ERICKSEN ELLISON
and Associates Inc.

■ CONSULTING
ENGINEERS
MEMORANDUM

305 SECOND STREET NW ■ SUITE 105 ■ NEW BRIGHTON, MN 55112-3279   TEL 651-632-2300 FAX 651-632-2397

DATE: March 26, 2009

PROJECT: MCF Stillwater Energy Study by ESG – Peer Review by EEA

MEMO BY: James Art PE/Matt Armstead PE

SUBJECT: Review of the Preliminary Energy Study Report

MEMO TO: Mr. Ken Bronson – Project Manager – State Dept. of Administration, RECS

EEA has reviewed the Draft Report of the Energy Study at MCF Stillwater, prepared by Energy Services Group (ESG). The Draft was presented to the Owner/User representatives by ESG at the Facility on February 18, 2009. Although the draft does not include the assumptions and savings calculations, we have the following comments:

General Comments

- In our view, the Energy Study Draft Report is well-conceived and informative. It appears to be based on a thorough review of the numerous buildings and their systems at MCF Stillwater. The recommended facility improvement measures (FIM) include operation & maintenance measures in addition to material change and control programming changes. Generally, the recommended measures are appropriate solutions for the existing conditions, in our opinion.

- The sum of the costs for all proposed energy conservation measures exceeds $5 million, whereas the state's current budget for improvements in the near term is about $1 million. The final report could additionally include a list of the "best" measures to implement within the budget. The best measures are those which accomplish the most annual savings within the budget, but they might also include items with higher paybacks which are, nonetheless, needed for long-term reliable operation of the facility.

- When preparing designs for system or building modifications, if this is accomplished by others (not ESG), then care should be taken to reconfirm the assumptions which have been made.

Specific Comments

- Regarding Cell Hall B, Item V.1c, <u>Cell Block Ventilation – Install Heat Recovery</u> (page IV-22): Consideration should be given to operating this in the summer as well as in the winter.

- Regarding The New Segregation Unit, Item C.1a, <u>Energy Management and Direct Digital Controls</u> (page IV-39): The building systems in the New Segregation Unit were commissioned within the past year, when the project was substantially complete. We recommend postponing review and re-commissioning of controls sequence of operations for at least another year. If VAV boxes (those not serving 24 hour per day spaces) are not already programmed to operate according to time of day schedules, then this could take place sooner.

- Regarding The Power House, Item C.1a, <u>Energy Management and Direct Digital Controls</u> (page IV-41): The age of the boilers and the make-up air systems should be taken into consideration. The boilers were replaced approximately two years ago. As such, another review and re-commissioning could be delayed for at least a year.

- Regarding Lighting Retrofit/Replacement (L.1b) calculations: The L.1b FIM describes the replacement of lighting fixtures with new high efficiency fixtures. This option does not appear to include any change in operating hours. The calculations for this FIM use different yearly operating hours for the existing lighting versus the proposed lighting.

- Regarding Steam Trap Replacement (M.1a through M.1c): No comments regarding the calculated savings for these items.

- Regarding Operating and Maintenance (O&M.1 through O&M.3): The total of $45,000 shown for the O&M.1 through O&M.3 improvements appears under estimated. With 41 buildings, that averages $1,095 per building. The Owner's estimate of $5,000 per building is more in line with the cost of the work listed in the report. The ESG report puts forth several improvements to be done under the O&M FIMs. In our opinion, the items that will provide the best cost/payback are:
  - Air Handling Unit and Coil Cleaning
    - All air handling units, condensing units, and unit heaters across all buildings should be addressed
    - MINNCOR (No. 18) – Add filters to air handlers
    - MINNCOR (No. 20) – Add filters to air handlers
  - Control and Back Draft Damper Repairs and Upgrades
    - Kitchen – Bakery area back draft dampers
    - Admin Annex – Adjust air handler relief dampers
    - Water Treatment – Repair makeup air damper
  - Control Valve Repairs and Upgrades
    - Admin Building – Kitchen MAU steam valve automation
    - Dining Hall – Dining room steam coil leak
    - Kitchen – North/South unit heater control valve actuators
    - MINNCOR (No. 18) – Install control valves on unit heaters and radiators
    - MINNCOR (No. 20) – Install control valves on radiators
    - MINNCOR (No. 21) – Install control valves on unit heaters
    - Q Maintenance – Install control valves on unit heaters
    - R Shop– Install control valves on unit heaters

- Regarding VSD Drive for Well Pump (E.2): This item was not recommended by ESG as they were unable to find easily quantitative cost savings for installing a VSD. The pump does not operate continuously against a variable head. It operates on a cycle to fill the water tower. There may be some benefits to installing a VSD, but none that provide a significant measurable energy savings.

- Regarding Ventilation Improvements (V1.a, V1.b, V1.c): The calculations for the energy cost of the outside air improvements (V1.a) and the heat recovery and VSD savings (V1.b and V1.c) appear to be in line. The calculations do not split up the costs for implementation and savings by the building. We suggest that ESG provide the cost/savings data in a building specific manner. With this data, specific improvements can be suggested. In general, we recommend the following ventilation related improvements:
  - V.1a Ventilation Requirement – Adjusting the outside air to provide the recommended amount of outside air to the cell areas will improve indoor air quality.
  - Install heat recovery systems to temper the outside air.
  - Rebalance and interlock exhaust fans and mixed air dampers to control building pressure.
  - Dining Hall V.1 – Replace dining room air handling unit

- Regarding Energy Management and Direct Digital Controls (C.1a through C.1d): Due to the large cost of these options and the limited budget, these FIMs will be split up and completed in phases. We recommend the following improvements be analyzed by ESG in a building by building manner to allow for ease of budgeting. The items listed in the C.1a option are of more importance and have the potential to save more energy than the other options and should be pursued first.
    - C.1a Base Project
        - Commission all software sequences to make sure they work properly.
        - Occupancy schedules, optimal start/stop, and temperature setback strategies will be programmed for systems in buildings that aren't occupied continuously.
        - Holiday schedules will be programmed for all applicable equipment for a full calendar year.
        - Mixed air dampers and heating and cooling control will be sequenced to avoid simultaneous heating and cooling.
            - Suggested Buildings for C.1a FIM
                - Administration Building
                - Visitor Building
                - Chapel
                - MINNCOR (18)
                - MINNCOR (20)
    - C.1b Enhanced Scope
        - Pneumatic controls air supply system monitoring
        - Miscellaneous motor status
        - Sprinkler stations – alarm low temperature conditions
            - Suggested Buildings for C.1b FIM
                - Q Maintenance
                - Warehouse MINNCOR Offices and Warm Storage
                - Guard Towers
    - C.1c Power Enhancements
        - All three of the recommendations made by ESG in the report have merit and should be addressed to allow for proper equipment control during periods of power fluctuations. The majority of the energy savings provided by this FIM (as compared to those from C.1b) come from reducing O&M costs.
    - C.1d Power Enhancements and UPS
        - The recommendations made by ESG in the report have merit and should be addressed to allow the energy management system to operate properly during periods of power fluctuations.

End of Memo

EEA

Exhibit 2.1
Guarantee
Standards of Comfort and Equipment Schedules

Row #	Facility	Area Served	Equipment Name	Location	Existing Schedule						Existing Space			
					Fall to Spring			Summer			Heating		Cooling	
					Weekdays	Weekend	Wkly hrs	Weekdays	Weekend	Wkly hrs	Occ.	Unocc.	Occ.	Unocc.
					Default temperatures (hide this row before printing)						70	60	75	75
1	Admin & Annex	Training	AHU-1	Mech Room	6:00 AM-10:00	6:00 AM-10:00 PM	112	6:00 AM-10:00 PM	6:00 AM-10:00 PM	112	70	68	75	75
2	Admin & Annex	BLDG VAV	AHU-2	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	75
3	Admin & Annex	I. T. Tech	AHU-3	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	75
4	Admin & Annex	Fitness	AHU-4	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	75
5	Admin & Annex	Telephone Room	AHU-5	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	75
6	Admin & Annex	Video Recording	AHU-6 (HP???)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	75
7	Admin & Annex	Turn Key&Visiting	Admin MZU-1	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	75
8	Admin & Annex	Kitchen on 3rd Floor	Admin MUA	Mech Room	1:00 AM-1:07 AM	Off	0.625	Off	Off	0	70	68		
9	Admin & Annex	S Stairwell	Cab Unit	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
10	Admin & Annex	N Stairwell	Cab Unit	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
11	Admin & Annex	Admin.Annex	AHU-1 Admin	Mech Room	7:00 AM-5:00 PM	7:00 AM-5:00 PM	70	7:00 AM-5:00 PM	7:00 AM-5:00 PM	70	70	68	75	75
12	Admin & Annex	Admin.Annex	AHU-2 Admin	Mech Room	7:00 AM-5:00 PM	7:00 AM-5:00 PM	70	7:00 AM-5:00 PM	7:00 AM-5:00 PM	70	70	68	75	75
13	Admin & Annex	Training	RET-1 (AHU-1)	Mech Room	6:00 AM-10:00	6:00 AM-10:00 PM	112	6:00 AM-10:00 PM	6:00 AM-10:00 PM	112				
14	Admin & Annex	BLDG VAV	RET-2 (AHU-2)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
15	Admin & Annex	I. T. Tech	RET-3 (AHU-3)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
16	Admin & Annex	Fitness	RET-4 (AHU-4)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
17	Admin & Annex	Toilets	EF-1	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
18	Admin & Annex	Toilets	EF-2	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
19	Admin & Annex	Attic Space	EF-3	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
20	Admin & Annex	Restroom	EF-4	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
21	Admin & Annex	Space	EF-5	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
22	Admin & Annex	Toilets(AdminAnnex)	E-1	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
23	Admin & Annex	Toilets(AdminAnnex)	E-2	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
24	Admin & Annex	Hot Water Heating	P-1 (Pump 1)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
25	Admin & Annex	Hot Water Heating	P-2 (Pump 2)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
26	Admin & Annex	Building	HWP-1	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
27	Admin & Annex	Building	HWP-2	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
28	Admin & Annex	Front Walkway	Snow Melt Pump	Mech Room	Runs below 32°F	Runs below 32°F	N/A	Runs below 32°F	Runs below 32°F	N/A				
40	Visitor,Chapel,Fi	Visiting	RTU-1(Bldg.2-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	75
41	Visitor,Chapel,Fi	Communications	RTU-2(Bldg.2-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	75
42	Visitor,Chapel,Fi	Bldg.# 7 Chapel	RTU-1(Bldg.7-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	75
43	Visitor,Chapel,Fi	Bldg8Investigations	RTU-1(Bldg8-	Mech Room	4:00 AM-10:00	4:00 AM-10:00 PM	126	4:00 AM-10:00 PM	4:00 AM-10:00 PM	126	70	68	75	75
44	Visitor,Chapel,Fi	Finance	AHU-1(Bldg4)	Mech Room	5:00 AM-5:00 PM	5:00 AM-5:00 PM	84	5:00 AM-5:00 PM	5:00 AM-5:00 PM	84	70	68	75	75
45	Visitor,Chapel,Fi	Records	AHU-2(Bldg4)	Mech Room	6:00 AM-4:00 PM	6:00 AM-4:00 PM	70	6:00 AM-4:00 PM	6:00 AM-4:00 PM	70	70	68	75	75
46	Visitor,Chapel,Fi	Bldg4-Finance	HWP-1 & HWP-2	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
47	Visitor,Chapel,Fi	Bldg 1 & 2	ChWP-	Mech Room	Runs above 53°F	Runs above 53°F	N/A	Runs above 53°F	Runs above 53°F	N/A				
58	Cell Block	Cell Block B SW	Supply 1, BW-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
59	Cell Block	Cell Block B NW	Supply 2, BW-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
60	Cell Block	Cell Block B NE	Supply 3, BE-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
61	Cell Block	Cell Block B SE	Supply 4, BE-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
62	Cell Block	Cell Block A,NW	Supply 1, AW-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
63	Cell Block	Cell Block A,SW	Supply 2, AW-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		

Row #	Facility	Area Served	Equipment Name	Location	Existing Schedule						Existing Space			
					Fall to Spring			Summer			Heating		Cooling	
					Weekdays	Weekend	Wkly hrs	Weekdays	Weekend	Wkly hrs	Occ.	Unocc.	Occ.	Unocc.
64	Cell Block	Cell Block A, SE	Supply 3, AE-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
65	Cell Block	Cell Block A, NE	Supply 4, AE-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
66	Cell Block	Bldg.#9 Front half	AHU-1	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	75
67	Cell Block	Cell Block C	AHU-1 Multi-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	75
68	Cell Block	Cell Block D	Supply 1, West	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
69	Cell Block	Cell Block D	Supply 2, East	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
70	Cell Block	Segregation	AHU-1	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	75
71	Cell Block	Segregation	AHU-2	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	75
72	Cell Block	Segregation	AHU-3	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	75
73	Cell Block	Cell Block C	Return Fan AHU-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
74	Cell Block	Bldg.#9 Front half	Return Fan(AHU-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
75	Cell Block	Segregation	RET-1 (AHU-1)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
76	Cell Block	Segregation	RET-2 (AHU-2)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
77	Cell Block	Segregation	RET-3 (AHU-3)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
78	Cell Block	Segregation	Blower Coil (BC-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
79	Cell Block	Segregation	SE-1 (Exhaust	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
80	Cell Block	Segregation	SE-2toSE-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
81	Cell Block	Segregation	E-1	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
82	Cell Block	Segregation	E-6	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
83	Cell Block	Cell Block D	Exhaust-Cell	Mech Room	Runs above 50°F	Runs above 50°F	N/A	Runs above 50°F	Runs above 50°F	N/A				
84	Cell Block	Cell Block A	Ex.Fan 1 &	Mech Room	Runs above 50°F	Runs above 50°F	N/A	Runs above 50°F	Runs above 50°F	N/A				
85	Cell Block	Cell Block B	Ex.Fan 1 &	Mech Room	Runs above 50°F	Runs above 50°F	N/A	Runs above 50°F	Runs above 50°F	N/A				
86	Cell Block	Oper.CellBlockC	HWP-1	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
87	Cell Block	Oper.CellBlockC	HWP-2	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
88	Cell Block	Oper.CellBlockC	HWP-3	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
89	Cell Block	Oper.CellBlockC	HWP-4	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
90	Cell Block	Segregation	HWP-1	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
91	Cell Block	Segregation	HWP-2	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
94	Cell Block	Offices Cell Block B	(2) Pkg. HVAC	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	75
110	Health Services	Health Services	AHU-1(Bldg10)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	75
111	Health Services	Operations Office	AHU-2(Bldg10)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	75
112	Health Services	Health Services	Return (AHU-1)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
113	Health Services	Health Services	HWP-1	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
114	Health Services	Health Services	HWP-2	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
115	Health Services	Lab	EF-1 Exhaust Fan	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
116	Health Services	Restroom	EF-2 Exhaust Fan	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
117	Health Services	Dark Room	EF-3 Exhaust Fan	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
118	Health Services	Sterilizer Room	EF-4 Exhaust Fan	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
125	Recreation	Upper Rec./Gym	AHU-1	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
126	Recreation	Office Area	AHU-2	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
127	Recreation	Weight Room	AHU-3	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
128	Recreation	Game Room	AHU-4	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
129	Recreation	Upper Rec./Gym	EF-1	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
130	Recreation	Recreation Bldg	HWP	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
138	Education/Psycho	Education &	AHU-1	Mech Room	4:00 AM-10:00	4:00 AM-10:00 PM	126	4:00 AM-10:00 PM	4:00 AM-10:00 PM	126	70	68	75	75
139	Education/Psycho	Ed.& Psychology	AHU-1(Return)	Mech Room	4:00 AM-10:00	4:00 AM-10:00 PM	126	4:00 AM-10:00 PM	4:00 AM-10:00 PM	126				
140	Education/Psycho	Ed.& Psychology	chW Pump#7	Mech Room	Runs above 50°F	Runs above 50°F	N/A	Runs above 50°F	Runs above 50°F	N/A				

Row #	Facility	Area Served	Equipment Name	Location	Existing Schedule						Existing Space			
					Fall to Spring			Summer			Heating		Cooling	
					Weekdays	Weekend	Wkly hrs	Weekdays	Weekend	Wkly hrs	Occ.	Unocc.	Occ.	Unocc.
141	Education/Psycho	Ed.& Psychology	Ex Fan Restroom	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
149	DiningKitchenCa	Dining Hall	S-1	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
150	DiningKitchenCa	Canteen	S-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	75
151	DiningKitchenCa	Kitchen	MUA - Bldg15	Mech Room	4:00 AM-8:00 PM	4:00 AM-8:00 PM	112	4:00 AM-8:00 PM	4:00 AM-8:00 PM	112	70	68		
152	DiningKitchenCa	Open	AHU-Open	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
153	DiningKitchenCa	General Exhaust	Exh-1 (Bldg#15)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
154	DiningKitchenCa	Hood Exhaust	Exh-2(Bldg#15)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
155	DiningKitchenCa	DishWashExFan	Exh-3(Bldg#15)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
156	DiningKitchenCa	OvenHoodExFAn	Exh-4(Bldg#15)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
157	DiningKitchenCa	Stairwell Exhaust	EF-1 (Bldg.16)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
158	DiningKitchenCa	Kitchen	EF-2 (Bldg.16)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
167	MinnCor(182021	S Shops-1st Level N	AHU S-3 (Blg21)	Mech Room	5:00 AM-5:00 PM	5:00 AM-5:00 PM	84	5:00 AM-5:00 PM	5:00 AM-5:00 PM	84	70	68		
168	MinnCor(182021	U Shops-1st Level N	AHU S-4 (Blg21)	Mech Room	5:00 AM-5:00 PM	5:00 AM-5:00 PM	84	5:00 AM-5:00 PM	5:00 AM-5:00 PM	84	70	68		
169	MinnCor(182021	V Shops-2nd Level	AHU S-5 (Blg21)	Mech Room	5:00 AM-5:00 PM	5:00 AM-5:00 PM	84	5:00 AM-5:00 PM	5:00 AM-5:00 PM	84	70	68		
170	MinnCor(182021	T Shops-2nd Level	AHU S-6 (Blg21)	Mech Room	5:00 AM-5:00 PM	5:00 AM-5:00 PM	84	5:00 AM-5:00 PM	5:00 AM-5:00 PM	84	70	68		
171	MinnCor(182021	VT Carpentry	AHU (Bldg21)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
172	MinnCor(182021	A,C,E,F Shops	AHU-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
173	MinnCor(182021	A Shop (Bldg.18)	AHU-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
174	MinnCor(182021	K,L&M-Shop	AHU-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
175	MinnCor(182021	K&OShop(Bldg.20)	AHU-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
176	MinnCor(182021	1st Flr/Office/kShop	AHU-S2 (Blg20)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	75
177	MinnCor(182021	P Shop 3rd Flr N end	MUA-1	Mech Room	7:00 AM-4:00 PM	Off	45	Off	Off	0	70	68		
178	MinnCor(182021	P Shop 3rd Flr N end	MUA-2(Bldg#20)	Mech Room	7:00 AM-4:00 PM	Off	45	Off	Off	0	70	68		
179	MinnCor(182021	P Shop 3rd Flr N end	MUA-3(Bldg#20)	Mech Room	7:00 AM-4:00 PM	Off	45	Off	Off	0	70	68		
193	MinnCor(182021	T Shops-Paint Booth	EF-1	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
194	MinnCor(182021	V Shops- Paint Booth	EF-2	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
201	QShopRshopMai	Q Shop(Metal Shop)	AHU-1 (Bldg #	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	75
202	QShopRshopMai	2nd Flr - Electrian	Furnace-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	75
203	QShopRshopMai	2rdFlr-AdminOffice	Furnace-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	75
204	QShopRshopMai	2rdFlr-	Furnace-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	75
205	QShopRshopMai	Welding Area	EF-1(Bldg # 25)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
206	QShopRshopMai	Metal Storage	EF-2(Bldg # 25)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
207	QShopRshopMai	Metal Storage	EF-3(Bldg # 25)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
208	QShopRshopMai	Metal Storage	EF-4(Bldg # 25)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
209	QShopRshopMai	Metal Storage	EF-5(Bldg # 25)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
210	QShopRshopMai	Metal Storage	EF-6(Bldg # 25)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
211	QShopRshopMai	R Shop(Plate Metal	EF-1(Bldg # 26)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
212	QShopRshopMai	R Shop(Plasma Cutter	EF-2(Bldg # 26)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
213	QShopRshopMai	R Shop(Metal Break	EF-3(Bldg # 26)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
229	MinSecurityUnit	MinSecUnitBldg	S-1	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
230	MinSecurityUnit	MUAUnitKitchen	S-2	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
231	MinSecurityUnit	Bldg#35 Heating	P-1(Bldg#35)	Mech Room	Runs below 50°F	Runs below 50°F	N/A	Runs below 50°F	Runs below 50°F	N/A				
232	MinSecurityUnit	Bldg#35 Heating	P-2(Bldg#35)	Mech Room	Runs below 50°F	Runs below 50°F	N/A	Runs below 50°F	Runs below 50°F	N/A				
233	MinSecurityUnit	Bldg#35 DHW	DHW P-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
234	MinSecurityUnit	Bldg#35 DHW	DHW P-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
235	MinSecurityUnit	Bldg#35 DHW	DHW P-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
236	MinSecurityUnit	Bldg#35 Kitchen	EF-1 Open	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				

Row #	Facility	Area Served	Equipment Name	Location	Existing Schedule						Existing Space			
					Fall to Spring			Summer			Heating		Cooling	
					Weekdays	Weekend	Wkly hrs	Weekdays	Weekend	Wkly hrs	Occ.	Unocc.	Occ.	Unocc.
237	MinSecurityUnit	Bldg#35 Kitchen	EF-1 Open	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
238	MinSecurityUnit	Bldg#35 Kitchen	EF-1 Open	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
239	MinSecurityUnit	Bldg#35 Kitchen	EF-1 Open	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
246	GreenHouse,Guar	Warehouse Office	AHU-1 (Bldg#37)	Mech Room	4:00 AM-7:00 PM	Off	75	4:00 AM-7:00 PM	Off	75	70	68	75	75
247	GreenHouse,Guar	Greenhouse Office	Furnace-1	Mech Room	Runs continuously	Runs continuously	168	Off	Off	0	70	68	75	75
248	GreenHouse,Guar	Bldg#45Office(Packa	PTAC(Bldg#45)O	Mech Room	Runs continuously	Runs continuously	168	Off	Off	0	70	68	75	75
249	GreenHouse,Guar	CommissaryOfficeBld	PTAC(Bldg#49)C	Mech Room	Runs continuously	Runs continuously	168	Off	Off	0	70	68	75	75
263	GreenHouse,Guar	WaterTreatmentBldg(	CircPump(Bldg#3	Mech Room	Runs below 50°F	Runs below 50°F	N/A	Runs below 50°F	Runs below 50°F	N/A				
264	GreenHouse,Guar	Greenhouse ExFan	ExhaustFan1(Blg	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
265	GreenHouse,Guar	Greenhouse ExFan	ExhaustFan2(Blg	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
266	GreenHouse,Guar	Greenhouse ExFan	ExhaustFan3(Blg	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
267	GreenHouse,Guar	FlammableStorBldg	ExhaustFanBldg#	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
274	PowerHouse	Powerhouse(BoilerCo	AHU-	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A	70	68		
275	PowerHouse	Boiler Room	S-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
276	PowerHouse	Boiler Room	S-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
277	PowerHouse	Boiler Room	EF-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
278	PowerHouse	Boiler Room	EF-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
279	PowerHouse	Boiler Room	EF-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
280	PowerHouse	DHW Pump	DHWCircPump-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
281	PowerHouse	DHW Pump	DHWCircPump-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
282	PowerHouse	BoilerFeedPump	BFP-	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
283	PowerHouse	BoilerFeedPump	BFP-	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
284	PowerHouse	BoilerFeedPump	BFP-	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
285	PowerHouse	CondensatePumpRece	CP-	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
286	PowerHouse	CondensatePumpRece	CP-	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
287	PowerHouse	CondensatePumpVacu	CP-	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
288	PowerHouse	CondensatePumpVacu	CP-	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
289	PowerHouse	CondensateVacuum	VP-	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
290	PowerHouse	CondensateVacuum	VP-	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				

Ro w #	Facility	Area Served	Equipment Name	Location	Proposed Schedule/Occupancy Schedule						Proposed Space			
					Fall to Spring			Summer			Heating		Cooling	
					Weekdays	Weekend	Wkly hrs	Weekdays	Weekend	Wkly hrs	Occ.	Unocc.	Occ.	Unocc.
											70	60	75	80
1	Admin & Annex	Training	AHU-1	Mech Room	5:00 AM-5:00 PM	Off	60	5:00 AM-5:00 PM	Off	60	70	64	75	Floats
2	Admin & Annex	BLDG VAV	AHU-2	Mech Room	5:00 AM-5:00 PM	Off	60	5:00 AM-5:00 PM	Off	60	70	64	75	Floats
3	Admin & Annex	I. T. Tech	AHU-3	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	64	75	Floats
4	Admin & Annex	Fitness	AHU-4	Mech Room	5:00 AM-5:00 PM	5:00 AM-5:00 PM	84	5:00 AM-5:00 PM	5:00 AM-5:00 PM	84	70	64	75	Floats
5	Admin & Annex	Telephone Room	AHU-5	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	64	75	Floats
6	Admin & Annex	Video Recording	AHU-6 (HP???)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	64	75	Floats
7	Admin & Annex	Turn Key&Visiting	Admin MZU-1	Mech Room	5:00 AM-5:00 PM	Off	60	5:00 AM-5:00 PM	Off	60	70	64	75	Floats
8	Admin & Annex	Kitchen on 3rd Floor	Admin MUA	Mech Room	1:00 AM-1:06 AM	Off	0.5	Off	Off	0	70	64		
9	Admin & Annex	S Stairwell	Cab Unit	Mech Room	5:00 AM-5:00 PM	Off	60	5:00 AM-5:00 PM	Off	60	70	64		
10	Admin & Annex	N Stairwell	Cab Unit	Mech Room	5:00 AM-5:00 PM	Off	60	5:00 AM-5:00 PM	Off	60	70	64		
11	Admin & Annex	Admin.Annex	AHU-1 Admin	Mech Room	5:00 AM-5:00 PM	Off	60	5:00 AM-5:00 PM	Off	60	70	64	75	Floats
12	Admin & Annex	Admin.Annex	AHU-2 Admin	Mech Room	5:00 AM-5:00 PM	Off	60	5:00 AM-5:00 PM	Off	60	70	64	75	Floats
13	Admin & Annex	Training	RET-1 (AHU-1)	Mech Room	5:00 AM-5:00 PM	Off	60	5:00 AM-5:00 PM	Off	60				
14	Admin & Annex	BLDG VAV	RET-2 (AHU-2)	Mech Room	5:00 AM-5:00 PM	Off	60	5:00 AM-5:00 PM	Off	60				
15	Admin & Annex	I. T. Tech	RET-3 (AHU-3)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
16	Admin & Annex	Fitness	RET-4 (AHU-4)	Mech Room	5:00 AM-5:00 PM	5:00 AM-5:00 PM	84	5:00 AM-5:00 PM	5:00 AM-5:00 PM	84				
17	Admin & Annex	Toilets	EF-1	Mech Room	5:00 AM-5:00 PM	Off	60	5:00 AM-5:00 PM	Off	60				
18	Admin & Annex	Toilets	EF-2	Mech Room	5:00 AM-5:00 PM	Off	60	5:00 AM-5:00 PM	Off	60				
19	Admin & Annex	Attic Space	EF-3	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
20	Admin & Annex	Restroom	EF-4	Mech Room	5:00 AM-5:00 PM	Off	60	5:00 AM-5:00 PM	Off	60				
21	Admin & Annex	Space	EF-5	Mech Room	5:00 AM-5:00 PM	Off	60	5:00 AM-5:00 PM	Off	60				
22	Admin & Annex	Toilets(AdminAnnex)	E-1	Mech Room	5:00 AM-5:00 PM	Off	60	5:00 AM-5:00 PM	Off	60				
23	Admin & Annex	Toilets(AdminAnnex)	E-2	Mech Room	5:00 AM-5:00 PM	Off	60	5:00 AM-5:00 PM	Off	60				
24	Admin & Annex	Hot Water Heating	P-1 (Pump 1)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
25	Admin & Annex	Hot Water Heating	P-2 (Pump 2)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
26	Admin & Annex	Building	HWP-1	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
27	Admin & Annex	Building	HWP-2	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
28	Admin & Annex	Front Walkway	Snow Melt Pump	Mech Room	Runs below 32°F	Runs below 32°F	N/A	Runs below 32°F	Runs below 32°F	N/A				
40	Visitor,Chapel,Fi	Visiting	RTU-1(Bldg.2-	Mech Room	6:00 AM-2:24 PM	Off	42	6:00 AM-2:24 PM	Off	42	70	58	75	Floats
41	Visitor,Chapel,Fi	Communications	RTU-2(Bldg.2-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	58	75	Floats
42	Visitor,Chapel,Fi	Bldg.# 7 Chapel	RTU-1(Bldg.7-	Mech Room	6:00 AM-10:00 PM	Off	80	6:00 AM-10:00 PM	Off	80	70	58	75	Floats
43	Visitor,Chapel,Fi	Bldg8Investigations	RTU-1(Bldg8-	Mech Room	7:00 AM-4:00 PM	Off	45	7:00 AM-4:00 PM	Off	45	70	58	75	Floats
44	Visitor,Chapel,Fi	Finance	AHU-1(Bldg4)	Mech Room	7:00 AM-5:00 PM	Off	50	7:00 AM-5:00 PM	Off	50	70	58	75	Floats
45	Visitor,Chapel,Fi	Records	AHU-2(Bldg4)	Mech Room	6:00 AM-4:00 PM	6:00 AM-4:00 PM	70	6:00 AM-4:00 PM	6:00 AM-4:00 PM	70	70	58	75	Floats
46	Visitor,Chapel,Fi	Bldg4-Finance	HWP-1 & HWP-2	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
47	Visitor,Chapel,Fi	Bldg 1 & 2	ChWP-	Mech Room	Runs above 53°F	Runs above 53°F	N/A	Runs above 53°F	Runs above 53°F	N/A				
58	Cell Block	Cell Block B SW	Supply 1, BW-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
59	Cell Block	Cell Block B NW	Supply 2, BW-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
60	Cell Block	Cell Block B NE	Supply 3, BE-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
61	Cell Block	Cell Block B SE	Supply 4, BE-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
62	Cell Block	Cell Block A,NW	Supply 1, AW-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
63	Cell Block	Cell Block A,SW	Supply 2, AW-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
64	Cell Block	Cell Block A, SE	Supply 3, AE-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
65	Cell Block	Cell Block A, NE	Supply 4, AE-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
66	Cell Block	Bldg.#9 Front half	AHU-1	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	Floats
67	Cell Block	Cell Block C	AHU-1 Multi-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	Floats

Ro w #	Facility	Area Served	Equipment Name	Location	Weekdays	Weekend	Wkly hrs	Weekdays	Weekend	Wkly hrs	Occ.	Unocc.	Occ.	Unocc.
					Proposed Schedule/Occupancy Schedule						**Proposed Space**			
					Fall to Spring			**Summer**			**Heating**		**Cooling**	
68	Cell Block	Cell Block D	Supply 1, West	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
69	Cell Block	Cell Block D	Supply 2, East	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
70	Cell Block	Segregation	AHU-1	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	Floats
71	Cell Block	Segregation	AHU-2	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	Floats
72	Cell Block	Segregation	AHU-3	Mech Room	7:00 AM-5:00 PM	7:00 AM-5:00 PM	70	7:00 AM-5:00 PM	7:00 AM-5:00 PM	70	70	68	75	Floats
73	Cell Block	Cell Block C	Return Fan AHU-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
74	Cell Block	Bldg.#9 Front half	Return Fan(AHU-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
75	Cell Block	Segregation	RET-1 (AHU-1)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
76	Cell Block	Segregation	RET-2 (AHU-2)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
77	Cell Block	Segregation	RET-3 (AHU-3)	Mech Room	7:00 AM-5:00 PM	7:00 AM-5:00 PM	70	7:00 AM-5:00 PM	7:00 AM-5:00 PM	70				
78	Cell Block	Segregation	Blower Coil (BC-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68		
79	Cell Block	Segregation	SE-1 (Exhaust	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
80	Cell Block	Segregation	SE-2toSE-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
81	Cell Block	Segregation	E-1	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
82	Cell Block	Segregation	E-6	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
83	Cell Block	Cell Block D	Exhaust-Cell	Mech Room	Runs above 50°F	Runs above 50°F	N/A	Runs above 50°F	Runs above 50°F	N/A				
84	Cell Block	Cell Block A	Ex.Fan 1 &	Mech Room	Runs above 50°F	Runs above 50°F	N/A	Runs above 50°F	Runs above 50°F	N/A				
85	Cell Block	Cell Block B	Ex.Fan 1 &	Mech Room	Runs above 50°F	Runs above 50°F	N/A	Runs above 50°F	Runs above 50°F	N/A				
86	Cell Block	Oper.CellBlockC	HWP-1	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
87	Cell Block	Oper.CellBlockC	HWP-2	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
88	Cell Block	Oper.CellBlockC	HWP-3	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
89	Cell Block	Oper.CellBlockC	HWP-4	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
90	Cell Block	Segregation	HWP-1	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
91	Cell Block	Segregation	HWP-2	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
94	Cell Block	Offices Cell Block B	(2) Pkg. HVAC	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	68	75	Floats
110	Health Services	Health Services	AHU-1(Bldg10)	Mech Room	7:00 AM-4:30 PM	Off	47.5	7:00 AM-4:30 PM	Off	47.5	70	64	75	Floats
111	Health Services	Operations Office	AHU-2(Bldg10)	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	64	75	Floats
112	Health Services	Health Services	Return (AHU-1)	Mech Room	7:00 AM-4:30 PM	Off	47.5	7:00 AM-4:30 PM	Off	47.5				
113	Health Services	Health Services	HWP-1	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
114	Health Services	Health Services	HWP-2	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
115	Health Services	Lab	EF-1 Exhaust Fan	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
116	Health Services	Restroom	EF-2 Exhaust Fan	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
117	Health Services	Dark Room	EF-3 Exhaust Fan	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
118	Health Services	Sterilizer Room	EF-4 Exhaust Fan	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
125	Recreation	Upper Rec./Gym	AHU-1	Mech Room	9:00 AM-9:00 PM	9:00 AM-9:00 PM	84	9:00 AM-9:00 PM	9:00 AM-9:00 PM	84	70	58		
126	Recreation	Office Area	AHU-2	Mech Room	9:00 AM-9:00 PM	9:00 AM-9:00 PM	84	9:00 AM-9:00 PM	9:00 AM-9:00 PM	84	70	58		
127	Recreation	Weight Room	AHU-3	Mech Room	9:00 AM-9:00 PM	9:00 AM-9:00 PM	84	9:00 AM-9:00 PM	9:00 AM-9:00 PM	84	70	58		
128	Recreation	Game Room	AHU-4	Mech Room	9:00 AM-9:00 PM	9:00 AM-9:00 PM	84	9:00 AM-9:00 PM	9:00 AM-9:00 PM	84	70	58		
129	Recreation	Upper Rec./Gym	EF-1	Mech Room	9:00 AM-9:00 PM	9:00 AM-9:00 PM	84	9:00 AM-9:00 PM	9:00 AM-9:00 PM	84				
130	Recreation	Recreation Bldg	HWP	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
138	Education/Psycho	Education &	AHU-1	Mech Room	7:00 AM-9:00 PM	7:00 AM-9:00 PM	98	7:00 AM-9:00 PM	7:00 AM-9:00 PM	98	70	64	75	Floats
139	Education/Psycho	Ed.& Psychology	AHU-1(Return)	Mech Room	7:00 AM-9:00 PM	7:00 AM-9:00 PM	98	7:00 AM-9:00 PM	7:00 AM-9:00 PM	98				
140	Education/Psycho	Ed.& Psychology	chW Pump#7	Mech Room	Runs above 50°F	Runs above 50°F	N/A	Runs above 50°F	Runs above 50°F	N/A				
141	Education/Psycho	Ed.& Psychology	Ex Fan Restroom	Mech Room	7:00 AM-9:00 PM	7:00 AM-9:00 PM	98	7:00 AM-9:00 PM	7:00 AM-9:00 PM	98				
149	DiningKitchenCa	Dining Hall	S-1	Mech Room	6:00 AM-6:00 PM	6:00 AM-6:00 PM	84	6:00 AM-6:00 PM	6:00 AM-6:00 PM	84	70	58		
150	DiningKitchenCa	Canteen	S-	Mech Room	6:00 AM-6:00 PM	6:00 AM-6:00 PM	84	6:00 AM-6:00 PM	6:00 AM-6:00 PM	84	70	58	75	Floats
151	DiningKitchenCa	Kitchen	MUA - Bldg15	Mech Room	4:00 AM-7:00 PM	4:00 AM-7:00 PM	105	4:00 AM-7:00 PM	4:00 AM-7:00 PM	105	70	58		

| Row # | Facility | Area Served | Equipment Name | Location | Proposed Schedule/Occupancy Schedule | | | | | | Proposed Space | | | |
| | | | | | Fall to Spring | | | Summer | | | Heating | | Cooling | |
					Weekdays	Weekend	Wkly hrs	Weekdays	Weekend	Wkly hrs	Occ.	Unocc.	Occ.	Unocc.
152	DiningKitchenCa	Open	AHU-Open	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	58		
153	DiningKitchenCa	General Exhaust	Exh-1 (Bldg#15)	Mech Room	4:00 AM-7:00 PM	4:00 AM-7:00 PM	105	4:00 AM-7:00 PM	4:00 AM-7:00 PM	105				
154	DiningKitchenCa	Hood Exhaust	Exh-2(Bldg#15)	Mech Room	4:00 AM-7:00 PM	4:00 AM-7:00 PM	105	4:00 AM-7:00 PM	4:00 AM-7:00 PM	105				
155	DiningKitchenCa	DishWashExFan	Exh-3(Bldg#15)	Mech Room	4:00 AM-7:00 PM	4:00 AM-7:00 PM	105	4:00 AM-7:00 PM	4:00 AM-7:00 PM	105				
156	DiningKitchenCa	OvenHoodExFAn	Exh-4(Bldg#15)	Mech Room	4:00 AM-7:00 PM	4:00 AM-7:00 PM	105	4:00 AM-7:00 PM	4:00 AM-7:00 PM	105				
157	DiningKitchenCa	Stairwell Exhaust	EF-1 (Bldg.16)	Mech Room	4:00 AM-7:00 PM	4:00 AM-7:00 PM	105	4:00 AM-7:00 PM	4:00 AM-7:00 PM	105				
158	DiningKitchenCa	Kitchen	EF-2 (Bldg.16)	Mech Room	4:00 AM-7:00 PM	4:00 AM-7:00 PM	105	4:00 AM-7:00 PM	4:00 AM-7:00 PM	105				
167	MinnCor(182021	S Shops-1st Level N	AHU S-3 (Blg21)	Mech Room	7:00 AM-4:00 PM	Off	45	7:00 AM-4:00 PM	Off	45	70	58		
168	MinnCor(182021	U Shops-1st Level N	AHU S-4 (Blg21)	Mech Room	7:00 AM-4:00 PM	Off	45	7:00 AM-4:00 PM	Off	45	70	58		
169	MinnCor(182021	V Shops-2nd Level	AHU S-5 (Blg21)	Mech Room	7:00 AM-4:00 PM	Off	45	7:00 AM-4:00 PM	Off	45	70	58		
170	MinnCor(182021	T Shops-2nd Level	AHU S-6 (Blg21)	Mech Room	7:00 AM-4:00 PM	Off	45	7:00 AM-4:00 PM	Off	45	70	58		
171	MinnCor(182021	VT Carpentry	AHU (Bldg21)	Mech Room	7:00 AM-4:00 PM	Off	45	7:00 AM-4:00 PM	Off	45	70	58		
172	MinnCor(182021	A,C,E,F Shops	AHU-	Mech Room	7:00 AM-4:00 PM	Off	45	7:00 AM-4:00 PM	Off	45	70	58		
173	MinnCor(182021	A Shop (Bldg.18)	AHU-	Mech Room	7:00 AM-4:00 PM	Off	45	7:00 AM-4:00 PM	Off	45	70	58		
174	MinnCor(182021	K,L&M-Shop	AHU-	Mech Room	7:00 AM-4:00 PM	Off	45	7:00 AM-4:00 PM	Off	45	70	58		
175	MinnCor(182021	K&OShop(Bldg.20)	AHU-	Mech Room	7:00 AM-4:00 PM	Off	45	7:00 AM-4:00 PM	Off	45	70	58		
176	MinnCor(182021	1st Flr/Office/kShop	AHU-S2 (Blg20)	Mech Room	7:00 AM-4:00 PM	Off	45	7:00 AM-4:00 PM	Off	45	70	58	75	Floats
177	MinnCor(182021	P Shop 3rd Flr N end	MUA-1	Mech Room	7:00 AM-4:00 PM	Off	45	Off	Off	0	70	58		
178	MinnCor(182021	P Shop 3rd Flr N end	MUA-2(Bldg#20)	Mech Room	7:00 AM-4:00 PM	Off	45	Off	Off	0	70	58		
179	MinnCor(182021	P Shop 3rd Flr N end	MUA-3(Bldg#20)	Mech Room	7:00 AM-4:00 PM	Off	45	Off	Off	0	70	58		
193	MinnCor(182021	T Shops-Paint Booth	EF-1	Mech Room	7:00 AM-4:00 PM	Off	45	7:00 AM-4:00 PM	Off	45				
194	MinnCor(182021	V Shops- Paint Booth	EF-2	Mech Room	7:00 AM-4:00 PM	Off	45	7:00 AM-4:00 PM	Off	45				
201	QShopRshopMai	Q Shop(Metal Shop)	AHU-1 (Bldg #	Mech Room	7:00 AM-4:00 PM	Off	45	7:00 AM-4:00 PM	Off	45	70	52	75	Floats
202	QShopRshopMai	2nd Flr - Electrian	Furnace-	Mech Room	7:00 AM-4:00 PM	7:00 AM-4:00 PM	63	7:00 AM-4:00 PM	7:00 AM-4:00 PM	63	70	52	75	Floats
203	QShopRshopMai	2rdFlr-AdminOffice	Furnace-	Mech Room	7:00 AM-4:00 PM	7:00 AM-4:00 PM	63	7:00 AM-4:00 PM	7:00 AM-4:00 PM	63	70	52	75	Floats
204	QShopRshopMai	2rdFlr-	Furnace-	Mech Room	7:00 AM-4:00 PM	7:00 AM-4:00 PM	63	7:00 AM-4:00 PM	7:00 AM-4:00 PM	63	70	52	75	Floats
205	QShopRshopMai	Welding Area	EF-1(Bldg # 25)	Mech Room	7:00 AM-4:00 PM	7:00 AM-4:00 PM	63	7:00 AM-4:00 PM	7:00 AM-4:00 PM	63				
206	QShopRshopMai	Metal Storage	EF-2(Bldg # 25)	Mech Room	7:00 AM-4:00 PM	7:00 AM-4:00 PM	63	7:00 AM-4:00 PM	7:00 AM-4:00 PM	63				
207	QShopRshopMai	Metal Storage	EF-3(Bldg # 25)	Mech Room	7:00 AM-4:00 PM	7:00 AM-4:00 PM	63	7:00 AM-4:00 PM	7:00 AM-4:00 PM	63				
208	QShopRshopMai	Metal Storage	EF-4(Bldg # 25)	Mech Room	7:00 AM-4:00 PM	7:00 AM-4:00 PM	63	7:00 AM-4:00 PM	7:00 AM-4:00 PM	63				
209	QShopRshopMai	Metal Storage	EF-5(Bldg # 25)	Mech Room	7:00 AM-4:00 PM	7:00 AM-4:00 PM	63	7:00 AM-4:00 PM	7:00 AM-4:00 PM	63				
210	QShopRshopMai	Metal Storage	EF-6(Bldg # 25)	Mech Room	7:00 AM-4:00 PM	7:00 AM-4:00 PM	63	7:00 AM-4:00 PM	7:00 AM-4:00 PM	63				
211	QShopRshopMai	R Shop(Plate Metal	EF-1(Bldg # 26)	Mech Room	7:00 AM-4:00 PM	7:00 AM-4:00 PM	63	7:00 AM-4:00 PM	7:00 AM-4:00 PM	63				
212	QShopRshopMai	R Shop(Plasma Cutter	EF-2(Bldg # 26)	Mech Room	7:00 AM-4:00 PM	7:00 AM-4:00 PM	63	7:00 AM-4:00 PM	7:00 AM-4:00 PM	63				
213	QShopRshopMai	R Shop(Metal Break	EF-3(Bldg # 26)	Mech Room	7:00 AM-4:00 PM	7:00 AM-4:00 PM	63	7:00 AM-4:00 PM	7:00 AM-4:00 PM	63				
229	MinSecurityUnit	MinSecUnitBldg	S-1	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	64		
230	MinSecurityUnit	MUAUnitKitchen	S-2	Mech Room	6:00 AM-6:00 PM	6:00 AM-6:00 PM	84	6:00 AM-6:00 PM	6:00 AM-6:00 PM	84	70	64		
231	MinSecurityUnit	Bldg#35 Heating	P-1(Bldg#35)	Mech Room	Runs below 50°F	Runs below 50°F	N/A	Runs below 50°F	Runs below 50°F	N/A				
232	MinSecurityUnit	Bldg#35 Heating	P-2(Bldg#35)	Mech Room	Runs below 50°F	Runs below 50°F	N/A	Runs below 50°F	Runs below 50°F	N/A				
233	MinSecurityUnit	Bldg#35 DHW	DHW P-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
234	MinSecurityUnit	Bldg#35 DHW	DHW P-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
235	MinSecurityUnit	Bldg#35 DHW	DHW P-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
236	MinSecurityUnit	Bldg#35 Kitchen	EF-1 Open	Mech Room	6:00 AM-6:00 PM	6:00 AM-6:00 PM	84	6:00 AM-6:00 PM	6:00 AM-6:00 PM	84				
237	MinSecurityUnit	Bldg#35 Kitchen	EF-1 Open	Mech Room	6:00 AM-6:00 PM	6:00 AM-6:00 PM	84	6:00 AM-6:00 PM	6:00 AM-6:00 PM	84				
238	MinSecurityUnit	Bldg#35 Kitchen	EF-1 Open	Mech Room	6:00 AM-6:00 PM	6:00 AM-6:00 PM	84	6:00 AM-6:00 PM	6:00 AM-6:00 PM	84				
239	MinSecurityUnit	Bldg#35 Kitchen	EF-1 Open	Mech Room	6:00 AM-6:00 PM	6:00 AM-6:00 PM	84	6:00 AM-6:00 PM	6:00 AM-6:00 PM	84				
246	GreenHouse,Guar	Warehouse Office	AHU-1 (Bldg#37)	Mech Room	7:00 AM-4:00 PM	Off	45	7:00 AM-4:00 PM	Off	45	70	52	75	Floats

Row #	Facility	Area Served	Equipment Name	Location	Proposed Schedule/Occupancy Schedule						Proposed Space			
					Fall to Spring			Summer			Heating		Cooling	
					Weekdays	Weekend	Wkly hrs	Weekdays	Weekend	Wkly hrs	Occ.	Unocc.	Occ.	Unocc.
247	GreenHouse,Guar	Greenhouse Office	Furnace-1	Mech Room	Runs below 0°F	Runs below 0°F	N/A	Runs below 0°F	Runs below 0°F	N/A	70	52	75	Floats
248	GreenHouse,Guar	Bldg#45Office(Packa	PTAC(Bldg#45)O	Mech Room	Runs below 0°F	Runs below 0°F	N/A	Runs below 0°F	Runs below 0°F	N/A	70	52	75	Floats
249	GreenHouse,Guar	CommissaryOfficeBld	PTAC(Bldg#49)C	Mech Room	Runs below 0°F	Runs below 0°F	N/A	Runs below 0°F	Runs below 0°F	N/A	70	52	75	Floats
263	GreenHouse,Guar	WaterTreatmentBldg(	CircPump(Bldg#3	Mech Room	Runs below 50°F	Runs below 50°F	N/A	Runs below 50°F	Runs below 50°F	N/A				
264	GreenHouse,Guar	Greenhouse ExFan	ExhaustFan1(Blg	Mech Room	7:00 AM-4:00 PM	Off	45	7:00 AM-4:00 PM	Off	45				
265	GreenHouse,Guar	Greenhouse ExFan	ExhaustFan2(Blg	Mech Room	7:00 AM-4:00 PM	Off	45	7:00 AM-4:00 PM	Off	45				
266	GreenHouse,Guar	Greenhouse ExFan	ExhaustFan3(Blg	Mech Room	7:00 AM-4:00 PM	Off	45	7:00 AM-4:00 PM	Off	45				
267	GreenHouse,Guar	FlammableStorBldg	ExhaustFanBldg#	Mech Room	7:00 AM-4:00 PM	Off	45	7:00 AM-4:00 PM	Off	45				
274	PowerHouse	Powerhouse(BoilerCo	AHU-	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A	70	64		
275	PowerHouse	Boiler Room	S-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	64		
276	PowerHouse	Boiler Room	S-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168	70	64		
277	PowerHouse	Boiler Room	EF-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
278	PowerHouse	Boiler Room	EF-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
279	PowerHouse	Boiler Room	EF-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
280	PowerHouse	DHW Pump	DHWCircPump-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
281	PowerHouse	DHW Pump	DHWCircPump-	Mech Room	Runs continuously	Runs continuously	168	Runs continuously	Runs continuously	168				
282	PowerHouse	BoilerFeedPump	BFP-	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
283	PowerHouse	BoilerFeedPump	BFP-	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
284	PowerHouse	BoilerFeedPump	BFP-	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
285	PowerHouse	CondensatePumpRece	CP-	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
286	PowerHouse	CondensatePumpRece	CP-	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
287	PowerHouse	CondensatePumpVacu	CP-	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
288	PowerHouse	CondensatePumpVacu	CP-	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
289	PowerHouse	CondensateVacuum	VP-	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				
290	PowerHouse	CondensateVacuum	VP-	Mech Room	Runs below 45°F	Runs below 45°F	N/A	Runs below 45°F	Runs below 45°F	N/A				

January 21, 2009

Minnesota Department of Administration
Real Estate and Construction Services
ATTN: MR KEN BRONSON
Administration Building, Room 309
50 Sherburne Avenue
St. Paul, MN 55155

PROPOSAL FOR
MCF – STILLWATER
PEER REVIEW OF AN ENERGY ANALYSIS

Dear Mr. Bronson:

Ericksen Ellison and Associates is pleased to submit this proposal for mechanical and electrical engineering services in conjunction with the above-referenced project. EEA requests your review and confirmation of the following scope of work. We welcome your ideas and any other comments and questions.

I.   **SCOPE OF BASIC SERVICES**

    A.   <u>Project Description</u>

        The State will be receiving a report and a proposal from a consultant, which is performing an energy analysis of systems at the Minnesota Correctional Facility at Stillwater. The consultant will make a verbal presentation of the report at a meeting. EEA will provide the following engineering services for the State of Minnesota:

        1.   Review the report and prepare a written list of comments

        2.   Attend the presentation meeting with representatives of the State and the consultant

        3.   Meet separately with the State and assist in the evaluation of the proposal.

II.   **PROFESSIONAL FEE**

    A.   We propose that our fee for services will be **a sum of $2,950** (including travel expenses), payable monthly upon presentation of invoice.

    B.   <u>Billing and Payment</u> We request that account payments for services rendered and for reimbursable expenses incurred shall be made monthly upon presentation of Engineer's invoice. Client shall pay Engineer's invoice within thirty (30) days.
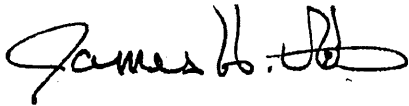
III.   OTHER CONDITIONS OR SERVICES - LIMITATION OF LIABILITY

In recognition of the relative risks, rewards, and benefits of the Project to both the Client and the Consultant, the risks have been allocated such that the Client agrees that, to the fullest extent permitted by law, the Consultant's total liability to the Client for any and all injuries, damages, claims, losses, expenses, or claim expenses arising out of this Agreement from any cause or causes shall not exceed the amount of our fee.

We hope you find this proposal acceptable. If acceptable, please issue the necessary proceed order or form of agreement, so that we may begin work.

We look forward to working with you on this project.

Sincerely,
ERICKSEN ELLISON and Associates, Inc.

James H. Art, PE
Principal

Attachments
c: Terri A. Fleischhacker, CFO – EEA

EEA