PENSWASTAAN PENYENGGARAAN
JALAN PERSEKUTUAN
SEMENANJUNG MALAYSIA

PROJECT QUALITY PLAN

POST DELINEATORS

Lokasi : .....

LOGO
SYARIKAT
KONSESI

CAWANGAN SENGGARA FASILITI JALAN
IBU PEJABAT JKR ALAYSIA
KUALA LUMPUR

ALAMAT SYARIKAT

JKR	**PROJECT QUALITY PLAN**	Reference No. :
	WORK INSTRUCTION MANUAL **POST DELINEATORS**	Revision No. :

1.0 OBJECTIVE

To outline the procedure by which post delineators shall be installed as per Arahan Teknik (Jalan) 2D/85 - Manual on Traffic Control Devices: Road Marking & Delineation.

2.0 SCOPE

This procedure shall be applicable for the installation of post delineators. The scope of work shall include:

a) Supply all necessary materials;
b) Provide all labours and equipment necessary to execute the work; and
c) Execute the work in accordance to drawings and specifications.

3.0 DEFINITION

Post delineators are reflector units mounted on suitable supports and very effective aids for nightime driving. The reflector unit which shall be of high intensity retro-reflective sheetings, are considered to be guide markings rather than warning devices and should never be a substitute for a proper warning sign. The purpose of delineators is to outline the edge of the roadway and to indicate the roadway alignment. The post shall either be made of timber, metal pipes or other materials as approved by the S.O.

4.0 PROCEDURES

4.1 Upon receiving Work Order from the S.O., the Project Manager shall prepare and submit Project Quality Plan (PQP) to the S.O. for approval.

4.2 Upon approval of the PQP, the Project Manager shall proceed with site possession, mobilization of plant and machineries, site demarcation and installation of the post delineators as per requirements.

4.3 Traffic control and safety shall be in accordance with the approved Traffic Management Plan (TMP).

4.4 The test certificate shall be submitted to S.O. for approval.

4.5 Installation of the post delineators shall include:

a. Digging holes on the ground to place 500mm of the post below ground level in accordance to Figure 1.

b. Setting of the alignment, spacing between posts and the arrangement of the colour of the reflector in accordance to Table 1 and Figure 2.

c. Providing a distance from the edge of pavements or paved shoulders between 0.6m to 1.8m depending on the site condition (refer Figure 3).

4.6 Upon completion of work, final inspection/ measurement shall be carried out jointly with S.O. representatives.

4.7 Refer to Flow Chart on page 7.

5.0 PLANT AND EQUIPMENT

i. Lorry
ii. Hand Auger
iii. Wheel Barrow
iv. Thrumeter
v. Spade

6.0 REFERENCES

i. Standard Specification for Road Works (JKR/SPJ/1988).
ii. Arahan Teknik (Jalan) 2D/85 - Manual on Traffic Control Devices: Road Marking & Delineation.
iii. Arahan Teknik (Jalan) 2C/85 - Manual on Traffic Control Devices: Temporary Signs and Work Zones Control.

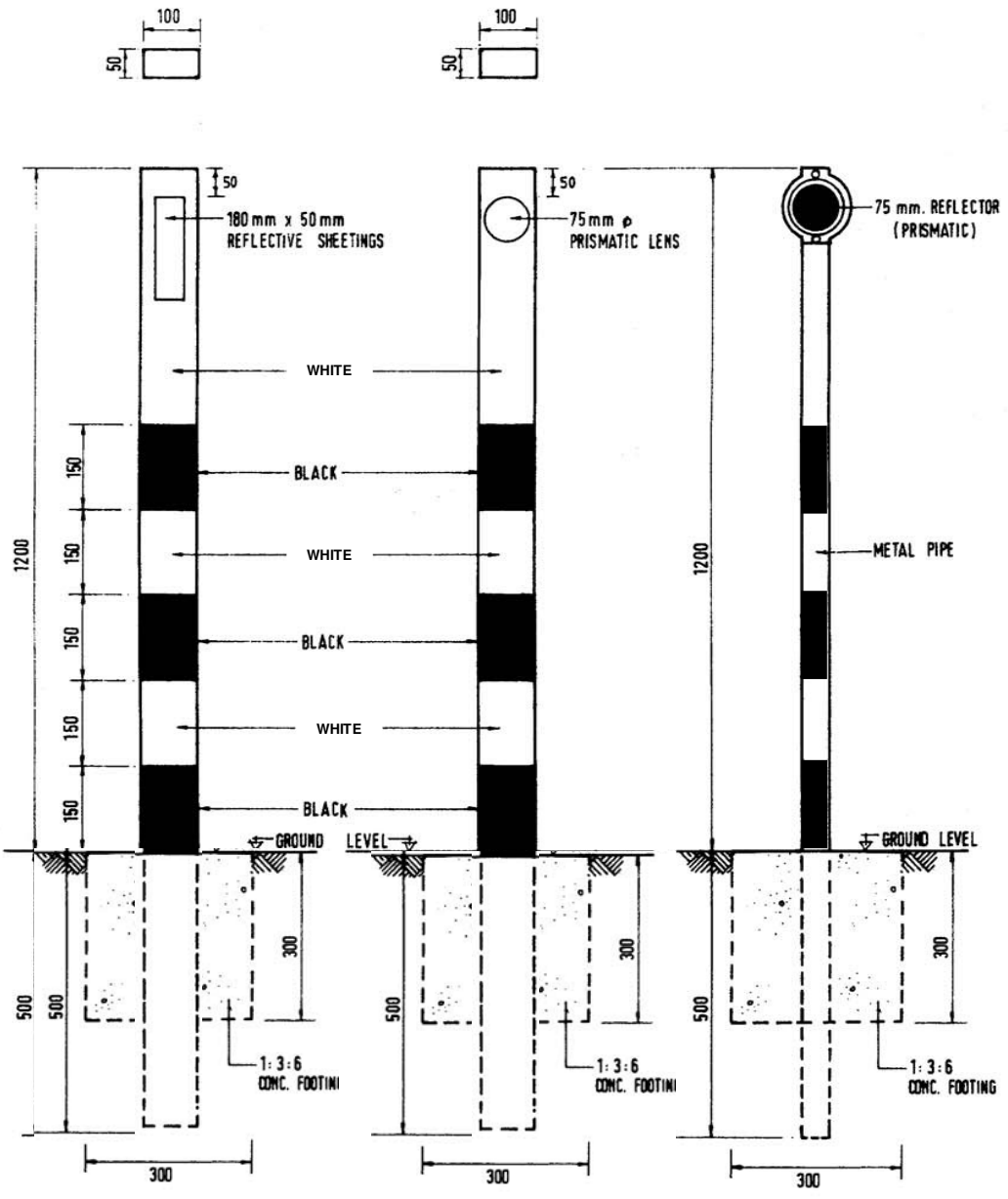


FIG 1: DETAILS OF POST DELINEATORS (DIMENSIONS ARE IN MILLIMETRES)

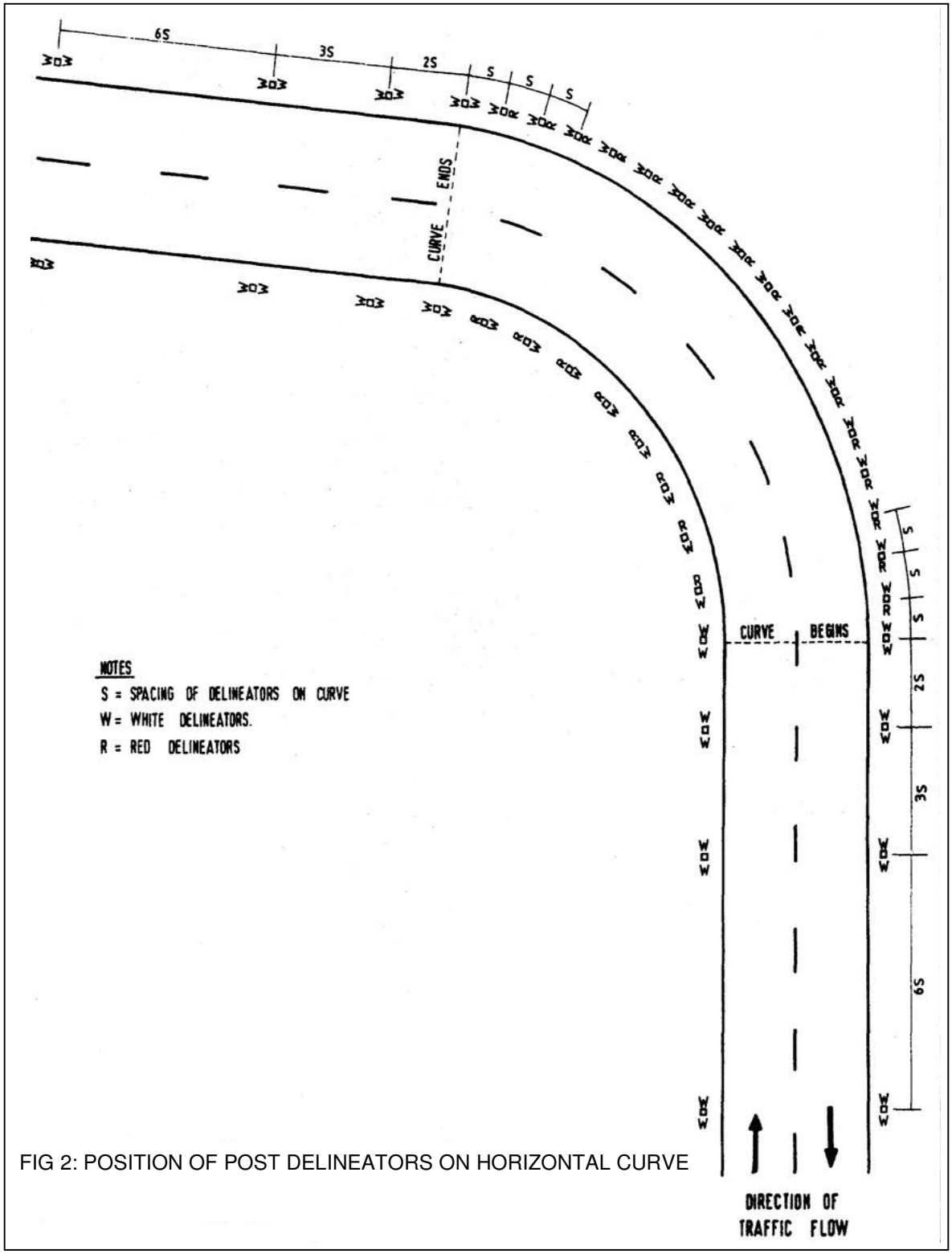


FIG 2: POSITION OF POST DELINEATORS ON HORIZONTAL CURVE

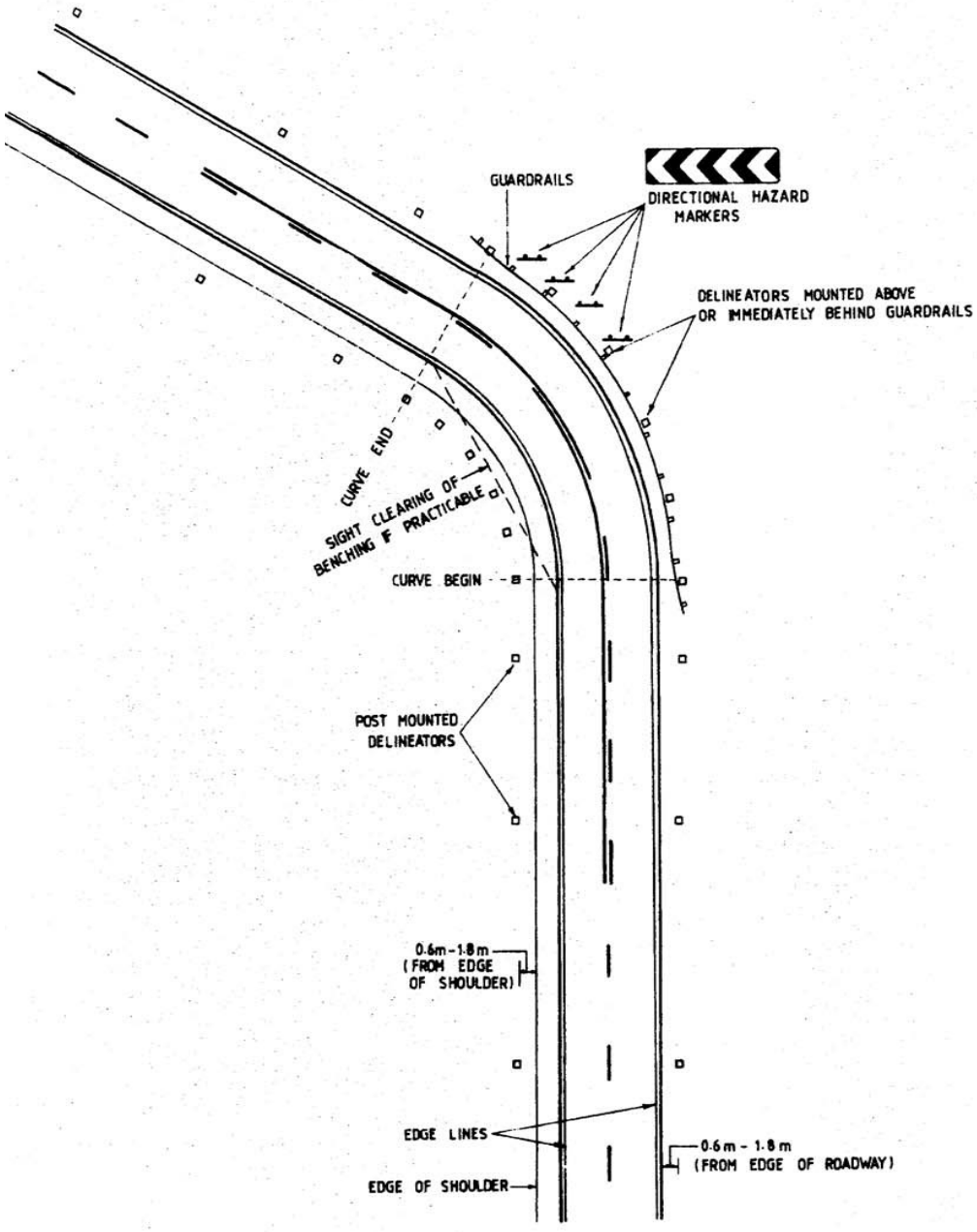
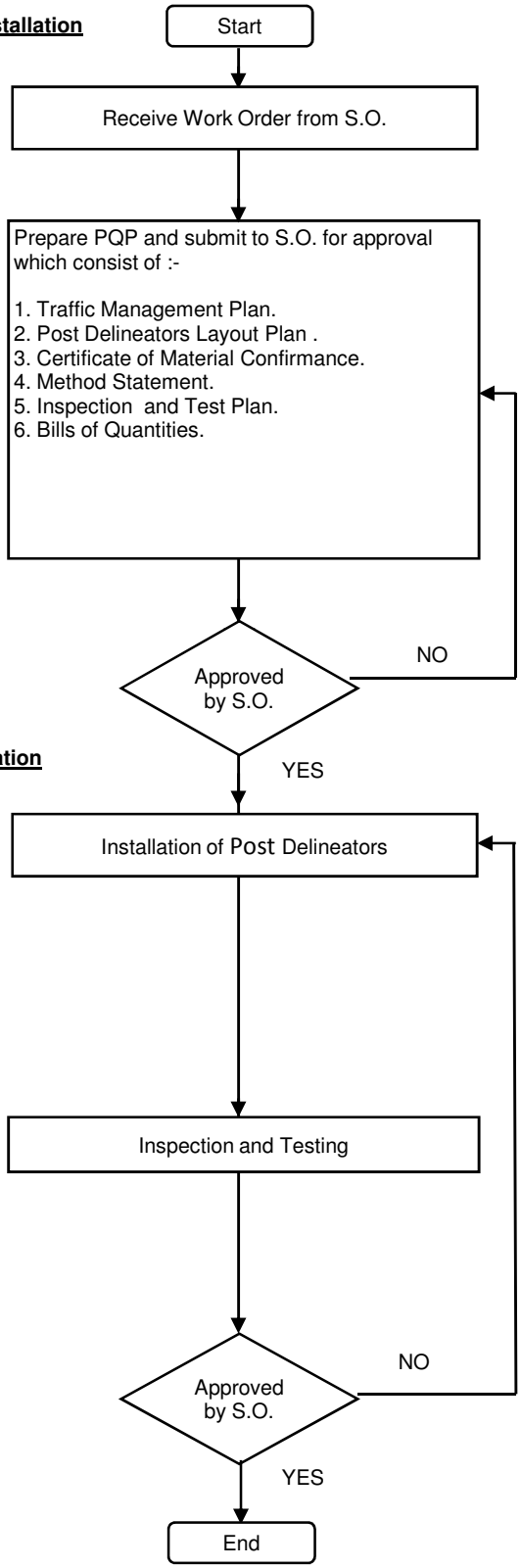


FIG 3: TYPICAL DELINEATOR INSTALLATION

Table 1 : Suggested Maximum Spacing for Road Delineators on Horizontal curve

Degree of Curve (Degrees)	Radius of Curve (Metres)	Spacing On Curve , S (Metres)
114.6	15	6
38.2	45	9
28.6	60	11
22.9	75	12
19.1	90	15
14.3	125	17
11.5	150	20
9.5	180	21
8.2	215	23
7.2	240	25
6.4	275	26
5.7	300	27

	PROJECT QUALITY PLAN	Reference No. :
	WORK INSTRUCTION MANUAL **POST DELINEATORS**	Revision No. :

ACTIVITY	RESPONSIBILITY	REFERENCE
A) Pre-Installation 	Project Manager Project Manager Project Manager S.O. Project Manager Project Manager S.O. Project Manager S.O.	Work Order Project Quality Plan Inspection and Test Plan

JKR	**PROJECT QUALITY PLAN**	Reference No. :
	INSPECTION AND TEST PLAN **DELINEATOR POSTS**	Revision No. :

LEGEND	
W	WITNESSED
A	APPROVED
C	CONFIRMED
V	VERIFIED
P	PREPARED

ITEM	DESCRIPTION	REQUIREMENT / STANDARD	INSPECTION	TEST	COMPLIANCE / CRITERIA	FREQUENCY OF TEST	LAB TECHNICIAN / SUPERVISOR	TECHNICAL EXECUTIVE / ENGINEER	PROJECT MANAGER	S.O.
1.0	**Traffic Management**									
1.1	Traffic control at worksite	Arahan Teknik (Jalan) 2C/85	Visual		Approved TMP		P	V	C	W
2.0	**Demarcation**									
2.1	Setting out and demarcation		Visual		Approved Layout Plan		P	V	C	W
3.0	**Material**									
3.1	**Post**									
3.1.1	Material	Project Quality Plan: Delineator Post (Figure 1)			Manufacturer's certificate	Once per project	P	V	C	W
3.1.2	Dimension		Measurement		Project Quality Plan: Delineator Post (Figure 1)					
3.1.3	Colour		Visual		Project Quality Plan: Delineator Post (Figure 1)					
3.2	**Reflector Unit**									
3.2.1	Dimension	Project Quality Plan: Delineator Post (Figure 1)	Measurement		Project Quality Plan: Delineator Post (Figure 1)	Once per project	P	V	C	W
3.2.2	Reflective Sheeting		Retro-reflectivity	Retro-reflective Test	Manufacturer's test certificate - High Intensity					
4.0	**Installation**									
4.1	Interval (Distance)	Arahan Teknik (Jalan) 2D /85 Section 5.0	Measurement	Length	Approved Layout Plan	Once per project	P	V	C	W

NOTE : IF DIFFERENT TYPES OF MATERIAL IS USED OTHER THAN SPECIFIED BY THIS DOCUMENT, THE ITP SHALL BE BASED ON MANUFACTURERS' REQUIREMENTS AND SPECIFICATIONS.