

	SURFACE VEHICLE RECOMMENDED PRACTICE	SAE J1824 FEB2013
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Specification Definitions - Clam Bunk Skidder		

RATIONALE

This document has been determined to contain basic and stable technology which is not dynamic in nature.

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1. **Scope**—This SAE Recommended Practice identifies and defines the specifications most commonly used to describe high-speed steel track and articulated rubber-tired clam bunk skidders. The illustrations used are not intended to be descriptive of any existing machine or dictate a combination needed for a particular logging situation. The dimensions indicated are basic and may be supplemented by the individual machine manufacturer.
- 1.1 **Purpose**—The purpose of this SAE document is to establish a uniform method of identifying and defining the specifications most commonly used to compare various models of this type of equipment.
2. **References**—Not applicable.
3. **Definition**
 - 3.1 **Clam Bunk Skidder**—A self-propelled machine, usually self loading, designed to transport trees or parts of trees by trailing or dragging using a clam or top-opening jaws to hold load.
 4. **Specifications**—The specifications described must be qualified by stating the tire size, the tire ply rating, and the recommended tire inflation pressure or the type of suspension and track with which the machine is equipped. All measurements are to be stated in SI units.
 - 4.1 **Front Axle to Hinge (A)**—The horizontal distance from the center of the front axle or front tandem axle assembly to the center of the hinge. (Figure 1)
 - 4.2 **Hinge to Rear Axle (B)**—The horizontal distance from the center of the hinge to the center of the rear axle or rear tandem axle assembly. (Figure 1)
 - 4.3 **Wheelbase (A + B)**—The horizontal distance from the center of the front axle or front tandem axle assembly to the center of the rear axle or rear tandem axle assembly when both are perpendicular to the longitudinal axis. (Figure 1)
 - 4.4 **Centerline of Hinge to Front of Machine (C)**—The horizontal distance from the centerline of the hinge to a vertical plane touching the farthest point forward, blade excluded. (Figure 1)

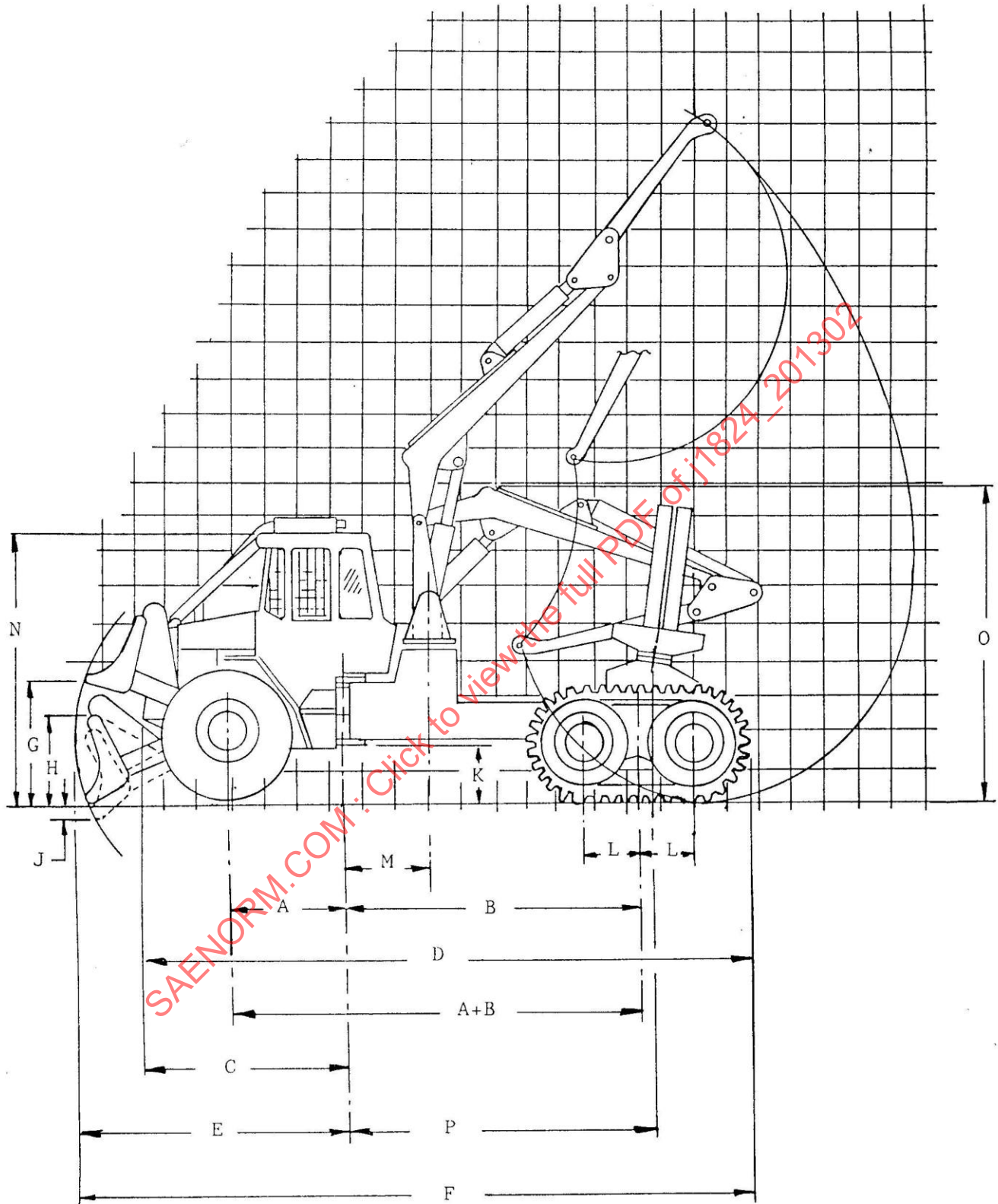


FIGURE 1—SIDE VIEW ARTICULATED RUBBER-TIRED CLAM BUNK SKIDDER

- 4.5 Total Frame Length (D)**—The horizontal distance between the vertical planes perpendicular to the longitudinal axis passing through the farthest points on the front and rear of the machine, blade excluded. (Figure 1)
- 4.6 Centerline of Hinge to Maximum Blade Arc (E)**—The horizontal distance from the centerline of the hinge to a vertical line tangent to the arc of the blade's lower edge as it passes from its maximum height (G) to the lowest position (J). (Figure 1)
- 4.7 Overall Length (F)**—The horizontal distance from a vertical plane touching the forward most point of the machine, blade positioned to give maximum forward reach, to a vertical plane touching the rearmost point of the machine, excluding the loader. (Figure 1)
- 4.8 Maximum Blade Lift, Lower Edge (G)**—The maximum vertical height to which the lower edge of the blade can be raised from the horizontal reference plane. (Figure 1)
- 4.9 Blade Height (H)**—The vertical distance from the lower edge to the top of the blade, decking lugs excluded. (Figure 1)
- 4.10 Lowest Blade Position (J)**—The vertical distance from the horizontal reference plane to the blade's lower edge with blade at its lowest position. (Figure 1)
- 4.11 Ground Clearance at Hinge Point (K)**—The perpendicular distance from the horizontal reference plane to the lowest point at the hinge. (Figure 1)
- 4.12 Centerline Distance of Tandem Axle Assembly (L)**—The horizontal distance between the centerline of the tandem axle assembly and the centerline of the front or rear tire of the tandem axle assembly. (Figure 1)
- 4.13 Centerline of Hinge to the Centerline of Loader Base (M)**—The horizontal distance from the centerline of the hinge to the centerline of the loader base on the longitudinal axis. (Figures 1 and 2)
- 4.14 Operator Enclosure Height (N)**—The vertical distance between the horizontal reference plane and a horizontal plane passing through the top outside of the operator enclosure. (Figure 1)
- 4.15 Overall Height (O)**—The vertical distance between the horizontal reference plane and a horizontal plane passing through the highest point of the skidder, with the main loader boom cylinder in retracted or travel position. (Figure 1)
- 4.16 Centerline of Hinge to the Centerline of Clam Bunk (P)**—The horizontal distance from the centerline of the hinge to the centerline of the clam bunk base on the longitudinal axis. (Figure 1)
- 4.17 Overall Width (Q)**—The horizontal distance between the vertical planes parallel to the longitudinal axis and passing through the farthest points on the two sides of this axis. (Figure 2)
- 4.18 Tread (R)**—The horizontal distance between two parallel vertical planes passing through the centerline of the tires on an axle. If the front and rear are different, both must be specified. (Figures 2, 3, and 4)
- 4.19 Blade Width (S)**—The horizontal distance between the outer edges of the blade. (Figure 2)
- 4.20 Loader Rotation (T)**—The maximum loader rotation in degrees from the centerline of skidder. (Specify if continuous rotation.) (Figure 2)

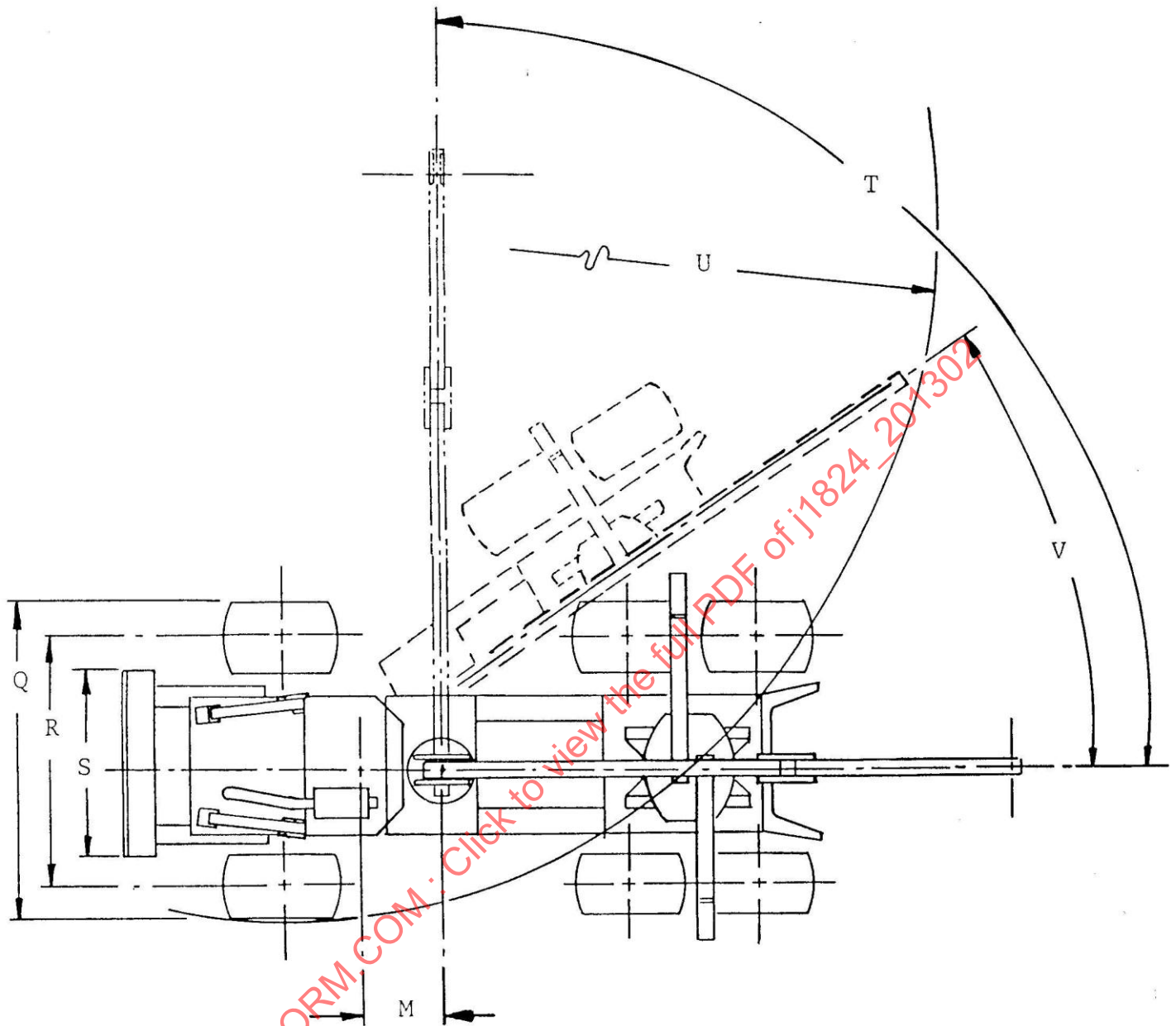


FIGURE 2—STEERING AND LOADER ROTATION ARTICULATED RUBBER-TIRED CLAM BUNK SKIDDER

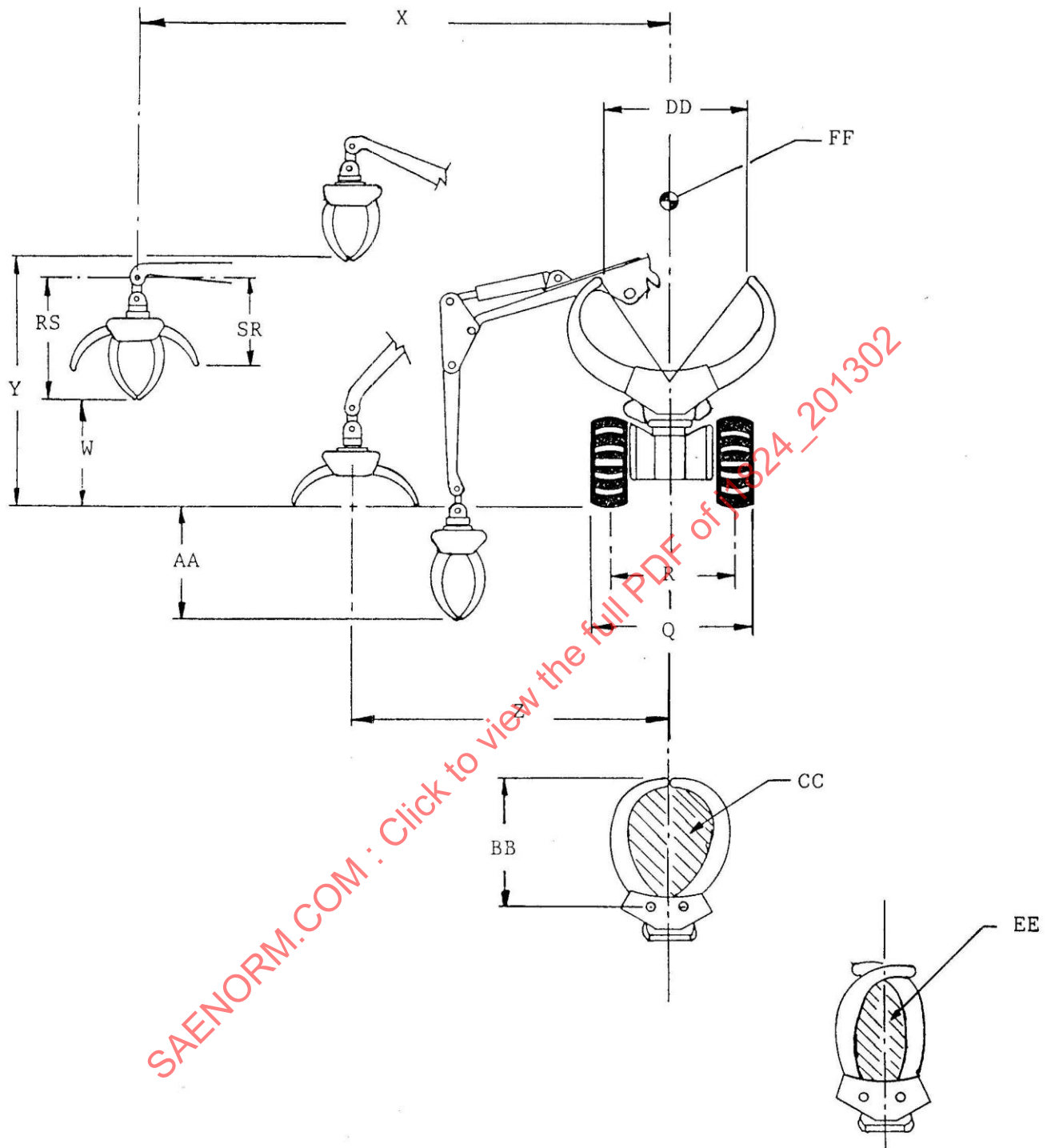


FIGURE 3—REAR VIEW ARTICULATED RUBBER-TIRED CLAM BUNK SKIDDER

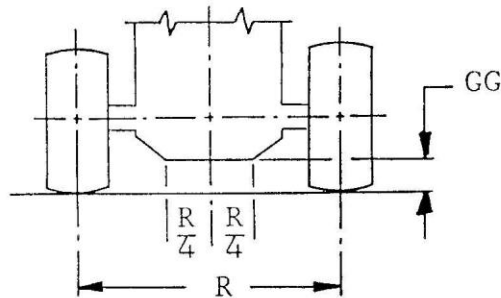


FIGURE 4—GROUND CLEARANCE

- 4.21 Clearance Circle (U)**—The smallest diameter that the outermost point of the machine will describe when turning under the following conditions: (Figure 2)
- Brakes unapplied.
 - Blade in carry position.
 - Loaded and unloaded.
- 4.22 Angle of Articulation (V)**—The maximum angle of frame steering movement from the straight ahead position measured in degrees between longitudinal centerlines of the machine frames. (Figure 2) (Quantify right and left if unequal.)
- 4.23 Loading Height of Loader at Maximum Reach (W)**—The vertical height of the loader at the maximum horizontal loader reach (X), measured from the bottom of the grapple in tip to tip condition to the horizontal reference plane. (Figure 3)
- 4.24 Maximum Reach of Loader (X)**—The maximum horizontal reach from the axis of rotation to the centerline of the grapple. (Figure 3)
- 4.25 Maximum Loader Lift Height (Y)**—The maximum vertical lift height from the bottom of the grapple in tip to tip condition to the horizontal reference plane on a specified horizontal radius from the centerline of the loader. (Figure 3)
- 4.26 Grapple Height Closed (RS)**—The vertical distance between the boom pivot and the tips of the grapple in tip to tip condition. (Figure 3)
- 4.27 Grapple Height Open (SR)**—The vertical distance between the boom pivot and the tips of a fully open grapple. (Figure 3)
- 4.28 Maximum Loader Reach at Ground Level (Z)**—The maximum horizontal distance from the longitudinal axis of the loader with open grapple resting on the horizontal reference plane. (Figure 3)
- 4.29 Maximum Depth of Loader (AA)**—The maximum depth below the horizontal reference plane to the bottom of the grapple in tip to tip condition at a specified reach. (Figure 3)
- 4.30 Clam Arm Length (BB)**—The vertical distance from the pivot pin of the clam arms to the tip of the arms. (Figure 3)
- 4.31 Area of Opening (CC)**—The available area in square meters with clam arms in tip to tip position. (Figure 3)
- 4.32 Maximum Clam Arm Opening (DD)**—The horizontal distance between the clam arms when the clam arms are fully open. (Figure 3)

- 4.33 Minimum Clam Arm Opening (EE)**—The available area in square meters with clam arms fully closed. (Figure 3)
- 4.34 Clam Arm Rotation (FF)**—The total number of degrees through which the clam jaw can rotate, may be specified either side of center. If rotation is continuous through more than 360 degrees, state as "continuous"; if clam jaws do not have a means of rotation, state as "fixed". (Figure 3)
- 4.35 Ground Clearance (GG)**—The perpendicular distance from the horizontal reference plane to the lowest point of the center portion of the machine. The center portion of the machine is defined as 25% of the tread to either side of the longitudinal centerline. (Figure 4)
- 4.36 Frame Oscillation (HH)**—The angle in degrees that one frame will rotate from a horizontal datum, in both directions, without rotating the other frame. (Figure 5)

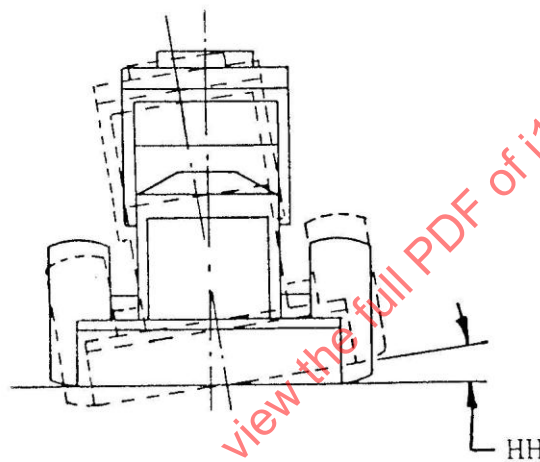


FIGURE 5—FRAME OSCILLATION

- 4.37 Axle Oscillation (JJ)**—The angle in degrees that one axle will rotate from a horizontal datum, in both directions, without rotating either frame. (Figure 6)

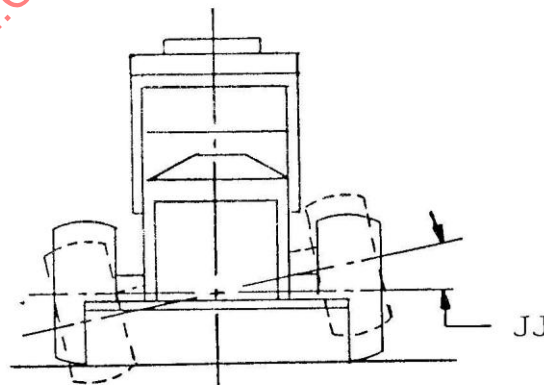


FIGURE 6—AXLE OSCILLATION