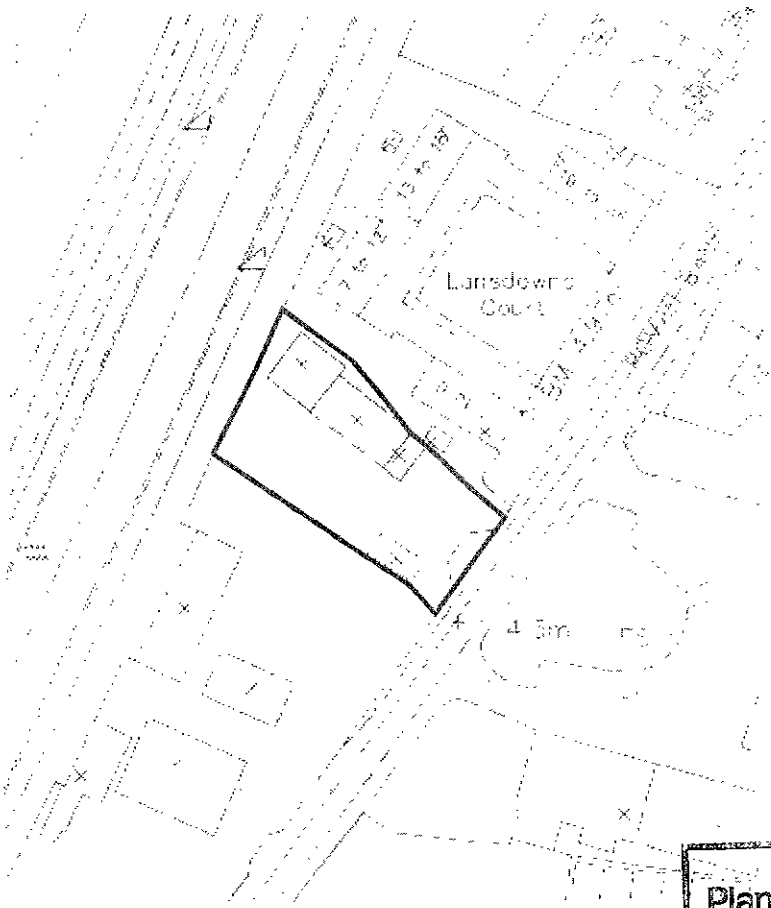


SHDC
Planning & Development
- 2 MAR 2009
Ref: 09/00761

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Rev.	By	Notes	Date

rdc
Robert Doughty Consultancy
12 High Street, Helpringham
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Tel: 01529 421646
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Email: admin@rdc.landplan.co.uk
Web: www.rdc.landplan.co.uk

Client:
Fieldview Homes

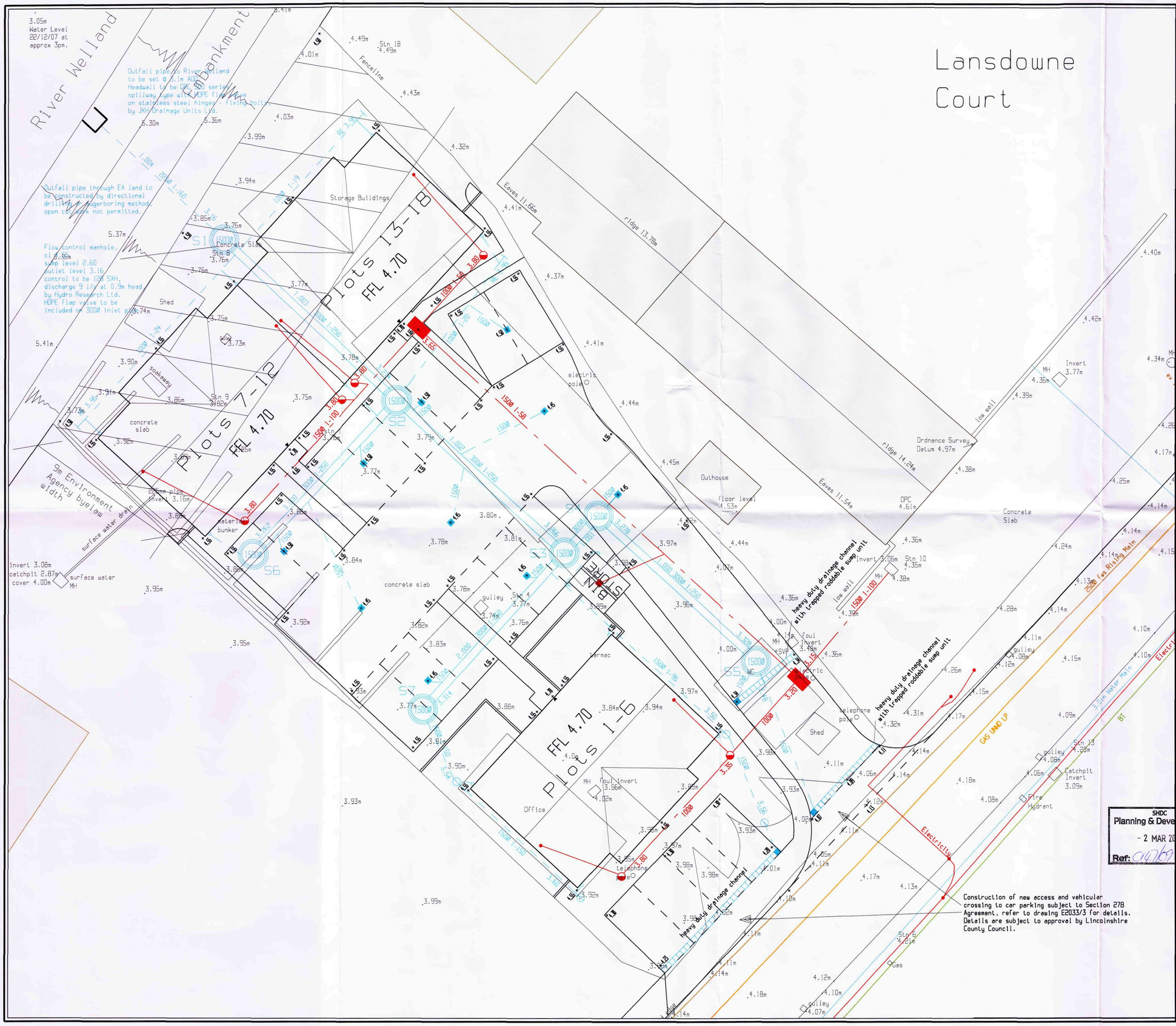
Project:
Roman Bank, Spalding

Drawing title:
Location Plan

Job No.	Drawing No.	Rev.	Drawn
544-17	LP-01		j.r.b.
Scale		Date	Checked
1:1250		26-02-07	

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DETERMINED
PLAN



DRAINAGE NOTES

All works to comply with Building Regulations 2000 Approved Document H 2002 Edition
Private drain connections to adoptable sewers to be clayware pipes.
Remaining private drains to be 110mm dia. U.P.V.C. or 100mm clayware unless stated.
Private sewers serving more than 10 dwellings to be 150mm dia

All pipe chambers and fittings to be installed, bedded and backfilled in accordance with the manufacturers instructions.
Private drains and sewers which pass adjacent to building foundations to be constructed in accordance with Part H1. of the Building Regulations.
All private drains to incorporate preformed inspection and shallow access chambers where possible.
Traditional chambers & gritpots to be constructed using precast concrete sections with 150mm concrete surround.

Depth to I.L.	Min. chamber size (internal).	
0.6m or less	225mm x 100mm or 150mm dia	
0.9m or less	450mm x 450mm	(normally a preformed chamber, 450mm dia)
1.2m or less	450 x 450mm	(normally a preformed chamber, 450mm dia)
1.5m or less	1200mm x 675mm or 1200mm dia.	(pipe up to 225mm dia only)
Over 1.5m	1200mm x 1000mm or 1200mm dia.	(pipe up to 225mm dia only)

Rainwater downpipes to be connected directly to surface water drain via 68/110mm adaptors, removable to allow for rodding.
Position of yard gullies shown in garage drives are nominal only and may be adjusted on site.

All drains in the vicinity of proposed trees to be constructed in accordance with the requirements of current N.H.B.C. standards.
All back inlet gullies to be roddable.

ADOPTABLE DRAINAGE LEGEND

Existing foul water sewer .....
Existing surface water sewer .....
Proposed foul water sewer ..... (to be adopted)
Proposed surface water sewer ..... (to be adopted)
Proposed backdrop ..... (on adopted sewer)
Proposed trapped road gully ..... (150mm outlet)

PRIVATE DRAINAGE LEGEND

Proposed foul water drain .....
Proposed surface water drain .....
Proposed inspection chamber (traditional) .....
Proposed preformed inspection chamber (depth 0.9m/1.2m or less) .....
Proposed preformed inspection chamber (depth 600mm or less) .....
Proposed shallow access chamber ..... (normally preformed 225mm or 250mm dia)
Proposed rodding eye .....
Proposed chamber invert level .....
Proposed trapped gully in drives .....
Suspended slab, where appropriate .....
Proposed slab level .....
Target levels to car parks .....

rwp... svp... svp via... 'Argo' valve ... wic... slok... big... vent pipe... required at head of system ... vent

NOTE
Where Argo valves are used they should not adversely affect the amount of ventilation necessary for the below ground system which is normally provided by the open stacks of the sanitary pipework.

All drains in vehicular areas with less than 1.2m cover and in soft landscaped areas with less than 0.9m cover to have concrete protection.

SVP's to have a minimum vertical distance of 750mm from floor level to invert of tail bend

Drainage channels to be ACO Road Drain 100 with P0900F Sump unit and 950 roddable foul air trap or similar approved.

Rev No.	REVISION	Date	Drawn By	
A	Details of Private Drainage added.	11.1.08	SJP	AJMB
B	Parking bays adjusted to front of site	28.1.08	SJP	AJMB
C	Highway construction/drainage notes to Roman Bank	7.2.08	SJP	AJMB
D	Private surface water drainage revised to accomodate highway run off from Roman Bank.	3.12.08	SJP/ JNG	AJMB
E	Revised to tie in with S278 levels, drainage channel notes added.	16.1.09	SJP	AJMB

Written dimensions to be taken. Do not scale off the drawing.
Any discrepancies, written or scaled, should be brought to the attention of the engineer immediately.
This drawing to be read in conjunction with the relevent Bills of Quantities and Local Authority Specification.
CDM NOTE: The design has been undertaken as far as possible to avoid risks to health and safety or to reduce and control the effects of any unavoidable risks.
All relevent information identifying the unavoidable risks has been passed to the planning supervisor for inclusion in the Health & Safety plan.
The Health & Safety plan will be issued by the planning supervisor with these drawings.

WORMALD, BURROWS PARTNERSHIP
Civil Engineering Consultants
12a & 14a Hitchin Street, Tel 01767 317244
Biggleswade, Beds SG18 8AX, U.K. Fax 315434

SHDC Planning & Development
- 2 MAR 2009
Ref: 0801/69

Project
Roman Bank, Spalding, Lincolnshire.

Drawing Description
Private Drainage and External Levels Layout

Client
Fieldview Homes Ltd, PO Box 1160, Spalding, Lincs. PE11 9BZ

Drawing Number
E2033/1/E

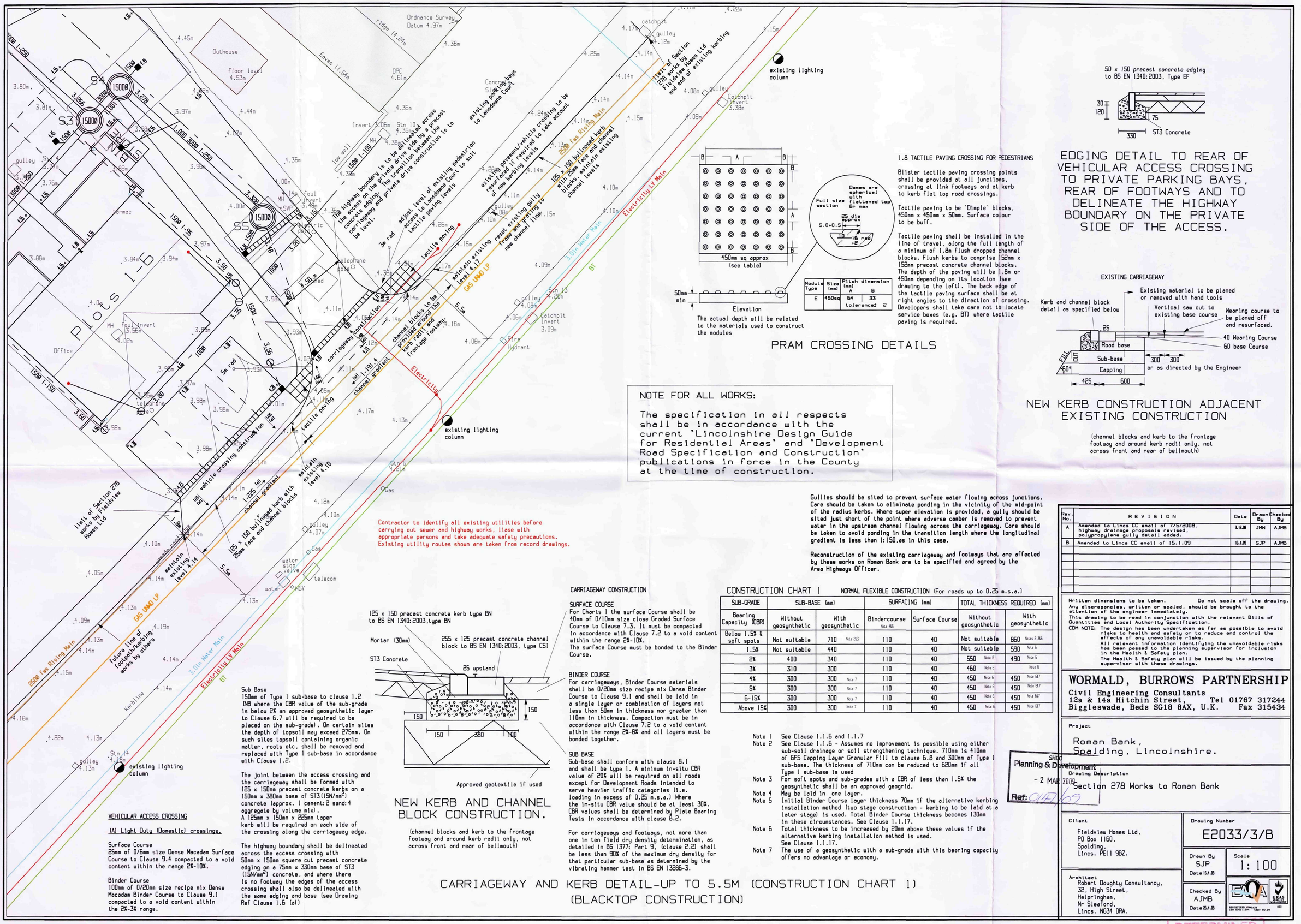
Drawn By AJMB/SJP Date 2.1.08

Scale 1:100

Checked By AJMB Date 3.12.08

Architect
Robert Doughty Consultancy, 32, High Street, Helpringham, Nr. Sleaford, Lincs. NG34 0RA

DETERMINED PLAN



Contractor to identify all existing utilities before carrying out sewer and highway works, liase with appropriate persons and take adequate safety precautions. Existing utility routes shown are taken from record drawings.

The actual depth will be related to the materials used to construct the modules

PRAM CROSSING DETAILS

1.8 TACTILE PAVING CROSSING FOR PEDESTRIANS

Bilster tactile paving crossing points shall be provided at all junctions, crossing at link footways and at kerb to kerb flat top road crossings.

Tactile paving to be 'Dimple' blocks, 450mm x 450mm x 50mm. Surface colour to be buff.

Tactile paving shall be installed in the line of travel, along the full length of a minimum of 1.8m flush dropped channel blocks. Flush kerbs to comprise 152mm x 152mm precast concrete channel blocks. The depth of the paving will be 1.8m or 450mm depending on its location (see drawing to the left). The back edge of the tactile paving surface shall be at right angles to the direction of crossing. Developers shall take care not to locate service boxes (e.g. BT) where tactile paving is required.

EDGING DETAIL TO REAR OF VEHICULAR ACCESS CROSSING TO PRIVATE PARKING BAYS, REAR OF FOOTWAYS AND TO DELINEATE THE HIGHWAY BOUNDARY ON THE PRIVATE SIDE OF THE ACCESS.

NEW KERB CONSTRUCTION ADJACENT EXISTING CONSTRUCTION

(channel blocks and kerb to the frontage footway and around kerb radii only, not across front and rear of bellmouth)

NOTE FOR ALL WORKS:

The specification in all respects shall be in accordance with the current 'Lincolnshire Design Guide for Residential Areas' and 'Development Road Specification and Construction' publications in force in the County at the time of construction.

Gullies should be sited to prevent surface water flowing across junctions. Care should be taken to eliminate ponding in the vicinity of the mid-point of the radius kerbs. Where super elevation is provided, a gully should be sited just short of the point where adverse camber is removed to prevent water in the upstream channel flowing across the carriageway. Care should be taken to avoid ponding in the transition length where the longitudinal gradient is less than 1:150,as in this case.

Reconstruction of the existing carriageway and footways that are affected by these works on Roman Bank are to be specified and agreed by the Area Highways Officer.

Rev. No.	REVISION	Date	Drawn By	Checked By
A	Amended to Lincs CC email of 7/5/2008. highway drainage proposals revised. polypropylene gully detail added.	3.12.08	JMW	AJMB
B	Amended to Lincs CC email of 15.1.09	16.1.09	SJP	AJMB

Written dimensions to be taken. Do not scale off the drawing.
Any discrepancies, written or scaled, should be brought to the attention of the engineer immediately.
This drawing to be read in conjunction with the relevent Bills of Quantities and Local Authority Specification.
CDM NOTE: The design has been undertaken as far as possible to avoid risks to health and safety or to reduce and control the effects of any unavoidable risks.
All relevent information identifying the unavoidable risks has been passed to the planning supervisor for inclusion in the Health & Safety plan.
The Health & Safety plan will be issued by the planning supervisor with these drawings.

WORMALD, BURROWS PARTNERSHIP
Civil Engineering Consultants
12a & 14a Hitchin Street, Tel 01767 317244
Biggleswade, Beds SG18 8AX, U.K. Fax 315434

Project
Roman Bank,
Spalding, Lincolnshire.

Drawing Description
Section 278 Works to Roman Bank

SHDC Planning & Development
- 2 MAR 2009
Ref: 0147/09

Client
Fieldview Homes Ltd,
PO Box 1160,
Spalding,
Lincs. PE11 9BZ.

Drawing Number
E2033/3/B

Drawn By SJP Date 15.1.08

Scale 1: 100

Checked By AJMB Date 25.1.08

Architect
Robert Doughty Consultancy,
32, High Street,
Helpringham,
Nr Sleaford,
Lincs. NG34 0RA.

CERT NO. 00

Sub Base
150mm of Type 1 sub-base to clause 1.2 (NB where the CBR value of the sub-grade is below 2% an approved geosynthetic layer to Clause 6.7 will be required to be placed on the sub-grade). On certain sites the depth of topsoil may exceed 275mm. On such sites topsoil containing organic matter, roots etc. shall be removed and replaced with Type 1 sub-base in accordance with Clause 1.2.

The joint between the access crossing and the carriageway shall be formed with 125 x 150mm precast concrete kerbs on a 150mm x 380mm base of ST3(15N/mm²) concrete (approx. 1 cement:2 sand:4 aggregate by volume mix).
A 125mm x 150mm x 225mm taper kerb will be required on each side of the crossing along the carriageway edge.

The highway boundary shall be delineated across the access crossing with 50mm x 150mm square cut precast concrete edging on a 75mm x 330mm base of ST3 (15N/mm²) concrete, and where there is no footway the edges of the access crossing shall also be delineated with the same edging and base (see Drawing Ref Clause 1.6 (a))

VEHICULAR ACCESS CROSSING

(A) Light Duty (Domestic) crossings.

Surface Course
25mm of D/6mm size Dense Macadam Surface Course to Clause 9.4 compacted to a void content within the range 2%-10%.

Binder Course
100mm of D/20mm size recipe mix Dense Macadam Binder Course to Clause 9.1 compacted to a void content within the 2%-3% range.

NEW KERB AND CHANNEL BLOCK CONSTRUCTION.

(channel blocks and kerb to the frontage footway and around kerb radii only, not across front and rear of bellmouth)

CARRIAGEWAY CONSTRUCTION

SURFACE COURSE
For Charts 1 the surface Course shall be 40mm of D/10mm size close Graded Surface Course to Clause 7.3. It must be compacted in accordance with Clause 7.2 to a void content within the range 2%-10%.
The surface Course must be bonded to the Binder Course.

BINDER COURSE
For carriageways, Binder Course materials shall be D/20mm size recipe mix Dense Binder Course to Clause 9.1 and shall be laid in a single layer or combination of layers not less than 50mm in thickness nor greater than 110mm in thickness. Compaction must be in accordance with Clause 7.2 to a void content within the range 2%-8% and all layers must be bonded together.

SUB BASE
Sub-base shall conform with clause 8.1 and shall be type 1. A minimum in-situ CBR value of 20% will be required on all roads except for Development Roads intended to serve heavier traffic categories (i.e. loading in excess of 0.25 m.s.a.) Where the in-situ CBR value should be at least 30%. CBR values shall be determined by Plate Bearing Tests in accordance with clause 8.2.

For carriageways and footways, not more than one in ten field dry density determination, as detailed in BS 1377: Part 9, (clause 2.2) shall be less than 90% of the maximum dry density for that particular sub-base as determined by the vibrating hammer test in BS EN 13286-3.

CONSTRUCTION CHART 1 NORMAL FLEXIBLE CONSTRUCTION (For roads up to 0.25 m.s.a.)

SUB-GRADE	SUB-BASE (mm)		SURFACING (mm)		TOTAL THICKNESS REQUIRED (mm)	
Bearing Capacity (CBR)	Without geosynthetic	With geosynthetic	Bindercourse Note 4&5	Surface Course	Without geosynthetic	With geosynthetic
Below 1.5% & soft spots	Not suitable	710 Note 2&3	110	40	Not suitable	860 Notes 2,3&6
1.5%	Not suitable	440	110	40	Not suitable	590 Note 6
2%	400	340	110	40	550 Note 6	490 Note 6
3%	310	300	110	40	460 Note 6	Note 6
4%	300	300 Note 7	110	40	450 Note 6	450 Note 6&7
5%	300	300 Note 7	110	40	450 Note 6	450 Note 6&7
6-15%	300	300 Note 7	110	40	450 Note 6	450 Note 6&7
Above 15%	300	300 Note 7	110	40	450 Note 6	450 Note 6&7

Note 1 See Clause 1.1.6 and 1.1.7
Note 2 See Clause 1.1.6 - Assumes no improvement is possible using either sub-soil drainage or soil strengthening technique. 710mm is 410mm of 6F5 Capping Layer Granular Fill to clause 6.8 and 300mm of Type 1 sub-base. The thickness of 710mm can be reduced to 620mm if all Type 1 sub-base is used
Note 3 For soft spots and sub-grades with a CBR of less than 1.5% the geosynthetic shall be an approved geogrid.
Note 4 May be laid in one layer.
Note 5 Initial Binder Course layer thickness 70mm if the alternative kerbing installation method (two stage construction - kerbing to be laid at a later stage) is used. Total Binder Course thickness becomes 130mm in these circumstances. See Clause 1.1.17.
Note 6 Total thickness to be increased by 20mm above these values if the alternative kerbing installation method is used. See Clause 1.1.17.
Note 7 The use of a geosynthetic with a sub-grade with this bearing capacity offers no advantage or economy.

CARRIAGEWAY AND KERB DETAIL-UP TO 5.5M (CONSTRUCTION CHART 1) (BLACKTOP CONSTRUCTION)

DETERMINED PLAN