

Over and Above Estimate

Region: 5

Location: MD002

CSS #: 15107

Maximo Work Order No.: 5993

Asset #: NA

Date: 2/8/2019

Original Description:

need to have the DDC, see if the server room is on the DDC system

Repairs Needed:

Labor, Materials, and Software Packages included in Phase I of approach to bring Building Automation up to proper functionality. This will include software upgrades to Niagara 4. Please see provided proposal with additional detail.

RS Means Line Buildup and Labor Summary (Data Version 2017, Q4):

Quantity	Line Item Number	Description	Labor Hours	Labor Rate/Hr	Materials	Equipment	Total
1	NA	Hardware Materials	--	--	\$1,195.00	--	\$1,195.00
1	NA	Software Materials	--	--	\$6,591.00	--	\$6,591.00
--	NA	Labor	139	\$134.00	--	--	\$18,614.00
--	NA	Sales Tax	--	--	--	--	\$1,644.00
--	NA	CMI Coordination and Site/Task Oversight	15	\$80.00	--	--	\$1,200.00

Estimate Summary:

Labor Hours	Labor Cost	Material Cost	Sales Tax	Total Cost	CE Factor	Total Estimate
154	\$19,814.00	\$7,786.00	\$1,644.00	\$29,244.00	102%	\$29,828.88



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TUSTIN ENERGY SOLUTIONS

PROJECT PROPOSAL

Proposal Date:

February 8, 2019

Proposal Number:

TES18298

Prepared for:

Adam Colopy
Tidewater, Inc.
3761 Attucks Drive

Powell OH 43065

TOMORROW'S SOLUTIONS for TODAY'S BUILDINGS

Prepared by:

Dominic Bostardi
610.539.8200

CORPORATE HEADQUARTERS:

2555 INDUSTRY LANE ~ NORRISTOWN, PA 19403 ~ 610.539.8200 ~ 610.539.2890 fax

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Summary

We are providing a proposal for **USAFRC Baltimore**. Our proposal is based upon the following documentation:

Site Visit:	Complete	Date:	09-20-18
Mechanical Documents:	NA	Date:	
Addendum Received:	NA	Date:	

During our meeting(s), we discussed the following goals:

Tustin Energy Solutions, LLC is proposing a two-phase approach to repair the existing Building Automation System.

A. Phase 1

i. Web-Server Maintenance

- Backup battery replacement
- Software upgrades

ii. Graphics

- Correct current function of graphics
- Provide override capabilities
- Add diagnostic information
- Correct value bindings where missing

iii. Scheduling

- Apply correct occupancy schedules to building and appropriate equipment

iv. Sequence of Operation

- Review all equipment sequence of operation
- Provide recommendations upon completion

v. Deficiency Report

- Provide detailed report of all automation and impacted mechanical systems
- Sample report available upon request

vi. Energy Analysis (included at no additional cost)

- During Phase I
 - Evaluate electrical and gas usage
 - Provide baseline report of systems
 - Quantify Phase I impacts
 - Provide opportunities of operational savings outside of Phase I corrections

B. Phase 2

i. Repairs

- Address repairs as outline in Phase I report (TBD).
- Address sequence of operation changes

Please see the following pages for clarification.

This proposal assumes that if granted, all parties will work together to develop a mutually agreeable construction schedule. This proposal is also based on information provided at time of bid proposal. Any revisions required at a later date is subject to price review at that time. We reserve the right to withdraw this proposal if not accepted within 60 days.

Thank you for this opportunity.

Dominic Bostardi

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USAFRC PHASE 1

Tustin Energy Solutions will provide the following to accomplish the documented goals:

1. Front End Modifications For The Following Existing HVAC Equipment:

- (3) Air handling units
- (1) Heat recovery unit
- (27) VAV boxes
- (1) Air-cooled chiller
- (2) Boilers
- (6) Unit heaters
- (8) Exhaust fans

2. Provide The Following New Software For Existing BAS Hardware:

- (6) JACE batteries
- (6) JACE software revision upgrades [v3.7.10X to latest v3.8]
- (1) JACE [AHU3] software upgrade to N4; graphics reside on this JACE
- Complete all missing and/or incomplete graphics
- Complete all missing value bindings
- Add missing hyperlinks onto existing floorplans
- Correct all incorrect scheduling and history recording

3. Standard Programming

- Web-based access (based upon owner approval)
- Trending reports (based upon owner's history requirements)
- Critical / Non-critical alarming (based upon owner's requirements)
- Provide setpoint screen listing zone temperatures

4. Owner Responsibilities

- Internal network connection to the world wide web utilizing a static IP address
- Signed proposal or purchase order

5. Work Hours

- Monday through Friday 7am to 3:30pm non-holidays

6. Warranty

- One year warranty on all new items furnished and installed by Tustin Energy Solutions

Exclusions - See the attached pages for additional exclusions

1. Premium Time
2. Permits or stamped engineered documents
3. Variable frequency drives or motor starters
4. All work associated with combination smoke/fire dampers
5. Isolation or balancing valves for mechanical piping systems
6. Air / water balancing
7. All line voltage power wiring including all control panels - by others
8. kW meters
9. Internal network connection to the world wide web
10. Asbestos abatement
11. Repair or replacement of any items not specifically noted above
12. Any/all controls not included above
13. Third party commissioning
14. Mechanical and/or plumbing work of any kind

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PROJECT AGREEMENT FOR BUILDING ENVIRONMENTAL SYSTEMS

Proposal Date	Proposal Number	Agreement No.
February 8, 2019	TES18298	

BY and BETWEEN:

Tustin Energy Solutions		
2555 Industry Lane		
Norristown	PA	19403

AND

Tidewater, Inc.		
3761 Attucks Drive		
Powell	OH	43065

hereinafter CONTRACTOR

hereinafter CUSTOMER

SERVICES WILL BE PROVIDED AT THE FOLLOWING LOCATION(S)

USAFRC
700 East Ordinance Road, Baltimore, MD 21226

As a condition of performance, payments are to be made on a progress basis. Invoice payment must be made within (30) days of receipt. Any alteration or deviation from the above proposal involving extra cost of material or labor will become an extra charge over the sum stated above. This proposal will become a binding Agreement only after acceptance by Customer and approved by an officer of Contractor as evidenced by their signatures below. This agreement sets forth all of the terms and conditions binding upon the parties hereto; and no person has authority to make any claim, representation, promise or condition on behalf of Contractor which is not expressed herein.

Phase 1 Proposal:	\$27,984.00	[6% Sales Tax Included]
Labor:	\$18,614.00	[Hourly Labor Rate \$134.00]
Hardware Materials:	\$1,195.00	
Software Materials:	\$6,591.00	

RELEASE OF THIS CONFIDENTIAL INFORMATION TO OTHERS IS FORBIDDEN AND IS PUNISHABLE BY LAW

Purchase Order #:

CONTRACTOR

Signature (Sales Representative) Dominic Bostardi

Approved for Contractor:

Signature

Name & Title

Date

CUSTOMER

Signature (Authorized Representative)

Name (Print/Type)

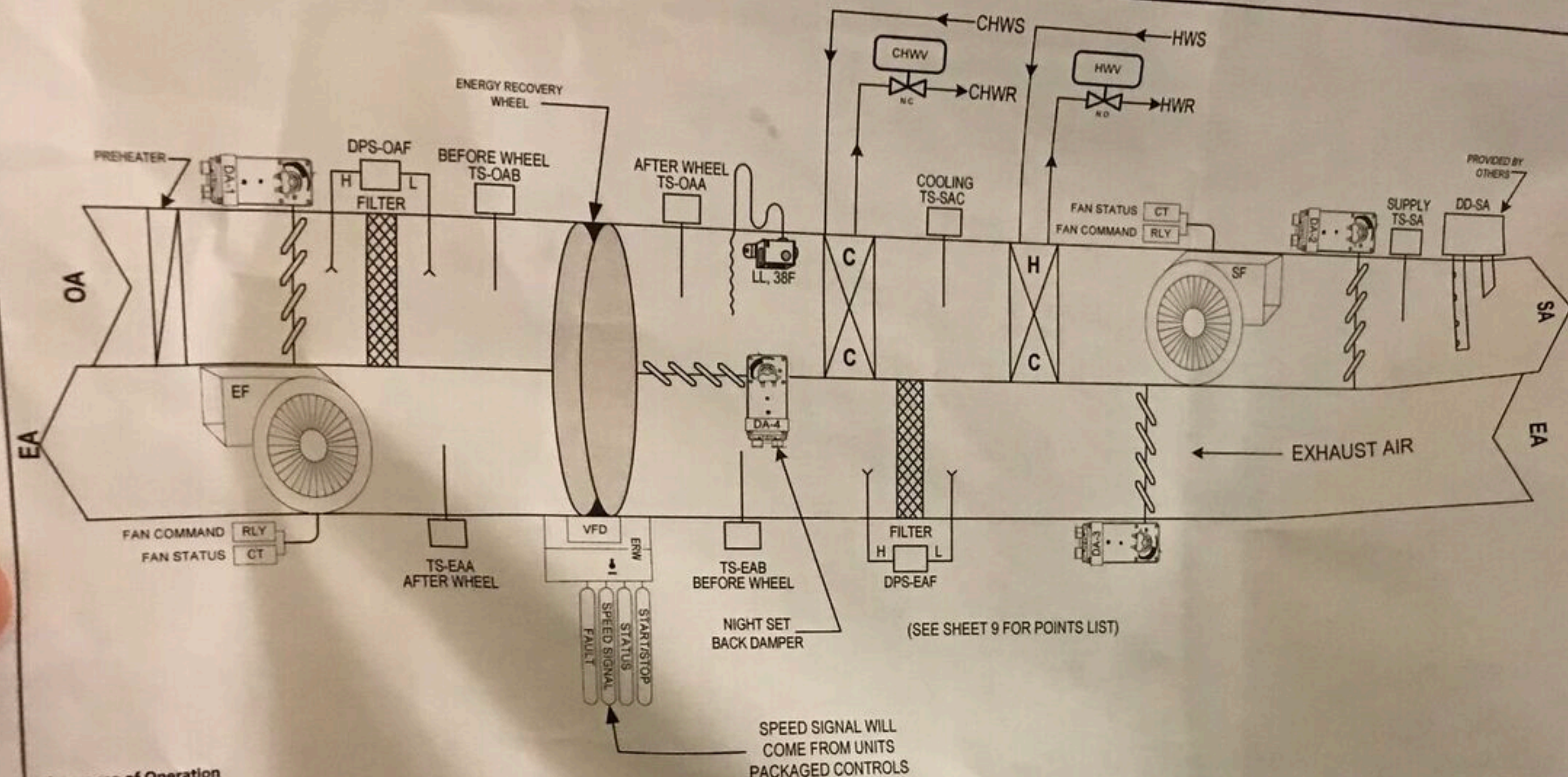
Title

Date

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PROJECT AGREEMENT TERMS AND CONDITIONS

1. Customer shall permit Contractor free and timely access to areas and equipment, and allow Contractor to start and stop the equipment as necessary to perform required services. All planned work under this Agreement will be performed during the Contractor's normal working hours.
2. Contractor warrants that the workmanship hereunder shall be free from defects for thirty (30) days from date of installation. If any replacement part or item of equipment proves defective, Contractor will extend to Customer the benefits of any warranty Contractor has received from the manufacturer. Removal and reinstallation of any equipment or materials repaired or replaced under a manufacturer's warranty will be at Customer's expense and at the rates in effect.
3. Customer will promptly pay invoices within thirty (30) days of receipt. Should a payment become thirty (30) days or more delinquent, Contractor may stop all work under this Agreement without notice and/or cancel this Agreement amount shall become due and payable immediately upon demand.
4. Customer shall be responsible for all taxes applicable to the services and/or materials hereunder.
5. Any alteration to, or deviation from, this Agreement involving extra work, cost of materials or labor will become an extra charge (fixed price amount to be negotiated on a time-and-material basis at Contractor's rates then in effect) over the sum stated in this Agreement.
6. In the event Contractor must commence legal action in order to recover any amount payable or owed to Contractor under this Agreement, Customer shall pay Contractor all court costs and attorneys' fees incurred by Contractor.
7. Any legal action against the Contractor relating to this Agreement, or the breach thereof, shall be commenced within one (1) year from the date of the work.
8. Contractor shall not be liable for any delay, loss, damage, or detention caused by unavailability of machinery, equipment or materials, delay of carriers, strikes, including those by Contractor's employees, lockouts' civil or military authority, priority regulations, insurrection or riot, action of the elements, forces of nature, or by any cause beyond its control.
9. To the fullest extent permitted by law, Customer shall indemnify and hold harmless Contractor, its agent and employees from and against all claims, damages, losses, and expenses (including but not limited to attorneys' fees) arising out of or resulting from the performance of work hereunder, provided that such claim, damage, loss or expense is caused in whole or in part by an active or passive act or omission of Customer, anyone directly or indirectly employed by Customer, or anyone for whose acts Customer may be liable, regardless of whether it is caused in part by the negligence of Contractor.
10. Customer shall make available to Contractor's personal all pertinent Material Safety Data Sheets (MSDS) pursuant to OSHA's Hazard Communication Standard Regulations.
11. Contractor's obligation under this proposal and any subsequent contract does not include the identification, abatement or removal of asbestos or any other toxic or hazardous substances, hazardous wastes or hazardous materials. In the event such substances, wastes and materials are encountered, Contractor's sole obligation will be to notify the Owner of their existence. Contractor shall have the right thereafter to suspend its work until such substances, wastes or materials and the resultant hazards are removed. The time for completion of the work shall be extended to the extent caused by the suspension and the contract price equitably adjusted.
12. UNDER NO CIRCUMSTANCES, WHETHER ARISING IN CONTRACT, TORT (INCLUDING NEGLIGENCE), EQUITY OR OTHERWISE, WILL CONTRACTOR BE RESPONSIBLE FOR LOSS OF USE, LOSS OF PROFIT, INCREASED OPERATING OR MAINTENANCE EXPENSES, CLAIMS OF CUSTOMER'S TENANTS OR CLIENTS, OR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES.



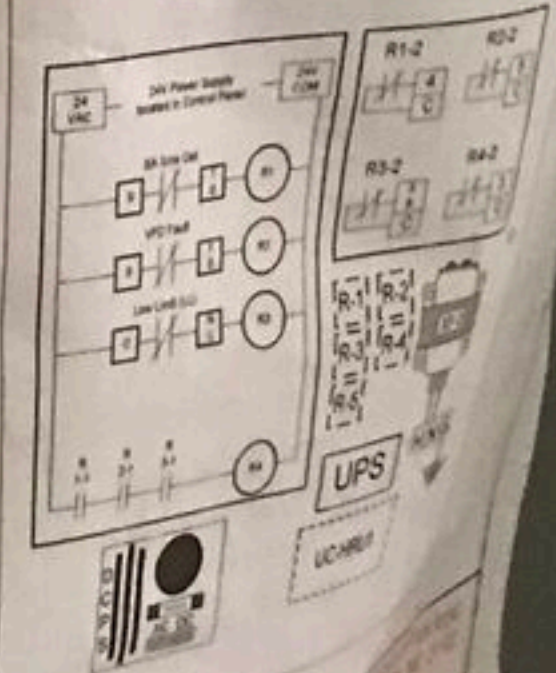
BILL OF MATERIALS			
DEVICE	QTY	MANUFACTURER-DESCRIPTION	NOTES
UC-AHU	1	HONEYWELL PROCESSOR	10-34-H
IO-MODULE	1	HONEYWELL 256MB MEMORY UPGRD	10-34-H
TS-OAB, OAA, SA	1	HONEYWELL INPUT/OUTPUT MOD	10-34-H
TS-EAB, EAA	3	ACI DUCT SENSOR	10-34-H
TS-SAC	2	ACI DUCT SENSOR	10-34-H
DPS-OAF, EAF	1	ACI AVERAGING SENSOR	10-34-H
LL	2	CLEVELAND CONTROLS DIFF PRESS SWITCH	10-34-H
CT-SF, EF	1	301 LOW LIMIT SWITCH, INC	10-34-H
VFD-STATUS	1	FUNCTIONAL DEVICES CURRENT SENSOR	10-34-H
DA-1(-4)	4	FUNCTIONAL DEVICES CURRENT SENSOR	10-34-H
DD-SA	1	BEILUNG DIRECT COUPLED ACTUATOR	10-34-H
HWV	1	HONEYWELL VALVE ASSEMBLY	10-34-H
CHWW	1	HONEYWELL VALVE ASSEMBLY	10-34-H
PANEL	1	HOFFMAN ENCLOSURE, 20"W x 26"H x 7"D	10-34-H
R-1(-6)	12	IDEC SINGLE POLE RELAY W/LED	10-34-H
-W-	12	IDEC RELAY SOCKET	10-34-H
UPS	2	APC 550VA UPS	10-34-H
XF-1	2	CORE TRANSFORMER 40VA WIRESET	10-34-H
XF-2	2	CORE TRANSFORMER 100VA WIRESET	10-34-H

Sequence of Operation

SYSTEMS: HRU-1

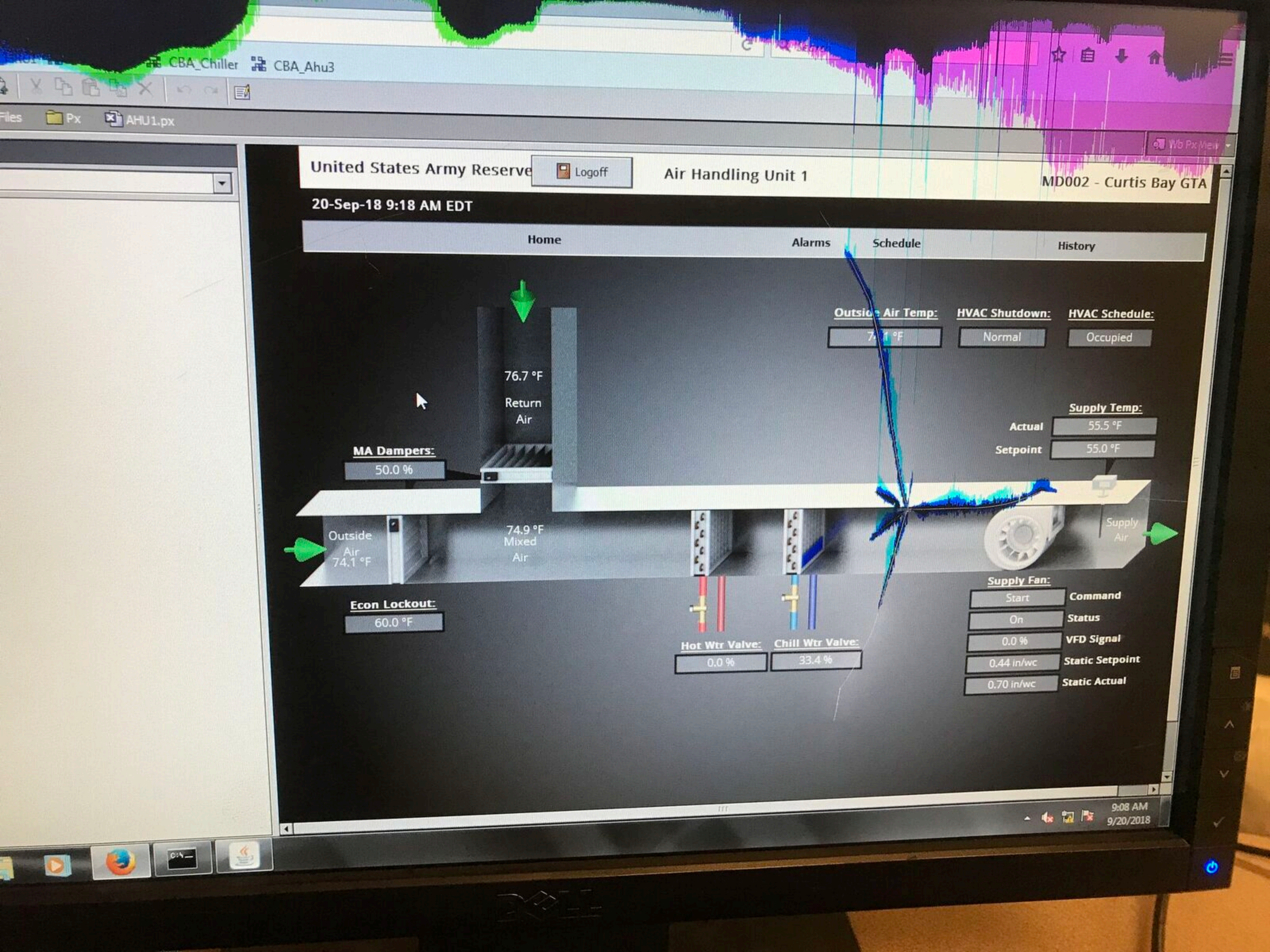
1. SYSTEM DESCRIPTION: THE CONSTANT VOLUME AIR HANDLING UNITS CONSIST OF A SUPPLY AND EXHAUST AIR SECTION, HEAT WHEEL, WITH SUPPLY AIR DAMPER, OUTDOOR AIR INTAKE DAMPER, EXHAUST AIR INTAKE DAMPER, AIR FILTERS, ELECTRIC PREHEATER, HOT WATER HEATING COIL, CHILLED WATER COOLING COIL, SUPPLY FAN, AND EXHAUST FAN.
2. OPERATION: THE HEAT RECOVERY UNIT HRU-1 SERVING THE TRAINING AREA OPERATES IN SUMMER COOLING, WINTER HEATING, NIGHT-HEATING AND SAFETY MODES.
3. OCCUPIED: THE OA, SA AND EA DAMPERS ARE OPENED. THE HEATING COIL VALVE AND COOLING COIL VALVE MODULATE IN SEQUENCE WITHOUT THE OVERLAP TO MAINTAIN THE SUPPLY AIR TEMPERATURE SET POINT OF 55 DEGREES F.
4. UNOCCUPIED: THE SUPPLY FAN STOPS, THE COOLING COIL VALVE CLOSES AND THE EA AND OA DAMPERS ARE CLOSED. IF THE SPACE TEMPERATURE IS LESS THAN 55 DEGREES F, THE SUPPLY FAN STARTS AND THE HEATING COIL VALVE MODULATES TO MAINTAIN THE UNOCCUPIED SUPPLY AIR SET POINT. IF THE SPACE AIR TEMPERATURE RISES ABOVE THE SET POINT, THE HEATING COIL VALVE CLOSES AND THE SUPPLY FAN STOPS.
5. SAFETY MODE: DISCHARGE HIGH STATIC CUTOUT, DUCT SMOKE DETECTORS IN SA DUCT AND FANS VFD FAULT ALARM SHALL DE-ENERGIZE THE SUPPLY FANS UPON ACTIVATION. THE SMOKE DETECTOR ACTIVATION SHALL SEND A SIGNAL TO THE FIRE ALARM PANEL. THE FIRE ALARM SYSTEM SHALL SHUTDOWN RESPECTIVE AHU UNIT UPON SMOKE DETECTION.
6. LOW TEMPERATURE DETECTION: TEMPERATURE SENSOR DOWN STREAM OF THE HEATING COIL SHALL DE-ENERGIZE THE UNIT UPON DETECTION OF AIR TEMPERATURE BELOW 38 DEGREES F (ADJ.).
7. CO2 CONTROL: HIGH OCCUPANCY CONCENTRATION AREAS SUCH AS CONFERENCE ROOM, AND LARGE OPEN SPACE AREAS SHALL BE PROVIDED WITH WALL MOUNTED CO2 DETECTORS. THE CONFERENCE ROOM CO2 DETECTOR SHALL MONITOR CO2 CONCENTRATION UPON INCREASE OF CO2 CONCENTRATION ABOVE THE CO2 SET POINT. THE SIGNAL FROM THE CO2 DETECTOR SHALL OVERRIDE THE VAV VOLUME DAMPER TEMPERATURE CONTROL. THE MULTIPLE ROOM AIR SUPPLY AND MAINTAIN THE CO2 CONCENTRATION BELOW THE CONCENTRATION SET POINT. UPON THE CO2 CONCENTRATION INCREASE ABOVE THE CO2 SET POINT BY A SINGLE DETECTOR, THE DDC CONTROLLER SHALL MODULATE OPEN THE ASSOCIATED VAV VOLUME CONTROL DAMPER TO INCREASE THE CO2 DETECTORS, ONE PER 5000SF OF FLOOR AREA, SHALL MONITOR THE CO2 CONCENTRATION IN LARGE OPEN AREAS. UPON THE CO2 CONCENTRATION INCREASE ABOVE THE CO2 SET POINT BY A SINGLE DETECTOR, THE DDC CONTROLLER SHALL MODULATE OPEN THE MINIMUM OA DAMPER AT THE ASSOCIATED AIR HANDLING UNIT TO MAINTAIN THE CO2 CONCENTRATION BELOW THE CONCENTRATION SET POINT.
8. THE DDC WILL INDICATE AN ALARM IF THE CONCENTRATION OF CO2 EXCEEDS THE MAXIMUM SET POINT (AMBIENT +400PPM; ADJ.). THE DDC WILL ALSO INDICATE AN ALARM IF THE OUTDOOR AIRFLOW DROPS BELOW 10 PERCENT OF THE MINIMUM VENTILATION REQUIREMENTS IN THE SCHEDULES. OUTDOOR AIRFLOW QUANTITY WILL BE CALCULATED FROM AIR TERMINAL BOX AIRFLOW MEASURES.

HRU CONTROL PANEL



HRU-1 CONTROLS

ARMY RESERVE CENTER
BALTIMORE, MD



CBA_Chiller CBA_Ahu3

Files Px AHU1.px

United States Army Reserve

Logoff

Air Handling Unit 1

MD002 - Curtis Bay GTA

20-Sep-18 9:18 AM EDT

Home

Alarms

Schedule

History

Outside Air Temp:
74.1 °F

HVAC Shutdown:
Normal

HVAC Schedule:
Occupied

76.7 °F
Return Air

MA Dampers:
50.0 %

Supply Temp:
Actual 55.5 °F
Setpoint 55.0 °F

Outside Air
74.1 °F

74.9 °F
Mixed Air

Econ Lockout:
60.0 °F

Hot Wtr Valve:
0.0 %

Chill Wtr Valve:
33.4 %

Supply Fan:
Start Command
On Status
0.0 % VFD Signal
0.44 in/wc Static Setpoint
0.70 in/wc Static Actual

9:08 AM
9/20/2018