

# MIDLAND HIGHWAY YORK PLAINS TO ST PETERS PASS

Submission to the Parliamentary Standing  
Committee on Public Works

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## Document Development History

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## Authorisation

	Name	Signature	Date
Authorised by:	Damien Dry		18/05/2017

# 1 Introduction

## 1.1 Background

The Midland Highway between York Plains and St Peters Pass is in the middle of the Midland Highway, north of Oatlands. The works are proposed to occur between 2 km south of the York Plains Road intersection and just south of the St Peters Pass rest area. The site constitutes a total length of approximately 5 km and includes the westernmost section of York Plains Road.

This project is a component of the Midland Highway Upgrade Program, a 10-year plan with a total commitment of \$500 million from Commonwealth and State governments to upgrade the Midland Highway.

The Midland Highway is a critical freight connection providing access from southern Tasmania to the State's northern ports and is the major passenger transport link between the north-west, northern and southern region. It is part of the National Land Transport Network. The Midland Highway between York Plains and St Peters Pass does not currently meet National Land Transport Network standards and is deficient in terms of current and future productivity needs.

The proposed upgrades predominantly follow the existing road alignment for the entire length of the road, with areas of existing minor deficiencies forming an amended alignment. The proposal also includes the provision of three sections of 2+1 traffic lanes in accordance with the Department of State Growth's typical road cross sections for the Midland Highway (Figure 22).

The upgrades will also support the key objective for the Midland Highway Action Plan to deliver a minimum AusRAP 3 star rating by:

- Widening the existing alignment, including:
  - Lane widths of 3.5m
  - Shoulder widths of 2.0m
- Lane separation with flexible safety barriers, including:
  - Median width of 2.1m with flexible wire rope safety barrier located centrally
  - Verge width of 0.5m, plus widening to accommodate safety barrier
- Reduction of roadside hazards;
- Audible edge lines;
- Extended sealed shoulders;
- Alignment and junction upgrades.

Other features within this Project's scope include the provision of a heavy vehicle lay-by, safer property accesses, upgrades to roadside drainage, pavement repairs, removal and replacement of heritage trees and hedgerows. The scope also includes all pre-construction activities such as the relocation of services.

## **1.2 Project Objectives**

The objectives of the project are to:

- Provide a National Land Transport Network standard 110 km/h speed environment;
- Provide a 3-star AusRAP rating for this section of the Midland Highway;
- Improve freight transport efficiency;
- Improve intersection safety and efficiency.

The key outcomes intended from this project will be to achieve the objectives outlined above, while managing the infrastructure assets to deliver an appropriate level of service and visual amenity, within the agreed budget and program.

## 1.3 Project Location

Figure 1 - Project location map



## 1.4 Strategic Context of the Project

The AusRAP Survey undertaken by the Australian Automobile Association in 2013 identified up to 86% of the Midland Highway has a safety rating of less than 3 stars. The predominant type of vehicle crash on the Highway is loss of control, most of which are single vehicle crashes with some resulting in head-on collisions. Approximately 60% of fatalities from vehicle crashes are a result of head-on collisions.

The Midland Highway from York Plains to St Peter's Pass has safety deficiencies and has been assessed as having a 1 or 2 star AusRAP rating. The existing road corridor consists of one existing southbound 2+1 section, 1.3 km long at the southern extent of the project. The remainder of the project generally consists of a two lane single carriageway with a posted speed limit of 110 km/h.

This Project will help to address current deficiencies in safety along the Midland Highway between York Plains and St Peters Pass. In particular, the proposed works will help to eliminate head-on collisions and provide additional safe overtaking opportunities in each direction of travel.

#### **1.4.1 Alignment with Approved Strategies**

Upgrading of the Midland Highway is a priority for the Tasmanian Government, and this is being supported by the Australian Government.

The project is a key component of the Midland Highway 10 Year Action Plan and the requirement for safety upgrades along strategic urban freight routes has been identified in the Tasmanian Infrastructure Strategy, the Southern Integrated Transport Plan 2010 and the Midland Highway Partnership Agreement 2009.

## 2 Project Details

### 2.1 Proposed Works

The proposed development consists includes:

- Widening of the existing carriageway for the provision of three sections of 2+1 traffic lanes.
- Extended sealed shoulders.
- Lane separation with flexible safety barriers.
- Reduction of roadside hazards.
- Alignment and junction upgrades.
- Provision of a heavy vehicle turning facility at York Plains Road and the reinstatement of the York Plains Road junction to an appropriate standard.
- Connection into the new highway design to the north.
- Associated earthworks with the proposed widening requiring moderate to significant cutting or embankments in some sections due to the nature of terrain and road gradient

Some acquisition of private property is required to facilitate the proposed construction works.

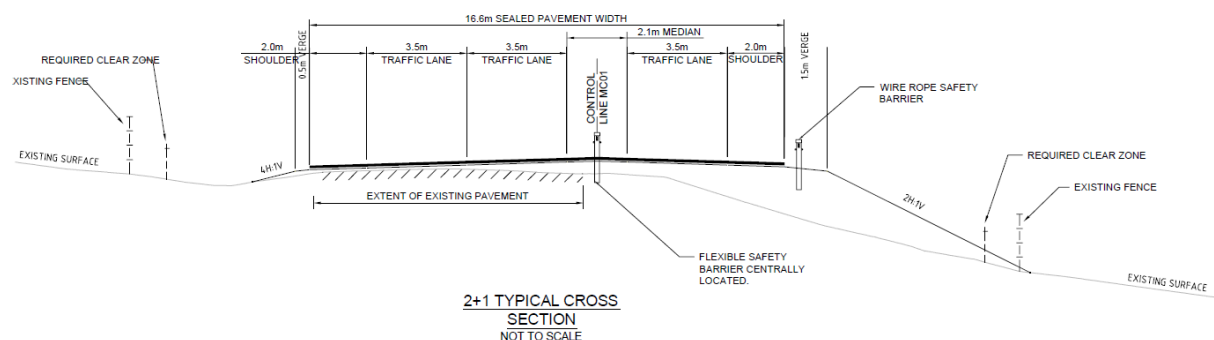
### 2.2 Design Speed

The design speed adopted for the project is 110 km/h, consistent with the adjacent sections of the National Land Transport Network. It is anticipated that the posted speed will be 110 km/h for the entire length of the York Plains to St Peters Pass upgrade.

### 2.3 Road Cross Section

The typical cross-section of the “2+1” lane arrangement is shown in Figure 2.

**Figure 2 - Midland Highway 2+1 typical cross-section**



## **2.4 Drainage**

Hydrology modelling indicates that any increase of runoff is minor and can be accommodated in the existing drainage paths. Cross drainage will be drained to the existing drainage paths and the existing culverts are to be retained at their existing size or increased in size. Similarly, the level of drainage of private accesses will either be retained or, in several cases, improved drainage is proposed.

Major waterway crossings will be maintained in their current location where practicable. Where relocation is required, localised diversion of the waterway has been minimised.

## **2.5 Utilities**

There are TasNetworks and Telstra infrastructure present at the project site.

### **2.5.1 TasNetworks**

TasNetworks have overhead electrical supply cables that run through the project site. The main supply cables are on the eastern side of the highway through to Ch. 5800 where they cross to the western side for the remainder of the project site. The works are expected to require relocation of approximately 13 TasNetworks poles and TasNetworks will be engaged to undertake the design of the pole relocations during the detailed design phase of the project.

### **2.5.2 Telstra**

Telstra services run through the site on the eastern side of the highway with the majority of the route outside the project works. However, there are two locations where the Telstra cables will be within the proposed works area. The main supply cables run through the location of the new turning facility on York Plains Road and there is a minor crossing of the Highway at approximate Ch. 9160. Both are likely to require relocation and/or modification. Telstra have been consulted during the design process and, the Department will continue liaison with Telstra in the detailed design stage to confirm relocation requirements.

## 3 Social, Environmental Impacts and Stakeholder Engagement

### 3.1 Property Acquisition

As the project involves significant widening of the Midland Highway around York Plains and St Peters Pass, there is some acquisition from adjoining properties required. The privately owned land either side of the highway forms part of an 8100 hectare farm (St Peters Pass). St Peters Pass has 1200 hectares on the eastern side of the highway that includes all the farm infrastructure, and 6900 hectares on the western side of the highway, with nearly all the livestock (beef cattle and sheep) and some crops. The farm also includes dwellings for residents, including full time and seasonal workers.

There are three highway stock underpasses within the project area. These are at Ch. 6260, Ch. 8950 and Ch. 9560. The main highway underpass, Ch. 6260, is used multiple times daily by vehicles and farm infrastructure. At Ch. 8950 a smaller underpass serves dual purpose as stock underpass and drainage culvert for Pass Creek.

The properties affected by property acquisition have been listed in Table 1, along with the approximate area to be acquired. There are two other properties that are only impacted by access realignment. The Department is currently working with the owners of the St Peters Pass property on access and fencing arrangements post-construction.

**Table 1 Proposed Property Acquisition**

Property	Owner/property	Works required	Estimated Area of Acquisition (m <sup>2</sup> )
135459/1	'St Peters Pass' – 6820 Midland Highway, Oatlands	Road upgrade works Access works	
104898/15	'St Peters Pass' – 6820 Midland Highway, Oatlands	Road upgrade works Access works	
104898/14	'St Peters Pass' – 6820 Midland Highway, Oatlands	Road upgrade works Access works	

### 3.2 Noise

Noise management has been considered in accordance with the Tasmanian State Road Traffic Noise Management Guidelines. Under the Guidelines, this project was assessed as a safety upgrade, and is not an eligible scenario for noise mitigation under the Guidelines.

### 3.3 Flora

The York Plains to St Peters Pass project will have a small impact on native flora. Flora and fauna habitat surveys were undertaken in 2015 and 2016, as part of the planning for this project.

There are many remnant patches of white gum (*Eucalyptus viminalis*) grassy forest or woodland (DVG). These sections are generally in poor condition with numerous weeds dominating the understorey. Some clearance of this community will be required, however this community is not listed under State or Federal legislation.

Flora surveys in the project area identified two species listed under the *Threatened Species Protection Act 1995*. It is likely that a small number of plants will be impacted by construction works, and an application for a Permit to Take Threatened Flora will be submitted to DPIWE prior to commencement of works. No flora species or vegetation communities listed under the Federal *Environment Protection and Biodiversity Conservation Act 1999* were found in the project area.

### 3.4 Fauna

No fauna species or vegetation communities listed under the Federal *Environment Protection and Biodiversity Conservation Act 1999* were found in the project area.

### 3.5 Aboriginal Heritage

Aboriginal Heritage Tasmania undertook a desktop assessment and recommended that a site survey be conducted. The Department commissioned CHMA to undertake this survey and provide a report. The survey found one isolated artefact, which will be impacted by the proposed works. The Department has applied for a permit to disturb this artefact, under the *Aboriginal Relics Act 1975*.

In addition, all Aboriginal heritage is protected under the *Aboriginal Relics Act 1975*, and an Unanticipated Discovery Plan will be implemented during construction to manage any unanticipated discoveries of Aboriginal heritage.

### 3.6 Historic Heritage

A Heritage Impact Assessment and Statement of Heritage Effects has been undertaken and is attached to this application. The assessment has identified two local and state listed properties within the development site, the Kenmore Arms and St Peters Pass.

During the design process, State Growth undertook careful planning to minimise impacts of the project on adjacent properties and heritage values.

A key aim for the design was to avoid any impact on the Kenmore Arms (listed on the Tasmanian Heritage Register), located on the eastern side of the highway. The Kenmore Arms is very close to the existing highway, and was identified as a major constraint when reviewing options for improved highway alignment. It was determined that works should avoid any impact on the building and the associated sandstone wall along the property frontage.

Due to the significance of the heritage matters on the eastern side (including the Kenmore Arms), all widening to accommodate the additional road width is on the western side of the existing Highway. During construction, the construction contractor will be required to ensure that works do not damage the Kenmore Arms building and other parts of the heritage site.

### **3.7 Landscape and Visual Impacts**

The existing roadside landscape character includes pastoral grazing land, native forest, and exotic tree plantings throughout the site, with views to the hills beyond. The native vegetation consists of scattered trees with native grass and pasture grass understorey. The exotic plantings form part of the historic Pioneer Avenue plantings between Launceston and Hobart and include large trees, hawthorn hedgerows and topiary.

The proposed road widening will impact the existing plantings, particularly along the western side of the highway where the widening will predominantly occur.

During the design process, a key consideration was impact on the hedgerows each side of the highway. The design aimed to avoid impact, where possible, and replaced existing hedges, if necessary. State Growth considered the footprint of both 1+1 and 2+1 alignments on adjacent heritage plantings on the western side of the Highway, and found that the impact on plantings between the two options was very similar. This was due to the close proximity of existing plantings to the highway.

To mitigate the removal of existing plantings, hedgerows on the western side of the highway are to be replaced where they are impacted by the works. State Growth has undertaken a comprehensive landscaping assessment and developed plans to retain the existing landscape character throughout the project area.

The key landscape design principles for the project are:

- Establish selected exotic specimen trees to:
  - provide in-fill planting to complete existing gaps along the highway;
  - highlight the location of the former Midland Highway route where it is visible from the current highway alignment;
  - highlight existing farm tracks where they are visible from the highway;
  - maximise the visual and physical values of the trees close to the highway;
  - and
  - benefit from moisture levels along minor drainage lines.

- Locate selected specimen trees generally along the contour on land adjoining the Midland Highway to highlight the topography and establish trees throughout the broader pastoral landscape in line with the original planting philosophy of using exotic trees to 'beautify the countryside' and using the native background to frame the newer plantings.
- Plant replacement and in-fill Hawthorn hedges where required.
- Removal of Poplar suckers.

To provide effective and accurate presentation of the proposed design, a series of photo-realistic images were created from still photos of the site at critical locations combined with the design road model. These photos were presented at the public information day and have been included in the Development Application report, along with the concept landscaping plan.

### **3.8 Stakeholder Engagement**

State Growth has undertaken active engagement with stakeholders, including the Southern Midlands Council, both salaried staff and elected members, Heritage Tasmania, the Midland Tree Society, and property owners.

In the initial stage of the project, a Stakeholder Engagement Plan (SEP) was developed which identified stakeholders and categorised their level of interest in or influence over the project. Action Plans were developed for each key stakeholder identifying at which stage of the project to contact the stakeholder and the best means of engagement.

State Growth has undertaken significant engagement with affected stakeholders. State Growth representatives have met with landowners adjacent to this section of the Midland Highway and explained the project objectives and the impacts on their properties. Landowners were provided the opportunity to explain current farm operations and communicate definite and potential future farm ideas. Preliminary design drawings were presented to landowners to assist discussions and describe the impacts on existing accesses due to the need to minimise gaps in the central flexible safety barrier. The concept landscaping plan has been provided to adjacent landowners that are affected by vegetation removal that requires replacement plantings on private properties.

A public display of the design plans was held on 23 February 2017 at the Oatlands Community Hall, Oatlands with State Growth and the consultant available to answer questions about the project. A public notice advertising the public display was placed in the Mercury and Examiner newspapers on Saturday 18 February 2017 and Wednesday 23 February 2017. The public notice also included an address for the State Growth road project webpage, where the plans can be viewed online. A letter advising of public display was sent to adjacent and affected landowners. A poster explaining the project and advertising the public display was placed at high traffic areas in the Oatlands community. The poster includes the webpage address and a 1800 phone number is on the website. This enables the public to contact the Department throughout the life of the project.

Approximately 20 people attended the public display. All attendees were accepting of the proposed design as well as the landscaping plan.

### **3.9 Development Approvals**

Early engagement with Southern Midlands Council regarding the lodgement of a Development Application has been undertaken. The Development Application was submitted in May 2017. A decision by Council is expected by early July 2017.

## 4 Project Program and Costs

### 4.1 Project Program

The current delivery program for the project is based on achievement of the following key milestones:

**Table 2 - Expected Delivery Program Milestones**

Milestone	Completion Date	Critical Path
Development Application approval	July 2017	Yes
Parliamentary Standing Committee on Public Works approval	August 2017	Yes
Land acquisition	September 2017	Yes
Tender for Design Development and Construct Contract	August 2017	Yes
Tender Assessment and Contract Award	September 2017	Yes
Construction begins	November 2017	Yes
Construction finishes	April 2019	

### 4.2 Costs

A detailed estimate of the expected out-turn costs has been produced for the project, including probabilistic methods using a Monte Carlo analysis of inherent and contingent risk factors that have been identified by the wider project team, as outlined in State Growth's Best Practice Cost Estimation Guidelines.

A summary of the cost estimate is outlined in Table 3 and additional information is provided in Appendix B.

**Table 3 - Cost Estimate Summary**

<b>Cost Item</b>	<b>Estimated Value</b>
Development Phase costs (including design, application fees and project management)	\$1,070,341
Property Acquisition <sup>1</sup>	\$100,000
Delivery Phase costs (including contract management, project management, and insurance costs)	\$754,141
Estimated construction contract costs, including: <ul style="list-style-type: none"> <li>• Earthworks</li> <li>• Drainage</li> <li>• Pavements</li> <li>• Bituminous surfacing</li> <li>• Bridge structures</li> <li>• Traffic facilities</li> <li>• Landscaping</li> </ul>	\$11,592,514
State Growth supplied construction costs, including: <ul style="list-style-type: none"> <li>• Services relocations</li> <li>• Street lighting</li> <li>• Reseal of pavements</li> </ul>	\$370,000
Expected contingency on base estimate outlined above (P50) plus Escalation	\$828,917
<i>Expected project out-turn cost (P50)</i>	<i>\$14,716,000</i>

The above is based on the contingency required to provide a P50<sup>2</sup> level of confidence in the cost estimate. The equivalent project out-turn cost for a P90 level of confidence is \$15,872,000.

<sup>1</sup> Estimated value, final value subject to Valuer General's determinations.

<sup>2</sup> P50 refers to the value at which there is a 50% chance of the project coming in above this cost and a 50% chance of it coming in below this cost.

## 5 Conclusion

The design for the proposed York Plains to St Peters Pass upgrade on the Midland Highway has been carried out in accordance with the appropriate design standards and guidelines. The requirements of abutting landowners, Southern Midlands Council and public utility owners have been incorporated.

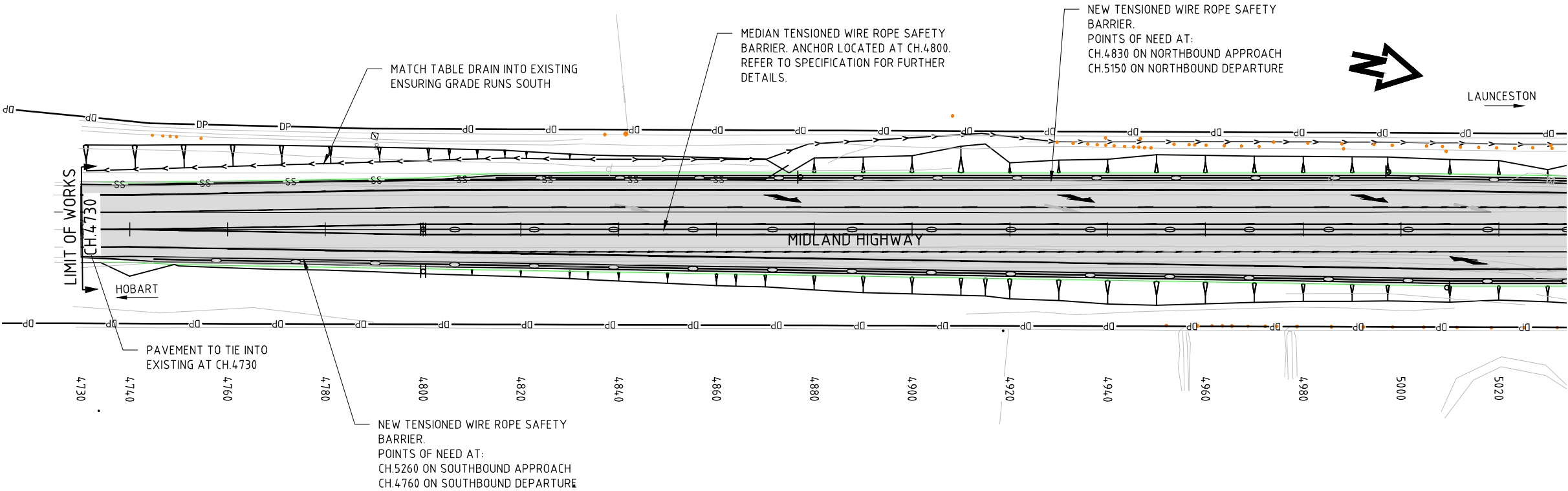
Once complete, the works will provide improved safety by providing increased sight distance, a central wire rope safety barrier, a wider pavement with sealed shoulders and will provide safer property accesses. The completed works will support transport efficiency objectives on the National Land Transport Network by providing improved overtaking opportunities.

It is recommended that the project be approved.

# Appendix A. Drawings

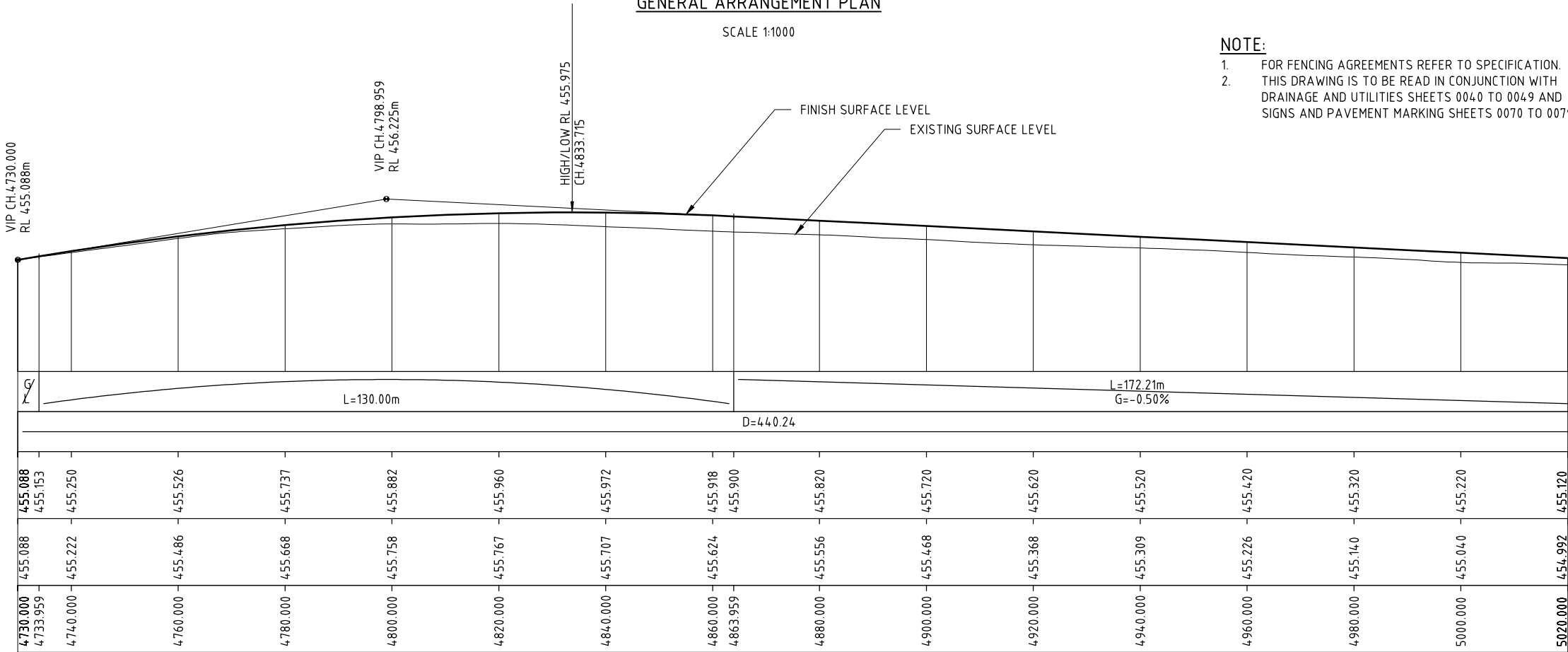
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AND WATER PROOFING SEAL
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- GRAVEL SHOULDER MATERIAL FOR INTERNAL  
ROADS



GENERAL ARRANGEMENT PLAN

SCALE 1:1000



NOTE:

- FOR FENCING AGREEMENTS REFER TO SPECIFICATION.
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HORIZONTAL  
ALIGNMENT

DESIGN LEVELS

EXISTING LEVELS

CHAINAGE

LONGITUDINAL SECTION - MIDLAND HIGHWAY (MC00)

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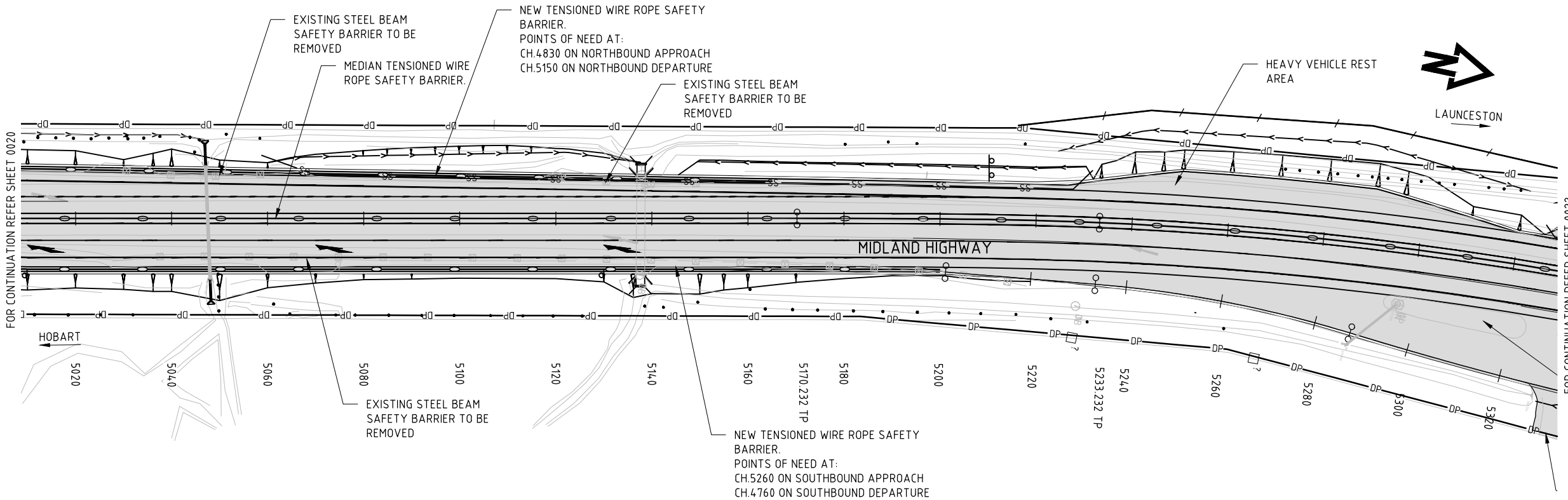
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Department of State Growth
MIDLAND HIGHWAY YORK PLAINS TO ST PETERS PASS SAFETY UPGRADE
GENERAL ARRANGEMENT & LONG SECTION - CH. 4730 TO CH. 5020

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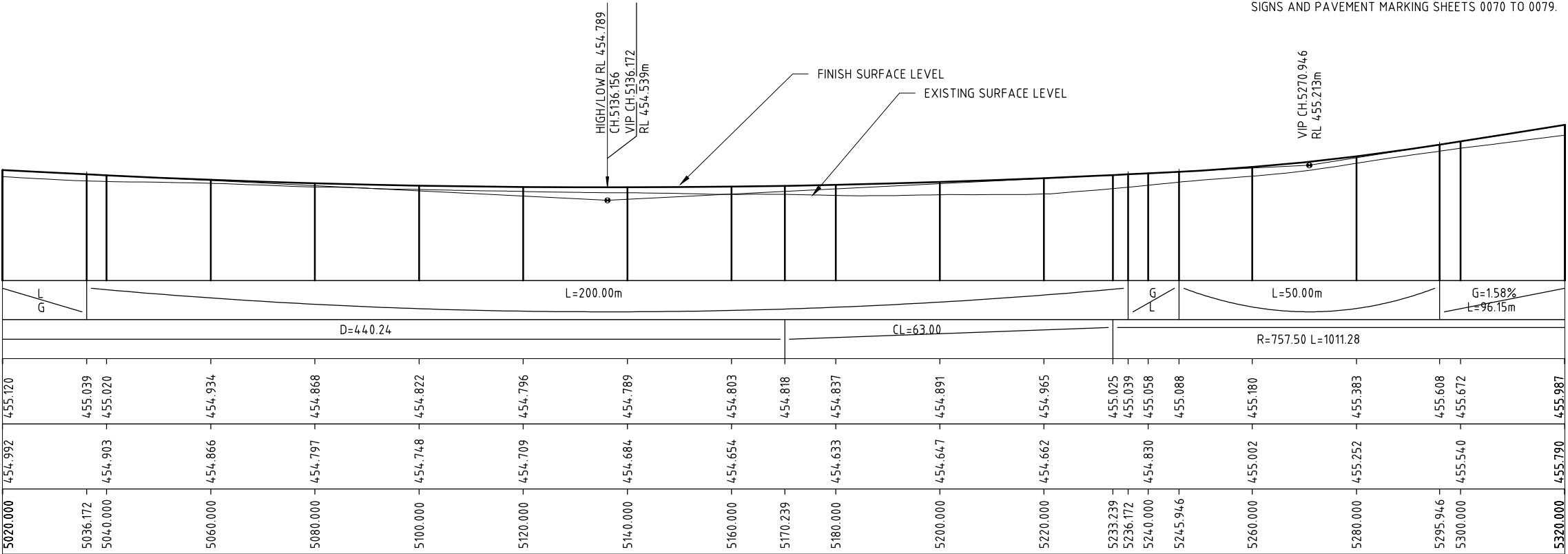
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LONGITUDINAL SECTION - MIDLAND HIGHWAY (MC00)

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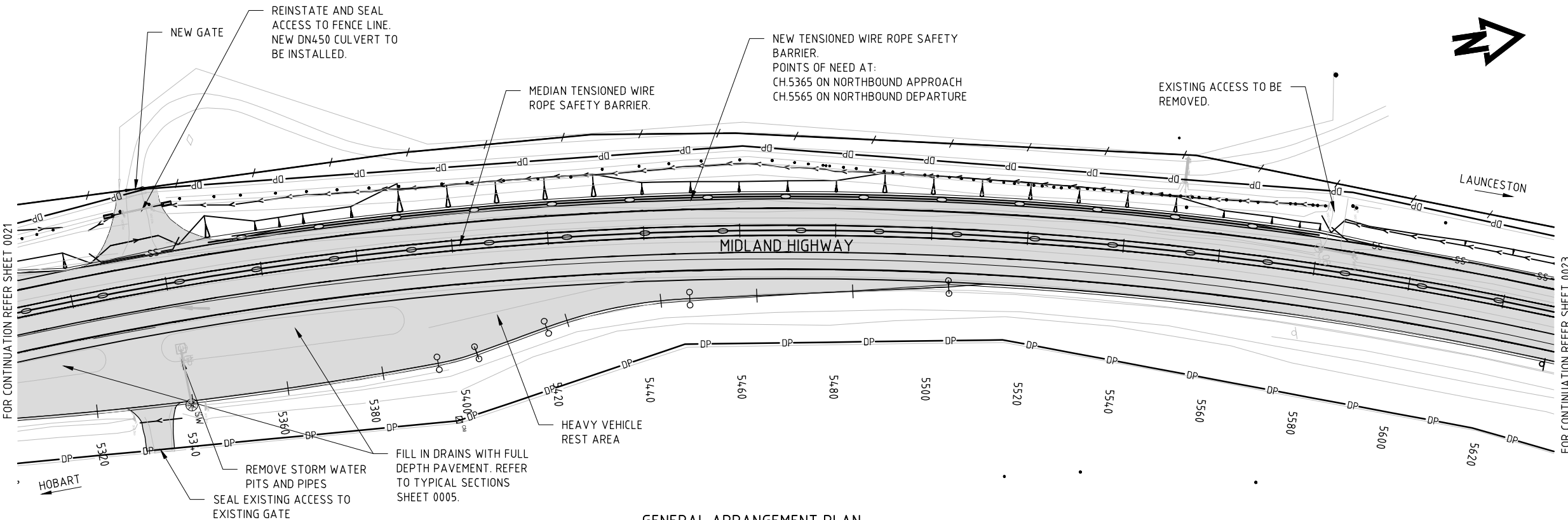
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Department of State Growth
MIDLAND HIGHWAY YORK PLAINS TO ST PETERS PASS SAFETY UPGRADE
GENERAL ARRANGEMENT & LONG SECTION - CH. 5020 TO CH. 5320

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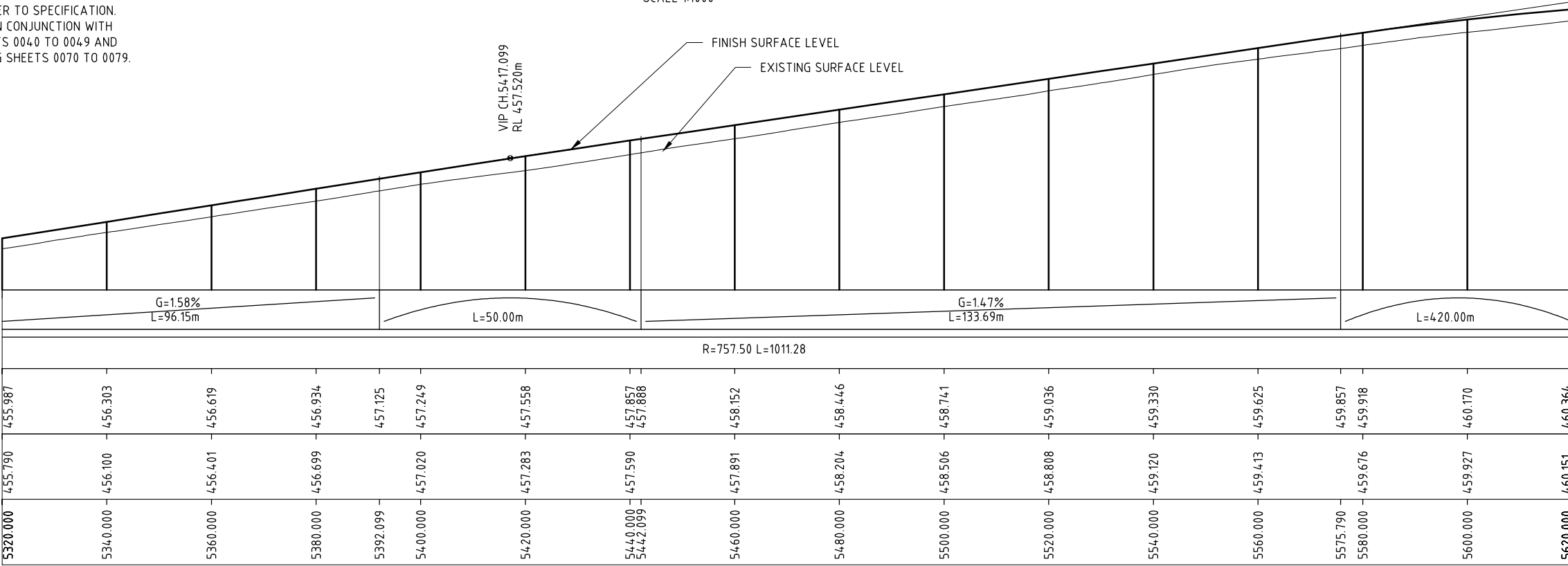
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VERTICAL ALIGNMENT  
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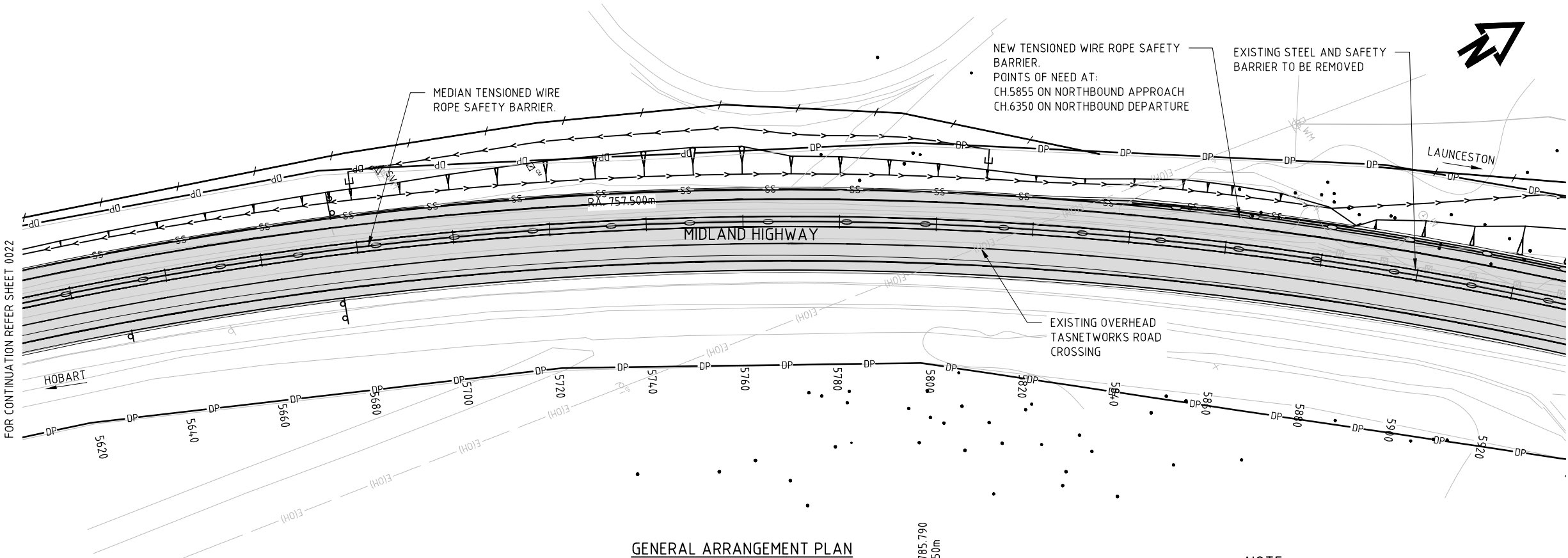
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MIDLAND HIGHWAY YORK PLAINS TO ST PETERS PASS SAFETY UPGRADE
GENERAL ARRANGEMENT & LONG SECTION - CH. 5320 TO CH. 5620

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LEGEND:

- PRIME & 14mm SEAL
- 50mm DENSE GRADED ASPHALT SEAL  
AND WATER PROOFING SEAL
- 40mm DENSE GRADED ASPHALT SEAL  
AND WATER PROOFING SEAL
- GRAVEL SHOULDER MATERIAL FOR INTERNAL  
ROADS



GENERAL ARRANGEMENT PLAN

SCALE 1:1000

NOTE:

1. FOR FENCING AGREEMENTS REFER TO SPECIFICATION.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRAINAGE AND UTILITIES SHEETS 0040 TO 0049 AND SIGNS AND PAVEMENT MARKING SHEETS 0070 TO 0079.



BASE SURVEY SUPPLIED BY  
JACOBS  
SURVEYED ON 07/2016  
HORIZONTAL DATUM: MGA94  
GRID: MGA94, ZONE 55  
LEVEL DATUM: AHD

WARNING  
BEWARE OF UNDERGROUND SERVICES  
THE LOCATION OF UNDERGROUND SERVICES ARE  
APPROXIMATE ONLY AND THE EXACT POSITION  
SHOULD BE PROVEN ON SITE. NO GUARANTEE IS  
GIVEN THAT ALL SERVICES ARE SHOWN.

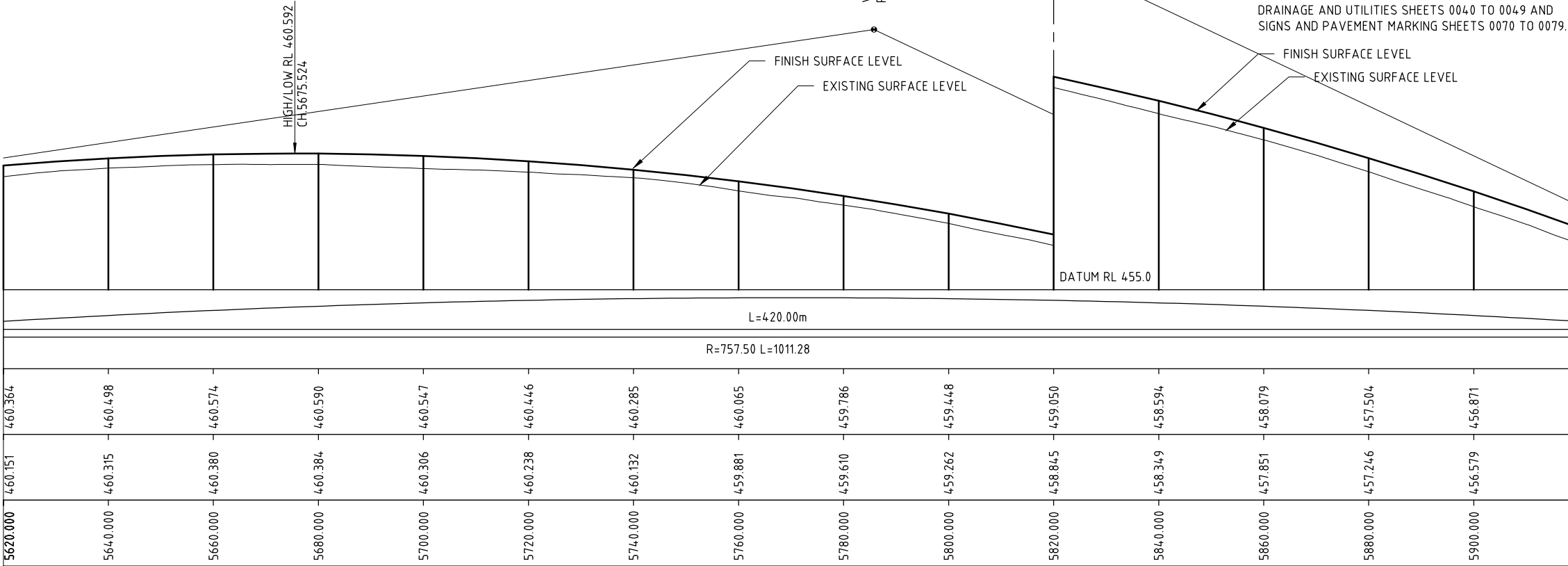
TO PROTECT THE ENVIRONMENT, CLEARING  
SHALL BE IN ACCORDANCE WITH SPECIFICATION  
PART G2 AND CONFINED TO THAT REQUIRED FOR  
EARTHWORKS, DRAINAGE AND FENCING. EXISTING  
TREES, SHRUBS AND GRASSES NOT AFFECTED  
BY THE ABOVE WORKS SHALL BE RETAINED AND  
DISTURBED AS LITTLE AS POSSIBLE.

DATUM RL 458.0  
VERTICAL  
ALIGNMENT  
HORIZONTAL  
ALIGNMENT

DESIGN LEVELS

EXISTING LEVELS

CHAINAGE



LONGITUDINAL SECTION - MIDLAND HIGHWAY (MC00)

SCALE 1:1000 HORIZ 1:100 VERT

A	ISSUE FOR PRELIMINARY REVIEW		
No.	Amendment Description	Initials	Date
A3 original	This sheet may be prepared using colour and may be incomplete if copied		

SCALES	
0 1 2 3 4 VERT.	0 10 20 30 40 HORIZ.
SCALE 1:1000(H) 1:100(V)	
Co-ordinate System: MGA Zone 55	Height Datum: A.H.D.

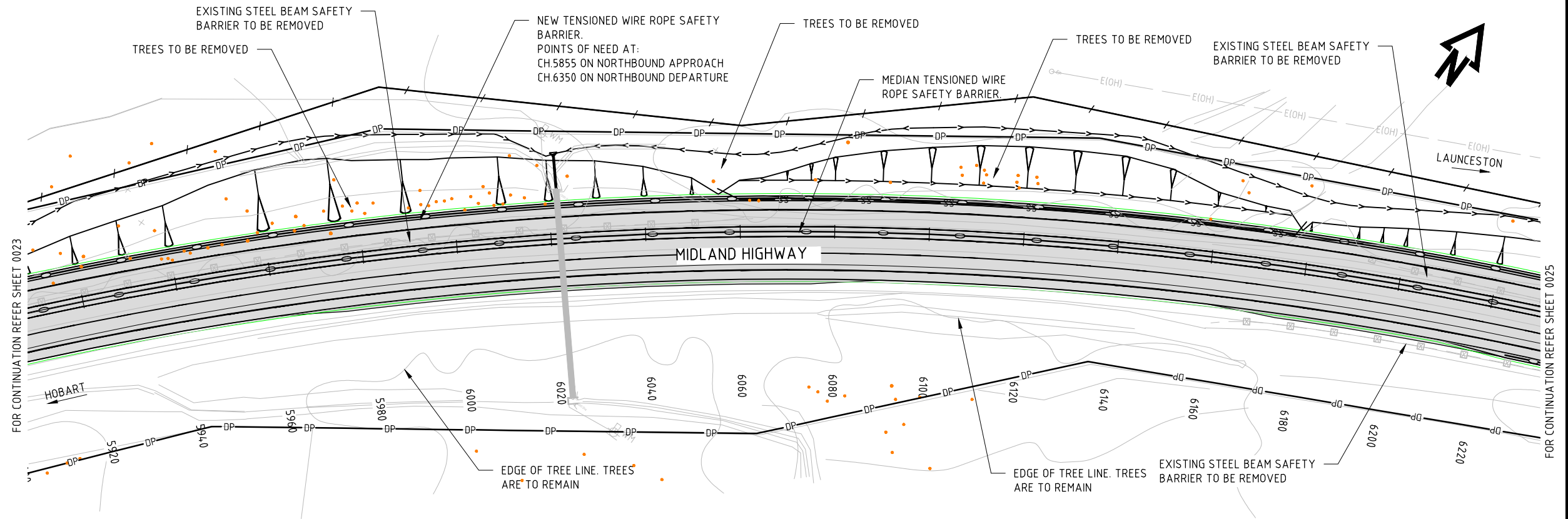
DESIGNED	D WILSON
REVIEWED	

Department of State Growth
MIDLAND HIGHWAY YORK PLAINS TO ST PETERS PASS SAFETY UPGRADE
GENERAL ARRANGEMENT & LONG SECTION - CH. 5620 TO CH. 5920

CONTRACT No. ???	DRAWING 32-18266-C020_C038.dwg	PRINTED DATE 01-Feb-17, 1:28 PM	SHEET No. 0023
REGISTRATION NUMBER A0087.0??			REVISION A

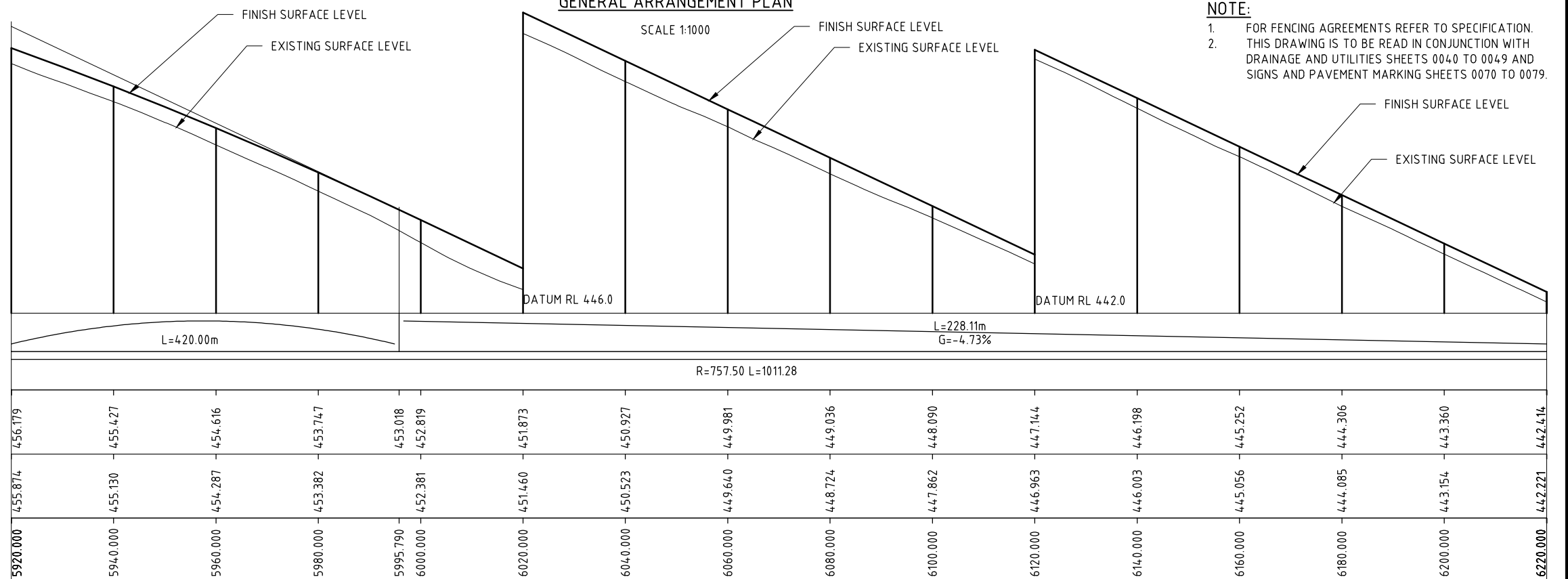
LEGEND:

- PRIME & 14mm SEAL
- 50mm DENSE GRADED ASPHALT SEAL AND WATER PROOFING SEAL
- 40mm DENSE GRADED ASPHALT SEAL AND WATER PROOFING SEAL
- GRAVEL SHOULDER MATERIAL FOR INTERNAL ROADS



GENERAL ARRANGEMENT PLAN

SCALE 1:1000



NOTE:

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- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRAINAGE AND UTILITIES SHEETS 0040 TO 0049 AND SIGNS AND PAVEMENT MARKING SHEETS 0070 TO 0079.



BASE SURVEY SUPPLIED BY  
JACOBS  
SURVEYED ON 07/2016  
HORIZONTAL DATUM: MGA94  
GRID: MGA94, ZONE 55  
LEVEL DATUM: AHD

DATUM RL 451.0  
VERTICAL  
ALIGNMENT  
HORIZONTAL  
ALIGNMENT

**WARNING**  
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DESIGN LEVELS

EXISTING LEVELS

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CHAINAGE

LONGITUDINAL SECTION - MIDLAND HIGHWAY (MC00)

SCALE 1:1000 HORIZ 1:100 VERT

A	ISSUE FOR PRELIMINARY REVIEW		
No.	Amendment Description	Initials	Date
A3 original	This sheet may be prepared using colour and may be incomplete if copied		

SCALES	
0 1 2 3 4 VERT.	0 10 20 30 40 HORIZ.
SCALE 1:1000(H) 1:100(V)	
Co-ordinate System: MGA Zone 55	Height Datum: A.H.D.

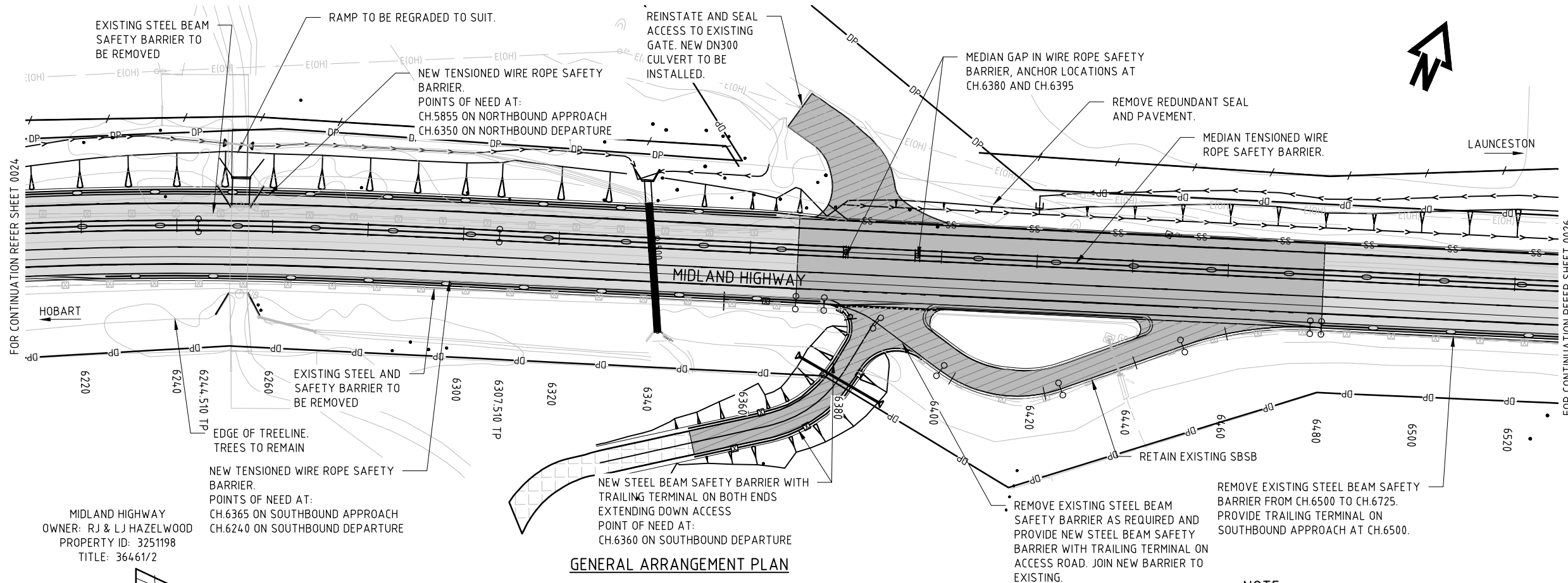
GHD	Tasmanian Government
DESIGNED	D WILSON
REVIEWED	

Department of State Growth
MIDLAND HIGHWAY YORK PLAINS TO ST PETERS PASS SAFETY UPGRADE
GENERAL ARRANGEMENT & LONG SECTION - CH. 5920 TO CH. 6220

CONTRACT No. ????	DRAWING 32-18266-C020_C038.dwg	PRINTED DATE 01-Feb-17, 1:28 PM	SHEET No. 0024
REGISTRATION NUMBER A0087.0??			REVISION A

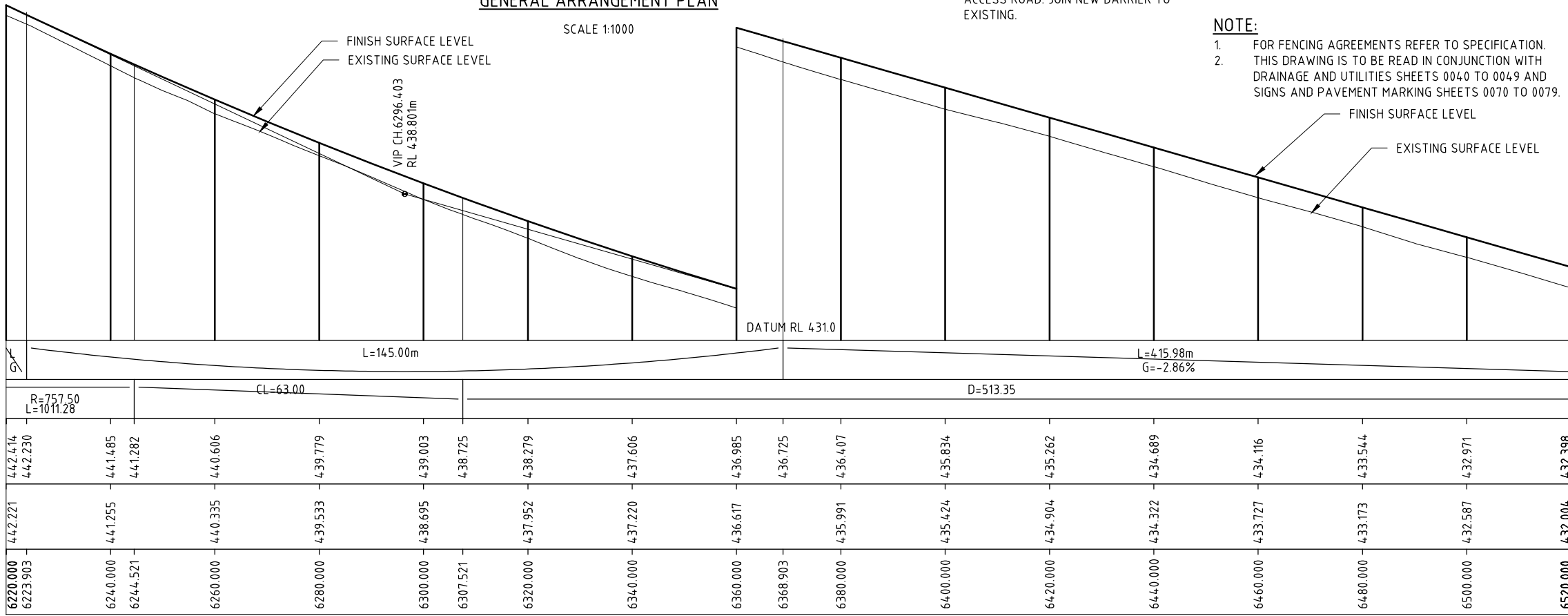
LEGEND:

- PRIME & 14mm SEAL
- 50mm DENSE GRADED ASPHALT SEAL AND WATER PROOFING SEAL
- 40mm DENSE GRADED ASPHALT SEAL AND WATER PROOFING SEAL
- GRAVEL SHOULDER MATERIAL FOR INTERNAL ROADS



GENERAL ARRANGEMENT PLAN

SCALE 1:1000



NOTE:

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BASE SURVEY SUPPLIED BY JACOBS  
SURVEYED ON 07/2016  
HORIZONTAL DATUM: MGA94  
GRID: MGA94, ZONE 55  
LEVEL DATUM: AHD

WARNING  
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DATUM RL 436.0  
VERTICAL ALIGNMENT  
HORIZONTAL ALIGNMENT

DESIGN LEVELS

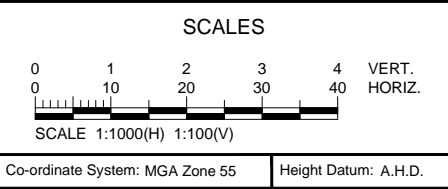
EXISTING LEVELS

CHAINAGE

LONGITUDINAL SECTION - MIDLAND HIGHWAY (MC00)

SCALE 1:1000 HORIZ 1:100 VERT

A	ISSUE FOR PRELIMINARY REVIEW		
No.	Amendment Description	Initials	Date
A3 original	This sheet may be prepared using colour and may be incomplete if copied		



GHD

Tasmanian Government

DESIGNED D WILSON

REVIEWED

Department of State Growth

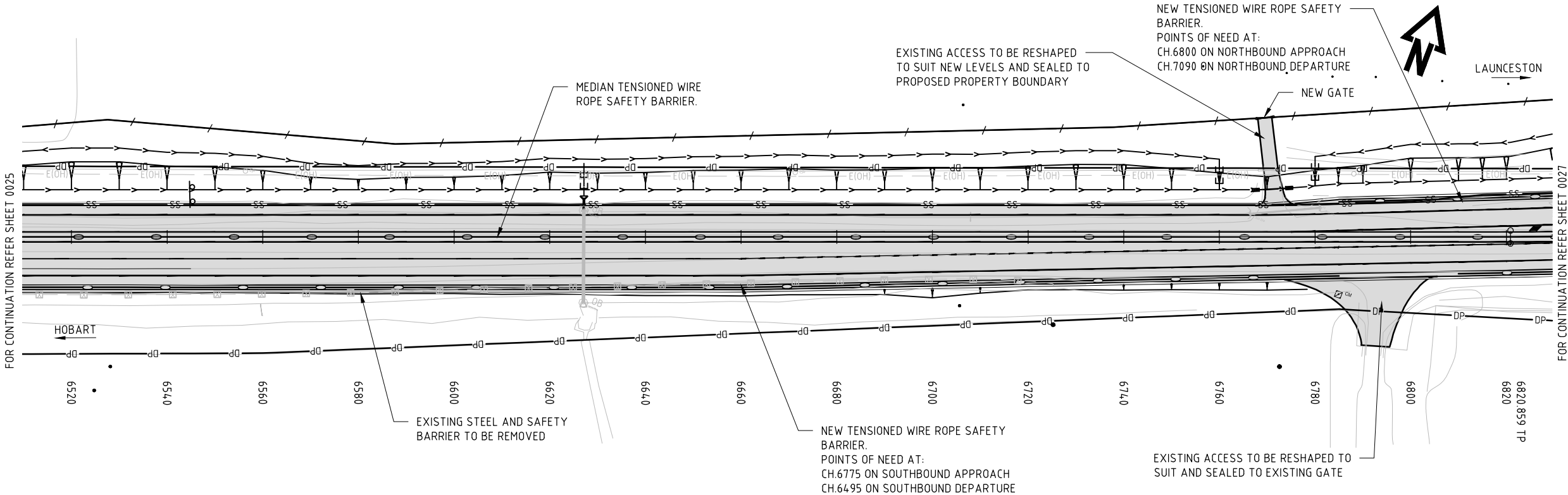
MIDLAND HIGHWAY  
YORK PLAINS TO ST PETERS PASS  
SAFETY UPGRADE

GENERAL ARRANGEMENT & LONG SECTION - CH. 6220 TO CH. 6520

CONTRACT No. ????	DRAWING 32-18266-C020_C038.dwg	PRINTED DATE 01-Feb-17, 1:28 PM	SHEET No. 0025
REGISTRATION NUMBER A0087.0??			REVISION A

LEGEND:

- PRIME & 14mm SEAL
- 50mm DENSE GRADED ASPHALT SEAL  
AND WATER PROOFING SEAL
- 40mm DENSE GRADED ASPHALT SEAL  
AND WATER PROOFING SEAL
- GRAVEL SHOULDER MATERIAL FOR INTERNAL  
ROADS



- NOTE:
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  - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRAINAGE AND UTILITIES SHEETS 0040 TO 0049 AND SIGNS AND PAVEMENT MARKING SHEETS 0070 TO 0079.



BASE SURVEY SUPPLIED BY  
JACOBS  
SURVEYED ON 07/2016  
HORIZONTAL DATUM: MGA94  
GRID: MGA94, ZONE 55  
LEVEL DATUM: AHD

WARNING  
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DISTURBED AS LITTLE AS POSSIBLE.

DATUM RL 427.0

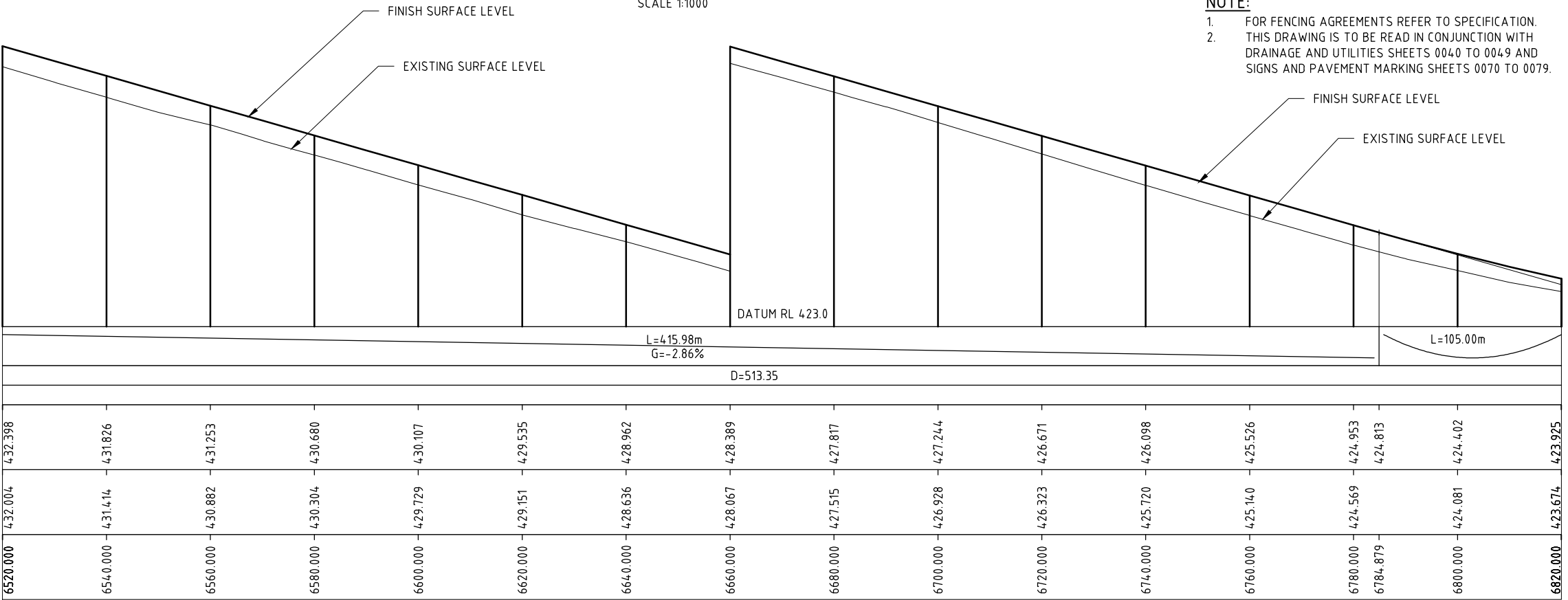
VERTICAL  
ALIGNMENT

HORIZONTAL  
ALIGNMENT

DESIGN LEVELS

EXISTING LEVELS

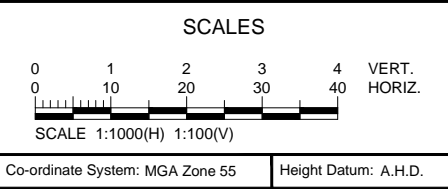
CHAINAGE



LONGITUDINAL SECTION - MIDLAND HIGHWAY (MC00)

SCALE 1:1000 HORIZ 1:100 VERT

A	ISSUE FOR PRELIMINARY REVIEW		
No.	Amendment Description	Initials	Date
A3 original	This sheet may be prepared using colour and may be incomplete if copied		



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REVIEWED

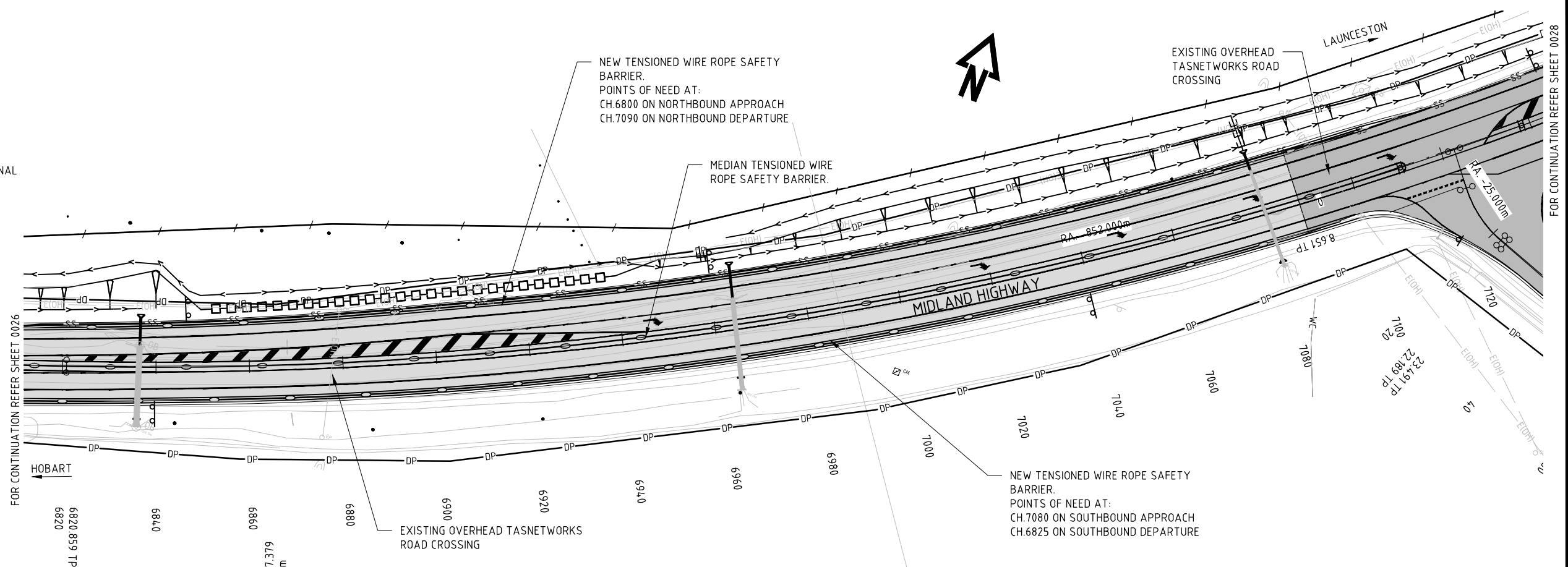
Department of State Growth

MIDLAND HIGHWAY  
YORK PLAINS TO ST PETERS PASS  
SAFETY UPGRADE

GENERAL ARRANGEMENT & LONG SECTION - CH. 6520 TO CH. 6820

CONTRACT No. ????	DRAWING 32-18266-C020_C038.dwg	PRINTED DATE 01-Feb-17, 1:28 PM	SHEET No. 0026
REGISTRATION NUMBER A0087.0??			REVISION A

	PRIME & 14mm SEAL
	50mm DENSE GRADED ASPHALT SEAL AND WATER PROOFING SEAL
	40mm DENSE GRADED ASPHALT SEAL AND WATER PROOFING SEAL
	GRAVEL SHOULDER MATERIAL FOR INTERNAL ROADS

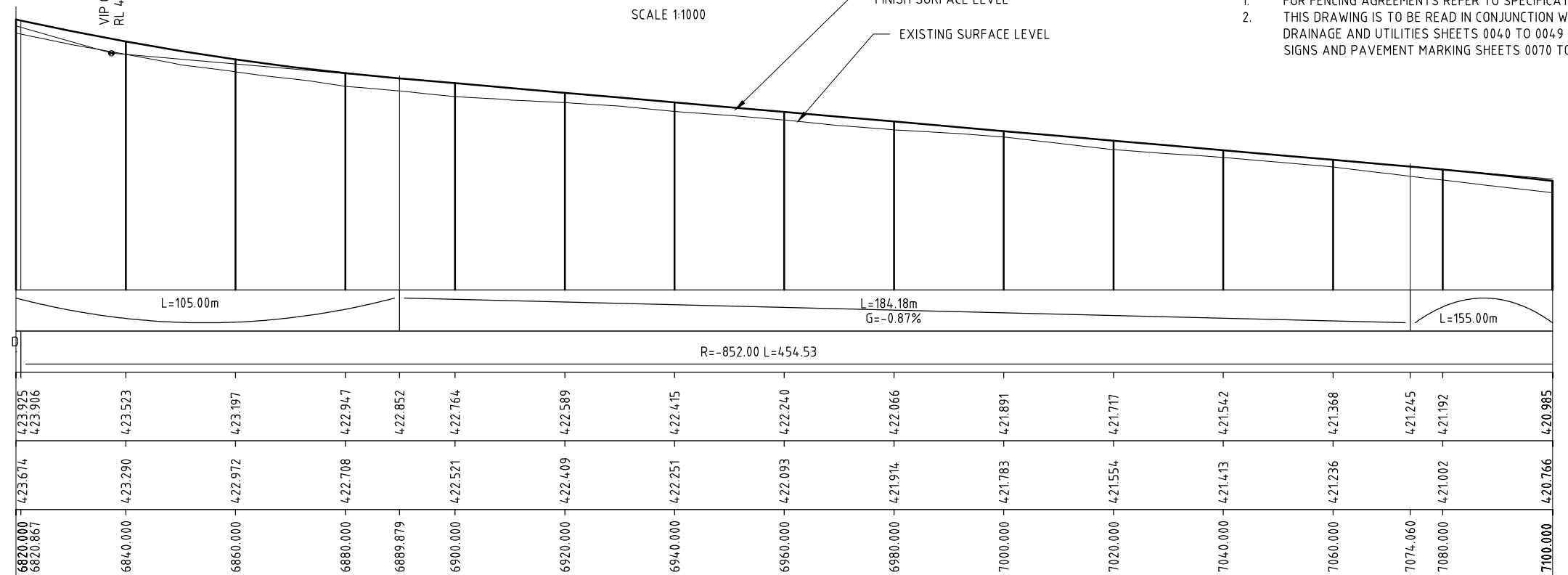


SCALE 1:1000

— FINISH SURFACE LEVEL

— EXISTING SURFACE LEVEL

1. FOR FENCING AGREEMENTS REFER TO SPECIFICATION.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRAINAGE AND UTILITIES SHEETS 0040 TO 0049 AND SIGNS AND PAVEMENT MARKING SHEETS 0070 TO 0079.



SCALE 1:1000 HORIZ 1:100 VERT



BASE SURVEY SUPPLIED BY  
JACOBS  
SURVEYED ON 07/2016  
HORIZONTAL DATUM: MGA94  
GRID: MGA94, ZONE 55  
LEVEL DATUM: AHD

**WARNING**  
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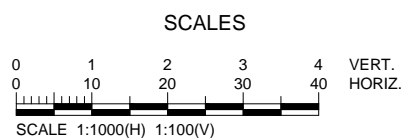
DATUM RL 419.0

VERTICAL  
ALIGNMENT  
HORIZONTAL  
ALIGNMENT

## DESIGN LEVELS

## EXISTING LEVELS

CHAINAGE



Co-ordinate System: MGA Zone 55
---------------------------------

Height Datum: A.H.D.



DESIGNED D WILSON

REVIEWED

Department of State Growth

MIDLAND HIGHWAY  
YORK PLAINS TO ST PETERS PASS  
SAFETY UPGRADE

GENERAL ARRANGEMENT &amp; LONG SECTION - CH. 6820 TO CH. 7100

CONTRACT No.

???

### DRAWING

32-18266-C020 C038.dwg

PRINTED DATE

01-Feb-17, 1:28 PM

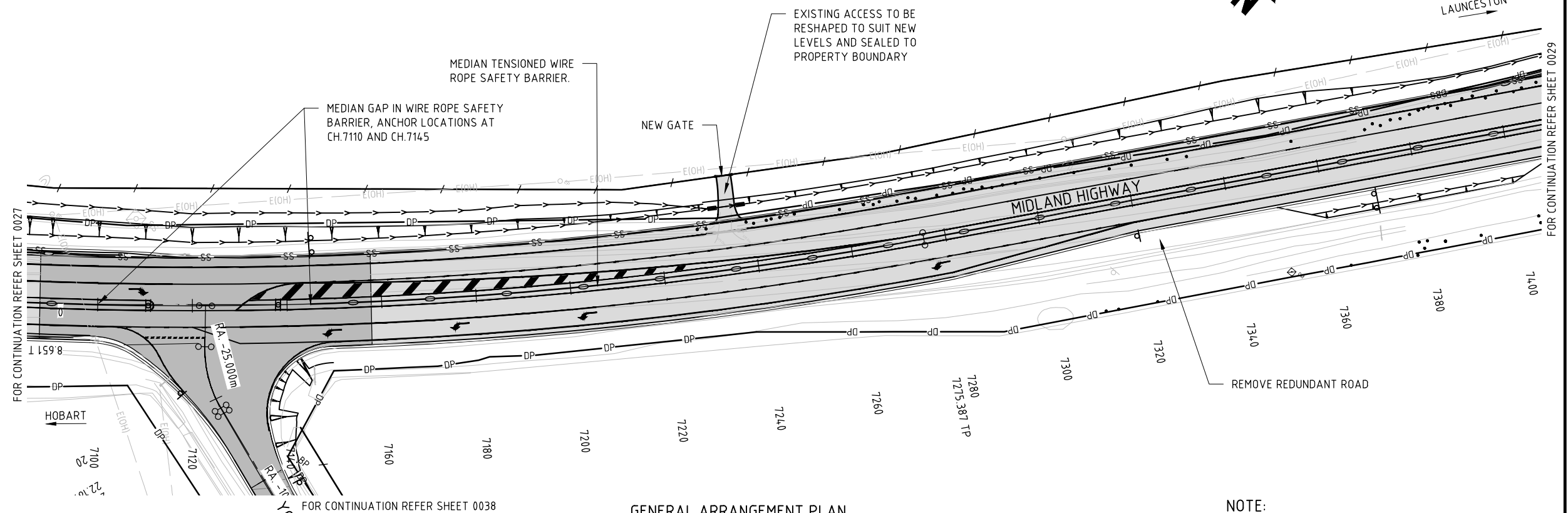
SHEET No.

0027 |

## REVISION A

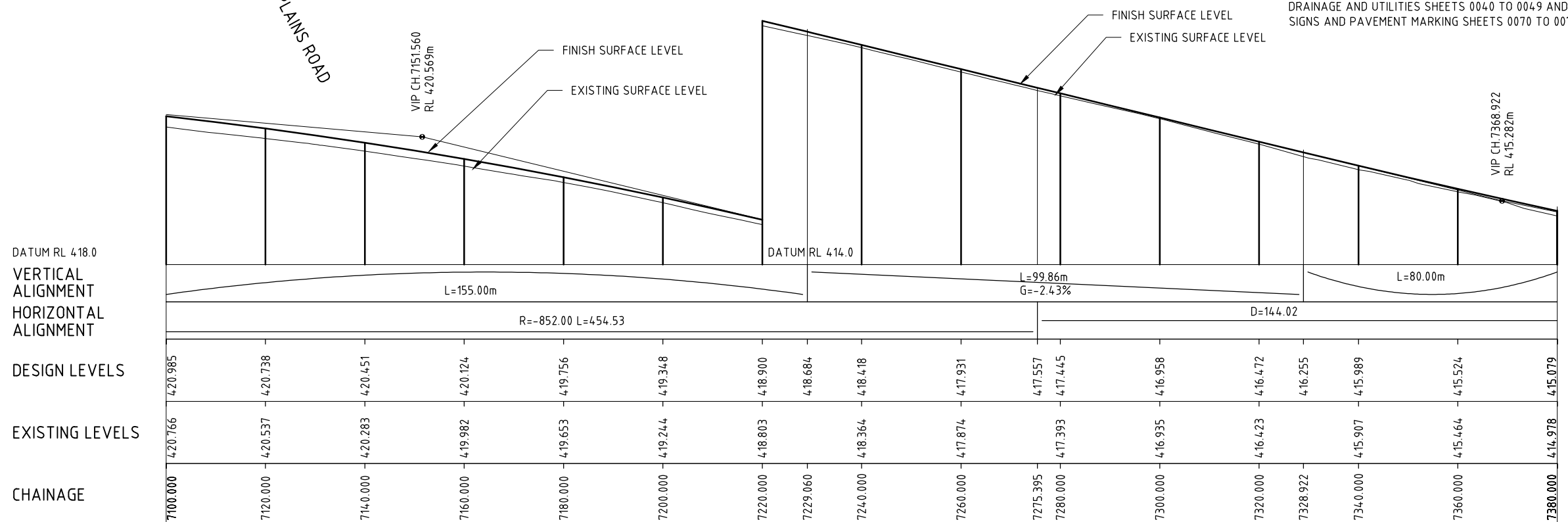
A	ISSUE FOR PRELIMINARY REVIEW		
No.	Amendment Description	Initials	Date
A3 original	This sheet may be prepared using colour and may be incomplete if copied		

	PRIME & 14mm SEAL
	50mm DENSE GRADED ASPHALT SEAL AND WATER PROOFING SEAL
	40mm DENSE GRADED ASPHALT SEAL AND WATER PROOFING SEAL
	GRAVEL SHOULDER MATERIAL FOR INTERNAL ROADS



SCALE 1:1000

1. FOR FENCING AGREEMENTS REFER TO SPECIFICATION.
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SCALE 1:1000 HORIZ 1:100 VERT



BASE SURVEY SUPPLIED BY  
JACOBS  
SURVEYED ON 07/2016  
HORIZONTAL DATUM: MGA94  
GRID: MGA94, ZONE 55  
LEVEL DATUM: AHD

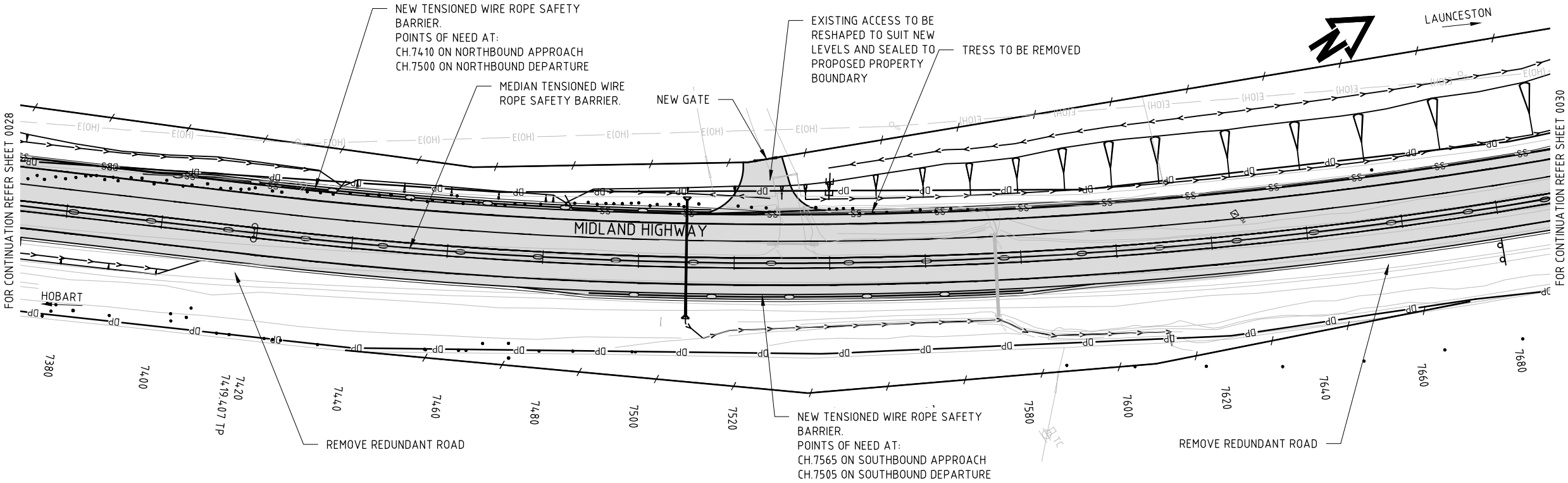
**WARNING**  
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				 		<b>Department of State Growth</b> MIDLAND HIGHWAY YORK PLAINS TO ST PETERS PASS SAFETY UPGRADE		CONTRACT No. ????	DRAWING 32-18266-C020_C038.dwg	PRINTED DATE 01-Feb-17, 1:28 PM	SHEET No.  <b>0028</b>
				DESIGNED     D. WILSON  REVIEWED				REGISTRATION NUMBER <b>A0087.0??</b>			REVISION A

LEGEND:

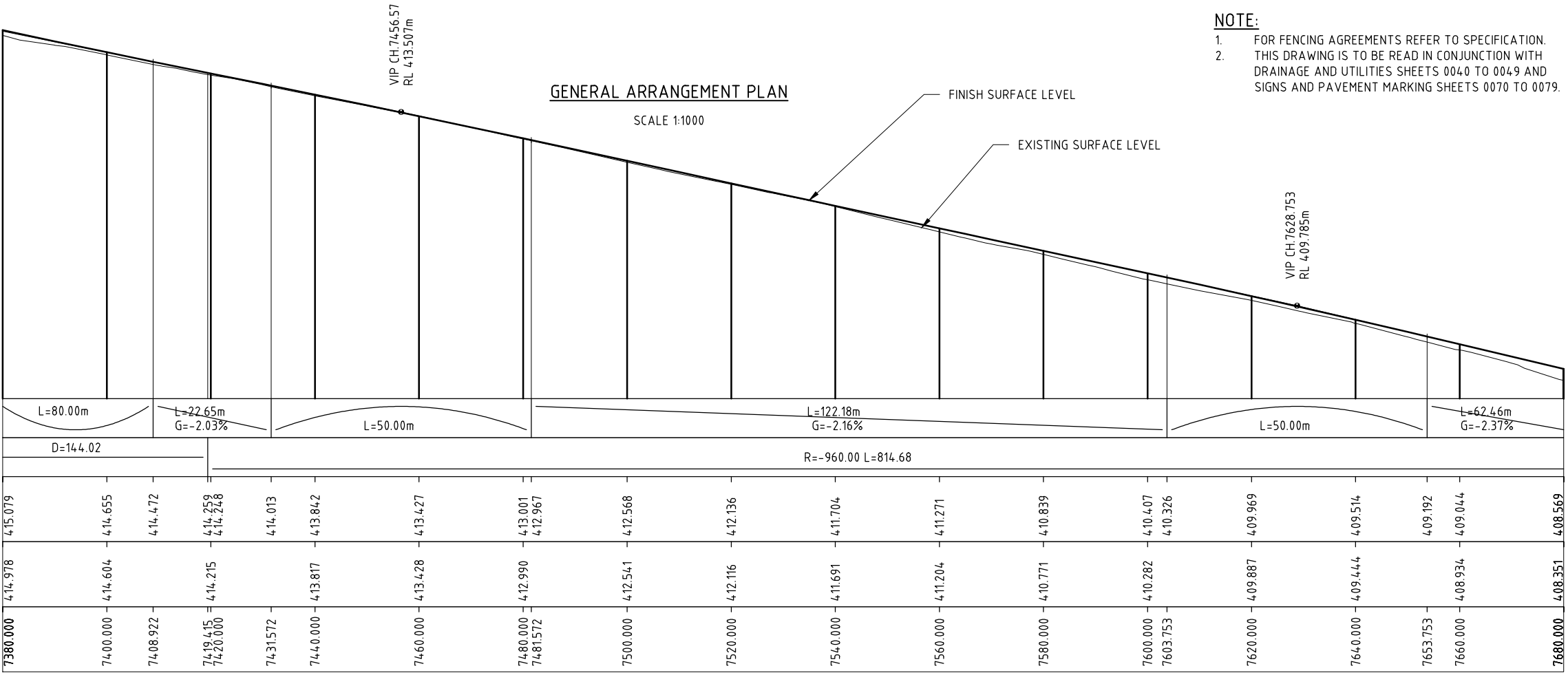
- PRIME & 14mm SEAL
- 50mm DENSE GRADED ASPHALT SEAL  
AND WATER PROOFING SEAL
- 40mm DENSE GRADED ASPHALT SEAL  
AND WATER PROOFING SEAL
- GRAVEL SHOULDER MATERIAL FOR INTERNAL  
ROADS



- NOTE:
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GENERAL ARRANGEMENT PLAN

SCALE 1:1000



LONGITUDINAL SECTION - MIDLAND HIGHWAY (MC00)

SCALE 1:1000 HORIZ 1:100 VERT



BASE SURVEY SUPPLIED BY  
JACOBS  
SURVEYED ON 07/2016  
HORIZONTAL DATUM: MGA94  
GRID: MGA94, ZONE 55  
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WARNING  
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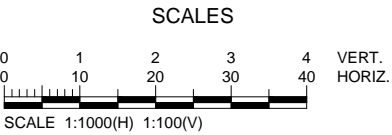
DATUM RL 408.0

VERTICAL  
ALIGNMENT  
HORIZONTAL  
ALIGNMENT

DESIGN LEVELS

EXISTING LEVELS

CHAINAGE



DESIGNED    D WILSON

REVIEWED

Department of State Growth

MIDLAND HIGHWAY  
YORK PLAINS TO ST PETERS PASS  
SAFETY UPGRADE

GENERAL ARRANGEMENT & LONG SECTION - CH. 7380 TO CH. 7680

CONTRACT No.

????

DRAWING

32-18266-C020\_C038.dwg

PRINTED DATE

01-Feb-17, 1:28 PM

SHEET No.

0029

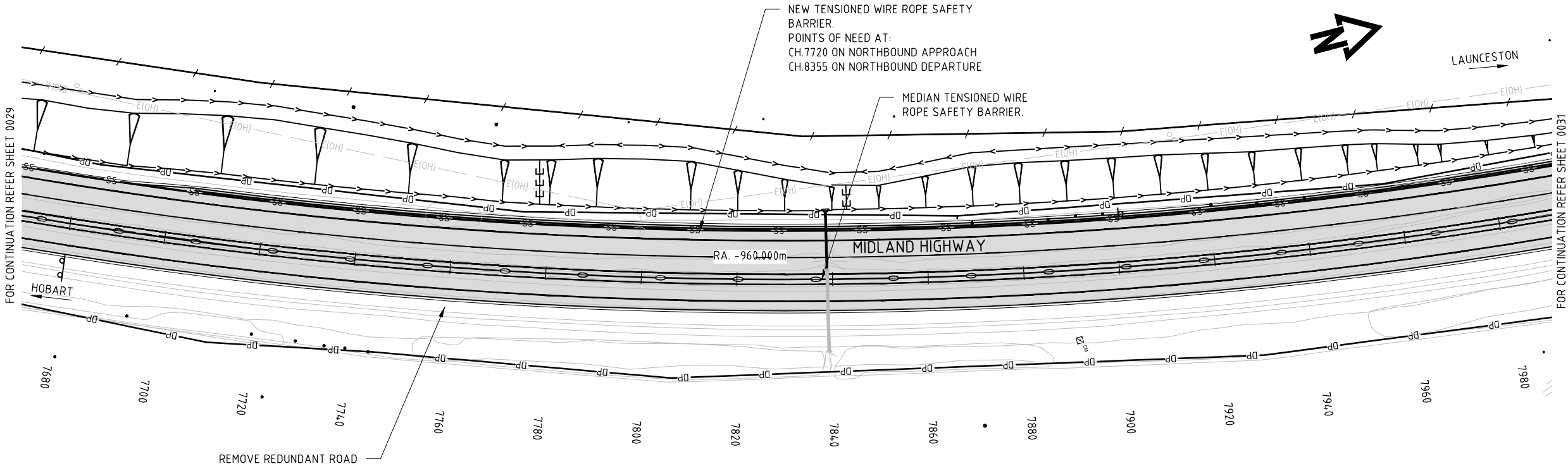
REVISION A

A	ISSUE FOR PRELIMINARY REVIEW		
No.	Amendment Description	Initials	Date

A3 original      This sheet may be prepared using colour and may be incomplete if copied

LEGEND:

- PRIME & 14mm SEAL
- 50mm DENSE GRADED ASPHALT SEAL  
AND WATER PROOFING SEAL
- 40mm DENSE GRADED ASPHALT SEAL  
AND WATER PROOFING SEAL
- GRAVEL SHOULDER MATERIAL FOR INTERNAL  
ROADS



GENERAL ARRANGEMENT PLAN

SCALE 1:1000

- NOTE:
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BASE SURVEY SUPPLIED BY JACOBS  
SURVEYED ON 07/2016  
HORIZONTAL DATUM: MGA94  
GRID: MGA94, ZONE 55  
LEVEL DATUM: AHD

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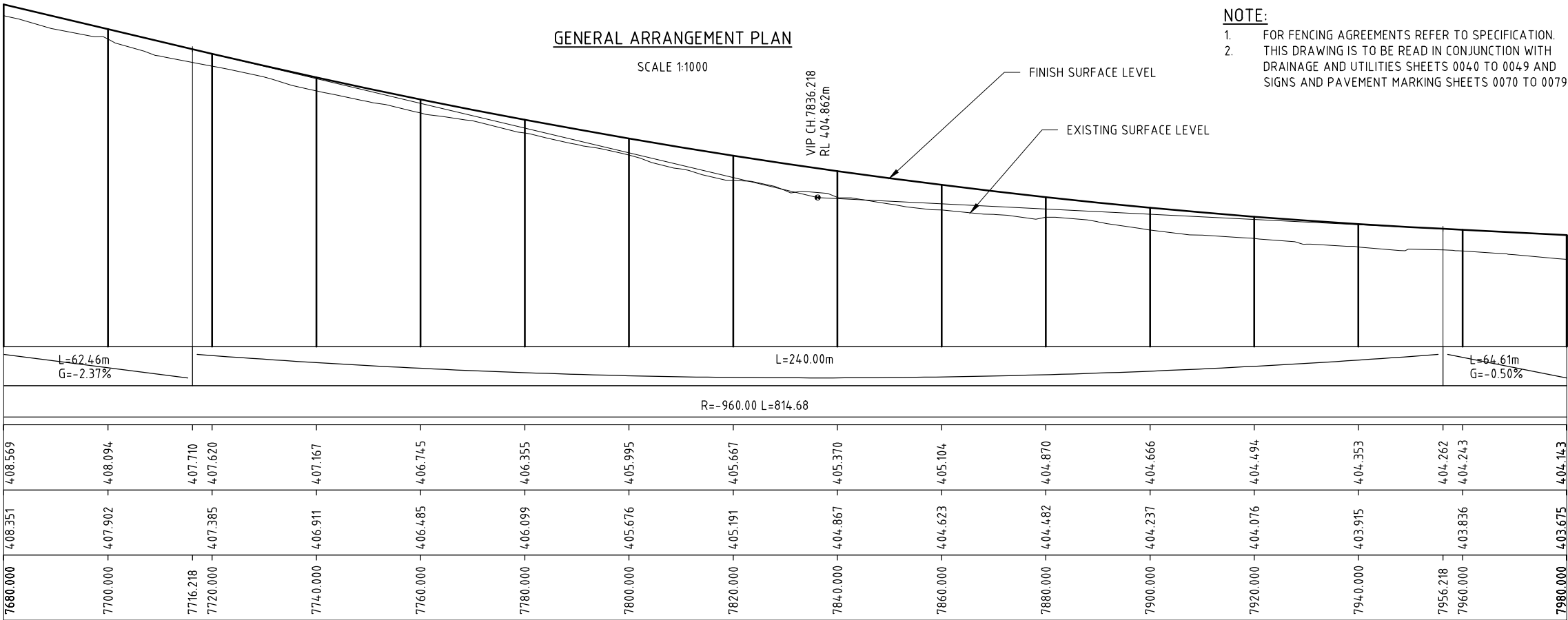
DATUM RL 402.0

VERTICAL ALIGNMENT  
HORIZONTAL ALIGNMENT

DESIGN LEVELS

EXISTING LEVELS

CHAINAGE



LONGITUDINAL SECTION - MIDLAND HIGHWAY (MC00)

SCALE 1:1000 HORIZ 1:100 VERT

A	ISSUE FOR PRELIMINARY REVIEW		
No.	Amendment Description	Initials	Date
A3 original	This sheet may be prepared using colour and may be incomplete if copied		

SCALES	
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SCALE 1:1000(H) 1:100(V)	
Co-ordinate System: MGA Zone 55	Height Datum: A.H.D.

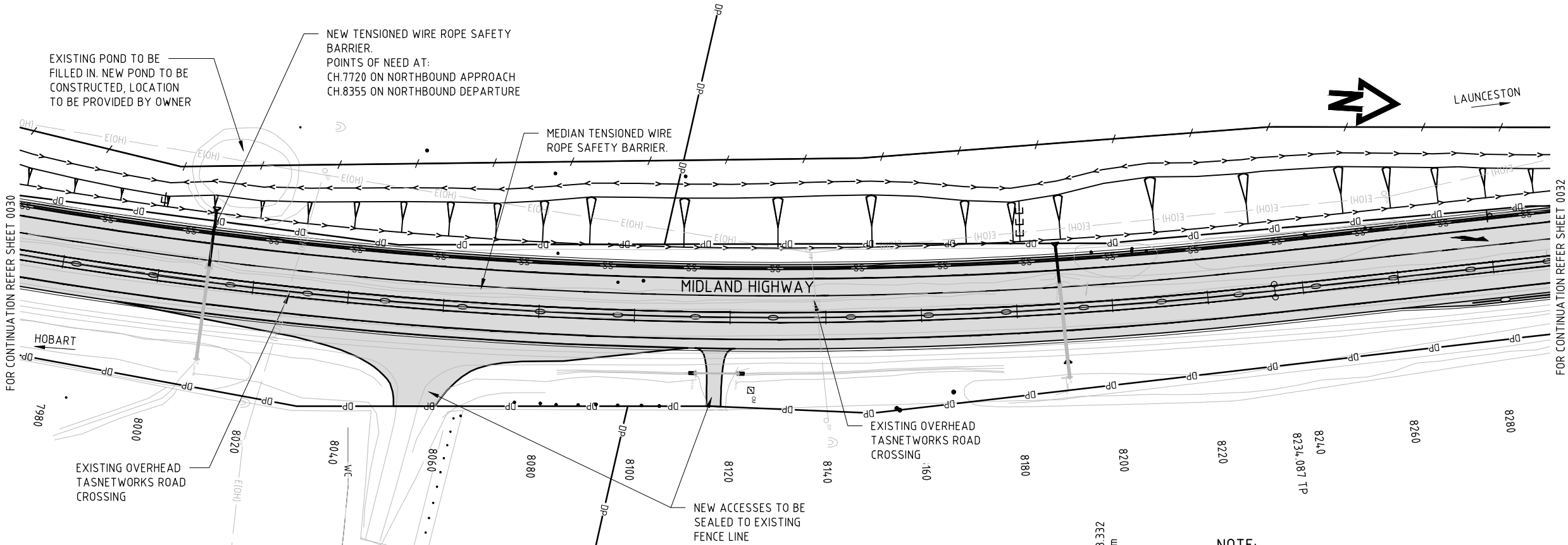
GHD	Tasmanian Government
DESIGNED	D WILSON
REVIEWED	

Department of State Growth
MIDLAND HIGHWAY YORK PLAINS TO ST PETERS PASS SAFETY UPGRADE
GENERAL ARRANGEMENT & LONG SECTION - CH. 7680 TO CH. 7980

CONTRACT No. ????	DRAWING 32-18266-C020_C038.dwg	PRINTED DATE 01-Feb-17, 1:28 PM	SHEET No. 0030
REGISTRATION NUMBER A0087.0??			REVISION A

LEGEND:

- PRIME & 14mm SEAL
- 50mm DENSE GRADED ASPHALT SEAL  
AND WATER PROOFING SEAL
- 40mm DENSE GRADED ASPHALT SEAL  
AND WATER PROOFING SEAL
- GRAVEL SHOULDER MATERIAL FOR INTERNAL  
ROADS



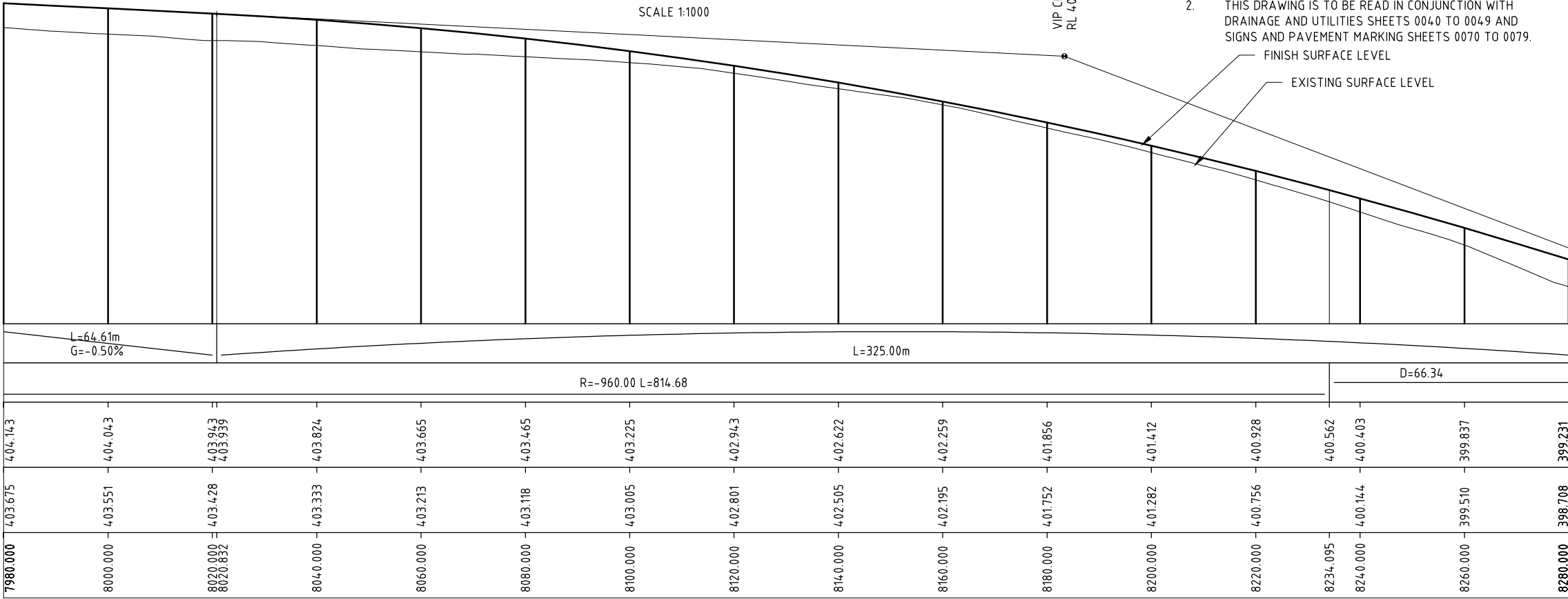
GENERAL ARRANGEMENT PLAN

SCALE 1:1000

NOTE:

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- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRAINAGE AND UTILITIES SHEETS 0040 TO 0049 AND SIGNS AND PAVEMENT MARKING SHEETS 0070 TO 0079.

FINISH SURFACE LEVEL  
EXISTING SURFACE LEVEL



LONGITUDINAL SECTION - MIDLAND HIGHWAY (MC00)

SCALE 1:1000 HORIZ 1:100 VERT



BASE SURVEY SUPPLIED BY  
JACOBS  
SURVEYED ON 07/2016  
HORIZONTAL DATUM: MGA94  
GRID: MGA94, ZONE 55  
LEVEL DATUM: AHD

WARNING  
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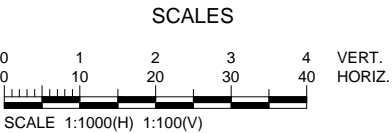
DATUM RL 398.0

VERTICAL  
ALIGNMENT  
HORIZONTAL  
ALIGNMENT

DESIGN LEVELS

EXISTING LEVELS

CHAINAGE



Co-ordinate System: MGA Zone 55

Height Datum: A.H.D.



DESIGNED D WILSON

REVIEWED

Department of State Growth

MIDLAND HIGHWAY  
YORK PLAINS TO ST PETERS PASS  
SAFETY UPGRADE

GENERAL ARRANGEMENT & LONG SECTION - CH. 7980 TO CH. 8280

CONTRACT No.

????

DRAWING

32-18266-C020\_C038.dwg

PRINTED DATE

01-Feb-17, 1:28 PM

SHEET No.

0031

REVISION A

REGISTRATION NUMBER

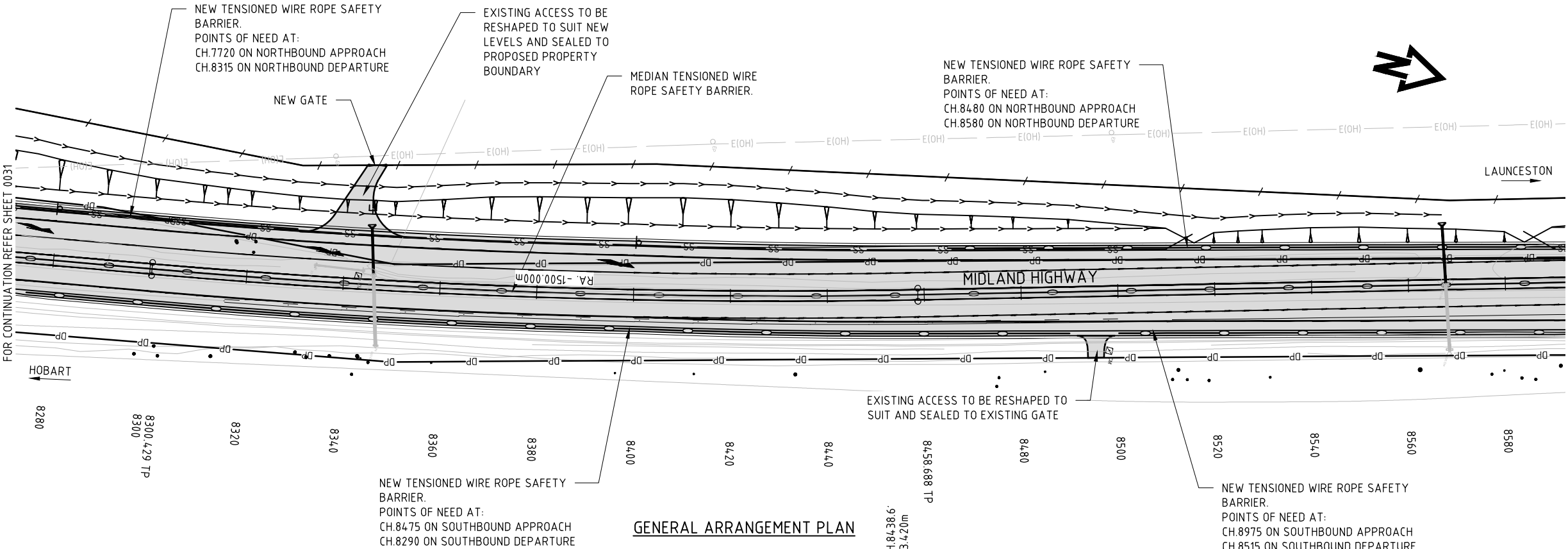
A0087.0??

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No.	Amendment Description	Initials	Date

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LEGEND:

- PRIME & 14mm SEAL
- 50mm DENSE GRADED ASPHALT SEAL  
AND WATER PROOFING SEAL
- 40mm DENSE GRADED ASPHALT SEAL  
AND WATER PROOFING SEAL
- GRAVEL SHOULDER MATERIAL FOR INTERNAL  
ROADS



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  - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRAINAGE AND UTILITIES SHEETS 0040 TO 0049 AND SIGNS AND PAVEMENT MARKING SHEETS 0070 TO 0079.



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GRID: MGA94, ZONE 55  
LEVEL DATUM: AHD

WARNING  
BEWARE OF UNDERGROUND SERVICES  
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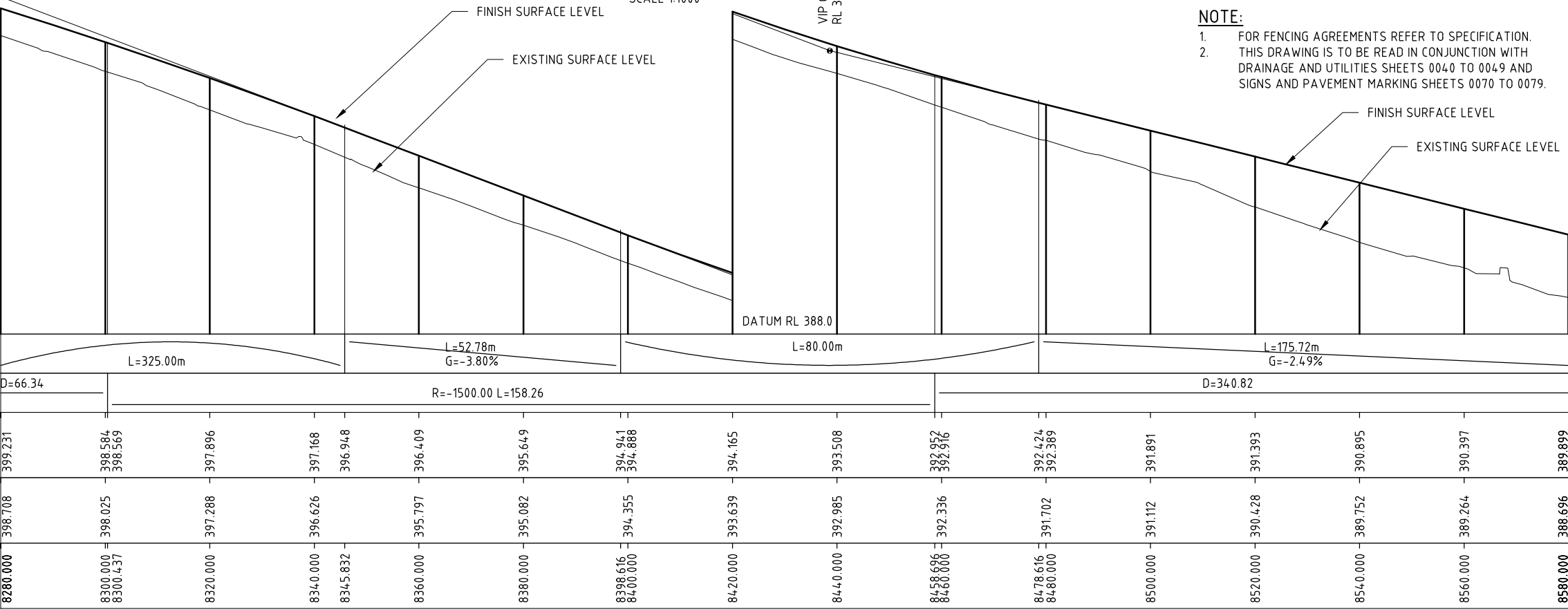
TO PROTECT THE ENVIRONMENT, CLEARING SHALL BE IN ACCORDANCE WITH SPECIFICATION PART G2 AND CONFINED TO THAT REQUIRED FOR EARTHWORKS, DRAINAGE AND FENCING. EXISTING TREES, SHRUBS AND GRASSES NOT AFFECTED BY THE ABOVE WORKS SHALL BE RETAINED AND DISTURBED AS LITTLE AS POSSIBLE.

DATUM RL 393.0  
VERTICAL  
ALIGNMENT  
HORIZONTAL  
ALIGNMENT

DESIGN LEVELS

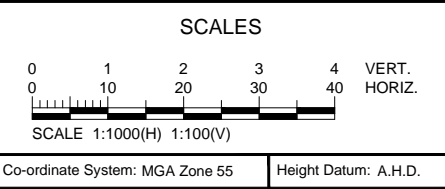
EXISTING LEVELS

CHAINAGE



LONGITUDINAL SECTION - MIDLAND HIGHWAY (MC00)  
SCALE 1:1000 HORIZ 1:100 VERT

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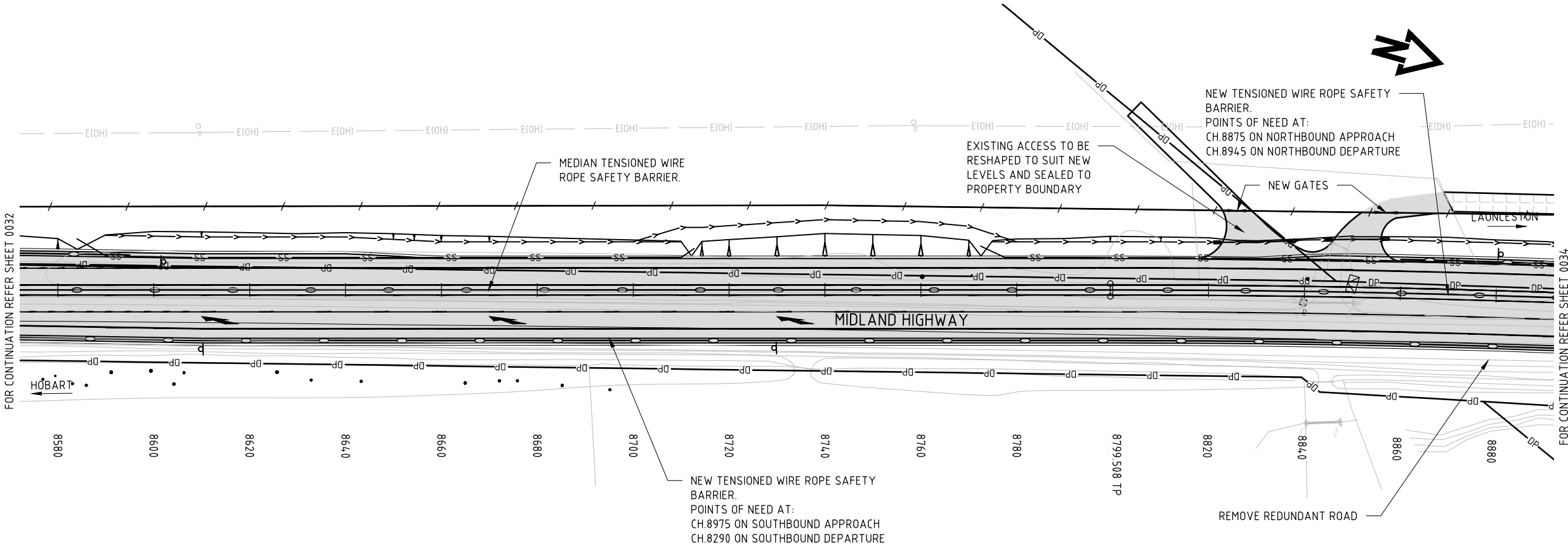
MIDLAND HIGHWAY  
YORK PLAINS TO ST PETERS PASS  
SAFETY UPGRADE

GENERAL ARRANGEMENT & LONG SECTION - CH. 8280 TO CH. 8580

CONTRACT No. ???	DRAWING 32-18266-C020_C038.dwg	PRINTED DATE 01-Feb-17, 1:28 PM	SHEET No. 0032
REGISTRATION NUMBER A0087.0??			REVISION A

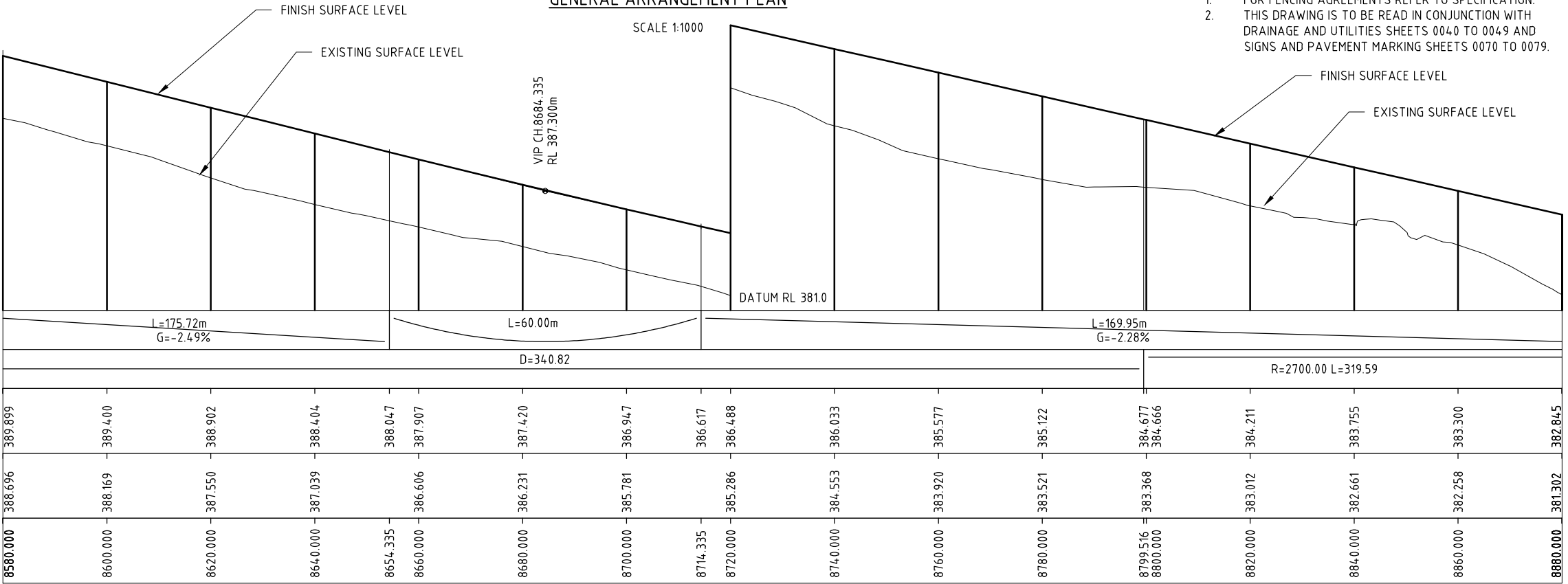
LEGEND:

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AND WATER PROOFING SEAL
- GRAVEL SHOULDER MATERIAL FOR INTERNAL  
ROADS



GENERAL ARRANGEMENT PLAN

SCALE 1:1000



LONGITUDINAL SECTION - MIDLAND HIGHWAY (MC00)

SCALE 1:1000 HORIZ 1:100 VERT

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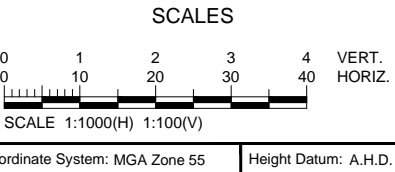
DATUM RL 385.0

VERTICAL  
ALIGNMENT  
HORIZONTAL  
ALIGNMENT

DESIGN LEVELS

EXISTING LEVELS

CHAINAGE



DESIGNED D WILSON

REVIEWED

Department of State Growth

MIDLAND HIGHWAY  
YORK PLAINS TO ST PETERS PASS  
SAFETY UPGRADE

GENERAL ARRANGEMENT & LONG SECTION - CH. 8580 TO CH. 8880

CONTRACT No.  
???

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0033

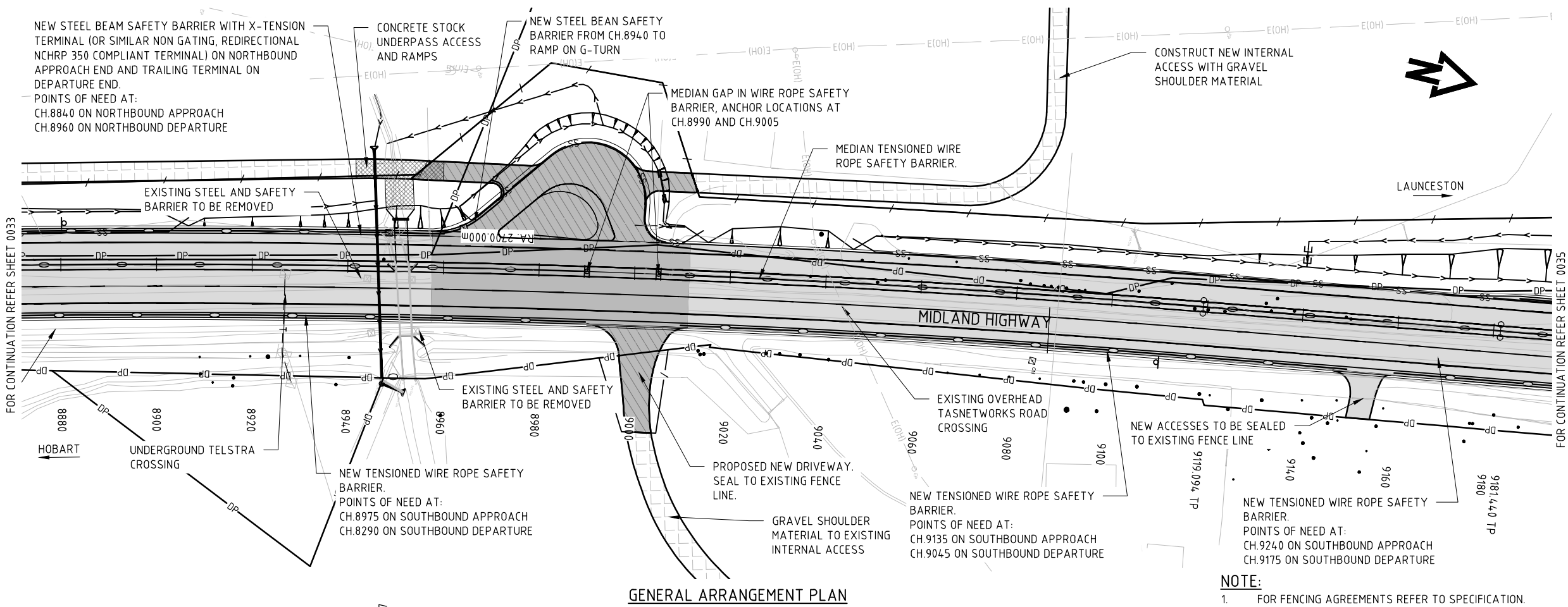
REGISTRATION NUMBER  
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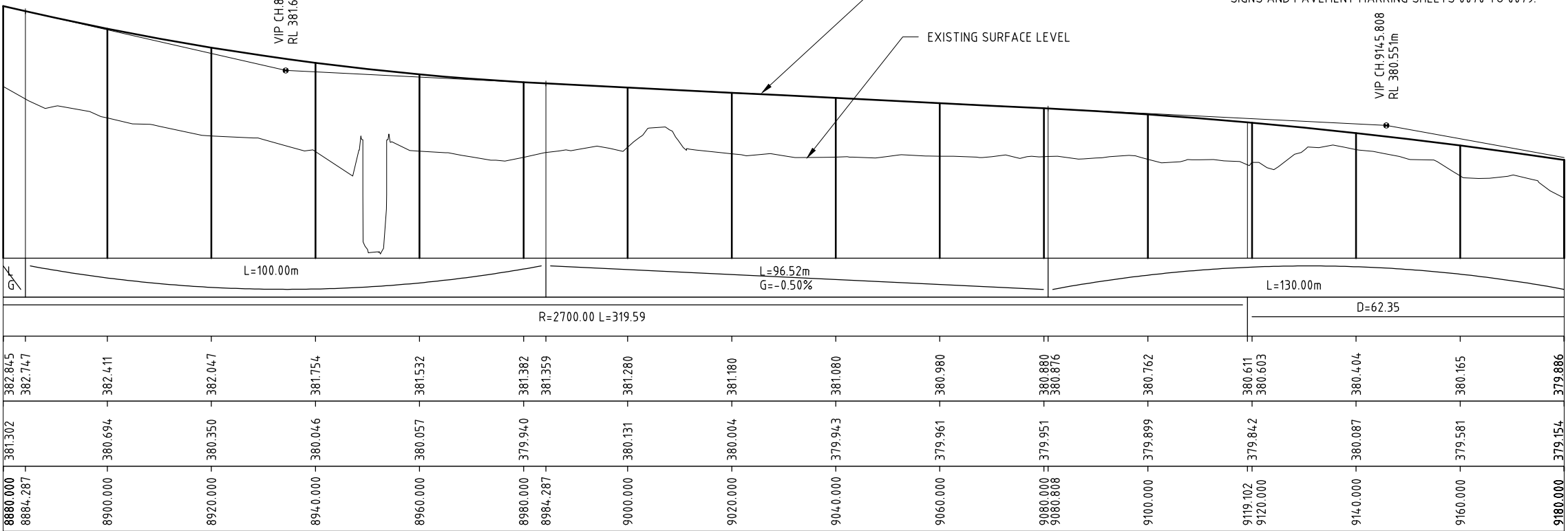
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- PRIME & 14mm SEAL
- 50mm DENSE GRADED ASPHALT SEAL AND WATER PROOFING SEAL
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LONGITUDINAL SECTION - MIDLAND HIGHWAY (MC00)

SCALE 1:1000 HORIZ 1:100 VERT



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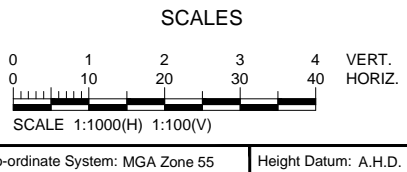
DATUM RL 378.0

VERTICAL ALIGNMENT  
HORIZONTAL ALIGNMENT

DESIGN LEVELS

EXISTING LEVELS

CHAINAGE



DESIGNED D WILSON

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Department of State Growth

MIDLAND HIGHWAY  
YORK PLAINS TO ST PETERS PASS  
SAFETY UPGRADE

GENERAL ARRANGEMENT & LONG SECTION - CH. 8880 TO CH. 9180

CONTRACT No.

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PRINTED DATE

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SHEET No.

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REGISTRATION NUMBER

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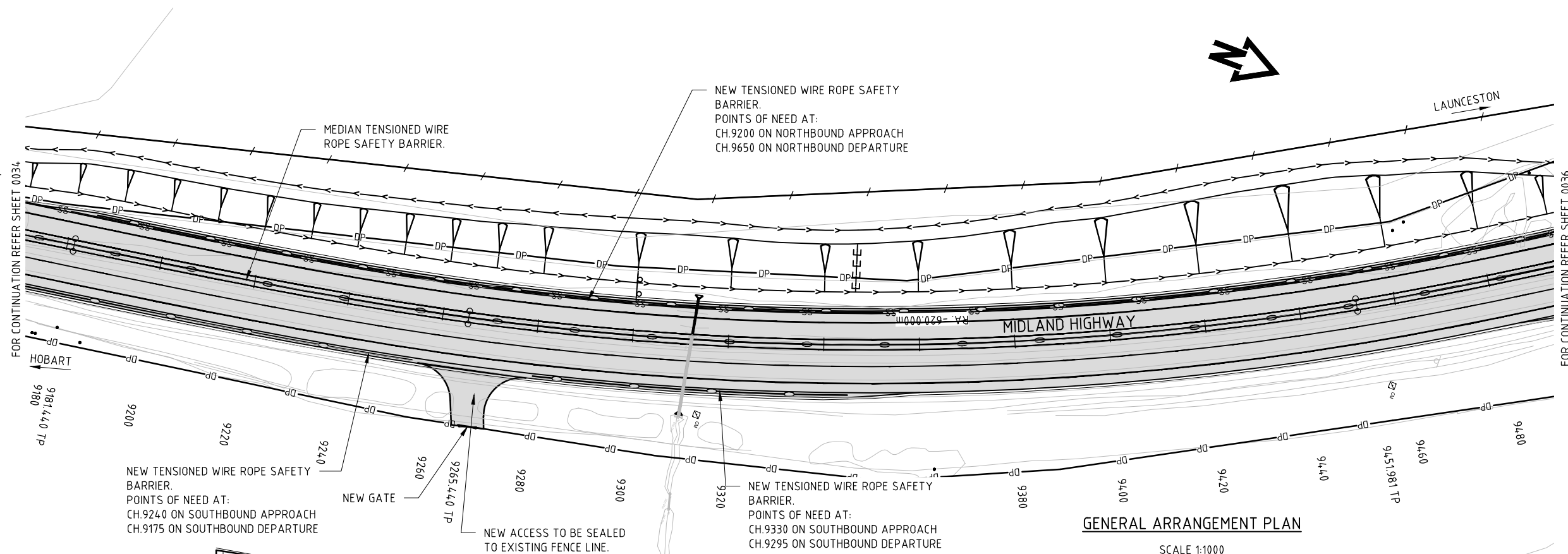
No. Amendment Description

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LEGEND:

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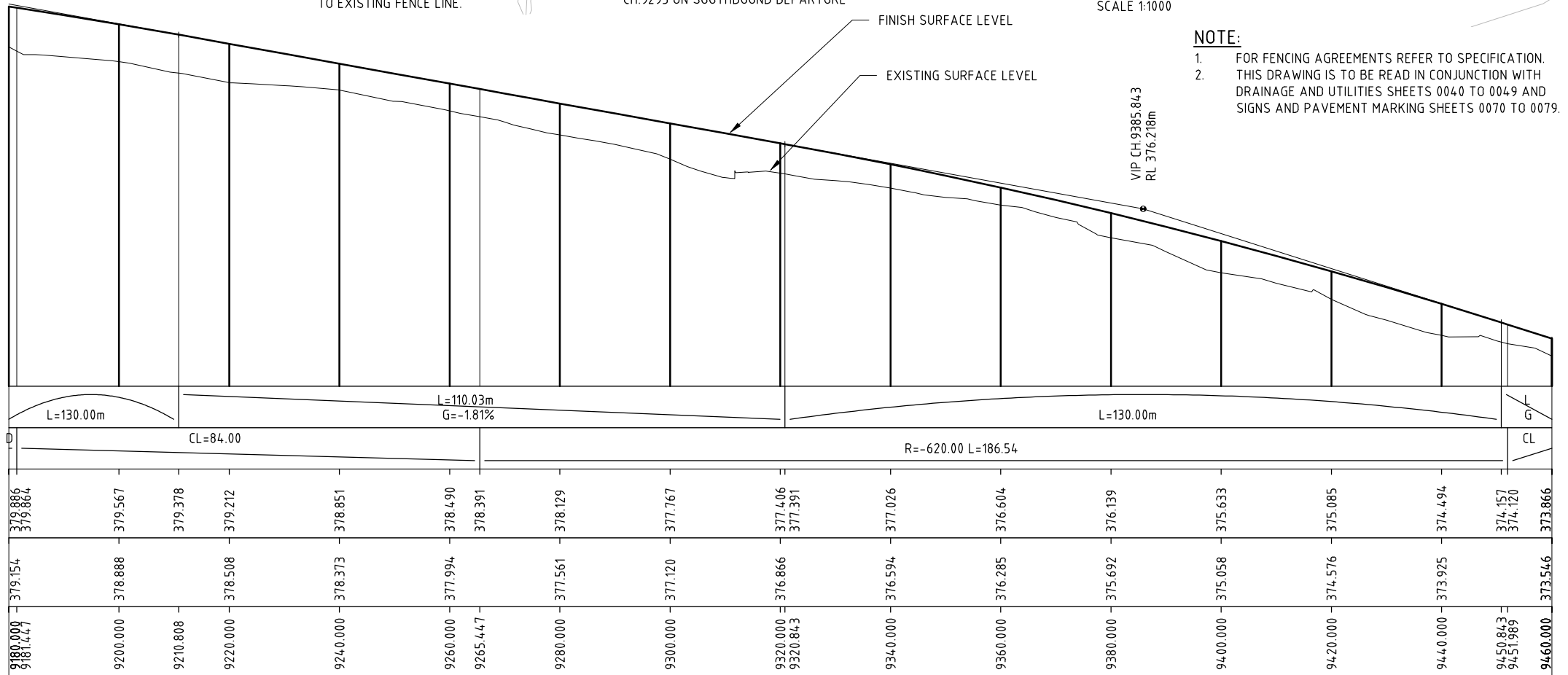
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DATUM RL 373.0  
VERTICAL  
ALIGNMENT  
HORIZONTAL  
ALIGNMENT

DESIGN LEVELS

EXISTING LEVELS

CHAINAGE



LONGITUDINAL SECTION - MIDLAND HIGHWAY (MC00)

SCALE 1:1000 HORIZ 1:100 VERT

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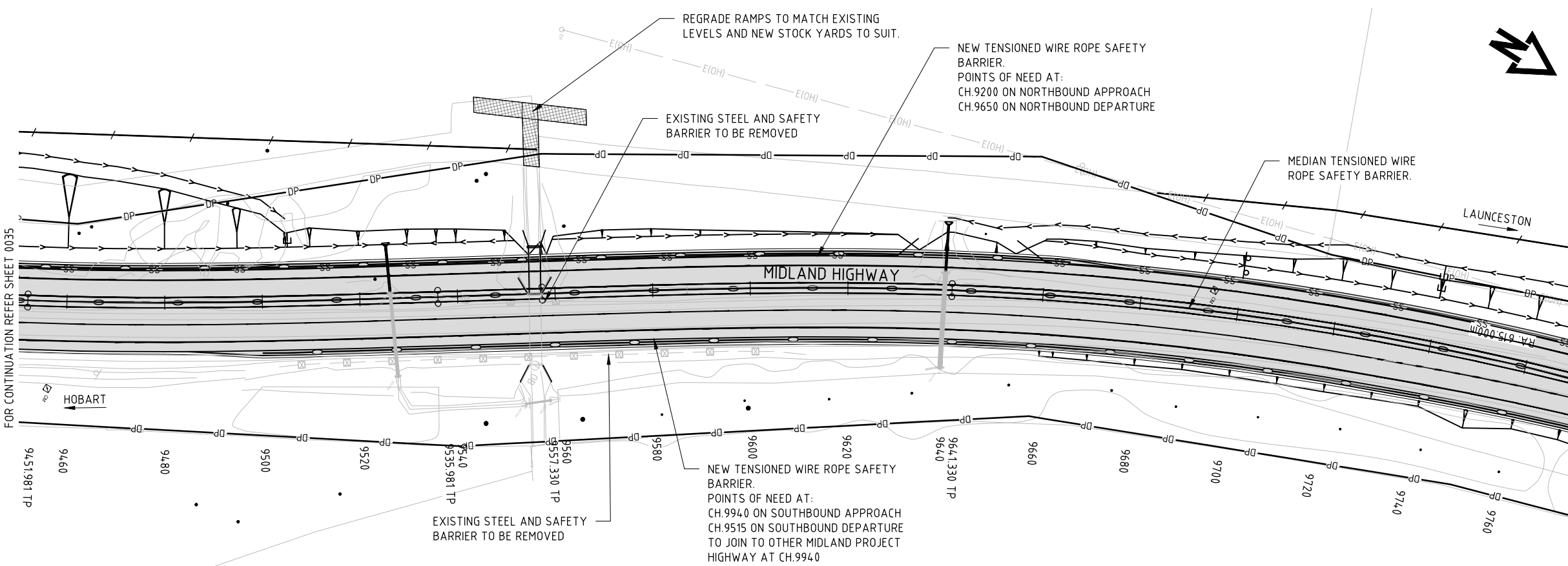
GHD	Tasmanian Government
DESIGNED	D WILSON
REVIEWED	

Department of State Growth
MIDLAND HIGHWAY YORK PLAINS TO ST PETERS PASS SAFETY UPGRADE
GENERAL ARRANGEMENT & LONG SECTION - CH. 9180 TO CH. 9460

CONTRACT No. ????	DRAWING 32-18266-C020_C038.dwg	PRINTED DATE 01-Feb-17, 1:29 PM	SHEET No. 0035
REGISTRATION NUMBER A0087.0??			REVISION A

LEGEND:

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ROADS



GENERAL ARRANGEMENT PLAN

SCALE 1:1000

NOTE:

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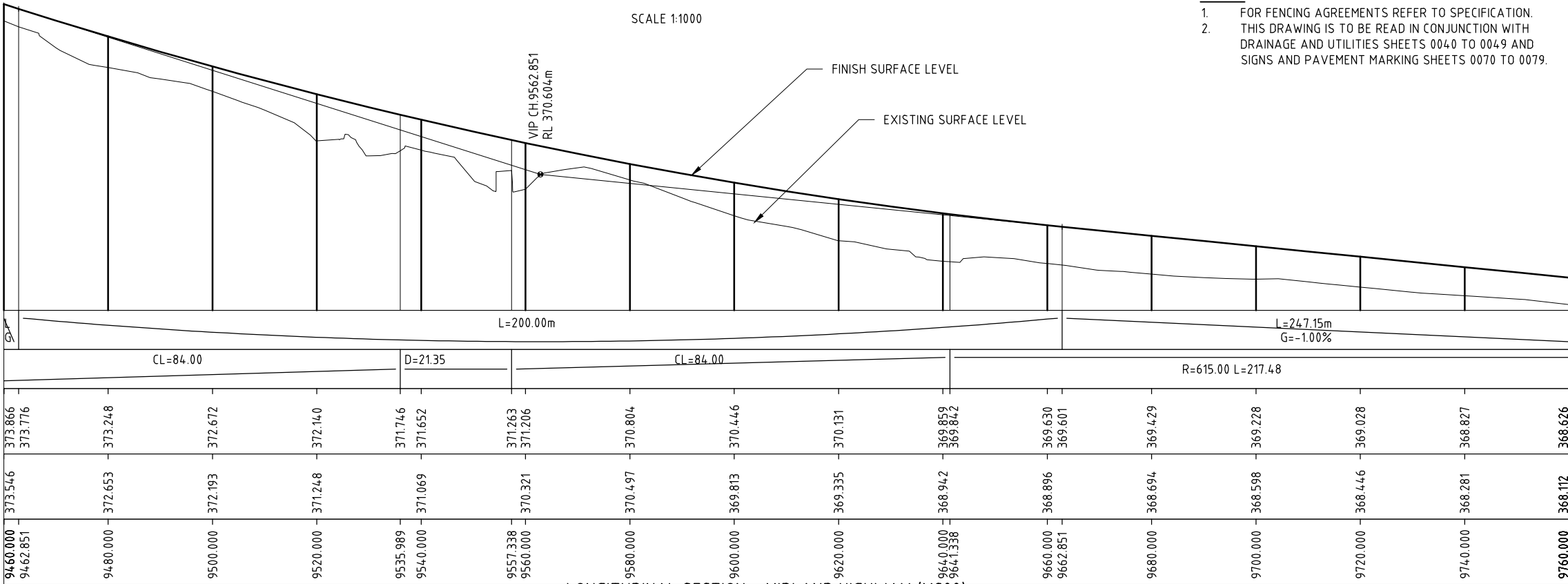
DATUM RL 368.0

VERTICAL  
ALIGNMENT  
HORIZONTAL  
ALIGNMENT

DESIGN LEVELS

EXISTING LEVELS

CHAINAGE



LONGITUDINAL SECTION - MIDLAND HIGHWAY (MC00)

SCALE 1:1000 HORIZ 1:100 VERT

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SCALES	
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SCALE 1:1000(H) 1:100(V)	
Co-ordinate System: MGA Zone 55	Height Datum: A.H.D.

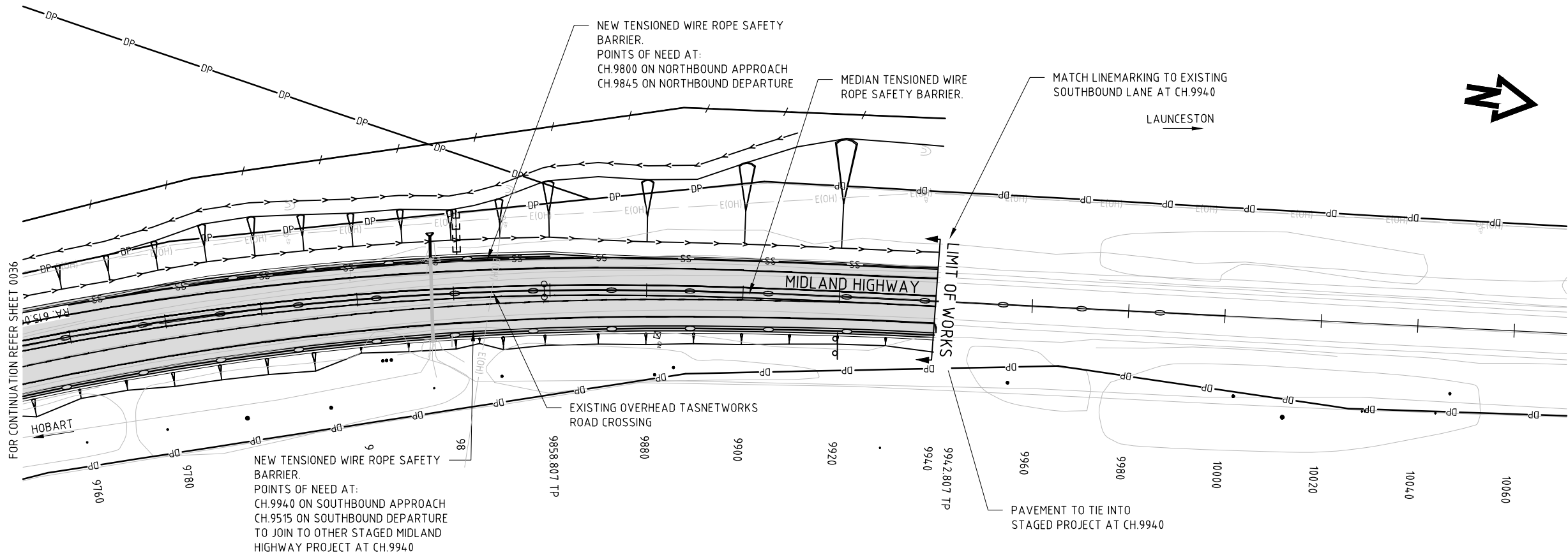
DESIGNED	D WILSON
REVIEWED	

Department of State Growth
MIDLAND HIGHWAY YORK PLAINS TO ST PETERS PASS SAFETY UPGRADE
GENERAL ARRANGEMENT & LONG SECTION - CH. 9460 TO CH. 9760

CONTRACT No. ????	DRAWING 32-18266-C020_C038.dwg	PRINTED DATE 01-Feb-17, 1:29 PM	SHEET No. 0036
REGISTRATION NUMBER A0087.0??			REVISION A

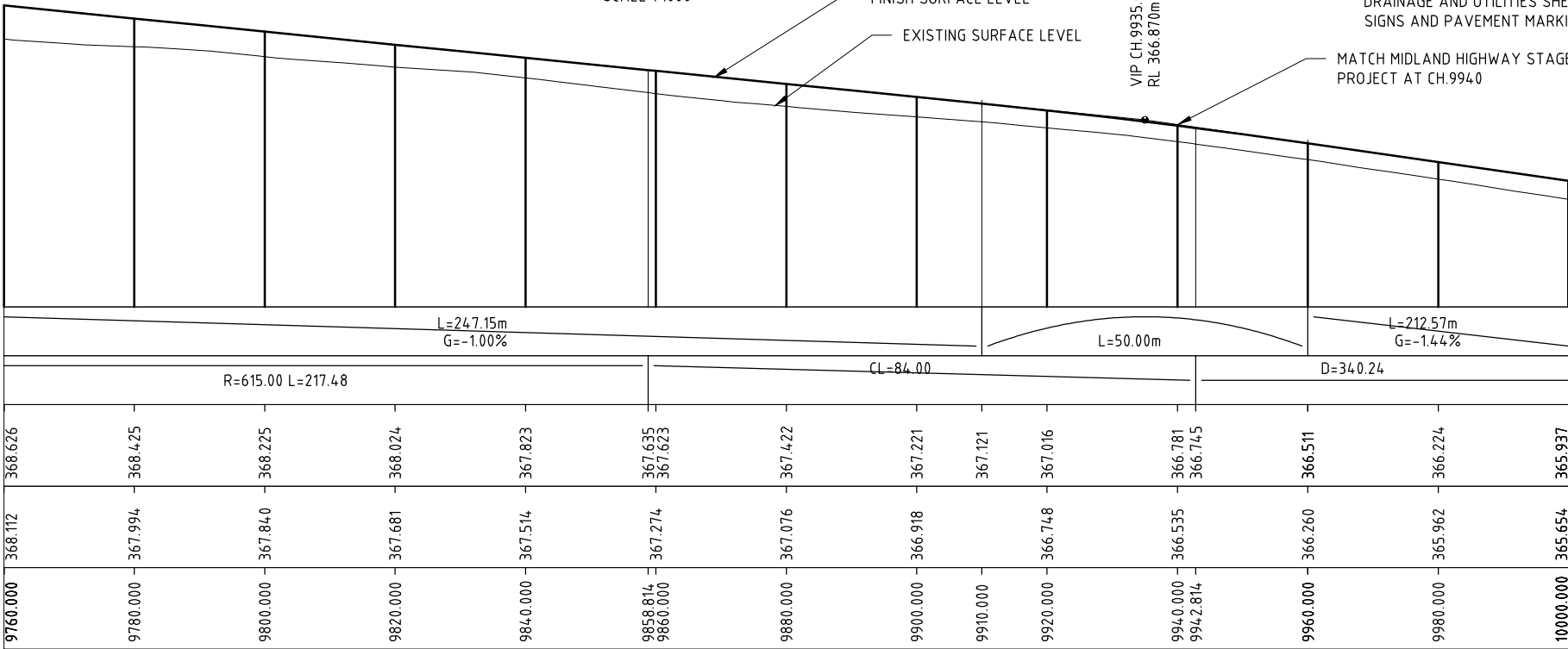
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GENERAL ARRANGEMENT PLAN

SCALE 1:1000



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LEVEL DATUM: AHD

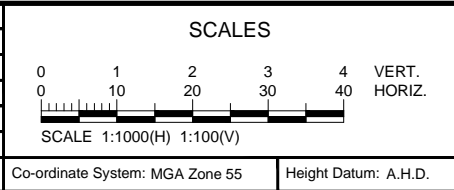
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LONGITUDINAL SECTION - MIDLAND HIGHWAY (MC00)

SCALE 1:1000 HORIZ 1:100 VERT

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MIDLAND HIGHWAY  
YORK PLAINS TO ST PETERS PASS  
SAFETY UPGRADE

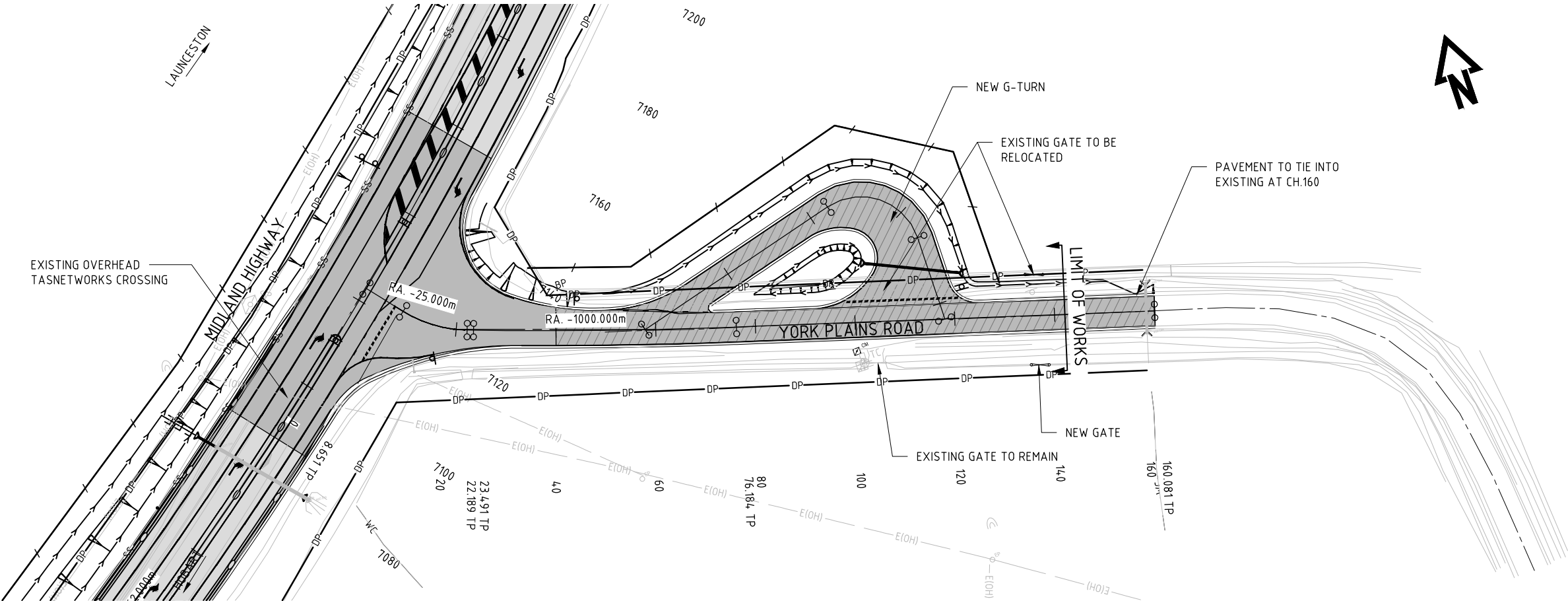
GENERAL ARRANGEMENT & LONG SECTION - CH. 9760 TO CH. 10000

CONTRACT No. ????	DRAWING 32-18266-C020_C038.dwg	PRINTED DATE 01-Feb-17, 1:29 PM	SHEET No. 0037
REGISTRATION NUMBER A0087.0??			REVISION A

LEGEND:

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FOR CONTINUATION REFER SHEET 0028

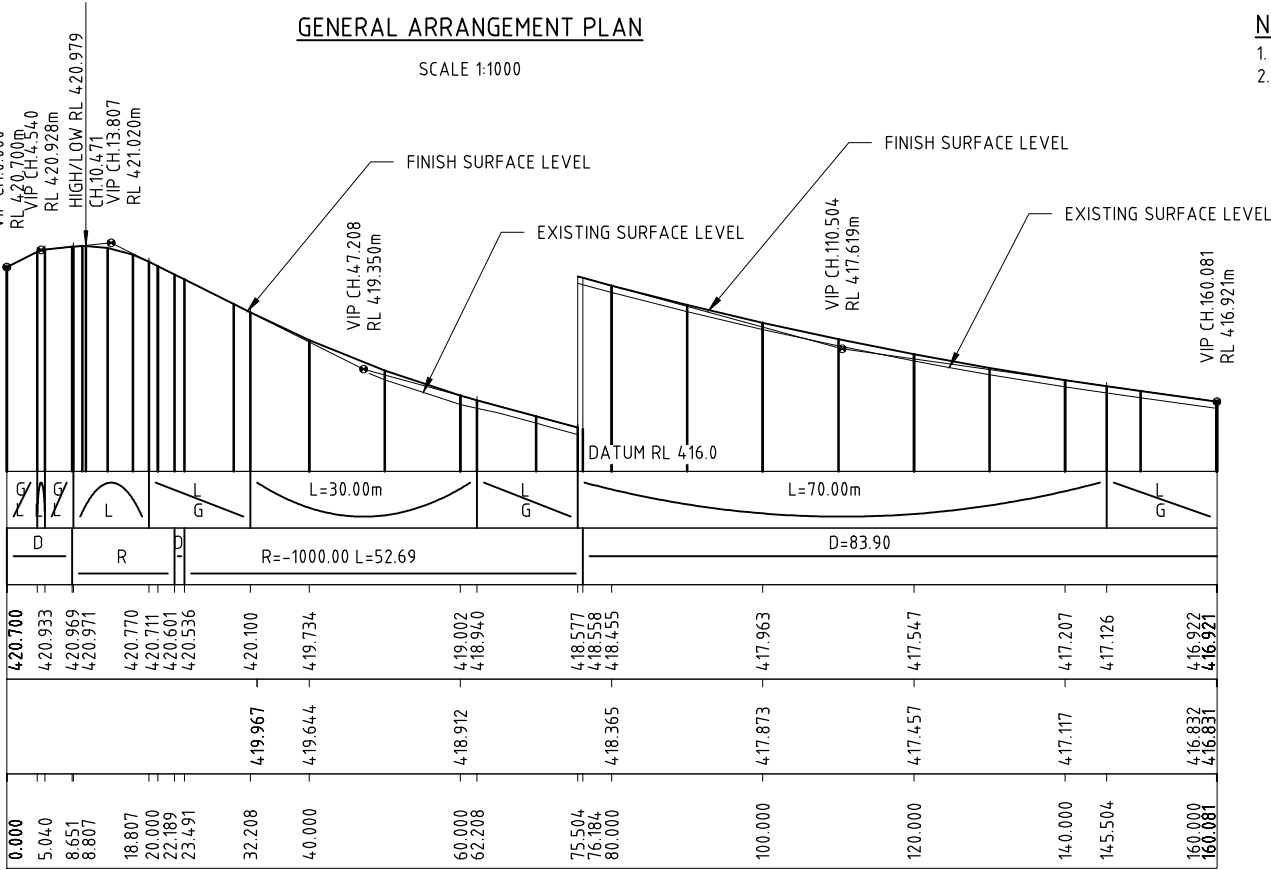


GENERAL ARRANGEMENT PLAN

SCALE 1:1000

NOTE:

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LONGITUDINAL SECTION - MIDLAND HIGHWAY (MC00)

SCALE 1:1000 HORIZ 1:100 VERT



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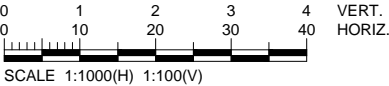
DATUM RL 418.0  
VERTICAL  
ALIGNMENT  
HORIZONTAL  
ALIGNMENT

DESIGN LEVELS

EXISTING LEVELS

CHAINAGE

SCALES



Co-ordinate System: MGA Zone 55

Height Datum: A.H.D.



DESIGNED D WILSON

REVIEWED

Department of State Growth

MIDLAND HIGHWAY  
YORK PLAINS TO ST PETERS PASS  
SAFETY UPGRADE

GENERAL ARRANGEMENT & LONG SECTION - YORK PLAINS ROAD

CONTRACT No.

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REGISTRATION NUMBER

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REVISION A

A ISSUE FOR PRELIMINARY REVIEW

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## **Appendix B. P50 / P 90 Cost Estimates**

# PROJECT ESTIMATE

Rates are exclusive of GST

**Contract No. 2220-2-49**  
**Midland Highway**  
**York Plains to St Peters Pass**

## Project Estimate Summary

Base Date of Estimate: January 2017  
Phase: Preliminary

Item	Amount	
Totals have been rounded		
1 Scoping Phase		
Not used		
Subtotal: Scoping Phase		Nil
2 Development Phase		
Design - Concept	\$	50,000.00
Design - Preliminary	\$	300,000.00
Design - Detailed	\$	200,000.00
Design Applications, Permits, Fees, Advertising etc.	\$	20,000.00
Dept. State Growth Project Management	\$	500,341.09
Subtotal: Development Phase		\$ 1,070,341.09
3 Property Acquisition		
Subtotal: Property Acquisition		\$ 100,000.00
4 Delivery Phase		
Dept. State Growth Project Management	\$	500,341.09
Consultant Contract Management	\$	200,000.00
Insurances	\$	53,800.00
Subtotal: Delivery Phase		\$ 754,141.09
5	Total Client Costs	\$ 1,924,482.17
Construction		
Project Specific	\$	1,194,900.00
Earthworks	\$	3,012,625.00
Drainage	\$	769,261.20
Pavement	\$	3,635,595.00
Bituminous Surfacing	\$	1,292,775.00
Traffic Facilities	\$	1,051,883.00
Landscaping	\$	342,825.00
Miscellaneous	\$	292,650.00
Precast Units	\$	-
Provisional Items	\$	-
Note: Direct & indirect costs factored into rates		
Subtotal: Contractor's Costs		\$ 11,592,514.20
8 Client Supplied Materials or Services		
Other Contractor	\$	-
Nominated Subbies	\$	-
BE Accommodation - Trees new	\$	100,000.00
FW Accommodation - New Fence &/or remove old	\$	-
PUA Service Authorities - Power	\$	150,000.00
PUA Service Authorities - NBN	\$	-
PUA Service Authorities - Communications	\$	20,000.00
PUA Service Authorities - Reticulated Water	\$	-
PUA Service Authorities - Irrigation	\$	-
PUA Service Authority - Gas	\$	-
TS Traffic - Workshop Materials	\$	-
FW Final Linemarking	\$	100,000.00
P Final Seal	\$	-
Subtotal: Client Supplied Materials or Services		\$ 370,000.00
9	Total Construction Cost (TCC)	\$ 11,962,514.20
10 Base Estimate (Lines 5 + 9)		\$ 13,886,996
		P50 P90
12 Total Contingency	\$ 828,917.91	\$ 1,984,738.16
	6%	14%
Total Contingency		\$ 828,917.91 \$ 1,984,738.16
13 Project Estimate (Lines 10 + 12)		\$ 14,715,914.29 \$ 15,871,734.53
Cash Flow: Start Escalation 30/06/2017 Start Construction 30/06/2017		
Lead Escalation		
14 (applied to Project Estimate excl. Development Phase)		\$ - \$ -
15 Total Outturn Cost (rounded to nearest \$1000)		\$ 14,716,000 \$ 15,872,000

**PROJECT ESTIMATE**  
Rates are exclusive of GST

**Schedule of Rates**

SPEC REF	ITEM NO.	AG Code	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
						\$	\$
<b>PART 1 - PROJECT SPECIFIC ITEMS</b>							
		SI	Contract Establishment and Mobilisation including fully operational site office and amenities. (Max 2% of Tender Sum)	1.00	Item	20,000.00	20,000.00
	1.01		Construction - Remove Existing Seal and Regrade Surface				
Part 4	1.01(a)	P	Remove Existing seal and regrade pavement	65000.00	m <sup>2</sup>	3.00	195,000.00
Part 4	1.01(b)	P	Regulation material to make up existing surface to design levels.	1900.00	m <sup>3</sup>	120.00	228,000.00
B24	1.02	DR	Extend 1200 x 1800 Box culvert (Ch.5137) including regrading approaches	1.00	No.	45,000.00	45,000.00
B24	1.03	DR	Extend 3600 x 3600 stock underpass (Ch.6249) including regrading approaches and fence modifications	1.00	No.	80,000.00	80,000.00
B24	1.04	DR	Extend 1800 x 3000 stock underpass (Ch.8951)	1.00	No.	50,000.00	50,000.00
B24	1.05	DR	Extend 2400 x 2400 stock underpass (Ch.9555) including regrading approach and fence modifications	1.00	No.	60,000.00	60,000.00
B24	1.06	DR	New concrete ramps and landing to stock underpass at Ch.8951	1.00	No.	15,000.00	15,000.00
R40	1.08	RW	New mass block retaining wall	450.00	m <sup>2</sup>	1,000.00	450,000.00
R40	1.09	EW	Alterations to private internal track, fencing and gates	1.00	No.	25,000.00	25,000.00
R40	1.10	EW	Construct New private driveway with shoulder material between Ch.9020 and 9090	70.00	m	120.00	8,400.00
R22	1.11	EW	Fill in existing pond (Ch.8020)	1.00	No.	500.00	500.00
R22	1.12	EW	Construct new pond	1.00	No.	3,000.00	3,000.00
R40	1.13	EW	Construct private internal track with shoulder material to Kenmore Arms (Ch.9000)	1.00	No.	15,000.00	15,000.00
<b>PART 1 - PROJECT SPECIFIC ITEMS CARRIED TO SUMMARY</b>						<b>TOTAL \$</b>	<b>1,194,900.00</b>

**PROJECT ESTIMATE**

*Rates are exclusive of GST*

SPEC REF	ITEM NO.	AG Code	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
						\$	\$
<b>PART 2 - EARTHWORKS</b>							
<b>Excavation &amp; Embankment</b>							
R21	2.01	BE	Clearing and grubbing	1.00	Item	40,000.00	40,000.00
R22	2.02	BE	Excavation in all materials	88350.00	m <sup>3</sup>	17.00	1,501,950.00
R22	2.03	BE	Extra Over Item 2.02 for rock	12000.00	m <sup>3</sup>	40.00	480,000.00
R23	2.04	BE	Subgrade material - Excavation, disposal and replacement	700.00	m <sup>3</sup>	65.00	45,500.00
R23	2.05	BE	Subgrade material - Embankment	1165.00	m <sup>3</sup>	11.00	12,815.00
R22	2.06	BE	Embankment construction	12600.00	m <sup>3</sup>	10.00	126,000.00
<b>Drainage Layers</b>							
R22	2.07	BE	Geotextile separation layer	24000.00	m <sup>2</sup>	3.00	72,000.00
R22	2.08	BE	Rock drainage blanket	12000.00	m <sup>2</sup>	50.00	600,000.00
R22	2.09	BE	Sand drainage blanket		m <sup>2</sup>		-
<b>Existing Pavement</b>							
R22	2.10	BE	Existing pavement failure repairs		m <sup>2</sup>		-
R22	2.11	BE	Existing pavement failure repairs - subgrade Excavation, disposal and replacement		m <sup>3</sup>		-
R22	2.12	BE	Treatment of redundant road	6060.00	m <sup>2</sup>	12.00	72,720.00
<b>Batter Treatment</b>							
R22	2.13		Supply and placing of topsoil				
R22	2.13a	BE	50mm deep	10400.00	m <sup>2</sup>	1.35	14,040.00
R22	2.13b	BE	300mm deep		m <sup>2</sup>		-
R22	2.13c	BE	Other		m <sup>2</sup>		-
R22	2.14	BE	Raking Earth Excavation batter face	23800.00	m <sup>2</sup>	2.00	47,600.00
<b>PART 2 - EARTHWORKS</b>							
<b>CARRIED TO SUMMARY</b>							
						<b>TOTAL \$</b>	<b>3,012,625.00</b>

**PROJECT ESTIMATE**

*Rates are exclusive of GST*

SPEC REF	ITEM NO.	AG Code	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
						\$	\$
			<b>PART 3 - DRAINAGE</b>				
			<b>Surface Drainage</b>				
R31	3.01	DR	Excavation of surface drains	3780.00	m	10.00	37,800.00
R31	3.02	DR	Rock excavation from surface drains	1000.00	m <sup>3</sup>	130.00	130,000.00
	3.03		Lining of open drains				
R31	3.03a	DR	Rock lining of open drains	1700.00	m <sup>2</sup>	35.00	59,500.00
R31	3.05c	DR	Type 2 single row	115.00	m	500.00	57,500.00
			<b>Culverts &amp; Endwalls</b>				
R32	3.09		Steel Reinforced Concrete pipes in new works				
			<i>CH - No. of Barrels - Class</i>				
R32	3.09b		375mm dia pipe				
	3.09b.01	DR	Ch.100 - 1 - Class 2	9.52	m	350.00	3,332.00
R32	3.09c		450mm dia pipe				
	3.09c.01	DR	5550 - 1 - Class 4	4.88	m	350.00	1,708.00
R32	3.09d		525mm dia pipe				
R32	3.09e		600mm dia pipe				
	3.09e.01	DR	Ch.5047 - 1 -Class 2	9.76	m	660.00	6,441.60
	3.09e.02	DR	Ch.6627 - 1 -Class 2	2.44	m	660.00	1,610.40
	3.09e.03	DR	Ch.6964 - 2 - Class 2	7.32	m	1,320.00	9,662.40
	3.09e.04	DR	Ch.7080 - 1 - Class 2	4.88	m	660.00	3,220.80
	3.09e.05	DR	Ch.7510 - 1 - Class 2	9.78	m	660.00	6,454.80
	3.09e.06	DR	Ch.7838 - 1 - Class 4	12.20	m	800.00	9,760.00
	3.09e.07	DR	Ch.8010 - 1 - Class 2	12.20	m	660.00	8,052.00
	3.09e.08	DR	Ch.8189 - 1 - Class 2	7.32	m	660.00	4,831.20
	3.09e.09	DR	Ch.8346 - 1 - Class 2	9.78	m	660.00	6,454.80
	3.09e.10	DR	Ch.8567 - 1 - Class 2	12.20	m	660.00	8,052.00
R32	3.09g		900mm dia pipe				
	3.09g.01	DR	Ch.9639 - 1 - Class 2	9.76	m	1,100.00	10,736.00
R32	3.09i		1200mm dia pipe				
	3.09i.01	DR	Ch.6021 - 1 - Class 2	7.32	m	1,500.00	10,980.00
	3.09i.02	DR	Ch.6836 - 1 - Class 2	7.32	m	1,500.00	10,980.00
R32	3.09j		1500mm dia pipe				
	3.09j.01	DR	Ch.6339 - 1 - Class 2	4.88	m	2,000.00	9,760.00
R32	3.10		Steel Reinforced Concrete pipes under existing pavement				
			<i>CH - No. of Barrels - Class</i>				
R32	3.10e		600mm dia pipe				
	3.10e.01	DR	Ch.6965 - 2 -Class 2	17.08	m	1,340.00	22,887.20
	3.10e.02	DR	Ch.7080 - 1 -Class 2	19.52	m	680.00	13,273.60
	3.10e.03	DR	Ch.7510 - 1 - Class 2	14.62	m	680.00	9,941.60
	3.10e.04	DR	Ch.8190 - 1 - Class 2	17.08	m	680.00	11,614.40
	3.10e.05	DR	Ch.8946 - 1 - C lass 2	24.40	m	680.00	16,592.00
	3.10e.06	DR	Ch.8946 - 1 - C lass 2	24.40	m	680.00	16,592.00
	3.10e.07	DR	Ch.9312 - 1 - Class 2	17.08	m	680.00	11,614.40
R32	3.10i		1200mm dia pipe				
	3.10i.01	DR	Ch.6835 - 1 - Class 2	14.64	m	1,500.00	21,960.00
R32	3.12		Removal of pipes ≤ 600mm dia				
R32	3.12c	DR	Under existing pavement	123.00	m	75.00	9,225.00
R32	3.13		Removal of pipes > 600mm dia				
	3.13a	DR	Blank				
	3.13b	DR	Blank				
R32	3.13c	DR	Under existing pavement	38.00	m	95.00	3,610.00
R32	3.14		Remove endwalls ≤ 600mm dia				
			<i>CH - No. of Barrels</i>				
R32	3.14.01	DR	Ch.5047 - 1	2.00	No.	175.00	350.00
	3.14.03	DR	Ch.6627 - 1	1.00	No.	175.00	175.00
	3.14.04	DR	Ch.7080 - 1	2.00	No.	175.00	350.00
	3.14.05	DR	Ch.7595 - 1	2.00	No.	175.00	350.00
	3.14.06	DR	Ch.7838 - 1	1.00	No.	175.00	175.00
	3.14.07	DR	Ch.8010 - 1	1.00	No.	175.00	175.00
	3.14.08	DR	Ch.8189 - 1	2.00	No.	175.00	350.00
	3.14.09	DR	Ch.8346 - 1	1.00	No.	175.00	175.00
	3.14.10	DR	Ch.8567 - 1	1.00	No.	175.00	175.00

**PROJECT ESTIMATE**

*Rates are exclusive of GST*

SPEC REF	ITEM NO.	AG Code	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
						\$	\$
	3.14.11	DR	Ch.8946 - 1	2.00	No.	175.00	350.00
	3.14.12	DR	Ch.9312 - 1	2.00	No.	175.00	350.00
	3.14.13	DR	Ch.9526 - 1	1.00	No.	175.00	175.00
	3.14.14	DR	Ch.9835 - 1	1.00	No.	175.00	175.00
R32	3.15		Remove endwalls > 600mm dia <i>CH - No. of Barrels</i>				
R32	3.15.01	DR	Ch.6021 - 1 - Class 2	1.00	No.	200.00	200.00
	3.15.02	DR	Ch.6339 - 1 - Class 2	1.00	No.	200.00	200.00
	3.15.03	DR	Ch.6836 - 1 - Class 2	2.00	No.	200.00	400.00
	3.15.04	DR	Ch.9639 - 1 - Class 2	1.00	No.	200.00	200.00
R32	3.16		Construction of endwalls <i>CH - No. of Barrels - Type</i>				
R32	3.16b		375mm dia pipe				
	3.16b.01	DR	Ch.100 - 1 - R.C. Endwall		No.		-
R32	3.16c		450mm dia pipe				
	3.16c.01	DR	Ch.5550 - 1 - Plain Endwall	2.00	No.	1,000.00	2,000.00
R32	3.16e		600mm dia pipe				
	3.16e.01	DR	Ch.5047 - 1 - R.C. Endwall	2.00	No.	2,500.00	5,000.00
	3.16e.02	DR	Ch.6627 - 1 - R.C. Endwall	1.00	No.	2,500.00	2,500.00
	3.16e.03	DR	Ch.6964 - 2 - Multi R.C. Endwall	2.00	No.	4,000.00	8,000.00
	3.16e.04	DR	Ch.7080 - 1 - R.C. Endwall	2.00	No.	2,500.00	5,000.00
	3.16e.05	DR	Ch.7510 - 1 - R.C. Endwall	2.00	No.	2,500.00	5,000.00
	3.16e.06	DR	Ch.7838 - 1 - R.C. Endwall	1.00	No.	2,500.00	2,500.00
	3.16e.07	DR	Ch.8010 - 1 - R.C. Endwall	1.00	No.	2,500.00	2,500.00
	3.16e.08	DR	Ch.8189 - 1 - R.C. Endwall	2.00	No.	2,500.00	5,000.00
	3.16e.09	DR	Ch.8346 - 1 - R.C. Endwall	1.00	No.	2,500.00	2,500.00
	3.16e.10	DR	Ch.8567 - 1 - R.C. Endwall	1.00	No.	2,500.00	2,500.00
	3.16e.11	DR	Ch.8946 - 1 - R.C. Endwall	2.00	No.	2,500.00	5,000.00
	3.16e.12	DR	Ch.9312 - 1 - R.C. Endwall	2.00	No.	2,500.00	5,000.00
	3.16e.13	DR	Ch.9526 - 1 - R.C. Endwall	1.00	No.	2,500.00	2,500.00
	3.16e.14	DR	Ch.9835 - 1 - R.C. Endwall	1.00	No.	2,500.00	2,500.00
R32	3.16g		900mm dia pipe				
	3.16g.01	DR	Ch.9639 - 1 - R.C. Endwall	1.00	No.	4,500.00	4,500.00
R32	3.16i		1200mm dia pipe				
	3.16i.01	DR	Ch.6021 - 1 - R.C. Endwall	1.00	No.	5,000.00	5,000.00
	3.16i.02	DR	Ch.6836 - 1 - R.C. Endwall	2.00	No.	5,000.00	10,000.00
R32	3.16j		1500mm dia pipe				
	3.16j.01	DR	Ch.6339 - 1 - R.C. Endwall	1.00	No.	7,000.00	7,000.00
			<b>Pits</b>				
R32	3.23		Construction of outlet protection works				
R32	3.23a	DR	Drop outlet		No.		-
R32	3.23b	DR	Rock dispersing apron	6.00	No.	750.00	4,500.00
R32	3.25	DR	Rock excavation from trenches etc	50.00	m³	105.00	5,250.00
			<b>Subsoil Drains</b>				
R33	3.34a	DR	Class 400 sub-soil drain <750 mm deep	4080.00	m	30.00	122,400.00
			<b>Surface Drainage Maintenance</b>				
R35	3.37	DR	Maintenance Clearing of open drains etc	250.00	m	12.00	3,000.00
R35	3.38	DR	Maintenance clearing of waterways.	100.00	m	16.00	1,600.00
			<b>Kerbing</b>				
R36	3.50	DR	V-gutter	100.00	m	100.00	10,000.00
R36	3.62	DR	Traffic Island including kerbing - Removal and disposal	8.00	m²	5.00	40.00
			<b>PART 3 - DRAINAGE</b>				
			<b>CARRIED TO SUMMARY</b>			<b>TOTAL \$</b>	<b>769,261.20</b>

**PROJECT ESTIMATE***Rates are exclusive of GST*

SPEC REF	ITEM NO.	AG Code	DESCRIPTION	QUANTITY	UNIT	RATE \$	AMOUNT \$
<b>PART 4 - PAVEMENT</b>							
<b>Construction</b>							
R40	4.01		Supply, spread and compact sub-base 1 material				
	4.01a	P	200 mm depth	29665.00	m <sup>2</sup>	13.00	385,645.00
	4.01b	P	250 mm depth	28500.00	m <sup>2</sup>	15.00	427,500.00
	4.01c	P	125 mm depth	13800.00	m <sup>2</sup>	11.00	151,800.00
R40	4.02		Supply, spread and compact sub-base 2 material				
	4.02a	P	150 mm depth	31750.00	m <sup>2</sup>	9.00	285,750.00
	4.02b	P	260 mm depth	16700.00	m <sup>2</sup>	13.00	217,100.00
	4.02c	P	325 mm depth	13600.00	m <sup>2</sup>	16.00	217,600.00
R40	4.03		Supply, spread and compact base material Class A				
	4.03a	P	175 mm depth	97800.00	m <sup>2</sup>	19.00	1,858,200.00
	4.03b	P	100 mm depth	5600.00	m <sup>2</sup>	15.00	84,000.00
	4.05b	P	Shoulder	700.00	m <sup>2</sup>	11.00	7,700.00
<b>Maintenance</b>							
P.S	4.12	P	Saw Cutting of existing surface/pavement	20.00	m	15.00	300.00
<b>PART 4 - PAVEMENT</b>							
<b>CARRIED TO SUMMARY</b>						<b>TOTAL \$</b>	<b>3,635,595.00</b>

**PROJECT ESTIMATE***Rates are exclusive of GST*

SPEC REF	ITEM NO.	AG Code	DESCRIPTION	QUANTITY	UNIT	RATE \$	AMOUNT \$
<b>PART 5 - BITUMINOUS SURFACING</b>							
<b>New pavements</b>							
R51	5.01a	P	Prime	93100.00	m <sup>2</sup>	2.95	274,645.00
R51	5.01b	P	One Coat Sprayed Seal	93100.00	m <sup>2</sup>	6.80	633,080.00
<b>Asphalt</b>							
R55	5.05		Supply, deliver, place and compact including sweeping of Dense Graded Asphalt				
R55	5.05c (i)	P	Nominally 14 mm size - 50mm thickness	4700.00	m <sup>2</sup>	45.00	211,500.00
R56	5.05c (ii)	P	Nominally 14 mm size - 40mm thickness	3300.00	m <sup>2</sup>	40.00	132,000.00
R55	5.05e	P	Waterproofing Seal	8000.00	m <sup>2</sup>	5.00	40,000.00
<b>Tender/Design Binder Adjustment</b>							
G7 / R51	5.15	P	Resistance to polishing test (PAFV) on Bituminous surfacing aggregates	1.00	No.	1,550.00	1,550.00
<b>PART 5 - BITUMINOUS SURFACING CARRIED TO SUMMARY</b>						<b>TOTAL \$</b>	<b>1,292,775.00</b>

**PROJECT ESTIMATE**

*Rates are exclusive of GST*

SPEC REF	ITEM NO.	AG Code	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
						\$	\$
			<b>PART 6 - TRAFFIC FACILITIES</b>				
			<b>Road Safety Barrier Systems</b>				
R61	6.01a	FW	Supply and installation of W-Beam Safety Barrier	130.00	m	120.00	15,600.00
R61	6.04	FW	Supply and Installation of Tensioned Wire Rope Safety Barrier (TWRSB)	10840.00	m	85.00	921,400.00
R61	6.05b	FW	Terminal Assemblies BCT Type B	3.00	No.	500.00	1,500.00
R61	6.05c	FW	Terminal Assemblies End impact	1.00	No.	4,000.00	4,000.00
R61	6.09		Remove existing barrier				
R61	6.09a	FW	W-Beam Safety Barrier	1264.00	m	10.00	12,640.00
			<b>Guide Posts</b>				
R62	6.14		Supply and installation of guide post				
R62	6.14a	TS	Guide posts	110.00	No.	37.00	4,070.00
R62	6.14c	TS	Accident Markers	1.00	No.	37.00	37.00
R62	6.15	TS	Removal and disposal of existing guide posts	152.00	No.	6.00	912.00
			<b>Delineators</b>				
R61	6.17		Supply and installation of delineator holders and delineators				
R61	6.17a	TS	Delineators on one (1) side	12.00	No.	8.00	96.00
R61	6.17b	TS	Delineators on two (2) sides	12.00	No.	8.00	96.00
			<b>Signs</b>				
R63	6.18		Fabrication and installation of signs with maximum dimension (D)				
R63	6.18b	TS	D ≤ 900mm including supply and installation of post				
	6.18b.01	TS	W4-9B	7.00	No.	300.00	2,100.00
	6.18b.02	TS	R1-2B	3.00	No.	300.00	900.00
	6.18b.03	TS	W8-15B	4.00	No.	300.00	1,200.00
	6.18b.04	TS	W8-5B (500m)	3.00	No.	300.00	900.00
	6.18b.05	TS	R2-4B	2.00	No.	300.00	600.00
	6.18b.06	TS	R2-3B(L)	7.00	No.	300.00	2,100.00
	6.18b.07	TS	GE9-15B	1.00	No.	300.00	300.00
	6.18b.08	TS	R2-5B	7.00	No.	300.00	2,100.00
	6.18b.09	TS	W4-6C	1.00	No.	300.00	300.00
	6.18b.10	TS			No.		-
R63	6.18d	TS	900mm < D ≤ 1200mm including supply and installation of posts				
	6.18d.01	TS	G9-73B	4.00	No.	730.00	2,920.00
	6.18d.02	TS	D4-1-2B	1.00	No.	730.00	730.00
	6.18d.03	TS	G9-38 (2)	1.00	No.	730.00	730.00
	6.18d.04	TS	G9-37 (300)	1.00	No.	730.00	730.00
	6.18d.05	TS	G9-37 (200)	1.00	No.	730.00	730.00
	6.18d.06	TS	G9-38 (1)	1.00	No.	730.00	730.00
	6.18d.07	TS	R6-29C	2.00	No.	730.00	1,460.00
R63	6.18h	TS	D > 1800mm including supply and installation of slip base posts and/or braces (unless stated otherwise)				
	6.18h.01	TS	Directional signage	4.00	No.	1,500.00	6,000.00
	6.18h.02	TS	U Turn signage	7.00	No.	1,500.00	10,500.00
	6.18h.03	TS	St Peter's Pass Jcn 400m	1.00	No.	1,500.00	1,500.00
R63	6.20	TS	Removal of existing signs	22.00	No.	30.00	660.00
			<b>Standard Waterborne</b>				
R64	6.25		Supply and install Standard Waterborne Paint pavement marking including glass beads and angular aggregate as required				
R64	6.25c	FW	B3, Barrier Line (Two Way Access)	15.00	m	12.00	180.00
R64	6.25e	FW	C, Continuity Line	1517.00	m	1.20	1,820.40
R64	6.25f	FW	CC, Continuity Continuous Line	486.00	m	1.20	583.20
R64	6.25h	FW	E2, Edge Line (Speed Limit above 60km/h)	26093.00	m	0.60	15,655.80
R64	6.25j	FW	HL, Holding Line	55.00	m	17.50	962.50
R64	6.25l	FW	L, Lane Line (Speed Limit above 60km/h)	4140.00	m	1.20	4,968.00
R64	6.25z	FW	EC2, Edge Continuity Line (150mm wide)	21.00	m	0.60	12.60
			<b>Chevrons</b>				
R64	6.32		Supply and application of chevrons with:				

**PROJECT ESTIMATE***Rates are exclusive of GST*

SPEC REF	ITEM NO.	AG Code	DESCRIPTION	QUANTITY	UNIT	RATE \$	AMOUNT \$
R64	6.32b	FW	Standard Waterbourne Paint	504.00	m <sup>2</sup>	11.50	5,796.00
<b>Pavement Arrows</b>							
R64	6.33		Supply and install pavement arrows including glass beads and angular quartz in Standard Paint				
R64	6.33a	FW	Left or right only	9.00	No.	175.00	1,575.00
R64	6.33e	FW	Rural merge	12.00	No.	175.00	2,100.00
<b>RRPM's</b>							
R64	6.45		Supply and application of raised pavement markers				
R64	6.45b	FW	Uni directional yellow	1302.00	No.	11.50	14,973.00
R64	6.45c	FW	Uni directional white	377.00	No.	11.50	4,335.50
R64	6.45d	FW	Bi directional yellow	40.00	No.	11.50	460.00
<b>Retro Reflectivity Measurement</b>							
R64	6.48		Line Marking Retro Reflectivity measurement				
R64	6.48a	FW	(20-30 days) - Longitudinal Markings	2.00	No of Sites	230.00	460.00
R64	6.48c	FW	(160-180 days)- Longitudinal Markings	2.00	No of Sites	230.00	460.00
<b>PART 6 - TRAFFIC FACILITIES CARRIED TO SUMMARY</b>						<b>TOTAL \$</b>	<b>1,051,883.00</b>

**PROJECT ESTIMATE**  
Rates are exclusive of GST

SPEC REF	ITEM NO.	AG Code	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
						\$	\$
			<b><u>PART 7 - LANDSCAPING</u></b>				
			<b>General</b>				
R70	7.05	FW	Hydromulching	10400.00	m <sup>2</sup>	0.80	8,320.00
			<b>Fences and Gates</b>				
	7.10		Supply and erect fences				
R72	7.10a	FW	Fencepost and wire	5900.00	m	30.00	177,000.00
P.S.	7.10i	FW	Stock Fences	200.00	m	80.00	16,000.00
R72	7.11	FW	Supply and fit gates	10.00	No.	1,000.00	10,000.00
R72	7.12	FW	Relocate gates	17.00	No.	550.00	9,350.00
R72	7.13	FW	Remove existing fence	6330.00	m	3.50	22,155.00
			<b>Roadside and Vegetation Management</b>				
R76	7.18a	FW	Tree Maintenance pruning		No.		-
R76	7.18b	FW	Tree removal	1.00	No.	100,000.00	100,000.00
			<b>PART 7 - LANDSCAPING CARRIED TO SUMMARY</b>			<b>TOTAL \$</b>	<b>342,825.00</b>

**PROJECT ESTIMATE**

*Rates are exclusive of GST*

SPEC REF	ITEM NO.	AG Code	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
						\$	\$
			<b>PART 8 - MISCELLANEOUS</b>				
R91	8.01a	EW	Construct access	17.00	No.	6,500.00	110,500.00
		EW	CH - Direction - Dia - Headwall Type				
	8.01a.01	EW	Ch.5340 - PD - 450 - Type 1 Driveable				
	8.01a.02	EW	Ch.5340 - CD - 0				
	8.01a.03	EW	Ch.6380 - PD - 300 - Type 1 Driveable				
	8.01a.04	EW	Ch.6380 - CD - 600 - RC				
	8.01a.05	EW	Ch.6770 - PD - 300 - Type 1 Driveable				
	8.01a.06	EW	Ch.6795 - CD - 0				
	8.01a.07	EW	Ch.7240 - PD - 375 - Type 1 Driveable				
	8.01a.08	EW	Ch.7530 - PD - 450 - Type 1 Driveable				
	8.01a.09	EW	Ch.8060 - CD - 0				
	8.01a.10	EW	Ch.8120 - CD - 300 - Type 1 Driveable				
	8.01a.11	EW	Ch.8340 - PD - 0				
	8.01a.12	EW	Ch.8495 - CD - 0				
	8.01a.13	EW	Ch.8830 - PD - 0				
	8.01a.14	EW	Ch.8850 - PD - 300 - Type 1 Driveable				
	8.01a.15	EW	Ch.9000 - PD - 300 - Type 1 Driveable				
	8.01a.16	EW	Ch.9000 - CD - 0				
	8.01a.17	EW	Ch.9265 - CD - 0				
R91	8.01b	EW	Construct G-Turn (listed by chainage)		No.		-
		EW	CH - Direction - Dia - Headwall Type				
	8.01b.01	EW	Ch.8980 - PD - 0				
	8.01b.02	EW	Ch.100 - PD - 375 - Type 1 Driveable				
R91	8.01c	EW	Close access (listed by chainage)	1.00	No.	1,500.00	1,500.00
		EW	CH - Direction - Dia - Headwall Type				
	8.01c.01	EW	Ch.5585 - PD - 300 - Plain Endwalls				
G1	8.02	EW	Inspection of buildings	5.00	No.	700.00	3,500.00
R92	8.05		Service Relocation - Excavation and Backfill of trenches for:				
R92	8.05d	PUA	Telecommunications	150.00	m	110.00	16,500.00
R92	8.05f	PUA	Water	150.00	m	110.00	16,500.00
	8.06a		Blank				
G2	8.06b	DE	Provision of Environmental Completion Audit	1.00	Item	4,000.00	4,000.00
G2	8.08	EW	Environmental Management	1.00	Item	25,000.00	25,000.00
P.S.	8.09		Relocation of Roadside Infrastructure				
P.S.	8.09a	FW	Mail Box		No.		-
P.S.	8.09b	FW	Mile Posts	1.00	No.	150.00	150.00
G3	8.10	TMTW	Traffic Management	1.00	Item	110,000.00	110,000.00
G8	8.11	DE	Audit Surveys - Provisional Sum				5,000.00
			<b>PART 8 - MISCELLANEOUS</b>				-
			<b>CARRIED TO SUMMARY</b>			<b>TOTAL \$</b>	<b>292,650.00</b>

**PROJECT ESTIMATE**  
*Rates are exclusive of GST*

SPEC REF	ITEM NO.	AG Code	DESCRIPTION	QUANTITY	UNIT	RATE	AMOUNT
						\$	\$
			<b>PART 9 - PRECAST UNITS</b>				
			<b>PART 9 - PRECAST UNITS</b>				
			<b>CARRIED TO SUMMARY</b>			<b>TOTAL \$</b>	<b>-</b>

**PROJECT ESTIMATE***Rates are exclusive of GST*

SPEC REF	ITEM NO.	AG Code	DESCRIPTION	QUANTITY	UNIT	RATE \$	AMOUNT \$
<b><u>PART 10 - PROVISIONAL ITEMS FOR SCHEDULE OF RATES CONTRACT or VARIATION SCHEDULE FOR LUMP SUM CONTRACT</u></b>							
R22	10.2.03	BE	Extra Over Item 2.02 for rock	m <sup>3</sup>		40.00	-
R23	10.2.04	BE	Subgrade material - Excavation, disposal and replacement	m <sup>3</sup>		65.00	-
R22	10.2.07	DR	Geotextile separation layer	m <sup>2</sup>		3.00	-
R22	10.2.08	DR	Rock drainage blanket	m <sup>2</sup>		35.00	-
R22	10.2.09	BE	Sand drainage blanket	m <sup>2</sup>			-
R22	10.2.10	BE	Existing pavement failure repairs	m <sup>2</sup>		210.00	-
R22	10.2.11	BE	Existing pavement failure repairs - subgrade Excavation, disposal and replacement	m <sup>3</sup>		115.00	-
R31	10.3.02	DR	Rock excavation from surface drains	m <sup>3</sup>		130.00	-
R31	10.3.03a	DR	Rock lining of open drains	m <sup>2</sup>		35.00	-
R22	10.3.03b	DR	Grass treatment of open drains	m <sup>2</sup>			-
R31	10.3.03c	DR	Concrete lining of open drains	m <sup>2</sup>			-
R31	10.3.07	DR	Extra Over Item 3.06 for rock excavation	m <sup>3</sup>			-
R32	10.3.11	DR	Material excavated and replaced below pipe footings	m <sup>3</sup>		17.00	-
R32	10.3.25	DR	Rock excavation from trenches etc PQ	m <sup>3</sup>		105.00	-
R33	10.3.34a	DR	Class 400 sub-soil drain <750 mm deep	m		30.00	-
R33	10.3.34b	DR	Class 1000 sub-soil drain <750mm deep	m		35.00	-
R33	10.3.35	DR	Extra Over Item 3.34(a) and 3.34(b) for >750 to 1500 deep	m			-
R33	10.3.36a	DR	Sheet filter drains	m <sup>2</sup>			-
R33	10.3.36b	DR	Strip filter drains	m			-
G8	10.8.11	DE	Audit Surveys	Item		5,000.00	-
B1	10.9.02	B	Extra over Items 9.01 for excavation in rock	m <sup>3</sup>			-
B1	10.9.05	B	Extra over Item 9.03 for supply and placing 100 mm dia. Subsoil drain pipe with filter and aggregate surround	m			-
<b>PART 10 - PROVISIONAL ITEMS CARRIED TO SUMMARY</b>						<b>TOTAL \$</b>	<b>-</b>

**PROJECT ESTIMATE***Rates are exclusive of GST***Client Costs**

Client Costs		AMOUNT	Min	Cost Range		Distribution	Comments
		\$	%	Most Likely	Upper		
				%	%		
<u>Additional Items</u>							
Land Acquisition		100,000.00	80	100	150	PertAlt	
<u>Development Phase</u>							
Design - Concept		50,000.00	90	100	120	PertAlt	Includes landscape
Design - Preliminary		300,000.00	90	100	120	PertAlt	
Design - Detailed		200,000.00	90	100	120	PertAlt	
Design Applications, Permits, Fees, Advertising etc.		20,000.00	70	100	150	PertAlt	
Dept. State Growth Project Management		500,341.09					
<u>Delivery Phase</u>							
Dept. State Growth Project Management		500,341.09					
Consultant Contract Management		200,000.00	75	100	150	PertAlt	6 month construction phase
Insurances		53,800.00	75	100	130	PertAlt	
<u>Client Supplied Materials or Services</u>							
	Other Contractor			100		PertAlt	to be confirmed with DSG
	Nominated Subbies			100		PertAlt	
BE	Accommodation - Trees new	100,000.00	80	100	200	PertAlt	
FW	Accommodation - New Fence &/or remove old			100		PertAlt	
PUA	Service Authorities - Power	150,000.00	70	100	130	PertAlt	
PUA	Service Authorities - NBN			100		PertAlt	
PUA	Service Authorities - Communications	20,000.00	70	100	130	PertAlt	
PUA	Service Authorities - Reticulated Water			100		PertAlt	
PUA	Service Authorities - Irrigation			100		PertAlt	
PUA	Service Authority - Gas			100		PertAlt	
TS	Traffic - Workshop Materials			100		PertAlt	
FW	Final Linemarking	100,000.00	70	100	130	PertAlt	
P	Final Seal			100		PertAlt	

**CLIENT COSTS TOTAL \$ 1,944,482.17**

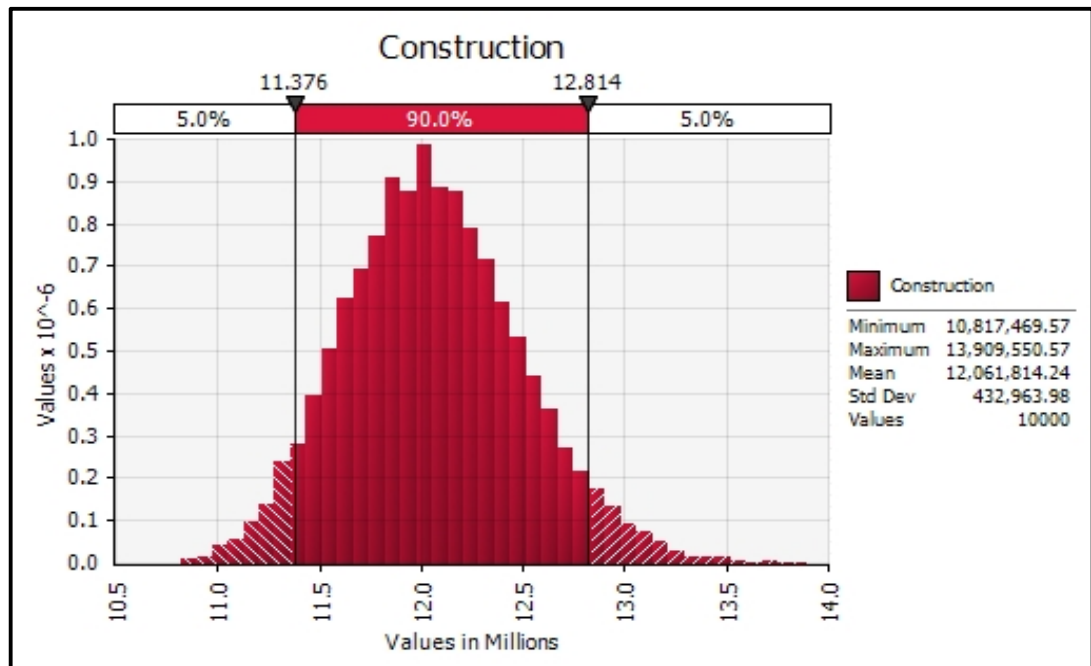
Contingent Risk

			Severity of Occurance						
Description	Average Frequency of Occurrence (%)	Estimated No. Occurances	Comment	Optimistic		Most Likely		Pessimistic	
				\$	Description	\$	Description	\$	Description
Delay costs incurred by Contractor for service authority relocations	30%	1		5,000		10,000		50,000	2 week delay
VicRoads specifications affect on tender rates	100%	1	risk register Item 4.09	10,000	Minimal affect	100,000	Some affect	500,000	significant affect
Scope - Design revisions	50%	1	risk register Item 3.02, 4.02, 4.04 & 6.01	-	No scope change	100,000	Variations allowance	300,000	10% increase scope
Adverse geotechnical conditions	30%	1		10,000		100,000	Additional subgrade/Excavation	750,000	Additional subgrade/Excavation
Accomodation works	50%	1	Additional works not scoped - Item 7.02 Planning, Heritage, environmental - Items 9 & 10	10,000		50,000	Minor internal road realignments and fencing	100,000	Major internal road realignments and fencing
Project delay due to regularatory approvals	10%	1		10,000		50,000	Delay costs	500,000	5% escalation 1year
Unidentified services	50%	1	Additional works not scoped - Item 13	10,000		30,000	Minor service	100,000	Major service
Acquisition of building opposite Kenmore Arms	25%	1	Purchase of building	10,000		100,000		200,000	
Unidentified Risks			Accommodation of smaller risks not specifically identified in the risk register	0		50,000		200,000	

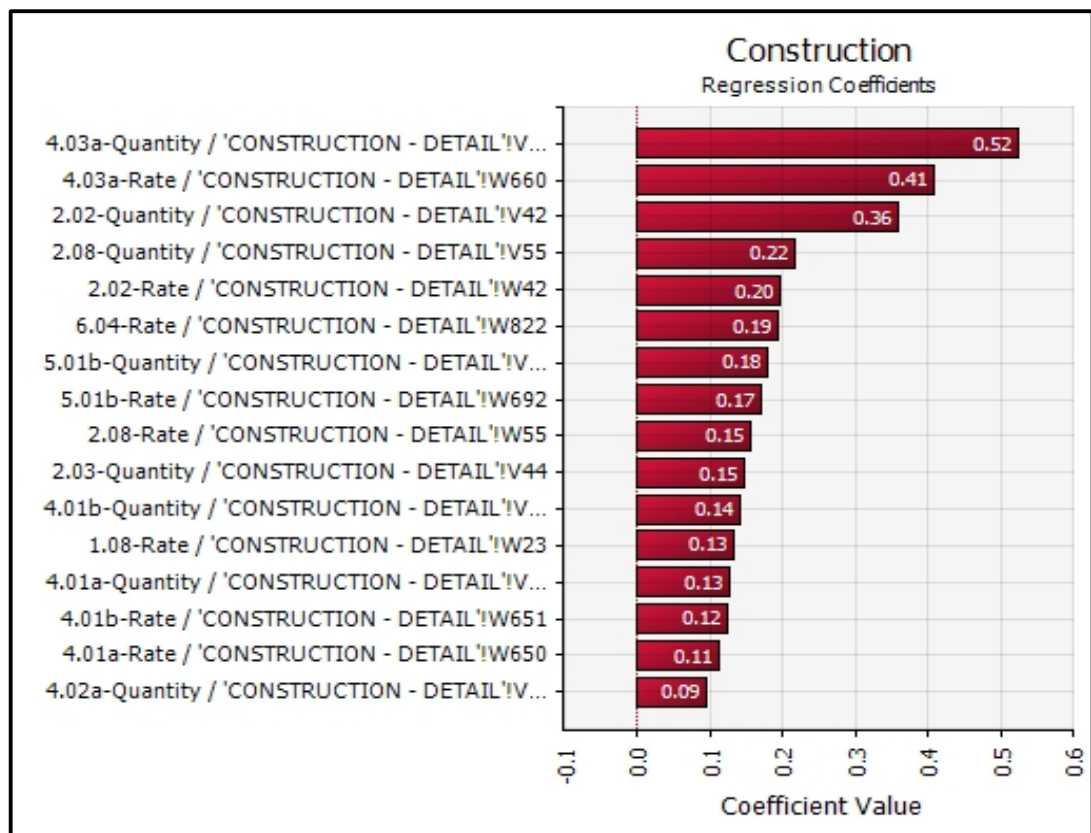
# @Risk Outputs

## Construction Costs

Histogram

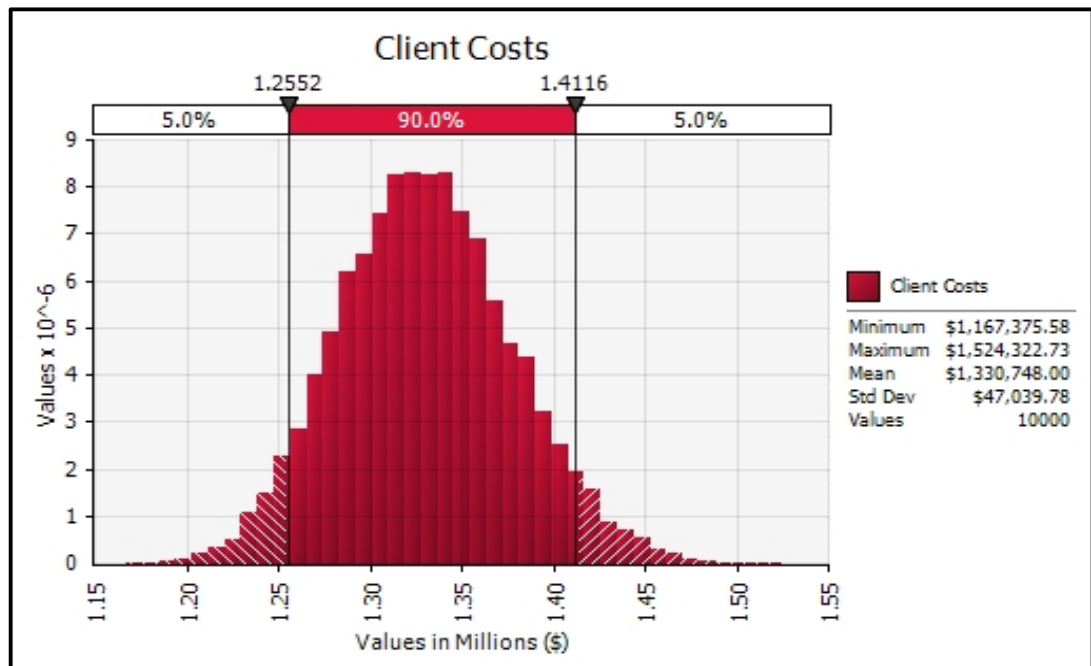


Regression  
Tornado

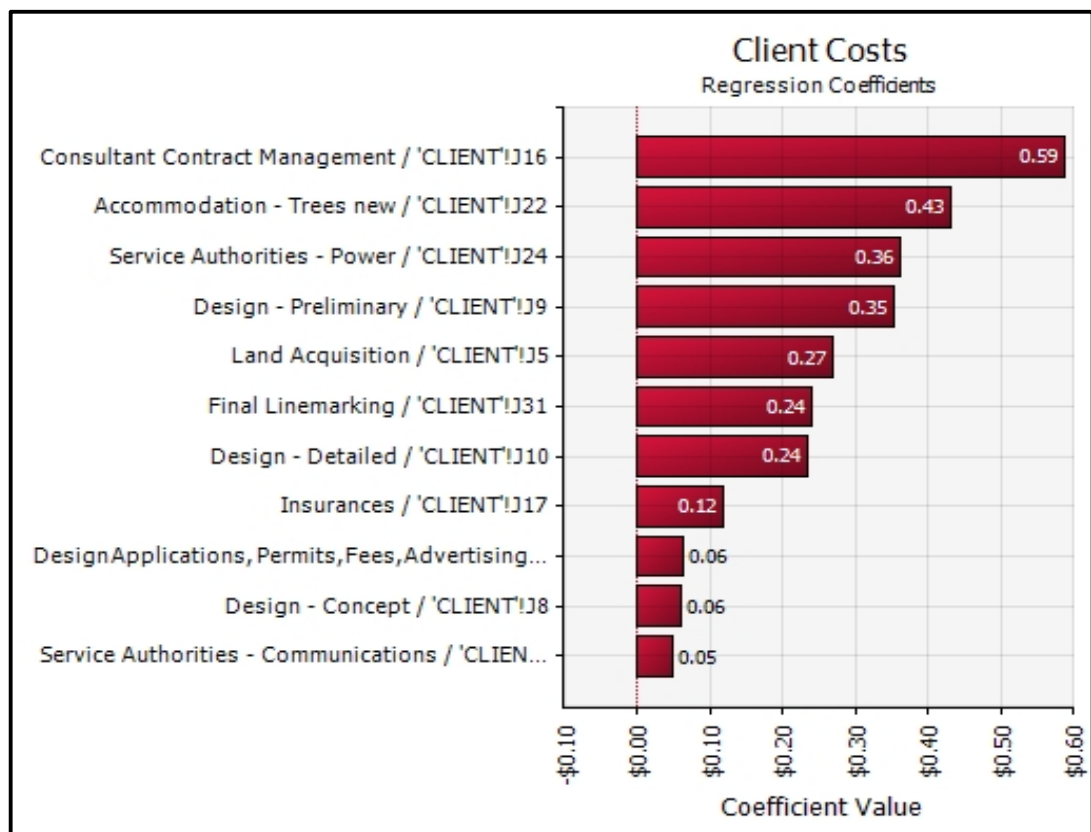


## Client Costs

Histogram

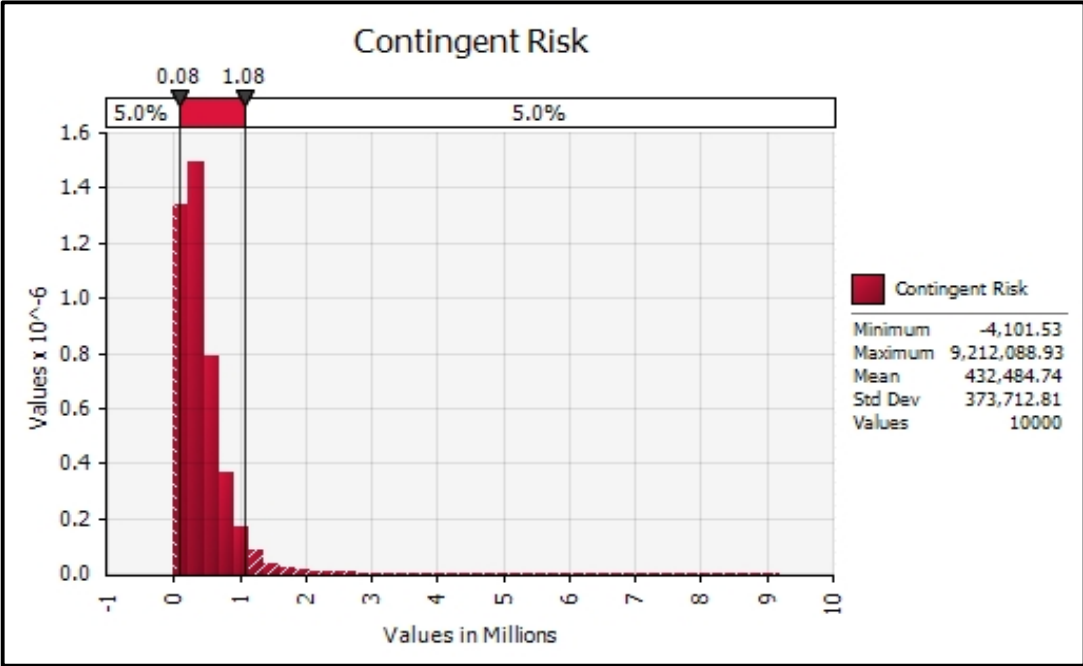


Regression  
Tornado



# Contingent Risk

Histogram



Regression  
Tornado

