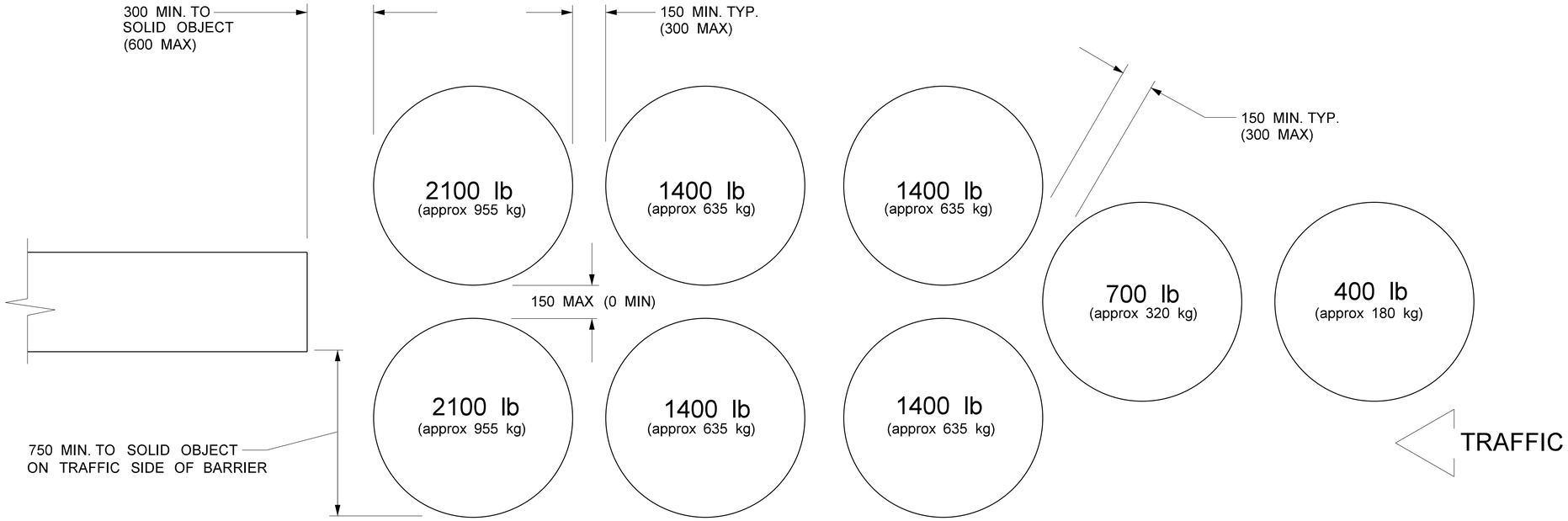
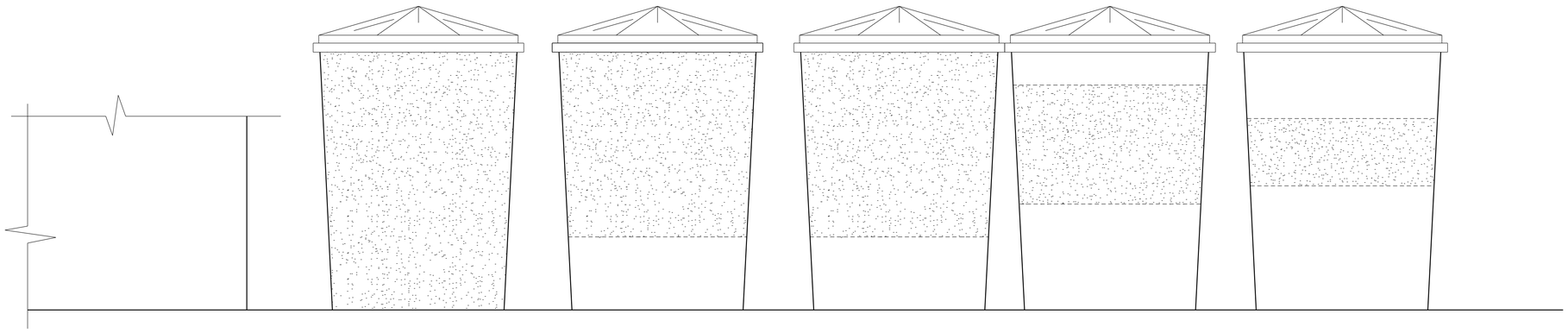


PLAN 1:25



ELEVATION 1:25

NOTES:

1. REFER TO THE MANUFACTURER'S MANUAL FOR PERFORMANCE CHARACTERISTICS AND LIMITATIONS OF THIS CRASH ATTENUATOR.
2. THIS SYSTEM IS NOT RECOMMENDED FOR SITES WHERE REDIRECTIVE CAPABILITIES ARE REQUIRED.
3. ▒ -- INDICATES RELATIVE LOCATION OF SAND.
4. SAND SHALL CONTAIN A MINIMUM 5% ROCK SALT (NaCl), BY WEIGHT.
5. EXIT VELOCITY ≤ 15 km/h AT REAR OF SYSTEM
   DECELERATION ≤ 12 g's AT ANY POINT IN SYSTEM
6. ALL SCALES ARE APPROXIMATE
7. LATERAL CROSS SLOPE SHALL NOT EXCEED 20H:1V (5%)

REVISIONS		
DATE	DESCRIPTION	BY
07-2011	T. BLOCK REVISED	DC
07-2013	ADDED NOTE REVISED LAYOUT	DC
08-2018	REVISED NOTES	SS

Manitoba Infrastructure

TRAFFIC ENGINEERING

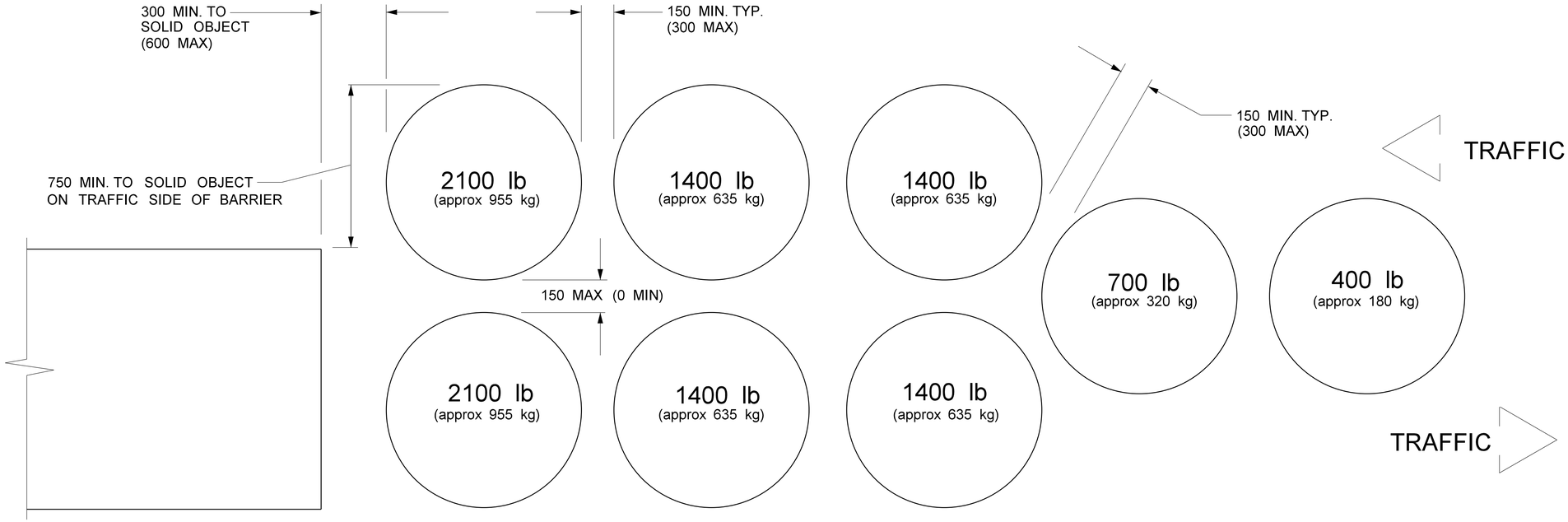
PROVINCE OF MANITOBA — H.P. LARSEN — REGISTERED PROFESSIONAL ENGINEER

SAND-FILLED BARRELS

UNIDIRECTIONAL LAYOUT
POSTED SPEED
OF 60 km/h

SHEET NO	1 OF 2
DATE:	2001 - 09
DRAWN:	TRAFFIC ENGINEERING

TSFB60



PLAN 1:25

DESIGN CALCULATIONS FOR A POSTED VELOCITY OF 60 km/h (SEE NOTE 1)

ROW	816.5 kg CAR SAND WT (lb)	816.5 kg CAR EXIT VEL (km/h)	816.5 kg CAR AVG g's FOR ROW	2041.2 kg TRUCK EXIT VEL (km/h)	2041.2 kg TRUCK AVG g's FOR ROW
0		60.00		60.00	
1	400	49.07	5.13	55.09	2.43
2	700	35.31	4.99	47.66	3.28
3	2800	13.80	4.54	29.36	6.06
4	2800	5.39	0.69	18.08	2.30
5	4200	1.62	0.11	9.34	1.03

NOTES:

1. THE DESIGN CALCULATIONS APPLY ONLY FOR A FRONTAL IMPACT IN EITHER A UNIDIRECTIONAL OR BIDIRECTIONAL LAYOUT.
2. ALL SCALES ARE APPROXIMATE.

REVISIONS		
DATE	DESCRIPTION	BY
07-2011	T. BLOCK REVISED	DC

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SAND-FILLED BARRELS

BIDIRECTIONAL LAYOUT
POSTED SPEED
OF 60 km/h

SHEET NO	2 OF 2
DATE:	2001 - 09
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