

'MAT' Series Softener Systems



Overview

The Marlo 'MAT' softener is a meter initiated twin-alternating softener that effectively reduces hard-water scale. This results in lower energy costs and longer equipment life.

The twin alternating design provides a continuous supply of softened water for critical applications, such as boiler feed, with a fully recharged tank always in standby.

Standard Features

- Top-mounted, twin-tank control valve with integral brine injector
- High capacity, sodium form cation resin
- Water meter initiated regeneration
- Inlet/Outlet Sizes - 3/4", 1" or 1-1/2"
- NSF certified corrosion resistant pressure vessels
- Brine tank assembly with salt shelf and safety overflow valve
- Hardness test kit

Materials of Construction

- Control Valve Body:
 - Glass-filled Noryl - Fleck 9100, (3/4" and 1")
 - Bronze - Fleck 9500, (1-1/2")
- Meter: Brass or glass filled Noryl
- Resin Tanks: FRP
- Internal Distributor: PVC/ABS
- Brine Tank: Corrosion resistant polyethylene

Instrumentation / Controls

- Fleck SXT digital display electronic timer
- Meter initiated with override option
- Blue backlit LCD display
- Adjustable cycle times
- Service and diagnostic indicators

Operating Parameters

- Flow Range: 2 gpm - 62 gpm
- Inlet Pressure: 30-125 psig
- Temperature: 40-100°F
- Electrical: 120VAC, 1-Ph, 60 Hz

Options Available

- Skid mounted, pre-piped, pre-loaded system
- Electromechanical controller
- XT electronic controller with resettable totalizer
- 220 VAC/50Hz electrical power
- Application specific resin
- Larger brine bank

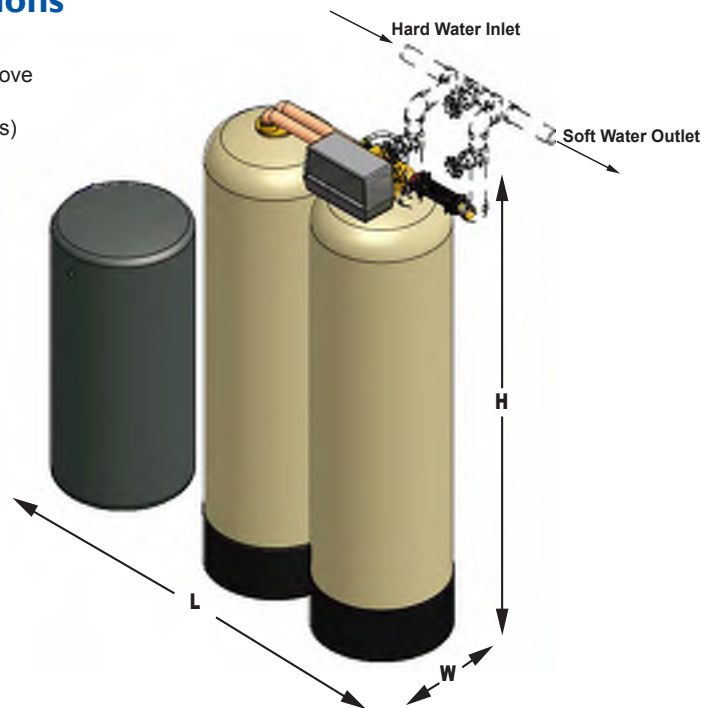
'MAT' Series Specifications

MODEL NUMBER	EXCHANGE CAPACITY (Grains)Ⓐ		FLOW RATES			PIPE SIZE		RESIN PER TANK	TANK SIZES		SALT STORAGE	# OF REGENS PER SALT REFILL	OVERALL DIMENSIONS (INCHES) Ⓒ			APPROX SHIPPING WEIGHT (LBS) Ⓔ
			SERVICE		BACK WASH	SERVICE	DRAIN		SOFTENER	BRINE						
			CONT. GPM Ⓓ	PEAK GPM Ⓔ												
	MAX.	MIN.		GPM	INCHES	INCHES	CU. FT.	INCHES	INCHES	LBS	MAX.	LENGTH	WIDTH	HEIGHT	SINGLE	
MAT 15M-3/4	15,000	10,000	12	16	1.2	¾	½	½	7x44	18x33	300	40	38	18	52	130
MAT 22M-3/4	22,000	15,000	13	17	1.6	¾	½	¾	8x44	18x33	300	27	40	18	52	165
MAT 30M-3/4	30,000	20,000	14	19	2	¾	½	1	9x48	18x33	300	20	40	18	56	200
MAT 45M-3/4	45,000	30,000	13	18	2.4	¾	½	1-½	10x54	18x33	375	17	45	18	62	265
MAT 60M-3/4	60,000	40,000	14	19	3.5	¾	½	2	12x52	18x40	320	11	49	18	60	400
MAT 60M-1	60,000	40,000	16	21	3.5	1	½	2	12x52	18x40	320	11	49	18	60	400
MAT 60M-1-½	60,000	40,000	28	39	3.5	1-½	1	2	13x54	18x40	320	11	52	18	62	425
MAT 90M-1	90,000	60,000	17	22	5	1	½	3	14x65	18x40	270	6	54	18	73	625
MAT 90M-1-½	90,000	60,000	31	42	5	1-½	1	3	14x65	18x40	270	6	56	18	75	650
MAT 120M-1	120,000	80,000	18	23	6	1	½	4	16x65	24x40	550	9	64	24	73	825
MAT 120M-1-½	120,000	80,000	34	46	6	1-½	1	4	16x65	24x40	550	9	68	24	75	850
MAT 150M-1-½	150,000	100,000	38	50	8	1-½	1	5	18x65	24x50	500	7	72	24	75	1,150
MAT 210M-1-½	210,000	140,000	39	52	12	1-½	1	7	21x62	24x50	580	6	78	24	75	1,375
MAT 240M-1-½	240,000	160,000	43	57	15	1-½	1	8	24x72	24x50	530	4	84	24	83	1,600
MAT 300M-1-½	300,000	200,000	41	55	15	1-½	1	10	24x72	24x50	440	3	84	24	83	1,850
MAT 450M-1-½	450,000	300,000	45	62	25	1-½	1	15	30x72	30x50	640	3	102	30	83	2,725

'MAT' Series Dimensions

NOTE:

Leave a minimum 24 inch clearance above the height of the unit for loading media.
Installation piping (shown in broken lines) are provided by others.



Notes

- Maximum capacity based on 30,000 grains per cubic foot of resin when regenerated with 15 lbs. salt .
Minimum capacity based on 20,000 grains per cubic foot of resin when regenerated with 6 lbs. salt .
- At pressure loss not exceeding 15 psi.
- At pressure loss not exceeding 25 psi.
- Dimensions are estimate only.
- Shipping weights are estimate only. Weights include resin and support gravel.



Submittal

Prepared For:

Webster University, Webster Grove, MO
C/O CW Boiler Supply

October 28, 2016

Description:

High Purity RO/DI Water Skid

Job Number: S-100516001

Submittal pages have been numbered to aid in referencing

All equipment and components shall be sized to fit in the available allocated space with the required working clearances.

All equipment and components shall be sized to fit within the service elevator.

General Specifications

Job Name: Webster University, Webster Grove, MO

Job No.: S-100516001

Items: High Purity RO/DI Water Skid

RO/DI Skid Consisting of the Following:

- MAT-60-1" Twin Alt Softener with SXT Digital Timer
- ACA-10G-1" Single Activated Carbon Filter with SXT Digital Timer/ RO Lockout Switch
- MRO-3600-4V" Deluxe RO System with Digital Conductivity
- 460V/3-Phase/60 Hz , 120V /1phase/60 Hz
- (2) 14" x 47" DI Bottles with 3.6 ft3 Mixed Bed Resin and Reslite (Piped in Series)
- 300 Gallon Polyethylene Conical Bottom Storage Tank, PRV Valve, Float Switches
- 5 GPM Flow Control for Slip Stream Recirculation
- (2) Grundfos CM 316 SS Re-press Pumps with VFD Drives & Sensors
- 35gpm @ 76 psi
- Motor Starter Panel with Disconnect
- Aquafine CSL-4R UV System
- Shelco 5FOS3 316 SS Final Filter with (5) 30" .2 Micron Filter Cartridges
- Master AB 1400 PLC with PV 800 Series 7" HMI Interface
- Ethernet Ports for Modbus Communication to BMS
- PLC to Display the Following Points
- (2) Recirculation Loop Flow Sensors
- (2) Recirculation Loop Resistivity Sensors
- (1) RO Conductivity Sensor
- Complete system less Permeate Tank to be Skid-Mounted, Pre-piped and Wired
- Split Skid Design
- Sch 80 PVC Piping to RO System
- Fused Poly Pro Piping Post RO

All components to be made to fit on service elevator. - icon Mechanical

Reference Drawings:

High Purity Skid General Arrangement Drawing
High Purity Water Treatment System P&ID

S-100516001-03-01
S-100516001-07-01

Shop Drawing Submittal Review

Transmitted To: Cannon Design

Date: December 20, 2016

Attention: stl-cac@cannondesign.com

Contact Person / WTA Field Inspector:
Patrick Garner

Project Name: Webster University-**ISB**

Reviewed by: Mike Whitworth (WES)

Project No. WT 14127.01
WES 607

☐ UPS ☐ Courier ☒ **Email**

Copies	No.	Description
1 PDF	226700P01B	(Submittal No.'s:)
		(Cannon #22 6700-006) - (Paric #15051-0389) – (WES #607)
		➤ Processed Water System - Resubmittal

***Remarks: See Submittal Review from Webb Engineering.**

c: Kelvin Patel
Kpatel@cannondesign.com

☒ ***Reviewed**

☒ ***No Exceptions Taken**

☐

☐ *Make Corrections As Noted,
No Resubmittal Required

Corrections or comments made on shop drawings during this review do not relieve contractor from compliance with requirements of drawings and specifications. This check is only for review of general conformance with the design concept of project and general compliance with information given in contract documents. Contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner.



1400 S. 3rd Street, Suite 201
St. Louis, Missouri 63104
Phone: (314) 588-0600
Fax: (314) 588-0604

Letter of Transmittal

To: **wtashop@wmtao.com**

From: **Mike Whitworth**

Date: **December 20, 2016**

Re: **Webster University ISB**

WES No: **607**

☐ For your Files

☐ For Review

☐ Please Comment

☐ Please Reply

Item No.	Description	No. of Copies	Date
1	Shop Drawing Review – (226700-006 REV002) 226700 Processed Water Systems for Laboratory Facilities	1	12-20-2016

•Signature: Mike Whitworth

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SERVICES INC.**www.webb-engineering.com

The review of this submittal is limited to the general conformance with the designated design concept and intent of this project and with the general compliance of the information provided in the contract documents. All comments, remarks and notations made on the submittal(s) as a result of this review do not relieve the contractor from full compliance with requirements of the contract documents. Approval for a specific item shall not include approval of an assembly of which the item is not a component. The contractor is solely responsible for rough-in and installation confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordination of this work with that of other trades on this project; and in a safe and satisfactory manner. All work shall be installed in full compliance with the manufacturer's recommendation, Federal, State and Local rules and regulation and the Authority Having Jurisdiction (AHJ) and applicable adopted codes and standards.

PROJECT NAME: Webster University ISBLOCATION: St. Louis MissouriCLIENT PROJ. No.: N/AWES PROJ. No.: 607SPEC SECTION: 22 6700
Processed Water System
for Laboratory FacilitiesSUBMITTAL ITEM:: See Below -CONTRACTOR: ICON Mechanical.CTR. SUBMITTAL # 22 6700-006 REV002SUBMITTAL DATE: December 19, 2016DATE RECEIVED: December 20, 2016RECEIVED VIA: E-MailRECEIVED FROM: WTADATE RETURNED: DECEMBER 20, 2016RETURNED VIA: E-MAILRETRURNED TO: WTASHOP@WMTAO.COM

STATUS KEY:

NEC	MCN	AAR	REJ	REV	NO EXCEPTION TAKEN	
					MAKE CORRECTIONS NOTED, NO RESUBMITTAL:	
					AMEND AND RESUBMIT	
					REJECTED, SEE REMARKS:	
					REVIEWED ONLY	
					ITEM	REMARKS
Submittal pages have been numbered to aid in referencing						
All equipment and components shall be sized to fit in the available allocated space with the required working clearances.						
All equipment and components shall be sized to fit within the service elevator.						
					Page 001 Cover Page	
X					Page 002 Marlo General Specifications	
X					Page 003 Marlo P&I Diagram	
X					Pages 004 - 005 Marlo Skid General Arrangement	
X					Pages 006 – 008 Marlo MAT Series Softener Systems Model – MAT 60M-1	
X					Pages 009 – 011 Marlo MFG Series Media Filter Systems Model – ACG-10G-1 Activated Carbon Filter	
X					Page 012 – 022 Marlo MRO-4V Reverse Osmosis Systems Model – MRO-3600-4V with pump	



X					Pages 023 – 025 Wave Cyber DI Tank Model 14"x47"	
X					Pages 026 – 028 Pentair Pentek Filter Housings Model – Not specified	
X					Page 029 – 031 Water Storage Tank Den Hartog Model – 36" x 325 Gal. Cone Bottom	1. Includes – stand and vent filter assembly
X					Pages 032 – 033 SPDT Pump Switch SJE Rhombus Model – Not Specified	
X					Page 034 - 035 Pressure Relief Valve Plast-O-Matic Model – Not Specified	
X					Pages 036 – 048 PP Piping Georg Fischer	1. Reviewed for uses as shown on submittal page 003
X					Page 049 – 059 Distribution Pumps Grundfos Model – CM 10-3	1. Motor starter control panel not included in submittal.
X					Pages 060 – 062 Pressure Gauges PIC Gauges Model – 301LFW	
X					Pages 063 – 066 UV System Aquafine Model – CSL-4R	
X					Pages 067 – 069 Final Filter Shelco Filters Model – 5FOS3	
X					Pages 070 – 074 Conductivity/Resistivity Sensor Georg Fischer Model Signet 2850	
X					Pages 075 – 079 Flow meter Georg Fischer Model – Signet 2537	
X					Pages 080 – 082 Pressure Sensor Ifm Electronic Model – PX3234	
X					Pages 083 – 085 Micro Drive Yaskawa Model – Not Specified.	
X					Pages 086 – 087 PLC Allen - Bradley	



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X					Pages 088 – 089 HMI Interface Allen Bradley Model – Pane View 800 (7")	
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REVIEWED BY: Michael R. Whitworth DATE: December 20, 2016

THESE COMMENTS ARE TO BE ATTACHED TO ALL COPIES OF THE SHOP DRAWING REFERENCED ABOVE.

SUBMITTAL IDENTIFICATION SHEET

To be completed by Contractor/CM

PROJECT NAME	
ADDRESS	
NUMBER	
OWNER	
ARCHITECT / ENGINEER	
SUBMITTED BY	
CONTRACTOR / CM SUBMITTAL NO.	CANNON DESIGN SUBMITTAL NO.
DRAWING / DETAIL REFERENCE	SPECIFICATION SECTION / PARAGRAPH
MANUFACTURER / SUPPLIER	ITEM / PRODUCT ID
REQUIRED DATE	PRIORITY
CRITICAL	☐

To be completed by Reviewer

CANNON DESIGN SUBMITTAL NUMBER
RECEIVED DATE

- ☐ **A. No Exceptions Taken**
No further review of submittal is required.
- ☐ **B. Make Corrections Noted**
Incorporate corrections in work;
resubmission is not required.
- ☐ **C. Revise and Resubmit**
Revise as noted, and resubmit for review.
- ☐ **D. Rejected**
Submittal is not in compliance with Contract Documents;
provide new submittal.
- ☐ **E. For Record / Information Only**
Submittal was reviewed for Record / Information
purposes only.
- ☐ **F. Not Required for Review**
Submittal is not required by Contract Documents
and has not been reviewed.

Review is for conformance with the design concept of this project and for general compliance with contract documents. Contractor is responsible for quantities, dimensions and compliance with contract documents and for information that pertains to fabrication processes, construction techniques and coordination of this work with all trades which will be affected thereby. This review is null and void if submittal deviates from contract documents and does not indicate or note deviations.

ITEM BEING SUBMITTED (check only one)

- ☐ Shop Drawings ☐ Certification / Qualifications ☐ Coordination Drawing
☐ Samples ☐ Record Documents ☐ Calculations
 (_____ copies) ☐ Product Data ☐ Schedules
☐ LEED Submittal ☐ O&M Manuals
☐ Other

ITEM BEING SUBMITTED FOR (check only one)

- ☐ Action ☐ Information Only ☐ Record

REMARKS OR DEVIATIONS

CONTRACTOR / CM CERTIFICATION
(SUBMITTALS NOT CERTIFIED WILL BE RETURNED WITHOUT REVIEW)



PARIC CORPORATION
SUBMITTAL STAMP

THIS SHOP DRAWING HAS BEEN REVIEWED BY PARIC CORPORATION

Subcontractor remains responsible for dimensions, quantities, coordination with other trades and compliance with contract documents.

Ry:

By:
Devin D. Gates

REVIEWED BY	DATE

A/E COMMENTS

- ☐
- See attached sheet(s) for additional comments

REVIEWED BY	DATE



77 Westport Plaza
Suite 250
St. Louis, MO 63146

TRANSMITTAL

No. 15051-0389

Paric Corporation

PROJECT: 15051-Webster University Interdisciplinary Science Building

DATE: 12/19/2016

TO: Cannon Design
1100 Clark Ave
St Louis MO 63102

Fax;
314-241-2203

RE: Processed Water System Shop Drawing
and Product Data REV1

ATTN: Kelvin Patel

JOB: 15051

WE ARE SENDING:	SUBMITTED FOR:	ACTION TAKEN:
☐ Shop Drawings	☒ Approval	☐ Approved as Submitted
☐ Letter	☐ Your Use	☐ Approved as Noted
☐ Prints	☐ As Requested	☐ Returned After Loan
☐ Change Order	☐ Review and Comment	☐ Resubmit
☐ Plans		☐ Submit
☐ Samples	SENT VIA:	☐ Returned
☐ Specifications	☐ Attached	☐ Returned for Corrections
☒ Other: Product Data	☐ Separate Cover Via:	☐ Due Date:

Item	Package	Code	Rev.	Copies	Date	Description	Status
Submittal		226700-006	2		12/19/2016	Processed Water System Shop Drawing and Product Data REV1	Submitted

NOTES:

CC:

Signed: _____
Devin Gates



Mechanical

LETTER OF TRANSMITTAL

TO: Paric Corporation

77 West Port Plaza #250

St. Louis, MO 63146

ATTN: Jason Szachnieski, Devin Gates

DATE: 12/8/16

JOB #: 5768

RE: Webster ISB

We are sending you

☒

Shop drawings

☐ Attached

☐ Prints

☐ Change order

☐ Under separate cover

☐ Plans

☐ Other

☐ Samples

☐ Specifications

☐ Copy of letter

COPIES	DATE	NO.	DESCRIPTION
1	12/8/16	226700	Processed Water System - Resubmittal

These are transmitted as checked below:

☐ For signature

☐ For your use

☐ As requested

☐ For bids due

☒ For review and comment

☐ Approved as submitted

☐ Approved as noted

☐ Returned for corrections

☐ Prints returned after loan to us

☐ Other

☒ Resubmit

☐ Submit

☐ Return

☐ copies for approval

☐ copies for distribution

☐ corrected prints

Remarks: Please return by 12/15/16

RESUBMITTAL WITH HIGHLIGHTED COMMENTS FROM MARLO BELOW WITHIN SUBMITTAL.

COPY TO: file

SIGNED:

Alex Chambers



Mechanical

Webster University ISB Webster Groves, MO

Submittal #:

226700

Submittal Description:

Processed Water System-Resubmittal

Return By:

12/15/16

Please Note: To avoid scheduling delays and equipment release delays, please submit by the "Return By" date.

CHECKED BY:			
DESIGNER:		X	ENGINEER:
X	NO EXCEPTION TAKEN		MAKE CORRECTIONS NOTED
	SUBMIT SPECIFIED ITEM		REVISE AND RESUBMIT
	REJECTED		
Checking is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Any action shown is subject to the requirements of the plans and specifications. Equipment supplier is responsible for: dimensions which shall be confirmed and correlated at the job site; fabrication processes and techniques of construction; coordination of his work with that of all other trades; and satisfactory performance of his work.			
		Job #:	5768
		Date:	12/8/16
		By:	ARC

• 2227 South Street • P.O. Box 044170
• Racine, Wisconsin 53404-7003
• Phone: 262-681-1300 • Fax: 262-681-1318
www.marlo-inc.com



Date: 12-06-16
RE: Webster University RO/DI Skid
TO: CW Boiler

Paul,

The following letter is to confirm that the RO/DI system is designed based on the P&ID supplied. The system proposed meets and exceeds the demands and performance required per the written specification section 226700. The Marlo system proposed is a custom skid mounted system with PLC controls which will deliver the required RO/DI quantity and quality required. Any questions feel free to give me a call.

Thanks,

Erik Stirle
Commercial & Industrial Division
Marlo Incorporated

Shop Drawing Submittal Review

Transmitted To: Cannon Design

Date: November 22, 2016

Attention: stl-cac@cannondesign.com

Contact Person / WTA Field Inspector:
Patrick Garner

Project Name: Webster University-**ISB**

Reviewed by: Mike Whitworth (WES)

Project No. WT 14127.01
WES 607

☐ UPS ☐ Courier ☒ **Email**

Copies	No.	Description
1 PDF	226700P01A	(Submittal No.'s:)
		(Cannon #22 6700-006) - (Paric #15051-0319) – (WES #607)
		➤ Processed Water System – (High Purity RO/DI Water Skid)
		(Resubmittal)

***Remarks: See Submittal Review from Webb Engineering.**

c: Kelvin Patel
Kpatel@cannondesign.com

☒ ***Reviewed**

☒ ***No Exceptions Taken**

☒ ***Make Corrections Noted,
No Resubmittal**

☒ ***Amend & Resubmit**

Corrections or comments made on shop drawings during this review do not relieve contractor from compliance with requirements of drawings and specifications. This check is only for review of general conformance with the design concept of project and general compliance with information given in contract documents. Contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner.



1400 S. 3rd Street, Suite 201
St. Louis, Missouri 63104
Phone: (314) 588-0600
Fax: (314) 588-0604

Letter of Transmittal

To: wtashop@wmtao.com

From: Mike Whitworth

Date: November 22, 2016

Re: Webster University ISB

WES No: 607

☐ For your Files

☐ For Review

☐ Please Comment

☐ Please Reply

Item No.	Description	No. of Copies	Date
1	Shop Drawing Review – Resubmittal 226700 Processed Water Systems for Laboratory Facilities	1	11-22-2016

•Signature: Mike Whitworth



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The review of this submittal is limited to the general conformance with the designated design concept and intent of this project and with the general compliance of the information provided in the contract documents. All comments, remarks and notations made on the submittal(s) as a result of this review do not relieve the contractor from full compliance with requirements of the contract documents. Approval for a specific item shall not include approval of an assembly of which the item is not a component. The contractor is solely responsible for rough-in and installation confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordination of this work with that of other trades on this project; and in a safe and satisfactory manner. All work shall be installed in full compliance with the manufacturer's recommendation, Federal, State and Local rules and regulation and the Authority Having Jurisdiction (AHJ) and applicable adopted codes and standards.

PROJECT NAME: Webster University ISB
 LOCATION: St. Louis Missouri
 CLIENT PROJ. No.: N/A
 WES PROJ. No.: 607
 SPEC SECTION: 22 6700
Processed Water System
for Laboratory Facilities
 SUBMITTAL ITEM:: See Below -

CONTRACTOR: ICON Mechanical.
 CTR. SUBMITTAL # 22 6700-006
 SUBMITTAL DATE: October 28, 2016
 DATE RECEIVED: November 16, 2016
 RECEIVED VIA: E-Mail
 RECEIVED FROM: WTA
 DATE RETURNED: NOVEMBER 22, 2016
 RETURNED VIA: E-MAIL
 RETURNED TO: WTASHOP@WMTAO.COM

STATUS KEY:

NEC	MCN	AAR	REJ	REV	NO EXCEPTION TAKEN	
					MAKE CORRECTIONS NOTED, NO RESUBMITTAL:	
					AMEND AND RESUBMIT	
					REJECTED, SEE REMARKS:	
					REVIEWED ONLY	
					ITEM	REMARKS
Submittal pages have been numbered to aid in referencing						
All equipment and components shall be sized to fit in the available allocated space with the required working clearances.						
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					Page 001 Cover Page	
X					Page 002 Marlo General Specifications	
X					Page 003 Marlo P&I Diagram	
X					Pages 004 - 005 Marlo Skid General Arrangement	
X					Pages 006 – 008 Marlo MAT Series Softener Systems Model – MAT 60M-1	
X					Pages 009 – 011 Marlo MFG Series Media Filter Systems Model – ACG-10G-1 Activated Carbon Filter	
		X			Page 012 – 022 Marlo MRO-4V Reverse Osmosis Systems Model – MRO-3600-4V with pump	1. Verify assembly includes items and components as specified. Refer to specification section 226700, Part 2.2 – paragraph 7 in its entirety.



X				Pages 023 – 025 Wave Cyber DI Tank Model 14"x47"	
		X		Pages 026 – 028 Pentair Pentek Filter Housings Model – Not specified	1. Provide manufacturers model/part number and list all accessories as applicable.
X				Page 029 – 031 Water Storage Tank Den Hartog Model – 36" x 325 Gal. Cone Bottom	1. Includes – stand and vent filter assembly
		X		Pages 032 – 033 SPDT Pump Switch SJE Rhombus Model – Not Specified	1. Verify electrical rating of SPDT switch is compatible with electrical characteristics of pump.
		X		Page 034 - 035 Pressure Relief Valve Plast-O-Matic Model – Not Specified	1. Provide manufacturers model/part number.
X				Pages 036 – 048 PP Piping Georg Fischer	1. Reviewed for uses as shown on submittal page 003
		X		Page 049 – 059 Distribution Pumps Grundfos Model – CM 10-3	1. Verify correct size and capacities of pumps and motors. 2. Motor starter control panel not included in submittal. 3. Refer to specification section 226700, Pat 2.2, paragraph 7a.
X				Pages 060 – 062 Pressure Gauges PIC Gauges Model – 301LFW	
X				Pages 063 – 066 UV System Aquafine Model – CSL-4R	
X				Pages 067 – 069 Final Filter Shelco Filters Model – 5FOS3	
	X			Pages 070 – 074 Conductivity/Resistivity Sensor Georg Fischer Model Signet 2850	1. All required patch cords and cables are to be included with sensor. Refer to specification section 226700, Part 2.2, paragraph 7d.
	X			Pages 075 – 079 Flow meter Georg Fischer Model – Signet 2537	1. Include all required patch cords and cables.
X				Pages 080 – 082 Pressure Sensor Ifm Electronic Model – PX3234	
		X		Pages 083 – 085 Micro Drive Yaskawa Model – Not Specified.	1. Provide manufacturers model/part number
		X		Pages 086 – 087 PLC Allen - Bradley	1. Provide manufacturers model/part number



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X					Pages 088 – 089 HMI Interface Allen Bradley Model – Pane View 800 (7")	
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REVIEWED BY: Michael R. Whitworth DATE: November 22, 2016

THESE COMMENTS ARE TO BE ATTACHED TO ALL COPIES OF THE SHOP DRAWING REFERENCED ABOVE.

SUBMITTAL IDENTIFICATION SHEET

To be completed by Contractor/CM

PROJECT NAME	
ADDRESS	
NUMBER	
OWNER	
ARCHITECT / ENGINEER	
SUBMITTED BY	
CONTRACTOR / CM SUBMITTAL NO.	CANNON DESIGN SUBMITTAL NO.
DRAWING / DETAIL REFERENCE	SPECIFICATION SECTION / PARAGRAPH
MANUFACTURER / SUPPLIER	ITEM / PRODUCT ID
REQUIRED DATE	PRIORITY
CRITICAL	☐

To be completed by Reviewer

CANNON DESIGN SUBMITTAL NUMBER
RECEIVED DATE

- ☐ **A. No Exceptions Taken**
No further review of submittal is required.
- ☐ **B. Make Corrections Noted**
Incorporate corrections in work;
resubmission is not required.
- ☐ **C. Revise and Resubmit**
Revise as noted, and resubmit for review.
- ☐ **D. Rejected**
Submittal is not in compliance with Contract Documents;
provide new submittal.
- ☐ **E. For Record / Information Only**
Submittal was reviewed for Record / Information
purposes only.
- ☐ **F. Not Required for Review**
Submittal is not required by Contract Documents
and has not been reviewed.

Review is for conformance with the design concept of this project and for general compliance with contract documents. Contractor is responsible for quantities, dimensions and compliance with contract documents and for information that pertains to fabrication processes, construction techniques and coordination of this work with all trades which will be affected thereby. This review is null and void if submittal deviates from contract documents and does not indicate or note deviations.

ITEM BEING SUBMITTED (check only one)

- ☐ Shop Drawings
☐ Samples
 (_____ copies)
☐ LEED Submittal
☐ Other
- ☐ Certification /
 Qualifications
☐ Record Documents
☐ Product Data
- ☐ Coordination Drawing
☐ Calculations
☐ Schedules
☐ O&M Manuals

ITEM BEING SUBMITTED FOR (check only one)

- ☐ Action ☐ Information Only ☐ Record

REMARKS OR DEVIATIONS

CONTRACTOR / CM CERTIFICATION
(SUBMITTALS NOT CERTIFIED WILL BE RETURNED WITHOUT REVIEW)



PARIC CORPORATION
SUBMITTAL STAMP

THIS SHOP DRAWING HAS BEEN REVIEWED BY PARIC CORPORATION

Subcontractor remains responsible for dimensions, quantities, coordination with other trades and compliance with contract documents.

Ry:

Devin D. Gates

REVIEWED BY	DATE

A/E COMMENTS

- ☐
- See attached sheet(s) for additional comments

REVIEWED BY	DATE



77 Westport Plaza
Suite 250
St. Louis, MO 63146

TRANSMITTAL

No. 15051-0319

Paric Corporation

PROJECT: 15051-Webster University Interdisciplinary Science Building

DATE: 11/11/2016

TO: Cannon Design
1100 Clark Ave
St Louis MO 63102

RE: Processed Water System Shop Drawing
and Product Data

ATTN: Kelvin Patel

JOB: 15051

WE ARE SENDING:		SUBMITTED FOR:	ACTION TAKEN:
☒ Shop Drawings		☒ Approval	☐ Approved as Submitted
☐ Letter		☐ Your Use	☐ Approved as Noted
☐ Prints		☐ As Requested	☐ Returned After Loan
☐ Change Order		☐ Review and Comment	☐ Resubmit
☐ Plans			☐ Submit
☐ Samples		SENT VIA:	☐ Returned
☐ Specifications			☐ Returned for Corrections
☒ Other: Product Data			☐ Due Date:

<i>Item</i>	<i>Package</i>	<i>Code</i>	<i>Rev.</i>	<i>Copies</i>	<i>Date</i>	<i>Description</i>	<i>Status</i>
Submittal		226700-006	1		11/11/2016	Processed Water System Shop Drawing and Product Data	Submitted

NOTES:

CC:

Signed: _____
Devin Gates



Mechanical

LETTER OF TRANSMITTAL

TO: Paric Corporation

77 West Port Plaza #250

St. Louis, MO 63146

ATTN: Jason Szachnieski, Devin Gates

DATE: 11/11/16

JOB #: 5768

RE: Webster ISB

We are sending you

☒

Shop drawings

☐ Attached

☐ Prints

☐ Under separate cover

☐ Plans

☐ Samples

☐ Specifications

☐ Copy of letter

☐ Change order

☐ Other

COPIES	DATE	NO.	DESCRIPTION
1	11/11/16	226700	Processed Water System

These are transmitted as checked below:

☐ For signature

☐ For your use

☐ As requested

☐ For bids due

☒

For review and comment

☐ Approved as submitted

☐ Approved as noted

☐ Returned for corrections

☐ Prints returned after loan to us

☐ Other

☐ Resubmit

☒

Submit

☐ Return

☐ copies for approval

☐ copies for distribution

☐ corrected prints

Remarks: Please return by 11/25/16

COPY TO: file

SIGNED:

Alex Chambers



Mechanical

Webster University ISB Webster Groves, MO

Submittal #:

226700

Submittal Description:

Processed Water System

Return By:

11/25/16

Please Note: To avoid scheduling delays and equipment release delays, please submit by the "Return By" date.

CHECKED BY:			
DESIGNER:		X	ENGINEER:
X	NO EXCEPTION TAKEN		MAKE CORRECTIONS NOTED
	SUBMIT SPECIFIED ITEM		REVISE AND RESUBMIT
	REJECTED		
Checking is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Any action shown is subject to the requirements of the plans and specifications. Equipment supplier is responsible for: dimensions which shall be confirmed and correlated at the job site; fabrication processes and techniques of construction; coordination of his work with that of all other trades; and satisfactory performance of his work.			
		Job #:	5768
		Date:	11/11/16
		By:	ARC