ADDENDUM NO. 3

Project: CITY OF GREAT FALLS INDOOR AQUATICS AND RECREATION CENTER

Project No.: 20-019

Date: OCTOBER 6, 2021

Bid Date: OCTOBER 13, 2021

LPW ARCHITECTURE

NOTICE TO ALL PLANHOLDERS OF RECORD: Acknowledge receipt of this Addendum by inserting its number and date in the Bid Proposal. This addendum forms a part of the Contract Documents to the same extent as if bound and modifies the documents as follows:

A. GENERAL

ITEM NO. 1. Current Plan Holders list: See Attachment "A"

ITEM NO. 2. Bid Form (with new bid date): See Attachment "B". **CLARIFICATION:** Sum of Base Bid and all Add Alternates" has been added to the last page of the bid form, and bid date on the form has been changed to October 13th.

ITEM NO. 3. **CLARIFICATION:** 15 mil. vapor barrier required under slab in all areas of LVT, carpet, and ceramic tile floor installations.

ITEM NO. 4. **CLARIFICATION:** For the purposes of bidding it is acceptable to assume native soil materials described in the geotechnical report boring logs as "completely weathered CLAYSTONE" or "severely weathered SANDSTONE" are considered weathered bedrock. Note that actual excavation depths and materials shall be confirmed by the geotechnical engineer of record during construction.

ITEM NO. 5. **CLARIFICATION:** Mirafi 140N geotextile as shown in pool drawings is required.

ITEM NO. 6. **CLARIFICATION:** Contact for Military Training Equipment in Alternate #4: Maria C. Hanna, mhanna@survivalsystemsinc.com (860) 405-0002

B. ARCHITECTURAL SPECIFICATIONS

ITEM NO. 7. SECTION 08 33 30 **ADD:** Part 2.1.B.2.i. Size: 4'-0" wide x 4'-2" tall.

ITEM NO. 8. SECTION 09 51 23 **ADD:** Part 2.5.A.4. Closed Reveal Planks, Color: Medium Brown Cherry.

DRAWINGS

ITEM NO. 9. Details 2/A1.4, 1A4.2, 3/A4.2, 1/A4.3, 1/A5.1, 5/A5.1, 5/A5.5, 6/A5.5, 9/A5.5, 3/A8.1, 16/A8.3 **CHANGE:** 5/8" Gyp. Sheathing to 7/16" Fire Retardant Treated (FRT) OSB Sheathing – See Structural.

ITEM NO. 10. Sheets A4.4 and A4.5: **CLARIFICATION:** Stairs to pit (and railings) in Pool Equipment Room are galvanized and not painted. All other stairs and railings are painted and not galvanized.

ITEM NO. 11. Detail 7/A4.5 stair treads **CHANGE:** to be similar to stair treads in Detail 10/A4.5.

ITEM NO. 12. Sheet A10.3 **ADD:** Interior Signage Schedule. See Attachment "C".

C. CIVIL

SPECIFICATIONS

N/A

DRAWINGS

N/A

D. LANDSCAPING

SPECIFICATIONS

N/A

DRAWINGS

N/A

E. STRUCTURAL

SPECIFICATIONS

N/A

DRAWINGS

N/A

F. MECHANICAL/PLUMBING

SPECIFICATIONS

ITEM NO. 13. **Sheet M0.1** – MECHANICAL SCHEDULES AND NOTES

- Modified the basis of design for EF-5 and 6 to a belt driven fan with a corrosion resistant coating on the fan and housing.
- Added the following to the dehumidifier schedule:
    - PROVIDE 6"Ø SCH 80 PLASTIC PVC PIPING FROM POOL MECHANICAL ROOM TO DEHUMIDIFIERS DH-1 AND DH-2.
    - PROVIDE PENTAIR OR EQUIVALENT PUMP—LOCATED IN THE POOL MECHANICAL ROOM—CAPABLE OF SUPPLY 200 GPM AT 40 FT OF HEAD. PUMP TO HAVE INTEGRAL BASKET STRAINER AND BE PROVIDED WITH SHUTOFFS, UNIONS, AND CHECK VALVE. DEHUMIDIFIER CIRCUITS TO BE PROVIDED WITH SHUTOFFS AND UNIONS.
    - WATER-SOURCE CONDENSER TO BE INCORPORATED INTO DDC SYSTEM WITH THE SAME CONTROL SEQUENCE AS THE AIR-SOURCE CONDENSER.
    - COMPLETE DESIGN TO BE PROVIDED BY POOL CONSULTANT AT A LATER DATE IF ALTERNATE IS SELECTED.
- Added the following to the Energy Recovery Unit schedule:
    - PROVIDE 2"Ø SCH 80 PLASTIC PVC PIPING FROM POOL MECHANICAL ROOM TO ENERGY RECOVERY UNITS ERU-1 AND ERU-2.
    - PROVIDE PENTAIR OR EQUIVALENT PUMP—LOCATED IN THE POOL MECHANICAL ROOM—CAPABLE OF SUPPLY 20 GPM AT 25 FT OF HEAD. PUMP TO HAVE INTEGRAL BASKET STRAINER AND BE PROVIDED WITH SHUTOFFS, UNIONS, AND CHECK VALVE. ERU CIRCUITS TO BE PROVIDED WITH SHUTOFFS AND UNIONS.
    - WATER-SOURCE CONDENSER TO BE INCORPORATED INTO DDC SYSTEM WITH THE SAME CONTROL SEQUENCE AS THE AIR-SOURCE CONDENSER.

- COMPLETE DESIGN TO BE PROVIDED BY POOL CONSULTANT AT A LATER DATE IF ALTERNATE IS SELECTED.

DRAWINGS

N/A

G. ELECTRICAL/TELECOM
SPECIFICATIONS

ITEM NO. 14. **CLARIFICATIONS:**

QUESTION 1:
I have the following question regarding specification section 281600 Intrusion Detection.
Section 2.5.F
Will a system printer be required?
ANSWER 1:
A system printer will not be required.

QUESTION 2:
Spec Section 26 05 29 Hangers and Supports for Electrical Systems – In terms of corrosion protection, can you better clarify what products you want in the different environments (pool, pool equipment, and chemical rooms). As an example, for unistrut in the pool areas for supporting light fixtures, can it be hot dipped, electro-galvanized (SC1 or SC3), or should it be something that the epoxy paint can best adhere to? Does the chemical room require PVC coated or fiberglass?
ANSWER 2:
Please provide FRP support structure in pool and pool equipment rooms.

DRAWINGS

ITEM NO. 15. **Sheet E1.0** – Electrical Site Plan
- Provide 2" C.O. from signage to pullbox for sign power.
- Route 1-1/4" C. from pull box to LCP to control backlit portion of sign.
- Route 1-1/4" C. from pull box to Panel L2A to power message board portion of the sign.
- Provide disconnects at sign location per NEC 600.6.

H. AQUATIC
SPECIFICATIONS

N/A

DRAWINGS

N/A

I. PRIOR APPROVALS

All material or products supplied by the contractor must meet or exceed the quality and performance of the material or product originally specified. It is the contractor's responsibility to ensure that substituted equipment matches the exterior dimensions, weight, and configuration of the equipment that was specified.

ARCHITECTURAL

09 65 00 – Resilient Flooring and Accessories
- Rubber Flooring
  - DynaTuff SP

09 65 66 – Resilient Athletic Flooring
- Sheet Vinyl Athletic Flooring
  - DynaCourt 8mm

09 65 88 Polyurethane Floor System
- Materials
  - DynaForce 10 + 2

MECHANICAL/PLUMBING

The following Mechanical manufacturers have been approved:

Related Section	Item	Manufacturer / Contractor	Notes
230900	DDC System Installers	ATS Inland Northwest	-
232116	Hydronic Balancing Valves	NuTech	-
233300	Backdraft and Pressure Relief Dampers	Pottorff	-
233300	Manual Volume Dampers	Pottorff	-
233300	Control Dampers	Pottorff	-
233300	Fire Dampers	Pottorff	-
233300.	Duct Mounted Access Doors	Pottorff	-
233300	Louvers	Resideo	-
233346	Insulated Flexible Duct	Atco	-
233423	Inline Centrifugal Fans	Carnes Company	-
233600	Single Duct Air Terminal Units	Titus	-
233716	Fabric Air Distribution Devices	FabricAir	-
237200	Air to Air Energy Recovery Equipment	Carnes Company	-
236313	Air Cooled Refrigerant Condensers	PoolPak	Unit must meet the physical constraints outlined in the drawings
238231	Hydronic Heaters	Vulcan	-
238416	Indoor, Mechanical Dehumidification Unit	PoolPak	Unit must meet the physical constraints outlined in the drawings

The following Mechanical manufacturers have **NOT** been approved:

Related Section	Item	Manufacturer / Contractor	Notes
237313	Roof Mounted Air Handling Unit	Energy Labs	Unfamiliar manufacturer

ELECTRICAL/TELECOM

265110 – Lighting

General Note:

1. Luminaires with integral batteries and not required. All emergency lighting shall be provided via central inverter.
2. Lighting packages shall qualify under FAR Clause 52.225 – Buy American Act

- Type C1/C1E
  - Insight Lighting in an approved manufacturer. Verify quantity and placement to ensure design criteria noted in Addendum 1 is met. Verify calculations are provided with luminaire at 25ft AFF. Please note ceiling height varies approx. 32'-42'.
  - Spec Grade Vanguard Luminaire is not approved.
- Type C2E/C2E
  - Insight Lighting in an approved manufacturer. Verify quantity and placement to ensure design criteria noted in Addendum 1 is met. Verify calculations are provided with luminaire at 25ft AFF. Please note ceiling height varies approx. 32'-42'.
  - Spec Grade Vanguard Luminaire is not approved.
  - Alight in an approved manufacturer. Verify quantity and placement to ensure design criteria noted in Addendum 1 is met. Verify calculations are provided with luminaire at 25ft AFF. Please note ceiling height varies approx. 32'-42'.
- Type E2
  - USAI luminaire Not Approved– verify luminaire is suitable for exterior surface mount. Optics must but narrow wall grazing effect for 30ft mounting height.
  - Insight Lighting in an approved manufacturer.
- Type E4
  - DuraGuard is an approved manufacturer. Provide with louvered optic, no exposed polycarbonate lenses.
  - Visionaire is an approved manufacturer.
  - LSI is an approved manufacturer.
  - KIM is an approved manufacturer.
  - Gardco is an approved manufacturer.
- Type E4E
  - Signtex Inc is an approved manufacturer.
  - Exitronix is an approved manufacturer.
- Type E5/E6/E7
  - NLS is an approved manufacturer if provided with capability to reduce output via time controls.
  - Visionaire is an approved manufacturer if provided with capability to reduce output via time controls.

        - LSI is an approved manufacturer, provide luminaire with improved BUG rating to match or improve the BUG rating of specified fixture.
        - Hubbell is an approved manufacturer, Verify luminaire is provided with BUG rating to match or improve the BUG rating of specified fixture.
        - Gardco is an approved manufacturer.

    - Type E8
        - NLS is an approved manufacturer.
        - Hubbell is an approved manufacturer.

    - Type X1/X2/X3
        - Orion is an approved manufacturer.

    - Lighting Controls
        - NLight/sensor switch is an approved manufacturer.

27 15 13 – Communications Copper Horizontal Cabling
- Structured Cabling
    - OCC is an approved manufacturer

End of Addendum 3

ATTACHMENT "A"

Project: Indoor Aquatics and Recreation Center - O.F. 1770.0 10-6

9/29/2021

	A	B	C	D	E
1	**Set #**	**Date Iss**	**Company Name**	**Address**	**Phone**
2	**1**		GFBE		
3	**2**	8/24/21	Swank Enterprises	614 Pondera Avenue Valier, MT 59486	(406) 279-3241
4	**3**	8/27/21	Dick Anderson Construction	4610 Tri Hill Frontage Road Great Falls, MT 59404	406-761-8707
5	**4**	8/30/21	Sampson Construction	5825 S 14th St Lincoln, NE 68512	402-434-5420
6	**5**	9/2/21	Sletten Construction	P.O. Box 2467 Great Falls, MT 59403	(406) 761-7920
7	**6**	9/23/21	LPW/City of Great Falls		
8	**7**				
9	**8**				
10	**9**				
11	**10**				
12	**11**				
13	**12**				
14	**13**				
15	**14**				
16	**15**				
17	**16**				
18	**17**				
19	**18**				
20	**19**				
21	**20**				
22	**21**				
23	**22**				
24	**23**				
25	**24**				
26	**25**				

Project: Indoor Aquatics and Recreation Center - O.F. 1770.0 10-6

9/29/2021

	F	G	H
1	**E-Mail**	**Contact**	**Add**
2			
3	kforbes@swankenterprises.com	Kevin Forbes	
4	evenetz@daconstruction.com	Ed Venentz	
5	pat.clough@sampson-construction.com	Pat Clough	
6	mguelff@sletteninc.com	Mike Guelff	
7	lkunz@greatfallsmt.net	Lisa Kunz	
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			

SECTION 00 30 00

BID FORM

Bid Date: 3:00 p.m., local time, Wednesday, October 13, 2021.

As the Undersigned, I have familiarized myself with the conditions of the Work and Contract Documents prepared by **LPW, P.C., Great Falls, Montana**, and agreed to furnish all labor, material, equipment and services necessary to complete the **Great Falls Indoor Aquatics and Recreation Center, Great Falls, MT** in accordance with the Contract Documents, including all addenda.

I have received the Project Manual and Drawings, the latter consisting of _____ total sheets.

I have received Addenda Nos._____ and have included their provisions in my Bid, agreeing to:

1. Hold my bid open for sixty (60) days after opening of Bid.
2. Accept the provisions of the Instructions to Bidders regarding disposition of my Bid Security, attached hereto.
3. Enter into and execute a Contract, if awarded on the basis of this Bid, and to furnish required Performance Bond, Labor-Material Payment Bond, and Insurance in specified amounts.
4. Accomplish the Work in accordance with the Contract Documents.

BASIC BID: The Undersigned agrees to complete all Work for the **bid lump sum** of

_____ **Dollars**

($_____).

Add Alternate No. 1: State the amount to provide and install Water-Source Condenser in Dehumidifier DH-1 and DH-2 as shown on drawings.
Alternate No. 1 Sum of _____**Dollars**

($_____).

Add Alternate No. 2: State the amount to convert EF-5 to ERU-1 and EF-6 to ERU-2 (Exhaust Heat Recovery System) as shown on drawings.
Alternate No. 2 Sum of _____**Dollars**

($_____).

Add Alternate No. 3: State the amount to provide and install Outdoor Splash Pad as shown on drawings. Base bid to include plumbing stub-outs for future splash pad, and irrigated turf.
Alternate No. 3 Sum of _____**Dollars**

($_____).

Add Alternate No. 4: State the amount to provide and install Military Training Equipment including Wall Mount Parachute Dual Winch Drag Simulator and Personnel Rescue Hoist Model 750 Trolley with

Rotarwash/Searchlight as shown on drawings. Base bid to include all required structural connections for future equipment installation.
Alternate No. 4 Sum of _____**Dollars**

($_____).

Add Alternate No. 5: State the amount to provide and install gymnasium divider curtain in Gym 136 as shown on drawings. Base bid to include electrical circuit for future curtain.
Alternate No. 5 Sum of _____**Dollars**

($_____).

Add Alternate No. 6: State the amount to provide and install Sauna 125 complete, including Door 125 as shown on drawings. Base bid to include wall, ceiling, and flooring finishes similar to Locker Corridor 126.
Alternate No. 6 Sum of _____**Dollars**

($_____).

Add Alternate No. 7: State the amount to provide and install acoustical panels in gym and pool areas as shown on drawings.
Alternate No. 7 Sum of _____**Dollars**

($_____).

Add Alternate No. 8: State the amount to provide and install underwater sound system in Lap Pool 120P as shown on drawings.
Alternate No. 8 Sum of _____**Dollars**

($_____).

Add Alternate No. 9: State the amount to provide and install south parking lot drop-off parking as shown on drawings. Base bid to include irrigated turf.
Alternate No. 9 Sum of _____**Dollars**

($_____).

Add Alternate No. 10: State the amount to provide and install exterior playground equipment at Child Watch and exterior basketball hoop and striping on the north side of the building as shown on plans. Base bid to include irrigated turf.
Alternate No. 10 Sum of _____**Dollars**

($_____).

Add Alternate No. 11: State the amount to provide and install specialty paving, cast-in-place concrete benches, compacted gravel trail and landscape berms at Entry Plaza as shown on drawings. Base bid to include concrete slab and freestanding bench.
Alternate No. 11 Sum of _____**Dollars**

($_____).

Add Alternate No. 12: State the amount to provide and install operable partition in Class/Party Room 114 as shown on plans.
Alternate No. 12 Sum of _____**Dollars**

($_____).

Add Alternate No. 13: State the amount to provide and install security cameras as shown on drawings. Base bid to include all conduit and rough-in for future cameras.
Alternate No. 13 Sum of _____**Dollars**

($_____).

Add Alternate No. 14: State the amount to provide and install portable bleachers as shown on drawings.
Alternate No. 14 Sum of _____**Dollars**

($_____).

Add Alternate No. 15: State the amount to provide and install flagpole, concrete pad, and associated lighting as shown on drawings. Base bid to include conduit to location of future flagpole and landscaping, per plans.
Alternate No. 15 Sum of _____**Dollars**

($_____).

Add Alternate No. 16: State the amount to provide and install monument sign and landscaping as shown on drawings. Base bid to include conduit to location of future monument sign.
Alternate No. 16 Sum of _____**Dollars**

($_____).

Add Alternate No. 17: State the amount to provide and install site conduit for future electric vehicle charging stations and conduit for future solar panels on roof.
Alternate No. 17 Sum of _____**Dollars**

($_____).

Add Alternate No. 18: State the amount to provide and install timing system and scoreboard for lap pool. Base bid to include conduit and rough-in for future score board.
Alternate No. 18 Sum of _____**Dollars**

($_____).

Add Alternate No. 19: State the amount to provide and install large flume slide in leisure pool as shown on drawings. Base bid to include all foundations and slide connection at pre-cast concrete walls for future installation, and all underground supply, suction, return piping, all slide piping penetrations, and slide suction outlets in the leisure pool. Slide piping to be installed and tested per specifications.
Alternate No. 19 Sum of _____**Dollars**

($_____).

Add Alternate No. 20: State the amount to provide and install frog slide in leisure pool as shown on drawings. Base bid to include all underground supply, suction, return piping, all slide piping penetrations, and slide suction outlets in the leisure pool. Slide piping to be installed and tested per specifications.
Alternate No. 20 Sum of _____**Dollars**

($_____).

Add Alternate No. 21: State the amount to provide and install all Covid-related mechanical upgrades as shown on mechanical drawings.
Alternate No. 21 Sum of _____**Dollars**

($_____).

Add Alternate No. 22: State the amount to provide and install all hallway cubbies in Corridor 127.
Alternate No. 22 Sum of _____**Dollars**

($_____).

Sum of Base Bid and All Add Alternates: _____Dollars

($_____).

Firm:

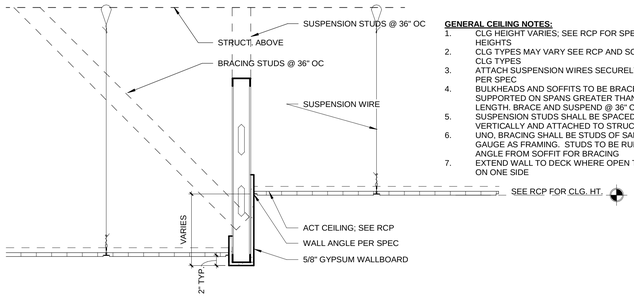
Date:_____ By:

(Corporate Seal) Business Address:

Contractor License No.:

Witness:

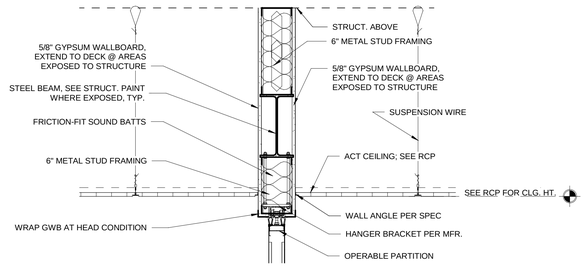
ATTACHMENT "C"



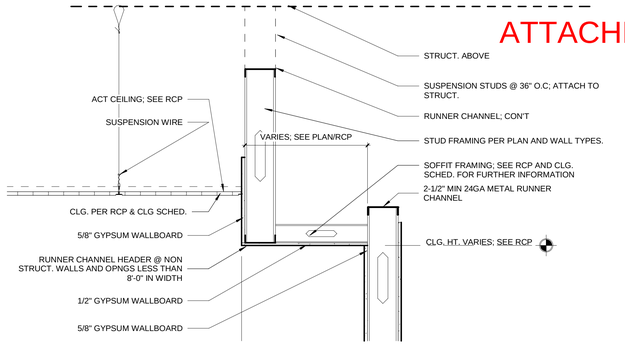
GENERAL CEILING NOTES:

1. CLG HEIGHT VARIES; SEE RCP FOR SPECIFIC HEIGHTS
2. CLG TYPES MAY VARY SEE RCP AND SCHED. FOR CLG TYPES
3. ATTACH SUSPENSION WIRES SECURELY TO STRUCT. PER SPEC
4. BULKHEADS AND SOFFITS TO BE BRACED AND SUPPORTED ON SPANS GREATER THAN 6' IN LENGTH. BRACE AND SUSPEND @ 36" OC.
5. SUSPENSION STUDS SHALL BE SPACED 36" OC. RUN VERTICALLY AND ATTACHED TO STRUCT. ABOVE
6. UNO, BRACING SHALL BE STUDS OF SAME SIZE AND GAUGE AS FRAMING. STUDS TO BE RUN @ 45 DEG. ANGLE FROM SOFFIT FOR BRACING
7. EXTEND WALL TO DECK WHERE OPEN TO STRUCT. ON ONE SIDE

1 **TYP. BULKHEAD DTL**
1" = 1'-0"

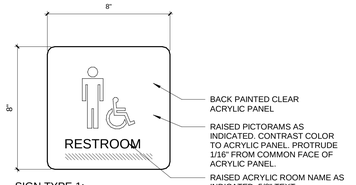


2 **TYP. BULKHEAD DTL ABOVE OPERABLE PARTITION**
1" = 1'-0"



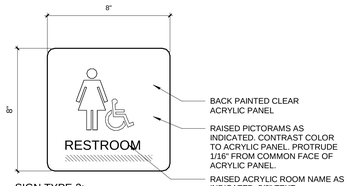
3 **TYP. ALCOVE SOFFIT**
1" = 1'-0"

SIGNAGE SCHEDULE					
Number	Name	Sign Copy	Location	Sign Type	Occupancy
100S	STORAGE	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
103	MANAGER	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
104	CONCESSIONS	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
105	LAUNDRY/STORAGE	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
107	AQUATICS	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
108	REC SUPERVISOR	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
109	SPORT SUPERVISOR	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
110	CHILD WATCH	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
110R	RR	SEE SIGN TYPE ELEVATION	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	3	
110S	STORAGE	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
113P	REC POOL	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	233
114	CLASS/PARTY RM	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
115	ELEC	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
116	BOILER RM	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
117	POOL EQUIP 1	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
118	STORAGE	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
119	GUARD OFFICE	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
120P	LAP POOL	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	459
121	MULTIPURPOSE RM	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
121S	STORAGE	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
122C	MENS LOCKERS	SEE SIGN TYPE ELEVATION	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	1	
123	JAN	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
125	SAUNA	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
128	FAMILY CHANGE-A	SEE SIGN TYPE ELEVATION	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	3	
129	ADA FAMILY CHANGE-B	SEE SIGN TYPE ELEVATION	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	3	
130	FAMILY CHANGE-C	SEE SIGN TYPE ELEVATION	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	3	
131	FAMILY CHANGE-D	SEE SIGN TYPE ELEVATION	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	3	
132	DATA	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
133	STORAGE	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
136	GYM	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	163
137	MANG STORAGE	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
138	MAFB STORAGE	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
141	WOMENS LOCKERS	SEE SIGN TYPE ELEVATION	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	2	
144	CHLORINE STG	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
145	CHEM STG	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
146	STORAGE	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
202	MECHANICAL	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
203	SOUTH RR	SEE SIGN TYPE ELEVATION	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	3	
204	NORTH RR	SEE SIGN TYPE ELEVATION	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	3	
205	STOR	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
206	MAINT	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	
210	ELEVATOR	SEE SIGN TYPE ELEVATION; VERIFY FINAL COPY WITH OWNER	WALL MT ADJACENT TO DOORWAY; VIF WITH ARCHITECT	4	



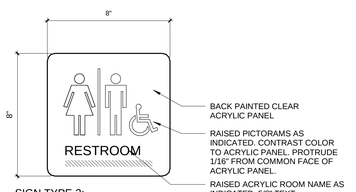
SIGN TYPE 1:
(RS-2)

ROOM NUMBER: NONE
COPY: FIXED
PICTOGRAMS: STANDARD FOR MEN'S AND ACCESSIBILITY AS INDICATED



SIGN TYPE 2:
(RS-3)

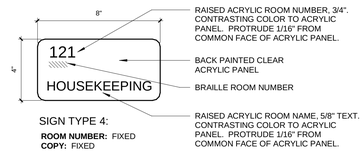
ROOM NUMBER: NONE
COPY: FIXED
PICTOGRAMS: STANDARD FOR WOMEN'S AND ACCESSIBILITY AS INDICATED



SIGN TYPE 3:
(RS-1)

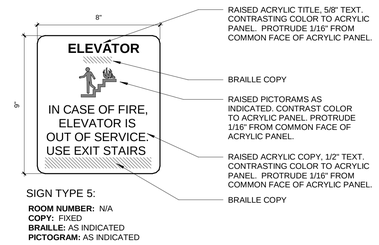
ROOM NUMBER: NONE
COPY: FIXED
PICTOGRAMS: STANDARD FOR UNISEX AND ACCESSIBILITY AS INDICATED

4 **SIGNAGE DETAILS**
3" = 1'-0"



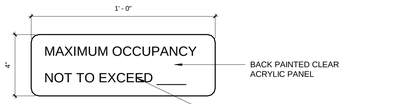
SIGN TYPE 4:

ROOM NUMBER: FIXED
COPY: FIXED



SIGN TYPE 5:

ROOM NUMBER: N/A
COPY: FIXED
BRAILLE: AS INDICATED
PICTOGRAM: AS INDICATED



SIGN TYPE 6:

ROOM NUMBER: N/A
BRAILE: N/A
COPY: FIXED

SIGNAGE: GENERAL REQUIREMENTS

1. MFR: INPRO CORP., ASPEN COLLECTION
2. FOR ROOMS ON SCHEDULE SHOWING OCCUPANCY NUMBER, PROVIDE SIGN TYPE 6
3. PROVIDE (1) SIGN TYPE 5 FOR PLACEMENT ADJACENT TO 2ND FLOOR ELEVATOR DOOR
4. MOUNT ALL SIGNAGE AT 60" AFF TO CENTERLINE OF SIGN
5. COLORS AND FINISHES AS SELECTED BY OWNER, SUBMIT FOR SELECTION
6. TEXT INDICATED ON SIGNS IS FOR EXAMPLE ONLY. SUBMIT SIGN SCHEDULE TO ARCHITECT ITEMIZED ON A PER ROOM, PER LOCATION BASIS, FOR CONFIRMATION OF FINAL LANGUAGE
7. SIGNS SHALL BE PROVIDED WITH MYLAR INSERTS WHERE APPLICABLE, BEARING COPY VERIFIED WITH OWNER DURING SUBMITTALS. INCLUDE BOTH FIXED TEXT AND UPDATEABLE TEXT FIELDS ON SUBMITTAL SCHEDULES.
8. SIGNS SHALL BE MOUNTED TO WALLS BY MEANS OF DOUBLE SIDED FOAM TAPE PER MFR INSTRUCTIONS

LPW ARCHITECTURE
www.lpwarchitecture.com
PHONE | 406.771.0770
15 FIFTH ST. SOUTH
GREAT FALLS | MT 59401

LICENSED ARCHITECT TIMOTHY M. PETERSON 11713 GREAT FALLS, MONTANA STATE OF MONTANA

Indoor Aquatics and Recreation Center
Great Falls, Montana

CEILING DETAILS and SIGNAGE SCHEDULE

Revision Schedule

No.	Revision	Date
1	Addendum 1-3	9-22-21

Submittals

No.		Date
1	100% DD SUBMITTAL	05-01-21
2	PERMIT SET	08-06-21
3	BID SET	08-23-21

DRAWN BY: MB
CHECKED BY: TMP
DATE: 08/19/21
PROJECT NUMBER: 20-019
SHEET NUMBER: A10.3

10/5/2021 8:36:16 AM

ATTACHMENT "D"

ROOFTOP UNIT SCHEDULE

ACCESSORIES FOR RTU-1 & 2:
1. ALL ROOFTOP UNIT RETURN DUCTS TO ROUTE VERTICALLY THROUGH PLENUM CURB.
2. RETURN DUCT SMOKE DETECTOR FURNISHED BY ELEC. CONTR., INSTALLED BY MECH. CONTR. AND WIRED BY ELEC. CONTR. SEE PLANS FOR LOCATIONS.
3. PROVIDE QTY. (1) 2" MERV-8 PRE-FILTER AND QTY. (1) 4" MERV-13 FINAL FILTER INTEGRAL TO UNIT. INCLUDE (2) SPARE SETS OF FILTERS FOR EACH UNIT.
4. PROVIDE DOUBLE WALL CABINET WITH R-13 FOAM INSULATION.

COOLING DATA:
1. REFRIGERANT: R-410A
2. PROVIDE ONE VARIABLE CAPACITY COMPRESSOR
3. SECOND COMPRESSOR SHALL BE ON/OFF
4. PROVIDE ECM CONDENSER FAN
5. PROVIDE STAINLESS STEEL DRAIN PAN

COOLING DATA:
1. REFRIGERANT: R-410A
2. PROVIDE ONE VARIABLE CAPACITY COMPRESSOR
3. SECOND COMPRESSOR SHALL BE ON/OFF
4. PROVIDE ECM CONDENSER FAN
5. PROVIDE STAINLESS STEEL DRAIN PAN

FAN DATA FOR RTU-1 & 2:
1. PROVIDE SUPPLY FAN VFD (EITHER BY MANUF. OR T.C.C. - TRADES TO COORDINATE)
2. PROVIDE RELIEF FAN VFD (EITHER BY MANF. OR T.C.C. - TRADES TO COORDINATE)
3. PROVIDE 100% ECONOMIZER WITH POWER RELIEF/EXHAUST
4. SUPPLY AND EXHAUST FANS ARE TO HAVE PREMIUM EFFICIENCY MOTORS

FAN DATA FOR RTU-3:
1. PROVIDE ECM SUPPLY FAN
2. PROVIDE 100% ECONOMIZER

ELECTRICAL DATA:
1. SEE MEP COORDINATION SCHEDULE FOR STARTER/DISCONNECT AND ALL OTHER ELEC. DATA.
2. PROVIDE FACTORY WIRED, NON-FUSED DISCONNECT.
3. PROVIDE FACTORY WIRED, SINGLE POINT ELECTRICAL CONNECTION.
4. PROVIDE 115 VOLT CONVENIENCE OUTLET. (FACTORY WIRED, ELEC. CONTR. TO CONNECT.

CONTROLS FOR RTU-1 & 2:
1. PROVIDE WHOLE BUILDING AUTOMATION SYSTEM (BAS) AS OUTLINED IN THE POINTS AND SEQUENCE OF OPERATION.
2. PROVIDE TERMINAL STRIP FOR DIRECT CONNECTION. IF NOT AVAILABLE, PROVIDE BAC-NET COMMUNICATION BOARD AND COORDINATE WITH T.C.C. FOR INTEGRATION REQUIREMENTS.
3. UNIT TO COME WITH NO ACTUATORS OR SENSORS. T.C.C. TO PROVIDE ALL HARDWARE.

CONTROLS FOR RTU-3:
1. PROVIDE WHOLE BUILDING AUTOMATION SYSTEM (BAS) AS OUTLINED IN THE POINTS AND SEQUENCE OF OPERATION.
2. PROVIDE TERMINAL STRIP FOR DIRECT CONNECTION. IF NOT AVAILABLE, PROVIDE BAC-NET COMMUNICATION BOARD AND COORDINATE WITH T.C.C. FOR INTEGRATION REQUIREMENTS.
3. UNIT TO COME WITH NO ACTUATORS OR SENSORS. T.C.C. TO PROVIDE ALL HARDWARE.

ROOF CURB INFORMATION (SEE DETAIL):
1. PROVIDE SOLID BOTTOM ROOF CURB WITH RA/SA PLENUMS. OFFSET PENETRATIONS AS NEEDED TO ALIGN WITH LOCATIONS AS SHOWN ON PLANS.

MARK	MANUF.	MODEL	OUTLET CONFIG	SYSTEM TYPE	SUPPLY FAN				EXHAUST FAN			OUTSIDE AIR		HEATING COIL											COOLING COIL					PHYSICAL DATA			
					AIRFLOW (CFM)	SUPPLY ESP (IN WC)	TOTAL ESP (IN WC)	HP	AIRFLOW (CFM)	EXHAUST ESP (IN WC)	HP	MIN. AIRFLOW (CFM)	MAX AIRFLOW (CFM)	TYPE	VALVE	AIRFLOW (CFM)	CAPACITY (BTU/HR)	EAT / LAT (°F)	WORKING FLUID	EWT / LWT (°F)	WPD (FT HD)	FLOW (GPM)	INPUT (BTU/HR) LOW / HIGH	OUTPUT (BTU/HR) LOW / HIGH	TYPE	AIRFLOW (CFM)	TOTAL CAPACITY (BTU/HR)	SENSIBLE CAPACITY (BTU/HR)	EAT / LAT (°F)	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	WEIGHT (LBS)
RTU-1	AAON	RN-025	VERTICAL	SINGLE-ZONE	9500	0.50	0.75	15	9500	0.25	10	530	2670	HW	3-WAY	9500	390,500	43.9 / 84.8	33% PG	160.0 / 136.3	5.5	35	- -	- -	DX	9500	269,660	221,400	78.5 / 53.6	110-3/8"	64-1/8"	59-1/4"	3096
RTU-2	AAON	RN-025	VERTICAL	MULTI-ZONE	10500	1.40	1.80	15	10000	0.40	10	780	2270	HW	2-WAY	7350	125,900	47.8 / 65.0	33% PG	160.0 / 137.8	0.5	12	- -	- -	DX	10500	264,840	216,720	77.5 / 55.4	110-3/8"	64-1/8"	59-1/4"	3085
RTU-3	CARRIER	48FCEA04	VERTICAL	SINGLE ZONE	900	- -	1.00	1/2	- -	- -	- -	260	260	NG	1-STAGE	900	73,000	39.6 / 97.9	- -	- -	- -	- -	65,000	53,000	DX	900	33,000	26,300	85.0 / 58.9	74-3/8"	46-5/8"	33-3/8"	482

ENERGY RECOVERY VENTILATOR UNIT SCHEDULE

ACCESSORIES/REMARKS:
1. FLEXIBLE DUCTWORK CONNECTION ON ALL FOUR CONNECTIONS.
2. DRAIN CONDENSATE TO NEAREST FLOOR DRAIN. SEE PLUMBING PLAN.
3. MOTORIZED POSITIVE CLOSURE DAMPERS ON BOTH AIR STREAMS.
4. SINGLE POINT ELECTRICAL CONNECTION.
5. INTEGRAL DEFROST CONTROL.
6. PROVIDE SPRING VIBRATION ISOLATORS.
7. PROVIDE 2" MERV-8 FILTERS IN EACH AIR STREAM.
8. PROVIDE HOT WATER COIL SIZED LARGE ENOUGH TO ALLOW UNIT TO OPERATE WITHOUT COIL FREEZE UP.

CONTROLS:
1. SEE DDC CONTROL POINTS AND SEQUENCES FOR ALL CONTROL INFORMATION.

ELECTRICAL DATA:
SEE MEP COORDINATION SCHEDULE FOR STARTER/DISCONNECT AND ALL OTHER ELEC. DATA.

MARK	MANUF.	MODEL	TYPE	SUPPLY AIR			EXHAUST AIR			DESIGN CONDITIONS												HYDRONIC PRE-HEAT COIL							PHYSICAL DATA			
										WINTER DESIGN CONDITIONS						SUMMER DESIGN CONDITIONS																
										OUTDOOR AIR		INDOOR AIR				OUTDOOR AIR		INDOOR AIR														
				MAX AIRFLOW (CFM)	ESP (IN WC)	DRIVE	MAX AIRFLOW (CFM)	ESP (IN WC)	DRIVE	DB (°F)	WB (°F)	DB (°F)	RH	DAT (°F)	TOTAL WINTER EFFECTIVENESS	DB (°F)	WB (°F)	DB (°F)	RH	DAT (°F)	TOTAL SUMMER EFFECTIVENESS	VALVE	WORKING FLUID	CAPACITY (BTU/HR)	FLOW RATE (GPM)	WPD (FT)	EWT / LWT (°F)	EAT / LAT (°F)	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	WEIGHT (LBS)
ERV-1	AMERICAN ALDES	PA15	FIXED PLATE ALUMINUM CORE	1460	1.5	DIRECT	1460	1.5	DIRECT	-17.7	-17.7	70	58	48.6	54.5%	92.1	61.3	75	63	83.9	48.1%	2-WAY	33% PG	55,600	4.5	2.2	160 / 133	-17.7 / 23	82.5"	38.25"	44.75"	750

DEHUMIDIFIER SCHEDULE

ACCESSORIES:
1. RETURN DUCT SMOKE DETECTOR FURNISHED BY ELEC. CONTR., INSTALLED BY MECH. CONTROLLED AND WIRED BY ELEC. CONTR. SEE PLANS FOR LOCATIONS.
2. 115 VOLT CONVENIENCE OUTLET. (FACTORY WIRED, ELEC CONTR. TO CONNECT).
3. PROVIDE LIGHT IN ALL ACCESSIBLE SECTIONS OF AHU. (FACTORY WIRED, ELEC. CONTR. TO CONNECT).
4. PROVIDE NEOPRENE SOUND ISOLATION PAD UNDER AIR HANDLING UNIT. (AMPAD)
5. CYCLE PROTECTOR.
6. MODULATING BYPASS DAMPER.
7. REFRIGERANT SHALL BE R-410A, AIR FILTERS SHALL BE 4", 30% EFFECTIVE.
8. RECESSED ELECTRICAL CONTROL PANEL.
9. AIR REHEAT CONDENSER COIL.
10. MODULATING EVAP. BYPASS DAMPER.
11. FULL SIZED RECEIVER W/ FLOODING VALVE.
12. STAINLESS STEEL CONDENSATE DRAIN - ROUTE TO FLOOR DRAIN.

LOW AMBIENT ACCESSORIES:
1. WINTER START CONTROL
2. CRANKCASE HEATER
3. START ASSIST CAPACITOR
4. LOW AMBIENT PRESSURE SWITCH
5. LOW AMBIENT CONTROLLER

CONFIGURATION:
1. HOT GAS REHEAT COIL WITH REMOTE AIR...

CONTROLS:
1. PACKAGED CONTROLLER
2. DUCT MOUNTED TEMP. SENSOR
3. DUCT MOUNTED HUMIDITY SENSOR
4. MODULATING 4-DAMPER AIRFLOW BALANCING SYSTEM

ELECTRICAL DATA:
SEE MEP COORDINATION SCHEDULE FOR STARTER/DISCONNECT AND ALL OTHER ELEC. DATA.

[ALTERNATE #1] COMMENTS:
1. CONFIGURATION TO BE HOT GAS REHEAT WITH COAXIAL WATER SOURCE HEAT EXCHANGER AND REMOTE AIR SOURCE CONDENSERPROVIDE 6"Ø SCH 80 PLASTIC PVC PIPING FROM POOL MECHANICAL ROOM TO DEHUMIDIFIERS DH-1 AND DH-2.
2. PROVIDE PENTAIR OR EQUIVALENT PUMP—LOCATED IN THE POOL MECHANICAL ROOM—CAPABLE OF SUPPLY 200 GPM AT 40 FT OF HEAD. PUMP TO HAVE INTEGRAL BASKET STRAINER AND BE PROVIDED WITH SHUTOFFS, UNIONS, AND CHECK VALVE. DEHUMIDIFIER CIRCUITS TO BE PROVIDED WITH SHUTOFFS AND UNIONS.
3. WATER-SOURCE CONDENSER TO BE INCORPORATED INTO DDC SYSTEM WITH THE SAME CONTROL SEQUENCE AS THE AIR-SOURCE CONDENSER.
4. COMPLETE DESIGN TO BE PROVIDED BY POOL CONSULTANT AT A LATER DATE IF ALTERNATE IS SELECTED.

3

MARK	MANUF.	MODEL	AIRFLOW DATA			DESIGN CONDITIONS				AIRFLOW DATA	MOISTURE REMOVAL CAPACITY (LBS/HR)	COOLING DATA				HEATING DATA						PHYSICAL DATA			
																	AUXILLARY HEATING DATA								
			SUPPLY AIR (CFM)	FRESH AIR, OPERATING (CFM)	OUTSIDE AIR, PURGE MODE (CFM)	WATER TEMP (°F)	DRY BULB AIR TEMP (°F)	UNOCCUPIED RELATIVE HUMIDITY	OCCUPIED RELATIVE HUMIDITY	ESP (IN WC)		TOTAL CAPACITY (MBH)	TOTAL SENSIBLE CAPACITY (MBH)	# OF CIRCUITS	COMPRESSOR TYPE	NET COMPRESSOR REHEAT CAPACITY (MBH)	TYPE	WORKING FLUID	EWT / LWT (°F)	WPD (FT)	FLOW (GPM)	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	WEIGHT (LBS)
DH-1	DESERT AIRE	SA50	22,000	2840	11,000	82°F	84°F	50% RH	60% RH	3.00	294.5	639.0	327.9	2	SCROLL	808 MBH	HOT WATER	33% PG	160 / 135	5.0	7.0	244"	87"	129"	8800
DH-2	DESERT AIRE	SA50	22,000	2230	11,000	88°F	86°F	50% RH	60% RH	3.00	294.5	639.0	327.9	2	SCROLL	808 MBH	HOT WATER	33% PG	160 / 135	5.0	7.0	244"	87"	129"	8800

CONDENSER SCHEDULE

ACCESSORIES:
1. TIME DELAY RELAY
2. EVAP. FREEZE T-STAT
3. CYCLE PROTECTOR
4. THERMOSTATIC EXP. VALVE (HARD SHUT OFF)
5. FILTER / DRYER
6. BALL BEARING FAN MOTOR
7. HIGH PRESSURE SWITCH
8. LOW PRESSSURE SWITCH
9. LIQUID LINE SOLENOID VALUE

CONTROLS:
1. FACTORY CONTROLS

RATED AMBIENT CONDITIONS:
1. 100°F DB OUTDOOR AIR

ELECTRICAL DATA:
SEE MEP COORDINATION SCHEDULE FOR STARTER/DISCONNECT AND ALL OTHER ELEC. DATA.

MARK	MANUF.	MODEL	NO. OF FANS	FAN LAYOUT	CAPACITY (BTU/HR)	REFRIGERANT	SOUND DATA AT 10 FEET	MIN. AMBIENT OPERATING TEMPERATURE (°F)	UNIT PHYSICAL DATA			
									LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	WEIGHT (LBS)
CND-1	DESERT AIRE	RC8D029C	4	2 X 2	808,000	R410-A	68.5 dB(A)	-20°F	139.1"	92"	54.62"	1537 LBS
CND-2	DESERT AIRE	RC8D029C	4	2 X 2	808,000	R410-A	68.5 dB(A)	-20°F	139.1"	92"	54.62"	1537 LBS

GRILLE, REGISTER AND DIFFUSER SCHEDULE

GRD REMARKS:
1. SUBMITTAL DATA SHALL INCLUDE N.C., THROW, VELOCITY, AND PRESSURE DROP AS WELL AS ALL PHYSICAL AND INSTALLATION DATA.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FITTINGS AND ACCESSORIES REQUIRED FOR A COMPLETE INSTALLATION.
3. N.C. VALUES IN SCHEDULE ARE VALID FOR SCHEDULE AIRFLOW ONLY AND REPRESENT A MAXIMUM ACCEPTABLE VALUE. SUBSTITUTE EQUIPMENT SHALL HAVE N.C. VALUE EQUAL TO OR BELOW THE VALUE SCHEDULE.

ACCESSORY REMARKS:
1. PROVIDE FRAME FOR INSTALLATION IN RELEVANT CEILING TYPE. REFER TO ARCHITECTURAL RCP FOR CEILING TYPE.
2. PAINT INTERIOR OF VISIBLE RETURN DUCTS & PLENUMS BLACK.
3. PROVIDE MANUAL BALANCING DAMPER AT LOCATIONS WHERE A SPECIFIED AIR VOLUME IS SHOWN.
4. PROVIDE PRICE MODEL VCS3 OPPOSED BLADE DAMPER (OBD) WHERE INDICATED ON THE FLOOR PLANS. BALANCE TO AIRFLOW SPECIFIED.
5. PROVIDE PRICE MODEL VCR9 RADIAL DAMPER (RD) WHERE INDICATED ON THE FLOOR PLANS. BALANCE TO THE AIRFLOW SPECIFIED.

MARK	QTY	MANUF.	MODEL	DESCRIPTION	NECK SIZE (ø" / W"XH")	FUNCTION	MAX AIRFLOW (CFM)	PERFORMANCE DATA AT MAX CFM					MOUNTING & FINISH		
								N.C.	PRESSURE DROP (IN WC)	THROW AT 50 FPM (FT)	VELOCITY (FPM)	THROW DIRECTION	MOUNTING	MATERIAL	FINISH
E-1	7	PRICE	PDR	24"X24" PERFORATED RETURN DIFFUSER W/ SR ADAPTOR	10"X10"	EXHAUST	200	- -	0.02	- -	298	- -	ACT CEILING	STEEL	ARCH SELECT
E-2	7	PRICE	PDR	24"X24" PERFORATED RETURN DIFFUSER W/ SR ADAPTOR	6"X6"	EXHAUST	80	- -	0.03	- -	320	- -	ACT CEILING	STEEL	ARCH SELECT
E-3	1	PRICE	530	FIXED LOUVER RETURN GRILLE - 45° BLADES - 3/4" SPACING	12"X6"	EXHAUST	80	- -	0.01	- -	195	- -	WALL	STEEL	ARCH SELECT
R-1	10	PRICE	PDR	24"X24" PERFORATED RETURN DIFFUSER	18"X18"	RETURN	670	- -	0.02	- -	298	- -	ACT CEILING	STEEL	ARCH SELECT
R-2	2	PRICE	PDR	24"X24" PERFORATED RETURN DIFFUSER W/ SR ADAPTOR	6"X6"	RETURN	80	- -	0.03	- -	320	- -	ACT CEILING	STEEL	ARCH SELECT
R-3	7	PRICE	530	FIXED LOUVER RETURN GRILLE - 45° BLADES - 3/4" SPACING	12"X6"	RETURN	80	- -	0.01	- -	195	- -	WALL	STEEL	ARCH SELECT
R-4	2	PRICE	530	FIXED LOUVER RETURN GRILLE - 45° BLADES - 3/4" SPACING	36"X18"	RETURN	2300	25	0.09	- -	545	- -	WALL	STEEL	ARCH SELECT
R-5	1	PRICE	530	FIXED LOUVER RETURN GRILLE - 45° BLADES - 3/4" SPACING	28"X14"	RETURN	1010	16	0.05	- -	403	- -	WALL	STEEL	ARCH SELECT
R-6	1	PRICE	530	FIXED LOUVER RETURN GRILLE - 45° BLADES - 3/4" SPACING	14"X14"	RETURN	620	20	0.08	- -	509	- -	WALL	STEEL	ARCH SELECT
R-7	2	PRICE	90	HEAVY DUTY GYM GRILLE - 0° BLADES - 3/8" SPACING	48"X24"	RETURN	4720	27	0.07	- -	621	- -	DUCT	STEEL	ARCH SELECT
R-8	8	PRICE	97	ALUMINUM GYM GRILLE - 0° BLADES - 1/2" SPACING	48"X24"	RETURN	5500	33	0.10	- -	724	- -	PRE-CAST WALL	ALUMINUM	ARCH SELECT
R-9	2	PRICE	97	ALUMINUM GYM GRILLE - 0° BLADES - 1/2" SPACING	10"X4"	RETURN	50	- -	0.01	- -	246	- -	WALL	ALUMINUM	ARCH SELECT
R-10	2	PRICE	735	FIXED LOUVER RETURN GRILLE - 45° BLADES - 1/2" SPACING	18"X6"	RETURN	150	- -	0.02	- -	239	- -	WALL	STAINLESS STEEL	ARCH SELECT
S-1	15	PRICE	SCDA	24"X24" SQUARE CONE DIFFUSER - ADJUSTABLE	8"ø	SUPPLY	210	23	0.08	11	602	VERTICAL	ACT CEILING	STEEL	ARCH SELECT
S-2	4	PRICE	SCDA	24"X24" SQUARE CONE DIFFUSER - ADJUSTABLE	6"ø	SUPPLY	80	- -	0.03	5	407	HORIZONTAL	ACT CEILING	STEEL	ARCH SELECT
S-3	8	PRICE	RCDA	ROUND CONE DIFFUSER - FULLY ADJUSTABLE	16"ø	SUPPLY	1180	- -	0.09	19	845	VERTICAL	DUCT OUTLET	STEEL	ARCH SELECT
S-4	3	PRICE	RCDA	ROUND CONE DIFFUSER - FULLY ADJUSTABLE	10"ø	SUPPLY	390	- -	0.07	10	715	VERTICAL	DUCT OUTLET	STEEL	ARCH SELECT
S-5	7	PRICE	RCDA	ROUND CONE DIFFUSER - FULLY ADJUSTABLE	8"ø	SUPPLY	240	- -	0.06	8	688	VERTICAL	DUCT OUTLET	STEEL	ARCH SELECT
S-6	2	PRICE	RCDA	ROUND CONE DIFFUSER - FULLY ADJUSTABLE	6"ø	SUPPLY	100	- -	0.03	4	509	VERTICAL	DUCT OUTLET	STEEL	ARCH SELECT
S-7	3	PRICE	510	LOUVERED STEEL GRILLE - 3/4" SPACING	12"X6"	SUPPLY	240	- -	0.04	28	587	HORIZONTAL	WALL	STEEL	ARCH SELECT
S-8	5	PRICE	SDGE	SPIRAL DUCT MOUNTED GRILLE - 24"ø	20"X12"	SUPPLY	500	16	0.06	42	569	HORIZONTAL	DUCT	ALUMINUM	ARCH SELECT
S-9	3	PRICE	SDGE	SPIRAL DUCT MOUNTED GRILLE - 16"ø	12"X8"	SUPPLY	310	- -	0.06	33	547	HORIZONTAL	DUCT	ALUMINUM	ARCH SELECT
S-10	3	PRICE	SDGE	SPIRAL DUCT MOUNTED GRILLE - 12"ø	10"X6"	SUPPLY	130	- -	0.03	21	385	HORIZONTAL	DUCT	ALUMINUM	ARCH SELECT
S-11	3	PRICE	SDGE	SPIRAL DUCT MOUNTED GRILLE - 10"ø	10"X6"	SUPPLY	110	- -	0.02	19	326	HORIZONTAL	DUCT	ALUMINUM	ARCH SELECT

ENERGY RECOVERY UNIT SCHEDULE [ALTERNATE #2]

3

ACCESSORIES FOR ALL FANS:
1. STANDARD DISCONNECT PREWIRED.
2. GRAVITY BACKDRAFT DAMPER.
3. STANDARD FINISH.
4. SPRING VIBRATION ISOLATORS.
5. MOUNT ON HOUSEKEEPING PAD. SEE STRUCTURAL COORDINATION SHEET.

ELECTRICAL DATA:
SEE MEP COORDINATION SCHEDULE FOR STARTER/DISCONNECT AND AL...

CONTROLS:
1. INTERLOCK WITH ASSOCIATED DEHUMIDIFIER CONTROLLER TO PROVIDE SOURCE CAPTURE EXHAUST UNDER THE SAME OCCUPANCY SCHEDULE. FAN TO BE ENERGIZED BY DEHUMIDIFIER CONTROLLER.

REMARKS:
1. COORDINATE WITH POOL CONTRACTOR TO PROVIDE POOL WATER PIPING AND ALL ASSOCIATED VALVING BETWEEN EACH ENERGY RECOVERY UNIT AND ITS RESPECTIVE POOL.

[ALTERNATE #2] COMMENTS:
1. BASE BID EXHAUST FANS EF-5 AND EF-6 ARE CONSIDERED DEDUCTIVE FROM THE COST ASSOCIATED WITH ALTERNATE #2
1. PROVIDE 2"Ø SCH 80 PLASTIC PVC PIPING FROM POOL MECHANICAL ROOM TO ENERGY RECOVERY UNITS ERU-1 AND ERU-2.
2. PROVIDE PENTAIR OR EQUIVALENT PUMP—LOCATED IN THE POOL MECHANICAL ROOM—CAPABLE OF SUPPLY 20 GPM AT 25 FT OF HEAD. PUMP TO HAVE INTEGRAL BASKET STRAINER AND BE PROVIDED WITH SHUTOFFS, UNIONS, AND CHECK VALVE. ERU CIRCUITS TO BE PROVIDED WITH SHUTOFFS AND UNIONS.
3. WATER-SOURCE CONDENSER TO BE INCORPORATED INTO DDC SYSTEM WITH THE SAME CONTROL SEQUENCE AS THE AIR-SOURCE CONDENSER.
4. COMPLETE DESIGN TO BE PROVIDED BY POOL CONSULTANT AT A LATER DATE IF ALTERNATE IS SELECTED.

MARK	MANUF.	MODEL	AIRFLOW (CFM)	ESP (IN WC)	DRIVE	MOUNTING	PIPE CONNECTION SIZE (IN)	WATER FLOW RATE (GPM)	WPD (FT)	TOTAL HEAT RECOVERED (BTU/HR)	WEIGHT (LBS)
ERU-1	DESERT AIRE	ER06	4600	0.75	DIRECT	FLOOR	1-1/4"	12	6.1	113,000	750
ERU-2	DESERT AIRE	ER04	2900	0.75	DIRECT	FLOOR	1"	8	9.2	74,000	580

EXHAUST FAN SCHEDULE

ACCESSORIES FOR ALL FANS:
1. STANDARD DISCONNECT PREWIRED.
2. ECM MOTOR WHERE APPLICABLE.
3. GRAVITY BACKDRAFT DAMPER.
4. STANDARD FINISH.

ACCESSORIES FOR ROOF-MOUNTED FANS:
1. ROOF CURB W/ HINGED BASE 12" ABOVE ROOF FINISH.

ACCESSORIES FOR SUSPENDED FANS:
1. RUBBER-IN-SHEAR VIBRATION ISOLATORS.

ACCESSORIES FOR FLOOR-MOUNTED FANS:
1. SPRING VIBRATION ISOLATORS.
2. MOUNT ON HOUSEKEEPING PAD. SEE STRUCTURAL COORDINATION SHEET.

CONTROLS:
1. MONITOR WITH BUILDING AUTOMATION SYSTEM. FAN TO RUN CONTNUOUSLY.
2. INTERLOCK WITH LIGHTS IN ASSOCIATED ROOMS.
3. INTERLOCK WITH ASSOCIATED DEHUMIDIFIER CONTROLLER TO PROVIDE SOURCE CAPTURE EXHAUST UNDER THE SAME OCCUPANCY SCHEDULE. FAN TO BE ENERGIZED BY DEHUMIDIFIER CONTROLLER.

FAN COATING FOR EF-5 & 6:
1. PHENOLIC EPOXY POWDERCOAT

3

ELECTRICAL DATA:
SEE MEP COORDINATION SCHEDULE FOR STARTER/DISCONNECT AND ALL OTHER ELEC. DATA.

MARK	MANUF.	MODEL	AIRFLOW (CFM)	SONES	ESP (IN WC)	DRIVE	TYPE	MOUNTING	CONTROL	WEIGHT (LBS)
EF-1	BROAN	XB80	80	0.3	0.20	DIRECT	INLINE	CEILING	2	12.3
EF-2	FANTECH	FG 6M EC	160	1.5	0.50	DIRECT	INLINE	HUNG	2	11
EF-3	PLASTEC	P15-4	150	6	0.55	DIRECT	CENTRIFUGAL	UPBLAST	1	10
~~EF-4~~	~~PLASTEC~~	~~P15-4~~	~~150~~	~~6~~	~~0.55~~	~~DIRECT~~	~~CENTRIFUGAL~~	~~UPBLAST~~	~~1~~	~~10~~
EF-5	COOK	165SQN-B	4300	24	0.75	BELT	INLINE	FLOOR	3	136
EF-6	COOK	150SQN-B	2600	13.9	0.75	BELT	INLINE	FLOOR	3	121

3

ELECTRIC HEATER SCHEDULE

ACCESSORIES:
1. WALL-MOUNTED, LINE VOLTAGE THERMOSTAT.
2. INTEGRAL DISCONNECTING MEANS AND THERMAL OVERLOADS.

ELECTRICAL DATA:
SEE MEP COORDINATION SCHEDULE FOR STARTER/DISCONNECT AND ALL OTHER ELECTRICAL DATA.

MARK	MANUF.	MODEL	VOLTAGE-PH	WATTAGE	FINISH	MOUNTING	PHYSICAL DATA		
							DEPTH (IN)	WIDTH (IN)	HEIGHT (IN)
EH-1	KING	KB2005	208-1	5 KW	BLACK ENAMEL	HUNG	11"	15"	16.5"
EH-2	KING	KB2003	208-1	3.3 KW	BLACK ENAMEL	HUNG	11"	15	16.5"
EH-3	KING	KB2010	208-1	10 KW	BLACK ENAMEL	HUNG	13.5"	15"	16.5"

SOURCE CAPTURE EVACUATOR SCHEDULE

REMARKS FOR EVAC-1 SERIES:
1. COORDINATE UNDERGROUND DUCT ROUTING WITH DECK DRAIN PIPING. SEE ASSOCIATED DETAIL FOR MORE INFORMATION.

REMARKS FOR EVAC-2 SERIES:
1. PROVIDE CONNECTION BOX WITH OUTLET CONNECTION AS ORIENTED ON THE FLOOR PLANS.

MARK	MANUF.	MODEL	ASSOCIATED POOL	LOCATION	MATERIAL	LENGTH	DUCT CONNECTION (IN)
EVAC-1A	PADDOCK	DECK DRAIN + EVACUATOR	LAP POOL	BELOW GRADE	STAINLESS STEEL	N/A	12"ø
EVAC-1B	PADDOCK	DECK DRAIN + EVACUATOR	LAP POOL	BELOW GRADE	STAINLESS STEEL	N/A	12"ø
EVAC-1C	PADDOCK	DECK DRAIN + EVACUATOR	LAP POOL	BELOW GRADE	STAINLESS STEEL	N/A	12"ø
EVAC-1D	PADDOCK	DECK DRAIN + EVACUATOR	LAP POOL	BELOW GRADE	STAINLESS STEEL	N/A	12"ø
EVAC-2A	PADDOCK	BENCH EVACUATOR	REC POOL	ABOVE GRADE	PVC	32 FT	16"ø
EVAC-2B	PADDOCK	BENCH EVACUATOR	REC POOL	ABOVE GRADE	PVC	32 FT	16"ø

NATATORIUM GENERAL NOTES

A. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO SEAL ALL ITEMS THAT PENETRATE THE ENVELOPE OF THE NATATORIUM AND ENSURE THAT THE AIR AND VAPOR BARRIER IS MAINTAINED THROUGHOUT. THE SEAL IS REQUIRED TO MAINTAIN THE INTEGRITY OF THE WALL, ROOF AND FLOOR ASSEMBLIES AS DEFINED BY THE ARCHITECT. SUB-CONTRACTOR IS SPECIFICALLY REQUIRED TO INFORM GENERAL CONTRACTOR OF THESE REQUIREMENTS DURING BIDDING AND CONSTRUCTION PHASES OF THE PROJECT TO ENSURE INTEGRITY OF ASSEMBLIES.
B. A COMPLETE AIR SYSTEM TEST AND BALANCE (T&B) SHALL BE PERFORMED BY A NEBB OR AABC CERTIFIED T&B CONTRACTOR FOR ALL NEW DEVICES. MECHANICAL CONTRACTOR SHALL MODIFY EQUIPMENT AS DIRECTED BY BALANCING CONTRACTOR, IF REQUIRED, TO ACHIEVE DESIGN PARAMETERS WITH NO EXTRA COST TO THE OWNER. CONTRACTOR IS TO TEST AND ADJUST ALL AIRFLOW ASSOCIATED WITH DEHUMIDIFIER FIRST INCLUDING SUPPLY AIR AND OUTSIDE AIR TO MATCH DESIGN SPECIFICATIONS. SECOND, CONTRACTOR SHALL TEST THE AIRFLOW ASSOCIATED WITH THE EXHAUST FAN AND ADJUST THE FAN SPEED TO ACHIEVE A NEGATIVE .1" W.C. IN THE NATATORIUM, RELATIVE TO THE HALLWAY ADJACENT TO THE SPACE. RETEST AND RE-BALANCE OUTSIDE AIR AND EXHAUST AIR TO ACHIEVE A STEADY STATE CONDITION. DURING ALL TESTS, ALL DOORS TO THE SPACE SHALL BE INSTALLED AND CLOSED. T&B REPORT SHALL BE PREPARED AND SUBMITTED TO ENGINEER. CONTRACTOR'S REPORT SHALL INCLUDE ALL ITERATIVE AIR FLOW READINGS AND PRESSURE DIFFERENTIAL READINGS AS REQUIRED INCLUDING THE FINAL VALUES. ADDITIONALLY, ALL ELECTRICAL CONDITIONS FOR ALL DEVICES SHALL MEASURED AND REPORTED.

HVAC GENERAL NOTES

A. ALL NEW PIPING, DUCTWORK AND EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH THE 2018 INTERNATIONAL MECHANICAL CODE AND THE 2018 INTERNATIONAL BUILDING CODE REQUIREMENTS.
B. IT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO FIELD COORDINATE THE LOCATION OF EQUIPMENT ROUTING OF ALL DUCTWORK AND PIPING WITH ALL OTHER TRADES.
C. IT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO REVIEW THE DRAWINGS FOR ALL DISCIPLINES AND PROVIDE ALL LABOR AND MATERIALS REQUIRED FOR A COMPLETE INSTALLATION.
D. ALL EQUIPMENT SHALL BE INSTALLED LEVEL, PLUMB, AND FIRMLY ANCHORED IN LOCATIONS INDICATED. OBSERVE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND RECOGNIZED INDUSTRY PRACTICES TO INSURE THAT PRODUCTS SERVE THEIR INTENDED FUNCTION.
E. ALL ELEMENTS PENETRATING BUILDING COMPONENTS (ROOF ASSEMBLIES, WALL ASSEMBLIES, ETC.) SHALL BE SEALED WEATHER AND WATER TIGHT.
F. COORDINATE THE INSTALLATION OF GRILLES, REGISTERS AND DIFFUSERS WITH THE ARCHITECTURAL REFLECTED CEILING PLANS AND THE ELECTRICAL LIGHTING PLANS.
G. VERIFY THE LOCATION OF THERMOSTATS AND SENSORS WITH THE ARCHITECT AND ENGINEER PRIOR TO INSTALLATION. INSTALL THERMOSTATS 48" ABOVE FINISHED FLOOR PER ADA REQUIREMENTS.
H. PROVIDE AND INSTALL SEISMIC BRACING FOR ALL EQUIPMENT, DUCTWORK AND PIPING PER THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE.
I. FLEXIBLE DUCTWORK BETWEEN BRANCH DUCTS AND GRILLES, REGISTERS OR DIFFUSERS SHALL BE LIMITED TO 5FT. FLEXIBLE DUCT SHALL NOT BE USED IN PLACE OF ELBOWS.
J. PROVIDE AND INSTALL FIRE, SMOKE AND/OR COMBINATION SMOKE/FIRE DAMPERS WHERE DUCTWORK PASSES THROUGH FIRE RATED ASSEMBLIES. ASSOCIATED DUCT DETECTORS SHALL BE ADDRESSABLE. SMOKE DAMPERS AND COMBINATION SMOKE/FIRE DAMPERS SHALL INCLUDE A KEYED REMOTE TEST SWITCH LOCATED IN AN ACCESSIBLE LOCATION. FIELD COORDINATE THE LOCATION OF TEST SWITCHES WITH THE ARCHITECT AND ENGINEER PRIOR INSTALLATION.
K. SEAL ALL DUCT AND PIPE PENETRATIONS THROUGH FIRE RATED ASSEMBLIES WITH A UL-APPROVED FIRE STOP SYSTEM.
L. PROVIDE ACCESS DOORS TO ALLOW SERVICE AND INSPECTION OF EQUIPMENT, VALVES, DAMPERS AND DEVICES INSTALLED ABOVE NON-REMOVABLE CEILINGS. COORDINATE SUCH INSTALLATIONS WITH ARCHITECT AND ENGINEER.
M. ALL EQUIPMENT SHALL BE SELECTED FOR THE SITE ELEVATION OF 3,330' ABOVE SEA LEVEL.
N. THE MECHANICAL CONTRACTOR SHALL FILL THE HYDRONIC SYSTEM WITH 33% PROPYLENE GLYCOL & 67% DISTILLED WATER - GLYCOL SHALL INCLUDE CORROSION INHIBITORS.
O. HEATING HOT WATER SYSTEMS WITH BOILERS THAT HAVE ALUMINUM HEAT EXCHANGERS SHALL USE HERCULES CRYO-TEK 100 / AL PROPYLENE GLYCOL OR APPROVED EQUAL PRODUCT. SEE SPECIFICATION SECTION 232113 FOR ADDITIONAL CHEMICAL TREATMENT REQUIREMENTS.

HVAC SHEET INDEX

NUMBER	SHEET NAME
M0.1	MECHANICAL SCHEDULES & NOTES
M0.2	MECHANICAL SCHEDULES
M0.3	MEP COORDINATION SCHEDULE
M0.4	MECHANICAL LEGEND & DETAILS
M0.5	MECHANICAL DETAILS
M0.6	MECHANICAL DDC SCHEDULES
M0.7	MECHANICAL DDC SCHEDULES
M0.8	MECHANICAL DDC SCHEDULES
M1.1	MECHANICAL PLAN - LEVEL 1
M1.2	MECHANICAL PLAN - LEVEL 2
M1.3	MECHANICAL PLAN - ROOF
M2.1	MECHANICAL PIPING PLAN - LEVEL 1
M2.2	MECHANICAL PIPING PLAN - LEVEL 2
M3.1	MECHANICAL ENLARGED VIEWS
M3.2	MECHANICAL ENLARGED VIEWS
M3.3	MECHANICAL PIPING ENLARGED VIEWS
M4.1	STRUCTURAL COORDINATION PLAN

HVAC RELATED ALTERNATE BID ITEMS

ALTERNATE #1
- ADDITION OF WATER SOURCE CONDENSER IN DEHUMIDIFIER DH-1 AND DH-2 TO ALLOW HEAT FROM THE NATATORIUM AIR STREAM TO BE RECOVERED AND TRANSFERRED BACK INTO THE POOL HEATING WATER .

ALTERNATE #2
- CONVERSION OF EF-5 TO ERU-1 AND EF-6 TO ERU-2 TO ALLOW THE WASTED HEAT IN THE EXHAUST AIR STREAM TO BE RECOVERED AND TRANSFERRED BACK INTO THE POOL HEATING WATER.

ALTERNATE #3
- INSTALLATION OF THE OUTDOOR SPLASH PAD. THIS INCLUDES ALL ASSOCIATED COMBUSTION AIR, VENT, AND PVC DUCTWORK FOR THE SPLASH PAD BOILER, H1C, AND SURGE TANK FAN, SV1C.

ALTERNATE #21
- ADDITION OF COVID-19 PREVENTATIVE HVAC UPGRADES INCLUDING MERV-13 FILTERS IN RTU-1 & 2, BI-POLAR IONIZATION IN RTU-1 & 2 AND DH-1 & 2, ULTRAVIOLET AIR PURIFIERS IN RTU-1 & 2 AND DH -1 & 2, AND INCREASED VENTILATION FREQUENCY CONTROL STRATEGIES.

LPW ARCHITECTURE
www.lpwarchitecture.com
PHONE | 406.771.0770
15 FIFTH ST. SOUTH
GREAT FALLS | MT 59401

MONTANA
SAMUEL J. KUHLIN
No. 61681 PE
LICENSED PROFESSIONAL ENGINEER

Morrison Maierle
engineers • surveyors • planners • scientists
172 Timberwolf Parkway | Kalispell, MT 59901
406.752.2216

Indoor Aquatics and Recreation Center
Great Falls, Montana

MECHANICAL SCHEDULES & NOTES

Revision Schedule

No.	Revision	Date
3	Addendum #3	10/6/21

Submittals

No.		Date
1	100% DD SUBMITTAL	05/01/21
2	PERMIT SET	08/06/21
3	BID SET	08/23/21

DRAWN BY: SJK
CHECKED BY: TRC
DATE: 08/23/2021
PROJECT NUMBER: 4458.092
SHEET NUMBER: M0.1

10/6/2021 12:56:40 PM