



West Winch Housing Access Road

Environmental Statement Chapter 11 Water Appendix P: Hardwick Rbt 2003 Scheme Drawings

Author: Highways Agency

Document Reference: NCC/3.11.01p

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1 Introduction

- 1.1.1 Plans provided by National highways showing the construction details of the drainage system for the Hardick Roundabout, including pipe runs, gulleys and pollution prevention devices. If you require this document in a more accessible format please contact westwinchhar@norfolk.gov.uk.

DRAINAGE & ACCESS TRACK DETAILS
AT CONSTITUTION HILL UNDERPASS.

SKETCH N° XTO186/SK04

INHR 146

IN DRAWING

RECEIVED
11 MAR 2003

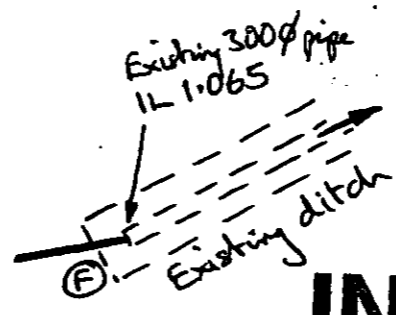
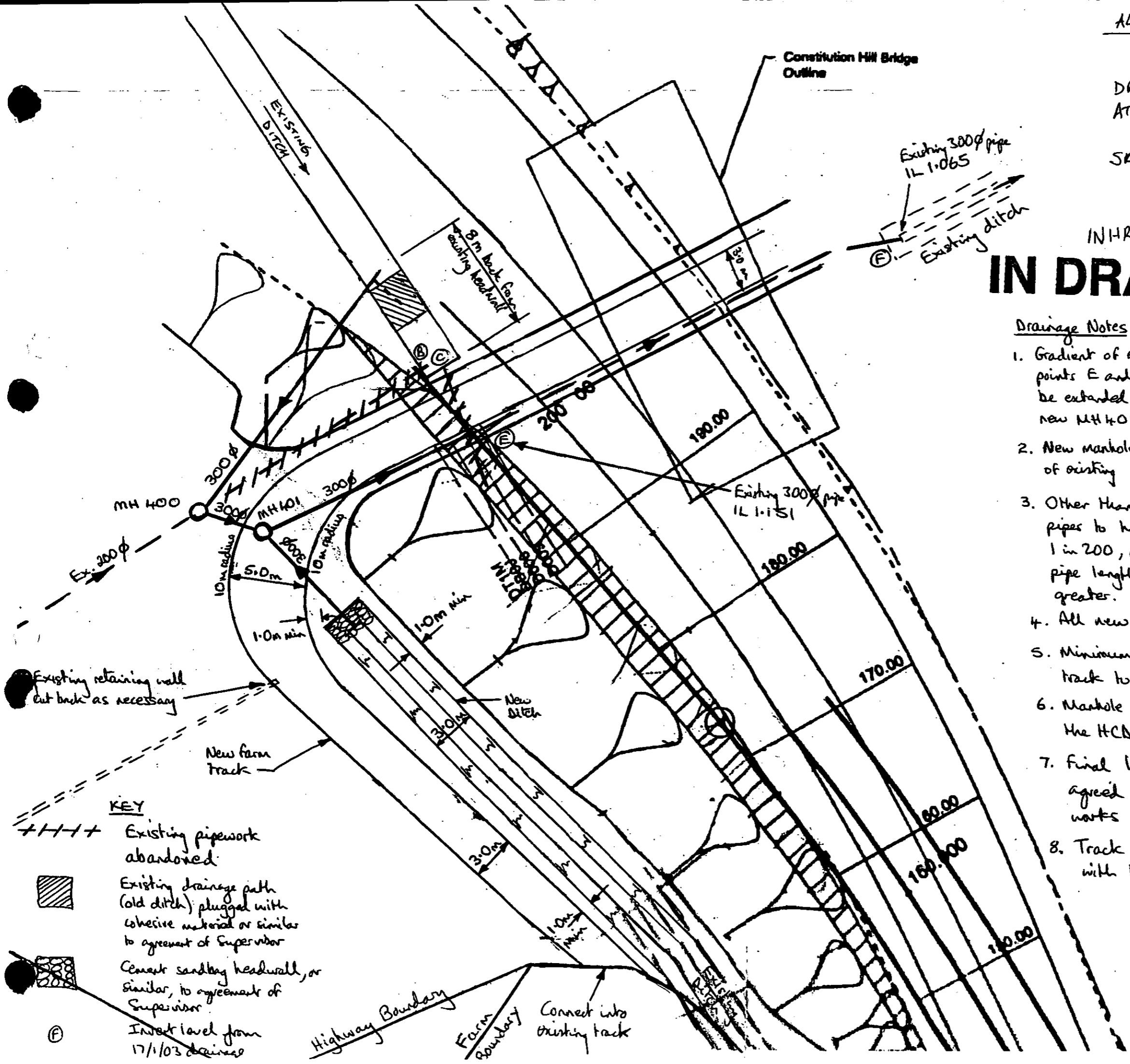
702/0446

Drainage Notes

1. Gradient of existing 300 ϕ pipe between points E and F is 1 in 4.17. Pipe to be extended at same gradient to new MH 401.
2. New manhole MH 400 contacted on-line of existing 200 ϕ pipe.
3. Other than pipe ⑤ to MH 401, all other pipes to have a minimum gradient of 1 in 200, or a level difference along the pipe length of 50mm, whichever is the greater.
4. All new pipework 300mm diameter.
5. Minimum cover to pipes beneath the track to be 750mm.
6. Manhole types to be in accordance with the HCB construction details.
7. Final layout and details to be agreed with the Supervisor before works commence.
8. Track construction to be agreed with the Supervisor.

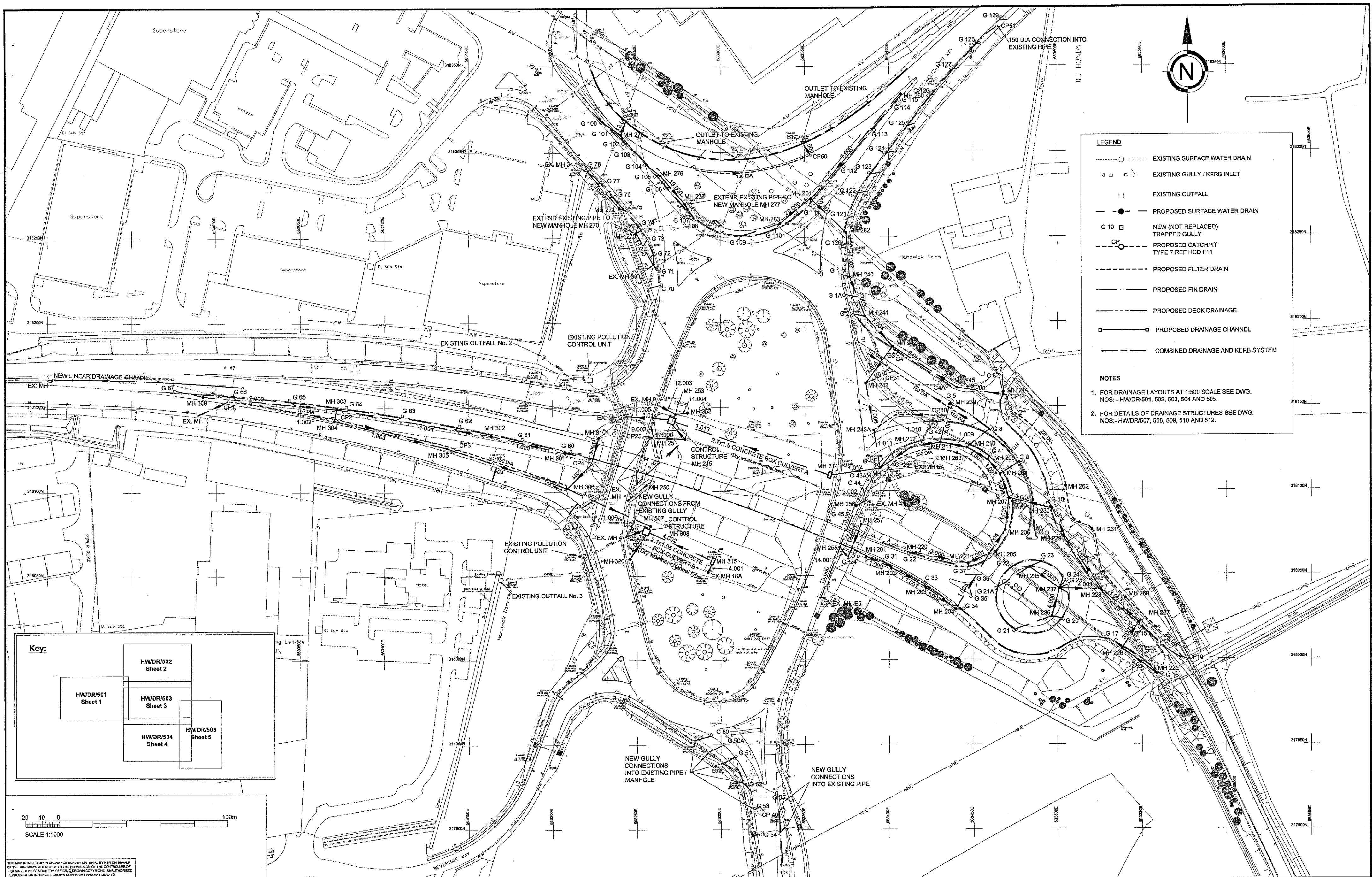
Scale 1:250

10/3/03



KEY

- + + + Existing pipework abandoned
- [Hatched Box] Existing drainage path (old ditch) plugged with cohesive material or similar to agreement of Supervisor
- [Stippled Box] Cement sandbag headwall, or similar, to agreement of Supervisor
- ⑤ Invert level from 17/1/03 drainage



LEGEND

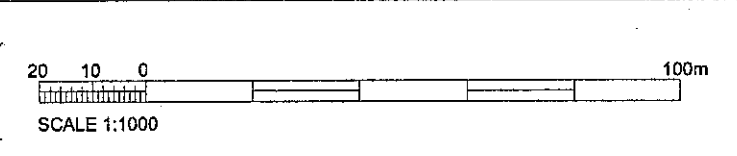
- EXISTING SURFACE WATER DRAIN
- G EXISTING GULLY / KERB INLET
- EXISTING OUTFALL
- PROPOSED SURFACE WATER DRAIN
- G 10 □ NEW (NOT REPLACED) TRAPPED GULLY
- PROPOSED CATCHPIT TYPE 7 REF HCD F11
- PROPOSED FILTER DRAIN
- PROPOSED FIN DRAIN
- PROPOSED DECK DRAINAGE
- PROPOSED DRAINAGE CHANNEL
- COMBINED DRAINAGE AND KERB SYSTEM

NOTES

1. FOR DRAINAGE LAYOUTS AT 1:500 SCALE SEE DWG. NOS: - HW/DR/501, 502, 503, 504 AND 505.
2. FOR DETAILS OF DRAINAGE STRUCTURES SEE DWG. NOS: - HW/DR/507, 508, 509, 510 AND 512.

Key:

HW/DR/501 Sheet 1	HW/DR/502 Sheet 2
HW/DR/503 Sheet 3	HW/DR/505 Sheet 5
HW/DR/504 Sheet 4	



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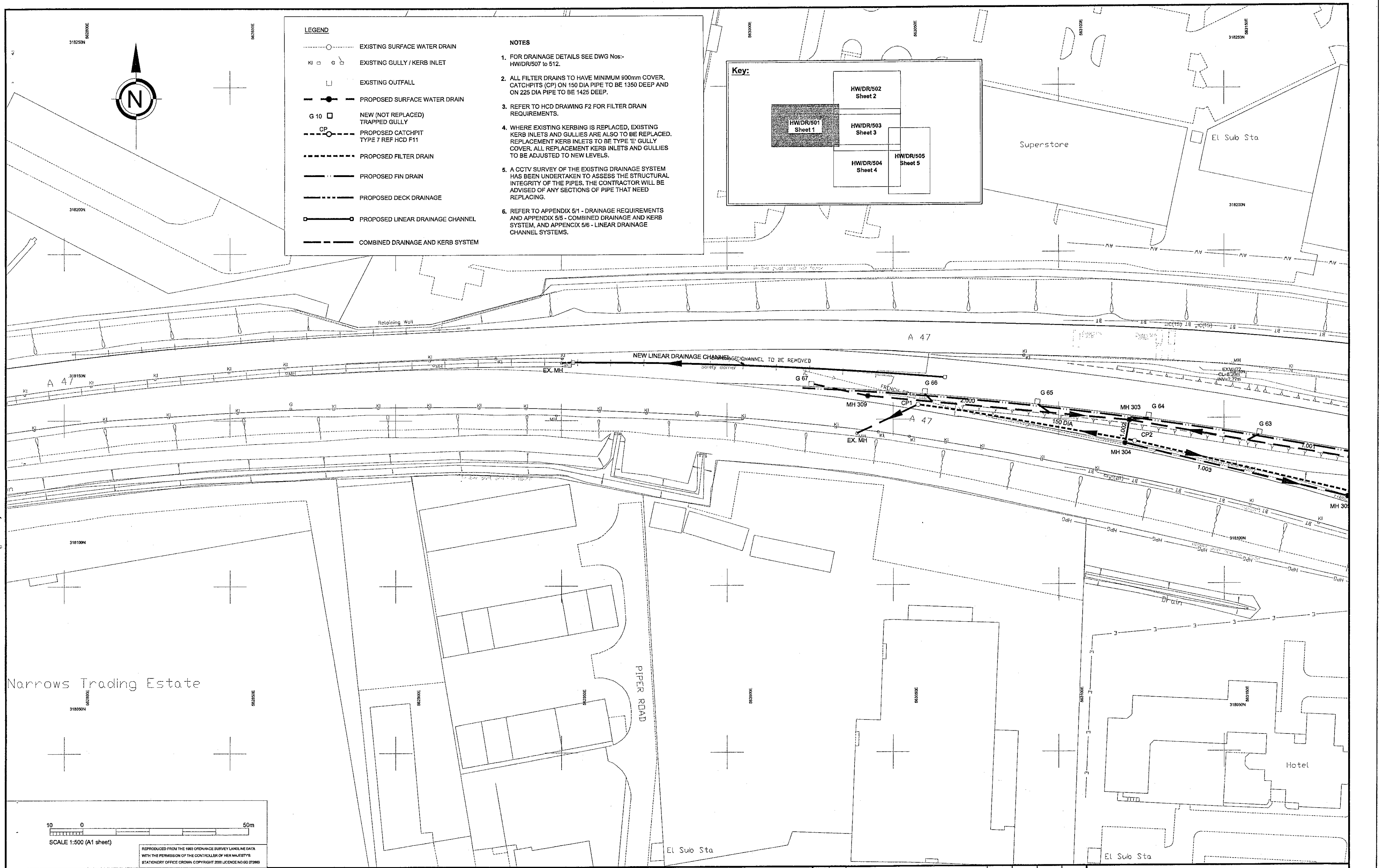
Project Name
A47 HARDWICK ROUNDABOUT IMPROVEMENT

Project Number
XT0186

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B02	08/02	FOR REVISIONS REFER TO DRAWING Nos HW/DR/501 TO 505 INCLUSIVE. ISSUED FOR TENDER.	RLW	PHB	JGB	RW
B01	07/02	ISSUED FOR TENDER	RLW	PHB	JGB	RW
A01	06/02	ISSUED FOR REVIEW				
Issue Date	Description	Drawn	Originator	Checked	Approved	
File ref:	NEW DES:GN:CAD:Drawings:Drainage layouts 501-506	Scale:	1:1000			

Drawing Title
DRAINAGE OVERALL LAYOUT

Drawing No HW/DR/506 **Issue** C01



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KBR**

Project Name
**A47 HARDWICK ROUNDABOUT
IMPROVEMENT**

Project Number
XT0186

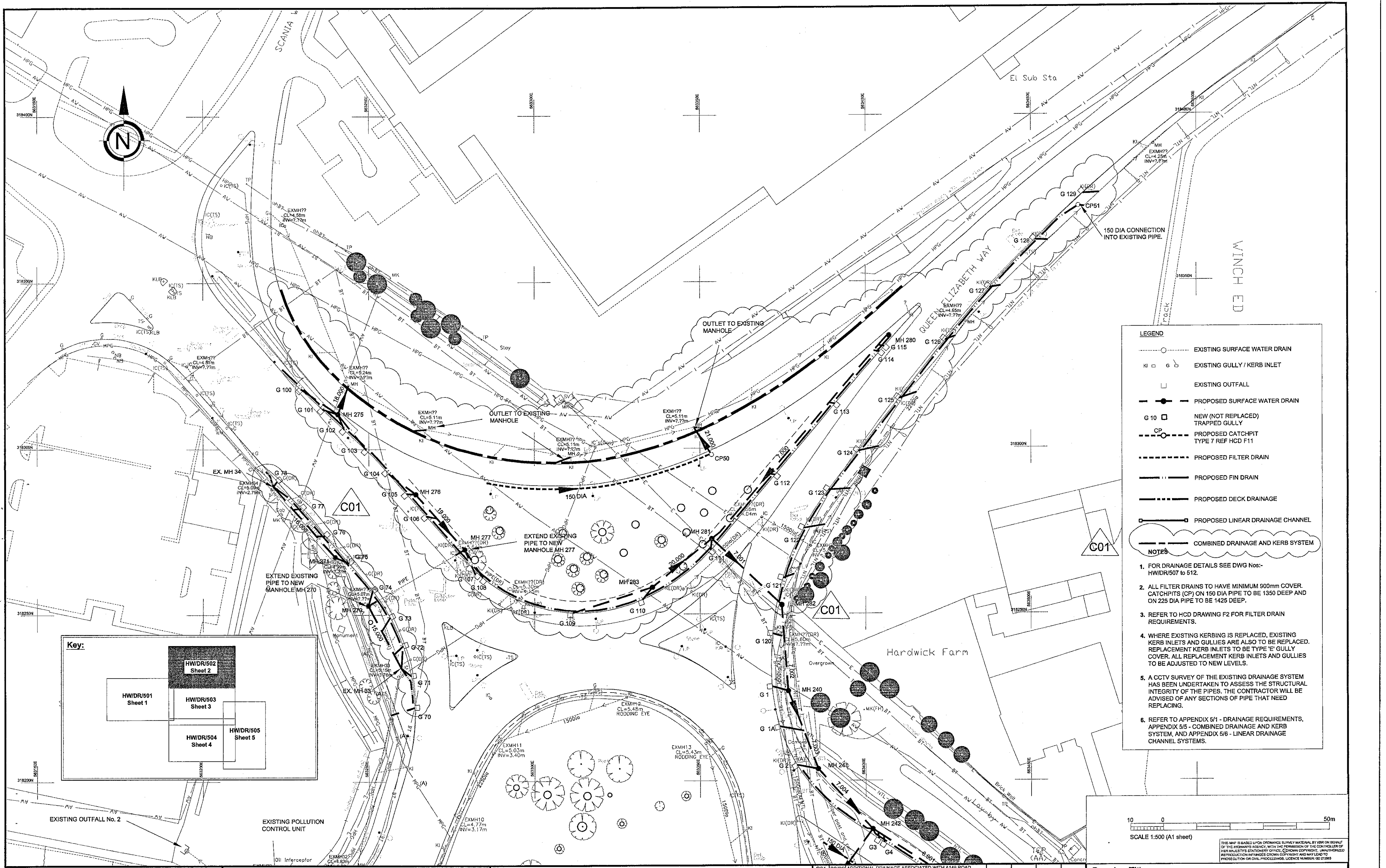
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B01	07/02	ISSUED FOR TENDER	RLW	PHB	JGB	RW
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Drawing Title
**DRAINAGE LAYOUT
SHEET 1 of 5**

Drawing No
HW/DR/501

Issue
C01

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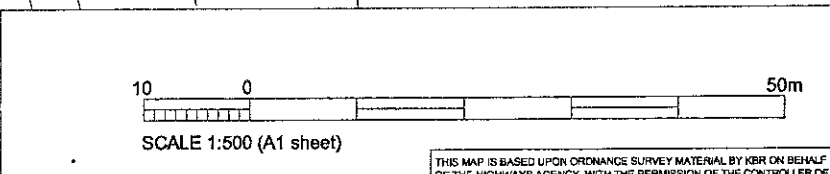
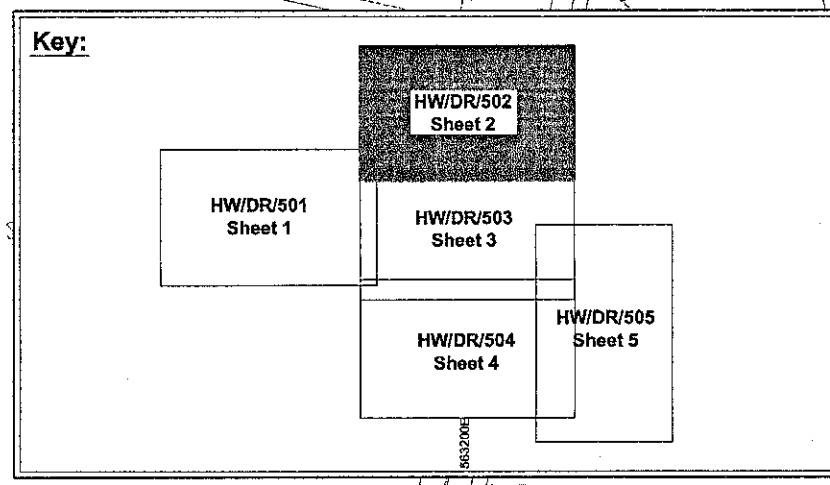


LEGEND

- EXISTING SURFACE WATER DRAIN
- KI □ G EXISTING GULLY / KERB INLET
- EXISTING OUTFALL
- PROPOSED SURFACE WATER DRAIN
- G 10 □ NEW (NOT REPLACED) TRAPPED GULLY
- PROPOSED CATCHPIT TYPE 7 REF HCD F11
- PROPOSED FILTER DRAIN
- PROPOSED FIN DRAIN
- PROPOSED DECK DRAINAGE
- PROPOSED LINEAR DRAINAGE CHANNEL
- COMBINED DRAINAGE AND KERB SYSTEM

NOTES

- FOR DRAINAGE DETAILS SEE DWG Nos- HW/DR/507 to 512.
- ALL FILTER DRAINS TO HAVE MINIMUM 900mm COVER. CATCHPITS (CP) ON 150 DIA PIPE TO BE 1350 DEEP AND ON 225 DIA PIPE TO BE 1425 DEEP.
- REFER TO HCD DRAWING F2 FOR FILTER DRAIN REQUIREMENTS.
- WHERE EXISTING KERBING IS REPLACED, EXISTING KERB INLETS AND GULLIES ARE ALSO TO BE REPLACED. REPLACEMENT KERB INLETS TO BE TYPE 'E' GULLY COVER. ALL REPLACEMENT KERB INLETS AND GULLIES TO BE ADJUSTED TO NEW LEVELS.
- A CCTV SURVEY OF THE EXISTING DRAINAGE SYSTEM HAS BEEN UNDERTAKEN TO ASSESS THE STRUCTURAL INTEGRITY OF THE PIPES. THE CONTRACTOR WILL BE ADVISED OF ANY SECTIONS OF PIPE THAT NEED REPLACING.
- REFER TO APPENDIX 5/1 - DRAINAGE REQUIREMENTS, APPENDIX 5/5 - COMBINED DRAINAGE AND KERB SYSTEM, AND APPENDIX 5/6 - LINEAR DRAINAGE CHANNEL SYSTEMS.



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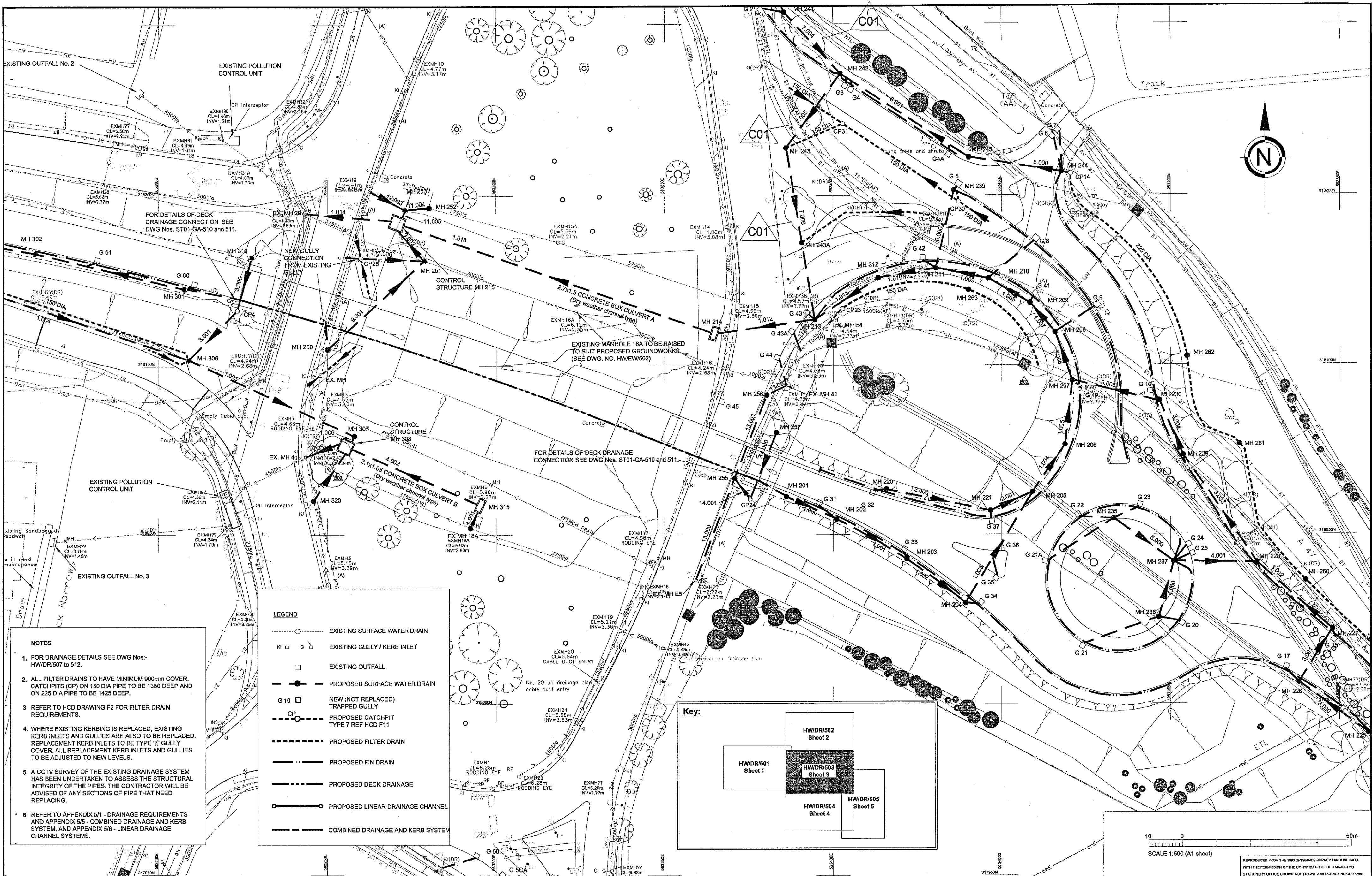
Project Name **A47 HARDWICK ROUNDABOUT IMPROVEMENT**

Project Number **XT0186**

C01	09/02	ADDITIONAL DRAINAGE ASSOCIATED WITH A149 ROAD WIDENING ADDED. FIN DRAIN TO WIDENED HARDWICK ROAD ADDED. COMBINED DRAINAGE & KERB SYSTEM ADDED. ISSUED FOR CONSTRUCTION.	RLW	PHB	JGB	RW
B02	08/02	GULLIES G1A, G71 TO G76, MANHOLES MH 270 AND 271 AND ASSOCIATED DRAINS ADDED. NOTE 5 REVISED ISSUED FOR TENDER.	RLW	PHB	JGB	RW
B01	07/02	ISSUED FOR TENDER	RLW	PHB	JGB	RW
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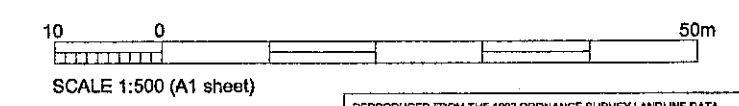
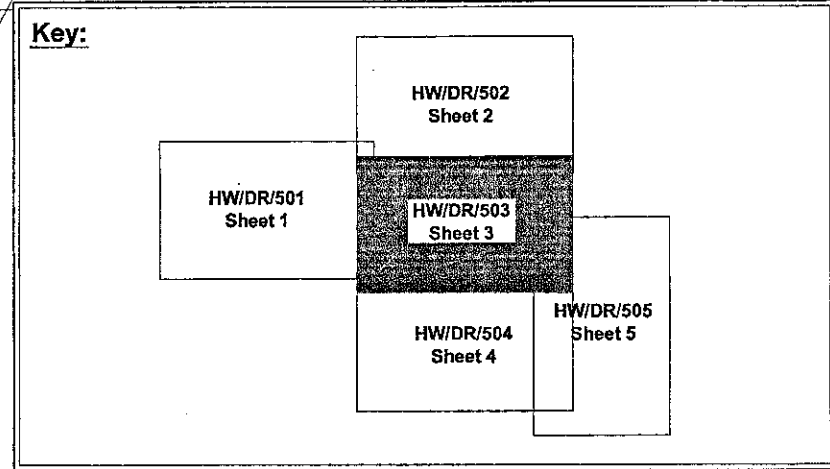
Drawing Title **DRAINAGE LAYOUT SHEET 2 of 5**

Drawing No **HW/DR/502** Issue **C01**



LEGEND

	EXISTING SURFACE WATER DRAIN
	EXISTING GULLY / KERB INLET
	EXISTING OUTFALL
	PROPOSED SURFACE WATER DRAIN
	NEW (NOT REPLACED) TRAPPED GULLY
	PROPOSED CATCHPIT TYPE 7 REF HCD F11
	PROPOSED FILTER DRAIN
	PROPOSED FIN DRAIN
	PROPOSED DECK DRAINAGE
	PROPOSED LINEAR DRAINAGE CHANNEL
	COMBINED DRAINAGE AND KERB SYSTEM



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Project Name **A47 HARDWICK ROUNDABOUT IMPROVEMENT**

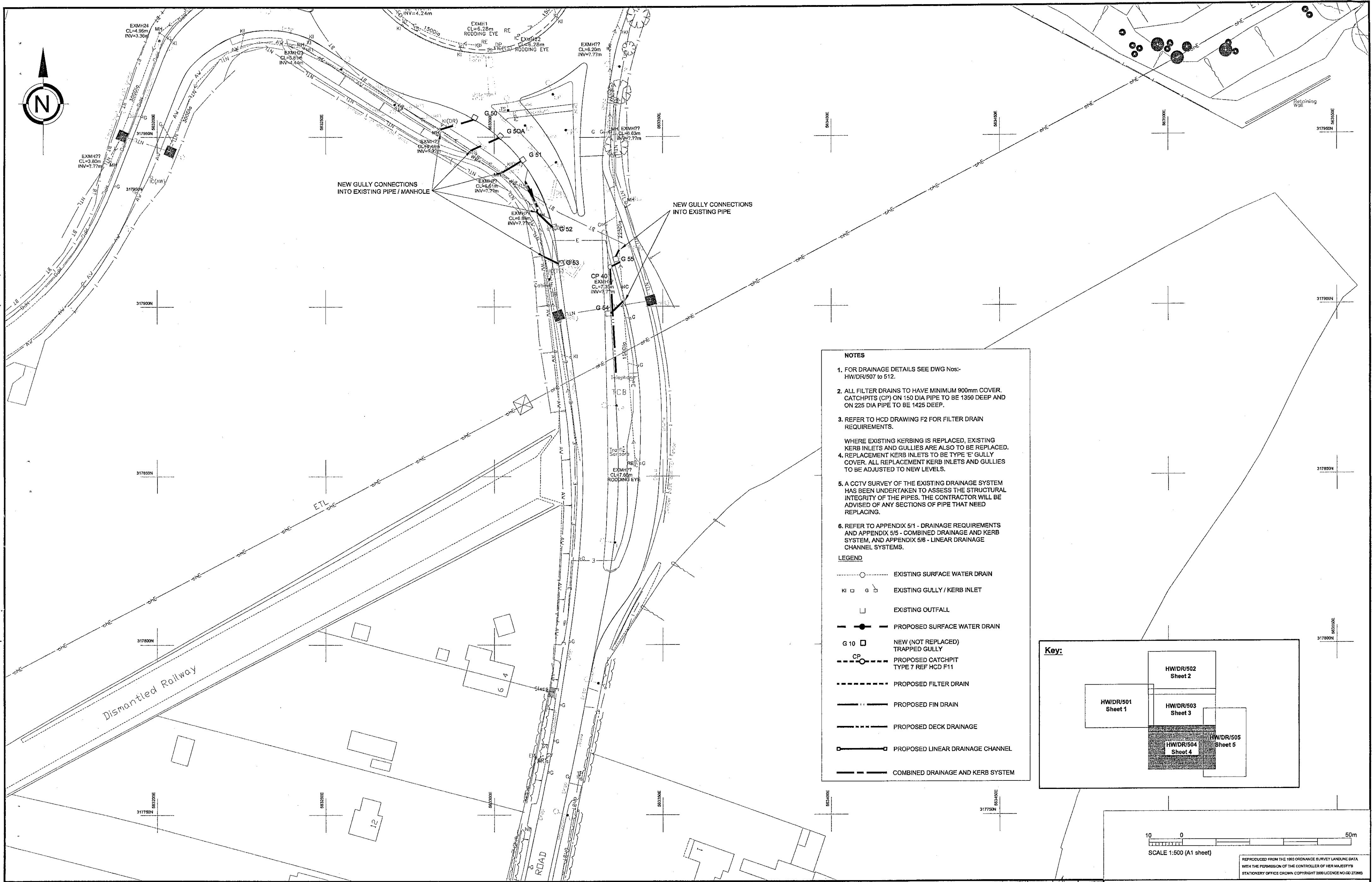
Project Number **XT0186**

C01	09/02	PIPE SECTIONS BETWEEN MHS 241 & 243 RE-NUMBERED. ISSUED FOR CONSTRUCTION.	RLW	PHB	JGB	RW
B02	08/02	PIPE REPS AT CONTROL STRUCTURES 215 & 308 AMENDED. GULLIES G4, G21A, G43A & G45 ADDED & GULLIES G4, G6, G7, G36 & G38 RELOCATED. FIN DRAIN ADDED TO A47 TERMINAL ROUNDABOUT, A47(E) LINK ROAD & A47(W). FILTER DRAIN ADDED (OP9 & OP11). NOTE 5 REVISED. CP21 DELETED & OP8 11, 12, 13 AND 14 REPLACED BY MHS. FIN DRAINS ADDED TO GRASSCRETE AREAS. ISSUED FOR TENDER.	RLW	PHB	JGB	RW
B01	07/02	ISSUED FOR TENDER	RLW	PHB	JGB	RW
Issue	Date	Description	Drawn	Originator	Checked	Approved
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Drawing No **HW/DR/503**

Issue **C01**

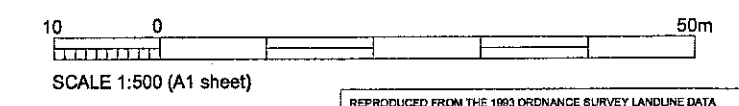
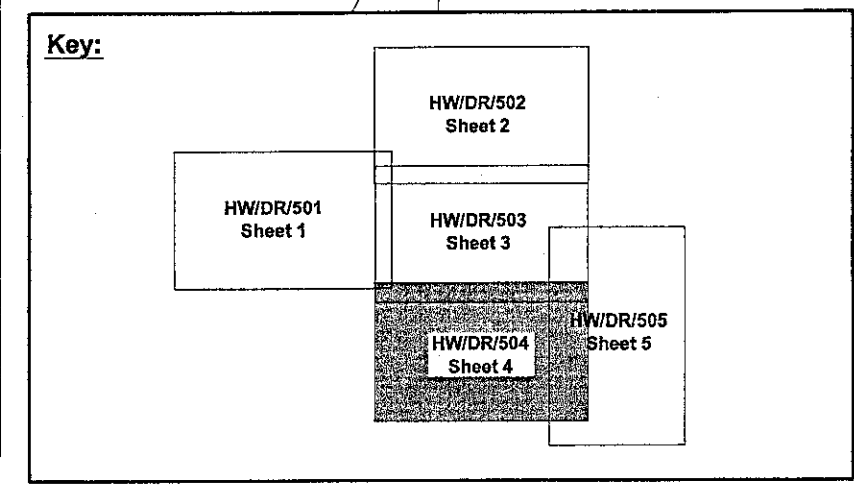


NOTES

- FOR DRAINAGE DETAILS SEE DWG Nos:- HW/DR/507 to 512.
- ALL FILTER DRAINS TO HAVE MINIMUM 900mm COVER. CATCHPITS (CP) ON 150 DIA PIPE TO BE 1350 DEEP AND ON 225 DIA PIPE TO BE 1425 DEEP.
- REFER TO HCD DRAWING F2 FOR FILTER DRAIN REQUIREMENTS.
- WHERE EXISTING KERBING IS REPLACED, EXISTING KERB INLETS AND GULLIES ARE ALSO TO BE REPLACED. REPLACEMENT KERB INLETS TO BE TYPE 'E' GULLY COVER. ALL REPLACEMENT KERB INLETS AND GULLIES TO BE ADJUSTED TO NEW LEVELS.
- A CCTV SURVEY OF THE EXISTING DRAINAGE SYSTEM HAS BEEN UNDERTAKEN TO ASSESS THE STRUCTURAL INTEGRITY OF THE PIPES. THE CONTRACTOR WILL BE ADVISED OF ANY SECTIONS OF PIPE THAT NEED REPLACING.
- REFER TO APPENDIX 5/1 - DRAINAGE REQUIREMENTS AND APPENDIX 5/5 - COMBINED DRAINAGE AND KERB SYSTEM, AND APPENDIX 5/6 - LINEAR DRAINAGE CHANNEL SYSTEMS.

LEGEND

- EXISTING SURFACE WATER DRAIN
- EXISTING GULLY / KERB INLET
- EXISTING OUTFALL
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- PROPOSED LINEAR DRAINAGE CHANNEL
- COMBINED DRAINAGE AND KERB SYSTEM



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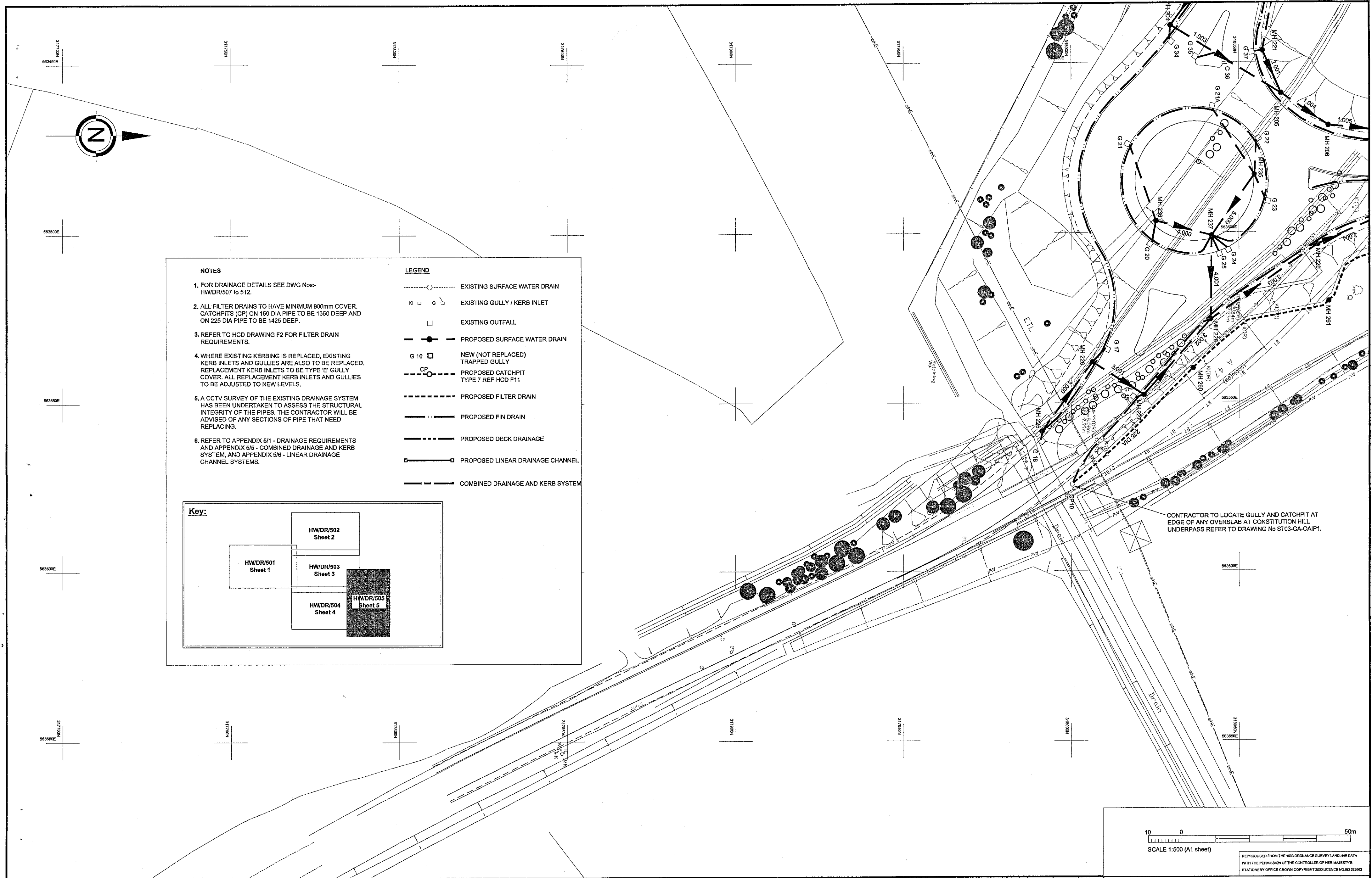
Project Name **A47 HARDWICK ROUNDABOUT IMPROVEMENT**

Project Number **XT0186**

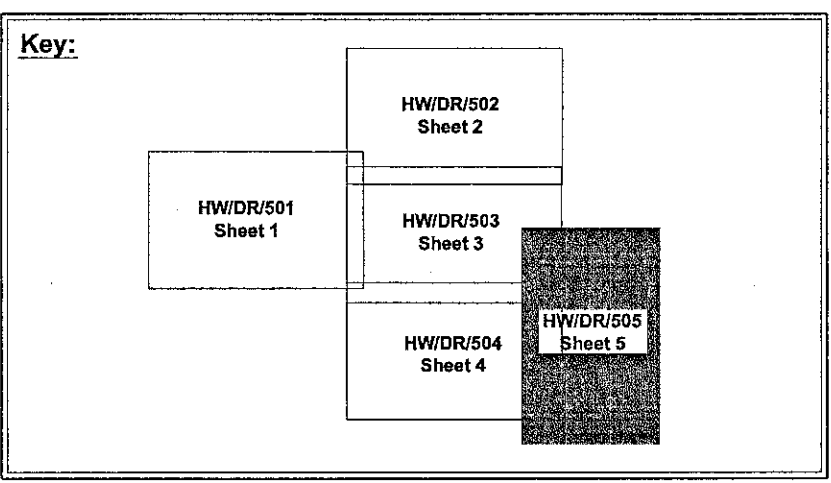
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B02	06/02	FILTER DRAIN ADDED TO GRASSCRETE AREA, FIN DRAIN, CP40 AND GULLIES G50A, G54 AND G55 ADDED TO A10/LAYBY. NOTE 5 REVISED. ISSUED FOR TENDER.	RLW	PHB	JGB	RW
B01	07/02	ISSUED FOR TENDER	RLW	PHB	JGB	RW
A01	06/02	ISSUED FOR REVIEW	RLW	PHB	JGB	RW
Issue	Date	Description	Drawn	Originator	Checked	Approved
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Drawing Title **DRAINAGE LAYOUT SHEET 4 of 5**

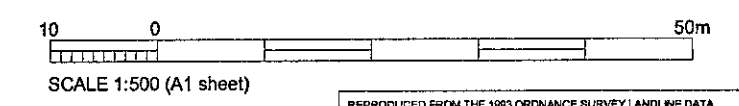
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- NOTES**
- FOR DRAINAGE DETAILS SEE DWG Nos:- HW/DR/507 to 512.
 - ALL FILTER DRAINS TO HAVE MINIMUM 900mm COVER. CATCHPITS (CP) ON 150 DIA PIPE TO BE 1350 DEEP AND ON 225 DIA PIPE TO BE 1425 DEEP.
 - REFER TO HCD DRAWING F2 FOR FILTER DRAIN REQUIREMENTS.
 - WHERE EXISTING KERBING IS REPLACED, EXISTING KERB INLETS AND GULLIES ARE ALSO TO BE REPLACED. REPLACEMENT KERB INLETS TO BE TYPE 'E' GULLY COVER. ALL REPLACEMENT KERB INLETS AND GULLIES TO BE ADJUSTED TO NEW LEVELS.
 - A CCTV SURVEY OF THE EXISTING DRAINAGE SYSTEM HAS BEEN UNDERTAKEN TO ASSESS THE STRUCTURAL INTEGRITY OF THE PIPES. THE CONTRACTOR WILL BE ADVISED OF ANY SECTIONS OF PIPE THAT NEED REPLACING.
 - REFER TO APPENDIX 5/1 - DRAINAGE REQUIREMENTS AND APPENDIX 5/5 - COMBINED DRAINAGE AND KERB SYSTEM, AND APPENDIX 5/6 - LINEAR DRAINAGE CHANNEL SYSTEMS.
- LEGEND**
- EXISTING SURFACE WATER DRAIN
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 - ||--- PROPOSED FIN DRAIN
 - ||--- PROPOSED DECK DRAINAGE
 - PROPOSED LINEAR DRAINAGE CHANNEL
 - ||--- COMBINED DRAINAGE AND KERB SYSTEM



CONTRACTOR TO LOCATE GULLY AND CATCHPIT AT EDGE OF ANY OVERSLAB AT CONSTITUTION HILL UNDERPASS REFER TO DRAWING No ST03-GA-OAIP1.



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Project Number **XT0186**

C01	09/02	ISSUED FOR CONSTRUCTION	RLW	PHB	JGB	RW
B02	08/02	FIN DRAIN ADDED TO TERMINAL R/ABOUT, GULLY G 21A AND CATCHPITS CP11 AND CP12 CHANGED TO MANHOLES MH 260 AND 261, GULLIES G 35 AND G 36 RELOCATED, NOTE 5 REVISED, ISSUED FOR TENDER.	RLW	PHB	JGB	RW
B01	07/02	ISSUED FOR TENDER	RLW	PHB	JGB	RW
Issue	Date	Description	Drawn	Originator	Checked	Approved
File ref.: NEW DESIGN/Cad/Drawings/Drainage layouts 501-506			Scale: 1:500			

Drawing Title
DRAINAGE LAYOUT SHEET 5 of 5

Drawing No **HW/DR/505** Issue **C01**