

Project No.: 3724  
Project Name: BSC Bangalow Shared Path Design  
Project Sub-title: Stage 2: Byron Street – Options Assessment  
Client Name: Byron Shire Council  
UPR No.: 3724-1013  
Project Manager: Michelle Erwin

# Options Assessment

## Bangalow Shared Path Stage 2: Byron Street/Bangalow Road

Date	Author	Notes
3/12/2020	MVE	Set-up
3/12/2020	DH	Additions

10 December 2020  
Ref No: 3724-1013

The General Manager  
Byron Shire Council  
PO Box 219  
MULLUMBIMBY NSW 2482

**Attention: Katie Hughes**

Dear Katie,

## Options Assessment - Bangalow Shared Path Stage 2: Byron Street

### Background

Byron Shire Council (Council) intends to improve facilities in Bangalow for pedestrians, cyclists and mobility devices in line with the *Bangalow Village Plan*, the *Byron Shire Pedestrian Access and Mobility Plan* (PAMP) and the *Byron Shire Bike Plan*. This will involve upgrading existing facilities and constructing new infrastructure to make it easier and safer for people to move between the main street, car parking areas, Bangalow Parklands and Heritage House.

This Option Assessment aims to assist Council to determine the safest and best value for money access from the Feros Village and Clover Hill Estate into the Bangalow town centre.

### Proposed Works

The works are separated into two stages as follows, with reference to the *Byron Shire Bike Plan* (2019) *Appendix 1f – Bangalow Maps* and the figure below extracted from this document.



**Figure 1** Extract from *Byron Shire Bike Plan* (2019) *Appendix 1f – Bangalow Maps*

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## Stage 1

Stage 1 is understood to include:

- BA003: Construction of new crossings on the eastern and southern legs of the Byron Street/ Station Street intersection and upgrade existing crossing on the western leg.
- BA005: Construct 320m of new shared path on the southern side of Deacon Street between Station Street and Ashton Street.
- Part of BA010: Construct 90m of new shared path on eastern side of Ashton Street and a new crossing on the southern leg of the Byron Street/ Ashton Street intersection.

## Stage 2

Stage 2 comprises shared path connection from the Bangalow town centre over Byron Creek to the Feros Care Residential Village.

GeoLINK has prepared concept design plans for two options of the Bangalow shared path upgrade works known as Stage 2. These plans are provided in **Appendix A**.

### 1.1 Option 1

- BA001, upgrading the path along the northern side of Byron Street between Station Street and the western end of Byron Creek Bridge including new crossings on the northern legs of the Byron Street/ Market Street and Byron Street/ Station Street intersections.
- Part of BA010, upgrading the existing path as required from the eastern end of the Byron Creek Bridge up to and including the existing pedestrian refuge island northeast of the Ballina Road intersection.
- The existing path will be upgraded to a width of 2.5m where feasible within site constraints.
- It is noted that the Station Lane shared zone as per BA001 in the *Byron Shire Bike Plan* is *not* included. Upgrades to the existing pedestrian path attached to the bridge over Byron Creek are also *not* included.

### 1.2 Option 2

- All items noted above in Option 1 west of Ashton Street;
- BA023, including a new crossing on the southern leg of the Bangalow Road / Ballina Road intersection, a new pedestrian bridge over Byron Creek, and a new shared path connection between these two elements;
- Part of BA010, including upgrading the existing path along the southern side of Byron Street (Bangalow Road), connecting the new shared path bridge to the Stage 1 shared path on the eastern side of Ashton Street; and
- A new crossing on Byron Street near Ashton Street to connect BA010 to BA001

## Preliminary Cost Estimates

Preliminary cost estimates have been prepared for each of the two concept designs, as provided in **Appendix B**.

## Options Assessment

The two options have been assessed with regard to a number of criteria, as detailed in the table below. Note that since both options include upgrading the existing footpath on the northern side of Byron Street between Byron Creek and Station Street to shared path standard, these works have not been included in the assessment.

<b>Assessment Criteria</b>	<b>Option 1</b>	<b>Option 2</b>
Cost	Option 1 requires very little work over and above the existing conditions. As we are utilising the existing pedestrian bridge over Byron Creek and associated footpath the only costs required for this option will be paint marking, signage, minor footpath maintenance and upgrading 54 m of existing footpath opposite the Feros Care Residential Village.	Option 2 has significant cost impacts in comparison to Option 1. The bridge is estimated to cost \$800,000 which is based on the cost of construction for the existing pedestrian bridge on the north western side of the Byron Creek bridge. An 85 m long footpath link from the north eastern end of the proposed shared path bridge to Ballina Road is required. An additional 35 m link from the south western end of the proposed shared path bridge to the corner of Byron Street and Ashton Street is also required. This option will require the relocation of the watermain attached to the side of the existing Byron Creek bridge to maintain ease of access.
Constructability	The constructability of Option 1 will be considerably easier due to utilising the existing pedestrian bridge. The existing footpath to the north east of the bridge only requires some minor maintenance. 54 m of new footpath will need to be constructed opposite the Feros Care Residential Village.	Option 2 is significantly more difficult to construct. This option will require piers to be constructed in Byron creek with extensive erosion and sediment control required. The existing water main connected to the south eastern side of the bridge will need to be relocated and a retaining wall will be required on the approach to the bridge adjacent to the Anglican Church.
Compliance	The existing footpath on both the south western and north eastern ends of the Byron Creek bridge are non-compliant in width and constrained without the opportunity to widen the existing footpath. The south western end of Byron Street bridge has a footpath width of 1.86 m and the north eastern end has a pinch point of 1.78 m. The existing Byron Creek pedestrian bridge has a width of 1.7 m.	Option 2 will comply with the 2.5 m wide shared footpath width in its entirety.

Assessment Criteria	Option 1	Option 2
Ecological Impact	As Option 1 utilises the existing pedestrian bridge over Byron Creek and the majority of works are within disturbed land, there is likely to be little to no adverse ecological impact.	The proposed location of the shared path bridge over Byron Creek will have several ecological impacts. The Giant Barred Frog is known to be present in this area and may require monitoring during construction. A high level of erosion and sediment control will be required to ensure downstream ecosystems are not inundated with sediment from construction in the creek bed.
Safety	Safety is somewhat compromised for a portion the Option 1 shared path where there is non-compliant width (1.7 m) along the existing Byron Creek pedestrian bridge. We would suggest providing adequate signage and pavement marking to reduce the possibility of collisions. It is noted, however, that there is good sight distance along the straight section of path with non-compliant width, and it is less than 50 m in length.	Option 2 will comprise new infrastructure designed and constructed to current standards and should hence offer premium safety. However, the alignment for Option 2 between Feros Care and the CBD requires an additional road crossing when compared to Option 1. The road crossings will include refuge islands and signage, however such features have inherent safety risks, particularly with vulnerable road users such as children and the elderly.

## Summary of Assessment

In summary, Option 1 with the existing pedestrian bridge on the north western side of the Byron Creek bridge is non-compliant with a footpath width of 1.7 m which also makes this the least safe of the two options. Option 1 will be considerably cheaper and quicker to construct with no impact on the Byron Creek ecosystem.

The proposed shared path bridge on the south eastern side of the Byron Creek bridge will also require 120 m of additional footpath, erosion and sediment control and monitoring of the Giant Barred Frog during construction. The cost of the proposed shared path bridge construction without any associated footpath links or services relocation is \$800,000.

I trust this information will be useful to Council in their decision-making process.

Yours sincerely

**GeoLINK**



**Damian Hyde**

Senior Civil Designer



## Appendix A

# Concept Design Drawings

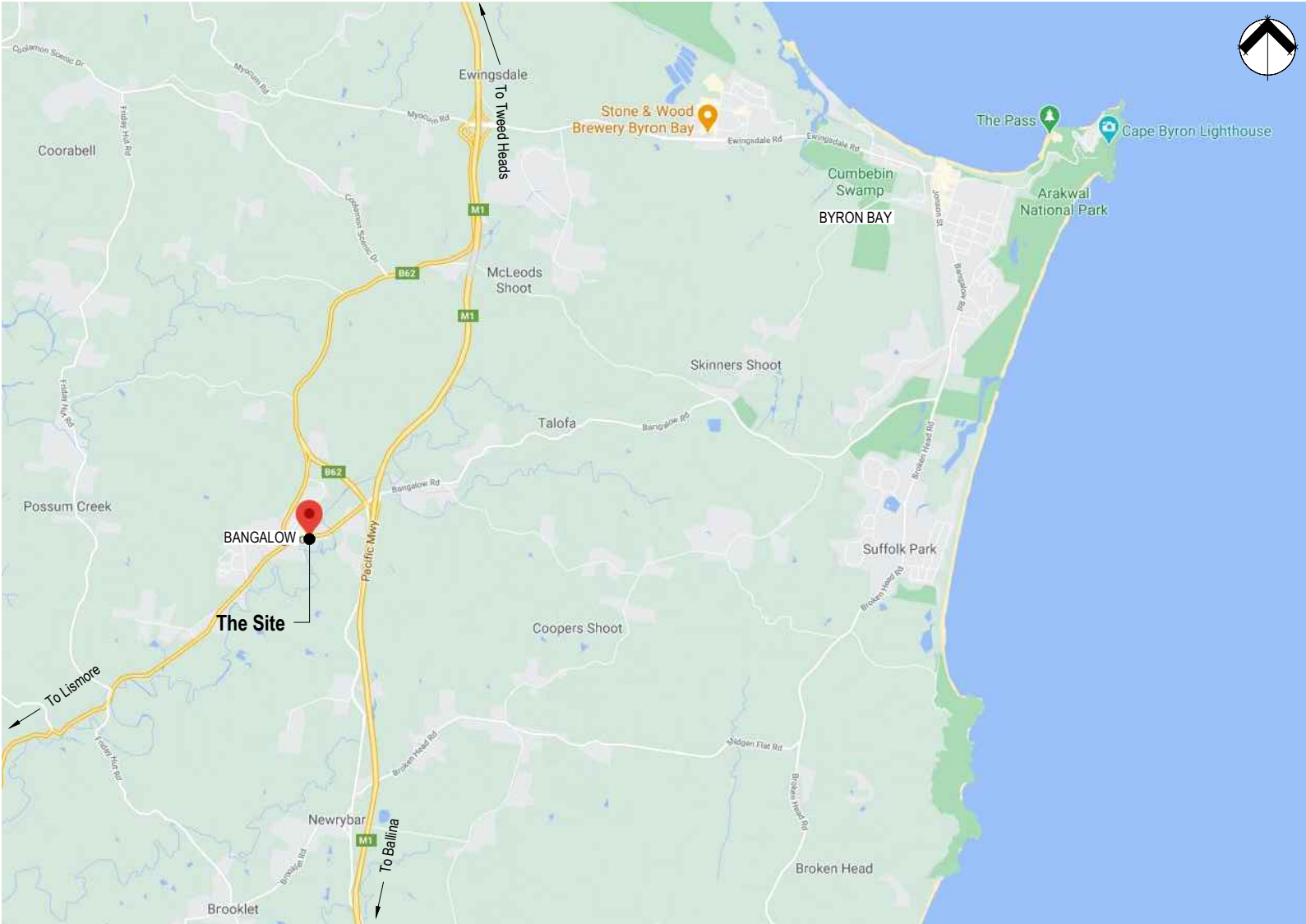
BYRON SHIRE COUNCIL

BANGALOW SHARED PATH - STAGE 2

Byron Street, Bangalow

Concept Design

Drawing Schedule			
Dwg No.	Title	Revision	
3724/C101	Cover Sheet, Locality Plan and Drawing Schedule	A	
3724/C102	Existing Site Layout Sheet 1 of 2	A	
3724/C103	Existing Site Layout Sheet 2 of 2	A	
3724/C110	Shared Path Layout Sheet 1 of 3	A	
3724/C111	Shared Path Layout Sheet 2 of 3	A	
3724/C112	Shared Path Layout Sheet 3 of 3	A	
3724/C113	Typical Cross Sections	A	
3724/C114	Shared Path Options Plan	A	
3724/C120	Longitudinal Section Sheet 1 of 2	A	
3724/C121	Longitudinal Section Sheet 2 of 2	A	



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A	Updated drawings	3/12/2020	DH	ME
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Amendments

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Bangalow Shared Path: Stage 2

Client

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Approved		Date	18/11/2020		

XREFs

Scale

metres

Not To Scale

Drawing Title

Cover Sheet, Locality Plan and Drawing Schedule

Drawing Number

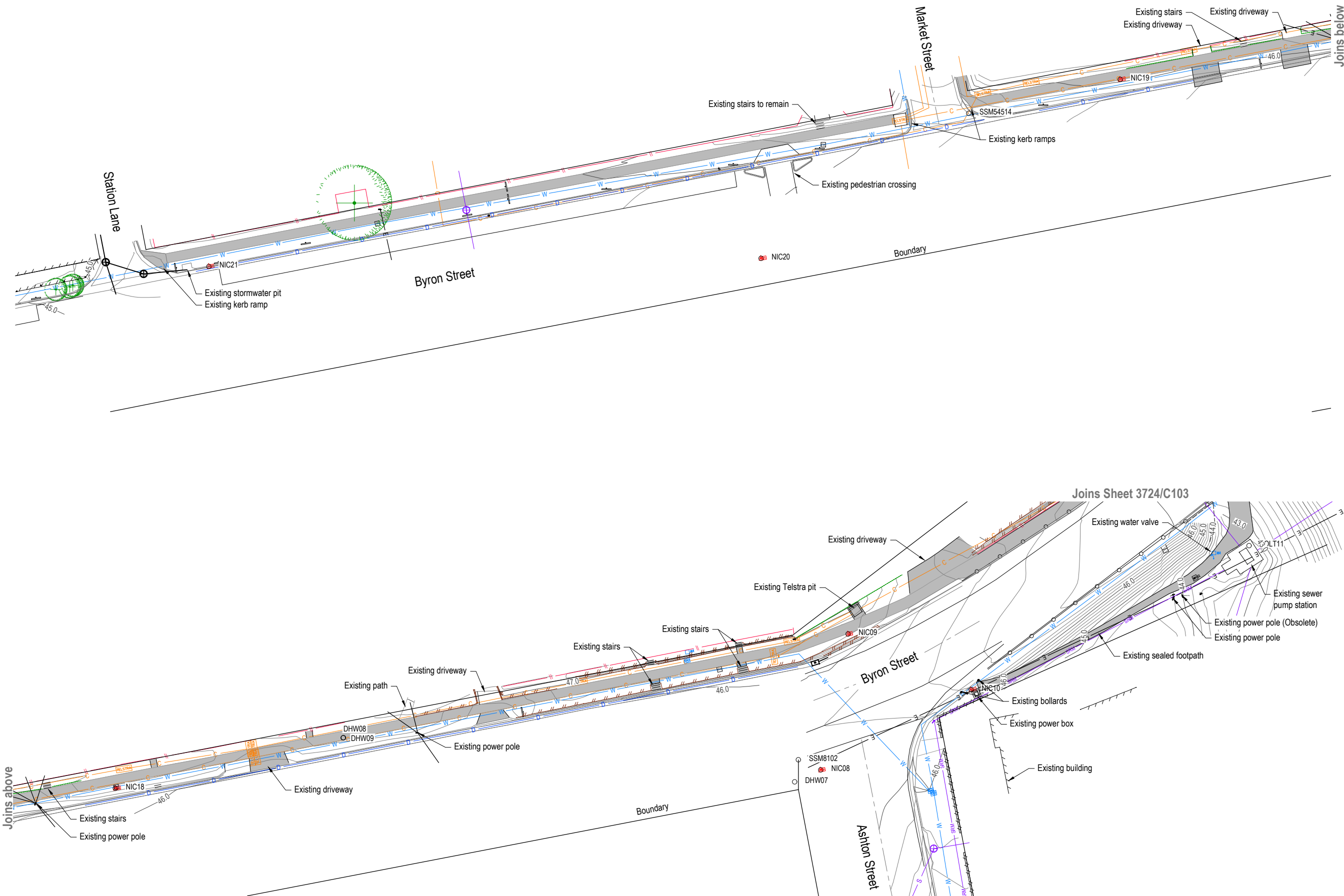
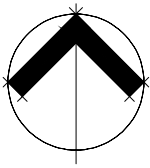
3724-1006

Revision

3724/C101

A





- LEGEND (Existing)**
- S Sewer main
  - SRM Sewer rising main
  - ⊗ Sewer manholes
  - E Overhead electricity
  - PP Power pole
  - C Communications line
  - TELSTRA Communications pit
  - D Stormwater pipe
  - W Water main
  - Water fittings
  - Vegetation line
  - Shrub and tree
  - Road signs
  - NIC03 Survey marks
  - Guard rail
  - Fence
- Surface contours shown at 0.2 m intervals

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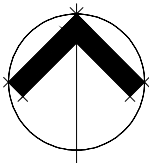
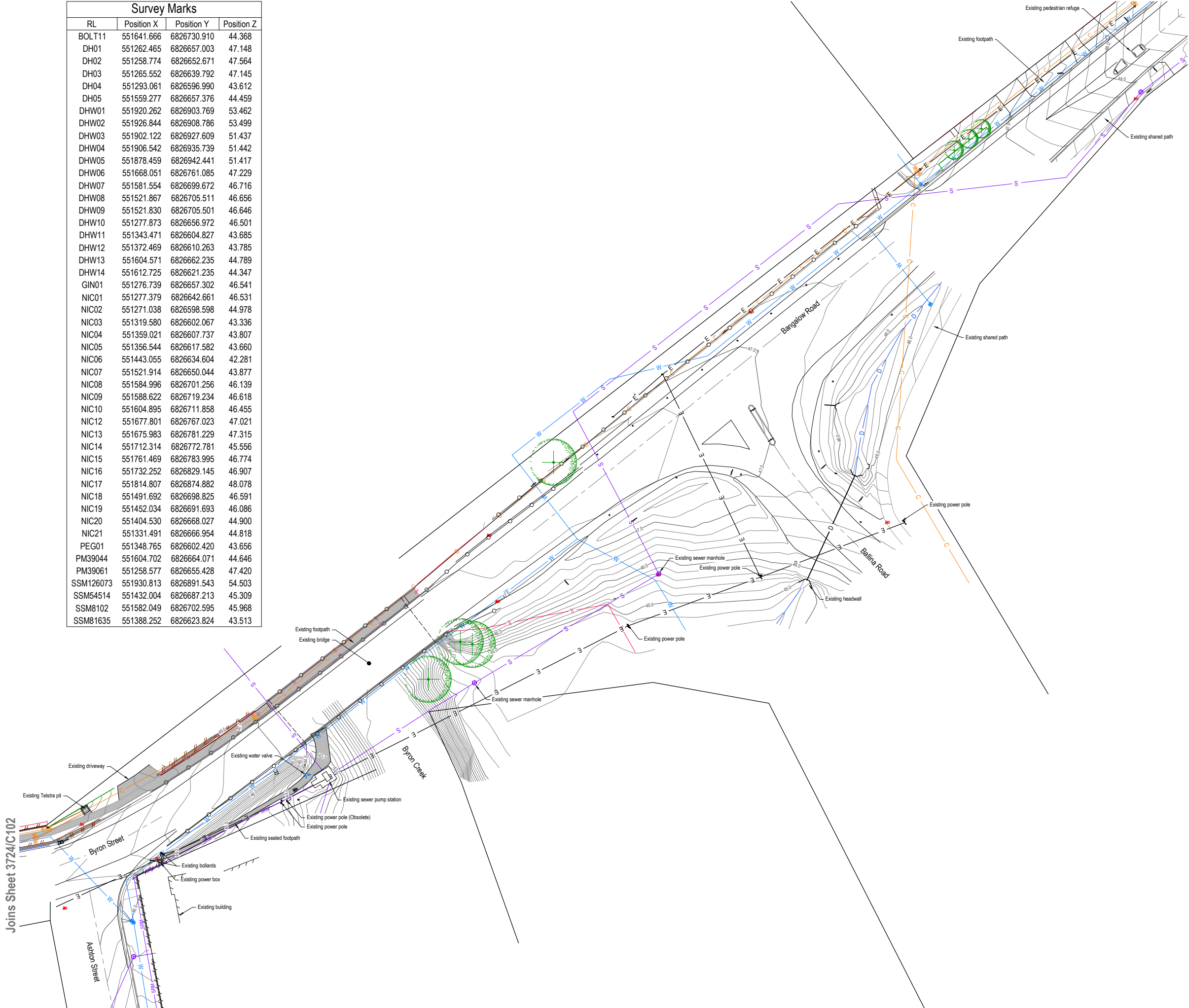
Drawing Title  
**Existing Site Layout  
Sheet 1 of 2**

Drawing Number  
**3724/C102**

Revision  
**A**



Survey Marks				
RL	Position X	Position Y	Position Z	
BOLT11	551641.666	6826730.910	44.368	
DH01	551262.465	6826657.003	47.148	
DH02	551258.774	6826652.671	47.564	
DH03	551265.552	6826639.792	47.145	
DH04	551293.061	6826596.990	43.612	
DH05	551559.277	6826657.376	44.459	
DHW01	551920.262	6826903.769	53.462	
DHW02	551926.844	6826908.786	53.499	
DHW03	551902.122	6826927.609	51.437	
DHW04	551906.542	6826935.739	51.442	
DHW05	551878.459	6826942.441	51.417	
DHW06	551668.051	6826761.085	47.229	
DHW07	551581.554	6826699.672	46.716	
DHW08	551521.867	6826705.511	46.656	
DHW09	551521.830	6826705.501	46.646	
DHW10	551277.873	6826656.972	46.501	
DHW11	551343.471	6826604.827	43.685	
DHW12	551372.469	6826610.263	43.785	
DHW13	551604.571	6826662.235	44.789	
DHW14	551612.725	6826621.235	44.347	
GIN01	551276.739	6826657.302	46.541	
NIC01	551277.379	6826642.661	46.531	
NIC02	551271.038	6826598.598	44.978	
NIC03	551319.580	6826602.067	43.336	
NIC04	551359.021	6826607.737	43.807	
NIC05	551356.544	6826617.582	43.660	
NIC06	551443.055	6826634.604	42.281	
NIC07	551521.914	6826650.044	43.877	
NIC08	551584.996	6826701.256	46.139	
NIC09	551588.622	6826719.234	46.618	
NIC10	551604.895	6826711.858	46.455	
NIC12	551677.801	6826767.023	47.021	
NIC13	551675.983	6826781.229	47.315	
NIC14	551712.314	6826772.781	45.556	
NIC15	551761.469	6826783.995	46.774	
NIC16	551732.252	6826829.145	46.907	
NIC17	551814.807	6826874.882	48.078	
NIC18	551491.692	6826698.825	46.591	
NIC19	551452.034	6826691.693	46.086	
NIC20	551404.530	6826668.027	44.900	
NIC21	551331.491	6826666.954	44.818	
PEG01	551348.765	6826602.420	43.656	
PM39044	551604.702	6826664.071	44.646	
PM39061	551258.577	6826655.428	47.420	
SSM126073	551930.813	6826891.543	54.503	
SSM54514	551432.004	6826687.213	45.309	
SSM8102	551582.049	6826702.595	45.968	
SSM81635	551388.252	6826623.824	43.513	



LEGEND (Existing)

S

Sewer main

SRM

Sewer rising main

Sewer manholes

E

Overhead electricity

PP

Power pole

C

Communications line

Communications pit

D

Stormwater pipe

W

Water main

Water fittings

Vegetation line

Shrub and tree

Road signs

Survey marks

Guard rail

Fence

Surface contours shown at 0.2 m intervals

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Designed DH

Drawn DH

Checked ME

Approved

Date 18/11/2020

XREFs

Scale

metres

0

4

8

12

16

20

Drawing Title

Existing Site Layout

Sheet 2 of 2

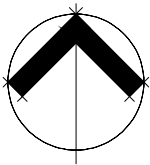
3724-1006

Drawing Number

3724/C103

Revision

A



**Key and Notes:**

1. New sign: Regulatory - Shared Path (R8-2) attached to holding rail
2. New sign: Warning - Shared Path (W6-9) and Crossing Arrows (W8-23)
3. New sign: Warning - Shared Path (W6-9), Crossing Arrows (W8-23) and On Side Road (W8-3R)
4. New kerb ramp in accordance with NRLG standard drawing R-04
5. Match path edge to existing driveway crossover
6. Replace existing driveway crossover
7. Match levels to existing path
8. Match levels to existing stairs
9. Relocate existing power pole
10. Construct new concrete block wall to path edge with hand rail on top
11. Provide line marking across existing driveway to identify shared path alignment
12. Existing signage to be relocated
13. Noncompliant footpath
14. Existing survey marks to be adjusted or moved
15. Sign locations are indicative only and to be installed in accordance with AS1742.2.

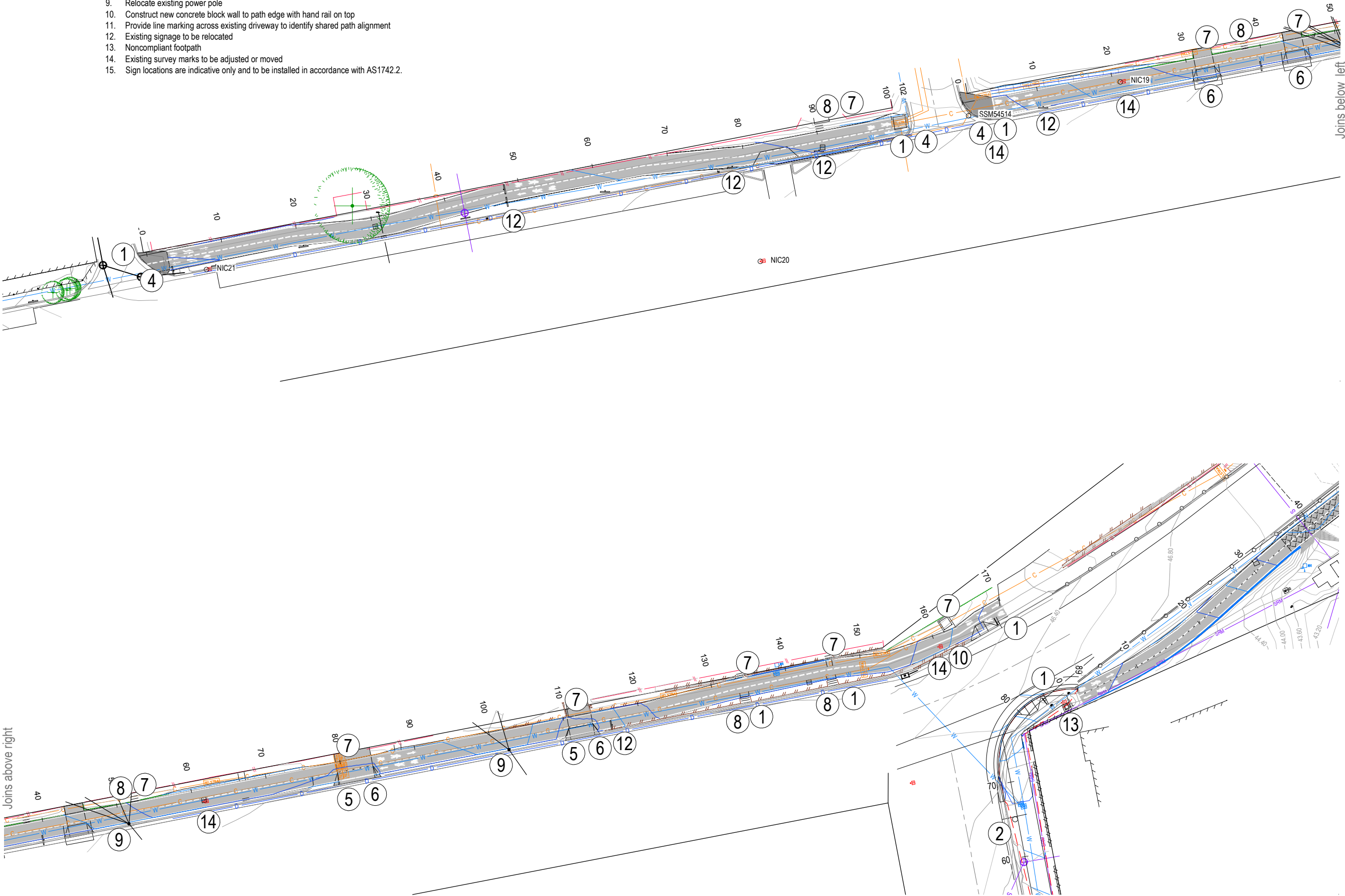
**LEGEND (Proposed)**

- Concrete Path
- Concrete Kerb
- Sealed Pavement
- Footpath Repair
- Limit of works
- Shrub and tree for removal

**LEGEND (Existing)**

- Vegetation line
- Shrub and tree
- Road signs
- Guard rail or barrier
- Fence
- Existing retaining wall

Surface contours shown at 0.2 m intervals



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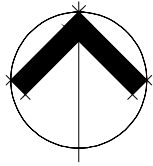
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**Shared Path Layout**  
**Sheet 1 of 3**

Drawing Number  
**3724/C110**

Revision  
**A**





**Key and Notes:**

1. New sign: Regulatory - Shared Path (R8-2) attached to holding rail
2. New sign: Warning - Shared Path (W6-9) and Crossing Arrows (W8-23)
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8. Match levels to existing stairs
9. Relocate existing power pole
10. Construct new concrete block wall to path edge with hand rail on top
11. Provide line marking across existing driveway to identify shared path alignment
12. Sign locations are indicative only and to be installed in accordance with AS1742.2.
13. Proposed refuge island location (TBC).
14. Noncompliant footpath

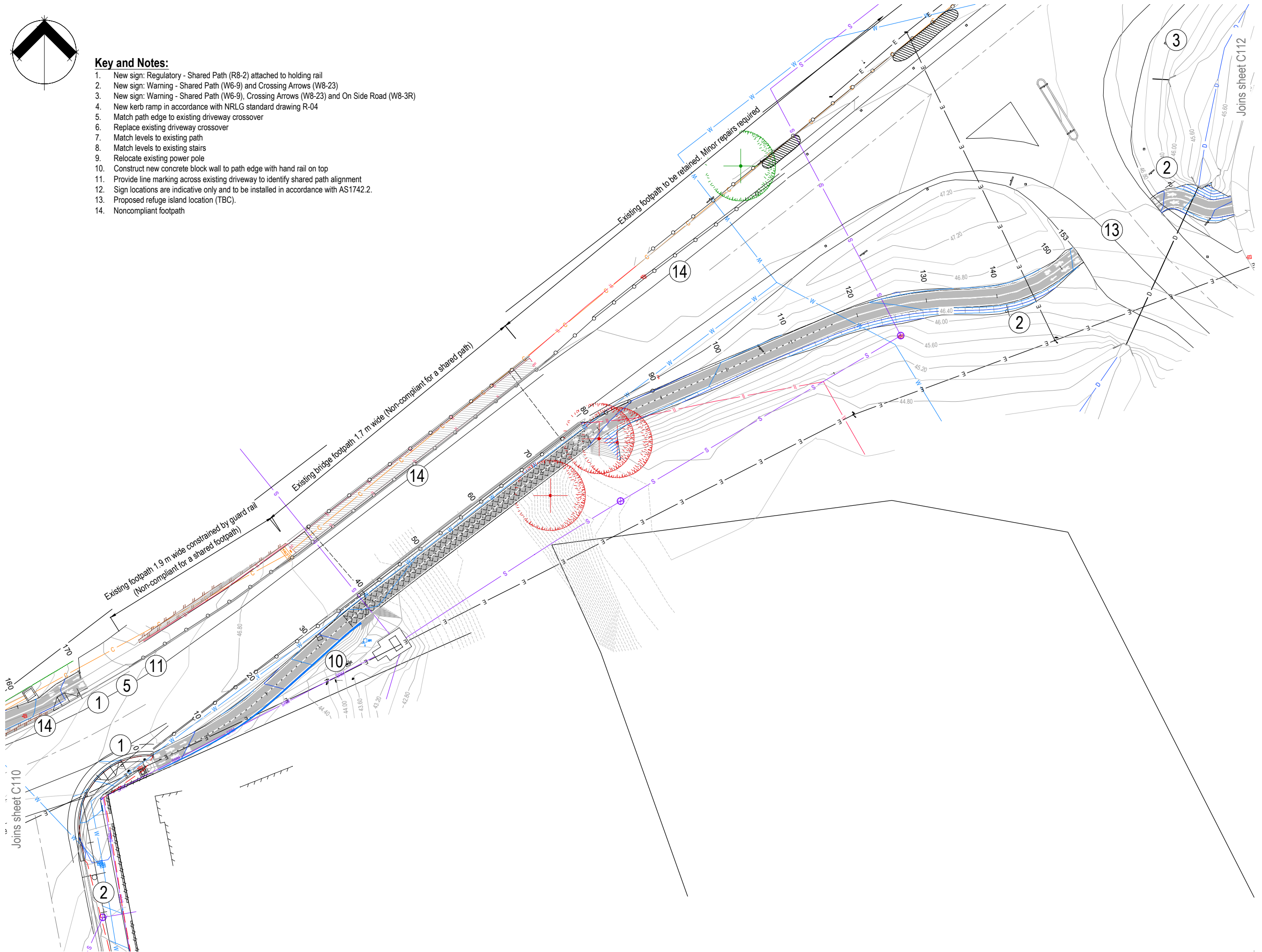
**LEGEND (Proposed)**

- Concrete Path
- Concrete Kerb
- Sealed Pavement
- Footpath Repair
- Limit of works
- Shrub and tree for removal

**LEGEND (Existing)**

- Vegetation line
- Shrub and tree
- Road signs
- Guard rail or barrier
- Fence
- Existing retaining wall

Surface contours shown at 0.2 m intervals



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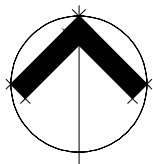
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Approved		Date	18/11/2020		
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Scale					

metres 0 2.5 5 7.5 10 12.5

Drawing Title  
**Shared Path Layout  
Sheet 2 of 3**

Drawing Number  
**3724/C111**

Revision  
**A**



**Key and Notes:**

1. New sign: Regulatory - Shared Path (R8-2) attached to holding rail
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Concrete Path

Concrete Kerb

Sealed Pavement

Footpath Repair

Limit of works

Shrub and tree for removal

Vegetation line

Shrub and tree

Road signs

Guard rail or barrier

Fence

Existing retaining wall

Surface contours shown at 0.2 m intervals

**LEGEND (Proposed)**

**LEGEND (Existing)**

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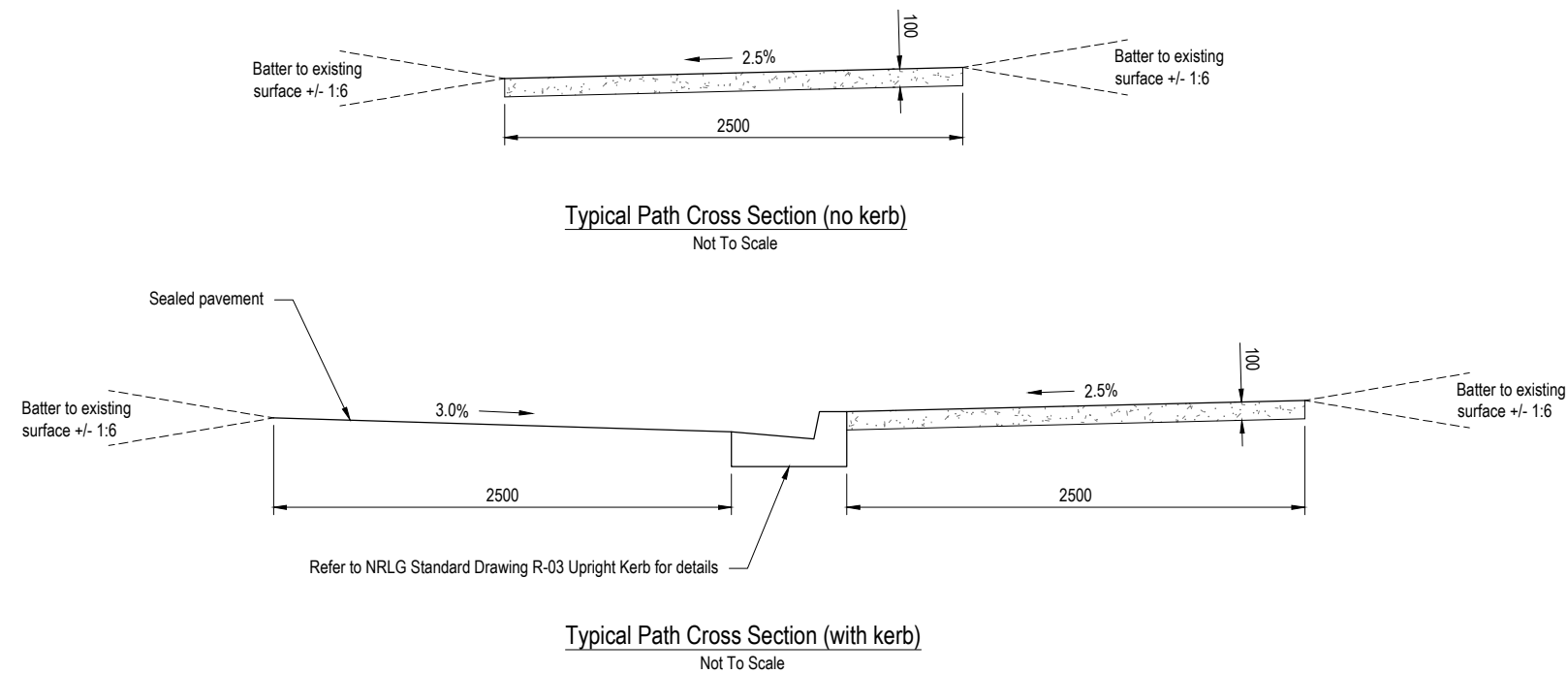
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Approved	Date	18/11/2020		ME
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Scale				
metres 0 2.5 5 7.5 10 12.5				

Drawing Title  
**Shared Path Layout**  
**Sheet 3 of 3**

Drawing Number  
**3724/C112**

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Designed	DH	Drawn	DH	Checked	ME
Approved		Date	18/11/2020		

XREFs

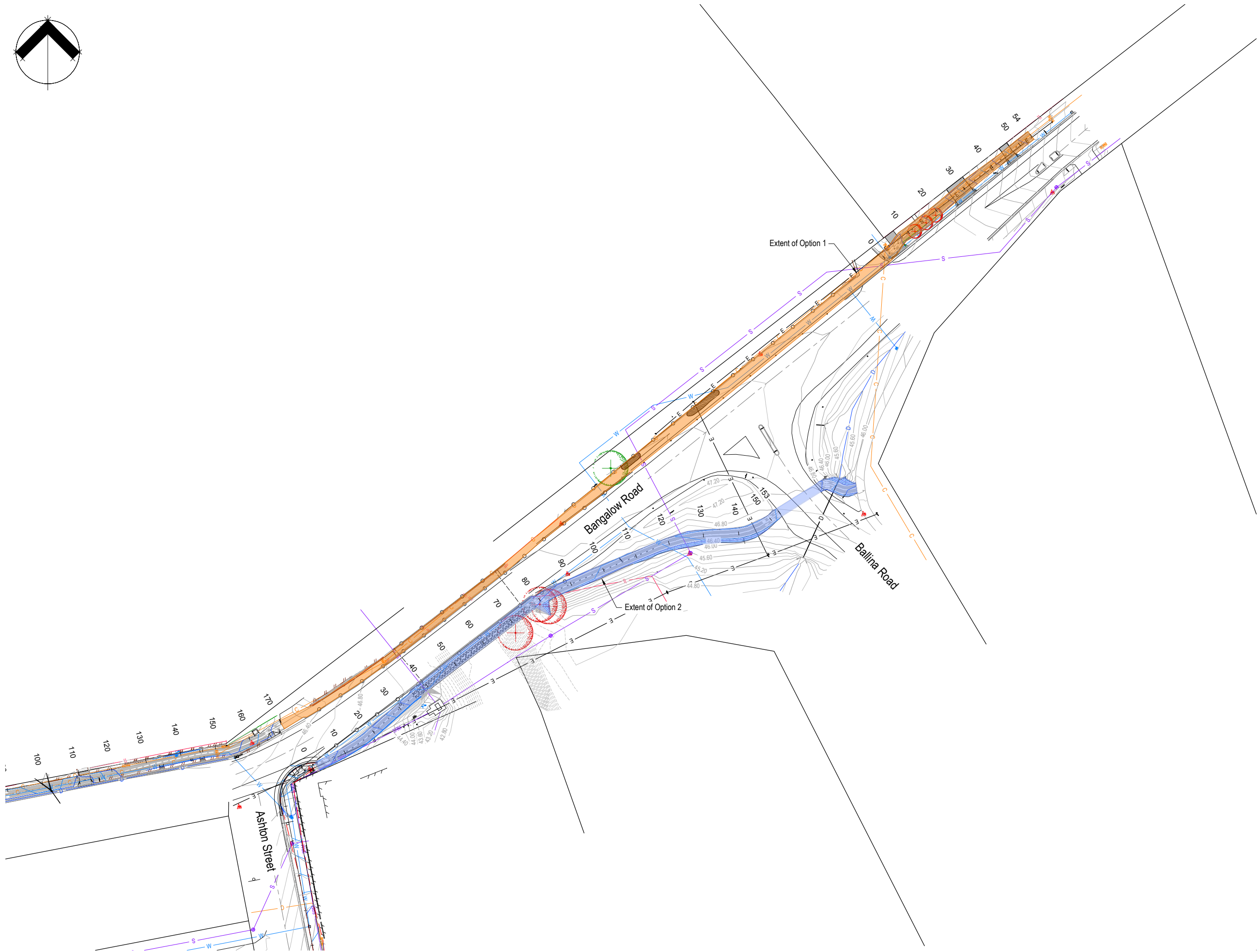
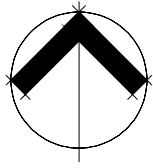
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Drawing Title

Typical Cross Sections

3724-1007
Drawing Number
3724/C113
Revision
A



DRAFT

Rev.	Description	Date	Des.	App.	Chk.
A	Drawing added to set	3/12/2020	DH		ME

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Project Title  
**Bangalow Shared Path: Stage 2**

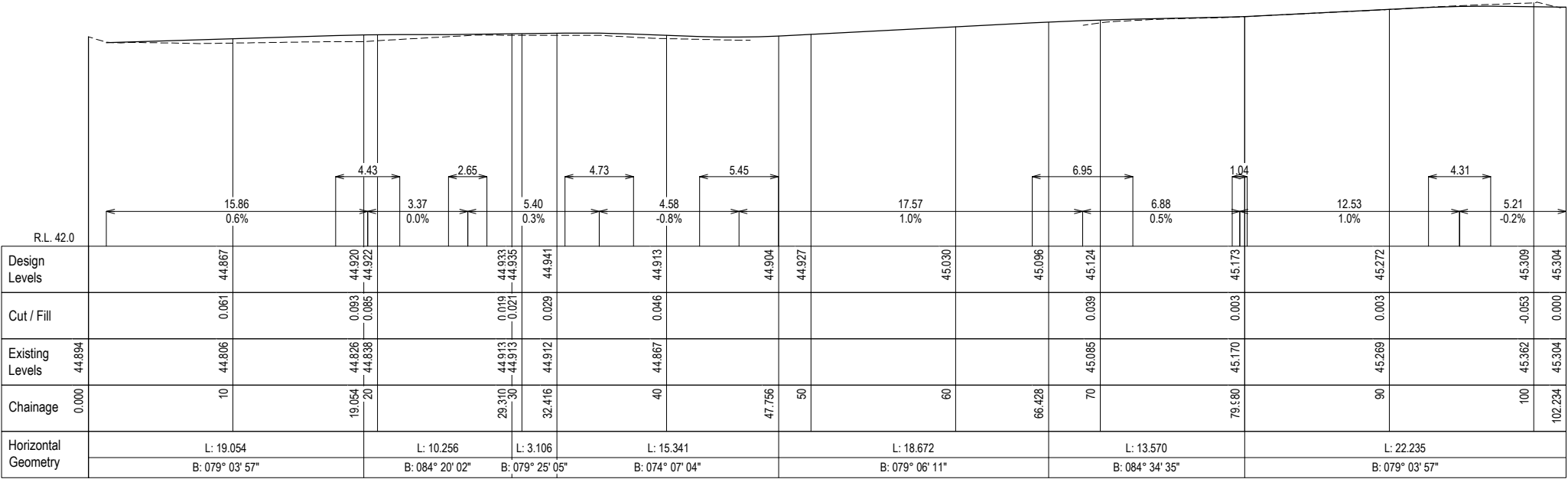
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**Byron Shire Council**

Designed	DH	Drawn	DH	Checked	ME
Approved		Date	16/12/2020		
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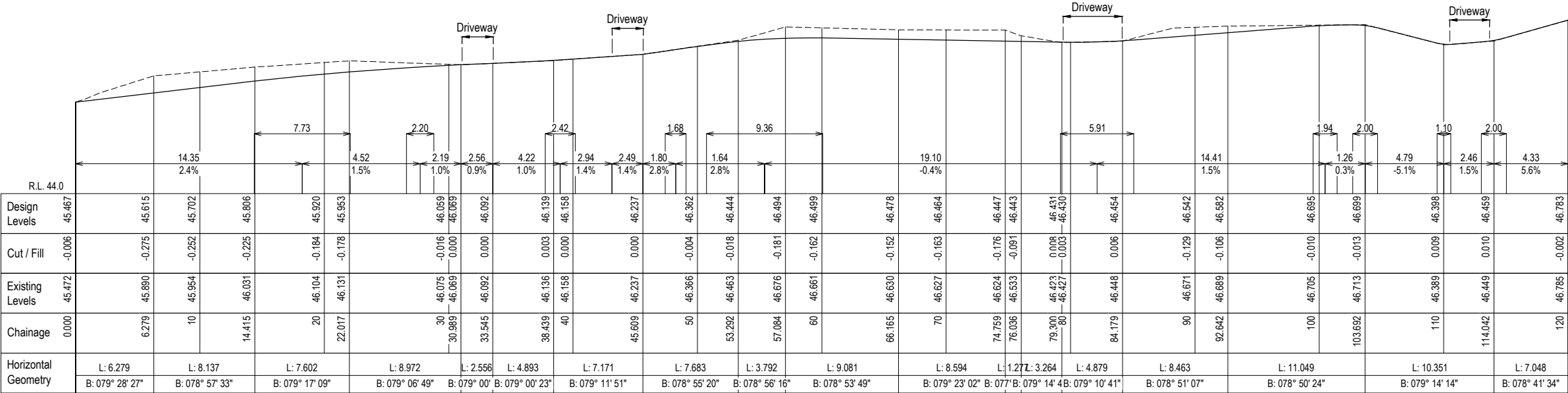
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**Shared Path Options Plan**

Drawing Number	Revision
3724/C114	A

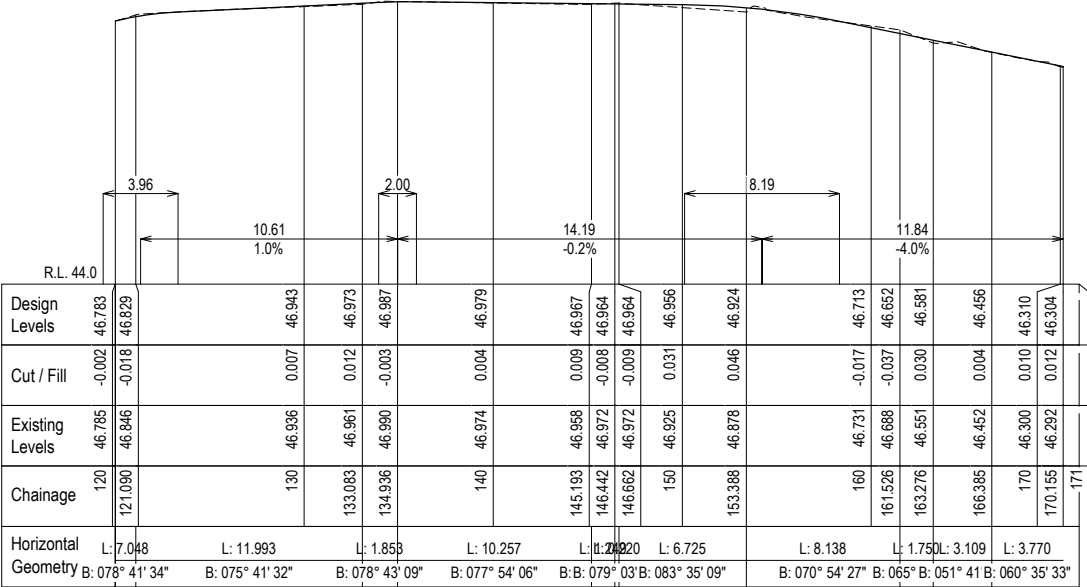




Longitudinal Section: Proposed path from Station Street to Market Street



Longitudinal Section: Proposed path from Market Street to Bridge



Longitudinal Section: Proposed path from Market Street to Bridge

DRAFT

A	Updated drawings	3/12/2020	DH	ME
Rev.	Description	Date	Des.	App. Chk.
				Amendments

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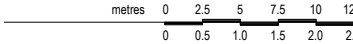
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Project Title  
Bangalow Shared Path: Stage 2

Client  
Byron Shire Council

Designed	DH	Drawn	DH	Checked
Approved	Date	18/11/2020		ME
XREFs				

Scale



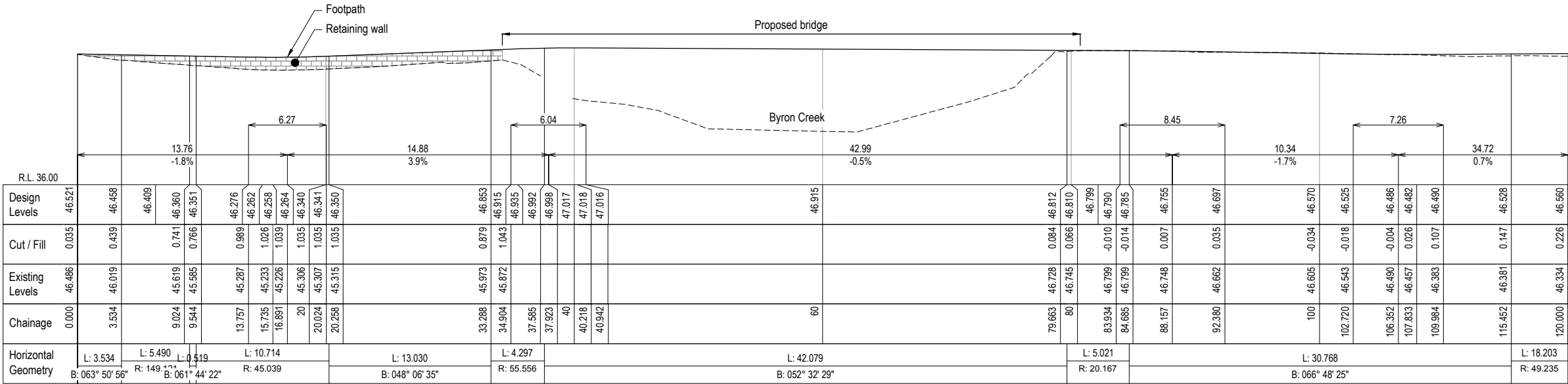
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Longitudinal Section  
Sheet 1 of 2

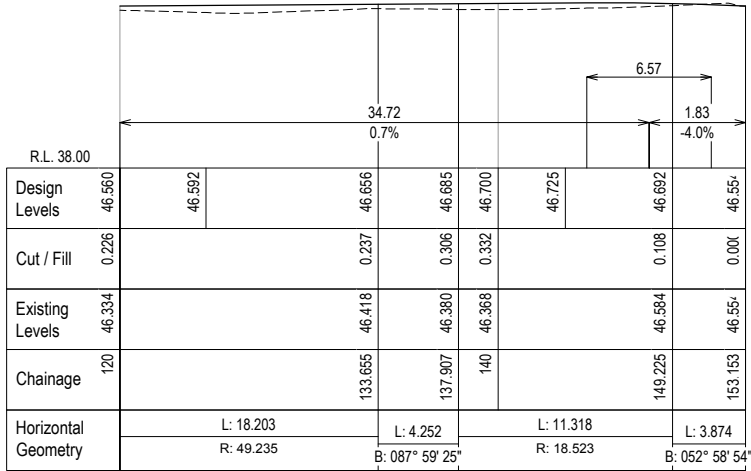
3724-1008

Drawing Number Revision

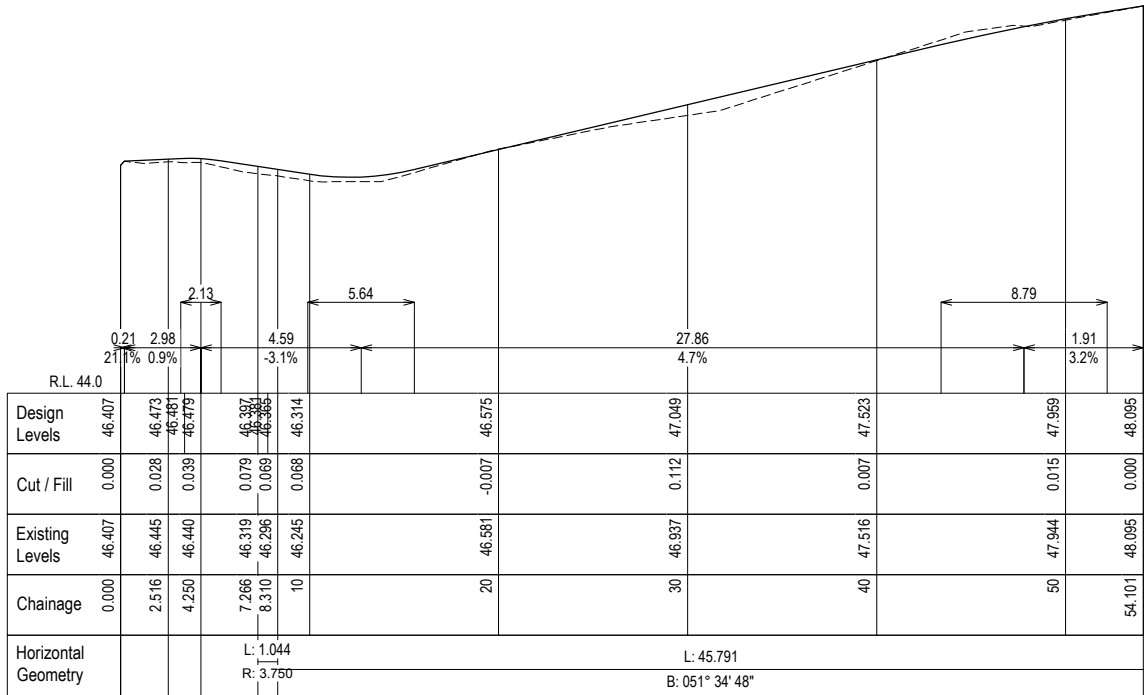
3724/C120 A



Longitudinal Section: Byron Creek Crossing



Longitudinal Section: Byron Creek Crossing



Longitudinal Section: Ballina Street To Refuge Island

DRAFT

A	Updated drawings	3/12/2020	DH	ME
Rev.	Description	Date	Des.	App. Chk.
				Amendments

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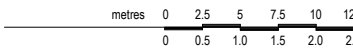
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Project Title  
Bangalow Shared Path: Stage 2

Client Byron Shire Council			
Designed	DH	Drawn	DH
Approved	Date	18/11/2020	Checked ME
XREFs			
Scale			



Drawing Title

Longitudinal Section  
Sheet 2 of 2

3724-1008

Drawing Number Revision

3724/C121 A



## **Appendix B**

# **Preliminary Cost Estimates**

**GeoLINK**

PO Box 119 Lennox Head NSW 2478  
 Level 1, 64 Ballina Street Lennox Head NSW 2478  
 TEL: 02 6687 7666 FAX: 02 6687 7782  
 DATE: 27-October-2020  
 CLIENT: Byron Shire Council  
 PROJECT: GEO03724 BSC Bangalow Shared Path


**SCHEDULE OF ESTIMATED QUANTITIES**
**BSC Bangalow Shared Path Design - Stage 2, Option 1**

This schedule has been prepared in association with GeoLINK's drawings 3724/C101 to C121 Concept Design

ITEM	DESCRIPTION	UNIT	QTY	RATE	TOTAL
<b>1.00</b>	<b>Preliminaries</b>				
1.01	Site establishment	Item	1	\$ 2,500.00	\$ 2,500.00
1.02	Survey and set-out (including the relocation of any disturbed marks)	Item	1	\$ 6,000.00	\$ 6,000.00
1.03	Services location	Item	1	\$ 2,000.00	\$ 2,000.00
1.04	Approvals, insurances etc.	Item	1		\$ -
1.05	Traffic control				
	(a) Signage, barriers and pedestrian fencing	Days	45	\$ 300.00	\$ 13,500.00
	(b) Traffic control crew	Days	10	\$ 1,800.00	\$ 18,000.00
1.06	Clearing, grubbing and tree removal/translocation (to be determined on site)	Item	1	\$ 4,000.00	\$ 4,000.00
1.07	Erosion and sediment controls	Item	1	\$ 4,000.00	\$ 4,000.00
<b>2.00</b>	<b>Demolition / Earthworks</b>				
2.01	Demolish and remove items:				
	a) Driveway	No.	8	\$ 500.00	\$ 4,000.00
	b) Kerb and Gutter	m	30	\$ 45.00	\$ 1,350.00
	c) Kerb Ramps	No.	4	\$ 250.00	\$ 1,000.00
	d) Existing path (Concrete)	m <sup>2</sup>	412	\$ 25.00	\$ 10,300.00
2.02	Relocate items:				
	a) Signs	No.	6	\$ 100.00	\$ 600.00
	b) Power pole	No.	2	\$ 15,000.00	\$ 30,000.00
2.03	Stripping to average depth of 25mm including bitumen and gravel, to be stockpiled and assess for reuse (excluding existing concrete path)	m <sup>2</sup>	820	\$ 5.00	\$ 4,100.00
2.04	Earthworks including placement and compaction:				
	a) Cut to fill	m <sup>3</sup>	20	\$ 50.00	\$ 1,000.00
	b) Fill to import	m <sup>3</sup>	5	\$ 65.00	\$ 325.00
2.05	Reshape, trim and compact boxing for:				
	a) Shared Path	m <sup>2</sup>	820	\$ 6.00	\$ 4,920.00
	b) Sealed pavement	m <sup>2</sup>	10	\$ 6.00	\$ 60.00
	c) Kerb	m <sup>2</sup>	10	\$ 6.00	\$ 60.00
<b>3.00</b>	<b>Concrete / Construction Works</b>				
3.01	Supply and construct 2.5m wide 25MPa concrete shared path including reinforcing, finishing, jointing and kerb ramps				
	a) 100mm thick plus additional for 150mm thick over existing driveways	m <sup>2</sup>	820	\$ 110.00	\$ 90,200.00
	b) 50mm bedding material	m <sup>3</sup>	40	\$ 65.00	\$ 2,600.00
3.02	Supply and construct concrete upright kerb	m	10	\$ 130.00	\$ 1,300.00
3.03	Supply, place and compact pavement material including under kerb (to be confirmed):				
	(a) base material, 150 mm thick:	m <sup>3</sup>	1.5	\$ 160.00	\$ 240.00
	(b) sub-base material, 150 mm thick:	m <sup>3</sup>	1.5	\$ 150.00	\$ 225.00
3.04	Final trim and preparation of pavement surface prior to surfacing	m <sup>2</sup>	10	\$ 3.00	\$ 30.00

ITEM	DESCRIPTION	UNIT	QTY	RATE	TOTAL
3.05	Supply and place primer and asphalt surfacing 30 mm thick:	m <sup>2</sup>	10	\$ 35.00	\$ 350.00
3.06	Adjusting services and include isolation joint				
	a) Telstra/communication pit/pillar	No.	5	\$ 200.00	\$ 1,000.00
	b) Sewer manhole	No.	1	\$ 300.00	\$ 300.00
	c) Stop valve	No.	1	\$ 200.00	\$ 200.00
	d) Hydrant	No.	4	\$ 200.00	\$ 800.00
3.07	Apply warning tape to power/light poles within 500mm min. obstruction zone	No.	3	\$ 500.00	\$ 1,500.00
3.08	Excavate for, supply materials and construct reinforced concrete block wall	m <sup>2</sup>	10	\$ 700.00	\$ 7,000.00
3.09	Existing asphalt footpath to be repaired (Extent to be confirmed)	Item	1	\$ 1,500.00	\$ 1,500.00
4.00	<b>Signage, Linemarking and Furniture</b>				
4.01	Supply and install signage including footings:				
	a) 'Shared Path' R8-2 attach as part of the holding rails	No.	6	\$ 750.00	\$ 4,500.00
	b) 'Shared Path' R6-9 and 'Crossing Arrows' W8-23	No.	4	\$ 450.00	\$ 1,800.00
	c) Line Marking	Item	1	\$ 10,000.00	\$ 10,000.00
5.00	<b>Landscaping/Reinstatement</b>				
5.01	Supply and lay turf and fertilizer to 600 mm either side of path where possible	m <sup>2</sup>	390	\$ 12.00	\$ 4,680.00
5.02	Supply and spread grass seed and fertilizer to disturbed areas (prov. qty.)	Item	1	\$ 1,500.00	\$ 1,500.00
5.03	Supply and install tree root protection (as required)	Item	1	\$ 3,000.00	\$ 3,000.00
5.04	Clean up and disestablishment	Item	1	\$ 4,000.00	\$ 4,000.00
6.00	<b>Misc</b>				
7.00	<b>ESTIMATE AMOUNT (EXCL CONTINGENCY AND GST)</b>				\$ 244,440.00
8.00	<b>CONTINGENCY (30%)</b>				\$ 73,332.00
9.00	<b>GST (10%)</b>				\$ 31,777.20
10.00	<b>ESTIMATE AMOUNT (INCL GST)</b>				\$ 349,549.20

**GeoLINK**

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 DATE: 27-October-2020  
 CLIENT: Byron Shire Council  
 PROJECT: GEO03724 BSC Bangalow Shared Path

**SCHEDULE OF ESTIMATED QUANTITIES****BSC Bangalow Shared Path Design - Stage 2, Option 2**

This schedule has been prepared in association with GeoLINK's drawings 3724/C101 to C121 Concept Design

ITEM	DESCRIPTION	UNIT	QTY	RATE	TOTAL
<b>1.00</b>	<b>Preliminaries</b>				
1.01	Site establishment	Item	1	\$ 2,500.00	\$ 2,500.00
1.02	Survey and set-out (including the relocation of any disturbed marks)	Item	1	\$ 10,000.00	\$ 10,000.00
1.03	Services location	Item	1	\$ 3,000.00	\$ 3,000.00
1.04	Approvals, insurances etc.	Item	1		\$ -
1.05	Traffic control				
	(a) Signage, barriers and pedestrian fencing	Days	50	\$ 300.00	\$ 15,000.00
	(b) Traffic control crew	Days	12	\$ 1,800.00	\$ 21,600.00
1.06	Clearing, grubbing and tree removal/translocation (to be determined on site)	Item	1	\$ 10,000.00	\$ 10,000.00
1.07	Erosion and sediment controls	Item	1	\$ 12,000.00	\$ 12,000.00
<b>2.00</b>	<b>Demolition / Earthworks</b>				
2.01	Demolish and remove items:				
	a) Driveway	No.	8	\$ 500.00	\$ 4,000.00
	b) Kerb and Gutter	m	30	\$ 45.00	\$ 1,350.00
	c) Kerb Ramps	No.	4	\$ 250.00	\$ 1,000.00
	d) Existing path (Concrete)	m <sup>2</sup>	332	\$ 25.00	\$ 8,300.00
	e) Existing path (Asphalt)	m <sup>2</sup>	13	\$ 15.00	\$ 195.00
2.02	Relocate items:				
	a) Signs	No.	8	\$ 100.00	\$ 800.00
	b) Power pole	No.	2	\$ 15,000.00	\$ 30,000.00
2.03	Stripping to average depth of 25mm including bitumen and gravel, to be stockpiled and assess for reuse (excluding existing concrete path)	m <sup>2</sup>	350	\$ 5.00	\$ 1,750.00
2.04	Earthworks including placement and compaction:				
	a) Cut to fill	m <sup>3</sup>	20	\$ 50.00	\$ 1,000.00
	b) Fill to import	m <sup>3</sup>	130	\$ 65.00	\$ 8,450.00
2.05	Reshape, trim and compact boxing for:				
	a) Shared Path	m <sup>2</sup>	990	\$ 6.00	\$ 5,940.00
	b) Sealed pavement	m <sup>2</sup>	10	\$ 6.00	\$ 60.00
	c) Kerb	m <sup>2</sup>	10	\$ 6.00	\$ 60.00
<b>3.00</b>	<b>Concrete / Construction Works</b>				
3.01	Supply and construct 2.5m wide 25MPa concrete shared path including reinforcing, finishing, jointing and kerb ramps				
	a) 100mm thick	m <sup>2</sup>	990	\$ 110.00	\$ 108,900.00
	b) 50mm bedding material	m <sup>3</sup>	49.5	\$ 65.00	\$ 3,217.50
3.02	Supply and construct concrete upright kerb	m	10	\$ 130.00	\$ 1,300.00
3.03	Supply, place and compact pavement material including under kerb (to be confirmed):				
	(a) base material, 150 mm thick:	m <sup>3</sup>	1.5	\$ 160.00	\$ 240.00
	(b) sub-base material, 150 mm thick:	m <sup>3</sup>	1.5	\$ 150.00	\$ 225.00



ITEM	DESCRIPTION	UNIT	QTY	RATE	TOTAL
3.04	Final trim and preparation of pavement surface prior to surfacing	m <sup>2</sup>	10	\$ 3.00	\$ 30.00
3.05	Supply and place primer and asphalt surfacing 30 mm thick:	m <sup>2</sup>	10	\$ 35.00	\$ 350.00
3.06	Adjusting services and include isolation joint				
	a) Telstra/communication pit/pillar	No.	5	\$ 200.00	\$ 1,000.00
	b) Sewer manhole	No.	1	\$ 300.00	\$ 300.00
	c) Stop valve	No.	1	\$ 200.00	\$ 200.00
	d) Hydrant	No.	4	\$ 200.00	\$ 800.00
	e) Watermain (re-route watermain on side of existing bridge)	No.	1	\$ 10,000.00	\$ 10,000.00
3.07	Apply warning tape to power/light poles within 500mm min. obstruction zone	No.	5	\$ 500.00	\$ 2,500.00
3.08	Excavate for, supply materials and construct reinforced concrete block wall	m <sup>2</sup>	40	\$ 700.00	\$ 28,000.00
4.00	<b>Signage, Linemarking and Furniture</b>				
4.01	Supply and install signage including footings:				
	a) 'Shared Path' R8-2 attach as part of the holding rails	No.	8	\$ 750.00	\$ 6,000.00
	b) 'Shared Path' R6-9 and 'Crossing Arrows' W8-23	No.	7	\$ 450.00	\$ 3,150.00
	c) 'Shared Path' R6-9, 'Crossing Arrows' W8-23 and 'On Side Road' W8-3R	No.	1	\$ 450.00	\$ 450.00
	d) Line Marking	Item	1	\$ 10,000.00	\$ 10,000.00
5.00	<b>Landscaping/Reinstatement</b>				
5.01	Supply and lay turf and fertilizer to 600 mm either side of path where possible	m <sup>2</sup>	500	\$ 12.00	\$ 6,000.00
5.02	Supply and spread grass seed and fertilizer to disturbed areas (prov. qty.)	Item	1	\$ 2,000.00	\$ 2,000.00
5.03	Supply and install tree root protection (as required)	Item	1	\$ 3,000.00	\$ 3,000.00
5.04	Clean up and disestablishment	Item	1	\$ 8,000.00	\$ 8,000.00
6.00	<b>Misc</b>				
6.01	Bridge construction (ranging from \$800,000 to \$1,000,000)	Item	1	\$ 1,000,000.00	\$ 1,000,000.00
7.00	ESTIMATE AMOUNT (EXCL CONTINGENCY AND GST)				\$ 1,332,667.50
8.00	CONTINGENCY (30%)				\$ 399,800.25
9.00	GST (10%)				\$ 173,246.78
10.00	ESTIMATE AMOUNT (INCL GST)				\$ 1,905,714.53