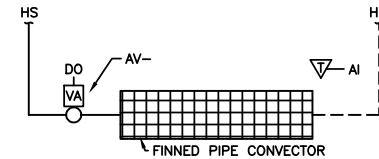
1 CONTROL SCHEMATIC - PUMPS
NO SCALE



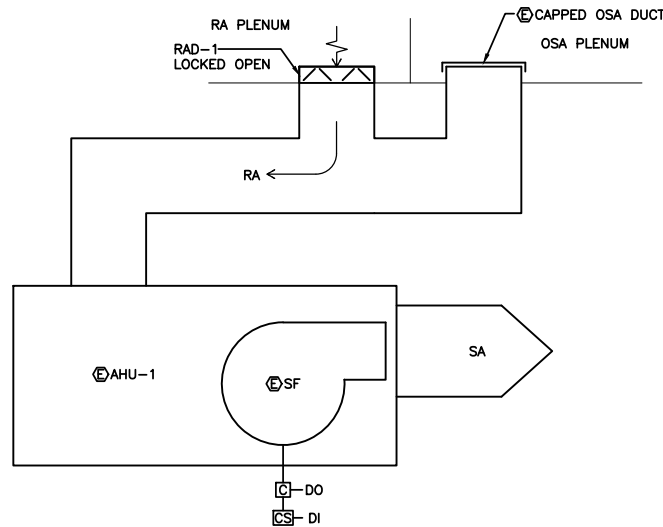
2 BOOSTER COIL CONTROL DIAGRAM
NO SCALE



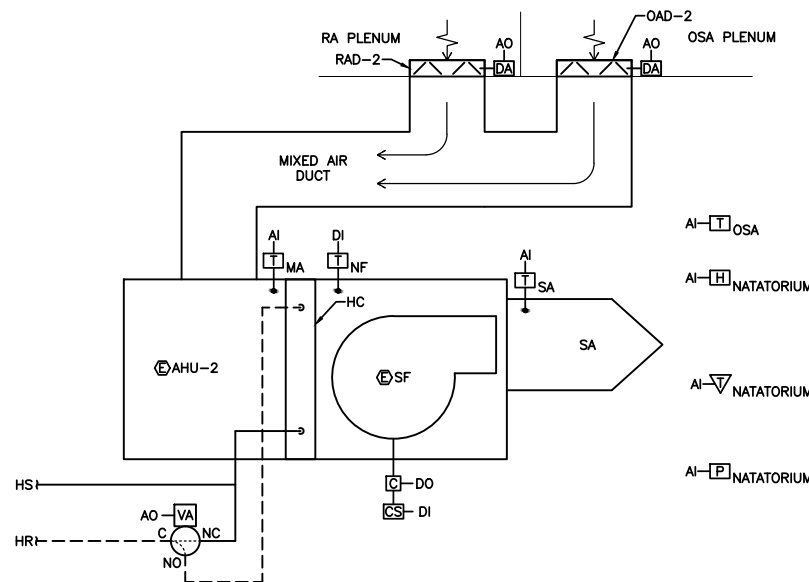
3 CUH CONTROL DIAGRAM - 2-WAY ARRANGEMENT
NO SCALE



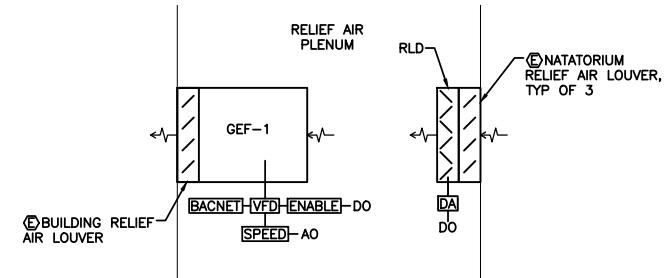
4 FP CONTROL DIAGRAM
NO SCALE



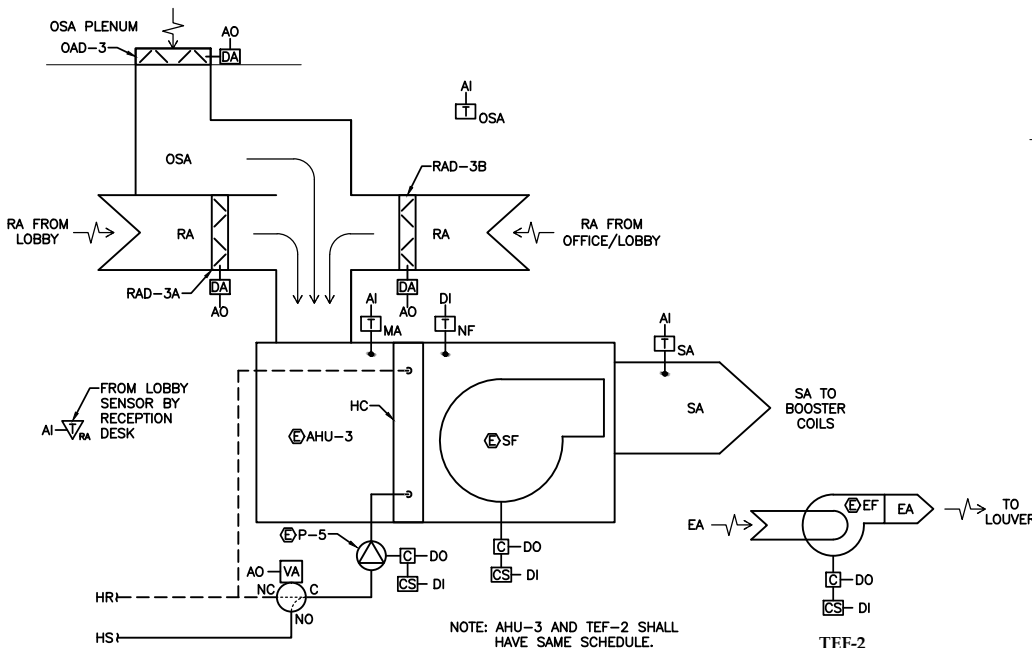
5 CONTROL SCHEMATIC FOR AHU-1 (NATORIUM RECIRCULATION)
NO SCALE



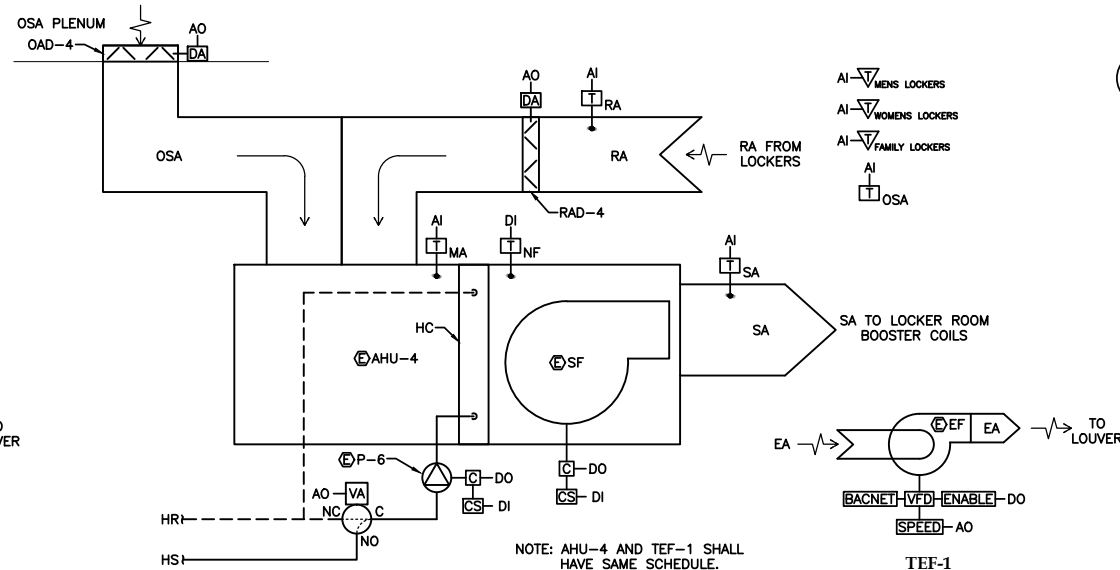
6 CONTROL SCHEMATIC FOR AHU-2 (NATORIUM)
NO SCALE



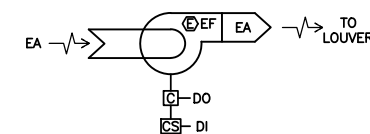
7 CONTROL SCHEMATIC FOR GEF-1, GEF-2, GEF-3
NO SCALE



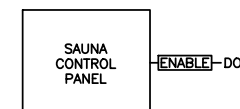
8 CONTROL SCHEMATIC FOR AHU-3 (LOBBY/OFFICE) AND TEF-2
NO SCALE



9 CONTROL SCHEMATIC FOR AHU-4 (LOCKER ROOMS) AND TEF-1
NO SCALE



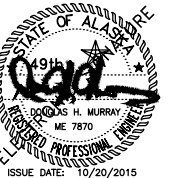
10 CONTROL SCHEMATIC FOR GEF-5, GEF-6
NO SCALE



11 CONTROL SCHEMATIC FOR SAUNA
NO SCALE

SHEET NOTE:

- FOR SEQUENCE OF OPERATIONS, SEE SPECIFICATION SECTION 230926 3.9.



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SHEET NO.

M402

JOB NO. 15-115