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ADDENDUM #1

July 30, 2020

TO: **ALL Prospective Bidders**
PROJECT: **Contract 75 A.1-Tertiary Process Equipment: Microstrainer Disc Filtration**
BID REFERENCE #: **89000-001.0**
BID OPENING DATE/TIME: **August 6, 2020 at 3:00 p.m. Local Time**

The purpose of this addendum is to clarify and/or modify the Drawings and/or Specifications for this project. All work affected is subject to all applicable terms and conditions of the Bidding and Contract Documents.

1. **NOTE: The BID OPENING DATE/TIME has been changed to:**
   Thursday, August 6, 2020 at 3:00 p.m.

2. **REVISIONS & CLARIFICATIONS: The following changes to the Bid Document should be made, and clarifications considered, when submitting bids for this project:**

   A) REPLACE Appendix C Table 1 with:

Table 1 – Process Parameters

Item	Value	Unit
Instantaneous Backwash Flowrate		gpm
Headloss		feet
Hydraulic Loading at average flow		gpm/sq ft
Maximum Hydraulic Loading at peak flow, one unit offline		gpm/sq ft
Number of Discs per Unit, as bid to meet Basis of Design performance requirement		each
Number of Discs per Unit, to occupy each location on drum		each
Submerged area of installed media per Unit, as bid to meet Basis of Design performance requirements		sq ft
Submerged area of installed media per Unit, to occupy each disc location on drum		sq ft
Instantaneous Backwash Flowrate, based on number of discs as bid to meet Basis of Design performance requirements		gpm
Instantaneous Backwash Flowrate, based on all discs installed to occupy all locations on drum		gpm

B) <u>REPLACE</u> Attachment A – Technical Specifications 2.03(D)

"**denotes the value for this parameter is required to be entered in Appendix B."
with
*""**denotes the value for this parameter is required to be entered in Appendix B and/or C."*

C) <u>REPLACE</u> Attachment A – Technical Specifications 2.03(C)

"Submerged area of media (all discs installed)*"
with
*"Submerged area of media (all discs installed)**"*

D) <u>ADD</u> Attachment A – Technical Specifications 2.03(C)

*"**denotes the value for this parameter is required to be entered in the bid document."*

E) <u>Clarification</u> Appendix C Table 3

Discfilter system is designed to handle a maximum TSS of 20 mg/L per previous proposals and discussions with *(professional services design consulting)* Engineer. Please provide basis for using 200 mg/L influent TSS as a design condition, as this would be outside of what we would expect a well operated WWTP to produce from secondary effluent clarifiers.
The ability for a Tertiary Treatment Process to handle an influent Total Suspended Solids (TSS) loading of 200 mg/L at an influent flow rate of 53 MGD for a maximum of 3 hrs is a design parameter of the existing Tertiary Treatment Process as stated in the existing Process's Jones & Henry Engineers, Limited Kalamazoo Water Reclamation Plant Operation and Maintenance Manual Volume I, dated 1987. State parameter is such that the Tertiary Treatment Process is capable of handling a short duration secondary clarifier operational upset without requiring a reportable bypass of the Tertiary Treatment Process nor a NPDES Permit violation. Nine (9) active disc filters is the maximum number of units to determine if the disc filter technology is capable of meeting this design parameter.
The Bidder shall complete the Table indicating the equipment's ability or inability to meet this parameter for bid evaluation purposes.

F) <u>REPLACE</u> Attachment A – Technical Specifications 1.03(A)(2)(d) in its entirety

with
"Delivery to Site – Equipment shall be delivered on site, to the location specified by the Owner, and shall be in accordance with the approved Shop Drawings, including but not limited to, correct quantities, dimensions, and materials. Items shall be wrapped and protected from damage during shipping. Items shall be capable of offloading and site transport via a forklift without the requirement for rigging. Vendor shall submit offloading forklift requirements to the Owner prior to shipping. Any offloading delay costs incurred due to incomplete and/or inaccurate offloading requirements shall be paid for by the Vendor. Shipping documents shall be submitted to and accepted by Owner prior to payment."

G) <u>ADD</u> Attachment A – Technical Specifications 1.02(C)(6)

"f. Offloading Requirements"

H) <u>ADDITION</u> Attachment A – Technical Specifications 1.02(B)(2)

Backwash volume calculation appendix.xlsx (Attached to Addendum and also available at https://www.kalamazoocity.org/bidopportunities.

I) <u>REPLACE</u> Attachment A – Technical Specifications 2.02(B)(9) in its entirety

with

"All motors shall be in use with a Variable Frequency Drive (VFD), unless otherwise noted. VFD shall be used in place of the function of a motor starter. All VFD's shall be identical. VFD's shall be ABB ACS500 series general purpose low voltage drives, Allen-Bradley PowerFlex family 750 series low voltage drives, or Owner approved equal."

J) <u>REPLACE</u> Attachment A – Technical Specifications 2.03(E)(6)(f) in its entirety

with

"A pressure sensor and gage shall be installed in the backwash header piping downstream of the pump, strainer, shut off, and piped bypass assembly in order to monitor nozzle pressure and serve as the backwash pump dry run protection. When the pressure is below an operator input setpoint, the PLC shall prevent the pump from running. When the pressure is below an operator input setpoint, the PLC shall warn the operator the backwash spray header is below minimum pressure for adequate backwash.

OR

A pressure sensor and gage shall be installed in the backwash header piping downstream of the pump, strainer, shut off, and piped bypass assembly in order to monitor nozzle pressure. When the pressure is below an operator input setpoint, the PLC shall warn the operator the backwash spray header is below minimum pressure for adequate backwash. A long, three (3) sided weir in conjunction with a level sensor, as specified else ware herein, shall provide dry-run protection of the backwash pump."

K) <u>REPLACE</u> Attachment A – Technical Specifications 2.03(E)(6)(g) in its entirety

with

"Flow measurement shall be provided by the Equipment Manufacturer as an estimated PLC calculation of the instantaneous flow rate and flow totalizer utilizing, but not limited to, real time pump run time, pump speed, pump discharge pipe pressure(s), and pump curve."

L) <u>Clarification</u> Attachment A – Technical Specifications 4.02(1)

Lifting or hoisting equipment is not necessary for removal as disc filter is not designed to be removed from building once installed and does not need to be removed for any maintenance or other purposes.

Hoisting equipment shall be provided as specified. Manufacturer unforeseen equipment maintenance and repairs are always necessary within the operational life of the equipment. Said maintenance and repairs are more adequately conducted in a controlled maintenance and repair facility and environment. Hoisting equipment will provide Owner the ability to properly conduct said future unforeseen equipment maintenance and repairs is said controlled facility and environment.

M) Clarification Attachment A – Technical Specifications 2.02(C)

Based on our review of Pre-Selection Bid Documents, it is our understanding that the supplier is to provide twenty-two (22) control panels. There are ten (10) Disc Filters with an Automatic Cleaning System (ACS). According to the Specs, there should be one (1) PLC Panel and one (1) 480VAC VFD panel for each Disc Filter (two (2) panels total per Disc Filter). Each PLC Panel will have a CompactLogix PLC, 12" PanelView 5510 HMI, HOA switches, pushbutton, pilot lights, etc. Each VFD Panel will include the VFDs for the Drum Motor and backwash pump for each Disc Filter. The ACS will include two (2) panels. One 480VAC panel for the ACS VFD and one 120VAC panel for the ACS Local Controls and initiation.

The specifications reference main power panels, intermittent power panels, and equipment control panels. Please confirm that the Manufacturer is able to supply a single panel per disc filter. Each panel will house the necessary motor controls (VFD's), transformers, power supplies, disconnects, and overload protection to receive 480 V 3 phase power, but transform to 120V AC and 24V DC as necessary within the panel.

Each Equipment Item shall be supplied with an adequate quantity of Industrial Control Panels (enclosures) such that each power type (AC or DC) and voltage (480V, 120V, 24V, etc.) is housed within its own enclosure. Housing each current type, voltage, and phase within its own enclosure allows for troubleshooting and maintenance within the enclosure while requiring the minimal PPE to safely be exposed to the current type, voltage, and phase within the enclosure, ie. ArcFlash PPE. Housing all electrical components of differing current, voltage and phasing within a single enclosure is not acceptable.

The circuits within an enclosure shall be designed such that the maximum Available Fault Current (AFC) within the enclosure is less than the Short Circuit Current Rating (SCCR) for the enclosure.

PLC Programming shall be used in place of relays whenever possible.

N) Clarification Appendix B – Performance Confidence

This section references "Phosphorus Performance Guarantee Offered" Please clarify if a phosphorus performance guarantee should be included as part of the base bid, and if information on phosphorus speciation and removal requirements is available.

The inclusion of a Phosphorus performance guarantee is at the sole discretion of the Bidder. The performance requirements are at the sole discretion of the Bidder. Disc Filter technology patent holders state their units are capable of decreasing the Phosphorus detected in the Disc Filter effluent to meet more stringent phosphorus discharge limits observed around the United States. This scoring parameter is provided to afford the Owner the ability to determine the Bidder's confidence in their marketing and real-world capabilities of their bidded equipment.

O) Clarification Appendix B – Performance Confidence

This section references a "4-week pre-procurement pilot". Please clarify if a 4-week pilot study should be included as part of the base bid, and if additional information on piloting requirements is available.

The inclusion of a 4-week pre-procurement pilot in the bid cost is at the sole discretion of the Bidder. Piloting performance requirements would be equal to those defined within the Bid Document(s). This scoring parameter is provided to afford the Owner the ability to determine the Bidder's confidence in their marketing and real-world capabilities of their bidded equipment.

P) Clarification Appendix B – Evaluation and Scoring Criteria

In previous specification versions, evaluation and scoring criteria was provided. Will the same criteria and weighting apply?

*The City (Owner) has not issued previous specification versions. Evaluation and scoring criteria is provided as an attachment to this addendum. (**Addendum Attachment A**)*

Q) Clarification Drawings – IFB-F-PE3

Please confirm that all grating will be independently supported and that all grating and supports will be provided by others.

Grating is independently supported. Grating and structural supports are provided by others.

R) Clarification Attachment A – Technical Specifications 1.02(C)(5)(s)

Our interpretation is that "shop Drawings" refer to Dimensional General Arrangement drawings to be included as part of the Submittal Package and not detailed fabrication drawings. Please confirm if this aligns with submittal expectations.

Submittals which shall be included with the Bid are specified in 1.02(C)(4).

S) Clarification Attachment A – Technical Specifications 2.02(C)

Our interpretation is that "shop Drawings" refer to Dimensional General Arrangement drawings to be included as part of the Submittal Package and not detailed fabrication drawings. Please confirm if this aligns with submittal expectations.

Submittals which shall be included with the Bid are specified in 1.02(C)(4).

T) Clarification Attachment A – Technical Specifications 2.03(B)

It is requested that the requirement for number of discs per unit be removed. With the external bypass, the system achieves higher utilization of the filter area which reduces the number of discs required per unit. Other parameters associated with loading and usable filter will remain in compliance.

The number of Filter Discs per unit value stated within the specification, 34, is the value used to develop a basis of design. The number of Filter Discs installed on a unit will be determined by the equipment manufacturer such that the equipment is capable of meeting the specifications. The equipment manufacturer's number of Filter Discs installed on a unit is required to be entered in the appropriate Appendix.

U) Clarification Attachment A – Technical Specifications 2.03(C)

The drawings appear to show 2 pumps and 2 tanks per skid, but the specifications indicate that a single pump per skid is required. Please confirm the required quantities for the ACS skid.

The ACS skid(s) shall be provided with an adequate quantity of pumps such that a single pump is not required to pump two (2) differing chemical solutions for chemical cleaning of a Disc Filter. Chemical solution(s) used for chemical cleaning shall be capable of removal of, including but not limited to, hardness scale buildup from filter media, biological growth from filter media, and Fats, Oils, and Grease (FOG) buildup from filter media. Chemical solution(s) will be provided by others housed in 275 gallon rigid intermediate bulk containers (IBC). Plumbing and piping between IBCs and ACS Skids will be provided by others.

V) Clarification Attachment A – Technical Specifications 2.03(D)

Filters are sized for 18 mg/L influent TSS. The maximum TSS at peak flow (200 mg/L) is beyond the limitations for a typical disc filter application with a 10 micron cloth. This may result in the machine operating in a continuous backwash mode and potential bypass, and will not likely achieve the average effluent parameters during this upset period. Please confirm if this is acceptable.

The ability for a Tertiary Treatment Process to handle an influent Total Suspended Solids (TSS) loading of 200 mg/L at an influent flow rate of 53 MGD for a maximum of 3 hrs is a design parameter of the existing Tertiary Treatment Process as stated in the existing Process's Jones & Henry Engineers, Limited Kalamazoo Water Reclamation Plant Operation and Maintenance Manual Volume I, dated 1987. Stated parameter is such that the Tertiary Treatment Process is capable of handling a short duration secondary clarifier operational upset without requiring a reportable bypass of the Tertiary Treatment Process nor a NPDES Permit violation. Nine (9) active disc filters is the maximum number of online units to determine if the disc filter technology is capable of meeting this design parameter. The Bidder shall complete the Table indicating the equipment's ability or inability to meet this parameter for bid evaluation purposes.

W) Clarification Attachment A – Technical Specifications 2.03(E)(2)(a)

The reference to "particle guidance to the filtration media" is a proprietary requirement. Accordingly, it is requested that this is removed.

The phrase "particle guidance to the filtration media" is not a patented nor trademarked phrase, thus not proprietary. Therefore, its removal from the specification is not necessary.

X) Clarification Attachment A – Technical Specifications 2.03(E)(11)(c)

Please note that the spray bar oscillation motor is a small 0.16 HP motor and requires a full voltage motor starter rather than a VFD.

Along with additional features, a VFD is capable of providing full voltage to a motor for starting.

Y) REPLACE Attachment A – Technical Specifications 4.01(2) in its entirety

with

"The model shall be provided in a format which is importable into Autodesk software at a scale dictated by the Owner."

Z) REPLACE Attachment A – Technical Specifications 2.03(E)(6)(h) in its entirety

with

"The Filter shall be equipped with a backwash-collecting trough for removing solids. The trough shall be constructed of AISI 316 stainless steel or GRP with AISI 316 stainless steel gables. The trough length shall be equivalent to the length of the center drum. The trough shall be elevated to prevent contact with the influent stream. The backwash waste stream shall leave the trough by gravity via the backwash outlet flange connection. The backwash collection and conveyance infrastructure shall be aligned such that the infrastructure does not come in contact with Filter effluent water nor is suspended above Filter effluent water."

AA) Clarification Appendix D – Process Performance Guarantee 1.04

Please confirm if the intent is to have the Vendor on site for 30 consecutive days to carry out performance testing and to pay for 60 samples (influent / effluent composites) taken during performance test.
Since the Owner will have been operating the system up until the time of performance testing starting, it is typically more Cost effective to have the Owner run the performance test, with assistance and/or supervision of Vendor. Please also note that the Owner has access to the daily log sheets, calibration reports, inspection reports, etc that the Vendor will not have access to at the time of starting the Performance Testing period.
Please confirm that if the intent is to have the Vendor operate the Filtration equipment and confirm if the Vendor needs to be a certified Operator for the State of Michigan.
The intent of the Owner is not to have the Vendor on site for 30 consecutive days to carry out performance testing. The intent of the Owner is not to have the Vendor operate the Filtration equipment, unless the Vendor requires operational staff oversight and control to validate the results of the process performance testing. The intent of the Owner is to have Vendor and Owner agreed upon staff and/or entity(ies) whom shall obtain necessary samples and perform analysis of said samples. Should the Vendor and Owner agree the Owner will obtain necessary samples and perform analysis of said samples, the intent of the Owner is to pass through the additional costs, if any, incurred by the Owner to the Vendor for sampling and analysis of samples which are required above and beyond the normal operations of the Facility yet necessary for evaluation, the parameters outlined in the Process Performance Guarantee. The Owner does not require the Vendor to be a certified Operator for the State of Michigan.

BB) ADD Attachment A – Technical Specifications 1.02(C)(4)

"m. Process Performance Guarantee lump sum sampling and laboratory analysis cost included in bid price"

CC) Clarification Attachment A – Technical Specifications 2.03(F)(2)(e)

Please note our ACS system utilizes CPVC piping for chemical resistance as a standard. Please confirm this is an acceptable material of construction for the ACS piping, ball valve, and ball check valves.
Chemical welded CPVC piping is not an acceptable material of construction for the ACS piping, ball valve, and ball check valves. Through long term operational and maintenance experience, only the specified material has proved to provide a low maintenance product.

DD) Clarification Attachment A – Technical Specifications 1.02(C)(4)(d)

Please provide a copy of the Certification / Affidavit form to be completed by the manufacturer or consider removing this requirement.
The Certification / Affidavit shall be submitted in a format as determined by the Bidder which shall meet the requirements of Attachment A – Technical Specifications section 2.01(B)(2).

EE) Clarification Attachment A – Technical Specifications 2.02(B)(9)

ABB has a newer version of this VFD, ACS 580 series, is this acceptable?
Yes.

FF) Clarification Attachment A – Technical Specifications 2.02(B)(11)(a)

Can the PTC input to the VFD be used to shut the motor down if the motor temperature reaches a certain limit? A PTC sensor cannot be used to monitor and record temperatures. Please clarify if this is acceptable.

Yes, the PTC input on the VFD may be used to shut down the motor if the motor temperature reaches a certain limit.

GG) REPLACE Attachment A – Technical Specifications 2.02(B)(11)(a) in its entirety

with

"Thermal protection devices shall be embedded within the motor windings terminated at the PTC input on the VFD. A signal shall also connect to the Equipment's PLC for monitoring, reporting, and trending."

HH) Clarification Attachment A – Technical Specifications 2.02(B)(12)

Is there a specific overload protection device that is required?

Overload protection device(s) shall be selected by the manufacturer which meets the specifications.

II) REPLACE Attachment A – Technical Specifications 2.02(C)(4)(b) in its entirety

with

"Laptop power outlet with ethernet port shall be Hubbell PR4X205EB, Panduit DAP4BC-G0-4 with Panduit DAP-5AMP-KIT, or Owner approved equal."

JJ) ADD Attachment A – Technical Specifications 2.02(C)(1)

"t. All terminations shall be finger-safe."

The Addendum can be viewed and downloaded from the City's website at https://www.kalamazoocity.org/bidopportunities.

In order for a bid to be responsive, this signed addendum must be returned with your bid. If you have already submitted your bid, acknowledge receipt and acceptance of this addendum by signing in the place provided and returning it to the undersigned and it shall be incorporated in your bid. Please identify your return envelope with the bid reference number and project description.

Sincerely,

Michelle Emig
Purchasing Division Manager

c: Ryan Stoughton, Public Services

FIRM: _____ SIGNED: _____

NAME: _____ DATE: _____
(Type or Print)

Addendum #1

Attachment A
EVALUATION & SCORING CRITERIA

CONTRACT 75 A.1-TERTIARY PROCESS EQUIPMENT: MICROSTRAINER DISC FILTRATION

Bid Reference #: 89000-001.0

Contract Award - IFB Submission Evaluation Form

Bidder:

Regional Stability and Longevity

Category	Criterion	# of Installations	Avg age of Installations, yrs	Sub-Total	Weight	Region Total
Number of simular bidded unit installations operational w/in their performance specifications	Tri State			0	4	0
	Great Lakes States (10 States)			0	3	0
	U.S.			0	2	0
	North America			0	1	0
					Total:	0

Rank	Value	Weight	Score
1	4	6	
2	3		
3	2		
4	1		

Parts Availability

Category	Criterion	Value	Weight	Score
Location of nearest warehouse for bidded units	50 Miles	4	7	
	100 Miles	3		
	250 Miles	2		
	250+ Miles	1		

Service Availability

Category	Criterion	Value	Weight	Score
Location of nearest Factory Certified Service Technicians	50 Miles	4	5	
	100 Miles	3		
	250 Miles	2		
	250+ Miles	1		

Specification Conformance

Category	Criterion	Value	Weight	Score
Technical Ability to Conform	No Deviations	4	8	
	Minor Deviations	3		
	Minimal Deviations	2		
	Major Deviations	1		

Treatment Flexibility

Category	Competitive Rank	Value	Weight	Score
Peak Hydraulic Capacity per unit w/ all capable discs installed w/ a hydraulic loading rate of 5 gpm / submerged sf of filtration media	1	4	9	
	2	3		
	3	2		
	4	1		
Submerged square feet of filtration media per unit w/ all discs installed at Peak Hydraulic Capacity	1	4	9	
	2	3		
	3	2		
	4	1		

Ability to Perform

Category	Competitive Rank	Value	Weight	Score
Lowest Headloss Ranking @ Peak Specified Hydraulic Flow Rate	1	4	9	
	2	3		
	3	2		
	4	1		
Title 22 approved	Bidded Units	5	7	
	Similar Vendor Production Units	3		
	Not Applicable	0		

Performance Confidence

Category	Criterion	Value	Weight	Score
Solids Performance Guarantee Offered	Yes	3	8	
	No	0		
Phosphorous Performance Guarantee Offered	Yes	3	8	
	No	0		
4 week pre-procurement pilot included	Yes	3	8	
	No	0		

20 Year Life Cycle Analysis Evaluation

Category	Competitive Rank	Value	Weight	Score
Cost	1	4	10	
	2	3		
	3	2		
	4	1		

Bid Evaluation

Category	Competitive Rank	Value	Weight	Score
Cost	1	4	10	
	2	3		
	3	2		
	4	1		

Total Score: 0