

GLADWIN COUNTY ROAD COMMISSION

STANDARD DUMP BODY:

Model HD Tipper 201SS, manufactured by Crysteel Manufacture Company or equal:

- a. Extra Heavy Duty body, 13.3 cubic yard capacity, 14' long x 84" wide with front, sides and gate all being 44", all are inside dimensions.
- No cutouts for taillights, cutouts for clearance lights only.

Yes _____ No _____ Deviations _____

- b. Sides, front and gate shall be made of 7 ga. 201SS.

Yes _____ No _____ Deviations _____

- c. Nine panel double acting tailgate, top brace shall be inverted V plus all horizontal brace shall be sloped to shed dirt.

Yes _____ No _____ Deviations _____

- d. Tailgate hardware shall consist of:

- 1-1/2" thick 201SS top hinge.
- 1-1/4" diameter 201SS upper and lower tailgate pins.
- Four (4) 3/8" thick 201SS chain slot brackets.
- Lower tailgate latch socket 201SS.
- Rear pillar cap and hinge plates 201SS.
- 3/8" Hi-Test galvanized chains sufficient length to allow tailgate to lay flat.
- 3-1/2" ID diameter air cylinder shaft retracted when gate is in closed position, to include 12 volt solenoid valve and toggle switch, both installed in the cab.
- All linkage, including upper pins shall have grease zerks.

Yes _____ No _____ Deviations _____

- e. Custom cab shield, manufactured of 7 ga. 201SS, continuously welded inside and out.

Yes _____ No _____ Deviations _____

- f. Floor shall be manufactured of 1/4" thick AR400, 180,000 tensile strength with 9" side to floor radius and 9" front to floor radius.

Yes _____ No _____ Deviations _____

- g. Western style understructure, 9” trapezoidal fabricated from combination of 3/16” and ¼ A1011 Hi tensile steel, continuously welded.

Yes_____No_____Deviations_____

HOIST; CRYSTEEL, MODEL RC690 TWIN CYLINDER OR EQUAL:

- a. To be full sub-frame design with grease-able and removable rear hinge pins, NTEA class 90 double acting cylinder with chrome 2-3/8 cylinder rods.

Yes_____No_____Deviations_____

NOTES:

- Everything above the floor shall be 201SS (unless noted otherwise). Complete body shall be continuously welded with SS wire.
- Body and Hoist shall have a 5 year warranty; 3 years full warranty and remaining 2 years to have a 50/50 parts and labor plan.

LIGHTS, WIRING AND SWITCHES:

- a. Front strobe shall be ECCO 6670 single unit mounted center wedge on cab shield.
- b. Rear lights – install the following lights in the stainless steel light boxes. The sequence of the three lights.
- Top: Grote LED strobe light, P/N 77363.
 - Middle: Grote LED stop, tail, turn light, P/N 53962.
 - Bottom: Grote LED back up lamp, P/N 62061.
- c. All wiring to have heat shrink connectors, heat shrink tubing and to routed through PVC pipefor maximum protection.
- d. Wiring to be terminated in a Betts Dri-Seal model 35104 junction box with water proof choke seals.
- e. County to specify at time of installation, location and heights on all lights, junction box, and routing of wiring and switch arrangements.
- f. Work lights – 5” N25 Nordic model, total of 3:
- (2) – 1 each side to shine on drag blade.
 - (1) – rear bottom of dump body corner post to shine on spinner discharge.

Yes_____No_____Deviations_____

SWITCH PANEL:

In-power vehicle switch panel model Star Pt# SB4425T – to control vehicle 12 volt auxiliary devices total of 10 switches. The switches will be wired to accommodate the following

applications: plow lights, rear strobe, front strobe, dolly lock, truck tailgate, V-bottom tailgate, V-bottom safety, and scraper lights.

Yes_____No_____Deviations_____

Accessories:

a. Electronic back-up alarm.

Yes_____No_____Deviations_____

b. (2) Grease-able body safety props.

Yes_____No_____Deviations_____

c. Custom built shovel holder, ladder style steps drivers side constructed of 304SS 1-1/4 SS tube up rights SS grip strut steps and includes SS inside step.

Yes_____No_____Deviations_____

d. Hopper fasteners 5/8 SS loops, exact location to be determined at installation.

Yes_____No_____Deviations_____

e. Wedge style stainless light boxes welded on rear side bolster of body, 3 hole design.

Yes_____No_____Deviations_____

f. Mud flaps shall be hung from dump body meeting federal regulations, 1/2" thick, heavy duty rubber, anti-sail type. Brackets and hardware shall be made of SS. Install ahead and behind the drive axles.

Yes_____No_____Deviations_____

g. Conspicuity tape placed on left, right, and rear of dump body to comply with federal regulations FMUSS 108.

Yes_____No_____Deviations_____

h. Reflectors placed on dump body to comply with federal regulations FMUSS 108.

Yes_____No_____Deviations_____

TARP SYSTEM:

RollRite, model 6416, shall be fully automatic, 4 spring system, wind deflector, tarp spool, aluminum tension and tarp bows with 30 degree elbows, in-cab switch, indicator light and circuit breaker, 20 ft. heavy duty mesh tarp, complete and installed.

Yes_____No_____Deviations_____

UNDERBODY SCRAPER:

Monroe model HD 4500 or equal

Make and Model:_____

- a. HANGERBOARD: Designed and engineered for optimum strength. 1/2" formed plate reinforced by 1/2" X 7-1/2" flat plate to make full 1" thickness. 3.25"X .344" mechanical tube outer hinge tubes. 3/4" bar reinforced full length of the hinge. 3/4" thick trunion arms. Outer trunion arms shall be bolted to hangerboard. Welded on is unacceptable. Shall include a Manifold bracket for the grease line kit, one installed each side of the hangerboard.

Yes_____No_____Deviations_____

- b. HINGE SHAFT: 2-1/2" OD X 96" long with (4) grease points and (3) hinge points. The two (2) outer hinges are 3-1/4" OD X 6" long with .344 wall thickness. Each outer hinge has (1) 1/2" wrap – around gusset, center hinge shall be 3 1/4" OD X 10 3/4" long with .344 wall and have (2) 1/2" thick wrap – around gussets, including thrust bearing wear plates to prevent side to side shifting of moldboard.

Yes_____No_____Deviations_____

- c. MOLDBOARD: 1" thick X 20" high X 12' long moldboard. Heat treated 1045 steel, 185 Brinell hardness, 89 ksi tensile. Integral pressed in lower offset. Rolled formed or fabricated moldboards will not be considered where the cutting edge bolts to the moldboard. 1/2" X 6" double beveled cutting edge with standard highway punched.

Yes_____No_____Deviations_____

- d. SHOCKS & HOUSINGS: Cushioned by two (2) extra heavy duty spring housings, allow 600 PSI down pressure. Two (2) 1/2" thick flange retaining plates held by (4) 5/8" bolts with prevailing lock nuts. Housings to be slotted to relieve contaminates. Grease-able trunion mount bushings are 2-3/4" OD with a .344" wall mechanical tube trunion mount pins are 2" solid rod, bolt in removable and replaceable design.

Yes_____No_____Deviations_____

- e. ACTUATING CYLINDERS: Shall be 3-1/2" bore X 10" stroke with 2" socatri 1000 piston rods, with poly pac seals and cast steel heads, 1/2" hoses and piping (supported with poly clamps) to be externally mounted for easy access. Prince in-line relief valve shall be supplied.

Yes _____ No _____ Deviations _____

- f. CIRCLE: Shall be 1" solid one piece with infinite plowing positions (no notches), minimum cut out for power reverse cylinder travel and full front circle ears as to have clamps in full contact of circle at 45 degree angle for maximum circle bearing surface. 5" ID X 6.5" OD X 1" hardened center pin bushing.

Yes _____ No _____ Deviations _____

- g. CENTER PIN: Heavy Duty 5" diameter, hardened center pin, zinc coated. Grease-able with 3 port grease journal and 5/16" wide X 3/16" deep grease groove around pin. Center pin is piloted into the hangerboard.

Yes _____ No _____ Deviations _____

- h. CLAMPS: 20.5 long X 7" deep X 1" thick. Shaped to follow the contour of the circle. 3/8" UHMW wear pads. Entire clamps must remain fully on the circle throughout the entire rotation of the scraper.

Yes _____ No _____ Deviations _____

- i. REVERSE CYLINDERS AND HARDWARE: (2) 4" double – acting cylinders containing 1/2" #8 SAE ports, 2" socatri 1000 rods, poly pac seals, and cast steel heads. 3" OD – 2" ID anchor pivots, 2" hardened zinc coated with spiraled grease groove removable pivot pins (grease-able at each end). Prince Cross over relief valve set at 2200 PSI to protect reversing cylinders from shock impacts.

Yes _____ No _____ Deviations _____

- j. MOUNTING PLATES: 3/4" thick custom tapered 35X26X22 full plate steel construction. With 7" X 7" cut out for ease of cleaning. Attached to the truck using 3/4" grade 8 bolts, SAE washers and prevailing lock nuts that are electronically plated for corrosion resistance.

Yes _____ No _____ Deviations _____

- k. PAINT: Shot-blasted, washed and powder coat paint TGIC polyester black. All parts are powder coated prior to assembly of scraper. Outer 12" of moldboard ends painted high visibility yellow.

Yes _____ No _____ Deviations _____

- l. SERRATED GRADE SAFETY STEP: 12" x 12" welded to outer end of the moldboard on driver's side, optional 45 degree angle cut passenger side end of moldboard.

Yes_____No_____Deviations_____

- m. GREASE LINE KIT: Remote grease kit that allows grease to be applied at centralized locations outside of the chassis frame. Grease hoses shall be SAE 107 Hytron hose rated at 3000 psi. Grease line kit will incorporate all 15 grease point on the scraper.

Yes_____No_____Deviations_____

WING PLOW, MONROE MODEL 8 DFWMB PATROL BEHIND
SCRAPER MOUNT STYLE:
Monroe 8D FWMB Para-Glide Design

Make and Model bid: _____

- a. Wing shall be designed to mount behind the underbody blade, moldboard length shall be 101 inches at the top and 96 inches at the bottom, height shall measure 33", inboard and 33" outboard including cutting edge.

Yes_____No_____Deviations_____

- b. Moldboard shall be 3/16" A36 steel; top of moldboard formed into a 2-3/4" X 1" channel for additional strength. All seams and joints shall be 100% continuous welded.

Yes_____No_____Deviations_____

- c. Bottom angle shall be 4" X 4" X 3/4", reinforced between the cutting edge holes with ten (10) 3" X 3" X 1/2" gussets. Shall include six (6) 1/2" moldboard reinforcement ribs tapered from 4" at the bottom to 2-1/2" at the top.

Yes_____No_____Deviations_____

- d. There shall be two (2) horizontal reinforcement angles between the discharge end last two ribs, bottom 4" X 3" X 1/2" reinforcement angle shall have seven (7) evenly spaced 5/8" holes for pusharm adjustment, top 4" X 4" X 1/2" reinforcement angle shall have seven (7) evenly spaced 5/8" holes for pusharm adjustment.

Yes_____No_____Deviations_____

- e. Pivot pin shall be constructed of 1-1/2" steel. Front attachment pivot plate will be 1/2" steel, completely boxed and supported with 1/2" and 3/16" plate. Pivot tube for the 1-1/2"

pivot bolt shall have a minimum .625" wall and be welded 100% to the inside of the 1/2" plate and outside of the moldboard.

Yes _____ No _____ Deviations _____

- f. A 1/2" safety stop eyelet and a 1/2" centered lip loop shall be on the front of the moldboard.

Yes _____ No _____ Deviations _____

- g. Cutting edge shall be 96" in length 5/8" thick X 8" tall AASHO punched recurved style. Moldboard shall be equipped with two (2) shoes. Shoes shall be bolted on with the cutting edge. One (1) shoe shall be installed on both the toe end and the heel end and shall be heavy-duty cast iron construction. Cast iron shoes shall weigh approximately 75 lbs each. Bottom of shoe shall be cut at approximately 10 degrees to match attack angle of moldboard.

Yes _____ No _____ Deviations _____

- h. Shall have 1/2" X 4" X 6" cross tube passes behind the underbody blade circle and passing thru two (2) mounting plates, 36" tall X 12" wide X 1/2" for mounting the wing to the frame of the truck.

Yes _____ No _____ Deviations _____

- i. Para-Glide structure shall be no more than 24" high and 14" wide. Post weldment shall be manufactured with a .750" inside mounting plate and a matching .500" outer plate. A .375" Ex-Ten 50 front base plate will set the width of the post, support the .500" inner lower hinge brackets and the .750" bottom cylinder mounts. Internal reinforcement with a .500 HSLA radius plate shall be welded to both side plates and the front base plate. The post weldment will serve as anchor for three trailing link assemblies. The upper and lower link arms shall be .750" radius bar with a 1.750" machined hole on each end. The upper arm assembly will be reinforced with a 2.500" schedule 80 pipe at the front. The lower arm assembly will be reinforced with a 2.500" schedule pipe at the front anchor and .500 HSLA x 5.000 plate to the rear. The lift/float link will be .500" bar with a radius at the anchor end, reinforced with a 2.500" schedule pipe. The rear of the lift link will be 1.000" plate reinforced with .625" bar and will include two .625" upper cylinder mounts. The rear lift weldment shall have an outer 1.000" and inner .500" bar with radius ends and machined 1.750" holes. Bars shall be spaced and supported with two 2.500" schedule pipes and two .500" x 4.000" triangular gussets. The hinge shall consist of three 1.000" thick radius ears that have 1.438" machined holes, spaced evenly and reinforced with two .250" x 2.000" x 2.000" angles. All 1.750" machined holes will have Rc 50 hardened bushings. Hinge pins shall be 1.500" OD, case hardened to Rc 55-60. Hinge pins shall be retained with machine bushings and .250" roll pins. There shall be 10 grease zerks. Lift cylinder shall be a 3.000" ID x 5.000" stroke with a 1.500" industrial hard chrome rod. Hydraulic port(s) shall be .562-18 ORB. Cylinder shall be attached within

the post with 1.000” stress proof pins, machine washers and roll pins. Prior to assembly, the post will be shot blasted, washed and prepped prior to power coating black.

Yes_____No_____Deviations_____

- j. The bolt for retaining the moldboard shall be 1-1/2 – 6 X 7 G8 HHCS Zinc plated with castle nut and cotter pin. Bolt shall be drilled for the cotter pin.

Yes_____No_____Deviations_____

- k. Lifting action for the heel end of the wing shall be a single 3” ID x 15” stroke, 2” nitrated rod, 3/4 - 16 ORB ports, polypak seals, double acting hydraulic cylinder. Heel cylinder shall be attached to the upper rear pusharm slide assembly.

Yes_____No_____Deviations_____

- l. Wing shall be operated by hydraulic lift; no cables or chains shall be accepted.

Yes_____No_____Deviations_____

- m. Rear wing mount shall be fabricated from 5” X 7” X 3/8” mild steel tubing, and shall include two (2) 28” X 18” X 1/2” frame attachment plates with 5” X 7” openings. Rear channel pusharm/cylinder mounting plate shall include two (2) 1/2” plates, flame cut with three (3) offset mounting holes to mount the rear pusharms and the heel lift cylinder. The rear upper pusharm shall be equipped with an external slide assembly to allow for mechanical float and attachment of the heel lift cylinder and the rear pusharms and heel lift cylinder shall be attached with 1-1/4” stress proof pins for quick attach and detach.

Yes_____No_____Deviations_____

- n. There shall be two (2) rear wing heavy duty, 2-1/2” schedule 80, adjustable, spring cushioned lift arms including safety shear pins. Wing shall be capable of mounting with an overlap to the scraper discharge to prevent a window between the scraper and the wing moldboard.

Yes_____No_____Deviations_____

- o. All fabricated components shall be shot blasted and washed prior to powder coating; mounting components shall be powder coated black, Moldboard shall be powder coated orange, with a minimum curing time of 25 minutes, at temperature of no less than 400 degrees.

Yes_____No_____Deviations_____

- p. Mounting hardware shall include (3) schedule 80 pipe bracing, six (6) pipe balls, a flame cut 3/4" support plate, Grade 8 nuts, bolts and washers necessary for a complete installation.

Yes_____No_____Deviations_____

- q. One (1) sequencing valve shall be supplied with the wing and shall be adjustable for both the up sequencing of the wing and the down sequencing of the wing. Lock valves shall be built into the sequencing valve to prevent both the toe and heel cylinder from drifting when in the stored position. The sequencing valve shall allow wing to hydraulically drift up when in the plowing position and shall be equipped with an adjustable metering valve to control the speed at which the blade drops when going from the stored position to the plow position.

Yes_____No_____Deviations_____

Installation shall also include:

1. Stainless steel quick couplers, caps and plugs.
2. 3/8" Hi Test safety chain and grab hook.
3. Stand Alone 60 Series LED strobe light and LED ICC light – both installed in a stainless steel 60 Series light box, mounted on discharge end of moldboard and to include in cab switch and weather pac for ease of removable.

Yes_____ No_____ Deviations_____

REAR FISH MOUTH COUPLER:

Holland Model: PH-990

Heavy Duty forged steel special swivel mount pin coupler with "fish mouth" type head and rubber cushion for shock absorption at the coupling, 3,000lbs maximum vertical, 100,000lbs gross trailer weight, mounted to minimum 3/4" full plate with reinforcements bolted in using minimum grade 8 hardware. Shall include two 1" safety chain D-rings 40,000lbs rated breaking strength. Body installer to relocate 7-prong trailer connector and air glad hands supplied by truck manufacturer. Height of coupler and lay-out of D-rings, 7-prong connector and glad hands to be decided at installation by Gladwin County Road.

Yes_____No_____Deviations_____

FRONT PLOW HITCH:

Hustings style heavy duty 34" wide Quick Hitch, top of hitch shall be gusseted with 3/8" plate. Plunger pins shall have grease zerks and secondary locking tabs. Lift arm shall include pivoting booster arm with (3) 1/2 grab hooks. Plow cylinder shall be hydraulic double acting cylinder with

the following specifications: 3" diameter bore and 10" stroke nitrated shaft – Boss O-ring ports. Hitch shall be bolted to a heavy duty structural channel. 12" minimum 20.7 lb., front bumper with flare back and boxed ends. Hitch shall include upper and lower bracing. Hitch, bumper and bracing shall be installed with grade 8 nuts and bolts; to include extended brackets for hood cables & pull back support cable. Supply chain box approximately 8" tall X 8" wide X 12" long, solid sides ¾" #9 expanded metal bottom. All to be epoxy, primed and painted urethane black.

Yes _____ No _____ Deviations _____

FUEL AND HYDRAULIC COMBINATION RESERVOIR:

Tanks shall be designed to be installed in conjunction with a vertically mounted DPF/SCR exhaust system. The Fuel Hydraulic Tanks shall be 7ga. Steel construction. The Fuel Tank shall be 110 gal. capacity. The Hydraulic Tank shall be 40 gal. capacity. The Fuel and Hydraulic Tanks shall be integrated into a single, integrally constructed unit. The mounting of the tank shall include four mounting pads and shall be equipped with rubber bushings and mounting bolts. Supports for the tanks shall be constructed of 4" 7.25 structural channel. The mounting brackets shall extend from the right frame rail and shall cantilever to the outside the left frame rail. A serrated step shall be installed on the left side. The tanks shall be powder coated orange and include labels.

The Fuel Tank shall include ball valve shut off valves on both the supply and the return fuel lines to facilitate changing of fuel filter. The proper fuel gauge sending unit shall be installed. The vent for the tank shall conform to the engine manufactures specifications. The tank shall also be equipped with a magnetic drain plug.

The hydraulic tank shall include a 3" supply port with a Zinga top of the tank mounting flange. The filter shall be equipped with an internal drop tube and an anti-siphon device. A solid state, low oil sending unit shall be installed in the side of the tank. A float type sender will not be acceptable. A 5" sight/temperature gauge shall be installed on the side of tank. The tank shall be full of AW32 hydraulic oil.

Hydraulic Tank also includes:

- Top of tank 1 ½" return with drop pipe.
- Zinga suction strainer, part # 2030-3.
- Zinga return filter, RF1215-S-1 with RE-409-10 micron element.
- ¼ turn full flow ball valve installed at the reservoir outlet.

Yes _____ No _____ Deviations _____

ACCESSORIES:

- Non-rusting Serrated grate steps, driver's side end of mounting saddle, size and location to be determined at installation.
- Decals as to the contents, "Diesel Fuel" or "Hydraulic Oil".
- Low oil light and alarm system installed in the cab.
- Momentary over-ride switch installed in the cab.

Yes_____No_____Deviations_____

PLOW LIGHTS:

- a. Auxiliary plow lights and turn signals. Nordic model N520 hood mounted, custom built 1/4" thick X 4" wide aluminum brackets with fiberglass in hood support plates, height to be determined at time of installation. Chassis manufacture to supply in-cab switch and harness.

Yes_____No_____Deviations_____

14 FT SS SLIP-IN SANDER

MONROE MODEL BRUTE 201 STAINLESS STEEL SLIP-IN SANDER:

- 201 Stainless Steel Sander, 9.2 cubic yards of capacity – water level. All welding is continuous. All hardware is stainless steel. Stainless Steel is unpainted. Metal is primed and painted gloss black.

Yes_____No_____Deviations_____

- Sander is constructed of 201 Stainless Steel with a 2" double crimp formed top for greater strength. Approx. dimensions shall be 168" long X 84" outside width X 56" tall with a 45 degree sloped sides.

Yes_____No_____Deviations_____

- Cross sills are 3" X 3/16" formed Stainless Steel channel.

Yes_____No_____Deviations_____

- Chain shields are 10 ga thick stainless steel, bolted in with stainless steel bolts & nuts, removable style.

Yes_____No_____Deviations_____

- Longsills are manufactured of 7 gauge stainless steel and continue beyond the spreader to support the spinner assembly. Both ends are slotted to accommodate easy drive and idler shaft removal.

Yes_____No_____Deviations_____

- Floor runners 201 stainless steel formed channel 3/16" thick X 1 -1/2" high X 4-5/16" wide (2) 1" wide return lips running full length attached to the 3" cross members.

Yes_____No_____Deviations_____

- Side supports are 10 gauge stainless steel and extend the full angled side height of the hopper, placed approx. 2' on center; continuously welded.

Yes_____No_____Deviations_____

- Lift hooks are stainless steel loops, one at each corner, a total of 4.

Yes_____No_____Deviations_____

- Rear end plate is 10 gauge stainless steel, reinforced inside and supported for maximum strength.

Yes_____No_____Deviations_____

- Conveyor Trough is 24" wide and has a 50:1 gearbox with direct drive Roller Stator Hydraulic Motor mounted to the 2" steel drive shaft. The drive shaft is supported by (2) keyed 8-tooth cast- gray sprockets that drive the chain. The 2" idler shaft and keyed sprockets shall be adjustable through the self-aligning 4-bolt flange bearings with two heavy-duty spring-loaded adjuster rods. Design allows 4 inches of adjustment. Grease-able and adjustable from the rear. (don't have to climb up in the dump box)

Yes_____No_____Deviations_____

- Conveyor chain is heat treated with 2.25 pitched self-cleaning Pintle type, 7/16" pins with a 21,000 # per strand tensile strength. Crossbars are 3/8" X 1-1/2" on 4-1/2" centers; welded both top and bottom. The system includes front and rear wipers.

Yes_____No_____Deviations_____

- Conveyor floor is 3/16 SS removable bolt in style using SS hardware.

Yes_____No_____Deviations_____

- Intermediate floor supports consist of SS angle iron braces on 12" centers.

Yes_____No_____Deviations_____

- Spinner and chute assembly constructed of 10 gauge 201 stainless steel, and adjustable in height, incorporated with 201 stainless steel, poly lined center chute assembly and a rear air operated diverter chute. The spinner assembly is a tip-up style, flexibility for unloading and storage. The disc is 201SS with six 201SS replaceable fins, driven by a top mount Roller Stator hydraulic motor through a cast iron hub with new seal saver design.

Yes_____No_____Deviations_____

- The feed-gate is 12" X 18", 7 gauge 201SS and adjustable with self-locking screw-type jack, giving ruler accurate metering. Jack is grease-able, non-rusting poly U-joint and SS crank handle.

Yes_____No_____Deviations_____

- Main beam is 6" X 9.0 lbs wide flange bolt-in beam, elevated 3" above the top edge of the hopper providing a longitudinal brace and hinge point for the top screens. Bolts are stainless steel.

Yes_____No_____Deviations_____

- Top screens are constructed of 3/8" carbon steel rods welded to form 2 1/2" X 2 1/2" square mesh sections formed by a combination of 1/4" X 1-1/2" flat steel and have 2' angle iron with edge support reinforced by 1/4" X 1" flat steel bars. Each section secured to H-Beam with (2) non-freeze 5/8" rod hinges.

Yes_____No_____Deviations_____

ON-BOARD PRE-WETTING SYSTEM DESIGNED TO BE INSTALLED ON MONROE BRUTE V-BOX SPREADER:

- NEMA weather-tite fiberglass pump enclosure, with hydraulic 7GPM pump assembly.

Yes_____No_____Deviations_____

- 304/201 Stainless Steel (SS) enclosure mounting kit.

Yes_____No_____Deviations_____

- Glass filled polypropylene components.

Yes_____No_____Deviations_____

- (2) 75 gallon tank kits, 304/201 Stainless Steel (SS) saddles and hardware mounting.

Yes_____No_____Deviations_____

- Black EPDM hose, 150 PSI.

Yes_____No_____Deviations_____

- PSI in-line check valves for nozzles.

Yes_____No_____Deviations_____

- (1) Nozzle kit, (3) nozzles with brass tips and caps, 2GPM, 304/201 Stainless Steel nozzle brackets, hose and connection.

Yes_____No_____Deviations_____

- (1) Dual tank cross over kit.

Yes_____No_____Deviations_____

- Bulk fill kit.

Yes_____No_____Deviations_____

- Flusher kit.

Yes_____No_____Deviations_____

Installation of the slip-in sander and pre-wet shall include:

- Install sander in dump body, supply (4) 2" X 96" ratchet strap assemblies.
- Supply and install 4 – 5/8 SS loops on sander body, exact location to be determined at installation to clear tarp arms, ladder, wing bumpers and electrical junction box.
- Supply 4X4X3/8 SS rear cross member, 1 1/4" round stock, to secure V-box into dump body tail gate latch system.
- Hook up pre-wet cab controls.

- Plumb conveyor motor, spinner motor, shall consist of short hose kit, SS coupler halves to the truck SS quick couplers halves.
- Install in cab air control, air to the rear including quick disconnect to operate diverter cylinder. Sander and pre-wet to be completely installed and tested.

CENTRAL HYDRAULICS AND CONTROL SYSTEM SECTION:

The intent of these specifications is to describe a Central Hydraulic System and controls for the operation of a Tandem axle blade Truck. The components listed herein have been chosen for their ability to provide long term durability and ease of service. Bidders may bid alternates but it will be the agency's decision whether they are considered equal.

HYDRAULIC PUMP& DRIVE: Front mounted piston pump, crank shaft driven load sense hydraulics system to operate a double acting front plow hoist, scraper up & down, scraper reverse, double acting dump body hoist, double function wing, slip-in sander main chain, spinner assembly, single acting pup, and on board pre-wet system. The system shall consist of a 1300 series Spicer drive shaft, model series 45-E147 8.9 cubic inch per Rev load sense piston pump; direct mount 12 volt automatic low oil shut-down system with in cab manual over ride.

Yes_____No_____Deviations_____

HYDRAULIC VALVE: Make and Model: _____

Rexroth M4-12 or equal. The hydraulic valve will be a cast iron, sectional type spool valve. Valve will feature individual section and flow compensation for each section. To include mid-inlet section, no exceptions. The valve will be rated for a nominal flow of 50 gpm to insure proper cycle time speed on pup trailer operation. The valve will include momentary and maintained overrides for all electrical operated sections. Electrical solenoid coils will be one piece assemblies. Sections will be shifted via pneumatic operators. The load sensing shuttle network will be accessible without valve disassembly. Port relief valves will be pilot operated reliefs and not pressure limiters for function protection. Sections will be provided for:

- Front Plow Double acting up and down
- Hoist Double acting with adjustable down relief
- Underbody Double acting up and down with adjustable port reliefs
- Underbody Double acting angle with adjustable port reliefs
- Pup Trailer Single acting with adjustable relief
- Wing Plow Double acting up and down
- Spinner Single acting motor
- Conveyor Single acting motor

Yes_____No_____Deviations_____

TEST PORT: The system will include a test port that is easily accessible on the external wall of the valve enclosure. Test port will be capped #4 JIC.

Yes_____No_____Deviations_____

CUSHION VALVE: The underbody swing will be protected by dual cross over relief valves (cushion valves). They shall be set per manufacturer's recommendation.

Yes_____No_____Deviations_____

PNEUMATIC CONTROLS: The valve will be shifted by Apsco feathering pneumatic controls. The controls for the hoist and pup trailer will include a neutral lock out feature. The handles will be assembled with offsets to allow easy operation. The handles will be mounted in a console tower with adjustable height. All airlines will be color coated from the handles to the operators on the hydraulic valve. Air lines will be ¼" and pass through the valve compartment bulkhead in quick disconnect fittings.

Yes_____No_____Deviations_____

SPREADER CONTROLS:Make and Model:_____

Spreader chain and spinner shall be operated by Rexroth CS420 or equal. Designed for hydraulically powered spreading systems proportionally.

- 2 Proportional PWM outputs (spinner, conveyor).
- Full transient suppression on all outputs.
- Parameter based programming.
- Programming key to protect calibration values.
- 9 Spinner and 9 Conveyor settings.
- Material calibration for open and closed loop operation.
- Pause and blast integrated into the selector dials.
- Pause and blast indicators.
- Remotely located valve driver and microcontroller for a compact installation.

Yes_____No_____Deviations_____

VALVE MOUNTING: The hydraulic valve will be mounted in an enclosure that fully encloses the hydraulic valve. The enclosure will feature a removable access panel held in place by rubber latches. Construction to be stainless steel.Location to be determined at installation.

Yes_____No_____Deviations_____

PLUMBING: Supply line from reservoir to pump shall be 2 ½" ID minimum; SS pipe with short hose assemblies each end.

Main pressure line pump to valve 1" stainless steel pipe with 3,000 PSI rated hose assemblies and to have swivel fittings each end.

Sander and wing piping to the rear to consist of four ½" stainless steel piping and one ¾" stainless steel pipe, 3,000 PSI rated hose assemblies each end and also to include four sets of ½" and one set of ¾" stainless steel couplers with protective caps and plugs

Hoses, fittings and adaptors; all hose to have crimp type fittings and have abrasive resistant sleeve covering in high wear areas. All clamps to be lined with abrasive resistant sleeve. Routing of pressure hoses shall be on the left side of engine as to stay away from turbo heat, using proper extension hangers and to leave room for service of engine filters.

Yes_____No_____Deviations_____

All system shall be installed and fully operational at delivery. Final calibration will be done by factory trained personnel at the GCRC facility for the purpose of training.

MANUALS:

Furnish one set of manufacture's manuals for operation, maintenance, and parts for all auxiliary equipment installed.

OPTION: (1) ONE MONROE ONE-WAY RIGID PLOW, MODEL OWFA 34-73-12-NT-RH 3" off set.

- a. No- trip plow, right hand discharge built with 3" off-set to discharge side, steel snow deflector installed with holes for future extended rubber deflector, one piece flame cut ribs lead edge nose guard installed.

Yes_____No_____Deviations_____

- b. Length of moldboard 173", moldboard intake approximately 36", discharge height is approximately 73".

Yes_____No_____Deviations_____

- c. 9-1/2' cutting angle, 14" push height, 38 degree cutting angle, 50 degree attack angle, 1/4" thick land slide plate.

Yes_____No_____Deviations_____

- d. 5/8" X 8" X 144" cutting edge – AASHO top punched, boomerang adjustable 2" X 6" X 16" cast skid shoes (2), heavy duty push frame – welded continuously to the moldboard, 34" Hustings quick hitch plow section, heavy duty top yoke assembly.

Yes_____No_____Deviations_____

- e. Shall be 100% continuous welded plow assembly, completely sandblasted and powder coat orange.

Yes_____No_____Deviations_____