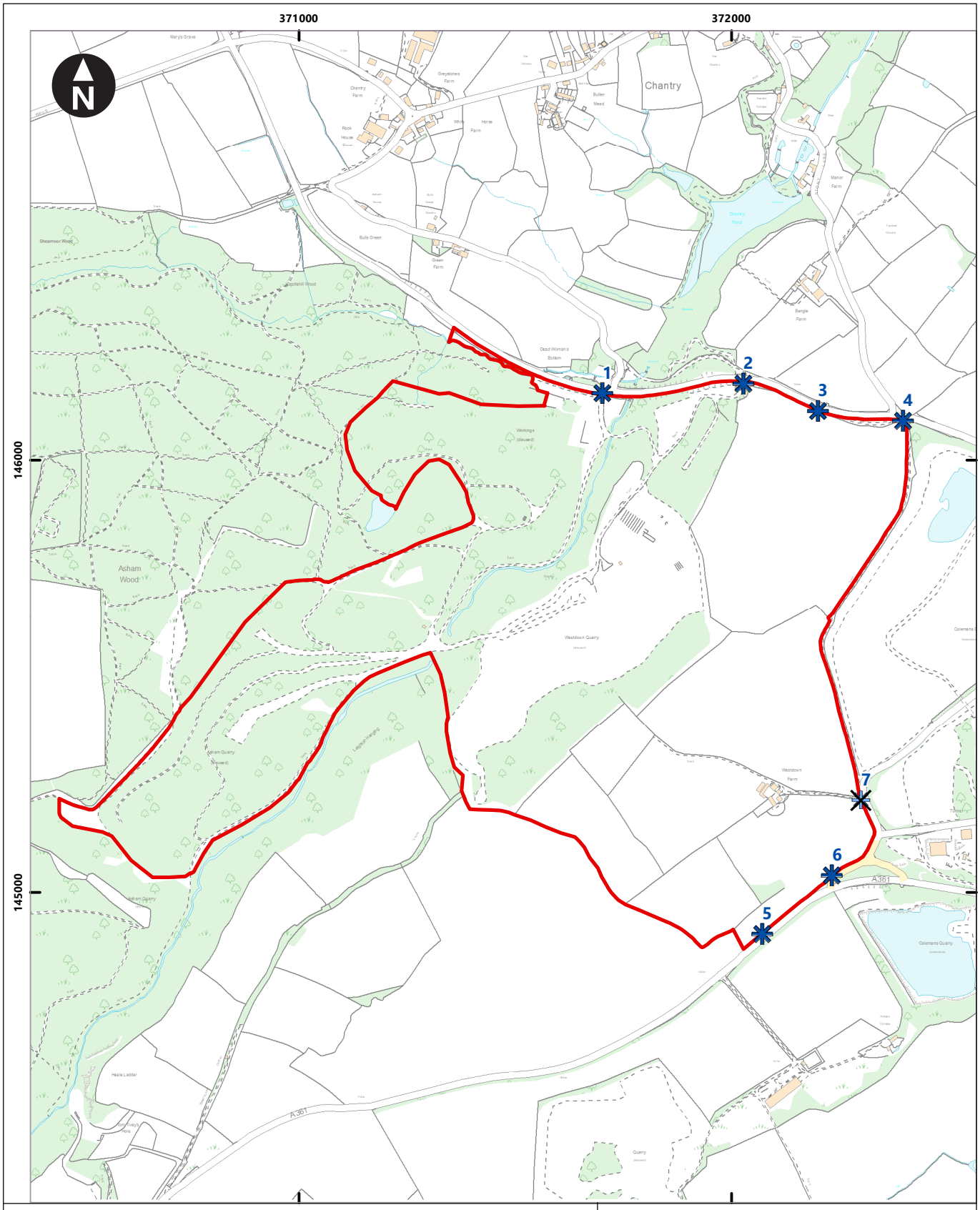
Figures



Key

Study area

Access location

Access not considered in this report

0 100 200 300 400 500 600 700 m

Scale at A4: 1:12,500

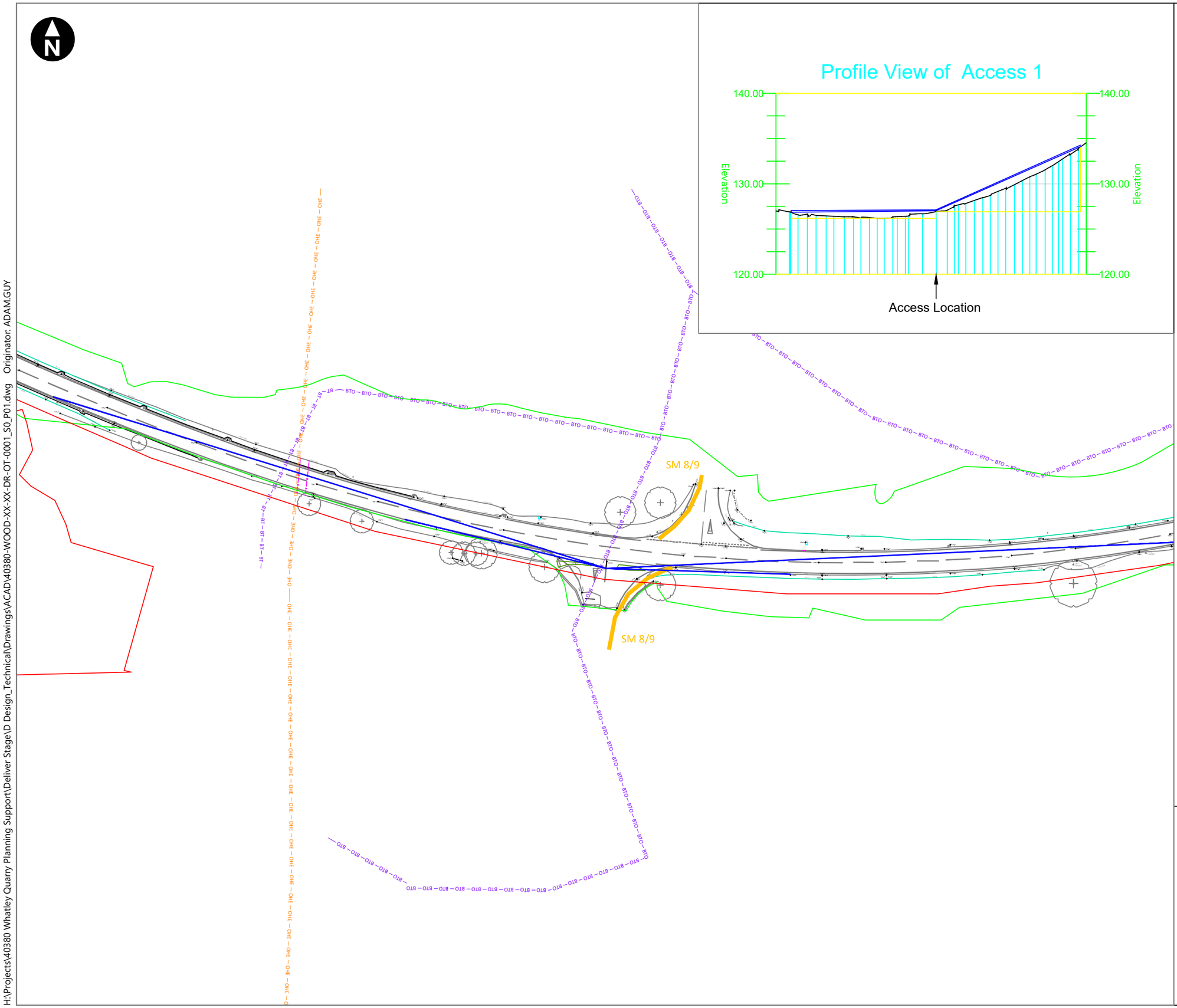
Westdown Quarry - Access Options

Figure 1.1
Location plan

January 2021

wood.

H:\Projects\40380 Whatley Quarry Planning Support\Deliver Stage\D Design_Technical\Drawings\ArcGIS\40380-WOOD-XX-XX-FG-OT-0001_S0_P01.1.mxd Originator: jacqui.parkin



Key

- 2.4 x 160m visibility splay
- PRoW SM 8/9
- BT Overhead services
- Overhead electricity services
- Overhead line
- Trees
- Highway boundary
- Site boundary

0 m 50 m

Scale 1:1000 @ A3

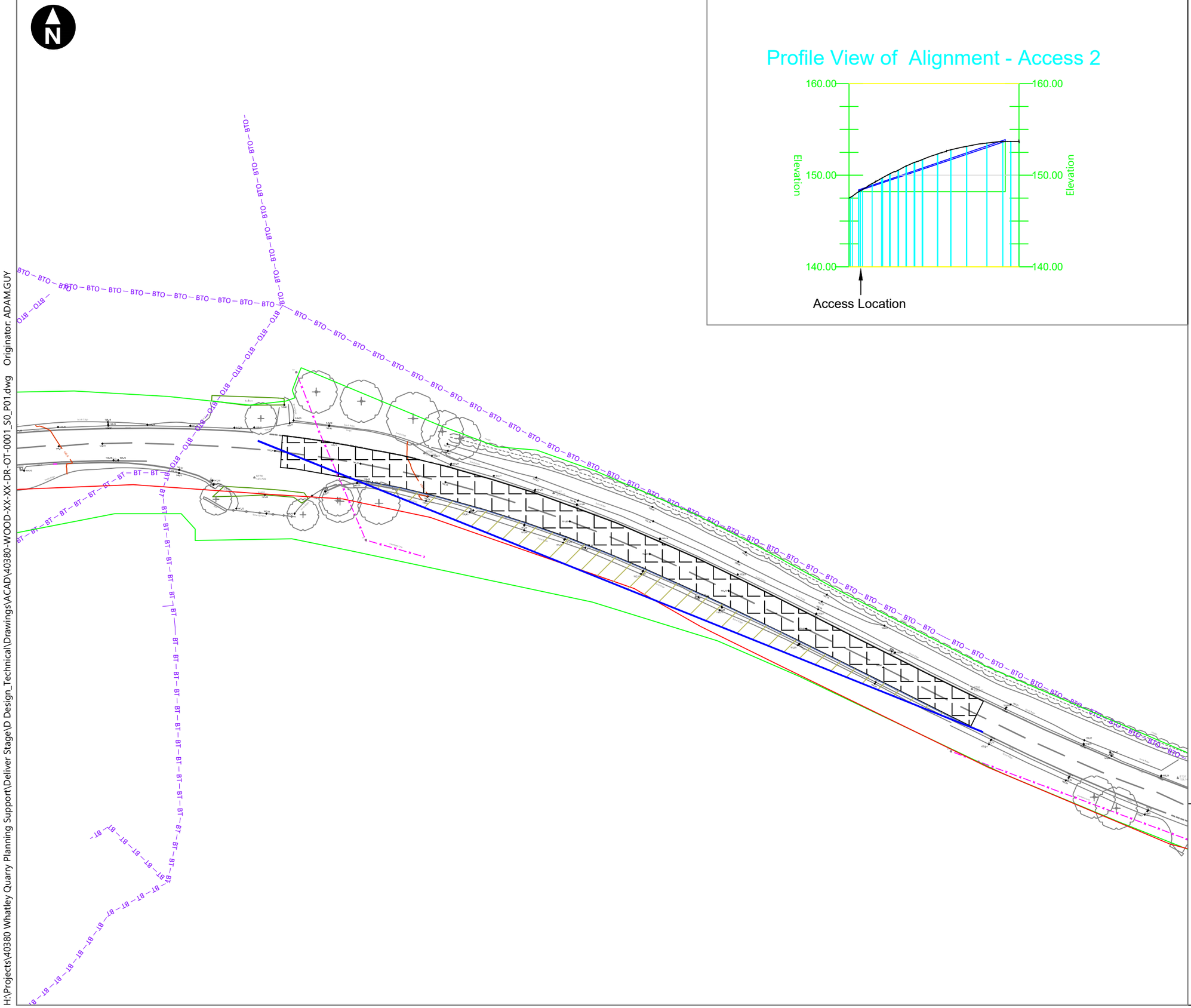
Westdown Quarry - Access Options

Figure 3.1
Access 1 scheme

January 2021

wood.

H:\Projects\40380 Whatley Quarry Planning Support\Deliver Stage\D Design_Technical\Drawings\ACAD\40380-WOOD-XX-XX-DR-OT-0001_S0_P01.dwg Originator: ADAM.GUY



Key

- 2.4 x 160m visibility splay
- 160m forward visibility
- Area to be reprofiled
- BT Services
- BT Overhead services
- Overhead line
- Trees
- Highway boundary
- Highway land required for visibility
- Site boundary

0 m 40 m

Scale 1:750 @ A3

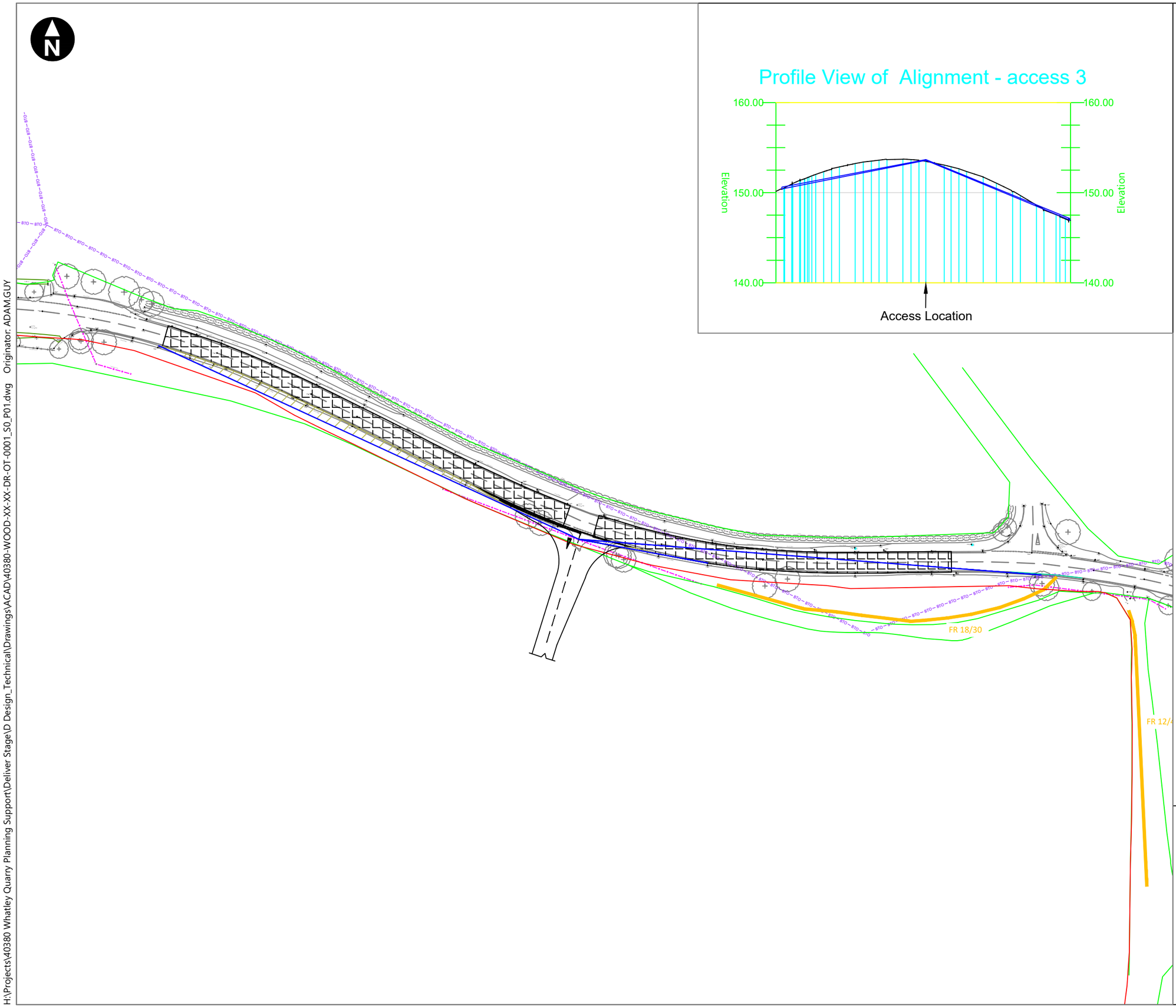
Westdown Quarry - Access Options

Figure 3.2
Access 2 scheme- entrance only

January 2021

wood.

H:\Projects\40380 Whatley Quarry Planning Support\Deliver Stage\D Design_Technical\Drawings\ACAD\40380-WOOD-XX-XX-DR-OT-0001_S0_P01.dwg Originator: ADAM.GUY

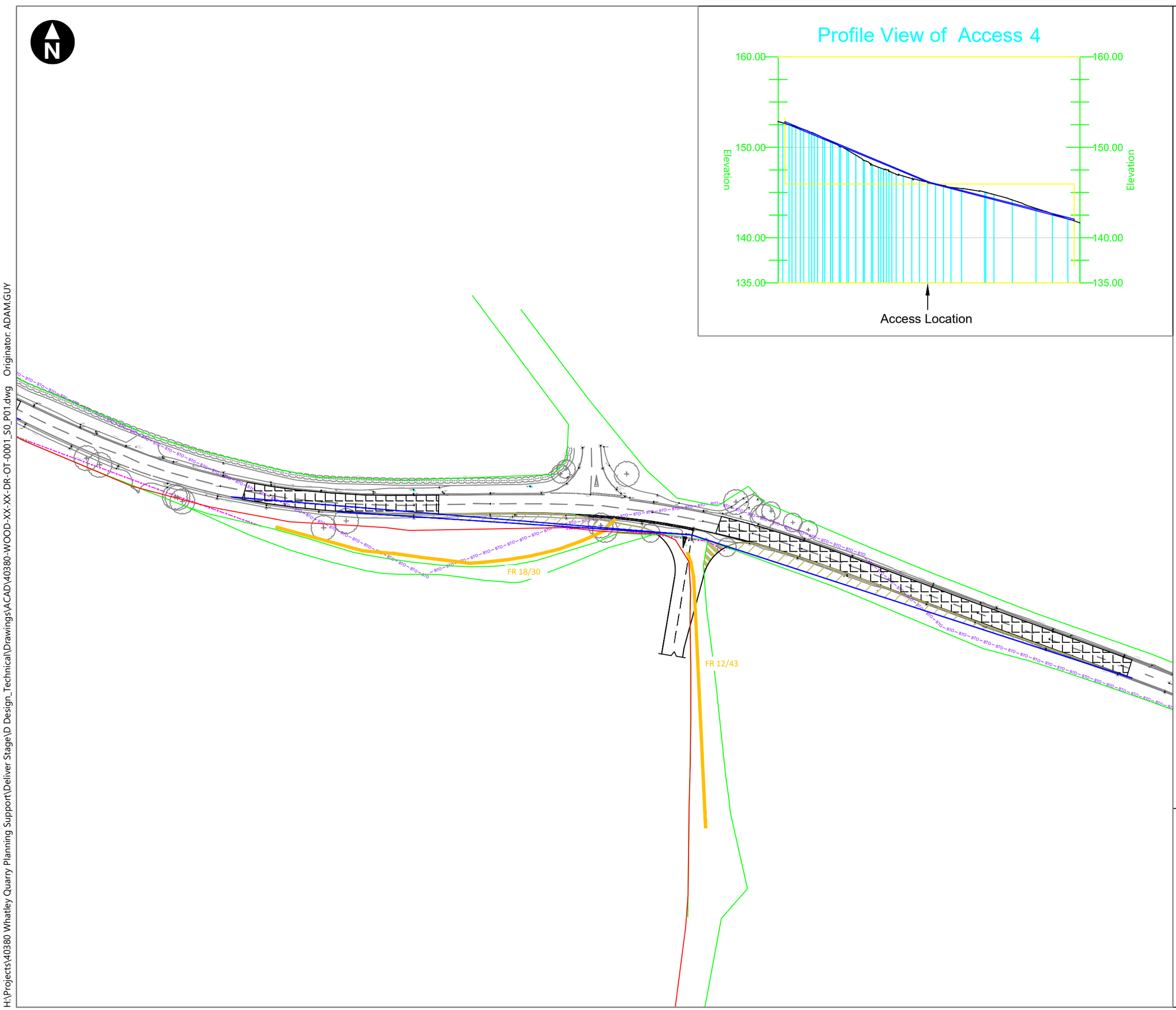


Westdown Quarry - Access Options

Figure 3.3
Access 3 scheme

January 2021

wood.



Key

- 2.4 x 160m visibility splay
- Access design
- BT overhead services
- Overhead line
- Trees
- Highway boundary
- PRoW FR 18/30 and FR 12/43
- Area to be reprofiled
- Highway land required for visibility
- Third party land required
- Site boundary

0 m 50 m

Scale 1:1250 @ A3

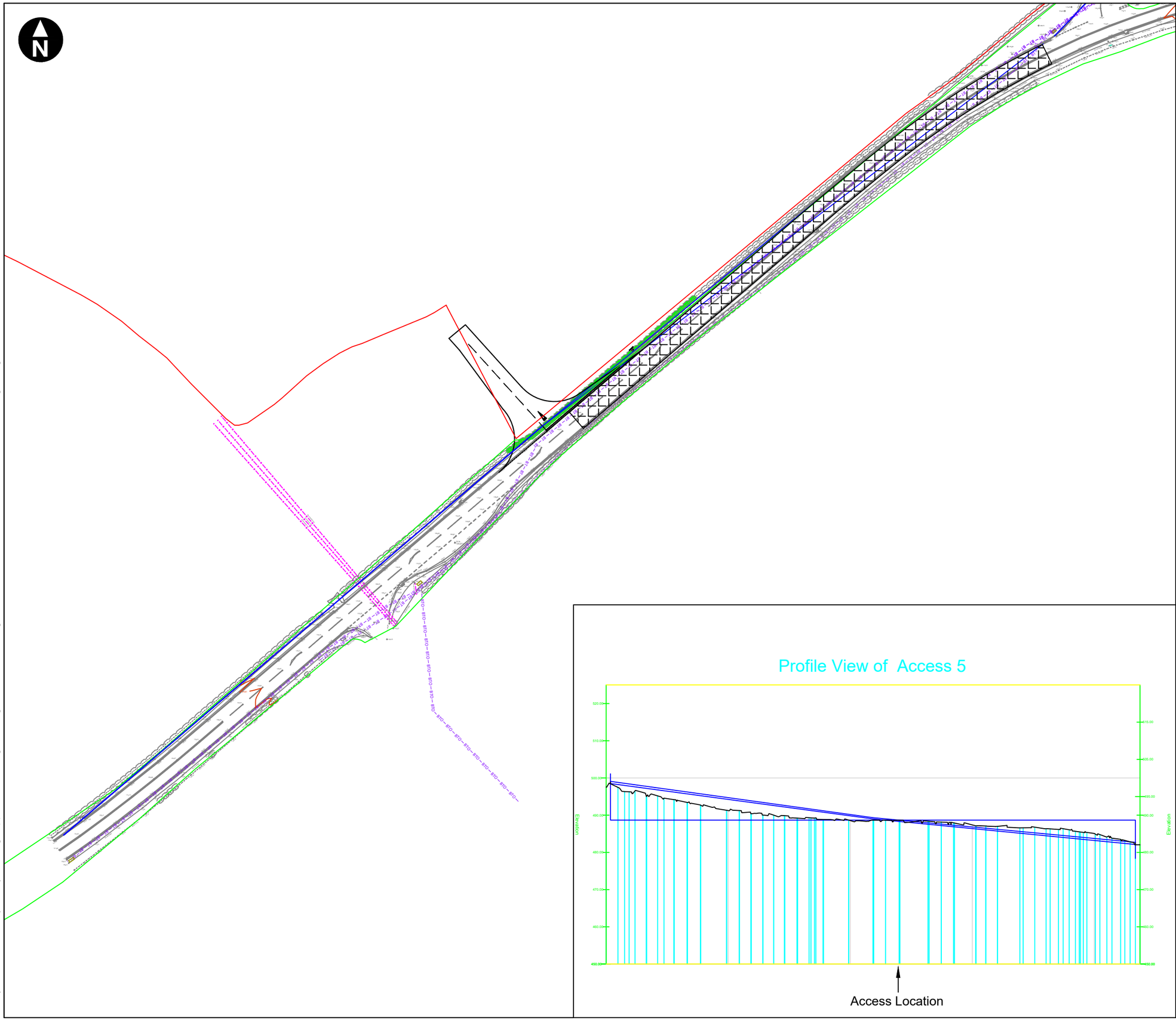
Westdown Quarry - Access Options

Figure 3.4
Access 4 scheme

January 2021

wood.

H:\Projects\40380 Whatley Quarry Planning Support\Deliver Stage\D Design_Technical\Drawings\ACAD\40380-WOOD-XX-XX-DR-OT-0001_S0_P01.dwg Originator: ADAM.GUY



0 m 50 m

Scale 1:1250 @ A3

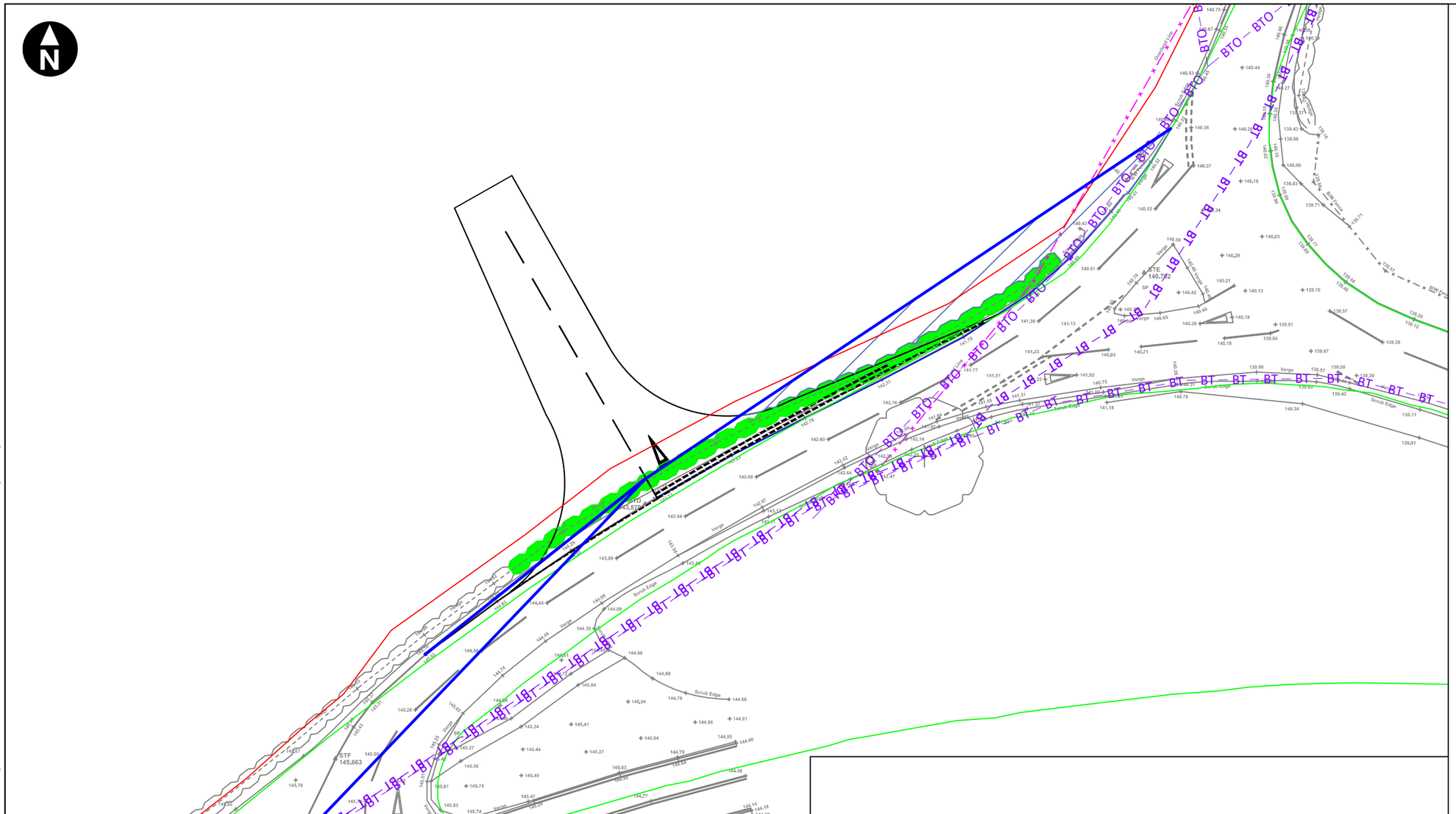
Westdown Quarry - Access Options

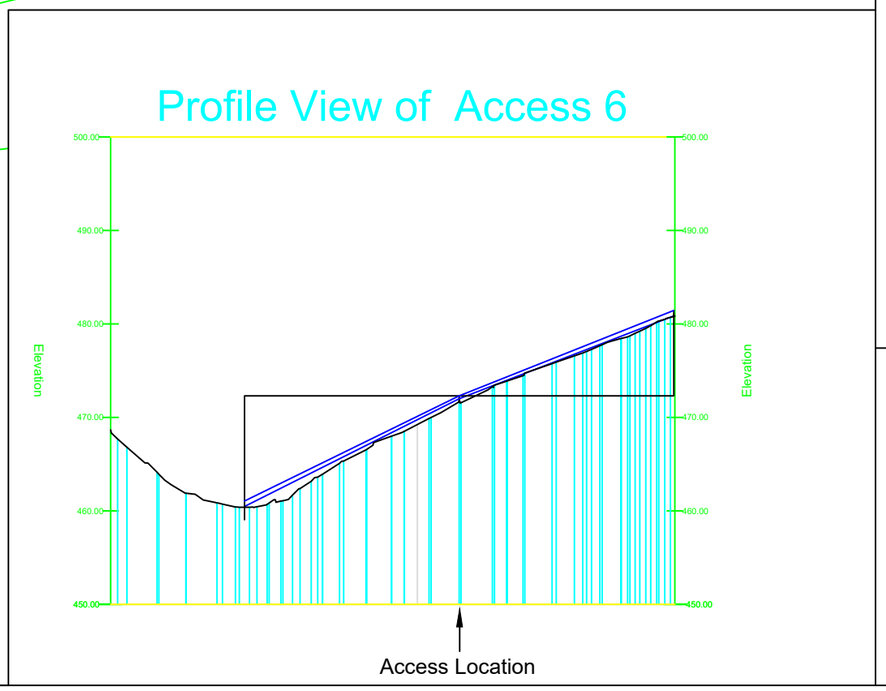
Figure 3.5
Access 5 scheme

January 2021

wood.

H:\Projects\40380 Whatley Quarry Planning Support\Deliver Stage\D Design_Technical\Drawings\ACAD\40380-WOOD-XX-XX-DR-OT-0002_S0_P01.dwg Originator: ADAM.GUY





Key

- 2.4m x 70m visibility splay
- Access design
- BT overhead services
- BT services
- Overhead line
- Hedgerow required to be removed
- Trees
- Highway boundary
- Vegetation clearance
- Site boundary

0 m — 30 m

Scale 1:500 @ A3

Westdown Quarry - Access Options

Figure 3.6
Access 6 scheme

January 2021

wood.

H:\Projects\40380 Whatley Quarry Planning Support\Deliver Stage\D Design_Technical\Drawings\ACAD\40380-WOOD-XX-XX-DR-OT-0002_S0_P01.dwg Originator: ADAM.GUY

Appendix A
Initial Access Options Assessment

Summary of initial access options assessment for Westdown Quarry

The four access locations were considered in AutoCAD LIDAR and OS mapping. The access locations were assessed using the AutoCAD model to understand the suitability of each access with regards to vertical and horizontal visibilities based on the requirements set out in the Design Manual for Roads and Bridges (DMRB) CD 109 (formerly TD 9/93). Based on the speed limit, a horizontal junction visibility splay of 215m is required to the left and right. Where there are difficulties in achieving this due to the visibility splay being partially in third party land or due to bends or dips in the road, consideration has been given to a speed limit reduction which results in a reduced length of visibility splay. A speed limit reduction would need to be negotiated with the highway authority.

The results of the initial access options for Westdown Quarry as previously reported to Hanson are set out in **Table 1.1**.

Table 1.1 Initial access options assessment based on LIDAR data and OS mapping

Access	Proposed Use	Left Visibility	Right Visibility	Comments
North Western existing access (Access 1)	Exit	215m	160m	• Verge trimming will be needed within the highway boundary to the west to maintain the 215m visibility; • To the east the vertical the visibility is acceptable, however the visibility splay required to achieve 215m will enter third party land on the opposite side of the carriageway. Therefore, a speed limit reduction to 50mph will be needed for which the visibility splay requirements are reduced to 160m; • 160m visibility to the east can be achieved by verge trimming; • PRoW in the vicinity of this access crosses the internal access and crosses the highway at the access location, therefore significant mitigation is required to cater for PRoW users; • At this stage the presence of other statutory services is not known; and • Impacts on the ecological corridor.
South Eastern existing access (Access 2)	Entry		160m	• A speed limit reduction to 50mph will be needed due to constraints in achieving the required 215m visibility splay; • Forward visibility has been assessed to 160m; • The vertical alignment of the road limits visibility from 30m onwards; • The vertical alignment of the road would have to be re-profiled to achieve the desired visibility constraints; this would be needed over 120m with a maximum a depth of 1.3m; • Verge trimming will also be needed to maintain visibility; and • At this stage the presence of other statutory services is not known.
Field Gate Access (Access 3)	Exit	160m	160m	• In both directions the visibility splay is limited by the vertical alignment of the road. • To the east, visibility is limited at 50m. To the west, visibility is limited at 30m.

Access	Proposed Use	Left Visibility	Right Visibility	Comments
				• A longer visibility splay could be achieved through reprofiling the road. This could be minimized through a speed limit reduction also. • To the east, 37m of road would need to be re-profiled to achieve a 160m visibility splay at a maximum depth of 0.75m. • To the west, 114m of road would need to be re-profiled to achieve a 160m visibility splay at a maximum depth of 1m. • Verge trimming will also be needed to maintain visibility. • Telegraph poles are located in the visibility splay in both directions. At this stage the presence of other statutory services is unknown.
Field Gate Access (Access 4)	Exit	160m	160m	• A 215m visibility splay is not achievable and a speed limit reduction to 50mph would be needed; • There are small encroachments into the vertical visibility splay to the east (0.2m); • The visibility splay to the east would also require third party land take and the removal of trees and hedgerow; • Visibility to the west would require verge trimming to maintain visibility; • Telegraph poles are located in the visibility splay in both directions. At this stage the presence of other statutory services is not known; and • There is a Public Right of Way (PRoW) in the vicinity of this access. Discussion with the PRoW officer would be required to ascertain the implications.

Appendix B
Estimated Costs

ESTIMATE SUMMARY SHEET
BASIS OF COSTINGS - ASSUMPTIONS / EXCLUSIONS
PROJECT: 40380 - Westdown Quarry

1 BASIS OF COSTINGS

1.01	Base Date	3Q20
1.02	Basis of Procurement	Competitively Tendered
1.03	Location	Somerset, England
1.04	Class of Estimate	Feasibility

2 EXCLUSIONS (UNLESS OTHERWISE STATED)

2.01 Tender Price Inflation
2.02 VAT
2.03 Capital Allowances recovery
2.04 Planning constraints
2.05 Land / property purchase costs
2.06 Party Wall / Rights of Light costs
2.07 Payments to adjacent property owners or tenants for access or disruption
2.08 Finance costs, Planning and Building Regulations Application fees
2.09 Costs associated with any Section 106 / 278 agreements & CIC
2.10 Decommission / remove / divert existing services (unless stated otherwise)
2.11 Services/infrastructure diversion or upgrades
2.12 Costs associated with any contamination or invasive plant species
2.13 Works to existing boundary walls or beyond the boundary of the site.
2.14 Costs associated with archaeological investigations and / or discoveries
2.15 Costs associated with ecological requirements and / or constraints
2.16 Removal of asbestos and other hazardous materials or contaminated ground or ordnance.
2.17 Significant site levelling and grading, retaining walls etc.
2.18 Abnormal foundations e.g. ground water, major obstructions etc.
2.19 Phasing of the Works or Restricted working hours

3 ASSUMPTIONS

3.01 Client Contingency included at 10.0%
3.02 Professional, legal and other consultancy fees allowance of 22.0%
3.04 Allowance for unmeasured items & small quantity of work 10%
3.05 Preliminaries and General Items 25.0% & 35%

4 DRAWINGS/PFD's

4.01 40380 north section - access 2; received 14th Nov. 2019
4.02 40380 north section - access 3; received 18th Sept. 2020
4.03 40380 north section - access 4; received 14th Nov. 2019
4.04 south section - access 5; received 14th Nov. 2019
4.05 south section - access 6; received 14th Nov. 2019
4.06 south section -access6 profile; received 14th Nov. 2019

5 SUPPLIER QUOTES

5.1
5.2

6 CHECKLIST

6.1	Price Database rates adjusted to base date ?	YES
6.2	Price Database rates consider Contract Value/complexity/location/General Items ?	YES
6.3	Method of Procurement considered and timescales ?	YES
6.4	Principal Quantities & rates check undertaken ?	YES

Prepared by; Gregory Hilary	Date 30th Sep 2020
Reviewed by; Nigel T Budge	Date 30th Sep 2020

Filename - "Estimate Summary Sheet.xls"

PROJECT: 40380 - Westdown Quarry

CAPEX GRAND SUMMARY

SERIES	DESCRIPTION		Access 1	Access 2	Access 3	Access 4	Access 5	Access 6
			0%	25%	25%	25%	25%	35%
100	Preliminaries and General Items		£0	£153,960	£241,083	£106,203	£159,088	£25,112
200	Site Clearance							
300	Fencing		£0	£0	£2,431	£1,884	£1,884	£1,884
400	Road restraint system		£0	£0	£0	£0	£0	£0
500	Drainage and Service Ducts		£0	£0	£0	£12,576	£148,118	£8,479
600	Earthworks		£0	£492,016	£732,654	£258,730	£282,909	£15,586
700	Pavements		£0	£67,840	£131,928	£110,191	£142,810	£36,543
1100	Kerbs, Footways and Paved Areas		£0	£0	£8,903	£2,631	£2,631	£2,631
1200	Traffic Signs and Road Markings		£0	£0	£750	£179	£151	£102
3000	Trees and Landscaping							
1400	Electrical Work for Road Lighting and Traffic Signs							
1500	Motorway Communications							
1600	Piling and Embedded Retaining Walls							
1700	Structural Concrete							
1800	Steelwork for Structures							
1900	Protection of Steelwork Against Corrosion							
2000	Waterproofing for Structures							
2100	Bridge Bearings							
2300	Bridge Expansion Joints and Sealing of Gaps							
2400	Brickwork, Blockwork and Stonework							
2500	Special Structures							
2700	Accommodation Works, Works for Statutory Undertakers, Provisional Sums and Prime Cost Items							
3000	Landscaping and Ecology							
	Allowance for unmeasured items/small quantities		£0	£55,986	£87,667	£38,619	£57,850	£6,523
	Construction Cost Sub-Total		**£0**	**£769,802**	**£1,205,415**	**£531,014**	**£795,442**	**£96,861**
	Project On-Costs	**22.0%**	£0	£169,357	£265,191	£116,823	£174,997	£21,309
	CAPEX SUB-TOTAL		**£0**	**£939,159**	**£1,470,607**	**£647,837**	**£970,440**	**£118,170**
	CONTINGENCY	**10.0%**	**£0**	**£93,916**	**£147,061**	**£64,784**	**£97,044**	**£11,817**
	CAPEX TOTAL (EXCLUDING VAT)		**£0**	**£1,033,075**	**£1,617,667**	**£712,620**	**£1,067,483**	**£129,987**
	EST. ACCURACY LOWER LIMIT	**-15%**	**£0**	**£878,114**	**£1,375,017**	**£605,727**	**£907,361**	**£110,489**
	EST. ACCURACY UPPER LIMIT	**30%**	**£0**	**£1,342,997**	**£2,102,968**	**£926,406**	**£1,387,729**	**£168,983**

Project: 40380 Westdown Quarry Planning Support
Title: North section access design - Access 1
Drawing:
Notes -

Base Date Spon's 2019	2Q18	326
Estimate Base Date	3Q20	332
Location Factor	BCIS	1

Highway Geometrics Costs

Series	Item Description	Assumptions	Quantity	Unit	Rate	Rate (+uplift)	Price	Comment
300	**Series 300 - Fencing**							
300	Timber rail 1,4m high, four rails		0	m	£15.60	£15.89	£0	Spon's 2019 pg 373
400	**Series 400 - Road restraint Systems**							
400	Group P1, curved not exceeding 50m radius			m	£195.96	£199.57	£0	Spon's 2019 pg 377
500	**Series 500 - Drainage and Service Ducts**							
500	150mm clay pipe, average depth 1.50m			m	£74.67	£76.04	£0	Spon's 2019 pg 382
500	150mm clay pipe, Type Z concrete surround			m	£61.82	£62.96	£0	Spon's 2019 pg 382
500	900 x 700 chamber, 1500mm to invert		0	nr	£1,372.67	£1,397.93	£0	Spon's 2019 pg 389
500	Precast concrete gully			nr	£674.75	£687.17	£0	Spon's 2019 pg 397
600	**Series 600 - Earthworks**							
600	General excavation using backacters, unacceptable material		0	m^3	£7.99	£8.14	£0	Spon's 2019 pg 407
600	E.O. Excavation of existing tarmac			m^3	£15.60	£15.89	£0	Spon's 2019 pg 408
600	Disposal off site of excavated material		0	m^3	£35.00	£35.64	£0	
600	Imported graded material; 400mm		0	m^3	£31.74	£32.32	£0	Spon's 2019 pg 411
700	**Series 700 - Pavement**							
700	Granular sub-base, 200mm deep			m^3	£40.91	£41.66	£0	Spon's 2019, page 425
700	DBM, base 200mm			m^2	£35.47	£36.12	£0	Spon's 2019, page 426
700	DBM Binder course 50mm			m^2	£13.90	£14.16	£0	Spon's 2019, page 426
700	DBM Surface 30mm			m^2	£9.83	£10.01	£0	Spon's 2019, page 426
700	Cutting existing; road surfacing			m	£44.60	£45.42	£0	Spon's 2019, page 428
700	Cold milling of existing Pavement, 75mm depth removal of existing			m^2	£19.04	£19.39	£0	Spon's 2019, page 429
700	Tack coat , bituminous spray			m^2	£0.93	£0.95	£0	Spon's 2019, page 429
700	Regulating course			sum	£500.00	£500.00	£0	
1100	**Series 1100 - Kerbs, Footways & Paved Areas**							
1100	Foundation; (300x150 mm)			m	£5.90	£6.01	£0	Spon's 2019, page 431
1100	Kerbs (straight), 125mm bull nose (125x150 mm)			m	£16.09	£16.39	£0	Spon's 2019, page 431
1100	Kerbs (curved), 125mm bull nose (125x150 mm)			m	£15.55	£15.84	£0	Spon's 2019, page 431
1100	Sub-base to Footpath; 150mm thick hardcore			m^2	£5.86	£5.97	£0	Spon's 2019, page 434
1100	Footpath/Ped island surfacing			m^2	£23.81	£24.25	£0	Spon's 2019, page 435
1200	**Series 1200 - Traffic Signs & Road Markings**							
1200	Intermittent line , 200mm wide with 4m line and 2m gap			m	£1.01	£1.03	£0.00	Spon's 2019, page 441
1200	Stop Line, 200mm wide with 0.6m line and 0.3m gap			m	£2.80	£2.85	£0.00	Spon's 2019, page 441
1200	Stop Line, 100mm wide with 0.6m line and 0.3m gap			m	£1.28	£1.30	£0.00	Spon's 2019, page 441
1200	Triangle			Nr	£12.12	£12.34	£0.00	Spon's 2019, page 442
1200	Self Righting Bollard			No	£225.64	£229.79	£0.00	
				SUB TOTAL			£0	
	Allowance for unmeasured items & small quantity of work					10%	£0	
				Overall Total			£0	

Project: 40380 Westdown Quarry Planning Support
Title: North section access design - Access 2
Drawing:
Notes -

Base Date Spon's 2019	2Q18	326
Estimate Base Date	3Q20	332
Location Factor	BCIS	1

wood.

Highway Geometrics Costs

Series	Item Description	Quantity	Unit	Rate	Rate (+uplift)	Price	Comment
300	**Series 300 - Fencing**						
300	Timber rail 1,4m high, four rails	0	m	£15.60	£15.89	£0	Spon's 2019 pg 373
400	**Series 400 - Road restraint Systems**						
400	Group P1, curved not exceeding 50m radius		m	£195.96	£199.57	£0	Spon's 2019 pg 377
500	**Series 500 - Drainage and Service Ducts**						
500	150mm clay pipe, average depth 1.50m		m	£74.67	£76.04	£0	Spon's 2019 pg 382
500	150mm clay pipe, Type Z concrete surround		m	£61.82	£62.96	£0	Spon's 2019 pg 382
500	900 x 700 chamber, 1500mm to invert	0	nr	£1,372.67	£1,397.93	£0	Spon's 2019 pg 389
500	Precast concrete gully		nr	£674.75	£687.17	£0	Spon's 2019 pg 397
600	**Series 600 - Earthworks**						
600	General excavation using backacters, unacceptable material	10,849	m^3	£7.99	£8.14	£88,279	Spon's 2019 pg 407
600	E.O. Excavation of existing tarmac	274	m^3	£15.60	£15.89	£4,359	Spon's 2019 pg 408
600	Disposal off site of excavated material	10,849	m^3	£35.00	£35.64	£386,706	
600	Imported graded material; 400mm	392	m^3	£31.74	£32.32	£12,671	Spon's 2019 pg 411
700	**Series 700 - Pavement**						
700	Granular sub-base, 200mm deep	196	m^3	£40.91	£41.66	£8,166	Spon's 2019, page 425
700	DBM, base 200mm	980	m^2	£35.47	£36.12	£35,400	Spon's 2019, page 426
700	DBM Binder course 50mm	980	m^2	£13.90	£14.16	£13,873	Spon's 2019, page 426
700	DBM Surface 30mm	980	m^2	£9.83	£10.01	£9,811	Spon's 2019, page 426
700	Cutting existing; road surfacing	13	m	£44.60	£45.42	£590	Spon's 2019, page 428
700	Cold milling of existing Pavement, 75mm depth removal of existing		m^2	£19.04	£19.39	£0	Spon's 2019, page 429
700	Tack coat , bituminous spray		m^2	£0.93	£0.95	£0	Spon's 2019, page 429
700	Regulating course		sum	£500.00	£500.00	£0	
1100	**Series 1100 - Kerbs, Footways & Paved Areas**						
1100	Foundation; (300x150 mm)		m	£5.90	£6.01	£0	Spon's 2019, page 431
1100	Kerbs (straight), 125mm bull nose (125x150 mm)		m	£16.09	£16.39	£0	Spon's 2019, page 431
1100	Kerbs (curved), 125mm bull nose (125x150 mm)		m	£15.55	£15.84	£0	Spon's 2019, page 431
1100	Sub-base to Footpath; 150mm thick hardcore		m^2	£5.86	£5.97	£0	Spon's 2019, page 434
1100	Footpath/Ped island surfacing		m^2	£23.81	£24.25	£0	Spon's 2019, page 435
1200	**Series 1200 - Traffic Signs & Road Markings**						
1200	Intermittent line , 200mm wide with 4m line and 2m gap		m	£1.01	£1.03	£0.00	Spon's 2019, page 441
1200	Stop Line, 200mm wide with 0.6m line and 0.3m gap		m	£2.80	£2.85	£0.00	Spon's 2019, page 441
1200	Stop Line, 100mm wide with 0.6m line and 0.3m gap		m	£1.28	£1.30	£0.00	Spon's 2019, page 441
1200	Triangle		Nr	£12.12	£12.34	£0.00	Spon's 2019, page 442
1200	Self Righting Bollard		No	£225.64	£229.79	£0.00	
			SUB TOTAL			£559,856	
	Allowance for unmeasured items & small quantity of work				10%	£55,986	
			Overall Total			£615,842	

Project: 40380 Westdown Quarry Planning Support
Title: North section access design - Access 3
Drawing:
Notes -

Base Date Spon's 2019	2Q18	326
Estimate Base Date	3Q20	332
Location Factor	BCIS	1

Highway Geometrics Costs

Series	Item Description	Quantity	Unit	Rate	Rate (+uplift)	Price	Comment
300	**Series 300 - Fencing**						
300	Timber rail 1,4m high, four rails	153	m	£15.60	£15.89	£2,431	Spon's 2019 pg 373
400	**Series 400 - Road restraint Systems**						
400	Group P1, curved not exceeding 50m radius	0	m	£195.96	£199.57	£0	Spon's 2019 pg 377
500	**Series 500 - Drainage and Service Ducts**						
500	150mm clay pipe, average depth 1.50m	0	m	£74.67	£76.04	£0	Spon's 2019 pg 382
500	150mm clay pipe, Type Z concrete surround	0	m	£61.82	£62.96	£0	Spon's 2019 pg 382
500	900 x 700 chamber, 1500mm to invert	0	nr	£1,372.67	£1,397.93	£0	Spon's 2019 pg 389
500	Precast concrete gully	0	nr	£674.75	£687.17	£0	Spon's 2019 pg 397
600	**Series 600 - Earthworks**						
600	General excavation using backacters, unacceptable material	15,979	m^3	£7.99	£8.14	£130,022	Spon's 2019 pg 407
600	E.O. Excavation of existing tarmac	533	m^3	£15.60	£15.89	£8,466	Spon's 2019 pg 408
600	Disposal off site of excavated material	15,979	m^3	£35.00	£35.64	£569,558	
600	Imported graded material; 400mm	761	m^3	£31.74	£32.32	£24,608	Spon's 2019 pg 411
700	**Series 700 - Pavement**						
700	Granular sub-base, 200mm deep	381	m^3	£40.91	£41.66	£15,859	Spon's 2019, page 425
700	DBM, base 200mm	1,903	m^2	£35.47	£36.12	£68,749	Spon's 2019, page 426
700	DBM Binder course 50mm	1,903	m^2	£13.90	£14.16	£26,941	Spon's 2019, page 426
700	DBM Surface 30mm	1,903	m^2	£9.83	£10.01	£19,053	Spon's 2019, page 426
700	Cutting existing; road surfacing	29	m	£44.60	£45.42	£1,326	Spon's 2019, page 428
700	Cold milling of existing Pavement, 75mm depth removal of existing		m^2	£19.04	£19.39	£0	Spon's 2019, page 429
700	Tack coat , bituminous spray		m^2	£0.93	£0.95	£0	Spon's 2019, page 429
700	Regulating course		sum	£500.00	£500.00	£0	
1100	**Series 1100 - Kerbs, Footways & Paved Areas**						
1100	Foundation; (300x150 mm)	400	m	£5.90	£6.01	£2,403	Spon's 2019, page 431
1100	Kerbs (straight), 125mm bull nose (125x150 mm)	300	m	£16.09	£16.39	£4,916	Spon's 2019, page 431
1100	Kerbs (curved), 125mm bull nose (125x150 mm)	100	m	£15.55	£15.84	£1,584	Spon's 2019, page 431
1100	Sub-base to Footpath; 150mm thick hardcore		m^2	£5.86	£5.97	£0	Spon's 2019, page 434
1100	Footpath/Ped island surfacing		m^2	£23.81	£24.25	£0	Spon's 2019, page 435
1200	**Series 1200 - Traffic Signs & Road Markings**						
1200	Intermittent line , 200mm wide with 4m line and 2m gap		m	£1.01	£1.03	£0.00	Spon's 2019, page 441
1200	Stop Line, 200mm wide with 0.6m line and 0.3m gap		m	£2.80	£2.85	£0.00	Spon's 2019, page 441
1200	Stop Line, 100mm wide with 0.6m line and 0.3m gap		m	£1.28	£1.30	£0.00	Spon's 2019, page 441
1200	Triangle		Nr	£12.12	£12.34	£0.00	Spon's 2019, page 442
1200	Self Righting Bollard - Assume minimum 1 day charge	1	No	£750.00	£750.00	£750.00	
			SUB TOTAL			£876,666	
	Allowance for unmeasured items & small quantity of work				10%	£87,667	
			Overall Total			£964,332	

Project: 40380 Westdown Quarry Planning Support
Title: North section access design - Access 4
Drawing:
Notes -

Base Date Spon's 2019	2Q18	326
Estimate Base Date	3Q20	332
Location Factor	BCIS	1

Highway Geometrics Costs

Series	Item Description	Assumptions	Quantity	Unit	Rate	Rate (+uplift)	Price	Comment
300	**Series 300 - Fencing**							
300	Timber rail 1,4m high, four rails		119	m	£15.60	£15.89	£1,884	Spon's 2019 pg 373
400	**Series 400 - Road restraint Systems**							
400	Group P1, curved not exceeding 50m radius			m	£195.96	£199.57	£0	Spon's 2019 pg 377
500	**Series 500 - Drainage and Service Ducts**							
500	150mm clay pipe, average depth 1.50m		65	m	£74.67	£76.04	£4,943	Spon's 2019 pg 382
500	150mm clay pipe, Type Z concrete surround		55	m	£61.82	£62.96	£3,463	Spon's 2019 pg 382
500	900 x 700 chamber, 1500mm to invert		2	nr	£1,372.67	£1,397.93	£2,796	Spon's 2019 pg 389
500	Precast concrete gully		2	nr	£674.75	£687.17	£1,374	Spon's 2019 pg 397
600	**Series 600 - Earthworks**							
600	General excavation using backacters, unacceptable material		5,353	m^3	£7.99	£8.14	£43,561	Spon's 2019 pg 407
600	E.O. Excavation of existing tarmac		268	m^3	£15.60	£15.89	£4,257	Spon's 2019 pg 408
600	Disposal off site of excavated material		5,353	m^3	£35.00	£35.64	£190,819	
600	Imported graded material; 400mm		622	m^3	£31.74	£32.32	£20,093	Spon's 2019 pg 411
700	**Series 700 - Pavement**							
700	Granular sub-base, 200mm deep		311	m^3	£40.91	£41.66	£12,949	Spon's 2019, page 425
700	DBM, base 200mm		1,554	m^2	£35.47	£36.12	£56,135	Spon's 2019, page 426
700	DBM Binder course 50mm		1,554	m^2	£13.90	£14.16	£21,998	Spon's 2019, page 426
700	DBM Surface 30mm		1,554	m^2	£9.83	£10.01	£15,557	Spon's 2019, page 426
700	Cutting existing; road surfacing		78	m	£44.60	£45.42	£3,552	Spon's 2019, page 428
700	Cold milling of existing Pavement, 75mm depth removal of existing			m^2	£19.04	£19.39	£0	Spon's 2019, page 429
700	Tack coat , bituminous spray			m^2	£0.93	£0.95	£0	Spon's 2019, page 429
700	Regulating course			sum	£500.00	£500.00	£0	
1100	**Series 1100 - Kerbs, Footways & Paved Areas**							
1100	Foundation; (300x150 mm)		119	m	£5.90	£6.01	£713	Spon's 2019, page 431
1100	Kerbs (straight), 125mm bull nose (125x150 mm)		74	m	£16.09	£16.39	£1,206	Spon's 2019, page 431
1100	Kerbs (curved), 125mm bull nose (125x150 mm)		45	m	£15.55	£15.84	£713	Spon's 2019, page 431
1100	Sub-base to Footpath; 150mm thick hardcore			m^2	£5.86	£5.97	£0	Spon's 2019, page 434
1100	Footpath/Ped island surfacing			m^2	£23.81	£24.25	£0	Spon's 2019, page 435
1200	**Series 1200 - Traffic Signs & Road Markings**							
1200	Intermittent line , 200mm wide with 4m line and 2m gap		45	m	£1.01	£1.03	£46.29	Spon's 2019, page 441
1200	Stop Line, 200mm wide with 0.6m line and 0.3m gap		32	m	£2.80	£2.85	£91.25	Spon's 2019, page 441
1200	Stop Line, 100mm wide with 0.6m line and 0.3m gap		32	m	£1.28	£1.30	£41.71	Spon's 2019, page 441
1200	Triangle			Nr	£12.12	£12.34	£0.00	Spon's 2019, page 442
1200	Self Righting Bollard			No	£225.64	£229.79	£0.00	
				SUB TOTAL			£386,192	
	Allowance for unmeasured items & small quantity of work					10%	£38,619	
				Overall Total			£424,811	

Project: 40380 Westdown Quarry Planning Support
Title: South section access design - Access 5
Drawing:
Notes -

Base Date Spon's 2019	2Q18	326
Estimate Base Date	3Q20	332
Location Factor	BCIS	1

Highway Geometrics Costs

Series	Item Description	Assumptions	Quantity	Unit	Rate	Rate (+uplift)	Price	Comment
300	**Series 300 - Fencing**							
300	Timber rail 1,4m high, four rails		119	m	£15.60	£15.89	£1,884	Spon's 2019 pg 373
400	**Series 400 - Road restraint Systems**							
400	Group P1, curved not exceeding 50m radius			m	£195.96	£199.57	£0	Spon's 2019 pg 377
500	**Series 500 - Drainage and Service Ducts**							
500	150mm clay pipe, average depth 1.50m		50	m	£74.67	£76.04	£3,802	Spon's 2019 pg 382
500	150mm clay pipe, Type Z concrete surround		50	m	£61.82	£62.96	£3,148	Spon's 2019 pg 382
500	900 x 700 chamber, 1500mm to invert		100	nr	£1,372.67	£1,397.93	£139,793	Spon's 2019 pg 389
500	Precast concrete gully		2	nr	£674.75	£687.17	£1,374	Spon's 2019 pg 397
600	**Series 600 - Earthworks**							
600	General excavation using backacters, unacceptable material		5,865	m^3	£7.99	£8.14	£47,723	Spon's 2019 pg 407
600	E.O. Excavation of existing tarmac		421	m^3	£15.60	£15.89	£6,690	Spon's 2019 pg 408
600	Disposal off site of excavated material		5,865	m^3	£35.00	£35.64	£209,050	
600	Imported graded material; 400mm		602	m^3	£31.74	£32.32	£19,446	Spon's 2019 pg 411
700	**Series 700 - Pavement**							
700	Granular sub-base, 200mm deep		407	m^3	£40.91	£41.66	£16,973	Spon's 2019, page 425
700	DBM, base 200mm		2,037	m^2	£35.47	£36.12	£73,582	Spon's 2019, page 426
700	DBM Binder course 50mm		2,038	m^2	£13.90	£14.16	£28,850	Spon's 2019, page 426
700	DBM Surface 30mm		2,038	m^2	£9.83	£10.01	£20,402	Spon's 2019, page 426
700	Cutting existing; road surfacing		66	m	£44.60	£45.42	£3,002	Spon's 2019, page 428
700	Cold milling of existing Pavement, 75mm depth removal of existing			m^2	£19.04	£19.39	£0	Spon's 2019, page 429
700	Tack coat , bituminous spray			m^2	£0.93	£0.95	£0	Spon's 2019, page 429
700	Regulating course			sum	£500.00	£500.00	£0	
1100	**Series 1100 - Kerbs, Footways & Paved Areas**							
1100	Foundation; (300x150 mm)		119	m	£5.90	£6.01	£713	Spon's 2019, page 431
1100	Kerbs (straight), 125mm bull nose (125x150 mm)		74	m	£16.09	£16.39	£1,206	Spon's 2019, page 431
1100	Kerbs (curved), 125mm bull nose (125x150 mm)		45	m	£15.55	£15.84	£713	Spon's 2019, page 431
1100	Sub-base to Footpath; 150mm thick hardcore			m^2	£5.86	£5.97	£0	Spon's 2019, page 434
1100	Footpath/Ped island surfacing			m^2	£23.81	£24.25	£0	Spon's 2019, page 435
1200	**Series 1200 - Traffic Signs & Road Markings**							
1200	Intermittent line , 200mm wide with 4m line and 2m gap		46	m	£1.01	£1.03	£47.32	Spon's 2019, page 441
1200	Stop Line, 200mm wide with 0.6m line and 0.3m gap		25	m	£2.80	£2.85	£71.29	Spon's 2019, page 441
1200	Stop Line, 100mm wide with 0.6m line and 0.3m gap		25	m	£1.28	£1.30	£32.59	Spon's 2019, page 441
1200	Triangle			Nr	£12.12	£12.34	£0.00	Spon's 2019, page 442
1200	Self Righting Bollard			No	£225.64	£229.79	£0.00	
				SUB TOTAL			£578,503	
	Allowance for unmeasured items & small quantity of work					10%	£57,850	
				Overall Total			£636,354	

Project: 40380 Westdown Quarry Planning Support
Title: South section access design - Access 6
Drawing:
Notes -

Base Date Spon's 2019	2Q18	326
Estimate Base Date	3Q20	332
Location Factor	BCIS	1

Series	Item Description	Assumptions	Quantity	Unit	Rate	Rate (+uplift)	Price	Comment
300	**Series 300 - Fencing**							
300	Timber rail 1,4m high, four rails		119	m	£15.60	£15.89	£1,884	Spon's 2019 pg 373
400	**Series 400 - Road restraint Systems**							
400	Group P1, curved not exceeding 50m radius			m	£195.96	£199.57	£0	Spon's 2019 pg 377
500	**Series 500 - Drainage and Service Ducts**							
500	150mm clay pipe, average depth 1.50m		31	m	£74.67	£76.04	£2,357	Spon's 2019 pg 382
500	150mm clay pipe, Type Z concrete surround		31	m	£61.82	£62.96	£1,952	Spon's 2019 pg 382
500	900 x 700 chamber, 1500mm to invert		2	nr	£1,372.67	£1,397.93	£2,796	Spon's 2019 pg 389
500	Precast concrete gully		2	nr	£674.75	£687.17	£1,374	Spon's 2019 pg 397
600	**Series 600 - Earthworks**							
600	General excavation using backacters, unacceptable material		205	m^3	£7.99	£8.14	£1,666	Spon's 2019 pg 407
600	E.O. Excavation of existing tarmac		0	m^3	£15.60	£15.89	£0	Spon's 2019 pg 408
600	Disposal off site of excavated material		205	m^3	£35.00	£35.64	£7,300	
600	Imported graded material; 400mm		205	m^3	£31.74	£32.32	£6,620	Spon's 2019 pg 411
700	**Series 700 - Pavement**							
700	Granular sub-base, 200mm deep		102	m^3	£40.91	£41.66	£4,266	Spon's 2019, page 425
700	DBM, base 200mm		512	m^2	£35.47	£36.12	£18,495	Spon's 2019, page 426
700	DBM Binder course 50mm		512	m^2	£13.90	£14.16	£7,248	Spon's 2019, page 426
700	DBM Surface 30mm		512	m^2	£9.83	£10.01	£5,126	Spon's 2019, page 426
700	Cutting existing; road surfacing		31	m	£44.60	£45.42	£1,408	Spon's 2019, page 428
700	Cold milling of existing Pavement, 75mm depth removal of existing			m^2	£19.04	£19.39	£0	Spon's 2019, page 429
700	Tack coat , bituminous spray			m^2	£0.93	£0.95	£0	Spon's 2019, page 429
700	Regulating course			sum	£500.00	£500.00	£0	
1100	**Series 1100 - Kerbs, Footways & Paved Areas**							
1100	Foundation; (300x150 mm)		119	m	£5.90	£6.01	£713	Spon's 2019, page 431
1100	Kerbs (straight), 125mm bull nose (125x150 mm)		74	m	£16.09	£16.39	£1,206	Spon's 2019, page 431
1100	Kerbs (curved), 125mm bull nose (125x150 mm)		45	m	£15.55	£15.84	£713	Spon's 2019, page 431
1100	Sub-base to Footpath; 150mm thick hardcore			m^2	£5.86	£5.97	£0	Spon's 2019, page 434
1100	Footpath/Ped island surfacing			m^2	£23.81	£24.25	£0	Spon's 2019, page 435
1200	**Series 1200 - Traffic Signs & Road Markings**							
1200	Intermittent line , 200mm wide with 4m line and 2m gap		39	m	£1.01	£1.03	£40.11	Spon's 2019, page 441
1200	Stop Line, 200mm wide with 0.6m line and 0.3m gap		15	m	£2.80	£2.85	£42.77	Spon's 2019, page 441
1200	Stop Line, 100mm wide with 0.6m line and 0.3m gap		15	m	£1.28	£1.30	£19.55	Spon's 2019, page 441
1200	Triangle			Nr	£12.12	£12.34	£0.00	Spon's 2019, page 442
1200	Self Righting Bollard			No	£225.64	£229.79	£0.00	
				SUB TOTAL			£65,226	
	Allowance for unmeasured items & small quantity of work					10%	£6,523	
				Overall Total			£71,749	

Appendix D
Junction Assessment – Site Access

Junctions 9

PICADY 9 - Priority Intersection Module

Filename: Site Access.j9
Path: \\Sal-fs12\shared\Projects\40380 Whatley Quarry Planning Support\Deliver Stage\D Design_Technical\Data\Transport\Westdown Quarry\Junction Assessment
Report generation date: 16/11/2020 11:40:24

»2042 Future Base + Development, AM
»2042 Future Base + Development , PM

Summary of junction performance

	AM						PM					
	Set ID	Queue (Veh)	Delay (min)	RFC	LOS	Junction Delay (min)	Set ID	Queue (Veh)	Delay (min)	RFC	LOS	Junction Delay (min)
	2042 Future Base + Development											
Stream B-C	D1	0.0	0.00	0.00	A	0.04	D2	0.0	0.10	0.00	A	0.03
Stream B-A		0.1	0.24	0.10	B			0.1	0.22	0.09	B	
Stream C-AB		0.0	0.10	0.00	A			0.0	0.10	0.00	A	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

File summary

File Description

Title	
Location	
Site number	
Date	16/11/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	GLOBAL\pranav.yadav
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	mph	Veh	Veh	perHour	min	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (min)	Queue threshold (PCU)
5.75				0.85	0.60	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2042 Future Base + Development	AM	ONE HOUR	07:45	09:15	15	✓
D2	2042 Future Base + Development	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2042 Future Base + Development, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (min)	Junction LOS
1	untitled	T-Junction	Two-way		0.04	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Bulls Green Link Road (east)		Major
B	Site Access		Minor
C	Bulls Green Link Road (west)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	7.00			150.0	✓	1.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	10.00	9.10	4.90	3.60	3.60		1.00	85	30

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	594	0.103	0.261	0.165	0.374
B-C	645	0.095	0.239	-	-
C-B	661	0.245	0.245	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2042 Future Base + Development	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	105	100.000
B		ONE HOUR	✓	26	100.000
C		ONE HOUR	✓	77	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	29	76
	B	26	0	0
	C	76	1	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	87	19
	B	95	0	0
	C	19	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (min)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.00	0.00	0.0	A	0	0
B-A	0.10	0.24	0.1	B	24	36
C-AB	0.00	0.10	0.0	A	0.92	1
C-A					70	105
A-B					27	40
A-C					70	105

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (min)	Unsignalised level of service
B-C	0	0	614	0.000	0	0.0	0.0	0.000	A
B-A	20	5	287	0.068	19	0.0	0.1	0.224	B
C-AB	0.75	0.19	634	0.001	0.75	0.0	0.0	0.095	A
C-A	57	14			57				
A-B	22	5			22				
A-C	57	14			57				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (min)	Unsignalised level of service
B-C	0	0	608	0.000	0	0.0	0.0	0.000	A
B-A	23	6	284	0.082	23	0.1	0.1	0.230	B
C-AB	0.90	0.22	629	0.001	0.90	0.0	0.0	0.096	A
C-A	68	17			68				
A-B	26	7			26				
A-C	68	17			68				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (min)	Unsignalised level of service
B-C	0	0	600	0.000	0	0.0	0.0	0.000	A
B-A	29	7	279	0.102	29	0.1	0.1	0.239	B
C-AB	1	0.28	622	0.002	1	0.0	0.0	0.097	A
C-A	84	21			84				
A-B	32	8			32				
A-C	84	21			84				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (min)	Unsignalised level of service
B-C	0	0	600	0.000	0	0.0	0.0	0.000	A
B-A	29	7	279	0.102	29	0.1	0.1	0.239	B
C-AB	1	0.28	622	0.002	1	0.0	0.0	0.097	A
C-A	84	21			84				
A-B	32	8			32				
A-C	84	21			84				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (min)	Unsignalised level of service
B-C	0	0	608	0.000	0	0.0	0.0	0.000	A
B-A	23	6	284	0.082	23	0.1	0.1	0.230	B
C-AB	0.90	0.22	629	0.001	0.90	0.0	0.0	0.096	A
C-A	68	17			68				
A-B	26	7			26				
A-C	68	17			68				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (min)	Unsignalised level of service
B-C	0	0	614	0.000	0	0.0	0.0	0.000	A
B-A	20	5	287	0.068	20	0.1	0.1	0.224	B
C-AB	0.75	0.19	634	0.001	0.75	0.0	0.0	0.095	A
C-A	57	14			57				
A-B	22	5			22				
A-C	57	14			57				

2042 Future Base + Development , PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (min)	Junction LOS
1	untitled	T-Junction	Two-way		0.03	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2042 Future Base + Development	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	128	100.000
B		ONE HOUR	✓	24	100.000
C		ONE HOUR	✓	91	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	22	106
	B	23	0	1
	C	90	1	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	88	4
	B	81	0	0
	C	6	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (min)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.00	0.10	0.0	A	0.92	1
B-A	0.09	0.22	0.1	B	21	32
C-AB	0.00	0.10	0.0	A	0.92	1
C-A					83	124
A-B					20	30
A-C					97	146

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (min)	Unsignalised level of service
B-C	0.75	0.19	616	0.001	0.75	0.0	0.0	0.098	A
B-A	17	4	307	0.056	17	0.0	0.1	0.207	B
C-AB	0.75	0.19	633	0.001	0.75	0.0	0.0	0.095	A
C-A	68	17			68				
A-B	17	4			17				
A-C	80	20			80				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (min)	Unsignalised level of service
B-C	0.90	0.22	609	0.001	0.90	0.0	0.0	0.099	A
B-A	21	5	303	0.068	21	0.1	0.1	0.212	B
C-AB	0.90	0.22	628	0.001	0.90	0.0	0.0	0.096	A
C-A	81	20			81				
A-B	20	5			20				
A-C	95	24			95				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (min)	Unsignalised level of service
B-C	1	0.28	600	0.002	1	0.0	0.0	0.100	A
B-A	25	6	298	0.085	25	0.1	0.1	0.220	B
C-AB	1	0.28	620	0.002	1	0.0	0.0	0.097	A
C-A	99	25			99				
A-B	24	6			24				
A-C	117	29			117				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (min)	Unsignalised level of service
B-C	1	0.28	600	0.002	1	0.0	0.0	0.100	A
B-A	25	6	298	0.085	25	0.1	0.1	0.220	B
C-AB	1	0.28	620	0.002	1	0.0	0.0	0.097	A
C-A	99	25			99				
A-B	24	6			24				
A-C	117	29			117				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (min)	Unsignalised level of service
B-C	0.90	0.22	609	0.001	0.90	0.0	0.0	0.099	A
B-A	21	5	303	0.068	21	0.1	0.1	0.213	B
C-AB	0.90	0.22	628	0.001	0.90	0.0	0.0	0.096	A
C-A	81	20			81				
A-B	20	5			20				
A-C	95	24			95				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (min)	Unsignalised level of service
B-C	0.75	0.19	615	0.001	0.75	0.0	0.0	0.098	A
B-A	17	4	307	0.056	17	0.1	0.1	0.207	B
C-AB	0.75	0.19	633	0.001	0.75	0.0	0.0	0.095	A
C-A	68	17			68				
A-B	17	4			17				
A-C	80	20			80				