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City of Bradford MDC
www.bradford.gov.uk
Department of Regeneration and Culture
Strategic Director: Mike Cowlam
BA (Home) Town and Country Planning, Dip M, Dip EPP

Design Office
Transportation and Highways Service
Highways Design Unit
2nd Floor South
Jacobs Well
Nelson Street
Bradford
BD1 5RW

Project
HARD INGS ROAD IMPROVEMENTS

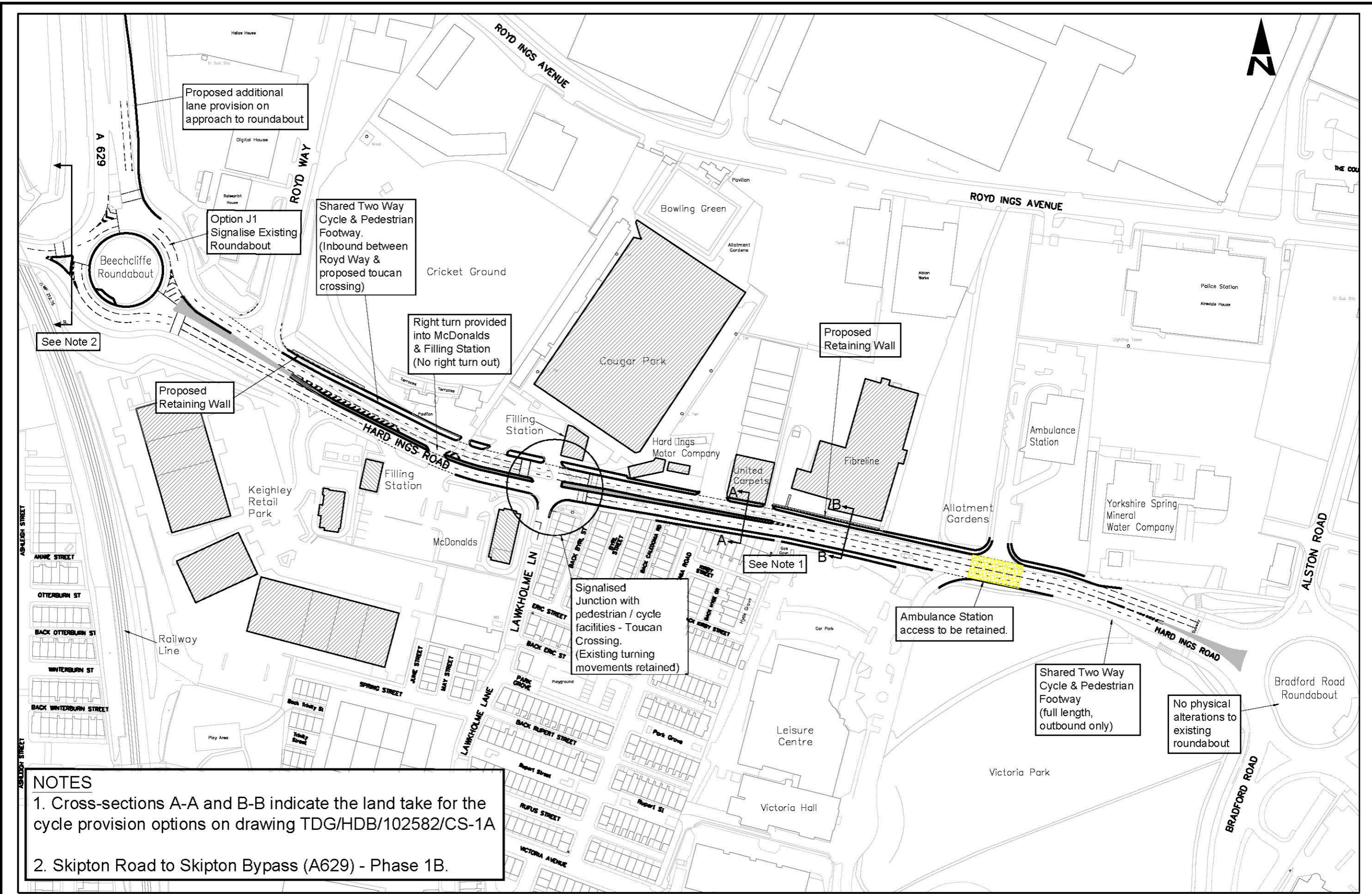
Client

B	Bradford Rd Roundabout lining added	SA	16.02.15
A	Original	SA	20.01.15
Revision		Initis	Date

Design	SA	Drawn	SA	Checked	CEY	Released	
				Approved		Date	01/2015
Scale(s) @ A3 1:2000							
Engineer to Contract							

Drawing Title
**PHASE 1A - LINK OPTION 1
DO NOTHING - BASE PLAN**

Drawing No.
TDG/HDB/102582/OPT-L1B



NOTES

1. Cross-sections A-A and B-B indicate the land take for the cycle provision options on drawing TDG/HDB/102582/CS-1A

2. Skipton Road to Skipton Bypass (A629) - Phase 1B.

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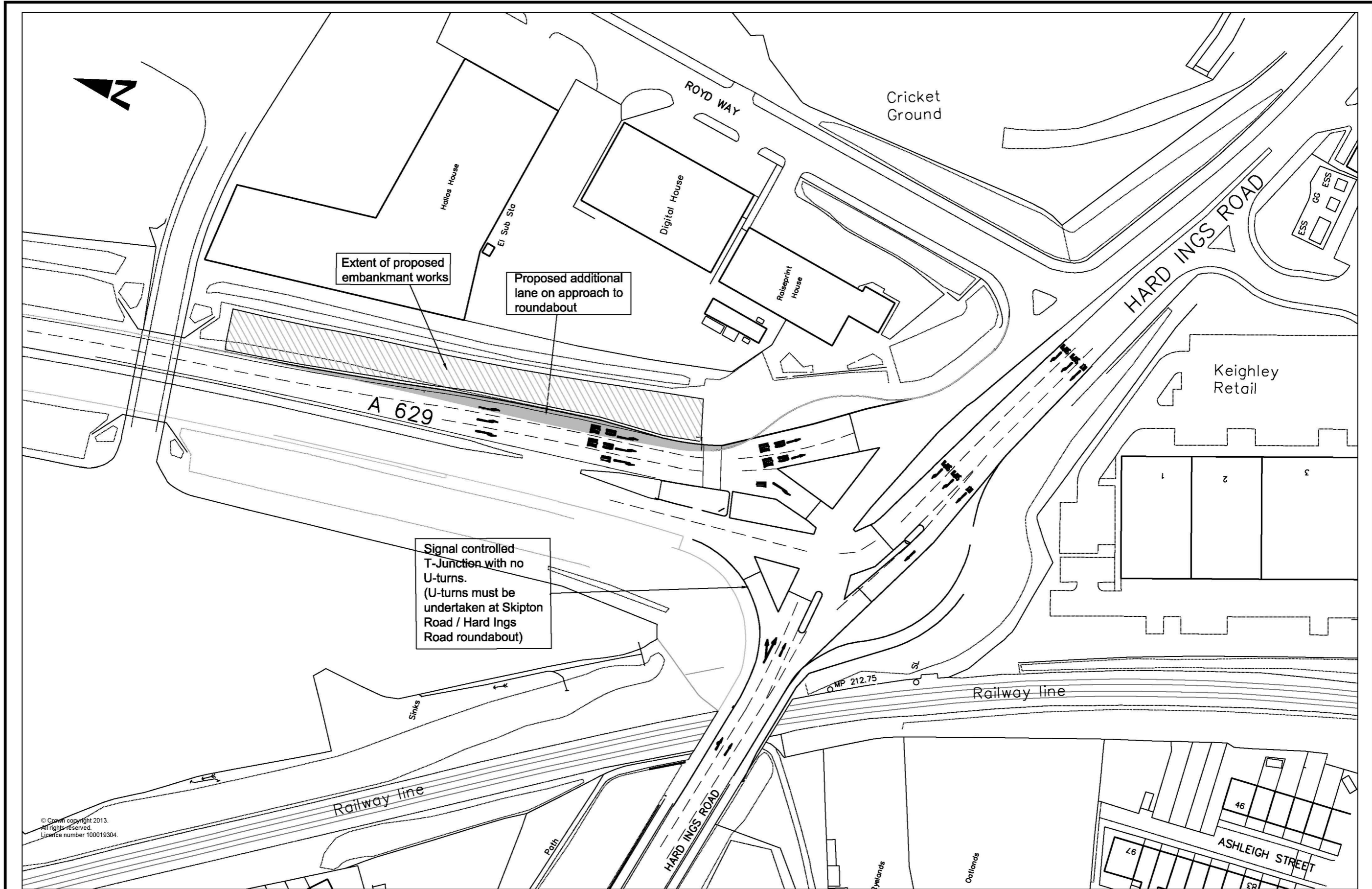
Client

B Additional Text	SA	16.02.15	
A Original	SA	20.01.15	
Revision	Initis	Date	

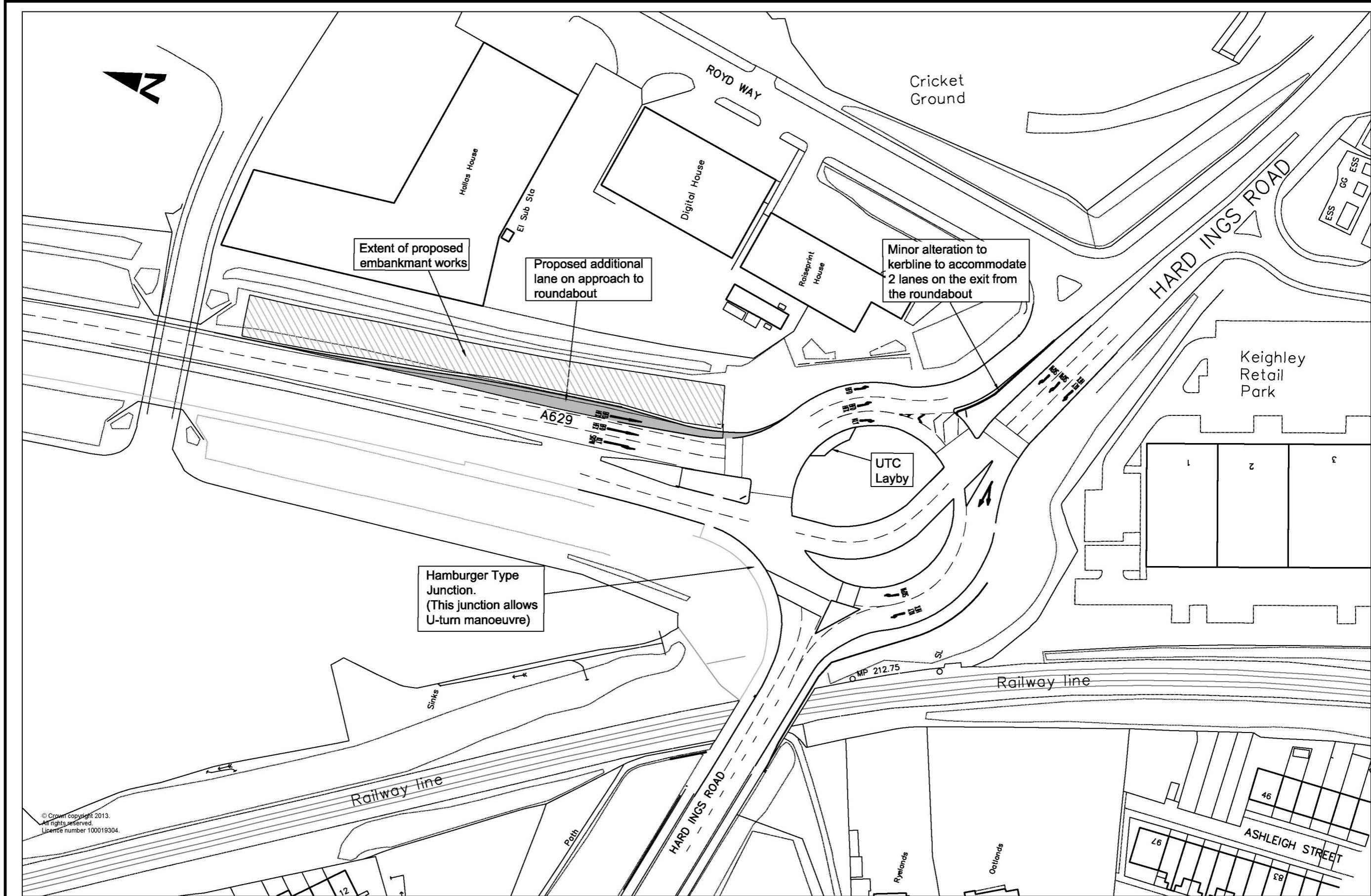
Design	Drawn	Checked	Released
SA	SA	CEY	
Scale(s) @ A3		Approved	Date
1:2000			01/2015
Engineer to Contract			

Drawing Title
PHASE 1A - LINK OPTION 5 COMPOSITE DESIGN (PART DUAL)

Drawing No.
 TDG/HDB/102582/OPT-L5B



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		Client	A	Original	AS	20.01.15	Engineer to Contract	Revision														Drawing No.	TDG/HDB/102582/OPT-J3



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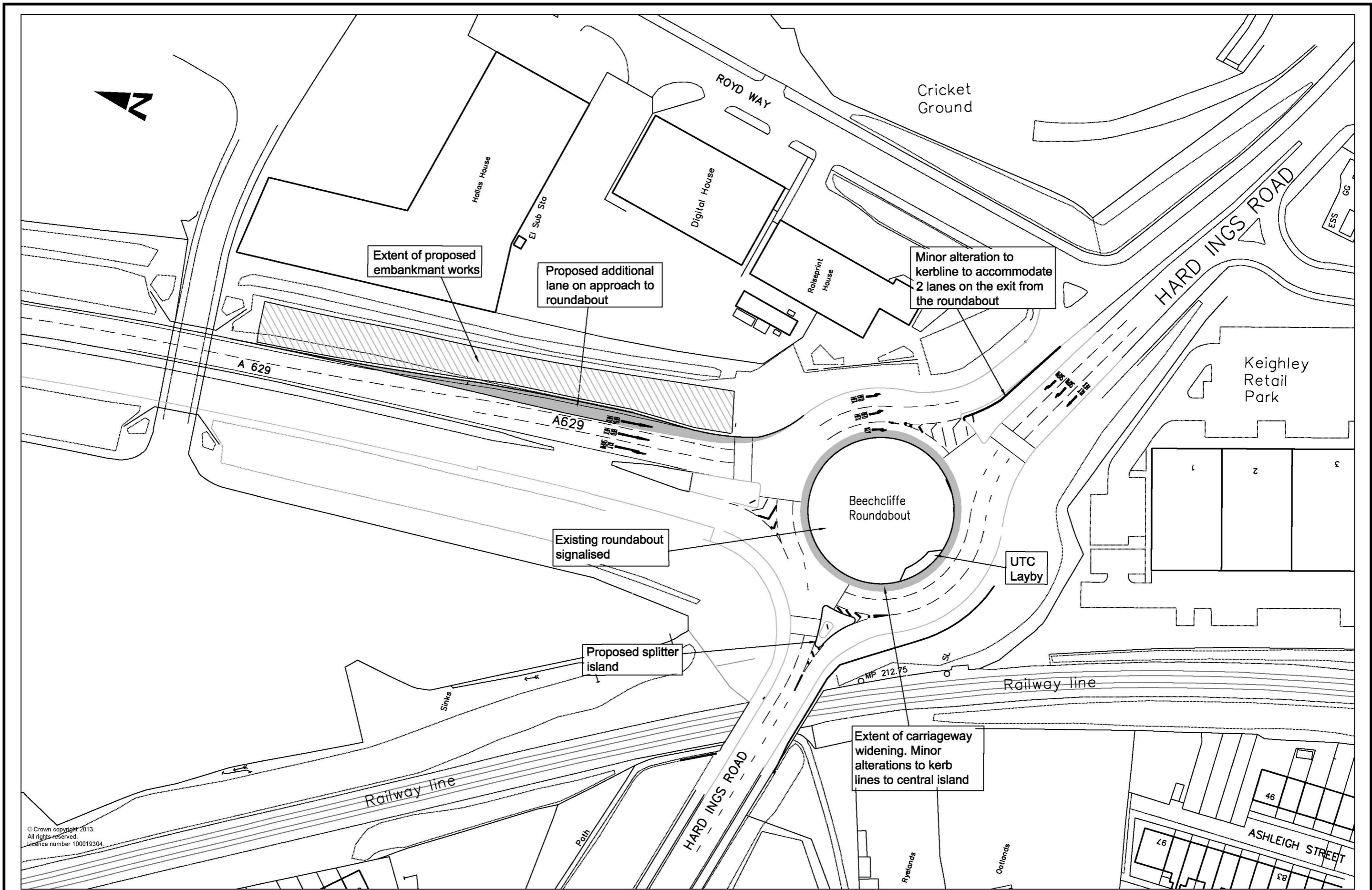
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Project	HARD INGS ROAD IMPROVEMENTS		
Client	A	Original	AS 20.01.15
	Revision		Init Date

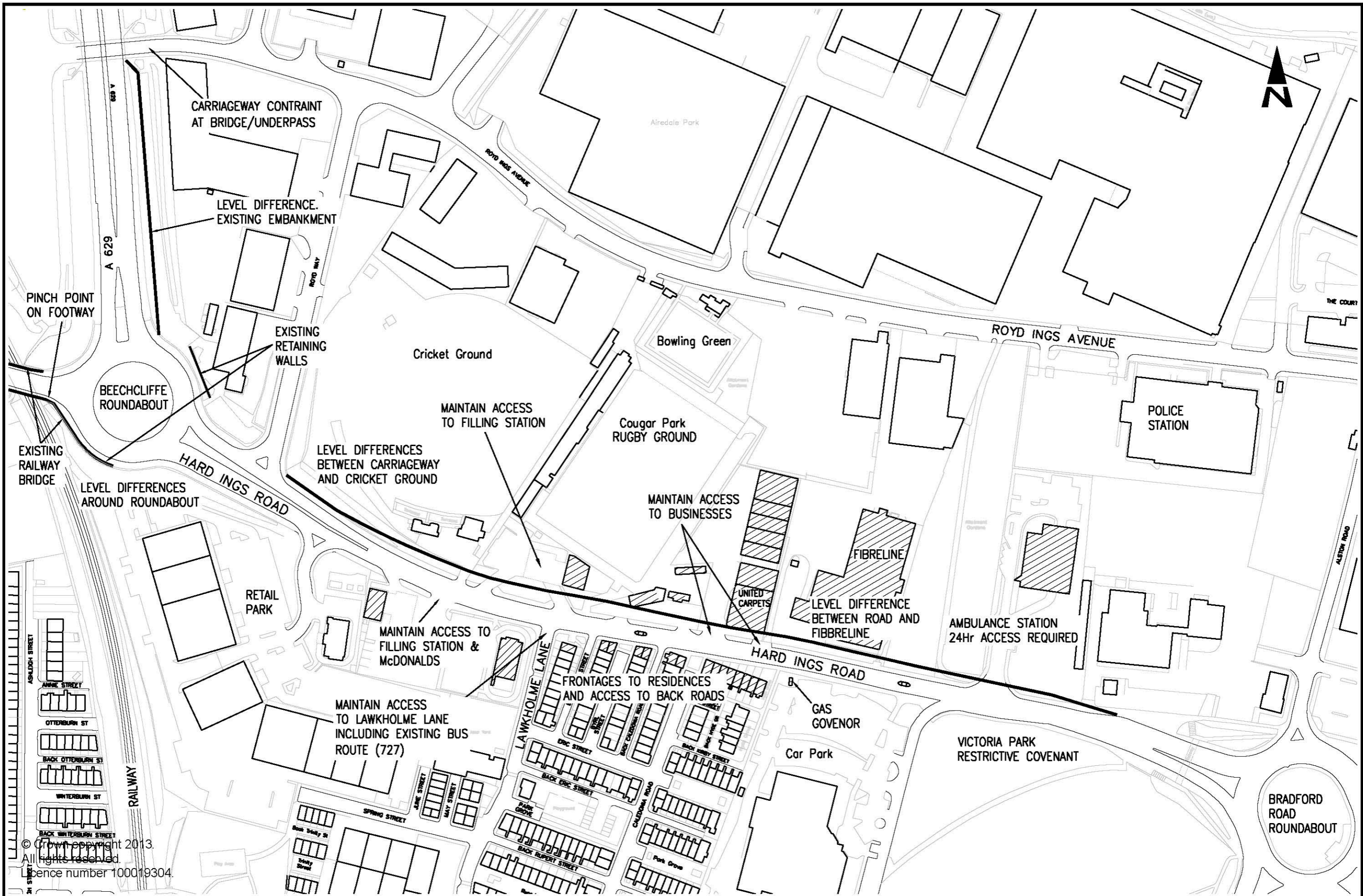
Design	AS	Drawn	AS	Checked	CEY	Released	
Scale(s)	@ A3			Approved		Date	01/2015
	1:1000						
Engineer to Contract							

Drawing Title	BEECHCLIFFE ROUNDABOUT PHASE 1A - JUNCTION OPTION J2 HAMBURGER TYPE ROUNDABOUT
Drawing No.	TDG/HDB/102582/OPT-J2



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		Client A Original SA 20.01.15 Revision Inits Date	Scale(s) @ A3 1:1000 Approved Engineer to Contract	Date 01/2015



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Project
HARD INGS ROAD IMPROVEMENTS

Client

Design	AS	Drawn	AS	Checked	CEY	Released	
Scale(s) @ A3	1:2000	Approved		Date	JAN 2015		
Revision	AS	23/01/15	Engineer to Contract				
	SA	16.02.15					
	A	Original					
		Initis					
		Date					

Drawing Title
CONSTRAINTS DRAWING

Drawing No.
 TDG/HDB/102582/MS-1B

Comparison table for all junction options

	Do Nothing	Option J1	Option J2	Option J3
Description		Existing roundabout with signal control and minor alterations to kerbs lines to central island	Signal controlled roundabout - Hamburger Type	Signal controlled 'T' Junction
Cost (including 44% OB)	No Change	£6.6m (including Hard Ings Road improvements)	-	-
Traffic (Opening Year 2017)				
Total Travel Time (h) AM	455	375	438	462
PM	479	352	381	385
Delays (sec/km) AM	86	46	67	82
PM	110	50	59	61
Network Average AM	82	54	76	88
Queue length (vehs) PM	98	53	64	65
Traffic (Design Year 2026)				
Total Travel Time (h) AM	695	548	Not tested since will give less benefits compared to Do Nothing in AM Peak imminently beyond opening year	Not tested since giving less benefit compared to Do Nothing in AM Peak in opening year
PM	718	502		
Delays (sec/km) AM	157	76		
PM	189	74		
Network Average AM	182	126		
Queue length (vehs) PM	196	113		
Summary Positive Aspects	No Cost	Least Cost. Minor junction re-modelling Significant reduction in travel times, delays and network average queue lengths in opening and design year U-turn manoeuvres can be accommodated within junction layout Junction option can be accommodated within the existing junction footprint	U-turn manoeuvres can be accommodated within junction Junction option can be accommodated within the existing junction footprint	Junction option can be accommodated within the existing junction footprint

Appendix 7 (cont.)

<p>Negative Aspects</p>		<p>No cycle facility provision within the junction Embankment works required to accommodate additional lane on A629 approach to roundabout</p>	<p>Most expensive compared with option J1 due to significant junction remodelling Fails to give benefits beyond the opening year 2017 No cycle facility provision within the junction Embankment works required to accommodate additional lane on A629 approach to roundabout</p>	<p>More expensive compared with option J1 due to significant junction remodelling Fails to give benefits in the opening year 2017 No cycle facility provision within the junction Embankment works required to accommodate additional lane on A629 approach to roundabout U-turn manoeuvres must be undertaken at the Skipton Road / Hard Ings Road roundabout with significant implications on queue lengths on this approach to the Beechcliffe junction</p>
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