EMBANKMENT PLAN

Edge of Special Shaping

3:1 preferred,
2:1 maximum

Possible Toe
of Embankment

10°

OBSTACLE

X

V

LOCATION STATION

4:1 max

Y

15°

20:1

Edge of Shoulder

W

Z

Shoulder
Width

Edge of Pavement

Approach Traffic

BARREL INSTALLATION LINE LAYOUT
Angle of Barrel Installation Line is measured from a line parallel to roadway centerline.

1

Where distance to obstacle is less than 15 feet from edge of traveled way:

3'-0"

Barrel Installation Line

5°

35'-0"

Approach Traffic

Where distance to obstacle is 15 feet or greater from edge of traveled way:

6'-0"

Barrel Installation Line

10°

35'-0"

Approach Traffic

EMBANKMENT TYPICAL SECTION

Edge of Shoulder

Edge of Special Shaping

20   1

3:1 pref.
2:1 max.

Toe of
Embankment

---

1 For obstacles located within the traveled way where space is limited, Barrel Installation Line may be parallel to roadway centerline. In this case, Y dimension equals X dimension.

Possible Contract Items:
  Embankment In Place
  Temporary Crash Cushion

Possible Tabulation:
  108-30

EMBANKMENT DIMENSIONS

For Obstacle Widths:	Sand Barrel Layouts Required	W	X	Y (must not be negative)	Z
3'-6" or less	1	24'-3"	V + 5'-3"	V + 3'-3"	3.73 V + 12'-0"
3'-7" - 10'-7"	2	25'-0"	V + 12'-3"	V + 10'-0"	3.73 V + 38'-0"
10'-8" - 17'-9"	3	25'-9"	V + 19'-3"	V + 17'-0"	3.73 V + 64'-0"
17'-10" - 32'-3"	4	26'-6"	V + 26'-3"	V + 24'-0"	3.73 V + 89'-0"

IOWA DOT

REVISION	
1	04-19-16

STANDARD ROAD PLAN

BA-500

SHEET 1 of 2

REVISIONS: Changed formula in Column Z.

Brian Smith
APPROVED BY DESIGN METHODS ENGINEER

**TEMPORARY CRASH CUSHIONS
SAND BARREL**

SAND BARREL LAYOUT

Edge of Obstacle

OBSTACLE

6"

6"

6"

6"

Leading Barrel

12"

30" min.

Barrel Installation Line

Sand Barrel
(36" nominal dia.)

Sand Weight
(lbs)

2100 1400 1400 700 400 700 400 200 200 200

2100 1400 1400 700 400
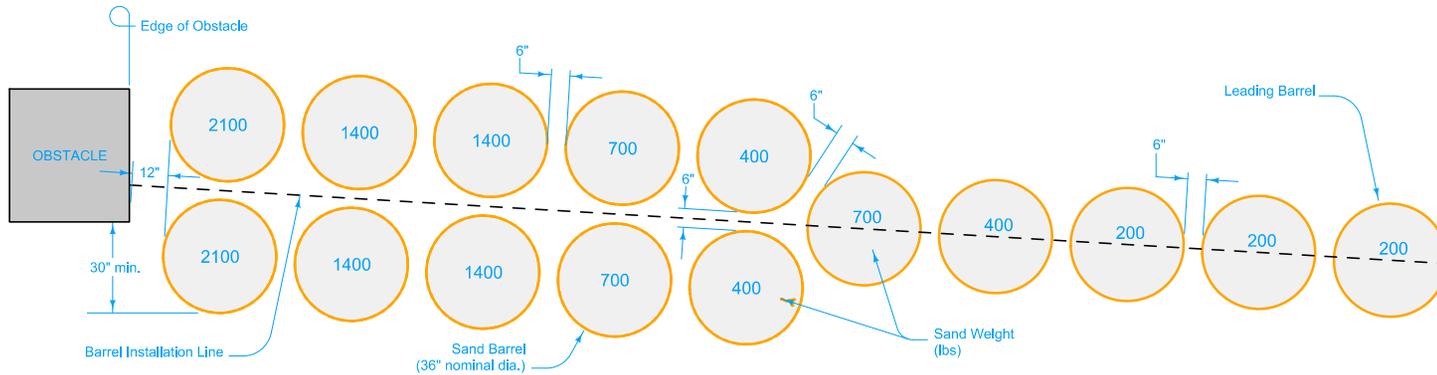
SAND BARREL DELINEATION

Mount marker plate on the leading barrel,
centered on the barrel installation line.

2"

MARKER PLATE

18"

18"

$\frac{7}{16}$" dia.

2"

2" 2"

0.032 inch aluminum
plate sheeted with yellow
Type III or Type IV
retroreflective sheeting
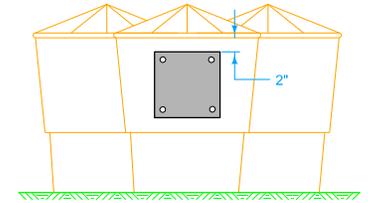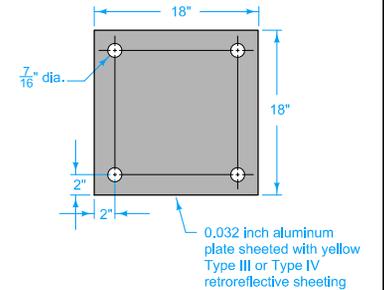
Mount plate using four $\frac{3}{8}$" bolts, nuts, and washers meeting
the requirements of Article 4186.09 for Type A signs.

Self-adhesive sheeting meeting the above requirements may
be substituted for the marker plate.

PROTECTING OBSTACLES BETWEEN OPPOSING TRAFFIC

Approach Traffic

30" min.

OBSTACLE

Leading Barrel

Opposing Traffic

Ensure barrels do not extend
beyond edge of obstacle for
opposing traffic
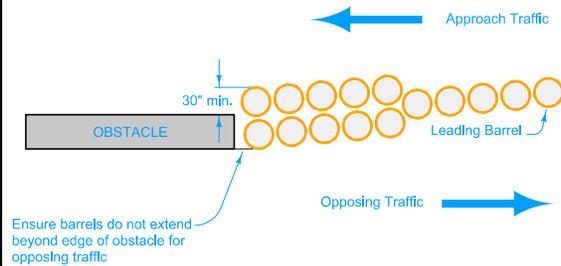
PROTECTING WIDE OBSTACLES

For wide obstacles, repeat sand barrel layout as needed

An installation consisting of multiple sand barrel layouts, similar
to the one shown, will be measured as a single crash cushion.

All barrels separated by 6 inches.

OBSTACLE

30" min.

Leading Barrel

Approach Traffic