

SSS01a

SSS01b

SIGN POST	BASE POST	KEEPER PLT	SLIPBASE BOLTS & NUTS	SLIPBASE WASHER	SLIPBASE SHIMS	SLIPBASE TORQUE	SYSTEM
PWF11a	PWF11b	FPS01	FBX12b	FWC12b	FPP11a-b	7 [10 ±2]	SSS01a & SSS01b
PWF12a	PWF12b	FPS02	FBX16b	FWC16b	FPP12a-b	20 [30±5]	SSS01a & SSS01b
PWF13a	PWF13b	FPS03	FBX20b	FWC20b	FPP13a-b	35 [50±8]	SSS01a ONLY
PWF14a	PWF14b	FPS04	FBX24b	FWC24b	FPP14a-b	50 [65±10]	SSS01a ONLY
PWF15a	PWF15b	FPS05	FBX24b	FWC24b	FPP15a-b	50 [65±10]	SSS01a ONLY

RECTANGULAR UNI-DIRECTIONAL SLIPBASE

SSS01a-b

SHEET NO.	DATE:
1 OF 6	2006

INTENDED USE

The rectangular unidirectional slipbase sign support system can be used as a single-post (SSS01a) or double-post (SSS01b) sign support system where both posts are within a 2100mm span. Single post installations (SSS01a) may use any post up to a mass of 67 kg/m (PWF15a or smaller). Two-post systems with both posts within a 2100 mm span must use posts with a mass of 27 kg/m or less (PWF12a or smaller). Larger posts with masses up to 67 kg/m (PWF15a or smaller) may also be used as dual post systems but the posts must be more than 2100 mm apart. In no case, however, should the total mass of all the sign posts above the slip-plane and below the hinge be greater than 270 kg. Several versions of this system have been successfully crash tested with the base post embedded in concrete. The system is considered to meet the requirements of the 1985 AASHTO *Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals*.

COMPONENTS

The rectangular unidirectional slipbase sign support system consists of a base and sign post (PWF11a-15a), four bolts and nuts each with three washers, and a keeper plate. The sign post and base post are connected using four bolts and nuts with two washers under each head and one washer under each nut. The bolts pass through the keeper plate (FPSOI-05) fitted between the two slipbase plates. The keeper plate keeps the bolts from sliding out of the assembly in windy conditions. The bolts tear through the keeper plate during a collision allowing the sign post and base post to separate. The post may be leveled by inserting shims (FPP11a-15b) between the keeper plate and upper slipbase as required. The slipbase nuts, coated with a dry lubricant, must be tightened to the torque shown on the drawings to achieve proper performance.

The base-post assembly (PWF11b-15b) shall be embedded in a 20 MPa concrete with cement conforming to AASHTO M85 (ASTM C150) Type 11. The concrete foundation shall be reinforced with 8 vertical bars of Grade 400 MPa bars conforming to either AASHTO M284M (ASTM D3936D) or AASHTO M31M (ASTM A615M). The spiral reinforcing shall conform to either ASTM A306 or AASHTO M32 (ASTM A82) and shall have 2 flat turns at the top and bottom and a 150 mm pitch.

The fuse plate (FPP21-25 or FPP31-35) shall be attached to the expected impact side of the sign post (PWF11a-15a). When the slipping fuse plate is used (FPP21-25) the four bolts and nuts shall be tightened one third turn past snug using the turn-of-the-nut method. When the perforated fuse plate is used (FPP31-35) the bolts must be at least snug. There should be a washer under both the head and nut. The fuse plate is designed to either slip (FPP21-25) or fracture (FPP31-35) allowing the compression flange of the sign post (PWF11a-15a) to act as a hinge. The hinge mechanism allows the post to rotate upward away from the impacting vehicle. The fuse plate assembly is only required for the two-post system (SSS01b).

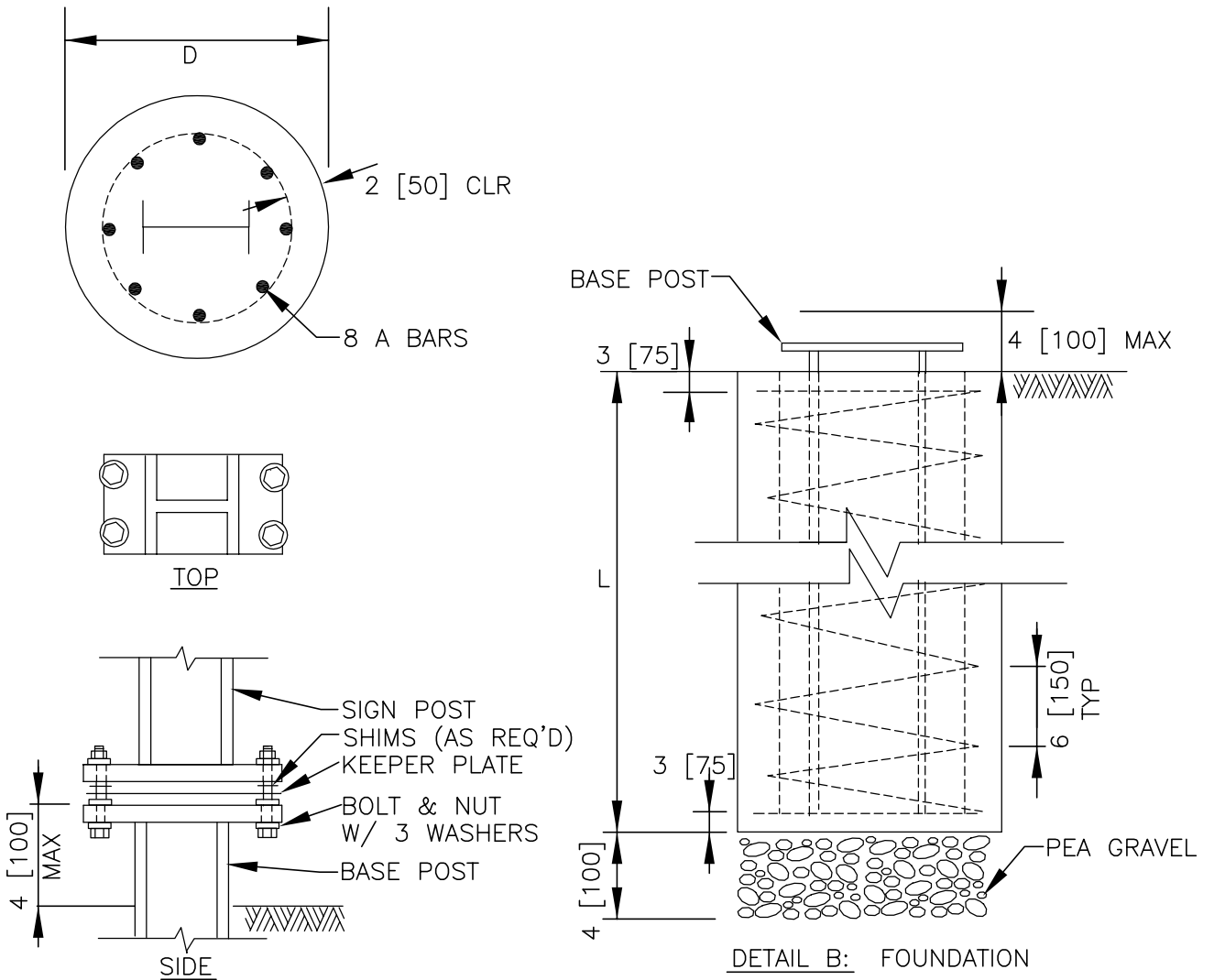
RECTANGULAR UNI-DIRECTIONAL SLIPBASE

SSS01a-b

SHEET NO.

DATE

2 of 6



DETAIL A: SLIPBASE ASSEMBLY

SIGN POST	D	L	BAR DIA
PWF11a	18 [460]	36 [920]	NONE
PWF12a	24 [610]	48 [1220]	½ [15]
PWF13a	24 [610]	72 [1830]	¾ [20]
PWF14a	24 [610]	96 [2440]	1¼ [30]
PWF15a	36 [920]	96 [2440]	1¼ [30]

RECTANGULAR UNI-DIRECTIONAL SLIPBASE

SSS01a-b

SHEET NO.

DATE:

3 OF 6

2006

REFERENCES

L.A. Staron, "Breakaway Sign Supports," Geometric and roadside Design Acceptance Letter SS-5, Federal Highway Administration, January 29, 1987.

L.A. Staron, "Breakway sign Supports," Geometric and roadside Design Acceptance Letter SS-25, Federal Highway Administration, June 4, 1991.

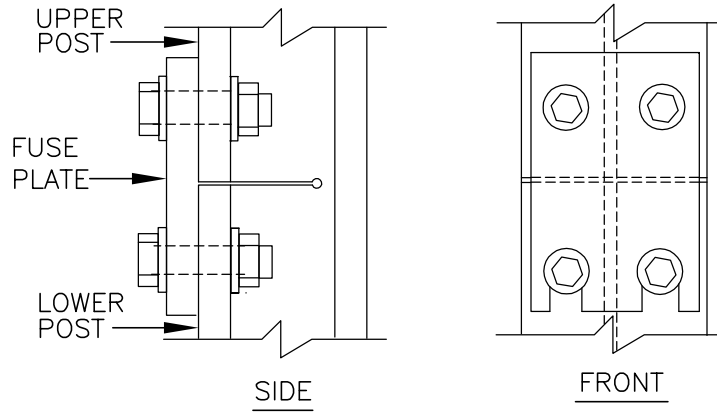
RECTANGULAR UNI-DIRECTIONAL SLIPBASE

SSS01a-b

SHEET NO.

DATE

4 of 6



DETAIL C: FUSE PLATE ASSEMBLY

SIGN POST	FUSE PLATE	FUSE PLT BOLT & NUT	FUSE PLT WASHERS
PWF11a	FPP21 or FPP31	FBX12b	FWC12b
PWF12a	FPP22 or FPP32	FBX12b	FWC12b
PWF13a	FPP23 or FPP33	FBX16b	FWC16b
PWF14a	FPP24 or FPP34	FBX20b	FWC20b
PWF15a	FPP25 or FPP35	FBX22b	FWC22b

RECTANGULAR UNI-DIRECTIONAL SLIPBASE

SSS01a-b

SHEET NO.

DATE:

5 OF 6

2006

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RECTANGULAR UNI-DIRECTIONAL SLIPBASE

SSS01a-b

SHEET NO.

DATE

6 of 6