

Havant Thicket Reservoir Project

Environmental Statement Volume 3: Chapter 12 Noise and Vibration Figures

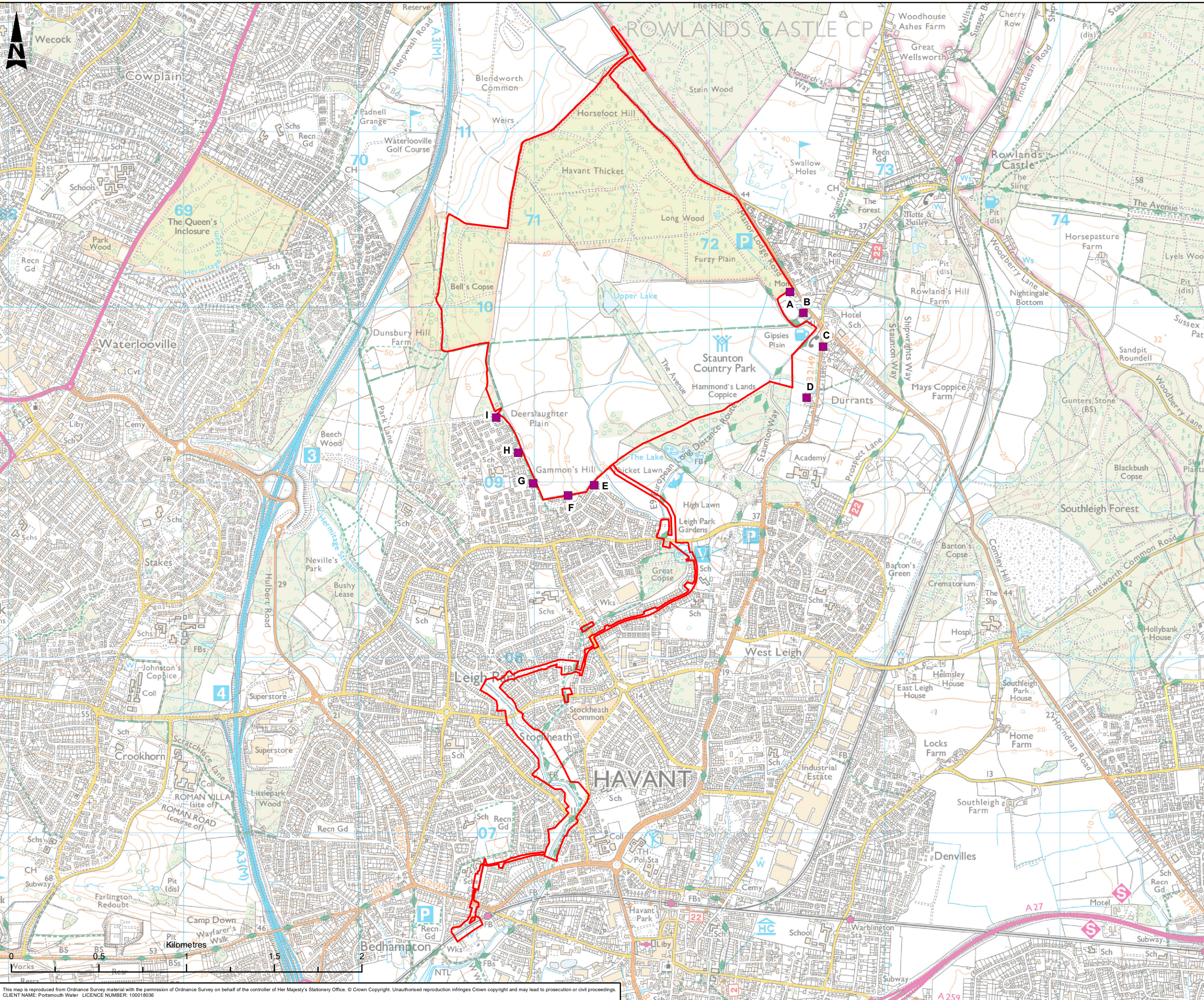
Portsmouth Water Ltd.

September 2020



Schedule of Drawings included in this application:

Drawing title	Drawing number
Figure 12.1 Sample Receptor Location Map for Reservoir Site	HTR-ATK-ZZ-ZZ-GS-Z-0115
Figure 12.2 Baseline Daytime Noise Contours and Measurement Locations	HTR-ATK-ZZ-ZZ-GS-Z-0003
Figure 12.3 Baseline Night Time Noise Contours and Measurement Locations	HTR-ATK-ZZ-ZZ-GS-Z-0004
Figure 12.4 Reservoir Construction Noise Contours 2021 Q3	HTR-ATK-ZZ-ZZ-GS-Z-0116
Figure 12.5 Reservoir Construction Noise Contours 2021 Q4	HTR-ATK-ZZ-ZZ-GS-Z-0117
Figure 12.6 Reservoir Construction Noise Contours 2022 Q1	HTR-ATK-ZZ-ZZ-GS-Z-0118f
Figure 12.7 Reservoir Construction Noise Contours 2022 Q2	HTR-ATK-ZZ-ZZ-GS-Z-0119
Figure 12.8 Reservoir Construction Noise Contours 2022 Q3	HTR-ATK-ZZ-ZZ-GS-Z-0120
Figure 12.9 Reservoir Construction Noise Contours 2022 Q4	HTR-ATK-ZZ-ZZ-GS-Z-0121
Figure 12.10 Reservoir Construction Noise Contours 2023 Q1	HTR-ATK-ZZ-ZZ-GS-Z-0122
Figure 12.11 Reservoir Construction Noise Contours 2023 Q2	HTR-ATK-ZZ-ZZ-GS-Z-0123
Figure 12.12 Reservoir Construction Noise Contours 2023 Q2 to 2026 Q2	HTR-ATK-ZZ-ZZ-GS-Z-0124
Figure 12.13 Reservoir Construction Noise Contours 2026 Q3	HTR-ATK-ZZ-ZZ-GS-Z-0125
Figure 12.14 Reservoir Construction Noise Contours 2028 Q2 to 2029 Q1	HTR-ATK-ZZ-ZZ-GS-Z-0126
Figure 12.15 Areas that Night Works Should Avoid	HTR-ATK-ZZ-ZZ-GS-Z-0127
Figure 12.16 Trenchless Pipeline Construction - Potential Daytime Significant Noise Effects	HTR-ATK-ZZ-ZZ-GS-Z-0128
Figure 12.17 Open Trench Pipeline Construction - Potential Daytime Significant Noise Effects	HTR-ATK-ZZ-ZZ-GS-Z-0129
Figure 12.18 Open Trench Pipeline Construction - Potential Night Time Significant Noise Effects	HTR-ATK-ZZ-ZZ-GS-Z-0130
Figure 12.19 Open Trench Pipeline Construction - Potential Significant Vibration Effects on Buildings Page 1	HTR-ATK-ZZ-ZZ-GS-Z-0131
Figure 12.19 Open Trench Pipeline Construction - Potential Significant Vibration Effects on Buildings Page 2	HTR-ATK-ZZ-ZZ-GS-Z-0132
Figure 12.19 Open Trench Pipeline Construction - Potential Significant Vibration Effects on Buildings Page 3	HTR-ATK-ZZ-ZZ-GS-Z-0133



Red Line Boundary

Sample Receptor Location

C01	FD	DB	AL	LB	PUBLISHED	13/08/2020
P01	KP	DB	AL	WI	FOR REVIEW / COMMENT	10/07/2020
Rev	Dn By	Old By	Rev By	Auth By	Description	Date

ATKINS
Member of the SNC-Lavalin Group

Aztec West
500 Park Avenue
Almondsbury
Bristol
BS32 4RZ

Tel: +44 (0) 1454 6620000
Fax: +44 (0) 1454 663333
www.atkinsglobal.com

Copyright © Atkins Limited (2020)

Drawing Suitability			Status
PUBLISHED			A1

Contractors Drawing Number:
HTR - ATK - ZZ - ZZ - GS - Z - 0115
Project | Originator | Volume | Location | Type | Role | Number

Telephone: Havant (023) 9249 9888
Fax: Havant (023) 9245 3632
Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
Havant Hampshire PO9 1LG
REGISTERED IN ENGLAND No. 2536455

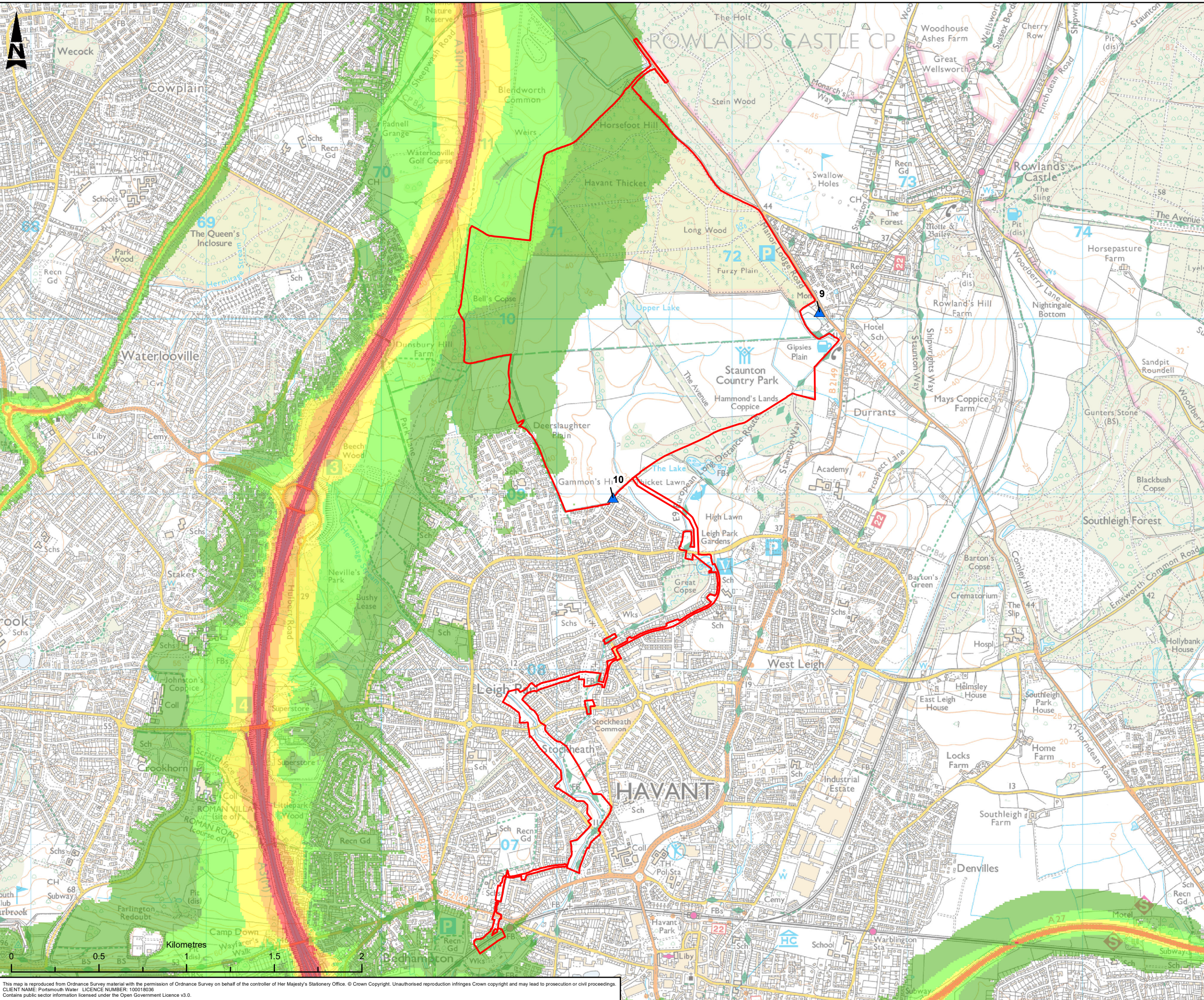
Project Ref. No	Sheet	Scale	Sheet Size
5169117	1 of 1	1:20,000	A3

Project Title
HAVANT THICKET RESERVOIR

Drawing Title
**FIGURE 12.1
SAMPLE RECEPTOR LOCATION MAP
FOR RESERVOIR SITE**

Portsmouth Water Drawing Number

Rev
C01



Red Line Boundary

Noise Monitoring Locations (Arup)

DEFRA Strategic Noise Maps (Major Road) 2017 – Night time free-field L_{night} (23:00 – 07:00)

50.0-54.9 dB

55.0-59.9 dB

60.0-64.9 dB

65.0-69.9 dB

≥ 70.0 dB

C01	KP	DB	AL	LB	PUBLISHED	10/07/2020
Rev	Dn By	Old By	Rev By	Auth By	Description	Date

ATKINS

Member of the SNC-Lavalin Group

Aztec West
500 Park Avenue
Almondsbury
Bristol
BS32 4RZ

Tel: +44 (0) 1454 6620000
Fax: +44 (0) 1454 663333
www.atkinsglobal.com

Drawing Suitability

Status

PUBLISHED

A1

Contractors Drawing Number:

HTR - ATK - ZZ - ZZ - GS - Z - 0004

Project | Originator | Volume | Location | Type | Role | Number

Telephone: Havant (023) 9249 9888
Fax: Havant (023) 9245 3632
Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
Havant Hampshire PO9 1LG
REGISTERED IN ENGLAND No. 2536455

Portsmouth Water

Project Ref. No	Sheet	Scale	Sheet Size
5169117	1 of 1	1:20,000	A3

Project Title

HAVANT THICKET RESERVOIR

Drawing Title

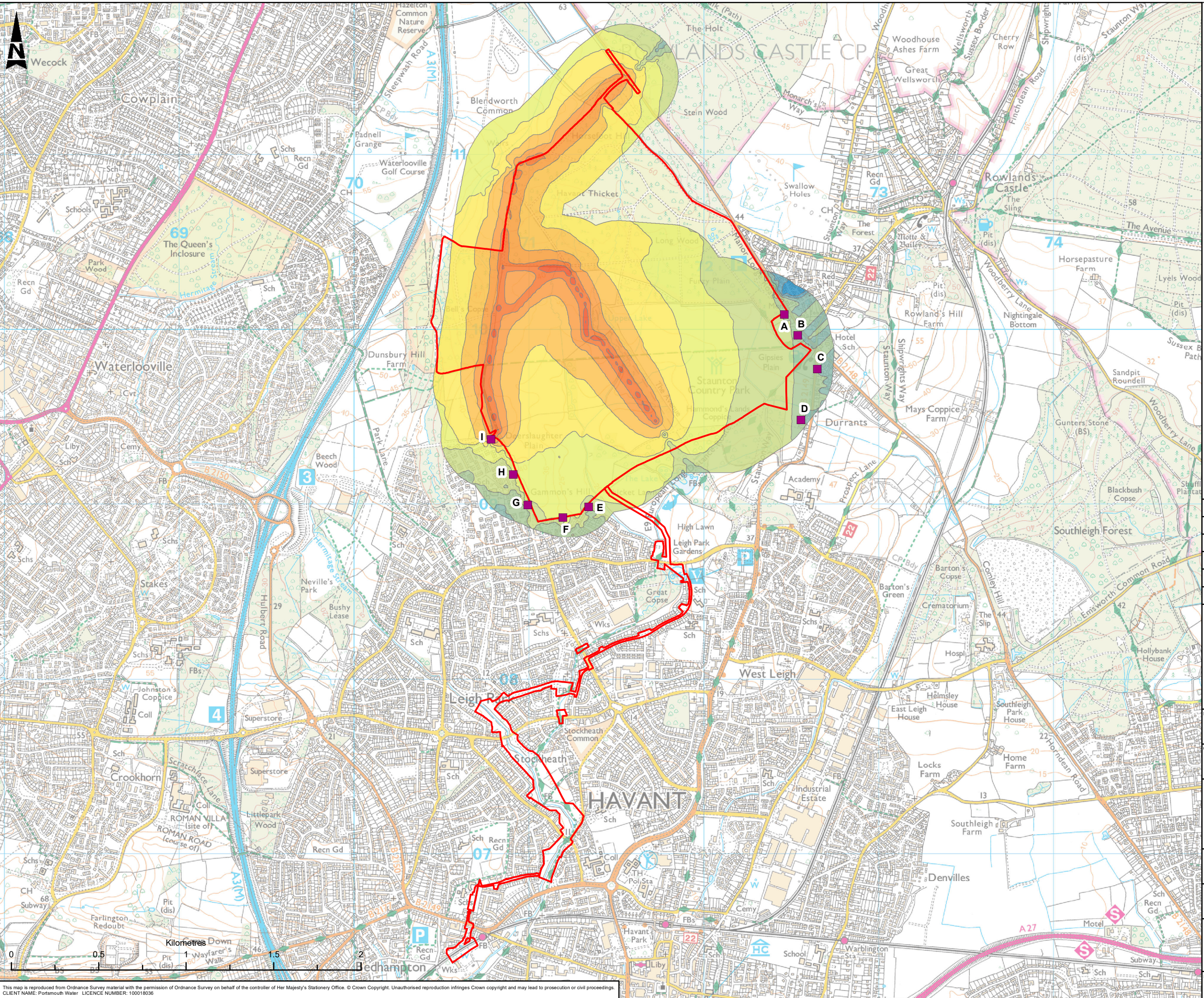
FIGURE 12.3
BASELINE NIGHT TIME NOISE
CONTOURS AND MEASUREMENT
LOCATIONS

Portsmouth Water Drawing Number

Rev

C01

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office. © Crown Copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings.
CLIENT NAME: Portsmouth Water LICENCE NUMBER: 100018036
Contains public sector information licensed under the Open Government Licence v3.0.



Red Line Boundary

Sample Receptor Location

Free-field calculated dB LAeq,T construction noise level for 2021 Q3 at 4m above ground

25 - 30

30 - 35

35 - 40

40 - 45

45 - 50

50 - 55

55 - 60

60 - 65

65 - 70

70 - 75

75 - 80

80 - 85

C01	FD	DB	AL	LB	PUBLISHED	13/08/2020
P01	KP	DB	AL	WI	FOR REVIEW / COMMENT	10/07/2020
Rev	Dn By	Old By	Rev By	Auth By	Description	Date

ATKINS

Member of the SNC-Lavalin Group

Aztec West

500 Park Avenue

Almondsbury

Bristol

BS32 4RZ

Tel: +44 (0) 1454 6620000

Fax: +44 (0) 1454 663333

www.atkinsglobal.com

Copyright © Atkins Limited (2020)

Drawing Suitability	Status
PUBLISHED	A1

Contractors Drawing Number:
HTR - ATK - ZZ - ZZ - GS - Z - 0116
Project | Originator | Volume | Location | Type | Role | Number

Telephone: Havant (023) 9249 9888

Fax: Havant (023) 9245 3632

Website: www.portsmouthwater.co.uk

Registered Office: PO Box 8 West Street

Havant Hampshire PO9 1LG

REGISTERED IN ENGLAND No. 2536455

Project Ref. No	Sheet	Scale	Sheet Size
5169117	1 of 1	1:20,000	A3

Project Title
HAVANT THICKET RESERVOIR

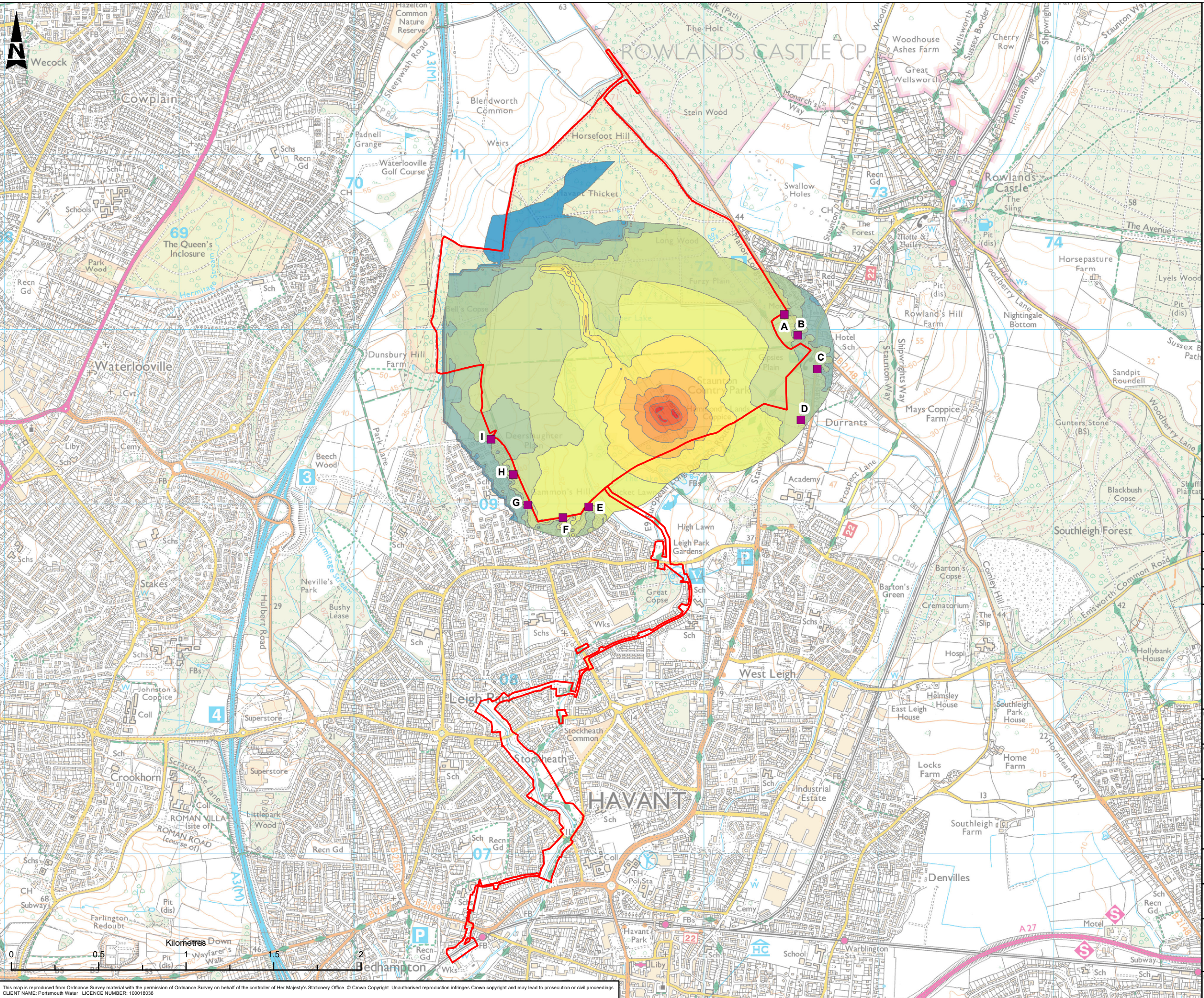
Drawing Title
FIGURE 12.4 RESERVOIR CONSTRUCTION NOISE CONTOUR - 2021 Q3

Portsmouth Water Drawing Number

Rev

C01

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office. © Crown Copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings.
CLIENT NAME: Portsmouth Water LICENCE NUMBER: 100018036



Red Line Boundary

Sample Receptor Location

Free-field calculated dB LAeq,T construction noise level for 2021 Q4 at 4m above ground

25 - 30

30 - 35

35 - 40

40 - 45

45 - 50

50 - 55

55 - 60

60 - 65

65 - 70

70 - 75

75 - 80

80 - 85

C01	FD	DB	AL	LB	PUBLISHED	13/08/2020
P01	KP	DB	AL	WI	FOR REVIEW / COMMENT	10/07/2020
Rev	Dn By	Old By	Rev By	Auth By	Description	Date

ATKINS

Member of the SNC-Lavalin Group

Aztec West

500 Park Avenue

Almondsbury

Bristol

BS32 4RZ

Tel: +44 (0) 1454 6620000

Fax: +44 (0) 1454 663333

www.atkinsglobal.com

Copyright © Atkins Limited (2020)

Drawing Suitability	Status
PUBLISHED	A1

Contractors Drawing Number:
HTR - ATK - ZZ - ZZ - GS - Z - 0117
Project | Originator | Volume | Location | Type | Role | Number

Telephone: Havant (023) 9249 9888
Fax: Havant (023) 9245 3632
Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
Havant Hampshire PO9 1LG
REGISTERED IN ENGLAND No. 2536455

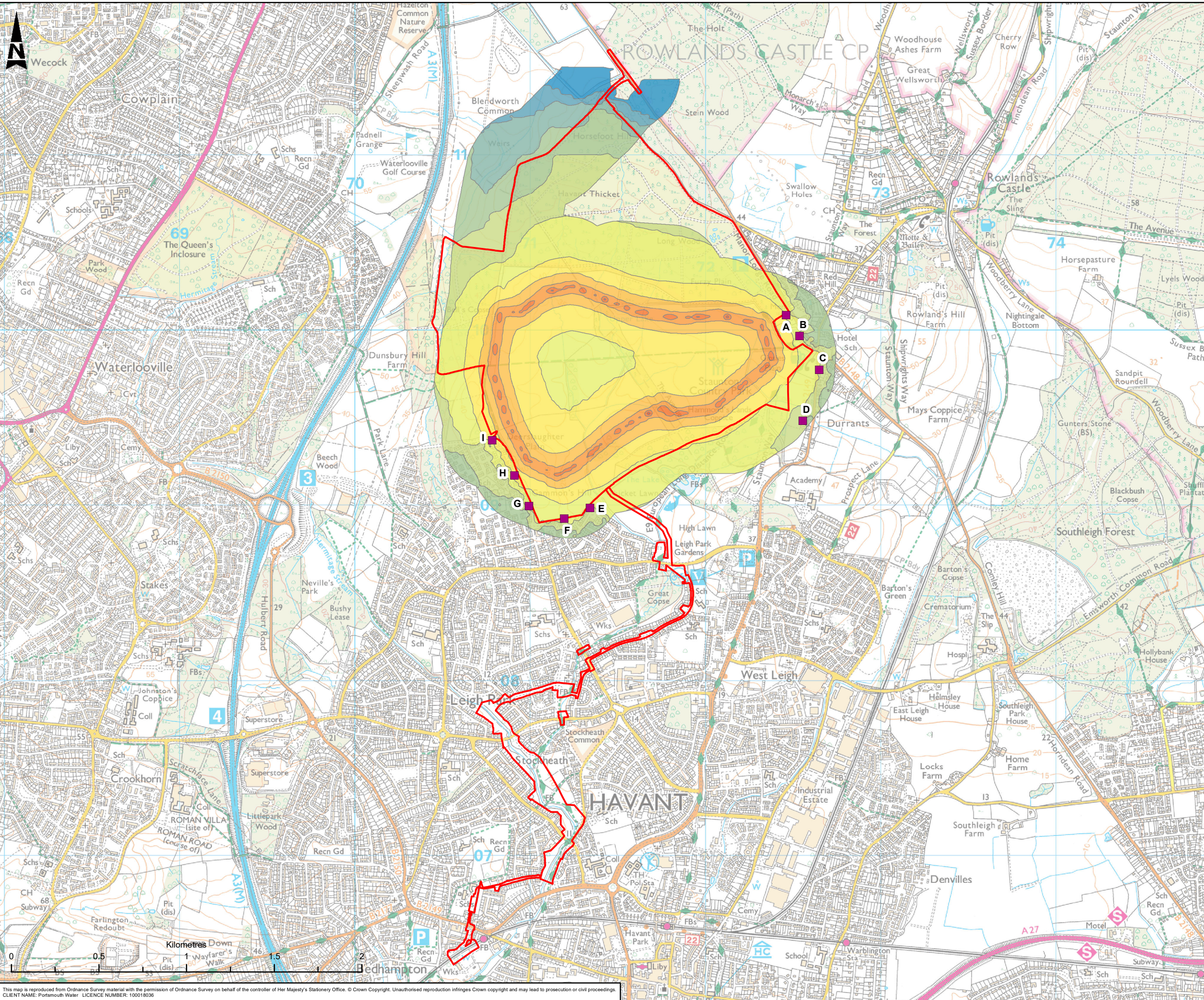
Project Ref. No	Sheet	Scale	Sheet Size
5169117	1 of 1	1:20,000	A3

Project Title
HAVANT THICKET RESERVOIR

Drawing Title
FIGURE 12.5
RESERVOIR CONSTRUCTION NOISE
CONTOUR - 2021 Q4

Portsmouth Water Drawing Number
Rev
C01

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office. © Crown Copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings.
CLIENT NAME: Portsmouth Water LICENCE NUMBER: 100018036



Red Line Boundary

Sample Receptor Location

Free-field calculated dB LAeq,T construction noise level for 2022 Q1 at 4m above ground

25 - 30

30 - 35

35 - 40

40 - 45

45 - 50

50 - 55

55 - 60

60 - 65

65 - 70

70 - 75

75 - 80

80 - 85

C01	FD	DB	AL	LB	PUBLISHED	13/08/2020
P01	KP	DB	AL	WI	FOR REVIEW / COMMENT	10/07/2020
Rev	Dn By	Old By	Rev By	Auth By	Description	Date

ATKINS

Member of the SNC-Lavalin Group

Aztec West

500 Park Avenue

Almondsbury

Bristol

BS32 4RZ

Tel: +44 (0) 1454 6620000

Fax: +44 (0) 1454 663333

www.atkinsglobal.com

Copyright © Atkins Limited (2020)

Drawing Suitability	Status
PUBLISHED	A1

Contractors Drawing Number:
HTR - ATK - ZZ - ZZ - GS - Z - 0118
Project | Originator | Volume | Location | Type | Role | Number

Telephone: Havant (023) 9249 9888

Fax: Havant (023) 9245 3632

Website: www.portsmouthwater.co.uk

Registered Office: PO Box 8 West Street

Havant Hampshire PO9 1LG

REGISTERED IN ENGLAND No. 2536455

Project Ref. No	Sheet	Scale	Sheet Size
5169117	1 of 1	1:20,000	A3

Project Title
HAVANT THICKET RESERVOIR

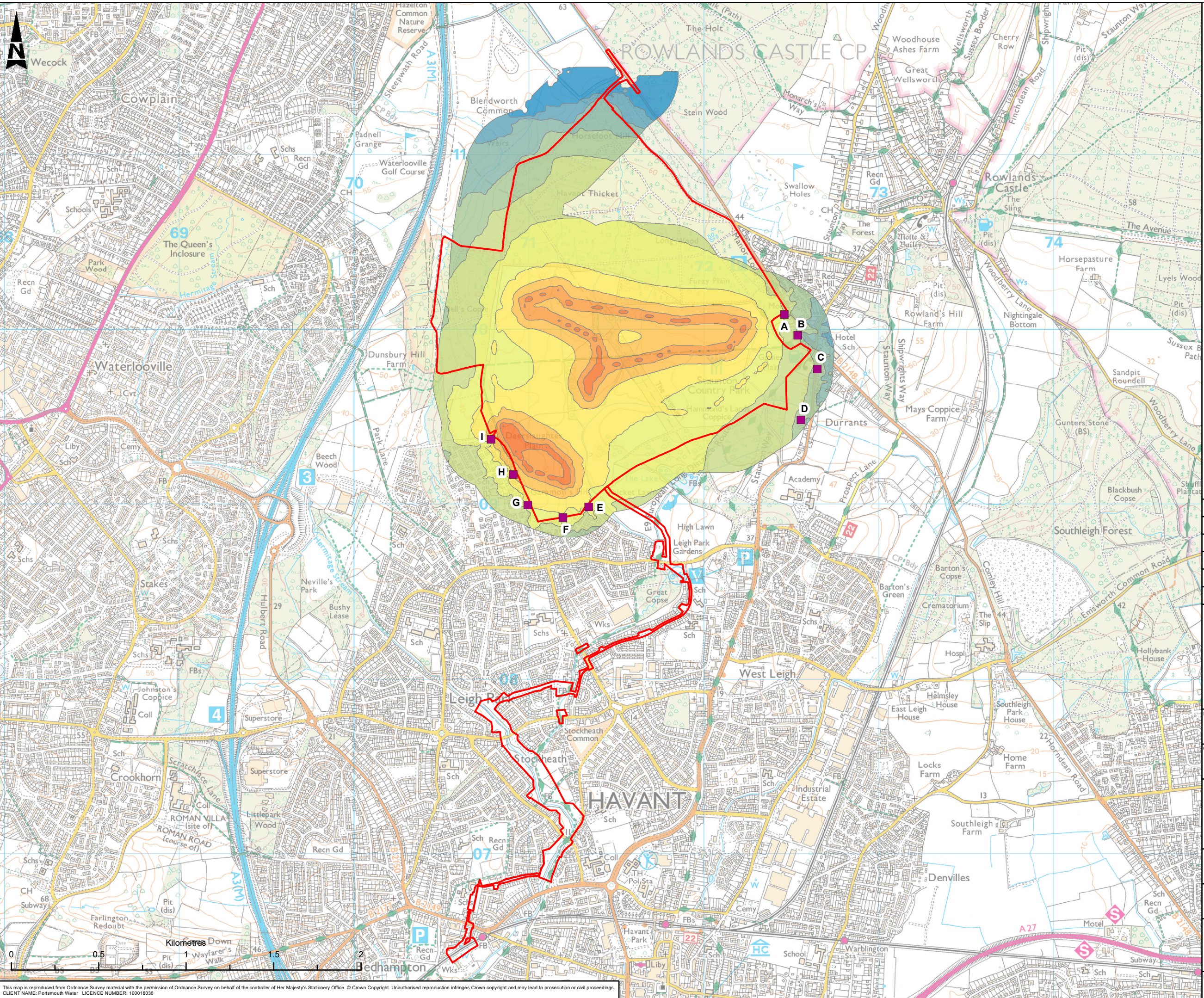
Drawing Title
FIGURE 12.6 RESERVOIR CONSTRUCTION NOISE CONTOUR - 2022 Q1

Portsmouth Water Drawing Number

Rev

C01

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office. © Crown Copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings.
CLIENT NAME: Portsmouth Water LICENCE NUMBER: 100018036



Red Line Boundary

Sample Receptor Location

Free-field calculated dB LAeq,T construction noise levels for 2022 Q2 at 4m above ground

25 - 30

30 - 35

35 - 40

40 - 45

45 - 50

50 - 55

55 - 60

60 - 65

65 - 70

70 - 75

75 - 80

80 - 85

C01	FD	DB	AL	LB	PUBLISHED	13/08/2020
P01	KP	DB	AL	WI	FOR REVIEW / COMMENT	10/07/2020
Rev	Dn By	Old By	Rev By	Auth By	Description	Date

ATKINS

Member of the SNC-Lavalin Group

Aztec West

500 Park Avenue

Almondsbury

Bristol

BS32 4RZ

Tel: +44 (0) 1454 6620000

Fax: +44 (0) 1454 663333

www.atkinsglobal.com

Copyright © Atkins Limited (2020)

Drawing Suitability	Status
PUBLISHED	A1

Contractors Drawing Number:
HTR - ATK - ZZ - ZZ - GS - Z - 0119
Project | Originator | Volume | Location | Type | Role | Number

Telephone: Havant (023) 9249 9888
Fax: Havant (023) 9245 3632
Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
Havant Hampshire PO9 1LG
REGISTERED IN ENGLAND No. 2536455

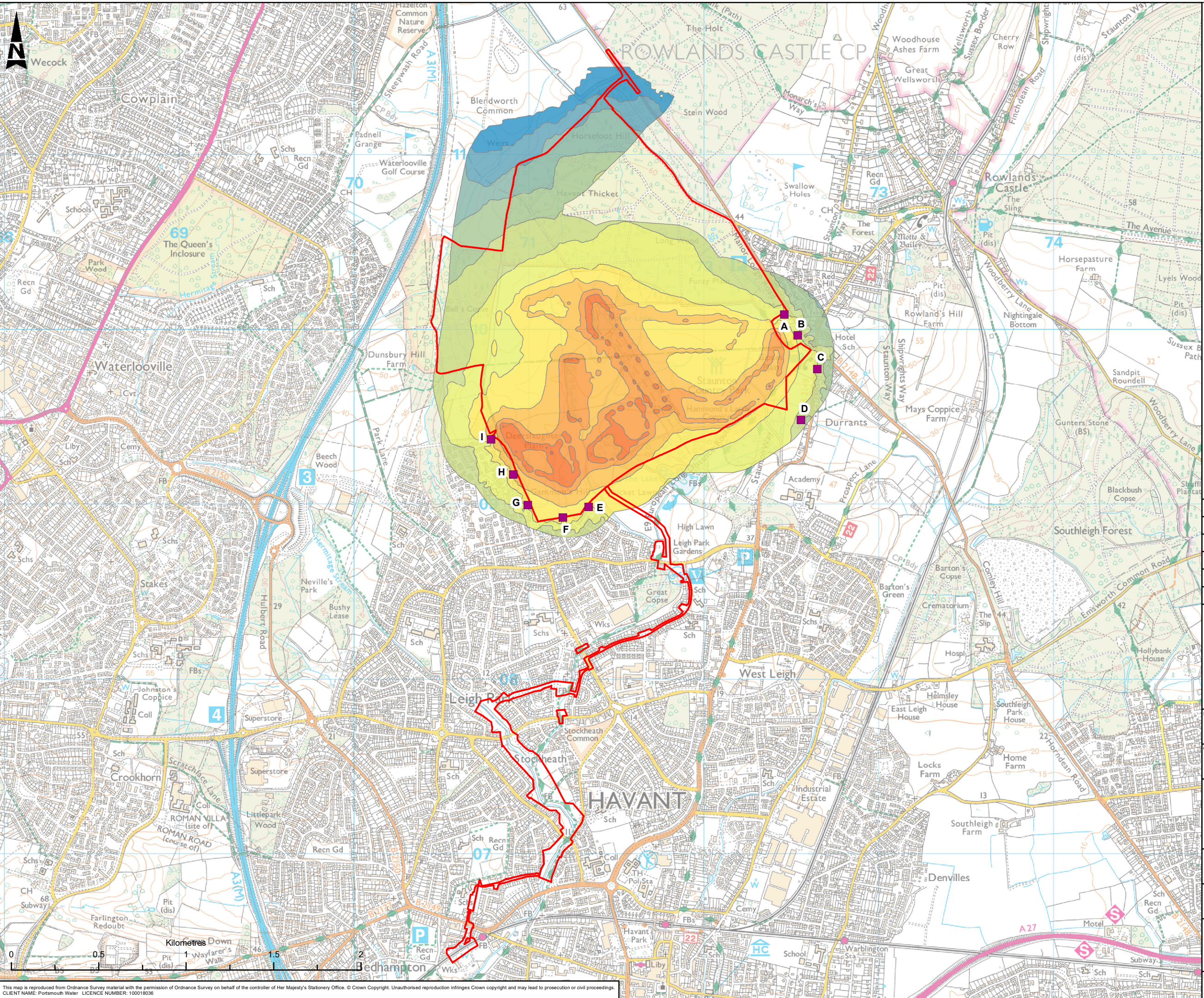
Project Ref. No	Sheet	Scale	Sheet Size
5169117	1 of 1	1:20,000	A3

Project Title
HAVANT THICKET RESERVOIR

Drawing Title
FIGURE 12.7
RESERVOIR CONSTRUCTION NOISE
CONTOUR - 2022 Q2

Portsmouth Water Drawing Number
Rev
C01

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office. © Crown Copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings.
CLIENT NAME: Portsmouth Water LICENCE NUMBER: 100018036



Red Line Boundary

Sample Receptor Location

Free-field calculated dB LAeq,T construction noise levels for 2022 Q3 at 4m above ground

25 - 30

30 - 35

35 - 40

40 - 45

45 - 50

50 - 55

55 - 60

60 - 65

65 - 70

70 - 75

75 - 80

80 - 85

C01	FD	DB	AL	LB	PUBLISHED	13/08/2020
P01	KP	DB	AL	WI	FOR REVIEW / COMMENT	10/07/2020
Rev	Dn By	Old By	Rev By	Auth By	Description	Date

ATKINS

Member of the SNC-Lavalin Group

Aztec West

500 Park Avenue

Almondsbury

Bristol

BS32 4RZ

Tel: +44 (0) 1454 6620000

Fax: +44 (0) 1454 663333

www.atkinsglobal.com

Copyright © Atkins Limited (2020)

Drawing Suitability	Status
PUBLISHED	A1

Contractors Drawing Number:
HTR - ATK - ZZ - ZZ - GS - Z - 0120
Project | Originator | Volume | Location | Type | Role | Number

Telephone: Havant (023) 9249 9888
Fax: Havant (023) 9245 3632
Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
Havant Hampshire PO9 1LG
REGISTERED IN ENGLAND No. 2536455

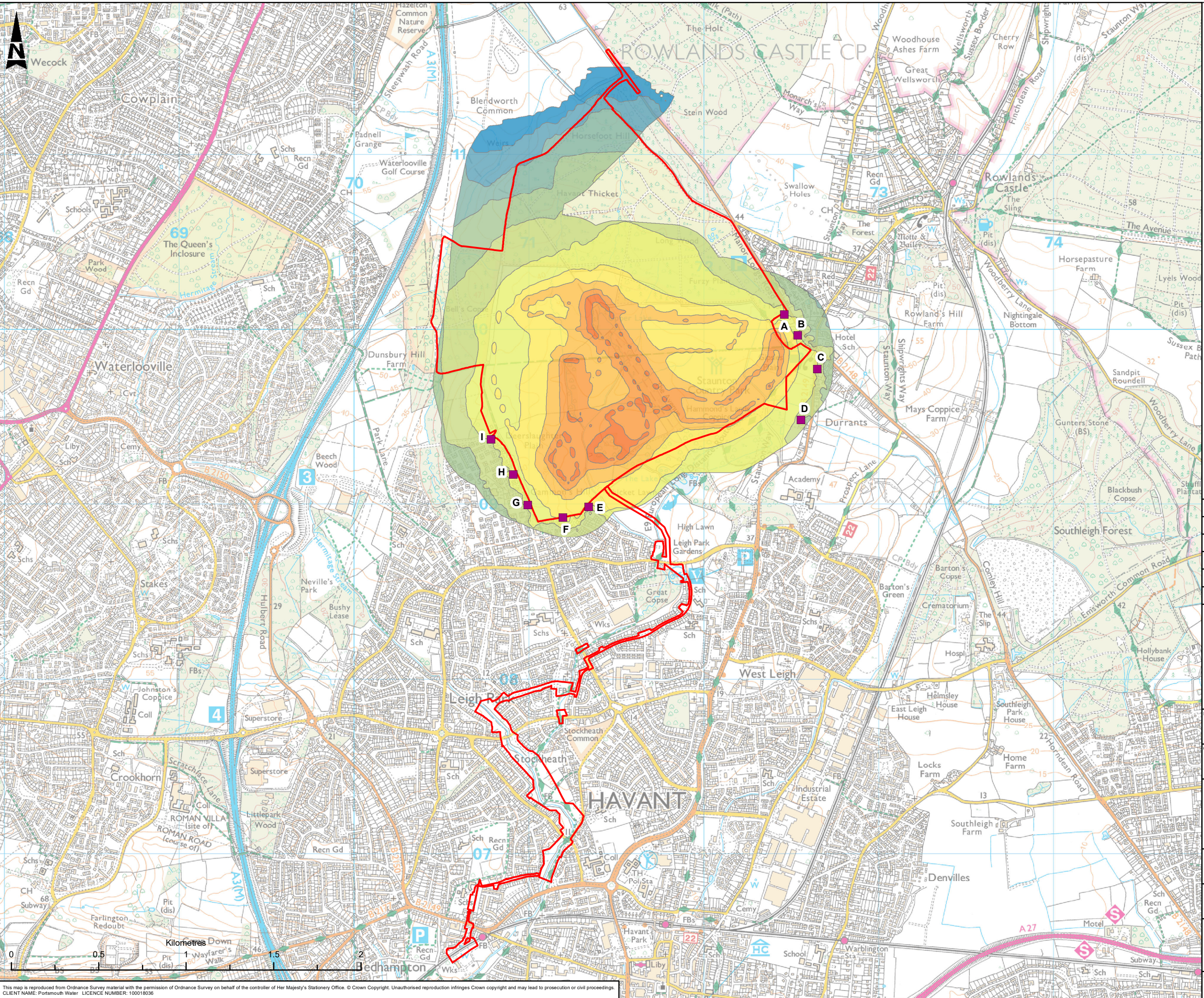
Project Ref. No	Sheet	Scale	Sheet Size
5169117	1 of 1	1:20,000	A3

Project Title
HAVANT THICKET RESERVOIR

Drawing Title
FIGURE 12.8
RESERVOIR CONSTRUCTION NOISE
CONTOUR - 2022 Q3

Portsmouth Water Drawing Number
Rev
C01

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office. © Crown Copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings.
CLIENT NAME: Portsmouth Water LICENCE NUMBER: 100018036



Red Line Boundary

Sample Receptor Location

Free-field calculated dB LAeq,T construction noise level for 2022 Q4 at 4m above ground

25 - 30

30 - 35

35 - 40

40 - 45

45 - 50

50 - 55

55 - 60

60 - 65

65 - 70

70 - 75

75 - 80

80 - 85

C01	FD	DB	AL	LB	PUBLISHED	13/08/2020
P01	KP	DB	AL	WI	FOR REVIEW / COMMENT	10/07/2020
Rev	Dn By	Old By	Rev By	Auth By	Description	Date

ATKINS

Member of the SNC-Lavalin Group

Aztec West

500 Park Avenue

Almondsbury

Bristol

BS32 4RZ

Tel: +44 (0) 1454 6620000

Fax: +44 (0) 1454 663333

www.atkinsglobal.com

Copyright © Atkins Limited (2020)

Drawing Suitability	Status
PUBLISHED	A1

Contractors Drawing Number:
HTR - ATK - ZZ - ZZ - GS - Z - 0121
Project | Originator | Volume | Location | Type | Role | Number

Telephone: Havant (023) 9249 9888
Fax: Havant (023) 9245 3632
Website: www.portsmouthwater.co.uk
Registered Office: PO Box 8 West Street
Havant Hampshire PO9 1LG
REGISTERED IN ENGLAND No. 2536455

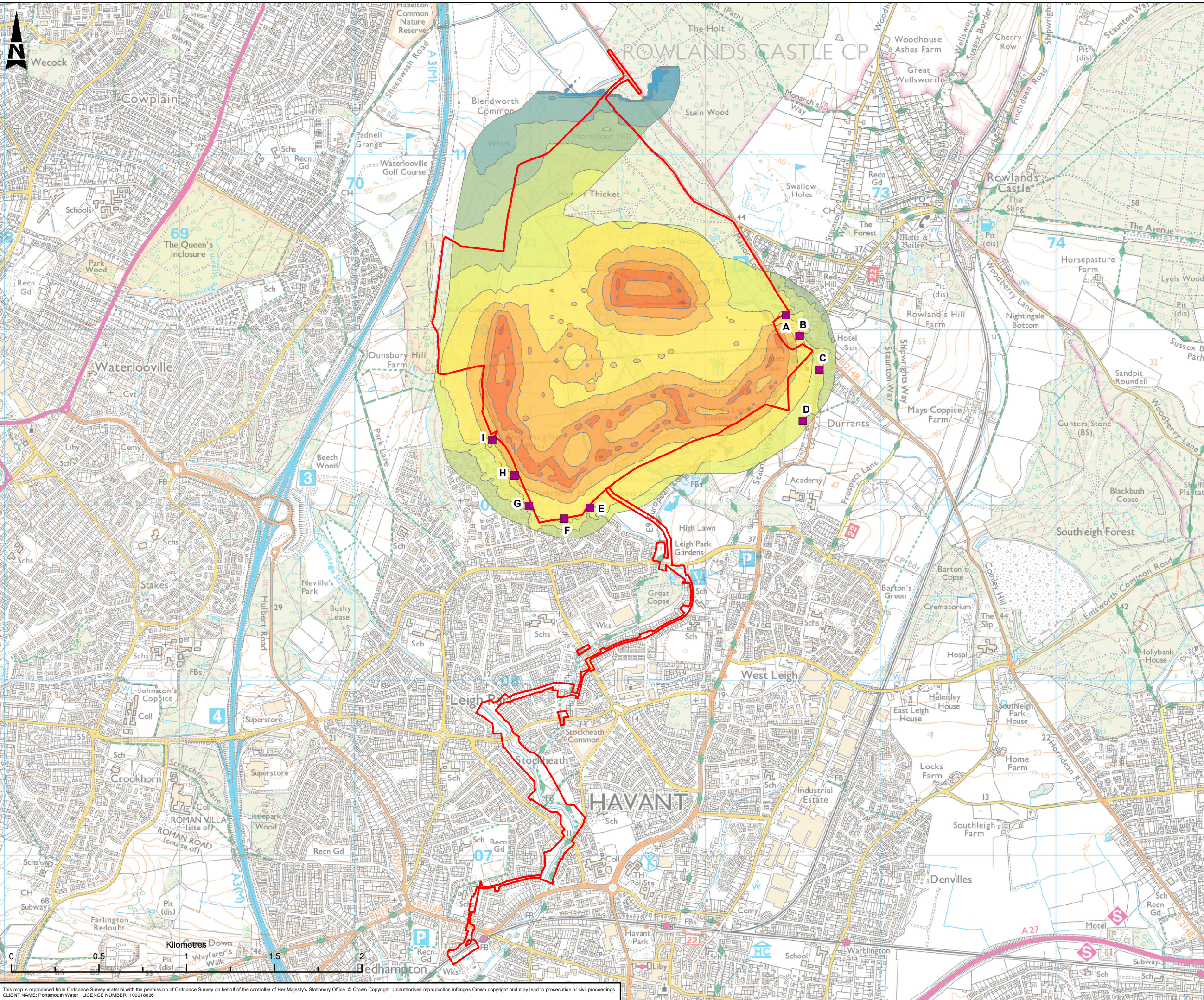
Project Ref. No	Sheet	Scale	Sheet Size
5169117	1 of 1	1:20,000	A3

Project Title
HAVANT THICKET RESERVOIR

Drawing Title
FIGURE 12.9
RESERVOIR CONSTRUCTION NOISE
CONTOUR - 2022 Q4

Portsmouth Water Drawing Number
Rev
C01

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office. © Crown Copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings.
CLIENT NAME: Portsmouth Water LICENCE NUMBER: 100018036



Red Line Boundary

Sample Receptor Location

Free-field calculated dB LAeq,T construction noise levels for 2023 Q1 at 4m above ground

25 - 30

30 - 35

35 - 40

40 - 45

45 - 50

50 - 55

55 - 60

60 - 65

65 - 70

70 - 75

75 - 80

80 - 85

C01	FD	DB	AL	LB	PUBLISHED	17/08/2020
P01	KP	DB	AL	WI	FOR REVIEW / COMMENT	10/07/2020
Rev	Dn By	Old By	Rev By	Auth By	Description	Date

ATKINS

Member of the SNC-Lavalin Group

Aztec West

500 Park Avenue

Almondsbury

Bristol

BS32 4RZ

Tel: +44 (0) 1454 6620000

Fax: +44 (0) 1454 663333

www.atkinsglobal.com

Copyright © Atkins Limited (2020)

Drawing Suitability	Status
PUBLISHED	A1

Contractors Drawing Number:
HTR - ATK - ZZ - ZZ - GS - Z - 0122
Project | Originator | Volume | Location | Type | Role | Number

Telephone: Havant (023) 9249 9888

Fax: Havant (023) 9245 3632

Website: www.portsmouthwater.co.uk

Registered Office: PO Box 8 West Street

Havant Hampshire PO9 1LG

REGISTERED IN ENGLAND No. 2536455

Project Ref. No	Sheet	Scale	Sheet Size
5169117	1 of 1	1:20,000	A3

Project Title
HAVANT THICKET RESERVOIR

Drawing Title
FIGURE 12.10 RESERVOIR CONSTRUCTION NOISE CONTOUR - 2023 Q1

Portsmouth Water Drawing Number	Rev
	C01

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office. © Crown Copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings.
CLIENT NAME: Portsmouth Water LICENCE NUMBER: 100018036