

DATE OF ISSUE: MAY 18, 2017

DEPARTMENT OF GENERAL SERVICES
ENERGY AND RESOURCE MANAGEMENT OFFICE
401 NORTH STREET
HARRISBURG, PENNSYLVANIA

BULLETIN NO. 4
on

Project No. GESA 2017-1 – REQUEST FOR QUOTES FOR A GUARANTEED ENERGY SAVINGS PROJECT AT: DEPT. OF GENERAL SERVICES, CAPITOL COMPLEX, HARRISBURG, PENNSYLVANIA, Department of General Services, Energy & Resource Management, 401 North Street, Room 403, Harrisburg, Pennsylvania, 17120.

PROPOSAL SUBMISSION DEADLINE, THURSDAY JUNE 29, 2017
TIME OF OPENING: 2:00 PM

REQUEST FOR INFORMATION (DGS Responses in bold text)

1. Please provide the attendance sign-in sheet from the Pre-Quote Conference held on April 26, 2017. **The sign in sheet is attached at the end of this document.**
2. Please provide the site inspection schedule, and when ESCOs will be able to return for escorted inspections of each facility. **Site visits can be scheduled at the convenience of the ESCO company. East Wing site visits are only available on Thursdays & Fridays. Contact Becky Tomlinson at retomlinso@pa.gov to schedule a visit. Public spaces do not require a DGS escort.**
3. Please provide electronic copies of existing Mechanical / Electrical / Plumbing (MEP) and controls system drawings on CD. **If we can obtain, we will place on our website for download.**
4. Please provide all available asbestos and hazardous materials logs/information for these sites, or let us know when we may be permitted to return and inspect such information.
 - a. Please clarify the extent of hazardous materials ESCOs are responsible considering the limited amount of site access available during the proposal development phase. **We will review available reports and place the "Response Action Tables" on our website once obtained/reviewed.**

QUESTIONS

1. There are certain instances where some screw-in lamps are 3000K as 3500K is not available but the predominant interior color temperature (TLEDs & new fixtures) is 3500K. Are 3500K and 4000K the correct preferences?
Answer: Yes, anything within the range of 3000K - 3500K for interior lights and 4000K - 5000K for exterior lights are the correct preferences.
2. Can you provide square footage information for each facility included within the project scope?

Answer: Yes, the gross square footage is as follows: East Wing 626,545 sq. ft., North Office 223,946 sq. ft., Labor & Industry 483,161 sq. ft., Health & Welfare 315,462 sq. ft. and Central Plant 26,076 sq. ft.

3. Where is the primary area of concern, regarding caulking, on the L&I building? It seems as if the caulking is aged but no failure at the seams was detected.

Answer: The primary area of concern is the North side of the building. However, all areas should be evaluated.

4. During the Pre-Quote Conference, it was mentioned that if any conflicts of the Contract Documents arise requiring interpretation, the terms of the Request for Quote (RFQ) shall control. Please confirm this is the case.

Answer: If any conflicts between the RFQ and the ITQ documents arise, the RFQ supersedes.

5. The scope-of-work includes core ECMs that must be evaluated as part of the response. ECM 2 relates to delta T management of the chilled water distribution loop and loop flow controls. However, the central plant also serves buildings with chilled water distribution systems that are not included in the RFP scope. Any comprehensive solution to improving efficiency here would more than likely also involve modifications to the distribution systems of buildings that are not currently included within the RFP scope. Should ESCOs limit proposed work to buildings solely within the current RFP scope even though this will likely be limiting to the potential success of this measure?

Answer: This Measure will include more buildings than the listed buildings. The main system used to be a primary secondary system to each building. A project +/- 2006 was done and placed VFD on the main chiller plant pumps, added bypasses to the secondary pumps and replaced the 3-way valve with 2-way valves. In the PJC, there is a heat exchanger with building side pumps. In the Keystone building, there are 22 AHUs - 18 are used in 6 (2 primary, 1 backup systems), 2 are dedicated out door air systems and 2 feed the atrium. Please see attached chart for the remaining buildings. For the building flow summary from previous flow study, see attached sheets.



Rebecca Tomlinson, RFQ Coordinator
ENERGY & RESOURCE MANAGEMENT OFFICE

PLEASE ACKNOWLEDGE RECEIPT OF BULLETIN BY EMAIL RESPONSE TO BECKY TOMLINSON AT retomlinso@pa.gov

SIGN IN SHEET

GESA 2017-1 PRE-QUOTE MEETING - CAPITOL COMPLEX PROJECT

Wednesday, April 26, 2017@ 1:00 P.M.

Keystone Building, Hearing Room No. 2

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FLOOD & STERLING, INC.

Capitol Complex – Chilled Water Flow Audit

Initial Readings Audit Notes

Flood and Sterling was hired to perform an audit of the chilled water being provided by the central plant to the connected buildings of the Capitol Complex. The first portion of our project we traced down the main piping as it entered into each building and prepare locations for our ultrasonic meter to measure flow in the main pipes entering the building. During this process we searched for any potential locations where chilled water may be short-cycling from the supply to the return piping. While tracking down the piping we did locate a 6" bypass pipe in the lower portion of that East Wing that was full open. With the approval of the maintenance staff we closed this valve. Once we did this we began to see the return temperature to the plant begin to rise. This tells us that this pipe was bypassing the cold supply water directly in to the return pipe and back to the chiller plant. By closing this valve the water that was being bypassed here is now available to cooling in the connected buildings.

The next portion of the project was to take our actual flow readings at each of the buildings. These readings were taken on 6/22/15, we chose this day because of the high outside air temperature and humidity to provide a load on the chiller plant. The first reading was taken on the main chilled water pipe leaving the plant. We took our reading and compared it to the DDC flow station that monitors the chilled water being provided by the plant. The two readings were found to be within 2% of each other. We documented that 3 pumps were operating at this time to maintain a discharge pressure setpoint of 105 psi. Our next step was to go to the individual buildings and take our flow readings and compare them to the installed flow meters if available. It was found that almost all the flow stations were reading close to the flows that were measured by our instrument. A flow diagram and the comparison of our actual readings versus the displayed flow readings can be found in the report. We measured the main flow from the plant at 3 times as the outside air temperature rose to see the impact on the chilled water flows. The pumps speed increased from 77% to 80% throughout the course of the day and the flow increased from 8,045 gpm to 8,475 gpm (5%). The total flow from all the different locations is within 1% of the total flow, making it highly unlikely that any other bypasses in the main piping system exist.

While performing our audit of the system we noted that during the project that converted the buildings from a secondary pumping system to part of the primary system, there are a multitude of normally closed valves and check valves that were installed to by pass the building pumps. Each of these valves is a potential location for supply water to bypass the system and short cycle into the return. The valves appear to be in the proper position but it is possible that some of them may be passing small amounts of water, which can equal large amounts of water if a majority of the valves are leaking. There is no way to measure the leakage at each valve to determine if water is passing through or not. The only way to quantify any leakage in our opinion would be to measure the main flow into the building and then measure the flow leaving the mechanical room going to the units, and compare these readings. This would tell you if water was not making it out to the system but it would not necessarily pinpoint which of the valves is leaking.

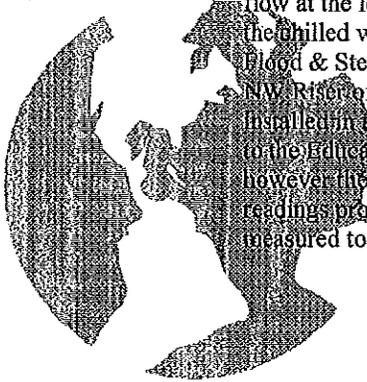
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NEW CUMBERLAND, PA 17070
717.232.0529
717.232.1797-fax

FLOOD & STERLING, INC.

Capitol Complex – Chilled Water Flow Audit

Secondary Readings Audit Notes

Flood & Sterling made a return visit to the Capitol complex to record the flow, pressure, and temperature readings at the buildings connected to the Central Chiller Plant. The readings were taken with 3 pumps operating at 77% speed, and maintaining a discharge pressure of 100 psi at the plant. The supply and return pressure and temperature were taken at each building where ports were installed. We also recorded the temperatures that were being measured by the BAS and the pressure readings of the gauges at the different locations when present. Flood & Sterling also re-measured the flow at the locations and compared to the flow stations where applicable. The location numbers on the chilled water summary page correspond with the numbers on the chilled water flow diagram. Flood & Sterling was unable to obtain pressure, temperature, and flow readings to the Senate Fitout, NW Riser of the East Addition, and S Riser of the East Addition. There were no necessary ports installed in the piping, or access to a suitable location in utilize the ultrasonic flow meter. The flow to the Education, and Forum building seem low for the size of the pipe going to the building, however the pipe reduces from 12" to 4" upon entering the building. We are confident that the readings provided for this building are accurate since on both occasions roughly the same flow was measured to the building.



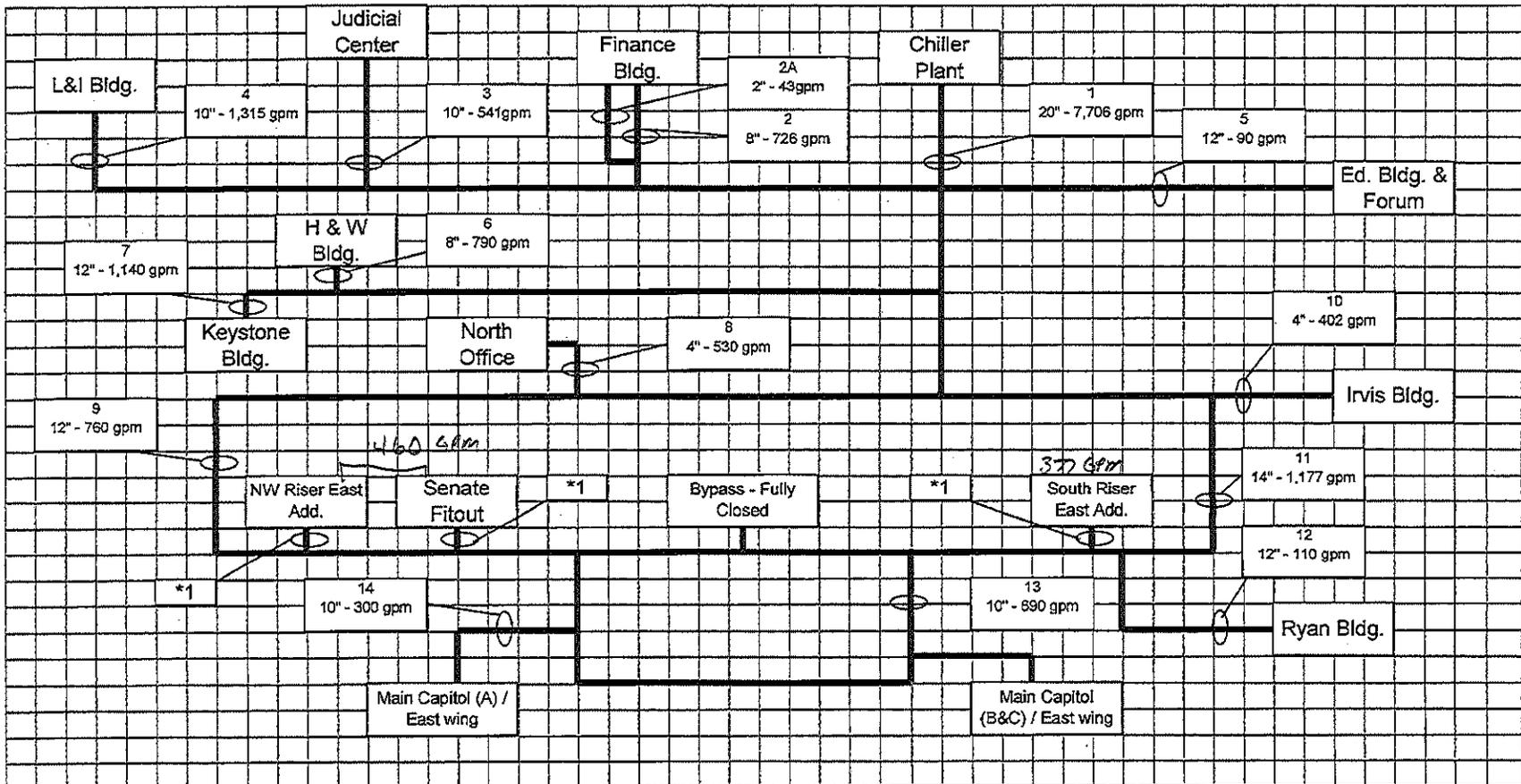
Balancing Report Table of Contents

<u>ITEM</u>	<u>SHEET #'s</u>
Chilled Water Flow Diagram	1
Second Chilled Water Flow Readings	2-3
Initial Chilled Water Flow Readings	4

FLOOD & STERLING, INC.
DATA SHEET

PROJECT: Capitol Complex - Chilled Water Audit
SYSTEM : Chilled Water
AREA : _____

DATE: 11/06/15



REMARKS: Flows shown are from readings during our second visit 8/11/15.

*1 - No ports available for pressure/temperature readings, no location for accurate ultrasonic flow readings



FLOOD & STERLING, INC.
CHILLED WATER SUMMARY

PROJECT: Capitol Complex
SYSTEM: Chilled Water

DATE: 11/06/15

Building Name	Location	Measured Flow	Flow Station		Entering Water Temp	Leaving Water Temp		Supply Pressure	Return Pressure	
Central Plant	1	7,706	7,591	F&S	42.6	55.1	F&S	109.6	73.6	
				BAS	42.0	54.0	BAS	110.0	70.5	
Finance	2	726	722	F&S	43.1	53.5	F&S	109.6	74.5	
				BAS	42.0	51.0	BAS	106.0	75.0	
	2A	43	~	F&S	42.6	55.0	F&S	NP	NP	
				BAS	~	~	Gauge	NG	NG	
JDC	3	541	590	F&S	42.5	52.3	F&S	105.5	103.6	
				BAS	42.0	52.0	Gauge	110.0	100.0	*1
L & I	4	1,315	1,221	F&S	43.8	52.4	F&S	100.9	84.7	
				BAS	44.0	52.0	Gauge	108.0	84.0	
Ed. & Forum	5	90	~	F&S	43.2	48.0	F&S	105.0	73.8	
				BAS	43.0	47.0	Gauge	NG	NG	
H & W	6	790	828	F&S	42.9	54.0	F&S	98.6	73.6	
				BAS	43.0	53.0	Gauge	105.0	75.0	
Keystone	7	1,140	1,360	F&S	42.1	53.2	F&S	99.0	73.4	
				BAS	39.0	57.5	BAS	96.0	~	
							Gauge	110.0	73.0	
North Office	8	530	528	F&S	43.0	52.4	F&S	100.7	69.1	
				BAS	46.0	52.0	Gauge	100.0	NG	
East Add	9	760	~	F&S	42.7	54.0	F&S	NP	NP	
				BAS	~	~	Gauge	NG	NG	
Irvis	10	402	380	F&S	42.9	53.7	F&S	101.3	64.3	
				BAS	42.0	55.0	Gauge	100.0	NG	
East Add	11	1,177	~	F&S	42.8	56.1	F&S	NP	NP	
				BAS	~	~	Gauge	NG	NG	

REMARKS: NG = No Gauge NP= No Ports

*1 - Gauge only goes to 100 psi

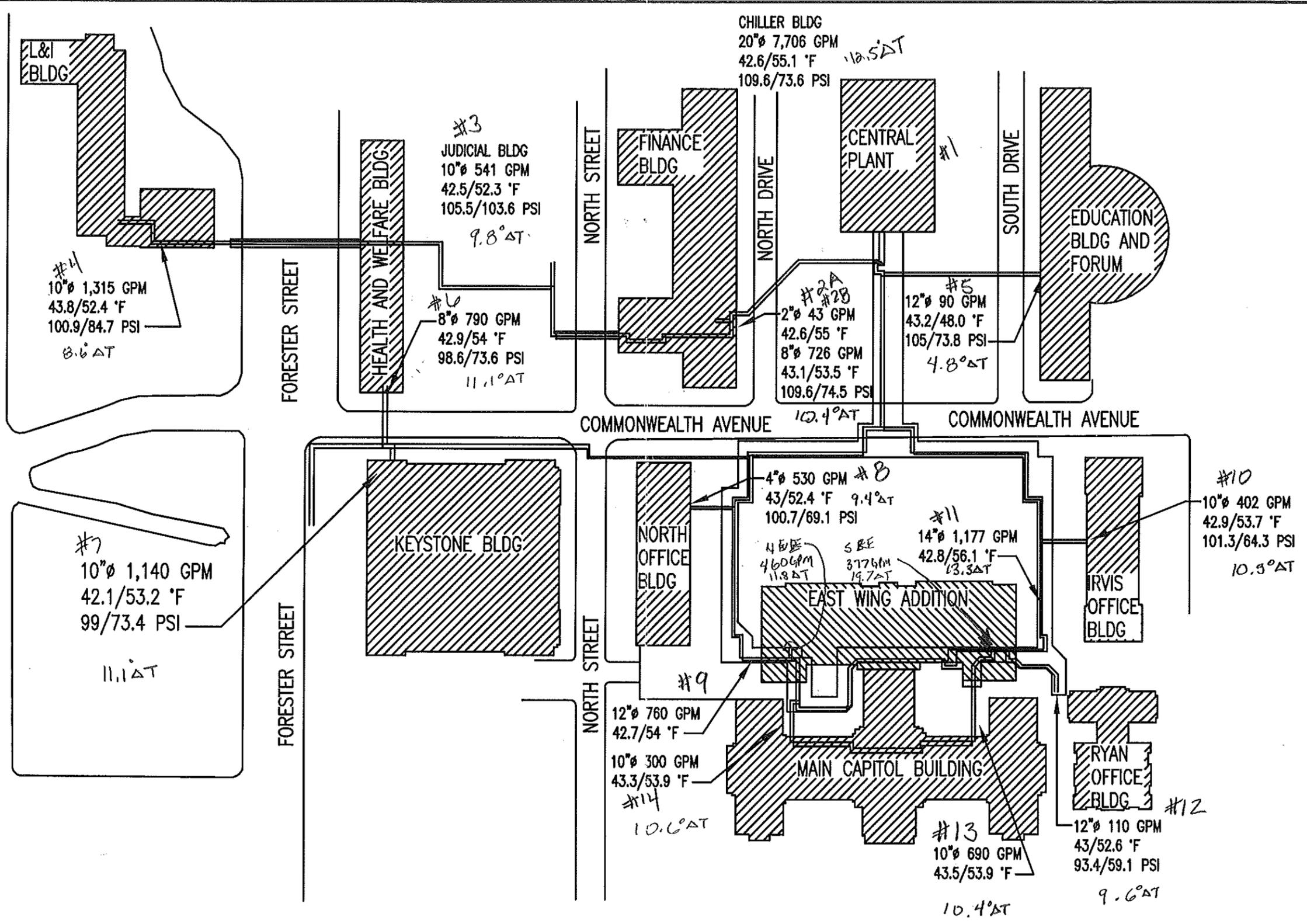
These readings from second visit 8/11/15.



CAPITOL COMPLEX CHILLED WATER STUDY

PROJECT NO:	77066-00
ISSUE DATE:	12/01/2015
ISSUED FOR:	REPORT
SHEET REF:	
CHECKED BY:	BWO
<small>ISSUE WITH IT TO RECEIVE GENERAL INFORMATION, DESIGN AND STATE OF WORK AND IS PART OF CONTRACT. NOTHING SHALL BE SCHEDULED.</small>	
<small>© Buchart Horn, Inc.</small>	
<small>DWG TITLE</small>	

COMPLEX CHILLED WATER DATA



1/16/2015 10:48 AM C:\Users\johnd\OneDrive\Documents\77066-00\77066-00.dwg

SECTION
LENGTH
(IN.)
5
5
7
7
11

TO SUIT

TAIL

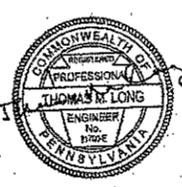
CONTROL VALVE SCHEDULE

BUILDING	LOCATION	AHU TAG	SERVICE	TYPE	LINE SIZE	Cv	DESIGN VALVE PD	MAX VALVE PD	SHUTOFF DIFF. PRESS.	REFERENCE NOTES	COMMENTS	
H & W	PH MER	AHU-1	CHW	2-WAY	4"	NOTES 1&2	5 PSI	20 PSI	60 PSID	NOTES 1&2	PROVIDE NEW TWO-WAY VALVE	
	PH MER	AHU-2			4"	NOTES 1&2	5 PSI	20 PSI	60 PSID	NOTES 1&2	PROVIDE NEW TWO-WAY VALVE	
	PH MER	AHU-3			4"	NOTES 1&2	5 PSI	20 PSI	60 PSID	NOTES 1&2	PROVIDE NEW TWO-WAY VALVE	
	PH MER	AHU-4			4"	NOTES 1&2	5 PSI	20 PSI	60 PSID	NOTES 1&2	PROVIDE NEW TWO-WAY VALVE	
L & I	B29	P&F H/X			3"	NOTES 1&2	5 PSI	20 PSI	60 PSID	NOTES 1,2&5	PROVIDE NEW TWO-WAY VALVE	
	B29	AHU			3"	NOTES 1&2	5 PSI	20 PSI	60 PSID	NOTES 1,2&5	PROVIDE NEW TWO-WAY VALVE	
	BASEMENT ELECT ROOM	AHU			3"	NOTES 1&2	5 PSI	20 PSI	60 PSID	NOTES 1,2,3&5	PROVIDE NEW TWO-WAY VALVE	
	EB57	AHU-8			4"	NOTES 1&2	5 PSI	20 PSI	60 PSID	NOTES 1,2&5	PROVIDE NEW TWO-WAY VALVE	
	EB57	AHU-9			3"	NOTES 1&2	5 PSI	20 PSI	60 PSID	NOTES 1,2&5	PROVIDE NEW TWO-WAY VALVE	
	MECH FLR	AHU-10			3"	NOTES 1&2	5 PSI	20 PSI	60 PSID	NOTES 1,2&5	PROVIDE NEW TWO-WAY VALVE	
	MECH FLR	AHU-11			3"	NOTES 1&2	5 PSI	20 PSI	60 PSID	NOTES 1,2&5	PROVIDE NEW TWO-WAY VALVE	
ED/FORUM	STAGE EOPT ROOM	AHU-1			2-1/2"	NOTES 1&2	5 PSI	60 PSI	60 PSID	NOTES 1&2	PROVIDE NEW TWO-WAY VALVE	
	109	AHU-3			3"	NOTES 1&2	5 PSI	60 PSI	60 PSID	NOTES 1&2	PROVIDE NEW TWO-WAY VALVE	
	DRESSING RM	CEILING AHU			1-1/2"	NOTES 1&2	5 PSI	60 PSI	60 PSID	NOTES 1,2&3	PROVIDE NEW TWO-WAY VALVE	
	DRESSING RM	CEILING AHU			1-1/2"	NOTES 1&2	5 PSI	60 PSI	60 PSID	NOTES 1,2&3	PROVIDE NEW TWO-WAY VALVE	
	DRESSING RM	CEILING AHU			1-1/2"	NOTES 1&2	5 PSI	60 PSI	60 PSID	NOTES 1,2&3	PROVIDE NEW TWO-WAY VALVE	
	DRESSING RM	CEILING AHU			1-1/2"	NOTES 1&2	5 PSI	60 PSI	60 PSID	NOTES 1,2&3	PROVIDE NEW TWO-WAY VALVE	
	AUDITORIUM	HVAC-3			3" VF	NOTES 1&2	5 PSI	60 PSI	60 PSID	NOTES 1,2&3	PROVIDE NEW TWO-WAY VALVE	
	AUDITORIUM	HVAC-3			3" VF	NOTES 1&2	5 PSI	60 PSI	60 PSID	NOTES 1,2&3	PROVIDE NEW TWO-WAY VALVE	
	AUDITORIUM	HVAC-3			3" VF	NOTES 1&2	5 PSI	60 PSI	60 PSID	NOTES 1,2&3	PROVIDE NEW TWO-WAY VALVE	
	AUDITORIUM	HVAC-3			3" VF	NOTES 1&2	5 PSI	60 PSI	60 PSID	NOTES 1,2&3	PROVIDE NEW TWO-WAY VALVE	
	NORTH OFFICE	B09	AC-1			6"	NOTES 1&2	5 PSI	50 PSI	60 PSID	NOTES 1,2&4	PROVIDE NEW TWO-WAY VALVE
		B09	AC-2			6"	NOTES 1&2	5 PSI	50 PSI	60 PSID	NOTES 1,2&4	PROVIDE NEW TWO-WAY VALVE
B09		FCUs			8"	367	5 PSI	50 PSI	60 PSID	NOTE 4	PROVIDE NEW TWO-WAY VALVE	
IRVMS OFFICE	B01	AC-1			6"	NOTES 1&2	5 PSI	50 PSI	60 PSID	NOTES 1,2&4	PROVIDE NEW TWO-WAY VALVE	
	B01	AC-2			6"	NOTES 1&2	5 PSI	50 PSI	60 PSID	NOTES 1,2&4	PROVIDE NEW TWO-WAY VALVE	
	B36	AC-1			2"	155	5 PSI	50 PSI	60 PSID	NOTE 4	PROVIDE NEW TWO-WAY VALVE	
	B36	AC-2			2"	155	5 PSI	50 PSI	60 PSID	NOTE 4	PROVIDE NEW TWO-WAY VALVE	
	B31	AC-3			2" VF	NOTES 1&2	5 PSI	50 PSI	60 PSID	NOTES 1,2,3&4	PROVIDE NEW TWO-WAY VALVE	
	B37	AC-4			2" VF	NOTES 1&2	5 PSI	50 PSI	60 PSID	NOTES 1,2,3&4	PROVIDE NEW TWO-WAY VALVE	
	B36	AC-5			2" VF	NOTES 1&2	5 PSI	50 PSI	60 PSID	NOTES 1,2,3&4	PROVIDE NEW TWO-WAY VALVE	
	VF	AC-6			2" VF	NOTES 1&2	5 PSI	50 PSI	60 PSID	NOTES 1,2,3&4	PROVIDE NEW TWO-WAY VALVE	
	CS2	AC-7			2" VF	NOTES 1&2	5 PSI	50 PSI	60 PSID	NOTES 1,2,3&4	PROVIDE NEW TWO-WAY VALVE	
	B01	FCUs			2-1/2"	255	5 PSI	60 PSI	60 PSID	NOTE 4	PROVIDE NEW TWO-WAY VALVE	
RYAN BLDG	PUMP ROOM	AHU-1			1"	9.4	5 PSI	30 PSID	60 PSID		PROVIDE NEW TWO-WAY VALVE	
	.068	AHU-2			1-1/4"	14.0	5 PSI	30 PSID	60 PSID		PROVIDE NEW TWO-WAY VALVE	
	VF	AHU-3			1-1/4"	14.0	5 PSI	30 PSID	60 PSID		PROVIDE NEW TWO-WAY VALVE	
	VF	AHU-4			1-1/4"	10.6	5 PSI	30 PSID	60 PSID		PROVIDE NEW TWO-WAY VALVE	
	VF	AHU-5			1-1/4"	12.9	5 PSI	30 PSID	60 PSID		PROVIDE NEW TWO-WAY VALVE	
	VF	AHU-6			2"	29.5	5 PSI	30 PSID	60 PSID		PROVIDE NEW TWO-WAY VALVE	
	VF	AHU-7			1"	8.7	5 PSI	30 PSID	60 PSID		PROVIDE NEW TWO-WAY VALVE	
	VF	AHU-8			1-1/4"	15.2	5 PSI	30 PSID	60 PSID		PROVIDE NEW TWO-WAY VALVE	
EAST ADD.	RM 99	AHU-1			VF	124	5 PSI	40 PSI	60 PSID		PROVIDE NEW TWO-WAY VALVE	
	RM 87	AHU-2			VF	124	5 PSI	40 PSI	60 PSID		PROVIDE NEW TWO-WAY VALVE	
	RM 29	AHU-3			VF	124	5 PSI	40 PSI	60 PSID		PROVIDE NEW TWO-WAY VALVE	
	RM 120	AHU-4			VF	124	5 PSI	40 PSI	60 PSID		PROVIDE NEW TWO-WAY VALVE	
	RM 150	AHU-5			VF	41	5 PSI	40 PSI	60 PSID		PROVIDE NEW TWO-WAY VALVE	
	150 ROTUNDA	AHU-6			VF	41	5 PSI	40 PSI	60 PSID		PROVIDE NEW TWO-WAY VALVE	
	116 ATRIUM	AHU-7			VF	41	5 PSI	40 PSI	60 PSID		PROVIDE NEW TWO-WAY VALVE	
	ELEC SHOP	AHU-8			VF	41	5 PSI	40 PSI	60 PSID		PROVIDE NEW TWO-WAY VALVE	
	CAP POLICE RM 70	AHU-9			VF	25	5 PSI	40 PSI	60 PSID		PROVIDE NEW TWO-WAY VALVE	
	PLUMBERS SHOP	AHU-10			VF	14	5 PSI	40 PSI	60 PSID		PROVIDE NEW TWO-WAY VALVE	
	DOCK FRONT SHOP	AHU-11			VF	14	5 PSI	40 PSI	60 PSID		PROVIDE NEW TWO-WAY VALVE	
	PLUMBERS SHOP	AHU-12			VF	14	5 PSI	40 PSI	60 PSID		PROVIDE NEW TWO-WAY VALVE	
	IMCS	AHU-13			VF	25	5 PSI	40 PSI	60 PSID		PROVIDE NEW TWO-WAY VALVE	
	RM 87	AHU-14			VF	124	5 PSI	40 PSI	60 PSID		PROVIDE NEW TWO-WAY VALVE	
	RM 4	AHU-15			VF	25	5 PSI	40 PSI	60 PSID		PROVIDE NEW TWO-WAY VALVE	
MAIN CAPITOL	STORAGE	AHU-16,17,18			VF	25	5 PSI	40 PSI	60 PSID	NOTE 4	PROVIDE NEW TWO-WAY VALVE	
	INTFACE A	AHU			8"	289	5 PSI	40 PSI	60 PSID		MODIFY/REPLACE EXIST VALVE	
	INTFACE B	AHU			8"	343	5 PSI	40 PSI	60 PSID		MODIFY/REPLACE EXIST VALVE	
	INTFACE C	AHU			8"	289	5 PSI	40 PSI	60 PSID		MODIFY/REPLACE EXIST VALVE	

* ACTUAL CONTROL VALVE SIZE LISTED, NOT LINE SIZE.

CONTROL VALVE SCHEDULE NOTES:

- ALL NEW CONTROL VALVES TO BE MINIMUM ONE SIZE SMALLER THAN LINE SIZE UNLESS OTHERWISE NOTED.
- CONTRACTOR TO VERIFY COIL DESIGN FLOW AND VERIFY CV FOR 5 PSIG CONTROL VALVE DESIGN PRESSURE DROP WITH RANGEABILITY UP TO MAX VALVE PRESSURE DROP LISTED.
- VERIFY LINE SIZE.
- DO NOT IMPLEMENT LEAVING AIR TEMPERATURE CONTROL (SEE DETAIL 9, THIS DRAWING) FOR CONTROL OF THIS CONTROL VALVE. CONTROL VALVE TO THROTTLE FLOW BASED ON LOCAL DIFFERENTIAL PRESSURE BETWEEN SUPPLY AND RETURN LINES.
- AIR HANDLING UNIT AND CONTROL VALVE CONTROL IN LABOR & INDUSTRY BUILDING BY AUTOMATED LOGIC.

DESCRIPTION	DESCRIPTION	
AS BUILT REVISIONS		
SUBMITTED	ARCHITECT (ENGINEER)	
SUBMITTED	ENGINEER (ARCHITECT)	
REVIEWED BY DEPARTMENT OF GENERAL SERVICES		
 		
 GANNETT FLEMING INC. 207 SENATE AVENUE CAMP HILL, PA 17011		
WMGroup WM Group Engineers, P.C. 370 Seventh Avenue, Suite 701 New York, New York 10001		
COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF GENERAL SERVICES HARRISBURG, PENNSYLVANIA		
PROJECT No. D.G.S. 948-37 PHASE 6		
EXPANSION OF CENTRAL AIR CONDITIONING SYSTEM TO MAIN CAPITOL BUILDING HARRISBURG, DAUPHIN COUNTY, PENNSYLVANIA		
DETAILS AND SCHEDULES		
DRAWN BY	DATE	DRAWING No.
CT	JAN 25, 2006	M-16
CHECK BY	SCALE	
	NONE	

ISSUED FOR BID
JANUARY 25, 2006