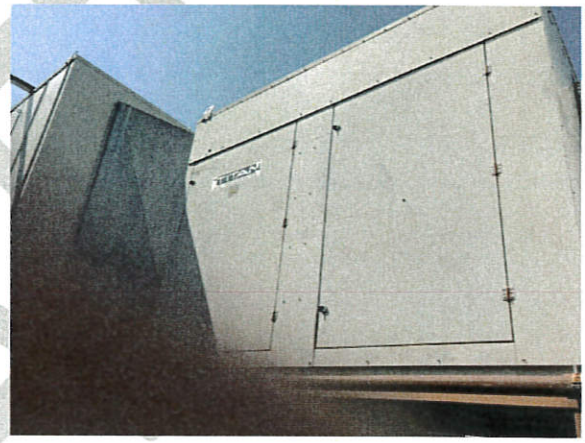
August 31, 2018
Davis County Events Center – Legacy Building
Mechanical Scoping Report

A. Mechanical Observations:
   1. The arena heating and air conditioning system consists of two (2) direct-fired heating units with evaporative cooling located outside on the south side of the building with exposed supply ducts running up the side of the building. The offices, kitchen and corridors are conditioned by gas-fired furnaces with air cooled condensing units. Condensing units are located outside and inside mechanical rooms. Buildings 1-3, hen, rabbit are heated with furnaces or unit heaters and cooled with evaporative coolers. The systems serving the offices and kitchen do not have a source of outside air which is required by the current mechanical code. The heating and cooling air is distributed thru galvanized steel ductwork with 1" fiberglass acoustical liner. The ductwork appears to be in good condition. The air temperature controls consists of electronic thermostats.
   2. Arena System AH-1, 2:
      a. Two each Titan MN TA-30NGHRNAR/-80, SN 4896, SN 4895. Direct fired-gas heating, ventilating and evaporative cooling units, 30,000 CFM ea, 2640 MBH a. Age = 19 years, expected life service (ESL) = 20 years.
      b. The motorized dampers may not be operable (frozen). The ability of these dampers to move are critical to the unit operation between heating and cooling modes. The motorized return air damper should be open in heating mode and closed in cooling mode and closed in heating mode. The manual damper should be closed in all modes.
      c. The interior of the unit and ductwork needs to be cleaned thoroughly.
      d. The evaporative cooler requires a bleed-off to reduce TDS buildup in the sump and cooler media. The bleed-off should be piped to a location where the water would not be a nuisance. A dry sump installed outside the enclosure would be one option. The drain valve should be



Arena, Air Handler East



Arena, Air Handler West

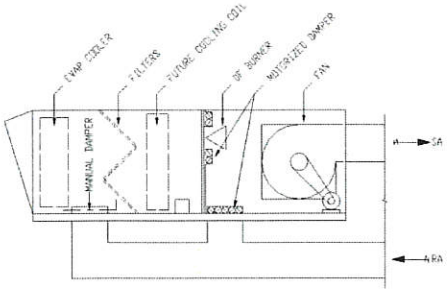


Arena, Drain Pan East

enabled/repaired and the cooler media replaced. Evaporative Media Option: Munters Celdek, 12" deep, Delta DEK, 12" deep.

e. The water and gas piping needs to be adequately supported.

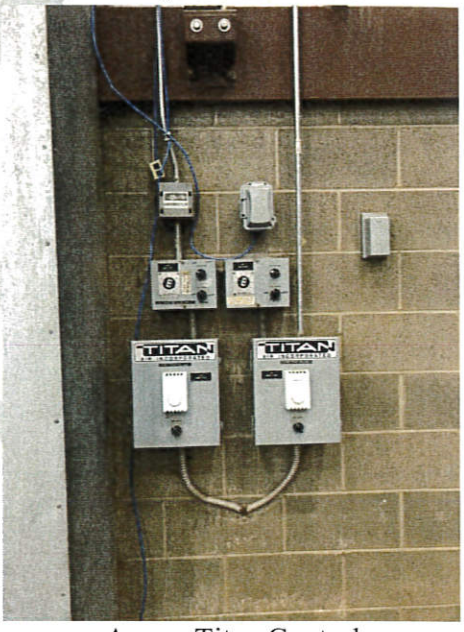
f. Rusty structural or housing elements should be replaced and appears to be close to failure.



DAVIS COUNTY HORSE ARENA – HTG/CLG UNIT



Arena, Drain Pan West



Arena, Titan Controls

3. Office Area, Furnace System F-1:
   a. Bryant MN 350X2AV060100, SN 0597A00167, high efficiency, gas-fired furnace, 100 MBH. Age = 20 years, ESL = 18 years.
   b. Bryant MN CK5AXA060000AAAA, SN 1797X14953, evaporator. Age = 20 years, ESL = 20 years.
   c. Bryant MN 561WJ060-A, SN 4497E01253, air cooled, condensing unit, R-22, 5 nominal tons. Age = 20 years, ESL = 20 years. The exterior refrigeration piping should be reinsulated and painted. Flexible elastomeric insulation deteriorates after prolonged exposure to UV radiation.
4. Concession Area, Furnaces System F-2:
   a. Bryant MN 350MAV060100, SN 1097A02248, high efficiency, gas-fired furnace, 100 MBH. Age = 21 years, ESL = 18 years.
   b. Bryant MN CK5AXA060000AAAA, SN 1797X14959, evaporator. Age = 21 years, ESL = 20 years.



Entry Area, Furnace F-3



Maintenance Building, Water Heater

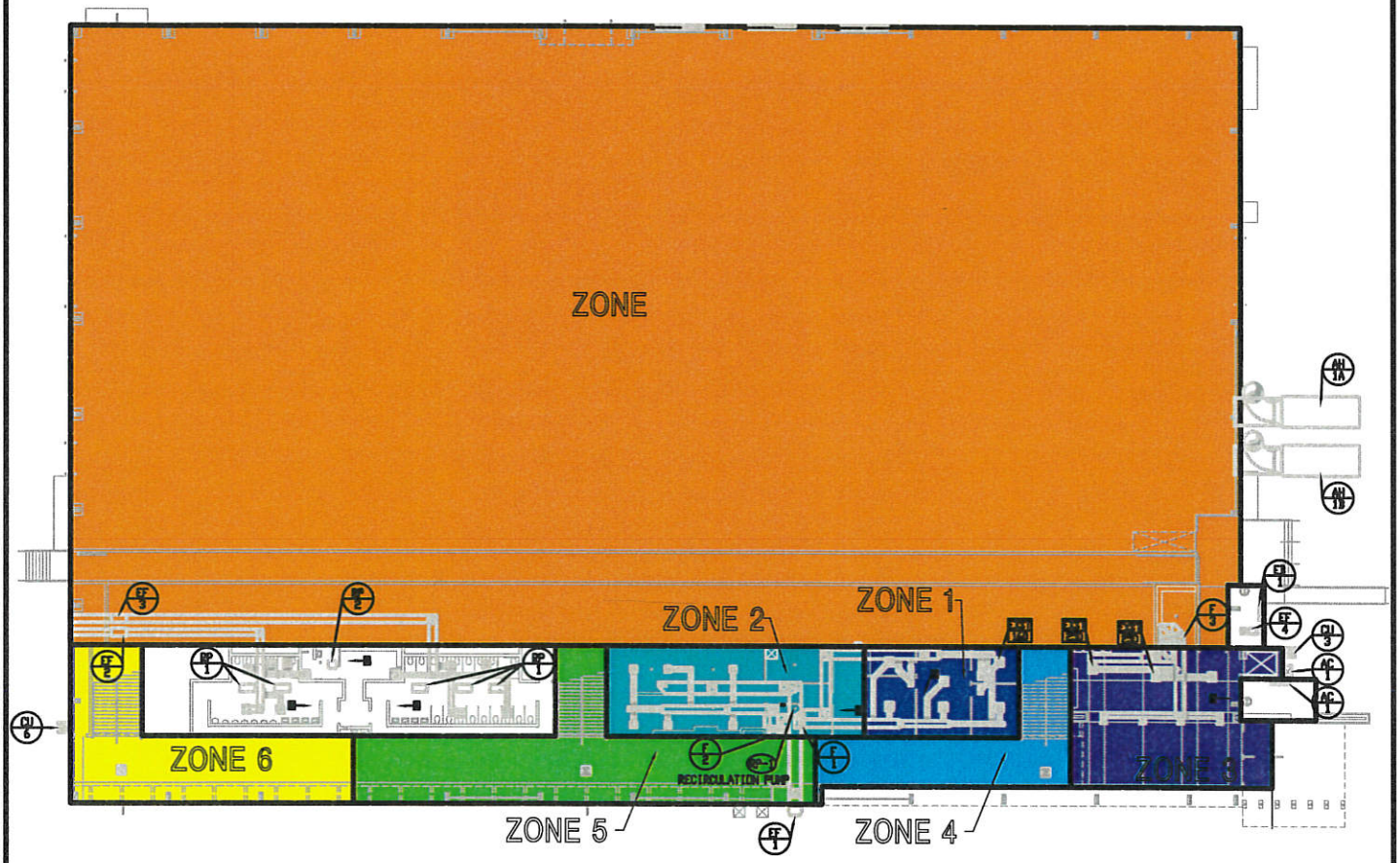


Maintenance Building, Unit Heater

B. Opinion of probable construction cost.
Refer to attached spreadsheet breakdowns for itemized listing:

2. Arena	System Replacement Cost = $376,824.00
3. Office Area	System Replacement Cost = $ 16,053.00
4. Concession Area	System Replacement Cost = $ 64,877.00
5. South Entry	System Replacement Cost = $ 16,053.00
6. South Corridor	System Replacement Cost = $ 16,112.00
7. Middle Corridor	System Replacement Cost = $ 16,112.00
8. North Corridor	System Replacement Cost = $ 16,053.00
9. Building 1	System Replacement Cost = $ 25,386.00
10. Building 2	System Replacement Cost = $ 28,609.00
11. Building 3	System Replacement Cost = $ 33,778.00
12. Bunny Barn	System Replacement Cost = $ 2,256.00
13. Hen House	System Replacement Cost = $ 2,256.00
14. Maintenance Building	System Replacement Cost = $ 24,261.00

DRAFT



DAVIS COUNTY LEGECY EVENTS CENTER

MAIN LEVEL LEGACY BUILDING
151 SOUTH 1100 WEST
FARMINGTON, UTAH

DAVID L. JENSEN & ASSOCIATES
MECHANICAL ENGINEERS
547 WEST 500 SOUTH SUITE #140
BOUNTIFUL, UTAH 84010
PHONE: (801) 294-9299

Mechanical Opinion of Probable Construction Cost

Davis County - Events Center
Project Phase: **Scoping**
Date: **31-Aug-18**

Item 2	Description	Qty	Unit	Unit Cost Material	Unit Cost Labor	Unit Cost M & L	Subtotal	Total
Plumbing:								
	Demolition	1	lot			$200.00	$200.00	
	Piping, Natural Gas, Steel							
	Pipe, 1.5"	12	lf	$5.70	$11.20		$202.80	
	Elbow, 1.5"	6	ea	$16.50	$44.50		$366.00	
	Tee, 1.5"	2	ea	$26.00	$69.00		$190.00	
	Valves							
	Ball Valve, 1.5"	2	ea	$167.00	$50.50		$435.00	
	Piping, Condensate, PVC							
	Pipe, 1.25"	12	lf	$9.50	$11.85		$256.20	
	Elbow, 1.25"	6	ea	$1.80	$22.50		$145.80	
	Tee, 1.25"	2	ea	$2.12	$33.50		$71.24	
HVAC:								
	Demolition	1	lot			$3,000.00	$3,000.00	
	MA Unit, Evap Clg, Heat, 30000 cfm	2	ea	$144,000.00	$5,875.00		$299,750.00	
	Ductwork	2	lot	$862.50	$3,450.00		$8,625.00	
	Controls, DDC							
	Furnace	2	ea			$500.00	$1,000.00	
	Test and Balance							
	MAU	2	ea			$1,200.00	$2,400.00	
	Diffuser/Grille	20	ea			$50.00	$1,000.00	
Electrical:								
	Demolition	1	lot			$200.00	$200.00	
	Electrical	1	lot			$1,500.00	$1,500.00	
Subtotal								$319,342.04
Overhead and Profit		8%						$25,547.36
Design Contingency		10%						$31,934.20
Total								**$376,823.61**

Item 3	Description	Qty	Unit	Unit Cost Material	Unit Cost Labor	Unit Cost M & L	Subtotal	Total
Plumbing:								
	Demolition	1	lot			$50.00	$50.00	
	Piping, Natural Gas, Steel							
	Pipe, 1"	4	lf	$4.38	$9.40		$55.12	
	Elbow, 1"	3	ea	$8.40	$38.50		$140.70	
	Tee, 1"	1	ea	$11.00	$62.00		$73.00	
	Valves							
	Ball, 1"	1	ea	$90.50	$36.00		$126.50	
	Piping, Condensate, PVC							
	Pipe, 0.75"	4	lf	$5.60	$9.75		$61.40	
	Elbow, 0.75"	3	ea	$0.57	$17.40		$53.91	
	Tee, 0.75"	1	ea	$0.73	$26.00		$26.73	
HVAC:								
	Demolition	1	lot			$200.00	$200.00	
	Furnace, 1800 cfm	1	ea	$1,400.00	$574.00		$1,974.00	
	Cooling Coil, 5 ton	1	ea	$590.00	$335.00		$925.00	