

## Specification For: Supply of Breakaway Bases for Traffic Signals and Pedestrian Corridor Structures

## 1. SCOPE

- a) These Specifications cover all operations necessary for and pertaining to the supply of materials, fabrication and delivery of breakaway bases for traffic signal and pedestrian corridor structures.
- b) The Work shall be done in accordance with these Specifications and as shown on the Drawings. The work by the Contractor shall include the furnishing of all superintendence, overhead, labour, materials, equipment, tools, supplies, and all things necessary for and incidental to the satisfactory performance and completion of all Works as hereinafter specified.

## 2. MATERIALS

## 2.1. General

- a) All materials used for fabrication of breakaway bases shall be new, previously unused material.

## 2.2. Handling and Storage of Materials

- a) The Supplier shall be responsible for the supply, safe storage and handling of all materials in a careful and workmanship-like manner, to the satisfaction of the Engineer.

## 3. APPROVED PRODUCTS

- a) Breakaway bases shall be FHWA approved and meet or exceed the criteria set out by AASHTO in NCHRP Report 350 for TL-3. An approved product is the Safety Base assembly with C7 couplers by Safety Base Ltd. Other products approved by FHWA and meeting the Assembly Data and Design Loading Data given in Table 1 and Table 2 below as well as satisfactory performance history will be considered upon request by suppliers.
- b) Breakaway bases will only be used for the Light Series Structures at designated locations specified by MI. Piles for breakaway bases will use 32 mm (1.25 in.) diameter anchor bolts at a spacing of 292 mm (11.5 in.) BCD. Three types of breakaway base assemblies (BR1, BR2 and BR3) are provided as shown in Table 1. Each assembly is configured for the type of structure and the loading due to the attachments. Figure 1 and Figure 2 show the assembly components of the three types of couplers. Type BR1 Breakaway Base shall include four couplers, a reaction plate and a shroud. Types BR2 and BR3 Breakaway Base Assemblies shall include the same components as Type BR1 plus a transition plate below the pole base plate.

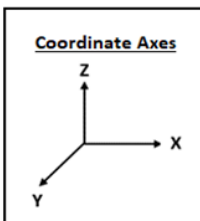
Specification For: Supply of Breakaway Bases for Traffic Signals and Pedestrian Corridor Structures

Table 1: Breakaway Base Assembly

Type	Structure Type	Pole BCD (mm)	BCD of 4 – C7 Couplers	Reaction Plate(mm)	Transition Plate (mm)
BR1	3.5/5.0 m Straight Pole	292	292 mm (11.5 in)	19X300X300	N/A
BR2	2.5 m Cantilever/Davit	292	457 mm (18 in)	38X450X450	38X450X450
BR3	5.0 m Cantilever/Davit	292	610 mm (24 in)	38X610x610	38X610x610

Table 2: Breakaway Base Design Loading Data

Pole Data (Using 32 mm dia. Anchor Bolts)		Breakaway Base		Design Unfactored Loads at Base (P = kN, M = kN.m)					
Configuration	Arm Length	Type	BCD (mm)	Px	Py	Pz	Mx	My	Mz
P-L-S35/S50	3.5/5.0 m Straight Pole	BR1	292	---	7.1	3.1	9.4	---	---
P-L-C65	2.5 m Cantilever	BR2	457	---	9.8	7.3	32.7	5.6	2.4
P-L-D64/25	2.5 m Davit	BR2	457	---	8.5	5.6	25.3	5.9	3.2
P-L-C65	5.0 m Cantilever	BR3	610	---	10.0	6.5	32.5	11.3	4.3
P-L-D64/25	5.0 m Davit	BR3	610	---	9.4	7.1	31.5	11.3	5.7



Specification For: Supply of Breakaway Bases for Traffic Signals and Pedestrian Corridor Structures

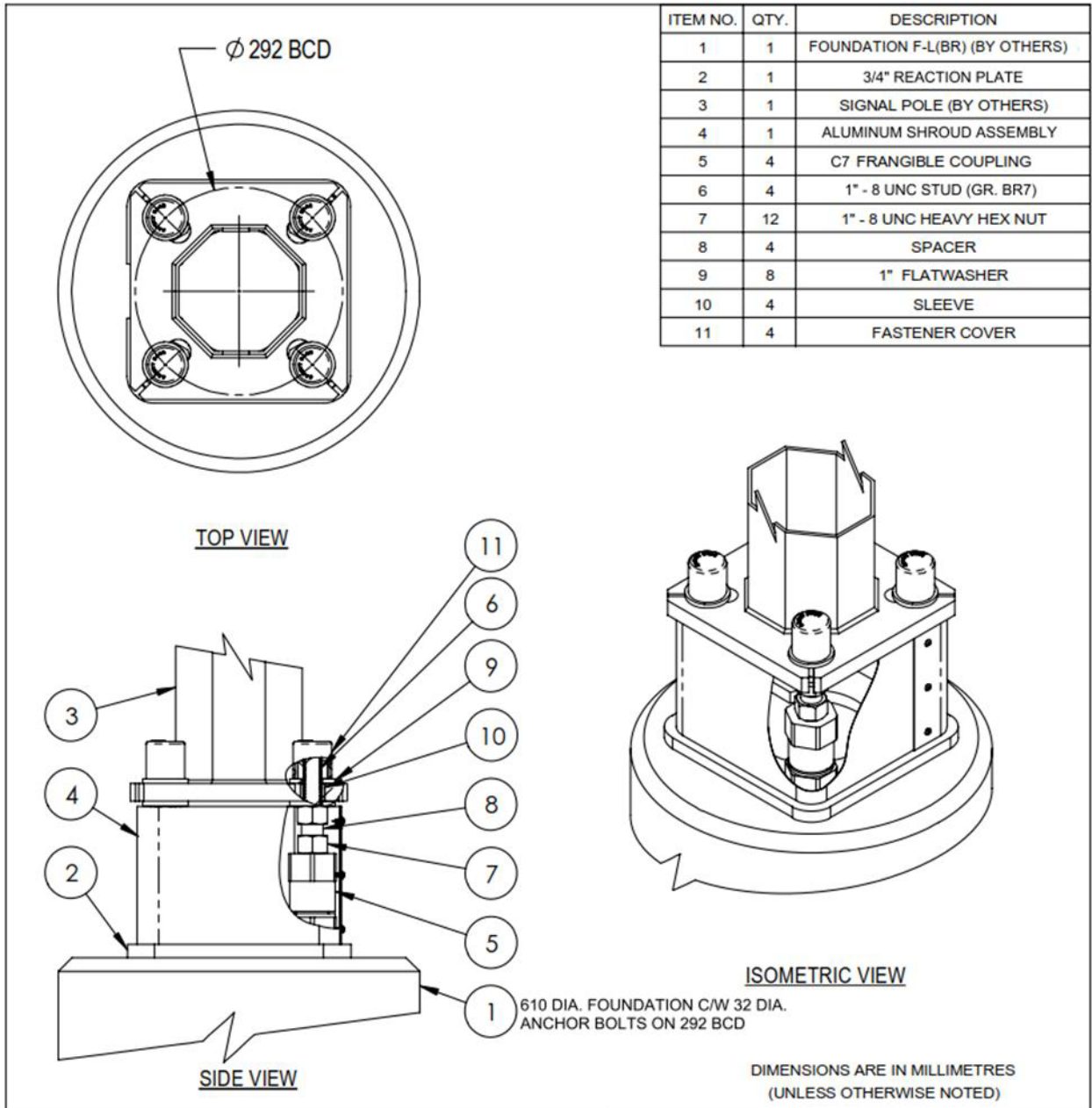
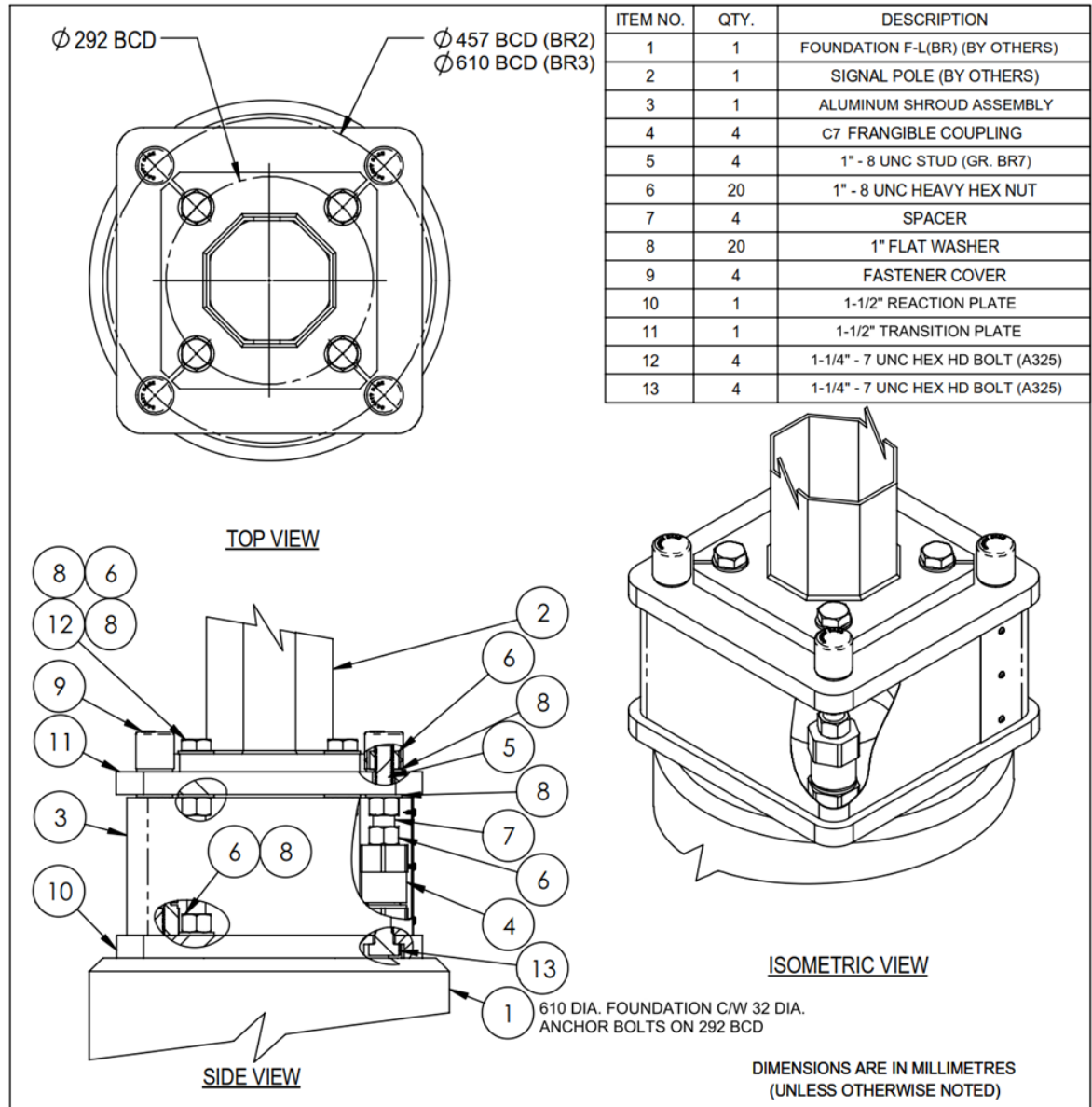


Figure 1: BR1 Breakaway Base Assembly Components

Specification For: Supply of Breakaway Bases for Traffic Signals and Pedestrian Corridor Structures



NOTES:  
1. COMPONENTS SHOWN ARE FOR THE APPROVED SAFETY BASE PRODUCTS, MANUFACTURED BY SAFETY BASE LTD.

Figure 2: BR2 and BR3 Breakaway Bases Assembly Components

## SUBMITTALS

### 3.1 General

All submittals shall be in PDF format and shall be sent electronically to the Engineer. Submittals required by the Supplier include the following documents:

- a) Test data including FHWA Approval documentation.
- b) Product material data.
- c) Assembly drawings.
- d) Installation Instructions.
- e) Other miscellaneous relevant information
- f) All costs resulting from any changes or due to failure to have submissions reviewed by the Engineer shall be borne by the Supplier

## 4. QUALITY CONTROL

### 6.1 General

- a) All workmanship and all materials furnished and supplied under this Specification are subject to close and systematic inspection and testing by the Department, including all operations from the selection and production of materials, through to final acceptance of the work. The Supplier shall be wholly responsible for the control of all operations incidental thereto notwithstanding any inspection approval that may have been previously given. The Department reserves the right to reject any materials or works that are not in accordance with the requirements of this Specification.
- b) The Supplier shall be responsible for making a thorough inspection of materials to be supplied under this Contract. All material shall be free of surface imperfections and other defects.

## 5. DELIVERY

- a) The Supplier shall deliver all structures F.O.B. Manitoba Infrastructure Warehouse Stores, 1550 Dublin Avenue, Winnipeg, Manitoba, R3E 0L4.
  - b) All materials will be inspected by the Director of Traffic Engineering or his representative upon receipt, before acceptance by this Department.
  - c) The Director of Traffic Engineering or his representative shall be informed 48-hours in advance of the anticipated delivery date.
  - d) A Bill of Lading shall be prepared by the Supplier clearly identifying all components being delivered. A PDF copy of the Bill of Lading shall be forwarded to the Engineer when the load leaves the plant.
-

Specification For: Supply of Breakaway Bases for Traffic Signals and Pedestrian Corridor Structures

- e) All components shall be bundled separately for each type of breakaway base assembly. Each bundle shall be clearly marked with the corresponding Part No. of the breakaway base assembly.

#### 6. GUARANTEE

The Supplier shall guarantee all material against defects in quality or workmanship for a period of one year (1) after final acceptance by the Department.

#### 7. METHOD MEASUREMENT

- a) The Supply of Breakaway Bases for Traffic Signal and Pedestrian Corridor Structures will be measured on a unit basis for each type of base assembly. The number of units to be paid for shall be the total number of parts of each assembly supplied in accordance with this Specification and accepted by the Engineer.

#### 8. BASIS OF PAYMENT

- a) The Supply of Breakaway Bases for Traffic Signal and Pedestrian Corridor Structures will be paid for at the Contract Unit Price per Part No. for the "Items of Work" listed below, measured as specified herein, which price shall be payment in full for supplying all materials and performing all operations herein described, and all other terms incidental to the Work included in this Specification.

Items of Work:

Supply of Breakaway Bases:

1. Breakaway Base Assembly – Part No. BR1
2. Breakaway Base Assembly – Part No. BR2
3. Breakaway Base Assembly – Part No. BR3

"Original Signed By"

Approved: \_\_\_\_\_

Glenn Cuthbertson, P. Eng.  
Director, Traffic Engineering Branch