SECTION 00 91 13.1 - ADDENDUM NO. 1 to CITY OF SARATOGA SPRINGS BIDDING DOCUMENTS FOR DRINKING WATER BOOSTER NO. 8



Bids Received until 2:00 PM, March 28, 2023

The following ADDENDUM (3 of text pages, 2 Drawings and 1 Attachment) shall be made part of the contract documents, and the bidder shall acknowledge receipt thereof on the BID FORM.

A1.1. Engineer Opinion of Construction Cost: \$5.5 - \$6.0 million. In the pre-bid meeting this was incorrectly stated as \$3 million.

PART 1 – BIDDING REQUIREMENTS

- A1.2. <u>Bid Date Change:</u> Section 00 11 13, Page 1, third paragraph entitled "Bids Due", CHANGE "**11:00 a.m. on Wednesday March 22**" to read "**2:00 p.m. on Tuesday,** March 28".
- A1.3. Questions Date Change: All questions must be submitted through the U3P web site until 2:00 p.m. on Tuesday, March 21.
- A1.4. Section 00 41 43, Bid Form, page 4, Bid Item 6 "Pay for RMP to Complete Onsite and Offsite Electrical Power Supply", under Bid Unit Price and Bid Price, CHANGE "Amount issued by addendum" to read: "Owner to pay RMP directly".
- A1.5. Section 00 45 13, after page 2, ADD page 3 which is missing from this spec: Addendum 1, Attachment 1: Section 00 45 13, page 3 (Section 7: Safety Program).

PART 3 – CONTRACT CONDITIONS

- A1.6. **Completion Date Changes.** Section 00 50 00, page 2, paragraph 4.02:
 - a. CHANGE Substantial Completion date from "July 1, 2024" to "Aug 30, 2024".
 - b. CHANGE Final Completion date from "July 31, 2024" to "September 30, 2024".

PART 4 – TECHNICAL SPECIFICATIONS

- A1.7. Section 01 22 00, pages 3-4, CHANGE paragraph 1.2.F.2 to read: "**BASIS OF PAYMENT**: Owner will pay RMP directly to complete electrical power supply to site."
- A1.8. Section 01 71 13, page 1, after paragraph 1.6 Permits, ADD: "Except that City will not charge Contractor costs of any Saratoga City permits because this is a City project."
- A1.9. ADD Addendum 1, Attachment 2: Spec Section 26 05 20, Radiant Heating Electric Cables, and add it to Table of Contents. Install these on roofs, gutters, and downspouts.

- A1.10. Section 26 05 73, after paragraph 1.1.A, ADD: "A Utah licensed professional engineer is acceptable to perform the study and arc-flash analysis."
- A1.11. Section 26 29 23, paragraph 2.1.A.1. The City is standardizing. Use the Altivar VFD.
- A1.12. Section 33 12 30, Pump and Pump Motor:
 - a. Page 4, paragraph 2.2.1.b., CHANGE "smaller than 100 hp" to "smaller than 300 hp".
 - b. Page 6, after paragraph 2.3.C.2.b, line 7, CHANGE "hollow shaft" to "solid shaft".
 - c. Page 7, after paragraph 2.3.C.2.d, ADD "See paragraph 2.4, Motors."
 - d. Page 7, paragraph 2.3.C.4.a, DELETE first 3 sentences (until "... approved equal.") and SUBSTITUTE "Pump shall have a NSF-61-certified, one piece, cartridge mechanical seal design, by Flex-A-Seal, Chesterton, John Crane, Flowserve ISC2-PX-61, or approved equal, with SilCar x SilCar faces."
 - e. Page 7, paragraph 2.3.C.5.a, line 2, DELETE "or threaded with bronze"
 - f. Page 8, paragraph 2.3.C.6.a, lines 5-6, DELETE "Provide. . Hardness number of 44."
 - g. Page 9, DELETE paragraph 2.3.D., FEA Analysis (30 lines).
- A1.13. Section 33 92 10:
 - a. Page 13, paragraph 2.5.A, Line 1, CHANGE "Cement-Mortar Lining for Shop Application" to read: "Provide Shop-Applied (field lining is not allowed) Cement Mortar Lining on all Buried Steel Pipes (Provide epoxy lining, per Section 09 90 00, on steel pipe for pump cans and in pump house).
 - b. Page 15, paragraph 2.6.A, after "Exterior Coating of Exposed Piping" ADD: "(includes pump cans and steel piping in wellhouse)".

PART 5 – DRAWINGS

- A1.14. Sheet C-1, General Sheet Notes, Note 1, CHANGE "Owner supplied 400KW Generac Generator" to read: "400KW Generator (See Specs)".
- A1.15. Sheet C-10, Detail B, CHANGE dimension (from 30" WSP OD and 2" WSP CL) from "8" to "11.0". Note: in plan, 2" WSP is at 25 deg angle, so it is not "true scale" in Detail B.
- A1.16. Sheet S-4, DELETE the rebar for the floor penetration that is dimensioned "12'-9" off the right wall, and delete the dimension.
- A1.17. Sheet S-10, Detail A: ADD: "Note 2: At all 90 degree joints in walls, floor, and ceiling provide ¼" gap between all intermediate and finished surfaces (ie floor, gypsum, wood trim, skylight, etc), and seal joint gaps with non-hardening, resilient acoustical caulk."
- A1.18. Sheet E-1.2. Tables indicate CP-4 to be provided and installed by Contractor. ADD Sheet Keynote: "1. CP-4 shall be a 36"H x 30"W x 12"D, NEMA 12 gasketed enclosure."
- A1.19. DELETE Sheets A-4.1 and A-4.2 and SUBSTITUTE: Addendum 1, Reissued Drawings A-4.1 and A-4.2. These clarify grounding requirements.

- A1.20. Sheet E-4.6, ADD under Sheet Keynotes: "1. Contractor shall install conduit and j-boxes for future CCTV cameras. Owner will provide and install cables and cameras in future."
- A1.21. Sheet E-6.2, Detail 1, call out "Bolt PVC coated conduit to pump can conc as shown".

ADDENDUM 1 REISSUED DRAWINGS:

- Sheet E4.1. Clarifies grounding.
- Sheet E4.2. Clarified grounding.

ATTACHMENTS:

- Attachment 1, Section 00 45 13, page 3 (Section 7: Safety Program). (1 page)
- Attachment 2, Section 26 05 20, Radiant Heating Electric Cables. (4 pages)

END OF ADDENDUM

7. SAFETY PROGRAM:

Name of Contractor's Safety Officer:_

Include the following as attachments:

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) <u>OSHA No. 500- Log & Summary of Occupational Injuries & Illnesses</u> for the past 5 years.

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) list of all OSHA Citations & Notifications of Penalty (monetary or other) received within the last 5 years (indicate disposition as applicable) - <u>IF NONE SO STATE.</u>

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) list of all safety citations or violations under any state all received within the last 5 years (indicate disposition as applicable) - <u>IF NONE SO STATE.</u>

Provide the following for the firm listed in Section 5 (and for each proposed Subcontractor furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) the following (attach additional sheets as necessary):

- Workers' compensation Experience Modification Rate (EMR) for last 5 years, and
- Total Recordable Frequency Rate (TRFR) for the last 5 years, and
- Total number of man-hours worked for the last 5 Years; and:
- Provide Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) Days Away From Work, Days of Restricted Work Activity or Job Transfer (DART) incidence rate for the particular industry or type of Work to be performed by Contractor and each of Contractor's proposed Subcontractors and Suppliers) for the last 5 years:

Year	EMR*	TRFR*	Total man-hours worked*	DART *
2018				
2019				
2020				
2021				
2022				

*Add additional pages if required.

SECTION 26 05 20 RADIANT-HEATING ELECTRIC CABLES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Electric heating cable for deicing / ice dam prevention, on roofs, in gutters, and in downspouts (roof drains).
- B. Controls and relay panels (for load switching).
- C. Electric roof deicing cable system components, accessories, and install materials.
- D. System includes a complete gutter and downspout de-icing system that consists of self-regulating trace heater, connection kits. Control will be from the Main Control Panel/RTU.

1.2 RELATED SECTIONS

- A. Section 01 33 00 Submittal Procedures
- B. Section 01 45 00 Quality Control and Material Testing
- C. Section 01 70 00 Project Closeout
- D. Division 26 Electrical

1.3 REFERENCES

- A. UL515 Electrical Resistance Heat Tracing fro Commercial Applications
- B. IEEE 515.1-2012 Standard for the Testing, Design, Installation & Maintenance of Electric Resistance Trace Heating for Commercial Applications
- C. CSA Standard C22.2 No. 130-03 Requirements for Electrical Resistance Heating Cables & heating Device Sets.
- D. NFPA 70 National Electrical Code (NEC)
- E. Canadian Standards Association (CSA)
- F. Underwriter's Laboratory (UL)

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Provide General Contractor, MEP Engineer, and Owner with all the

Manufacturer's product data sheets, warranty, and installation instructions.

C. Provide General Contractor, MEP Engineer, and Owner with all relevant Shop Drawings, Samples, Mock-Ups, and Electrical Schematics.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications & Services:
 - 1. 5 years of experience (minimum) with electric heating cable deicing systems.
 - 2. Supplier must provide 24/7 technical install support, and free design assistance.
 - 3. Manufacturer shall be ISO-9001 registered.
 - 4. The self-regulating heating cable shall be qualified and tested to demonstrate a useful lifetime in excess of 20 years.
- B. Installer Qualifications:
 - 1. Must have verifiable experience successfully completing projects of similar size, and /or has been trained or certified by a manufacturer's representative.
- C. Pre-Installation Meetings:
 - 1. Coordinate work with other trade representatives (general, electrical, roofing, and other trade contractors) to verify areas of responsibility (scope of work).
 - 2. Review project timeline and construction deadlines to ensure project will comply with all manufacturer's installation instructions and warranty requirements.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- B. Store materials protected from exposure to harmful site conditions, and in an area protected from vandalism and theft in a clean, dry location with a temperature range 0-deg F to 140-deg F.

1.7 WARRANTY

- A. Manufacturer's Warranty
 - 1. Provide a 2 year warranty for all products from the date of purchase against faulty workmanship and use of defective materials when such goods are properly installed, operated and maintained according to the product documentation.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Chromolox
- B. Raychem
- C. Or approved equal.mailto:epasek@warmlyyours.com

2.2 PERFORMANCE REQUIREMENTS

- A. Self-regulating style heating cable must generate approx. 5 watts per foot, when dry at 50 degrees F, and approx. 9 10 watts per foot, when cold and wet.
 Plug-in style constant watt heaters will not be acceptable for this application.
- B. Self-regulating heating cable shall be two-conductor, so the end of the heating cable does not have to make a homerun back to its start point. The conductive core responds to temperature changes, and becomes more conductive in the cold, thereby increasing its heat output. An outer polyolefin jacket allows the heating cable for use in wet applications. One-conductor cables, or cables without the outer jacket are not acceptable for this application.
- C. Self-regulating heating cable allows the installer to cut the heated section to length, in the field, with no cold zones developing throughout the length applied with power. Cable heaters that do not allow for this "cut-to-length" action by the installer are not acceptable for this application.
- D. Substitution requests must be approved 15 days prior to bid due date. Alternative equipment manufacturer must provide all relevant product data sheets, warranty, installation instructions, shop drawings, samples, and electrical schematics. Alternative equipment must meet specified material standards.

2.3 ELECTRIC DEICING HEATING CABLE

- A. The self-regulating heating cable shall have two copper bus wires, 16 AWG, and shall include an irradiated cross-linked conductive polymer core with an inner thermoplastic jacket that is extruded and bonded to the core material. A second inner thermoplastic jacket is extruded over the first inner jacket. A tinned copper braid is woven around this 2nd jacket, and provides a continuous ground path throughout the heating cable. A final (3rd) outer UV stabilized polyolefin overjacket makes this heating cable acceptable for wet applications (roof, gutter, & downspout deicing).
- B. The heating cable shall be 240 VAC. Multiple cable heater systems must be wired in parallel by the installer. Cable heaters must not be pre-terminated with cold leads or plugs. Cables heaters must include a 2 year warranty (minimum).
- C. RLY series relay panels shall be used for load switching of the heating cables. The relay panel(s) shall have 120 VAC coils, and shall receive the 120 VAC

control signal from CP-01 the Main Control Panel/RTU. Each relay pole, shall be capable of handling a maximum of 24 amps.

- D. The heating cable shall have a self-regulating factor of at least 70 percent.
- E. The heating cable shall be UL listed.

2.4 ACCESSORIES

A. Provide all downspout hangers, supporting clips, roof clips for a complete system installation .

PART 3 EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

A. Comply with manufacturer's product data, including product technical bulletins, installation instructions and design drawings.

3.2 EXAMINATION & PREPARATION

- A. Installer shall verify field measurements are as shown on Shop Drawings(s).
- B. Any revisions needed to Shop Drawings, or product provided, must be corrected prior to proceeding with the installation.
- C. Installer shall verify that the required power, is available, in proper location, and ready for use.

3.3 INSTALLATION

- A. Complete installation must conform to appropriate manufacturer's installation instructions, National Electrical Code, and appropriate local codes.
- B. Ground the system as required by NEC.

3.4 FIELD QUALITY CONTROL

- A. Test each heating cable for insulation resistance with a 500 VDC Meg-Ohm Meter. Heater cable should have a minimum insulation resistance of 20 megohms. Record these values on the warranty form provided at the end of the Installation Manual.
- B. Start-up (first-time activation) may proceed immediately after the licensed electrician has every component wired up correctly.
- C. During "Start-Up", amps of each heater should be tested by a licensed electrician. All testing records should be copied, and provided to the Owner.

END OF SECTION



H.P.E. INC. ELECTRICAL ENGINEERS POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS

HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051 FAX (801) 642-2154 708 EAST 50 SOUTH AMERICAN FORK, UT 84003

HPE PROJECT:22.048 FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

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ELECTRICAL PLAN ITEMS (E-4.1)								
DRAWING ID	TAG	DESCRIPTION	POWER SOURCE	LOCATION				
10	XFMR	UTILITY TRANSFORMER	UTILITY	OUTSIDE				
11	CTS	CURRENT TRANSFORMER SWITCHBOARD	N/A	OUTSIDE				
12	MSD	MAIN SERVICE DISCONNECT	U. XFMR	OUTSIDE				
13	MS-1	METER SOCKET	N/A	OUTSIDE				
14	ATS	AUTOMATIC TRANSFER SWITCH	MSD/GEN	OUTSIDE				
15	GEN	BACKUP POWER GENERATOR	N/A	OUTSIDE				
32	GCS-1	GATE CONTROL STATION	-	OUTSIDE				
35	GA-1	GATE OPERATOR	L-16,18	OUTSIDE				
36	JWH-1	GEN. JACKET WATER HEATER	L-10,12	OUTSIDE				
37	BC-1	GEN. BATTERY CHARGER	L-14	OUTSIDE				
69	F3A	LIGHT FIXTURE	L-13	OUTSIDE				
70	F3B	LIGHT POLE	N/A	OUTSIDE				

GENERAL NOTES:

- REFER TO THE POWER ONE-LINE DIAGRAM FOR THE WIRE AND CONDUIT REQUIREMENTS.
- 2. CONTRACTOR SHALL INSTALL CONDUIT FOR THE RMP SERVICE. NOT ALL CONDUIT IS SHOWN ON THIS PLAN.
- 3. CONDUIT LOCATIONS SHOWN ARE APPROXIMATE. VERIFY LOCATIONS PRIOR TO CONDUIT ROUGH-IN.
- 4. FOR GENERATOR CONCRETE PAD REQUIREMENTS REFER TO CIVIL DRAWINGS.

SHEET KEYNOTES:

- 1. INSTALL A 2" CONDUIT WITH A PULL STRING FROM NEAR THE IRRIGATION CONTROLLER IN THE ELECTRICAL ROOM TO NORTH OF THE POLE LIGHT FOR FUTURE LANDSCAPE IRRIGATION VALVE WIRING. ACCURATELY IDENTIFY LOCATION ON AS-BUILD DRAWINGS.
- ADDITIONAL UTILITY CONDUIT INSTALLATION REQUIRED. REFER TO SHEET G-6 FOR THE LOCATION AND POWER SOURCE FOR THIS PUMP STATION.
- 3. INSTALL 1-1/4°C WITH #6 CONDUCTORS FOR ALL POLE LIGHT POWER CIRCUITS AND HOME RUN TO PANEL L IN THE ELECTRICAL ROOM. REFER TO E-6.6 FOR ADDITIONAL SITE LIGHTING REQUIREMENTS.
- 4. INSTALL TYPE III-PC BOX FOR FUTURE FIBER OPTIC CABLING. INSTALL PULL STRINGS IN ALL CONDUIT.
- 5. SECTIONALIZING CABINET PROVIDED AND INSTALLED BY APPROXIMATE. COORDINATE DURING CONSTRUCTION FOR FINAL LOCATION
- 6. INSTALL A TRAFFIC RATED CONCRETE POLYMER PULL BOX FOR THE GENERATOR JACKET WATER HEATER AND BATTERY CHARGER POWER CIRCUITS, SCADA MONITORING FOR ATS AND THE GENERATOR PARALLELING CIRCUITS. INSTALL ALL CONDUITS FOR THE FUTURE GENERATORS TO 12-IN FROM BACK OF CURB. CONTRACTOR SHALL SIZE PULL BOX AS REQUIRED. NOT ALL CONDUITS SHOWN ON THIS PLAN. REFER TO ONE-LINE DIAGRAMS FOR THE REQUIRED CONDUITS
- 7. INSTALL POLE LIGHT CIRCUIT CONDUIT IN ASPHALT AND NOT BELOW THE GENERATOR OR FUTURE GENERATORS.
- 8. CONDUITS TO PANELBOARD L, CP-1 (MCP) AND CP-6 (GENERATOR PARALLEL CONTROL PANEL). REFER TO F-4.2 FOR LOCATIONS.
- 9. F.O. CONDUITS TO CP-1.
- 10. CONDUIT FOR FUTURE CCTV CAMERA CABLING.
- 11. AUTOMATIC GATE OPERATOR, CARD READER PEDESTAL AND CONTROLS PROVIDED BY SUPPLIER. NOT SHOWN ON THESE PLANS ARE THE GATE PRESSURE SWITCH AND SENSING LOOPS. CONTRACTOR SHALL INSTALL ALL COMPONENTS SUPPLIED WITH GATE ACTUATOR AS REQUIRED BY SUPPLIER. COORDINATE WITH SUPPLIER FOR INSTALLATION LITERATURE DURING CONSTRUCTION AS REQUIRED.

12. CONNECT TO BUILDING GROUND SYSTEM, SEE E-4.1.

ZONE 2 SOUTH DW BOOSTER #8 ELECTRICAL SITE PLAN

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		EQUIDMENT PATING DISCONNECT															
ITEM	DESCRIPTION	LOCATION			QUPP		UG		DISCONNECT				TYDE	NEMA	ANOTEC		
			VOLTS	PH	HP	WATTS	FLA	MCA	AMPS	VOLTS	POLES	NEMA	FUSE	JSE CONNECTION		SIZE	
P-1	BOOSTER PUMP	PUMP ROOM	460	3	100	98,793	124	-	-	-	-	-	-	HARD-WIRED	VFD	100 HP	1)
P-2	BOOSTER PUMP	PUMP ROOM	460	3	100	98,793	124	-	-	-	-	-	-	HARD-WIRED	VFD	100 HP	1)
P-3	BOOSTER PUMP	PUMP ROOM	460	3	100	98,793	124	-	-	-	-	-	-	HARD-WIRED	VFD	100 HP	1)
P-4	FUT. BOOSTER PUMP	PUMP ROOM	460	3	250	223,878	281	-	-	-	-	-	-	HARD-WIRED	VFD	250 HP	2)
P-5	FUT. BOOSTER PUMP	PUMP ROOM	460	3	250	223,878	281	-	-	-	-	-	-	HARD-WIRED	VFD	250 HP	2)
VA-15	VALVE ACTUATOR	PUMP ROOM	460	3	F	864	1		30	600	3	1	NF	HARD-WIRED	INCL.	-	-
VA-1	VALVE ACTUATOR	PUMP ROOM	460	3	F	864	1		30	600	3	1	NF	HARD-WIRED	INCL.	-	-
VA-2	VALVE ACTUATOR	PUMP ROOM	460	3	F	864	1		30	600	3	1	NF	HARD-WIRED	INCL.	-	-
VA-3	VALVE ACTUATOR	PUMP ROOM	460	3	F	864	1		30	600	3	1	NF	HARD-WIRED	INCL.	-	-
VA-4	FUTURE VALVE ACTUATOR	PUMP ROOM															2)
VA-5	FUTURE VALVE ACTUATOR	PUMP ROOM															2)

NOTES: 1) REFER TO TYPICAL VFD CONTROL DIAGRAM ON E-3.3. 2) PROVIDE CONDUIT WITH PULL STRING ONLY.

ESIGNED KBH SCALE ansen ALLEI RAFTED KBH SARATOGA SPRINGS AS SHOWN & LUCE HECKED KBH 3-9-2023 ADDENDUM 1 квн квн PROJECT ENGINEER DATE JANUARY 2023 NO DATE REVISIONS BY APVD

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71214-2202 KEITH B.

H.P.E. INC. ELECTRICAL ENGINEERS POWER SYSTEMS, CONTROL & INSTRUMENTATION SYSTEMS HEGERHORST POWER ENGINEERING INCORPORATED (801) 642-2051 FAX (801) 642-2154 708 EAST 50 SOUTH AMERICAN FORK, UT 84003 ©202 HPE PROJECT:22.048

FOR INFORMATION ABOUT THIS JOB, PLEASE CONTACT: KEITH HEGERHORST

POWER PLAN ITEMS (E-4.2)								
DRAWING ID	TAG	DESCRIPTION	POWER SOURCE	LOCATION				
16	MDP	PANELBOARD MDP	ATS	ELECTRICAL RM.				
17	PNL H	PANELBOARD H	MDP-2	ELECTRICAL RM.				
18	XFMR L	TRANSFOMER L	H-2,4	ELECTRICAL RM.				
19	PNL L	PANELBOARD L	XFMR-L	ELECTRICAL RM.				
20	P-1	PUMP NO. 1	VFD-1	PUMP RM.				
21	P-2	PUMP NO. 2	VFD-2	PUMP RM.				
22	P-3	PUMP NO. 3	VFD-3	PUMP RM.				
23	P-4	PUMP NO. 4	VFD-4	PUMP RM.				
24	P-5	PUMP NO. 5	VFD-5	PUMP RM.				
25	VFD-1	VFD NO. 1	MDP-3	ELECTRICAL RM.				
26	VFD-2	VFD NO. 2	MDP-4	ELECTRICAL RM.				
27	VFD-3	VFD NO. 3	MDP-5	ELECTRICAL RM.				
28	RVSS-4	REDUCED VOLTAGE SOFT STARTER P#4	MDP-6	ELECTRICAL RM.				
29	RVSS-5	REDUCED VOLTAGE SOFT STARTER P#5	MDP-7	ELECTRICAL RM.				
30	CP-1	MAIN CONTROL PANEL/RTU	L-2	ELECTRICAL RM.				
31	CP-2	RELAY CONTROL PANEL	L-4	ELECTRICAL RM.				
33	SC-1	SPRINKLER TIME CONTROLLER	L-7	ELECTRICAL RM.				
34	CP-6	GEN. PARALLELING CONTROLLER	L-25	BLD. INTERIOR				
38	CP-4	SECURITY EQUIP. ENCLOSURE	L-20	ELECTRICAL RM.				
39	CP-5	DE-ICING CONTROL PANEL	L-19,21,23	ELECTRICAL RM.				
40	DDB-1	DE-ICE JUNCTION BOX	CP-5	BLD. EXTERIOR				
41	DDB-2	DE-ICE JUNCTION BOX	CP-5	BLD. EXTERIOR				
42	DIJB-3	DE-ICE JUNCTION BOX	CP-5	BLD. EXTERIOR				
43	DDB-4	DE-ICE JUNCTION BOX	CP-5	BLD. EXTERIOR				
61	VA-4	MOTORIZED VALVE ACTUATOR	H-26,28,30	PUMP RM.				
62	VA-3	MOTORIZED VALVE ACTUATOR	H-31,33,35	PUMP RM.				
63	VA-2	MOTORIZED VALVE ACTUATOR	H-25,27,29	PUMP RM.				
64	VA-1	MOTORIZED VALVE ACTUATOR	H+19,21,23	PUMP RM.				
65	VA-15	MOTORIZED VALVE ACTUATOR	H-8,10,12	PUMP RM.				
66	VA-5	MOTORIZED VALVE ACTUATOR	H-32,34,36	PUMP RM.				
112	FIT-1	FLOW INDICATOR/TRANSMITTER (ZONE 2 SO.)	L-6	PUMP RM.				
113	FIT-2	FLOW INDICATOR/TRANSMITTER (ZONE 2 NO.)	L-8	PUMP RM.				
120	AE/AIT-1	RESIDUAL CHLORINE ANALYZER	L-22	PUMP RM.				

GENERAL NOTES:

- 1. "HOME RUN" POWER SOURCE LISTED IN THE POWER PLAN ITEM TABLE ABOVE.
- 2. FOR WIRE AND CONDUIT REQUIREMENTS, REFER TO THE POWER ONE-LINE AND/OR PANEL SCHEDULE FOR THE CIRCUIT ID, THEN THE WIRE AND CONDUIT INFORMATION IS IN THE CONDUIT/CONDUCTOR TABLE ON E-1.2.
- 3. INSTALL ALL INTERIOR RECEPTACLES AT +36-IN ABOVE THE FLOOR. INSTALL EXTERIOR RECEPTACLES +18-IN ABOVE THE FINISHED SURFACE AND PROVIDE IN-SERVICE W/P COVER.

SHEET KEYNOTES:

- 1. 100 HP VFD SHOWN IN SOLID LINE, FUTURE 250 HP VFD SHOWN IN DASHED LINE. INSTALL THE 100 HP VFD ENCLOSURE WITH ADEQUATE CLEARANCE TO BE ABLE TO UPGRADE TO A 250 HP VFD ENCLOSURE IN THE FUTURE.
- 2. FUTURE 250 HP PUMP MOTOR.
- 3. INSTALL A NEMA 5-20R BELOW TIMER, AND WIRE TO PANEL L AS SHOWN.
- 4. INSTALL TOP OF ENCLOSURE AT 72-IN ABOVE FLOOR.
- 5. INSTALL FLOW METER INDICATOR/TRANSMITTER AT +60" ABOVE FINISHED FLOOR.
- 6. FLOOR MOUNTED EQUIPMENT: EXTEND HOUSEKEEPING PAD 4-IN IN FRONT AND SIDES. WALL MOUNTED EQUIPMENT: PAD SHALL EXTEND 6-IN (MAX.) FROM WALL.
- DISCONNECT SWITCHES FOR VA-1, VA-2, VA-3. STUB CONDUIT BELOW FUTURE DISCONNECT SWITCHES VA-3B AND VA-3C.
- 8. STUB CONDUITS FOR VA-3B AND VA-3C FOR THE FUTURE VALVE ACTUATORS. EXTEND ABOVE CONCRETE FLOOR MIN. OF 6-IN.

9. INSTALL GROUNDING CONDUCTORS TO SERVICE ENTRANCE EQUIPMENT AND GENERATOR. SEE E-4.1.

