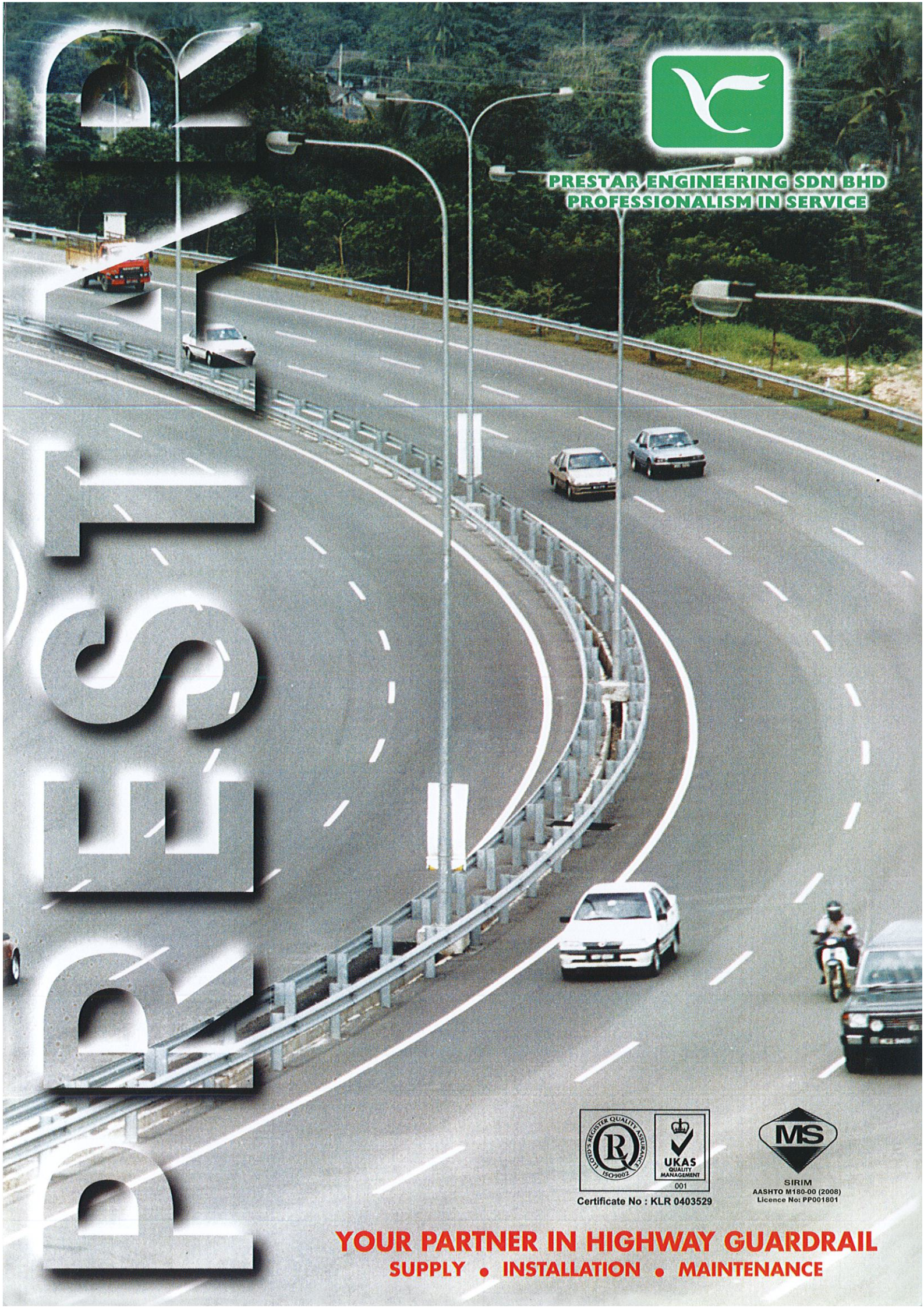




**PRESTAR ENGINEERING SDN BHD**  
**PROFESSIONALISM IN SERVICE**



PRESTAR



Certificate No : KLR 0403529



SIRIM  
AASHTO M180-00 (2008)  
Licence No: PP001801

**YOUR PARTNER IN HIGHWAY GUARDRAIL**  
**SUPPLY • INSTALLATION • MAINTENANCE**



## COMPANY INTRODUCTION

**PRESTAR ENGINEERING SDN BHD (PESB)** is a fully integrated manufacturer and supplier of highway guardrail and accessories. Our highway guardrail and accessories are manufactured strictly conforming to the design usage and application with the latest engineering know how and is certified by SIRIM.

As an affiliated company to **PRESTAR RESOURCES BHD**, PESB have the access to the various facilities and technical support which further enhance the capability to undertake all aspect of project involving highway guardrail and accessories. The range of facilities include hot dip galvanising services and metal fabrication equipment such as press and forming machines etc.

The highway guardrail and accessories are produced at the new factory in Rawang Industrial Estate under the brand name PRESTAR and is in compliance with

**American Association Of State Highway & Transportation Official (AASHTO)**

**Standard Industry Research Institute Of Malaysia (SIRIM)**

**Malaysia Public Work Department Standard (JKR)**

The product galvanising finish is in compliance with





## HIGHWAY GUARDRAIL PRODUCT FEATURES & APPLICATION

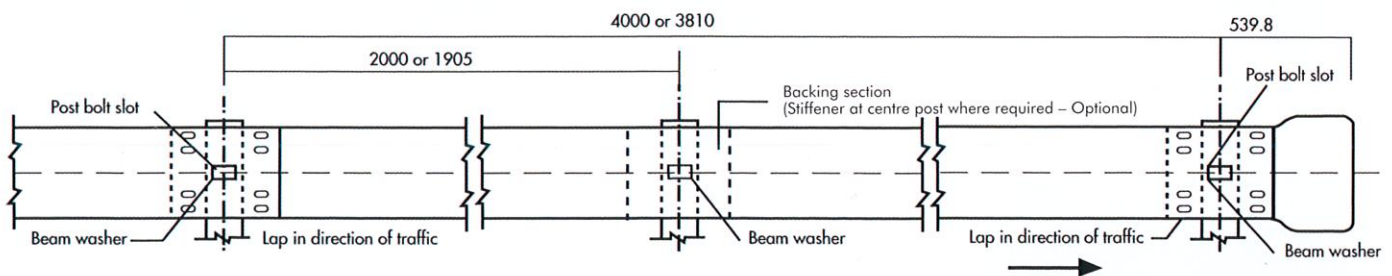
- \* To Provide Railing Protection To Motor Vehicle At Dangerous Road Area Such As
  - Steep Slope
  - Obscure Curve/Bend
  - High Embankment
  - Sharp Corner
- \* To Absorb Sudden Impact During Collision Thus Minimise Injury To Vehicle And Passenger.
- \* To Act As A Directional Railing For Vehicle Moving In The Right Direction.
- \* To Act As A Median Barrier For Avoiding Head On Collision.
- \* To Act As A Protective Barrier For Pedestrian Along The High Way.

### SPECIFICATION AND TECHNICAL DATA

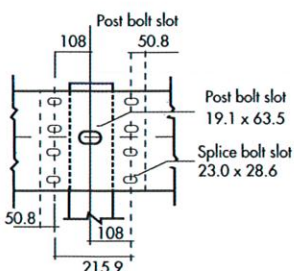
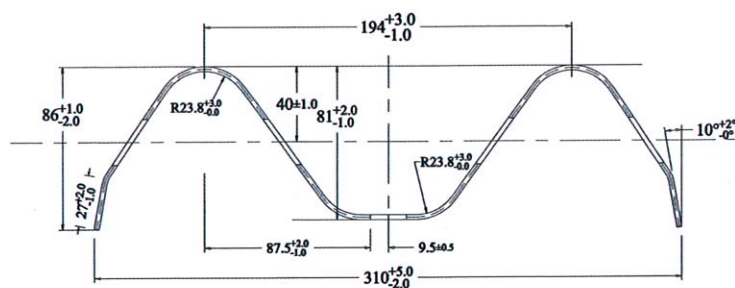
1. Base Metal specification comply to AASHTO M 180-00 (2008)
  - Minimum Yield Strength : 345 N/mm<sup>2</sup>
  - Minimum Tensile Strength : 483 N/mm<sup>2</sup>
  - Minimum Elongation : 15%
2. Galvanising specification comply to:
  - AASHTO DESIGNATION: M 111M/ M 111-09
  - BS EN ISO 1461: 2009
3. PRESTAR dimension comply to AASHTO M 180-00 (2008)

TYPE	EFFECTIVE LENGTH (MM)	OVERALL LENGTH (MM)	NOMINAL THICKNESS (MM)
PE 1	3810	4128	2.67
PE 2	4000	4318	2.67
PE 3	3810	4128	3.00
PE 4	4000	4318	3.00

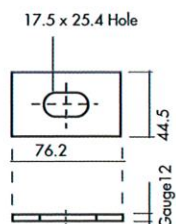
(Tolerance allowable under specified thickness)



SECTION THROUGH BEAM



BEAM SPLICE



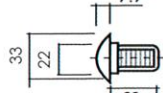
SPLICE WASHER



POST BOLT



HEX BOLT



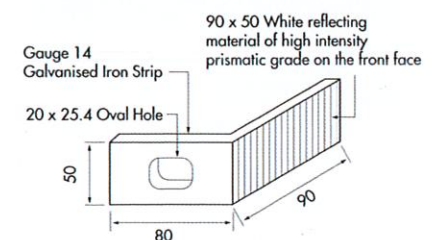
SPLICE BOLT & NUT



HEX NUT



ROUND WASHER

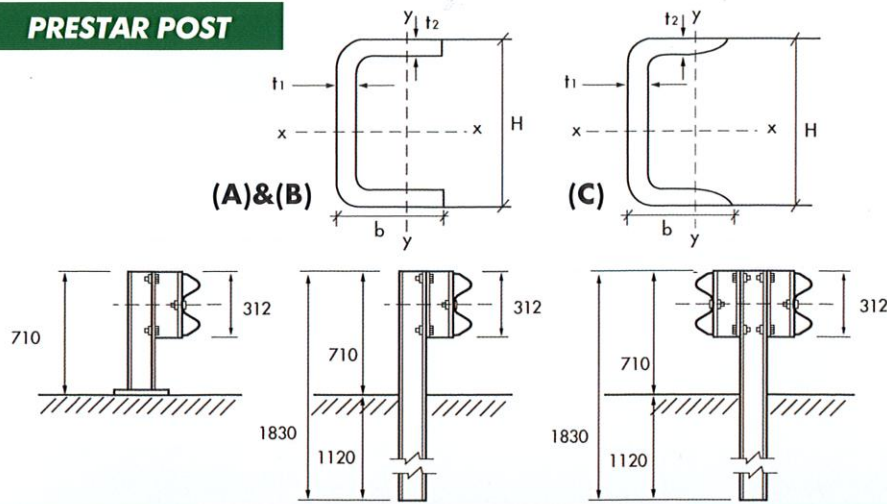


DELINEATOR STRIP

NOTE : All dimension are subject to manufacturer's design tolerance.  
All dimension are in millimetre  
SIRIM LICENSE NO : PP001801

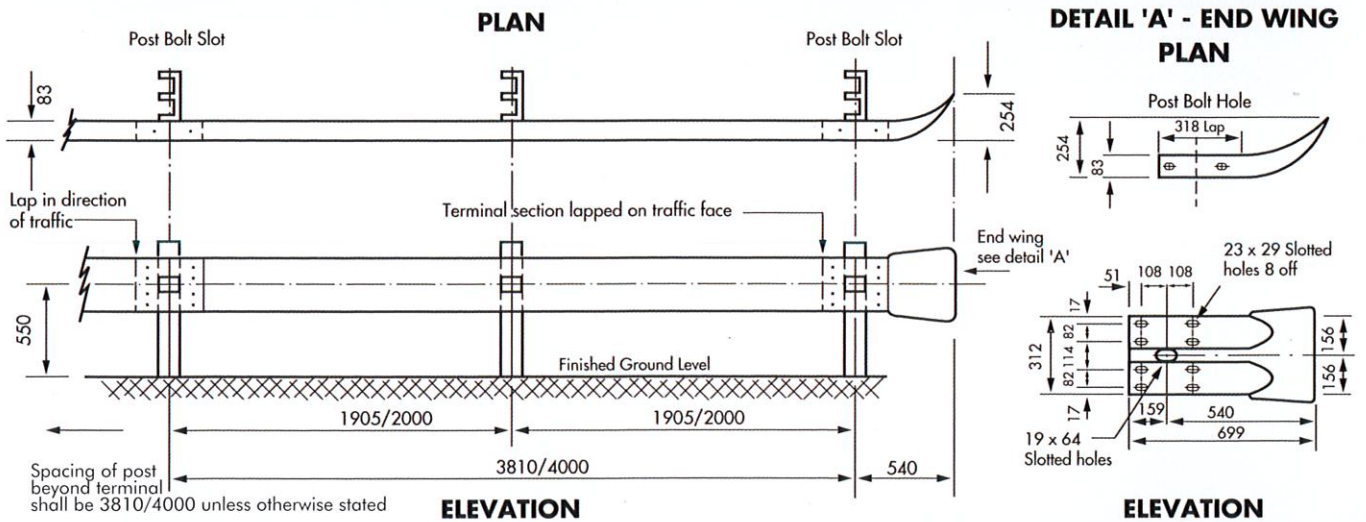


## PRESTAR POST

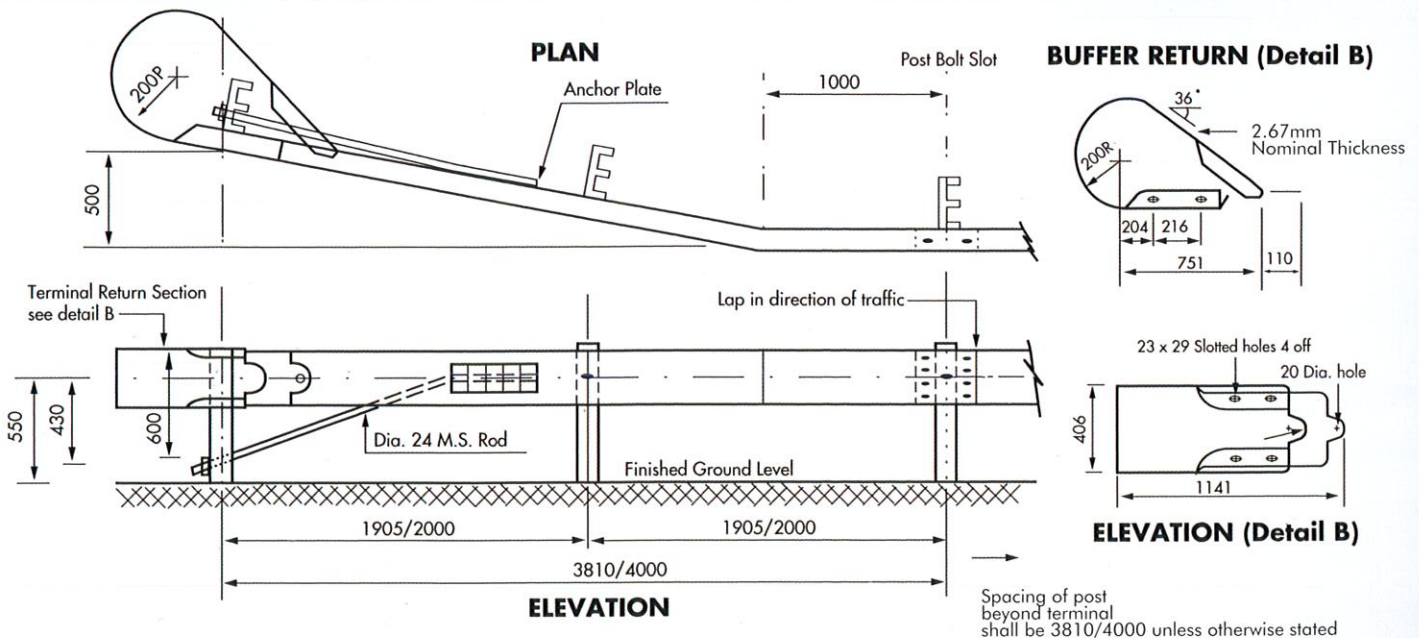


TYPE	H x b x t1 x t2 (mm)	Unit Weight (kg/m)	Section Area (cm <sup>2</sup> )	Moment of Inertia		Section Modulus	
				Ix (cm <sup>4</sup> )	Iy (cm <sup>4</sup> )	Sx (cm <sup>3</sup> )	Sy (cm <sup>3</sup> )
A	C178 x 76 x 6 x 6	14.3	19.08	903.5	102.5	101.5	52.0
B	C150 x 76 x 6 x 6	13.2	17.50	610.0	98.0	80.3	45.3
C	C125 x 65 x 6 x 8	13.4	17.11	425	65.5	68.0	14.4

## TERMINAL UNIT ( TYPE 1 )



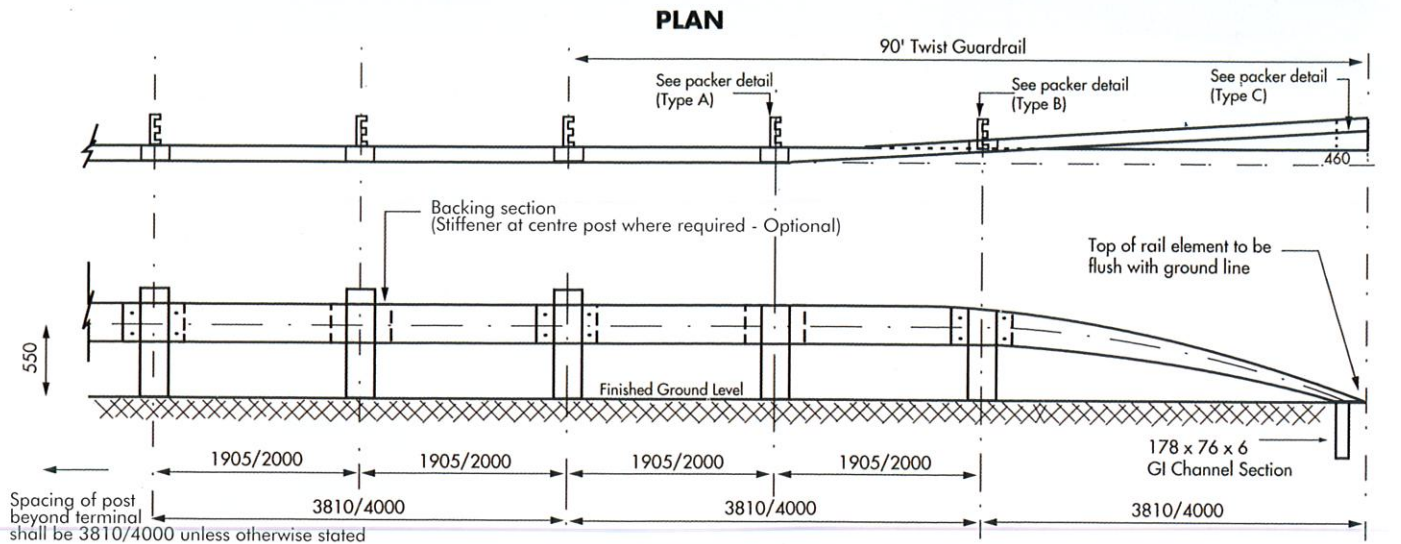
## TERMINAL ANCHORAGE UNIT OR FLARE END ( TYPE 2 )



Spacing of post beyond terminal shall be 3810/4000 unless otherwise stated



## 90° TWIST TERMINAL ANCHORAGE UNIT ( TYPE 3 )

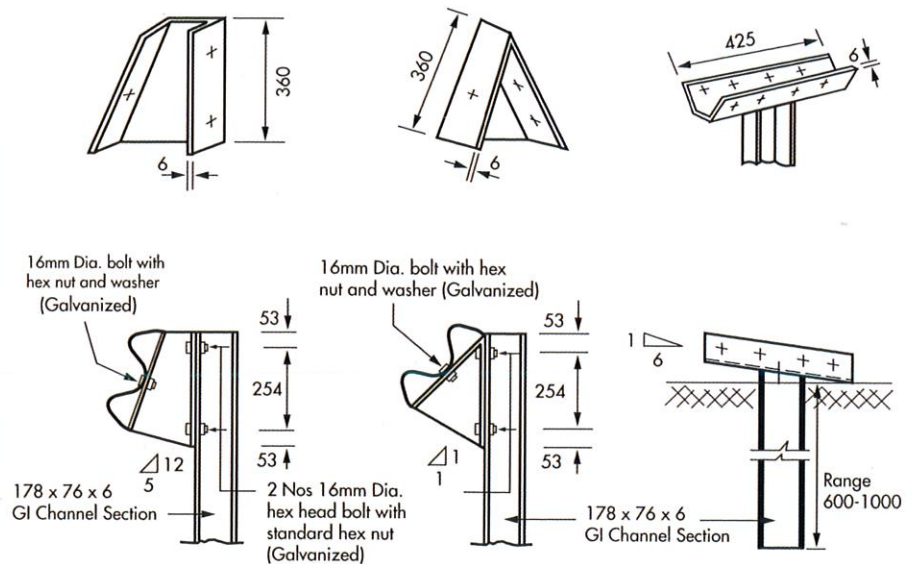


Formula 1, Sepang



Type 2 Complete Set

### ELEVATION

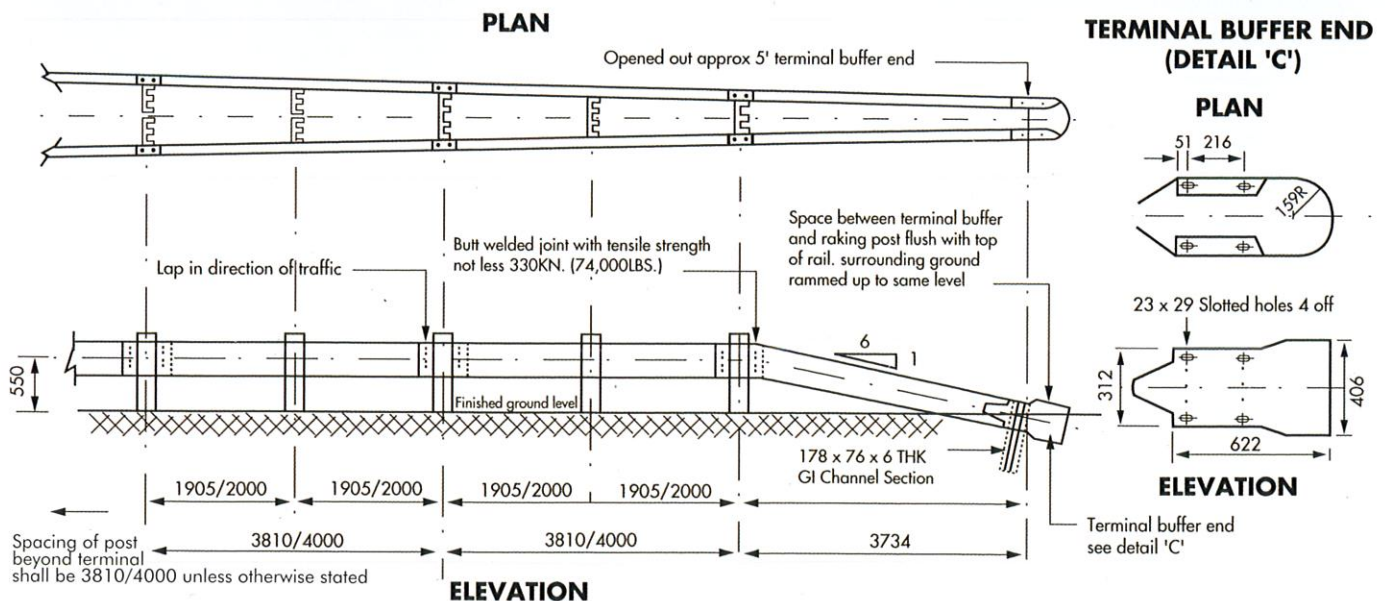


PACKER (TYPE A)

PACKER (TYPE B)

PACKER (TYPE C)

## TERMINAL SECTION 1:6 ( TYPE 4 )





- \* To Provide Extra Railing Protection To Motor Vehicle At Dangerous Road Area Such As
  - Steep Slope
  - Obscure Curve/Bend
  - High Embankment
  - Sharp Corner
- \* To Absorb Impact During Collision Thus Minimise Injury To Vehicle And Passenger.
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- Minimum Tensile Strength : 483 N/mm <sup>2</sup>	- BS EN ISO 1461: 2009
- Minimum Elongation : 15%	3. PRESTAR dimension comply to AASHTO M 180-00 (2008)

TYPE	EFFECTION LENGTH (MM)	OVERALL LENGTH (MM)	NOMINAL THICKNESS (MM)
PE 5	4000	4318	2.67

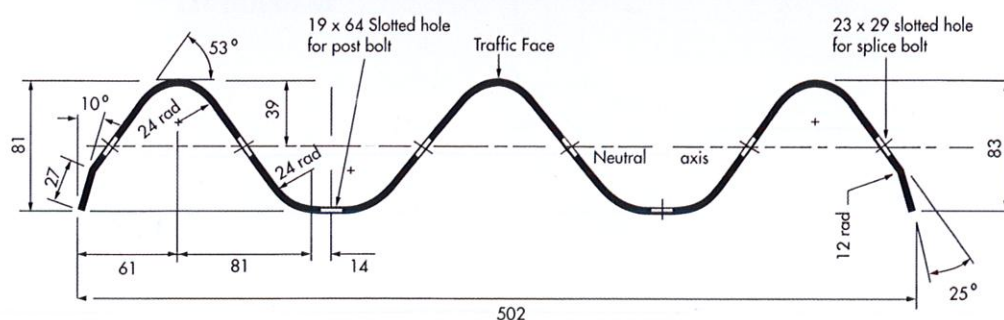
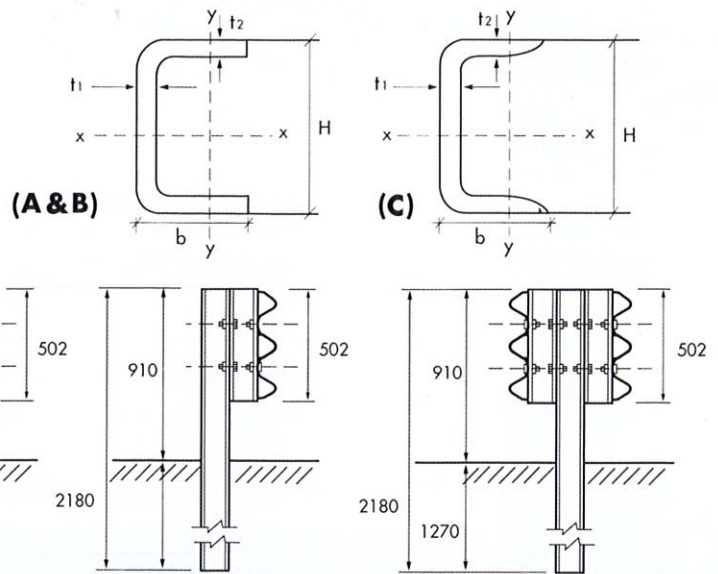
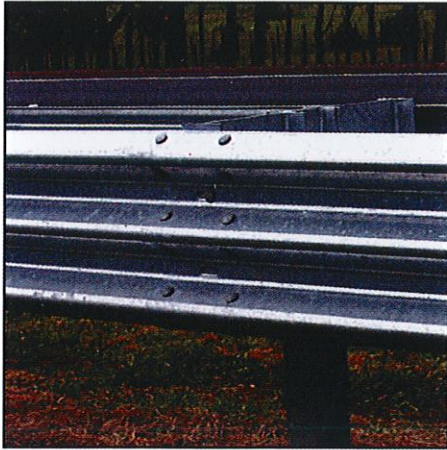


Figure 1 is a technical drawing showing the elevation view of the bridge deck. It illustrates the location of the beam washers and splice bolts. The drawing includes dimensions for the overall width (2000 units for the main section, 160 units for the end sections) and height (502 units). It also shows the spacing between the beam washers (108 units) and the splice bolts (108 units). The drawing indicates the location of the beam washers (19 x 64 slotted hole for post bolt) and the splice bolts (23 x 29 slotted hole for splice bolts). The drawing also shows the location of optional posts.

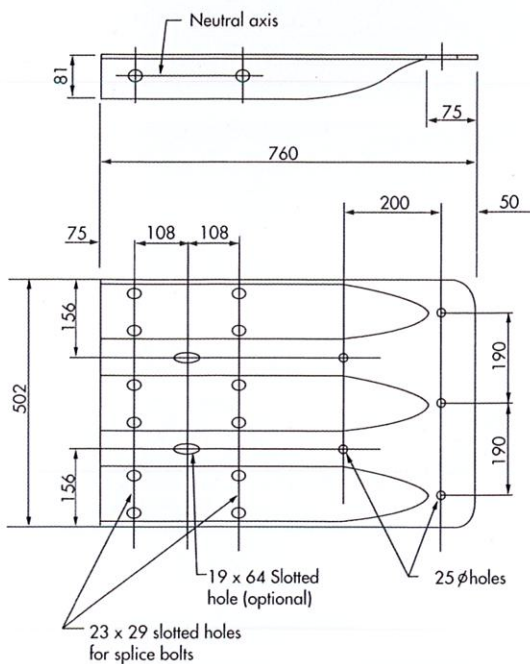
( All dimension are subject to manufacture tolerance )  
All dimension are in mm



## PRESTAR POST

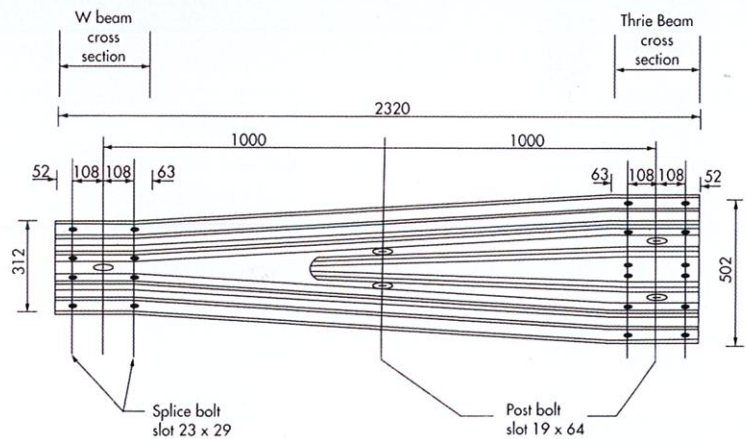


TYPE	H x b x t1 x t2 (mm)	Unit Weight (kg/m)	Section Area (cm <sup>2</sup> )	Moment of Inertia		Section Modulus	
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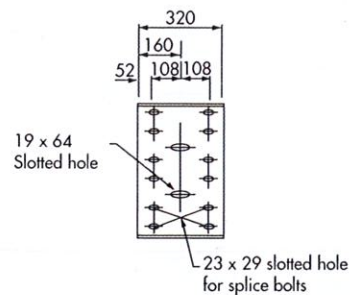


### THRIE BEAM TERMINAL CONNECTOR

**PRESTAR ENGINEERING SDN BHD** (307178-A)



### W BEAM TO THRIE BEAM TRANSITION RAIL



### BRIDGE ENDPST CONNECTION BRACKET

#### - Factory Address -

Lot 1298, Rawang Industrial Estate, 16<sup>1</sup>/<sub>2</sub> Miles, Jalan Ipoh  
48000 Rawang, Selangor Darul Ehsan, MALAYSIA  
Tel : 603 - 6092 5200 (Ext.192) Tel Fax : 603 - 6093 4301



## **PRESTAR GROUP OF COMPANIES**



**PRESTAR RESOURCES BERHAD (PRB)**

We are a group of companies specializing in the manufacture and export of steel related products from Malaysia. Our integrated facilities include highway guardrails, steel service center, steel pipes factory, hot-dip galvanizing plant and PVC doors manufacturing plant.



**PRESTAR MANUFACTURING SDN BHD (PMSB)**

We are involved in the group's core activity of manufacturing material handling products such as Wheelbarrows, Hand Trucks, Industrial Castors, Industrial Wheels. Besides supplying to domestic market, our manufactured products are exported overseas substantially to the United States, Japan, Europe, ASEAN Region, the Middle East etc.



**PRESTAR ENGINEERING SDN BHD (PESB)**

We are the manufacturer of Highway Guardrail, Posts, Packers, Bridge Railing and steel related product to the major highway project in Malaysia.

**PRESTAR ENGINEERING SDN BHD** (307178-A)

**- Factory Address -**

Lot 1298, Rawang Industrial Estate, 16<sup>1</sup>/<sub>2</sub> Miles, Jalan Ipoh  
48000 Rawang, Selangor Darul Ehsan, MALAYSIA  
Tel : 603 - 6092 5200 (Ext.192) Tel Fax : 603 - 6093 4301