

FIGURE W-14 - TYPICAL FRAME CONFIGURATION.

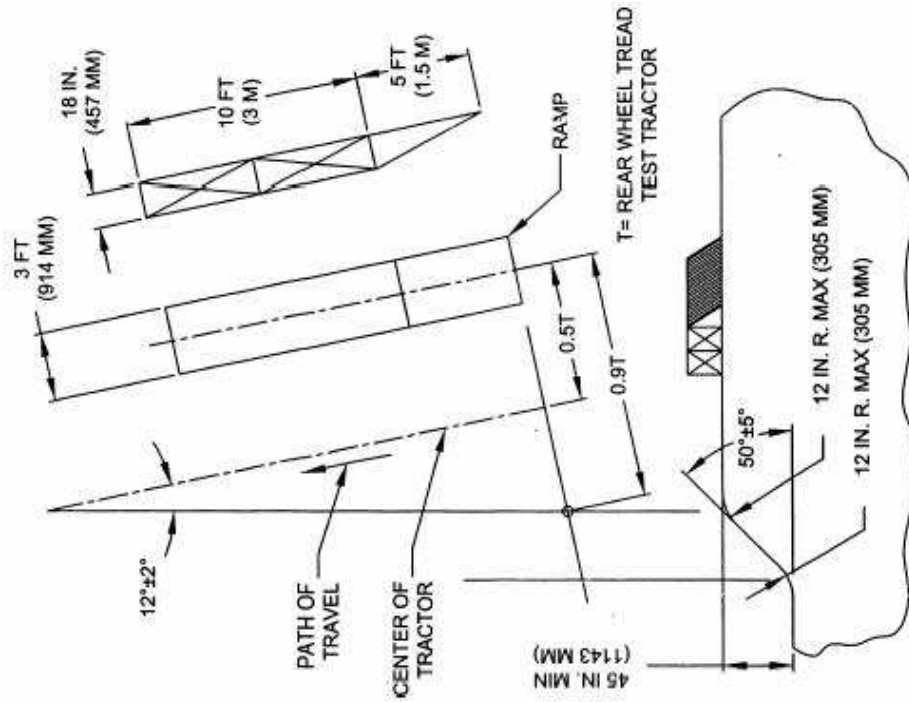


FIGURE W-15 - SIDE OVERTURN BANK AND RAMP.

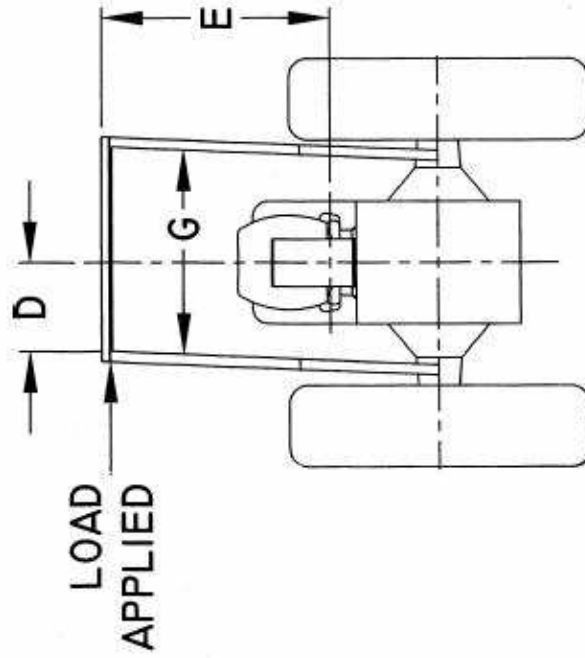


FIGURE W-16 - SIDE LOAD APPLICATION.

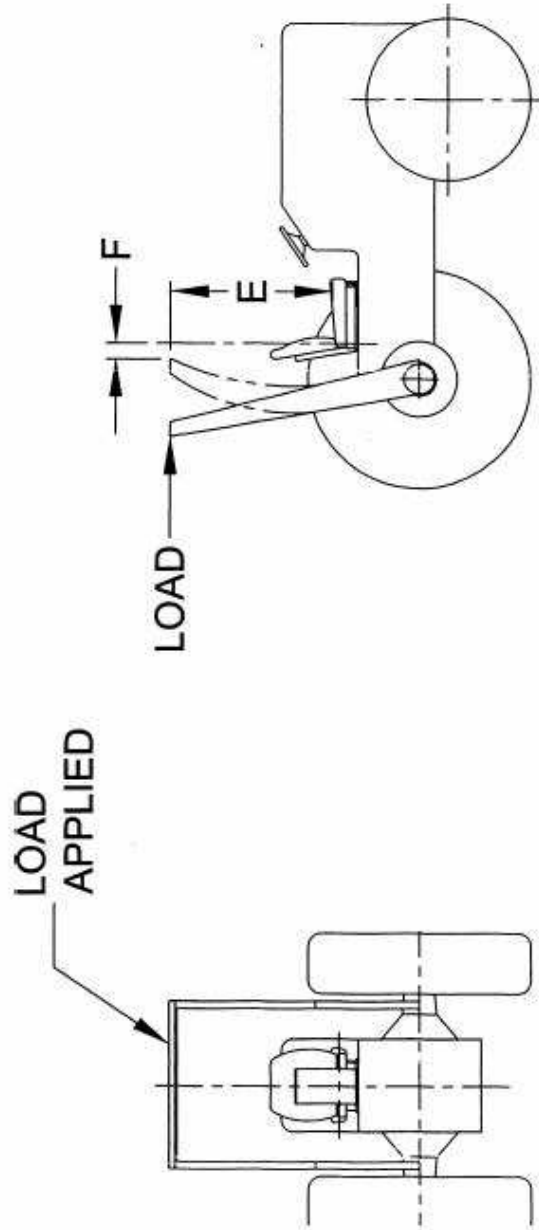


FIGURE W-17 - REAR LOAD APPLICATION.

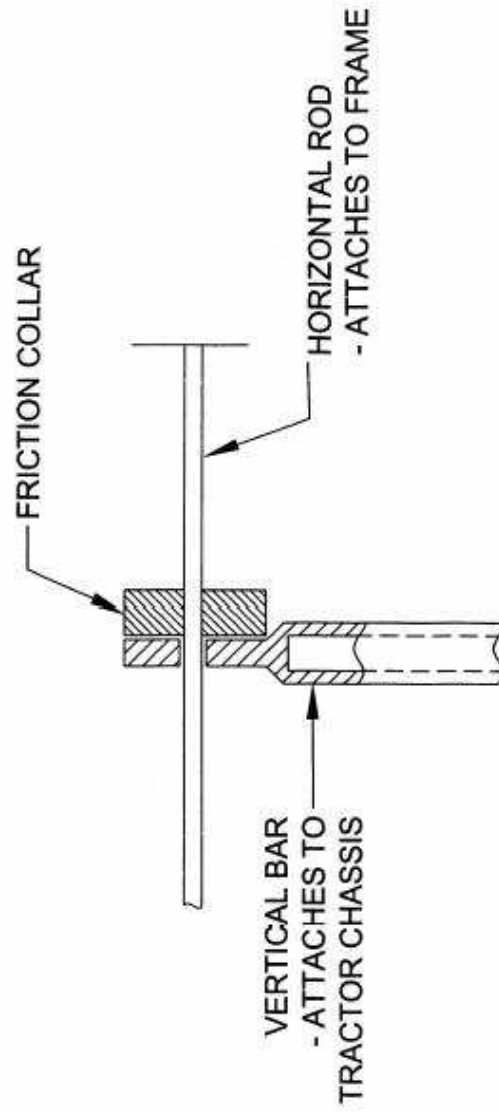


FIGURE W-18 - METHOD OF MEASURING INSTANTANEOUS DEFLECTION.

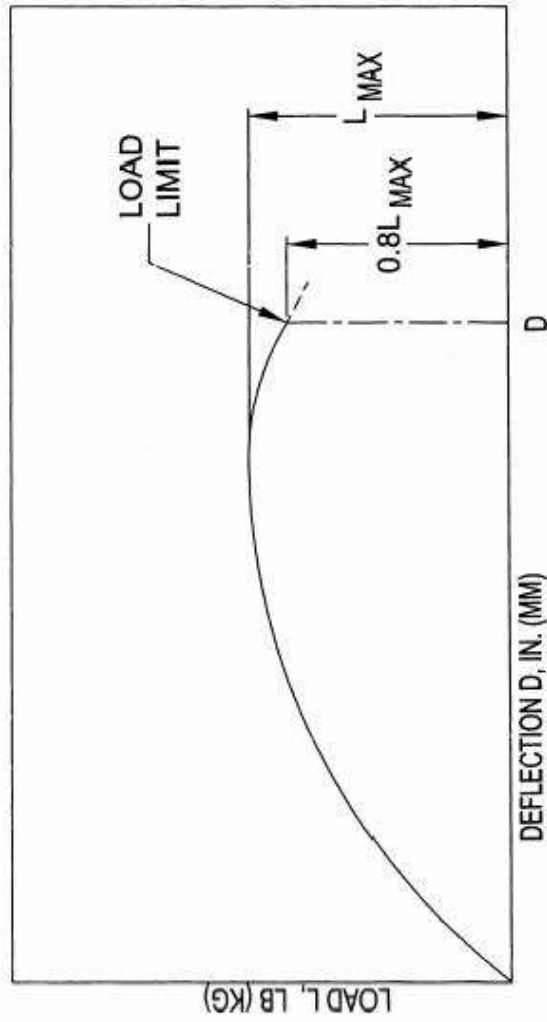


FIGURE W-19 - TYPICAL L-D DIAGRAM.

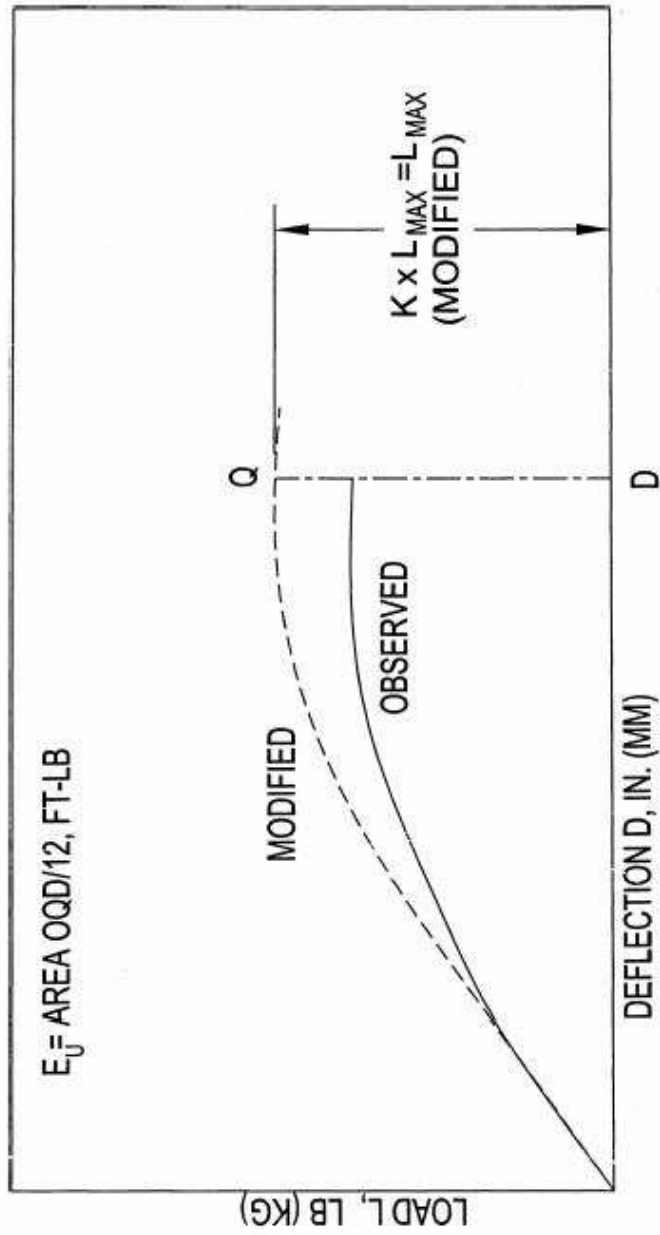


FIGURE W-20 - TYPICAL MODIFIED L_M - D_M DIAGRAM.

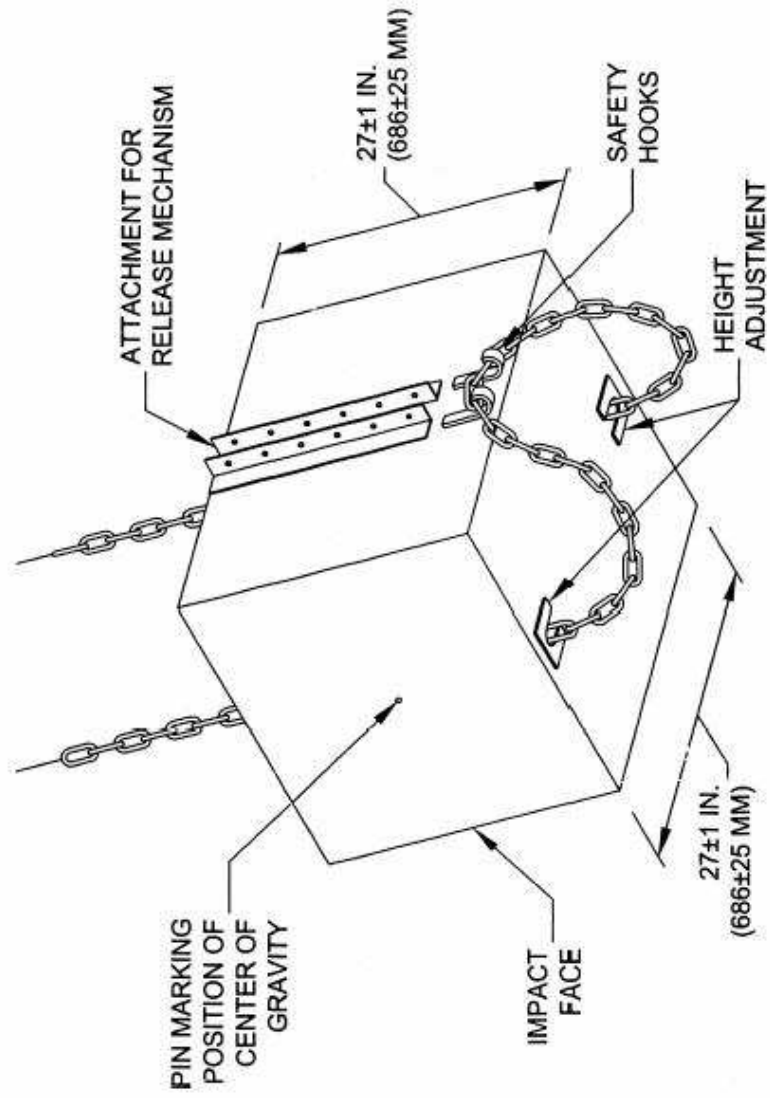


FIGURE W-21 - PENDULUM.

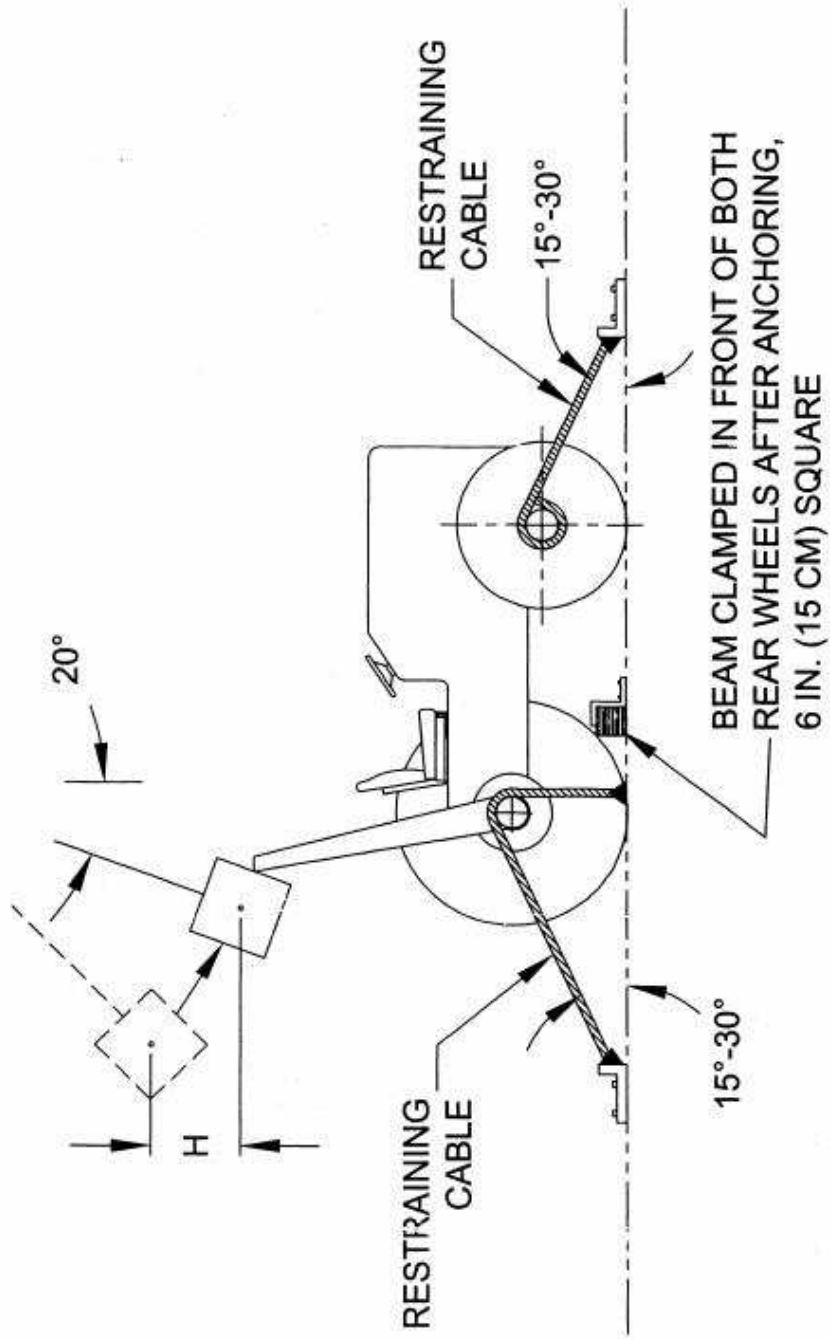


FIGURE W-22 - METHOD OF IMPACT FROM REAR.

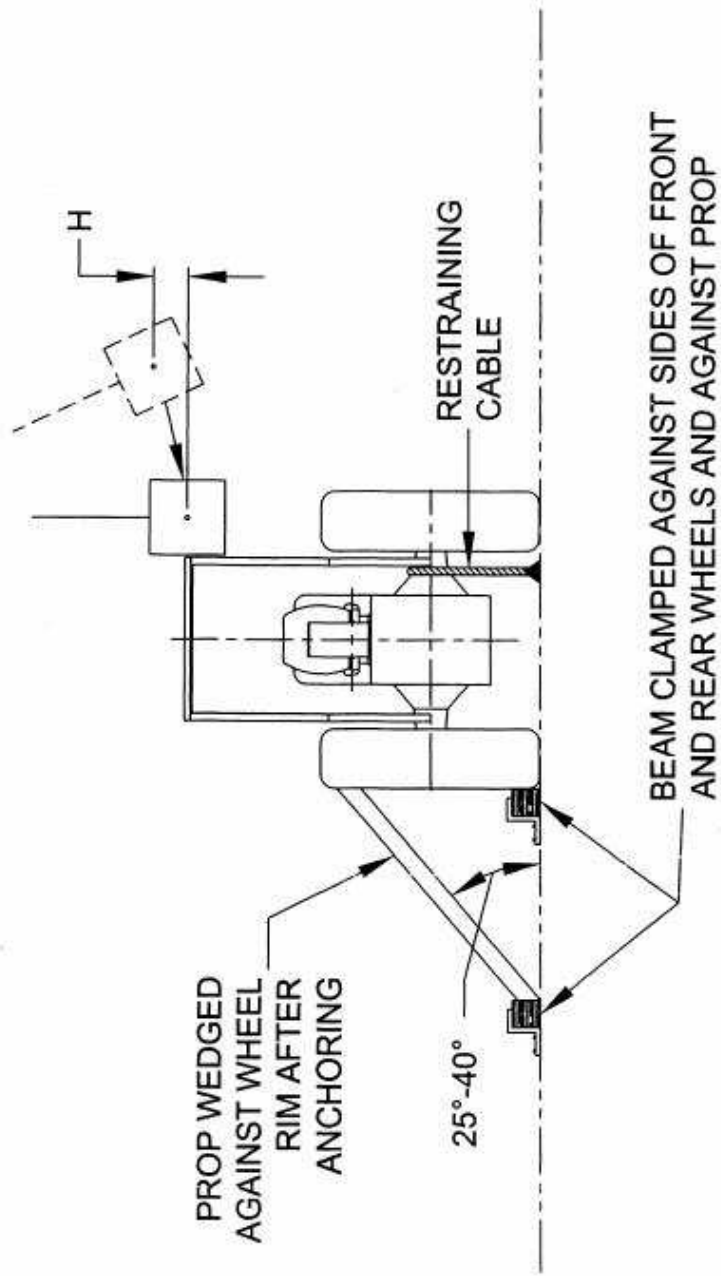
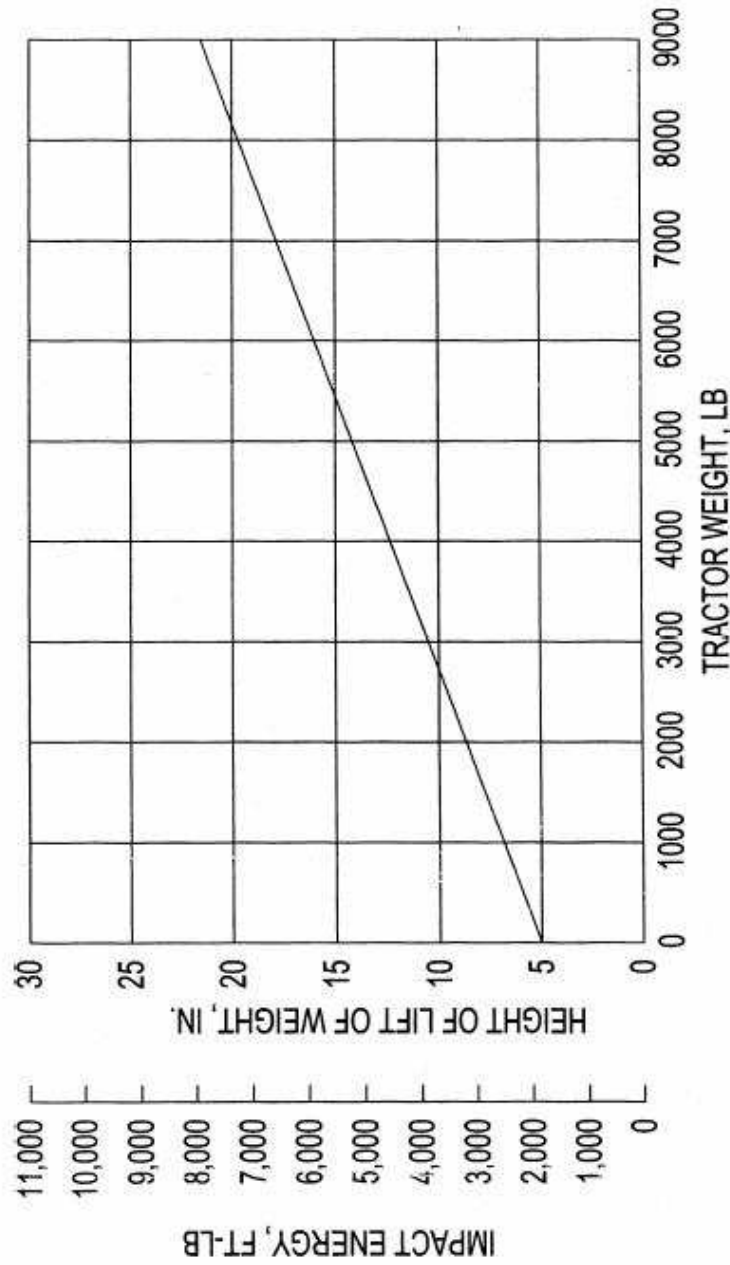


FIGURE W-23 - METHOD OF IMPACT FROM SIDE.



NOTATION OF FORMULAE

$H=4.92+0.00190W$ or $H'=125+0.107W'$

W=tractor weight specified by 29 CFR

1926.1002(e)(1) and (e)(3) in lbs (W' in kg).

FIGURE W-24 - IMPACT ENERGY AND CORRESPONDING LIFT HEIGHT OF 4,410 lb (2,000 kg) WEIGHT.

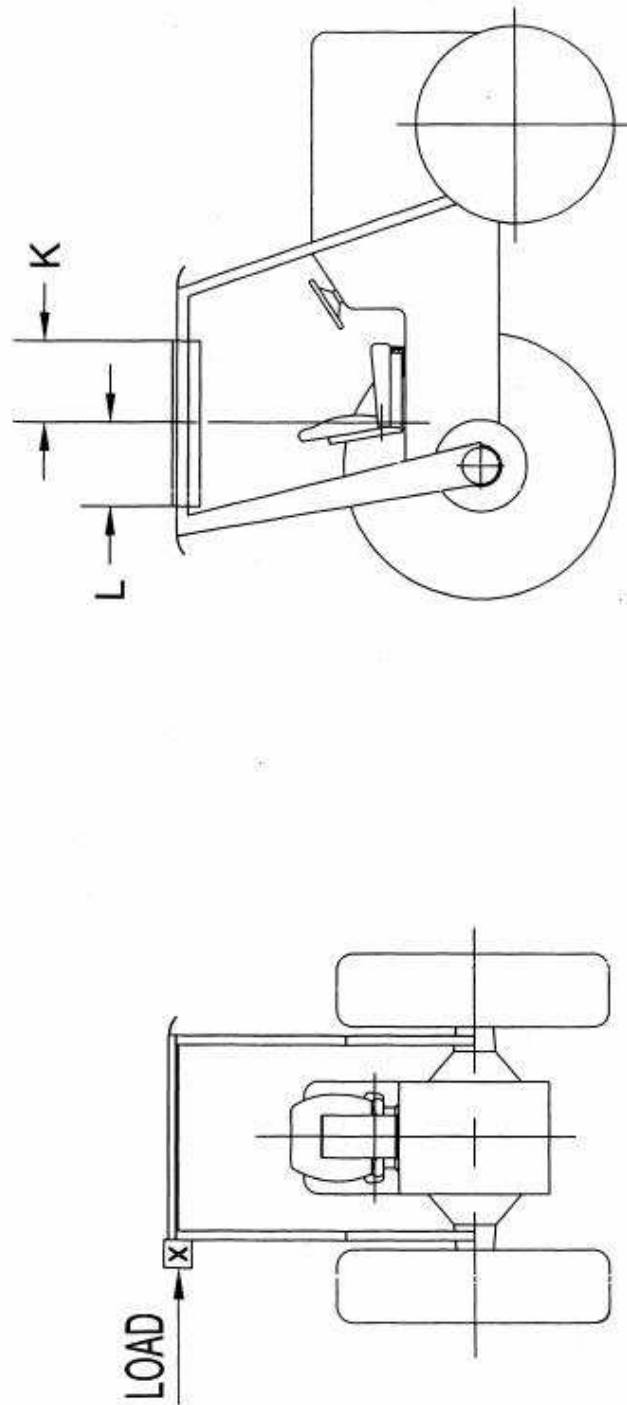


FIGURE W-25 - LOCATION OF SIDE LOAD.

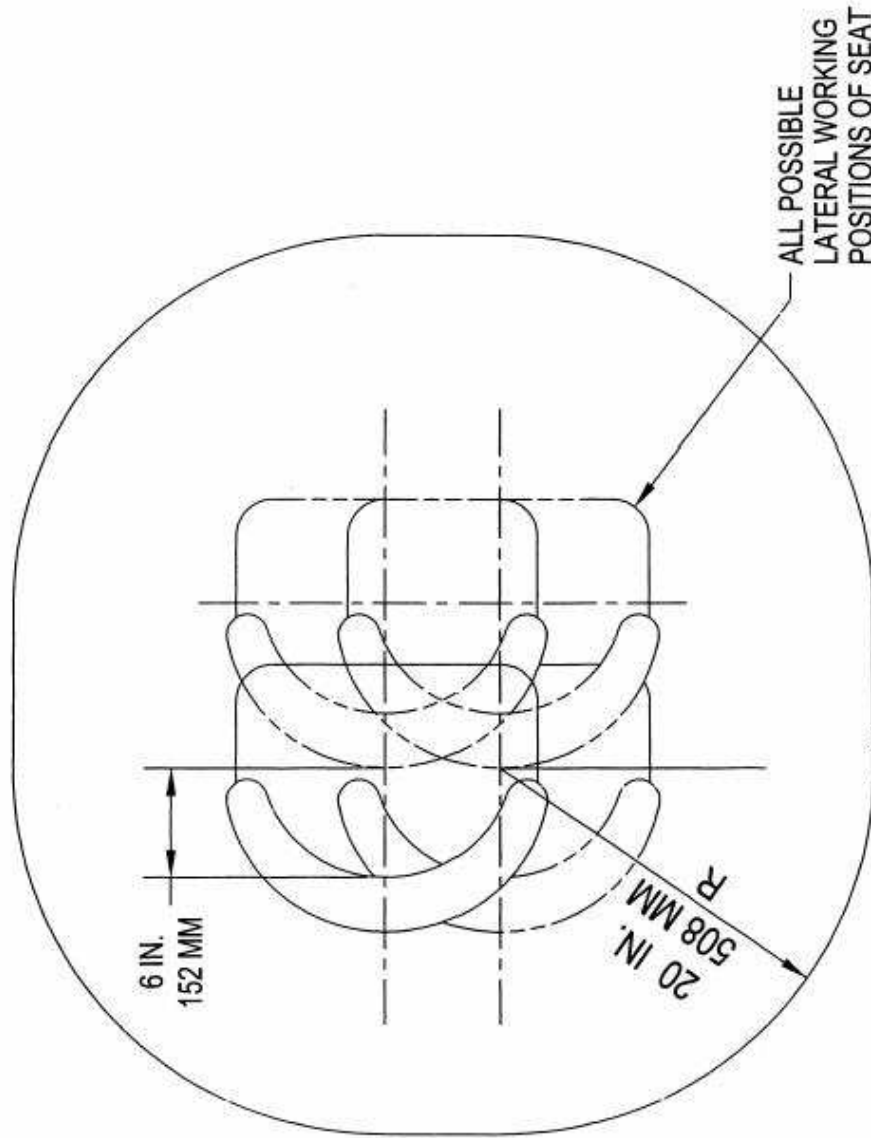


FIGURE W-26 - ZONE OF PROTECTION FOR DROP TEST.

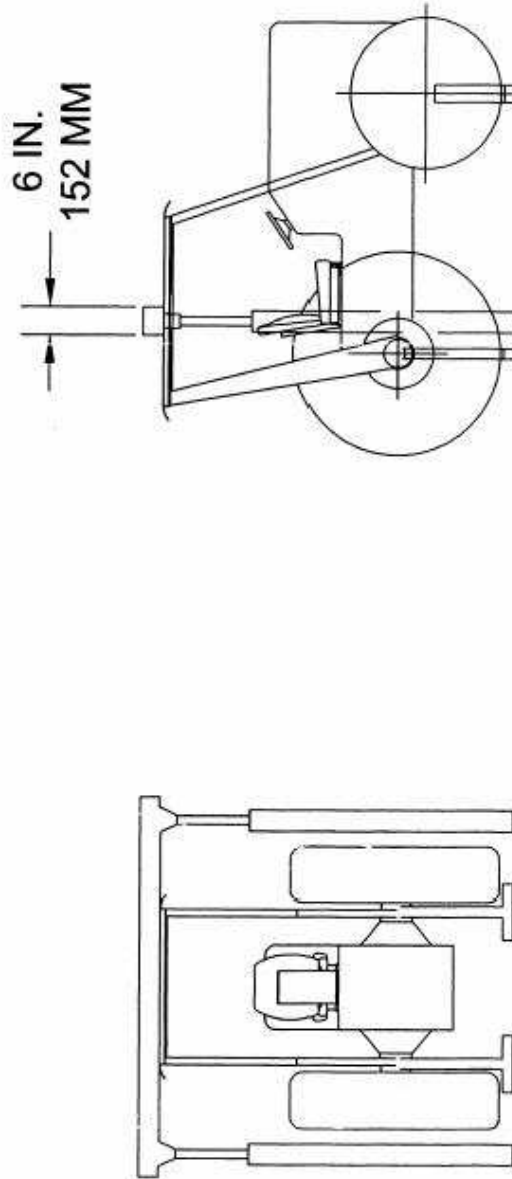


FIGURE W-27 - METHOD OF LOAD APPLICATION FOR CRUSH TEST.

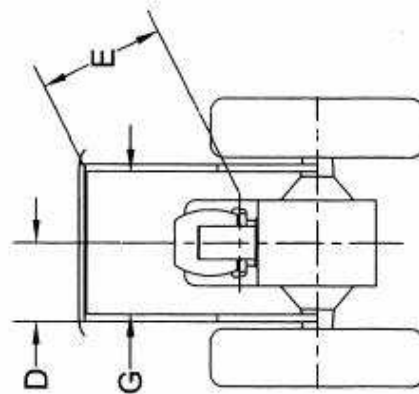
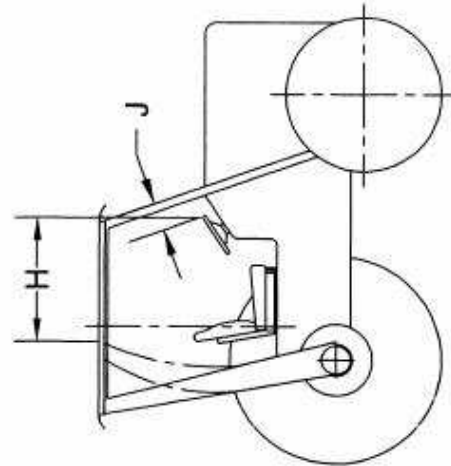


FIGURE W-28 - PROTECTED ZONE DURING CRUSH AND DROP TEST.

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Authority: Sections 4, 6, and 8 of the Occupational Safety and Health Act of 1970 (29 U.S.C. 653, 655, 657); and Secretary of Labor's Order No. 12-71 (36 FR 6754), 6-76 (41 FR 25059), 9-83 (48 FR 35736), 1-90 (55 FR 9033), 6-96 (62 FR 111), 3-2000 (65 FR 50017) or 5-2002 (67 FR 65008) as applicable; and 29 CFR part 1911.

Section 1928.21 also issued under Section 29, Hazardous Materials Transportation Uniform Safety Act of 1990 (Pub. L. 101-615, 104 Stat. 3244 (49 U.S.C. 1801-1819 and 5 U.S.C. 553)).

■ 5. Revise paragraph (d)(2)(ii) of § 1928.53 to read as follows:

§ 1928.53 Protective enclosures for wheel-type agricultural tractors—test procedures and performance requirements.

* * * * *

- (d) * * *
- (2) * * *

(ii) The following definitions shall apply:

W = Tractor weight (see 29 CFR 1928.51(a)) in lb (W' in kg);
 E_{is} = Energy input to be absorbed during side loading in ft-lb (E'_{is} in J [joules]);
 $E_{is} = 723 + 0.4 W$ ($E'_{is} = 100 + 0.12 W'$);
 E_{ir} = Energy input to be absorbed during rear loading in ft-lb (E'_{ir} in J);
 $E_{ir} = 0.47 W$ ($E'_{ir} = 0.14 W'$);
 L = Static load, lbf [pounds force], (N [newtons]);

D = Deflection under L, in. (mm);
 L-D = Static load-deflection diagram;
 L_{max} = Maximum observed static load;
 Load Limit = Point on a continuous L-D curve where the observed static load is 0.8 L_{max} on the down slope of the curve (see Figure C-5);
 E_w = Strain energy absorbed by the protective enclosure in ft-lbs (J); area under the L-D curve;

FER = Factor of energy ratio;
 $FER_{is} = E_w/E_{is}$; and
 $FER_{ir} = E_w/E_{ir}$.
 * * * * *

■ 6. In Appendix B to subpart C, remove existing Figures C-1 through C-16 and add in their place new Figures C-1 through C-16.
 BILLING CODE 4510-26-P

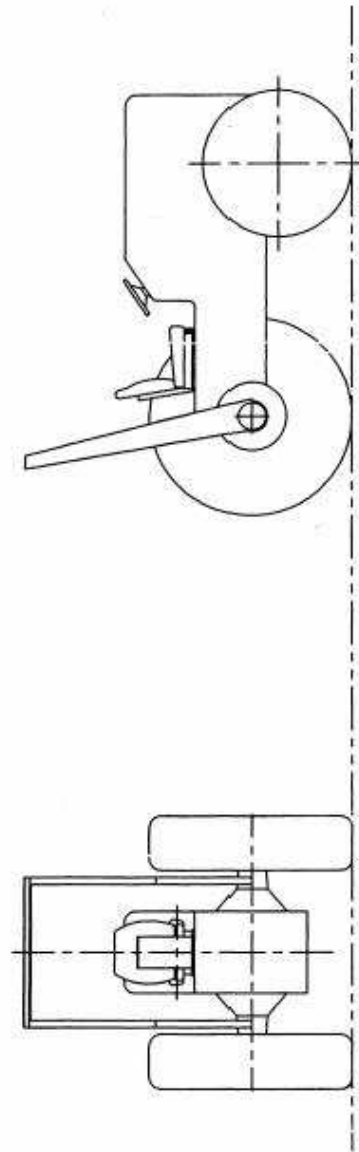


FIGURE C-1 - TRACTOR WITH TYPICAL PROTECTIVE FRAME.

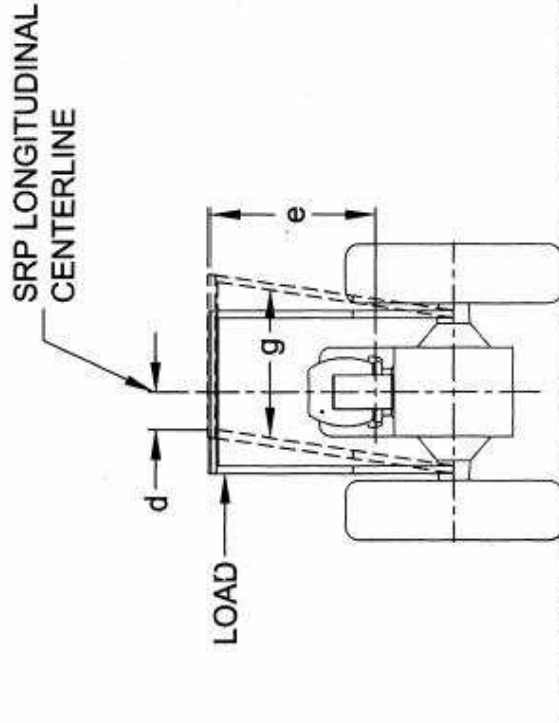


FIGURE C-2 - SIDE LOAD APPLICATION.

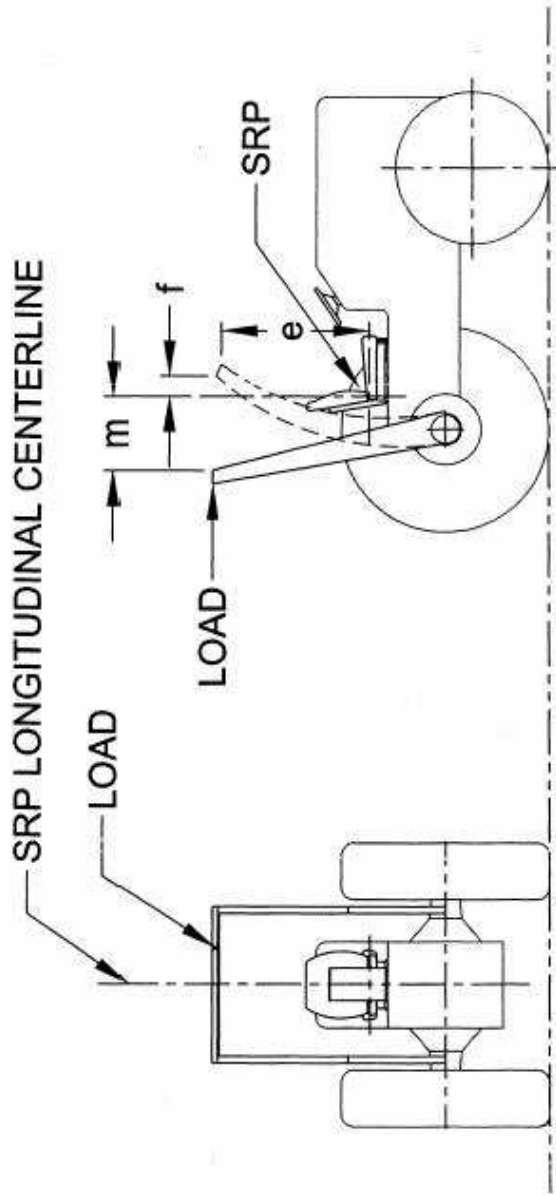


FIGURE C-3 - REAR LOAD APPLICATION.

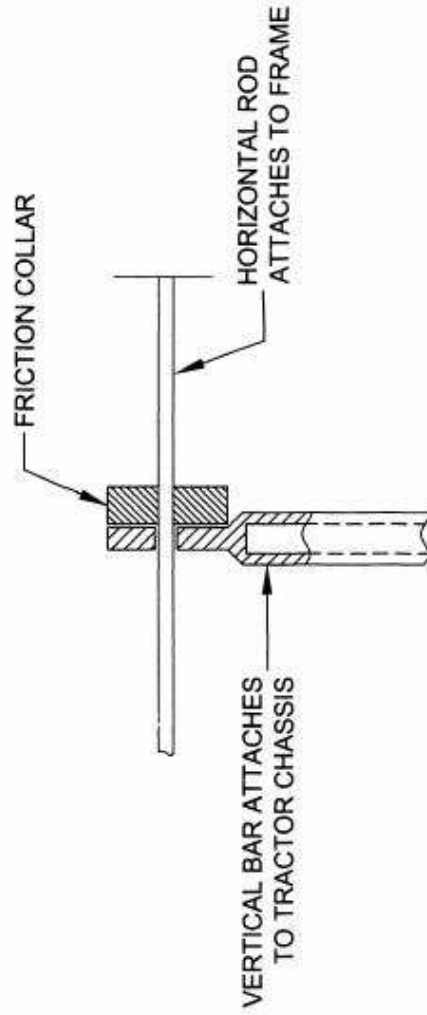


FIGURE C-4 - METHOD OF MEASURING INSTANTANEOUS DEFLECTION.

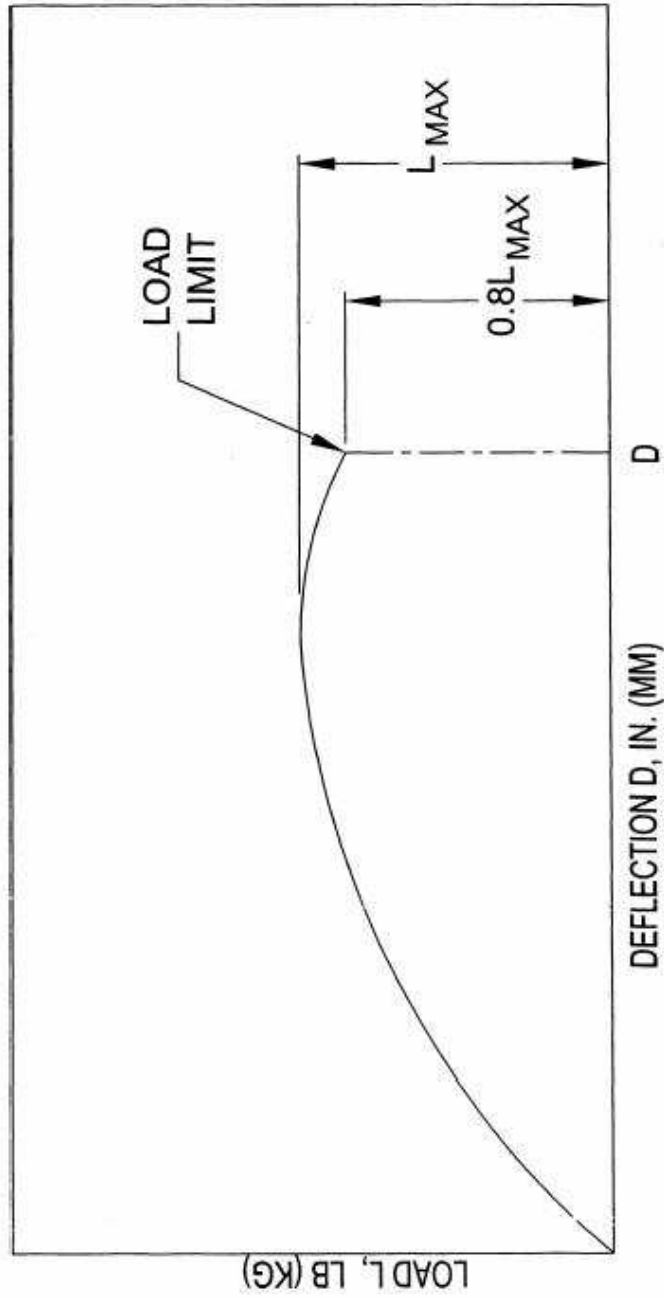


FIGURE C-5 - TYPICAL L-D DIAGRAM.

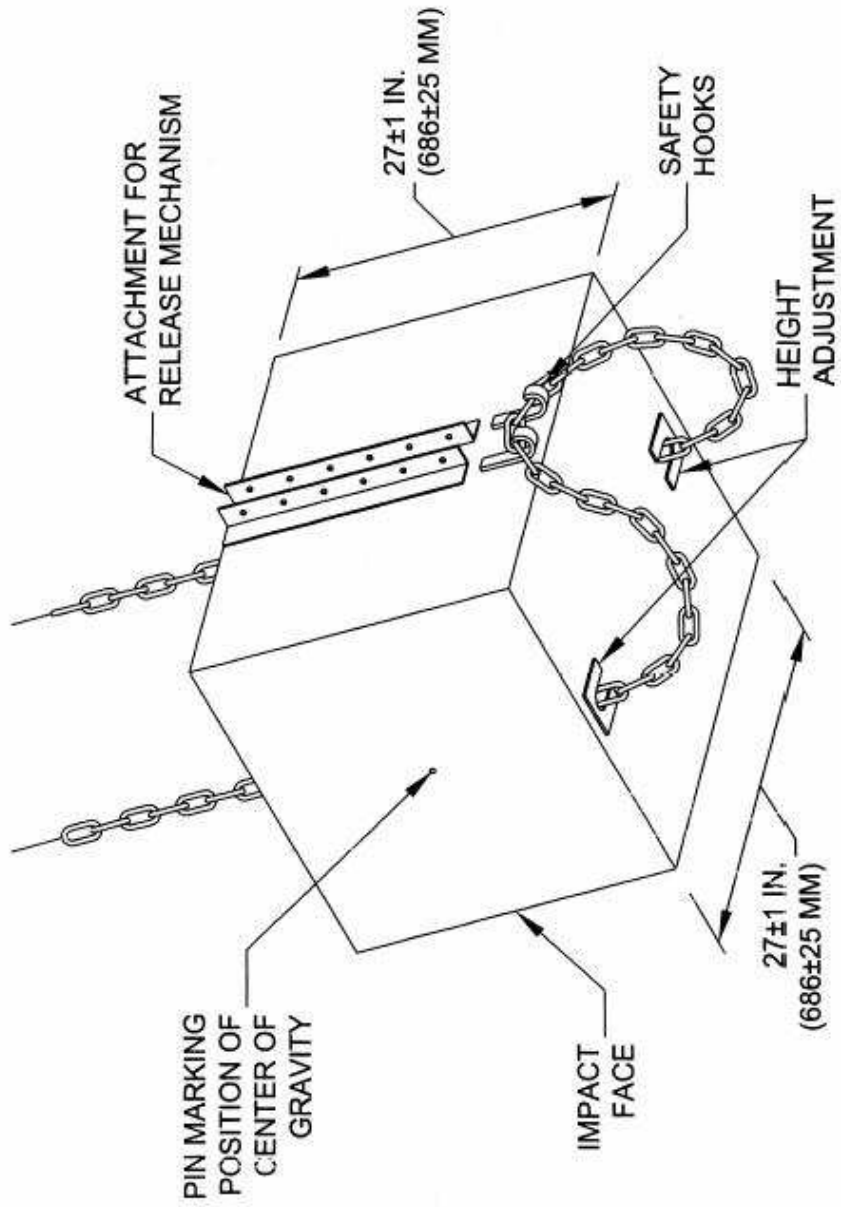
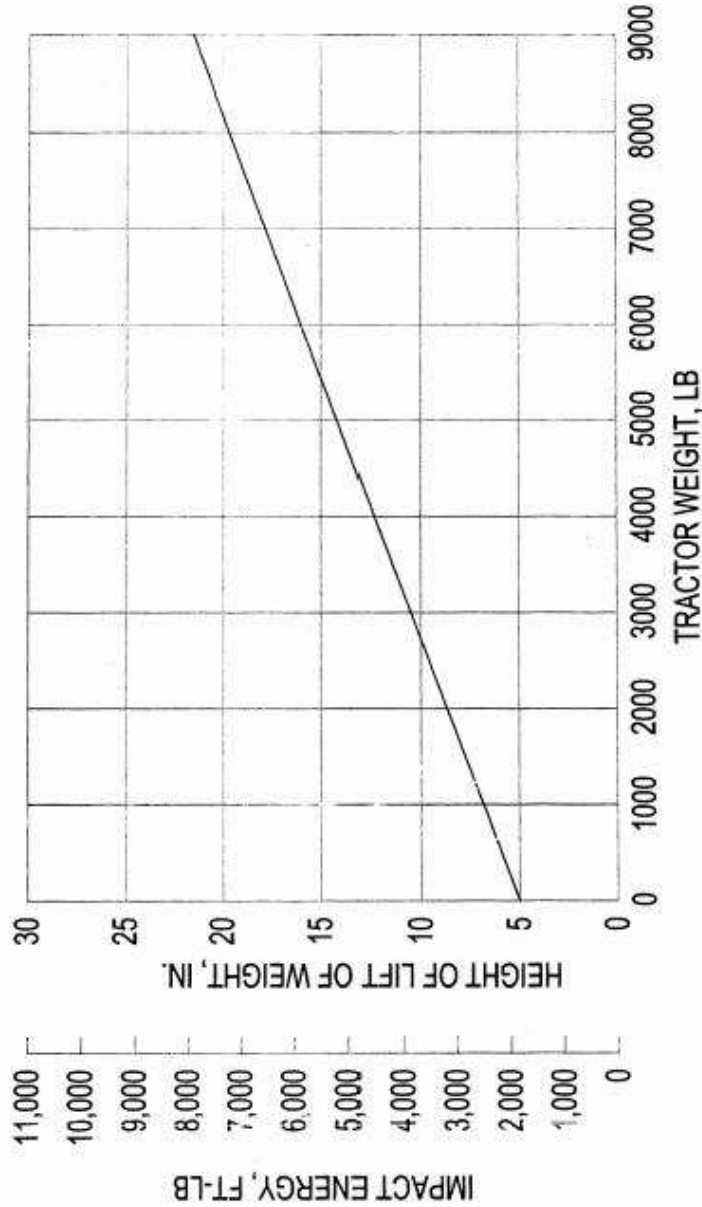


FIGURE C-6 - PENDULUM.



NOTATION OF FORMULAE

$H=4.92+0.00190W$ or $H'=125+0.107W'$

W=tractor weight specified by 29 CFR

1928.51(a) in lbs (W' in kg).

FIGURE C-7 - IMPACT ENERGY AND CORRESPONDING LIFT HEIGHT OF 4,410 LB (2,000 kg) WEIGHT.

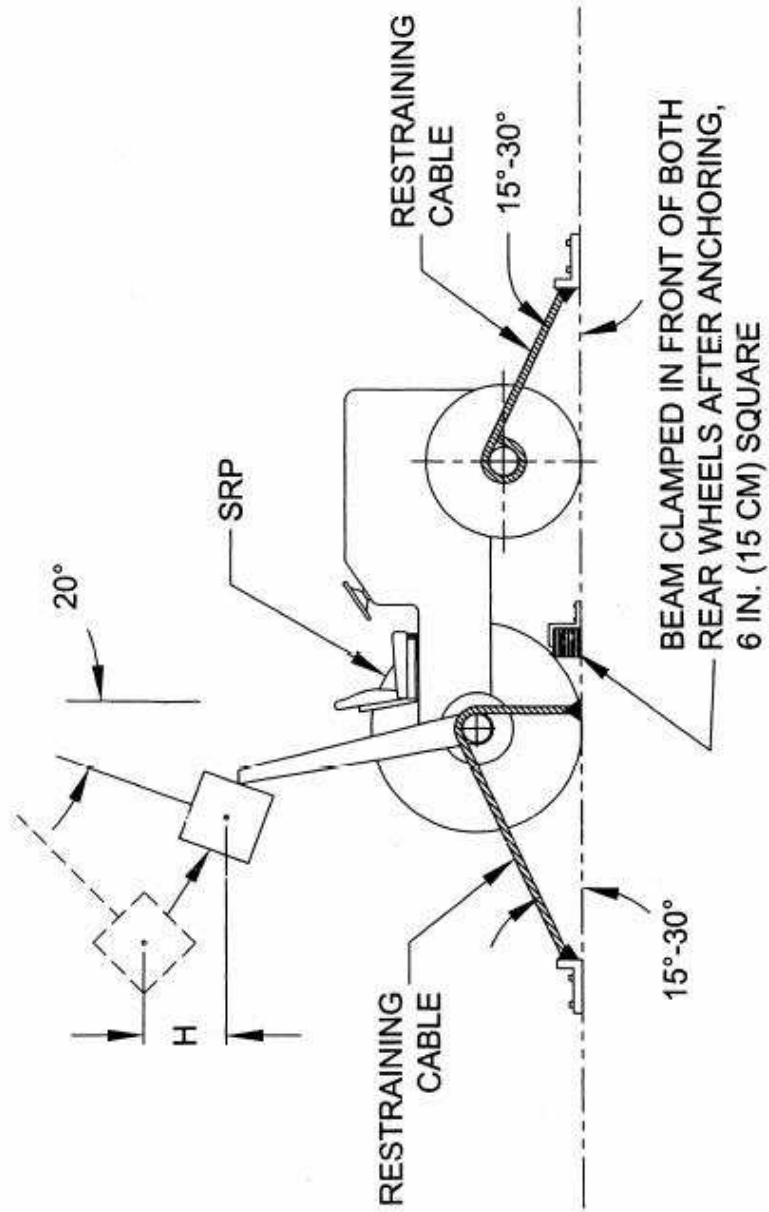


FIGURE C-8 - REAR IMPACT APPLICATION.

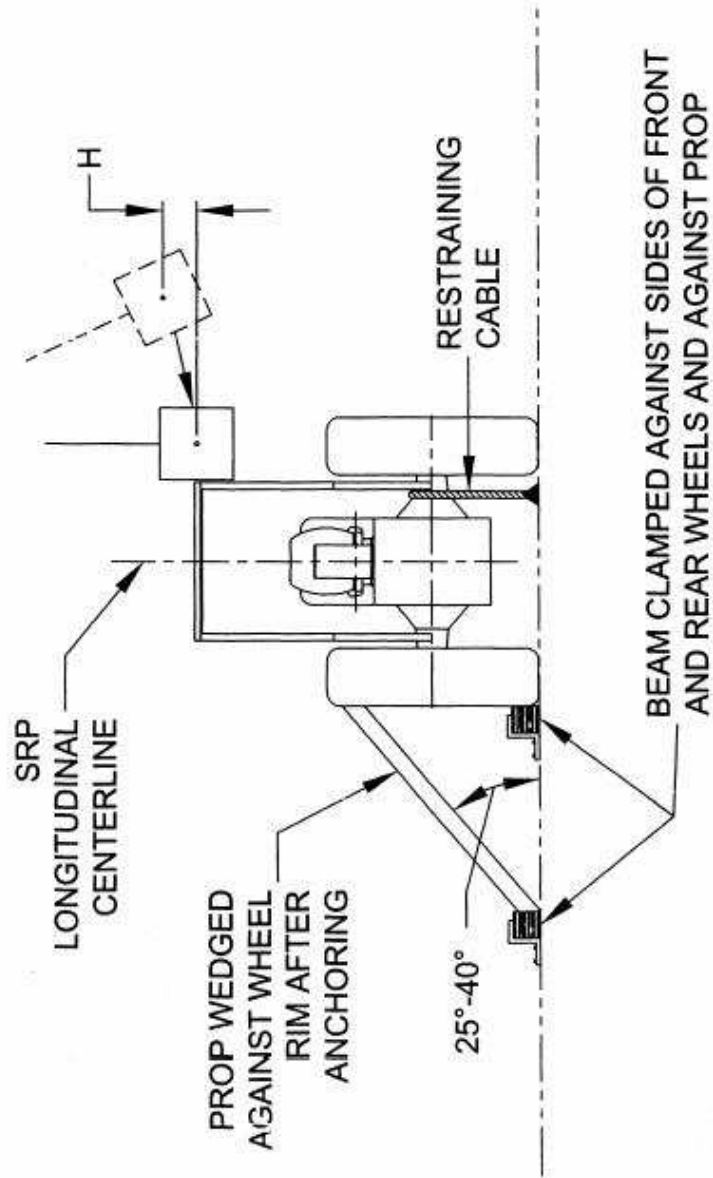


FIGURE C-9 - SIDE IMPACT APPLICATION.

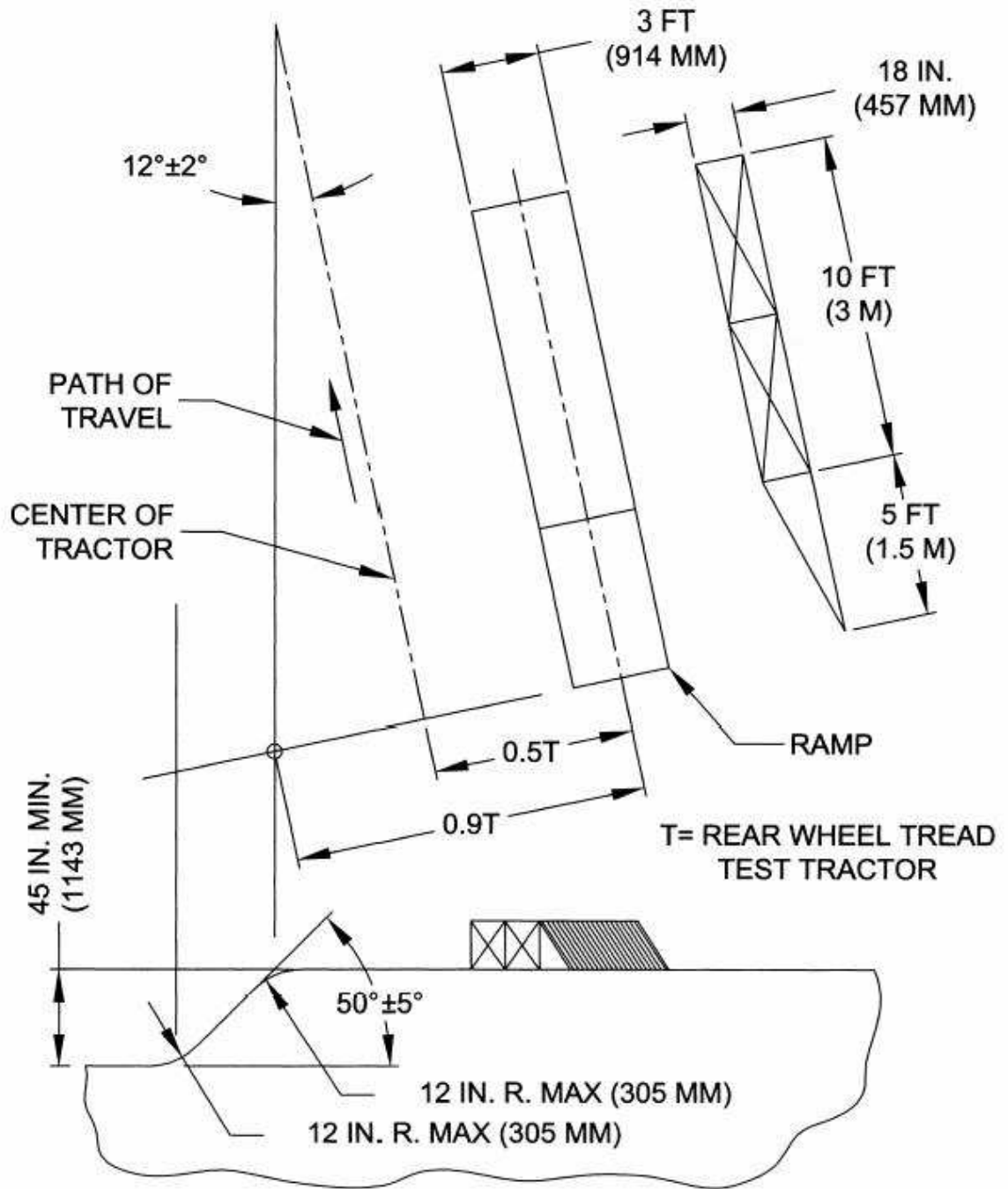


FIGURE C-10 - SIDE OVERTURN BANK AND RAMP.

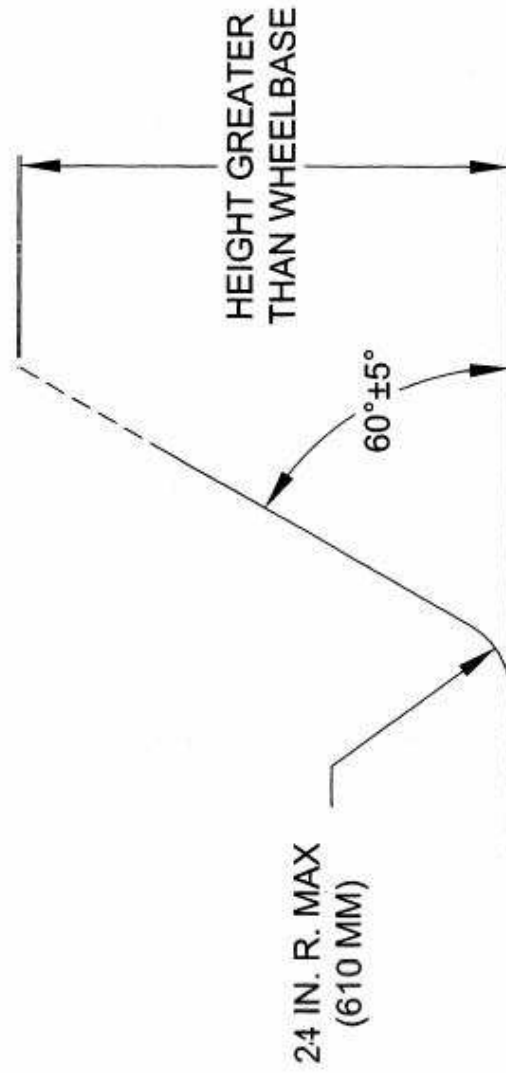


FIGURE C-11 - TYPICAL REAR OVERTURN BANK.

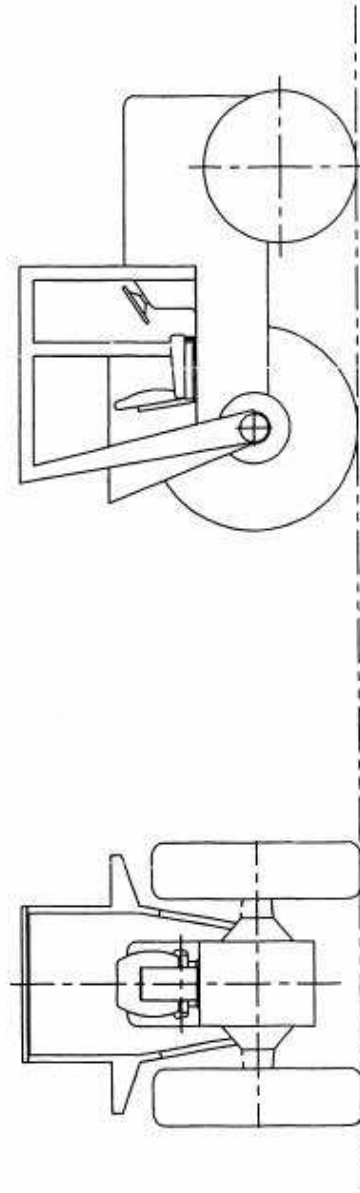


FIGURE C-12 - TRACTOR WITH TYPICAL PROTECTIVE ENCLOSURE.

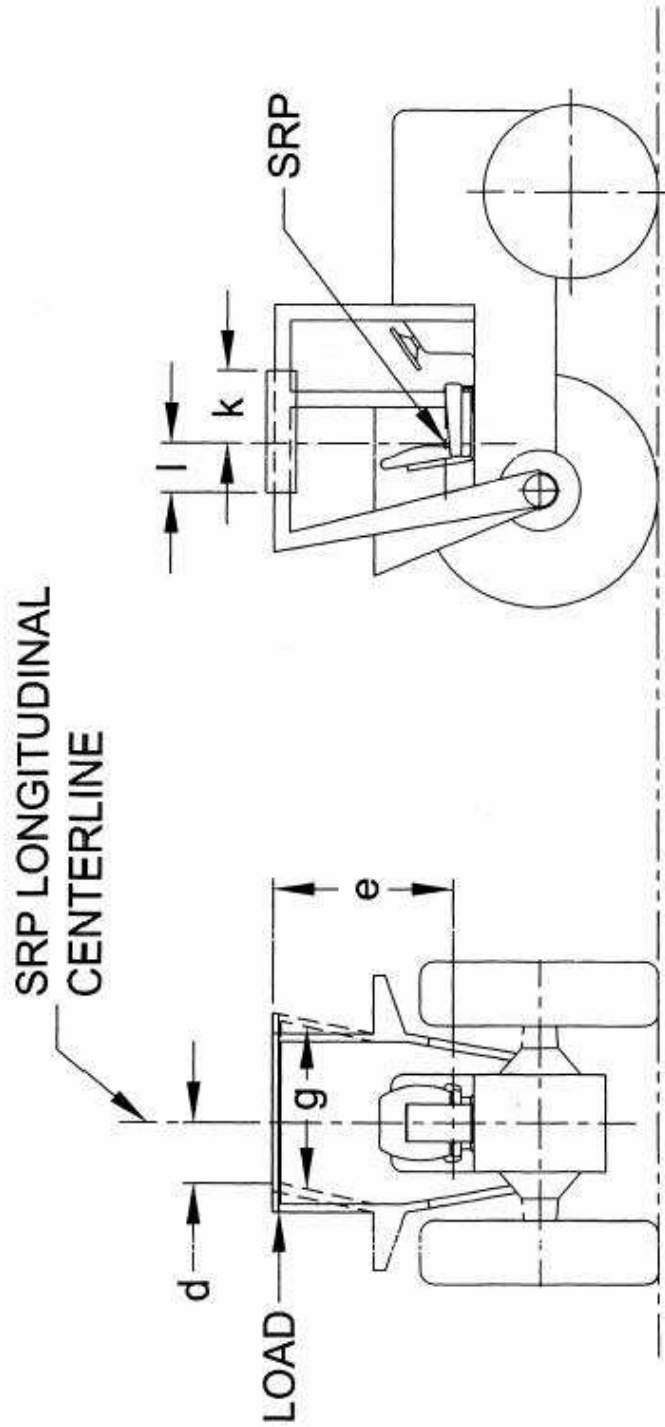


FIGURE C-13 - SIDE LOAD APPLICATION.

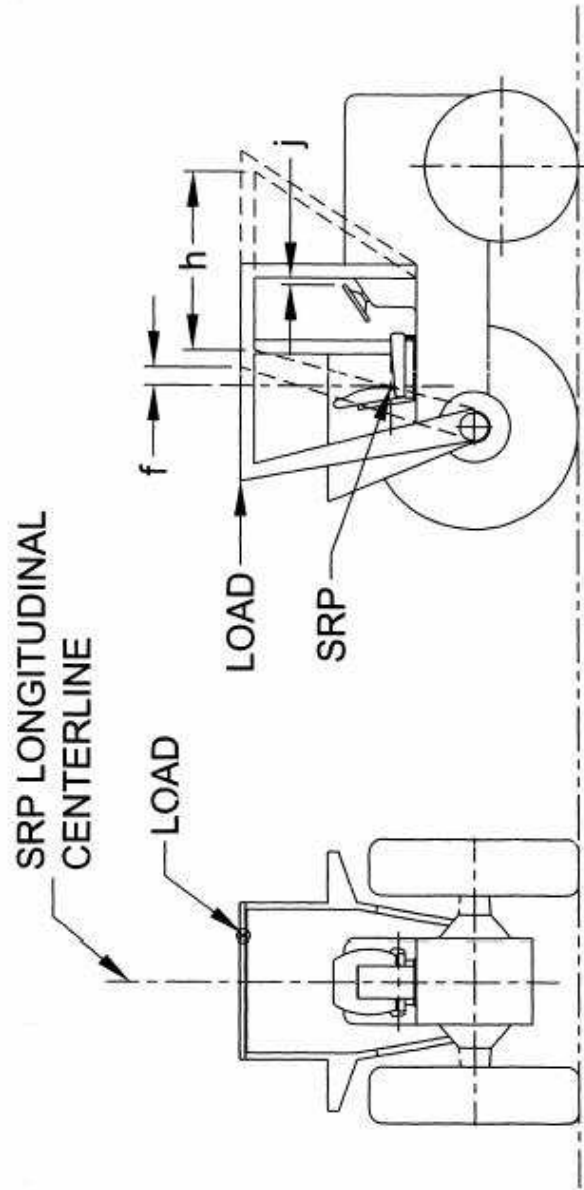


FIGURE C-14 - REAR LOAD APPLICATION.

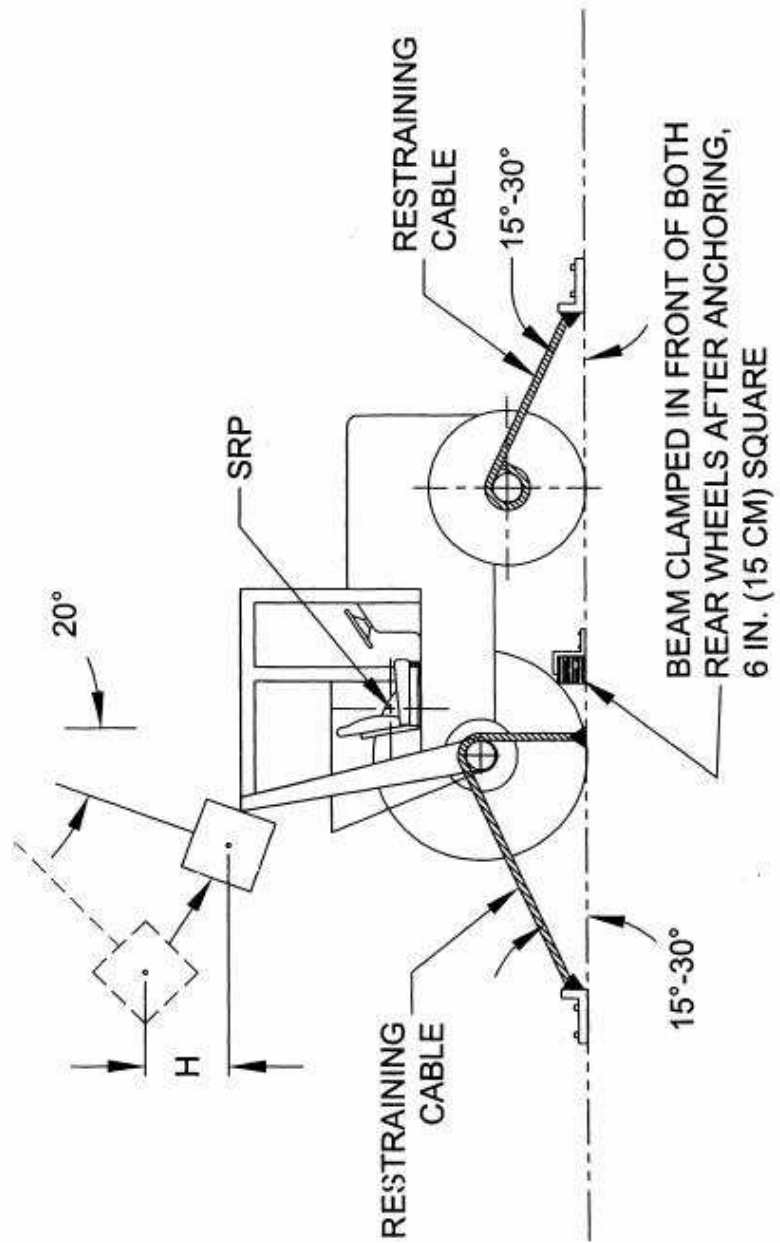


FIGURE C-15 - REAR IMPACT APPLICATION.

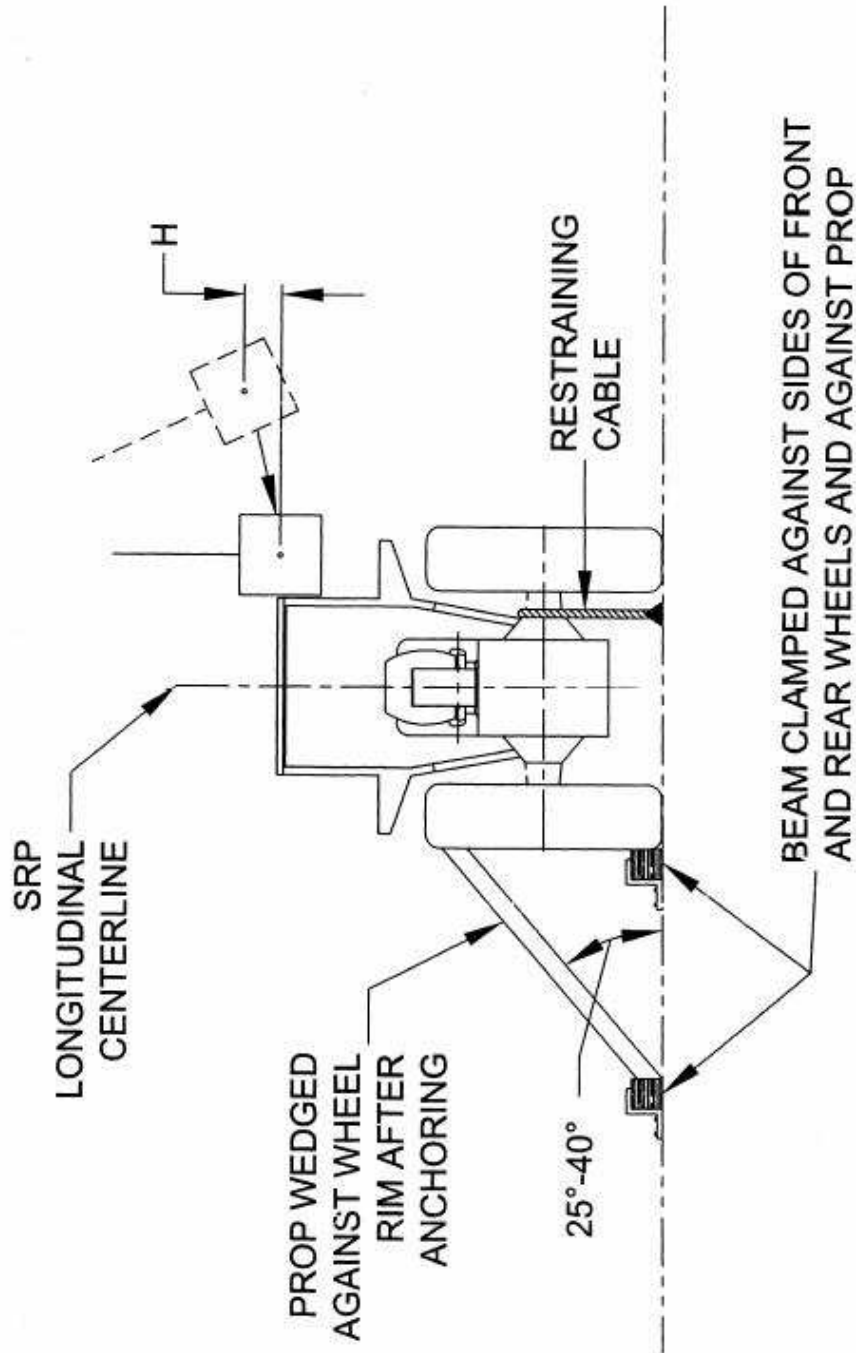


FIGURE C-16 - SIDE IMPACT APPLICATION.

