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02. 04. 1014


**SUBJECT: DESIGN STANDARDS FOR TOURISM  
AND FARM TO MARKET ROADS**

No. 11  
Series of 2014 02.08.13  
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Design Element	Requirements	
	Tourism Roads (Figure 1)	Farm to Market Roads (Figures 2 & 3)
Pavement Type	Portland Cement Concrete Pavement (PCCP)	PCCP
Pavement Width	Minimum of 6.1 m for two lanes	<p>Fig. 2: Minimum of 4.0m for two - lanes</p> <ul style="list-style-type: none"> <li>Average daily traffic of less than 200</li> </ul> <p>Fig. 3: Minimum of 5.0m for two-lanes</p> <ul style="list-style-type: none"> <li>Average daily traffic between 200-400</li> </ul>
Pavement Thickness	Minimum of 230mm (9 inches) (Higher thickness of pavement may be adopted but shall be verified from pavement design analysis using AASHTO method as contained in the DPWH Design Guidelines Criteria and Standards considering the latest Annual Average Daily Traffic and Axle Loading).	Minimum of 150mm (6 inches) (Higher thickness of pavement may be adopted but shall be verified from pavement design analysis using AASHTO method as contained in the DPWH Design Guidelines Criteria and Standards considering the latest Annual Average Daily Traffic and Axle Loading).
Shoulder <ul style="list-style-type: none"> <li>Width</li> <li>Material</li> </ul>	<ul style="list-style-type: none"> <li>Minimum of 1.5m</li> <li>Minimum of gravel surfacing</li> </ul>	<ul style="list-style-type: none"> <li>Minimum of 1.5 m</li> <li>Minimum of gravel surfacing</li> </ul>
Roadway Cross Slope	1.50 % for PCCP	1.50% for PCCP
Shoulder Cross Slope	3.0% for Gravel Surfacing	3.0% Gravel Surfacing
Radius of Horizontal Curve	Minimum of 50m	Minimum of 30 m
Length of Tangent between reverse curves.	Minimum length of 30m	Minimum length of 30 m

	<b>Tourism Roads (Figure 1)</b>	<b>Farm to Market Roads (Figures 2 &amp; 3)</b>
<b>Length of Vertical Curve</b>	Minimum length of 60m	Minimum of length of 60 m
<b>Design Speed</b>	<ul style="list-style-type: none"> <li>60 km/hr for flat terrain</li> <li>40 km/hr for rolling terrain</li> <li>30km/hr for mountainous terrain</li> </ul>	30 km/hr for all terrain type
<b>Longitudinal Grade</b>	Minimum of 0.50% on cut section and maximum of 12% on cut/fill section	Minimum of 0.50% on cut section and maximum of 12% on cut/fill section
<b>Side Slope Ratio (H:V)</b>	<ul style="list-style-type: none"> <li>Cut slope of 1.5:1 to 1:1 for common materials</li> <li>Cut slope of 0.5:1 to 1:1 for rippable rock</li> <li>Cut slope of 0.25:1 to 0.5:1 for hard/solid rock</li> <li>Minimum fill slope of 1.5:1</li> </ul>	<ul style="list-style-type: none"> <li>Cut slope of 1.5:1 to 1:1 for common materials</li> <li>Cut slope of 0.5:1 to 1:1 for rippable rock</li> <li>Cut slope of 0.25:1 to 0.5:1 for hard/solid rock</li> <li>Minimum fill slope of 1.5:1</li> </ul>
<b>Road Drainage</b>	<ul style="list-style-type: none"> <li>Box culvert: 25 - year flood with sufficient freeboard to contain the 50- year flood</li> <li>Pipe culvert: 15 - year flood with sufficient freeboard to contain the 25-year flood</li> <li>Minimum size of 910 mm in diameter.</li> </ul>	<ul style="list-style-type: none"> <li>Box culvert: 25 - year flood with sufficient freeboard to contain the 50- year flood</li> <li>Pipe culvert: 15 - year flood with sufficient freeboard to contain the 25-year flood</li> <li>Minimum size of 910 mm in diameter.</li> </ul>
<b>Slope protection</b>	As needed	As needed
<b>Road Safety Devices including Pavement Markings</b>	Refer to DPWH Highway Safety Design Standards, Part 2 (May 2012)	Refer to DPWH Highway Safety Design Standards, Part 2 (May 2012)
<b>Accessibility Requirements for Persons with Disability</b>	As needed	As needed
<b>Bridges</b>	<ul style="list-style-type: none"> <li>Permanent structures (concrete or steel)</li> <li>Structural design based on AASHTO HS20-44, using 0.4g ground acceleration coefficient for seismic analysis and 50- year flood frequency for hydraulic analysis.</li> <li>Carriageway Width = 6.70m</li> </ul>	<ul style="list-style-type: none"> <li>Permanent structures (concrete or steel)</li> <li>Structural design based on AASHTO HS15-44, using 0.4g ground acceleration coefficient for seismic analysis and 50- year flood frequency for hydraulic analysis.</li> <li>Carriageway Width: <ul style="list-style-type: none"> <li>4.60m (for 4.0m roadway width Fig. 2)</li> <li>5.60m (for 5.0m roadway width – Fig. 3)</li> </ul> </li> </ul>

This Order shall amend/modify Department Order No. 46, s. 2012 and other previous issuances inconsistent herewith and shall take effect immediately.

  
**ROGELIO L. SINGSON**  
 Secretary

Department of Public Works and Highways  
 Office of the Secretary



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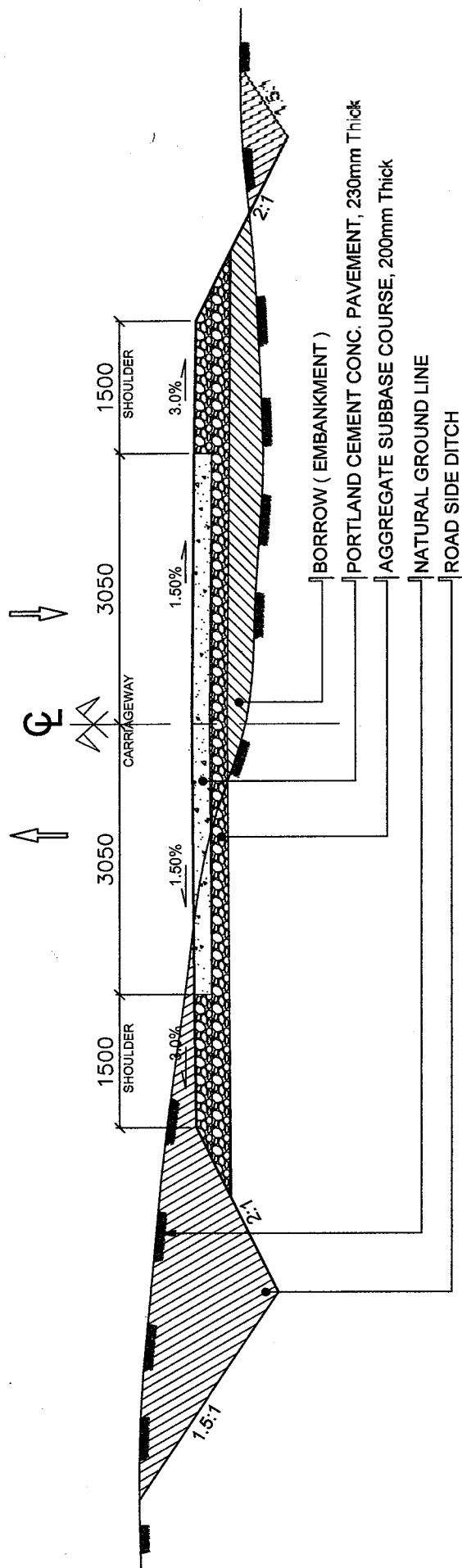


FIGURE 1; TYPICAL ROADWAY SECTION

## TOURISM ROAD

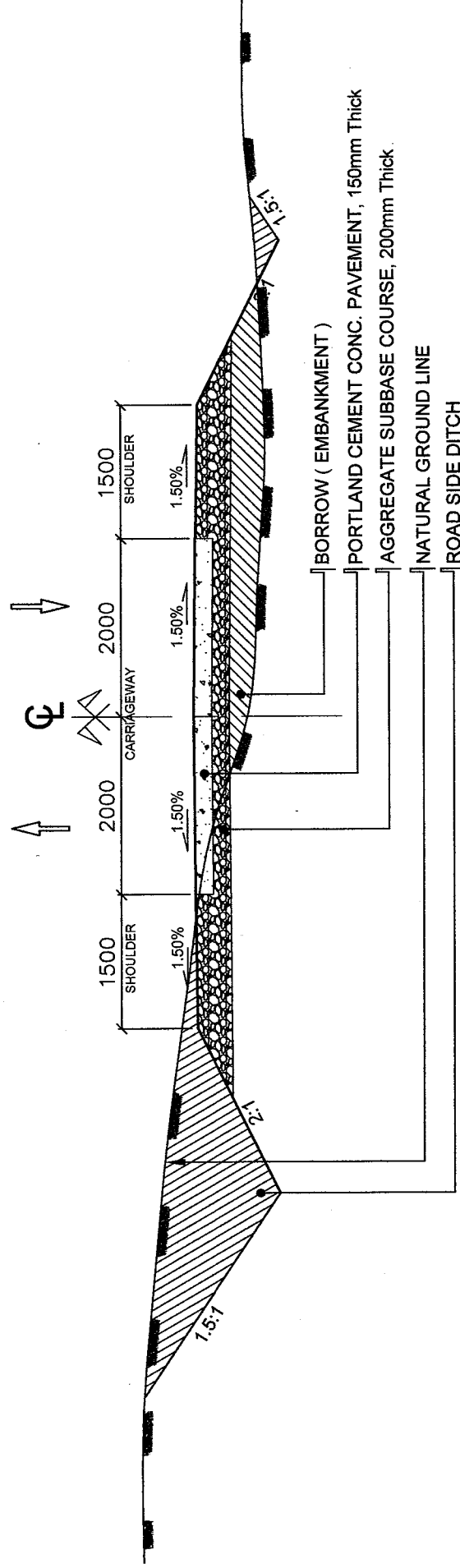


FIGURE 2; TYPICAL ROADWAY SECTION

## FARM TO MARKET ROAD

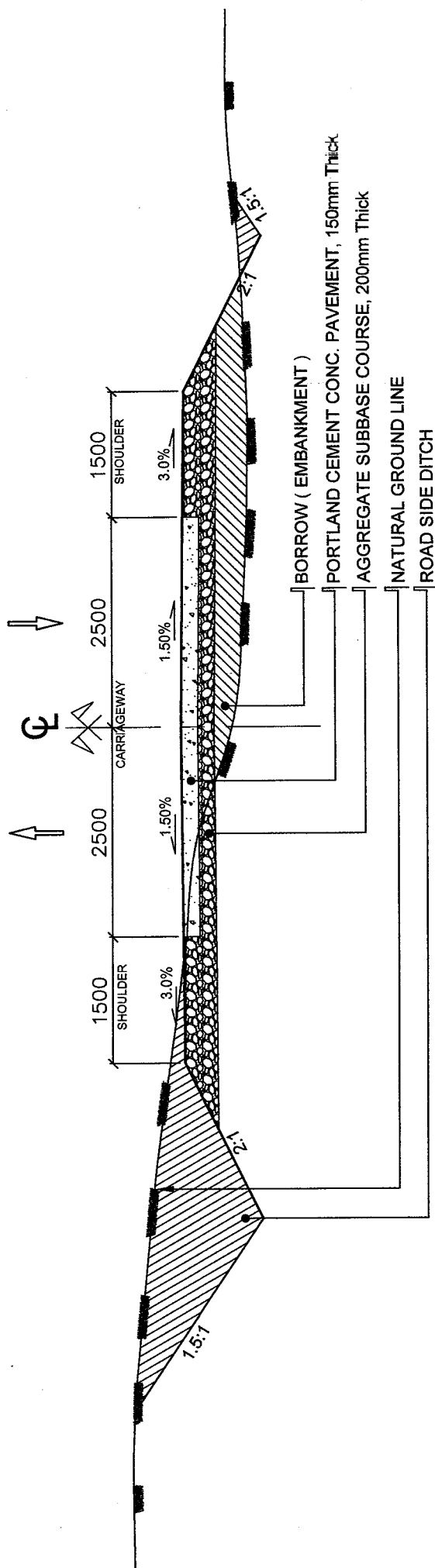


FIGURE 3; TYPICAL ROADWAY SECTION

## FARM TO MARKET ROAD