

## **Specification Requirements for Open Top Aluminum Trailers**

### **1.0 PURPOSE**

The purpose of this Attachment is to provide sufficient specification requirement information for a suitable qualified Contractors to furnish transfer trailers to transport materials associated with the R&E Center. “Suitably qualified” means that the Contractor shall be able to demonstrate satisfactory performance of the offered, or similar, equipment in a comparable application to the satisfaction of R&E.

R&E intends to purchase up to four (4) open top trailers to allow for one to be in transit while the other is positioned to be loaded with material within the R&E Center.

### **1.1 Scope of Supply**

Attachment 4 is not intended to be restrictive. An approved equal may be proposed but shall be approved by R&E. Alternate transfer trailers may be submitted as equal to the specified equipment. The burden of proof of equality shall be the responsibility of the Contractor. However, to retain consideration, the Contractor’s base bid shall be prepared using the information provided per the RFB and all associated attachments.

1. R&E reserves the right, throughout the term of the contract, to purchase an additional number of trailers.
2. The Contractor shall bid aluminum panel smooth side moving floor trailers.
3. The total scope of the contract shall include design, supply, and delivery and performance warranties for the specified equipment. The Contractor shall furnish complete transfer trailer, including:
  - Self-unloading trailers capable of load/unload organic waste contained within DCBs or non-processible bulky waste.
  - Maintenance instructions/manuals
  - Assembly and Structural Drawings
  - Recommended spare parts list and pricing
  - Surface preparation and painting
  - Initial fill and operating fluids and lubricants
4. External hydraulic wet packs for moving floor operation will be provided by R&E.

### **2.0 PERFORMANCE SPECIFICATIONS**

#### **2.1 General Description**

The transfer trailers will be used to transport organic waste materials to and from the processing facility, located in Newport, Minnesota. These trailers will be required to travel on paved highways as well as unpaved surfaces, such as solid waste facilities.

## 2.2 Operating Requirements

The transfer trailers will be top loaded by means of a conveyor or loader. The trailers shall have a full-size rear door for unloading purposes.

The trailers shall be constructed of aluminum. The transfer trailers shall meet all the requirements for maintaining maximum payload in the State of Minnesota. The trailers shall also conform to all Federal Department of Transportation regulations.

The trailers shall be of the moving floor design for self-unloading (**HALLCO ONLY**). All trailers shall be equipped with the necessary hardware and components such as hydraulic cylinders and directional valves to operate the unloading system. The unloading system shall be compatible with a hydraulic wet pack (by the R&E) which operates at 3,000-PSI pressure and a flow of 30 GPM. The trailers shall be capable of off-loading the materials being transported in temperatures of (-) 40 to (+) 100 degrees Fahrenheit with no difficulty.

## 2.3 Detail Guide

The construction of this equipment shall conform to the requirements as outlined in this Attachment. All furnished equipment shall meet OSHA standards. All hydraulic piping shall be stainless steel seamless pipe, socket welded throughout. All trailers to be Minnesota State DOT certified and licensed prior to delivery.

## 2.4 Specified Requirements

### Target Weight

Not to Exceed 20,500 pounds (lbs.)  
108 cubic yard (cy) minimum

### Target Height

13'6"

### Target Length

45'0"

### Maximum Width

8'0"

### Axles

Two 22,500 lb 71.5 IN. Meritor 5/8" WALL TP w/ 49" spacing. Hutchens cast spring ride 3 leaf suspension. Axles are placed such that the rear of the rear most tire is a minimum of 12" forward from the rear of the trailer.

The Hutchens 9700 series is available in cast or fabricated components, and either is acceptable.

### Tires

Michelin XZE-2 11Rx 22.5

### Rims

Steel HP 22.5 x 8.25 10 hole white powder coated

**Brakes**

16-1/2" by 7" Rockwell full air with quick disconnect couplers mounted at the front of trailer (must comply with all DOT requirements). Brake adjusters shall be self-adjusting. ABS braking system (Meritor/Wabco) shall be a four-sensor system. (No gunnite products)

**Hub/Drum**

(4) cast w/steel hub 10 stud tp,ss,7" Hubodometer mounted driver side front - Stemco

**King Pin**

SAE standard king pin, 36" from front. All trailers shall have a full width trailer front fifth wheel protection plate.

**Landing Gear**

Heavy Duty, 2-speed crank types Holland Mark 5, crank mounted on driver side. 200,000-lbs. static load capacity with cushion foot sand pad. Landing gear shall include a 4-inch O.D schedule 80 pipe installed inside the legs. The landing gear is to be located 33'0" from the rear of the trailers and have a 72" centerline spacing. The landing gear shall have heavy duty bracing for multiple use.

**Lights**

Truck lite L.E.D. lights (rear lights to be suitably protected to prevent breakage). All lights must meet D.O.T. requirements and regulations.

**Trailer Connections**

Two flush mounted access panels -- one on each side of the electrical and hydraulic hookups - with minimum dimensions of 19-inches (H) by 23-inches (W) shall be installed at the front of the trailer with airline and electrical connections flush mounted to the face of the access panel. Panel design must be approved by R&E.

**Mud Flaps**

Standard rubber composition at rear.

**Paint**

Any steel structure will be blasted to SPS-6, have 2-part epoxy primer of 3-4 mils with an epoxy topcoat of 3-4 mils in black.

Galvanization at a weldment is acceptable.

**Ejection System**

Hydraulically operated and compatible with a wet pack operation at 3,000 PSI pressure and 30 GPM flow. Two duplicate sets of male Pioneer 4010-6P quick disconnect couplers mounted at the front of the trailer. The Contractor shall provide trailer pricing for three moving floor options: 1) a Hallco i-4000 series ejection floor system with 3/8 aluminum slats; 2) a NLR-i4000 series; and 3) an NLR-brute 8500. All but one of the deck slats shall include one full length 7/8"

(.875") tall by 1" overlapping ridge with HDPE deck slat seal installed. The remaining deck slat will have no overlapping ridge or seal. The side trim of the trailer will create the final seal with the remaining deck slat.

### **Body**

Aluminum smooth side/ panels landfill tolerant design on both trailer frame and body. Either horizontal or vertical panels are acceptable. Interior panel shall be thicker than exterior panel. Recommendations from the Contractor will be reviewed to achieve maximum strength while meeting weight requirements.

Ladder mounted on front of trailer.

Current floor member cross spacing design is an I-beam that is 5-1/4" tall with 3/8" thick web and flanges. Each I-beam is located 14" on center for the entire length of the trailer. This "or approved equal" is acceptable.

The rearmost 10 feet of the trailer walls shall have a 3/16" interior aluminum overlay for the entire interior height of the trailer. The aluminum overlay shall be attached with a continuous weld for the entire overlay (stitch welding is not acceptable).

A vent shall be provided in the front of the trailer to provide a sight port at tractor window level to enable driver to watch the progress of the unloading sequence.

A non-stick surface shall be added to the front slope shield to aid in self- cleaning and freeze prevention. This surface shall be 3/8" UHMW plastic or equal.

Manufacturer's mark or logo, if applied to the trailer body, must be integrated into the finish.

### **Tarping System**

Each open top trailer shall include a tarping system. Each trailer shall be fitted with Agricover EZ Lock HD System and a 3" tarp pole toggle switch on the driver's side.

### **Door**

A mechanism shall be provided for unlatching the rear doors from the driver side. The handle for unlatching the rear door shall be approximately 2-4 feet from the rear of the trailer and a minimum 1-inch schedule 40 steel rod shall be used to connect the handle to the door mechanism. The door handle shall be located such that the operator is within four (4) feet of the rear of the trailer accessing the handle operating the door.

Door shall use "U-bolt" latches. Door mechanisms shall be on the exterior of the trailer body panels. A method of adjusting door closure shall be provided. Doors must rest flush against trailer wall when open. Hinge design must be approved by R&E. Each hinge pin shall be stainless steel. No brass bushings. Each hinge requires a minimum of two (2) tapped grease zirks, and the hinge bore shall be 0.005" larger than the hinge pin diameter.

All mechanisms used to close or latch doors shall be located on the exterior of the trailer body panels.

The hinge design must allow door to rest flush against trailer side wall when open.

Hinge design must use individual hinge pins at each hinge (single rod through all hinges is not acceptable).

The front access doors hinge shall be located on the bottom and shall be a minimum of 10 gauge with 3/8" pin (piano hinges will not be acceptable). A site visit to observe the existing trailer doors is encouraged.

#### **Maximum Unloading Time**

The trailers unloading system shall require no more than 10 minutes to fully unload a trailer at 3,000 PSI and 30 GPM flow. Curves of unloading time vs. pressure shall be provided with bid.

#### **Decal**

All trailers will be provided with a "Caution-This trailer makes wide turns" decal affixed to the rear door on the passenger side.

#### **Miscellaneous**

All trailers shall be provided with a backing bell mounted to the passenger side front axle.

### **3.0 PERFORMANCE**

The Contractor shall provide sufficient data with the bid to assure R&E that trailer of the type and style furnished by the Contractor have a minimum life of seven (7) years normal landfill and/or over-the-road usage and have demonstrated such capabilities. The trailers may be used seven (7) days per week and twenty-four (24) hours per day.

The Contractor shall guarantee the trailer performance as specified for a period of two years (24 months) to commence upon delivery of the complete order to the R&E Center.

It shall be understood that normal trailer operation shall include top loading materials (organics or non-processible waste) on a high frequency basis with sufficient quantities of material to obtain a gross vehicle weight of 80,000 pounds while still maintaining legal rear axle weights. Furthermore, fully loaded trailers shall be operated in landfills or composting operations on a continuous basis.

The Contractor guarantee shall address the following elements:

#### **A. Corrective Maintenance**

If any individual trailer supplied under the resulting contract requires corrective maintenance and if the root cause of the problem to be corrected is traceable to the trailer Contractor (design, materials, fabrication, workmanship or sub-components), then the Contractor shall, at the Contractor's expense and at the Contractor's choice, perform corrective maintenance or replace the trailer requiring corrective maintenance.

#### **B. Routine Maintenance**

In support of this guarantee the Contractor shall provide information on expected maintenance which details schedules, material consumables and labor requirement.

If any individual trailer supplied under the resulting contract requires an abnormally high amount of routine maintenance, defined as 150% of the expected maintenance based on the contractor's maintenance schedule, then the Contractor shall, at the Contractor's expense and at the Contractor's choice, either:

Perform the routine maintenance above and beyond that which is normally expected and provide temporary and compatible replacement trailers of equal or greater capacity while those trailers are awaiting or are receiving maintenance.

-OR- Reimburse R&E for all routine maintenance above and beyond that which is normally expected.

## **4.0 EQUIPMENT WARRANTY**

### **4.1 Comprehensive Warranty**

The Contractor warrants that the work will be as specified and will be free from defects in design, workmanship, and materials. If within the warranty period the materials or equipment fails to meet the provisions of this warranty, the Contractor shall promptly correct any defects, including non-conformance with the specification, by adjustment, repair or replacement of all defective parts or materials without additional cost to R&E.

Unless otherwise specified, the warranty period shall extend a period of two years (24 months) from the date of complete delivery of the equipment to the R&E Center.

Any deviations from the above conditions must be specifically declared in writing with the Contractor's bid.

### **4.2 Performance Warranty**

The equipment shall be tested by R&E at least once within the first six (6) months after delivery of the equipment. The test will run for ten (10) loads over fifteen (15) consecutive days. The equipment shall meet the following criteria:

- No structural integrity damage.
- No mechanical operational problems.
- Unloading time stated in proposal with minimal carryback of material.
- Stated payloads.

### **4.3 Submissions After Receipt of Contract**

After award of the contract, the Contractor shall furnish eight (8) copies of the following documents to the operations staff of R&E in accordance with the agreed-upon schedule:

- Operations Manual
- Maintenance and Lubrication Manual
- Emergency Procedures

- Wiring Diagrams
- Electrical Schematics
- Piping Schematics
- General Arrangements and Assembly and Structural
- OSHA Certification

## **5.0 SUPPLEMENTAL PROVISIONS**

### **5.1 Shipment and Storage**

All spare parts and unattached material shall be suitable crated, boxed, equipped with handling fixtures, or otherwise prepared for shipment to prevent damage during shipment and handling. Each box or crate shall contain a detailed packing list. The weight of each component or container shall be stamped on the outside of the container along with R&E's address and contract number. All openings shall be properly protected to prevent the entrance of dirt or debris. Suitable weatherproofing shall adequately protect all parts, which may be exposed to the weather. It shall be the responsibility of the Contractor to take any other precaution required to reasonably ensuring job site arrival of the equipment in an undamaged and satisfactory working condition.

All parts shall be identified in an appropriate manner. When parts are crated or boxed, detailed packing lists shall be provided with each crate or box. All parts to be joined in the field shall be clearly matched marked after shop painting, and shall be marked with references to applicable assembly drawings

### **5.2 Surface Preparation and Painting**

In general, all components of standard manufacture purchased by the Contractor and furnished for this contract shall be prepared and finish painted in accordance with the component manufactures standard practice. All equipment and structural steel fabricated by the Contractor shall be cleaned, prepared, primed and finish painted in accordance with applicable painting codes and standards of Steel Structures Painting Council Surface Preparation Spec (SSPC-SP 6). All Painting shall be consistent with the specified intended service and the Contractor shall adhere to the paint manufacture's requirements. All surfaces shall be thoroughly cleaned before priming and painting. Priming shall be a 2 (two) part epoxy primer 3-4 mil thickness County approved equivalent. Finish paint shall consist of a two (2) part polyurethane in a color selected by R&E of a thickness of 3-4 mils, total thickness to be no less than 6 mils. The underside of the trailers shall be painted black.

### **5.3 Nameplates**

All equipment shall be provided with a permanently attached stainless steel nameplate located in a readable location and fastened to the largest, least dismantled part. Nameplates shall not be attached to a pressure- retaining surface with mechanical fasteners.

The nameplate shall be stamped with the following information:

- Item
- Serial Number
- Design Capacity

## **6.0 QUALITY PROGRAM REQUIREMENTS**

## **6.1 Quality Control (QC) Program**

The Contractor shall have an effective QC Program to ensure the requirements of the contract and specifications are complied with. It is preferred the program be documented, but verifiable demonstration of compliance through normal fabrication/erection practice is acceptable.

The program shall assure that required procedures are prepared and implemented, required test/measurements are made using calibrated tools and equipment, referenced codes and standards are available for use, personnel are trained and qualified to perform the specified task as required by codes, standards and the specification, deviation/defects are identified and corrected in compliance with specification requirements, and that materials are procured, handled and shipped in compliance with the Contract. All deviations/defects must be identified to R&E in writing including corrective action taken.

## **6.2 Notification Points**

R&E shall have the right to establish notification points for which the Contractor shall give prior notification. Notification points require the Contractor prior notification at least ten working days in advance of the scheduled time of performance. R&E may require that activities performed without proper notification be repeated for R&E's observation at the Contractor's expense.

R&E will inform the Contractor of its desire to witness the event or will authorize the Contractor to proceed without witnessing the event. The above may be performed by telephone communication. Written waiver will be issued if requested by the Contractor.

## **6.3 Quality Program Interface**

The Contractor is subject to audits, unannounced inspections, and witnessing by R&E to ensure compliance with the requirements of the specifications, codes, drawings and R&E approved submittals. Any request for approval of deviations of nonconformance to the contract documents shall be requested in writing and preceded in accordance with the specification.

## **6.4 Submittal of Manufacturing/Erection Schedule**

Prior to the award of the contract, the Contractor shall submit copies of the Manufacturing Schedule to R&E upon request for their information and establishment of Notification Points and Project Management.

## **6.5 Documentation**

Records System – A record system shall be established and maintained that provides for the identification and correlation of required records and certifications.

Documentation Schedule – This specification requires specific documents to be formally submitted to R&E for information or review and approval. If these documents are changed subsequent to submittal, the Contractor shall resubmit the revised document(s) to R&E for information or review and approval consistent with the original requirements.

Contractor Documentation - The Contractor shall assemble all required records into two identical sets. Each page of the documents submitted shall be clearly identified by the R&E name, the station and/or

unit, the contract number, the equipment description and specific identification, and the manufacture/contractor's name and address. Each individual document shall be legible and shall be reproducible capability. No information shall be recorded closer than 5/8" of the binding edge or closer than 1/4" to any other edge of the paper.

Documents that have been submitted with a previous shipment on this order/contract shall not be duplicated. However, a statement shall be furnished to R&E itemizing, by document, the documents previously furnished for each item of equipment and the date of that previous submittal.

Documentation by the Contractor – The minimum documentation required to be furnished is listed in the Contract documents.

All records required by this specification, applicable regulations, codes and standards, or generated as a result of the Contractor's QC Program shall be retained in the Contractor's file for a period of 365 days after the contract requirements for the manufactures or installation have been complied with. At the expiration of this 365-day period, R&E or their authorized agent shall be provided the option of receipt and/or the Contractor's continued retention of the file contents. No records shall be destroyed or otherwise disposed of without permission from R&E.