



ALABAMA STATE PORT AUTHORITY

McDuffie Coal Terminal

RCD2 System Replacement

Contractor Scope of Work

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This document provides a summary of the contractor's responsibilities. For further and full installation details, reference Richmond Engineering works Installation and Commissioning Manual & attachments.

I - PROJECT DESCRIPTION

Alabama State Port Authority (ASPA) is replacing the existing RCD2 Rotary Railcar Dumper and Positioner and TAS2 Take-Away System. Richmond Engineering Works (REW) has been contracted to provide the design and equipment supply for these systems. REW will also provide on-site technical assistance during the installation and commissioning of the equipment.

II - CONTRACTORS RESPONSIBILITIES

- a) The general contractor is responsible for unloading supplies and equipment (fabricated steel, parts, and supplies), on site handling and security of supplied equipment and materials on jobsite. This includes, but is not limited to, furnishing tools, material and labor to protect the mechanical and electrical equipment from weather related damage/corrosion, damage that may occur during hoisting and shoring, and securing worksite from normal operation's traffic until the equipment is installed and accepted by the Owner.
- b) The contractor will also be responsible for supplying all labor, rigging, lifting equipment, cranes, cribbing, etc., for unloading the trucks. The equipment is to be staged and protected until assembly. The contractor is to provide all dunnage, tarps, temporary shelters or other protection for the equipment.
- c) The contractor will also be responsible for supplying all labor, materials, rigging, lifting equipment, cranes, lifts cribbing, etc., for completion of the project.
- d) ***The contractors, mechanical, electrical and hydraulic are responsible to ensure all employee are safety trained, all LOTO procedures are followed and will need to verify with the owner that all equipment is locked out prior to any work on the dumper or positioner**

III - ERECTION

Pre-outage assembly of components

- a) **End rings** are provided in three (3) sections. Each section is to be laid and supported in the horizontal position. Each section shall be aligned and leveled within 1/8" and joined together at the three (3) splice joints on the web plates with bolted splice plates. Following the field alignment and splice plate connections, a final field survey of the flatness of the assembly must be completed by the contractor. Once both end rings are fit, assembled and approved, the end rings are stood up in the vertical position, aligned to each other and supported. The spill girder, car clamps, front and rear trusses, platen and other equipment can be installed, aligned and secured.
 - a. Electrical and hydraulic assembly on the dumper can be completed once the dumper is erected. Prior to installation, the general contractor shall coordinate scheduling the electrical and piping crews to facilitate time and the assembly of the dumper.
- b) The **Positioner** carriage will need to be pre-assembled prior to the outage to keep the outage time for the RCD2 system as short as possible. Installation of the positioner will include but not be limited to the travel wheel assemblies, equalized thrust wheels, positioner platform, grating, ladders, and handrails, (5) positioner drives and pinion shafts. The positioner gear racks and top rail will need to be assembled to the positioner runway prior to the installation of the positioner carriage and after civil work is completed to the runway. The positioner arm must be assembled AFTER the carriage is installed onto the runway.
 - a. Electrical and hydraulic assembly on the dumper can be completed once the dumper is erected. Prior to installation, the general contractor shall coordinate scheduling the electrical and piping crews to facilitate time and the assembly of the positioner.
- c) The Hopper bottom sections will be in two pieces with weld field splicing on the centerlines of the apron feeders. The Hoppers mid and upper sections will be in 4 sections with weld field splices in the corners. The hopper wear plate will be assembled with the exception of the liners over the welded areas. These will need to be field assembled.
- d) Grizzly's – 16 sections of grizzlies will need to be set into place on top of the hoppers. 4 sections per hopper. Grizzlies are to be tack welded to the grizzly bar stops.

- e) The Dumper pit deflector plate will need to have the wear plate installed.
- f) The north and south pit wall sloped plates will be provided by ASPA for installation by the contractor.
- g) Takeaway system includes the apron feeders and take away conveyor (need information from vendor on assembly)
 - a. The take away conveyor will be assembled during the outage due to the limited access to the pit below. Sections/components will need to be lowered into the pit thru the hopper openings and assembled in place.
 - b. The apron feeders will need the head shaft, motor and reducer installed and aligned onto feeder frame which includes the motor and reducer on the dribble conveyor.
 - c. There will be 1 to 3 feeder pans and 1 dribble pan that will need to be installed on each feeder. There are 4 apron feeders for this project.

IV - EXISTING EQUIPMENT REMOVAL

- a) The existing dumper, trunnions, sill beams and grizzly's must be removed before removing the existing hoppers, vibrating feeders and transfer belts along with the existing positioner. Following the removal of these existing components, civil work will need to be completed prior to the installation of the new dumper, takeaway system and positioner. All removed items must be disposed by the contractor. All fluids from gearboxes, etc., are to be collected by the contractor for off-site disposal.

V – CONCRETE and FOUNDATION (Detailed designed by others)

- a) Modifications to the concrete & foundation will be required on the positioner runway.
- b) New concrete foundations will need to be constructed for (3 areas) the wheel grippers.
- c) New concrete and foundation modifications will need to be completed for (2) dumper drives (new piers).
- d) Layout and installation of new anchor bolts into existing concrete will need to be completed in various locations.

VI – NEW EQUIPMENT INSTALLATION

- a) Modifications to the existing C-16 conveyor are to be completed by the contractor.

- b) A new Conveyor & Conveyor Belt will need to be assembled, set, aligned and anchored into the existing foundation. The majority of assembly and alignment will be completed during the outage.
- c) 4 new Apron Feeders 7 Apron Feeder Platforms will need to be mounted & aligned to the conveyor chutes.
- d) 4 new Hoppers will need to be set aligned and anchored into the existing foundation.
- e) (16) New Grizzley's will need installed and tack welded to the stop bars.
- f) 4 new Sill Beams and Trunnions will need to be installed, aligned and anchored to the concrete.
- g) Access walkways platforms will need to be installed at the north and south sill beams.
- h) Deflector plates at north and south sill beams.
- i) Sloped plate at north and south pit walls.
- j) 2 new dumper barrels will need to be set onto the trunnions, aligned and tested.
Continued electrical, hydraulic and grease piping will need to be completed after the dumper barrels have been set and aligned.
- k) 3 new wheel gripper assemblies will need to be set, aligned and secured into the new concrete foundations.
- l) The positioner will need to be set onto the runway rails, set and aligned. Continued electrical and grease piping will need to be completed after the positioner is set into place. The positioner arm will also need to be installed after the carriage frame is set onto the runway.

Touch-up paint will need to be completed to all components after installation is completed and before commissioning.

VII – PIPING

- (a) Hydraulic piping to be installed to each of the Car clamps on each dumper from the HPU building. Pipe will be carbon steel welded together. Leak testing required.
- (b) Hydraulic piping is to be installed to the Hopper slide gate hydraulic cylinders from the HPU building. Piping will be carbon steel welded together. Leak testing required.
- (c) Grease line piping is to be installed to each of the Dumper trunnions from the auto-lube system. Piping will be stainless steel welded. Leak testing required.

- (d) Grease line piping is to be installed to the Positioner carriage from the auto lube. Piping will be stainless steel welded together. Leak testing required.
- (e) Air line piping is to be installed to each of the 3 Wheel gripper air cylinders. The lines will connect to the existing air compressor. Piping will be carbon steel threaded pipe. Leak testing required.

VIII – ELECTRICAL

- (a) The Electrical and control system will be completely upgraded. Control panels will be removed from the electrical room and new panels installed.
- (b) Unused wiring is to be removed and disposed of by the contractor.
- (c) The majority of the new cables will be routed in new conduit and cable trays. Existing embedded conduit will be used where possible.
- (d) The contractor is responsible for routing conduit and tray around existing and new equipment.
- (e) The contractor will provide all cable, conduit, tray, fittings, supports etc... as needed for a complete installation.
- (f) The area below the hoppers is classified as a hazardous area class II, division 1, group F.
- (g) New lighting is to be installed in the TAS2 area.
- (h) The installation manual and electrical drawings detail the electrical system.

IX - START-UP AND COMMISSIONING

- a) Mechanical and electrical support will be needed thru the commissioning of the takeaway system, dumper, positioner and wheel gripper operation.