

**KEY**

- SITE BOUNDARY
- INDICATIVE ON-SITE FOUL WATER GRAVITY MAIN NETWORK
- INDICATIVE RISING MAIN TO CONNECT TO EXISTING FOUL SEWER NETWORK
- INDICATIVE LOCATION OF ON-SITE PUMP-OUT STATION (LOCATION TO BE AGREED)

Issue	Description	Date
03	MINOR REVISIONS	20/03/13
02	LAYOUT REVISED	04/04/11
01	FIRST ISSUE	25/11/10

Scale	AS SHOWN	Author P. WILLIAMS
Original Size	A1	Checker M. PEARSON
Height	-	Approver SA. DAVIES
Grid	D.S.	© Copyright reserved

Filename:  
Client:



**Hyder Consulting**  
Hyder Consulting (UK) Limited  
29, Bressenden Place  
London  
SW1E 5DZ  
Tel: +44 (0)870 000 3906  
Fax: +44 (0)870 000 3906

Project:  
**BICESTER ECO DEVELOPMENT EXEMPLAR SITE**

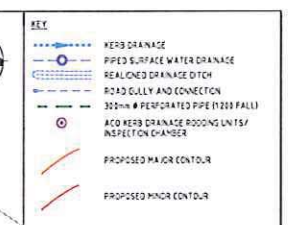
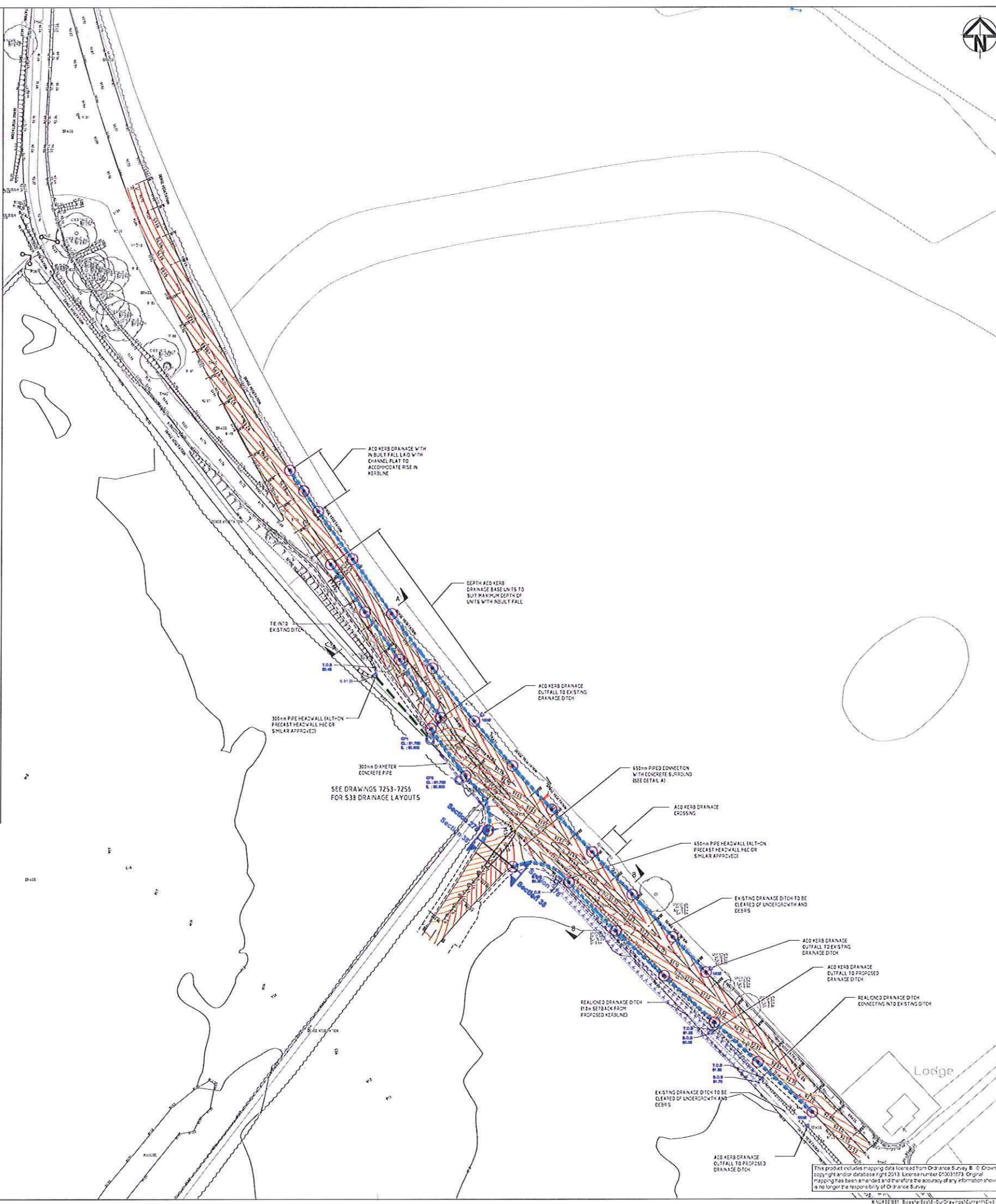
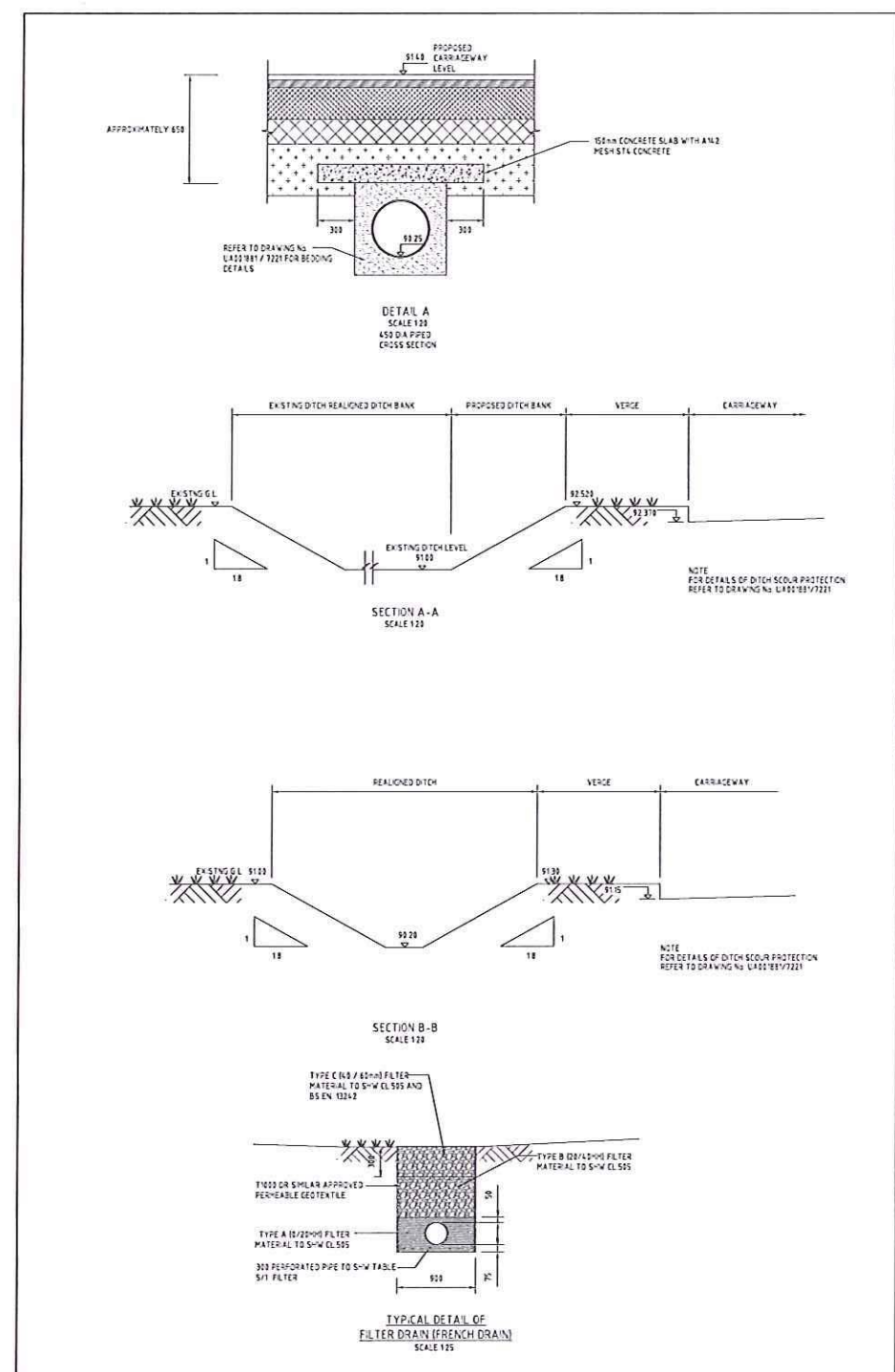
Title:  
**EXEMPLAR SITE FOUL WATER DRAINAGE**

Drawing No	Project No	Issue
7162	UA001881	03

CAD FILE: K:\UA001881\_BicesterEco\CurrentDrawings\Civil Engineering\7162-UA001881-UP210-03-Foul Drainage Strategy.dwg  
 PRINTED BY: P.W.68098 - MARCH/19/2013 - 8:59AM  
 UPDATED BY: P.W.68098 - MARCH/19/2013 - 8:59AM

SCALE 1:2000

This product includes mapping data licensed from Ordnance Survey ©. © Crown copyright and/or database right 2013. License number 010031873. Original mapping has been amended and therefore the accuracy of any information shown is no longer the responsibility of Ordnance Survey.



- EXISTING DRAINAGE DITCH TO BE CLEARED OF VEGETATION AND RE-GRADED FOR A MINIMUM 10m EITHER SIDE OF PROPOSED WORKS**
- NOTES**
- DO NOT SCALE FROM THIS DRAWING. USE FIGURED DIMENSIONS ONLY.
  - ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR PRIOR TO CONSTRUCTION OR MANUFACTURE. ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER.
  - ALL WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH MOD 100 - SPECIFICATION FOR HIGHWAY WORKS, SEENESS FOR ADOPTION AND D.C. DETAILS AND SPECIFICATION THIS DRAWING TO BE READ IN CONJUNCTION WITH THE STANDARD DRAINAGE DETAILS, REFER TO DRAWING NO. L422181/7221 AND 7221.
  - EXISTING LEVELS AT EXISTING DITCH TO BE CONFIRMED ON SITE FOLLOWING VEGETATION CLEARANCE.
  - ALL OUTFALLS INTO EXISTING DITCHES TO BE 150mm DIAMETER.

A	CONSTRUCTION ISSUE	16/03/13
12	MINOR REVISION	16/11/12
11	MINOR REVISIONS FILTER DRAIN DETAIL ACCESS	13/11/12
10	MINOR REVISIONS	08/11/12
09	DESIGN UPDATED FOLLOWING DCC COMMENTS	01/10/12
08	MINOR REVISIONS	25/09/12
07	MINOR REVISIONS	16/09/12
06	DESIGN UPDATED FOLLOWING DCC COMMENTS	27/07/12
05	DESIGN UPDATED FOLLOWING DCC COMMENTS	28/06/12
04	DESIGN UPDATED FOLLOWING DCC COMMENTS	18/04/12
03	DESIGN UPDATED FOLLOWING DCC COMMENTS	06/03/12
02	DESIGN REVISION	JULY 11
Rev A	Description	Date

<b>FOR CONSTRUCTION</b>		
Scale	1:500	Current Issue Signatures
Original Size	A0	Author: P. WILLIAMS
Height	-	Checker: M. PEARSON
Date	-	Approver: S.A. GAVES
Drawn	-	© Copyright reserved

azdominion

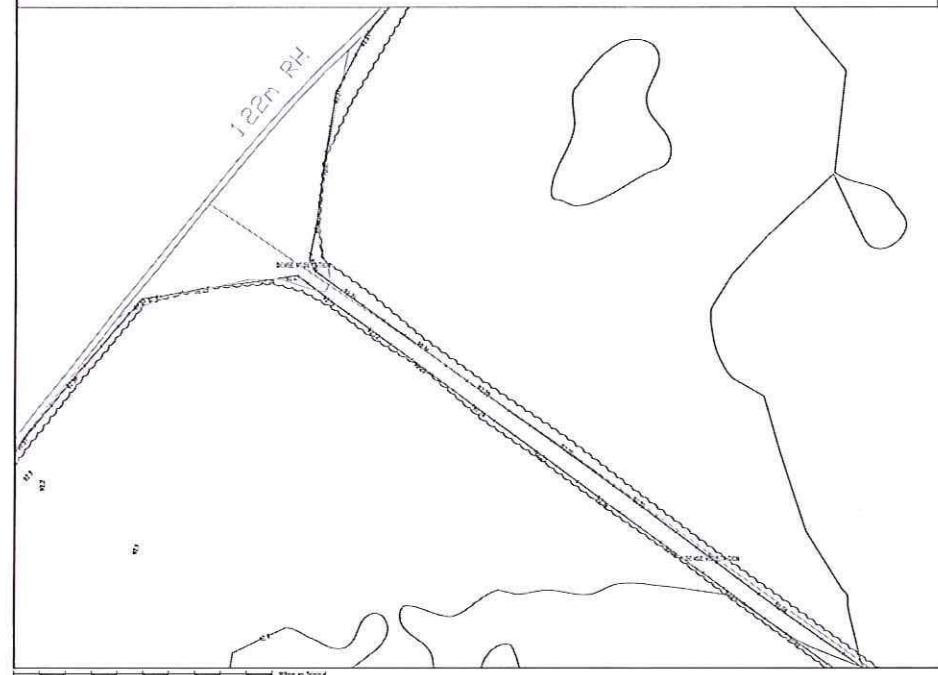
Hyder Consulting (UK) Limited  
29, Bressenden Place  
S.W.1E 6DU

Hyder Consulting Tel: +44 (0)20 000 3000 Fax: +44 (0)20 000 3000

Project: **BICESTER ECO DEVELOPMENT**

Title: **EXEMPLAR SITE S278 NW ACCESS PROPOSED DRAINAGE**

Drawing No: 7210 Project No: UA001881 Issue: A



This project includes mapping data licensed from Ordnance Survey & © Crown copyright and/or database right 2013. License number G10031573. Original mapping has been amended and therefore the accuracy of any information shown is no longer the responsibility of Ordnance Survey.



SPINE ROAD (RESIDENTIAL SPECIFICATION)		
	CONSOLIDATED THICKNESS (mm)	SPECIFICATION
1	SURFACE COURSE	30 SMA 10mm SUR 40/60 65PSV
2	BINDER COURSE	60 AC 20 DENSE B.N 150/220
3	BASE COURSE	150 (min) AC 32 DENSE BASE 150/220
4	SUB BASE	SUBJECT TO CBR TYPE 1 TO TABLE B/2 AND CLAUSE 613 SHW (RECYCLED MATERIAL) - SEE TABLE A
5	CAPPING	SUBJECT TO CBR TYPE 6F TABLE 6/1 AND CLAUSE 613 SHW (RECYCLED MATERIAL) - SEE TABLE A

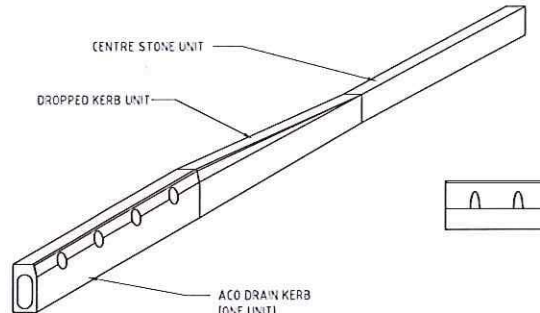
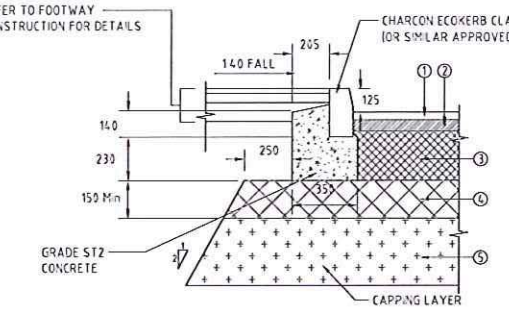
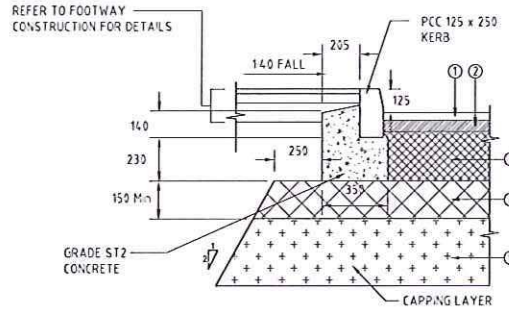
**NOTE**  
TARMAC FOAMMASTER RECYCLED ASPHALT OR SIMILAR APPROVED PRODUCT TO BE USED  
**NOTE**  
THE DEVELOPER WILL BE REQUIRED TO SUBMIT CBR TEST RESULTS FOR ALL ROADS TO THE HIGHWAY AUTHORITY PRIOR TO THE COMMENCEMENT OF ROAD CONSTRUCTION. CBR SAMPLES SHOULD BE TAKEN ON THE SUB-GRADE FORMATION AT MAXIMUM INTERVALS OF 100m ALONG THE CENTRELINE OF THE PROPOSED CARRIAGEWAY.

ALL MATERIALS TO BE USED IN CARRIAGEWAY AND FOOTWAY CONSTRUCTION SHALL COMPLY WITH THE RELEVANT BRITISH STANDARDS, WHERE APPLICABLE AND WITH THE REQUIREMENTS OF THE SPECIFICATION FOR HIGHWAY WORKS HMSO 1991

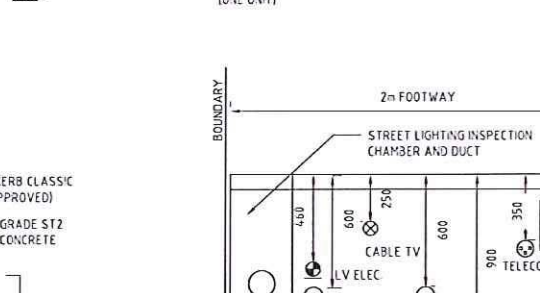
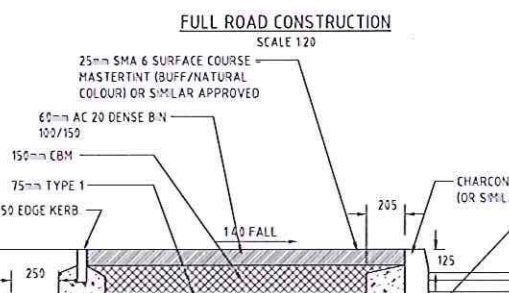
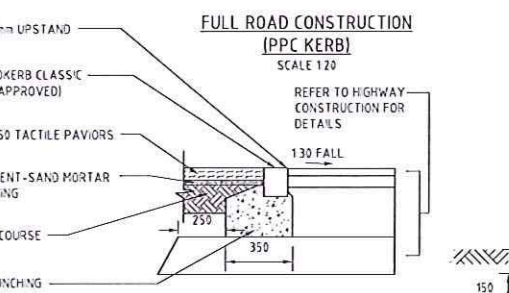
BELOW 5%	5% & ABOVE
300mm SUB BASE PLUS GEO TEXTILE MEMBRANE AND 400mm CAPPING LAYER	SUB BASE THICKNESS 300mm

**TABLE A**

150mm MINIMUM CLASS S9 TOPSOIL ACCORDANCE WITH CLAUSE 618 SHW WITH GRASS SEEDING COMPRISING 40% CHEWINGS FESCUE, 40% CREEPING RED FESCUE, 10% SMOOTH STALKED MEADOW GRASS AND 10% BROWNTOP BENT
---

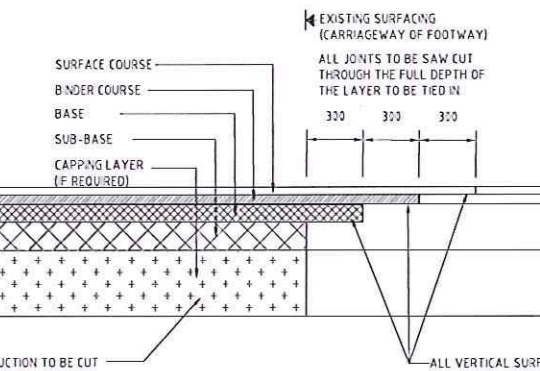
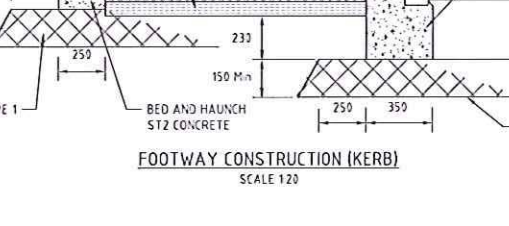
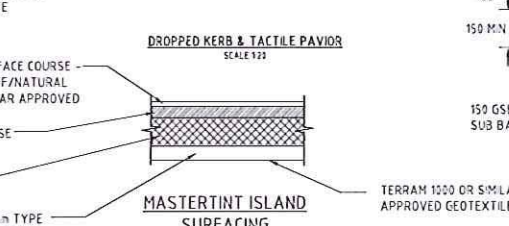
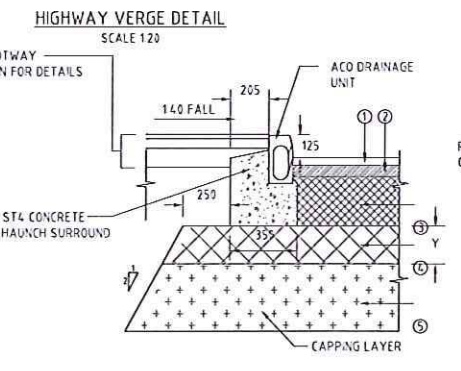


ACO KERB CROSSING DETAIL  
NTS

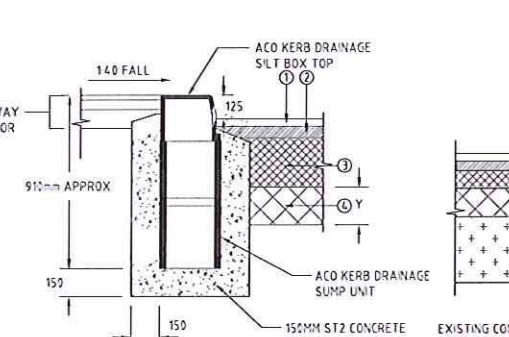
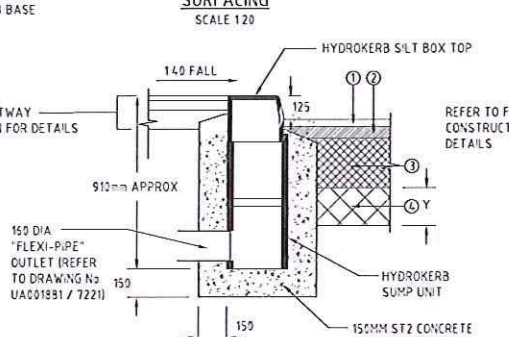


TYPICAL ARRANGEMENT OF MAINS IN A 2m FOOTWAY  
NOT TO SCALE

- NOTES**
- 1 THE ADJACENT ARRANGEMENT IS INDICATIVE ONLY. SERVICES SHOULD BE PLACED AT THE DEPTH AND WITHIN THE BEDDING AS REQUIRED BY THE APPROPRIATE UNDERTAKING AUTHORITY. SERVICE DUCT PROTECTION, TO THE SERVICE PROVIDER/HIGHWAY AUTHORITY REQUIREMENTS, WILL BE REQUIRED AT ALL ROAD CROSSINGS WHERE THE DEPTH OF COVER IS LESS THAN 12m
  - 2 WHEREVER POSSIBLE SERVICES SHALL REMAIN WITHIN THE FOOTPATH
  - 3 ALL SERVICES SHALL REMAIN OUTSIDE THE DRAINAGE EASEMENT ZONES
  - 4 ALL SERVICES WITHIN OR CROSSING THE CARRIAGEWAY SHOULD BE LAID WITHIN DUCTS WITH ASSOCIATED DRAWPIITS
  - 5 NO SERVICE BOXES ARE TO BE LOCATED WITHIN TACTILE PAVING AREAS OR VEHICULAR CROSSOVERS
  - 6 ALL STREET LIGHTING CABLES SHOULD BE LAID WITHIN DUCTS. EACH LENGTH OF DUCT SHALL BE CLEARLY AND DURABLY MARKED "STREET LIGHTING" AND SHALL BE COLOUR CODED TO SUIT N JUG & L.A REQUIREMENTS
  - 7 ALL CONDUITS SHALL BE COVERED WITH TAPE MARKED LIVE CABLE
  - 8 ONLY ONE TYPE OF CONDUIT SHALL BE USED WITH CONSECUTIVE INSPECTION CHAMBERS
  - 9 ADJACENT CONDUITS IN TRENCHES MUST NOT TOUCH
  - 10 COMPACTION OF BACKFILL MATERIALS SHALL BE IN ACCORDANCE WITH CLAUSE 612 SHW. THE USE OF GRANULAR SUB-BASE MATERIAL AS BACKFILL MATERIAL TO TRENCHES IN THE HIGHWAY SHOULD BE AVOIDED
  - 11 ALL INSTALLATION SHALL BE IN ACCORDANCE WITH THE NATIONAL JOINT UTILITIES GROUP DOCUMENT NU007
  - 12 THE CONTRACTOR SHALL ENSURE FULL COMPLIANCE WITH THE NEW ROADS AND STREET WORKS 1991



- NOTES**
- 1 STEPS IN EXISTING CARRIAGEWAY SHALL BE COLD MILLED IN ACCORDANCE WITH CLAUSE 709. A BOND COAT, TACK COAT OR BITUMINOUS SPRAY SHALL BE APPLIED TO THE MILLED SURFACE IN ACCORDANCE WITH CLAUSE 920 AND THE REQUIREMENTS OF APPENDIX 7 CLAUSE 4
  - 2 WHEN POSSIBLE ALL BINDER AND FINISH COURSES TO BE LAID ON ALL NEW CONSTRUCTION EXISTING CONSTRUCTION ALL AT ONCE

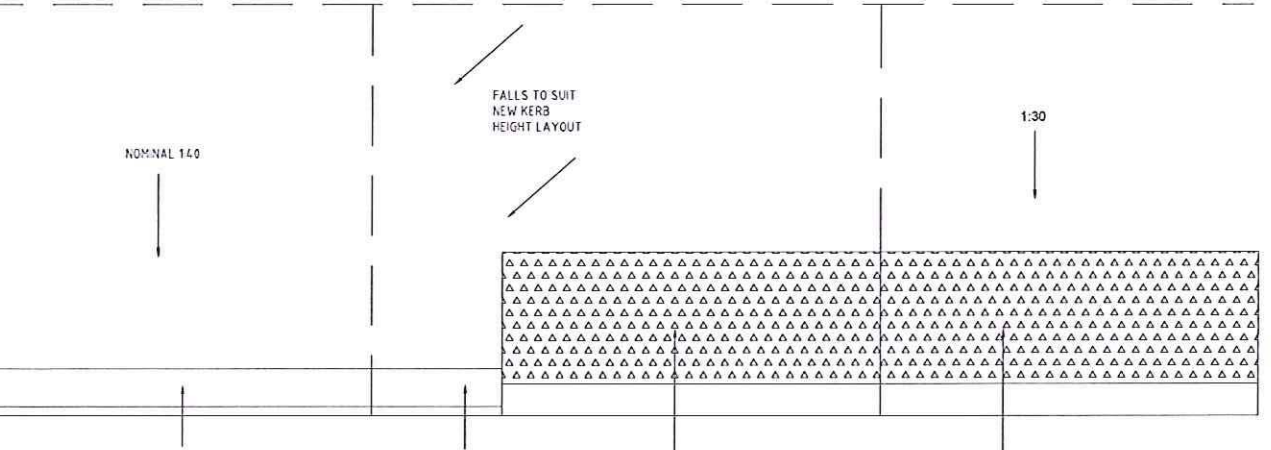


CARRIAGEWAY TIE-IN DETAIL  
SCALE 1:20

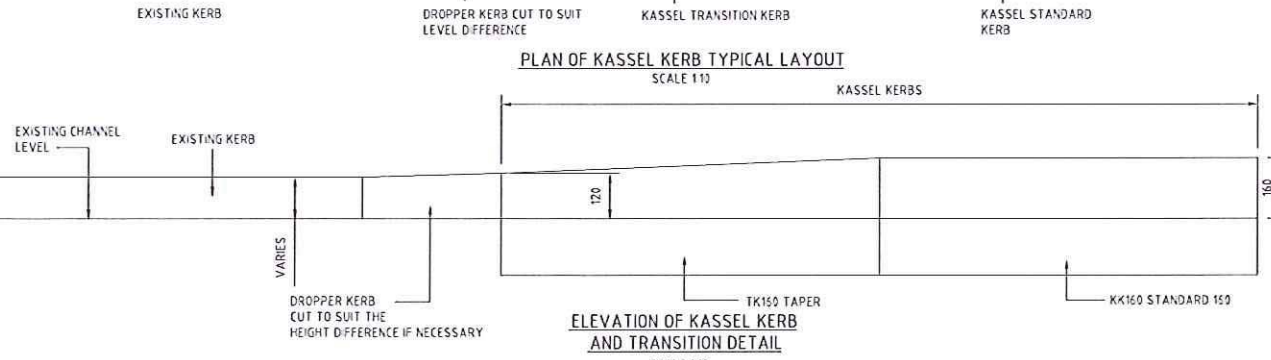
FULL ROAD CONSTRUCTION KERB DRAINAGE  
SCALE 1:20

ACO KERB DRAINAGE SUMP OUTLET  
SCALE 1:20

ACO KERB DRAINAGE SUMP  
SCALE 1:20

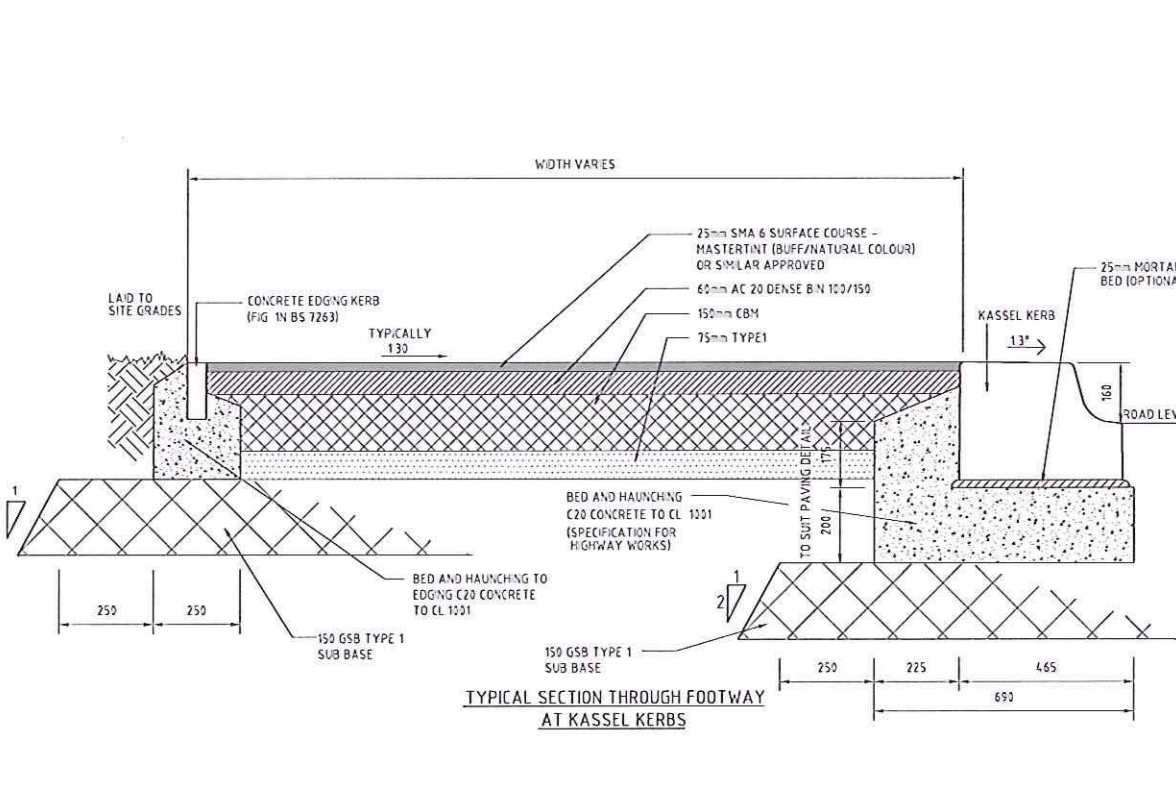


PLAN OF KASSEL KERB TYPICAL LAYOUT  
SCALE 1:10



ELEVATION OF KASSEL KERB AND TRANSITION DETAIL  
SCALE 1:10

120mm on Original



TYPICAL SECTION THROUGH FOOTWAY AT KASSEL KERBS

Issue	Description	Date
A	CONSTRUCTION ISSUE	14/03/13
CB	KERB AND BEDDING DETAILS REVISED	25/09/12
07	KERB AND BEDDING DETAILS REVISED	14/09/12
06	UPDATED FOLLOWING OCC COMMENTS	27/07/12
05	UPDATED FOLLOWING OCC COMMENTS	25/05/12
04	UPDATED FOLLOWING OCC COMMENTS	23/04/12
03	DESIGN UPDATED FOLLOWING OCC COMMENTS	06/03/12
02	ADDITIONAL DETAILS ADDED	NOV 11
01	FIRST ISSUE	APR 11

**FOR CONSTRUCTION**

Scales	1:500	Author	MILLEWELLIN
Original Size	A1	Checker	S.A.DAVIES
Height Datum	O.S.	Approver	S.A.DAVIES
Grid	O.S.	Copyright reserved	

Files: 7220-7221-UA001881-UP210-A-S278-CONSTRUCTION DETAILS.DWG

Client:



Hyder Consulting (UK) Limited  
29, Bressenden Place  
London  
SW1E 5DZ  
Tel: +44 (0)870 000 3006  
Fax: +44 (0)870 000 3906

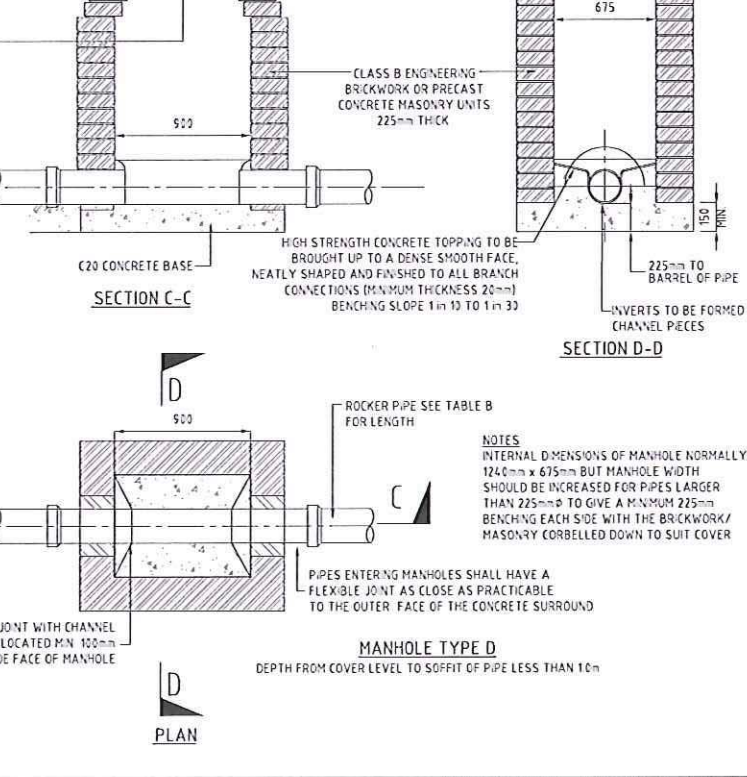
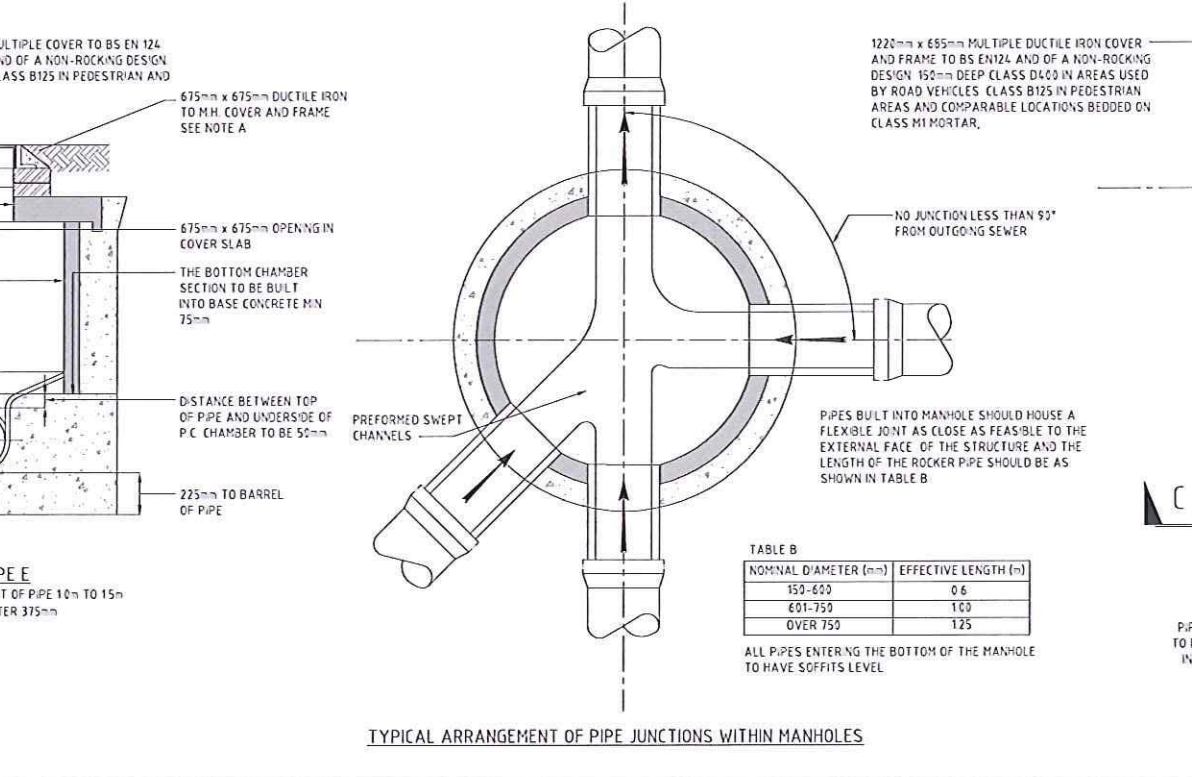
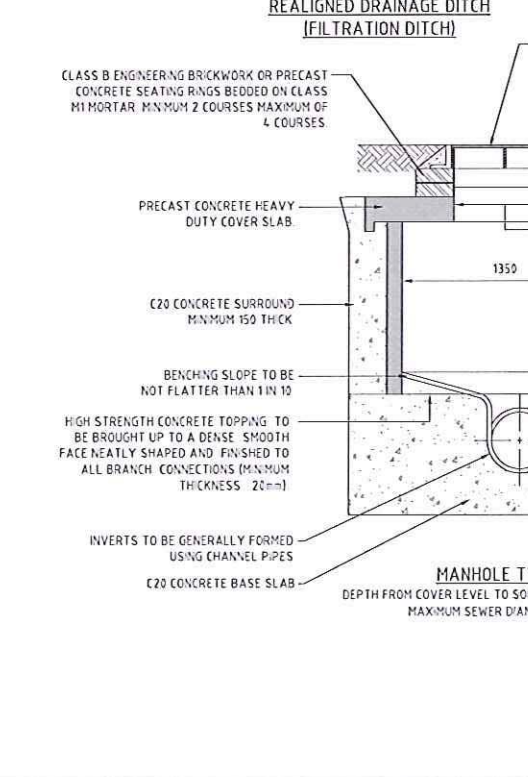
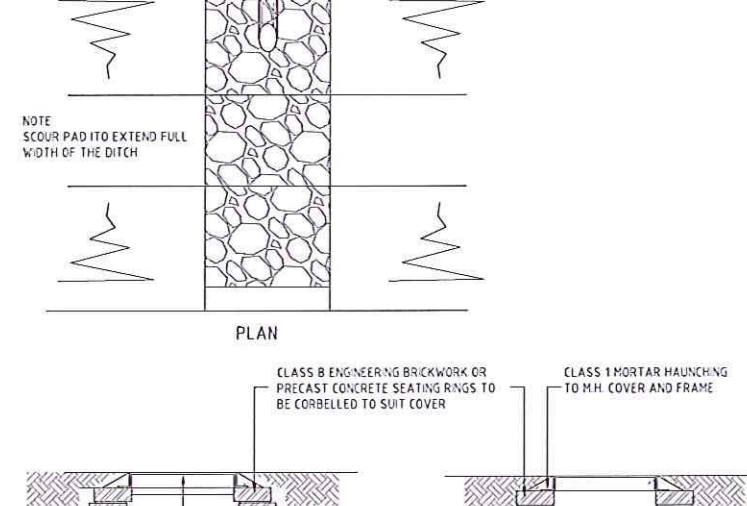
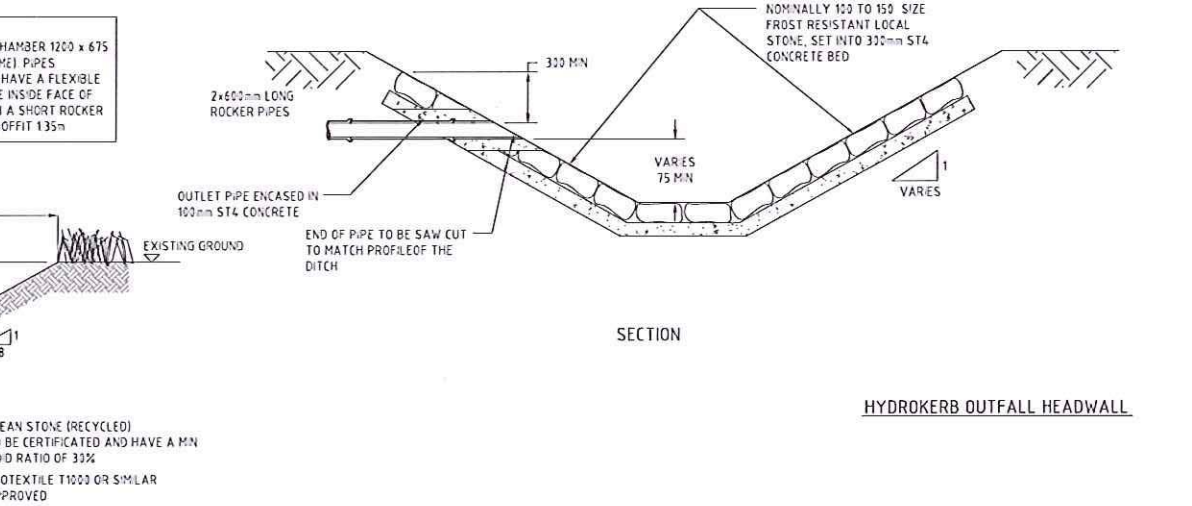
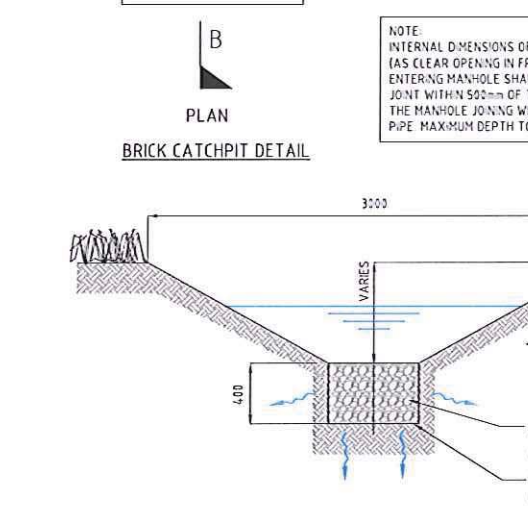
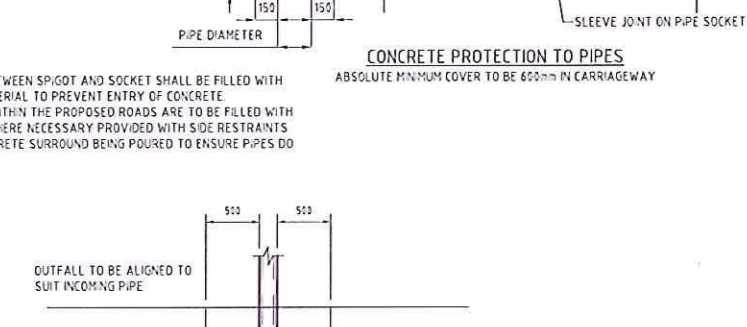
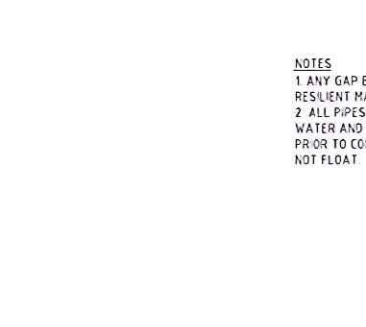
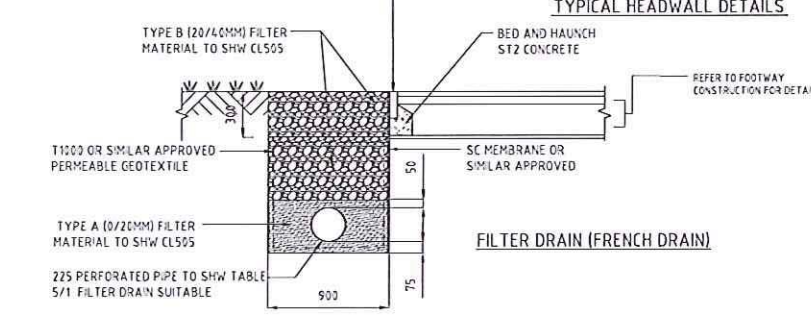
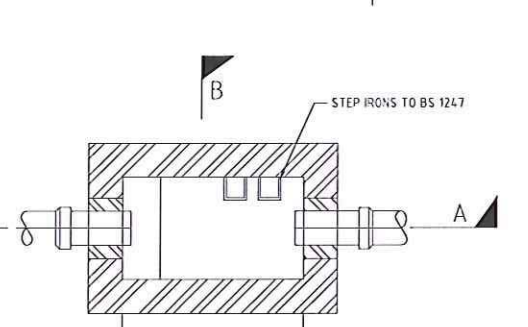
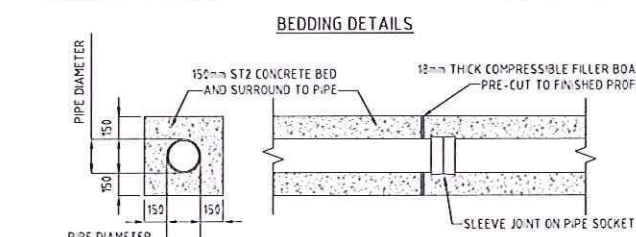
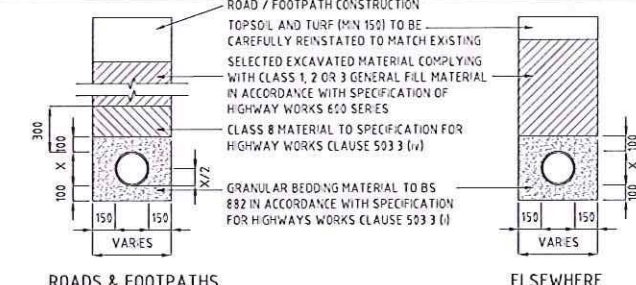
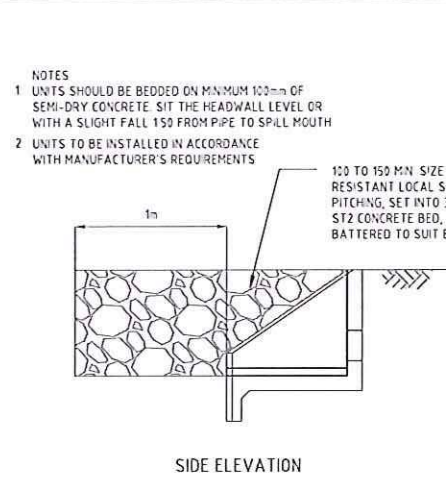
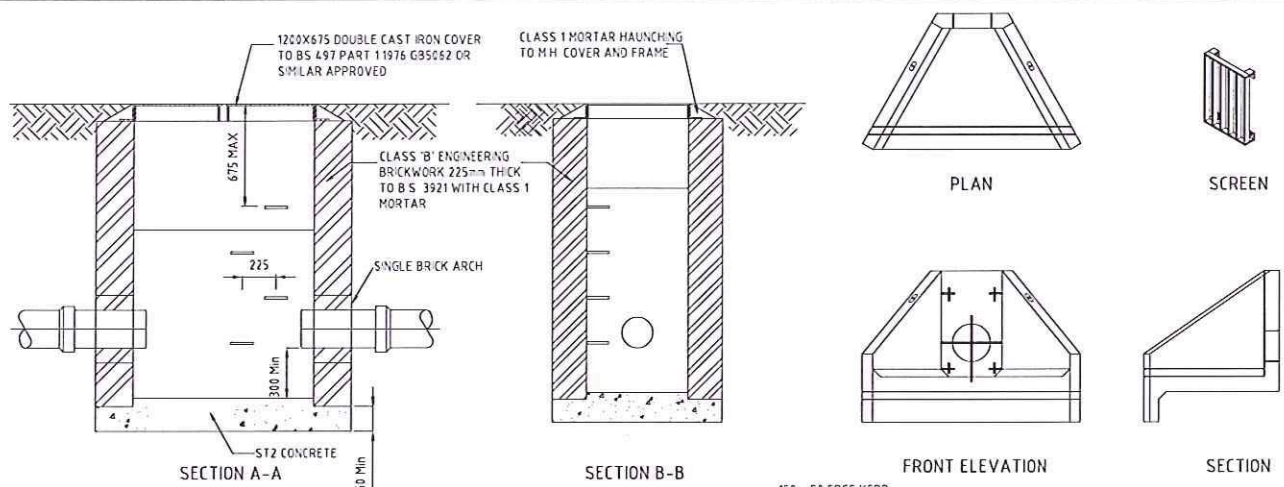
Project:

BICESTER ECO DEVELOPMENT EXEMPLAR SITE

Title  
EXEMPLAR SITE (S278) CONSTRUCTION DETAILS

Drawing No	Project No	Issue
7220	UA001881	A

CAD FILE: K:\UA001881\_BicesterEcoE-OurDrawings\Current\Civil Engineering\7220-7221-UA001881-UP210-A-S278-CONSTRUCTION DETAILS.dwg  
PRINTED BY: P.W.68098 - MARCH/19/2013 - 11:04AM  
UPDATED BY: P.W.68098 - MARCH/19/2013 - 12:47PM



NOMINAL DIAMETER (mm)	EFFECTIVE LENGTH (m)
150-600	0.6
601-750	1.00
OVER 750	1.25

Issue	Description	Date
A	CONSTRUCTION ISSUE	14/03/13
07	FILTER DRAIN DETAIL REVISED	25/09/12
05	FILTER DRAIN DETAIL REVISED	14/09/12
06	DESIGN UPDATED FOLLOWING OCC COMMENTS	27/07/12
05	DESIGN UPDATED FOLLOWING OCC COMMENTS	27/07/12
04	DESIGN UPDATED FOLLOWING OCC COMMENTS	25/05/12
03	DESIGN UPDATED FOLLOWING OCC COMMENTS	20/04/12
02	DESIGN UPDATED FOLLOWING OCC COMMENTS	05/03/12
01	FIRST ISSUE	NOV 11

Scale	Author	Checker	Approver
NTS	M LLEWELLYN	S A DAVIES	S A DAVIES
Original Size	A1		
Height Datum	O.S.		
Grid	O.S.		

Client: azdominion

Hyder Consulting (UK) Limited  
29, Bressenden Place  
London SW1E 5DZ  
Tel: +44 (0)870 000 3005  
Fax: +44 (0)870 000 3505

Project: BICESTER ECO DEVELOPMENT EXEMPLAR SITE

Title: EXEMPLAR SITE (S278) DRAINAGE DETAILS

Drawing No: 7221 - Project No: UA001881 - Issue: A

CAD FILE: K:\UA001881\_BicesterEco-OurDrawings\Civil\Engineering\7220-7221-UA001881-UP210-A-S278-CONSTRUCTION DETAILS.dwg  
PRINTED BY: P\668098 - MARCH 17 2013 - 11:26AM  
UPDATED BY: P\668098 - MARCH 17 2013 - 11:26AM



**KEY**

	SURFACE WATER DRAINAGE
	150mm DIA PIPE FOUL WATER DRAINAGE
	ROADSIDE SUDS FEATURE
	KERB DRAINAGE (HYDROKERB)
	FOUL PUMPING MAIN
	MANHOLE WITH BACKDROP
	HEADWALL
	POND
	BASIN
	SWALE

**NOTES**  
 SCHEME TO BE LIT IN ACCORDANCE WITH OCC SPECIFICATIONS AND IN LINE WITH OCC CARBON FOOTPRINT LIGHTING PRACTICES OCC TO PROVIDE SCHEME LIGHTING LAYOUT AND DETAILS

- DO NOT SCALE FROM THIS DRAWING USE FIGURED DIMENSIONS ONLY
- ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR PRIOR TO CONSTRUCTION OR MANUFACTURE ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER
- ALL WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH MCHW - SPECIFICATION FOR HIGHWAY WORKS, SEWERS FOR ADOPTION AND O.C.C DETAILS AND SPECIFICATION

Issue	Description	Date
09	HIGHWAY BOUNDARY REVISED	06/11/12
08	GENERAL REVISIONS	19/10/12
07	DESIGN REVISED	27/07/12
06	DESIGN REVISED	22/05/12
05	DESIGN REVISED	MAR 12
04	POND CONNECTIONS REVISED	21.10.11
03	DRAINAGE CHECK ISSUE	05.10.11
02	DESIGN REVISED	JULY 11

Status: **DRAFT**

Scale	1:500	Author	M LLEWELIN
Original Size	A1	Checker	S A DAVES
Height Datum	O.S.	Approver	S A DAVES
Grid	O.S.	Copyright	reserved

Client: **azdominion**

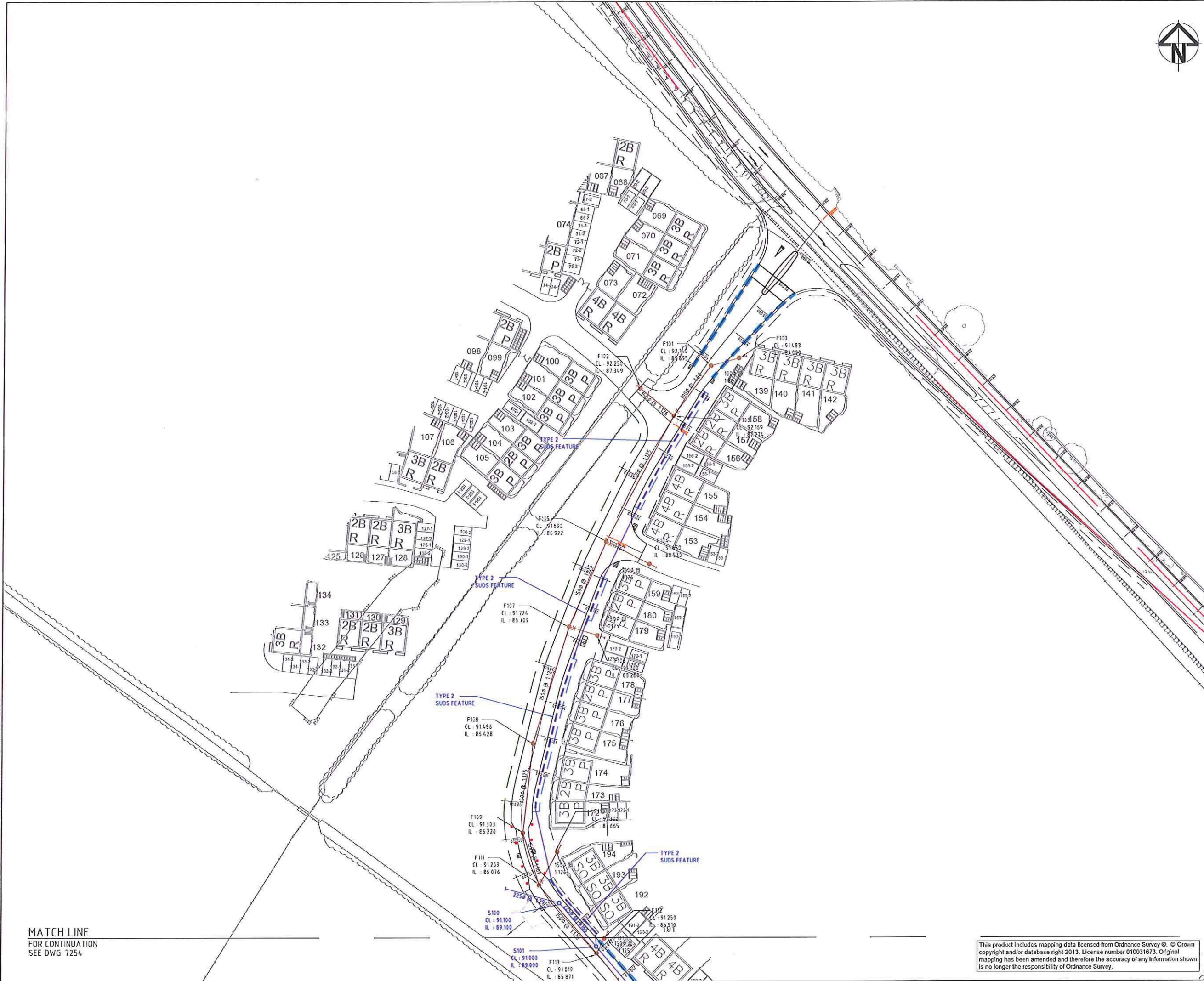


**Hyder Consulting**  
 Hyder Consulting (UK) Limited  
 29, Bressenden Place  
 London  
 SW1E 5DZ  
 Tel: +44 (0)870 000 3006  
 Fax: +44 (0)870 000 3906

Project: **BICESTER ECO DEVELOPMENT EXEMPLAR SITE**

Title: **EXEMPLAR SITE (S38) FOUL AND SURFACE WATER DRAINAGE SHEET 1 OF 4**

Drawing No	7253	Project No	UA001881	Issue	09
------------	------	------------	----------	-------	----



CAD FILE: K:\UA001881\_BicesterEco\E-OurDrawings\Current\Civil\Engineering\7253-7256-UA001881-UP210-S38-12-SPINE ROAD DRAINAGE.dwg  
 PRINTED BY: PWS68098 - MARCH/19/2013 - 11:14AM  
 UPDATED BY: PWS68098 - MARCH/13/2013 - 2:28PM

MATCH LINE  
 FOR CONTINUATION  
 SEE DWG 7254

This product includes mapping data licensed from Ordnance Survey ©. © Crown copyright and/or database right 2013. License number 010031673. Original mapping has been amended and therefore the accuracy of any information shown is no longer the responsibility of Ordnance Survey.

FOR CONTINUATION  
SEE DWG 7253  
MATCH LINE

**KEY**

- SURFACE WATER DRAINAGE
- 150mm DIA PIPE FOUL WATER DRAINAGE
- ROADSIDE SUDS FEATURE
- KERB DRAINAGE (HYDROKERB)
- FOUL PUMPING MAIN
- MANHOLE WITH BACKDROP
- HEADWALL
- POND
- BASIN
- SWALE

**NOTES**

SCHEME TO BE LIT IN ACCORDANCE WITH OCC SPECIFICATIONS AND IN LINE WITH OCC CARBON FOOTPRINT LIGHTING PRACTICES OCC TO PROVIDE SCHEME LIGHTING LAYOUT AND DETAILS

- DO NOT SCALE FROM THIS DRAWING USE FIGURED DIMENSIONS ONLY.
- ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR PRIOR TO CONSTRUCTION OR MANUFACTURE ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER.
- ALL WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH MCDHW - SPECIFICATION FOR HIGHWAY WORKS, SEWERS FOR ADOPTION AND OCC DETAILS AND SPECIFICATION

Issue	Description	Date
10	HIGHWAY BOUNDARY REVISED	05/11/12
09	GENERAL REVISIONS	19/10/12
08	MASTERPLAN REVISED	05/10/12
07	DESIGN REVISED	27/07/12
06	DESIGN REVISED	22/05/12
05	DESIGN REVISED	MAR 12
04	POND CONNECTIONS REVISED	21.10.11
03	DRAINAGE CHECK ISSUE	05.10.11
02	DESIGN REVISED	JULY 11

Status: **DRAFT**

Scale	1:500	Author M LLEWELLIN
Original Size	A1	Checker S A DAVIES
Height Datum	O.S.	Approver S A DAVIES
Grid	O.S.	© Copyright reserved

Client: **azdominion**



**Hyder Consulting** (UK) Limited  
29, Bressenden Place  
London SW1E 5DZ  
Tel: +44 (0)870 000 3906  
Fax: +44 (0)870 000 3905

Project: **BICESTER ECO DEVELOPMENT EXEMPLAR SITE**

Title: **EXEMPLAR SITE (S38) FOUL AND SURFACE WATER DRAINAGE SHEET 2 OF 4**

Drawing No	Project No	Issue
7254	UA001881	10

CAD FILE: K:\UA001881\_BicesterEco\1-E-OurDrawings\Current\Engineering\7253-7256-UA001881-UP210-538-12-SPINE ROAD DRAINAGE.dwg  
 PRINTED BY: Pw68008 ->MARCH/09/2013 - 11:56AM  
 UPDATED BY: Pw68008 ->MARCH/13/2013 - 2:28PM

MATCH LINE  
FOR CONTINUATION  
SEE DWG 7255

This product includes mapping data licensed from Ordnance Survey ©. © Crown copyright and/or database right 2013. License number 010031673. Original mapping has been amended and therefore the accuracy of any information shown is no longer the responsibility of Ordnance Survey.