

August 8, 2016

Mr. Joe Moore
Dubois-Cooper Associates
905 Penniman Ave
Plymouth, MI 48170

Mr. Dan Leveque
Solberg, Knowles & Associates
601 S. Lansing Street
St. Johns, MI 48879

Mr. Randy Hamlett
Hamlett Environmental Tech Co
905 Gulley Road
Howell MI 48843

Re: Invitation to Bid
Owosso Wastewater Treatment Plant
Mechanically Cleaned Fine Bar Screen and Matching Washer-Compactor
City of Owosso, Shiawassee County, MI

Dear Sir:

The City of Owosso is requesting quotes for a Mechanically Cleaned Fine Bar Screen and matching Washer-Compactor. Based on your representation of manufacturers of this equipment, you are invited to submit a bid for the proposed equipment.

Bids for the Mechanically Cleaned Fine Bar Screen and matching Washer-Compactor will be received at: City of Owosso, Utility Department, Attn: Glenn Chinavare, Utilities Director, 301 West Main Street, Owosso, MI 48867. Bids shall be received no later than 2:00 p.m. on Friday, August 26, 2016. It is anticipated that the equipment purchase will be approved at the September 6, 2016 City Council meeting and the Notice of Award will be issued on September 7, 2016.

If you have any questions regarding the equipment purchase, please contact the project engineer at C2AE, Jim Minster, PE at 517-371-1200.

Sincerely,

C2AE



Jim Minster, PE
Project Manager
O: 517.371.1200
James.Minster@c2ae.com

**INVITATION TO BID
FOR
OWOSSO WASTEWATER TREATMENT PLANT
MECHANICALLY CLEANED FINE BAR SCREEN AND MATCHING WASHER-COMPACTOR
CITY OF OWOSSO
SHIAWASSEE COUNTY, MICHIGAN**

1. Sealed Bids for Owosso WWTP Mechanical Cleaned Fine Bar Screen and Matching Washer-Compactor will be received by City of Owosso at 301 West Main Street, Owosso, MI 48867 until 2:00 p.m. local time on Friday, August 26, 2016 at which time all Bids will be publicly read aloud.

2. The principal items of work consist of the following:

Vendor supply of a Mechanically Cleaned Fine Bar Screen and Matching Washer-Compactor

3. An electronic copy of the Bid Documents, including specifications and plans, in .pdf format may be obtained/downloaded from C2AE's ShareFile site. Please contact Jennifer Bernardin at Jennifer.bernardin@c2ae.com for login and password information.

Addenda shall also be posted on and may be obtained from C2AE's ShareFile site.

It is the Bidder's responsibility to determine/evaluate the capability of their equipment to provide/download documents that are accurate for size, scale, and content.

The Bidder shall be responsible for obtaining/downloading all pertinent bidding information to adequately and accurately prepare his Bid.

4. Bids shall remain firm and shall not be withdrawn for a period of ninety (90) calendar days after bid opening.
5. City of Owosso reserves the right to accept any Bid, to reject any or all Bids, or to waive bidding formalities in the best interest of the Owner.

By Order of:

Amy K. Kirkland
City Clerk

BID FORM

PROJECT IDENTIFICATION:

Owosso Wastewater Treatment Plant
Mechanically Cleaned Fine Bar Screen & Matching Washer-Compactor
City of Owosso
301 West Main Street
Owosso, Michigan 48867

ARTICLE 1 - BID RECIPIENT

- 1.01 This Bid is submitted to: City of Owosso
City Utilities
Attn: Glenn Chinavare, Utilities Director
301 West Main Street
Owosso, Michigan 48867
- 1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Buyer in the form included in the Bidding Documents to furnish the Goods and Special Services as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 - BIDDER'S ACKNOWLEDGMENTS

- 2.01 Bidder accepts all of the terms and conditions of the Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. The Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Buyer.
- 2.02 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of its failure to furnish the Goods and Special Services in accordance with the schedule set forth in the Agreement.
- 2.03 Bidder accepts the provisions of the Agreement as to the assignment of the Contract for furnishing Goods and Special Services.

ARTICLE 3 - BIDDER'S REPRESENTATIONS

- 3.01 In submitting this Bid, Bidder represents, as set forth in the Agreement, that:
- A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of all of which is hereby acknowledged.

<u>Addendum No.</u>	<u>Addendum Date</u>
_____	_____
_____	_____
_____	_____

- B. If specified, or if in Bidder's judgment, any local condition may affect cost, progress or the furnishing of Goods and Special Services, Bidder has visited the Point of Destination and become familiar with and is satisfied as to the local conditions that may affect cost, progress, or the furnishing of Goods and Special Services.

C. Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress and the furnishing of Goods and Special Services.

D. Bidder has carefully studied and correlated the information known to Bidder, and information and observations obtained from Bidder's visits, if any, to the Point of Destination with the Bidding Documents.

E. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.

F. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for furnishing the Goods and Special Services for which this Bid is submitted.

G. Bidder further represents that this Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any individual or entity to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over Buyer.

ARTICLE 4 - BASIS OF BID

4.01 Bidder will furnish the Goods and Special Services in accordance with the Contract Documents for the following price(s):

BASE BID: Supply one (1) 1/8" Mechanically Cleaned Fine Bar Screen and Matching Washer-Compactor

\$ _____

Dollar Amount in Words: _____

ALTERNATE: Replace 1/8" Screen with 1/4" Screen (ADD) \$ _____

Dollar Amount in Words: _____

ARTICLE 5 - TIME OF COMPLETION

5.01 Bidder agrees that the furnishing of Goods and Special Services will conform to the schedule set forth in Article 5 of the Agreement.

ARTICLE 6 - ATTACHMENTS TO THIS BID

6.01 The following documents are attached to and made a condition of this Bid:

A. Required Bid security in the form of a certified or bank check or a bid bond; and

B. Required bidder qualifications statement with supporting data.

ARTICLE 7 - DEFINED TERMS

7.01 The terms used in this Bid have the meanings indicated in the General Conditions and the Supplementary Conditions. The significance of terms with initial capital letters is described in the General Conditions.

ARTICLE 8 -BID SUBMITTAL

8.01 This Bid submitted by:

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____ (SEAL)
(Individual's signature)

Doing business as: _____

Business address: _____

Phone No.: _____ FAX No.: _____

A Partnership

Partnership Name: _____ (SEAL)

By: _____
(Signature of general partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Business address: _____

Phone No.: _____ FAX No.: _____

A Corporation

Corporation Name: _____ (SEAL)

State of Incorporation: _____

Type (General Business, Professional, Service, Limited Liability): _____

By: _____
(Signature -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

(CORPORATE SEAL)

Attest _____

(Signature of Corporate Secretary)

Business address: _____

Phone No.: _____ FAX No.: _____

Date of Qualification to do business is _____

Joint Venture

Joint Venturer Name: _____ (SEAL)

By: _____

(Signature of joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

Phone No.: _____ FAX No.: _____

Joint Venturer Name: _____ (SEAL)

By: _____

(Signature of joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

Phone No.: _____ FAX No.: _____

Phone and FAX Number, and Address for receipt of official communications:

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

AGREEMENT

THIS AGREEMENT is between City of Owosso ("*Buyer*") and _____ ("*Seller*"). Buyer and Seller, in consideration of the mutual covenants set forth herein, agree as follows:

ARTICLE 1 - GOODS AND SPECIAL SERVICES

1.01 Seller shall furnish the Goods and Special Services as specified or indicated in the Contract Documents. The Goods and Special Services to be furnished are described in Section 01100, Summary of Goods and Special Services.

ARTICLE 2 - THE PROJECT

2.01 The Project for which the Goods and Special Services to be provided under the Contract Documents may be the whole or only a part is generally described as follows:

City of Owosso
Wastewater Treatment Plant
Mechanically Cleaned Fine Bar Screen and Matching Washer-Compactor

ARTICLE 3 – ENGINEER

3.01 The Contract Documents for the Goods and Special Services have been prepared by

Capital Consultants, Inc. dba C2AE
725 Prudden Street
Lansing, MI 48906

who is hereinafter called Engineer and who is to assume all duties and responsibilities, and have the rights and authority, assigned to Engineer in the Contract Documents in connection with the furnishing of Goods and Special Services.

ARTICLE 4 - POINT OF DESTINATION

4.01 The place where the Goods are to be delivered is defined in the General Conditions as the Point of Destination and is designated as:

Owosso Wastewater Treatment Facility
1410 Chippewa Trail
Owosso, MI 48867

ARTICLE 5 - CONTRACT TIMES

5.01 *Time of the Essence*

A. All time limits for Milestones, if any, the delivery of Goods and the furnishing of Special Services as stated in the Contract Documents are of the essence of the Contract.

5.02 *Days for Submittal of Shop Drawings*

A. All Shop Drawings and Samples required by the Contract Documents will be submitted to Buyer for Engineer's review and approval within 10 days of Notice of Award.

5.03 *Days to Achieve Delivery of Goods*

A. The Goods are to be delivered to the Point of Destination and ready for Buyer's receipt of delivery on (or within a period of 15 days prior to) ten weeks after the Seller's receipt of approved Shop Drawings.

5.04 *Days for Furnishing Special Services*

A. The furnishing of Special Services to Buyer will commence within 2 weeks after Buyer's written notice to Seller following Buyer's receipt of delivery of the Goods, and shall be completed within 7 days thereafter. Such notice will be given no later than 60 days after Buyer's receipt of delivery.

5.05 *Liquidated Damages*

A. Buyer and Seller recognize that time is of the essence of this Agreement and that Buyer will suffer financial loss if the Goods are not delivered at the Point of Destination and ready for receipt of delivery by Buyer within the times specified in Paragraph 5.03 above, plus any extensions thereof allowed in accordance with Article 7 of the General Conditions. The parties also recognize that the timely performance of services by others involved in the Project are materially dependent upon Seller's specific compliance with the requirements of Paragraph 5.03. Further, they recognize the delays, expense and difficulties involved in proving the actual loss suffered by Buyer if complete acceptable Goods are not delivered on time. Accordingly, instead of requiring such proof, Buyer and Seller agree that as liquidated damages for delay (but not as a penalty) Seller shall pay Buyer \$500.00 for each day that expires after the time specified in Paragraph 5.03 for delivery of acceptable Goods.

ARTICLE 6 - CONTRACT PRICE

6.01 Buyer shall pay Seller for furnishing the Goods and Special Services in accordance with the Contract Documents in current funds as follows:

- A. A Lump Sum of _____
- B. Additional Charges should Owner elect to replace $\frac{1}{8}$ " bar screen with $\frac{1}{4}$ " bar screen after start-up and evaluation of performance \$_____

ARTICLE 7 - PAYMENT PROCEDURES

7.01 Submittal and Processing of Payments.

- A. Seller shall submit Applications for Payment in accordance with Article 10 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

7.02 Progress Payments.

- A. Buyer shall make progress payments on account of the Contract Price on the basis of Seller's Applications for Payment as follows:
 - 1. Upon receipt of the first Application for Payment submitted in accordance with Paragraph 10.01.A. 1 of the General Conditions and accompanied by Engineer's recommendation of payment in accordance with Paragraph 10.02.A of the General Conditions, an amount equal to 10% percent of the Contract Price, less such amounts as Engineer may determine in accordance with Paragraph 10.02.A.3 of the General Conditions.
 - 2. Upon receipt of the second such Application for Payment accompanied by Engineer's recommendation of payment in accordance with Paragraph 10.01.A.2 of the General Conditions, an amount sufficient to increase total payments to Seller to 100% percent of the Contract Price, less such amounts as Engineer may determine in accordance with Paragraph 10.02.A.3 of the General Conditions.

7.03 Final Payment

- A. Upon receipt of the final Application for Payment accompanied by Engineer's recommendation of payment in accordance with Paragraph 10.06 of the General Conditions, Buyer shall pay the remainder of the Contract Price as recommended by Engineer.

ARTICLE 8 - INTEREST

- 8.01 All monies not paid when due as provided in Article 10 of the General Conditions shall bear interest at the rate of 5 percent per annum.

ARTICLE 9 - SELLER'S REPRESENTATIONS

9.01 In order to induce Buyer to enter into this Agreement, Seller makes the following representations:

- A. Seller has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
- B. If specified or if, in Seller's judgment, any local condition may affect cost, progress or the furnishing of the Goods and Special Services, Seller has visited the Point of Destination and become familiar with and is satisfied as to the local conditions that may affect cost, progress or the furnishing of the Goods and Special Services.
- C. Seller is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress and the furnishing of the Goods and Special Services.
- D. Seller has carefully studied and correlated the information known to Seller, and information and observations obtained from Seller's visits, if any, to the Point of Destination, with the Contract Documents.
- E. Seller has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Seller has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Seller.
- F. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for furnishing Goods and Special Services.

ARTICLE 10 - CONTRACT DOCUMENTS

10.01 *Contents*

- A. The Contract Documents consist of the following:
 - 1. This Agreement (pages 1 to 8, inclusive);
 - 2. General Conditions (pages 1 to 19 , inclusive);
 - 5. Supplementary Conditions (page 1 to 2, inclusive);
 - 6. Specifications: Section 011000 Summary of Goods and Special Services
 Section 444260 Mechanically Cleaned Fine Bar Screen
 Section 444261 Washer Compactor WC2.A_.5 (3/4 HP Motor)
 (WC2.1)
 - 6. Addenda (Numbers ____ to ____, inclusive);

7. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
 - a. Written Amendment(s);
 - b. Change Order(s);
 - c. Field Order(s);
 - d. Engineer's Written Interpretation(s).
- B. The documents listed in paragraph 10.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 10.
- D. The Contract Documents may only be amended, or supplemented as provided in Paragraph 3.04 of the General Conditions.

ARTICLE 11 - MISCELLANEOUS

11.01 *Defined Terms*

- A. Terms used in this Agreement will have the meanings indicated in the General Conditions and the Supplementary Conditions.

11.02 *Assignment*

- A. No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound. Specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law). Unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

11.03 *Successors and Assigns*

- A. Buyer and Seller each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, its partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

11.04 Severability

A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Buyer and Seller. The Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

IN WITNESS WHEREOF, Buyer and Seller have signed this Agreement in duplicate. One counterpart each has been delivered to Buyer and Seller. All portions of the Contract Documents have been signed or identified by Buyer and Seller or on their behalf.

This Agreement will be effective on _____.

Buyer: _____

Seller: _____

By: _____

[Corporate Seal]

By: _____

[Corporate Seal]

Attest:

Attest:

Address for giving notice:

Address for giving notice:

(If Buyer is a corporation, attach evidence of authority to sign. If Buyer is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of Buyer-Seller Agreement.)

Designated Representative:

Name: _____

Title: _____

Address: _____

Phone: _____

Facsimile: _____

Agent for service of process:

(If Seller is a corporation or a partnership,
attach evidence of authority to sign.)

Designated Representative:

Name: _____

Title: _____

Address: _____

Phone: _____

Facsimile: _____

SECTION 011000

SUMMARY OF GOODS AND SPECIAL SERVICES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Project information.
 - 2. Work covered by Contract Documents.

1.2 PROJECT INFORMATION

- A. City of Owosso, Owosso Wastewater Treatment Facility, Mechanical Bar Screen and Washer Compactor.
 - 1. Project Location: Owosso Wastewater Treatment Plant, 1410 Chippewa Trail, Owosso, MI 48867.
- B. Owner: City of Owosso
 - 1. Owner's Representative: Glenn Chinavare, Director of Public Works.
- C. Engineer: Capital Consultants dba C2AE, Jim Minster PE, 725 Prudden St. Lansing MI 48906, Phone: 517-371-1200, email: james.minster@c2ae.com.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of the following:
 - 1. Supply of new screening and washer compactor equipment for the wastewater plant to be installed by Owner's personnel in existing raw wastewater channel.
 - 2. Supply one day of training and start-up services following installation
 - 3. Initial bar screen to be $\frac{1}{8}$ " spacing for initial startup. Subsequent to startup and after evaluation of screening volume received with this spacing, the City may elect to have the $\frac{1}{8}$ " replaced with $\frac{1}{4}$ "
- B. Type of Contract.
 - 1. Equipment and special services will be supplied under a single prime contract.

PART 2 - PRODUCTS

2.1 Mechanical Bar Screen: Section 44 4260

2.2 Washer Compactor: Section 44 4261

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 444260

MECHANICALLY CLEANED FINE BAR SCREENS

PART 1 – GENERAL

1.1 SUMMARY

- A.** This section includes the furnishing of a front-cleaning, front-return link driven mechanically cleaned bar screen assembly and any auxiliary equipment or accessories to be installed in the location as indicated on the drawings and as specified herein.

Number of units: 1

Equipment designation: North Clarifier Bar Screen

Equipment location: North Clarifier Influent Channel

- B.** All equipment supplied under this section shall be furnished by or through a single Screening System Supplier who shall coordinate with the City for delivery, installation and testing of the screening components. The Screening System Supplier shall have the sole responsibility for the coordination and performance of all components of the screenings system with the performance and design criteria specified herein.
- C.** The City shall be responsible to coordinate all details of the screening equipment with other related parts of the Work, including verification that all structures, piping, wiring, and equipment components are compatible.

1.2 RELATED SECTIONS

- A.** The following list of related sections is provided for the convenience of the Contractor and is for reference only to support commonly referenced sections that are in-general applicable to all equipment supplied. (For complete list of sections see specification index.)
1. All sections of Agreement for Procurement of Equipment Division 1 including but not limited to Submittal Procedures, Shop Drawings, Product Data and Samples, Operating and maintenance information, Protection of Materials and Equipment, Installation, Testing, and Commissioning, Instruction of Operations and Maintenance Personnel, and Spare Parts Maintenance Manuals.

1.3 REFERENCE STANDARDS

- A.** American National Standards Institute (ANSI)

- B. American Society for Testing and Materials (ASTM)
- C. American Welding Society (AWS)
- D. American Institute of Steel Construction (AISC)
- E. American Bearing Manufacturers Association (ABMA)
- F. American Gear Manufacturers Association (AGMA)
- G. National Electrical Manufacturers Association (NEMA)
- H. Underwriters Laboratory (UL)

1.4 SUBMITTALS

- A. The equipment manufacturer shall submit the following items:
 - 1. (6) Sets of General Arrangement drawings that illustrate the layout of the equipment, equipment weight, principal dimensions with related verifications required for installation including anchorage locations. Other related data including descriptive literature, Electrical Control Drawings, Catalog Cut Sheets for individual components and Drive Motor Data.
 - 2. A list of recommended Spare Parts including any Special Tools required for routine maintenance of the equipment is provided in Section 2.5.
 - 3. (6) Sets of O & M Manuals including As-Built Drawings of the Mechanically Cleaned Bar Screen Arrangement, Controls and Accessories shall be provided in digital format after equipment ship for inclusion in the Close-Out Submittal process.
 - 4. For sites that have (3) ft or greater head differential, equipment manufacturer shall provide Structural Certification from licensed Civil engineer.

1.5 QUALITY ASSURANCE

- A. The Mechanically Cleaned Bar Screens shall be fully assembled and shop tested at the manufacturing facility prior to shipment. Shop testing shall include a minimum of 4 hours of run time. The contractor, the engineer, the owner or the owner's designated representative reserves the right to witness the shop test. A minimum three (3) week notice shall be provided prior to the test to allow for travel coordination.
- B. To assure quality and performance: All equipment furnished under this Section and related sections shall be of a single manufacturer who has been regularly engaged in the design and manufacture of the equipment and demonstrates, to the satisfaction of the Engineer, that the quality is equal to equipment made by those manufacturers specifically named herein. And the screen manufacturer shall have at least 25 installations of the specified model of mechanically cleaned bar screen equipment that has been in successful operation, at similar installations, for at least five (5) years. Upon request, the manufacturer shall provide a reference of such installation sites along with the relevant contact information.

Possible consideration may be given to manufacturers with less installation experience but only upon submission and approval of dimensional and installation drawings and O & M Manuals. Additionally, a complete product development plan with dates indicating all applicable alpha and beta testing shall be provided for review and acceptance.

Approval of any manufacturer that does not meet the installation experienced defined herein shall be contingent upon submission and approval of the previously defined information. Additionally, such manufacturers shall be required to provide a performance bond issued in favor of the owner, covering the full amount of the manufacturer's offering and for the entire warranty period of the project.

- C. The equipment furnished shall be fabricated, assembled, installed and placed in proper operation condition in full conformity with approved drawings, specifications, engineering data, and/or recommendations furnished by the equipment manufacturer.

1.6 WARRANTY

- A. Manufacturer shall provide a written one year standard warranty from the date of use of the mechanically cleaned bar screen equipment to guarantee that there shall be no defects in material or workmanship in any item supplied.
- B. Manufacturer shall warrant for the period of 5 years all rotating parts of the Mechanically Cleaned Bar Screen including the gear motor, bearing, drive head, and the link system including the links, castings, pins and retaining rings. Manufacturer warrants that these components shall be replaced if damaged or defective in the normal use of the equipment.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Screen shall be as manufactured by Duperon Corporation, 1200 Leon Scott Court, Saginaw, Michigan, TF 800.383.8479. The screens shall be the FlexRake® M, Full Penetration Fine Screens.
- B. Or equal. Screen manufacturer seeking to submit and "or equal" must submit additional information for engineering evaluation. The necessary submission to be considered shall include the following information:
 - a. Product data sheet
 - b. Site Specific Proposal Drawing

- c. Installation drawings and instructions
- d. O & M Manual
- e. An employee list of in-house field service technicians along with their respective locations and resumes.

2.2 BASIS OF DESIGN

- A.** The mechanically cleaned bar screen shall have a head sprocket only, with no sprockets, bearings, idlers, or similar drive components under water to trap the chain. Equipment featuring reciprocating rake arms or lower bearings/sprockets/tracks below the water is not acceptable.
- B.** The mechanically cleaned bar screen shall be designed to run continuously (24/7), without operator. No special provisions to limit run time or intermittent operations shall be employed.
- C.** The equipment shall have multiple scrapers on the bar screen at one time cleaning continuously from bottom to top, the entire width of the bar screen. The drive output shaft rotation shall be constant and in one direction in order to reduce maintenance and increase product life.
- D.** The link system shall have jam evasion capability by flexing around and collecting large objects and grease balls and surges of solids at peak loading times without overloading and shutting down the unit. The link system shall have a 1,000 pound lifting capacity.
- E.** The design shall be such to ensure that all maintenance can be accomplished at the operating floor level or above. No part of the drive system including sprockets shall be located below the water surface at maximum design flow.

F. Design Conditions:

Site Installation Information:	
Channel Width:	3 ft.
Channel Height:	5' 8"
(upstream clearance) Channel Depth:	3' 2"
Bar Opening Size:	1/8" w/potential change to 1/4"
Angle of Installation (From Vertical):	Approx. 22 ⁰
Average Flow:	3.5 MGD
Average Water Level:	
Maximum Flow:	
Maximum Water Level:	
Maximum Head Differential:	standard 1 ft.
Equipment Location:	Outdoors
Indoor Installation:	
Ceiling Clearance Height:	NA
Site Access Constraints:	NA
Roof Opening Available:	NA
Door Opening Size:	NA
Other Site Constraints:	NA
Installation Area Classification:	NA
Outdoor Installation:	
Site Access Constraints:	Minimal
Below Freezing Temperatures:	Yes
Installation Area (Envelope) Classification:	Unclassified
Collection and Conveyance	
Containment Height:	See 44 4261
Debris Bin:	See 44 4261
Conveyor:	None
Washer/Compactor:	Yes
Other:	

2.3 COMPONENTS

A. Bar screen assembly: Bar screen assembly shall be of stainless steel and designed to withstand 1 foot head differential unless noted otherwise in Section 2.2 J Design Conditions. Unless noted otherwise materials of construction shall be 304 Stainless Steel. A stainless steel channel bottom plate shall be an integral part of the bar screen assembly to fully engage scrapers in the bar screen at the base of the unit and assure that the raking mechanism reaches the bottom of the screen to prevent debris accumulation The Bar screen assembly shall be shipped in one piece.

- 1. Screen Bars:** Bars shall be 316L stainless steel and be tear-shaped with a Hydraulic Coefficient shape factor of 0.76 and the minimum dimensions

of 0.25 inch x 0.75 inch x 0.13 inch. Bars shall be individually replaceable without welding.

2. **Side Fabrication:** The screen framework shall be 304 stainless steel bent plate with minimum of 3/16 inch cross section.. Horizontal members shall be of stainless steel bent plate or stainless steel pipe. Support members and frame shall adequately support the bar screen based on site specific requirements.
 3. **Dead Plate:** Dead plate shall be 0.25 inch thick 304 stainless steel. The dead plate shall be flat and true; span the entire width of the unit; and transition from bar screen to discharge point.
 4. **Discharge Chute:** The discharge chute shall be 11ga. (0.12 inch) 304 stainless steel. The discharge chute shall be bolted to the dead plate and shall be designed to allow debris to be transferred from discharge point into the debris containment.
 5. **Flexor:** Flexor assembly shall be provided per manufacturer standard design and shall be constructed of UV Stable UHMW PE rollers and 304 stainless steel rails and components. Flexor shall act to provide positive engagement into the screen while also allowing for the scrapers to flex away from the screen.
- B. **Closeouts:** Closeouts shall be 304 stainless steel and shall assure that there is no space wider than the clear opening between bars to prevent passage of larger solids than allowed through the screen.
- C. **Debris Blade:** A 304 stainless steel and UV Stable UHMW-PE debris blade assembly, which does not require a separate drive, shall be installed to assist in removing debris from the scraper on the mechanically cleaned bar screen unit as recommended by the manufacturer. Hydraulic, shock, or spring controlled debris blade mechanisms are not acceptable.
- D. **Screen Enclosure:** A 14ga. #4 brushed satin finish 304 SSTL Enclosure shall be installed to cover the screen above the operating deck level. Front Enclosure shall be continuously hinged stainless steel doors for access to equipment and shall be secured with a lift-slide-latch handle. Rear Enclosure shall have hinged removable doors and shall be secured with a lift-slide-latch handle.
- E. **Link System:** The link system shall be passivated stainless steel castings and have a minimum ultimate strength of 60,000 lbs with a minimum cross section of 1.5 inches and weighing a minimum of 4.5 lbs each. System shall include 302 stainless steel retaining rings and 304 stainless steel pins. Parts must meet ASTM A380 specification for surface finish.
- F. **Scrapers:** Scrapers shall be spaced 21 inches apart. To provide long product life the scraper shall move at no greater than 28 inches per minute at standard operating speed of 1/2 rpm allowing for approximately 1 debris discharge per minute. At least one scraper every 21 inches shall fully penetrate the bar screen,

cleaning all three sides of the bars as well as through to the cross members in openings of 0.25, 0.375 and 0.50 inches. Scraper teeth shall be minimum .375 inch thick. Scraper shall be 5 inches deep x screen width 304 stainless steel filled with a high strength composite.

G. Drive Head: The Drive Head shall be located at the top of the mechanically cleaned bar screen.

1. Drive Unit: Each mechanically cleaned bar screen unit shall operate independently and shall have its own drive unit and driven components.

- a. Drive Spindle including shaft and sprockets shall be welded 304 stainless steel.
- b. Gearbox shall be shaft-mounted, right angle type and include spiral bevel gearing. The output shaft speed shall be controlled by a vector type inverter or per rake manufacturer's recommendation. It shall have at least a 1.52 or greater service factor based on machine torque requirements. The gearbox shall not be vented to the outside atmosphere. The gearbox shall be grease filled. Oil filled gearboxes are not allowed.
- c. The motor shall be AC induction type, inverter duty, 3 phase 240/480 volt and mounted to the gear reducer. The motor shall be ½ hp, designed for 1800 RPMs base speed and rated for Class I, Groups C & D, Class II Groups F & G environments. The motor shall have an EPNV enclosure, NEMA design B with a 56C frame size. Service factor shall not exceed 1.0 with 1600V, Class F insulation rated for temperatures up to 40 degrees C and 1600 volts and be optimized for IGBT type inverters. The motor must be UL listed and designed for continuous operation.
- d. Motor shall have built in, normally closed, thermostat to protect from overheating that is to be field wired to corresponding terminal in control panel for redundant (ambient) overload protection.
- e. All drive head components shall be of components available in the United States.

2. Bearing: Bearing shall be self lubricating engineered Thordon or Vesconite bearing and shall have a 24/7/365 L10 life of 20 years when in compliance with stated O&M recommendations. Non-sealed bearings are not acceptable.

3. Speed Reducer: Speed reducer shall be a double-reduction, cycloidal style and shall comply with all applicable AGMA standards. The speed reducer shall be capable of a 4/1 speed range with variable output speeds between 0.50 to 2.2 output RPMs (in high flow conditions). The

speed reducer shall produce an output torque of 11,417 in.lb. and have a gear ratio of 809:1.

- H. Standard Coating:** All non-stainless bar screen components shall be coated in strict accordance with the paint manufacturer's specification. Surface Preparation shall be done in accordance with SSPC-SP6 Commercial Blast Cleaning. The three-part coating system shall be manufactured by Tnemec as follows: Prime Coat Series 90-97 Tnemec Zinc at 2.5-3.5 mils DFT, Intermediate Coat Series 27 F.C. Typoxy at 3.0-5.0 mils DFT, and Top Coat Series 1075U Endura-Shield II at 2.0-3.0 mils DFT. Standard color is 11SF Safety Blue. Material shall meet all state and federal VOC and other regulatory requirements.

2.4 ELECTRICAL, CONTROLS, INSTRUMENTATION

- A. General:** Controls for each rake shall be in enclosures provided by the bar screen manufacturer. The bar screen manufacturer shall be responsible for proper sizing and function of the controls at 480V, unless specified otherwise.
1. Main control panels require shading from the sun and shall be operated within a temperature range between 35°F and 104°F. Sunshields, visors or other structures needed to provide shade are by others.
 2. Controls shall be designed to accept incoming power supply per plans/specs and shall include a step-down transformer as needed to achieve 120V.
 3. Control Panel(s) shall be constructed to meet the appropriate NEMA classification requirements and will include a main, lockable disconnect. The panel will be constructed by a UL certified control panel build facility and will be supported by the appropriate UL labeling.
 4. Controls shall be tested prior to shipment to owner. The rake manufacturer shall verify all overload settings in the rake controller to insure proper overload and speed settings required for the application are properly programmed.
 5. Control panel(s) shall be wired complete with a minimum of #16 MTW wire in the appropriate colors for the circuits being supplied. 120VAC control shall be red, grounded AC neutral shall be white, DC control shall be blue, DC neutral shall be blue with a white tracer, equipment ground shall be green and all incoming and outgoing external power source wires shall be a yellow configuration. All AC power wiring shall be a minimum of #12 Black. All wires shall be labeled at both ends with heat-shrink wire markers. Internal panel wiring shall be contained in non-flammable, covered wire way.
 6. All panel(s) and panel mounted devices shall be labeled with engraved I.D. markers that reference back to the system schematics. Tags shall be white with black core, engraved as required.

7. All field wiring and power cables between the bar screen Main Control Panel and the Local Push Button Station shall be provided by others under the Electrical Section. VFD rated motor cable (Belden #29502 or equal) is recommended for all motors. Motor cables shall be less than 80 ft unless otherwise specified.

B. Components:

1. Main Control Panel

- a. Enclosure(s) shall be NEMA 12 painted for indoor installations
- b. Enclosure shall not be located in an explosive environment.
- c. Main Control Panel shall be designed with a SCCR rating of 18KA at 480VAC minimum and labeled as such, unless otherwise specified.
- d. All terminals utilized in the main panel shall be 600V rated terminals and 20% spare terminal space shall be provided for any potential future revisions.
- e. The Main Control Panel shall include at a minimum the following
 - Main fusible disconnect with lockable operator, unless otherwise specified.
 - Physical or virtual Hand/Off/Auto (HOA) Selector and Push/pull E-Stop button.
 - Elapsed run-time meter
 - Indication for "Power On", "Forward" and necessary faults.
- f. Relay Based Controls shall include the following:
 - Variable Frequency Drive (VFD)
 - Electronic torque control
 - Hard contact SCADA Interlock(s)
 - Adjustable on/off cycle timers
- g. PLC Based Controls shall include the following:
 - Programmable Logic Controller (PLC)
 - Variable Frequency Drive (VFD)
 - HMI programmable functions as required
 - SCADA Interlocking via Hard Contact and/or Ethernet Communications Protocols as required.

2. Local Control Push Button Station

- a. Enclosure shall be NEMA 4X rated for unclassified installation. Local push button station must be local to the equipment to maintain requirements of local safety codes as determined by the

Engineer.

- b. Local station shall be mounted within 10 feet or as close to the equipment as safely possible and be field wired by the electrical subcontractor to the corresponding terminal inputs in the main control panel.
 - c. The remote pushbutton station shall include Forward, Jog Reverse and E-Stop buttons.
3. **Instrumentation:** Each raking assembly shall have a separate level system that shall be installed and field wired by others per the manufacturer's instructions. Note that the HydroRanger can be installed in the control panel or remotely and wired to the control panel.

Differential Level Control: Shall use a Relay based logic control with a HydroRanger 200. The rake will automatically start/stop based on the headloss across the screen. Cycle timing logic shall also be included in the program that shall function in parallel with the differential level control logic for optimal rake run time. Level sensing instrumentation shall be a Siemens HydroRanger 200 with (2) Ultrasonic Level Transducers and (1) intrinsically safe hand-held programmer rated for 20ft range and for Class I Div I hazardous environments. Transducers shall be installed upstream and downstream of the rake, at least 1 foot above the highest anticipated water elevation and the beam angle shall not have obstructions between the transducer face and the water surface. The HydroRanger will be configured with two level setpoints, differential level and provide a run command based on the differential level.

Differential Level Control: Shall use a Unitronics PLC with a built-in HMI. Program shall include differential setpoints used to automatically start/stop the rake based on the headloss across the screen. The logic shall also include a "Rake Off" setpoint which shall be lower than the initial run setpoint. This setpoint is required to help avoid intermittent starting/stopping caused by the differential level equalizing with minimal rake run time. Cycle timing logic shall also be included in the program that shall function in parallel with the differential level control logic for optimal rake run time.

C. Controls Design Conditions:

Incoming Power: (Voltage/Phase)	480 V 3 phase
Enclosures:	NEMA 12
Installation location:	Indoors
Approx. distance between main panel and equipment motor	50 ft.
Climate controlled location:	Yes
Outdoor location (must be shaded): For temperatures below 35° F select Outdoors	NA

Option 1. For temperatures above 104° F select Outdoors Option 2	
Outdoors Option 1: thermostat, heater and fan w/ grilles and rain hoods for ventilation. Appropriate N4X rating by the addition of grilles is acceptable, if is rated N4X prior to install of grilles.	
Outdoors Option 2: Thermostat, air conditioner and heater	
Transducer/Float cable length (50 ft standard):	50 ft.

2.5 SPECIALTY TOOLS, SPARE PARTS AND LUBRICATION

A. Manufacturer shall provide any specialty tools and recommend spare parts required for maintaining the equipment as follows:

1. Snap/Retaining Rings (10)
2. Link Clevis Pins (4)
3. Scraper Bolts (4)
4. Scraper Nuts (4)
5. Snap Ring Tool (1)
6. Never Seez, 3 oz. tube (1)

PART 3 – EXECUTION

3.1 SHIPMENT

Shipment of all equipment shall be coordinated to allow the screen shipment as one complete integrated assembly unless otherwise specified by the customer, contractor, or engineer.

3.2 INSTALLATION

- A. Equipment shall be installed in strict conformance with the manufacturer's installation instructions, as submitted with Shop Drawings, Operation and Maintenance Manuals and/or any pre-installation checklists. Installation shall utilize standard torque values and be installed secure in position and neat in appearance. Installation shall include any site preparation tasks as required by the engineer or manufacturer; such as unloading, touch-up painting, etc. and any other installation tasks and materials such as wiring, conduit, controls stands as determined by the customer and/or specified by the manufacturer.

B. Anchor Bolts: Anchor bolts and nuts shall be 304 stainless steel and furnished for each item of equipment by the CONTRACTOR.

1. Anchor bolt template drawings shall be included in the submittal to permit verification of the location structural elements, new or existing in the concrete.
2. Anchor bolt sizes, quantity and requirements will be indicated on the submittal drawings. Quantity is site specific but typically each Barscreen assembly requires (8) to (12) 1/2" dia. x 4 1/2" Lg. embed HILTI HAS RODS w/ RE-500 SD Adhesive system anchor bolts for Mechanical Screen anchorage and typically (8) to (12) 3/8" dia. x 3 3/8" Lg. embed HILTI HAS RODS w/ RE-500 adhesive system anchor bolts for the Return Guide/Closeouts anchorage.

3.3 TESTING

A. After completion of installation, CONTRACTOR shall provide for testing and shall be performed in strict conformance with the manufacturer's start up instructions. Testing of the bar screen shall demonstrate that the equipment is fully operational by picking up and depositing materials into specified containment.

B. Field certification shall include inspection of the following:

1. Verify equipment is properly aligned and anchored per the installation instruction and drawings. Assure the bar screen unit is square, flat and unobstructed with required clearances maintained.
2. Assure controls and instrumentation work in all modes.
3. Check equipment for proper operation of debris blade, scrapers, etc as well as completion of the Start-Up requirements in the installation guide.

3.4 ONSITE TECHNICAL ASSISTANCE

A. Manufacturer shall provide services to include Installation Certification, and shall include (1) day for Start-Up and (1) day for Training. Manufacturer shall be given minimum 14 days notification prior to the need for such services. To assure the best outcome for the Owner and Contractor, the Contractor shall provide certification for completion of the PRE-COMMISSIONING CHECKLIST.

END OF SECTION 444261

SECTION 444261

Washer Compactor WC2.A_.5 (3/4 HP Motor) (WC2.1)

PART 1 – GENERAL

1.1 DESCRIPTION

A. SCOPE OF WORK

Furnish an interleaving, dual auger washer compactor assembly as shown on the drawings and as specified herein. A single unit shall provide washing and compacting action on waste water screenings. The equipment shall be supplied and manufactured by the same company(ies) supplying and manufacturing the associated fine bar screen.

B. RELATED WORK

1. Bar Screen

1.2 QUALITY ASSURANCE

A. All equipment furnished under this Section shall be of a single manufacturer and demonstrate, to the satisfaction of the Engineer, that the quality is equal to equipment made by those manufacturers specifically named herein.

B. The equipment furnished shall be fabricated, assembled, erected, and placed in proper operating condition in full conformity with approved drawings, specifications, engineering data, and/or recommendations furnished by the equipment manufacturer.

C. References

- American Welding Society (AWS)
AWS D1.1 Structural Welding Code – Steel
- American Institute of Steel Construction (AISC)
Manual of Steel Construction

1.3 SUBMITTALS

The equipment manufacturer shall submit the following items in sets of 4

- A. Shop Drawings (including main layout drawings, list of equipment specifications, and recommendations furnished by the equipment manufacturer).
- B. As-Built Drawings of the Washer Compactor Structure, Controls, and Accessories (as is applicable).
- C. List of Spare Parts and Special Tools (if applicable).

- D. 4 O&M Manuals, including As-Built drawings, shall be provided after equipment ships for inclusion in the close-out Submittal process.

PART 2 – PRODUCTS

2.1 Compactor Washer

A. Design Features:

1. Compacting Action: Dual augers provide positive displacement action, are orientated on top of each other and rotate in opposing directions. The augers are intermeshed and are of 1 left hand and 1 right hand lead and shall have ability to rotate, 2.2 RPM in opposing directions. Compactor augers shall be designed with a limited float on top of a perforated plate, allowing them to accommodate irregular debris.
2. Washing Action: Wash port manifold is integrated prior to the compaction housing and delivers 3 to 5 GPM assuming supply pressure is 40 to 60 PSI at a ½ inch NPT connection for attaching water source utilizing filtered effluent or municipal water. Washing action is flood wash type from a single ½ inch NPT supply. Drain connection shall be 3" NPT male.
3. Operation: Washer Compactor is designed to be continuous run not requiring operator. Washer Compactor is equipped with a self-regulating, active pressure zone designed to accept non-standard wastewater debris in its original form, such as rocks, broken concrete, and metal (bolts, short pipe, etc.) up to 4 inches long. Washer Compactor shall have the ability to process multiple pieces of clothing, variable volumes of debris, and unprocessed septage or grease. Compactor moves at normal operating speed of 2.2 RPM and can run intermittently to sync with upstream equipment.

B. Components:

1. Compactor Housing: The compactor housing shall be constructed of stainless steel (see table for material options available) and be a minimum of 11 Gauge and connect to 3/8 inch thick flanges.
2. Augers: Shall be of stainless steel (see table for material options available) with flights 3/8 inch and have a 4 inch flight pitch. Augers shall be coupled to a transmission at the drive end and supported at the compaction end with UHMW plane bearings. Such arrangement allows movement for accommodation of irregular debris.
3. Drive Assembly:
 - i. Each Washer Compactor unit shall operate independently and will have its own drive unit and driven components. The gearbox shall not be vented to the outside atmosphere.
 - ii. The gearbox shall be grease lubricated and designed for 5 years (or 20,000 hours of operation) between recommended clean and re-grease services. The gearbox shall be right angle type and shall incorporate cycloidal and spiral bevel gearing with a total ratio of

- 809:1. The gear reducer output shaft speed shall be 0.5 RPM minimum – 2.2 RPM maximum and controlled by an AC Tech, vector type inverter or greater service factor based on unit torque requirements. It shall be shaft mounted utilizing the keyless Taper-Grip® bushing.
- iii. The motor shall be mounted to the gear reducer by utilizing a quill, C-Face mounting style. The gearmotor shall be AC induction type, ¾ hp, 3/60/230/460 volt, explosion proof, inverter duty model.
- iv. The drive assembly shall incorporate the Duperon® standard coating system (see Section 2.2. for full description).
4. Auger Transmission:
- i. The Drive Assembly shall be coupled to a dual gear transmission which drives the augers in counter rotation.
 - ii. The spur gears are contained in a stainless steel housing and supported by Delrin (or equivalent) plane bearings.
 - iii. Grease fittings shall be located outside of the transmission housing to provide lubrication to the gears.
5. Speed Reducer: Shall have a maximum output of 2.2 RPM, 809:1 reduction ratio with 18,940 in-lb of output torque.
6. Thrust Bearings: Shall be Delrin (or equivalent), self-lubricating and be capable of withstanding minimum 2000 Lb. of thrust load (each auger) at 2.2 RPM for life of machine.
7. Screw supports: Shall be UHMW plane type, self lubricating and fastened into place using stainless steel fasteners.
8. Spur Gears: Shall be 17-4 PH stainless steel.
9. Spare Parts and Special Tools:
- a. Shall include the following: (Note: Duperon does not typically recommend the purchase of additional spare parts, though some customers prefer to have them on hand.)
 - 1) Plane bearing kit includes:
 - 2 side screw supports
 - 2 upper/lower screw supports
 - Fasteners
10. Heat Trace and Blanket Kit:
- Teflon heat blanket (weather proof) construction, removable and attaches to the heat trace for ease of access.
 - Heat Trace (heating cable) is self regulating type, 12 AWG buss, 10Watts/ft. Kit includes 60ft of cable.
 - Thermostat is NEMA 4X and has a remote probe for detecting temperature inside heat blanket. Field mounting and wiring by others.

- Junction box includes materials necessary for explosion proof termination of heat trace. Field mounting by others.
- Power requirement is 120VAC / 600 watts. Power by others.
- Components are suitable for CLASS I, DIVISION I areas.

2.2 MATERIALS

- A. Fabrications: All welded fabrications are to be made from stainless steel (see table for material selections). All welded connections and welding procedures shall comply with AWS "Structural Welding Code – Sheet Steel" D1.3/D1.6.
- B. Select Parts: Select power transmission parts to be made from cast iron; however, shall conform to coating as follows.

- C. Standard Coating:

Motor Gearbox shall be coated in strict accordance with the paint manufacturer's specification. Surface Preparation shall be done in accordance with SSPC-SP-10 Near White. The three-part coating system shall be manufactured by Tnemec as follows: Prime Coat Series 90-97 Tnemec Zinc at 2.5-3.5 mils DFT, Intermediate Coat Series 27 F.C. Typoxy at 3.0-5.0 mils DFT, and Top Coat Series 1075U Endura-Shield II at 2.0-3.0 mils DFT. Standard color is 11SF Safety Blue. Material shall meet all state and federal VOC and other regulatory requirements.

Alternatives: Any alternate products must provide certified test reports when submitting products other than those specified herein the specification. Test reports shall indicate the test method, system and requirements for those products being submitted, and shall meet or exceed the test criteria and performance values of the specified coatings herein.

- D. Non-metal: Parts not covered above shall be made from UHMW polyethylene.

2.3 CONTROLS

- A. General:
1. Controls shall be provided by Washer Compactor manufacturer.
 2. Controls shall be designed to accept 3PH 240/480 volt incoming power supply per plans/specs. Control panel power shall be 1PH/120VAC and shall include a step-down transformer to achieve 120V.
 3. Controls shall be built by a UL-approved panel builder and bear the UL-approved logo. Controls shall be tested by panel builder and by the Washer Compactor manufacturer prior to shipment to owner. The Washer Compactor manufacturer shall verify all overload settings in the Washer Compactor controller to insure proper overload and speed settings required for the application are properly programmed.
- B. Main Panel:
1. Main control panels require shading from the sun and shall be operated within a temperature range between 35 and 104 F. Sunshields, visors, or

other structures necessary to provide shade are by others. (If the controls will experience temperatures outside this range, then special climate provisions are available.)

2. The controls shall be rated NEMA 4X, yet be located in a climate-controlled environment and be mounted per plans.
3. Control panel shall have an inner door pocket that includes a copy of As-Built drawings from the manufacturer, as well as any other pertinent documentation necessary to properly operate the controls.
4. The control package shall include the following and utilize the panel builder's standard component manufacturers, unless otherwise approved by the Washer Compactor manufacturer:
 - a. N4X 304 SSTL enclosure with continuous hinge, exterior, lockable door.
 - b. High volt transformer.
 - c. HOA Selector where Hand mode shall enable the local station and Auto receives a Run signal from a remote/discrete source. When input signal is cut, the Washer Compactor shall then utilize an off-delay timer to allow debris to finish depositing.
 - d. Duperon[®] speed controller (based on vector drive technology), pre-programmed for speed/overload control by the panel builder and verified by the Washer Compactor manufacturer.
 - e. Dry contact input for motor thermostat to shut down equipment if motor overtemp condition occurs.
 - f. Dry contact output signals for "Run", "Start Solenoid", "Common Fault", and "In Auto" conditions.
 - g. 120 VAC output power to wash water solenoid.
 - h. Dry contact input terminals for "Remote Run", "Motor Thermostat", and remote station.
 - i. Main control power breaker with lockable, thru-door operator.
 - j. Elapsed run-time meter.
 - k. "Push-to-Test" type indicator lights for "Power On", "Forward", "VFD Fault", and "Motor Overtemp".
 - l. Phenolic label on outer door indicating equipment identification number (as required by owner).
 - m. Push/Pull E-Stop on outside of enclosure.

C. Remote Panel:

1. A NEMA 7/9 remote push button station is required to maintain equipment requirements and local safety codes.
2. The remote station shall be rated NEMA 7/9 and include Forward, Jog Reverse, and E-Stop buttons. The remote station shall be mounted as close to the equipment as safely possible and be field-wired by the electrical subcontractor to the corresponding terminal inputs in the main control panel. Jog Reverse shall only function for a period of one second (or less) when button is depressed to stay within manufacturer's operational and design parameters.

D. Sequence of Operations:

1. The controls shall enable the remote push button station installed near the Washer Compactor when in Hand mode and utilize an input signal from a remote source when in Auto mode. Upon receiving a stop signal in Auto mode, the Washer Compactor shall utilize an off-delay timer to allow debris to finish depositing.

2. The Duperon® speed controller fault shall be cleared by turning off the Washer Compactor, then waiting approximately three minutes (or time designated per current UL standards) and then turning the HOA back to the desired setting. A motor overtemp fault shall clear automatically when the motor cools to be within normal operating range.

E. Miscellaneous

1. The following shall be provided by the electrical contractor and are not part of the Washer Compactor manufacturer's scope of supply:
 - a. Mounting stands
 - b. Mounting hardware
 - c. Field wiring and conduit
 1. VFD rated motor cable (Belden #29502 or equal) is recommended for all motors.
 2. Motor cables shall be less than 80 ft long unless specified otherwise.
 - d. Junction boxes
 - e. Installation
2. The field wiring shall include (but not be limited to) the following connections as applicable:
 - a. Incoming power supply to the main control panel
 - b. All required grounding of the motor and controls
 - c. Motor to the main control panel
 1. VFD rated motor cable (Belden #29502 or equal) is recommended for all motors.
 2. Motor cables shall be less than 80 ft long unless specified otherwise.
 - d. Motor thermostat to the terminal inputs in the control panel
 - e. Input and output signal wiring for remote start/stop as required by plans/specs
 - f. Remote station contacts to the corresponding terminal inputs in the main control panel

PART 3 – EXECUTION

3.1 INSTALLATION:

Installation shall be installed in strict conformance with the manufacturer's installation instructions, as submitted with Shop Drawings, Operation & Maintenance Manuals and/or any pre-installation checklists. Installation shall utilize standard torque values and be installed securely in position and neat in appearance. Installation shall include any site preparation tasks. Pre-installation tasks as determined by the manufacturer; such as unloading, touch-up painting, etc. and any other installation tasks and materials such as wiring, conduit, controls stands, as determined by the customer and/or specified by the manufacturer. All plumbing to be completed at site following all local and national plumbing regulations, by a qualified individual.

3.2 TESTING:

After completion of installation, Contractor shall provide for testing. Testing of the Washer Compactor shall demonstrate that the equipment is operational, and that the equipment will wash, compact and deposit materials not to exceed 4 inches.

3.3 WARRANTY:

A written one year standard warranty from the date of use of the equipment shall be provided the equipment supplier to guarantee that there shall be no defects in material or workmanship in any item supplied.

Washer Compactor WC2.__.5 Data Sheet	
EQUIPMENT:	
Washer Compactor:	1
DESIGN SUMMARY:	
Peak Capacity:	80 cu. ft/hour (for approx. 5 minutes)
Average Capacity:	40 cu. ft/hour (continuous)
Water: Typical	Utilizes filtered effluent
	Consumes 3-5 gallons per minute
	Requires 40 to 60 PSI
	½ inch NPT supply – male threads
	3 inch NPT drain – male threads
Materials of Construction:	304 SSTL or 316 SSTL Select
	17-4 spur grears
	Delrin (or equiv,) thrust and plane bearings
	UHMW auger supports
Hopper Height (Deck to Hopper):	38"
Hopper Length (WC2.A1.5 Unit):	27"
Hopper Length (WC2.A2.5 Unit):	43"
Hopper Length (WC2.A3C.5 Unit):	67"
Outdoor installation:	
Below Freezing temperatures:	Heat tracing is required to be installed on support, transition, discharge chutes and wash water system
PERFORMANCE DATA:	
Up to 60% dry solids	
Up to 60% mass/weight reduction	
Up to 84% volume reduction (6:1 ratio)	
Significantly reduces odor and fecal	

content	
MOTOR/DRIVE:	
Motor Size:	3/4 HP
Motor Paint:	Duperon® Standard Tnemec Coating
Motor Service Factor:	1.0
Output Speed:	2.2 RPM
Speed Reducer Ratio/Output:	809:1
Speed Reducer Paint:	Duperon® Standard Tnemec Coating
SITE POWER:	
Phase/Voltage:	3 Phase 480 volt
CONTROLS:	30" x 26" x 12" N4X SSTL enclosure
	Main Control Breaker
	Emergency Stop
	HOA (Auto is discreet "Run" input)
	Fwd/Jog Reverse/E-Stop push button station
	"Run" and "In Auto" discrete outputs
	Explosion Proof Local Stations Standard.
CONTROLS MOUNTING:	Wall
PROJECT MANAGEMENT:	
Submittal Quantity:	6
O&Ms Quantity:	6
Warranty Period:	1 Year
SHIPPING:	Partially Assembled: Shipped in Pre-Assembled Sections

End of Section 444261

SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions for Procurement Documents (No. P-700, 2000 Edition) and other provisions of the Procurement Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

ARTICLE 2 – PRELIMINARY MATTERS

SC-2.01 DELETE 2.01 A in its entirety.

SC-2.03 DELETE 2.03 A in its entirety and INSERT the following paragraph in its place:

- A. The Contract Times will commence to run upon Seller's receipt of approved Shop Drawings.

SC-2.06 DELETE 2.06 A in its entirety and INSERT the following paragraph in its place:

- A. Within ten (10) days of Seller's receipt of approved Shop Drawings, Seller shall submit to Buyer and Engineer an acceptable progress schedule of activities including tests and deliveries. No progress payment will be made to Seller until an acceptable schedule is submitted to Buyer and Engineer.

SC-2.07 DELETE 2.07 A in its entirety and INSERT the following paragraph in its place:

- A. Upon Issuance of the Notice of Award, the Engineer will schedule a conference attended by Seller, Buyer, Engineer and others as appropriate to establish a working understanding among the parties as to the Goods and Special Services and to discuss schedule submittal required under SC-2.06 A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment and maintaining required records.

ARTICLE 4 – BONDS AND INSURANCE

SC-4.01 DELETE paragraph 4.01 A in its entirety.

SC-4.02 DELETE paragraph 4.02.A in its entirety and INSERT the following paragraph in its place:

- A. Seller shall assume all risk of loss or damage to the Goods prior to acceptance of delivery by Buyer at the Point of Destination and shall purchase and maintain insurance on the Goods during the process of fabrication and while in transit to insure against the perils of fire and extended coverage including "all risk" insurance for physical loss and damage including theft, vandalism and malicious mischief, collapse, water damage and such other perils as Seller deems appropriate.

ARTICLE 5 – SELLER'S RESPONSIBILITIES

SC-5.05 AMEND paragraph 5.05.A to read as follows:

- A. Seller shall be responsible for all taxes and duties, excepting Michigan State sales and use taxes, arising out of the sale of the Goods and the furnishing of Special Services. All taxes, excepting Michigan State sales and use taxes, are included in the Contract Price.

ARTICLE 13 - DISPUTE RESOLUTION

SC-13.01 DELETE paragraph 13.01.A in its entirety and INSERT the following paragraphs in its place:

A. All claims, counterclaims, disputes and other matters in question between the Buyer and the Seller arising out of or relating to this agreement or its breach, except for claims which have been waived by the making and acceptance of final payment will be decided by arbitration if the parties mutually agree, or in a court of competent jurisdiction within the State in which the Buyer is located.

B. If used, arbitration shall be in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association. This agreement to arbitrate shall be specifically enforceable under the prevailing arbitration law. The award rendered by the arbitrators shall be final, and judgment may be entered upon it in any court having jurisdiction thereof.

C. Any request for arbitration shall be filed in writing by the Seller with the Buyer, the American Arbitration Association and a copy shall be filed with the Engineer. Requests for arbitration shall in no event be made on any claim, dispute or other matter in question, which would be barred by the applicable statute of limitations.

D. The Seller shall carry on the work and maintain the progress schedule during any arbitration or litigation proceedings, unless otherwise mutually agreed in writing.

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the Controlling Law.

STANDARD GENERAL CONDITIONS FOR PROCUREMENT CONTRACTS

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

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EJCDC P-700 Standard General Conditions for Procurement Contracts
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00700-1

These Standard General Conditions For Procurement Contracts have been prepared for use with the Suggested Instructions to Bidders For Procurement Contracts (EJCDC No. P-200, 2000 Edition), the Suggested Form of Agreement Between Buyer and Seller For Procurement Contracts (EJCDC No. P-520, 2000 Edition), and the Guide to Preparation of Supplementary Conditions For Procurement Contracts (EJCDC No. P-800, 2000 Edition). Their provisions are interrelated and a change in one may necessitate a change in the others. Additional information concerning the use of the EJCDC Procurement Documents may be found in the Commentary on Procurement

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EJCDC STANDARD GENERAL CONDITIONS FOR PROCUREMENT CONTRACTS

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Whenever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to the singular or plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*--Those written or graphic instruments issued prior to the opening of Bids in accordance with the Bidding Requirements which clarify or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*--The written instrument signed by both Buyer and Seller covering the Goods and Special Services and which lists the Contract Documents in existence on the Effective Date of the Agreement.

3. *Application for Payment*--The form acceptable to Buyer which is used by Seller in requesting progress and final payments and which is accompanied by such supporting documentation as is required by the Contract Documents.

4. *Bid*--An offer or proposal submitted on the prescribed form setting forth the prices for the Goods and Special Services to be provided.

5. *Bidder*--A person who submits a Bid directly to Buyer.

6. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda).

7. *Bidding Requirements*--The Advertisement or Invitation to Bid, Instructions to Bidders, Form of Bid security, if any, and Bid Form with any supplements.

8. *Buyer*--The person or public entity purchasing the Goods and Special Services.

9. *Change Order*--A document recommended by Engineer which is signed by Seller and Buyer and authorizes an addition, deletion, or revision to the Contract

Documents or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

10. *Claim*--A written demand or assertion by Buyer or Seller seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract.

11. *Contract*--The entire and integrated written agreement between Buyer and Seller concerning the Goods and Special Services. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*--Those items listed in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Files in electronic media format of text, data, graphics, and the like are not Contract Documents, and may not be relied on by Seller. Approved Shop Drawings and other Seller's submittals are not Contract Documents.

13. *Contract Price*--The moneys payable by Buyer to Seller for furnishing the Goods and Special Services in accordance with the Contract Documents as stated in the Agreement.

14. *Contract Times*--The times stated in the Agreement by which the Goods must be delivered and Special Services must be furnished.

15. *Drawings*--That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, intent, and character of the Goods and Special Services to be furnished by Seller.

16. *Effective Date of the Agreement*--The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

17. *Engineer*--The person designated as such in the Agreement.

18. *Field Order*--A written order issued by Engineer which requires minor changes in the Goods or Special Services but which does not involve a change in the Contract Price or Contract Times.

19. *General Requirements*--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

20. *Goods*--The tangible and movable personal property that is described in the Contract Documents, regardless of whether the property is to be later attached to realty.

21. *Laws and Regulations; Laws or Regulations*--Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

22. *Milestone*--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to the Contract Times.

23. *Notice of Award*--The written notice by Buyer to the apparent Successful Bidder stating that upon timely compliance by the apparent Successful Bidder with the conditions precedent listed therein, Buyer will sign and deliver the Agreement.

24. *Notice to Proceed*--A written notice given by Buyer to Seller fixing the date on which the Contract Times commence to run and on which Seller shall start to perform under the Contract.

25. *Point of Destination*--The specific address of the location where delivery of the Goods shall be made as stated in the Agreement.

26. *Project*--The total undertaking of which the Goods and Special Services to be provided under the Contract are a part.

27. *Project Manual*--The bound documentary information prepared for bidding and furnishing the Goods and Special Services. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

28. *Samples*--Physical examples of materials, equipment, or workmanship that are representative of some portion of the Goods and which establish the standards by which such portion of the Goods or Special Services will be judged.

29. *Seller*--The person furnishing the Goods and Special Services.

30. *Shop Drawings*--All drawings, diagrams, illustrations, schedules, and other data or information

which are specifically prepared or assembled by or for Seller and submitted by Seller to illustrate some portion of the Goods or Special Services.

31. *Special Services*--Services associated with the Goods to be furnished by Seller as required by the Contract Documents.

32. *Specifications*--That part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards and workmanship as applied to the furnishing of the Goods and Special Services, and certain administrative details applicable thereto.

33. *Successful Bidder*--The lowest responsible Bidder submitting a responsive Bid, to whom Buyer makes an award.

34. *Supplementary Conditions*--That part of the Contract Documents which amends or supplements these General Conditions.

35. *Written Amendment*--A written statement modifying the Contract Documents, signed by Buyer and Seller on or after the Effective Date of the Agreement and normally dealing with the administrative aspects of the Contract Documents.

1.02 Terminology

A. Intent of Certain Terms or Adjectives

1. The Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Goods or Special Services. It is intended that such exercise of professional judgment, action or determination will be solely to evaluate, in general, the Goods or Special Services for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to Engineer any duty or authority to supervise or direct the furnishing of Goods or Special Services or any duty or authority to undertake responsibility contrary to any other provision of the Contract Documents.

2. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

3. The word "non-conforming" when modifying the words "Goods" or "Special Services", refers to Goods or Special Services that fail to conform to the Contract Documents.

4. The word "receipt" when referring to the Goods, shall mean the physical taking and possession by the Buyer under the conditions specified in Paragraph 8.01.B.3.

B. *Day*

1. The word "day" shall constitute a calendar day of 24 hours measured from midnight to the next midnight.

ARTICLE 2 - PRELIMINARY MATTERS

2.01 *Delivery of Bonds*

A. When Seller delivers the executed Agreements to Buyer, Seller also shall deliver such bonds as Seller may be required to furnish.

2.02 *Copies of Documents*

A. Buyer shall furnish Seller up to five copies of the Contract Documents. Additional copies will be furnished upon request at the cost of reproduction.

2.03 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 *Designated Representatives*

A. Buyer and Seller shall each designate its representative at the time the Agreement is signed. Each representative shall have full authority to act on behalf of and make binding decisions in any matter arising out of or relating to the Contract.

2.05 *Before Starting Fabrication/Assembly of Goods*

A. *Seller's Review of Contract Documents:* Before commencing performance of the Contract, Seller shall carefully study and compare the Contract Documents and check and verify pertinent requirements therein and, if specified, all applicable field measurements. Seller shall promptly report in writing to Buyer and Engineer any conflict, error, ambiguity or discrepancy which Seller may discover and shall obtain a written interpretation or clarification from Engineer before proceeding with any work affected thereby.

2.06 *Progress Schedule*

A. Within 15 days after the Contract Times start to run, Seller shall submit to Buyer and Engineer an acceptable progress schedule of activities, including at a minimum, Shop Drawing and Sample submittals, tests, and deliveries as required by the Contract Documents. No progress payment will be made to Seller until an acceptable schedule is submitted to Buyer and Engineer.

B. The progress schedule will be acceptable to Buyer and Engineer if it provides an orderly progression of the submittals, tests, and deliveries to completion within the specified Milestones and the Contract Times. Such acceptance will not impose on Buyer or Engineer responsibility for the progress schedule, for sequencing, scheduling, or progress of the work nor interfere with or relieve Seller from Seller's full responsibility therefor. Such acceptance shall not be deemed to acknowledge the reasonableness and attainability of the schedule.

2.07 *Preliminary Conference*

A. Within 20 days after the Contract Times start to run, a conference attended by Seller, Buyer, Engineer and others as appropriate will be held to establish a working understanding among the parties as to the Goods and Special Services and to discuss the schedule referred to in Paragraph 2.06.A., procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT AND AMENDING

3.01 *Intent*

A. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.

B. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided, whether or not specifically called for, at no additional cost to Buyer.

C. Clarifications and interpretations of, or notifications of minor variations and deviations in, the Contract Documents, will be issued by Engineer as provided in Article 9.

3.02 *Laws and Regulations, Standards, Specifications and Codes*

A. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws and Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws and Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

B. No provision of any such standard, specification, manual or code, or any instruction of a supplier shall be effective to change the duties or responsibilities of Buyer or Engineer, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall any such provision or instruction be effective to assign to Buyer or Engineer, or any of their consultants, agents, or employees any duty or authority to supervise or direct the performance of Seller's obligations or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies:* If, during the performance of the Contract, Seller discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Contract or of any standard, specification, manual or code, or of any instruction of any supplier, Seller shall promptly report it to Buyer in writing for Engineer's review. Seller shall not proceed with the furnishing of the Goods or Special Services affected thereby until an amendment to or clarification of the Contract Documents has been issued. Seller shall not be liable to Buyer or Engineer for failure to report any such conflict, error, ambiguity, or discrepancy unless Seller knew or reasonably should have known thereof.

B. *Resolving Discrepancies:* Except as may be otherwise specifically stated in the Contract Documents, the provisions

of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

1. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

2. the provisions of any Laws or Regulations applicable to the furnishing of the Goods and Special Services (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Clarifying Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions to the Goods or Special Services or to modify the terms and conditions thereof by a Written Amendment or a Change Order.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Goods or Special Services not affecting Contract Price or Contract Times may be authorized, by one or more of the following ways: 1) a Field Order; 2) Engineer's approval of a Shop Drawing pursuant to Paragraph 5.06.D.2; or 3) Engineer's written interpretation or clarification.

ARTICLE 4 - BONDS AND INSURANCE

4.01 *Bonds*

A. Seller shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price, to Buyer. The bonds shall be delivered in accordance with Paragraph 2.01 and shall remain in effect at least one year after the date final payment is due, except as provided otherwise by Laws or Regulations.

B. The bonds shall be issued in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations and shall be executed by a surety named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

C. If the surety on a bond is declared bankrupt or becomes insolvent or its right to do business is terminated in the state where the Project is located or it ceases to meet the requirements of Paragraph 4.01.B, Seller shall provide another bond and surety which comply with those requirements within 20 days, at Seller's expense.

4.02 Insurance

A. Seller shall provide insurance of the types and coverages and in the amounts stipulated in the Supplementary Conditions.

ARTICLE 5 - SELLER'S RESPONSIBILITIES

5.01 Supervision and Superintendence

A. Seller shall be solely responsible for the means, methods, techniques, sequences, and procedures used in performing its obligations. Seller shall be responsible to see that the completed Goods and Special Services conform to the Contract Documents.

5.02 Labor, Materials and Equipment

A. Seller shall provide competent, qualified and trained personnel in all aspects of its performance of the Contract.

B. All equipment, products and material incorporated into the Goods shall be as specified, or if not specified, shall be new, of good quality and protected, assembled, used, connected, applied, cleaned and conditioned in accordance with the original manufacturer's instructions, except as otherwise may be provided in the Contract Documents.

5.03 Compliance with Laws and Regulations, Standards, Specifications and Codes

A. Seller shall comply with all Laws and Regulations applicable to the furnishing of the Goods and Special Services.

5.04 Or Equals

A. Whenever an item of material or equipment to be incorporated into the Goods is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular supplier or manufacturer, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item is

permitted, other items of material or equipment or material or equipment of other suppliers or manufacturers may be submitted to Buyer for Engineer's review.

1. If in Engineer's sole discretion, such an item of material or equipment proposed by Seller is functionally equal to that named and sufficiently similar so that no change in related work will be required, it may be considered by Engineer as an "or-equal" item.

2. For the purposes of this paragraph, a proposed item of material or equipment may be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment, Engineer determines that: 1) it is at least equal in quality, durability, appearance, strength, and design characteristics; and 2) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole; and

b. Seller certifies that: 1) there is no increase in any cost including capital, installation or operating to Buyer; and 2) the proposed item will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Documents.

B. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraph 5.04.A. Engineer will be the sole judge of acceptability. No "or-equal" will be ordered, manufactured or utilized until Engineer's review is complete, which will be evidenced by an approved Shop Drawing. Engineer will advise Buyer and Seller in writing of any negative determination. Notwithstanding Engineer's approval of an "or-equal" item, Seller shall remain obligated to comply with the requirements of the Contract Documents.

C. *Special Guarantee:* Buyer may require Seller to furnish at Seller's expense a special performance guarantee or other surety with respect to any such proposed "or-equal."

D. *Data:* Seller shall provide all data in support of any such proposed "or-equal" at Seller's expense.

5.05 Taxes

A. Seller shall be responsible for all taxes and duties arising out of the sale of the Goods and the furnishing of Special Services. All taxes are included in the Contract Price.

5.06 *Shop Drawings and Samples*

A. Seller shall submit Shop Drawings and Samples to Buyer for Engineer's review and approval in accordance with the schedule required in Paragraph 2.06.A. All submittals will be identified as required and furnished in the number of copies specified in the Contract Documents. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Seller proposes to provide.

B. Where a Shop Drawing or Sample is required by the Contract Documents, any related work performed prior to Engineer's approval of the pertinent submittal will be at the sole expense and responsibility of Seller.

C. *Submittal Procedures*

1. Before submitting each Shop Drawing or Sample, Seller shall have determined and verified:

a. all field measurements (if required), quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto; and

b. that all materials are suitable with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the furnishing of Goods and Special Services.

2. Seller shall also have reviewed and coordinated each Shop Drawing or Sample with the Contract Documents.

3. Each submittal shall include a written certification from Seller that Seller has reviewed the subject submittal and confirmed that it is in compliance with the requirements of the Contract Documents. Both Buyer and Engineer shall be entitled to rely on such certification from Seller.

4. With each submittal, Seller shall give Buyer and Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both in a written communication separate from the submittal and by specific notation on each Shop Drawing or Sample.

D. *Engineer's Review*

1. Engineer will provide timely review of Shop Drawings and Samples.

2. Engineer's approval of Shop Drawings or Samples will be subject to the standard of Paragraph 1.02.A.1. Engineer's approval will not relieve Seller from responsibility for any variation from the requirements of the Contract Documents unless Seller has in writing called Engineer's attention to each such variation at the time of each submittal as required by Paragraph 5.06.C.1. and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval.

E. *Resubmittal Procedures*

1. Seller shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit as required new Samples for review and approval. Seller shall direct specific attention in writing to any revisions other than the corrections called for by Engineer on previous submittals.

5.07 *Continuing Performance*

A. Seller shall adhere to the progress schedule established in accordance with Paragraph 2.06.A., and the Goods shall be delivered and the Special Services furnished within the Contract Times specified in the Agreement.

B. Seller shall carry on the work and adhere to the progress schedule during all disputes or disagreements with Buyer. No work shall be delayed or postponed pending resolution of any disputes or disagreements.

5.08 *Seller's Warranties and Guarantees*

A. Seller warrants and guarantees to Buyer that the title to the Goods conveyed shall be proper, its transfer rightful, and free from any security interest, lien, or other encumbrance.

B. Seller warrants and guarantees to Buyer that all Goods and Special Services will conform with the Contract Documents, including any Samples approved by Engineer, and the Goods will be of merchantable quality. Engineer shall be entitled to rely on representation of Seller's warranty and guarantee.

C. Seller's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, improper modification or improper maintenance or operation by persons other than Seller, or

2. normal wear and tear under normal usage.

D. Seller's obligation to furnish the Goods and Special Services in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Goods or Special Services that are non-conforming, or a release of Seller's obligation to furnish the Goods and Special Services in accordance with the Contract Documents:

1. observations by Buyer or Engineer;
2. recommendation by Engineer or payment by Buyer of any progress or final payment;
3. use of the Goods by Buyer;
4. any acceptance by Buyer (subject to the provisions of Paragraph 8.02.D.1) or any failure to do so;
5. the issuance of a notice of acceptance by Buyer pursuant to the provisions of Article 8;
6. any inspection, test or approval by others; or
7. any correction of non-conforming Goods or Special Services by Buyer.

E. Buyer shall within a reasonable time notify Seller of any breach of Seller's warranties or guarantees. If Buyer receives notice of a suit or claim as a result of such breach, Buyer also may give Seller notice in writing to defend such suit or claim. If Seller fails to defend such suit or claim, Seller will be bound in any subsequent suit or claim against Seller by Buyer by any factual determination in the prior suit.

5.09 Indemnification

A. To the fullest extent permitted by Laws and Regulations, Seller shall indemnify and hold harmless Buyer, Engineer, and their officers, directors, shareholders, partners, employees, agents, consultants, contractors and subcontractors from any and all claims, costs, losses, and demands or judgments for damages for claims (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) caused by, arising out of or relating to a negligent act or omission or the breach of any obligation under this Contract by Seller, or its officers, directors, shareholders, partners, employees, agents, consultants, contractors or subcontractors, or anyone for whom Seller is responsible, provided that any such claim, cost, loss, or damage;

1. is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Goods or Special Services themselves), including the loss of use resulting therefrom; and

2. is caused in whole or in part by any negligent act or omission of Seller or any individual or entity directly or indirectly employed to furnish any of the Goods or Special Services or anyone for whose acts Seller may be liable, regardless of whether or not caused in part by any negligence or omission of an individual or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws and Regulations regardless of the negligence of any such individual or entity.

B. The indemnification obligations of Seller under paragraph 5.09.A shall not extend to the liability of Engineer and Engineer's consultants or to the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

ARTICLE 6 - SHIPPING AND DELIVERY

6.01 Shipping

A. Seller shall select the carrier and bear all costs of packaging, transportation, insurance, special handling and any other costs associated with shipment and delivery.

6.02 Delivery

A. Seller shall deliver the Goods F.O.B. the Point of Destination in accordance with the Contract Times set forth in the Agreement, or other date agreed to by Buyer and Seller.

B. Seller shall provide written notice to Buyer at least 15 days before shipment of the manner of shipment and the anticipated delivery date. The notice shall also include any instructions concerning special equipment or services required at the Point of Destination to unload and care for the Goods. Seller shall also require the carrier to give Buyer

at least 24 hours notice by telephone prior to the anticipated hour of delivery.

C. Buyer will be responsible and bear all costs for unloading the Goods from carrier.

D. Buyer will assure that adequate facilities are available to receive delivery of the Goods during the Contract Times set forth in the Agreement, or another date agreed by Buyer and Seller.

E. No partial deliveries shall be allowed, unless permitted or required by the Contract Documents or agreed to in writing by Buyer.

6.03 *Risk of Loss*

A. Risk of loss and insurable interests transfer from Seller to Buyer upon Buyer's receipt of the Goods.

B. Notwithstanding the provisions of Paragraph 6.03.A, if Buyer rejects the Goods as non-conforming, the risk of loss on such Goods shall remain with Seller until Seller corrects the non-conformity or Buyer accepts the Goods.

ARTICLE 7 - CHANGES: SCHEDULE AND DELAY

7.01 *Changes in the Goods and Special Services*

A. Buyer may at any time, without notice to any surety, make changes in the Contract Documents within the general scope of the Contract.

B. If any such change or action by Buyer affects the Contract Price or Contract Times, Seller shall notify Buyer within 15 days after the occurrence of the event giving rise thereto, and written supporting data will be submitted to Buyer within 45 days after such occurrence. If Seller fails to do so, Seller waives any Claim for such adjustment.

C. Seller shall not suspend performance while Buyer and Seller are in the process of making such changes and any related adjustments.

7.02 *Changes in Laws and Regulations*

A. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of furnishing the Goods and Special Services shall be the subject of an adjustment in Contract Price or Contract Times. If Buyer and Seller are unable to agree on entitlement to or on the amount or extent, if any, of any such

adjustment, a Claim may be made therefor as provided in Paragraph 9.06.A.

7.03 *Changing Contract Price or Contract Times*

A. The Contract Price or Contract Times may only be changed by:

1. a Change Order;

2. a Written Amendment; or

3. a written unilateral order of Buyer, in which case Seller shall be entitled to an equitable adjustment in Contract Price or Contract Times for any reasonable and necessary costs or delays incurred by Seller to accommodate such a change.

B. If Seller is prevented from delivering the Goods or performing the Special Services within the Contract Times for any unforeseen reason beyond its control and not attributable to its actions or inactions, then Seller shall be entitled to an adjustment of the Contract Times to the extent attributable to such reason. Such reasons include fire, floods, epidemics, abnormal weather conditions, acts of God, acts of war, directions by government authority, and other like matters. If such an event occurs and delays Seller's performance, Seller shall notify Buyer in writing within 15 days of the beginning of the event causing the delay, stating the reason therefor.

C. Contract Times will not be modified for delays within the control of Seller, including labor strife, transportation shortages or delays at Seller's facilities. Delays attributable to and within the control of Seller's subcontractors or suppliers shall be deemed to be delays within the control of Seller.

D. If Seller is prevented from delivering the Goods or furnishing the Special Services within the Contract Times due to the actions or inactions of Buyer, Seller shall be entitled to any reasonable and necessary additional costs arising out of such delay to the extent directly attributable to Buyer.

E. Neither Buyer nor Seller shall be entitled to any damages arising from delays which are beyond the control of both Buyer and Seller, including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God, acts of war, direction by government authority, and other like matters.

ARTICLE 8 - BUYER'S RIGHTS

8.01 *Inspections and Testing*

A. *General*

1. Buyer shall have the right to perform, or cause to be performed, reasonable inspections and require reasonable tests of the Goods at Seller's facility, and at the Point of Destination. Seller shall allow Buyer a reasonable time to perform such inspections or tests.

2. Seller shall bear all expenses, except for travel, lodging and subsistence expenses of Buyer's representatives, for inspections and tests at Seller's facility, but Buyer shall be entitled to reimbursement from Seller of travel, lodging and subsistence expenses of Buyer's representatives if the Goods are non-conforming.

3. Buyer shall bear all expenses, except for travel, lodging and subsistence expenses of Seller's representatives, for inspections and tests at the Point of Destination, but Buyer shall be entitled to reimbursement from Seller for Buyer's expenses for reinspection or retesting if, on the basis of an initial inspection or testing, the Goods are determined to be non-conforming.

4. Seller shall provide Buyer 30 days written notice of the readiness of the Goods for all inspections, tests, or approvals which the Contract Documents specify are to be observed by Buyer prior to shipment.

5. Buyer will give Seller timely notice of all specified tests, inspections and approvals of the Goods which are to be conducted at the Point of Destination.

6. If, on the basis of any inspections or testing, the Goods appear to be conforming, Buyer will give Seller prompt notice thereof. If on the basis of said inspections or testing, the Goods appear to be non-conforming, Buyer will give Seller prompt notice thereof and will advise Seller of the remedy Buyer elects under the provisions of Paragraph 8.02.

7. Neither payments made by Buyer to Seller prior to any tests or inspections, nor any tests or inspections shall constitute acceptance of non-conforming Goods, or prejudice Buyer's rights under the Contract.

B. *Inspection on Delivery*

1. Buyer or Engineer will inspect the Goods upon delivery solely for purposes of identifying the Goods and

general verification of quantities and observation of apparent condition in order to provide a basis for a progress payment. Such inspection will not be construed as final or as receipt of any Goods and Special Services that, as a result of subsequent inspections and tests, are determined to be non-conforming.

2. Within ten days of such inspection, Buyer shall provide Seller with written notice of Buyer's determination regarding conformity of the Goods. In the event Buyer does not provide such notice, it will be presumed that the Goods appear to be conforming.

3. If, on the basis of the inspection specified in Paragraph 8.01.B.1, the Goods appear to be conforming, Buyer's notice thereof to Seller will acknowledge receipt of the Goods.

C. *Final Inspection*

1. After all of the Goods have been incorporated into the Project, tested in accordance with such testing requirements as are specified, and are functioning as intended, Buyer or Engineer will make a final inspection.

2. If, on the basis of the final inspection, the Goods are conforming, Buyer's notice thereof will constitute Buyer's acceptance of the Goods.

3. If, on the basis of the final inspection, the Goods are non-conforming, Buyer will identify the non-conformity in writing.

8.02 *Non-Conforming Goods or Special Services*

A. If, on the basis of inspections and testing prior to delivery, the Goods appear to be non-conforming, or if at any time after Buyer has acknowledged receipt of delivery and before the expiration of the correction period described in Paragraph 8.03, Buyer determines that the Goods are non-conforming, Seller shall promptly, without cost to Buyer and in response to written instructions from Buyer, either correct such non-conforming Goods, or, if rejected by Buyer, remove and replace the non-conforming Goods with conforming Goods, including all work required for reinstallation.

B. *Buyer's Rejection of Non-Conforming Goods*

1. If Buyer elects to reject the Goods in whole or in part, Buyer's notice to Seller will describe in sufficient detail the non-conforming aspect of the Goods. If Goods have been delivered to Buyer, Seller

shall promptly, and within the Contract Times, remove and replace the rejected Goods.

2. Seller shall bear all costs, losses and damages attributable to the removal and replacement of the non-conforming Goods as provided in Paragraph 8.02.E.

3. Upon rejection of the Goods, Buyer retains a security interest in the Goods or to the extent of any payments made and expenses incurred in their testing and inspection.

C. Remedying Non-Conforming Goods or Special Services

1. If Buyer elects to permit the Seller to modify the Goods to remove the non-conformance, Seller shall promptly provide a schedule for such modifications and shall make the Goods conforming within a reasonable time.

2. If Buyer notifies Seller in writing that any of the Special Services are non-conforming, Seller shall promptly provide conforming services acceptable to Buyer. If Seller fails to do so, Buyer may delete the Special Services and reduce the Contract Price a commensurate amount.

D. Buyer's Acceptance of Non-Conforming Goods

1. Instead of requiring correction or removal and replacement of non-conforming Goods discovered either before or after final payment, Buyer may accept the non-conforming Goods. Seller shall bear all costs, losses, and damages attributable to Buyer's evaluation of and determination to accept such non-conforming Goods as provided in Paragraph 8.02.E.

E. Seller shall pay all claims, costs, losses, and damages, including but not limited to all fees and charges for re-inspection, retesting and for any engineers, architects, attorneys and other professionals, and all court or arbitration or other dispute resolution costs arising out of or relating to the non-conforming Goods or Special Services, including the correction or removal and replacement of the non-conforming Goods and the replacement of property of Buyer and others destroyed by the correction or removal and replacement of the non-conforming Goods, or the obtaining of conforming Special Services from others.

8.03 Correction Period

A. Seller's responsibility for correcting all non-conformities in the Goods will extend for a period of one

year after the earlier of the date on which Buyer has placed the Goods in continuous service or the date of final payment, or for such longer period of time as may be prescribed by Laws or Regulations or by the terms of any specific provisions of the Contract Documents.

ARTICLE 9 - ROLE OF ENGINEER

9.01 Duties and Responsibilities

A. The duties and responsibilities and the limitations of authority of Engineer are set forth in the Contract Documents.

9.02 Clarifications and Interpretations

A. Engineer will issue with reasonable promptness such written clarifications or interpretations of the Contract Documents as Engineer may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. Such written clarifications and interpretations will be binding on Buyer and Seller. If either Buyer or Seller believes that a written clarification or interpretation justifies an adjustment in the Contract Price or Contract Times, either may make a Claim therefor.

9.03 Authorized Variations

A. Engineer may authorize minor deviations or variations in the Contract Documents by: 1) issuance of approved Shop Drawings when such change or deviation was duly noted by Seller as required in Paragraph 5.06.C.4, or 2) a Field Order.

9.04 Rejecting Non-Conforming Goods and Special Services

A. Engineer will have the authority to disapprove or reject Goods or Special Services which Engineer believes to be non-conforming.

9.05 Decisions on Requirements of Contract Documents

A. Engineer will be the initial interpreter of the Contract Documents and judge of the acceptability of the Goods and Special Services. Claims, disputes and other matters relating to the acceptability of the Goods and Special Services or the interpretation of the requirements of the Contract Documents pertaining to Seller's performance will be referred initially to Engineer in writing with a request for a formal decision in accordance with this paragraph.

B. When functioning as interpreter and judge under this Paragraph 9.05, Engineer will not show partiality to Buyer or Seller and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by Engineer pursuant to this Paragraph 9.05 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in Paragraph 10.07) will be a condition precedent to any exercise by Buyer or Seller of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter.

9.06 *Claims and Disputes*

A. *Notice:* Written notice of each Claim, dispute or other matter relating to the acceptability of the Goods and Special Services or the interpretation of the requirements of the Contract Documents pertaining to Seller's performance shall be delivered by the claimant to Engineer and the other party to the Agreement within 15 days after the occurrence of the event giving rise thereto, and written supporting data will be submitted to Engineer and the other party within 45 days after such occurrence unless Engineer allows an additional period of time to ascertain more accurate data.

B. *Engineer's Decision:* Engineer will render a decision in writing within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any. Engineer's written decision on such Claim, or dispute, or other matter will be final and binding upon Buyer and Seller unless:

1. an appeal from Engineer's decision is made within the time limits and in accordance with the dispute resolution procedures set forth in Article 13; or

2. if no such dispute resolution procedures have been set forth, a written notice of intention to appeal is delivered by Buyer or Seller to the other and to Engineer within 30 days after the date of such decision, and a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction within 60 days after the date of such decision (unless otherwise agreed to in writing by Buyer and Seller), to exercise such rights or remedies as the appealing party may have with respect to such Claim, dispute, or other matter in accordance with applicable Laws and Regulations.

C. If Engineer does not render a formal decision in writing within the time stated in Paragraph 9.06.B., a decision denying the Claim in its entirety shall be deemed to have been issued 31 days after receipt of the last submittal of

the claimant or the last submittal of the opposing party, if any.

ARTICLE 10 - PAYMENT

10.01 *Applications for Progress Payments*

A. Seller shall submit to Buyer for Engineer's review Applications for Payment filled out and signed by Seller and accompanied by such supporting documentation as is required by the Contract Documents and also as Buyer or Engineer may reasonably require. The timing and amounts of progress payments shall be as stipulated in the Agreement.

1. The first application for Payment will be submitted after review and approval by Engineer of all Shop Drawings and of all Samples required by the Contract Documents.

2. The second Application for Payment will be submitted after receipt of the Goods has been acknowledged in accordance with Paragraph 8.01.B and will be accompanied by a bill of sale, invoice or other documentation satisfactory to Buyer warranting that Buyer has rightfully received good title to the Goods from Seller and that the Goods are free and clear of all liens. Such documentation will include releases and waivers from all parties with viable lien rights. In the case of multiple deliveries of Goods, additional Applications for Payment accompanied by the required documentation will be submitted as Buyer acknowledges receipt of additional items of the Goods.

10.02 *Review of Applications for Progress Payments*

A. Engineer will, within ten days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Buyer, or return the Application to Seller indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Seller may make the necessary corrections and resubmit the Application.

1. Engineer's recommendation of payment requested in the first Application for Payment will constitute a representation by Engineer, based on Engineer's review of the Application for Payment and the accompanying data, that the Shop Drawings and Samples have been reviewed and approved as required by the Contract Documents and Seller is entitled to payment of the amount recommended.

2. Engineer's recommendation of payment requested in the Application for Payment submitted upon Buyer's acknowledgment of receipt of the Goods will constitute a representation by Engineer, based on Engineer's review of the Application for Payment and the accompanying data Seller is entitled to payment of the amount recommended. Such recommendation will not constitute a representation that Engineer has made a final inspection of the Goods, that the Goods are free from non-conformities, acceptable or in conformance with the Contract Documents, that Engineer has made any investigation as to Buyer's title to the Goods, that exhaustive or continuous inspections have been made to check the quality or the quantity of the Goods beyond the responsibilities specifically assigned to Engineer in the Contract Documents or that there may not be other matters or issues between the parties that might entitle Seller to additional payments by Buyer or Buyer to withhold payment to Seller.

3. Engineer may refuse to recommend that all or any part of a progress payment be made, or Engineer may nullify all or any part of any payment previously recommended if, in Engineer's opinion, such recommendation would be incorrect or if on the basis of subsequently discovered evidence or subsequent inspections or tests Engineer considers such refusal or nullification necessary to protect Buyer from loss because the Contract Price has been reduced, Goods are found to be non-conforming, or Seller has failed to furnish acceptable Special Services.

10.03 *Amount and Timing of Progress Payments*

A. Subject to Paragraph 10.02.A., the amounts of the progress payments will be as provided in the Agreement. Buyer shall within 30 days after receipt of each Application for Payment with Engineer's recommendation pay Seller the amount recommended; but, in the case of the Application for Payment upon Buyer's acknowledgment of receipt of the Goods, said 30-day period may be extended for so long as is necessary (but in no event more than 60 days) for Buyer to examine the bill of sale and other documentation submitted therewith. Buyer shall notify Seller promptly of any deficiency in the documentation and shall not unreasonably withhold payment.

10.04 *Suspension of or Reduction in Payment*

A. Buyer may suspend or reduce the amount of progress payments, even though recommended for payment by Engineer, under the following circumstances:

1. Buyer has reasonable grounds to conclude that Seller will not furnish the Goods or the Special Services in accordance with the Contract Documents,

2. Buyer has requested in writing assurances from Seller that the Goods or Special Services will be delivered or furnished in accordance with the Contract Documents, and Seller has failed to provide adequate assurances within ten days of Buyer's written request.

B. If Buyer refuses to make payment of the full amount recommended by Engineer, Buyer will provide Seller and Engineer immediate written notice stating the reason for such action and promptly pay Seller any amount remaining after deduction of the amount withheld. Buyer shall promptly pay Seller the amount withheld when Seller corrects the reason for such action to Buyer's satisfaction.

10.05 *Final Application for Payment*

A. After Seller has corrected all non-conformities to the satisfaction of Buyer and Engineer, furnished all Special Services, and delivered all documents required by the Contract Documents, Engineer will issue to Buyer and Seller a notice of acceptability. Seller may then make application for final payment following the procedure for progress payments. The final Application for Payment will be accompanied by all documentation called for in the Contract Documents, a list of all unsettled claims and such other data and information as Buyer or Engineer may reasonably require.

10.06 *Final Payment*

A. If, on the basis of the review of the final Application for Payment and accompanying documentation, Engineer is satisfied that the Goods and Special Services have been furnished in accordance with the Contract Documents, and that Seller's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, recommend in writing final payment subject to the provisions of Paragraph 10.07 and present the Application to Buyer. Otherwise, Engineer will return the Application to Seller, indicating the reasons for refusing to recommend final payment, in which case Seller shall make the necessary corrections and resubmit the Application. If the Application and accompanying documentation are appropriate as to form and substance, Buyer shall, within 30 days after receipt thereof, pay Seller the amount recommended by Engineer.

10.07 *Waiver of Claims*

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by Buyer against Seller, except Claims arising from unsettled liens and Claims, from non-conformities in the Goods or Special Services appearing after final payment, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Seller's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by Seller against Buyer other than those previously made in accordance with the requirements herein and expressly noted in writing by Seller as still unsettled in its final Application for Payment.

ARTICLE 11 - CANCELLATION, SUSPENSION, AND TERMINATION

11.01 *Cancellation*

A. Buyer has the right to cancel the Contract, without cause, at any time prior to delivery of the Goods by written notice. Cancellation pursuant to the terms of this paragraph shall not constitute a breach of contract by Buyer. Upon cancellation:

1. Buyer shall pay Seller for Goods, specially manufactured for the Project, plus any documented reasonable direct and indirect costs incurred by Seller in producing such Goods not recovered by payment for the reasonable value of the Goods.

2. For Goods which are not specially manufactured for the Project, Seller shall be entitled to a restocking charge of 10 percent of the unpaid Contract Price of such Goods.

11.02 *Suspension of Performance by Buyer*

A. Buyer has the right to suspend performance of the Contract, without cause, by written notice. Upon suspension under this paragraph, Seller shall be entitled to an increase in the Contract Times and Contract Price caused by the suspension, provided that performance would not have been suspended or delayed for causes attributable to Seller.

11.03 *Suspension of Performance by Seller*

A. Subject to the provisions of Paragraph 5.07.B, Seller may suspend the furnishing of the Goods and Special Services only under the following circumstance:

1. Seller has reasonable grounds to conclude that Buyer will not perform its future payment obligations under the Contract. ("Reasonable grounds" shall not include a pending dispute or disagreement with Buyer) and,

2. Seller has requested in writing assurances from Buyer that future payments will be made in accordance with the Contract, and Buyer has failed to provide such assurances within ten days of Seller's written request.

11.04 *Breach and Termination*

A. Buyer's Breach

1. Buyer shall be deemed in breach of the Contract if it fails to comply with any material provision of the Contract Documents, including but not limited to:

a. wrongful rejection or revocation of Buyer's acceptance of the Goods,

b. failure to make payments in accordance with the Contract Documents, or

c. wrongful repudiation of the Contract.

2. Seller shall have the right to terminate the Contract for cause by declaring a breach should Buyer fail to comply with any material provisions of the Contract. Upon termination, Seller shall be entitled to all remedies provided by Laws and Regulations.

a. In the event Seller believes Buyer is in breach of its obligations under the Contract, Seller shall provide Buyer with reasonably prompt written notice setting forth in sufficient detail the reasons for declaring that it believes a breach has occurred. Buyer shall have seven days from receipt of the written notice declaring the breach (or such longer period of time as Seller may grant in writing) within which to cure the alleged breach.

B. Seller's Breach

1. Seller shall be deemed in breach of the Contract if it fails to comply with any material provision of the Contract Documents, including, but not limited to:

- a. failure to deliver the Goods or perform the Special Services in accordance with the Contract Documents,
- b. wrongful repudiation of the Contract, or
- c. delivery or furnishing of non-conforming Goods or Special Services.

2. Buyer may terminate Seller's right to perform the Contract for cause by declaring a breach should Seller fail to comply with any material provision of the Contract Documents. Upon termination, Buyer shall be entitled to all remedies provided by Laws and Regulations.

a. In the event Buyer believes Seller is in breach of its obligations under the Contract, and except as provided in Paragraph 11.04.B.2.b, Buyer shall provide Seller with reasonably prompt written notice setting forth in sufficient detail the reasons for declaring that it believes a breach has occurred. Seller shall have seven days from receipt of the written notice declaring the breach (or such longer period of time as Buyer may grant in writing) within which to cure the alleged breach.

b. If and to the extent that Seller has provided a performance bond under the provisions of Paragraph 4.01, the notice and cure procedures of that bond, if any, shall supersede the notice and cure procedures of Paragraph 11.04.B.2.a.

ARTICLE 12 - LICENSES AND FEES

12.01 *Intellectual Property and License Fees*

A. Unless specifically stated elsewhere in the Contract Documents, Seller is not transferring any intellectual property rights, patent rights, or licenses for the Goods delivered. However, in the event the Seller is manufacturing to Buyer's design, Buyer retains all intellectual property rights in such design.

B. Seller shall pay all license fees and royalties and assume all costs incident to the use or the furnishing of the

Goods, unless specified otherwise by the Contract Documents.

12.02 *Seller's Infringement*

A. Subject to Paragraph 12.01.A, Seller shall indemnify and hold harmless Buyer, Engineer and their officers, directors, partners, employees, agents, consultants, contractors, and subcontractors from and against all claims, costs, losses, damages, and judgments (including but not limited to all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement or alleged infringement of any United States or foreign patent or copyright by any of the Goods delivered hereunder.

B. In the event of suit or threat of suit for intellectual property infringement, Buyer will notify Seller within a reasonable time of receiving notice thereof.

C. Upon written demand from Buyer, Seller shall be given the opportunity to defend the claim or suit, including negotiating a settlement. Seller shall have control over such claim or suit, provided that Seller agrees to bear all expenses and to satisfy any adverse judgment thereof.

1. If Seller fails to defend such suit or claim after written demand by Buyer, Seller will be bound in any subsequent suit or claim against Seller by Buyer by any factual determination in the prior suit or claim.

2. If Buyer fails to provide Seller the opportunity to defend such suit or claim after written demand by Seller, Buyer shall be barred from any remedy against Seller for such suit or claim.

D. If a determination is made that Seller has infringed upon intellectual property rights of another, Seller may obtain the necessary licenses for Buyer's benefit, or replace the Goods and provide related design and construction as necessary to avoid the infringement at Seller's own expense.

12.03 *Buyer's Infringement*

A. Buyer shall indemnify and hold harmless Seller, and its officers, directors, partners, employees, agents, consultants, contractors, and subcontractors from and against all claims, costs, losses, damages, and judgments (including but not limited to all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement or alleged

infringement of any United States or foreign patent or copyright caused by Seller's compliance with Buyer's design of the Goods or Buyer's use of the Goods in combination with other materials or equipment in any process (unless intent of such use was known to Seller and Seller had reason to know such infringement would result).

B. In the event of suit or threat of suit for intellectual property infringement, Seller must within a reasonable time after receiving notice thereof notify Buyer.

C. Upon written demand from Seller, Buyer shall be given the opportunity to defend the claim or suit, including negotiating a settlement. Buyer shall have control over such claim or suit, provided that Buyer agrees to bear all expenses and to satisfy any adverse judgment thereof.

1. If Buyer fails to defend such suit or claim after written demand by Seller, Buyer will be bound in any subsequent suit or claim against Buyer by Seller by any factual determination in the prior suit or claim.

2. If Seller fails to provide Buyer the opportunity to defend such suit or claim after written demand by Buyer, Seller shall be barred from any remedy against Buyer for such suit or claim.

12.04 *Reuse of Documents*

A. Neither Seller nor any other person furnishing any of the Goods or Special Services under a direct or indirect contract with Seller shall: (1) acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media versions; or (2) reuse any of such Drawings, Specifications, other documents, or copies thereof on any other project without written consent of Buyer and Engineer and specific written verification or adaptation by Engineer. This prohibition will survive termination or completion of the Contract. Nothing herein shall preclude Seller from retaining copies of the Contract Documents for record purposes.

ARTICLE 13 - DISPUTE RESOLUTION

13.01 *Dispute Resolution Method*

A. Disputes between Buyer and Seller will be resolved as set forth in the Supplementary Conditions. If no method and procedure has been set forth, and subject to the provisions of Paragraphs 9.05 and 9.06, Buyer and Seller may exercise such rights or remedies as they have under Controlling Law.

ARTICLE 14 - MISCELLANEOUS

14.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

14.02 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Point of Destination is located.

14.03 *Computation of Time*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day shall be omitted from the computation.

14.04 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

14.05 *Survival of Obligations*

A. All representations, indemnifications, warranties and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion and acceptance of the Goods or Special Services and termination or completion of the Agreement.