

Technical note

Subject:	Swansea Bay Campus – Rock Revetment Survey		
Reference:	5104896-SBC-OUT-0191	Author:	Andy Wareing / Huw Richards
Revision:	01	Checker:	Rob Bull
Date:	7 th March 2014	Authoriser:	Darren Mace

1. Introduction

A visual inspection of the sea defences fronting the new University Campus and the Transit site was undertaken on 23rd January 2014 with the results shown on the plans included as appendices to this note. The extent of the revetment inspected covered a distance of some 1,200m. This technical note is provided to record any changes since the first survey, undertaken in November 2012.

The figures produced after the first, baseline survey are updated and attached to this note in order that any interested parties can view contemporary photos of the structure, as of 23rd January 2014. Both sets of record photographs are attached for this purpose.

2. Observations

WESTERN END

The inspections include the western extremity of the defence (further west than the university campus site). This section of the defence comprises a concrete sea wall with a rock slope on its seaward side. In December 2012, in two locations the rock protection to the front of the wall had been removed by storms. The exposure of the wall is thought to have occurred at least 5 years ago. The storm damage was likely caused by waves impacting the steep revetment and reflecting off the underlying impermeable wall removing the rocks.

During the recent survey in January 2014, additional damage was noted to the top of the base of the concrete wall. Two tabular sections of concrete have been removed from the top of the base of the wall and these concrete pieces are now located on the rock revetment to seaward. This is evidenced on sheet 1, west, photo references IP4 and IP5.

The remainder of this section of the sea defences are in a similar condition to that observed during the last inspection in November 2012. Please refer to the previous Technical Note for details of the condition of the revetment.

EASTERN END

There has been some observed erosion of the dunes landward of the revetment. The area between revetment crest and dunes looks has been trafficked by construction plant. This is evidenced on sheet 2, east, photo references IP15, 16 and 21.

The new outfall, part of the development works, has been constructed. This is evidenced on sheet 2, east, photo reference IP14.

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The rock comprising the eastern end of the revetment has been formalised. The structure here has been consolidated with rock brought from further east, increasing the packing density. There are no gaps and the previously observed dune grass can be seen sticking out from under the newly placed rocks, particularly in the upper part of the slope. This is evidenced on sheet 2, east, photo references IP18 and IP19.

3. Conclusions

The condition of the revetment observed although variable has remained intact during its lifetime (circa. 50 years).

Of the changes observed, only the changes observed at the western end of the sea defence is via natural processes. The condition of the revetment remains largely unaltered from the inspection undertaken in November 2012.

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Appendices

1. Figures from Inspection, January 2014

A3_Swansea_Bay_AW_Site_Survey_Jan2014_Photo_sheet1

A3_Swansea_Bay_AW_Site_Survey_Jan2014_Photo_sheet2

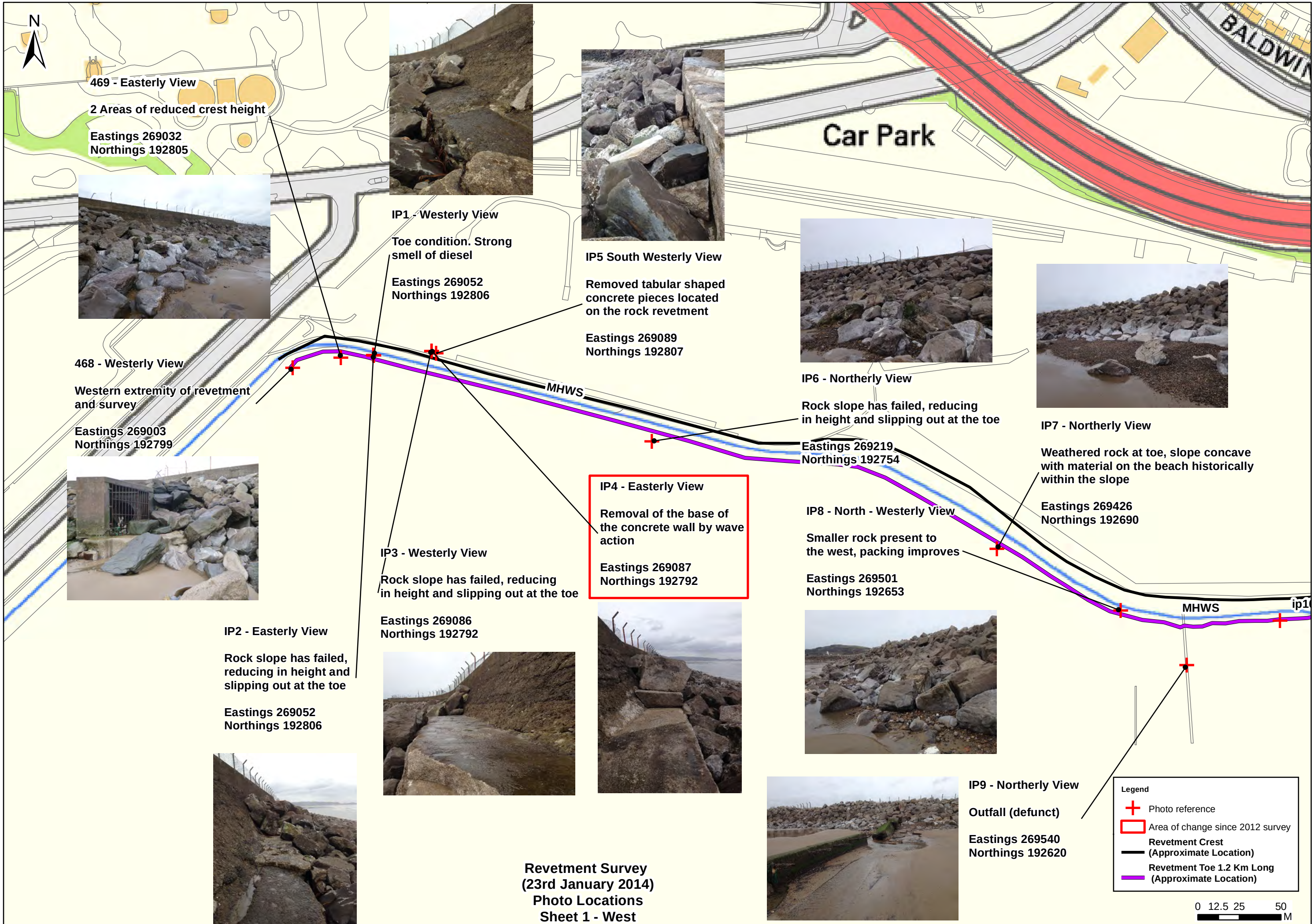
2. Figures from Inspection, November 2012

A3_Swansea_Bay_AW_Site_Survey_Nov 2012_Photo_sheet1

A3_Swansea_Bay_AW_Site_Survey_Nov 2012_Photo_sheet2

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Appendix 1 - Figures from Inspection, January 2014





IP10 - South Westerly View

Slope slackens approaching outfall

Eastings 269596
Northings 192647



IP11 - Westerly View

Sinuuous profile as crest and toe levels vary and slope alters

Eastings 269757
Northings 192634.2



IP21 Easterly View

Area looks to have been trafficked by construction plant, possible mechanical cause of dune face failing

Eastings 269919
Northings 192621

IP14 North Westerly View

New outfall construction, part of site development

Eastings 270006
Northings 192573



IP18 North Westerly View

Revetment has been formalised, voids previously evident have been filled.

Eastings 270082
Northings 192601



IP20 Westerly View

Highest point on the survey reach. Reverse slope to landward on the revetment crest

Eastings 269867
Northings 192633



IP12 Westerly View

Crest level lowers

Eastings 269878
Northings 192606

IP15

North-westerly View.

Evidence of dune erosion behind rock revetment

Eastings 269879
Northings 192605



IP 16

North-westerly View.

Evidence of dune erosion behind rock revetment

Eastings 269879
Northings 192605



Sand

IP13 North Westerly View

Outfall (operational)

Eastings 270004
Northings 192574



IP17 Westerly View

Example of poor packing density and large number of voids throughout

Eastings 270046
Northings 192594



IP19 Westerly View

Eastern extremity of revetment and survey

Eastings 270113
Northings 192608



MHWS

Revetment Survey
(23rd January 2014)
Photo Locations
Sheet 2 - East

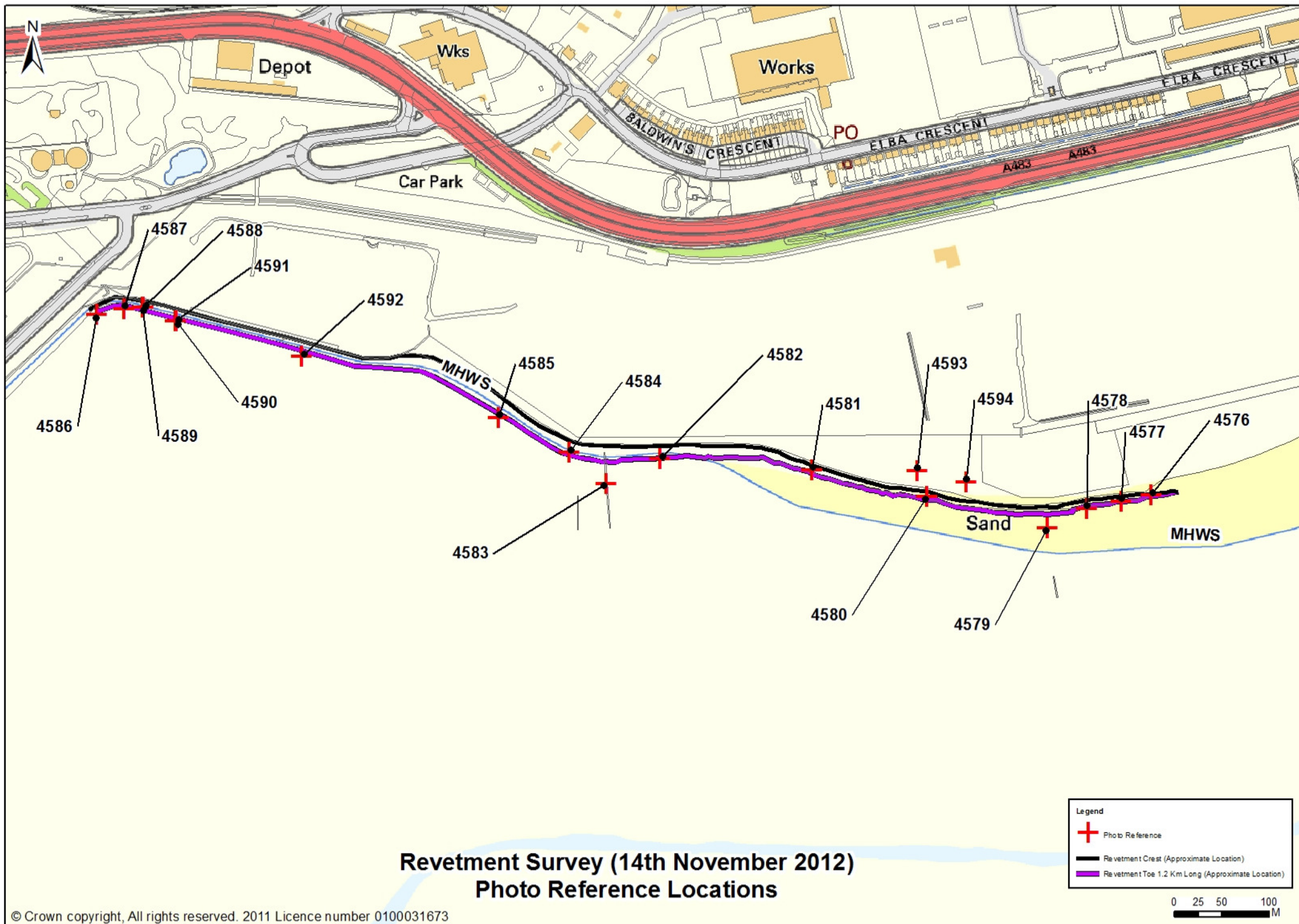
Legend

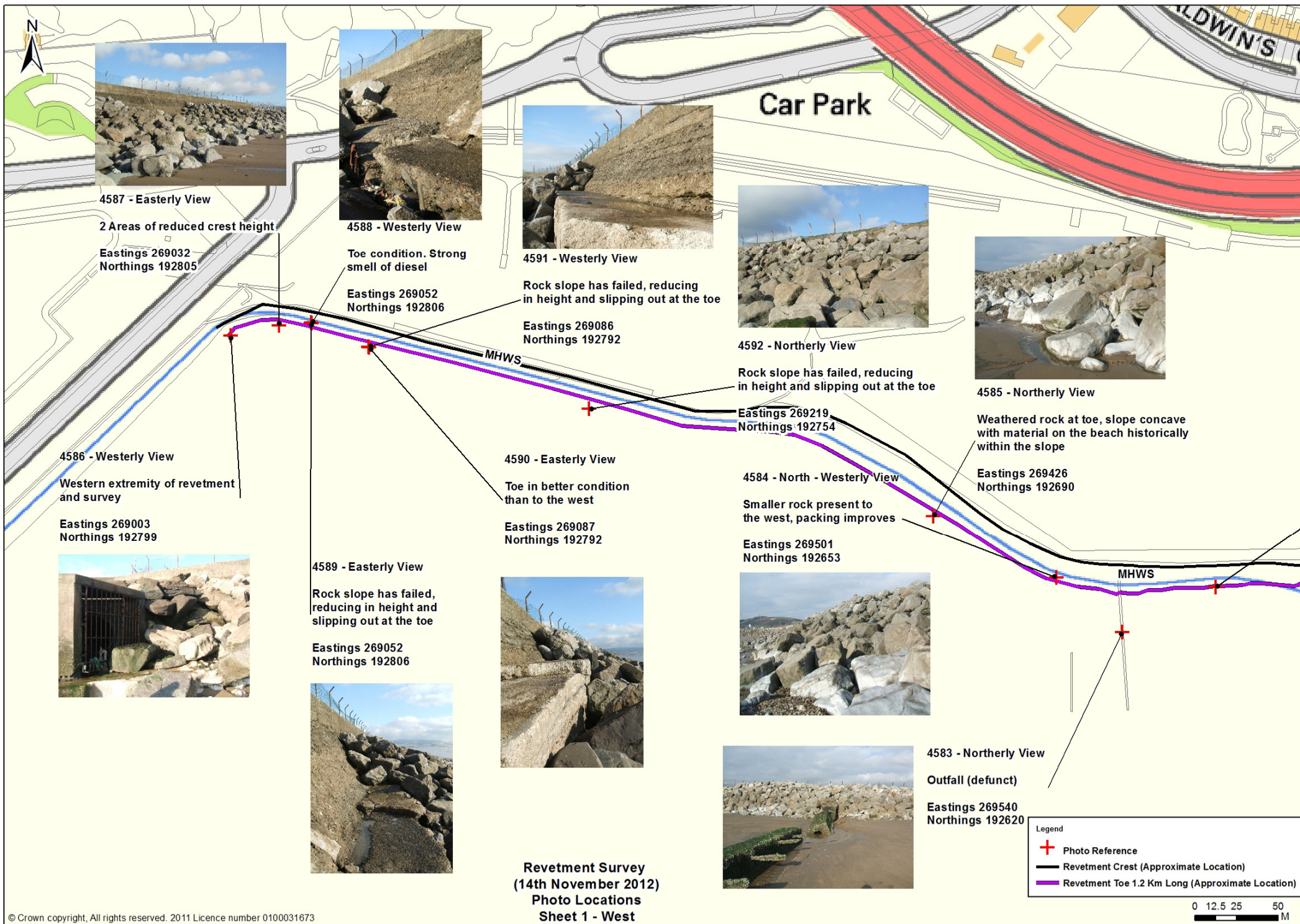
- + Photo reference
- Area of change since 2012 survey
- Revetment Crest (Approximate Location)
- Revetment Toe 1.2 Km Long (Approximate Location)

0 12.5 25 50
M

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Appendix 2 - Figures from Inspection, November 2012







4582 - South Westerly View

Slope slackens
approaching outfall

Eastings 269596
Northings 192647



4581 - Westerly View

Sinuous profile as crest
and toe levels vary and
slope alters

Eastings 269757
Northings 192634.2



4594 North Westerly View

Reverse slope to landward on
the revetment crest, plateau area
between rock and dunes

Eastings 269919
Northings 192621
Reverse slope to landward on
the revetment crest, plateau area
between rock and dunes



4577 North Westerly View

Gap in revetment, triangular
in shape, 1 layer thick

Eastings 270082
Northings 192601



4593 Westerly View

Highest point on the survey reach.
Reverse slope to landward on
the revetment crest

Eastings 269867
Northings 192633



4580 Westerly View

Crest level lowers

Eastings 269878
Northings 192606



4579 North Westerly View

Outfall (operational)

Eastings 270004
Northings 192574



4578 South Westerly view

Example of poor packing
density and large number
of voids throughout

Eastings 270046
Northings 192594



4576 Westerly View

Eastern extremity of
revetment and survey

Eastings 270113
Northings 192608

