



DANE COUNTY DEPARTMENT of PUBLIC WORKS, HIGHWAY and TRANSPORTATION

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Commissioner / Director
Gerald J. Mandli

June 19, 2015

ATTENTION ALL REQUEST FOR PROPOSALS (RFP) HOLDERS

RFP NO. 315033 - ADDENDUM NO. 1

RE-BID C&D MATERIALS RECOVERY FACILITY EQUIPMENT

DANE COUNTY LANDFILL SITE #2

7102 U.S. HIGHWAY 12 & 18

MADISON, WISCONSIN

BIDS, PROPOSALS DUE: Thursday, June 25, 2015, 2:00 PM.
DUE DATE AND TIME ARE NOT CHANGED BY THIS ADDENDUM

This Addendum is issued to modify, explain or clarify the original Request for Proposals (RFP) and is hereby made a part of the RFP. Proposers must acknowledge this addendum on the proposal form.

PLEASE MAKE THE FOLLOWING CHANGES:

1. Pages PF-1 through PF-3 – Proposal Form

Remove Pages PF-1 through PF-3; replace with new Pages PF-1 through PF-3, issued with this Addendum. These revised pages are marked “Addendum No. 1”. The new pages correct Item 5 and Item 12 from Slider Bed Conveyors to Troughing Idler Conveyors.

2. Section 11 90 00 - C&D Waste Processing System Equipment

Remove Specifications Section 11 90 00; replace with new Section 11 90 00, issued with this Addendum. These revised pages are marked “Addendum No. 1”. Changes to the specifications are shown in red.

3. Section 26 05 00 - Common Work Results for Electrical

- a. Part 2.09 A.2. Revise to: “10 HP Troughing Idler Conveyor (Secondary Finger Screen Infeed) (5)”.
- b. Part 2.09 A.7. Revise to: “10 HP Troughing Idler Conveyor Fines Bunker Infeed (12)”.

4. Sheet Q100 – General Arrangement

- a. Revise equipment legend descriptions and call-out notes for the following equipment numbers:
 - i. No. 5 – Change description from Slider Bed Conveyor (Secondary Finger Screen Infeed) to Troughing Idler Conveyor (Secondary Finger Screen Infeed)
 - ii. No. 12 – Change description from Slider Bed Conveyor (Fines Bunker Infeed) to Troughing Idler Conveyor (Fines Bunker Infeed)

5. Sheet Q200 – Equipment Elevations A-C

a. Revise equipment legend descriptions and call-out notes for the following equipment numbers:

- i. No. 5 – Change description from Slider Bed Conveyor (Secondary Finger Screen Infeed) to Troughing Idler Conveyor (Secondary Finger Screen Infeed)
- ii. No. 12 – Change description from Slider Bed Conveyor (Fines Bunker Infeed) to Troughing Idler Conveyor (Fines Bunker Infeed)

6. Sheet Q201 – Equipment Elevations D-H

a. Revise equipment legend descriptions and call-out notes for the following equipment numbers:

- i. No. 5 – Change description from Slider Bed Conveyor (Secondary Finger Screen Infeed) to Troughing Idler Conveyor (Secondary Finger Screen Infeed)
- ii. No. 12 – Change description from Slider Bed Conveyor (Fines Bunker Infeed) to Troughing Idler Conveyor (Fines Bunker Infeed)

RESPONSES TO QUESTIONS RECEIVED:

1. Section 11 90 00, Part 2 PRODUCTS - 2.06 A 3. Can you explain this sentence?

VFD (variable speed drives) will be used on the (2) sorting conveyors and the (2) conveyors that feed these conveyors. See Section 26 05 00, Part 2.08.

2. Section 11 90 00, Part 2 PRODUCTS - 2.06 A 6. Specifies 3 HP, however this section looked like a specification for all of the conveyors. Is the 3 HP correct and which specific conveyor (#) is it for?

Motor horse power will vary based on the conveyor. Refer to Section 26 05 00, Part 2.09A. The vendor may request an alternative recommended horsepower rating for the motor on any sliding bed conveyor based on the material, design capacity, and other factors.

3. Section 11 90 01, Part 3 EXECUTION -3.01 A 3. indicates that all boxes should be NEMA 4

Section 26 05 00 - Part 2 PRODUCTS - 2.04 A indicates that all enclosures are NEMA 12

Section 26 05 00 - Part 2 PRODUCTS - 2.012 AUDIBLE ALARMS indicate that the alarm shall be rated IP-55

Please indicate the correct specification.

Enclosure shall be NEMA 4. Audible alarms shall be rated IP-55.

4. Section 11 90 01, Part 3 EXECUTION -3.01 A 5. indicates all devices must have the UL or FM label. Is this label necessary for the PLC panel?

Yes, the PLC panel requires UL listing.

5. Section 26 05 00, Part 2 PRODUCTS -2.01 A calls for a Motor Control Center, 2.02 calls for a Primary Disconnect. Base bid is for a MCC. A drive panel can be priced as an alternate through the process specified in the RFP.

The spec of a primary disconnect hints that you want a drive panel rather than a manufactured MCC. Please verify the type of equipment that you require.

Can the primary (Main) disconnect be in the MCC? Yes

Do you have a vendor selection for the MCC? No

Can the MCC be 15" deep model? Yes

Do you want the MCC to use fuses or breakers for the motor protection? Fuses

Do you want Solid State or bi-metallic overload protection? Solid State

Will the VFD's and Soft Start units be in the MCC buckets? Yes

Do you require Line &/or Load Reactance on the VFD's? **No**
Will you approve Square "D" or Allen Bradley VFD's and Soft starts as an "Approved Equal"?**Yes**

6 . Section 26 05 00, Part 2 PRODUCTS - 2.03 specifies the local disconnects. Are they required on all 480 VAC loads in the field?

Yes.

7 . Section 26 05 00, Part 2 PRODUCTS - 2.08 A, again hints that the VFD's are in a drive panel rather than an MCC, but if it is an MCC, do you want the VFD Keypads on the PLC panel or on the face of the MCC buckets?

VFD keypads should go on the PLC panel. If a drive panel is bid as an alternate item, the keypads should be mounted on the door of the drive panel.

8. Section 26 05 00, Part 2 PRODUCTS - 2.08 C calls for potentiometers to be located in the console with the HMI. Can the speed control be accomplished on the HMI using programming rather than the pots? Do you want the operators to have this option, or are you saying that we can select one or the other of the options?

We want the operators to have the option to use the potentiometer or the screen control.

9 . Section 26 05 00, Part 2 PRODUCTS - 2.07 A indicates a 24 vdc power supply. Do you want the control push buttons and switches to be at 24 vdc or can they be at 120 VAC?

120VAC is acceptable.

10 . Section 26 05 00, Part 2 PRODUCTS - 2.11 A specifies two (2) rope pull e-stop devices. The layout has people on both sides of Line A and one side of Line B. This would call for three (3) rope pull devices. Please verify.

Two rope pulls are acceptable. If there was an emergency with the B line, the rope on the A line can be pulled.

11. Section 26 05 00, Part 2 PRODUCTS - 2.012 A calls out IP55. Is NEMA 4 OK?

NEMA 4 is acceptable.

12 . Section 26 05 00, Part 2 PRODUCTS - 2.013 A is this the PLC panel?

Yes. If the PLC panel only has 120VAC or less in it, this requirement may be waived.

13 . Section 26 05 00, Part 2 PRODUCTS - 2.015 A, Is there more specification for the Dell Laptop (speed, memory, hard drive, etc) ?

Inspiron 15 5000 Series Non-touch or equivalent (http://www.dell.com/us/p/inspiron-15-5551-laptop/pd?oc=dncwv0002b&model_id=inspiron-15-5551-laptop).

14 . Section 26 05 00, Part 2 PRODUCTS - 2.016 B 4 & 5 . Please clarify the meaning of this text.

Replace current text in 2.016B with the following:

- B. Settings (Drawing equipment numbers in parentheses)**
- 1. Slider Bed Conveyor (Primary Finger Screen Overs) (2) set on 1st potentiometer setting.**
 - 2. Slider Bed Conveyor Picking Line A (3) set on 2nd potentiometer setting.**
 - 3. Slider Bed Conveyor Picking Line B (9) speed set on 3rd potentiometer setting**

This provides two (2) run modes. One mode requires the Dead Man switch to be pressed for the A Line incline (2) to be on. If the operator lets go of this switch, the incline conveyor will stop. This assists with material piling onto the A line pick belt in the event the line manager needs to slow down the A line picking belt. In the second mode, the Dead Man switch is disabled and the A Incline Conveyor (2) matches speed with the potentiometer setting of the A picking line (3).

If any additional information about this Addendum is needed, please contact Mike Rupiper at (608) 266-4990, or rupiper.michael@countyofdane.com

Enclosures:

Proposal Form
Specifications Section 11 90 00

Name of Proposing Firm: _____

PROPOSAL FORM – ADDENDUM NO. 1

PROPOSAL NO. 315033

**PROJECT: RE-BID C&D MATERIALS RECOVERY FACILITY EQUIPMENT
DANE COUNTY LANDFILL SITE #2**

**TO: DANE COUNTY DEPARTMENT OF PUBLIC WORKS, HIGHWAY &
TRANSPORTATION PROJECT MANAGER
1919 ALLIANT ENERGY CENTER WAY
MADISON, WISCONSIN 53713**

EQUIPMENT SCHEDULE:

Include a complete list of the individual equipment components with manufacturer and model number (if applicable). Any used, but properly reconditioned “like new” piece of equipment must be indicated. The specifications describe an acceptable unit. Any deviation from the minimum specifications must be identified in detail in the proposal including a description of how the proposed item/s differ from the bid requirements, along with detailed justification for such deviation.

EQUIPMENT SCHEDULE

ITEM	DESCRIPTION	MANUFACTURER	PRICE	COMPLIES WITH SPECS
1	Primary Finger Screen		\$	Yes / No
2	Slider Bed Conveyor (Primary Finger Screen Overs)		\$	Yes / No
3	Slider Bed Conveyor (Picking A-Line)		\$	Yes / No
4	Ferrous Magnet		\$	Yes / No
5	Troughing Idler Conveyor (Secondary Finger Screen Infeed)		\$	Yes / No
6	Secondary Finger Screen		\$	Yes / No
7	De-stoner / Air Knife (Single Knife)		\$	Yes / No
8	Slider Bed Conveyor (De-stoner/Air Knife Outfeed)		\$	Yes / No
9	Slider Bed Conveyor (Picking B-Line)		\$	Yes / No
10	Troughing Idler Conveyor (Small Residuals Bunker)		\$	Yes / No
11	Troughing Idler Conveyor (Primary Finger Screen Unders)		\$	Yes / No
12	Troughing Idler Conveyor (Fines Bunker Infeed)		\$	Yes / No

ITEM	DESCRIPTION	MANUFACTURER	PRICE	COMPLIES WITH SPECS
13	Dust Collector / Filter		\$	Yes / No
14	Aggregate Conveyor		\$	Yes / No
15	Slider Bed Conveyor (Aggregate on Platform)		\$	Yes / No
16	Tilting Hoppers (4)		\$	Yes / No
17	Elevated Picking Line Platform and Drop Chutes		\$	Yes / No
18	Integrated Electrical Controls, and Safety /Shut-down Features		\$	Yes / No
19	Other:			
20	Other:			
21	Other:			
22	Other:			
23	Other:			
	TOTAL PROPOSED COST		\$	

_____ and _____ /100 Dollars
 Written Price

ADDENDA:

Receipt of the following addenda and inclusion of their provisions in this Proposal is hereby acknowledged:

Addendum No(s). _____ through _____

Dated _____

COMPLETION:

Dane County Department of Public Works, Highways, & Transportation / Solid Waste Division must have this project completed no later than December 31, 2015. Assuming this Work can be started by June 30, 2015, what dates can you commence and complete this job?

Commencement Date: _____ Completion Date: _____
 (final, not substantial)

I hereby certify that all statements herein are made on behalf of:

(Name of Corporation, Partnership or Person submitting Bid)

Select one of the following:

1. A corporation organized and existing under the laws of the State of _____, or

2. A partnership consisting of _____, or

3. A person conducting business as _____;

Of the City, Village, or Town of _____ of the State of _____.

I have examined and carefully prepared this Proposal from the associated documents and have checked the same in detail before submitting this Proposal; that I have full authority to make such statements and submit this Proposal in (its) (their) (my) behalf; and that the said statements are true and correct. In signing this Proposal, we also certify that we have not, either directly or indirectly, entered into any agreement or participated in any collusion or otherwise taken any action in restraint of free competition; that no attempt has been made to induce any other person or firm to submit or not to submit a Proposal; that this Proposal has been independently arrived at without collusion with any other proposer, competitor, or potential competitor; that this Proposal has not been knowingly disclosed prior to the Proposal Due Date to another proposal or competitor; that the above statement is accurate under penalty of perjury.

The undersigned further agrees to honor the Proposal for ninety (90) days following the proposal due date.

SIGNATURE: _____
(Bid is invalid without signature)

Print Name: _____ Date: _____

Title: _____

Address: _____

Telephone No.: _____ Fax No.: _____

Email Address: _____

Contact Person: _____

SECTION 11 90 00

C&D WASTE PROCESSING SYSTEM

PART 1 GENERAL

1.01 RELATED DOCUMENTS

Conditions of the Contract and portions of Division One of this Project Manual apply to this Section as though repeated herein.

1.02 DESCRIPTION OF THE WORK

The construction and demolition (C&D) waste processing system shall be a new, pre-engineered system comprised of proven, integrated components and controls, including structures and machinery that are specifically designed to handle typical urban and commercial C&D wastes.

The minimum capacity of the system, at the initial in-feed equipment, shall be approximately 350 tons per day using an average waste weight of 400 pounds per cubic yard, over a 10-hour operating day (i.e., 175 cubic yards per hour).

A single, qualified Contractor shall be responsible for providing the complete C&D processing system, however, the system itself may be composed of equipment and structures provided or manufactured by multiple qualified vendors. The meaning of the word "providing" shall be understood to include overall responsibility to the Owner for: final design, construction layout, shop drawings, component fabrication, shipping, assembly/installation, quality assurance, start-up/shake-down, system warranty, O&M Manual, and operator training.

1.03 SYSTEM REQUIREMENTS

The C&D waste processing system shall be designed to provide maximum opportunity to separate the waste stream into several specific material types, as indicated on the Drawings, using automated and manually-assisted equipment and work stations, integrated with proven personnel safety features in accordance with OSHA regulations, the City of Madison, Wisconsin Building Code, and applicable ANSI Standards for Facility Safety.

The Contractor shall provide all electrical circuit protection and shut-off/alarm devices, control panels, and power and instrumentation wiring circuitry necessary to operate the entire system in an integrated manner and to interface with the power supply. The operation of the system shall be provided by a central computerized screen that will allow automatic and manual over-ride of the system. Owner will provide the primary electrical feed for the processing system.

The C&D waste processing system shall be essentially composed of two main processing lines (A-Line and B-Line) and the following major components that include, but are not limited to (Drawing Equipment No. noted in parentheses):

A-Line

- Primary Finger Screen (1)
- Slider Bed Conveyor (Primary Finger Screen Overs) (2)
- Troughing Idler Conveyor (Primary Finger Screen Unders) (11)
- Slider Bed Conveyor (Picking A-Line) (3)

B-Line

- Ferrous Magnet (4)
- ~~Slider Bed~~Troughing Idler Conveyor (Secondary Finger Screen Infeed) (5)

- Secondary Finger Screen (6)
- Destoner / Air Knife (7)
- Slider Bed Conveyors (De-stoner/Air Knife Outfeed) (8)
- Slider Bed Conveyor Picking B-Line (9)
- Troughing Idler Conveyor (Small Residuals Bunker) (10)

Other

- Aggregate Conveyor (14)
- Slider Bed Conveyor (Aggregate on Platform) (15)
- ~~Slider Bed Troughing Idler~~ Conveyor (Fines Bunker Infeed) (12)
- De-stoner/Air Knife Dust Collector/Filter (13)
- Cardboard Baler (19) (Provided and Installed by Owner)
- Elevated Picking Line Platform and Drop Chutes
- Access Ladders to various pieces of equipment at common material jam points
- Conveyor Transition Chutes/Guards, as needed
- Integrated Electrical Controls with HMI screen for graphics-based visualization of the control and monitoring system
- Safety /vibration, thermal and current overload Alarms/Shut-down Features

All equipment sizing and design criteria noted are estimated and subject to change. The Contractor shall be responsible for the exact equipment sizing, mechanical and electrical design capacity of all equipment. Equipment sizing and design to be based on the design throughput at the head of the system provided by Owner, including any adjustment or re-design to electrical wire sizing and control devices for their processing equipment.

The Contractor is responsible for confirming the fully loaded weight of the equipment, providing adequate load supports, structural support and bracing, and verifying that the system will not overload the concrete floors.

The Drawings represent the overall intent of the Owner for this system, however, they may not indicate every detail necessary or required of the waste processing system. The Contractor shall include all hardware, devices, and equipment either necessary or required, whether indicated on the plans or not, so that the system is complete, adequate in capacity, meets the aforementioned Codes and standards, and is fully operational before turning it over to the Owner.

The Owner may entertain modifications to the system in a Contractor's proposal that may result in minor changes in alignment, location, and/or orientation of the system components or changes in equipment size to meet required capacity, however, these changes must be consistent with all of the other proposed building facility modifications.

1.04 WORK INCLUDED

- A. The work included under this section consists of furnishing and installing a new C&D waste processing system. The system shall include modifications to the existing facility, including electrical power connection, and furnishing and installation of the C&D infrastructure, sorting equipment and other related equipment, which should be fully tested and in operating condition as shown in the Contract Documents.
- B. It is the Owner's intent to obtain a complete system. The Contractor shall provide any item at no extra cost that is necessary to provide a complete and operable system as intended by the Drawings, whether or not that item, equipment or feature is shown on the Drawings or described in the Specifications.

1.05 QUALITY ASSURANCE

- A. Equipment Responsibility: The conveyors and primary sorting equipment shall be supplied by the Contractor. The Contractor shall have experience in providing equipment for C&D waste processing facilities.
- B. Factory tests: An operational test shall be conducted and all equipment shall be calibrated and tested to assure proper operation. Documentation of tests shall be provided to the Engineer and Owner.
- C. Each submittal for equipment and system components shall be accompanied by an "Equipment Warranty and Certification Form". The form shall be duly executed by an authorized principal of the manufacturer warranting and certifying that the equipment and system components proposed meets or exceeds the specifications, is suitable for its intended purpose and will provide satisfactory performance at the design criteria/capacity specified. In the event that the manufacturer is not the supplier, an authorized principal of the supplier shall also execute the equipment warranty and certification form.
- D. All electrical or electronic devices shall be U.L. listed or Factory Mutual listed.

1.06 SUBMITTALS

- A. Contractor shall provide shop drawings prepared by the manufacturer and submitted to the Engineer for review prior to the manufacture of the proposed equipment. A copy of the manufacturer's warranty shall be included with each submittal. The Contractor shall provide the required number of submittals at no extra cost to the Owner. In addition, the shop drawings shall include the following:
 - 1. Comprehensive two dimensional CAD drawing of the equipment exterior as viewed from the front and side. Include complete control layout showing location of component parts as well as full electrical schematic of control operation.
- B. Operating Instruction: For the equipment, conveyors, and controls under this section, Contractor shall submit operation and maintenance manuals. At a minimum these manuals shall include:
 - 1. General equipment function, description, normal and limiting operating characteristics.
 - 2. Installation instructions.
 - 3. Operation instructions, start up procedure, emergency and normal shutdown, and restart procedures.
 - 4. Troubleshooting guide.
 - 5. Assembly and wiring diagrams.
 - 6. List of spare parts on-hand.
- C. Factory Performance Test Data: A qualified technician from the factory shall be provided for three continuous days to instruct representatives of the Owner and the Engineer on proper operation and maintenance. With the permission of the Owner, this work may be conducted in conjunction with the inspection of the installation and system start-up. If during start-up there is an equipment failure due to the manufacturer's design or fabrication of the equipment, additional services shall be provided at no additional cost to the Owner. System start-up shall be completed by a factory technician. This technician should be a direct employee of the manufacturer who has had first hand dealings with the equipment through its production at the factory.

Certifications: Contractor shall furnish the Owner and Engineer with a written certification signed by the manufacturer that the equipment has been properly installed. The form should indicate that all equipment has been operated without fault and that satisfactory operation and design capacity has been obtained.

- D. Approved Equal: For alternative equipment to be approved equal the Contractor must submit any alternative equipment to the Engineer prior to the bid. To be considered equal the Contractor must demonstrate that; they have a successful track record of use of this piece of equipment in a similar setting and waste type, the alternative equipment has equivalent operating capacity, similar proposed dimensions and is compatible with existing and proposed equipment and conveyors at the facility.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver a complete system to include all parts listed in submittal approved by Engineer.
- B. Store in a weather-tight building or suitable covering to protect against damage of any nature.
- C. Handle during delivery, storage and installation in a manner to prevent damage of any nature.

1.08 WARRANTY AND GUARANTEES

- A. The Contractor shall provide all warranty services against defects in materials and workmanship for a minimum of one year from the date of written acceptance of the system by the Owner to the effect that any defective or damaged equipment shall be repaired or replaced without extra cost or obligation to the Owner.

PART 2 PRODUCTS

| 2.01 PRIMARY FINGER SCREEN (EQUIPMENT NUMBER 1)

- A. The proposed primary finger screen shall have a minimum design capacity of 175 cubic yards per hour.
- B. Provide deflector plates to facilitate top loading and containment of C&D waste.
- C. The primary finger screen shall be manufactured by General Kinematics or approved equal.

| 2.02 SECONDARY FINGER SCREEN (EQUIPMENT NUMBER 6)

- A. The proposed secondary finger screen shall have a minimum design capacity of 100 cubic yards per hour.
- B. The secondary finger screen shall be manufactured by General Kinematics or approved equal.

| 2.03 FERROUS MAGNET (EQUIPMENT NUMBER 4)

- A. Overhead Magnetic Separator Requirements
 - 1. Overhead magnetic separator shall be DINGS Model 55T or approved equal.
 - 2. TEFC 5 HP, 230/460-3-60 AC motor.
- B. Rectifier Requirements
 - 1. The rectifier shall be a DINGS 8KW silicon diode rectifier or approved equal.
 - 2. The Rectifier for the magnetic separator shall be provided in a NEMA 12 enclosure.
 - 3. AC input 460 volts, 3PH, 60HZ.
 - 4. DC output 115 volts, 5000 watts.
 - 5. Three phase maintenance free solid state rectifier bridge.

2.04 DESTONER/AIR KNIFE (EQUIPMENT NUMBER 7)

- A. General Kinematics Model DS-F 60 X 19.5 Vibratory Single Knife De-Stoner / Classifier or approved equal.
- B. Inlet Air Plenum
 - 1. Include required air distribution boxes, complete with slide gate type dampers and flexible connections with band clamps, blower, and blower motor.

2.05 COLLECTOR AND FILTER

- A. The destoner/ air knife shall be equipped with an integrated dust capture and filter system, minimum flow rate of 12,000 CFM, including the centrifugal fan, with an impeller designed to work in the heavy dust and debris environment expected from the air knife discharge with design to minimize entanglement with strings and fibrous material, access clean-out panels, filter panels and filters, TEFC motor, belt-drive motor to fan arrangement, all ductwork, capture hood with removable panels for cleaning and access, return air manifold, and metal framed support structure, manufactured by General-Kinematics, Inc. Provide four spare air filter elements.

2.06 CONVEYORS

- A. This Slider Bed Conveyor equipment has the following characteristics (Equipment Numbers 2, 3, 8, 9, 14, 15):
 - 1. Design: Slider Bed
 - 2. Materials: Commercial mixed C&D materials and products, including; small and large stones up to approximately 12 inches, concrete pieces, rubber, brick, sand, glass, fiberglass, asphalt, metals, wood, gypsum, plastics, paper, vinyl, ceramic, etc. Typical feedstock products include, but are not limited to; pipe, dimensional lumber, consumer products, boxes, hose, pallets, shrink wrap, buckets, conduit and wiring, wallboard, tiles, mastic/glues, shingles, carpeting, rebar, furniture, insulation, electrical devices, ductwork, metal studs, hardware, doors, windows, and lighting.
 - 3. Speed: Variable speed control suited to the specific equipment, capacity, location, and if paired with manual picking stations.
 - 4. Length: Varies
 - 5. Width: Varies
 - 6. Motor shall be Emerson or Baldor Severe Duty Motor, 1800 RPM, 230/460V, 60Hz, 3PH, TEFC, or approved equal.
 - 7. Reducer shall be Dodge Shaft Mount Speed Reducer or approved equal.
 - 8. Shafting shall be C-1045 cold rolled precision.
 - 9. Bearings shall be Dodge, Sealmaster or SKF – IP Pillow Block or approved equal.
 - 10. Belting shall be black heavy duty belting 3Ply-220PIW, 2/16” x BB or approved equal.
 - 11. Fastener System shall be FLEXCO R5 Megaloy Fasteners or approved equal.
 - 12. Pulleys: Head shall be heavy duty drum pulley crown faced and lagged 3/8” thick diamond pattern complete with XT hubs and bushings. Tail shall be heavy duty wing pulley complete with XT hubs and bushings.
 - 13. 1/4” sides and frame.
 - 14. Return Idlers shall be CEMS D-5” to 7” diameter channel inset return steel disc idler or approved equal.
 - 15. Wide slot adjustable screw type take up frames.
 - 16. Safety Guards: all rotating parts guarded in accordance with OSHA regulations.
 - 17. Supports shall be bolted structural steel members braced and mechanically anchored to concrete floor or bolted on steel structure.

18. Provide chevrons or equivalent slip prevention on all inclined conveyor belts.

B. Troughing Idler Bed Conveyor equipment has the following characteristics:

1. Materials: Unders Fraction (<12") (Equipment Numbers 5, 11)

- a. Speed: Variable speed control suited to the specific equipment, capacity, location, and if paired with manual picking stations.
- b. Length: Varies
- c. Width: Varies
- d. Motor shall be Emerson or Baldor Severe Duty Motor, 1800 RPM, 230/460V, 60Hz, 3PH, TEFC, or approved equal.
- e. Reducer shall be Dodge Shaft Mount Speed Reducer or approved equal.
- f. Shafting shall be C-1045 TGP (Turned, Ground and Polished) cold rolled precision or approved equal.
- g. Bearings shall be Dodge, Sealmaster or SKF – IP Pillow Block or approved equal.
- h. Belting shall be black heavy duty belting 3Ply-330PIW, 3/16" x 1/16" MOR or approved equal.
- i. Fastener System shall be FLEXCO Bolt Hinged Fasteners or approved equal.
- j. Pulleys: Head shall be heavy duty drum pulley crown faced and lagged 3/8" thick diamond pattern complete with XT hubs and bushings. Tail shall be heavy duty wing pulley complete with XT hubs and bushings or approved equal.
- k. Carrying Idlers shall be CEMA C-5" diameter 20°/35° Troughing Idler or approved equal.
- l. Return Idlers shall be CEMA C-5" diameter with 4 1/2" standard drop Return Rubber Disc Idler approved equal.
- m. Take ups shall be OEM Telescopic Screw type – Square tubing and ACME main rod or approved equal.
- n. Safety Guards: all rotating parts guarded in accordance with OSHA regulations.
- o. Accessories shall include Martin Engineering QC-1 Belt Cleaner or approved equal.
- p. Supports shall be bolted structural steel members braced and mechanically anchored to concrete floor or bolted on steel structure.
- q. Provide chevrons or equivalent slip prevention on all inclined conveyor belts.

2. Materials: Fines Fraction (<2") (Equipment Number 10, 12)

- a. Speed: Variable speed control suited to the specific equipment, capacity, location, and if paired with manual picking stations.
- b. Length: Varies
- c. Width: Varies
- d. Motor shall be Emerson or Baldor Severe Duty Motor, 1800 RPM, 230/460V, 60Hz, 3PH, TEFC, or approved equal.
- e. Reducer shall be Dodge Shaft Mount Speed Reducer or approved equal.
- f. Shafting shall be C-1045 TGP (Turned, Ground and Polished) cold rolled precision or approved equal.
- g. Bearings shall be Dodge, Sealmaster or SKF – IP Pillow Block or approved equal.
- h. Belting shall be black heavy duty belting 2Ply-220PIW, 3/16" x 1/16" MOR or approved equal.
- i. Fastener System shall be FLEXCO Bolt Hinged Fasteners or approved equal.
- j. Pulleys: Head shall be heavy duty drum pulley crown faced and lagged 3/8" thick diamond pattern complete with XT hubs and bushings. Tail shall be heavy duty wing pulley complete with XT hubs and bushings or approved equal.

- k. Carrying Idlers shall be CEMA C-5" diameter 20°/35° Troughing Idler or approved equal.
- l. Return Idlers shall be CEMA C-5" diameter with 4 ½" standard drop Return Rubber Disc Idler approved equal.
- m. Take ups shall be OEM Telescopic Screw type – Square tubing and ACME main rod or approved equal.
- n. Safety Guards: all rotating parts guarded in accordance with OSHA regulations.
- o. Accessories shall include Martin Engineering QC-1 Belt Cleaner or approved equal.
- p. Supports shall be bolted structural steel members braced and mechanically anchored to concrete floor or bolted on steel structure.
- q. Provide chevrons or equivalent slip prevention on all inclined conveyor belts.

2.07 TILTING HOPPERS (EQUIPMENT NUMBER 16)

- A. Wastequip Model H-350LP (3.5 cubic yards, 46" height x 99-1/2" width) heavy-duty, self-dumping, low profile hoppers or approved equal.
 - 1. Heavy-duty 7 gauge steel body
 - 2. 1" round rocker stops
 - 3. Designed for 5,000 lb. capacity

PART 3 EXECUTION

3.01 GENERAL

- A. All materials and equipment shall be installed as shown on the Drawings and as recommended by the manufacturer.

3.02 INSPECTION AND TESTING

- A. Field supervisor: A factory-trained representative shall inspect the completed installation, make necessary adjustments and instruct Owner and Engineer in the proper care and operation of the equipment, prior to the final acceptance of the C&D sorting system.
- B. Field Test: When the system is complete and ready for operation, then the system shall be inspected and tested for compliance to the contract documents. Test of equipment shall be made by the Contractor in the presence of the Engineer and the Owner. Owner will supply representative waste for the duration of the test, which shall be a minimum of 2 hours of continuous run time with no stoppages due to a system malfunction or material jam. The equipment tests shall include, but will not be limited to the following:
 - 1. The screens and conveyors shall be tested to operate at design capacity.
 - 2. Electrical: Readings shall be made of the voltage and amperage draw and recorded on the manufacturer's start-up form.
 - 3. Controls: Control primary elements shall be tested to determine satisfactory performance and alarm functions, and emergency stop functions will also be tested.
 - 4. Inspection: An inspection of all mechanical and electrical equipment, controls, brackets, mountings, seals, conduit, and component features shall be made while the system is being tested to determine performance and compliance with design requirements and the specification.
 - 5. Repairs, adjustments and replacement: The Contractor shall make any and all necessary repairs, adjustments and replace any component parts until performance has been demonstrated to the satisfaction of the Owner and Engineer. The Contractor shall bear the cost of any repair, adjustment and replacement.

END OF SECTION