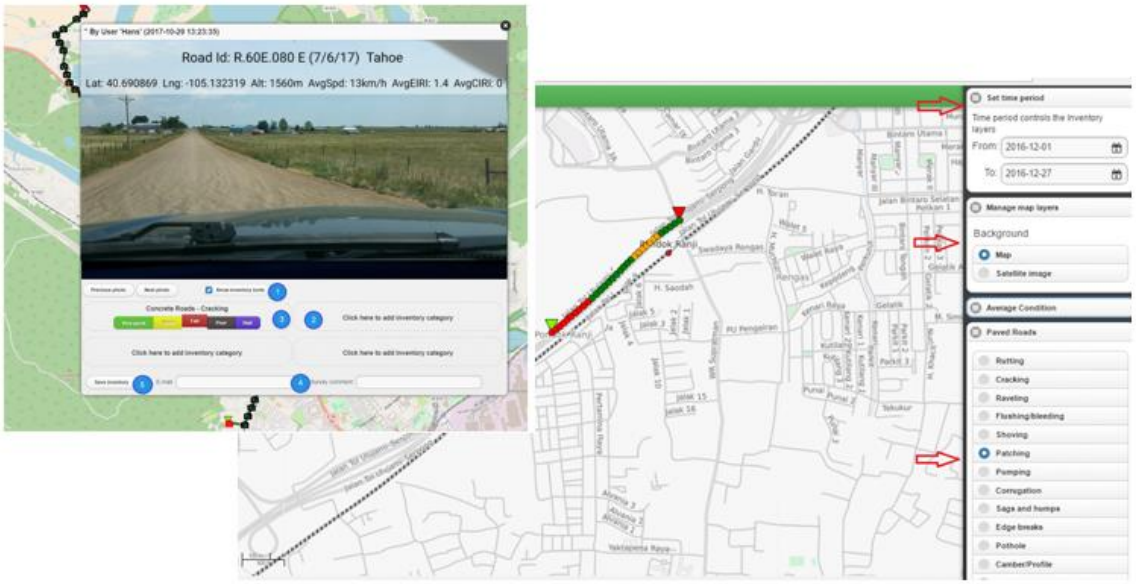
Roadroid

Make visual road inventories from smartphone data

The user guide describes how to make **inventories from photos – or video** collected by the Roadroid V3Pro app. Inventories from both the app and video is imported to the same web system.



1. Introduction

Benefits of road inventory from photos/video:

- Photos or video with GPS data can be captured with the Roadroid apps for roughness IRI.
- You get both objective road condition IRI – and records for road inventories.
- No need to travel to site to view or rate the conditions; it can be done from an office anywhere.

Photos needs a good GSM/4G/5G connection to upload. Videos are more demanding and need a good stable WiFi.

NOTE: You need to email us your *device IMEI-number or MAC-address* to get your device registered and be able to upload data. We also need to register a *user login* to the Road Data Management System at www.roadroid.com to access your data.

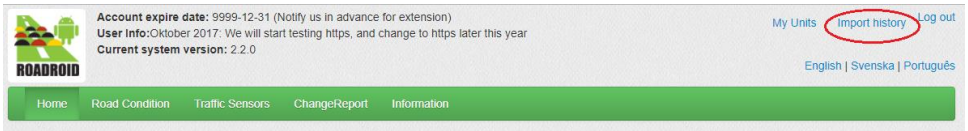
This user guide *requires basic knowledge of Android phones and operating system*. Please refer to your phone's user guide or tutorials if you are unsure of Android operating system.

Please also look for information at http://www.roadroid.com/Home/About

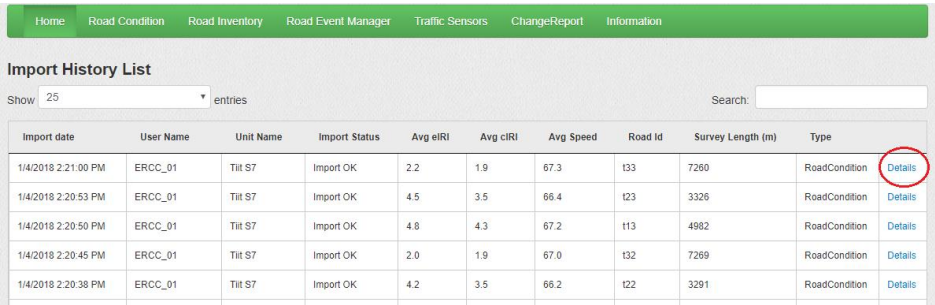
Please also check out our updates at:
- Twitter: www.twitter.com/roadroid
- LinkedIn: https://www.linkedin.com/company/3737990

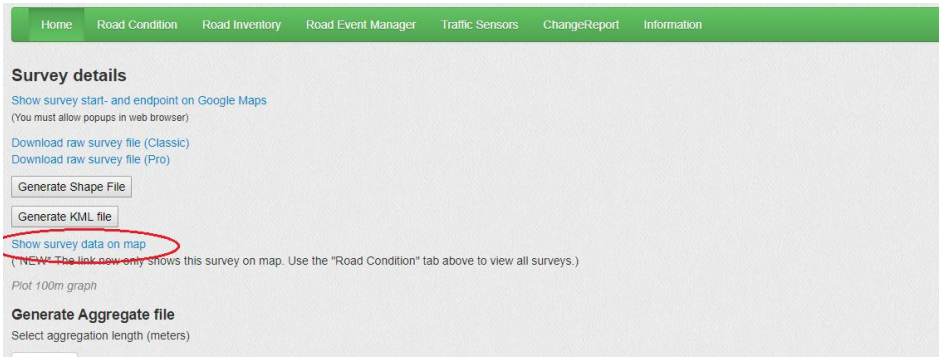
2. Road Inventory from photos

It is now possible to record a video of the road being surveyed by Roadroid Pro App Version 3. To do that, login to the Roadroid website -> Click on “Import History”.

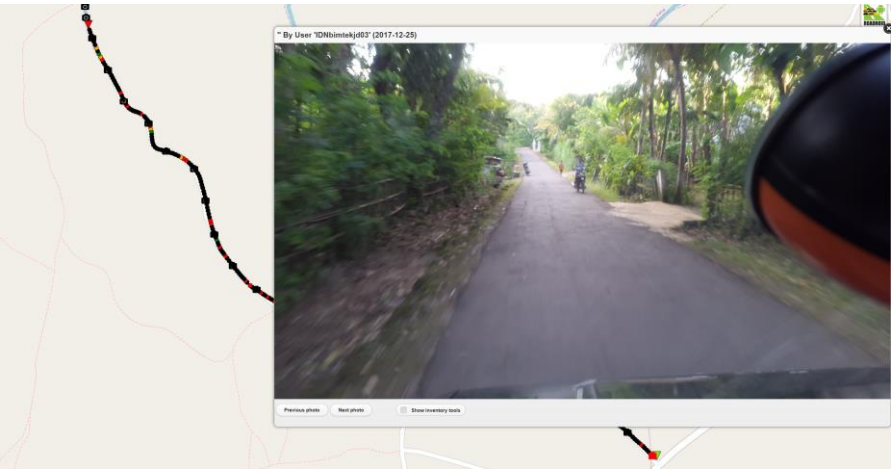


From the import history list, click “File details” for the survey that you want to do the inventory on. In file detail - select “Show survey data on map".



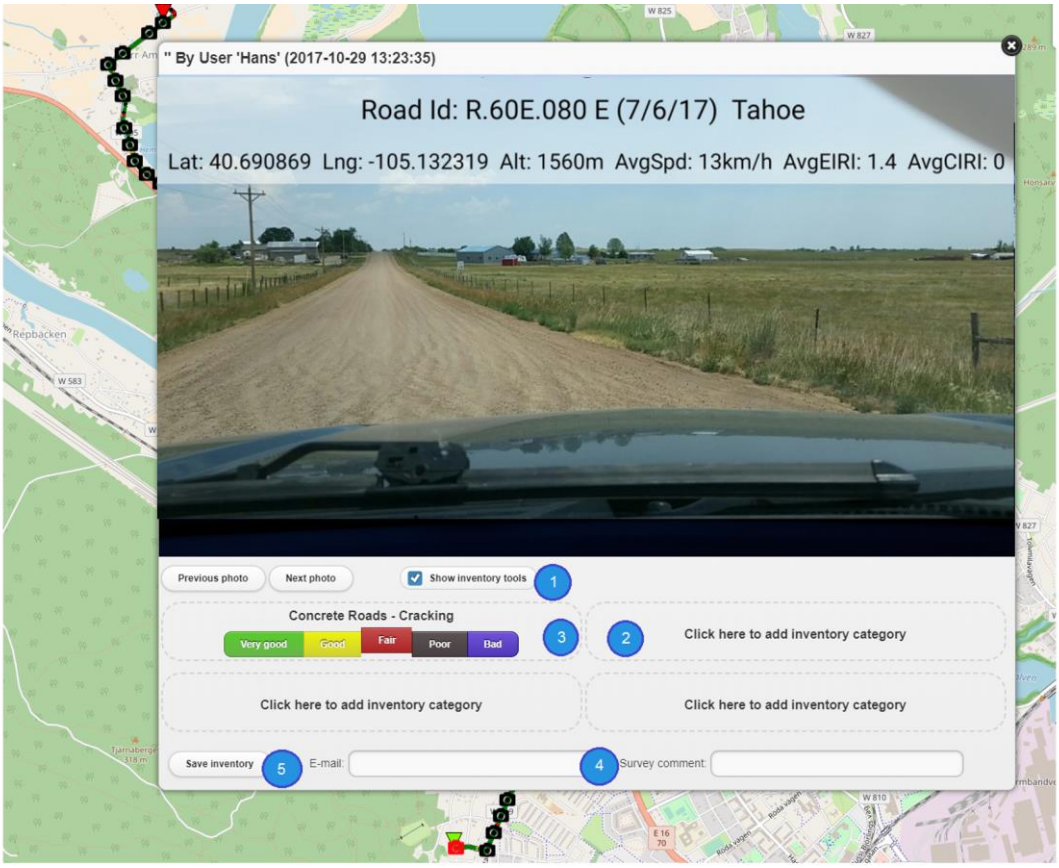


As the survey opens on the map, click on the first photo icon in the survey (the beginning of the survey is marked by a green triangle and the end by a red triangle).



You can see 3 buttons at the bottom: Previous photo, Next photo and Show inventory tools.

- Previous photo: Click on this button to go to previous photo in the survey.
- Next photo: Click on this button to go to next photo in the survey.
- Show inventory tools: Click on this button to open the inventory section.



1. Click on Show inventory tools.
2. Click to add inventory category, choose inventory parameters (see appendix).
3. Once you selected parameters Classification Buttons (very good, good, etc.) appear
4. Enter your email address and the survey comment (as RoadID)

To perform the inventory, use previous/next button to go to previous/next image in survey.

Choose the classification that correspond to the image that you are viewing, click next button to continue.

An inventory entry will be created for every GPS-point in the survey that's between current image and next image. Continue with this until you have gone through all images in the survey.

5. Click Save inventory to finish the inventory.

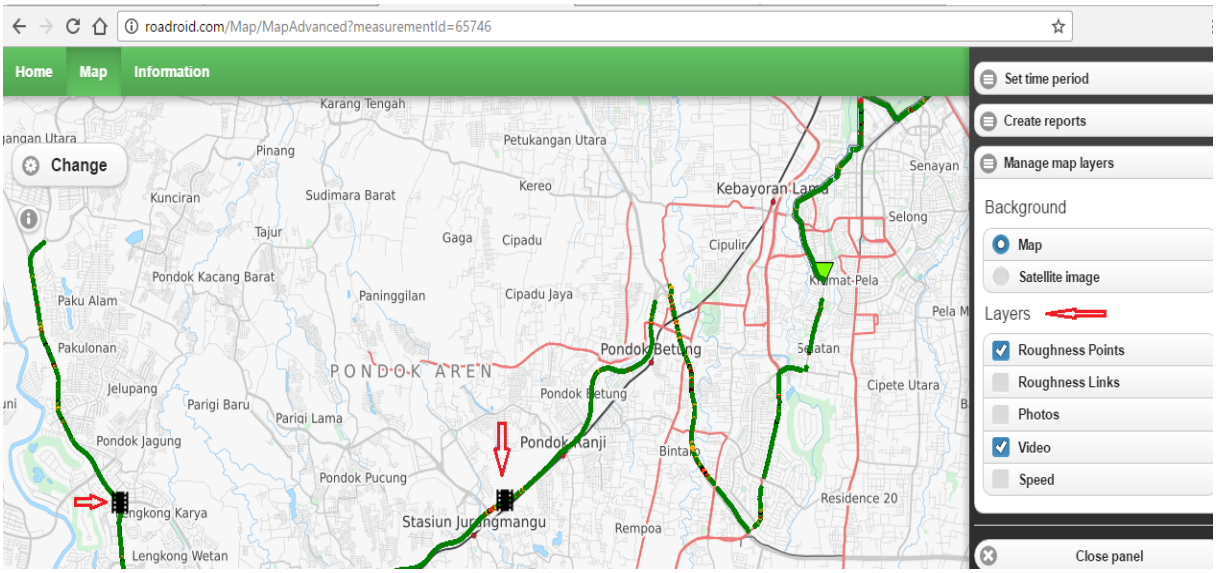
When finished, an inventory import file will be created in the background and automatically imported to your account as any other inventory files (see chapter 4, "View data in Roadroid Web Services")

3 Road Inventory from Video recorded by the Roadroid app

It is possible to record a video of the road being surveyed by Roadroid Pro App Version 3. The Roadroid Pro App is a separate application that automatically collects road roughness condition data and photo/video.

When you have your recorded and uploaded a video with the “Roadroid 2 Pro App”, Login to the Roadroid website > Click on *“Import History”.*

- From the import history list, click “File details” for survey that contains the desired video.
- In file detail - select “Zoom to measurement area on map".
- As the survey opens on the map, click on “*Change*” button and then select “Manage Map Layers” from the menu opened to the right of the screen.
- Tick mark “*Video*” under the “Layers” to make the uploaded videos visible on the map.
- As a video icon appear on the map, click it to proceed to next step.

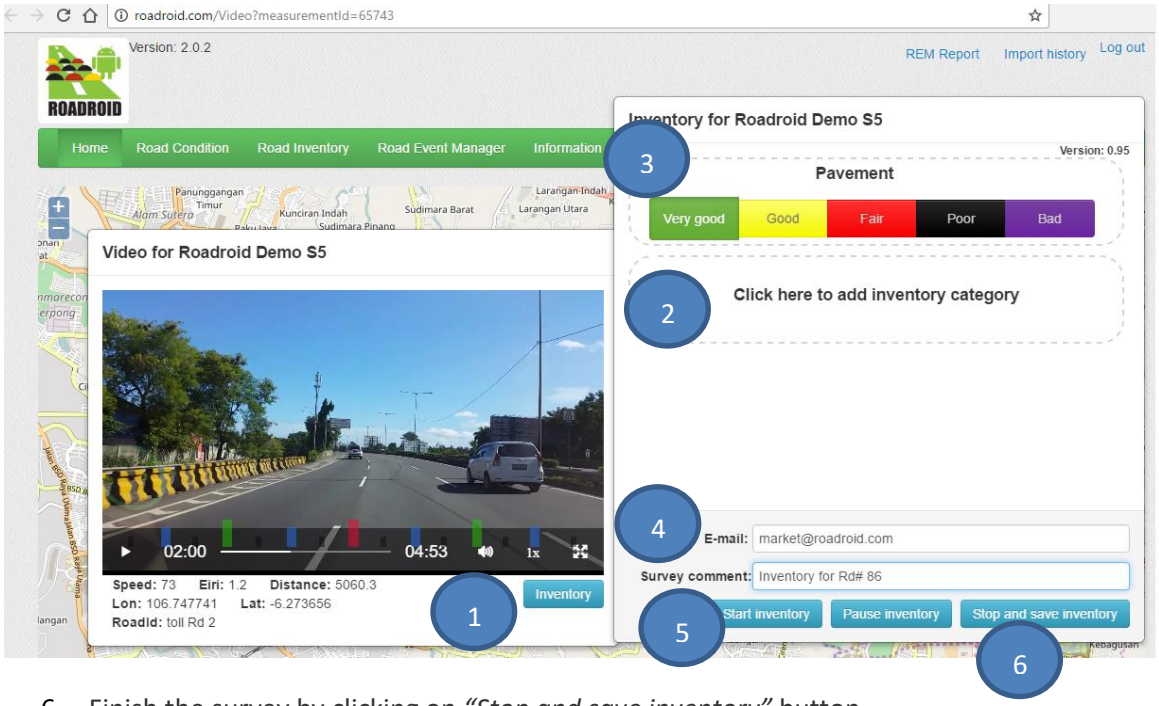


As you click on desired video icon the video will open into a new tab. You should be able play and pause the video at this section. You can also adjust playback speed of the video.

Note: You need to learn how this work in your IT environment. Not all browsers might support the video playback. And not all firewalls/networks allow video playback. Use your IT support to setup your computer so it’s all playing correctly.

1. Click on “Inventory” button on the video player window and the inventory window will open.
2. *“Click to add inventory category”* to choose the road inventory parameters from the library dived in 10 available categories.
3. Once you selected parameters **Classification Buttons** (very good, good, etc.) appear
4. Enter your email address and the survey comment (as RoadID)
5. Click on *“Start inventory”.*

As you start the survey; the video will play and classification for the chosen parameters is recorded every second. It works like the inventory app, and the registrations here is using GPS-data from the original survey file. Be active and click classification buttons rationally to the details you get from the video playback.



6. Finish the survey by clicking on *“Stop and save inventory”* button.

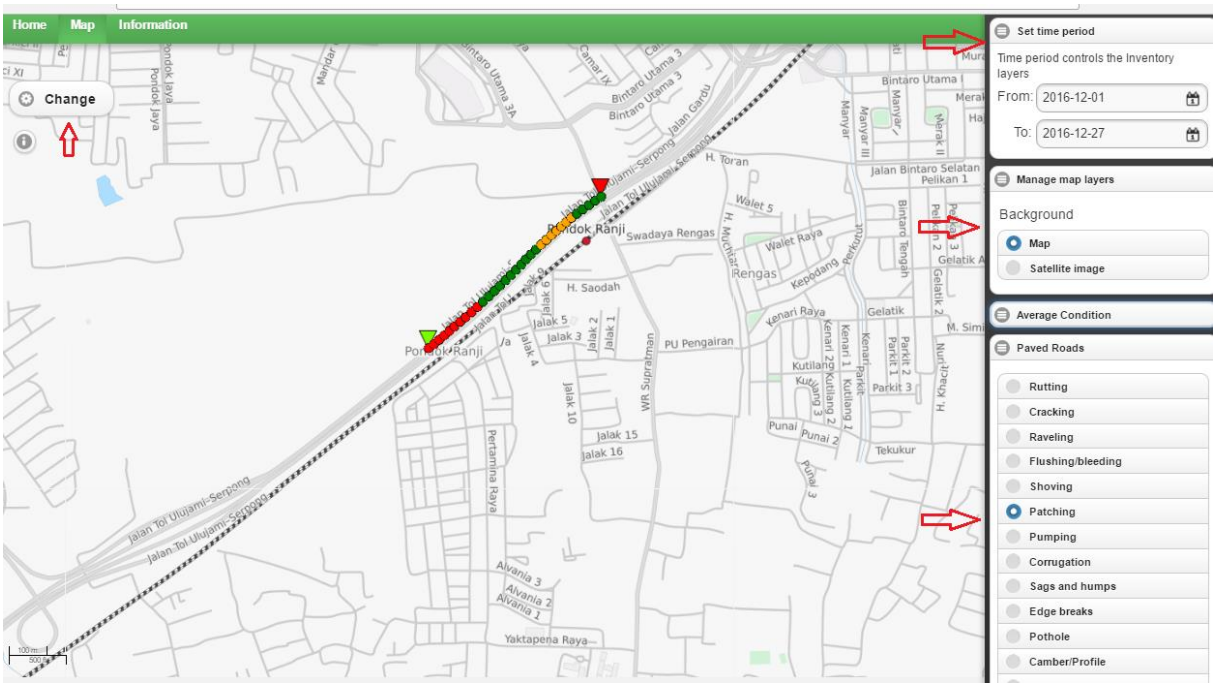
Your inventory survey should be saved to the system, and be available on the “import history” where you can view and analyze further.

4 View Data in Roadroid Web Services

This chapter describes how to view, analyze, and export reports, based on inventories done as described in chapter 2 & 3.

First, log in to www.roadroid.com and click on *"Import history"*.

- Find your survey from import history list and click on *details*. In next page; you will have the options to:
  - *"Show measurement start- and endpoint in Google Maps" -* a new pop-up window will open the google maps.
  - *"Generate Shape File" –* Shape files will be generated and downloaded in a zip folder.
  - "Select aggregation length (meters)" and "Generate" – It will generate data in preferred section lengths and downloaded as *.txt file for easy use to be pasted in Excel, etc. 1 = Very Good and 5 = Bad.
  - *"Zoom to measurement area on map".*
  - In this page you can also see the details of your file i.e. *Import date*, *Inventory parameters*, etc.
- Click on *Zoom to measurement area on map* to see your survey on the map.
- Click on the button "*Change*" and from the appeared menu on right of the screen, set the time period and choose map layers (Map/Satellite maps).
- Now from the list of parameters categories, find and select your parameters that your survey is done for. As you select your parameter the classification dots will appear on the map which shows your survey result.



Appendix: Table of inventory parameters

Average conditions	VGood	Good	Fair	Poor	Bad	**Comment**
Pavement						Refer to inventory manuall
Cracking						"
Gravel						
Earth road						
Flexible/DBST						
Concrete						
Shoulder						
Sidecut						
Drainage						
Embankments						
Cutting						
Potholes						
Loose chippings						
Slippery road						
Floodedarea						
Paved roads	VGood	Good	Fair	Poor	Bad	**Comment**
Rutting						
Cracking						
Raveling						
Flushing/bleeding						
Shoving						
Patching						
Pumping						
Corrugation						
Sags and humps						
Edge breaks						
Pothole						
Road marking						
Camber/Profile						
Pavement loss						
Widening						
Concrete road	VGood	Good	Fair	Poor	Bad	**Comment**

Cracking						
Poppouts						
Spalling						
Corner Break						
Scaling						
Blowups						
Faulting						
Pumping						
LTS Dropoff						
Edge breaks						
Severity Patch						
Earth road	VGood	Good	Fair	Poor	Bad	**Comment**
Roughness						
Top/Surface						
Gradation/Mix						
Binding/Dust						
Cross section						
Super-elevation						
Side slope						
Width						
Stability						
Road slide						
Action: Grading/shaping						
Action: Re-material						Define levels
Action: Stab/dust ctrl						
Gravel road	VGood	Good	Fair	Poor	Bad	**Comment**
Roughness						
Side slope						
Top/Surface						
Gradation/Mix						
Binding/Dust						
Cross section						
Super-elevation						
Width	<3,5 m	3,5-4,5	4,5-5,5	5,5-6,5	>6,5	
Stability						

Road slide						
Action: Grading						
Action: Regravel						Define levels
Action: Stab/dust ctrl						

Detailed cracking	VGood	Good	Fair	Poor	Bad	Comment
Alligator cracking						"
Raveling cracking						
Longitudinal cracking						
Non WP long cracking						
Transverse cracking						
Block cracking						
Thermal cracking						
Wide cracking						
FatigueCracking						
DiagonalCracking						
HairCracking						
MapCracking						
Crack seal condition						
Road equipment	**VGood**	**Good**	**Fair**	**Poor**	**Bad**	**Comment**
Guard rails						
Concrete barriers						
Noise barriers						
Road signs						
Guid posts						
Retaining wall						
Erosion protection						
Road Curb						
Road marking						
Reflexes/cateyes						
Road side	**VGood**	**Good**	**Fair**	**Poor**	**Bad**	**Comment**
Road side safety						
Illegal road signs						
Sight distance						
Vergemaintenance						

Road_side_clerance						
Plantations						
Cut height/slope						
Cut rock outcrops						
Slip/Slide/Rockfall						
Cross space						
Winter roads	VGood	Good	Fair	Poor	Bad	**Comment**
Winter ruts						
Slush on road						
Ice on road						
Snow on road						
Road side marking						
Snow ditches						
Wall cutting						
Snow fences						
Frost damages						
Action: Plowing						
Action: Grading						
Action: Salt spread						Define levels
Action: Sand spread						"
iRAP essentials	VGood	Good	Fair	Poor	Bad	**Comment**
Motorcycle flow	None	1	2-3	4-5	6-7	
Bicycle flow	None	1	2-3	4-5	6-7	
Ped. driver flow	None	1	2-3	4-5	6-7	
Ped. pass. flow	None	1	2-3	4-5	6-7	
Land_use_Driver_side	Un-developed	Farm/ Agricult	Commer-sial	Educat-ional	Industry/-Manuf.	
Land_use_Pass._side	Un-developed	Farm/ Agricult	Commer-sial	Educat-ional	Industry/-Manuf.	
Shoulder rumble strip	Present		Not present			
Centerl. rumble strip	Present		Not present			
Paved shoulder driver	>2,4m	1-2,4 m	Narrow <1m	None		
Paved shoulder pass	>2,4m	1-2,4 m	Narrow <1m	None		

Number of lanes	One	Two + One	Two	Three + two	Three	
Lane width	>3,25m	2,75-3,25	0-2,75			
Skid resistance	Sealed Adeq.	Sealed Med.	Sealed Poor	Unseal Adeq.	Unseal - poor	
Street lightning	Present				Not present	
Road works	No works		Minor works		Major works	

For a deeper explanation of how to make iRAP inspections, please refer to:
http://www.irap.org/en/resources/specifications