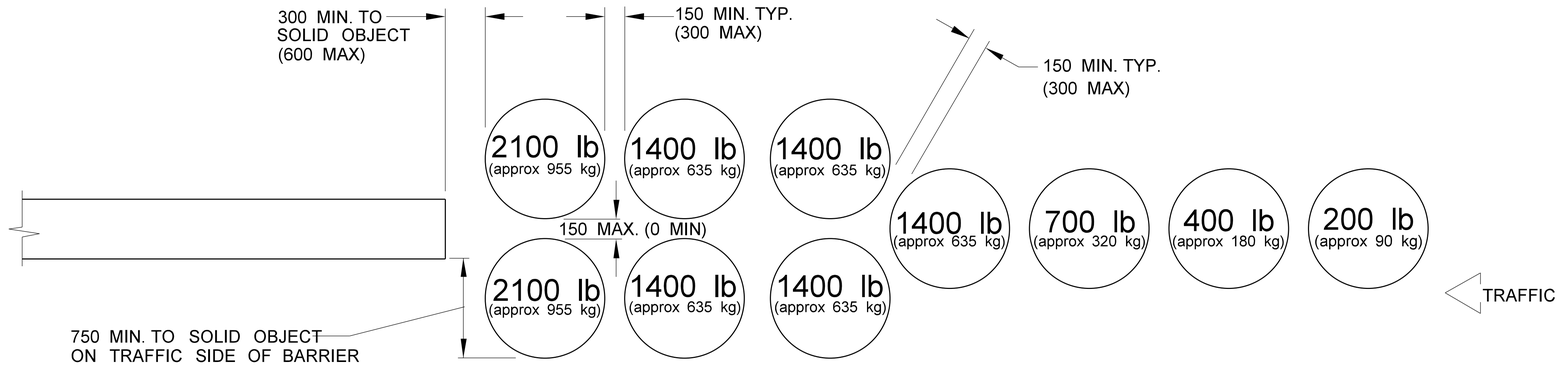
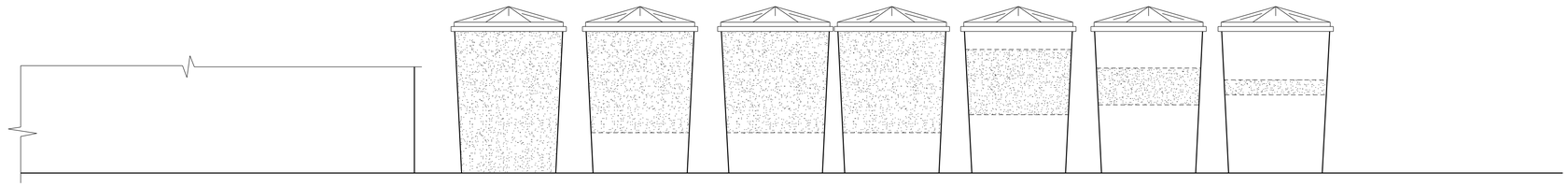


PLAN 1:50



ELEVATION 1:50

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
6. LATERAL CROSS SLOPE SHALL NOT EXCEED 20H:1V (5%).

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

Manitoba Infrastructure

TRAFFIC ENGINEERING

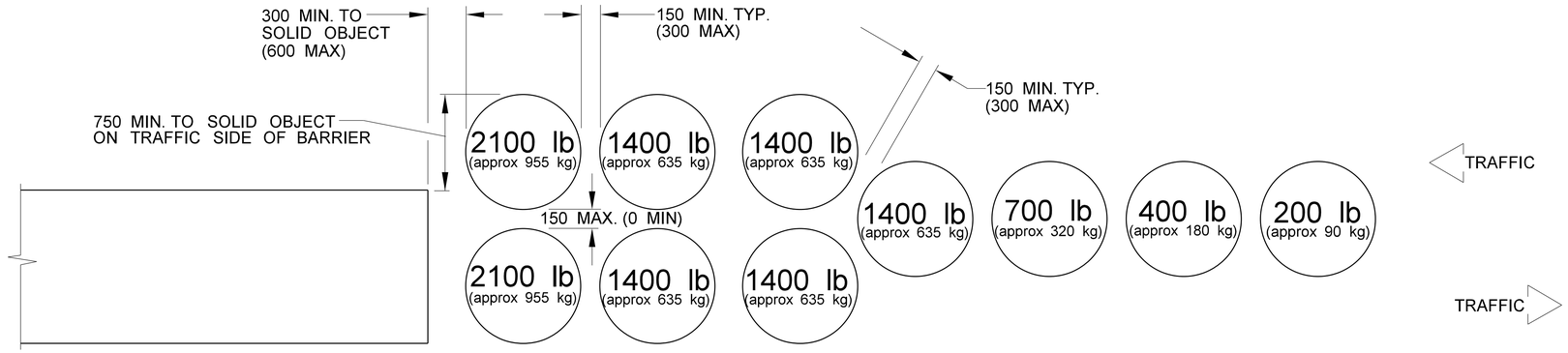
PROVINCE OF MANITOBA
H.P. LARSEN
REGISTERED PROFESSIONAL ENGINEER

SAND-FILLED BARRELS

UNIDIRECTIONAL LAYOUT
POSTED SPEED
OF 80 km/h

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

TSFB80



PLAN 1:50

DESIGN CALCULATIONS FOR A POSTED VELOCITY OF 80 km/h (SEE NOTE 1)

ROW	816.5 kg CAR SAND WT (lb)	EXIT VEL (km/h)	AVG g's FOR ROW	2041.2 kg TRUCK EXIT VEL (km/h)	AVG g's FOR ROW
0		80.00		80.00	
1	200	71.98	5.24	76.59	2.30
2	400	58.87	7.38	70.32	3.96
3	700	42.36	7.19	60.84	5.35
4	1400	23.31	5.28	46.38	6.67
5	2800	9.30	2.07	28.57	5.74
6	2800	3.64	0.32	17.60	2.18
7	4200	1.09	0.05	9.09	0.98

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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BIDIRECTIONAL LAYOUT
POSTED SPEED
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