11 March 2022

COASTAL WALKWAY UPGRADE NUNGAMOORA AND SA WATER SITE, HALLETT COVE, SA 5158

GEOTECHNICAL STABILITY REPORT

ASPECT STUDIOS

ADL2022-0050AE Rev1

ADL2022-0050AE		
Date	Revision	Comments
11 March 2022	0	Internal Only
11 March 2022	1	Draft

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EXECUTIVE SUMMARY

This report provides geotechnical design advice for two segments of the Coastal Walkway Project (Nungamorra street approximate Chainages 250-280m) and in front of SA Water Property (approximate Chainages 400-430m). In these segments design developments have encountered slope stability challenges that are addressed in the following report.

For the Nungamorra street site a small segment of boardwalk has been identified to be underlain by a very large non-engineered fill mass that limits a quantifiable slope stability assessment to be undertaken. For this site there is a risk associated with potential mass movement of a global soil block, which cannot easily be mitigated.

CMW recommendations for this area include:

- Completion of a quantitative slope stability assessment that addresses the global stability slopes down and up slope slopes to the boardwalk structure to determine the associated risk of global stability issues. The assessment should also include the provision of a treatment option/s to reduce the risk of instability to a Low-risk landslide site. This assessment is required within the remaining design life of the structure (understood to be 2 to 7 years).
- The current structural condition of the boardwalk is reassessed by an independent structural engineering to confirm or find agreement with the estimated RDL of 2 to 7 years (given the last assessment was in 2019 and the current changes in boundary conditions). This report must include options of remediation of the boardwalk. In accordance with safety in design, any options proposed should consider construction slope instability risk for the site. It is emphasized that the risk of instability during construction is high as the fill materials are not able to bear significant loads under short or long term. Construction advice is recommended to be sourced, from construction businesses, to ensure the provision of practical safe advice.

During the time to complete the assessment, CMW recommend the existing boardwalk should remain closed.

CMW note that any action taken along the existing boardwalk that potentially compromises the stability of the up-slope properties will result in liability and responsibility of this impact being held by the City of Marion.

Design Options possible for this site may include:

1. Leave existing boardwalk structure –This option is subject to the outcomes of structural reassessment and quantitative Slope Stability Assessment.
2. Re-found the existing footings - This option is subject to the outcomes of structural reassessment and quantitative Slope Stability Assessment.
3. Stabilizing the entire slope mass - This option is subject to the outcomes of a quantitative Slope Stability Assessment.
4. Bridging the fill mass – making the structure independent of the fill mass.

CMW preference is to consider Option 2, but it is highlighted that the option would not be able to retain the large fill mass within the valley. However, with the implementation of mitigation measure to address the items listed in Section 2.5.3 of this report, risks are able to be managed by Council.

For the SA Water Property segment of the walkway, a combination of cut and fill has been included in the civil design along the existing alignment to limit long term potential for slope instabilities to the walkway and slopes to the west of the walkway.

This design however does not remove the potential for a localized slope instabilities to impact the walkway from the east in the area between CH405 to CH430. In this area upslope developments have placed non-engineered fill materials which are contained within a valley channelling stormwater downslope to the west. As such the stability of these fill mass slopes is unable to be quantified but the design considers minimal disturbance and revegetation to aid in surface water flow erosional scour.

1 INTRODUCTION

CMW Geosciences (CMW) was authorised by Aspect Studios to undertake a revised geotechnical stability assessment of the boardwalk adjacent to Nungamorra street (approximate Chainages 250-280m) and in front of SA Water Property (approximate Chainages 400-430m) to inform the civil design development of a proposed walkway, Hallett Cove, SA. This work was a part of the Coastal Walkway Project.

This report outlines results of the assessments and recommendations for the design of the trial path structures.

2 NUNGAMORRA STREET (APPROXIMATE CHAINAGE 250-280)

2.1 Design Basis of the Existing Boardwalk

It is understood the existing boardwalk has been designed and constructed by Council in accordance with applicable Australian Design Standards covering the risks associated with the structure and the subsurface conditions of the site. It is also understood the basis of this design is that the boardwalk is founded in natural soil or rock subsurface conditions. Noting the as-built construction details of this structure have not been provided to CMW. It is with this assumption CMW undertook the concept stability assessment as discussed below.

It is further highlighted that this section of the Boardwalk is bound and underlain by a very large area of fill materials. The extent, volume and incremental fill is unknown to CMW, but Council and Plan SA have records as land lots have been modified in the recent past.

Of note regarding the fill materials, overlaying the natural soil and infilling the valley, is that CMW have not been provided with any information regarding the placement of this fill and if it has been placed in accordance with AS3798 and if this material is considered as an engineered fill under the existing board walk and under the adjacent allotments.

2.2 Concept Design and Initial Assessment

In April 2021 CMW provided advice to Aspect Studio that the concept design (refer to Figure 1) which included an upgrade to balustrade, handrails and retaining wall a low slope stability risk to the walking trial was assigned.

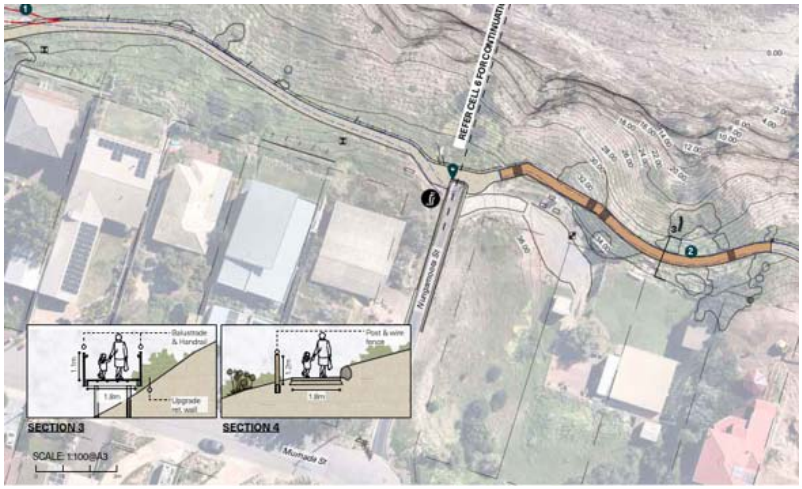
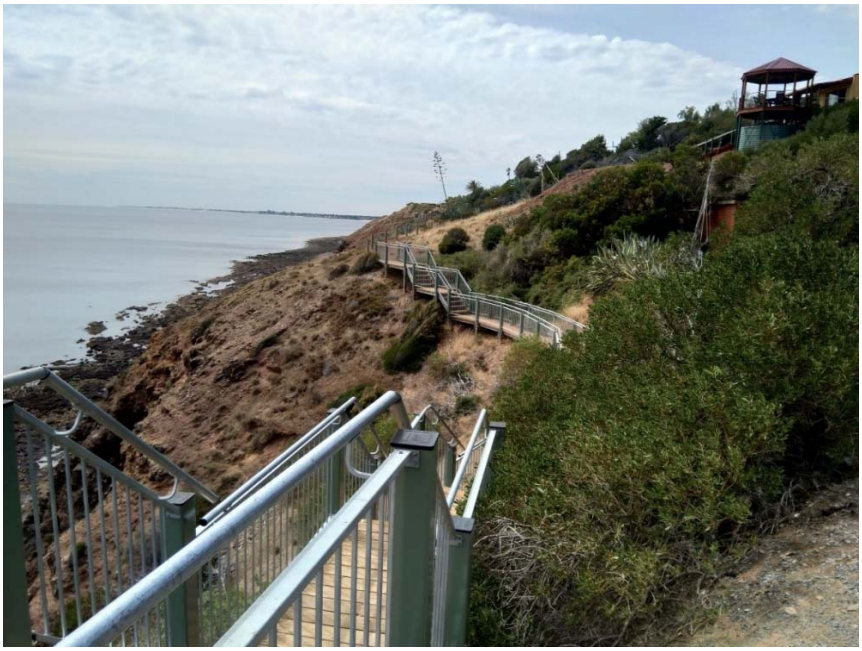


Figure 1: Elevated Walkway Concept Design Layout by Aspect Studios: Cell 5 – Kurnabinna Gully Sheet 2

Since this assessment the adjacent landowner has modified the adjacent allotment land surface and has removed vegetation from the adjacent allotments and Council land. Refer to Photograph 1 and 2 for images of the extent of tree removal. Possibly, in addition, the adjacent landowner has increased the height of material placed upon the slope immediately adjacent the board walk.



Photograph 1: Boardwalk and vegetation present in April 2021. Photograph taken facing north.



Photograph 2: Boardwalk and vegetation that is now not present in February 2022. Photograph taken facing north. Red cross denotes location of boreholes (BH1 south, BH2 north and BH3 central).

2.3 Percussion Geological Investigation

To aid in the understanding of the subsurface conditions at this segment of the trail, 3 boreholes were drilled vertically by RW Solutions on the 4th March 2022. Refer to Figure 2 for the location of these boreholes. As the drilling method was percussion the level of information able to be deduced is limited to drilling resistance and material properties (no geotechnical engineering data). The drilling was able to indicate a deep profile of fill material persist under the existing boardwalk structure.

Table 1 provides a summary of the conditions encountered during the investigation.

Table 1: Summary of Subsurface Conditions

Depth (m)	BH1 (south)	BH2 (north)	BH3* (central)
0 to 1	Fill: Silt, Gravel, Clay with trace organic matter, bricks. Poorly consolidated.		
1 to 2	Fill: Silt, Gravel, Clay with trace organic matter, bricks. Poorly consolidated.		
2 to 3	Fill: Silt, Gravel, Clay with trace organic matter, bricks. Poorly consolidated.		
3 to 4	Fill to 3.2, Residual Soil to 4	Fill: Silty Gravelly Clay	Fill: Silty Gravelly Clay
4 to 5	Low strength, moderately weathered Slate	Low strength, highly weathered Slate	Fill: Silty Gravelly Clay

*Fill depth greater than 5m. Drilling was unable to recover samples of the material recovered from the base of the borehole as the sample continuously collapsed back into the borehole. It was inferred the last 0.5m of the borehole drilled into a dense material like residual soil of the bedrock. On this basis the depth to competent bedrock (Low to medium strength, moderately weathered Slate) is assumed to be 6 to 7m below the current surface (level of the boardwalk balustrade). BH3 was located central to the valley and may represent the deepest area of fill materials.

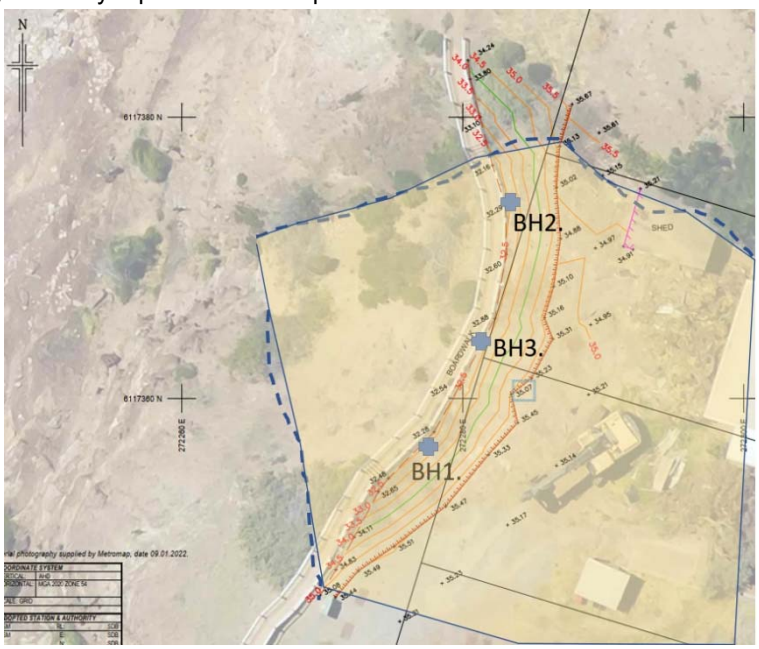


Figure 2: Existing Elevated Walkway with the extent of fill material (yellow in colour) mapped out under the boardwalk. Figure also includes property boundary, survey of current slope, trees removed and borehole locations.

2.4 Existing Boardwalk

Given the results of the investigation it is inferred this segment of the trail has been infilled with uncontrolled fill materials of variable and that the upslope land allotments have also been infilled with a similar material. The exact density and material strength of the fill materials is unknown. What is now also apparent at this site is that the fill mass resides at a steep angle of inclination (sloping to the west) and that the fill mass body is very large (40mW x 150mL x 5mD). In addition, the valley area is bound to the west by a steep cliff face to the west (of at least 10 m vertical drop – see photograph 3). Also, the fill mass is considered to be placed upon clay, residual soils of Slate and Slate (bedrock).

These conditions generate a difficult environment for the safe access of personnel and construction equipment along the existing trail path alignment.



Photograph 3: View looking east at the existing boardwalk. Photo taken in April 2021 when vegetation was present.

It is understood, from a structural condition report of the boardwalk prepared in 2019 for Council, this segment of boardwalk was in fair condition with an estimated RDL of 5 to 10 years (noting a boardwalk structure has a finite design life and the boardwalk structure is a light structure as it distributes load to many foundation points). It is however unknown what the piles to the board walk are founded upon (fill materials or natural subsurface conditions). Also, the increased mass of recent material placed on the slope immediately above the boardwalk by the adjacent landowner is unknown.

With the above considerations the existing assessment for the boardwalk require revision.

2.5 100% Design Assessment and Advice

2.5.1 Historical condition of the site

For the Nungamorra Site it is generally understood the current surface (slope and surrounding land mass) have remained unchanged for over a period of over 10 years. No local slope instabilities have been recorded by Council and signs of tension cracks in the ground surface were not observed during recent site visits. Given these conditions the site is assessed to be metastable, that is no inherent landslides appear to have occurred or are progressively occurring at the site.

In support of this statement is the structural conditions of the boardwalk. Since it first construction the boardwalk has also had balustrades replaced. It is understood the current boardwalk is serviceable in its current state and for a short in the future.

It is therefore apparent from the site surface conditions and the structure that future upgrades are required to meet serviceable requirements.

2.5.2 Recent Removal of Vegetation

During this design phase for the Trail upgrade modification of the slope adjacent to the boardwalk has occurred as discussed above in Section 2.2. In particular is the removal of trees and their roots in the soil mass. Trees help to stabilize the near surface soils as their roots hold/bound the soil mass together.

The removal of grasses and shrubs has now exposed a surface composed of unconsolidated loosely placed clay, sand, gravel (reworked local soils), shrubs roots and organic matter and bricks, plastics (typical construction and demolition waste materials).

This changes/disturbances to the site have led to a significant change to the stability of near surface soils. Such that the materials are now more prone to erosion by surface water flows and water infiltration into the soil has increased.

2.5.3 Design Basis

CMW understand that geotechnical design advice for a new trail path structure is to consider a replacement structure be light and have multiple piled footings as per the existing boardwalk structure. Preferably it is recommended to avoid changing the existing conditions under the boardwalk (e.g. remove and replace the existing piers is preferred) and therefore the alignment is recommended to follow as close as practical to the existing trail alignment. Also, there is balustrade specification applicable, and a design life of 40 years is specified. CMW understand there no other design requirements.

CMW would like to raise that the lack of design specifications or guidelines makes it difficult to set boundaries and limits to our design advice and for a design to progress at this stage. Request additional information related to the adjacent up slope area include:

- For the adjacent land allotments: what are the conditions applicable to a development on the site. This includes surcharge load limits and where these limits apply within the property? Is there conditions of stormwater discharge downslope from the property? CMW highlight this request as a pile footing design must consider the lateral forces of the adjacent fill mass and any surcharge loadings from the proposed allotments, potential landslides and stormwater outlet systems from the proposed new development upon the adjacent land allotments.
- For the adjacent land allotments: Is there any requirements for the landowner to revegetate the current slope?
- What are the Councils stormwater management to mitigate and manage stormwater down Nungamorra street from entering the area of the existing boardwalk?
- Are Council planning to revegetate the existing slope that had vegetation stripped.
- Are the proposed temporary construction access tracks to build the Grey Gully South Bridge to be designed and certified by an engineer to ensure there is no impact on the existing permanent structures surrounding the access track?
- Mitigation measures in place by the adjacent service providers SA Water and to direct any subsurface ground water flows that are funnelled through the services trenches away from the current boardwalk structure. Council is recommended to implement such management

as ground water has a high potential to impact on the long-term stability of the fill mass below the existing boardwalk.

2.5.4 Design Advice

Given the above, CMW have revised their slope stability assessment for this area from low as per the AGS Qualitative Landslide Assessment method for the boardwalk area to requiring a quantitative slope stability assessment that addresses the global stability of the adjacent slopes to the boardwalk structure. The assessment must also include the provision of a treatment option/s to reduce the risk of instability to a Low-risk landslide site. This assessment is required within the remaining design life of the structure (2 to 7 years).

It is also recommended that the current structural condition of the boardwalk is reassessed by an independent structural engineering to confirm or find agreement with the estimated RDL of 2 to 7 years (given the last assessment was in 2019 and the current changes in boundary conditions). This report must include options of remediation of the boardwalk. In accordance with safety in design, any options proposed should consider construction slope instability risks. It is emphasized that the risk of instability during construction is high as the fill materials are not able to bear significant loads under short- or long-term periods. Construction advice is recommended to be sourced, from construction businesses, to ensure the provision of practical safe advice.

During the time till this reassessment is completed the existing boardwalk should remain closed.

CMW note any action taken along the existing boardwalk that potentially compromises the stability of the up-slope properties will result in liability and responsibility of this impact to the up-slope property being with City of Marion and its consultant team.

Design Options possible for this site may include:

1. Leave existing boardwalk structure –This option is subject to the outcomes of structural reassessment and quantitative Slope Stability Assessment.
2. Reconstruct the existing footings and boardwalk structure - This option is subject to the outcomes of structural reassessment and quantitative Slope Stability Assessment.
3. Stabilizing the entire slope mass - This option is subject to the outcomes of a quantitative Slope Stability Assessment.
4. Bridging the fill mass – making the structure independent of the fill mass.

CMW preference is to consider Option 2, but it is highlighted that the option would not be able to retain the large fill mass within the valley. However, with the implementation of mitigation measure to address the items listed in Section 2.5.3 risks are able to be managed.

3 SA WATER PROPERTY (APPROXIMATE CHAINAGE 400-430)

3.1 Concept Design

The initial concept design aimed to remove many concrete steps in this short but undulating segment of the path. Refer to Figure 3 and the section therein for an illustration of the alignment that aimed to stay on approximately on-contour to the existing land surface.

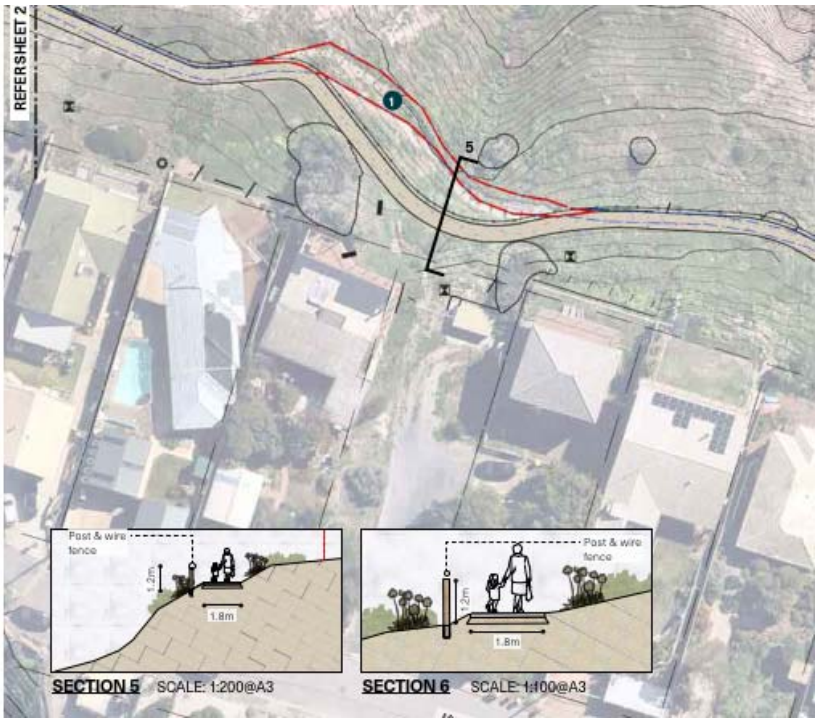


Figure 1: Elevated Board Walk Concept Design Layout by Aspect Studios: Cell 6 – extract from Kurnabinna Gully Sheet 1

3.2 100% Design

In February 2022, CMW undertook a site assessment of the SA Water site with design representatives to geotechnically assess the area for potential long-term challenges to the concept path design. Observations of non-engineered fill present to the east of the current footpath between CH410 and CH430 were relayed back to the civil design team. Along the existing path segments of natural soil and rock were observed and only small length of shallow non-engineered fill material present.

Typically constructing of any civil structure upon or into non-engineered fill is not recommended. This is as the material is difficult to judge the long-term behaviour of the material especially when the fill materials are also present in adjacent properties with structural buildings/loads upon these land lots. This interaction with boundary conditions is not recommended as any alteration to the existing conditions will led to Council being responsible for any up-slope changes to the foundation conditions of these allotments.

Also, of large influence on the stability of a non-engineered fill mass is surface water flow and subsurface water flows. This site has a significant catchment area up slope of the trial and is subject to variable surface water flow during rainfall events.

As a result of the above and to minimize slope instability risks and maintenance costs, CMW recommended to the design team to not construct the path as per the concept and the proposed alignment (see Figure 4) was generated. This alignment limited the cut and fill along this segment of the trail, but it has not removed all of the steps.

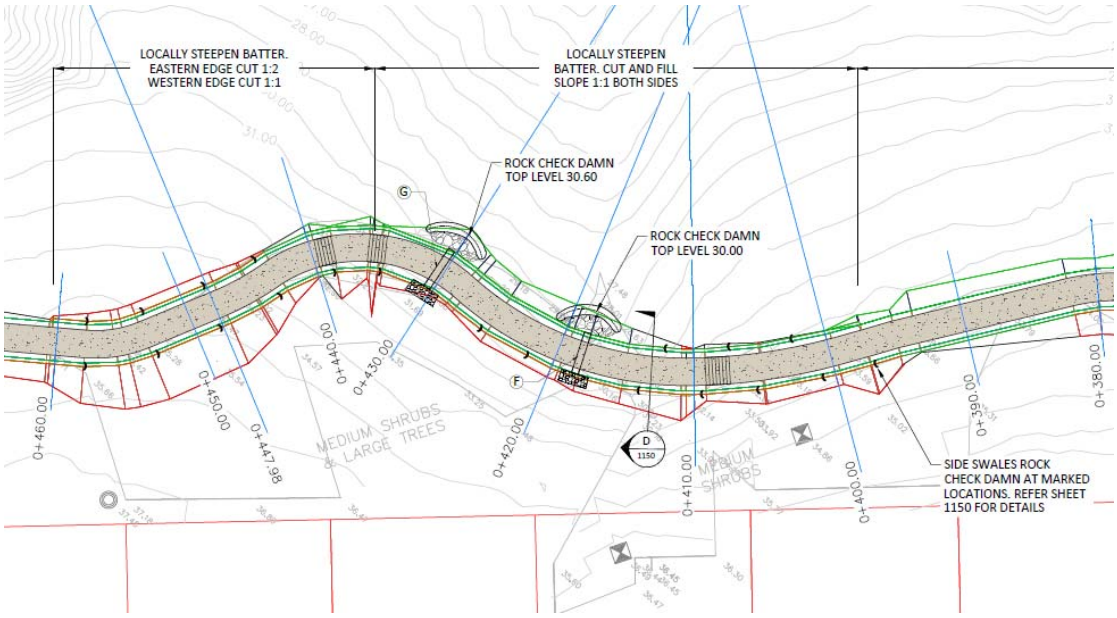


Figure 4: Revised 100% Design Layout by Aspect Studios (extract from drawing J0439-CIV-DRG-1061[C])

Design advice has also informed the batter slopes for the path. These are shallow to the east in the non-engineered fill mass and steeper to the west where near surface bedrock is present. Local revegetation of these slope is highly recommended and rock armoured drainage paths to limit water velocity and erosional scour.

This design however does not remove the potential for a localized slope instabilities to impact the walkway from the east in the area between CH405 to CH430. As such the stability of these fill mass slopes is unable to be quantified but the design considers minimal disturbance and revegetation to aid in surface water flow erosional scour.

4 LIMITATIONS

The findings contained within this report are the result of limited discrete investigations conducted in accordance with normal practices and standards. To the best of our knowledge, they represent a reasonable interpretation of the general surface condition of the site. Under no circumstances, can it be considered that these findings represent the actual state of subsurface ground conditions away from our investigation locations.

If the ground conditions encountered during construction are significantly different from those described in this report and on which the conclusions and recommendations were based, then we must be notified immediately.

This report has been prepared for use in the Coastal Walkway Project located in Hallett Cove SA, in accordance with generally accepted consulting practice. No other warranty, expressed or implied, is made as to the professional advice included in this report. Use of this report by parties other than City of Marion and their respective consultants and contractors is at their risk as it may not contain sufficient information for any other purposes.

5 CLOSURE

Should there be any questions in relation to this request for report, please contact the undersigned.

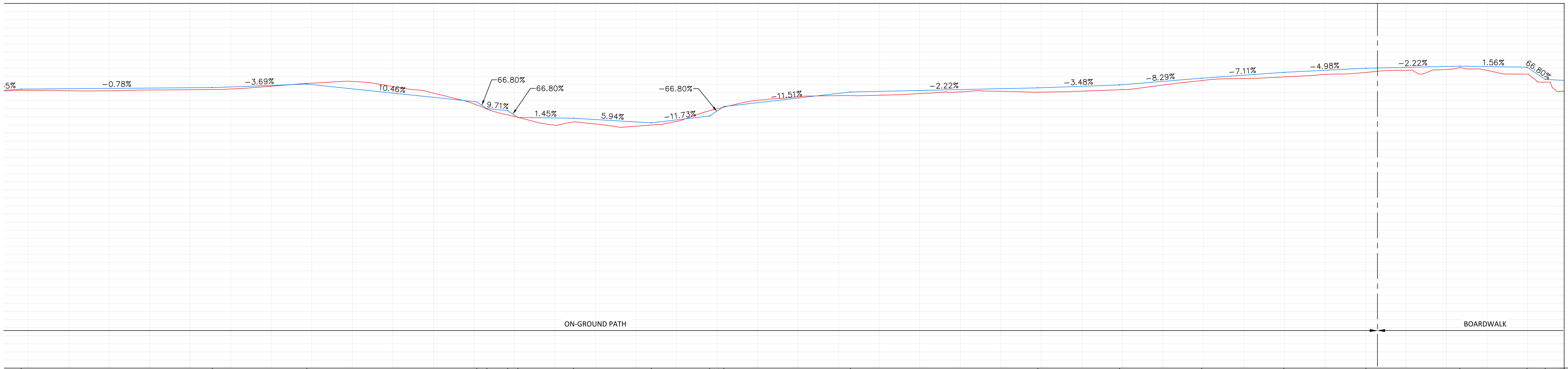
For and on behalf of CMW Geosciences

Prepared by:	Reviewed and authorised by:
Yan Wang	John Slade
Project Geotechnical Engineer	**Principal Geotechnical Engineer, CPEng**

Distribution: 1 electronic copy to Aspect Studio via email
Original held at CMW Geosciences

Appendix A: Drawings

Appendix A
Drawings



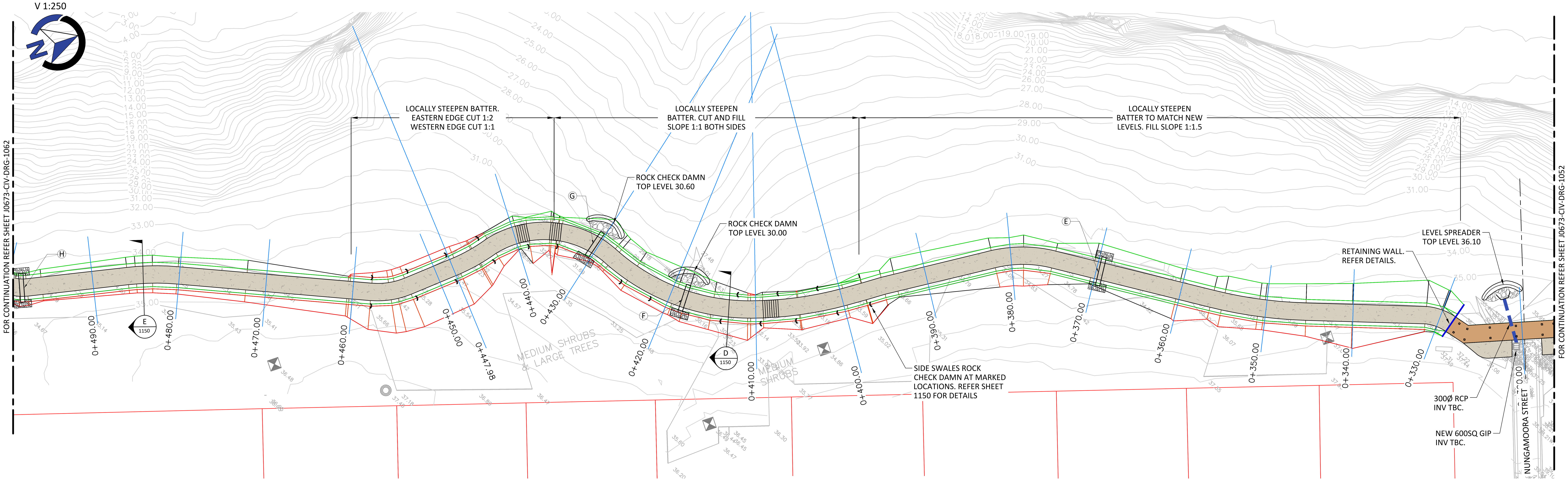
DESIGN GRADIENT: -0.78% | -3.69% | 10.46% | 66.80% | 9.71% | 66.80% | 1.45% | 5.94% | -11.73% | -66.80% | -11.51% | -2.22% | -3.48% | -8.29% | -7.11% | -4.98% | -2.22% | 1.56% | 66.80%

DESIGN LEVELS: 34.43 | 34.48 | 34.55 | 34.61 | 34.70 | 35.04 / 34.98 | 33.93 | 32.89 / 32.85 | 32.01 | 31.76 | 30.93 | 30.86 | 30.83 | 30.37 | 30.26 | 31.10 / 31.71 / 32.27 | 33.33 | 34.07 | 34.15 | 34.37 | 34.58 / 34.60 | 34.94 / 34.96 | 35.78 / 35.79 | 36.50 | 37.00 | 37.22 | 37.26 | 37.03 / 37.07 | 35.63

CHAINAGE	EXISTING LEVELS	LEVEL DIFFERENCE
0+490	34.23	0.25
0+480	34.32	0.24
0+470	34.44	0.26
0+460	35.16	-0.18
0+450	34.74	-0.80
0+440	32.60	0.29
0+430	29.96	0.91
0+420	29.85	0.52
0+410	32.00	-0.28
0+400	33.48	-0.16
0+390	33.67	0.48
0+380	34.08	0.30
0+370	34.05	0.55
0+360	34.36	0.61
0+350	35.51	0.28
0+340	35.94	0.56
0+330	36.47	0.53
0+320	36.85	0.37
0+310	36.27	0.80

LONGITUDINAL SECTION - CELL 6 PART 1

SCALE: H 1:250
V 1:250



SETOUT PLAN - CELL 6 PART 1

SCALE: 1:250



LOCATION PLAN

SCALE 1 : 250
0 5 10 15 20 25 m

NOTE:
1. FOR GENERAL NOTES REFER TO DRAWING J0439-CIV-DRG-1001
2. ALL DIMENSIONS TO BE CONFIRMED PRIOR TO CONSTRUCTION.
3. ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ARCHITECTURAL, SERVICES AND OTHER CONSULTANTS DRAWINGS.
4. REFER STRUCTURAL DRAWINGS FOR DETAILS OF BOARD WALK AND SUSPENSION BRIDGE.

- ON GROUND CEMENT TREATED RUBBLE PAVEMENT REFER SECTION E ON SHEET 1150 FOR DETAILS
- BOARDWALK STRUCTURE REFER STRUCTURAL DRAWINGS FOR DETAILS
- CABLE SUSPENSION BRIDGE REFER STRUCTURAL DRAWINGS FOR DETAILS
- CONCRETE BLOCK PAVER REFER SECTION F ON SHEET 1150 FOR DETAILS
- EXISTING PATH/BOARDWALK TO BE REMOVED
- ROCK CHECK DAMN REFER SHEET 1150
- RC BOX CULVERT WITH ROCK PITCHING AT INLET AND OUTLET REFER DETAILS ON SHEET 1150
- NEW UNDERGROUND STORMWATER PIPE
- EXISTING UNDERGROUND STORMWATER PIPE
- NEW JUNCTION BOX (JB.)
- NEW GRATED INLET PIT (GIP.)

REVIEW

CLIENT: ASPECT Studios™

REV:	DATE:	DESCRIPTION:	IVR:	APR'D:
C	18/02/2022	ISSUED FOR 90% DD		JCA
B	20/10/2021	ISSUED FOR 70% DD		JCA
A	14/10/2021	ISSUED FOR REVIEW		JCA

TITLE:	NAME:
DRAFTER	ESA
DRAFTING CHECK	TM
DESIGNER	JSH
DESIGN CHECK	JCA
PROJECT MANAGER	JSH

MARION COSTAL WALKWAY UPGRADE
CELL 6: KURNABINNA GULLY
HALLETT COVE, SA 5158
CELL 6 PART 1

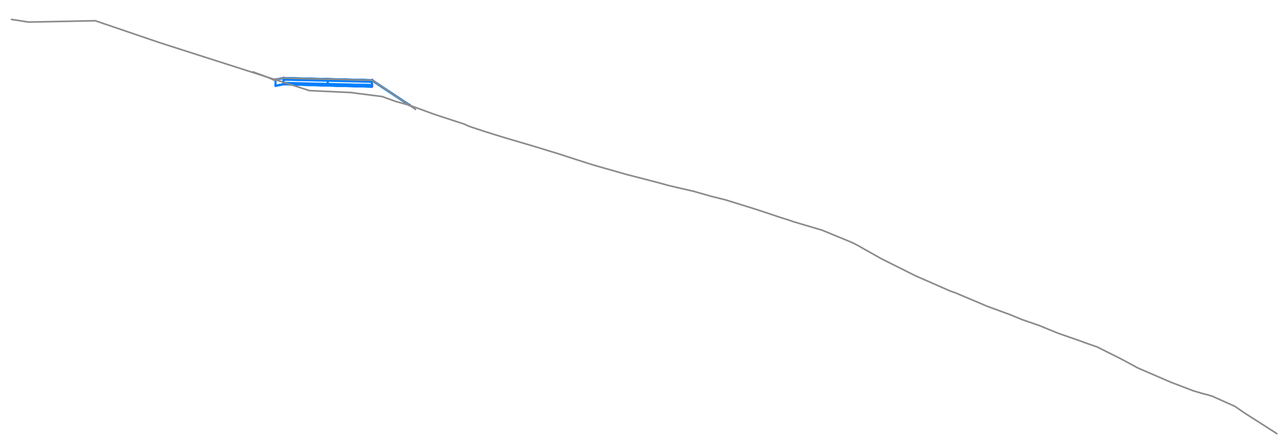
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SCALE: 1:250 | DATE: 18/02/2022 | PHASE: REVIEW | SHT SIZE: A1
DRAWING NUMBER: J0439-CIV-DRG-1061 | REVISION: C

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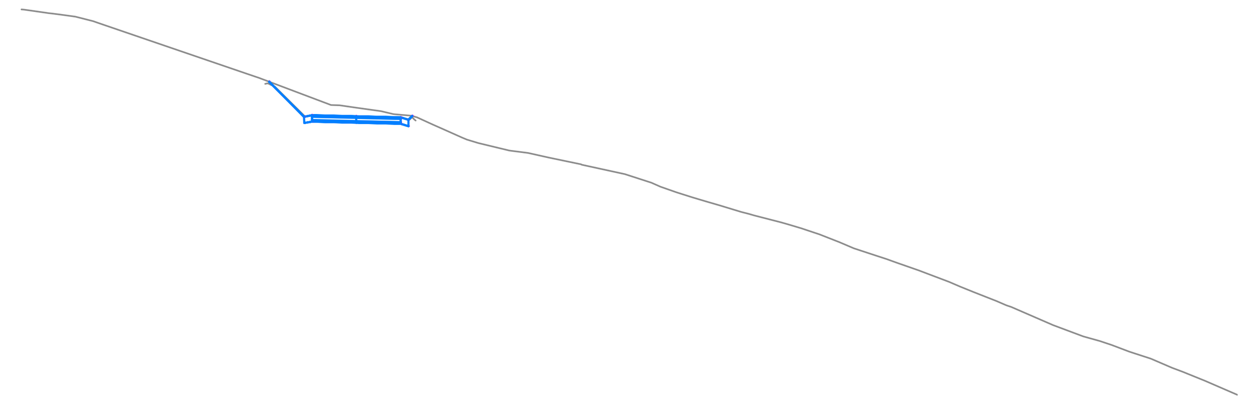
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EXISTING ELEVATIONS	35.91 35.83 35.85 35.75 35.41 35.07 34.75 34.43 34.11 33.79 33.63 33.56 33.37 33.04 32.70 32.36 32.05 31.75 31.43 31.13 30.86 30.61 30.35 30.07 29.75 29.43 29.09 28.62 28.09 27.62 27.19 26.78 26.40 26.02 25.67 25.22 24.72 24.31 23.98 23.45 22.81
LEVEL DIFFERENCE	0.02 0.00 0.13 0.39 0.43 0.41 0.01 −0.07
OFFSET	−2.36 −1.99 −1.40 0.00 0.99 1.53 2.57 2.77



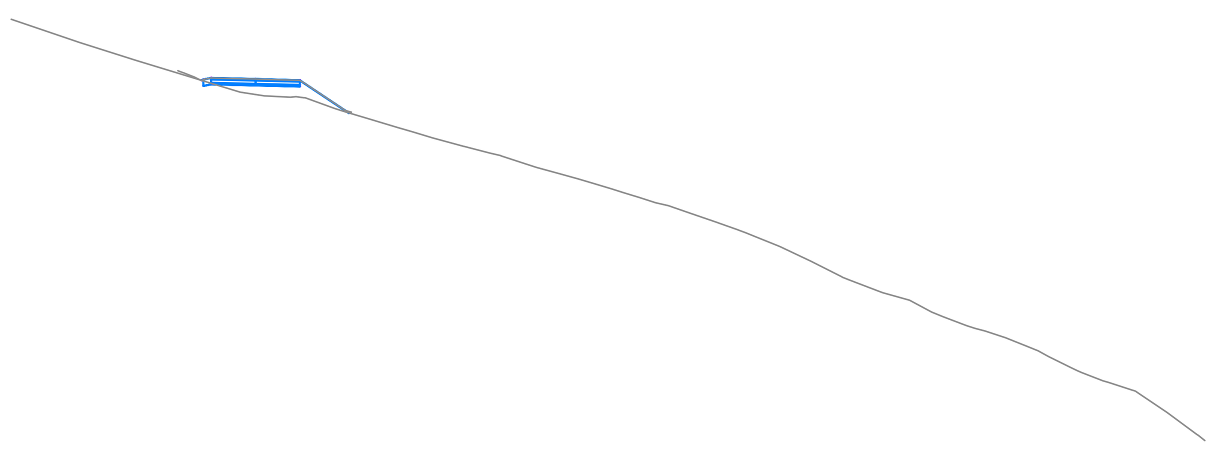
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PROPOSED ELEVATIONS	34.16 34.14 33.36 33.33 33.29 33.12
EXISTING ELEVATIONS	36.00 35.74 35.48 35.26 35.11 34.96 34.64 34.31 33.98 33.64 33.48 33.38 33.10 32.84 32.59 32.23 31.79 31.55 31.20 30.91 30.68 30.44 30.16 29.87 29.58 29.27 28.87 28.47 28.05 27.58 27.12 26.76 26.42 26.09 25.69 25.29 24.92 24.52 24.10 23.67 23.23
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OFFSET	−2.54 −2.47 −1.40 0.00 1.40 1.82



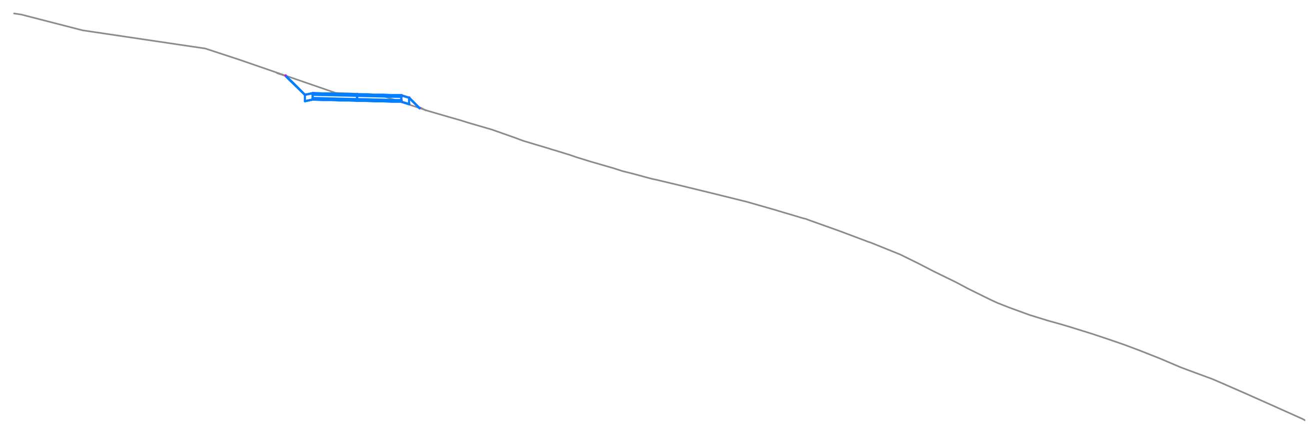
0+406.00

PROPOSED ELEVATIONS	33.67 33.58 32.67 32.64 32.60 32.50
EXISTING ELEVATIONS	35.94 35.80 35.53 35.19 34.85 34.51 34.17 33.82 33.44 33.07 32.91 32.75 32.57 32.11 31.75 31.54 31.35 31.14 30.92 30.64 30.28 29.96 29.67 29.40 29.12 28.76 28.38 28.04 27.68 27.29 26.89 26.48 26.05 25.68 25.36 25.01 24.61 24.20
LEVEL DIFFERENCE	−0.11 −0.08 −0.53 −0.27 −0.08 −0.12
OFFSET	−2.88 −2.58 −1.37 0.00 1.43 1.87



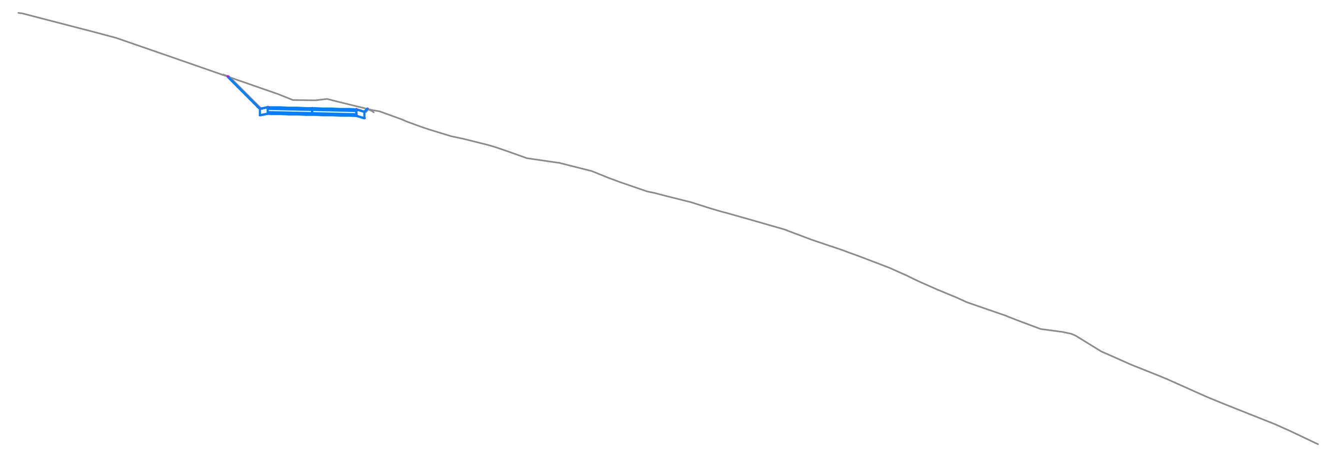
0+392.00

PROPOSED ELEVATIONS	34.37 34.17 34.14 34.11 34.07 33.12 33.06
EXISTING ELEVATIONS	36.99 36.36 36.10 35.75 35.41 35.08 34.76 34.46 34.15 33.85 33.62 33.54 33.36 33.02 32.72 32.43 32.14 31.87 31.60 31.28 31.01 30.71 30.40 30.12 29.77 29.43 29.05 28.61 28.12 27.67 27.31 26.94 26.49 26.16 25.82 25.37 24.88 24.51 24.11 23.43 22.68
LEVEL DIFFERENCE	0.08 0.04 0.22 0.49 0.54 0.04 0.05
OFFSET	−2.45 −1.93 −1.21 0.00 1.40 2.83 3.04



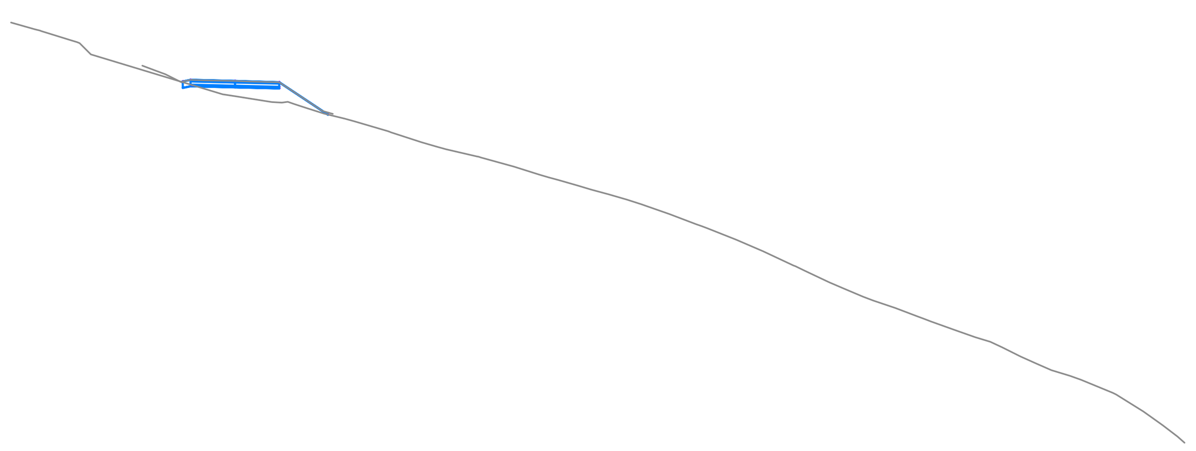
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PROPOSED ELEVATIONS	34.23 34.14 33.56 33.58 33.56 33.53 33.45 33.04
EXISTING ELEVATIONS	35.93 35.67 35.49 35.34 35.19 35.04 34.74 34.40 34.06 33.72 33.58 33.45 33.12 32.82 32.52 32.18 31.86 31.55 31.25 30.97 30.73 30.49 30.24 29.96 29.67 29.33 28.96 28.56 28.08 27.58 27.08 26.68 26.35 26.05 25.72 25.36 24.94 24.56 24.13 23.69
LEVEL DIFFERENCE	−0.01 −0.01 −0.36 −0.14 −0.02 0.10 0.22 −0.01
OFFSET	−2.52 −2.24 −1.58 −1.02 0.00 1.04 1.65 2.18



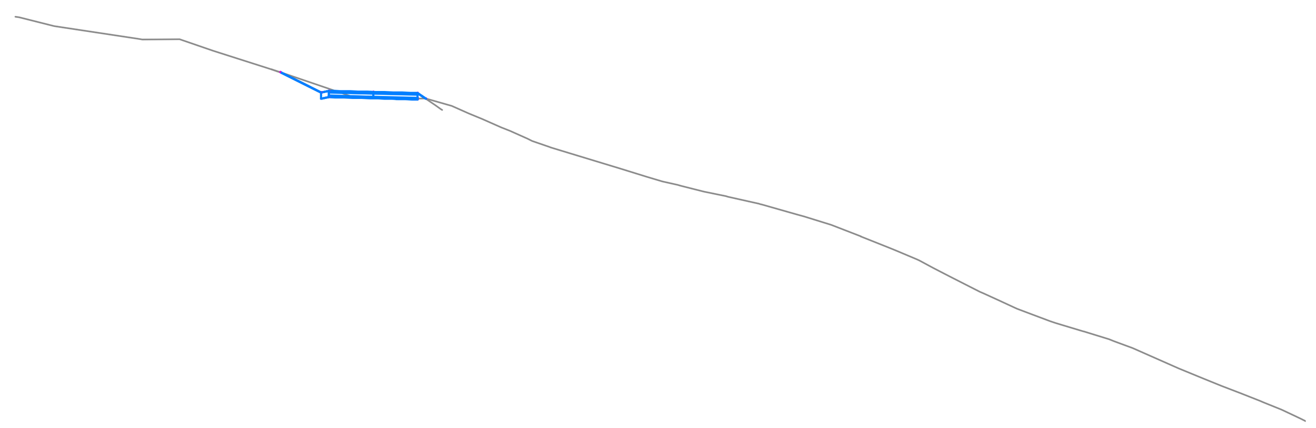
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PROPOSED ELEVATIONS	33.93 33.88 32.90 32.87 32.83 32.74
EXISTING ELEVATIONS	35.82 35.56 35.30 35.03 34.68 34.33 33.99 33.64 33.29 33.12 33.04 32.80 32.45 32.11 31.85 31.57 31.26 31.10 30.82 30.44 30.15 29.90 29.59 29.31 29.02 28.65 28.30 27.93 27.49 27.05 26.65 26.29 25.92 25.75 25.17 24.73 24.33 23.89 23.47 23.07 22.64
LEVEL DIFFERENCE	0.00 0.02 −0.51 −0.25 −0.09 −0.07
OFFSET	−2.83 −2.62 −1.35 0.00 1.45 1.95



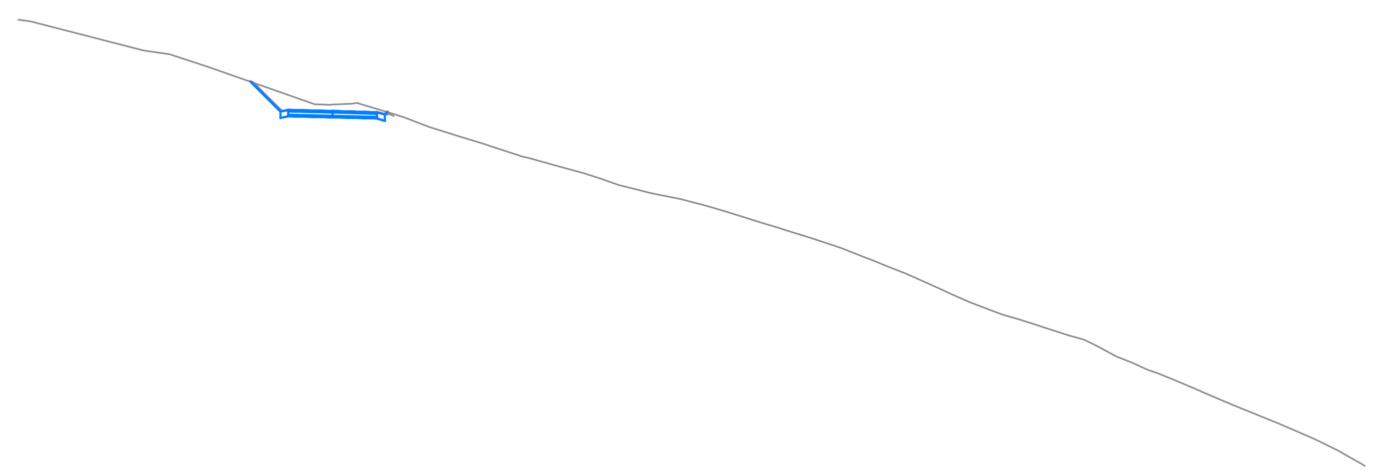
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PROPOSED ELEVATIONS	34.64 34.59 34.36 34.17 34.17 34.15 34.12 33.21 33.11
EXISTING ELEVATIONS	37.24 36.76 36.35 35.98 35.69 35.38 34.83 34.52 34.22 33.92 33.67 33.51 33.38 33.07 32.81 32.51 32.18 31.92 31.67 31.39 31.08 30.80 30.51 30.20 29.84 29.47 29.06 28.62 28.16 27.69 27.28 26.92 26.55 26.19 25.85 25.36 24.95 24.60 24.15 23.50
LEVEL DIFFERENCE	0.14 0.13 0.08 0.11 0.27 0.48 0.64 0.07 0.06
OFFSET	−2.92 −2.79 −2.20 −1.48 −0.97 0.00 1.40 2.76 3.09



0+396.00

PROPOSED ELEVATIONS	34.51 34.37 33.98 33.83 33.82 33.79 33.77 33.75 33.37 33.22
EXISTING ELEVATIONS	36.10 35.86 35.71 35.56 35.45 35.42 35.08 34.76 34.44 34.10 33.75 33.60 33.57 33.48 33.12 32.69 32.25 31.92 31.61 31.31 31.00 30.75 30.53 30.30 30.03 29.74 29.39 28.99 28.57 28.07 27.56 27.10 26.69 26.35 26.05 25.69 25.25 24.83 24.43 24.04 23.61
LEVEL DIFFERENCE	0.00 0.00 −0.13 −0.06 0.11 0.19 0.20 0.17 −0.12 −0.22
OFFSET	−3.22 −2.82 −2.03 −1.39 −0.85 0.00 0.58 1.40 1.96 2.18



0+402.00

PROPOSED ELEVATIONS	34.05 34.04 33.57 33.13 33.10 33.08 33.06 32.94
EXISTING ELEVATIONS	35.80 35.54 35.28 35.02 34.84 34.51 34.17 33.82 33.47 33.30 33.29 32.98 32.61 32.30 31.98 31.66 31.39 31.12 30.78 30.52 30.31 30.05 29.74 29.43 29.12 28.80 28.41 28.01 27.57 27.12 26.73 26.42 26.10 25.75 25.25 24.84 24.43 24.00 23.58 23.18 22.74 22.25
LEVEL DIFFERENCE	0.01 0.01 −0.27 −0.45 −0.20 −0.23 −0.08 −0.07
OFFSET	−2.64 −2.60 −2.07 −1.33 0.00 0.92 1.47 1.93

NOTE:
1. FOR GENERAL NOTES REFER TO DRAWING J0439-CIV-DRG-1001
2. ALL DIMENSIONS TO BE CONFIRMED PRIOR TO CONSTRUCTION.
3. ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ARCHITECTURAL, SERVICES AND OTHER CONSULTANTS DRAWINGS.
4. REFER STRUCTURAL DRAWINGS FOR DETAILS OF BOARD WALK AND SUSPENSION BRIDGE.

VERTICAL AND HORIZONTAL SCALE 1 : 200

0 2 4 6 8 10 20 m

REVIEW

CLIENT: ASPECT Studios™

REV:	DATE:	DESCRIPTION:	IVR:	APR'D:
A	18/02/2022	ISSUED FOR 90% DD		JCA

TITLE:	NAME:
DRAFTER	ESA
DRAFTING CHECK	TM
DESIGNER	JSH
DESIGN CHECK	JCA
PROJECT MANAGER	JSH

MARION COASTAL WALKWAY UPGRADE
CELL 6: KURNABINNA GULLY
HALLETT COVE, SA 5158
CELL 6 ADDITIONAL CROSS SECTIONS 01

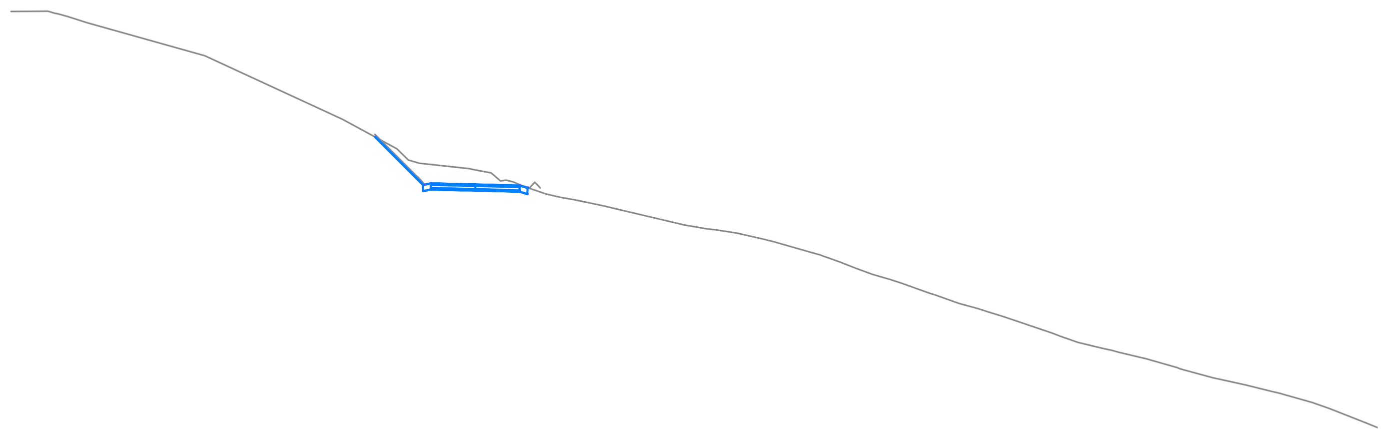
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SCALE: 1:200 | DATE: 18/02/2022 | PHASE: REVIEW | SHT SIZE: A1
DRAWING NUMBER: J0439-CIV-DRG-1091 | REVISION: A

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PRINT DATE:

FILE LOCATION:



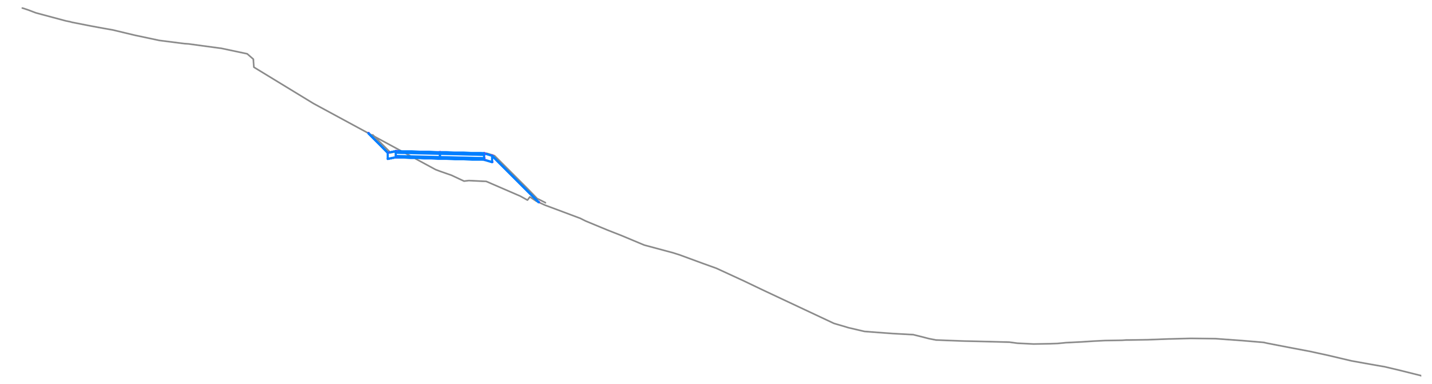
0+412.00

PROPOSED ELEVATIONS	32.55 31.01 30.98 30.94 30.87
EXISTING ELEVATIONS	36.44 36.31 36.01 35.72 35.44 35.16 34.78 34.32 33.86 33.41 32.93 32.39 31.71 31.56 31.44 31.11 30.75 30.51 30.31 30.08 29.84 29.63 29.48 29.27 29.01 28.71 28.34 28.01 27.67 27.32 27.02 26.69 26.36 26.01 25.76 25.52 25.24 24.96 24.72 24.49 24.22 23.90 23.50
LEVEL DIFFERENCE	0.08 −0.59 −0.46 0.00 0.13
OFFSET	−3.17 −1.33 0.00 1.46 2.05



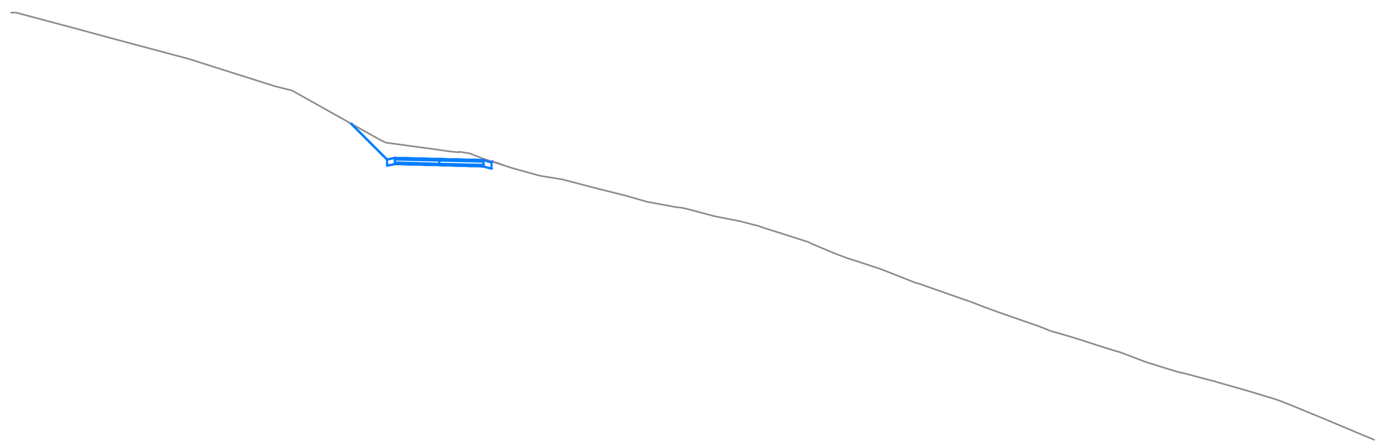
0+418.00

PROPOSED ELEVATIONS	31.29 31.23 30.65 30.31 30.27 30.24 28.60 28.64
EXISTING ELEVATIONS	33.69 32.97 32.28 31.48 30.66 30.08 30.00 29.55 29.11 28.67 28.25 27.93 27.86 27.81 27.61 27.36 27.13 26.83 26.58 26.32 26.07 25.87 25.74 25.59 25.40 25.25 25.17 25.09 24.96 24.84 24.72 24.58 24.40 24.13 23.81 23.49 23.22 22.95 22.63 22.17 21.53
LEVEL DIFFERENCE	0.05 0.03 −0.04 0.04 0.28 0.86 0.02 0.11
OFFSET	−2.68 −2.62 −2.03 −1.34 0.00 1.41 3.22 3.35



0+424.00

PROPOSED ELEVATIONS	31.16 30.90 30.64 30.61 30.58 30.50 29.47 29.02 29.01
EXISTING ELEVATIONS	35.10 34.81 34.60 34.40 34.17 34.04 33.91 33.64 32.76 32.15 31.61 31.07 30.52 30.01 29.71 29.45 29.09 28.68 28.27 27.86 27.53 27.21 26.82 26.35 25.88 25.41 25.04 24.89 24.82 24.65 24.62 24.60 24.55 24.59 24.65 24.67 24.70 24.71 24.67 24.59 24.40 24.20 23.98 23.79 [illegible]
LEVEL DIFFERENCE	0.03 −0.09 −0.05 0.61 0.89 0.93 0.37 0.09 0.08
OFFSET	−2.13 −1.87 −1.31 0.00 1.21 1.73 2.76 3.33 3.34



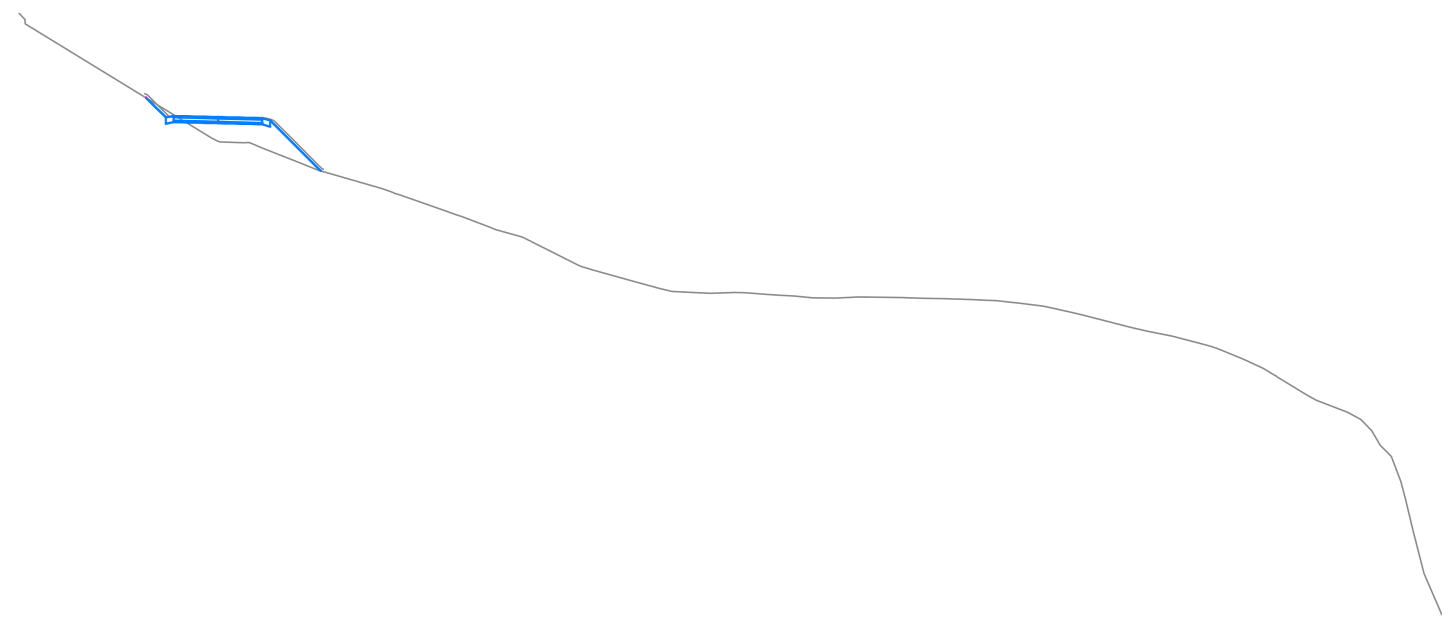
0+410.00

PROPOSED ELEVATIONS	32.87 32.82 31.75 31.71 31.68 31.52
EXISTING ELEVATIONS	36.24 35.97 35.71 35.44 35.17 34.90 34.59 34.27 33.97 33.51 32.95 32.39 32.14 32.00 31.87 31.52 31.23 31.04 30.78 30.52 30.28 30.09 29.85 29.62 29.30 28.94 28.55 28.21 27.82 27.47 27.12 26.75 26.40 26.08 25.75 25.42 25.09 24.81 24.54 24.25 23.90 23.48 23.06
LEVEL DIFFERENCE	−0.01 0.00 −0.44 −0.29 −0.04 0.01
OFFSET	−2.87 −2.77 −1.40 0.00 1.40 2.03



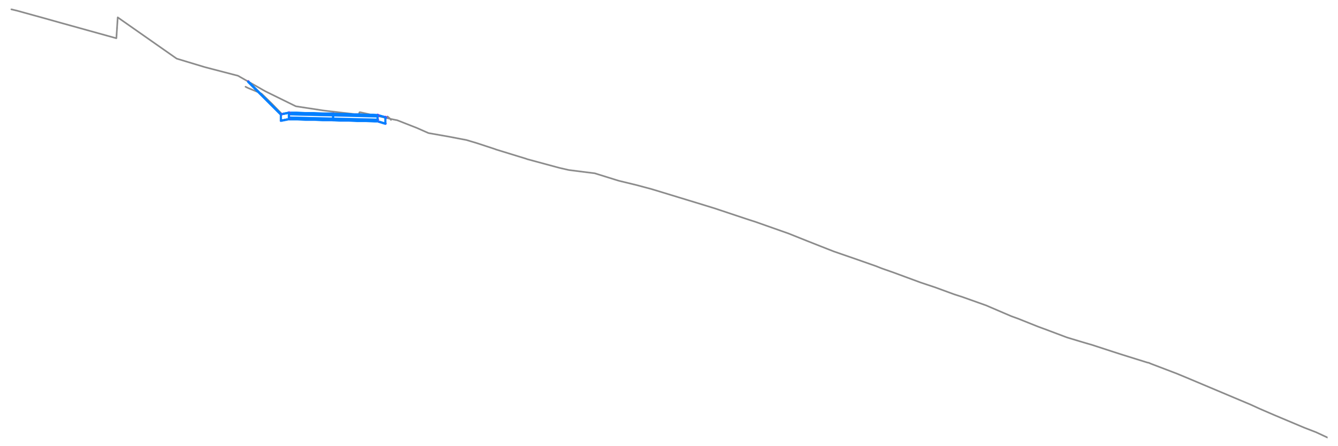
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PROPOSED ELEVATIONS	31.34 30.78 30.54 30.51 30.49 30.45 29.63 29.10 29.11
EXISTING ELEVATIONS	33.64 33.09 32.48 31.86 31.03 30.42 30.25 29.74 29.27 28.88 28.77 28.66 28.55 28.44 28.16 27.86 27.61 27.42 27.20 26.89 26.66 26.37 26.16 25.95 25.70 25.49 25.37 25.24 25.06 24.88 24.72 24.55 24.33 24.04 23.70 23.36 23.05 22.73 22.39 21.94 [illegible]
LEVEL DIFFERENCE	−0.17 −0.12 0.07 0.26 0.76 0.95 0.58 0.22 0.22
OFFSET	−2.44 −1.88 −1.35 0.00 1.01 1.52 2.46 2.98 3.00



0+422.00

PROPOSED ELEVATIONS	31.22 30.76 30.53 30.52 30.49 30.48 30.46 29.85 28.86 28.83
EXISTING ELEVATIONS	34.16 33.38 32.77 32.16 31.54 30.93 30.32 29.72 29.68 29.28 28.88 28.57 28.28 27.94 27.59 27.23 26.87 26.50 26.00 25.62 25.33 25.06 24.94 24.93 24.91 24.84 24.77 24.79 24.79 24.77 24.75 24.72 24.64 24.52 24.31 24.06 23.81 23.60 23.34 23.01 22.56 21.96 21.43 21.00 19.85 16.54
LEVEL DIFFERENCE	0.10 −0.05 0.04 0.39 0.77 0.80 0.99 0.70 0.08 0.07
OFFSET	−2.32 −1.80 −1.27 −0.69 0.00 0.70 1.52 2.29 3.28 3.33



0+408.00

PROPOSED ELEVATIONS	33.27 33.23 32.44 32.41 32.37 32.22
EXISTING ELEVATIONS	35.67 35.39 35.11 34.84 34.89 34.19 33.87 33.61 33.05 32.62 32.48 32.43 32.21 31.80 31.62 31.33 31.02 30.74 30.56 30.30 30.05 29.75 29.44 29.11 28.76 28.39 28.00 27.65 27.29 26.93 26.58 26.20 25.79 25.41 25.10 24.78 24.45 24.06 23.64 23.21 22.78 22.37
LEVEL DIFFERENCE	−0.21 −0.20 −0.29 −0.07 0.04 −0.03
OFFSET	−2.77 −2.68 −1.36 0.00 1.44 1.83



0+414.00

PROPOSED ELEVATIONS	31.86 31.41 30.73 30.77 30.74 30.71 29.96
EXISTING ELEVATIONS	33.65 33.21 32.76 32.31 31.62 31.05 30.89 30.73 30.10 29.92 29.79 29.63 29.47 29.30 29.10 28.84 28.59 28.32 28.12 27.81 27.46 27.18 26.87 26.58 26.33 26.04 25.74 25.56 25.38 25.15 24.92 24.72 24.52 24.28 23.97 23.60 23.23 22.86 22.51 22.15 21.69
LEVEL DIFFERENCE	0.54 0.30 −0.26 −0.11 0.01 0.72 0.10
OFFSET	−2.71 −2.26 −1.58 −0.97 0.00 1.46 2.49



0+420.00

PROPOSED ELEVATIONS	31.13 31.07 30.41 30.37 30.34 28.58 28.55
EXISTING ELEVATIONS	34.06 33.60 33.04 32.07 31.46 30.85 30.24 29.85 29.63 29.11 28.71 28.32 28.03 27.68 27.58 27.29 26.99 26.75 26.38 26.10 25.78 25.50 25.35 25.34 25.24 25.11 25.01 24.98 24.94 24.86 24.79 24.72 24.61 24.46 24.22 23.93 23.64 23.40 23.14 22.81 22.36 21.73 21.23 20.73 [illegible]
LEVEL DIFFERENCE	0.00 0.00 −0.08 0.52 0.95 0.00 0.00
OFFSET	−2.46 −2.37 −1.40 0.00 1.40 3.33 3.41

NOTE:
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4. REFER STRUCTURAL DRAWINGS FOR DETAILS OF BOARD WALK AND SUSPENSION BRIDGE.

VERTICAL AND HORIZONTAL SCALE 1 : 200

0 2 4 6 8 10 20 m

REVIEW

CLIENT: ASPECT Studios™

REV:	DATE:	DESCRIPTION:	IVR:	APR'D:
A	18/02/2022	ISSUED FOR 90% DD		JCA

TITLE:	NAME:
DRAFTER	ESA
DRAFTING CHECK	TM
DESIGNER	JSH
DESIGN CHECK	JCA
PROJECT MANAGER	JSH

MARION COASTAL WALKWAY UPGRADE
CELL 6: KURNABINNA GULLY
HALLETT COVE, SA 5158
CELL 6 ADDITIONAL CROSS SECTIONS 02

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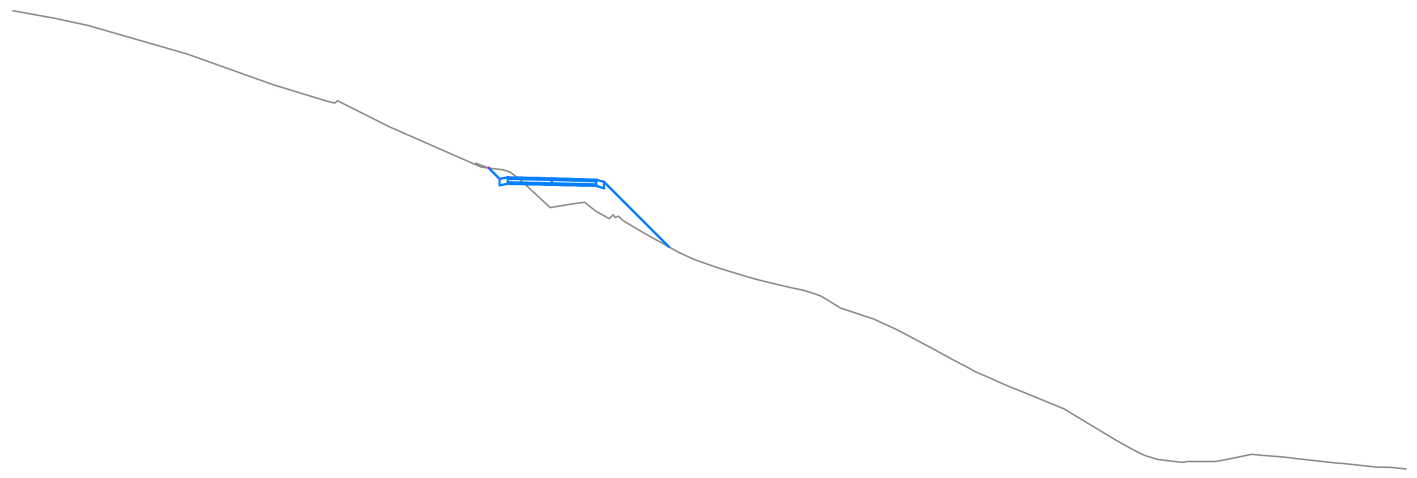
SCALE:	DATE:	PHASE:	SHT SIZE:
1:200	18/02/2022	REVIEW	A1

DRAWING NUMBER: J0439-CIV-DRG-1092 REVISION: A

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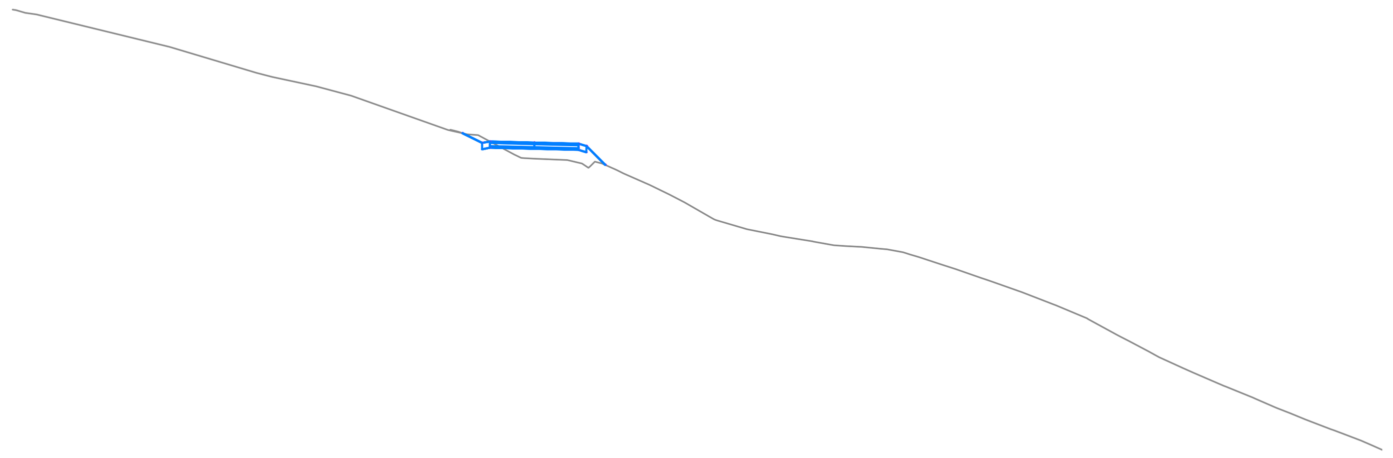
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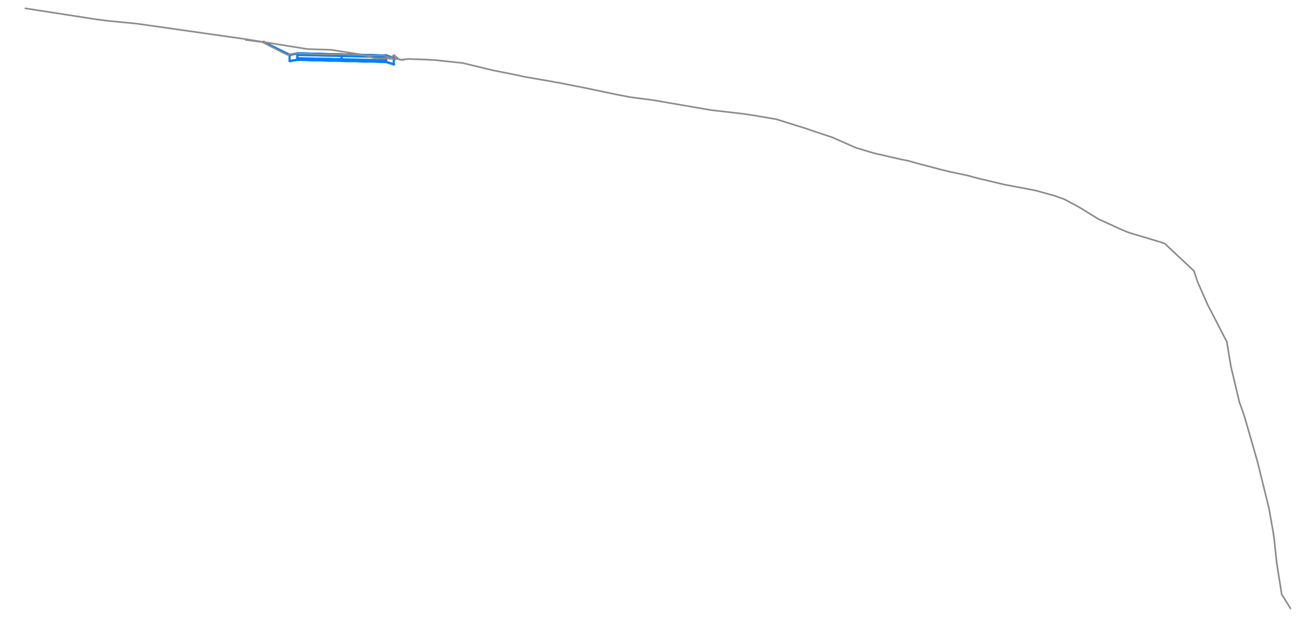
0+430.00

PROPOSED ELEVATIONS	31.35 31.20 30.90 30.86 30.83 29.55
EXISTING ELEVATIONS	36.16 35.98 35.78 35.51 35.23 34.94 34.61 34.26 33.90 33.58 33.28 32.94 32.44 32.00 31.56 31.20 30.83 29.96 30.11 29.64 29.09 28.54 28.13 27.81 27.55 27.31 26.85 26.48 26.04 25.51 24.97 24.49 24.07 23.66 23.09 22.49 22.03 21.90 21.92 22.12 22.07 21.96 21.86 21.75 [illegible]
LEVEL DIFFERENCE	0.05 0.00 −0.20 0.91 1.00 0.37
OFFSET	−2.41 −2.00 −1.40 0.00 1.40 2.86



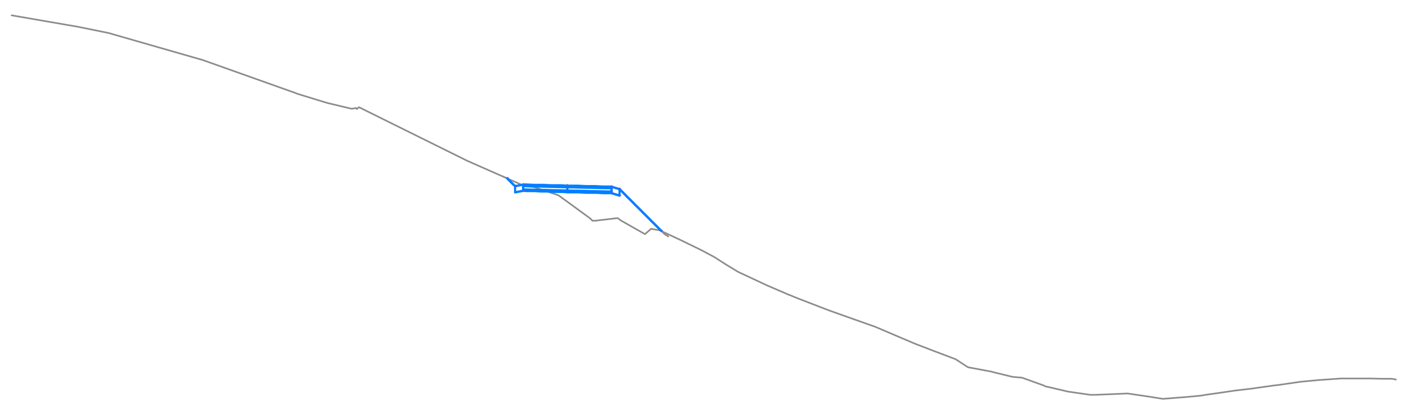
0+436.00

PROPOSED ELEVATIONS	32.19 32.03 31.81 31.78 31.75 31.07 31.07
EXISTING ELEVATIONS	35.86 35.64 35.40 35.16 34.91 34.64 34.35 34.05 33.79 33.58 33.32 32.98 32.63 32.27 32.03 31.60 31.27 31.23 31.16 30.72 30.27 29.75 29.26 28.99 28.79 28.62 28.50 28.42 28.21 27.89 27.55 27.20 26.83 26.43 25.94 25.40 24.89 24.44 24.02 23.60 23.19 22.80 22.42 [illegible]
LEVEL DIFFERENCE	0.02 −0.03 0.04 0.51 0.60 −0.01 0.00
OFFSET	−2.66 −2.19 −1.33 0.00 1.38 2.23 2.25



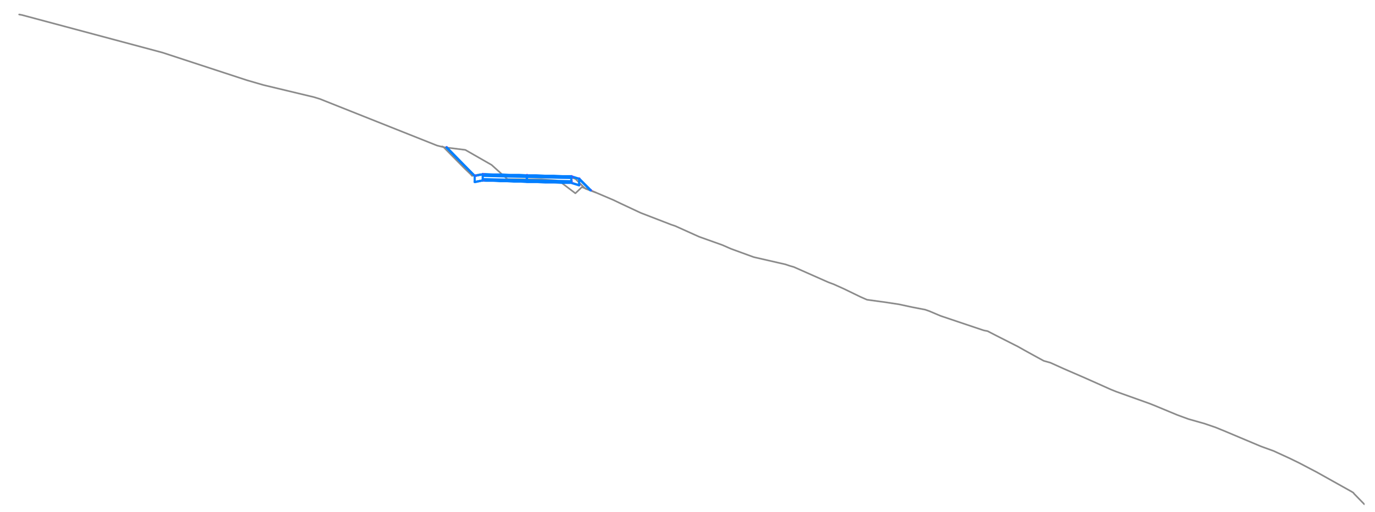
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PROPOSED ELEVATIONS	33.55 33.55 33.48 33.13 33.10 33.09 33.06 33.04 32.93 32.92
EXISTING ELEVATIONS	34.55 34.40 34.24 34.12 34.00 33.86 33.72 33.57 33.41 33.27 33.19 32.99 32.94 32.91 32.78 32.55 32.35 32.17 31.98 31.77 31.62 31.45 31.30 31.17 30.96 30.65 30.26 29.94 29.71 29.44 29.21 28.97 28.78 28.44 27.86 27.43 27.12 26.09 23.96 20.05 15.58
LEVEL DIFFERENCE	−0.02 −0.02 −0.01 −0.20 −0.15 −0.10 0.04 0.07 0.00 −0.02
OFFSET	−3.02 −3.02 −2.51 −1.47 −0.55 0.00 0.85 1.39 1.90 1.96



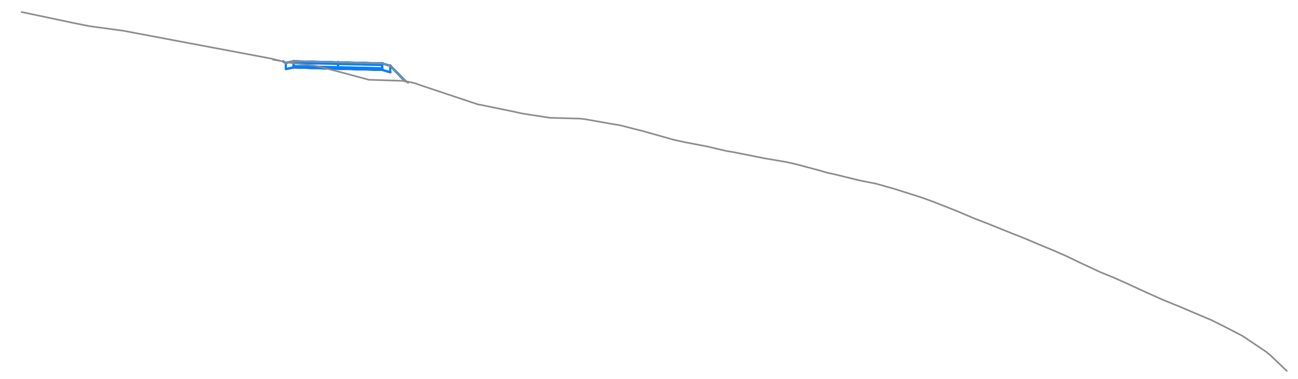
0+428.00

PROPOSED ELEVATIONS	31.13 31.10 30.87 30.85 30.83 30.82 30.80 29.92 29.32 29.22
EXISTING ELEVATIONS	36.12 35.95 35.76 35.52 35.23 34.95 34.62 34.27 33.91 33.57 33.30 33.02 32.53 32.04 31.55 31.11 30.78 30.32 29.74 29.56 29.39 28.91 28.35 27.83 27.39 27.00 26.64 26.26 25.83 25.45 25.03 24.81 24.54 24.30 24.24 24.22 24.11 24.20 24.34 24.47 24.61 24.71 24.74 24.73
LEVEL DIFFERENCE	0.00 0.00 0.03 0.16 0.51 0.96 1.01 0.62 −0.05 −0.08
OFFSET	−2.05 −1.98 −1.40 −0.77 0.00 0.63 1.40 2.45 3.06 3.19



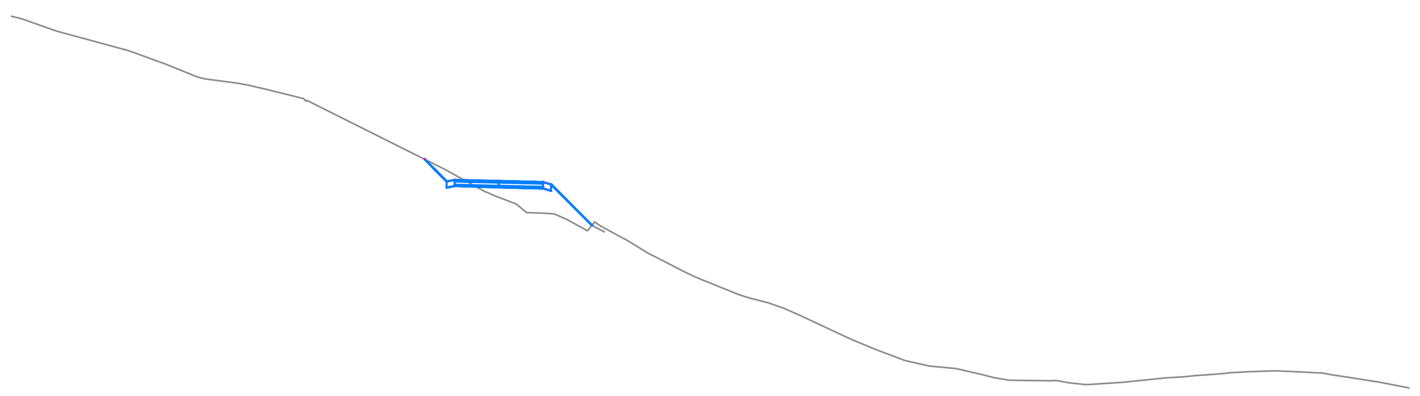
0+434.00

PROPOSED ELEVATIONS	31.84 31.82 30.96 30.92 30.89 30.73 30.39 30.38
EXISTING ELEVATIONS	35.99 35.73 35.46 35.19 34.93 34.63 34.30 33.98 33.69 33.45 33.12 32.72 32.33 31.93 31.74 31.14 30.80 30.74 30.46 30.02 29.58 29.18 28.78 28.40 28.15 27.78 27.35 26.96 26.80 26.52 26.18 25.78 25.25 24.80 24.36 23.96 23.58 23.20 22.87 22.45 22.04 21.53 20.97
LEVEL DIFFERENCE	0.01 0.01 −0.51 0.12 0.20 0.30 0.00 0.00
OFFSET	−2.69 −2.64 −1.49 0.00 1.09 1.62 2.15 2.17



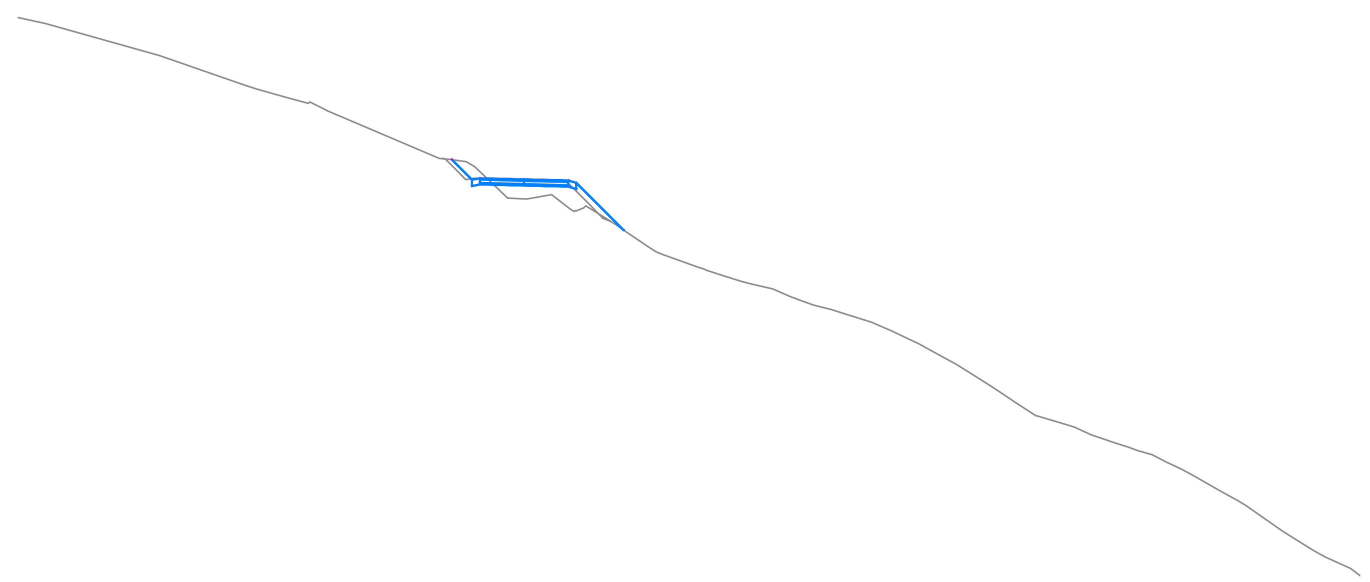
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PROPOSED ELEVATIONS	32.97 32.92 32.89 32.85 32.30 32.24
EXISTING ELEVATIONS	34.47 34.26 34.06 33.92 33.74 33.55 33.36 33.17 32.98 32.81 32.60 32.34 32.31 32.03 31.70 31.44 31.24 31.12 31.06 30.88 30.61 30.36 30.15 29.95 29.77 29.53 29.27 29.05 28.76 28.41 28.00 27.61 27.20 26.77 26.31 25.87 25.42 25.00 24.55 23.97 23.13
LEVEL DIFFERENCE	−0.02 0.07 0.29 0.53 0.01 −0.04
OFFSET	−2.06 −1.40 0.00 1.38 2.12 2.22



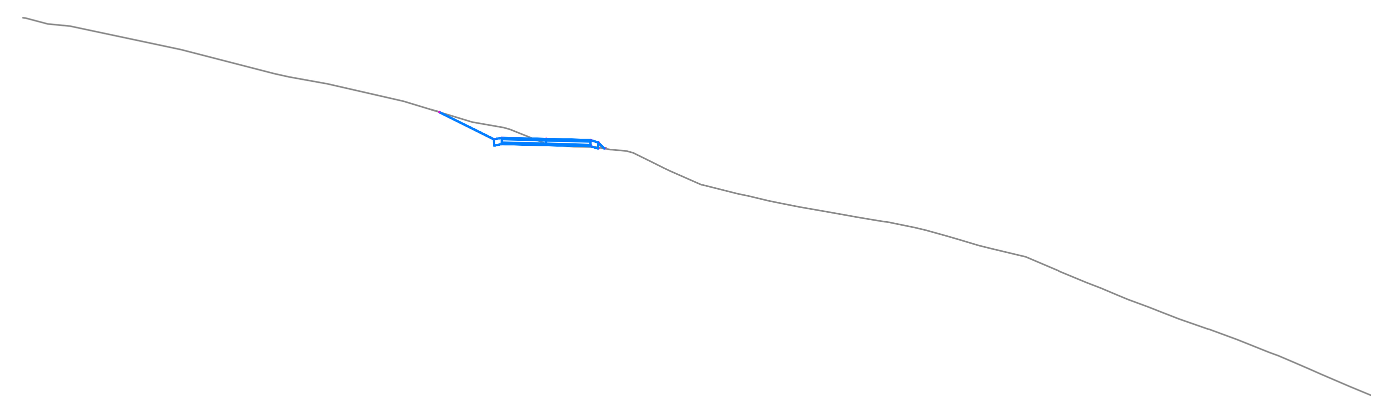
0+426.00

PROPOSED ELEVATIONS	31.10 30.76 30.73 30.69 29.79 29.12
EXISTING ELEVATIONS	35.82 35.47 35.20 34.92 34.59 34.20 33.92 33.77 33.54 33.24 32.74 32.24 31.74 31.24 30.70 30.21 29.72 29.58 29.40 28.89 28.31 27.80 27.38 27.01 26.71 26.26 25.79 25.37 25.02 24.84 24.68 24.46 24.42 24.36 24.32 24.39 24.50 24.57 24.65 24.71 24.71 24.66 24.50 24.34 [illegible]
LEVEL DIFFERENCE	−0.14 −0.14 0.52 0.99 0.47 −0.12
OFFSET	−2.00 −1.36 0.00 1.43 2.51 3.34



0+432.00

PROPOSED ELEVATIONS	31.56 31.52 30.93 30.91 30.89 30.86 30.09 29.61 29.56
EXISTING ELEVATIONS	36.00 35.78 35.50 35.22 34.93 34.62 34.27 33.92 33.62 33.34 32.96 32.54 32.11 31.69 31.47 30.76 30.27 30.31 30.02 29.39 28.72 28.29 27.94 27.63 27.37 26.98 26.69 26.37 25.92 25.41 24.84 24.19 23.54 23.18 22.80 22.46 22.11 21.62 21.05 20.46 19.76 19.14 18.65
LEVEL DIFFERENCE	0.02 −0.02 −0.38 0.12 0.61 0.67 0.11 −0.03 0.00
OFFSET	−2.57 −2.47 −1.60 −1.04 0.00 1.15 2.08 2.61 2.75



0+438.00

PROPOSED ELEVATIONS	32.90 32.86 32.01 31.97 31.94 31.69
EXISTING ELEVATIONS	35.68 35.53 35.32 35.11 34.90 34.66 34.40 34.15 33.91 33.74 33.51 33.28 33.01 32.71 32.45 32.22 31.82 31.72 31.64 31.42 30.92 30.50 30.26 30.03 29.83 29.65 29.47 29.30 29.09 28.80 28.52 28.28 27.89 27.46 27.06 26.68 26.28 25.94 25.57 25.17 24.76 24.32 [illegible]
LEVEL DIFFERENCE	0.00 0.01 −0.34 0.16 0.22 0.03
OFFSET	−3.64 −3.46 −1.43 0.00 1.12 1.89

NOTE:

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4. REFER STRUCTURAL DRAWINGS FOR DETAILS OF BOARD WALK AND SUSPENSION BRIDGE.

VERTICAL AND HORIZONTAL SCALE 1 : 200

0 2 4 6 8 10 20 m

REVIEW

CLIENT: ASPECT Studios™

REV:	DATE:	DESCRIPTION:	IVR:	APR'D:
A	18/02/2022	ISSUED FOR 90% DD		JCA

TITLE:	NAME:
DRAFTER	ESA
DRAFTING CHECK	TM
DESIGNER	JSH
DESIGN CHECK	JCA
PROJECT MANAGER	JSH

MARION COASTAL WALKWAY UPGRADE
CELL 6: KURNABINNA GULLY
HALLETT COVE, SA 5158
CELL 6 ADDITIONAL CROSS SECTIONS 03

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INNOVIS Agile Outcomes

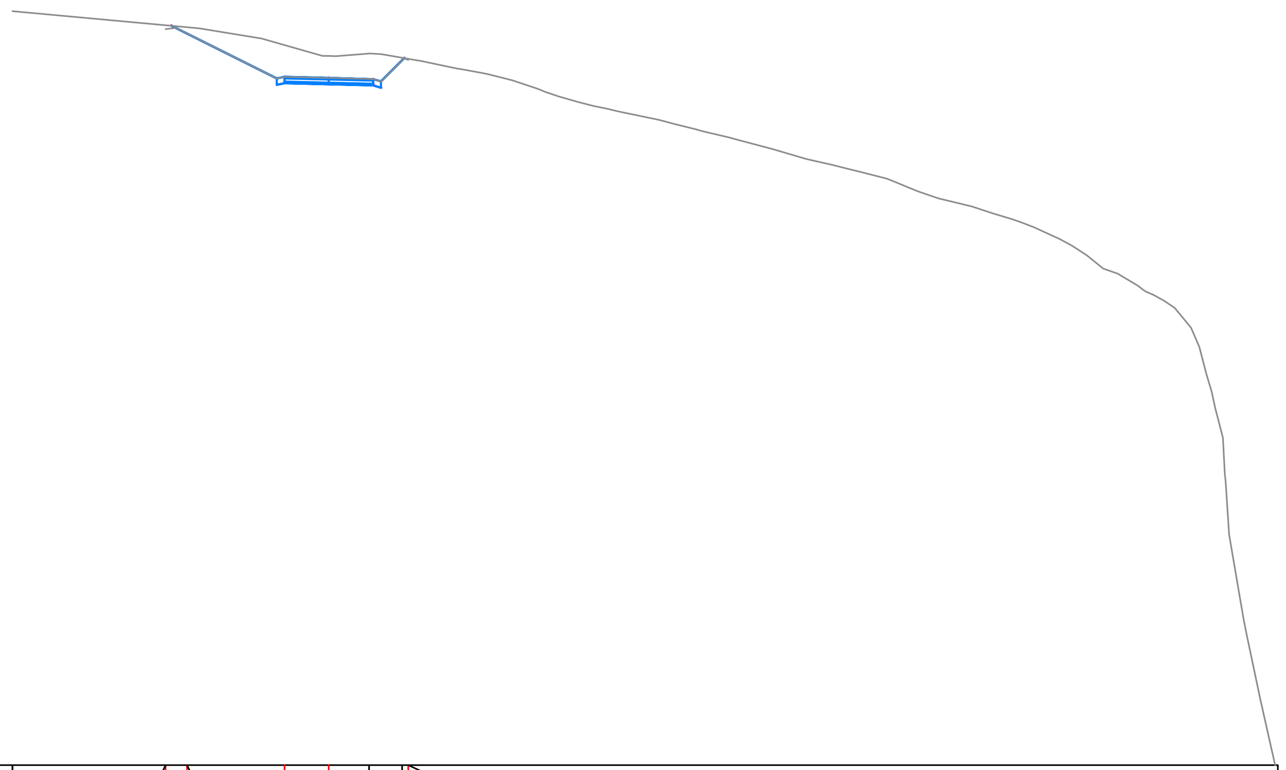
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1:200	18/02/2022	REVIEW	A1

DRAWING NUMBER: J0439-CIV-DRG-1093 REVISION: A

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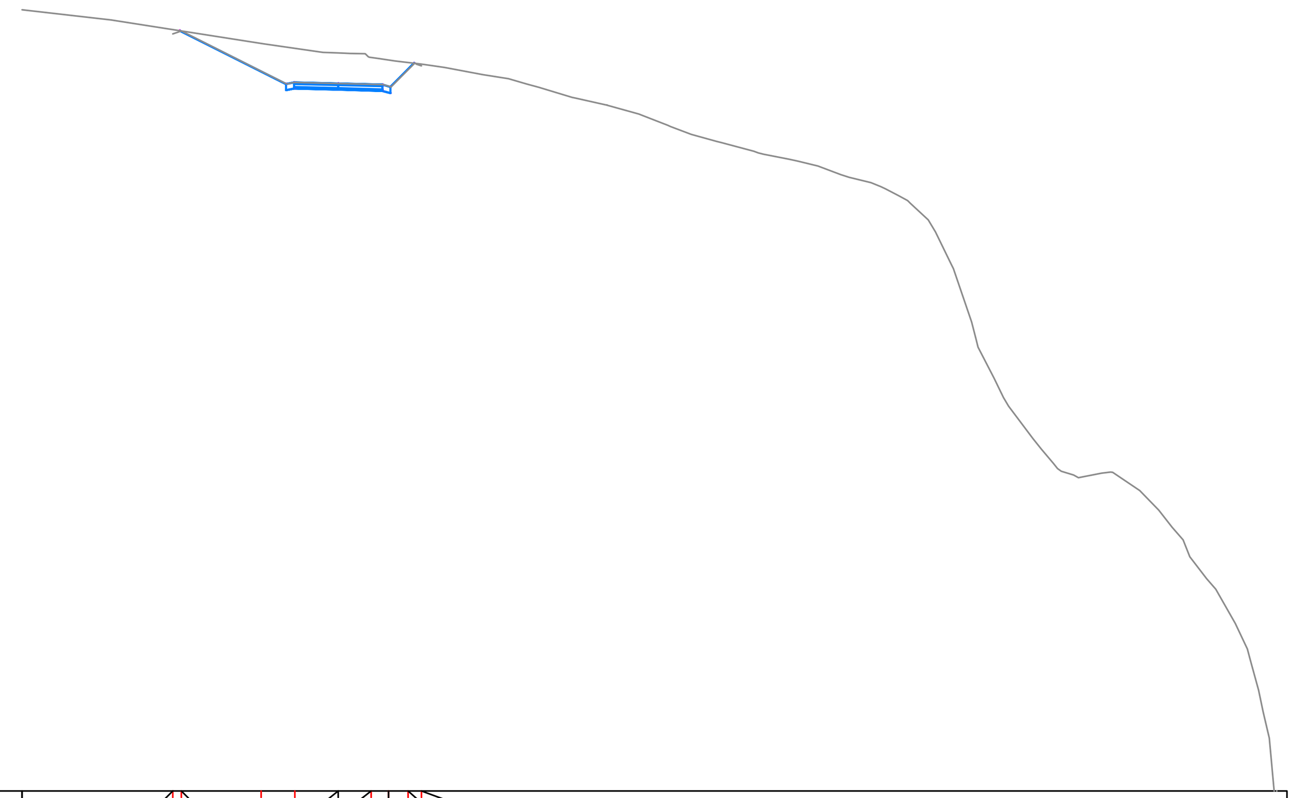
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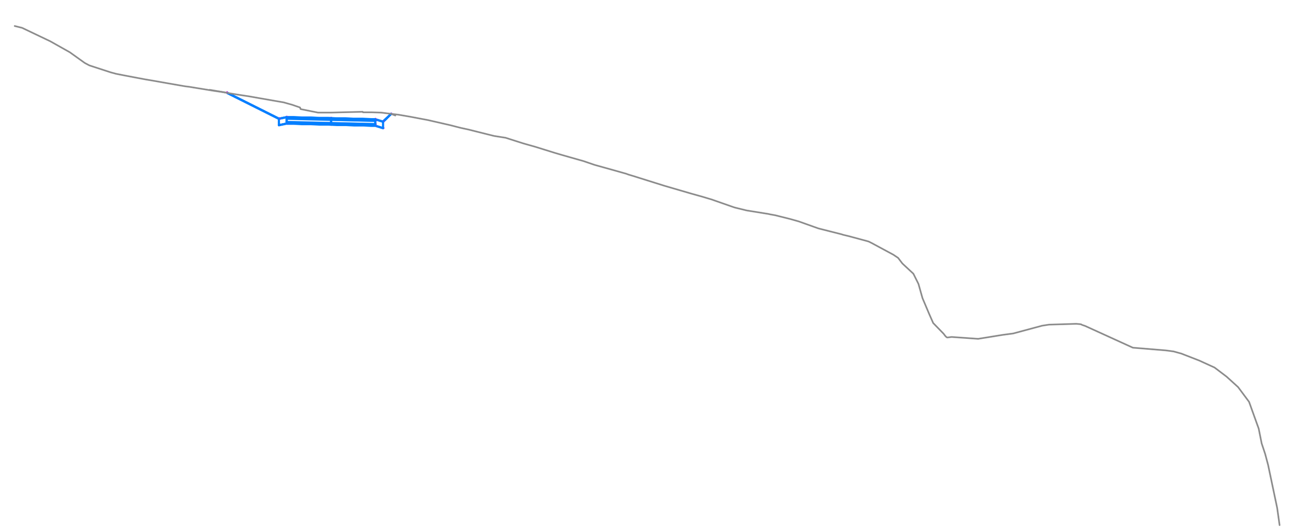
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PROPOSED ELEVATIONS	35.27 35.13 33.76 33.72 33.69 34.28 34.29
EXISTING ELEVATIONS	35.84 35.74 35.65 35.56 35.47 35.38 35.28 35.11 34.93 34.65 34.42 34.47 34.42 34.24 34.04 33.85 33.58 33.23 32.94 32.70 32.49 32.25 32.00 31.75 31.49 31.19 30.96 30.70 30.39 30.01 29.74 29.44 29.12 28.68 28.08 27.50 26.90 26.13 23.36 16.20 11.58
LEVEL DIFFERENCE	−0.12 −0.20 −1.00 −0.70 −0.80 −0.08 −0.03
OFFSET	−5.16 −4.48 −1.40 0.00 1.28 2.32 2.51



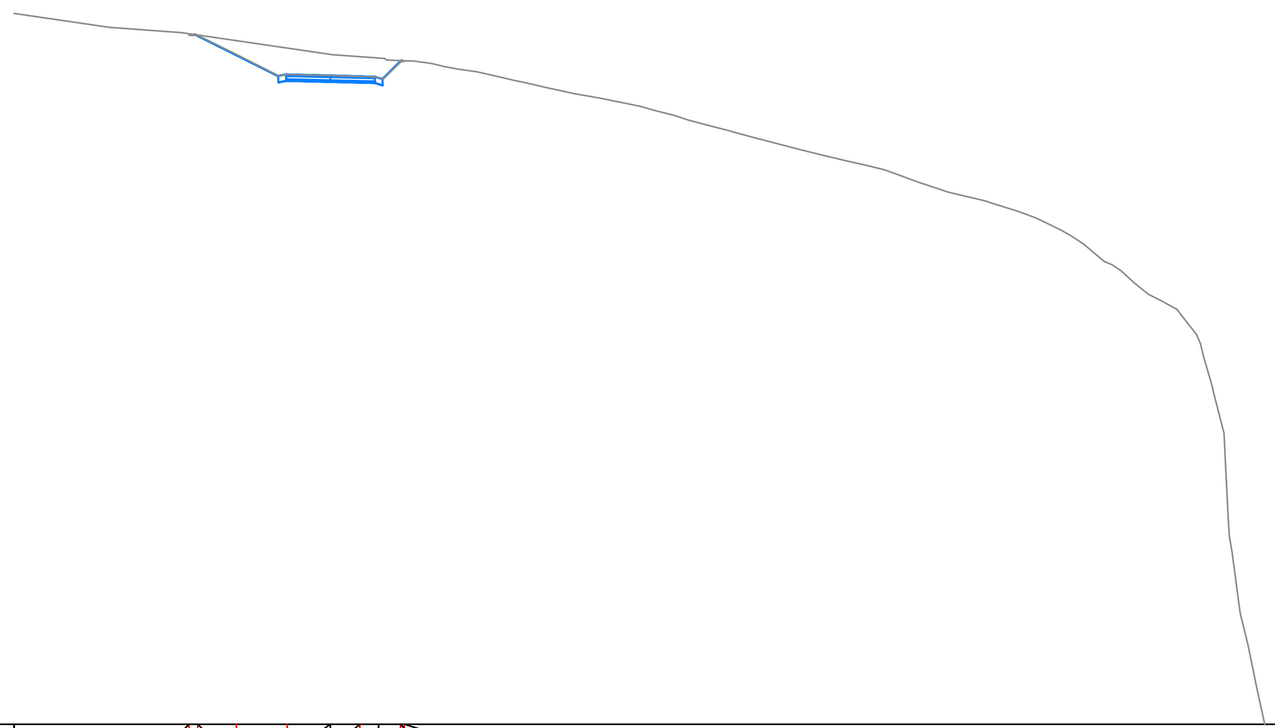
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PROPOSED ELEVATIONS	35.92 36.01 34.74 34.39 34.35 34.32 34.26 34.78 34.91
EXISTING ELEVATIONS	36.68 36.56 36.45 36.33 36.17 36.02 35.86 35.70 35.55 35.41 35.32 35.18 35.04 34.91 34.74 34.56 34.33 34.03 33.78 33.53 33.19 32.80 32.51 32.25 32.01 31.78 31.44 31.15 30.65 29.42 26.89 24.51 23.09 22.06 22.01 21.72 20.80 19.31 17.93 15.56 6.41
LEVEL DIFFERENCE	−0.13 0.00 −0.88 −1.07 −0.96 −0.85 −0.83 −0.23 −0.05
OFFSET	−5.23 −4.96 −2.44 −1.37 0.00 1.04 1.60 2.21 2.64



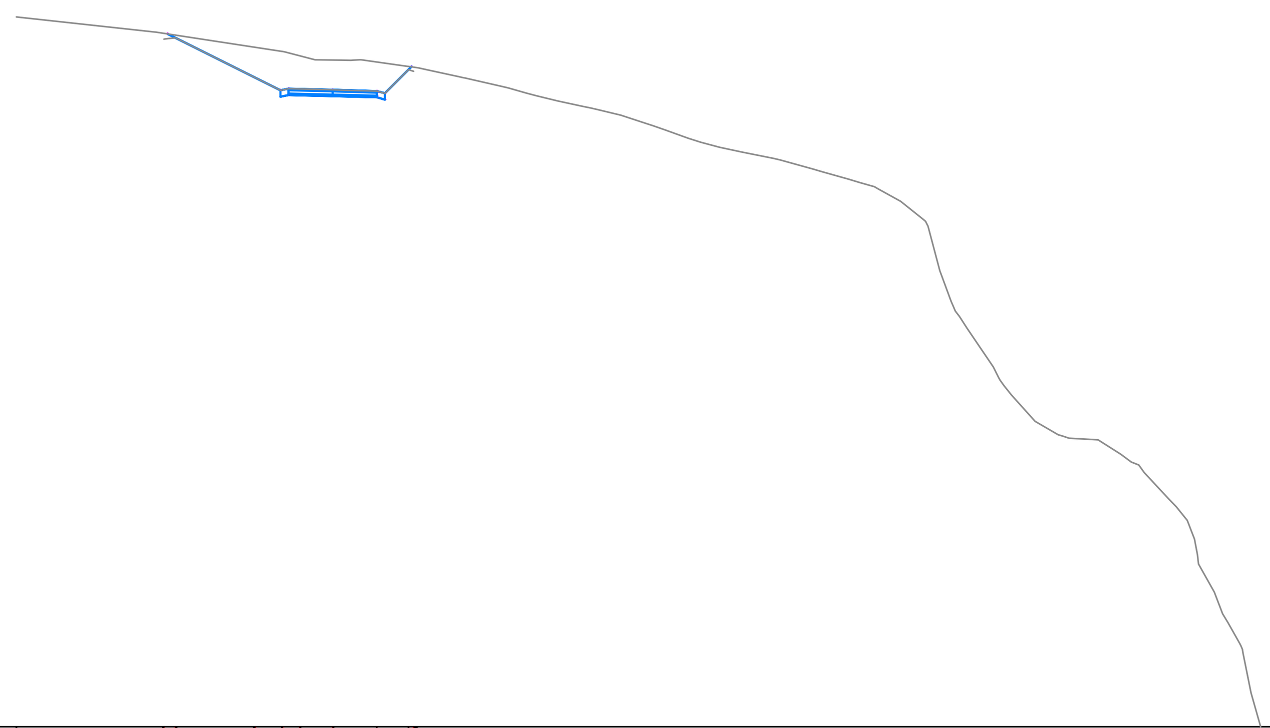
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PROPOSED ELEVATIONS	35.88 35.78 35.01 34.98 34.94 35.12 35.07
EXISTING ELEVATIONS	37.90 37.47 36.88 36.44 36.23 36.06 35.90 35.74 35.57 35.33 35.16 35.18 35.11 34.94 34.71 34.46 34.22 33.91 33.62 33.33 33.02 32.72 32.43 32.10 31.93 31.65 31.35 31.09 30.49 28.61 28.05 28.10 28.30 28.47 28.35 27.90 27.68 27.51 27.07 26.07 22.14
LEVEL DIFFERENCE	0.01 0.00 −0.44 −0.18 −0.22 0.00 −0.03
OFFSET	−3.84 −3.29 −1.40 0.00 1.39 1.90 2.03



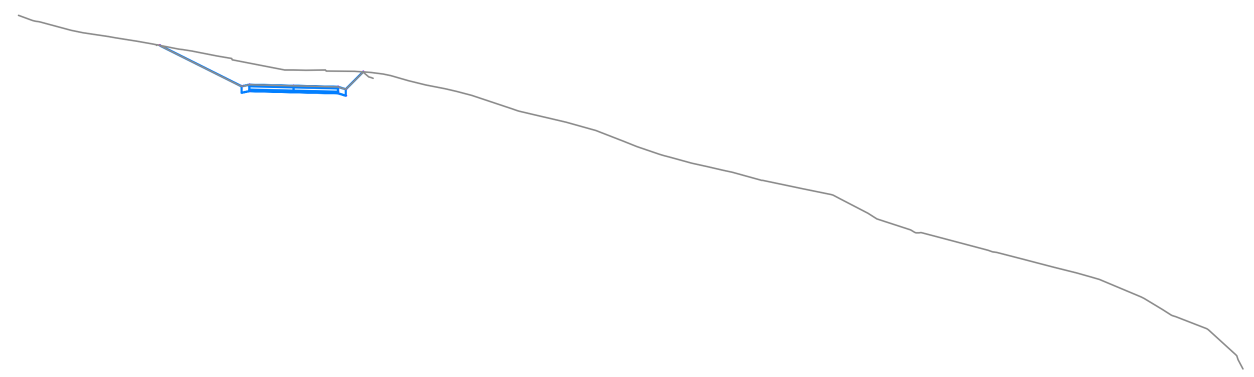
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PROPOSED ELEVATIONS	34.78 34.78 34.18 33.55 33.52 33.49 33.45 33.95 33.96
EXISTING ELEVATIONS	35.48 35.34 35.19 35.05 34.97 34.90 34.77 34.63 34.48 34.34 34.18 34.11 34.00 33.93 33.72 33.55 33.33 33.10 32.89 32.70 32.48 32.21 31.92 31.66 31.39 31.13 30.90 30.66 30.36 30.01 29.72 29.45 29.12 28.67 28.02 27.34 26.53 25.81 23.15 15.51 9.82
LEVEL DIFFERENCE	−0.06 −0.02 −0.44 −0.84 −0.67 −0.63 −0.62 −0.05 −0.03
OFFSET	−4.47 −4.19 −2.98 −1.37 0.00 0.93 1.52 2.22 2.33



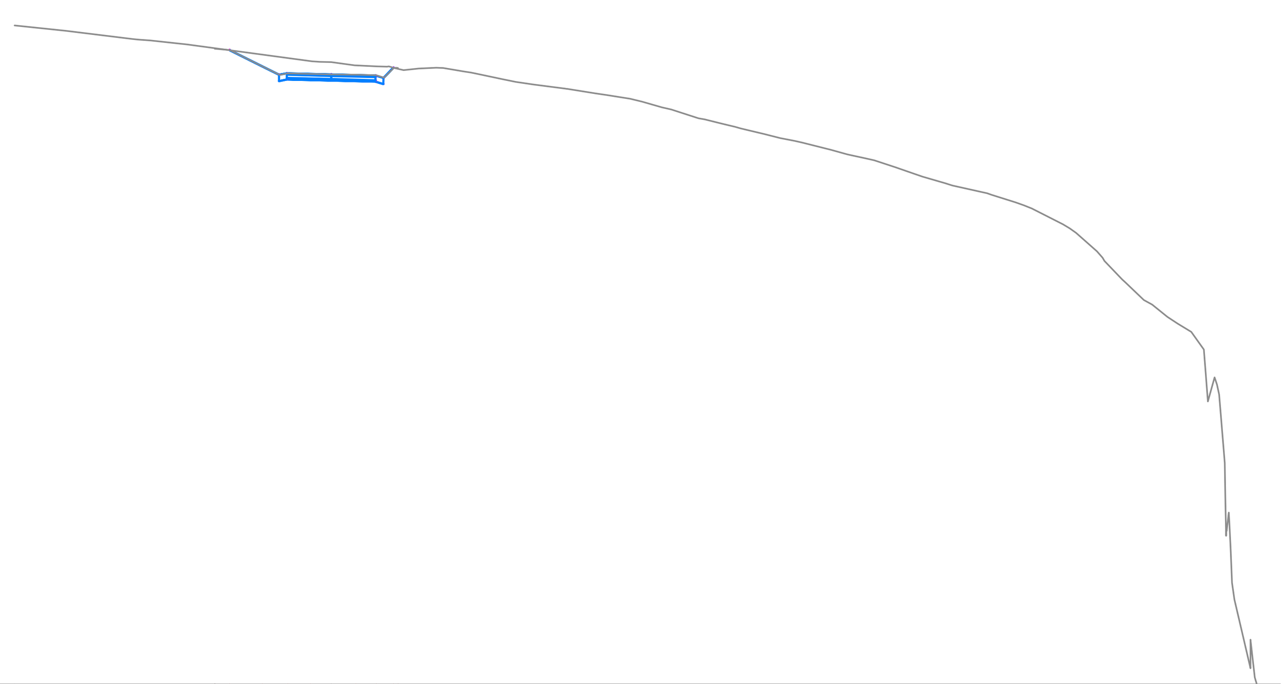
0+452.01

PROPOSED ELEVATIONS	35.75 35.79 34.53 34.14 34.17 34.14 34.11 34.78 34.73
EXISTING ELEVATIONS	36.45 36.34 36.23 36.12 36.01 35.88 35.73 35.57 35.42 35.21 35.09 35.08 34.94 34.78 34.56 34.33 34.08 33.82 33.60 33.37 33.05 32.70 32.39 32.16 31.96 31.69 31.40 31.11 30.58 29.14 26.69 25.14 23.89 23.22 23.08 22.55 21.67 20.54 17.90 15.22 6.65
LEVEL DIFFERENCE	−0.18 −0.08 −0.96 −1.22 −1.05 −0.94 −0.92 −0.10 −0.13
OFFSET	−5.33 −4.97 −2.45 −1.59 −1.04 0.00 1.40 2.40 2.55



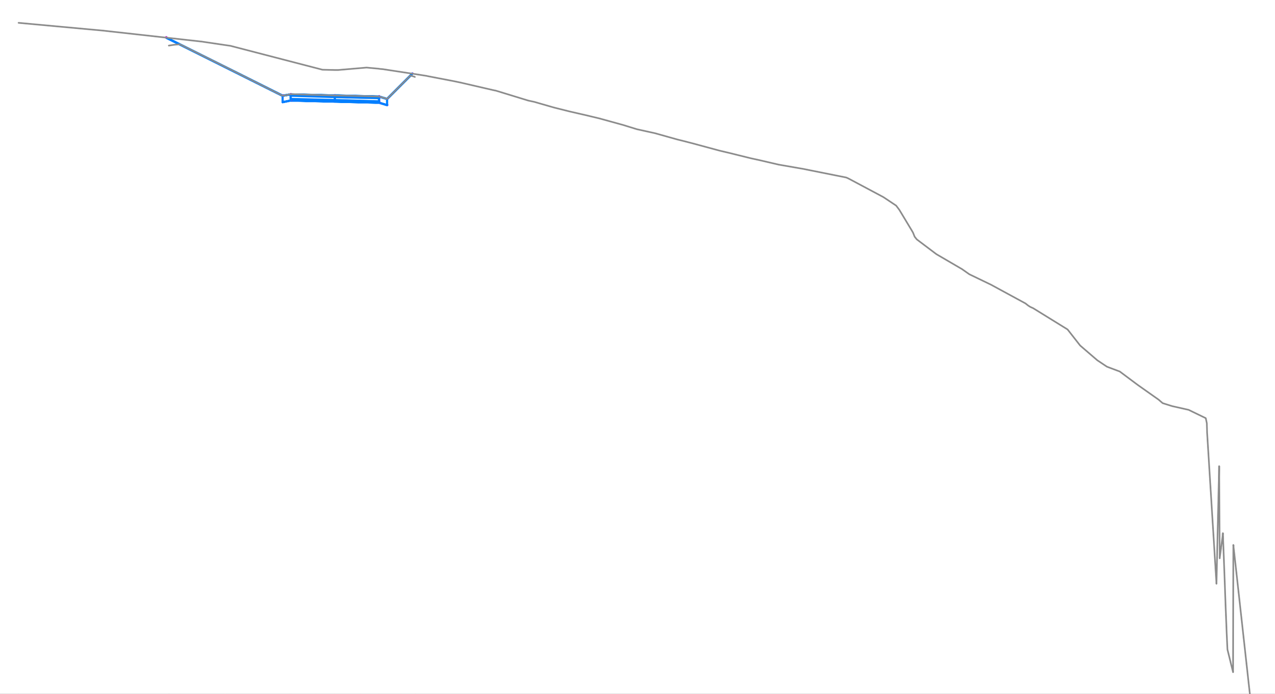
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PROPOSED ELEVATIONS	36.05 36.06 34.81 34.77 34.74 35.21 35.01
EXISTING ELEVATIONS	37.41 37.11 36.79 36.53 36.35 36.19 36.01 35.83 35.65 35.41 35.27 35.28 35.23 35.11 34.84 34.63 34.35 34.02 33.77 33.52 33.19 32.80 32.49 32.24 32.01 31.75 31.54 31.34 30.83 30.38 30.09 29.83 29.56 29.31 29.05 28.79 28.43 27.99 27.43 26.98 25.83
LEVEL DIFFERENCE	−0.02 0.00 −0.68 −0.50 −0.49 0.00 −0.18
OFFSET	−4.34 −4.25 −1.40 0.00 1.31 2.20 2.51



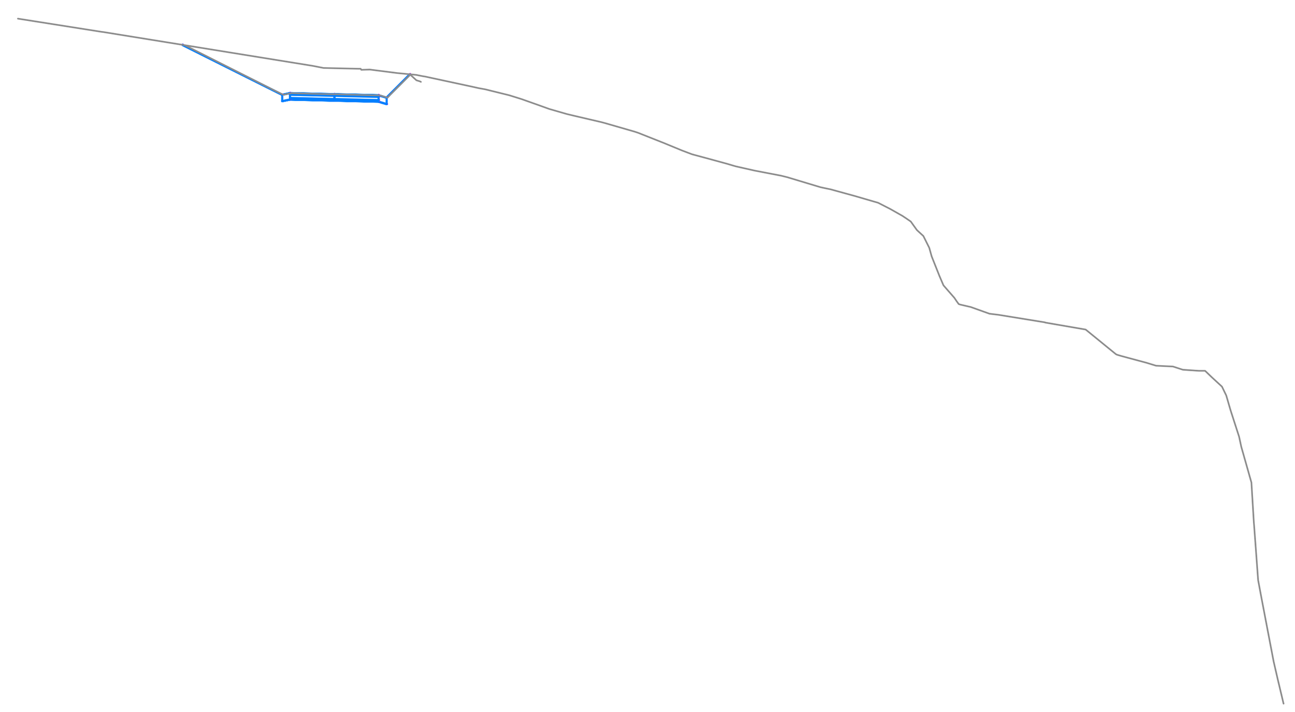
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PROPOSED ELEVATIONS	34.11 34.07 33.56 33.33 33.32 33.30 33.29 33.27 33.50 33.50
EXISTING ELEVATIONS	34.85 34.75 34.64 34.51 34.40 34.30 34.18 34.04 33.91 33.77 33.69 33.58 33.51 33.50 33.43 33.24 33.04 32.90 32.76 32.60 32.39 32.11 31.83 31.58 31.33 31.12 30.86 30.62 30.31 29.98 29.71 29.45 29.12 28.62 27.88 26.81 25.97 25.26 23.44 14.73 8.48
LEVEL DIFFERENCE	−0.02 0.00 −0.37 −0.49 −0.41 −0.39 −0.30 −0.28 −0.02 0.02
OFFSET	−3.68 −3.20 −2.17 −1.37 −0.65 0.00 0.78 1.43 1.97 2.11



0+450.00

PROPOSED ELEVATIONS	35.51 35.55 34.83 33.97 33.95 33.93 33.91 33.90 34.25 34.51
EXISTING ELEVATIONS	36.22 36.13 36.04 35.94 35.83 35.72 35.60 35.42 35.16 34.90 34.74 34.81 34.69 34.53 34.33 34.10 33.81 33.53 33.29 33.03 32.76 32.50 32.23 31.98 31.75 31.57 31.37 30.90 30.06 28.93 28.32 27.81 27.24 26.64 25.65 25.06 24.35 23.99 19.56 14.35 6.47
LEVEL DIFFERENCE	−0.24 −0.16 −0.69 −1.04 −0.85 −0.80 −0.89 −0.88 −0.43 −0.09
OFFSET	−5.25 −4.90 −3.47 −1.40 −0.58 0.00 0.82 1.40 2.08 2.53



0+456.05

PROPOSED ELEVATIONS	36.12 34.71 34.60 34.57 34.53 34.55 35.18 34.96
EXISTING ELEVATIONS	36.95 36.80 36.64 36.48 36.32 36.16 36.00 35.84 35.68 35.52 35.39 35.34 35.24 35.10 34.88 34.66 34.39 34.04 33.79 33.53 33.19 32.78 32.48 32.22 32.02 31.74 31.48 31.19 30.69 29.15 27.87 27.60 27.44 27.27 26.93 26.26 25.99 25.86 25.38 22.11 15.32
LEVEL DIFFERENCE	0.00 −0.96 −0.97 −0.82 −0.80 −0.72 −0.01 −0.19
OFFSET	−4.73 −1.93 −1.36 0.00 1.25 1.76 2.40 2.74

NOTE:
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VERTICAL AND HORIZONTAL SCALE 1 : 200

0 2 4 6 8 10 20 m

REVIEW

CLIENT: ASPECT Studios™

REV:	DATE:	DESCRIPTION:	IVR:	APR'D:
A	18/02/2022	ISSUED FOR 90% DD		JCA

TITLE:	NAME:
DRAFTER	ESA
DRAFTING CHECK	TM
DESIGNER	JSH
DESIGN CHECK	JCA
PROJECT MANAGER	JSH

MARION COASTAL WALKWAY UPGRADE
CELL 6: KURNABINNA GULLY
HALLETT COVE, SA 5158
CELL 6 ADDITIONAL CROSS SECTIONS 04

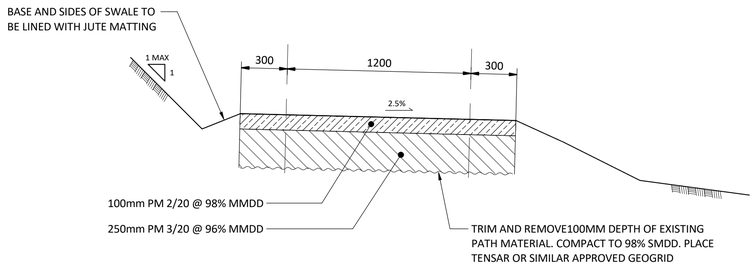
www.innovis.com.au INNOVIS Agile Outcomes

SCALE: 1:200 | DATE: 18/02/2022 | PHASE: REVIEW | SHT SIZE: A1
DRAWING NUMBER: J0439-CIV-DRG-1094 | REVISION: A

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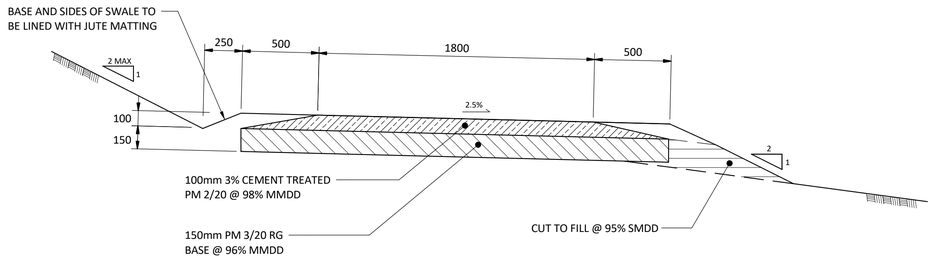
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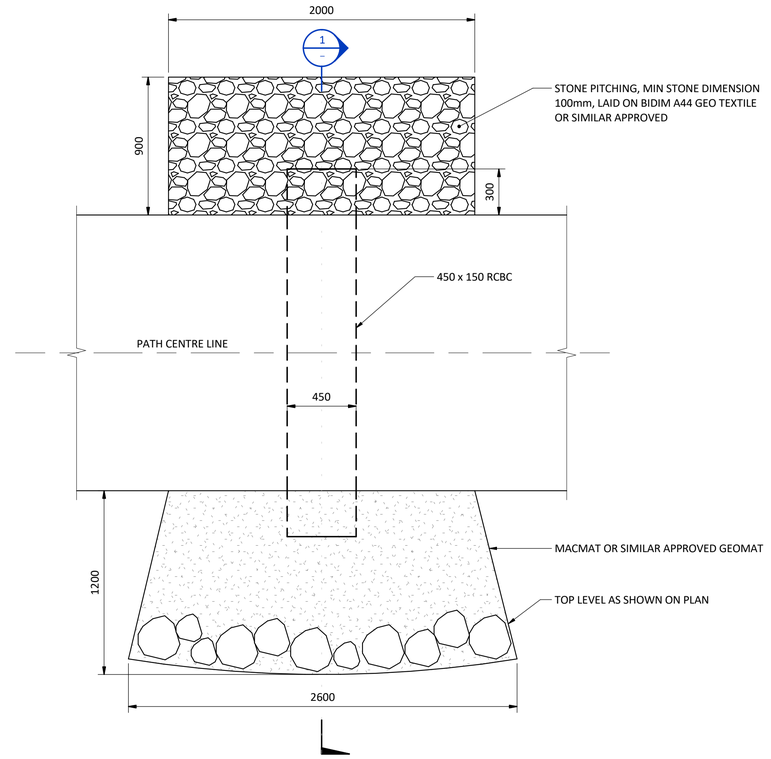
TYPICAL WALKWAY CROSS SECTION, TYPE D CH 390 to 450

SCALE: 1 : 20



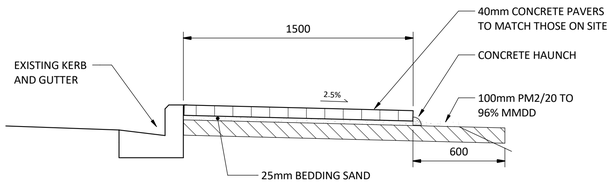
TYPICAL WALKWAY CROSS SECTION - TYPE E

SCALE: 1 : 20



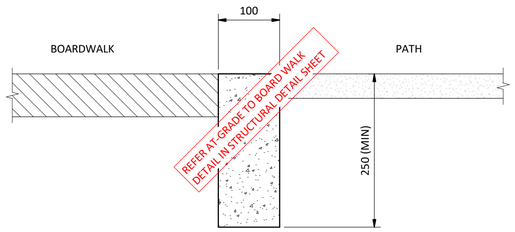
ROCK PITCHING & ROCK CHECK DAM DETAIL AT POINTS A TO G

SCALE: 1 : 20



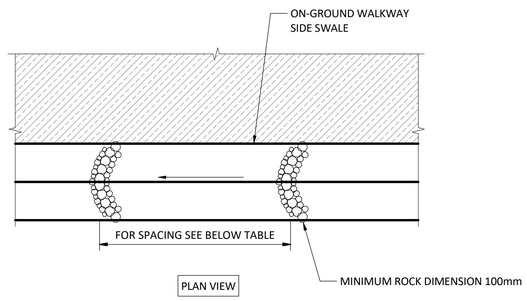
WALKWAY CROSS SECTION - TYPE F

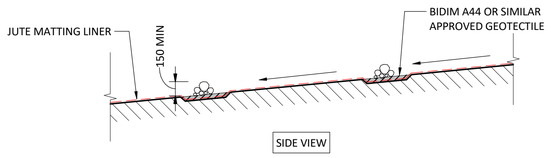
SCALE: 1 : 20



CONCRETE EDGE STRIP.

SCALE: 1 : 5



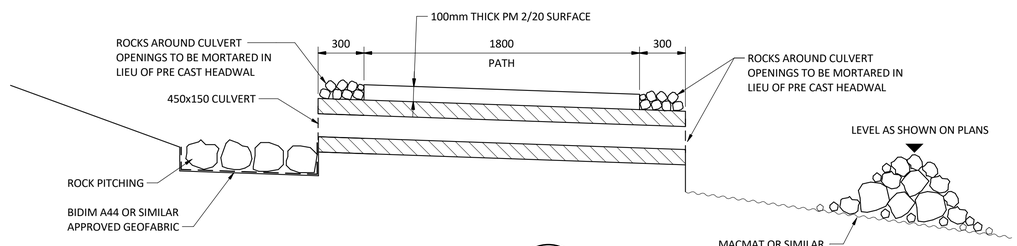


ROCK CHECK DAMN SPACING

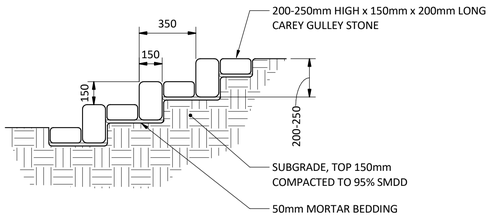
LONGITUDINAL GRADE	MIN SPACING
0.0% TO 1.5%	N/A
1.5% TO 3.0%	20m
3.0% TO 5.0%	10m
GREATER THAN 5.0%	5m

ROCK CHECK DAMN DETAIL

SCALE: 1 : 20



SECTION 1 / SCALE: 1 : 20



STEP DETAIL FOR ON-GROUND PATH

SCALE: N.T.S.

NOTE:

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REVIEW

CLIENT: ASPECT Studios™

REV:	DATE:	DESCRIPTION:	IVR:	APR'D:
B	18/02/2022	ISSUED FOR 90% DD		JCA
A	20/10/2021	ISSUED FOR 70% DD		JCA

TITLE:	NAME:
DRAFTER	ESA
DRAFTING CHECK	TM
DESIGNER	JSH
DESIGN CHECK	JCA
PROJECT MANAGER	JSH

MARION COASTAL WALKWAY UPGRADE
CELL 5 AND 6
HALLET COVE, SA 5158
CELL 5 AND 6 CIVIL DETAILS

INNOVIS INFRASTRUCTURE

SCALE:	DATE:	PHASE:	SHT SIZE:
As indicated	18/02/2022	REVIEW	A1

DRAWING NUMBER: J0439- CIV- DRG- 1150
REVISION: B

FILE LOCATION: C:\Users\sam.aryanpour\Documents\J0439-STR-MOD-500 Coastal Walking Trail-210309_sam.aryanpour.rvt

PRINT DATE: 18/02/2022 4:06:46 PM

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0 10mm AT A1 20 30 40 50 60 70 80 90 100