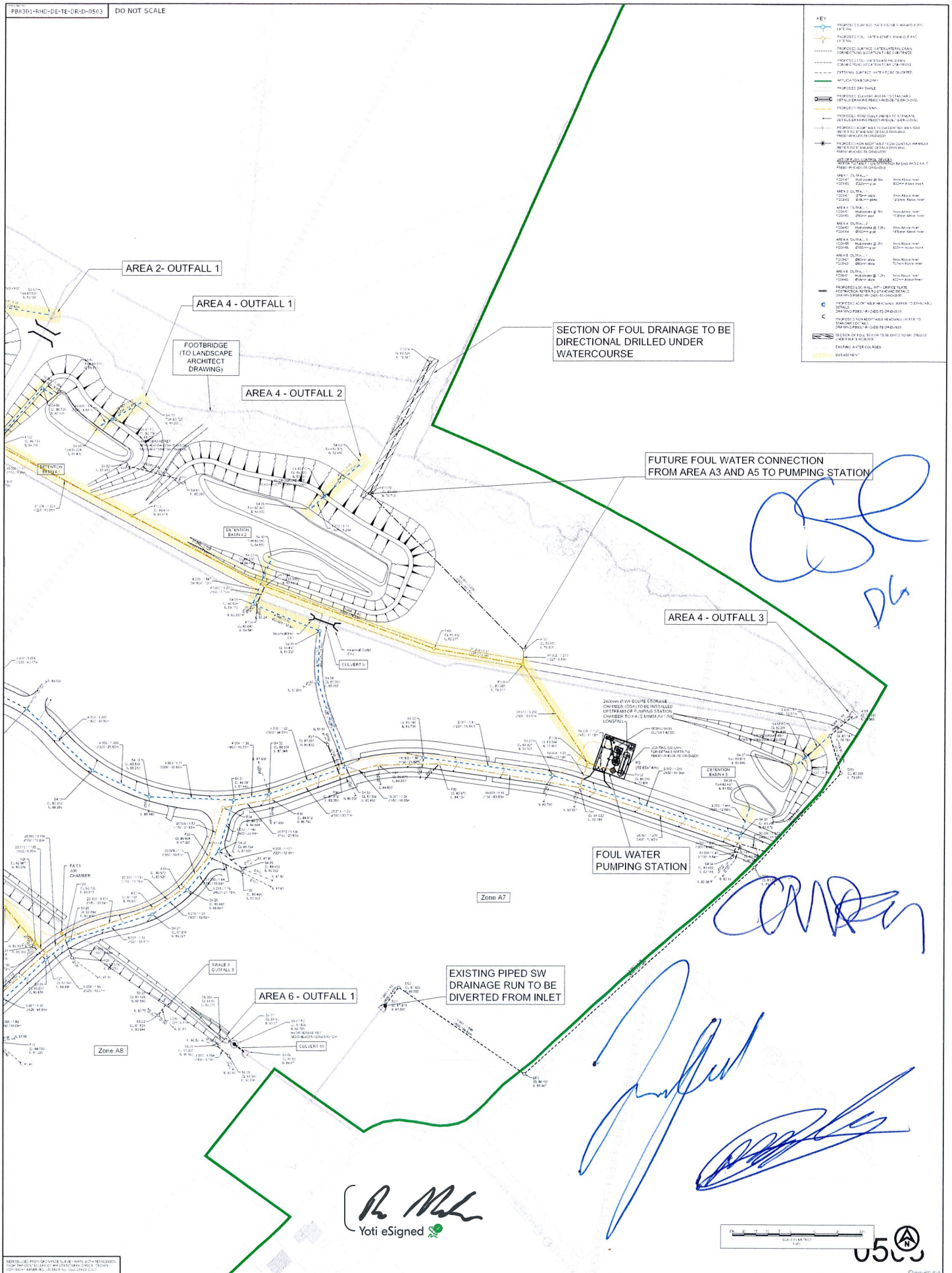
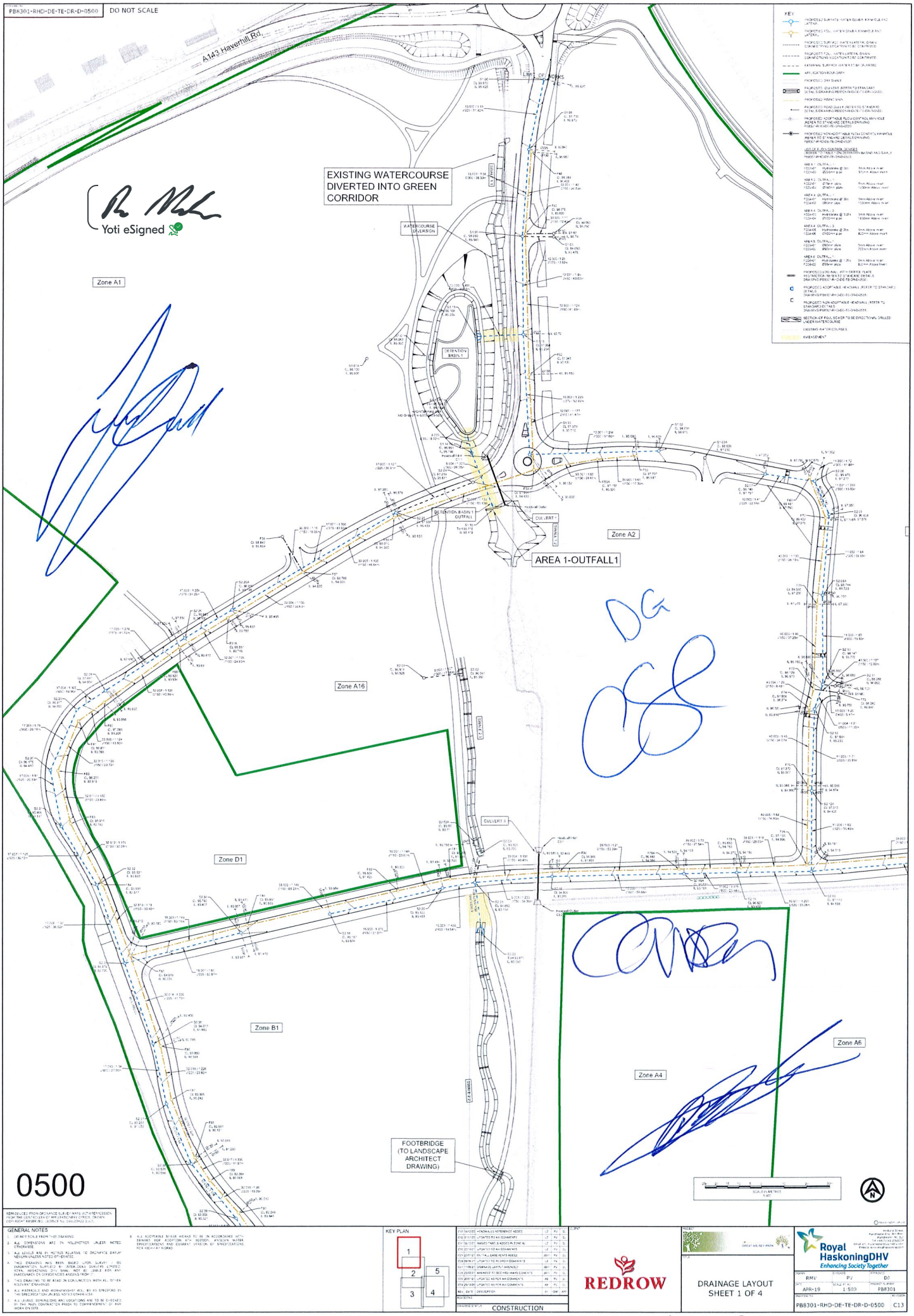
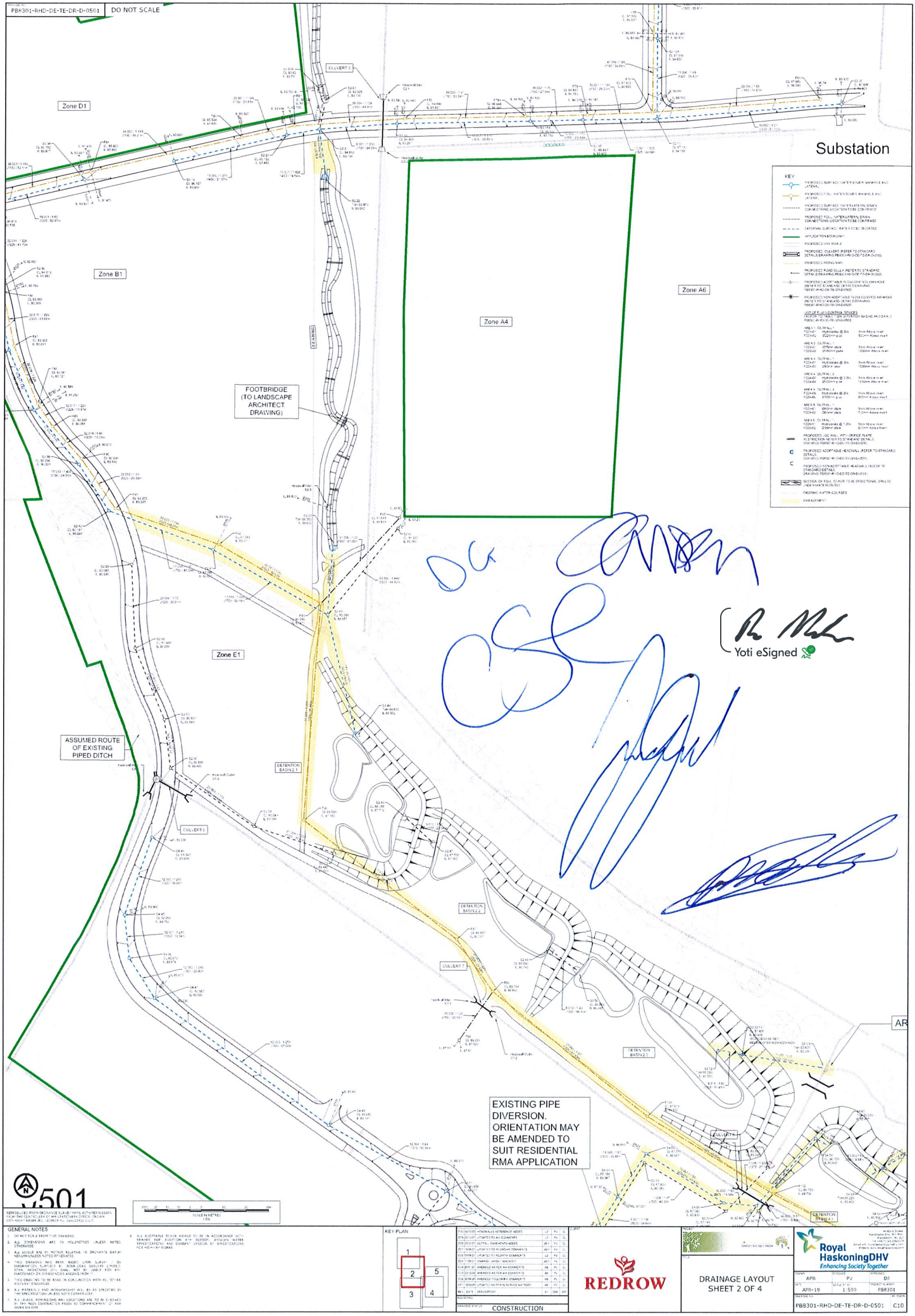




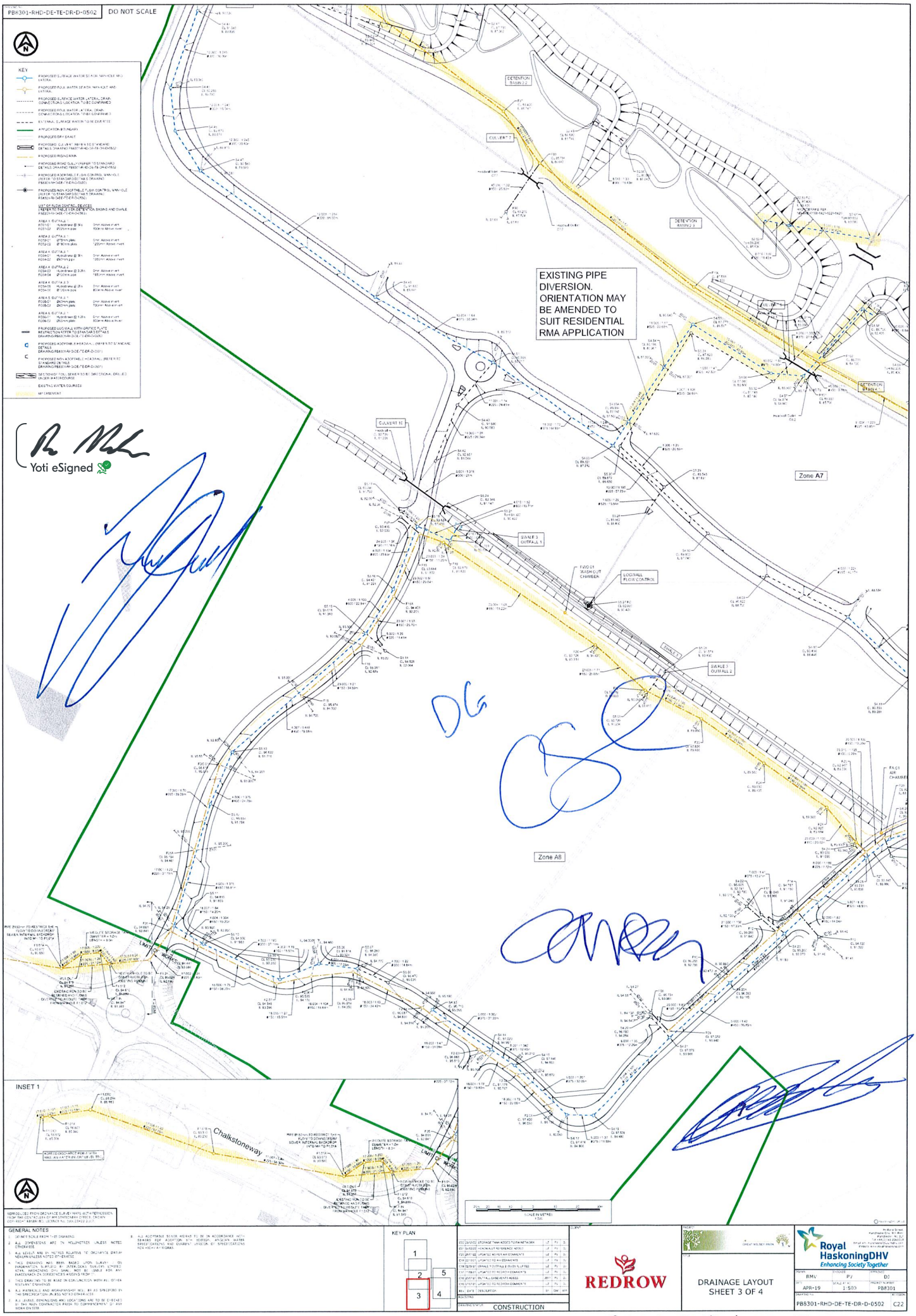
Yoti eSigned

DG

Seal number 5501



seal number 5501



Yoti eSigned

Seal number 5501

Appendix E

Redrow Drainage Drawings

DRAWING No.

PB8301-RHD-DE-A7-DR-D-0150

DO NOT SCALE

CONNECTION INTO SEWERS PROVIDED AS PART OF INFRASTRUCTURE RESERVED MATTERS

STUB CONNECTION INTO DEVELOPMENT

STUB CONNECTION INTO DEVELOPMENT

SEWER DIVERION FORMING PART OF INFRASTRUCTURE RESERVED MATTERS

Zone A7

Zone A8

× ???

× ???

25m 20 15 10 5 0 10 20 30m

SCALE IN METRES
1:500

GENERAL NOTES

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KEY:

- OUTLINE APPLICATION BOUNDARY
- A7 ACCESS ROAD RMA APPLICATION BOUNDARY
- PROPOSED SURFACE WATER SEWER
- PROPOSED ROAD GULLY CONNECTION
- PROPOSED STUB INTO DEVELOPMENT
- PROPOSED SURFACE WATER MANHOLE
- PROPOSED ROAD GULLY
- SURFACE WATER SEWERS FORMING PART OF INFRASTRUCTURE RESERVED MATTERS
- FOUL SEWERS FORMING PART OF INFRASTRUCTURE RESERVED MATTERS
- SEWER DIVERSION FORMING PART OF INFRASTRUCTURE RESERVED MATTERS

REV	DATE	DESCRIPTION	BY	CHK	APP
P03	17.12.24	AMENDED TO PRE APP COMMENTS	SS	LZ	DJ
P02	11.12.24	CYCLEWAY AND TURNING HEAD AMENDED	SS	LZ	DJ
P01	29.11.24	FIRST ISSUE	JM	JM	DJ

REVISIONS

DRAWING STATUS: PRELIMINARY

CLIENT: REDROW

PROJECT: GREAT WILSEY PARK

TITLE

RESERVED MATTERS
A7

PROPOSED DRAINAGE

Royal HaskoningDHV
Enhancing Society Together

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Manchester One, 9th Floor
Manchester, M1 3LF
Tel +44(0)161 2361018
Email info.manchester@uk.rhdhv.com
Website www.royalhaskoning.com

DRAWN	CHECKED	APPROVED
JM	JM	DJ
DATE	SCALE AT A1	PROJECT NUMBER
NOV '24	1:500	PB8301

DRAWING No.	REVISION
PB8301-RHD-DE-A7-DR-D-0150	P03

DRAWING No.
PB8301-RHD-DE-TE-DR-D-0504

DO NOT SCALE

Zone A5

L 1

REA 4 - OUTFALL 1

BRIDGE
DSCAPE
ITECT
WING)

AREA 4 - OUTFALL 2

SECTION OF FOUL DRAINAGE TO BE DIRECTIONAL DRILLED UNDER WATERCOURSE

FUTURE FOUL WATER CONNECTION FROM AREA A3 AND A5 TO PUMPING STATION

AREA 4 - OUTFALL 3

2400mm Ø WHEOLITE STORAGE CHAMBER (OSA) TO BE INSTALLED UPSTREAM OF PUMPING STATION. CHAMBER TO HAVE MINIMUM 1:500 LONGFALL

FOUL WATER PUMPING STATION

DETENTION BASIN 4.2

DETENTION BASIN 4.3

CULVERT 9

PS (15.65x14m)

F107A CL 82.828 IL 78.987

F107B CL 83.606 IL 78.711

F107 CL 83.587 IL 78.305

F108 CL 83.924 IL 78.277

F106 CL 85.083 IL 82.237

F105 CL 85.982 IL 84.191

F104 CL 86.640 IL 84.555

F109 CL 83.477 IL 77.909

F1.02 CL 84.009 IL 77.797

F07 CL 87.097 IL 85.650

F37 CL 86.873 IL 84.850

F38 CL 87.472 IL 85.350

F39 CL 85.970 IL 84.134

F44 CL 84.032 IL 79.784

F45 CL 83.265 IL 80.499

F34 CL 88.310 IL 86.894

F35 CL 88.613 IL 86.740

S4.02 CL 86.199 IL 83.758

S4.03 CL 84.325 IL 82.345

S4.04 CL 83.422

S4.05 CL 83.265 IL 81.879

S4.06 ToH 82.437 IL 81.850

S4.07 ToH 81.915 IL 81.090

S4.08 FC CL 82.200 IL 80.839

S4.OZ ToH 82.975 IL 82.450

S4.40 FC CL 86.200 IL 83.000

S4.39 ToH 85.300 IL 84.400

S4.38 ToH 85.580 IL 84.680

S4.37 CL 86.200 IL 84.695

S4.36 CL 86.654 IL 84.719

S4.35 CL 86.450 IL 85.236

S4.34 CL 86.960 IL 85.365

S4.33 CL 87.356 IL 85.460

S4.32 CL 88.564 IL 87.048

S4.31 CL 89.090 IL 87.445

S4.30 CL 89.744 IL 87.597

D06 CL 80.187 IL 78.784

D05 CL 80.399 IL 79.069

4.01 CL 79.550 IL 79.352

HYDROBRAKE REF.: MD-SHE-0066-2000-1100-2000

HYDROBRAKE REF.: MD-SHE-0077-2000-1400-3200

48.001 / 1:230 Ø225 / 82.18m

31.009 / 1:40 Ø225 / 12.53m

31.010 / 1:17 Ø225 / 38.34m

31.011 / 1:230 Ø300 / 50.11m

48.002 / 1:219 Ø225 / 6.14m

29.001 / 1:270 Ø450 / 72.83m

29.000 / 1:40 Ø100 / 6.84m

2.001 / 1:47 Ø225 / 55.46m

2.002 / 1:216 Ø450 / 84.36m

2.003 / 1:444 Ø525 / 12.68m

2.005 / 1:21 Ø525 / 5.39m

2.006 / 1:7 Ø300 / 12.97m

19.001 / 1:34 Ø150 / 16.85m

19.002 / 1:36 Ø150 / 25.82m

19.003 / 1:16 Ø150 / 60.83m

19.004 / 1:26 Ø450 / 11.16m

19.005 / 1:100 Ø450 / 11.18m

20.010 / 1:136 Ø150 / 20.87m

20.011 / 1:22 Ø150 / 30.71m

4.004 / 1:38 Ø600 / 15.23m

4.005 / 1:22 Ø600 / 34.36m

4.008 / 1:70 Ø2x525 / 30.6m

4.007 / 1:67 Ø2x525 / 21.46m

5.012 / 1:149 Ø600 / 22.12m

9.000 / 1:236 Ø300 / 9.68m

9.001 / 1:225

RISING MAIN OUTLET 82.320

LIGHTING COLUMN FOR DETAILS REFER TO PB8301-RHD-DE-TE-DR-D-0520

Headwall Inlet C9.1

Headwall Outlet C9.2

KEY:

- PROPOSED SURFACE WATER SEWER, MANHOLE AND LATERAL
- PROPOSED FOUL WATER SEWER, MANHOLE AND LATERAL
- PROPOSED SURFACE WATER LATERAL DRAIN CONNECTIONS (LOCATION TO BE CONFIRMED
- PROPOSED FOUL WATER LATERAL DRAIN CONNECTIONS (LOCATION TO BE CONFIRMED
- EXTERNAL SURFACE WATER TO BE DIVERTED
- APPLICATION BOUNDARY
- PROPOSED DRY SWALE
- PROPOSED CULVERT (REFER TO STANDARD DETAILS DRAWING PB8301-RHD-DE-TE-DR-D-0532)
- PROPOSED RISING MAIN
- PROPOSED ROAD GULLY (REFER TO STANDARD DETAILS DRAWING PB8301-RHD-DE-TE-DR-D-0532)
- PROPOSED ADOPTABLE FLOW CONTROL MANHOLE (REFER TO STANDARD DETAILS DRAWING PB8301-RHD-DE-TE-DR-D-0530)
- PROPOSED NON ADOPTABLE FLOW CONTROL MANHOLE (REFER TO STANDARD DETAILS DRAWING PB8301-RHD-DE-TE-DR-D-0530)

LIST OF FLOW CONTROL DEVICES
(REFER TO TABLE 1 ON DETENTION BASINS AND SWALE PB8301-RHD-DE-TE-DR-D-0563)

AREA 1. OUTFALL 1.
FC01-01 Hydrobrake @ 5l/s 0mm Above invert
FC01-02 Ø225mm pipe 930mm Above invert

AREA 2. OUTFALL 1.
FC02-01 Ø75mm plate 0mm Above invert
FC02-02 Ø180mm plate 1200mm Above invert

AREA 4. OUTFALL 1.
FC04-01 Hydrobrake @ 3l/s 0mm Above invert
FC04-02 Ø60mm pipe 1000mm Above invert

AREA 4. OUTFALL 2.
FC04-03 Hydrobrake @ 3.2l/s 0mm Above invert
FC04-04 Ø100mm pipe 1650mm Above invert

AREA 4. OUTFALL 3.
FC04-05 Hydrobrake @ 2l/s 0mm Above invert
FC04-06 Ø100mm pipe 800mm Above invert

AREA 5. OUTFALL 1.
FC05-01 Ø60mm plate 0mm Above invert
FC05-02 Ø60mm plate 700mm Above invert

AREA 6. OUTFALL 1.
FC06-01 Hydrobrake @ 1.2l/s 0mm Above invert
FC06-02 Ø55mm plate 800mm Above Invert

- PROPOSED LOG WALL WITH ORIFICE PLATE RESTRICTION REFER TO STANDARD DETAILS DRAWING PB8301-RHD-DE-TE-DR-D-0530)
- PROPOSED ADOPTABLE HEADWALL (REFER TO STANDARD DETAILS DRAWING PB8301-RHD-DE-TE-DR-D-0531)
- PROPOSED NON ADOPTABLE HEADWALL (REFER TO STANDARD DETAILS DRAWING PB8301-RHD-DE-TE-DR-D-0531)
- SECTION OF FOUL SEWER TO BE DIRECTIONAL DRILLED UNDER WATERCOURSE
- EXISTING WATER COURSES
- 6M EASEMENT

25m 20 15 10 5 0 10 20 30m
SCALE IN METRES
1:500

GENERAL NOTES

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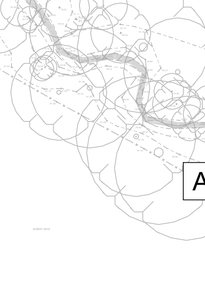
KEY PLAN



REV	DATE	DESCRIPTION	BY	CHK	APP
C04	06/12/23	LAYOUT AMENDED TO SCC COMMENTS	KZ	DJ	DJ
C03	23/10/23	AMENDED TO REDROWS COMMENTS	LZ	JM	DJ
C02	08/07/22	AMENDED TO REDROWS COMMENTS	LZ	PV	DJ
C01	30/07/20	FIRST ISSUE	AB	PV	DJ

REVISIONS

DRAWING STATUS: CONSTRUCTION

CLIENT: REDROW

PROJECT: GREAT WILSEY PARK

TITLE: DRAINAGE LAYOUT SHEET 5 OF 5

Royal HaskoningDHV
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Website www.royalhaskoning.com

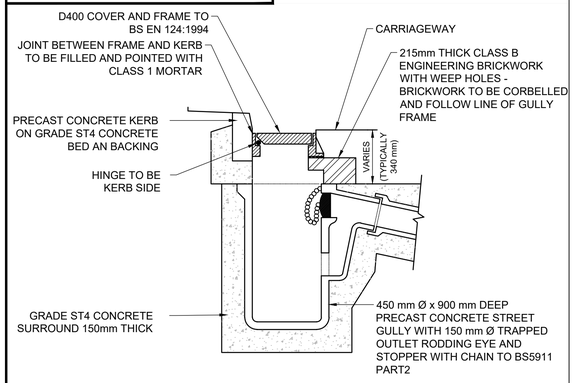
DRAWN	CHECKED	APPROVED
AB	PV	DJ
DATE	SCALE AT A0	PROJECT NUMBER
JULY-20	1:500	PB8301

DRAWING No. PB8301-RHD-DE-TE-DR-D-0504

REVISION C04

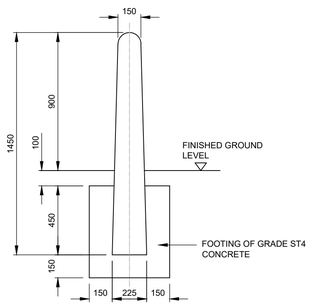
DRAWING No.
PB8301-RHD-DE-TE-DR-D-0520

DO NOT SCALE

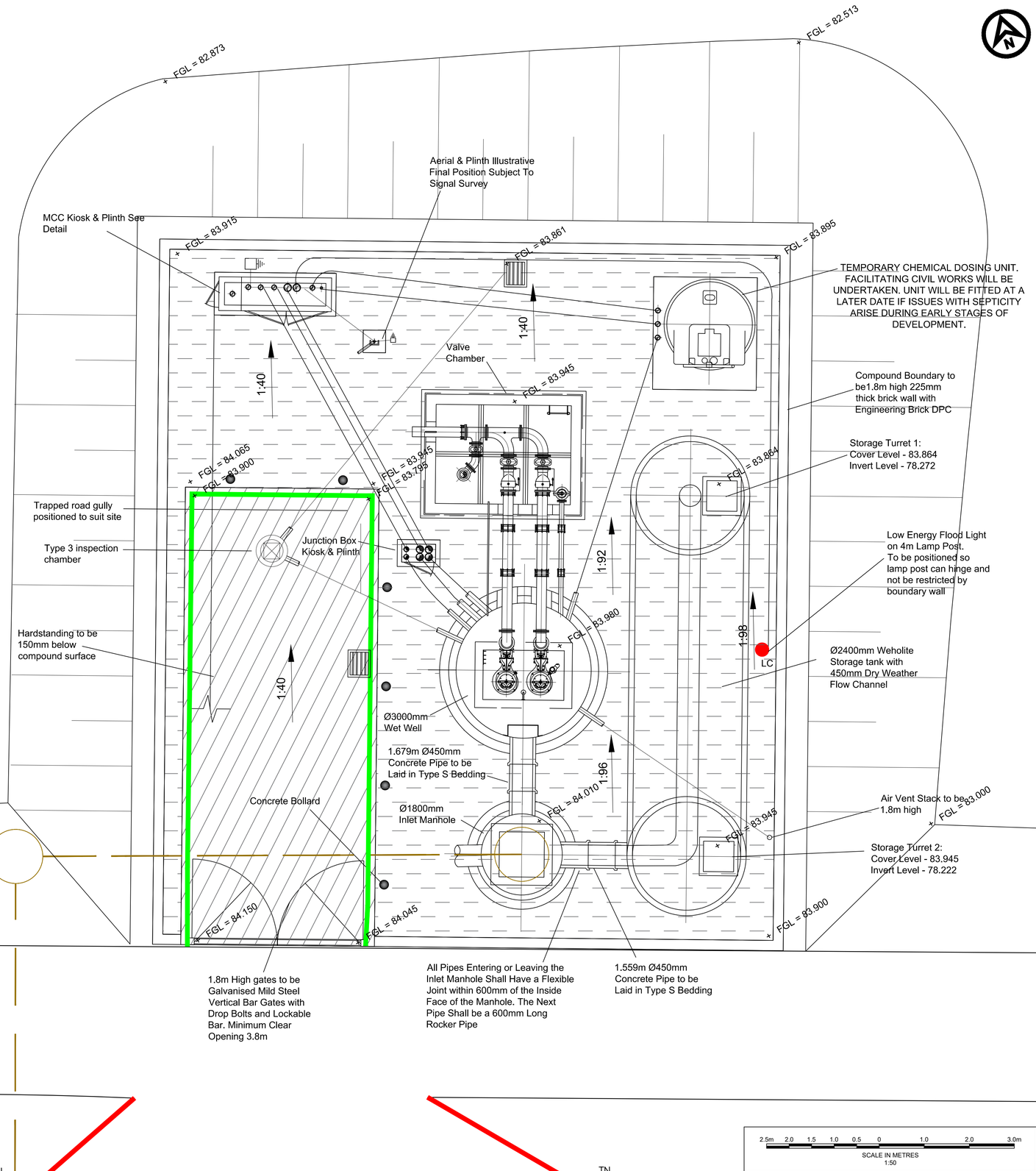


1. KERB FACE NORMALLY 125mm.
2. ALL DIMENSIONS IN MILLIMETRES.
3. GULLY GRATE AND FRAME TO BE SET 5mm BELOW ADJACENT CARRIAGEWAY.
4. OVERBREAK IN EXCAVATION FOR GULLY TO BE BACKFILLED WITH CONCRETE GRADE ST4.
5. ALL CONCRETE TO COMPLY WITH BS:8500.

HIGHWAY GULLY
SCALE: 1:20



CONCRETE BOLLARD DETAIL
SCALE 1:20



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KEY:-

COMPOUND SURFACING
20mm SMA AC6 SURFACE COURSE
60mm AC20 HDM BINDER COURSE
75mm TYPE 1 SUB BASE

TANKER HARDSTANDING
40mm SMA 10 SURFACE COURSE
60mm AC20 HDM BINDER COURSE
125mm AC32 HDM BASE COURSE
225mm TYPE 1 SUB BASE

+FGL=83.980 FINISHED GROUND LEVEL

PROPOSED LOCATION OF BOLLARD (REFER TO DETAIL) (CENTRE OF BOLLARD TO BE 400mm BEHIND CHANNEL LINE)

PCC 125 x 255 HALF BATTERED KERB TYPE HB2(REFER TO DRAWING PB8301-RHD-DE-TE-DR-D-1105 FOR DETAILS)

PCC 50 x 150 EDGING TYPE EF1 (REFER TO DRAWING PB8301-RHD-DE-TE-DR-D-1105 FOR DETAILS)

PCC 125 x 255 TRANSITION KERB (REFER TO DRAWING PB8301-RHD-DE-TE-DR-D-1105 FOR DETAILS)

PCC 125 x 255 TRANSITION KERB (REFER TO DRAWING PB8301-RHD-DE-TE-DR-D-1105 FOR DETAILS)

REV	DATE	DESCRIPTION	BY	CHK	APP
C05	20/10/21	UPDATED AS PER AW COMMENTS	JBW	PV	DJ
C04	16/06/21	UPDATED AS PER AW COMMENTS	JBW	PV	DJ
C03	14/04/21	UPDATED AS PER AW COMMENTS	JBW	PV	DJ
C02	20/01/21	UPDATED AS PER AW COMMENTS	AB	PV	DJ
C01	12/11/20	FIRST ISSUE	AB	PV	DJ

REVISIONS

DRAWING STATUS: CONSTRUCTION

CLIENT: REDROW

PROJECT: GREAT WILSEY PARK

TITLE

FOUL WATER PUMPING STATION. GENERAL ARRANGEMENT LAYOUT

Royal HaskoningDHV
Enhancing Society Together
Portland Street,
Manchester One, 9th Floor
Manchester, M1 3LF
Tel +44(0)161 2361018
Email info.manchester@uk.rhdhv.com
Website www.royalhaskoning.com

DRAWN	CHECKED	APPROVED
AB	C01	DJ
DATE	SCALE AT A1	PROJECT NUMBER
OCT-20	1:50	PB8301

DRAWING No.: PB8301-RHD-DE-H1-DR-D-0520
REVISION: C05

DRAWING No.
PB8301-RHD-DE-TE-DR-D-0521

DO NOT SCALE

3000mm x 2200mm FACTA B Steelway Brickhouse 'Defender' Access Cover c/w Torsion Spring Assisted Lift, 'StampLock' Locking Mechanism, Recessed Padlock Box, Self Locating Safety Stays. Internal Hinged Safety Grid And Dismountable Barrier System Rebates 250mm Wide x 130mm Deep Supplied by PDAS, fitted by Civils Contractor

Heavy Duty Precast Concrete Cover Slab

Heavy Duty Precast Concrete Cover Slab

Ø100mm Duct To Dosing Unit See Notes 9 & 10

1800mm x 1100mm FACTA B Steelway Brickhouse 'Prolift' Access Cover c/w Torsion Spring Assisted Lift, 'StampLock' Locking Mechanism, Recessed Padlock Box, Self Locating Safety Stays. Internal Hinged Safety Grid And Dismountable Barrier System Rebates 180mm Wide x 90mm Deep Supplied by PDAS, fitted by Civils Contractor

1000mm x 1000mm FACTA B Steelway Brickhouse 'Prolift' Access Cover c/w Torsion Spring Assisted Lift, 'StampLock' Locking Mechanism, Recessed Padlock Box, Self Locating Safety Stays. Internal Hinged Safety Grid And Dismountable Barrier System Rebates 180mm Wide x 90mm Deep Supplied by PDAS, fitted by Civils Contractor

Heavy Duty Precast Concrete Cover Slab

83.945

130 Rebate

83.980

90 Rebate

84.010

90 Rebate

Tanker Hard Standing

Tanker Hard Standing

450

2000

375

600

820

1470

300

2535

8500

6.288

3500

2 off Ø150mm and 1 off Ø100mm Cable Ducts

Ø25mm Trace Wire Duct

225 Thick Grade GEN3 Sulphate Resisting Concrete Walls

Stainless Steel Retractable Ladder

1 off Ø25mm Earth Duct

Ø100mm Air Vent Pipe

Trapped road Gulley

A

A

82.320

81.945

350 Thick Grade GEN3 Sulphate Resisiting Reinforced Concrete Base Slab

Screed to Fall to Drain

1 Layer A393 Mesh (Top + Btm)

Pipe Supports

Ø80mm Sludge Valve. Supplied by PDAS, fitted by Civils Contractor

Ø80mm Valve Chamber Drain Supplied by PDAS, fitted by Civils Contractor

200 Thick Grade GEN3 Sulphate Resisting Concrete Surround

Precast Concrete Chamber Sections. Lifting Eyes to be Pointed

WARNING
Care must be taken in positioning drain and plug to ensure clearances from
1. Pipe Supports
2. Access Cover opening
3. Access Cover centre bar
4. That final benching can be made to fall.

200 Thick Grade GEN3 Sulphate Resisting Concrete Surround

Precast Concrete Chamber Sections. Lifting Eyes to be Pointed

Stainless Steel Baffle Plate. Supplied by PDAS, fitted by Civils Contractor

Ø450mm Bi Directional pipe to Storage Tank
78.172

Ø450mm Incoming sewer
77.672

Ø450mm Incoming sewer
77.722

77.453 HLA

77.303 STBY START

77.153 START

Precast Concrete Chamber Sections to be Set 75mm into Base Slab

1 Layer A393 Mesh (Top + Btm)

300 Thick Grade GEN3 Sulphate Resisting Reinforced Concrete Base Slab

Benching See Note 8

75.867 STOP

45°

45°

75.480

Ø1800

Benching to start 100mm from Front of Duckfoot

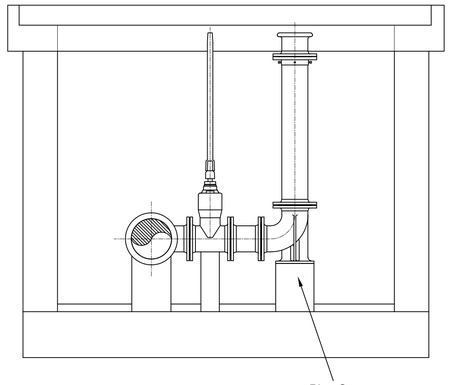
100

100

Benching to start 100mm from Volute

3.73m x 3.73m x 0.4m Deep Square Grade GEN3 Sulphate Resisting Reinforced Concrete Base Slab

Ø3000



VIEW ON OVERPUMPING

OPERATING LEVELS	
MAXIMUM STORAGE LEVEL	80.672
LOWEST INLET	77.672
HIGH LEVEL ALARM	77.453
STANDBY PUMP START	77.303
DUTY PUMP START	77.153
PUMP STOP	75.867
WET WELL BASE	75.480

GENERAL NOTES

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REV	DATE	DESCRIPTION	BY	CHK	APP
C02	14/04/21	AMENDED FOLLOWING AW COMMENTS	JBW	PV	DJ
C01	12/11/20	FIRST ISSUE	AB	PV	DJ

REVISIONS

DRAWING STATUS: CONSTRUCTION

CLIENT: REDROW

PROJECT: GREAT WILSEY PARK

TITLE

FOUL WATER PUMPING STATION. SECTION LAYOUT

Royal HaskoningDHV
Enhancing Society Together
Portland Street,
Manchester One, 9th Floor
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Tel +44(0)161 2361018
Email info.manchester@uk.rhdhv.com
Website www.royalhaskoning.com

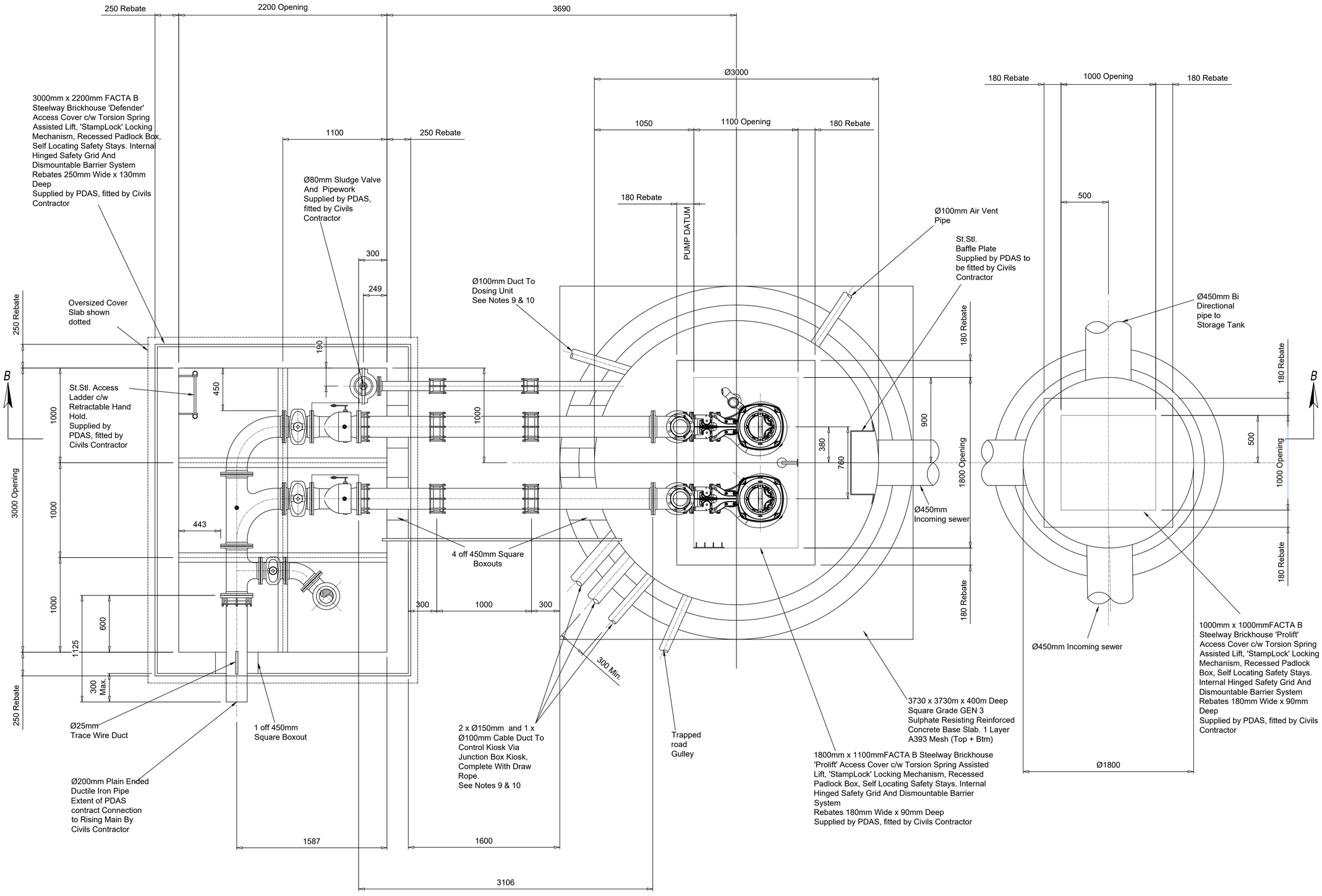
DRAWN	CHECKED	APPROVED
AB	PV	DJ
DATE	SCALE AT A1	PROJECT NUMBER
OCT-20	1:50	PB8301

DRAWING No. PB8301-RHD-DE-TE-DR-D-0521

REVISION C02

DRAWING No.
PB8301-RHD-DE-TE-DR-D-0522

DO NOT SCALE



VIEW ON SECTION A - A

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7. ALL LEVELS, DIMENSIONS AND LOCATIONS ARE TO BE CHECKED BY THE MAIN CONTRACTOR PRIOR TO COMMENCEMENT OF ANY WORK ON SITE
8. ALL ADOPTABLE SEWER WORKS TO BE IN ACCORDANCE WITH SEWERS FOR ADOPTION 6th EDITION, ANGLIAN WATER'S SPECIFICATION AND THE CURRENT VERSION OF THE SPECIFICATION FOR HIGHWAY WORKS.

REV	DATE	DESCRIPTION	BY	CHK	APP
C02	14/06/21	LAYOUT AMENDED	JBW	PV	DJ
C01	26/10/20	FIRST ISSUE	AB	PV	DJ

REVISIONS

DRAWING STATUS: CONSTRUCTION

CLIENT: REDROW

PROJECT: GREAT WILSEY PARK

TITLE

FOUL WATER PUMPING STATION. PLAN LAYOUT

Portland Street,
Manchester One, 9th Floor
Manchester, M1 3LF
Tel +44(0)161 2361018
Email info.manchester@uk.rhdhv.com
Website www.royalhaskoning.com

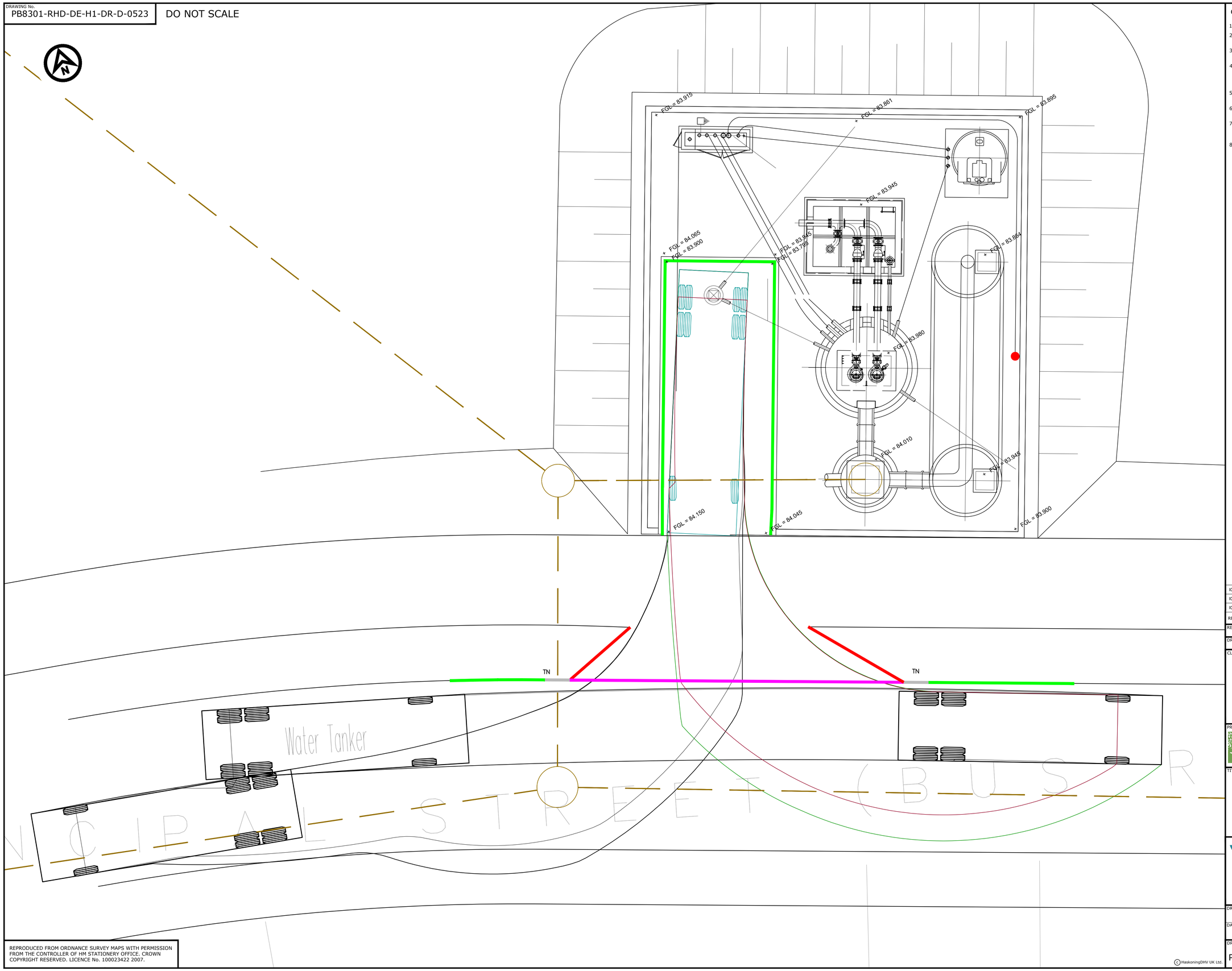
Royal HaskoningDHV
Enhancing Society Together

DRAWN	CHECKED	APPROVED
AB	PV	DJ
DATE	SCALE AT A1	PROJECT NUMBER
OCT-20	1:50	PB8301

DRAWING No.: PB8301-RHD-DE-TE-DR-D-0522
REVISION: C02

DRAWING No.
PB8301-RHD-DE-H1-DR-D-0523

DO NOT SCALE



REPRODUCED FROM ORDNANCE SURVEY MAPS WITH PERMISSION FROM THE CONTROLLER OF HM STATIONERY OFFICE. CROWN COPYRIGHT RESERVED. LICENCE No. 100023422 2007.

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KEY:-

PCC BULLNOSED KERB LAID WITH 20mm UPSTAND

PCC HALF BATTERED KERB TYPE HB2

REV	DATE	DESCRIPTION	BY	CHK	APP
I03	14/06/21	AMENDED AS PER AW COMMENTS	JBW	PV	DJ
I02	06/05/21	AMENDED AS PER AW COMMENTS	JBW	PV	DJ
I01	26/10/20	FIRST ISSUE	AB	PV	DJ

REVISIONS

DRAWING STATUS: INFORMATION

CLIENT: REDROW

PROJECT: GREAT WILSEY PARK

TITLE

FOUL WATER PUMPING STATION. SWEPT PATH ANALYSIS FOR TANKER

Royal HaskoningDHV
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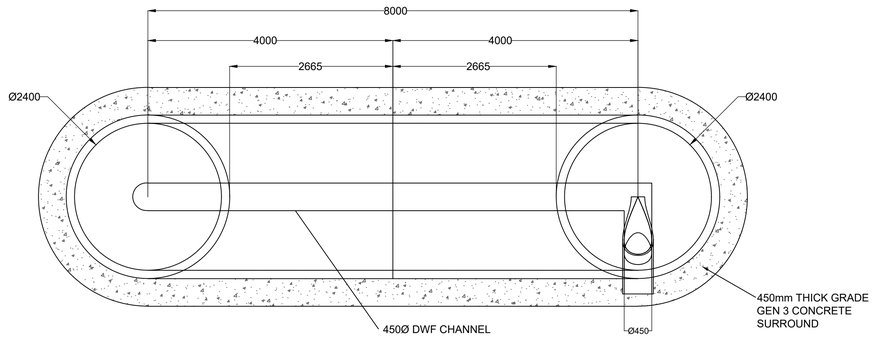
Email info.manchester@uk.rhdhv.com
Website www.royalhaskoning.com

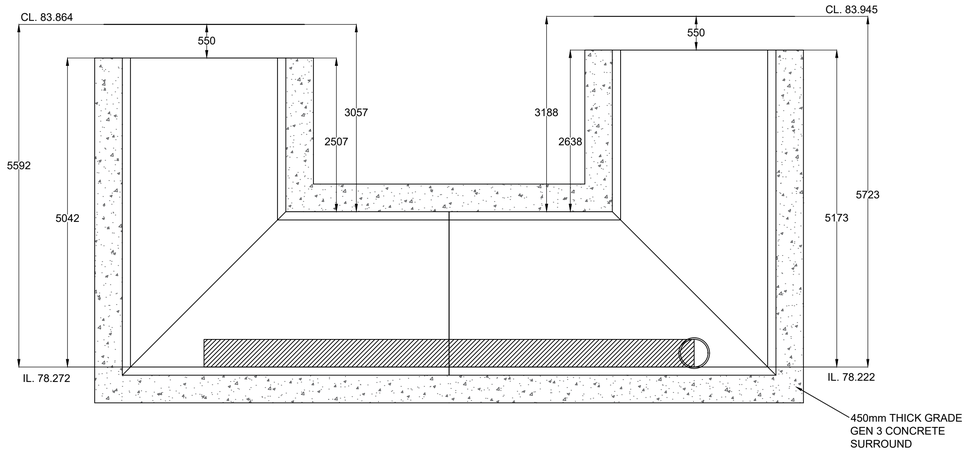
DRAWN	CHECKED	APPROVED
AB	PV	DJ
DATE	SCALE AT A1	PROJECT NUMBER
OCT-20	1:100	PB8301

DRAWING No.	REVISION
PB8301-RHD-DE-TE-DR-D-0523	I03

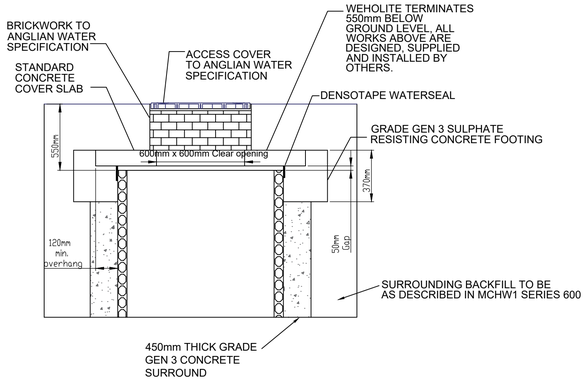
DRAWING No.
PB8301-RHD-DE-TE-DR-D-0524

DO NOT SCALE

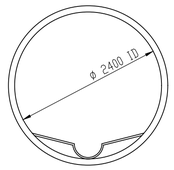




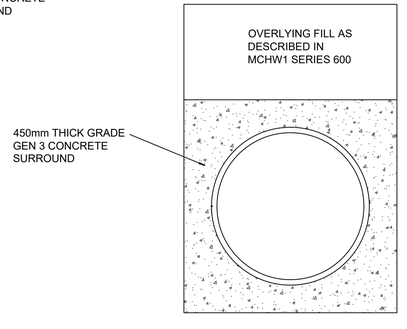
SECTION THROUGH TANK



Manhole Detail



450mm Ø DRY WEATHER CHANNEL



BEDDING AND BACKFILL DETAILS

GENERAL NOTES

1. DO NOT SCALE FROM THIS DRAWING.
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REV	DATE	DESCRIPTION	BY	CHK	APP
C01	16/11/20	FIRST ISSUE	AB	PV	DJ

REVISIONS

DRAWING STATUS: CONSTRUCTION

CLIENT: REDROW

PROJECT: GREAT WILSEY PARK

TITLE

FOUL WATER PUMPING STATION. WEHOLITE TANK DETAILS

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Manchester One, 9th Floor
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Tel +44(0)161 2361018
Email info.manchester@uk.rhdhv.com
Website www.royalhaskoning.com

DRAWN	CHECKED	APPROVED
AB	PV	DJ
DATE	SCALE AT A1	PROJECT NUMBER
NOV-20	1:50	PB8301

DRAWING No. PB8301-RHD-DE-TE-DR-D-0524 | REVISION C01

Appendix F

LLFA Correspondence

Iris Kalaci

From: Miles Orlopp <Miles.Orlopp@suffolk.gov.uk>
Sent: 12 November 2025 14:10
To: Scott Butcher
Subject: RE: EA232 - Haverhill - Outfalls

Hi Scott,

Happy with this, can you give me a call back regarding the swales question from the email dated 24th of October please?

Thanks,

Miles Orlopp BSc (Hons)
Flood and Water Engineer
Growth, Highways and Infrastructure
Suffolk County Council
Endeavour House, 8 Russell Road, Ipswich, IP1 2BX

Email: miles.orlopp@suffolk.gov.uk
Not at work Fridays due to University

The updated Suffolk SuDS Guidance (Appendix A to the Suffolk Flood Risk Management Strategy) is now available on our website at the following link:
https://www.suffolk.gov.uk/roads-and-transport/flooding-and-drainage/guidance-on-development-and-flood-risk

---

From: Scott Butcher <Scott.Butcher@bloorhomes.com>
Sent: 01 October 2025 14:12
To: Miles Orlopp <Miles.Orlopp@suffolk.gov.uk>
Subject: EA232 - Haverhill - Outfalls

Hi Miles,

Thank you for taking my call earlier – apologies have been in meetings since we spoke.

As discussed I have enclosed the FRA where the assessment of the peak water level within the ditch / watercourse was undertaken (Page 31). This has then been used by Ardent to review our proposed outfall level against the peak water level. Where our outfall level is above the peak water level our stance is that the outfall does not need to be modelled as being surcharged.

You will note a crate discrepancy from the ***"Scenario B"*** drawing attached for Catchment A compared to the below summary (Ardent), as the storm calcs had been run by another consultant – outfall shown as being surcharged.

The below calcs utilise the parameters we agreed:

- Discharge rate based on dev area and IoH124 2.84l/s/ha
- 40% CC
- CV = 0.9

- Max water depth = 1.2m

SW Catchment A
Developable Area = 3.775ha
Qmax = 10.7l/s (2.84l/s/ha x 3.775ha)
Basin A Layout – as shown on Dwg No. ***Scenario B EA232-EN-SK301***
Basin A IL = 78.50m
Basin A Depth = 1.50m (Maximum Water Depth 1.20m and 0.30m Freeboard)
Basin A Footprint (excl. Maintenance Strip) = 0.159ha (considered as impermeable area in the drainage calculations – as per the SCC Flood Risk Management Strategy Appendix A) – Size of tank can be reduced if this is omitted from the drainage calculations.
Attenuation Tank Size = 860m2 x 0.60m height (product Aco Storm Brixx….or another supplier can be used)
Attenuation Tank IL = 79.10m (set 600mm above IL of Basin A)
Outfall IL = 78.328m
Peak Water Level in OWC, 1:100y+cc (Brookbanks FRA) Node HV32 = 77.49m and HV33 = 76.94m. The outfall will be between these two nodes and therefore is modelled as **not surcharged**.
Halfdrain times for both Basin A and Tank less than 24hrs for 1 in 100y+cc.

SW Catchment B
Developable Area = 4.008ha
Qmax = 11.4l/s (2.84l/s/ha x 4.008ha)
Basin B Layout – as shown on Dwg No. ***Scenario B EA232-EN-SK301***
Basin B IL = 72.30m AOD
Basin B Depth = 1.50m (Maximum Water Depth 1.20m and 0.30m Freeboard)
Basin B Footprint (excl. Maintenance Strip) = 0.253ha (considered as impermeable area in the drainage calculations – as per the SCC Flood Risk Management Strategy Appendix A)
Outfall IL = 71.90m
Peak Water Level in OWC, 1:100y+cc (Brookbanks FRA) Node HV47 = 70.57m, therefore Outfall modelled as **not surcharged**.
Halfdrain time for Basin B is less than 24hrs for 1 in 100y+cc.

SW Catchment C
Developable Area = 6.441ha
Qmax = 18.3l/s (2.84l/s/ha x 6.441ha)
Basin C Layout – as shown on Dwg No. ***Scenario B EA232-EN-SK301***
Basin C IL = 69.75m
Basin C Depth = 1.50m (Maximum Water Depth 0.90m and 0.60m Freeboard…may slightly change as part of the detailed design)
Basin B Footprint (excl. Maintenance Strip) = 0.44ha (considered as impermeable area in the drainage calculations – as per the SCC Flood Risk Management Strategy Appendix A).
Outfall IL = 69.0m
OWC IL at Outfall = 67.41m, The drainage model in the Brookbanks FRA does not extend this far / does not covert this part of the watercourse. There is scope to raise the outfall.
Half-drain times for both Basin C is less than 24hrs for 1 in 100y+cc.

If you could please review and confirm you are happy with the stance that has been taken by Ardent with the outfalls. From review my stance is that the outfalls do not need to be surcharged.

Regards,

Scott Butcher
Senior Engineer

Bloor Homes Eastern
Marauder House, Skyline Way, Bury St Edmunds, Suffolk, IP32 7YA

Mob: **07977 097119**
Tel: **01284 777524**
Email: Scott.Butcher@bloorhomes.com

Appendix G

Drainage Strategy Drawings

GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELATED DRAWINGS ISSUED BY THE ENGINEER.
2. DO NOT SCALE FROM THIS DRAWING. WORK FROM FIGURED DIMENSIONS ONLY.
3. ALL LEVELS AND DIMENSIONS SHOWN ON THIS DRAWING ARE IN METRES UNLESS OTHERWISE STATED.
4. THIS DRAWING HAS BEEN BASED UPON TOPOGRAPHICAL SURVEY BY INTERLOCK SURVEYS DRAWING No. 141025 SHEET 1 TO 77, DATED FEBRUARY 2015.
5. THIS DRAWING IS BASED UPON CLIENT'S PLANNING LAYOUT DRAWING NO. EA232-PD-001 Rev D, DATED MAY 2025.

DRAWING KEY

- PLANNING APPLICATION BOUNDARY
- FUTURE PHASE OF WORKS SUBJECT TO A SEPARATE RESERVED MATTERS APPLICATION
- MODELLED EXTENT OF SURFACE WATER FLOOD FOR STORMS 1 IN 100YEARS PLUS CLIMATE CHANGED (BY HYDROSOLUTIONS)
- MODELLED EXTENT OF SURFACE WATER FLOOD FOR STORMS 1 IN 100YEARS PLUS CLIMATE CHANGED (BY HYDROSOLUTIONS), WHICH WILL BE REMOVED DUE TO RAISED LEVELS AS PART OF THE DEVELOPMENT
- EXISTING ORDINARY WATERCOURSE (BED / INVERT LEVEL)
- EXISTING SURFACE WATER DRAINAGE SERVING REDROW DEVELOPMENT
- EXISTING FOUL WATER DRAINAGE SERVING REDROW DEVELOPMENT
- PROPOSED ADOPTABLE (SECTION 104) SURFACE WATER SEWER & MANHOLE
- SURFACE WATER SEWER & MANHOLE TO BE INSTALLED DURING A FUTURE PHASE OF WORKS
- PROPOSED SURFACE WATER BACKDROP
- PROPOSED ADOPTABLE (SECTION 104) SURFACE WATER HEADWALL WITH RIP RAP
- PROPOSED PRIVATE DRAINAGE
- 450Ø 1/95 1.013 — PROPOSED SURFACE WATER CULVERT AS PART OF FLOOD MITIGATION MEASURES BY HYDROSOLUTIONS
- PROPOSED HEADWALL AS PART OF FLOOD MITIGATION MEASURES BY HYDROSOLUTIONS
- PROPOSED CULVERT AS PART OF VEHICULAR CROSSINGS. REFER TO HYDROSOLUTIONS DRAWINGS FOR FURTHER DETAILS
- PROPOSED ADOPTABLE (SECTION 104) FOUL WATER SEWER & MANHOLE
- FOUL WATER SEWER & MANHOLE TO BE INSTALLED DURING A FUTURE PHASE OF WORKS
- BD IL: 77.024 — PROPOSED FOUL WATER DRAINAGE BACKDROP
- PROPOSED ADOPTABLE (SECTION 104) FOUL WATER RISING MAIN
- FOUL WATER RISING MAIN TO BE INSTALLED DURING A FUTURE PHASE OF WORKS
- PROPOSED RIDGIDRAIN AS SLEEVE FOR LIKELY FUTURE FOUL WATER RISING MAIN
- PROPOSED ONLINE PRIVATE ATTENUATION BASIN FOR STORMS UP TO AND INCLUDING THE 1 in 100-YEAR RETURN PERIOD PLUS 40% ALLOWANCE FOR CLIMATE CHANGE
- PROPOSED BELOW GROUND ATTENUATION TANK (GEOCELLULAR CRATES)
- PROPOSED ADOPTABLE ROADSIDE SHALLOW HIGHWAY SWALE (0.3-0.4m DEEP) WITH 1:3.0-4.0 SIDE SLOPES AND WITH UNDER DRAIN (MAINTENANCE BY SCC HIGHWAYS)
- PROPOSED HIGHWAY DRAINAGE
- PROPOSED PRIVATE ROADSIDE SHALLOW SWALE (0.3-0.6m DEEP) WITH 1:3.5 SIDE SLOPES (MAINTENANCE BY MANAGEMENT COMPANY)
- 86.0 — EXISTING MAJOR GROUND LEVELS CONTOUR (0.5m) TRANSCRIBED FROM TOPOGRAPHIC SURVEY
- EXISTING MINOR GROUND LEVELS CONTOUR TRANSCRIBED FROM TOPOGRAPHIC SURVEY
- FFL 86.400 — PROPOSED INDICATIVE FINISHED FLOOR LEVEL
- PROPOSED BASIN MINOR LEVELS CONTOURS (0.10m)
- 80.000 — PROPOSED BASIN MAJOR LEVELS CONTOURS (0.50m)
- PROPOSED FLOW EXCEEDANCE ROUTE
- INDICATIVE UTILITY SERVICES CORRIDOR
- RPA — EXISTING TREE AND ROOT PROTECTION AREA TRANSCRIBED FROM HAYDEN'S ABORICULTURAL CONSULTANTS DRG NO. 11497-D-AIA DATED AUGUST 2025
- VTB — EXISTING TREE AND VETERAN TREE BUFFER TRANSCRIBED FROM HAYDEN'S ABORICULTURAL CONSULTANTS DRG NO. 11497-D-AIA DATED AUGUST 2025
- INDICATIVE TREE LOCATIONS. REFER TO LANDSCAPING DRAWINGS FOR EXACT LOCATIONS

FOR APPROVAL

0m 5m 25m
Scale: 1:500 @ A0

Rev	Description	Drn	Chk	App	Date
P5	ISSUED FOR PLANNING APPOVAL	IK	IK	SDB	27.11.2025
P4	ISSUED FOR PLANNING APPOVAL	IK	IK	SDB	25.11.2025
P3	ISSUED FOR PLANNING APPOVAL	IK	IK	SDB	20.11.2025
P2	ISSUED FOR PLANNING APPOVAL	IK	IK	SDB	13.11.2025
P1	ISSUED FOR PLANNING APPOVAL	IK	IK	SDB	28.10.2025
-	ISSUED FOR PLANNING APPOVAL	IK	IK	SDB	15.10.2025

Purpose: PRELIMINARY

Status: -

ARDENT CONSULTING ENGINEERS
AN EMPLOYEE OWNED COMPANY

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Client: BLOOR HOMES

Project Title: GREAT WILSEY PARK, HAVERHILL

Drawing Title: PARCEL A9 DRAINAGE AND SUDS STRATEGY

Drawn by	Checked by	Approved by	Revision
IK	IK	SDB	P5

Scale: 1:500 @ A0 | Date: OCT 2025

Drawing Number: 2503710_A-ACE-XX-XX-DR-C-0601