

06-13-2017

**DEKALB COUNTY JAIL EXPANSION PROJECT
INTERNAL FINANCING LOANS**

Entity / Fund		Outstanding Loans as of 06-13-2017	Loan # 1 02-04-2016	Loan # 2 07-01-2016	Loan # 3 10-01-2016	Loan # 4 12-02-2016	Loan # 5 01-13-2017	Loan # 6 05-15-2017
A Public Building Commission								
8200	Capital Improvement Reserve Fund	1,500,000	1,500,000					
8400	Sycamore Campus R & R Fund	500,000					500,000	
8450	Hlth Facility Renew & Replace Fund	2,000,000				2,000,000		
A-99	Total PBC Loans	4,000,000	1,500,000	0	0	2,000,000	500,000	0
B Forest Preserve								
1252	Land Acquisition Fund	0						
1253	IMRF Retirement Fund	0						
B-99	Total Forest Preserve Loans	0	0	0	0	0	0	0
C DeKalb County Government								
1111	General Fund	2,000,000		2,000,000				
1212	Tort & Liability Insurance Fund	1,000,000						1,000,000
1231	Highway General Fund	1,000,000					1,000,000	
1235	Highway Federal Matching Fund	1,000,000		1,000,000				
1241	Public Health Fund	500,000					500,000	
1242	Community Mental Health Fund	500,000			500,000			
1472	County Farm Land Sale Fund	0						
1475	Opportunity Fund	1,000,000						1,000,000
1476	Asset Replacement Fund	1,000,000						1,000,000
1478	Data Fiber Network Fund	0						
2501	Nursing Home Fund	2,000,000					2,000,000	
2601	Health Insurance Fund	0						
C-99	Total County Loans	10,000,000	0	3,000,000	500,000	0	3,500,000	3,000,000
D	Total of All Loans	14,000,000	1,500,000	3,000,000	500,000	2,000,000	4,000,000	3,000,000

06-09-2017

**DEKALB COUNTY GOVERNMENT
JAIL EXPANSION - BUDGET v ACTUAL**

Description	Adjusted Budget 06-09-2017	Actual Spent or Billed 06-09-2017	Total as Percent of Budget
1 Construction Contracts less Unused Allowances	27,687,507		
2 Approved Change Orders	543,479		
3 Pending Change Orders for Consideration	99,218		
4 Total Construction Costs	28,330,204	10,807,276	38%
5 Professional Services & Reimbursables	4,408,000	3,439,903	78%
6 Soft Costs	1,744,565	1,006,996	58%
7 Total Monies Committed / Spent	34,482,769	15,254,175	
8 Contractor Allowances Remaining	297,032		
9 Contingency Remaining	20,199		
10 Contingency Resulting from Bond Sale	0		
11 Total Project Budget	34,800,000	15,254,175	44%
12 Gilbane Estimate of Construction Completed as of 06-09-2017			50%

DeKalb County Jail

Construction Phase Commissioning Kickoff Meeting



Date: 5/1/17

Time: 9:00AM

Agenda

1. Introductions
2. Commissioning Scope of Work
3. Commissioning Specs
4. Process Overview
5. Roles and Responsibilities
6. Commissioning Schedule
7. Field Observation Notes
8. Contractor Testing Summary
9. Operation and Maintenance Manuals
10. Training
11. Commissioning Status Report
12. Commissioning Meetings
13. Questions?

COMMISSIONING SCOPE OF WORK

1. Division 22 – Plumbing Systems

- Domestic Water – booster pump, water heaters, recirculating pumps, water softener, piping, fixtures, accessories, controls
- Drain / Waste – sump pumps, muffin monsters, piping, accessories, controls

2. Division 23 – Mechanical Systems

- Heating – boilers, pumps, unit heaters, piping, accessories, controls
- Ventilation – AHUs, RTUs, exhaust fans, terminal units, ductwork, accessories, controls

3. Division 23 – Building Automation Systems

- Panels, points/devices, sequences of operation, operator workstation

4. Division 26 – Electrical Systems

- Normal power distribution – transformers, switchboards, panel boards, distribution
- Normal power connection to the systems in the Cx scope – VFDs, starters, conduit, wire
- Emergency power distribution – generators, ATs, UPSs, panel boards, distribution
- Lighting and lighting controls – panels, devices, conduit and wire, controls sequences

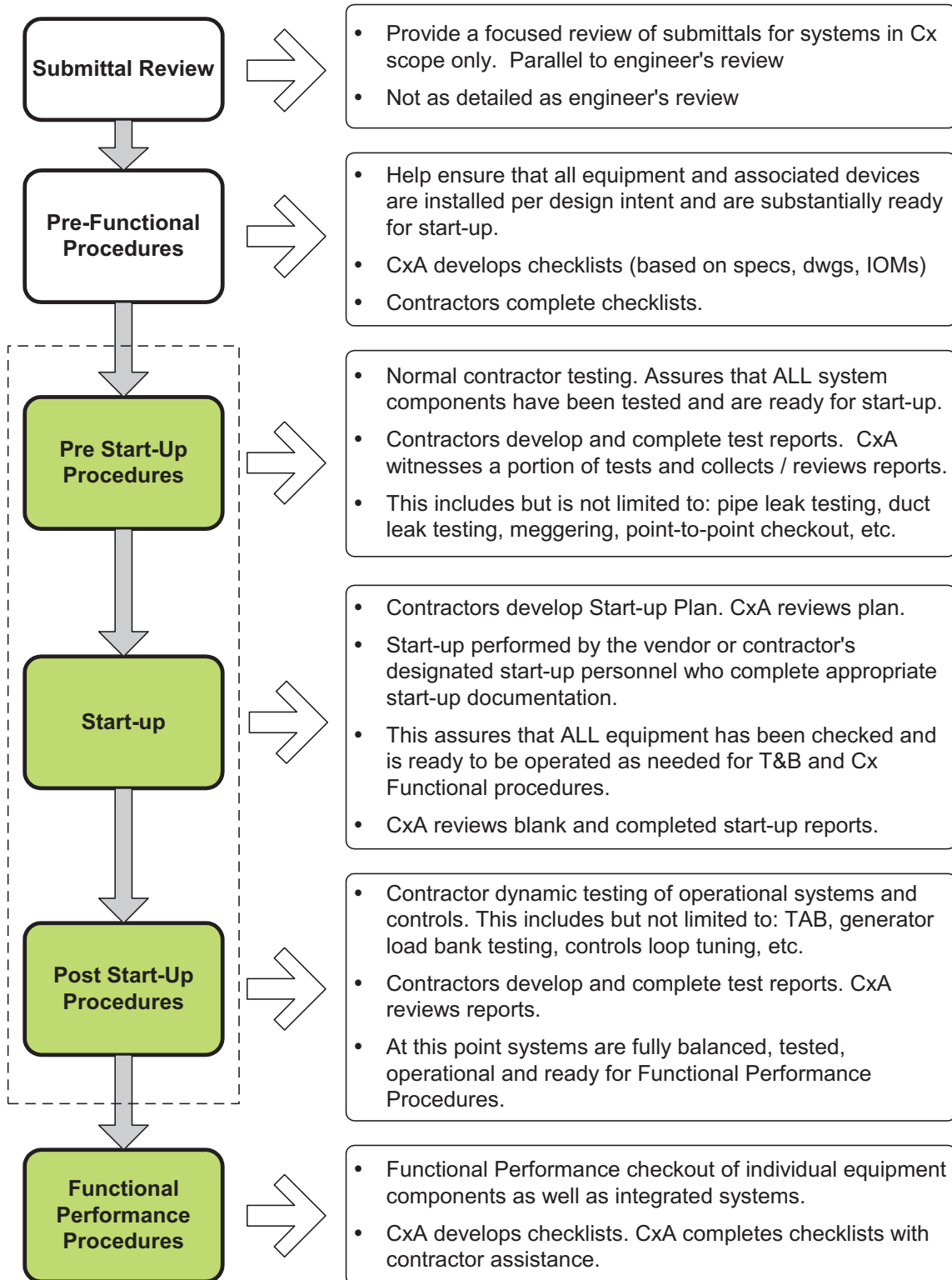
5. Division 27 – Low Voltage Security Systems

- Main panel, cameras, card readers, other access control, interface with other systems, conduit and wire, control sequences

COMMISSIONING SPEC SECTIONS

- 01 19 13 – General Commissioning Requirements
- 22 99 00 – Plumbing Systems Commissioning
- 23 99 00 – Mechanical Systems Commissioning
- 26 99 00 – Electrical Systems Commissioning

COMMISSIONING PROCESS – CONSTRUCTION PHASE



PREFUNCTIONAL PROCEDURES

Main Requirement:	Review and document proper equipment installation
Location of Requirement:	019113 Cx specifications
Main Documentation:	Pre-functional Checklists
Checklists Developed by:	E Cube, Inc.
Checklists Completed by:	Trade Contractors (with oversight/review by E Cube)

Sample:

Checklist TAB - A200E

E Cube | College of Lake County A&B Wings - GMP2 | 808.1



NOT STARTED

Type Pre-Functional
 Asset TAB - A200E
 Terminal Unit
 CURRIDOR A200E

Sections 2

Mechanical	NOT STARTED	MG Mechanical	Status set by Mandeep Singh on 4/4/2016.
NAMEPLATE DATA			
	1	VAV Terminal Unit w/ Reheat	
	2	Model Number Terminal Unit VAV - Model Number DESV	
	3	Serial Number	
	4	Inlet Size Terminal Unit VAV - Inlet Size 8 in	
STORAGE / HANDLING			
	19	Unit covered during storage, protected from moisture	
	20	Openings covered during installation	
GENERAL INSTALLATION			
	21	Unit located per plans	
	22	Unit size and ratings correct	
	23	Installed level and plumb	
	24	Aligned on foundations, hangers, etc.	
	25	Adequate access space for service/maintenance	
	26	Access panels upstream and downstream of reheat coil	
	27	Configuration per drawings	
	28	Straight duct length at inlet per dwgs	
	29	Disch duct internal insulation per spec	
	30	Sound attenuators installed (if applicable)	
	31	Inlet duct sizing correct	
	32	Inlet duct alignment correct	
	33	Damper gasket installed (factory)	
	34	Air flow cross in place, not damaged	

PRE START-UP PROCEDURES

- Main Requirement:** Perform and document equipment testing prior to startup (i.e. duct leak tests, pipe leak tests, megger, controls point-to-point)
- Location of Requirement:** Division 23, 26 specifications and 019113 Cx specifications
- Main Documentation:** Test Reports
- Reports Developed by:** Trade contractors, vendors, manufacturers
- Reports Completed by:** Trade Contractors (with oversight/review by E Cube)

Sample:

PIPING SYSTEM LEAKAGE TEST REPORT					
Name: <u>JOHN SMITH</u>		Installing Contractor: <u>ABC MECH</u>			
Company: <u>ABC MECHANICAL</u>		Reference Drawings: <u>M-101</u>			
Date: <u>10-20-16</u>					
<small>Instructions: Complete testing per spec requirements or as agreed by project team. Record test data in fields provided below. Sign report when complete. Have witness sign report. Upload report to on-line system.</small>					
System Served: <u>HEATING HW</u>					
Test Section / Location: <u>FIRST FLOOR EAST MAINS + BRANCHES</u>					
Test Medium: <u>WATER</u>					
ITEM	OK	NOTES			
Design Requirements					
Required Test Pressure (psi)	75#				
Required Duration (hours)	4				
Allowable dP during test (psi)	0				
Test					
Confirm all test section isolation valves are open	✓				
Confirm test pressure does not exceed any device rating	✓				
	Date	Time	Pressure	Leaks	Other
Test Start	10/20	8 AM	75#	NONE	
Test End	10/20	1 PM	75#	NONE	
Note location and extent of any leaks	N/A				
Note date of leak repair	N/A				
Attach high-lighted drawing of tested section	✓				
Notes:					
Signatures: (sign when checklist is complete)					
Installing Contractor / Vendor: <u>[Signature]</u>		Date: <u>10-20-16</u>			
General Contractor: <u>[Signature]</u>		Date: <u>10/20/16</u>			
Witness: <u>[Signature]</u>		Date: <u>10-20-16</u>			

START-UP PROCEDURES

Main Requirement: Plan for, perform, and document equipment start-up
Location of Requirement: Division 23, 26 specifications and 019113 Cx specifications
Main Documentation: Start-up Reports
Reports Developed by: Trade contractors, vendors, manufacturers
Reports Completed by: Trade Contractors (with oversight/review by E Cube)

Sample:



FIELD START-UP TEST SHEET

230 W. Blue Ridge Ave. Orange, CA 92665
 Phone: (714) 821-8000 Fax: (714) 821-8010
 www.dataaire.com

MINI-PLUS and LCS CEILING SYSTEMS
 Air Cooled, Water/Glycol Cooled and Chilled Water Units

434
 w/
 AC-01

Instructions:

This test sheet must be completely filled out during start-up and returned to Data Aire, Inc. Failure to return the test sheet may limit or cause delays in warranty coverage. Some of the terms listed require specific information to be entered and others only need a check mark that verifies a test of inspection has been conducted. Items not applicable should be marked "N/A".

UNIT IDENTIFICATION Model Number: DATA-0534-BN Serial Number: 2013-2281-A

Job Number: 27373

TEST VOLTAGE

Voltage: A-B 480¹ A-C 480² B-C 480

TEST CONDITIONS

Supply Air Temperature: 54 °F Condenser/Ambient Air Temperature: 18 °F
 Return Air Temperature: 72 °F Return Air Humidity: 52 %

BLOWER (EVAPORATOR)

Motor HP: 2.40 F.L.A.: 1.9 Voltage: 480 Operating Amps: L1 2.9 L2 2.9 L3 2.9
 Motor, Drive and Pulley Aligned: Yes or No Drive and Pulley Set Screws Tight: Yes or No
 Blower Clean of Debris: Yes or No Blower Pulley Size: _____

BLOWER (CONDENSER)

Motor HP: 5.60 F.L.A.: 1.8 Voltage: 480 Operating Amps: L1 1.8 L2 1.8 L3 1.8
 Motor, Drive and Pulley Aligned: Yes or No Drive and Pulley Set Screws Tight: Yes or No
 Blower Clean of Debris: Yes or No Blower Pulley Size: _____

COMPRESSOR No. 1

Operating Amps: L1 6.6 L2 6.4 L3 6.5 (19.6) Discharge Pressure: 275 PSIG
 Suction Pressure: 115 PSIG Suction Temperature: 50 °F Superheat: 12 °F
 Crankcase Temperature: 52 °F High Pressure Failure: 475 PSIG
 Hot Gas Bypass: Yes or No Liquid Line Solenoid: Yes or No

COMPRESSOR No. 2 (AS APPLICABLE)

Operating Amps: L1 _____ L2 _____ L3 _____ Discharge Pressure: _____ PSIG
 Suction Pressure: _____ PSIG Suction Temperature: _____ °F Superheat: _____ °F
 Crankcase Temperature: _____ °F High Pressure Failure: _____ PSIG
 Hot Gas Bypass: Yes or No Liquid Line Solenoid: Yes or No

REHEAT

Type: Electric _____ Hot Water _____ Hot Gas _____ Steam _____
 (For Electric Reheat) Operating Amps: L1 _____ L2 _____ L3 _____
 High Temperature Safety Operation: Yes or No
 (For Non-Electric Reheat) Valve Operating: Yes or No

POST START-UP PROCEDURES

Main Requirement:	Evaluate system performance after startup (i.e. Test and Balance, Controls Loop Tuning, Gen Load Bank, etc.)
Location of Requirement:	Division 23, 26 specifications and 019113 Cx specifications
Main Documentation:	Post Start-up Reports
Reports Developed by:	Trade contractors, vendors, manufacturers
Reports Completed by:	Trade Contractors (with oversight/review by E Cube)

Sample:

Customer: E Cube	Project: NU Mid Quads
118 S. Clinton Suite 650	Number: TB.151015.01
Chicago, IL 60661	Date: January 8, 2016
Attn: Mandeep Singh	Sheet: 1 of 8

Air Moving Equipment Data Sheet				
SYSTEM	AHU-N1		AHU-N1 Exhaust	
Equipment Location	Attic		Attic	
Area Served	South Mid-Quads		South Mid-Quads	
Equipment Manufacturer	Ventrol		Ventrol	
Model	ITF		ITF	
Serial Number	24067-01		24067-01	
	Specified	Actual	Specified	Actual
Total CFM - Fan	2985	3492	2560	2915
Total CFM - Outlet	2985	3180	2610	2559
Total Static Pressure <small>(Total External)</small>	4	See	3	See
Inlet Pressure	NA	Profile	NA	Profile
Discharge Pressure	NA	Sheet	NA	Sheet
Fan Rpm	3500	2070	3500	1686
	Specified	Actual	Specified	Actual
Motor Manufacturer	NA	Baldor	NA	Baldor
Motor HP/BHP	5	5	5	5
Phase	3/60	3/60	3/60	3/60
Voltage	230/460	206	230/460	156
Amperage	13.7-13/6.5	8.5	13.7-13/6.5	6.9
Power Factor / Efficiency	80%	90.20%	80%	90.20%
Motor RPM	1750	2070	1750	1686
Motor Service Factor / Frame #	1.15	184TZ	1.15	184TZ
Starter Heater Elements	ABB	VFD	ABB	VFD
Motor Sheave & Bushing	Direct Drive		Direct Drive	
Fan Sheave & Bushing				
Belts				
Pulley Adjustment				
Center Line/Motor Adjustment	In	Out	In	Out
Comments:				
	Supply Pitot 24x16=2.67sq.ft. x 1308fpm = 3492 cfm @ 70Hz			
	Return Pitot 24x16=2.67sq.ft. x 1092fpm = 2915 cfm @ 57Hz			

FUNCTIONAL PROCEDURES

Main Requirement:	Evaluate system performance under full design conditions
Location of Requirement:	019113 Cx specifications
Main Documentation:	Functional Performance Checklists
Checklists Developed by:	E Cube
Checklists Completed by:	E Cube (with assistance from trade contractors)

Sample:

Test AHU-6B

E Cube



IN PROGRESS

Assigned To Commissioning Authority
 Asset AHU-6B
 Air Handling Unit
 Penthouse 8

Attempts Most Recent

Attempt No. 1 **IN PROGRESS**

Status set by Mandeep Singh on 2/13/2017.

SETPOINTS

Yes	1	Outside Air (OA) Minimum Flow Rate <i>8,334 CFM. From design schedule. Not on graphic.</i>
Yes	2	Discharge Air Temperature (55 °F) <i>60 F. per design. DAT operates on a reset schedule based on terminal box positions. Max VAV position at time of this observation was 48%.</i>
Yes	3	Discharge Air Temperature Reset Low Limit (55 °F)
Yes	4	Discharge Air Temperature Reset High Limit (60 °F)
Yes	5	RA Relative Humidity High Limit (60% RH)
Yes	6	SA Duct Static Pressure <i>1.5"</i>
Yes	7	SA Duct Static Pressure Reset Range <i>0.5" to 2"</i>
Yes	8	Occupancy Schedule
Yes	9	Monday - Friday = 6:00AM to 10:00PM
Yes	10	Saturday = 8:00AM to 12:00PM
Yes	11	Sunday, Holiday = OFF

CONTROL POINTS / DEVICES INSTALLED AND SHOWN ON GRAPHICS

Yes	12	Outside Air (OA)
Yes	13	OA Temperature <i>36 F</i>
No	14	OA Relative Humidity
No	15	OA Enthalpy <i>Not on graphic, but not required to be. Point installed. Observed value = 22.8 BTHU/lb</i>
No	16	OA CO2 Level <i>Delta to add to graphic.</i>
Yes	17	OA Flow Rate
Yes	18	OA Minimum Flow Rate <i>8,334 CFM as required by design.</i>
Yes	19	OA Damper Command <i>100%</i>

Integrated Systems Procedures (Blackout Test)

Main Requirement: Evaluate total building performance under simulated utility power failure
Location of Requirement: 019113 Cx specifications
Main Documentation: Blackout Test Script and Checklists
Checklists Developed by: E Cube
Checklists Completed by: E Cube (with assistance from trade contractors)

Sample:

Day #	Step #	Duration Hrs:Mins	Time		Action	Resp Party	Expected Results	Actual Results / Notes	OK?
			Start	Finish					
1	13	0:05	10:30	10:35	At Main Switchgear: Verify utility main breaker is closed. Verify generator main open. Verify ATSs are in Normal / AUTO	Elec	Units operating on normal source and in automatic control.		OK
1	14	0:00	10:40	10:40	Announce: "Power will be shut off in 5 min" Use PA system and Radios	GC			OK
1	15	0:00	10:44	10:44	Announce: "Power will be shut off in 30 seconds"	GC	Units operating on normal source and in automatic control.		OK
1	16	0:00	10:45	10:45	Open utility main at main switchgear	Elec	Electrical Power: - ATSs sense drop in normal source voltage to 85% and initiate transfer (0 sec delay) - Generators start after 1 second time delay - Utility main open - All ATSs transfer to EM source - Life safety re-energizes within 10 seconds Fire Alarm Panel: - Remains on line (existing source) Fire Protection: - Existing fire pump remains on line (separate electrical source) Lighting: - Exit signs and EM lights lose power and re-energize on EM power within 10 seconds - Normal lights lose power HVAC: The following equipment loses power and re-energizes on EM Power: - SAF-4A, 5A: Stair C Pressurization Fans - PHP-1A, 2A: Heating HW Pumps - EF-ISO-3A, 4A: West Isolation Exh Fans - HP-1A, 2A, 3A, 4A, 5A, 6A - FCU-1 (3 units in stair C) - EF-ISO1A, 2A remain online All other HVAC equipment loses power	E Cube Notes: 8.5 sec noted at 2nd floor mech room Electrician notes: ATS-WP-EQ1 = 20 sec delay ATS-WP-SB2 = 30 sec delay ESSCOE notes: Needs daylight savings time correction.	OK
								See comments below.	OK

Commissioning Field Observation Notes and Issues Log

CHK-109-1 CLOSED HIGH

The Onicon flow meter (FM) for the primary geothermal field does not appear to be installed with sufficient length of straight pipe up and down stream of the FM. Also, there is a thermometer installed within a few inches of the FM. Per the manufacturer's instructions, the flow meter is to be installed in a straight run of pipe, free of bends, tees, valves, transitions, and obstructions for a distance of 10 pipe diameters upstream and 5 diameters downstream, (depending on the model installed).

Assigned To Mechanical
Due Date 3/11/2016
Created By Juan Guardian
Identified On 2/26/2016 3:15 PM

(7/7/16) E3 verified there is sufficient clearance to remove temperature probe. Issue is closed.

Mike Romito on 07/07/2016 at 11:38 AM

Still need response from on the status of this issue.

Mandeep Singh on 07/01/2016 at 08:26 AM

Access to the temperature sensor is still necessary. It does not appear the device can be removed in the future if repair / replacement / maintenance is necessary.

Mandeep Singh on 04/04/2016 at 09:51 AM

The Onicon device being shown is actually one of the temperature sensors for the BTU meter, not the flow meter.

on 03/09/2016 at 03:52 PM



CHK-88-1 CLOSED HIGH

Geothermal pumps appear to be missing flex connectors on suction and discharge lines as called for on mechanical drawing M8.01 detail 11. A Victaulic coupling is installed, verify this suffices as a flex connector.

Assigned To
Asset GWP-1
 Pump
 Geothermal
 Mechanical Room
Due Date 3/10/2016
Created By Juan Guardian
Identified On 2/25/2016 8:13 PM

Per 5/10 email from response is as follows: "We generally don't put isolation pads under the pumps, but isolate the piping system. The Victaulic couplings are flexible and work as a flex connector."

Mandeep Singh on 05/15/2016 at 12:08 PM

Per discussion in 3/8 Cx meeting, confirm if the installed combination of Victaulic fittings is acceptable in place of flex connector.

Mandeep Singh on 03/11/2016 at 01:06 PM