

Full Scale Crash Test Results for W-Beam Terminals

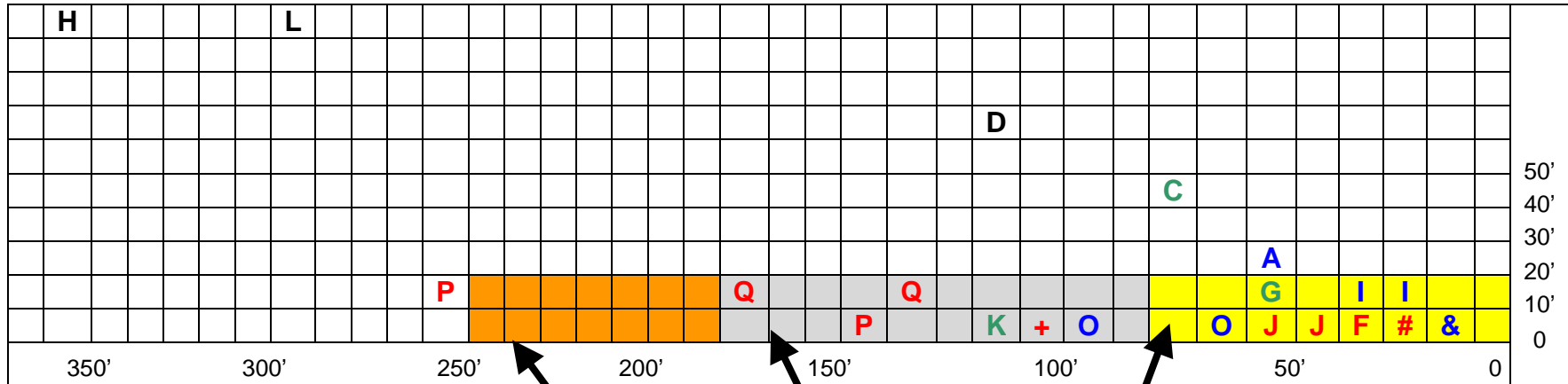
(Final Resting Position of Vehicle Shown for TL-3 Impact Condition)

| System Type / Name | Test 3-30 820kg / 0 deg / offset W/4 | Test 3-31 2000kg / 0 deg / centered | Test 3-32 820kg / 15 deg / centered | Test 3-33 2000kg / 15 deg / centered |
|---|--|---|---|--|
| Tangent BEST Energy Absorbing | Lat. 8.8 m (28.9 ft) Long. 17.1 m (56.1 ft) | Lat. 0.9 m (3.0 ft) Long. 8.9 m (29.2 ft) | Lat. 13.2 m (43.3 ft) Long. 21.7 m (71.2 ft) | Lat. 21.3 m (69.9 ft) Long. 36.6m (120 ft) |
| Tangent ET 2000 Energy Absorbing | Lat. 1.7 m (5.6 ft) Long. 6.3 m (20.7 ft) | Lat. 2.0 m (6.6 ft) Long. 7.62 m (25.0 ft) Lat. 0.0 m (0.0 ft) Long. 12.0 m (39.4 ft) | Lat. 4.6 m (15.1 ft) Long. 17.1 m (56.1 ft) | Lat. 36.6 m (120 ft) Long. 107.9 m (354 ft) |
| Tangent SKT Energy Absorbing | Lat. 5.0 m (16.4 ft) Long. 10 m (32.8 ft) Lat. 5.7 m (18.7 ft) Long. 8.5 m (27.9 ft) | Lat. 0.0 m (0.0 ft) Long. 15.2 m (49.9 ft) Lat. 0.0 m (0.0 ft) Long. 17.5 m (57.4 ft) | Lat. 2.0 m (6.6 ft) Long. 37.0 m (121 ft) | Lat. 35 m (115 ft) Long. 90 m (295 ft) |
| Flared FLEAT Energy Absorbing | Lat. 0.0 m (0.0 ft) Long. 5.5 m (18.0 ft) | Lat. 1.7 m (5.6 ft) **Long. 32.0 m (105 ft) Lat. 1.6 m (5.3 ft) Long. 9.7 m (31.8 ft) | Did Not Conduct | Did Not Conduct |
| Flared REGENT Non-Energy Absorbing | Lat. 3.0 m (9.8 ft) Long. 19.0 m (62.3 ft) Lat. 1.5 m (4.9 ft) Long. 29.5 m (96.8 ft) | Lat. 1.0 m (3.3 ft) Long. 44.0 m (144 ft) Lat. 4.6 m (15.1 ft) Long. 77.2 m (253 ft) | Did Not Conduct | Did Not Conduct |
| Flared SRT Non-Energy Absorbing | Numbers Were Not Reported | Lat. 5.2 m (17.1 ft) Long. 41.8 m (137 ft) Lat. Not Reported Long. Past the 53.3 m (175 ft) test installation | Did Not Conduct | Did Not Conduct |

** The FLEAT 3-31 Long. 32.0 m (105 ft) value is from a test involving the impact head deforming sufficiently to block the rail outlet. The rail kinking stopped after only about 1.5 m (5 ft). When the impact head was further reinforced to prevent this behavior the vehicle stopped about 1/3 the distance.

Post Impact Vehicle Trajectories

(Shown are Final Resting Positions for Various NCHRP 350 Roadside Terminals)



- A – BEST Terminal Test 3-30
- B – BEST Terminal Test 3-31
- C – BEST Terminal Test 3-32
- D – BEST Terminal Test 3-33

- E – ET Terminal Test 3-30
- F – ET Terminal Test 3-31
- G – ET Terminal Test 3-32
- H – ET Terminal Test 3-33

- I – SKT Terminal Test 3-30
- J – SKT Terminal Test 3-31
- K – SKT Terminal Test 3-32
- L – SKT Terminal Test 3-33

- M – FLEAT Terminal Test 3-30
- N – FLEAT Terminal Test 3-31

O – REGENT Terminal Test 3-30

P – REGENT Terminal Test 3-31

Q – SRT Terminal Test 3-31

Vehicles
May Travel
Over 75 m
(250 ft) With
Non-Energy
Absorbing
Terminals

B + F + N
& E + M
+ N (early design, see note)

23 m (75 ft) x 6 m (20 ft)
Area as Described in the
AASHTO RDG Section 8.2

Non-Energy Absorbing Terminals:

Recommended Minimum 175 ft. Clear Area Where the Vehicle Can Travel. Refer to FHWA Acceptance Letters:

- CC-56A – MNDOT – Eccentric Loader Terminal
- CC-72 – Trinity Industries – Slotted Rail Terminal
- CC-80 – Energy Absorption Systems – REGENT
- CC-84 – CTDOT – TL-2 MELT Terminal
- CC-86 – BRIFEN – BRIFEN Cable Terminal