



Chilled Water System Communication and Controls Replacement

Solicitation Number: CO-00090

Job No.: 14-7502

ADDENDUM 1

09/15/2016

To Respondent of Record:

This addendum, applicable to work referenced above, is an amendment to the bid proposal, plans and specifications and as such will be a part of and included in the Contract Documents. Acknowledge receipt of this addendum by entering the Addendum number and issue date on the space provided in submitted copies of the bid proposal.

RESPONSES TO QUESTIONS

1. **Q: I wanted to inquire about a bit more detail in reference to the above mentioned project. Is this project going to include any mechanical insulation needs for the chilled water piping itself? Or is it more of a job that pertains to the controls aspect of the system? If it does have any insulation, painting/coatings or scaffolding needs as any portion of the scope, our firm is very interested in participating and providing a bid for any of the mentioned scopes of work. Your time and consideration in this matter is appreciated.**

R: Painting is required as part of demolition to restore the walls to their original condition after patching. Insulation is only required where the new ultrasonic flow meter sensors will be installed. The means and methods in which the existing and proposed equipment will be accessed will be the responsibility of the contractor.

2. **Q: We are interested in buying the refrigerant that comes from the old chiller would this be the responsibility of the winner bidder, or can we buy this from you?**

R: Replacing or recharging the chiller is not part of this project's scope.

3. **Q: Project is missing plans 023-M1.3 and M5.1 along with special special provisions and specification 264100 for the Chilled Water System Communication and Controls Replacement.**

R: Sheet 023-M1.3 will not be used on the project and the Drawing List for sheet G1.0 will be updated to reflect this. Sheet M5.1 is included in the set as the first sheet of a second plan set on the project's website. The Special Provisions to the Technical Specifications will not be used on the project and the Table of Contents will be updated to reflect this. Specification 26 41 00 will not be used on the project and the Table of Contents, Specifications TOC, and specifications section 26 05 26, 3.4.C.5.e. will be updated to reflect this.

4. **Q: Is a commercial grade controller with redundancy acceptable for this project?**

R: There will be no exceptions to the manufacturer or models called out in the specifications.

5. **Q: The C819HG-4G-V-K9 (Section 2.3 A 1) is end of life in December and will be replaced IR809G-LTE-VZ-K9. Will procurement take place before December? Does SAWS want to use an end of life product?**

R: No, it is not SAWS' intent to use an EOL Cisco Cellular Router. The C819HG-4G-V-K9 will be replaced with the IR809G-LTE-VZ-K9.

6. **Q: Part# WMMG-7-27-5P (Section 2.3 B 2) is manufactured by Panorama. The spec states WPS Antennas who is simply a reseller.**
- R: SAWS does not recommend where the contractor should procure the parts and equipment, that is the responsibility of the contractor.
7. **Q: Signal strength may be a concern with this current design.**
- R: SAWS performed a signal strength test at all project sites prior to the finalization of the specifications and plans and achieved adequate results.
8. **Q: This antenna is designed to be mounted outdoors on a pole or wall. At the meeting, the engineer stated the antenna would be mounted on the enclosure.**
- R: Antenna to be field mounted to enclosure as shown in drawings.
9. **Q: 15' of cabling is excessive for this installation. Cabling should be as short as possible in order to reduce signal degradation.**
- R: Cabling to be as short as possible between radio and antenna. 15' does not have to be installed.
10. **Q: The spec calls for cutting of the end of the cable and re-terminating which will decrease signal strength. Panorama offers the same antenna without cabling allowing you to use the proper connectors and length which will improve signal.**
- R: Link for Panorama antenna provided has the same 15' (5 meters) cable length provided. Contractor to use shortest cable length and proper connections to equipment.
11. **Q: IE-2000-4TS-L1 (Section 2.10) is not a valid part number. Table 1 linked here shows all IE-2000 configurations. Can you please clarify?**
- R: Refer to <http://www.cisco.com/c/en/us/products/collateral/switches/industrial-ethernet-2000-series-switches/datasheet-c78-730729.html> for clarification.
12. **Q: There is no Smartnet called for on the IE-2000, but it was mentioned yesterday. Is it required?**
- R: Yes, 2 years, 8 hours per day, 5 days per week, and next business day (8x5xNBD) is required for all components.
13. **Q: Page IR-1, last sentence—Does this requirement apply to the Price Schedule alone?**
- R: Yes.
14. **Q: PP-1—Our company structure is neither a corporation nor a partnership. May we modify the top part of the Price Proposal to accurately reflect our status?**
- R: Yes, if it is necessary in order to properly reflect the company's legal name.
15. **Q: IR-3, g., third line—Are there words missing?**
- R: No. However, please reference item #1 Changes to the Specifications of this Addendum.
16. **Q: SIR-2, 2.b. Rockwell Automation Process Systems Integrator—Rockwell does not have a certification of "Process Systems Integrator." Should this be Rockwell Automation Solution Partner?**
- R: No.

17. **Q: SIR-3, d.—The first sentence limits the SAWS projects to those performed as prime contractor. Most of the scope of the Chilled Water project is the type of work generally performed by subcontractors on SAWS projects. Is it acceptable to include SAWS projects on which we were a subcontractor? If not, this evaluation factor will default to 8 points even though the experience obtained as a subcontractor is directly applicable to the Chilled Water project.**

R: Yes, SAWS will consider work performed as a sub-contractor. Please see item #2 Changes to the Specifications of this Addendum. However, to clarify, a neutral score of 8 points is not dependent on whether the work was performed as a prime contractor or subcontractor, but rather whether the experience was performed on a SAWS project or not.

18. **Q: SIR-6, F.7—Are we supposed to put page numbers on the Proposal Checklist, or is a separate Table of Contents acceptable?**

R: No. Page numbers should be provided on the Table of Contents and for each part of the Qualifications portion of the submittal.

19. **Workers Compensation Insurance, H., please define "each project site." We believe posting these notices at each meter location is unnecessary.**

R: Each site location as identified within the plans where work should be performed is considered a project site.

The Contractor will be required to post the notices at each project site. Since the contract allows for work to be performed at six (6) sites, there will need to be 6 separate notices. The Contractor may consider using mobile signs that can be relocated as project sites change.

20. **PC-1—Proposal Certification has 182 days for duration. 01 10 00-4. 1.5.A.2.c and d-says sites are completed within 6 months, then the 30 day test begins. Please clarify the project duration.**

R: PC-1 Price Proposal will be changed from 182 calendar days to 212 calendar days. Please reference item #3 and item #4 of Changes to the Specifications of this Addendum.

21. **Q: GC-21, 5.3.9—Are pre and post construction videos required?**

R: Yes.

22. **Q: GC-24, 5.7.1.7—Is Pollution Liability Coverage required? This coverage would typically be required for a construction project with significant civil work.**

R: No.

23. **Q: 01 91 00—This section requires a third-party commissioning agent. Is it acceptable to use a commissioning agent based outside the State of Texas?**

R: The specifications will be revised for the Owner, and not the Contractor, to be responsible for providing third party commissioning services. Please reference item #5 of Changes to the Specifications of this Addendum.

24. **Q: 01 91 00 1.8.B—The system integrator is required to supervise the 30 day Site Acceptance Test. How many hours per day will the system integrator be on-site?**

R: Please see 23 09 00 Industrial Process Automation System, section 3.5 30-DAY SITE ACCEPTANCE TEST for system integrator requirements.

25. **Q: Is an Engineering Workstation Computer required? If so what are the specifications?**

R: There is no Engineering Workstation Computer required.

26. **Q: If an Engineering Workstation is required, the specification will need to list 9528-EWSLICENE which includes Studio 5000, FactoryTalk View SE Studio, RSLinx Enterprise, and Emulation 5000.**
- R: Refer to response provided above on question 25.
27. **Q: 27 09 00 includes an APC SUA500PDR-H. What equipment requires this UPS?**
- R: There is one APC SUA500PDR-H UPS required in each BTU computer/flow processor cabinet as per the drawings.
28. **Q: 23 09 23 lists a Data Concentrator - Does this require a 1756-L71 processor, Modbus Communications Protocol Converter, and 1756-EN2T Ethernet IP Module?**
- R: Yes, a Rockwell ControlLogix 1756-L71 PLC processor is required to collect and process the data from each remote BTU computer/flow processor.
29. **Q: Is Calibration for all existing instrumentation at the Commerce Chiller Plant required as part of or prior to commissioning?**
- R: Calibration for existing instrumentations to the new PLCs is part of the scope and commissioning.
30. **Q: 23 09 00, 1.5.A.6.a.—Implementation of a PlantPax solution includes using the Rockwell PlantPax Process Object Library for PLC/HMI programming which is in keeping with SAWS standards. The software used to convert a PLC-5 program to ControlLogix maintains the ladder logic format of the PLC-5 program. Rockwell Automation does not provide a tool to convert ladder logic to function block as required to use the Process Object Library. Therefore, the convertor cannot be used to provide a PlantPax solution.**
- R: Refer to http://literature.rockwellautomation.com/idc/groups/literature/documents/rm/1756-rm085_-en-p.pdf for Rockwell information on ladder logic to function block conversion.
31. **Q: 27 09 00, 2.4.A.1—This section seems requires a redundant Historian. The Historian software is very expensive. Are two 10,000 Tag Historian Licenses, 9518-HSE10K, required?**
- R: Yes, the historian is redundant. Also, the Historian Tag licenses requirement is being reduced from 10,000 to 2,000 per server.
32. **Q: 27 09 00— Does SAWS have a standard Communications Module to replace the Basic Module on each chiller PLC?**
- R: No, SAWS does not currently have a standard Communications Module.
33. **Q: I-07.4—New Work Key Notes 4 and 5 are missing.**
- R: Please reference item #3 of Changes to the Plans of this Addendum.
34. **Q: I-07.2—New Work Key Notes 4 is missing.**
- R: Please reference item #2 of Changes to the Plans of this Addendum.
35. **Q: M0.0 Demolition Notes—Says, “All Extraneous items in the space or on the roof not applicable to the new work must be removed.” Please limit this to items that are part of the Chilled Water Metering System.**
- R: Please reference item #1 of Changes to the Plans of this Addendum.
36. **Q: Please provide the Controls Narrative for the Commerce Chilled Water Plant.**

R: The Chiller PLC Code and Aux Equipment PLC Code is included as attachments C & D starting on page 534 of 815 of the specifications. Spec section 23 09 00 – 1.5 A-6 will require the contractor to submit a description of the sequence of operations to SAWS and engineering for submittal review based on the interpreted code.

37. **Q: Please provide bit maps of the existing Johnson Controls graphics for the Commerce Chilled Water Plant. We need this information to determine the number of screens required for the control system.**

R: There are an approximate 20 screens required per PLC. See Attachment #1 for picture of a typical chiller PLCs located at the Commerce St. Plant.

38. **Q: Please provide the P&ID's for the Commerce Street Chiller Plant.**

R: We included all of the original drawings of the Chiller and Aux Equipment PLCs, including P&IDs, as attachment A & B starting on page 356 of 815 of the specifications.

39. **Q: The following questions concern discrepancies between the Summary of Work in Division 01 10 00 and Division 27 09 00, primarily about Rockwell Automation software. We need these requirements to be as clear as possible because of the impact on software cost.**

01 10 00, 1.4.B.1.h—requires one FactoryTalk Workstation. 27 09 00. 2.2 has “QTY 2.” How many workstations are required?

R: There is one existing operator workstation with a FactoryTalk SE client license. Adding a second operator workstation desktop, keyboard, mouse, 60” wall monitor, Microsoft OS, and FactoryTalk SE client license is required.

40. **Q: The following questions concern discrepancies between the Summary of Work in Division 01 10 00 and Division 27 09 00, primarily about Rockwell Automation software. We need these requirements to be as clear as possible because of the impact on software cost.**

01 10 00, 1.4.B.1.p and s—requires sufficient FactoryTalk View SE Server Display licenses to support additional displays for 7 new PLC HMI Graphic Displays. 27 09 00, 2.4.a requires part number 9528-PASSUNLENE which is unlimited. If we need to add 7 displays, we need the existing FactoryTalk SE Server License part number and the total number of existing displays. Do we need to add enough license capacity for the new screens, or do we need to supply the unlimited license?

R: You need to add enough display licenses plus 20% spares. There is an existing 250 display license.

41. **Q: The following questions concern discrepancies between the Summary of Work in Division 01 10 00 and Division 27 09 00, primarily about Rockwell Automation software. We need these requirements to be as clear as possible because of the impact on software cost.**

01 10 00, 1.4.B.1.q—requires 2 FactoryTalk View SE Client licenses. 27 09 00, 2.5.B requires 4 PlantPax Operator Workstation Licenses. Do we provide 2 each or 4 each 9528-OWSLICENE?

R: There are a total of two operator workstations. SAWS currently has one existing installed on a temporary Dell desktop. Also, please see answer for Question #40.

42. **Q: The following questions concern discrepancies between the Summary of Work in Division 01 10 00 and Division 27 09 00, primarily about Rockwell Automation software. We need these requirements to be as clear as possible because of the impact on software cost.**

01 10 00, 1.4.B.1.t—requires redundant FactoryTalk Historian Server licenses. 27 09 00, 2.4.A.b references a 10,000 tag license. Please confirm we are to provide 2 each 9518-HSE10K licenses.

R: Please see answer for Question #31.

43. **Q: The following questions concern discrepancies between the Summary of Work in Division 01 10 00 and Division 27 09 00, primarily about Rockwell Automation software. We need these requirements to be as clear as possible because of the impact on software cost.**

01 10 00, 1.4.B.1.r—discusses FactoryTalk Asset Centre. 27 09 00, 2.4.A.d lists a specific part number and adds details. Please confirm that the requirements of 27 09 00 are correct.

R: 27 09 00, 2.4.A.d is correct.

44. **Q: The following questions concern discrepancies between the Summary of Work in Division 01 10 00 and Division 27 09 00, primarily about Rockwell Automation software. We need these requirements to be as clear as possible because of the impact on software cost.**

01 10 00, 1.4.B.1.u—requires FactoryTalk Vantage Point Server with 3 licenses. 27 09 00, 2.4.A.c requires 8 named user and 10 concurrent user licenses. Please confirm that the requirements of 27 09 00 are correct.

R: 01 10 00, 1.4.B.1.u is correct, three concurrent users licenses.

45. **Q: The following questions concern discrepancies between the Summary of Work in Division 01 10 00 and Division 27 09 00, primarily about Rockwell Automation software. We need these requirements to be as clear as possible because of the impact on software cost.**

27 09 00, 2.4.C.4—please confirm the requirement for 3 each 9528-PAXVTENE Virtual Image Templates.

R: A total of one 9528-PAXVTENM is required.

46. **Q: The following questions concern discrepancies between the Summary of Work in Division 01 10 00 and Division 27 09 00, primarily about Rockwell Automation software. We need these requirements to be as clear as possible because of the impact on software cost.**

27 09 00, 3.4—FactoryTalk Kepware OPC Server. How many licenses are required, one or two?

R: A fully redundant OPC Server is required.

47. **Q: Will SAWS engineering approve the following Instrumentation components as an approved equal? These instruments meet or exceed the specifications for the project. Endress +Hauser and Rockwell Automation are Encompass Partners and their products have been tested and proven to have great communication between them.**

- 1. Flow processor- Endress+Hauser Model # RH33 Energy Cal Meter. Specification # 23 09 10 2. 1. J.**
- 2. Ultrasonic flow meter Endress + Hauser Model # 91W Specification # 23 09 10 2.3.M**
- 3. Resistance Temperature Device (RTD) Endress and Hauser Model # TH11 Specification # 23 09 10 2.4.J**

R: The specifications will be changed to include the Endress+Hauser Flow Processor, Ultrasonic Flow Meter, and RTD. Please reference item #6 of Changes to the Specifications of this Addendum.

48. **Q: We have made numerous attempts to contact Johnson Controls with regards to obtaining a quote for commissioning support. Our attempts have been unsuccessful. There are other firms who can support commissioning of a control system for York chillers. Please approve the following local contractor for commissioning support:**

**Texas Chiller Systems, LLC
9807 McCullough
San Antonio, TX 78216
210-650-9972
Attn.: Robert Uhl
Email: ruhl@texaschillersystems.com**

R: Below is the contact information for the Johnson Controls representative than can provide a cost estimate for the scope in the project:

Peter Smith
Johnson Controls, Inc.
210-524-7065 (Business)
(210) 669-8634 (Mobile)
Peter.A.Smith@jci.com

49. **Q: Is Commissioning Authority experience only to be submitted if you are the successful contractor?**

R: Yes, the commissioning authority experience is only to be submitted if you are the successful contractor.

CHANGES TO THE SPECIFICATIONS

1. Page IR-3, g., remove in its entirety and replace with the following:

The Respondent is required to submit as part of the proposal a letter from the insurance provider stating provider's commitment to insure the Contractor for the types of specified or an Insurance Certificate to be in conformance with the types of coverage specified in the General Conditions Section 5.7 – Contractor's Insurance Requirements, if awarded the contract.

2. **Supplementary Instructions to Respondents, page SIR-3, C.1.d. SAWS Past Performance (critical to SAWS)**, remove the first paragraph and replace with the following:

List all SAWS projects that you have worked on as a prime contractor or as a subcontractor over the past seven (7) years meeting the requirements of Part B and provide contact information for specific project - Kindly be aware that a portion of the scoring for this criterion may be based on SAWS Contractors' record, as well as other documentation and experience with SAWS projects, generated by SAWS staff and SAWS Consultants' on previous SAWS projects.

The remainder of this section remains unchanged.

3. MODIFY PRICE PROPOSAL (PP-1) as follows:

PROPOSAL

The Respondent offers to construct the Project in accordance with the Contract Documents for the contract price, and to complete the Project within ~~182~~ 212 calendar days after the start date, as set forth in the Authorization to Proceed. The Respondent understands and accepts the provisions of the contract Documents relating to liquidated damages of the project if not completed on time.

Complete the additional requirements of the Proposal which are included on the following pages.

4. MODIFY PRICE CERTIFICATION (PC-1) as follows:

The work called for in this Contract shall commence on the date indicated in the SAWS written Authorization to Proceed Under no circumstances shall the work commence prior to the date provided for in the SAWS issued, written Authorization to Proceed. Work shall be completed in full within ~~182~~ 212 consecutive calendar days.

5. SECTION 01 91 00, COMMISSIONING:

REPLACE 1.6.A. with the following:

"A. The Commissioning Authority shall be a third party company hired directly by the OWNER."

6. SECTION 23 09 10, FLOW PROCESSOR INSTRUMENTATION:

REPLACE 2.1.J. with the following:

*“J. The Flow Processor shall be Spirax Sarco FP-93B, Onicon D100, **Endress+Hauser # RH33 Energy Cal Meter**, or approved equal.”*

REPLACE 2.2.M. with the following:

*“M. The Ultrasonic Flow Meter shall be Spirax Sarco UTM10 Series, GE AT868, **Endress + Hauser Model # 91W**, or approved equal.*

REPLACE 2.3.J. with the following:

*“J. Manufacturer: Provide Spirax Sarco EL2271, **Endress and Hauser Model # TH11**, or approved equal RTDs.*

CHANGES TO THE PLANS

1. Sheet M0.0, Demolition Notes, line 5, to be edited to the following: “All extraneous items as part of the project in the space or on the roof not applicable to the new work must be removed.”

2. SHEET I-07.2:

ADD note to NEW WORK KEY NOTES as follows:

“4. INSTALL NEW RACEWAY AND ASSOCIATED SUPPORTS AS REQUIRED. COORDINATE WITH WIRING SCHEMATICS FOR CONDUIT AND CABLE SIZES AND TYPES.”

3. SHEET I-07.4:

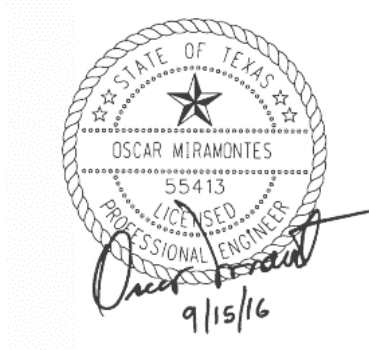
REMOVE and REPLACE sheet I-07.4 with the attached sheet.

4. SHEET I-07.5:

REMOVE and REPLACE sheet I-07.4 with the attached sheet.



EAA Consulting Engineers – Firm No. F-2497
All Questions except 1, 33, 34, and 47



San Antonio Water System
Questions 1, 33, 34, and 47

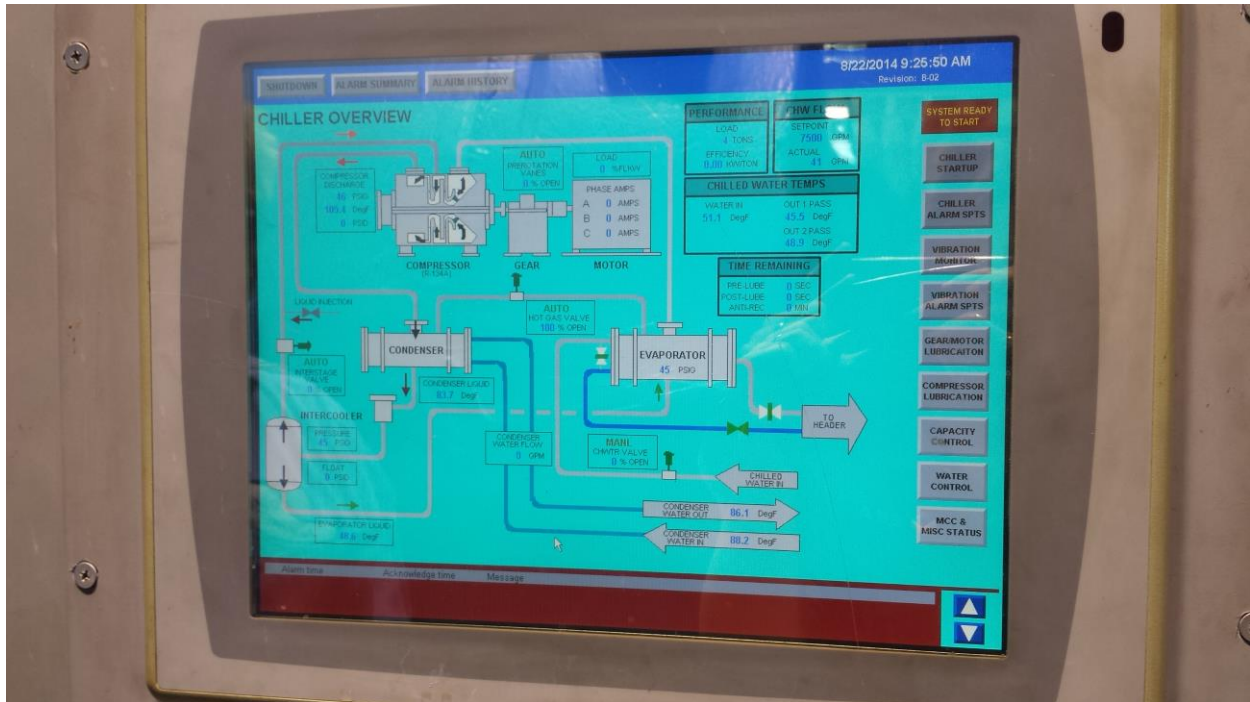
ACKNOWLEDGEMENT BY RESPONDENT

The undersigned acknowledges receipt of this Addendum No. 1 and the bid submitted herewith are in accordance with the information and stipulation set forth.

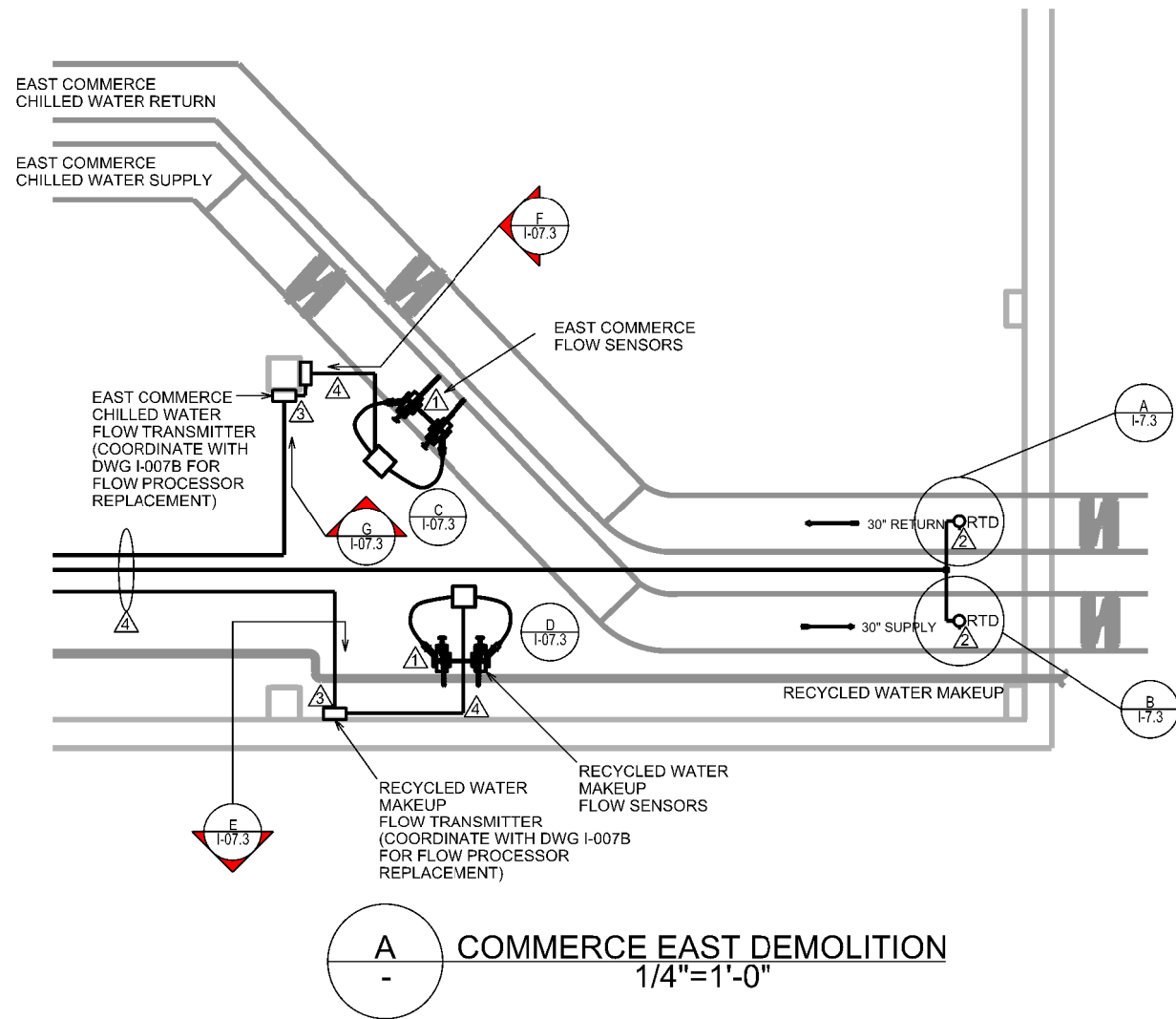
Signature of Respondent

Date
END OF ADDENDUM

Attachment #1



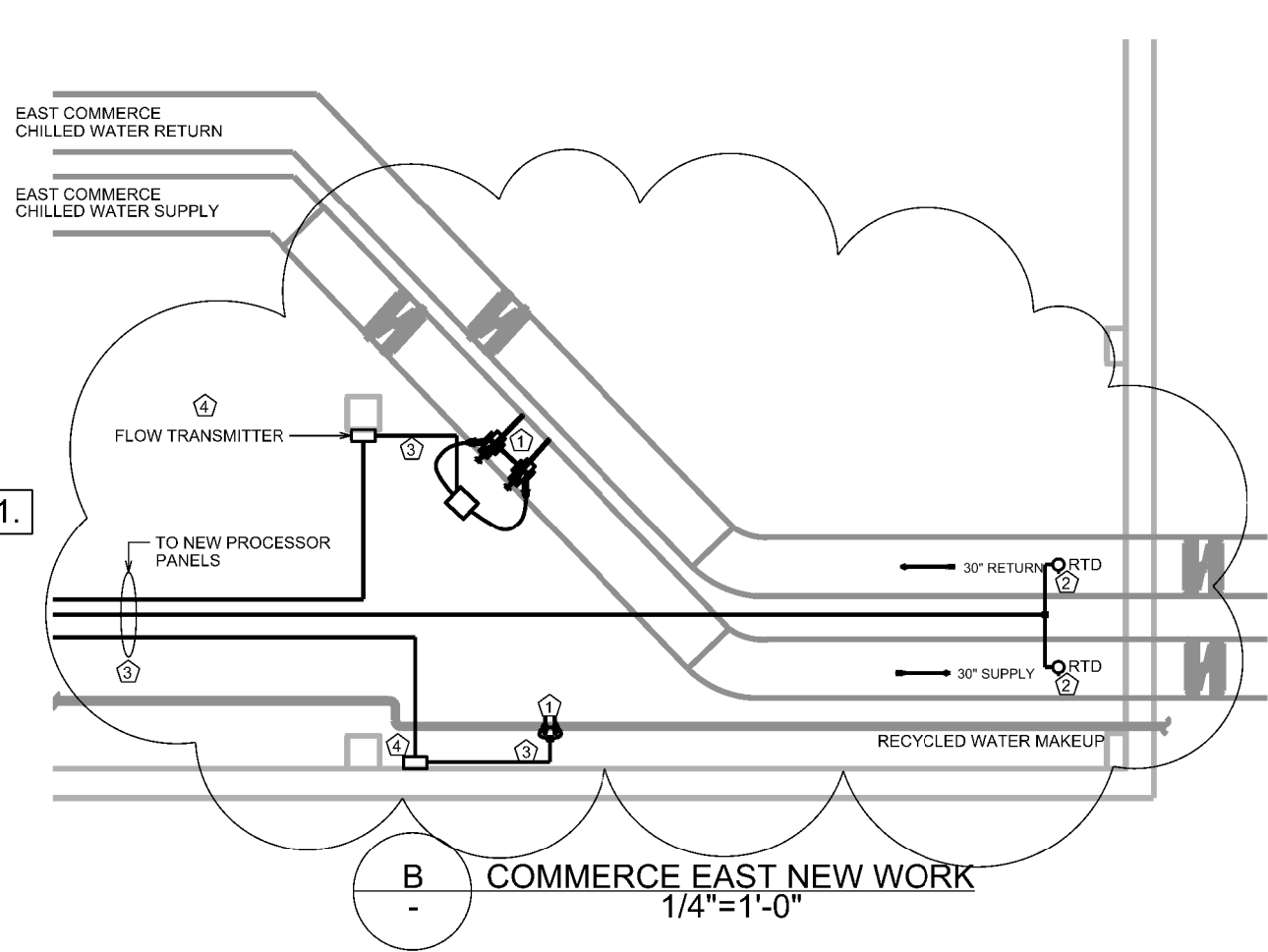
This picture shows a typical PLC screen for PLCs #1-5. PLC #6 will have a different screen layout but is expected to have a similar number of screens.



A COMMERCE EAST DEMOLITION
1/4"=1'-0"

Δ	DEMOLITION KEY NOTES:
1	REMOVE EXISTING ULTRASONIC FLOW METER AND SALVAGE TO OWNER. REMOVE PIPE TO NEAREST JUNCTION AND DISCARD. REMOVE ALL CONDUIT, ASSOCIATED RACEWAY SUPPORTS AND ALL CABLE AND DISCARD.
2	REMOVE RTD INSTRUMENT INCLUDING ALL CONDUIT, ASSOCIATED RACEWAY AND SUPPORTS AND ALL CABLE. SALVAGE RTD DEVICE TO OWNER.
3	REMOVE EXISTING FLOW PROCESSORS AND ASSOCIATED FLOW TRANSMITTER AND SALVAGE TO OWNER. REMOVE AND DISCARD ALL CHANNEL SUPPORTS, ENCLOSURES, AND ASSOCIATED MOUNTING HARDWARE. COORDINATE WITH EEA'S DRAWINGS FOR ADDITIONAL DEMOLITION INSTRUCTIONS.
4	REMOVE ALL CONDUIT AND RACEWAY SUPPORTS AND ALL CABLES AND DISCARD.

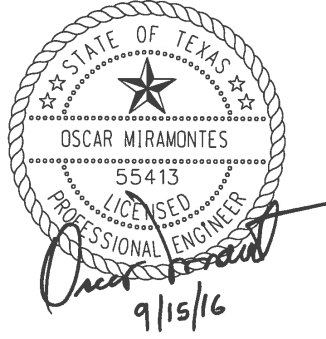
1.



B COMMERCE EAST NEW WORK
1/4"=1'-0"

Δ	NEW WORK KEY NOTES:
1	INSTALL NEW ULTRASONIC FLOW SENSORS IN APPROXIMATE LOCATION SHOWN. COORDINATE WITH MANUFACTURER FOR OPTIMAL LOCATION GIVEN EXISTING CONSTRAINTS. REPLACE INSULATION AND COVER ENTIRE PIPE WHERE SENSORS ARE TO BE INSTALLED. APPLY INSULATION AND INHERENT VAPOR RETARDANT MATERIAL TO PIPE. THICKNESS OF INSULATION TO MATCH EXISTING. INSTALL NEW CONDUIT AND NEW RACEWAY FOR ENTIRE CABLE RUN. REFER TO SCHEMATICS FOR SIZES.
2	INSTALL NEW RTD IN EXISTING THERMO-WELL ADJUST LENGTH OF RTD PROBE TO FIT EXISTING WELL. REPLACE INSULATION AROUND ENTIRE PIPE FOR A MINIMUM OF 6" ON EITHER SIDE OF PROBE. INSTALL NEW CABLE AND CONDUIT FOR ENTIRE CABLE RUN. REFER TO SCHEMATICS FOR SIZES.
3	INSTALL RIGID CONDUIT FOR ENTIRE RUN. FLEXIBLE CONDUIT ALLOWED ONLY AT TERMINATION ENDS. REFER TO SCHEMATICS FOR SIZES.
4	INSTALL ULTRASONIC FLOW TRANSMITTER IN NEW PANEL. COORDINATE WITH EEA'S DRAWINGS FOR ADDITIONAL REQUIREMENTS. REFER TO DWG. I-07.4 FOR LOCATION OF PROCESSOR.

1.



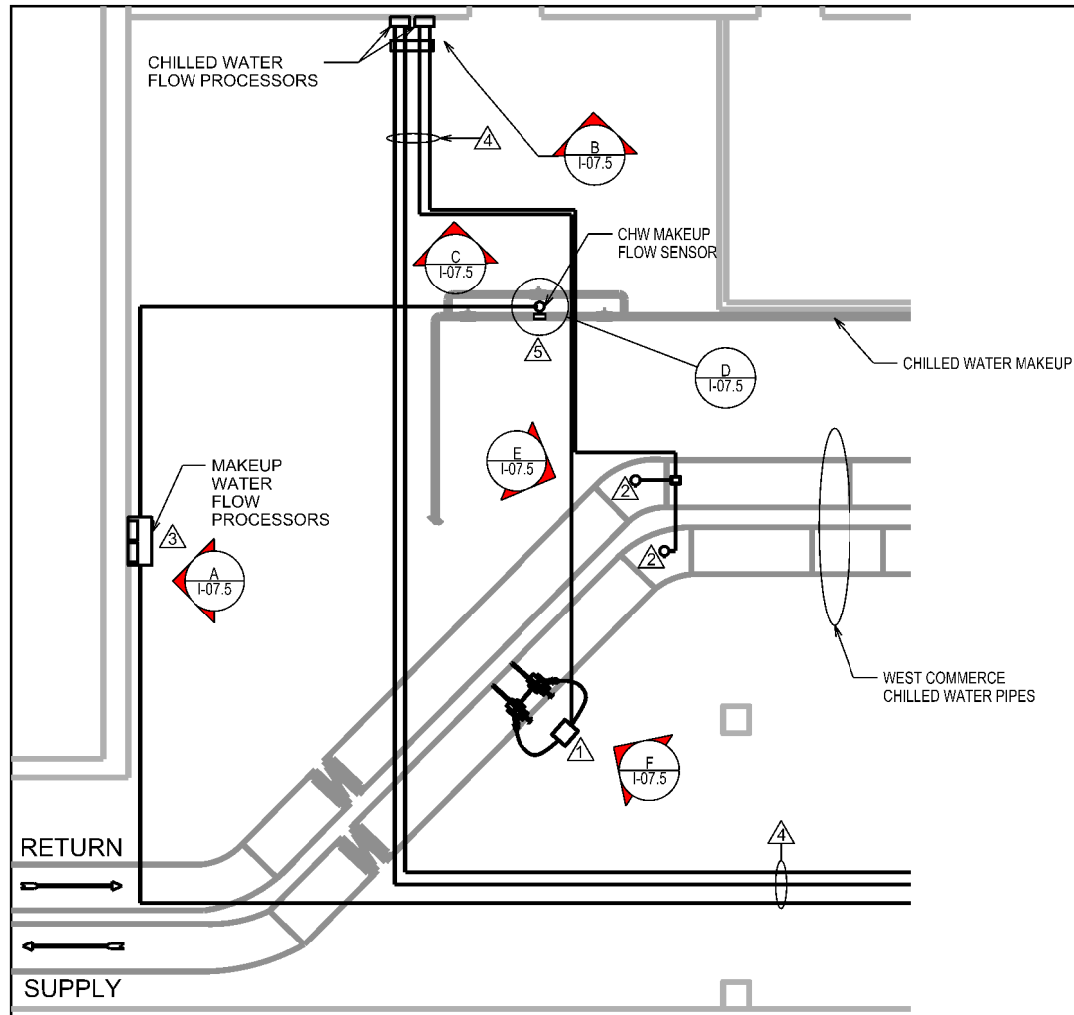
No.	Revision	Drawn	Approved	Date	
				Drawn	Approved
1	ADDENDUM NO.1	LVG	OM	9/15/16	

CHILLED WATER SYSTEM
COMMUNICATION AND CONTROLS
REPLACEMENT PROJECT

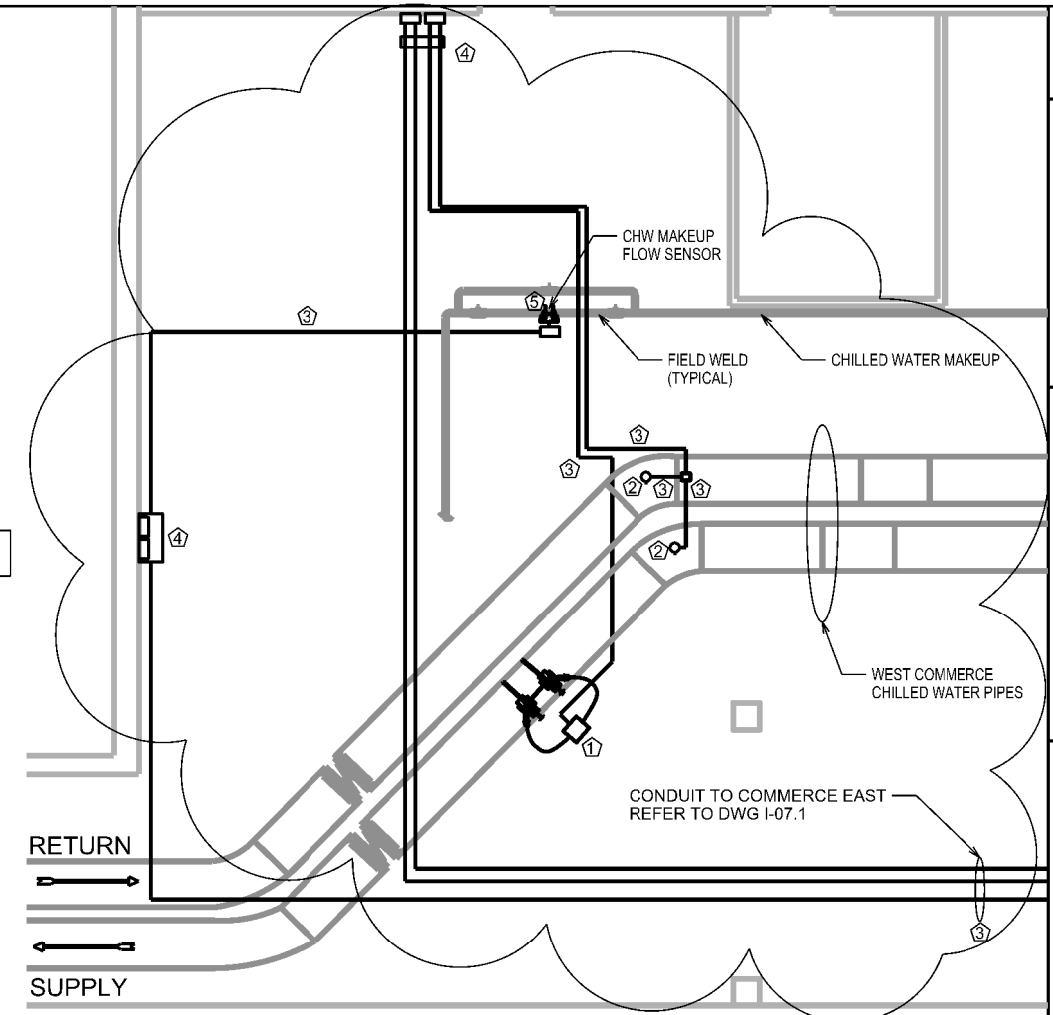
Date:	JAN 2016
Drawn By:	LVG
Designed By:	OM
Checked By:	JR
Scale:	AS SHOWN
Approved By:	OM
Map No.:	N/A



CHILLED WATER FLOW METERS
UPGRADE PROJECT
COMMERCE STREET
CHILLED WATER PLANT (EAST)
DETAILS



A - COMMERCE WEST DEMOLITION
NTS



B - COMMERCE WEST NEW WORK
NTS

Δ	DEMOLITION KEY NOTES:
1	REMOVE EXISTING ULTRASONIC FLOW METER AND SALVAGE TO OWNER. REMOVE PIPE TO NEAREST JUNCTION AND DISCARD. REMOVE ALL CONDUIT, ASSOCIATED RACEWAY SUPPORTS AND ALL CABLE AND DISCARD.
2	REMOVE RTD INSTRUMENT INCLUDING ALL CONDUIT, ASSOCIATED RACEWAY AND SUPPORTS AND ALL CABLE. SALVAGE RTD DEVICE TO OWNER.
3	REMOVE EXISTING FLOW PROCESSORS AND ASSOCIATED FLOW TRANSMITTER AND SALVAGE TO OWNER. REMOVE AND DISCARD ALL CHANNEL SUPPORTS, ENCLOSURES, AND ASSOCIATED MOUNTING HARDWARE. COORDINATE WITH EEA'S DRAWINGS FOR ADDITIONAL DEMOLITION INSTRUCTIONS.
4	REMOVE ALL CONDUIT AND RACEWAY SUPPORTS AND ALL CABLES AND DISCARD.
5	REMOVE IN-LINE FLOW METER AND SALVAGE TO OWNER. REMOVE PIPE TO NEAREST JUNCTIONS AND REPLACE. REMOVE ALL CONDUIT, ASSOCIATED RACEWAY SUPPORTS AND ALL CABLE AND DISCARD.

1.

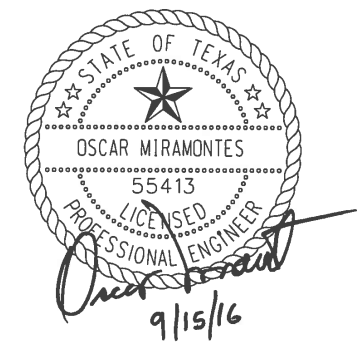
⌘	NEW WORK KEY NOTES:
1	INSTALL NEW ULTRASONIC FLOW SENSORS IN APPROXIMATE LOCATION SHOWN. COORDINATE WITH MANUFACTURER FOR OPTIMAL LOCATION GIVEN EXISTING CONSTRAINTS. REPLACE INSULATION AND COVER ENTIRE PIPE WHERE SENSORS ARE TO BE INSTALLED. APPLY INSULATION AND INHERENT VAPOR RETARDANT MATERIAL TO PIPE. THICKNESS OF INSULATION TO MATCH EXISTING. INSTALL NEW CONDUIT AND NEW RACEWAY FOR ENTIRE CABLE RUN. REFER TO SCHEMATICS FOR SIZES.
2	INSTALL NEW RTD IN EXISTING THERMO-WELL ADJUST LENGTH OF RTD PROBE TO FIT EXISTING WELL. REPLACE INSULATION AROUND ENTIRE PIPE FOR A MINIMUM OF 6" ON EITHER SIDE OF PROBE. INSTALL NEW CABLE AND CONDUIT FOR ENTIRE CABLE RUN. REFER TO SCHEMATICS FOR SIZES.
3	INSTALL RIGID CONDUIT FOR ENTIRE RUN. FLEXIBLE CONDUIT ALLOWED ONLY AT TERMINATION ENDS. REFER TO SCHEMATICS FOR SIZES.
4	INSTALL ULTRASONIC FLOW TRANSMITTER AND FLOW PROCESSOR IN NEW PANEL. COORDINATE WITH EEA'S DRAWINGS FOR ADDITIONAL REQUIREMENTS.
5	REPLACE PIPE AS NEEDED AND INSTALL ULTRASONIC FLOW SENSORS IN APPROXIMATE LOCATION SHOWN. COORDINATE WITH MANUFACTURER FOR OPTIMAL LOCATION OF SENSORS TO MAXIMIZE ACCURACY GIVEN EXISTING CONSTRAINTS. INSTALL NEW RACEWAY FOR ENTIRE CABLE RUN. REFER TO SCHEMATICS FOR SIZES.

1.

No.	Revision	Drawn	Approved	Date
1	ADDENDUM NO.1	LVG	OM	9/15/16

CHILLED WATER SYSTEM
COMMUNICATION AND CONTROLS
REPLACEMENT PROJECT

Date:	JAN 2016
Drawn By:	LVG
Designed By:	OM
Checked By:	JR
Scale:	AS SHOWN
Approved By:	OM
Map No.:	N/A



CHILLED WATER FLOW METERS
UPGRADE PROJECT
COMMERCE STREET
CHILLED WATER PLANT (WEST)
EXHIBITS



A COMMERCE WEST
EXISTING RECYCLE & MAKEUP
FLOW PROCESSORS
SCALE: N.T.S.



B COMMERCE WEST
& COMMERCE EAST
FLOW PROCESSORS
SCALE: N.T.S.



C COMMERCE WEST
& COMMERCE EAST
FLOW PROCESSORS
SCALE: N.T.S.



D COMMERCE WEST
EXISTING MAKEUP FLOW METER
SCALE: N.T.S.
1.



E COMMERCE WEST
EXISTING RTD XMTRS
SCALE: N.T.S.
1.



COMMERCE WEST
EXISTING ULTRASONIC SENSORS
SCALE: N.T.S.

STATE OF TEXAS
OSCAR MIRAMONTES
55413
LICENSED
PROFESSIONAL ENGINEER
Oscar Miramontes
9/15/16

No.	Revision	Drawn	Approved	Date
1	ADDENDUM NO.1	LVG	OM	9/15/16

CHILLED WATER SYSTEM
COMMUNICATION AND CONTROLS
REPLACEMENT PROJECT

Date:	JAN 2016
Drawn By:	LVG
Designed By:	OM
Checked By:	JR
Scale:	AS SHOWN
Approved By:	OM
Map No.:	N/A



CHILLED WATER FLOW METERS
UPGRADE PROJECT
COMMERCE WEST
EXHIBITS