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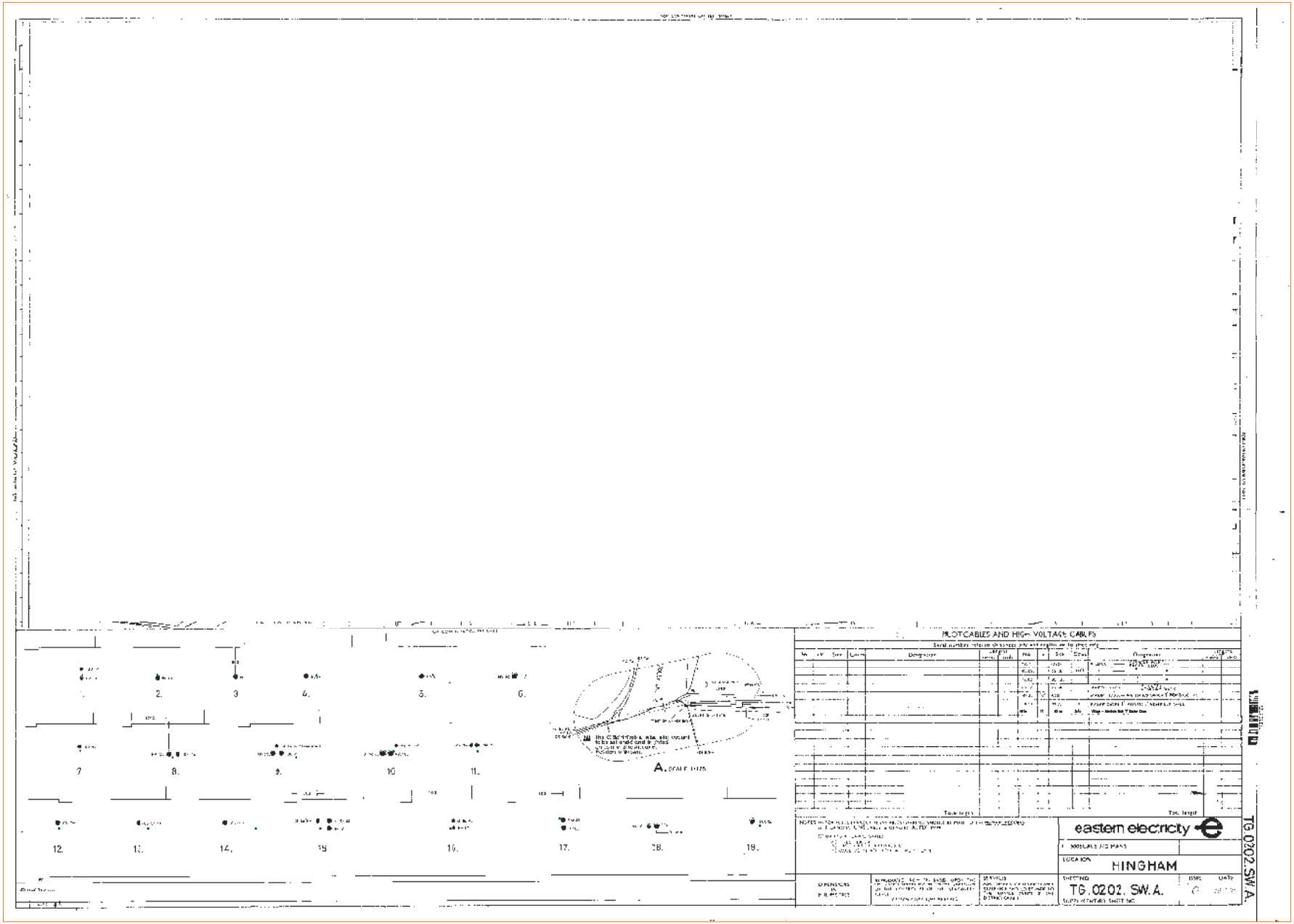
TG0202SWA 1:500 LV



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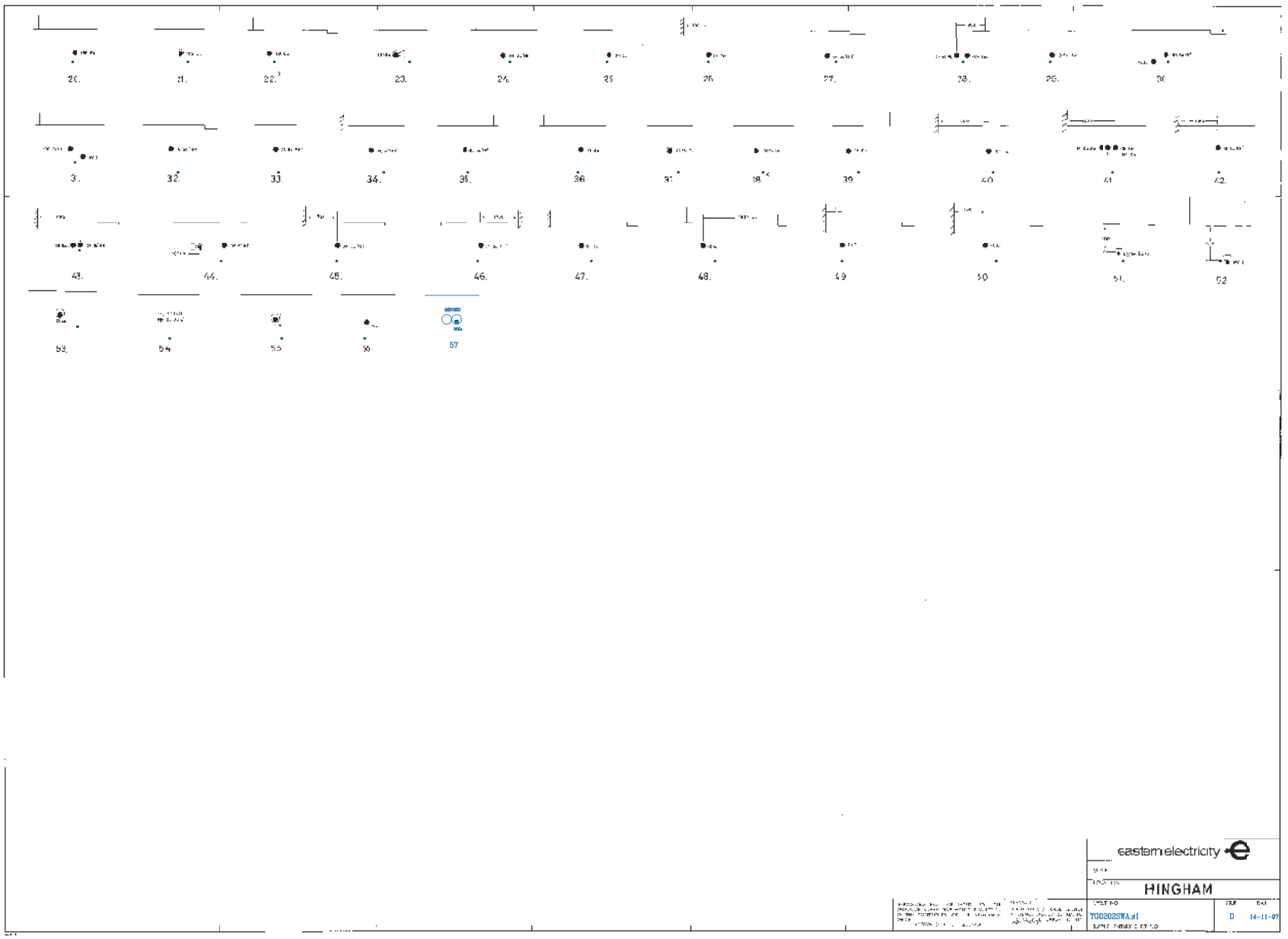
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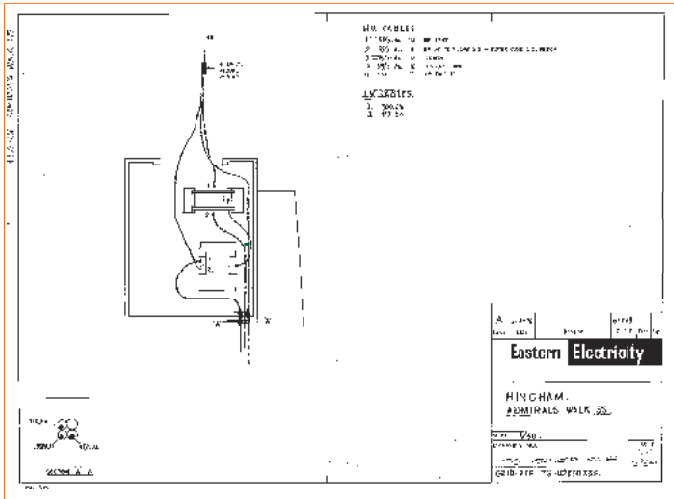
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ADMIRALS WALK 55

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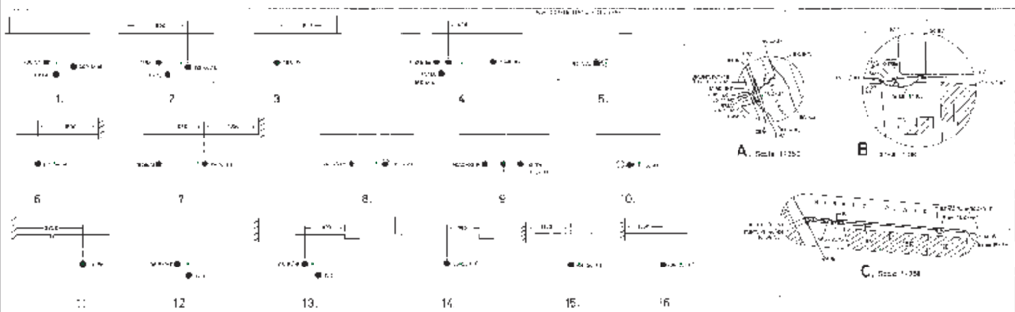

PILOT CABLES AND HIGH VOLTAGE CABLES

HV5	11	70Al EPR	3x1	OAK LANE S/S TEE – HALL LANE S/S TEE
HV1c	11	95Al	3	VILLAGE – HALL MOOR TRANS / HALL LANE T
HV1d	11	185ax	3x1	VILLAGE – HALL MOOR TRANS / HALL LANE T
HV2a	11	95Al	3	VILLAGE – ADMIRALS WALK / BAXTER CLOSE "T"
HV2b	11	185ax	3x1	VILLAGE – ADMIRALS WALK / BAXTER CLOSE "T"
HV3c	11	95Al	3	VILLAGE – MANOR HOUSE
HV3d	11	185ax	3x1	VILLAGE – MANOR HOUSE
HV15311	11	95 ax	3x1c	TEE TO ST ANDREWS CHURCH

Total length

NOTES:

EASTERN ELECTRICITY

LOCATION HINGHAM

DIMENSIONS IN MILLIMETRES

REPRODUCED FROM AND BASED UPON THE ORDNANCE SURVEY MAP WITH PERMISSION OF THE CONTROLLER OF H.M. STATIONERY OFFICE

SERVICES

FOR DETAILS OF SERVICE CABLE REFERENCE SHOULD BE MADE TO THE SERVICE CARDS IN THE LOCAL OFFICE

SHEET No.	ISSUE	DATE
TG0202SWB.s0	B	27-08-99

SUPPLEMENTARY SHEET No.

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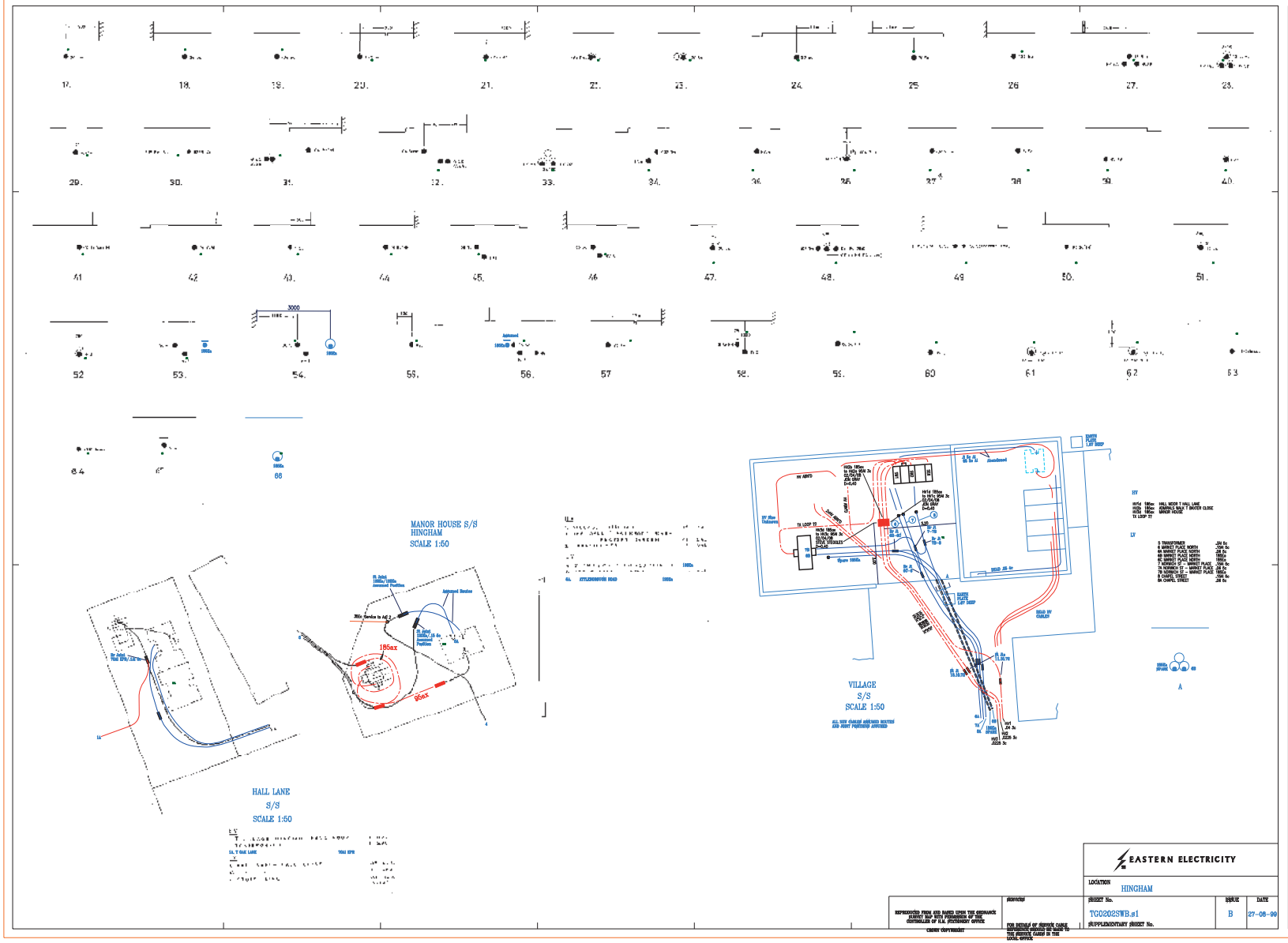
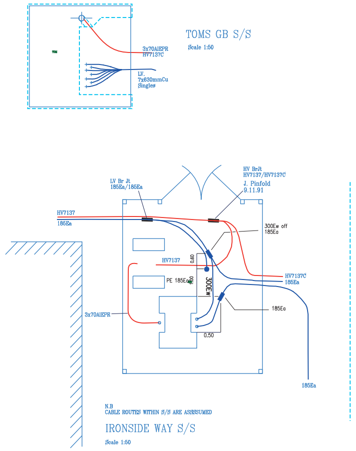
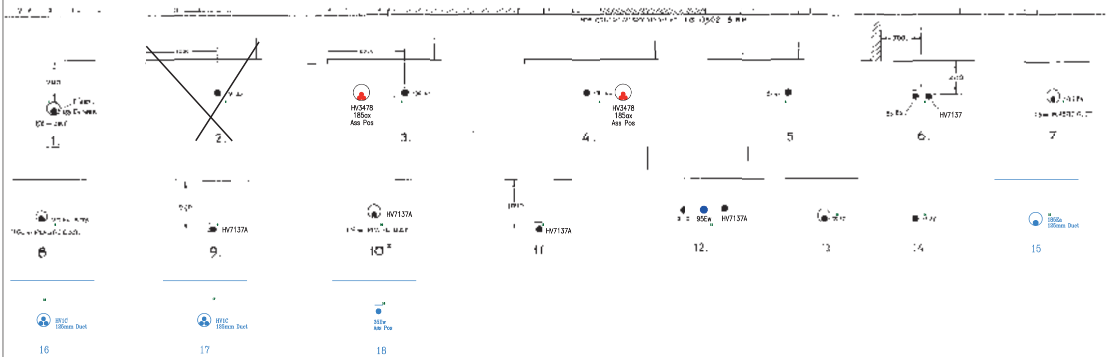

MANOR HOUSE S/S
HINGHAM
SCALE 1:50
HALL LANE
S/S
SCALE 1:50
VILLAGE
S/S
SCALE 1:50
EASTERN ELECTRICITY
LOCATION
HINGHAM
SHEET No.
TG0202SWB.s1
ISSUE
B
DATE
27-06-99
SUPPLEMENTARY SHEET No.

SO

TG0302SWA 1:500 LV





PILOT CABLES AND HIGH VOLTAGE CABLES

Ref	kV	Size	Type	Designation
HV7137	11	95Al	[illegible]	HARDINGHAM RD(POLE 2) – IRONSIDE WAY
HV7137A	11	95Al	Tape	HARDINGHAM RD(POLE 2) – IRONSIDE WAY
HV7137B	11	70AlEPR	3 x 1c	HARDINGHAM RD(POLE 2) – IRONSIDE WAY
HV7137E	11	95ax	3 x 1c	HARDINGHAM RD(POLE 2) – IRONSIDE WAY
HV1C	11	70AlEPR	3x1	TOMS GB S/S TEE IRONSIDE WAY S/S – HV POLE 2
HV1D	11	150XLPE	x3	NORWICH RD S/S 'T' HV1
HV3478	11	185ax	3x1	TEE OFF HV7137C TO LINCOLN AVENUE

EASTERN ELECTRICITY

LOCATION	HINGHAM		
SHEET No.	TG0302SWA.s0	ISSUE	DATE
SUPPLEMENTARY SHEET No.		D	17-06-04

SERVICES

FOR DETAILS OF SERVICE CABLE REFERENCE SHOULD BE MADE TO THE SERVICE CARDS IN THE LOCAL OFFICE

RichardJackson Engineering Consultants

Appendix C

Date: 08/02/18

Scale: 1:1250

Map Centre: 603043,302031

Data updated: 04/01/18

Our Ref: 252484 - 2

Clean Water Plan A0

Potable Water	Fitting
Raw Water	Hydrant
Decommissioned Water	

duncan@cornerstoneprojects.co.uk

48851

RichardJackson Engineering Consultants

Appendix D

Date: 08/02/18 | Scale: 1:1250 | Map Centre: 603043,302031 | Data updated: 04/01/18 | Our Ref: 252484 - 3 | Wastewater Plan A0

Foul Sewer
Surface Sewer
Combined Sewer
Final Effluent
Rising Main*
Private Sewer*
Decommissioned Sewer*

Outfall*
Inlet*
Manhole*

Sewage Treatment Works
Public Pumping Station
Decommissioned Pumping Station

*(Colour denotes effluent type)

duncan@cornerstoneprojects.co.uk
48851

love every drop
anglianwater

Manhole Reference	Easting	Northing	Liquid Type	Cover Level	Invert Level	Depth to Invert
0201	603037	302340	F	56.32	54.78	1.54
0202	603030	302259	F	56.61	54.89	1.72
0203	603056	302241	F	56.4	54.89	1.51
0204	603092	302244	F	56.73	55.09	1.64
0205	603032	302280	F	56.85	55.04	1.81
0206	603047	302278	F	57.02	54.975	2.045
0207	603047	302256	F	56.7	54.83	1.87
0208	603047	302241	F	56.42	54.9	1.52
0301	603040	302354	F	57.45	55.57	1.88
0302	603056	302390	F	58	56.15	1.85
0701	603059	301707	F	44.96	43.34	1.62
1201	603111	302244	F	57.55	55.21	2.34
1202	603160	302235	F	57.67	55.45	2.22
1203	603164	302261	F	57.68	55.63	2.05
1204	603164	302280	F	57.75	55.76	1.99
1301	603160	302327	F	57.7	56.05	1.65
1401	603111	302496	F	58.11	56.59	1.52
1502	603133	302510	F	-	-	-
1701	603127	301707	F	45.64	43.88	1.76
2201	603223	302278	F	-	17.115	-
2301	603223	302339	F	58	56.58	1.42
3001	602402	302076	F	53.23	52.04	1.19
3002	602324	302006	F	54.39	53.49	0.9
3003	602333	302056	F	56.34	54	1.34
3004	602362	302017	F	53.4	52.1	1.3
3005	602317	302080	F	55.9	54.66	1.24
3006	602368	302058	F	55.34	54.06	1.28
3007	602324	302069	F	-	-	-
3008	602328	302070	F	-	-	-
3009	602329	302064	F	-	-	-
3102	602367	302126	F	54.95	53.1	1.85
3104	602369	302179	F	56.23	54.36	1.87
3105	602377	302137	F	54.79	53.03	1.76
3106	602377	302187	F	-	-	-
3201	602363	302207	F	56.96	55.14	1.82
3202	602353	302213	F	57.14	55.31	1.83
3300	602394	302338	F	-	-	-
3301	602394	302332	F	-	-	-
3401	602371	302410	F	55.85	52.85	3
3801	602393	301867	F	49.25	48.44	0.81
3802	602373	301861	F	49.75	48.6	1.15
3803	602358	301858	F	49.89	48.75	1.14
3901	602394	301940	F	51.46	49.39	2.07
3902	602387	301961	F	52.24	50.41	1.83
3903	602332	301912	F	51.26	49.87	1.39
4001	602421	302085	F	53.04	51.41	1.63
4002	602431	302090	F	53.19	51.19	2
4003	602425	302080	F	52.82	50.99	1.83
4004	602403	302072	F	53.41	51.91	1.5
4005	602496	302036	F	50.96	48.58	2.38
4006	602463	302084	F	52.95	51.6	1.35
4007	602459	302035	F	-	-	-
4101	602411	302118	F	54.1	51.94	2.16
4102	602468	302124	F	-	-	-
4201	602454	302273	F	55.97	54.07	1.9
4301	602483	302356	F	55.62	52.31	3.31
4302	602403	302353	F	56.08	54.57	1.51
4401	602468	302428	F	55.91	52.56	3.35
4601	602470	301868	F	43.54	41.95	1.59
4801	602414	301877	F	48.67	47.72	0.95
4802	602498	301884	F	46.72	45.21	1.51
4803	602409	301874	F	49.18	48.28	0.9
4901	602456	301948	F	48.26	46.69	1.57
4902	602438	301938	F	49.12	47.1	2.02
4903	602420	301919	F	49.27	47.35	1.92
4904	602401	301930	F	50.32	48.78	1.54
4905	602449	301991	F	49.51	48.3	1.21
5001	602577	302029	F	50.23	47.92	2.31
5201	602509	302275	F	55.27	53.64	1.63
5202	602552	302275	F	54.82	51.76	3.06
5203	602598	302280	F	54.81	53.35	1.46
5204	602522	302223	F	54.51	52.81	1.7
5205	602553	302255	F	54.59	51.51	3.08
5206	602592	302209	F	53.37	51.42	1.95
5208	602549	302200	F	53.94	51.92	2.02
5301	602545	302358	F	55.54	51.92	3.62
5601	602528	301601	F	43.3	40.88	2.42
5602	602546	301657	F	43.11	41.04	2.07
5701	602555	301713	F	43.35	41.23	2.12
5702	602561	301753	F	43.66	41.39	2.27
5703	602550	301798	F	44.17	42.8	1.37
5801	602542	301841	F	45	43.78	1.22
5803	602591	301830	F	44.54	42.8	1.74
5804	602596	301804	F	44.51	42.63	1.88
5901	602515	301971	F	49.28	47.61	1.67
5902	602536	301979	F	48.95	47.88	1.07
5903	602560	301989	F	-	-	-
5904	602516	301908	F	-	-	-
5905	602535	301916	F	-	-	-
5906	602566	301926	F	-	-	-
6001	602685	302077	F	49.22	47.81	1.41
6002	602657	302082	F	48.72	47.25	1.47
6003	602647	302081	F	48.22	46.62	1.6
6004	602640	302015	F	47.01	45.26	1.75
6101	602638	302163	F	50.8	48.89	1.91
6201	602624	302233	F	53.85	52.56	1.29
6202	602683	302231	F	-	-	-
6301	602632	302313	F	55.18	53.75	1.43
6302	602604	302360	F	55.62	53.47	2.15
6303	602664	302307	F	55.27	54.1	1.17
6304	602664	302349	F	55.59	53.96	1.63
6305	602614	302358	F	55.59	53.6	1.99
6401	602686	302488	F	56.89	54.27	2.62
6402	602606	302460	F	56.44	53.93	2.51
6701	602679	301761	F	43.4	42.3	1.1
6801	602634	301850	F	44.66	43.17	1.49
6802	602656	301891	F	-	-	-
6901	602637	301975	F	46.32	44.75	1.57
6902	602663	301902	F	45.26	43.86	1.4
7101	602762	302198	F	53.49	51.86	1.63
7201	602741	302273	F	54.7	53.68	1.02
7202	602769	302226	F	58.67	57.04	1.63
7203	602781	302265	F	55.47	-	-
7701	602773	301805	F	43.79	42.51	1.28
7702	602755	301725	F	43.29	42.06	1.23
8201	602882	302239	F	54.95	53.37	1.58
8202	602884	302280	F	55.78	53.9	1.88
8203	602883	302226	F	-	-	-
8204	602900	302228	F	-	-	-
8301	602881	302314	F	56.52	54.9	1.62
8601	602856	301689	F	42.76	41.63	1.13
8602	602855	301685	F	42.66	41.57	1.09
8603	602860	301696	F	42.94	42.03	0.91
8701	602876	301751	F	43.66	42.17	1.49
8702	602865	301714	F	43.29	42.37	0.92
8703	602869	301723	F	43.6	41.87	1.73
8704	602839	301770	F	-	-	-
9201	602955	302239	F	55.75	54.14	1.61
9202	602938	302282	F	56.19	54.65	1.54
9203	602951	302286	F	56.5	54.92	1.58
9204	602955	302275	F	56.2	55.25	0.95
9205	602944	302239	F	55.65	54.13	1.52
9206	602944	302254	F	55.67	54.22	1.45
9207	602901	302222	F	-	-	-
9301	602951	302337	F	57.07	55.46	1.61
9302	602950	302381	F	57.66	55.99	1.67
9701	602899	301712	F	44.5	42.92	1.58
9702	602938	301724	F	44.14	42.45	1.69
1251	603167	302284	S	57.75	55.82	1.93
1252	603168	302263	S	57.68	56.12	1.56
1253	603162	302223	S	57.7	56.2	1.5
1254	603159	302208	S	57.65	56.51	1.14
1351	603165	302324	S	57.86	56.03	1.83
2251	603219	302283	S	57.85	55.69	2.16
2252	603219	302265	S	57.8	56.58	1.22
2351	603282	302349	S	58.4	55.44	2.96
2352	603218	302346	S	58.07	55.55	2.52
3051	602333	302076	S	55.471	54.601	0.87
3150	602327	302151	S	55.843	53.993	1.85
3151	602326	302102	S	-	-	-

Manhole Reference	Easting	Northing	Liquid Type	Cover Level	Invert Level	Depth to Invert
3351	603330	302359	S	58.4	55.31	3.09
3851	602320	301811	S	49.59	48.17	1.42
3852	602334	301836	S	49.8	48.29	1.51
3853	602348	301868	S	49.89	48.41	1.48
3951	602327	301919	S	51.57	48.76	2.81
3952	602324	301953	S	53	50.22	2.78
3953	602334	301977	S	53.46	50.52	2.94
3954	602358	301991	S	53.61	50.92	2.69
3955	602376	301984	S	53.1	51.19	1.91
4051	602429	302082	S	52.817	-	-
4951	602414	301960	S	48.394	47.734	0.66
4950	602464	301948	S	-	-	-
4951	602403	301930	S	50.282	48.722	1.56
4952	602424	301922	S	49.29	47.39	1.9
4953	602438	301936	S	49.091	47.301	1.79
4954	602493	301958	S	49.303	48.253	1.05
4955	602468	301946	S	48.503	47.553	0.95
5251	602548	302270	S	-	-	-
5951	602529	301970	S	49.2	48.34	0.86
5952	602553	301983	S	48.621	47.921	0.7
6051	602677	302075	S	-	-	-
6052	602653	302080	S	-	-	-
6151	602603	302186	S	-	-	-
6152	602629	302161	S	-	-	-
6153	602634	302157	S	-	-	-
6154	602637	302141	S	-	-	-
6850	602602	301842	S	44.758	43.258	1.5
6851	602613	301792	S	43.838	42.708	1.13
6951	602683	301973	S	-	-	-
7351	602759	302322	S	-	-	-
7850	602721	301897	S	-	-	-
7951	602708	301935	S	-	-	-
7952	602703	301950	S	-	-	-

Manhole Reference	Easting	Northing	Liquid Type	Cover Level	Invert Level	Depth to Invert

Manhole Reference	Easting	Northing	Liquid Type	Cover Level	Invert Level	Depth to Invert

Manhole Reference	Easting	Northing	Liquid Type	Cover Level	Invert Level	Depth to Invert

Manhole Reference	Easting	Northing	Liquid Type	Cover Level	Invert Level	Depth to Invert

RichardJackson Engineering Consultants

Appendix E

Maps by email Plant Information Reply

IMPORTANT WARNING

Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy.
It should not be relied upon in the event of excavations or other works being made near to BT apparatus which may exist at various depths and may deviate from the marked route.

openreach

CLICK BEFORE YOU DIG

FOR PROFESSIONAL FREE ON SITE ASSISTANCE PRIOR TO COMMENCEMENT OF EXCAVATION WORKS INCLUDING LOCATE AND MARKING SERVICE

email cbyd@openreach.co.uk

ADVANCE NOTICE REQUIRED
(Office hours: Monday – Friday 08:00 to 17:00)
www.openreach.co.uk/cbyd

KEY TO BT SYMBOLS

DP		Pole	
Planned DP		Planned Pole	
PCP		Joint Box	
Planned PCP		Change Of State	
Built		Split Coupling	
Planned		Duct Tee	
Inferred		Planned Box	
Building		Manhole	
Kiosk		Planned Manhole	
Hatchings		Cabinet	
		Planned Cabinet	

Other proposed plant is shown using dashed lines.
BT Symbols not listed above may be disregarded.
Existing BT Plant may not be recorded.
Information valid at time of excavation

BT Ref : MYC084170
Map Reference : (centre) TG0267502196
Easting/Northing : (centre) 602675,302196
Issued : 09/02/2018 08:41:20

WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nrhc@openreach.co.uk

Maps by email Plant Information Reply

IMPORTANT WARNING

Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy.
It should not be relied upon in the event of excavations or other works being made near to BT apparatus which may exist at various depths and may deviate from the marked route.

openreach

CLICK BEFORE YOU DIG

FOR PROFESSIONAL FREE ON SITE ASSISTANCE PRIOR TO COMMENCEMENT OF EXCAVATION WORKS INCLUDING LOCATE AND MARKING SERVICE

email cbyd@openreach.co.uk

ADVANCE NOTICE REQUIRED
(Office hours: Monday - Friday 08:00 to 17:00)
www.openreach.co.uk/cbyd

KEY TO BT SYMBOLS

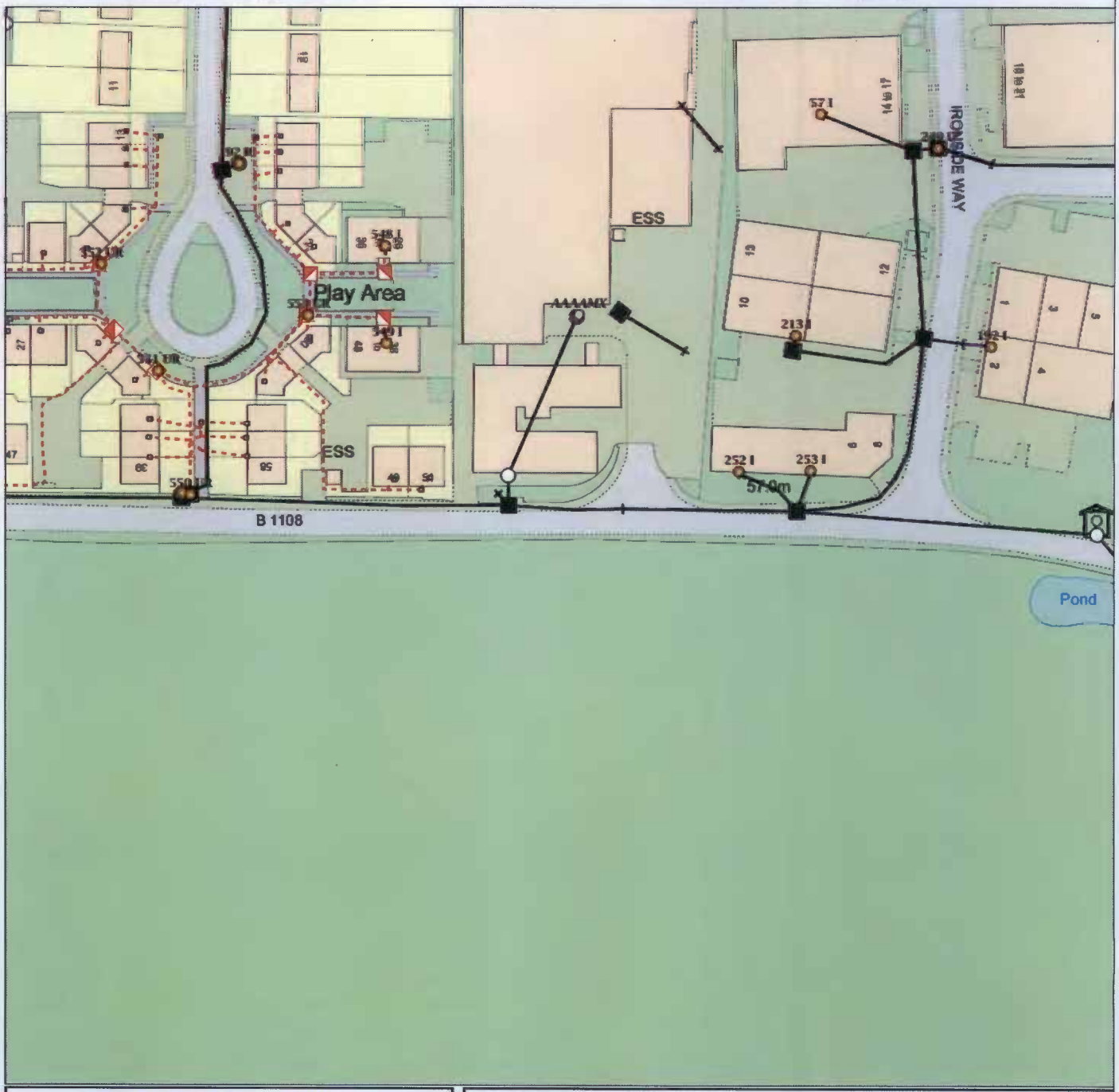
DP		Pole	
Planned DP		Planned Pole	
PCP		Joint Box	
Planned PCP		Change Of State	
Built		Split Coupling	
Planned		Duct Tee	
Inferred		Planned Box	
Building		Manhole	
Kiosk		Planned Manhole	
Hatchings		Cabinet	
		Planned Cabinet	

Other proposed plant is shown using dashed lines.
BT Symbols not listed above may be disregarded.
Existing BT Plant may not be recorded.
Information valid at time of excavation

BT Ref : TAK08418D
Map Reference : (centre) TG0287502196
Easting/Northing : (centre) 602875,302196
Issued : 09/02/2018 08:41:45

WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nnhc@openreach.co.uk

Maps by email Plant Information Reply



IMPORTANT WARNING

Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy. It should not be relied upon in the event of excavations or other works being made near to BT apparatus which may exist at various depths and may deviate from the marked route.

openreach

CLICK BEFORE YOU DIG

FOR PROFESSIONAL FREE ON SITE ASSISTANCE PRIOR TO COMMENCEMENT OF EXCAVATION WORKS INCLUDING LOCATE AND MARKING SERVICE

email cbyd@openreach.co.uk

ADVANCE NOTICE REQUIRED
(Office hours: Monday – Friday 08:00 to 17:00)
www.openreach.co.uk/cbyd

KEY TO BT SYMBOLS

DP		Pole	
Planned DP		Planned Pole	
PCP		Joint Box	
Planned PCP		Change Of State	
Built		Split Coupling	
Planned		Duct Tee	
Inferred		Planned Box	
Building		Manhole	
Kiosk		Planned Manhole	
Hatchings		Cabinet	
		Planned Cabinet	

Other proposed plant is shown using dashed lines.
BT Symbols not listed above maybe disregarded.
Existing BT Plant may not be recorded.
Information valid at time of generation.

BT Ref : IGS08416V
Map Reference : (centre) TG0307502196
Easting/Northing : (centre) 603075,302196
Issued : 09/02/2018 08:41:53

WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nnhc@openreach.co.uk

Maps by email Plant Information Reply

IMPORTANT WARNING

Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy. It should not be relied upon in the event of excavations or other works being made near to BT apparatus which may exist at various depths and may deviate from the marked route.

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email cbyd@openreach.co.uk

ADVANCE NOTICE REQUIRED
(Office hours: Monday – Friday 08:00 to 17:00)
www.openreach.co.uk/cbyd

KEY TO BT SYMBOLS

DP	Pole
Planned DP	Planned Pole
PCP	Joint Box
Planned PCP	Change Of State
Built	Split Coupling
Planned	Duct Tee
Inferred	Planned Box
Building	Manhole
Kiosk	Planned Manhole
Hatchings	Cabinet
	Planned Cabinet

Other proposed plant is shown using dashed lines.
BT Symbols not listed above maybe disregarded.
Existing BT Plant may not be recorded.
Information valid at time of generation.

BT Ref : OZP08421X
Map Reference : (centre) TG0327502196
Easting/Northing : (centre) 603275,302196
Issued : 09/02/2018 08:42:16

WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nnhc@openreach.co.uk

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(Office hours: Monday – Friday 08:00 to 17:00)
www.openreach.co.uk/cbyd

KEY TO BT SYMBOLS

DP		Pole	
Planned DP		Planned Pole	
PCP		Joint Box	
Planned PCP		Change Of State	+
Built		Split Coupling	×
Planned		Duct Tee	▲
Inferred		Planned Box	
Building		Manhole	
Kiosk	K	Planned Manhole	
Hatchings		Cabinet	
		Planned Cabinet	

Other proposed plant is shown using dashed lines.
BT Symbols not listed above maybe disregarded.
Existing BT Plant may not be recorded.
Information valid at time of excavation.

BT Ref : DLC08425S
Map Reference : (centre) TG0267501996
Easting/Northing : (centre) 602675,301996
Issued : 09/02/2018 08:42:20

WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nnhc@openreach.co.uk

Maps by email Plant Information Reply

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(Office hours: Monday – Friday 08:00 to 17:00)
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KEY TO BT SYMBOLS

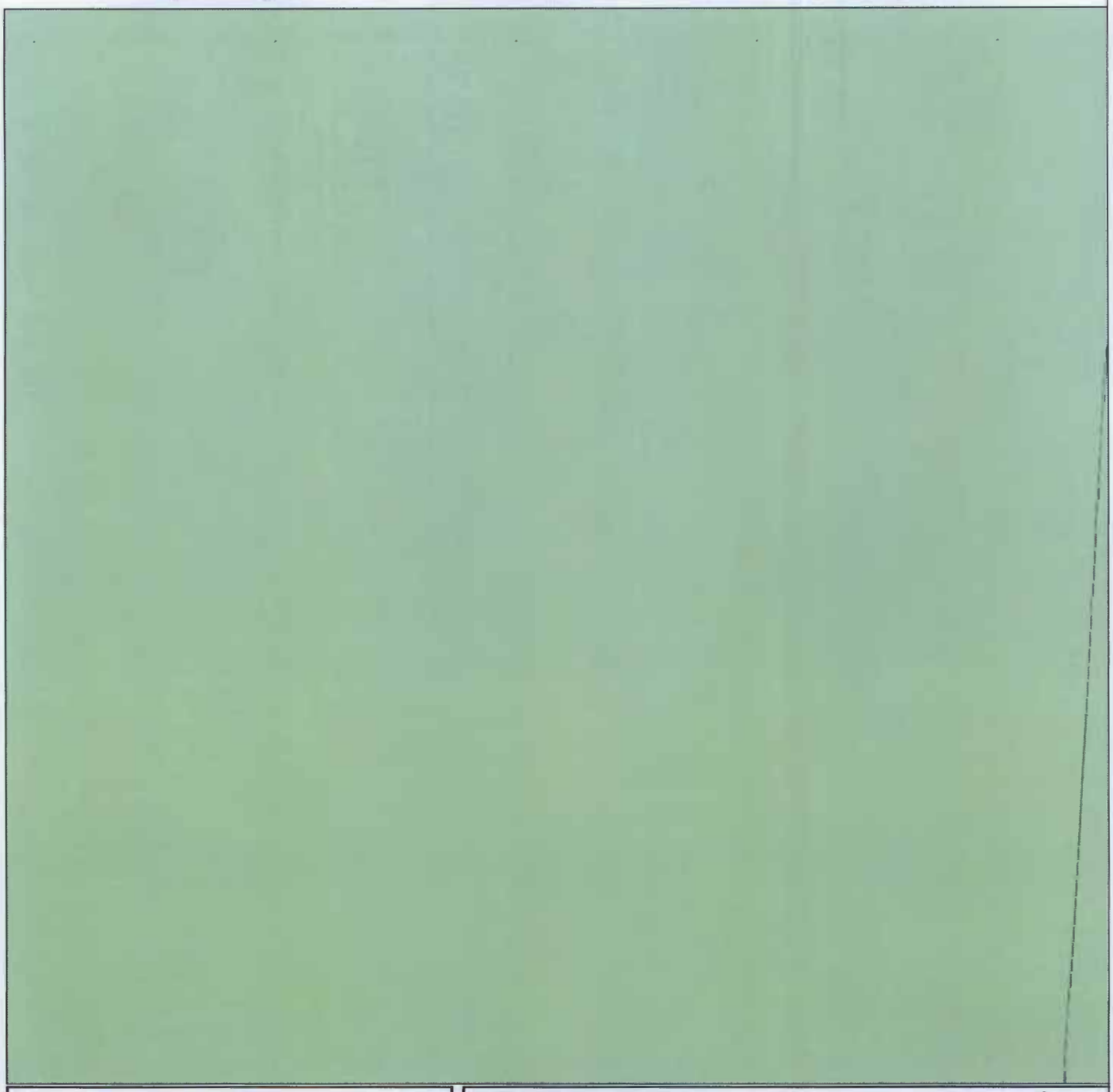
DP		Pole	
Planned DP		Planned Pole	
PCP		Joint Box	
Planned PCP		Change Of State	+
Built		Split Coupling	X
Planned		Duct Tee	▲
Inferred		Planned Box	
Building		Manhole	
Kiosk		Planned Manhole	
Hatchings		Cabinet	
		Planned Cabinet	

Other proposed plant is shown using dashed lines.
BT Symbols not listed above may be disregarded.
Existing BT Plant may not be recorded.
Information valid at time of preparation

BT Ref : ITK08421J
Map Reference : (centre) TG0287501996
Easting/Northing : (centre) 602875,301996
Issued : 09/02/2018 08:42:44

WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nnhc@openreach.co.uk

Maps by email Plant Information Reply



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www.openreach.co.uk/cbyd

KEY TO BT SYMBOLS

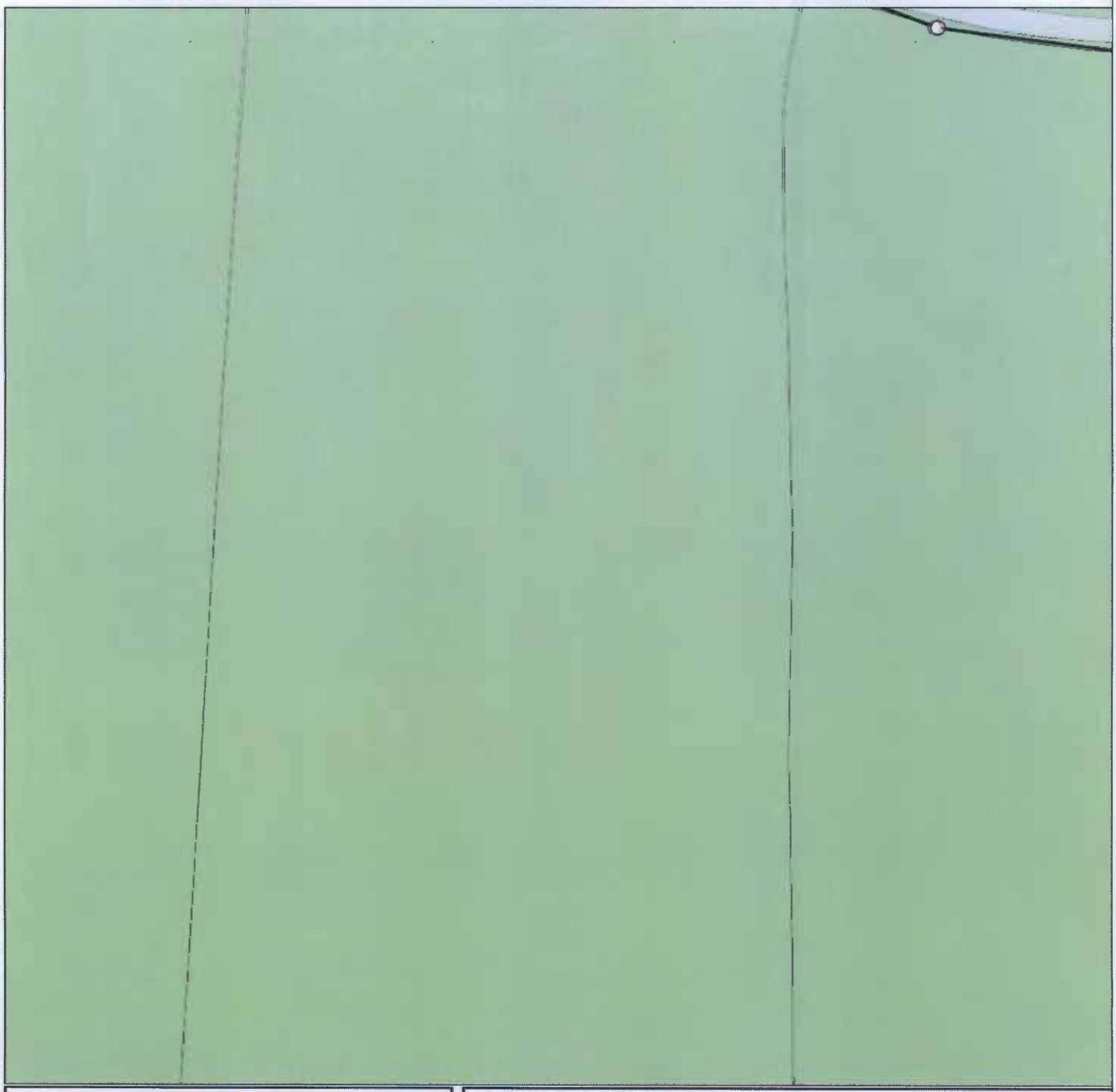
DP	Pole
Planned DP	Planned Pole
PCP	Joint Box
Planned PCP	Change Of State
Built	Split Coupling
Planned	Duct Tee
Inferred	Planned Box
Building	Manhole
Kiosk	Planned Manhole
Hatchings	Cabinet
	Planned Cabinet

Other proposed plant is shown using dashed lines.
BT Symbols not listed above may be disregarded.
Existing BT Plant may not be recorded.
Information valid at time of preparation

BT Ref : AZZ08422Z
Map Reference : (centre) TG0307501996
Easting/Northing : (centre) 603075,301996
Issued : 09/02/2018 08:43:05

WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nnhc@openreach.co.uk

Maps by email Plant Information Reply



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(Office hours: Monday - Friday 08:00 to 17:00)
www.openreach.co.uk/cbyd

KEY TO BT SYMBOLS

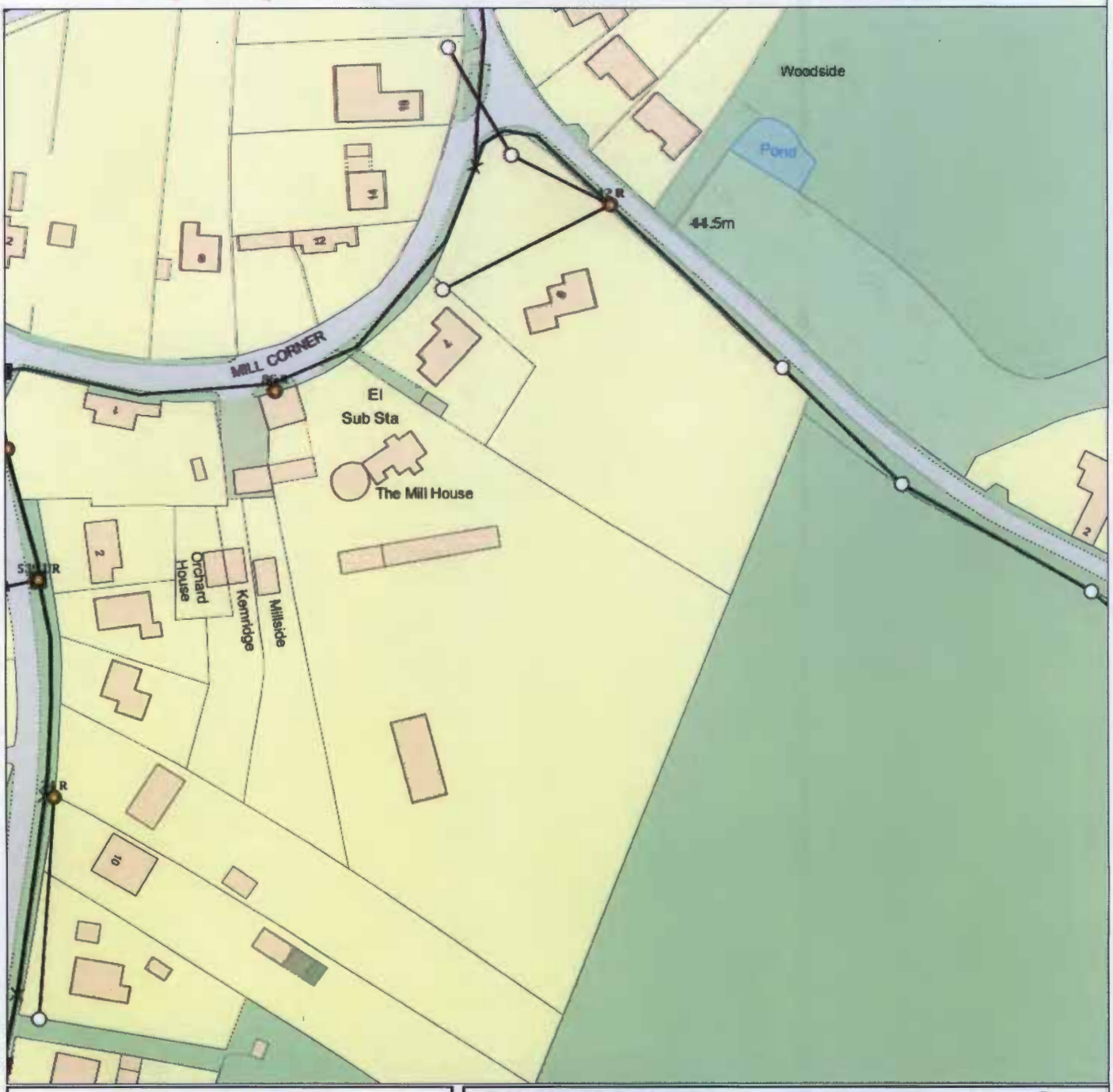
DP	Pole
Planned DP	Planned Pole
PCP	Joint Box
Planned PCP	Change Of State
Built	Split Coupling
Planned	Duct Tee
Inferred	Planned Box
Building	Manhole
Kiosk	Planned Manhole
Hatchings	Cabinet
	Planned Cabinet

Other proposed plant is shown using dashed lines.
BT Symbols not listed above may be disregarded.
Existing BT Plant may not be recorded.
Information valid at time of excavation

BT Ref : RHS08431Y
Map Reference : (centre) TG0327501996
Easting/Northing : (centre) 603275,301996
Issued : 09/02/2018 08:43:17

WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nnhc@openreach.co.uk

Maps by email Plant Information Reply



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KEY TO BT SYMBOLS

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Planned DP		Planned Pole	
PCP		Joint Box	
Planned PCP		Change Of State	
Built		Split Coupling	
Planned		Duct Tee	
Inferred		Planned Box	
Building		Manhole	
Kiosk		Planned Manhole	
Hatchings		Cabinet	
		Planned Cabinet	

Other proposed plant is shown using dashed lines.
BT Symbols not listed above may be disregarded.
Existing BT Plant may not be recorded.
Information valid at time of excavation

BT Ref : THZ08434Y
Map Reference : (centre) TG0267501796
Easting/Northing : (centre) 602675,301796
Issued : 09/02/2018 08:43:35

WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nnho@openreach.co.uk

Maps by email Plant Information Reply

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KEY TO BT SYMBOLS

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Planned DP	Planned Pole
PCP	Joint Box
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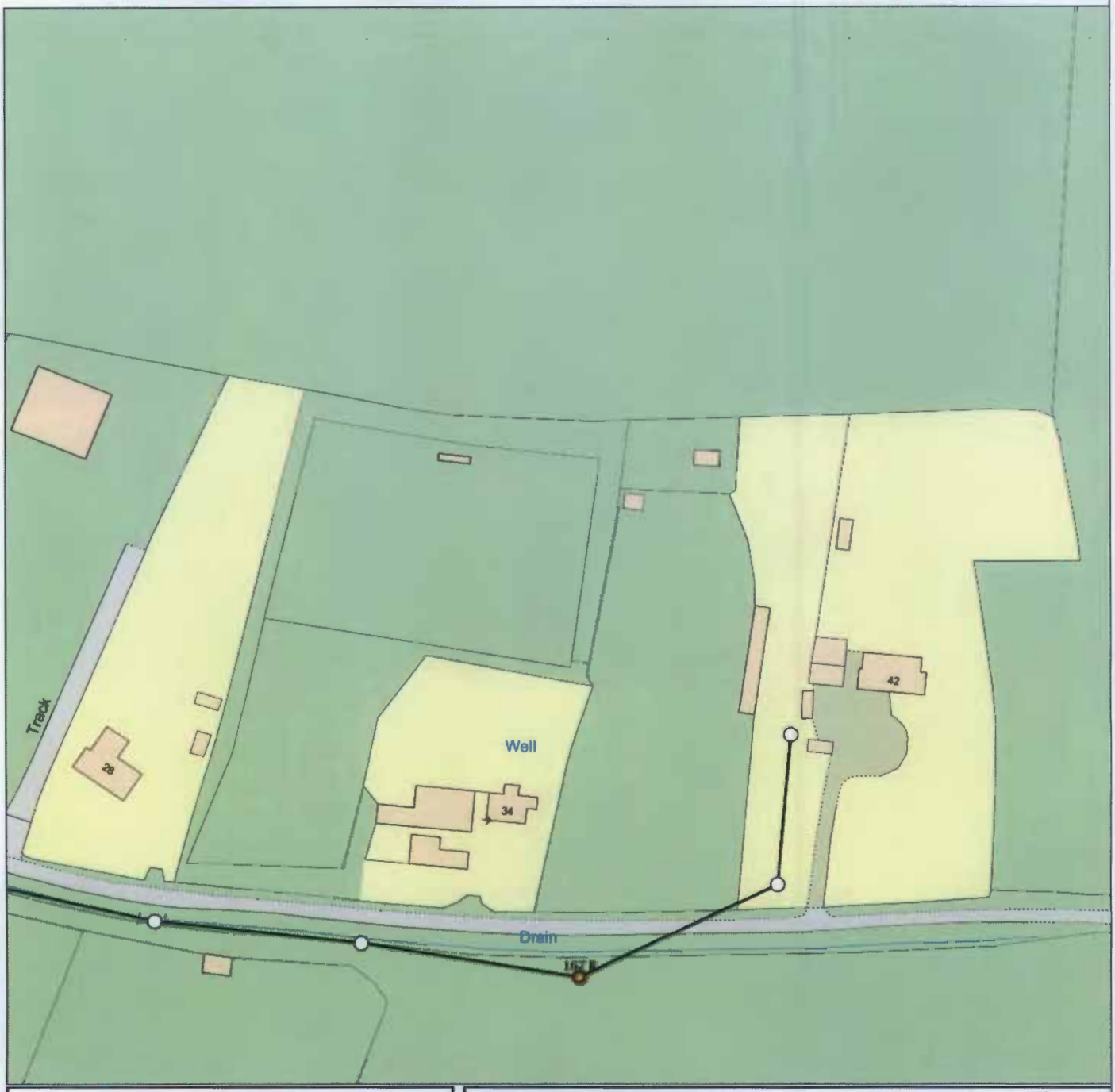
Built	Split Coupling
Planned	Duct Tee
Inferred	Planned Box
Building	Manhole
Kiosk	Planned Manhole
Hatchings	Cabinet
	Planned Cabinet

Other proposed plant is shown using dashed lines.
BT Symbols not listed above maybe disregarded.
Existing BT Plant may not be recorded.
Information valid at time of excavation

BT Ref : BRL084338
Map Reference : (centre) TG0287501796
Easting/Northing : (centre) 602875,301796
Issued : 09/02/2018 08:43:49

WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nnhc@openreach.co.uk

Maps by email Plant Information Reply



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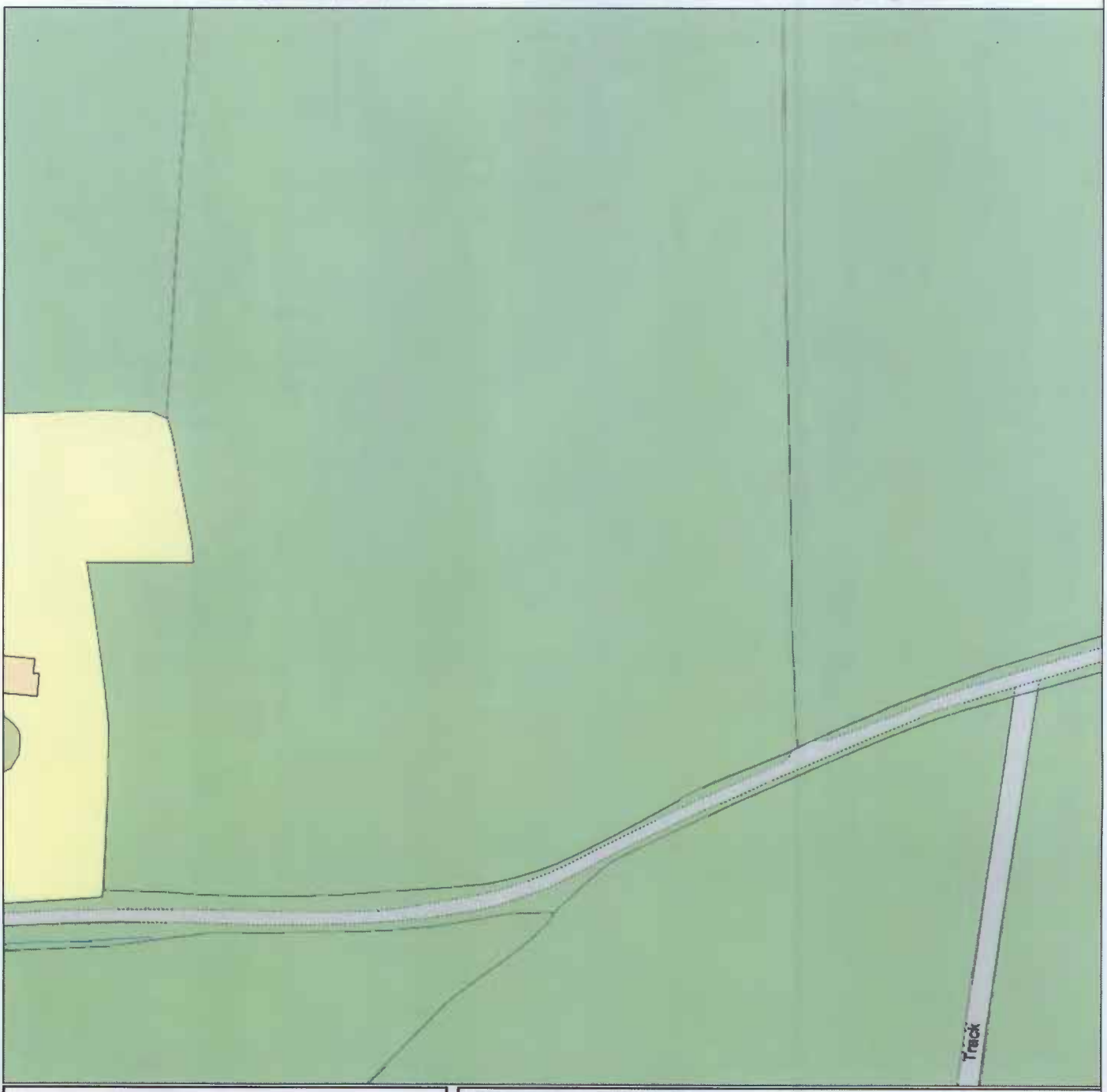
Planned DP	Planned Pole
PCP	Joint Box
Planned PCP	Change Of State
Built	Split Coupling
Planned	Duct Tee
Inferred	Planned Box
Building	Manhole
Kiosk	Planned Manhole
Hatchings	Cabinet
	Planned Cabinet

Other proposed plant is shown using dashed lines.
BT Symbols not listed above maybe disregarded.
Existing BT Plant may not be recorded.
Information valid at time of excavation.

BT Ref : EIO08443A
Map Reference : (centre) TG0307501796
Easting/Northing : (centre) 603075,301796
Issued : 09/02/2018 08:44:09

WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nnhc@openreach.co.uk

Maps by email Plant Information Reply



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(Office hours: Monday - Friday 08:00 to 17:00)
www.openreach.co.uk/cbyd

KEY TO BT SYMBOLS

DP		Pole	
Planned DP		Planned Pole	
PCP		Joint Box	
Planned PCP		Change Of State	+
Built		Split Coupling	X
Planned		Duct Tee	
Inferred		Planned Box	
Building		Manhole	
Kiosk	K	Planned Manhole	
Hatchings		Cabinet	
		Planned Cabinet	

Other proposed plant is shown using dashed lines.
BT Symbols not listed above maybe disregarded.
Existing BT Plant may not be recorded.
Information valid at time of generation

BT Ref : BFD08441W
Map Reference : (centre) TG0327501796
Easting/Northing : (centre) 603275,301796
Issued : 09/02/2018 08:44:34

WARNING: IF PLANNED WORKS FALL INSIDE HATCHED AREA IT IS ESSENTIAL BEFORE PROCEEDING THAT YOU CONTACT THE NATIONAL NOTICE HANDLING CENTRE. PLEASE SEND E-MAIL TO: nnhc@openreach.co.uk

Colchester
847 The Crescent
Colchester
Essex
CO4 9YQ
t/ **01206 228800**

London
Suite 409
1 Alie Street
London
E1 8DE
t/ **020 7448 9910**

Norwich
6 The Old Church
St Matthews Road
Norwich
NR1 1SP
t/ **01603 230240**

Cambridge
York House
3 Station Court
Great Shelford
Cambridge
CB22 5NE
t/ **01223 314794**

Bristol
The Wheelhouse
Bonds Mill
Stonehouse
Gloucestershire
GL10 3RF
t/ **01172 020070**

APPENDIX 7
SOUTH NORFOLK COUNCIL PRE-APPLICATION RESPONSE

South Norfolk House
Cygnet Court
Long Stratton
Norwich
NR15 2XE

Tel 01508 533985
Planning@s-norfolk.gov.uk

Mr I Hill
Bidwells
16 Upper King Street
Norwich
NR3 1HA

Our ref ENQMEM/2018/0469

08 June 2018

Dear Mr Hill

Location: Land south of Norwich Road, Hingham, Norfolk
Proposal: (meeting in office) Proposed erection of 80 dwellings

Thank you for your enquiry. Detailed below are the main planning considerations and planning policies which are relevant to your proposal and an officer's opinion on the likelihood of permission being granted, together with details of how to apply.

Summary of advice
Development of this site has the potential to represent a sustainable form of development in an area where the updated SHMA identifies a shortfall in housing land supply. This may be considered an overriding benefit in terms of policies DM1.1 and DM1.3, subject to satisfactory layout & design, affordable housing and open space provision, access and off-site highways improvements and landscaping.

Constraints associated with the site which may affect your proposal
Local Plan Boundary
Open Country Side
Parish Area
Public Rights of Way
Tree Preservation Orders

Relevant Planning History

2014/1791	Screening opinion for proposed residential development	EIA Not Required

2014/2322	Erection of 88 new homes plus associated roads and landscaping	Approved
2015/1675	Variation of condition 2 - amended plans and removal of condition 9 - Eastern pedestrian refuge and electronic sign of permission 2014/2322/F - Erection of 88 new homes plus associated roads and landscaping.	Approved
2015/2084	Discharge of conditions 4, 8, 9 (Part A only) (Highways), 12 (Materials), 16 (Landscape),17 (Renewable Energy) of planning permission 2015/2463 and condition 24 (WSI) of planning consent 2014/2322	Approved
2015/2435	Display of 3 x display boards and 4 x flags for a temporary period of three years.	Approved
2015/2463	Variation of condition 10 to allow revised drainage strategy of planning permission 2015/1675 - Erection of 88 dwellings.	Approved
2015/2678	Discharge of condition 14 of permission 2014/2322 - Hard and soft landscaping scheme	Approved
2016/1296	Non material amendment of planning permission 2014/2322/F - changes in floor area and changes to window and doors	Approved
2016/1727	Pedunculate oaks (19,20, 21 and 22) Strip ivy away from base and strip away from frame work to assist further inspection, 1-2m (T19,20, 21) and 3m (T22) overall crown reduction to reduce encroachment over road, reduce extended branches over road by 2m to limit encroachment over the road, remove deadwood from	Approved

	crown to limit the chances of deadwood failure, raise crown to allow 5.2 m clearance to road.	
2016/2076	Pedunculate oak (T19) - Fell to ground level due to recent branch failure over the road and the proliferation of Laetiporus sulphureus a brown rot known to cause stem or branch failure in mature oaks. The fructifications were found at the base of the tree and around a major fork. Replant with one heavy standard pedunculate oak tree.	Approved
2017/2770	Discharge of conditions 3 and 23 of planning permission 2014/2322/F - (3) management and maintenance of streets (23) Fire Hydrant positions	Approved

Relevant Appeal History
You can view details of these applications on the planning pages of the Council's website

Officers informal opinion

Principle of the proposal

This site is outside of and immediately adjacent to the development boundary for Hingham. It is within the Rural Policy Area (RPA). Policy 14 of the Joint Core Strategy (JCS) identified Hingham as a Key Service Centre which would accommodate additional housing in the range of 100 new dwellings. A development of 88 dwellings to the west of this site ('The Hops') has recently been completed.

Policy DM1.3 of the South Norfolk Local Plan 2015 (SNLP) states that all new development should be located so that it positively contributes to sustainable development. It should be located on allocated sites or within the development boundaries of settlements and should be of a scale proportionate to the level of growth planned in that location and the role and function of the settlement in which it is located. Proposals for development outside of the defined development boundaries will only be granted if specific Development Management policies allow or if overriding benefits in terms of sustainable development can be demonstrated. Where proposals do not accord with the development plan consideration should be given to whether there are material considerations that otherwise indicate that they should be approved.

Under the current JCS, the Council is able to demonstrate an adequate housing land supply within the RPA. However, as you are aware, the most recent version of the SHMA (June 2017) identifies a shortfall in housing land supply within the RPA against a revised objectively assessed need and this is a key material consideration. Therefore, while policy

DM1.3 applies, the revised SHMA evidence is likely to enhance the benefits of and the weight attributed to housing delivery. This factor has the potential to weigh in favour of approval of proposals for residential development, subject to the other matters considered below.

Sustainable development has three dimensions – economic, social and environmental. It goes on to stress that these are not to be undertaken in isolation because they are mutually dependent. The following is an informal officer opinion of whether the scheme may be considered to represent sustainable development.

The proposed scheme would result in some short term economic benefits during the construction period and, in the longer term, by local spending from future occupants. It is therefore considered that the scheme has the potential to bring forward a level of economic benefit. However, these benefits will need to be balanced against any potential economic harms not yet identified.

The principle social benefit of the proposed scheme is that it would provide housing, which includes affordable housing, and this benefit is enhanced by the most recent SHMA evidence.

Affordable housing and housing mix

JCS policy 4 requires 33% of the dwellings to be affordable. However, as discussed at our meeting, with regards to the new SHMA evidence, the affordable housing requirement is 28.89%. This is a material consideration and the new evidence suggests a reduction in the affordable housing requirement from 33%. The JCS also requires a tenure mix of 85% (social rented):15% (intermediate tenures) although the Council's Strategic Housing & Enabling Officer considers that, also due to this recent evidence, this split could change to 79:21.

If a future application is received or pre-app advice requested then we will be happy to provide a further assessment of this evidence and affordable housing requirements.

The exact mix of affordable housing would need to be secured through a S106 agreement and further discussions are recommended with the Council's Strategic Housing & Enabling Officer.

With regard to the environmental dimensions of the scheme, these are assessed below.

Design

Joint Core Strategy Policy 2 and DM Policy 3.8 promote good design. At our meeting, you explained that the proposed development would have the same relationship to the Norwich Road as The Hops to the west. The setting back of buildings on the western side of the site would create an open, landscaped entrance to the site which would reflect the layout of The Hops to the west. The concept masterplan that you have submitted indicates a mix of dwelling sizes, including two storey and bungalows. This also indicates an overall density similar to The Hops and you have advised that the scale, form and appearance of dwellings would also be similar, a traditional design with a contemporary finish. In principle, I consider that this is an acceptable design approach which is likely to allow successful integration with existing development.

The layout indicated in the concept masterplan would prevent a linear estate appearance close to Norwich Road which would have been inappropriate in this edge-of-settlement location. However, The Council's Design Officer expresses concern that resulting boundary treatments may also adversely affect the appearance of Norwich Road. You may

also consider the provision of an access road, set well back from the northern site boundary and serving front-facing dwellings which would then benefit from south-facing gardens. This would allow the retention of the hedgerow and provision of a landscaped buffer separating the development from the employment area to the north. This landscaped buffer could be incorporated into the open space provision for the site.

In terms of the indicative layout as submitted, you are proposing to provide the main areas of open space on the western and eastern sides of the site. It is considered that this would provide a soft boundary to the public right of way to the west and the area of open space to the east would allow transition into the open countryside beyond.

Impact on neighbours
DM Policy 3.13 relates to the protection of the amenity of neighbouring uses. The residential amenity of existing and future occupiers need to be considered in respect of scale, layout and design of proposed dwellings.

No detailed designs other than an illustrative masterplan have been provided at this stage, however with careful positioning and design it is considered that a scheme could be provided that would not give rise to a situation detrimental to the existing neighbouring properties amenities.

Impact on the historic environment
DM Policy 4.10 sets out that proposals must have regard to the historic environment and safeguard the setting of such buildings. NPPF section 12 also requires the level of harm to the significance of heritage assets to be considered. The Hingham Conservation Area is some distance to the west of this site and so this proposal would not be likely to have an adverse impact on its character.

St Andrews Church to the west is a Grade I listed building and there are glimpsed views of the church when approaching Hingham from the east. I consider that the level of development indicated, limited to two storey in height, would be unlikely to harm the setting of this listed building.

There are also several listed buildings on Seamere Road to the south. It is considered that the proposed development, as indicated, would not adversely affect the settings of these listed buildings providing that a scheme of planting along the southern boundary is proposed and, as shown, the layout incorporates a loose form of development generally set back from this boundary.

Highway safety
DM Policy 3.11 relates to highway safety and DM Policy 3.12 relates to parking. The Highway Authority has no objections in principle to a single point of access from Norwich Road. However, severe reservations are expressed that an acceptable junction can be created without the need to remove one or more existing trees along the frontage.
At our meeting, you confirmed that additional work has now been undertaken by your arboricultural and highways consultants which demonstrates that an acceptable access may be provided which takes account of existing trees and you will shortly submit further information in this respect. I will be able to comment further once I have received these details.

At our meeting, we also discussed the Highway Authority's requirement for a safe pedestrian crossing point from the proposed development to the employment areas and primary school to the north as there is no continuous footway on the south side of Norwich Road. The Highway Authority will require an assessment of the route to the village centre,

particularly for pedestrians and, where appropriate, suitable mitigation measures should be proposed.

In terms of on-site parking, this should be proposed in the context of the County Council's current parking standards which are 1 space for 1 bed, 2 spaces for 2 & 3 bed and 3 spaces for 4 bed. Please note that for a garage to be considered as a parking space, its internal dimensions should be 7 metres x 3 metres.

Flood Risk

This site is within flood zone 1 and there are areas at risk of surface water flooding in the north western part and in Norwich Road adjacent to the site. There are historical flooding issues in Seamere Road, generally from a northern direction, and historical surcharging of the foul sewer although Anglian Water have now made some improvements.

The LLFA have not undertaken an assessment of this proposal. However, it is recommended that any development demonstrates that a sustainable surface water drainage strategy can be achieved as part of any full planning application that accords with the principles set out in policy DM4.2, the Non-Statutory Technical Standards for Sustainable Drainage Systems, the LLFA's guidance document and the SuDS Manual (CIRIA C753-2015).

The surface water drainage hierarchy should be followed with all available options being considered and the most sustainable techniques used wherever appropriate. We would recommend that water butts or alternative rainwater harvesting systems are provided to each property to encourage rainwater re-use and water conservation.

Design standards and exceedance flows should take account of the Environment Agency's updated guidance on climate change allowances for peak rainfall intensity demonstrating that the 20% and 40% climate change scenarios have been tested to ensure no flooding of buildings. https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances

A Flood Risk Assessment will be required to support any application.

A foul water connection would also be required and secured through condition.

Contamination requirements may also be conditioned

Trees and Hedgerows

There is an established hedge along the northern boundary which also includes trees which are the subject of a TPO. Any proposed layout should take account of the trees' constraints (RPA, canopy spread and shading effects. As discussed at our meeting, I await up-to-date information from your arboricultural consultants to confirm the condition of these trees

The roadside hedgerow should also be retained as part of any proposals to soften the appearance of this boundary. At our meeting, I confirmed that it is not 'important' as defined by the Hedgerows Regulations.

Ecology

Any application will need to consider the ecological impact of development of the site and will need to include mitigation measures for any habitat lost as well as enhancement measures.

Community involvement

The Council's Statement of Community Involvement strongly encourages developers and agents of all application types to engage with the community at the earliest opportunity. The Council will encourage developers, particularly of larger schemes, to contact town/parish councils and local community groups at the pre-application stage. Involvement by all parties allows issues and concerns to be raised at an early stage, potentially enabling them to be addressed and giving communities the opportunity to shape or influence the development proposals. This will give the best information on which to base proposals and enable any planning application that is subsequently made to have the best chance of success.

Conclusion

As discussed, the principle of development in this location is likely to be acceptable having regard to the updated SHMA which identifies a shortfall in housing land supply within the Rural Policy Area. This is subject to submission of a satisfactory layout and design which adheres to all relevant Development Management policies and demonstrates that a satisfactory access can be achieved that takes account of the constraints of the site, specifically trees along the northern boundary which are subject to TPO.

Community Infrastructure Levy

The council now applies Community Infrastructure Levy (CIL) charging to some forms of new development. The charging schedule and more information on liability can be found here on the Community Infrastructure pages of the Council's web site.

From the information you have submitted, the proposal will be liable for CIL

Section 106 Agreement

The proposed development will require the completion of a Section 106 Agreement regarding the provision of affordable housing and on-site open space/ play space. I would recommend that a draft agreement is submitted with any future planning application.

Consultees

As part of the planning application, we are likely to consult the following bodies. You may wish to contact them prior to submitting an application :

Lead Local Flood Authority llfa@norfolk.gov.uk (charged for service)
Environment Agency enquiries@environmentagency.gov.uk (charged for service)
Anglian Water
Historic England
Highways England
Highway Authority – Norfolk County Council
Norfolk County Council – Minerals
Norfolk County Council – Planning Obligations
Norfolk Historic Environment Service
Natural England – For Standing Advice on protected species please go to
https://www.gov.uk/protected-species-and-sites-how-to-review-planning-proposals

How to apply

The Council's Statement of Community Involvement strongly encourages developers and agents of all application types to engage with the community at the earliest opportunity. Particularly with larger schemes, you are encouraged to contact town/parish councils, local community groups and neighbours at the earliest possible stage. Involvement by all parties allows issues and concerns to be raised as soon as possible, potentially enabling them to

be addressed and giving communities the opportunity to shape or influence the development proposals, giving the planning application the best chance of success.

Further information how to apply can be found on the Council's web site under "planning" and "How do I submit a planning application" (http://www.south-norfolk.gov.uk/how-do-i-submit-planning-application).

We would encourage you to submit your application on line using the Planning Portal https://1app.planningportal.co.uk/. Details of the information needed to complete your application can be found on the Planning pages of the Council's website. You should submit a completed application form, site location plan (to appropriate scale, red line around all of land required for the proposal and sufficient road names/features to easily identify the site), fee and a full set of existing and proposed site, floor and elevation plans as necessary to explain the proposal.

I would highlight that your application should include :

- Design and Access Statement
- Statement of community involvement

I would also request that the application includes :

- Planning statement
- Archaeological desk-based assessment
- Flood risk assessment
- Arboricultural assessment
- Ecology assessment
- Affordable housing statement
- Planning obligations statement – including heads of terms for s106
- Energy, water and construction statement
- Transport statement including assessment of pedestrian route to the village centre with suitable mitigation proposals

A CIL Additional Information Requirement Form should be submitted.

Consent under the Building Regulations may be required for the proposal and work should not proceed until any necessary consent has been obtained. Please contact CNC Building Control on (0808 1685041), or enquiries@cncbuildingcontrol.gov.uk for more information.

You should be aware that any pre-application advice provided by the Local Planning Authority is made at officer level only, and does not constitute a formal decision of the Council. Any views or opinions expressed, are given without prejudice to the consideration by the Council of any formal planning application, which will be subject to wider consultation and publicity.

It should be noted that policies, constraints etc. change from time to time and may affect the advice given. The weight that can be given to pre-application advice may therefore decline over time.

The provisions of The Freedom of Information Act bind the Council, as a public authority, and therefore it should be presumed that information supplied to the Council is likely to be disclosed under the above Act if requested. If you want information to remain confidential, you should state clearly why. Information sent to the Council "in confidence" may still be disclosed under the above Act. Before sending such information you are advised to take

legal advice if there are fears that disclosure would prejudice you in some commercial way.

The details submitted in the application form and associated information will be stored on computer and will be used to correspond with yourself, and to undertake Council Services. Personal data will be retained for 10 years as part of the lawful processing of the enquiry.

Your rights - Under data protection legislation you have the right to request access to, rectification, restriction, or objection to the processing of your personal data, as detailed on our Data Protection Policy. You can contact our Data Protection Officer at e) right2know@s-norfolk.gov.ukor t) 01508 533943. You also have the right to lodge a complaint with the regulator, the Information Commissioner's Office.

Please note: Where a fee has been paid for an enquiry, further enquiries in respect of the same project can be made free of charge by the same enquirer who paid the original fee, but only within a period of 6 months from the date of the original advice given and charged for. A fee will be charged for any further enquiry after this time has elapsed.

Yours sincerely

Blanaid Skipper
Planning Officer

BIDWELLS

Table of Contents

1.0 Introduction

1.1 Abel Homes are promoting the residential development of 5.3 hectares of land to the south of Norwich Road, Hingham through the preparation of the Greater Norwich Local Plan. Representations to the Regulation 18 Growth Options and Site Proposal Consultation were submitted on behalf of Abel Homes in March 2018 (Ref: GNLP0520).

1.2 The representations outlined that, in accordance with the National Planning Policy Framework (NPPF), the site is deliverable; providing a site that is available, offers a suitable location and is achievable with a realistic prospect that housing will be delivered on the site within five years.

1.3 Whilst the representations detailed above demonstrated that the site is evidently suitable (which is recognised in the Housing and Economic Land Availability Assessment (December, 2017)) this Delivery Statement seeks to embellish those representations by providing further evidence to show that, in accordance with the NPPF, there is a realistic prospect that housing development can be viably delivered in the next five years and during the period to 2036 and, accordingly, that the site should be allocated in the Regulation 18 Draft Plan.

2.0 Background to Abel Homes

2.1 Abel Homes Ltd are an award-winning, independent, family owned business based in Watton, but operating across Norfolk. The company is renowned for building homes of a high specification, with a particular focus on energy efficiency.

2.2 They have a proven track-record of delivery within Norfolk. As well as schemes in Swaffham (425 units), Bawdeswell (40 units), Mattishall (35 units) and Watton (98 units), Abel Homes have developed 88 units at The Hops, Hingham; the site immediately adjacent to the subject site which has recently completed and sold exceptionally well.

3.0 Description of the Proposed Development

3.1 Abel Homes are seeking to develop approximately 100 residential units (Class C3), together with associated highway, infrastructure works and open space on the site. On a site of 5.3 ha, this equates to a density of 19 dwellings per hectare, which is similar to the adjacent Hops development.

3.2 The proposed development is detailed on the Concept Masterplan prepared by Feilden+Mawson (see below and attached at **Appendix 1**).

3.3 The mix of units has not been determined at this stage. However, the Concept Masterplan demonstrates how the site could accommodate a range of dwelling sizes, including both houses and bungalows, similar to the mix which proved so popular on The Hops development.

3.4 Access to the site will be taken from Norwich Road, in a location informed by Richard Jackson Engineering Consultants, in order to provide a junction of sufficient capacity to meet highway standards and provide adequate visibility splays, whilst ensuring that trees subject to a Tree Preservation Order are retainen. The Concept Masterplan submitted in support of this pre-application request has been designed to have regard to Norfolk County Council Parking Standards.

3.5 Pedestrian and cycle access can be provided via The Hops or Norwich Road, providing easy access to the local services available in Hingham, particularly the school.

3.6 The Concept Masterplan also demonstrates that the site can be developed to provide in excess of the current policy requirement of 4,800m2 of open space, including play space and recreation space.

Figure 1: Indicative Concept Masterplan, produced by Feilden+Mawson

4.0 Planning Overview

4.1 As detailed above, Abel Homes submitted representations to the Regulation 18 Growth Options and Site Proposals Consultation in March 2018. In summary, the representations demonstrated that:

- Hingham, as a Key Service Centre, is identified as a suitable and sustainable location which can accommodate additional development and, therefore, is a preferred location for growth. This is recognised by the GNLP Team in their 'Towards a Strategy' paper that was presented at their January 2019 Board Meeting.
- Residential development on the site would help to support and sustain the local economy in Hingham, and would support the long-term planned economic growth of the Greater Norwich Area, providing high quality and desirable homes within easy reach of key employment locations.
- The scale of development envisaged is such that it will enable the creation of a strong, vibrant and healthy community, which is well related and connected to the existing facilities on offer in Hingham, such as the Primary School, Co-op Food Store, White Hart Pub, Library, and Doctors Surgery.
- Residents will have the option to utilise sustainable transport methods, given that Hingham is well connected by bus, providing frequent services to Norwich, Watton, Shipdham and Easton College.
- The location of the site to the east of Hingham is also beneficial in highway terms as it would enable those commuting to and from Norwich, and other locations, to not have to pass through the centre of the village.

4.2 To demonstrate the deliverability of the site, a substantial amount of technical work has been undertaken, which is summarised below. (Copies of the relevant technical reports are attached at **Appendices 2-6**). In addition, pre-application discussions have been held with South Norfolk Council.

4.3 In their formal response, (copy attached as **Appendix 7**) South Norfolk Council confirmed that development is likely to be acceptable in this location, subject to *"submission of a satisfactory layout and design which adheres to all relevant Development Management policies and demonstrates that a satisfactory access can be achieved that takes account of the constraints of the site, specifically trees along the northern boundary which are subject to TPO."*

Highways & Access

4.4 A Highways Report produced by Richard Jackson Engineering Consultants demonstrates that sufficient access to the site could be created via Norwich Road, which would provide for adequate visibility in accordance with the 30mph speed limit, whilst avoiding the existing mature trees. Updated access plans have been prepared by Richard Jackson Engineering Consulting and are also attached as **Appendix 2**.

Biodiversity & Ecology

4.5 A Preliminary Ecological Appraisal of the site was conducted by Parker Planning Services (attached at **Appendix 3**). This report details that the site is typical of an intensive arable landscape, with habitat loss being considered the main adverse impact of development on the site. It is envisaged that the impact of the proposed development could be mitigated via appropriate landscaping and scheme design, with the potential for ecological enhancement (.

Heritage

4.6 A report to assess the impact of the proposed development on identified heritage assets, notably listed buildings to the south, Hingham Conservation Area and Hingham Church, has been prepared by David Edleston (attached at **Appendix 4**). The report concluded that as part of any development, consideration should be given to the scale, height and the location of buildings, particularly along the southern boundary.

4.7 In order to ensure any impact on heritage assets to the south is minimised, the proposed development seeks to reinstate a hedgerow along the southern boundary, screening the development from the surrounding context.

4.8 The Council confirmed in their pre-application response that the proposed development would not cause harm to any of the identified heritage assets, provided, as detailed above, a scheme of planting is provided along the southern boundary and a loose form of development is proposed.

Flood Risk

4.9 Richard Jackson Engineering Consultants have provided a Flood Risk & Drainage Strategy (attached at **Appendix 5**). The Assessment demonstrates that indicative ground conditions show that partial infiltration is likely to be suitable as part of a fully compliant SuDS scheme. The Flood Risk Assessment also indicates that: the site falls within Flood Zone 1 and is suitable for residential development; there are no existing surface water flooding issues which cannot be accommodated within a Drainage Strategy; and that the proposals will conform to the SuDS Manual and LLFA guidance for the use of infiltration devices.

Utilities

4.10 A Utilities Report provided by Richard Jackson Engineering Consultants (attached at **Appendix 6**) concludes that Cadent Gad Ltd, UK Power Networks and BT could all provide apparatus into the site. UKPN would potentially require an onsite substation, whilst connection to Anglian Water foul water sewers and the disposal of surface water through infiltration techniques appear, based on the research undertaken, to be feasible. The report demonstrates that there are existing services adjacent to the site, which are likely to have capacity to serve the potential development, subject to statutory undertaker network capacity analysis. Existing services which cross the site can be diverted and would not prevent development, with the location of existing services likely to be deliverable for new connections to take place for construction of any future development on the site.

5.0 Proposed Housing Trajectory

5.1 The programme and Housing Trajectory shown in the table below is based on robust local evidence, notably the completion of the adjacent Hops development by Abel Homes, and represents an eminently achievable timetable. Indeed, Abel Homes would be able to deliver units in advance of this timeline should a permission be forthcoming.

5.2 We have assumed that an application would be submitted in 2020, to tie in with submission of the Local Plan. (As detailed in the previous section initial survey and technical work has already been commissioned and discussions held with the local planning authority to ensure that this is achievable.)

5.3 We have allowed 6-9 months for the determination of the application, and a further 6 months construction to start on site. Assuming construction starts on site in 2022, the first units would be completed by 2023. It is estimated that, based on the completion rates of the Hops, that the scheme would deliver 35 units per annum, ensuring completion in 2024; well within the first five years of the local plan period.

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Units	0	35	35	30	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Total	**0**	**35**	**70**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

6.0 Development Viability

6.1 Based upon the technical investigation works undertaken, the site is fully deliverable and no issues have been highlighted which would cause a concern in relation to the viability of the site.

6.2 Abel Homes are in control of the land holding and are in a position to deliver the site as soon as a planning permission is in place.

6.3 The development would be delivered in full compliance with the current policies in relation to Affordable Housing and Open Space requirements.

7.0 Conclusion

7.1 The technical work Abel Homes have commissioned and submitted as part of our previous representations (Ref: GNLP0520) demonstrate that the site occupies a suitable location and that there are no technical constraints to prevent the site from coming forward for residential-led development.

7.2 The detailed analysis presented in this Delivery Statement has demonstrated that there is a realistic prospect that housing will start, and will be, delivered within 5 years of the Local Plan being adopted.

7.3 The land south of Norwich Road, Hingham is, therefore, developable in the context of the NPPF and should be allocated in the Regulation 18 Local Plan.

APPENDIX 1
SKETCH MASTERPLAN

REV	DATE	DRN	AMENDMENTS	NOTES
A(0)	2018.11.16	CD	Initial issue	
B(1)	2018.11.20	CD	Amended following comments	

DO NOT SCALE FROM THIS DRAWING ALL DIMENSIONS TO BE CONFIRMED ON SITE BY THE CONTRACTOR PRIOR TO CONSTRUCTION

Feilden + Mawson

CLIENT
Abel Homes

JOB
Residential Development,
Norwich Road, Hingham

DRAWING
Site Plan-Sketch Option

PLANNING

SCALE	1:1000	PAPER	A3	DATE	2018.11.19
JOB	8716	DWG	004	REV	A01

APPENDIX 2
HIGHWAYS REPORT AND ACCESS PLANS

RichardJackson
Engineering Consultants

Our Ref: 48851/LG/MJD
Your Ref:

14 May 2018

Mr D Piper
Abel Homes Ltd
Neaton Business Park
Norwich Road
Watton
Norfolk
IP25 6JB

Dear Mr Piper

RE: Land South of Norwich Road, Hingham – Highways & Access

We refer to our instructions to consider the transport aspects for a potential residential development off Norwich Road, Hingham. The site compromises of greenfield land. The main multi-modal access will be off Norwich Road, with potential pedestrian linsk to the west into a previous Phase of development referenced "The Hops". Our assessment for an access and the transportation elements for land south of Norwich Road, Hingham has been made on the potential for proposal of approximately 80 dwellings.

This assessment considers current policy with regards to access for the development and accessibility, which are addressed in following matters and we present our views for proposed mitigation for the offsite infrastructure.

1. Access and offsite assessment of highways.

2. Location and accessibility to services.

3. Transportation links including pedestrian, cycle and public transport modes.

4. Development trip generation.

5. Traffic routes towards village.

6. Highway/transportation improvements.

The site is located off Norwich Road in Hingham with a grid reference of 603043, 302031 and an approximate postcode of NR9 4LS. The site is bound by Norwich Road (B1108) to the north and the dwellings of Seamere Road to the south, see **Figure 101** attached. To the west of the site is a Public Right of Way footway linking Norwich Road and Seamere Road with a residential housing estate currently under construction adjacent and beyond that the centre of the village of Hingham to the west. Surrounding the site to the east, are agricultural fields and also to the south beyond the existing dwellings.

Cont'd.../

4 The Old Church
St Matthews Road Norwich
Norfolk NR1 1SP

Telephone: 01603 230240
www.rj.uk.com

The civil parish of Hingham resides in rural Norfolk, within the South Norfolk District, with approximately 944 households and a population of 2367 (taken from the 2011 Census data for the Hingham parish). The village is situated along Norwich Road (B1108) which stretches to Norwich in the east and Bodney via Watton to the west. Hingham is approximately 21.7km southwest of Norwich city centre, 10.8km southeast of Dereham and 8.8km west of Wymondham. The main proposed access to the site would be from Norwich Road.

Access and offsite assessment of highways

An access is proposed, which provides for adequate visibility according to the 30mph speed limit, avoiding the existing mature trees. Improved pedestrian and cyclist connections via The Hops into the village centre, are also proposed.

The access parameters for the site have been considered for a development of approximately 80 dwellings. The type of access required to serve the development is dictated by the Norfolk Residential Design Guide and is to be taken as a Type 2 road, which is 6.0m wide and would be taken from Norwich Road. The initial straight length of the road should be minimum of 15m in length.

An initial design of the potential access location on Norwich Road indicates that adequate visibility of up to 70m should be available in both directions from a 2.4m setback.

The northern site boundary is Norwich Road with a width of 6.0m with approximately a 1.2m verge on one the southern side and a 1.8m footway on the northern side. There are presently no footways on the southern side along the site boundary of Norwich Road to give the site access to the bus stops or local facilities without crossing the B1108. A new footway would therefore be required to support this development proposal, to connect the site to the bus stop located west of the proposed access. Further to this, another footway will be constructed to the east of the proposed access with a potential pedestrian crossing point (type and configuration to be agreed with NCC highways) to link the site to the northern side of Norwich Road. The footways are designed to allow for better pedestrian access to the site, local facilities and bus stops, avoiding the tree roots protection zone to ensure the trees will not be damaged in the implementation of the footway.

Furthermore, a pedestrian refuge island was implemented as part of The Hops, to allow safer, sufficient access to local facilities and bus stops. This is situated further west along Norwich Road at the Ironside Way bus stop. To access the crossing point from the new development, pedestrians would walk to the access and along the proposed west footway linking to a footpath on The Hops development. Individuals will walk through The Hops development along the footways to reach the pedestrian refuge crossing island in the centre of Norwich Road. This will allow pedestrians to safely cross the B1108 to access the local facilities and primary school. Additionally, small pedestrian bridges could be erected across the existing ditch on the west site boundary, to link the site to the existing public right of way footpath, on the west boundary of the site, before connecting to footpath links through to The Hops development footways.

The access proposals and footway links are indicated on **Drawing 6387-C-SK001** produced by Barter Hill Partnership. This indicates two potential locations for access onto Norwich Road which are both possible. Initially access is proposed from the western option.

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Location and Accessibility to Services

To assess the ability for potential residents to access services, research has been undertaken to locate the local services and facilities, which are tabulated below.

Facility/Services Table

Facility	Location	Km	Miles
School - Primary	Hardingham Street	1.08	0.67
School - Secondary	Norwich Road, Attleborough	10.14	6.34
Post Office	Long Street	6.44	4.00
Local Shop	Co-Op, Norwich Street	0.64	0.40
Doctors	Hardingham Street	0.95	0.58
Public House	Market Place	0.90	0.56
Place of Worship	Market Place	0.94	0.58
Bus Stops	Ironside Way	0.12	0.07
	Ringers Lane	0.32	0.20
Children's Centre	Norwich Road, Attleborough	10.30	6.40

The conclusions that can be drawn from the table are that most of the facilities and services are available in the local area. A key aim of the NPPF is to promote sustainable travel choices and accessibility to shops, jobs and other facilities whilst reducing the need to travel, especially by car.

Walking is identified as the most important form of transport at local level and the walking offers the greatest potential to replace the car for journeys of less than 2.0km. The guidance document (NPPF) also acknowledges that cycling has the potential to replace many car trips of less than 5.0km, which may also form part of longer journeys supported by public transport.

The table above provides an indication of the distances that need to be travelled to the facilities and as a consequence the following list indicates the acceptability of the site in terms of distance, frequency of use and acceptability of need to travel.

Acceptability of Travel/Use Table

Facility	Location	Km	Likely Frequency of Use					
			Daily Km		Weekly Km		Greater than Weekly Km	
			<5.0	>5.0	<5.0	>5.0	<5.0	>5.0
School - Primary	Hardingham Street	1.08	✓					
School - Secondary	Norwich Road	10.14		✓				
Post Office	Long Street	6.44				✓		
Local Shop	Co-Op, Norwich Street	0.64			✓			
Doctors	Hardingham Street	0.95					✓	
Public House	Market Place	0.90					✓	
Place of Worship	Church Street	0.94			✓			
Bus Stops	Ironside Way	0.12	✓					
	Ringers Lane	0.32	✓					
Children's Centre	Norwich Road, Attleborough	10.30		✓				

The conclusions of the acceptability table for distance and frequency travelled indicates that most daily activities are within 2.0km of the development.

Cont'd.../

Whilst other activities and frequency usage of facilities are likely to be weekly or greater than weekly, the table shows that most are within 5.0km of the site and also less than 2km, indicating that there is a likelihood that walking, and cycling could be used to travel to and from the majority of these locations.

Although the local nearest high school (Attleborough Academy) is outside of the walking and cycling boundaries at 10.14km from the site, Norfolk County Council run a free school bus linking Hingham to Attleborough Academy.

Transportation Links including Pedestrian, Cycle and Public Transport

As stated previously local, regional and national guidance for transportation and residential dwellings advises that proposed development should be readily accessed by all sustainable modes of transport.

Considering the different modes an assessment can be made in respect of the suitability of existing infrastructure.

Pedestrians

The routes for pedestrians are currently served well from the proposed site access to all the facilities recorded in the '*Facility/Services Table'.* All routes consist of road with footways on at least one side of the carriageway. Further, there is a pedestrian refuge in the road to aid pedestrians when crossing the B1107, Norwich Road, to the west of the access for The Hops.

The new development will offer new footways on the south side of Norwich Road, to bus stops and links to The Hops site to the pedestrian refuge crossing point to allow access to the local facilities and bus stops. This will not only encourage more individuals from the new development to walk to access these facilities, it also makes public transport more accessible to individuals.

An initial assessment of the routes to school, shows the route has been confirmed as safe. However, this is subject to further investigation with use of traffic flow data.

Cyclists

The bicycle has become a much more widely used mode of transport in recent years, as promoting the healthier lifestyle and the current economic circumstances that affects the population. From assessing the locations of the facilities locally, many of them are well within the 5.0km cycling parameters that are recognised in the NPPF.

The majority of the roads in Hingham are within a 30mph speed limit and, thus, provide an appropriate network for cycle use in the village, to access local facilities. Using the SUSTRANS website, it appears that there are no national or local cycle routes within the vicinity of Hingham, therefore, cycling outside of the village is likely to be for keen cyclists only.

Public Transport

To establish a criteria for public transport provision, guidance was sought from Norfolk County Council on the necessary bus service frequency. A benchmark guide to bus services can be found in the Norfolk Bus Strategy 2003/4 to 2008/9. Whilst this document is a few years old it has not been updated, but does give criteria for 'Target level of service in rural areas (all offering a return journey)'.

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The table indicates that for a parish population of between 1500 and 3000 the target service level should provide the following:

- Shopping service, five days a week;
- journey to work service;
- a Saturday service and;
- evening service;

The closest stops to the proposed site are 0.12km and 0.32km from the proposed access from the site.

Operator	Service	Frequency
Konectbus	3 Watton – Hingham – Norfolk & Norwich University Hospital - Norwich City Centre	Mon – Sat: 0700 – 1647 (departing approximately every hour) Sun: 0945, 1145, 1345, 1545
	3 Norwich City Centre – Norfolk & Norwich University Hospital – Hingham - Watton	Mon - Sat: 0750 – 1836 (departing approximately every hour) Sun: 1108, 1308, 1508, 1708
Konectbus	6/6A Watton – Hingham – Wymondham - Norwich City Centre	Mon - Sat: 0717 - 1717 (departing approximately every hour)
	6/6A Norwich City Centre – Wymondham – Hingham - Watton	Mon - Sat: 0857 - 2003 (departing approximately every hour)
Konectbus	13 Shipdham – Watton – Easton College	Mon – Fri: 0750 (during term time)
	13 Easton College – Watton – Shipdham	Mon - Fri: 1721 (during term time)
Konectbus	17 Bradenham – Hingham - Dereham	Tuesdays and Fridays only: 0955
	17 Dereham – Hingham - Bradenham	Tuesdays and Fridays only: 1318

(All main stop details included)

The bus company Konectbus use bus stops on Norwich Road for all services listed above. The stops include Ironside Way, Ringers Lane and Bears Lane.

Services are frequent and offer good commuting and social facilities to the residents requiring access to them. The accessibility of the buses may also encourage more individuals to use public transport, rather than using their cars. Furthermore, there are sufficient footways to reach the bus stops along with a pedestrian refuge in the centre of Norwich Road to aid pedestrian crossing to reach the bus stop on the northern side of the B1108 (Norwich Road) of Ringers Lane.

Overall, accumulatively, the bus timetables meet the Norfolk County Council village requirements for Hingham in terms of public transport availability and frequency.

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Development trip generation

The proposed development site vehicle trip generation can be calculated based on similar sites and data taken from a national data base (TRICS). An assessment of the trip generation from the proposed development site could also be taken from the local trips undertaken by the occupants of the dwellings already in the village. In general, the trip generation will be approximately 0.46 trips per dwelling in the peak hour. On this basis, the development is likely to generate approximately 37 additional trips in the peak hour. If it is assumed the key area of employment are Dereham, Wymondham and Norwich, this would amount to approximately 75% of this traffic, which would travel in an easterly direction. Therefore it is assumed that 75% of the traffic would flow away from the village centre.

Based on the information above which is an approximation at this stage, there would be an of increase of 9 vehicles travelling into/through the village centre in the peak hour.

Traffic routes towards the village

The route from the site on Norwich Road to Norwich City Centre follows the B1108 through until it becomes Earlham Road and then onto the City Centre.

The area of Norwich Road and other roads surrounding the site are 30mph carriageways with footways on at least one side of the road. There is also a 20mph zone in the centre of the village.

Along Norwich Road in the vicinity of the site, there have been three slight accidents within the last 5 years (2013-2017), the latest being in April 2016, none of which have involved a pedestrian or a cyclist. Furthermore, the accident data shows there have only been two additional accidents to these within the last 10 years (2008-2017), both also reported as slight. This suggests the site is not a high risk accident site and the road will not require any additional traffic calming measures to prevent accidents. All information collected from publicly available data (viewable via www.crashmap.co.uk).

Highway/Transportation Improvements

With the addition of a pedestrian crossing point to the east of the site and footways to access The Hops development, it is concluded that in terms of vehicular access and accessibility to services, the site meets a satisfactory level to deliver a suitable access and pedestrian links.

Conclusions

To collate the issues and highlight the matters that are relevant to transportation for the proposed development at Norwich Road, Hingham, the following table shows the summary of benefits that this scheme includes:

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Summary Table

Matters	Comment	Satisfactory	Needs some Upgrade	Not Satisfactory
Site Access	A satisfactory access with necessary visibility can be achieved.			
Local Junction Assessment	Based upon preliminary findings no offsite junction upgrades are required.			
Accessibility to Services	A high proportion of daily and weekly services can be accessed by pedestrian, cyclists or public transport routes at less than 2.0km.			
Pedestrian Links	Good site routes to schools and facilities (upon additional footway implementation within the site)			
Cycle Facilities	There is no specific route in the village however there is a 20/30mph speed limit between the site and local facilities.			
Public Transport	The current public transport provision does meet the NCC targets.			

It is therefore concluded that in terms of vehicular access, accessibility to services, other modes of transport, the site meets all the necessary criteria.

In summary, the development, which will generate a low level of trips in the peak hour towards/through the village centre, shows how, with offsite pedestrian improvements the generated traffic can be mitigated.

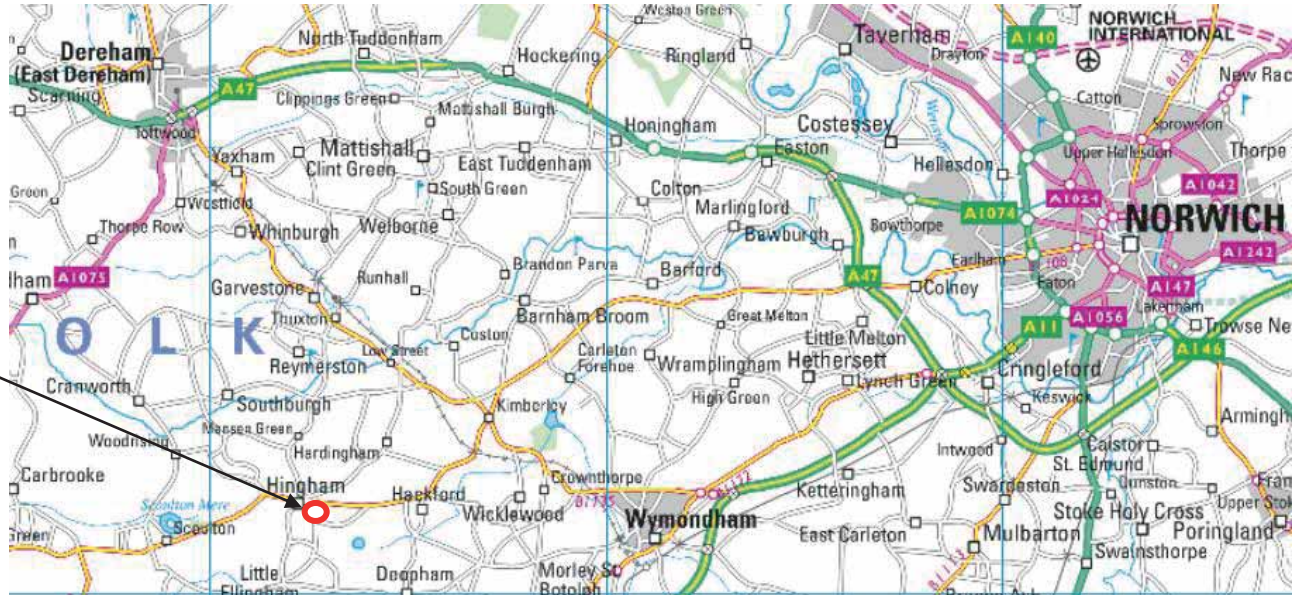
I trust the foregoing is satisfactory, but if we can be of further assistance, please do not hesitate to contact us.

Yours sincerely,

Prepared by Lauren Gray
on behalf of Richard Jackson Ltd

Checked by Martin Doughty (Director) – BEng (Hons), CEng, FICE, FCIHT, MAPM
on behalf of Richard Jackson Limited

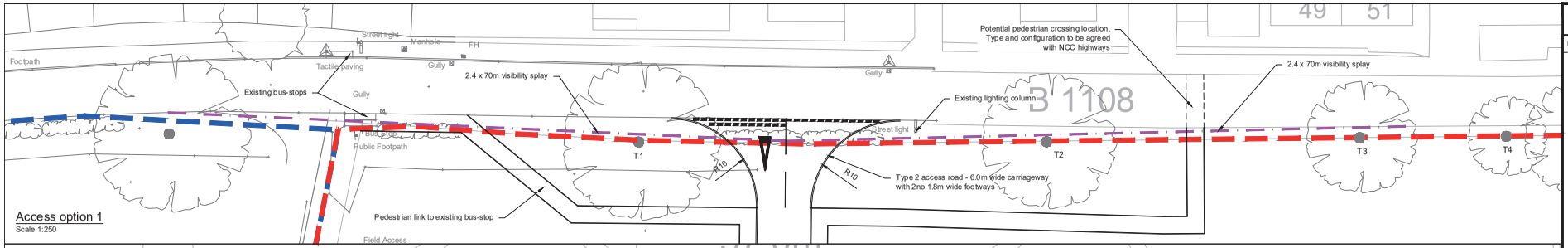
Encs – Figure 101
Drawing 6387-C-SK001

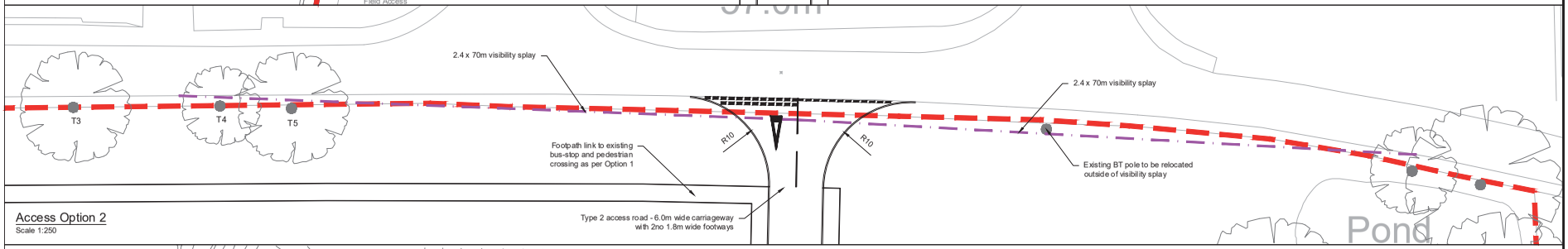


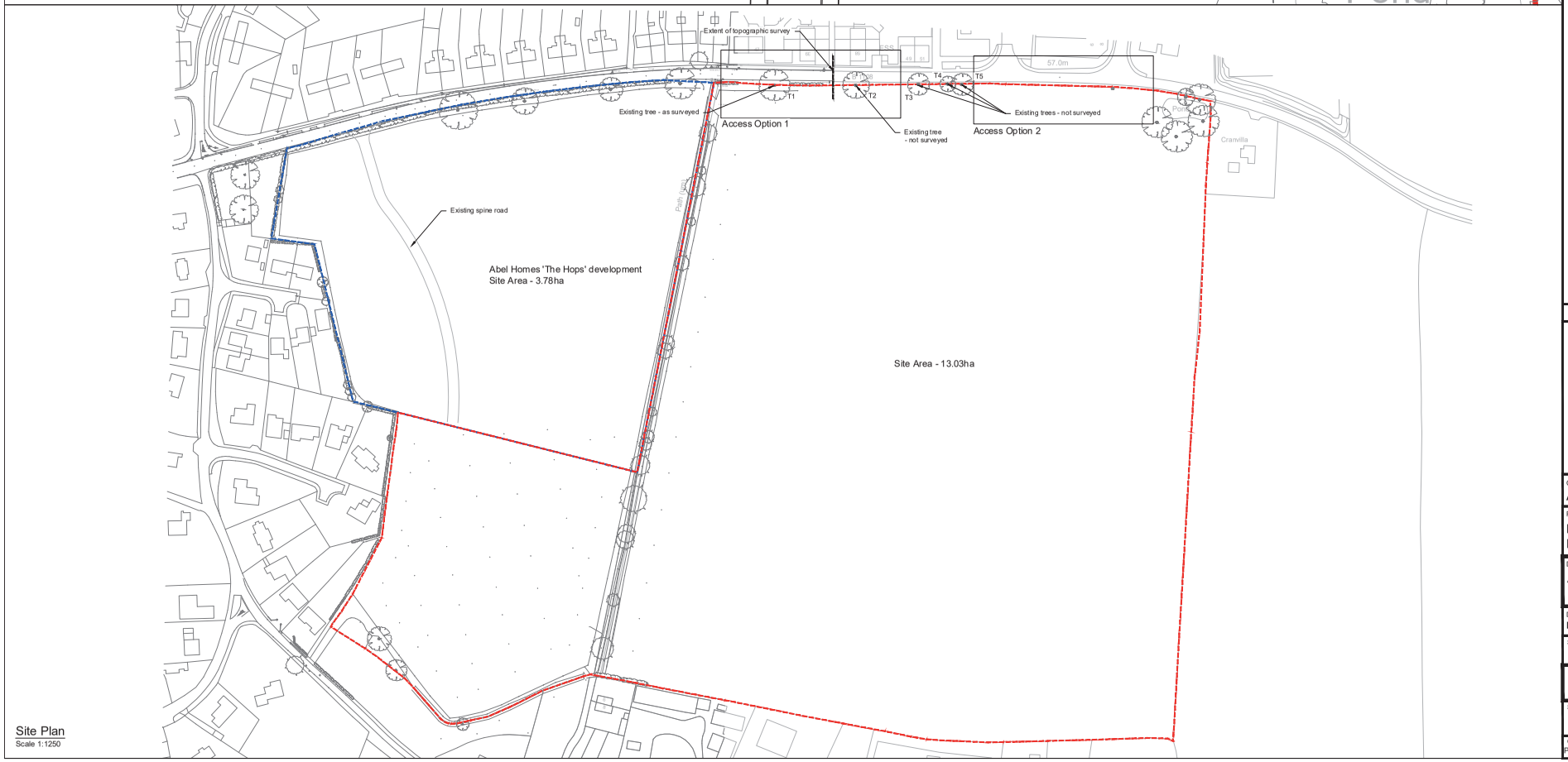
Site location grid reference 603043, 302031
and postcode NR9 4LS

Client:	Drawing Title:		
Abel Homes Ltd	**Site Location Plan**		
Job Title:	Date:	Job No:	Dwg No:
Land south of Norwich Road, Hingham	**11.05.18**	**48851**	**Fig. 101 (NTS)**

RichardJackson Engineering Consultants
4 The Old Church, St Matthews Road, Norwich, NR1 1SP
Tel. 01603 230240
www.richardjackson.uk.com







Notes

NOTES:
PRELIMINARY DRAWING:
This drawing should be read as a PRELIMINARY issue and should NOT be used for construction under any circumstances.

Rev.	Description	By	Date
P1	Preliminary Issue	DP	01.07.16

Barter Hill Partnership Limited
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Magdalen Laver
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Meridian Business Park
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e: mail@barterhill.co.uk

Consulting Structural & Civil Engineers

Client
Abel Homes Ltd

Project
Norwich Road
Hingham Phase 2

Drawing Title
Access Options

Designed by	Drawn by	Checked by
DP	AR	DP

Scale @ A1	Date
1:1250/1:250	July 2016

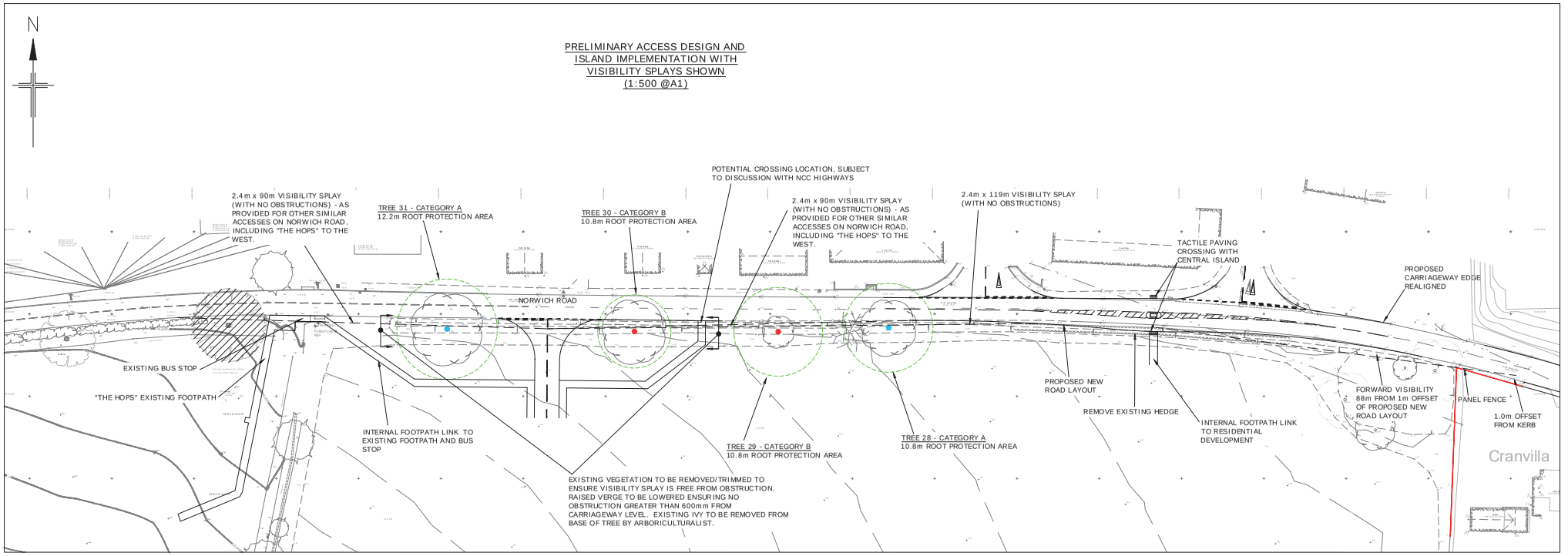
Drawing No.	Revision	Job Ref
6387-C-SK001	P1	6387

Status
PRELIMINARY ISSUE

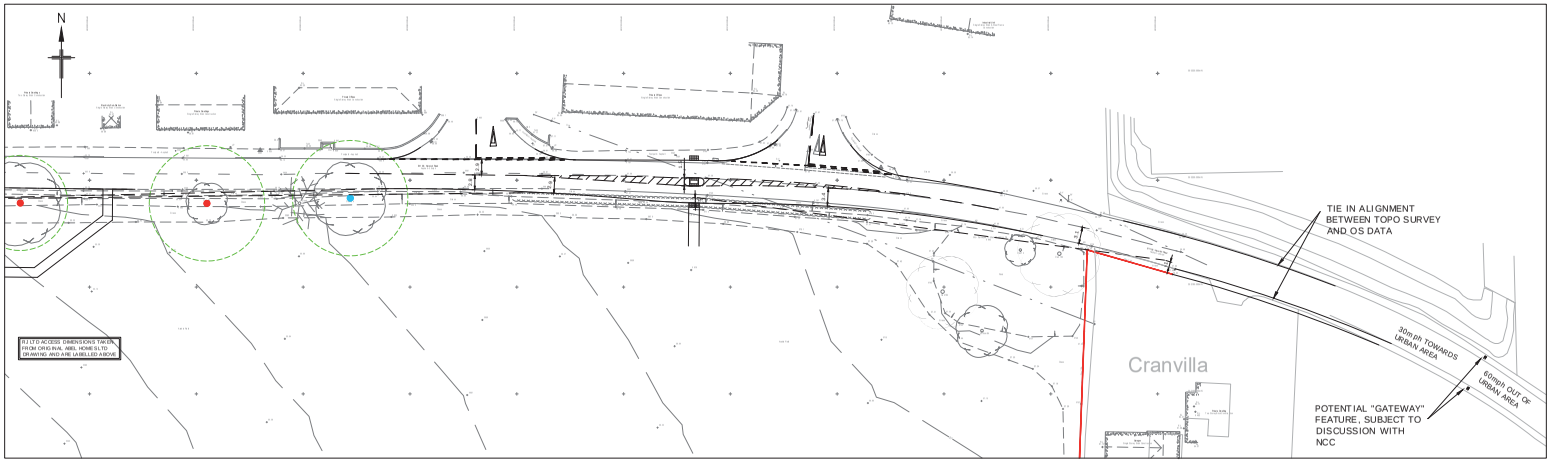
Cad file	Contact Office
P:6387/Teamwork/Civils/BHP Drawings	Norwich

DO NOT SCALE

PRELIMINARY ACCESS DESIGN AND ISLAND IMPLEMENTATION WITH VISIBILITY SPLAYS SHOWN (1:500 @A1)



PRELIMINARY ISLAND IMPLEMENTATION DIMENSIONS (1:500 @A1)



NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE IN METRES ABOVE ORDNANCE SURVEY DATUM.
3. TOPOGRAPHICAL SURVEY 18731ea01 - 06 DATED NOVEMBER 2016 HAS BEEN SUPPLIED TO RICHARD JACKSON LTD BY SURVEY SOLUTIONS AND RJ LTD ACCEPT NO RESPONSIBILITY FOR ERROR OR OMISSION.
4. ROOT PROTECTION AREAS HAVE BEEN TAKEN FROM A.T. COOMBES ASSOCIATES LTD PRELIMINARY ARBORICULTURAL IMPACT ASSESSMENT. TREE NUMBERS HAVE BEEN TAKEN FROM APPENDIX 3 OF THAT REPORT.

KEY:

- ROOT PROTECTION AREA (AS PER A.T. COOMBES REPORT)
- CATEGORY A TREE (AS PER A.T. COOMBES REPORT)
- CATEGORY B TREE (AS PER A.T. COOMBES REPORT)
- TREE NO LONGER EXISTS

REVISIONS

REV	DATE	DESCRIPTION	DRAWN	CHKD
A	5.11.18	VEGETATION NOTE ADDED	MJD	MJD

Project: LAND SOUTH OF HINGHAM ROAD, NORWICH	Title: ACCESS DESIGN WITH PEDESTRIAN ISLAND	Client: ABEL HOMES LTD	
Drawn: L. GRAY	Date: 19/07/18		
Job Manager: M. DOUGHTY	Checked: M. DOUGHTY		
Approved: M. DOUGHTY	Scale: AS SHOWN @A1		

This drawing is to be read in conjunction with all other Engineer's drawings and all other project information. Any discrepancy between the Engineer's drawings and other project information is to be reported to the Engineer immediately.

RichardJackson Engineering Consultants
Art7 The Crescent, Colchester, Essex CO4 9YQ — Tel: 01206 228800
3rd Floor, Rennie House, 57-60 Aldgate High Street, London EC3N 1AL — Tel: 020 7448 9910
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The Wheelhouse, Bonds Mill, Stonehouse, Gloucestershire GL10 3RF — Tel: 01172 020070
Email Address: mail@rj.uk.com — Website: http://www.rj.uk.com

Drawing No.	Revision
48851-PP-SK11	A

Drawing Status: ☒ INFORMATION ☐ APPROVAL ☐ COSTING ☐ TENDER ☐ CONSTRUCTION ☐ AS CONSTRUCTED

A1

APPENDIX 3
PRELIMINARY ECOLOGICAL APPRAISAL

parkerplanningservices.co.uk

March 18

Preliminary Ecological Appraisal

Land off Norwich Road, Hingham

Norfolk Office 01603 516319

Orchard House,

Hall Lane,

East Tuddenham,

Norfolk, NR20 3LR

Suffolk Office 01284 336348

Northgate Business Centre

10 Northgate Street,

Bury St Edmunds

Suffolk, IP33 1HQ

Report For: Abel Homes

Neaton Business Park,
Norwich Rd,

Watton,

Thetford

IP25 6JB

Report Version	Author	Reviewed By	Comments	Date
1.0	Christine Hipperson MCIEEM	Ben Jervis MCIEEM	First Issue for Comment	02/03/2018
1.1	Christine Hipperson MCIEEM	Ben Jervis MCIEEM	Minor Amendments to Conclusions	06/03/2018

This report has been prepared in accordance with British Standards 42020:2013 and the Chartered Institute of Ecology and Environmental Management's (CIEEM) 'Guidelines for Ecological Report Writing' and Code of Professional Conduct.

The authors and surveyors used to undertake our work are accredited CIEEM members and/or appropriately qualified for the tasks undertaken. Due care, skill and diligence has been taken in preparation of the information and views provided in this report, although no warranty is provided as to their accuracy.

This report and its contents remains the property of Parker Planning Services Ltd until payment has been received in full.

Contents

Figures

Appendices

Non-Technical Summary

Parker Planning Services were commissioned in February 2018 by Abel Homes to undertake a Preliminary Ecological Appraisal (PEA) at a parcel of land located off Norwich Road, Hingham, Norfolk. The appraisal comprised a desk-based study and Extended Phase 1 survey, a Habitat Suitability Index (HSI) assessment of two on-site ponds, along with an assessment of impacts on ecological features at the site.

The site comprised a large parcel and smaller parcel of arable land bisected by scattered trees. A small section of wet ditch was present along the south-western boundary. A small section of dry ditch was present along southern boundary and a small stretch bisected the two parcels of arable land. Scattered scrub and tall ruderal vegetation were also present on site. Two ponds were present within the north-east and south-west corners of the site.

Based on the habitat types present, it is considered that the site has potential to support the following protected species or groups of species in some capacity: amphibians (including great crested newts), breeding birds, terrestrial mammals, invertebrates and foraging/commuting bats. The ecological value of the site is **unknown** subject to further surveys.

The impact of the development on great crested newts and breeding birds are **unknown**, subject to further surveys.

The impact of the development on roosting bat is **unknown**, subject to further surveys upon trees to be impacted upon as a result of works.

The impact of the development upon Sites of National Importance are **unknown**. The Flood Risk Assessment should identify any impacts upon the hydrological features of Sea Mere SSSI, and the Local Planning Authority are required to consult with Natural England based on SSSI Impact Risk Zones.

In the absence of mitigation, the proposed development would give rise to:

- **Moderate-Minor Adverse** impacts upon Sites of County Importance and Sites of District Importance
- **Minor Adverse** impacts upon habitats, green infrastructure, invertebrates, provisionally amphibians (excluding great crested newts), terrestrial mammals (excluding badgers) and foraging/commuting bats;

Mitigation has been proposed which would reduce the overall impact to **minor adverse** *(excluding where further surveys are required)* including:

- **Avoidance and Mitigation**: Tree root protection zones; retention and strengthening of boundary hedgerows with native species; replacement and landscape planting with native species; excavations to be covered at night; gaps beneath fencing to provide links between gardens for use by small mammals, including hedgehogs; building materials to be stored on hardstanding or off the ground, e.g. upon pallets, if they are to be kept at the site overnight or for long periods of time; care should be taken to ensure any imported aggregate and soil onto the site is not contaminated with invasive plant material; 5m working buffer from retained habitats; any open or exposed pipe work to be capped to prevent animals from gaining access; oils, fuels and chemicals should be stored in sealed containers and not be left out overnight; adequate dust and noise suppression facilities will be used on site throughout construction; restricted overnight working; sensitive lighting scheme; care should be taken to avoid killing and/or injury to wild rabbits during the construction phase; no additional input into the ponds or boundary ditches during the construction or operational phases of the development; grassland and tall ruderal vegetation should be maintained at a short sward before and during construction; ***no vegetation should be removed until further surveys have been completed and mitigation has been recommended.***
- **Enhancements**: Installation of an insect hotel within the garden of each new dwelling, creation of artificial hibernation sites incorporated either within gardens or in public green space; installation of 25No. bat bricks built into the fabric of new dwellings across the site.

The overall impact assessment does not take into consideration those species for which further information is required. The following surveys are recommended:

- **Environmental DNA (eDNA) Survey** – Analysis of water samples from Ponds 1 and 2, to determine presence of great crested newt through detection of environmental DNA, e.g. skin cells, faeces, etc. Likely absence can be presumed in any ponds where a negative result is obtained. *If a positive result is returned, great crested newt presence/likely absence surveys would be required for these ponds and any others within 500m which are assessed as being of 'Average' suitability or higher*. *This would comprise 6 visits between mid-March and mid-June, with at least half of the visits undertaken between mid-April to mid-May.*
- **Breeding Bird Survey** – Three surveys to be carried out to establish use of the site by breeding birds, including skylark; one each in April, May and June.
- **Pre-Construction Badger Check –** One pre-construction check for badgers on the site and accessible areas within 30m of the site boundary should be undertaken no more than one month prior to construction. Optimal timing for surveys are March and October.
- **Preliminary Roost Assessment (PRA) –** If semi-mature/mature trees are likely to be impacted upon, i.e. where trees will be removed, root protection zones cannot be adhered to, or management is recommended by the arboriculturist, a Preliminary Roost Assessment of the trees must be undertaken. *However, no further survey should be necessary if no trees are to be impacted upon as a result of the development.*

If construction work does not commence within two years of this survey an update Preliminary Ecological Appraisal (PEA) should be carried out to re-assess the status of the site for protected species.

The proposed development falls into the IRZ categories and therefore requires consultation with Natural England.

1 Introduction

1.1 Commission

1.1.1 Parker Planning Services were commissioned in February 2018 by Abel Homes to undertake a Preliminary Ecological Appraisal (PEA) at a parcel of land located off Norwich Road, Hingham, Norfolk. The appraisal comprised a desk-based study and Extended Phase 1 survey, a Habitat Suitability Index (HSI) assessment, along with an assessment of impacts on ecological features at the site.

1.2 Site Description

1.2.1 The site lies on the eastern outskirts of the village of Hingham, approximately 11km east of the town of Watton. Access to the site is via Norwich Road to the north of the site.

1.2.2 The surveyed site comprised a large parcel and smaller parcel of arable land bisected by scattered trees. A small section of wet ditch, running from a pond, was present along the south-western boundary, which ran dry towards its eastern extent. A Public Right of Way (PRoW) in the form of a narrow strip of bare ground/grass divided the two parcels of arable land. Scattered scrub and tall ruderal vegetation were also present on site. A second pond was present within the north-eastern corner of the site. Norwich Road bounds the site to the north.

1.2.3 A new residential development, which has not yet reached completion, lies adjacent to the west of the site. Arable fields lie adjacent to the east of the site. Residential properties bound the south and south-west corner of the site, in addition to a stand of deciduous woodland.

1.2.4 The village of Hingham and arable fields comprises the majority of the wider surroundings.

1.2.5 The proposed development area is approximately 13 hectares (ha) in size. The approximate centre of the site lies at grid reference TG 030 020. The site location is provided in Figure 01.

1.3 Proposed Development

1.3.1 The proposed development is in the early stages but is expected to include the construction of up to 250 dwellings with associated drives and garden areas. Access would likely be from Norwich Road to the north of the site.

1.3.2 This appraisal considers land within the planning application site boundary as shown in Figure 01 and is hereon referred to as 'the site'. The proposed development plans are provided in Appendix 1.

1.4 Relevant Planning Policy and Legislation

1.4.1 Legislation and policies set at local, national and international levels afford varying degrees of protection to sites of ecological value and species at risk due to declining populations.

1.4.2 The Local Planning Authority, South Norfolk District Council, includes policies within their Local Plan to help protect ecological features valuable at the local level.

1.4.3 A summary of relevant legislation and planning policy is provided in Appendix 2.

1.5 Report Objectives

1.5.1 The overall purpose for this report is to provide supporting information for a planning application for the proposed development, as detailed above. Specific objectives are to:

- Identify the presence or potential presence of important habitats and protected species at the proposed development site;
- Identify any ecological constraints to the development;
- Assess the impact of the proposed development upon nearby designated sites, important habitats and protected species;
- Assess the impact of the proposed development upon protected species;

- Provide advice on the measures required to avoid, reduce or compensate for impacts on protected species; and
- Propose enhancements to increase site value to wildlife and nature conservation post-development.

1.6 Acknowledgements

1.6.1 Work undertaken for this report was carried out by the following surveyors:

Survey(s)	Surveyor(s)	Experience (in years)	Licences Held
Report reviewer Phase 1 Habitat survey	Ben Jervis MCIEEM	8+	Bat Class Licence CL18 (Level 2) (2016-25752-CLS-CLS) Great Crested Newt Class Licence CL08 (Level 1) (2015-18768-CLS-CLS)
Report author	Christine Hipperson MCIEEM	9+	Bat Class Licence CL18 (Level 2) (2015-16077-CLS-CLS) Great Crested Newt Class Licence CL08 (Level 1) (2015-17826-CLS-CLS)

1.6.1 We acknowledge the contribution of:

- Norfolk Biodiversity Information Service (NBIS) for providing relevant designated site information and species records.

1.7 Previous Ecological Studies

1.7.1 An ecological survey including surveys for bats and great crested newts was carried out by Norfolk Wildlife Service in 2013-2014 for the residential development adjacent to the west of the site (Norfolk Wildlife Services, 2014).

1.7.2 Great crested newt surveys were carried out on both Ponds 1 and 2 in 2013, with no great crested newts recorded.

1.7.3 Bat emergence/re-entry surveys recorded low numbers of common pipistrelle roosting in four mature oak trees along Norwich Road.

2 Methodology

2.1 Desk-Based Study

2.1.1 The following information was reviewed to provide information on the location of statutory and non-statutory designated sites, legally protected species, Species and Habitats of Principal Importance and other notable species recorded within a 2km radius of the site boundary:

- Norfolk Biodiversity Information Service (NBIS) provided records of protected, rare and/or priority species and details of statutory and non-statutory designated sites.
- The MAGIC website (www.magic.gov.uk), the Government's online mapping service, was used to identify international and national sites, waterbodies and information on non-statutory sites.
- Publicly available aerial imagery (Google Maps) was used to consider the context of the site and its contribution to local green infrastructure.

2.1.2 The potential for protected, rare and/or priority species to be present on site has been assessed in this assessment, considering the nature of the site and the habitat requirements of the species in question. Absence of records does not constitute absence of a species. Habitats on-site may be suitable to support other protected species that have not previously been recorded within the search area. Records of alien species, non-localised records (e.g. tetrad records) and records dated pre-1997 have not been described in detail but are considered when assessing likely species presence or absence.

Limitations to survey

2.1.3 NBIS does not allow its species records to be made publicly available, for example through direct inclusion within this report. Therefore, whilst we can comment upon species recorded in the local area and take them into consideration for our impact assessment, any accurate locations are determined to be sensitive and cannot be revealed.

2.2 Phase 1 Habitat Survey

2.2.1 Habitats were described and mapped following the standard Phase 1 methodology (JNCC, 2010). Features of ecological interest within such habitats were recorded and mapped. The survey methodology enables a simple and rapid assessment of habitats and it is not necessary to identify every plant species on site.

2.2.2 The survey visit was also used to identify potential for protected, rare and/or priority species, for example, bats, mammals, amphibians and reptiles, to occur on, or in the vicinity of, the proposed development site. Although the survey methodology is not intended for species survey, any protected, rare and/or priority species which were incidentally seen during the survey were noted.

2.2.3 The survey was undertaken on 20th February 2018 in cool conditions with light rain and moderate wind.

Limitations to survey

2.2.4 The survey was undertaken outside of the flowering period for most plant species and therefore not all species present would have been recorded. However, as the site comprises largely of improved grassland, the risk of rare and/or scarce plants being present is minimal.

2.2.5 The survey was carried out in sub-optimal weather conditions which made it difficult to make clear notes whilst on site, though this is not considered to have had a significant effect on the outcome of the survey, the report or any of the recommendations made within.

2.3 Great Crested Newt Habitat Suitability Index (HSI) Assessment

Rationale

2.3.1 Great crested newts are protected by national and European legislation and are 'European Protected Species'.

2.3.2 Great crested newts are widespread across the UK, with varying degrees of abundancy in different localities. They spend large parts of the year on land using habitats such as grasslands, hedgerow bases and woodland, visiting ponds between March and June to breed. They are not usually found in fast-flowing water, though have been known to use slower-flowing waterbodies, such as drainage ditches and canals. Over winter, newts will usually hibernate in sheltered locations, such as log or rubble piles. The likelihood of finding great crested newt at a site depends largely upon the presence of nearby ponds supporting the species and of suitable habitat on site, with local abundancy also greatly affecting likely presence.

2.3.3 The Habitat Suitability Index (HSI) assessment is a standard measure of pond suitability for great crested and informs the requirement for further investigation.

2.3.4 HSI is a geometric mean of ten suitability indices relating to factors affecting the presence of great crested newt. Ponds with high HSI scores are generally more likely to support great crested newts than those with low scores. For example, one study found the presence of great crested newts in 93% of ponds categorised as 'Excellent', whilst only in 3% of ponds determined to be 'Poor' (ARG UK, 2010). A high score does not infer presence of great crested newts, just as a low HSI score does not completely rule out the possibility of great crested newt being present. However, it does provide scientific grounding for the requirement (or not) of further survey to be undertaken.

Methodology

2.3.5 The standard Habitat Suitably Index (HSI) methodology (ARG UK, 2010) was followed. A total of 13 ponds were identified within a 500m radius of the site. Two ponds were present on site and were surveyed.

2.3.6 The following measurements were made or estimated on site:

- Pond surface area, rounded to the nearest 50m^2;
- How often the pond is likely to dry out (within a 10-year period);
- Water quality, based on the invertebrate community;
- Percentage of pond edge (within 1m) subject to shading;
- Presence/absence and impact of waterfowl;
- Presence/absence and density of fish populations;
- Quality of surrounding terrestrial habitat; and
- Percentage of pond surface occupied by macrophytes.

2.3.7 Two map-based estimates were made following the field survey:

- The location of the pond within the UK
- The number of ponds within a 1km radius, as seen on a 1:25, 000 Ordnance Survey map and using freely available aerial imagery.

2.3.8 Pond suitability for great crested newts was defined using a categorical scale, as follows:

HSI Score	< 0.5	0.5 – 0.59	0.6 – 0.69	0.7 – 0.79	> 0.8
Pond Suitability	Poor	Below Average	Average*	Good*	Excellent*

*pond usually requires further surveys

2.3.9 The surveys were undertaken on 20th February 2018 in cool conditions with light rain and moderate wind.

Limitations to survey

2.3.10 Only the two ponds on site were surveyed. Permission to access other ponds within a 500m radius of the site was not attempted at this stage.

2.4 Impact Assessment

2.4.1 The assessment was undertaken in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM) Professional Guidance Series 'Guidelines for Ecological Impact Assessment [EcIA] in the UK and Ireland' (Second Edition January 2016).

2.4.2 In summary, the impact assessment process involves:

- Assessing the value of ecological features at the site and those nearby that could be affected (i.e. designated sites, habitats, species);
- Identifying the unmitigated impacts of the development (magnitude, spatial extent, duration, timing/frequency, reversibility);
- Providing measures to avoid and mitigate for impacts;
- Assessing the significance of residual impacts after specified mitigation;
- Identifying appropriate compensation measures to offset significant residual effects; and
- Identifying enhancement opportunities to provide a net benefit for biodiversity.

Value/scale of ecological features

2.4.3 The value of ecological features uses conservation status (i.e. extent, relative abundance and distribution) to assign geographical levels at which the feature is considered to hold importance.

2.4.4 For habitats, this includes the structure and composition of plant communities, the species they may support, and over what distance the habitat may have influence over, e.g. wetlands may attract wintering birds from hundreds of miles away, whereas a small stand of woodland is likely to only support fauna within the local area.

2.4.5 For species, this includes the abundance and distribution within a given geographical area, e.g. a low population of great crested newts may be assessed to be of local importance in the south of England where populations are abundant, but of county importance in the north of England where they are scarcer.

2.4.6 In-depth details of geographic values of importance are summarised in Appendix 3.

Scale of Impact and confidence levels

2.4.7 Impacts on ecological features can occur either directly (e.g. loss of habitats, habitat fragmentation, noise/light disturbance) or indirectly (e.g. changes to local hydrology, nutrient levels, and water/air quality). The overall impact is difficult to quantify and therefore subjectively assessed taking into consideration a range of factors, including conservation status of an ecological feature, magnitude, spatial extent, duration, timing/frequency and reversibility. Impacts can be both positive and negative. The terminology used to quantify scale of impacts are:

Scale of Impact	Description	Examples (in relation to breeding birds)
Negligible	No conceivable impact upon ecological feature.	The habitats on site are unsuitable for supporting a species.
Neutral	No significant impacts which would impact upon occurrence or success of an ecological feature in the short- or long-term.	Temporary noise disturbance during construction would not affect breeding success of common and widespread bird species 20m from the site.

Minor	Likely to have a limited temporary impact upon an ecological feature at the site and/or a small long-term impact.	Temporary noise disturbance during construction might affect breeding success of birds within hedgerows along a site boundary, and the loss of a small area of scrub might reduce long-term foraging and breeding success at the site.
Moderate	Likely to have a significant temporary impact and/or moderate long-term impact upon an ecological feature. Possibly irreversible.	Removal of a high proportion (>50%) of suitable breeding and foraging habitat, such as scrub and hedgerows, which would have a sizeable, but recoverable, impact upon bird species at the site and the immediate adjacent habitats.
Major	Likely to have a huge impact upon an ecological feature, which is likely to be irreversible (if negative).	Removal of all suitable breeding and foraging habitat on a large site, such as scrub and hedgerows, which would dramatically reduce long-term success for the population of bird species, both on-site and in the wider area.

Confidence in impact assessment

2.4.8 Impacts on ecological features can occur either directly (e.g. loss of habitats, habitat fragmentation, noise/light disturbance) or indirectly (e.g. changes to local hydrology, nutrient levels, and water/air quality).

2.4.9 Our assessment of these impacts are predictions based on the available evidence and therefore may be inaccurate if predicted activities change. Therefore, we provide an indication of confidence levels for our assessments using the following criteria:

- Certain probability estimated at above 95%
- Likely probability estimated above 60% but below 95%
- Probable probability estimated above 40% but below 60%
- Possible probability estimated above 20% but below 40%
- Unlikely probability estimated as less than 20%.

Cumulative impacts

2.4.10 Consideration is also given to the potential for the development proposal to give rise to significant negative impact in combination with other proposed development in the local area.

Overall assessment

2.4.11 An overall assessment of value and impact is provided, and this is based upon the highest level of value of any of the features or species present or likely to be present on the site, and similarly the overall assessment of impact would be the impact of greatest significance.

2.5 Duration of Validity

2.5.1 The information provided within this report, including all assessments, conclusions and recommendations, are based on the studies and limitations to survey detailed herein. This appraisal is based on the development proposals described above and may need to be reviewed should there be any changes to the scheme. The assessments made assume that site habitats will continue to be used for their current purpose without significant change until development commences.

2.5.2 Changes in site habitats and the ability of the site to support protected species may alter over time. Our professional judgement and knowledge of the site and the species it may support can be used to determine the period for which the undertaken surveys and this appraisal remain valid. The table below states the sources of information used to form our assessments, conclusions and recommendations, and provides the timescale for when update surveys would be required should development be delayed.

Information Source	Date Undertaken	Valid Until	Comments
Desk-Based Study	February 2018	February 2020	Further records may be available within 1-2 years
Preliminary Ecological Appraisal (PEA)	February 2018	February 2020	Habitats on site may change dependent upon management regime
Great Crested Newt Habitat Suitability Index (HSI) Assessment	February 2018	February 2020	Pond conditions and suitability for great crested newt are unlikely to change within a 2-year period.

3 Results

3.1 Desk-Based Study

Designated Sites

3.1.1 Few designated sites were identified within the 2km search radius, the details of which are provided in the below table.

Site	Distance & Direction From Study Site	Reason For Designation / Key Features
Sites of International Importance		
There are no sites of international importance within 2km of the proposed development site.		
Sites of National Importance		
Sea Mere Hingham (SSSI)	470m south	This site contains a natural lake and an area of species-rich fen and grazing marsh. Deciduous plantations retain some elements of older woodland. The site has ornithological interest because of the diversity of habitats that it contains. The Mere has dense growths of phytoplanktonic algae probably as a result of excretal enrichment from wintering gulls and as a result water plants are restricted to a few patches of yellow water lily. The marginal vegetation is dominated by reed. Breeding birds include great crested grebe and kingfisher. The grazing marshes are generally very wet due to poor drainage and are dominated by tufted hair-grass and fen rush. The fen is species-rich and includes saw sedge marsh orchids Dactylorhiza spp., marsh pennywort, ragged robin, yellow loosestrife, yellow iris and the rare green figwort. Willow Salix sp. is abundant on parts of the marsh and is spreading. Breeding birds include snipe, reed bunting, sedge and grasshopper warblers. The mature plantations surrounding Sea Mere are mostly oak, ash and sycamore, although small areas of coppiced hazel under oak standards are present. The ground flora is dominated by dog's mercury with lords-and-ladies, common twayblade and nettle-leaved bellflower.
Sites of County Importance		
Moneyhill Meadow (CWS)	1km south	The site is a small grassland area bisected by a small stream and fence line. A thin strip of scrub occurs along the northern edge and one of tall ruderal herb vegetation to the south. The majority of the site consists of semi-improved grassland over a neutral soil with impeded drainage. The sward is dominated by Yorkshire fog and rough meadow-grass with false oat-grass, couch-grass and red fescue.

		Herbs include frequent cleavers, common nettle, great willowherb and great horsetail which is scarce in Norfolk. The east of the site is more species rich with frequent common fleabane, cow parsley, rough chervil and hogweed. Scrub areas are largely sloe but with sallow, crack willow, field maple, hawthorn and sycamore. Towards the edges and in areas of lighter shade fool's water-cress, marsh marigold, cuckooflower, hoary willowherb, hemp-agrimony and water-cress.
Gurney's Wood (CWS)	1.7km south-west	The site is a small block of oak and ash woodland situated in the centre of a large field. The canopy is generally loose and open and is dominated by oak although ash is abundant. Sycamore is occasional and there is a ring of spruce around the periphery. The understorey is coppiced hazel with some elder, dogwood and elm. The ground flora consists of rose, bramble, common nettle, dog's mercury, ivy and moss.
Sites of District Importance		
Deciduous Woodland (PHI)	340m north-east	50+ deciduous woodlands within a 2km radius of the site. The closest of which is located 340m north-east of the site. A small parcel of broadleaved woodland is present adjacent to the south of the site, although this is not officially designated as a PHI Deciduous Woodland habitat.
Lowland Fen (PHI)	535m south	Four lowland fen habitats within a 2km radius of the site. the closest of which is located 535m south of the site.
Reedbeds (PHI)	625m south	Seven reedbeds located within a 2km radius of the site. The closest of which is located 625m south of the site.
Traditional Orchard (PHI)	520m south-east	Two traditional orchards within a 2km radius of the site.
No main habitat but additional habitat exists (England) (PHI)	500m south	11 habitats within a 2km radius of the site. The closest of which is located 500m south of the site.

Designated Site Acronyms: SSSI - Site of Special Scientific Interest; CWS – County Wildlife Site; PHI – Priority Habitat Inventory

Biological Records

3.1.2 Several protected species have been recorded within 2km of the site, including:

- Rare and/or Scarce Plants: None.
- Veteran Trees: Three veteran trees (horse chestnut *Aesculus hippocastanum*, small-leaved lime *Tilia cordata* and oak *Quercus robur*). The closest of which is located approximately 540m west of the site.
- Invertebrates: 36 invertebrate species (butterflies, moths and Hymenoptera).
- Amphibians: None.
- Reptiles: None.

- Birds: 54 bird species, including buzzard, hobby, yellowhammer, barn owl, little owl, tawny owl, swift, skylark, swallow, house sparrow.
- Terrestrial Mammals: Hedgehog *Erinaceus europaeus* (8 record), brown hare *Lepus europaeus* (12 records).
- Bats: Records nine species of bat (barbastelle *Barbastella barbastellus*, serotine *Eptesicus serotinus*, Daubenton's bat *Myotis daubentonii*, Natterer's bat *Myotis nattereri*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus,* noctule *Nyctalus noctule,* Nathusius's Pipistrelle *Pipistrellus nathusii,* brown long-eared bat *Plecotus auritus).* Records were also returned for an unidentified *Pipistrellus* species and an unidentified *Myotis* species. Four bat roosts records (common pipistrelle and brown-long-eared bat) were also returned from the same location.

3.1.3 The following invasive, non-native species have been recorded within the 2km search radius:

- Plants: Japanese knotweed *Fallopia japonica*, giant hogweed *Heracleum mantegazzianum*
- Terrestrial Mammals: Chinese muntjac
- Birds: Egyptian goose
- Fish: Common carp

3.2 Phase 1 Habitat Survey

3.2.1 The Phase 1 habitat survey identified 11 different habitat types. Descriptions for each habitat are provided in the table below, and their locations within the site are shown in Figure 02. Site photos are provided in Appendix 4. Scientific names for plant species are only provided in their first instance.

Habitat Code	Habitat Name	Description	Species Recorded
A2.2	Scattered scrub	Scattered scrub was present in small sections along the arable field boundaries and Pond 2 in the north-east corner of the site. A small area of immature blackthorn was also present in the south-west of the site.	Dominant: bramble *Rubus fruticosus* agg., blackthorn *Prunus spinosa* Present: common nettle *Urtica dioica*
A3.1	Broadleaved scattered trees	Scattered trees were present around the arable field boundaries, with an almost continuous shelter belt present on the southern boundary.	Dominant: ash *Fraxinus excelsior* Present: hawthorn *Crataegus monogyna*, oak, common ivy *Hedera helix,* sycamore *Acer pseudoplatanus*, beech *Fagus sylvatica*, hazel *Corylus avellana*
C3.1	Tall ruderal	A large parcel of tall ruderal vegetation was recorded in the south-west corner of the site. A narrow strip was also present between the large arable field and the adjacent field to the east.	Present: spear thistle *Cirsium vulgare*, rosebay willowherb *Chamaenerion angustifolium*, creeping thistle *Cirsium arvense*, curled dock *Rumex crispus*, common nettle, bristly ox-tongue *Helminthotheca echioides*, groundsel *Senecio vulgaris*, red dead nettle *Lamium purpureum*, broadleaved plantain *Plantago major*, dove's-foot crane's-bill

			Geranium molle, cut-leaved crane's-bill *Geranium dissectum*, cleavers *Galium aparine*, lords-and-ladies *Arum maculatum*
G1	Standing water	Two ponds were present at the site; one in the south-west corner (Pond 1) and the other in the north-east corner (Pond 2). A wet ditch ran along the south-western site boundary into Pond 1.	
J1.1	Arable	A large arable field formed the majority of the site, with a smaller parcel of arable field also present in the south-west corner. The fields were mostly bare ground although they appeared to be sown with *Lolium perenne* ley.	Present: Perennial rye grass *Lolium perenne*
J2.1.1	Intact native species-rich hedge	A recently planted (2-3 years old) hedgerow ran alongside the Public Right of Way in the west of the site.	Dominant: hawthorn *Crataegus monogyna*, blackthorn Present: holly *Ilex aquifolium*, hazel *Corylus avellana*, beech *Fagus sylvatica*
J2.1.2	Intact species-poor hedge	Two small sections of hawthorn and blackthorn hedgerow were found along the northern site boundary. Two sections of garden hedgerow (one beech, the other blackthorn) bounded part of the south-west corner of the site.	Present: hawthorn, blackthorn, beech, bramble
J2.4	Fence	Heras fencing was present along the large sections of the western site boundary and the northern section of the south-west corner. Timber panel fencing was present along sections of adjacent gardens.	
J2.6	Dry ditch	The ditch leading from Pond 1 continued along the site boundary, with the eastern half being dry at the time of survey. Vegetative growth within the ditch suggests this part of the ditch remains dry throughout the year.	Present: grass species, snowdrop *Galanthus nivalis*

J4	Bare ground	A parcel of bare ground, outlined by Heras fencing, was present in the south-west corner of the site	
J5	Other habitat	A construction compound bounded by Heras fencing was present in the west of the site.	
Target Notes (TN) *Locations shown on Figure 02*		TN1 – Rabbit burrows TN2 – Skylark calling	

3.3 Great Crested Newt HSI Assessment

3.3.1 Two ponds were present onsite and were surveyed. Eleven other ponds were identified within a 500m radius of the site but were not surveyed at this stage. The detailed results of the HSI assessment are provided in the table below, with pond locations shown in Figure 02. Site photos are provided in Appendix 4.

Habitat Suitability Index (HSI) Assessment – Suitability Scores

Pond Number	Individual Suitability Indices										Overall Score
	Location	Pond Area	Pond Drying	Water Quality	Shade	Fowl	Fish	Pond Count	Terrestrial Habitat	Macrophytes	
1	1	0.3	0.9	0.33	0.6	0.67	0.67	1	0.67	0.6	0.62
2	1	0.5	0.9	0.33	0.4	0.67	0.67	1	0.33	0.3	0.55

3.3.1 A summary table of HSI results, location related to the site and requirement for further survey is provided below.

Habitat Suitability Index (HSI) Assessment - Summary of Results

Pond Number	HSI Score	HSI Category	Distance & Direction From Site	Comments	Further Survey Required?
1	0.62	Average	Onsite	Pond within the south-western corner of the site lying adjacent to a small woodland area.	Yes
2	0.55	Below Average	Onsite	Pond within arable field in north-eastern corner of the site.	Yes

3.3.1 Pond 1 was categorised as 'Average' and will require further survey to determine presence/likely absence of great crested newt. Pond 2 was categorised as 'Below Average'. However, as this pond is on site, further surveys should still be undertaken to determine presence/likely absence of great crested newt.

4 Assessment

4.1 Designated Sites

4.1.1 An assessment of impacts for each of the designated sites within the search radius of the proposed development is provided in the table below. Those sites where an impact is determined likely are discussed.

Site	Distance & Direction From Study Site	Likely Impact	Reason
Sites of International Importance			
There are no sites of international importance within 2km of the proposed development site.			
Sites of National Importance			
Sea Mere Hingham (SSSI)	470m south	**Unknown** *until Flood Risk Assessment confirms no hydrological impact*	The development footprint will remain within the site boundary. Noise and air pollution which may be created during the construction phase are unlikely to affect sites over 200m from the site, assuming air pollution is controlled using standard best practice throughout the construction period. Sea Mere SSSI lies approximately 470m south of the proposed development site. It is assumed that any surface and waste water at the proposed development would run into the mains system. A flood risk engineer will need to be consulted as part of the planning application, e.g. to assess flood risk potential and design SuDS features. If the flood risk engineer determines the proposed development would affect the hydrology around Sea Mere SSSI, then a Habitat Regulation Assessment (HRA) would be required. Although Sea Mere SSSI is accessible for educational and group visits, access is only permitted through bookings. As such, an increase in recreational use of the site by residents of the proposed development is highly unlikely to be significant in the long-term. The proposed development site lies within the Impact Risk Zones (IRZ) of the SSSI. As such, consultation with Natural England is required (see below).

Sites of County Importance			
Moneyhill Meadow (CWS)	1km south	**Moderate-Minor Adverse**	Noise and air pollution which may be created during the construction phase are unlikely to affect sites over 200m from the site, assuming air pollution is controlled using standard best practice throughout the construction period. The development footprint will remain within the site boundary. An increase in the level of disturbance, e.g. through recreational use may take place at publicly accessible sites during the operational phase. Use by dog walkers could cause localised nutrient enrichment.
Gurney's Wood (CWS)	1.7km south-west		
Sites of District Importance			
Deciduous Woodland (PHI)	340m north-east	**Moderate - Minor Adverse**	Noise and air pollution, during construction and operational phases, are unlikely to affect sites over 200m from the development, assuming air pollution is controlled using standard best practice throughout the construction period. An increase in the level of disturbance, e.g. through recreational use, may take place at publicly accessible sites during the operational phase if these habitats are accessible to the public. This is highly unlikely to be significant in the long-term. Use by dog walkers could cause localised nutrient enrichment. A small parcel of broadleaved woodland is present adjacent to the south of the site. This is not designated as a PHI Deciduous Woodland habitat. However, the woodland is separated from the site by a wet ditch and so an increase in the level of disturbance, e.g. through recreational use, is unlikely to be significant. However, it is possible there may be an ongoing predation risk from resident cats towards small mammal/bird species within the woodland.
Lowland Fen (PHI)	535m south		
Reedbeds (PHI)	625m south		
Traditional Orchard (PHI)	520m south-east		
No main habitat but additional habitat exists (England) (PHI)	500m south		

Designated Site Acronyms: SSSI - Site of Special Scientific Interest; PHI – Priority Habitat Inventory; CWS – County Wildlife Site

4.1.2 Natural England has provided guidance in the form of Impact Risk Zones (IRZ) to aid with determining impacts upon Sites of Special Scientific Interest and the need for consultation with planning applications. These Impact Risk Zones consider the type of development proposed and the distance of the development site from a SSSI.

4.1.3 In accordance with the SSSI Impact Risk Zones User Guidance (Natural England, March 2018, from www.magic.gov.uk), website consultation with Natural England would be required for the proposed development site for:

- Any residential development of 50 or more houses outside existing settlements/urban areas.

4.1.1 The proposed development falls into this IRZ category and therefore requires the Local Planning Authority to consult with Natural England.

4.2 Habitats and Green Infrastructure

Habitats

4.2.1 The site comprised two parcels of arable land, bisected by scattered trees. Scattered scrub, tall ruderal, species-rich and species-poor hedgerows, dry and wet ditches were also present at the site. Two ponds were present on site.

4.2.2 A small parcel of broadleaved woodland existed adjacent to the south-western corner of the site. This is separated from the site by a partially wet ditch.

4.2.3 Species recorded at the site were typical of habitats within the wider area, although habitats present are likely to provide suitable foraging and nesting resource for a range of species, including breeding and foraging birds, bats, terrestrial mammals, amphibians and invertebrates.

4.2.4 The habitats on site are considered to only be of importance at the **parish** scale. The unmitigated impact is provisionally assessed as being **minor adverse** due to the loss of foraging and breeding habitat for a variety of species. However, the impacts would be reduced to **minor adverse-neutral** with the recommended mitigation as detailed in Section 5.2, to include the protection and strengthening of boundary habitats.

Green Infrastructure

4.2.5 Garden habitats adjoin the site boundary along the south and part of the west boundary. However, arable land and residential developments lie adjacent to the site and isolates the site from habitats of high ecological value within the wider surroundings. Scattered trees, small sections of hedgerow and a partially wet ditch along the southern boundary provide limited connectivity to the wider area.

4.2.6 The site is considered to contribute to local green infrastructure at the **parish** scale. The unmitigated impact of the proposed development is assessed as being **minor adverse**. This would be reduced to **neutral** with the recommended mitigation, including sensitive lighting design, detailed in Section 5.2.

4.3 Great Crested Newts

4.3.1 No records for great crested newts were returned in the data search.

4.3.2 The boundary ditches and hedgerows provide connectivity to surrounding suitable habitats (gardens, woodland, tall ruderal vegetation, ponds) for terrestrial great crested newts. Thirteen ponds lie within 500m of the site.

4.3.3 Two ponds were present on site. The dry and wet ditches along the southern boundary of the site. Pond 1 was categorised as 'Average' and therefore assessed as having potential to support great crested newts. Pond 2 was categorised as 'Below Average'. However, as this pond is on site, further surveys will be required to determine presence/likely absence of great crested newt.

4.3.4 Great crested newt surveys were carried out on both ponds in 2013 by Norfolk Wildlife Trust for the adjacent residential development. Although, no great crested newts were found during the surveys in either pond, survey data is now over two years old and therefore up-to-date information is required.

4.3.5 The value of the site for great crested newts is **unknown** until further surveys have been undertaken.

4.4 Other Protected Species

Rare and/or Scarce Plants

4.4.1 The plant species on site were common, widespread and typical of the habitats present within the local area.

4.4.2 The value of the site to rare and/or scarce plants is therefore considered to be **negligible**.

Veteran Trees

4.4.3 A total of three veteran trees were returned in the data search, the closest of which was located 540m west of the site. No veteran trees were recorded at the site.

4.4.4 The value of the site for veteran trees is therefore assessed as being **negligible**.

Invertebrates

4.4.5 Several species of moth, butterfly and Hymenoptera were returned in the data search. The habitats recorded on site provide suitable habitat for foraging invertebrates, although only common and widespread species are considered likely to use the site.

4.4.6 The site is considered to be of value at a **parish** scale for invertebrates, with a **minor adverse** impact foreseen as a result of the proposed development. The impact would be reduced to **neutral** with implementation of the mitigation recommended in Section 5.2.

Amphibians (excluding Great Crested Newts)

4.4.7 No records for amphibians were returned in the data search.

4.4.8 Two ponds were present on site. The boundary ditches and hedgerows provide connectivity to surrounding habitats suitable habitat for great crested newts. Garden habitats adjacent to the south and west of the site provide suitable foraging habitat.

4.4.9 The value of the site to amphibians, excluding great crested newts, is provisionally assessed as being at the **parish** scale. The impact of the proposed development is provisionally assessed as being **minor adverse**. Impacts would be reduced to **minor adverse-neutral** with implementation of the recommendations set out in Section 5.2.

Reptiles

4.4.10 No records for reptiles were returned in the data search.

4.4.11 The scrub habitat along the northern boundary was isolated from other suitable habitats. Hedgerow bases were poorly vegetated and unlikely to support commuting reptiles, and there was generally poor connectivity to habitats within the wider surroundings. The site is therefore considered to be isolated from areas of suitable habitat for reptiles.

4.4.12 The site is assessed as being of **site only** value to reptiles. The impact of the proposed development is assessed as being **neutral**, assuming the grassland and tall ruderal vegetation is maintained to a short sward before and during construction. *No vegetation should be removed until further surveys have been completed and mitigation has been recommended.*

Birds

Breeding Birds

4.4.13 Fifty-four species of bird were returned in the data search, and skylark was heard calling at height above the large arable field at the site.

4.4.14 The hedgerows, trees and scattered scrub on site provide suitable nesting and foraging habitats for birds. The arable field provides suitable foraging and breeding habitat for birds.

4.4.15 The value of the site to breeding birds is **unknown** subject to further surveys.

Wintering Birds

4.4.16 The habitats on site are sub-optimal for wintering birds and the site is therefore considered to be of **negligible** value.

Badgers

4.4.17 No records for badger were returned in the data search.

4.4.18 Although no signs of badgers were recorded whilst on site, badgers use a wide variety of habitats, including arable fields for foraging and woodland for breeding. The woodland habitat adjacent to the southern boundary of the site is provides suitable habitat for badgers. The onsite arable field and surrounding arable fields provide suitable habitat for badgers.

4.4.19 Badgers are a mobile species and could potentially forage at the site infrequently.

4.4.20 Badgers are protected from killing and injury under The Protection of Badgers Act 1992. Under this act it is also an offence to intentionally or recklessly damage, destroy or obstruct access to a badger sett or any part. See Appendix 2 for a summary of the relevant legislation.

4.4.21 The site is considered to be of **site only** value for badgers, with the unmitigated impact assessed as being **neutral**. However, *a pre-construction badger check should be carried out no more than one month prior to works commencing to ensure that no setts have been created at the site, or within 10m of the site boundary.*

Terrestrial Mammals (excluding Badgers)

4.4.22 Records were returned for brown hare and hedgehog.

4.4.23 The hedgerow bases, scrub and tall ruderal vegetation provide suitable foraging habitat for hedgehogs. Garden habitats lie adjacent to the south and west of the site which the species may also frequent. The presence of hedgehogs using the site cannot be ruled out, although this would be restricted to the habitats mentioned above and not the arable fields.

4.4.24 The arable habitats are suitable for brown hare. Arable habitats are present within the wider area. It should be assumed that brown hare may occasionally use the site.

4.4.25 No records for water vole or otter were returned in the data search. The two ponds present on site were not well-vegetated and were isolated from habitats suitable for water vole or otter. The dry and wet ditches do not provide suitable connectivity to other waterbodies in the area.

4.4.26 Rabbit burrows were recorded along the north and south boundaries of the large arable field. Precautionary measures should be implemented so as to avoid unnecessary injury to rabbits during works.

4.4.27 The site is considered to be of **parish** value for terrestrial mammals with the unmitigated impact assessed as being **minor adverse**. However, should the recommended mitigation detailed in Section 5.2 be implemented, the impact would be reduced to **neutral.**

Bats

Roosting

4.4.28 The scattered trees present on site could have the potential to support roosting bats. The value of the trees for roosting bats is **unknown** subject to further survey. However, no further survey should be necessary if no trees are to be impacted upon as a result of the development, which will be determined by the Arboricultural Impact Assessment.

Foraging/Commuting

4.4.29 The ditches, scattered trees and hedgerow habitats provide suitable foraging and commuting habitat for bats of common and widespread species. However, connectivity to the wider surroundings is relatively poor.

4.4.30 The site is assessed as being of value at the **parish** scale for foraging and commuting bats. The unmitigated impact of the proposed development is provisionally assessed as being **minor adverse.** This would be reduced to **minor adverse-neutral** with the recommended mitigation, to include sensitive lighting design.

4.5 Invasive species

4.5.1 The data search returned records for Japanese knotweed, giant hogweed, Chinese muntjac, Egyptian goose and common carp.

4.5.2 Chinese muntjac are widespread and may graze at the site sporadically.

4.5.3 Common carp are unlikely to be present in either of the two onsite ponds. These are an ornamental species which would only be present if introduced.

4.5.4 The two ponds on site provide potential habitat for Egyptian geese. However, the site is highly unlikely to provide a stronghold for these species.

4.5.5 No invasive plant species were recorded on site. However, if invasive plant species are found on the site at a later date, advice should be sought from an invasive species specialist and measures taken to prevent their spread.

4.6 Cumulative Impacts

4.6.1 There are no known cumulative impacts of the proposed development. Although the proposed development would continue encroachment into the greenbelt area east of Hingham, arable fields are generally of low ecological value.

5 Conclusions and Recommendations

5.1 Ecological Value and Impacts

5.1.1 The Site is considered to be typical of an intensive arable landscape, dominated by relatively large fields with hedgerows and small areas of other habitats (two ponds, scattered scrub and tall ruderal vegetation). A number of protected and/or priority species may potentially use the site in some capacity. Further surveys to inform the baseline position would be undertaken to inform any future planning application.

5.1.2 Habitat loss is considered to be the main adverse impact at this stage, with mitigation possible for some species via appropriate soft landscaping and scheme masterplanning. Although, mitigation of impacts on some species associated with arable fields will not be possible on-site, e.g. skylark, it is expected the scheme could deliver an overall net biodiversity gain for some species through an increase in habitats of higher ecological value and creation/strengthening of green infrastructure, e.g. hedgerows.

5.1.3 However, whilst as detailed above further survey work is required to clarify the full impact on certain species, it is envisaged that the impact of the proposed development could be mitigated via appropriate landscaping and scheme design, with the potential for ecological enhancement.

5.1.4 The table below provides a summary for levels of value for ecological features, the expected unmitigated impact and residual impact with the recommended mitigation. *All assessments are based upon the site layouts provided in Appendix 1.*

Ecological Feature	Scale of Value	Unmitigated Impact	Confidence Level	Residual or Long-Term Impact
Sites of International Importance	International	N/A	-	-
Sites of National Importance	National	**Unknown**	Likely	-
Sites of County Importance	County	Moderate-Minor Adverse	Likely	Minor Adverse
Sites of District Importance	District	Moderate-Minor Adverse	Likely	Minor Adverse
Habitats	Parish	Minor Adverse	Likely	Minor Adverse-Neutral
Green Infrastructure	Parish	Minor Adverse	Likely	Neutral
Great Crested Newts	**Unknown**	**Unknown**	Likely	-
Rare and/or Scarce Plants	Negligible	Negligible	Likely	-
Veteran Trees	Negligible	Negligible	Certain	-
Invertebrates	Parish	Minor Adverse	Likely	Neutral
Amphibians (including Great Crested Newts)	Parish	Minor Adverse	Likely	Minor Adverse-Neutral
Reptiles	Site Only	Neutral	Likely	-
Breeding Birds	**Unknown**	**Unknown**	Likely	-

Wintering Birds	Negligible	Negligible	Certain	-
Badgers	Site Only	Neutral	Likely	Neutral
Terrestrial Mammals	Parish	Minor Adverse	Likely	Neutral
Roosting Bats	**Unknown**	**Unknown**	Likely	-
Foraging/Commuting Bats	Parish	Minor Adverse	Likely	Minor Adverse-Neutral

5.2 Mitigation

Avoidance and Mitigation

5.2.1 The following mitigation is proposed to avoid and/or reduce the impacts of the development upon site features to acceptable levels. All mitigation recommendations are provisional and should be reviewed once further surveys have been completed.

General Precautionary Measures

- No groundworks or mobile plant movement within the root protection zone of trees. Any retained trees should be protected in accordance with British Standards Institution (2012) guidelines.
- Any construction materials stored at the site overnight or for long periods of time should be kept on hardstanding or raised off the ground, e.g. on pallets, to reduce the risk of being used by animals for shelter.
- Care should be taken to ensure any imported aggregate and soil onto the site is not contaminated with invasive plant material, e.g. Japanese knotweed and giant hogweed.
- Any trenches or excavations should be covered overnight or provide a ramp (no greater than 45 degrees in angle) to allow animals to escape. They should also be checked for animals prior to the continuation of works each morning or infilling.
- Any open or exposed pipe work should be capped to prevent animals from gaining access.
- Adequate dust and noise suppression facilities should be used on site throughout construction.
- Overnight working should be avoided to minimise noise and disturbance to nocturnal fauna, such as badgers, bats and breeding birds.
- Oils, fuels and chemicals should be stored in sealed containers and not be left out overnight.
- Care should be taken to avoid killing and/or injury to wild rabbits during the construction phase.

Habitats and Green Infrastructure

- Retention and strengthening of boundary hedgerows with native species, to preserve the site's existing contribution to local green infrastructure and allow continued use by breeding and foraging birds, foraging and commuting bats, amphibians and small mammals.
- To mitigate for the loss of vegetation and foraging opportunities, replacement or landscape planting should include native fruit and berry-bearing trees and shrubs, and plants which provide a good nectar source, to improve foraging resources available for a range of invertebrate species. Planting should be structurally diverse, i.e. comprise of trees, shrubs and ground layer planting, to benefit a wider variety of species.
- No additional input into the ponds or boundary ditches during the construction or operational phases of the development.
- Ensure a minimum 5m working buffer from retained habitats.
- The grassland and tall ruderal vegetation should be maintained at a short sward before and during construction.

- *No vegetation should be removed until further surveys have been completed and mitigation has been recommended.*

Bats - Foraging

- No external lighting of boundary features to allow continued use by commuting bats.
- Any external lighting should be designed in accordance with Bat Conservation Trust guidelines (Appendix 5).

Other Protected Species

- New fencing installed should be made permeable to wildlife (e.g. hedgehogs) by providing 15cm x 15cm gaps or tunnels in the bottom of panels or gravel boards, and gates. This will provide connectivity between gardens for a range of species (see Appendix 6).

Compensation

5.2.2 No compensatory habitat creation or management can be recommended until further surveys have been completed.

Enhancement

5.2.3 Whilst avoidance and mitigation measures are required to reduce the impacts of the proposed development upon ecological features, site enhancements can be made to improve the quality of the site for native flora and fauna post-development. These enhancements can often be employed within other aspects of the development, such as the provision of SuDS features or public green space.

5.2.4 Habitat enhancements are of most benefit to wildlife, whilst small-scale enhancements generally target individual species or a set of species. Potential opportunities specific to the proposed development site are provided below.

Enhancement	Species Benefitted
Creation of artificial hibernation sites to be created using log piles and heaps of stone, brick rubble and soil, and located in areas that are likely to be free from future disturbance. Log piles should be stacked adjacent to retained areas of cover such as scrub, tall ruderal vegetation or hedgerow, and be approximately 1m in height. These could be incorporated into a garden feature or public open space, such as a rockery.	Reptiles, terrestrial mammals, amphibians
Installation of 1No. insect hotel, e.g. Schwegler Clay and Reed Insect Nest, or solitary beehive within the garden of the new dwelling.	Invertebrates
Installation of 25No. bat bricks, e.g. Free Access Bat Box A, or Enclosed Bat Box B or C, within new dwellings at the site to vastly increase the number of roosting opportunities.	Bats

5.2.5 Implementation of the above enhancements would lead to a long term **moderate beneficial** impact upon the stated species.

5.3 Further Studies

Recommended Surveys

5.3.1 Further information is required to fully assess the impact of the proposed development upon some protected species prior to planning permission being obtained. The recommended further surveys include:

- **Environmental DNA (eDNA) Survey** – Analysis of water samples from Ponds 1 and 2, to determine presence of great crested newt through detection of environmental DNA, e.g. skin cells, faeces, etc. Likely absence can be presumed in any ponds where a negative result is obtained. *If a positive result is returned, great crested newt presence/likely absence surveys would be required for these ponds and any others within 500m which are assessed as being of 'Average' suitability or higher. This would comprise 6 visits between mid-March and mid-June, with at least half of the visits undertaken between mid-April to mid-May.*
- **Breeding Bird Survey** – Three surveys to be carried out to establish use of the site by breeding birds, including skylark; one each in April, May and June.
- **Pre-Construction Badger Check** – One pre-construction check for badgers on the site and areas within 30m of the site boundary should be undertaken no more than one month prior to construction. Optimal timing for surveys are March and October.
- **Preliminary Roost Assessment (PRA) –** If semi-mature/mature trees are likely to be impacted upon, i.e. where trees will be removed, root protection zones cannot be adhered to, or management is recommended by the arboriculturist, a Preliminary Roost Assessment of the trees must be undertaken. *However, no further survey should be necessary if no trees are to be impacted upon as a result of the development.*

5.3.2 If construction work does not commence within two years of this survey an update Preliminary Ecological Appraisal (PEA) should be carried out to re-assess the status of the site for protected species.

5.3.3 The proposed development falls into the IRZ categories and therefore requires the Local Planning Authority to consult with Natural England.

5.4 Species Licencing

5.4.1 A European Protected Species Mitigation (EPSM) licence would be needed to implement any impacts upon bats and great crested newts such as damaging or destroying a breeding or resting place or obstructing access to any place of shelter or protection (deliberately or recklessly).

6 References

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JNCC (2010) *Handbook for Phase 1 Habitat Survey - A Technique for Environmental Audit*. Reprinted by JNCC, Peterborough.

Norfolk Wildlife Service (2014) *Ecological Surveys (including Bat Surveys and Great Crested Newt Surveys) - Land off Norwich Road, Hingham*

Figures

Appendices

Appendix 1

Proposed Site Layout (as provided by client)

(AWAITING LAYOUT FROM CLIENT)

Appendix 2

Relevant Legislation

Please note: This section contains key details of legislation and planning policy applicable in England and Wales only (i.e. not including the Isle of Man, Scotland, Northern Ireland, the Republic of Ireland or the Channel Islands) and does not provide full details. It is provided for general guidance only. While every effort has been made to ensure accuracy, this section should not be relied upon as a definitive statement of the law. Further information can be obtained from the relevant authorities.

International Legislation: Species

EC Habitats Directive

The aim of the EC Habitats Directive is to protect various species of flora and fauna which are considered rare across Europe. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2017 (as amended) (formerly The Conservation of Habitats and Species Regulations 2010 (as amended), The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)) and The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended).

National Legislation: Species

The Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 (as amended) is a fundamental piece of national legislation which implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and implements the species protection obligations of Council Directive 2009/147/EC (formerly 79/409/EEC) on the conservation of wild birds (EC Birds Directive) in Great Britain. Various amendments have been made to the Wildlife & Countryside Act 1981 including the Countryside and Rights of Way (CRoW) Act (2000).

Other Legislation

Other legislative Acts affording protection to wildlife and their habitats include:

- Deer Act 1991
- Countryside and Rights of Way (CRoW) Act 2000
- Natural Environment & Rural Communities (NERC) Act 2006
- Protection of Badgers Act 1992
- Wild Mammals (Protection) Act 1996.

Species and species groups that are protected or otherwise regulated under the aforementioned domestic and European legislation, and that are most likely to be affected by development activities, include herpetofauna (amphibians and reptiles), badger, bats, birds, dormouse, invasive plant species, otter, plants, red squirrel, water vole and white clawed crayfish.

Conservation of Habitats and Species Regulations 2017 in relation to species

The Conservation of Habitats and Species Regulations 2017 (as amended) interpret the Birds Directive and Habitats Directive into English and Welsh law.

Explanatory notes relating to species protected under The Conservation of Habitats and Species Regulations 2017 (as amended) (which includes smooth snake, sand lizard, great crested newt and natterjack toad), all bat species, otter, dormouse and some plant species) are given below and consider the case in England only, with Natural England given as the appropriate nature conservation body. **These should be read in conjunction with the relevant species sections that follow.**

- In the Directive, the term 'deliberate' is interpreted as being somewhat wider than intentional and may be thought of as including an element of recklessness.

- The Conservation of Habitats and Species Regulations 2017 (as amended) does not define the act of 'migration' and therefore, as a precaution, it is recommended that short distance movement of animals for e.g. foraging, breeding or dispersal purposes, are also considered.
- In order to obtain a European Protected Species Mitigation (EPSM) licence, the application must demonstrate that it meets the following three 'tests':
    (i) the action(s) is(are) necessary for the purpose of preserving public health or safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequence of primary importance for the environment;
    (ii) that there is no satisfactory alternative; and
    (iii) that the action authorised will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.

Wild Mammals (Protection) Act 1996

Under the Wild Mammals (Protection) Act 1996 all wild mammals are protected against intentional acts of cruelty under the above legislation. It is an offence to:

- Mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

To avoid possible contravention, due care and attention should be taken when carrying out works (for example, operations near nests or burrows) with the potential to affect any wild mammal in this way, regardless of whether they are legally protected through other conservation legislation or not.

Bats

All species of bat are fully protected under The Conservation of Habitats and Species Regulations 2017 (as amended) through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species (e.g. all bats)
- Deliberate disturbance of bat species as:
    a) to impair their ability:
        (i) to survive, breed, or reproduce, or to rear or nurture young;
        (ii) to hibernate or migrate
    b) to affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place
- Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

Bats are also protected under the Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

Implication for development works

For works liable to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate), a European Protected Species Mitigation (EPSM) Licence, issued by the relevant countryside agency (e.g. Natural England), will be required. The licence is to allow derogation from the relevant legislation and to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Though there is no current case law the legislation may also be interpreted such that, in certain circumstances, important foraging areas and/or commuting routes can be regarded as being afforded de facto protection, for example, where it can be proven that removal of such features may have a major impact to maintaining the viability of a bat roost[1].

Birds

- With certain exceptions, all wild birds, their nests and eggs are protected under Sections 1-8 of the Wildlife and Countryside Act 1981 (as amended). Among other things, this makes it an offence to:
- Intentionally kill, injure or take any wild bird;
- Intentionally take, damage or destroy the nest of any wild bird while it is in use or being built;
- Intentionally take or destroy an egg of any wild bird:
- Sell, offer or expose for sale, have in his possession or transport for the purpose of sale any wild bird (dead or alive) or bird egg or part thereof.

Certain species of bird, for example the barn owl, black redstart, hobby, bittern and kingfisher receive additional special protection under Schedule 1 of the Act and Annex 1 of the European Community Directive on the Conservation of Wild Birds (2009/147/EC). This affords them protection against:

- Intentional or reckless disturbance while it is building a nest or is in, on or near a nest containing eggs or young;
- Intentional or reckless disturbance of dependent young of such a bird.

Implication for development works

Works should be planned to avoid the possibility of killing or injuring any wild bird, or damaging or destroying their nests, in order to avoid breaching the Wildlife and Countryside Act 1981 (as amended). To reduce the likelihood of nest destruction in particular, work should be undertaken outside the main bird breeding season (March to September[2]). Where this is not achievable any areas of habitat suitable for birds must be thoroughly checked for nests prior to vegetation clearance.

Species of bird listed on Schedule 1 are additionally protected against disturbance during the breeding season. It will therefore be necessary to ensure that no potentially disturbing works are undertaken in the vicinity of the nest. The most effective way to avoid disturbance is to postpone works until the young have fledged. If this is not achievable, it may be possible to maintain an appropriate buffer zone or standoff around the nest.

Herpetofauna (Amphibians and Reptiles)

Through their inclusion on Schedule 2 under The Conservation of Habitats and Species Regulations 2017 (as amended), the sand lizard *Lacerta agilis*, smooth snake *Coronella austriaca*, natterjack toad *Epidalea calamita* and great crested newt *Triturus cristatus* receive full protection. The pool frog *Pelophylax lessonae* is also afforded full protection under the same legislation. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of species listed on Schedule 2
- Deliberate disturbance of any Schedule 2 species as:
    a) to impair their ability:
        (i) to survive, breed, or reproduce, or to rear or nurture young;

1 Garland & Markham (2008) Is important bat foraging and commuting habitat legally protected? Mammal News, No. 150. The Mammal Society, Southampton.

2 It should be noted that this is the main breeding period. Breeding activity may occur out of this period (depending on the particular species and geographical location of the site) and as such due care and attention should be given when undertaking potentially disturbing works at any time of year.

- (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate
- b) to affect significantly the local distribution or abundance of the species

- Deliberate taking or destroying of the eggs of a Schedule 2 species
- Damage or destruction of a breeding site or resting place
- Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

With the exception of the pool frog, these species are also currently listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

Other native species of herpetofauna are protected solely under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). Species such as the adder *Vipera berus*, grass snake *Natrix natrix*, common lizard *Zootoca vivipara* and slow-worm *Anguis fragilis* are listed in respect to Section 9(1) & (5). For these species, it is prohibited to:

- Intentionally (or recklessly in Scotland) kill or injure these species
- Sell, offer or expose for sale, possess or transport for purpose of sale these species, or any part thereof.

Common frog *Rana temporaria*, common toad *Bufo bufo*, smooth newt *Lissotriton vulgaris* and palmate newt *L. helveticus* are listed in respect to Section 9(5) only which affords them protection against:

- Sale, offering or exposing for sale, possession or transport for the purpose of sale.

Implication for development works

A European Protected Species Mitigation (EPSM) Licence issued by the relevant countryside agency (e.g. Natural England) will be required for works liable to affect the breeding sites or resting places of those amphibian and reptile species protected under The Conservation Habitats and Species Regulations 2017 (as amended) (sand lizard, smooth snake, natterjack toad, great crested newt and pool frog). A licence will also be required for operations liable to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licences are to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Although not licensable, appropriate mitigation measures may also be required to prevent the intentional killing or injury of adder, grass snake, common lizard and slow worm, thus avoiding contravention of the Wildlife and Countryside Act 1981 (as amended).

Badger

Badgers *Meles meles* receive protection under The Protection of Badgers Act 1992 which consolidates the previous Badger Acts of 1973 and 1991. Under the Act it an offence to:

- Wilfully kill, injure, take, or, in England and Wales only, attempt to kill, injure or take a badger
- Cruelly ill-treat a badger, including use of tongs and digging
- Possess or control a dead badger or any part thereof
- Intentionally or recklessly damage, destroy or obstruct access to a badger sett or any part thereof
- Intentionally or recklessly disturb a badger when it is occupying a badger sett
- Intentionally or recklessly cause a dog to enter a badger sett
- Sell or offers for sale, possesses or has under his control, a live badger

Implication for development works

A Development Licence is required from the relevant countryside agency (e.g. Natural England, Natural Resources Wales or Scottish Natural Heritage) for any development works liable to affect an active badger sett, or to disturb badgers whilst in the sett. In Wales, the Welsh Government is responsible for issuing licences in relation to agricultural and forestry operations or works to maintain or

improve any existing watercourse or drainage works, or to construct new works required for the drainage of land, including works of defence against seawater or tidal water.

Depending on the nature of the works and the specifics of the sett and its environment, badgers could be disturbed by work near the sett even if there is no direct interference or damage to the sett itself. The countryside agencies have issued guidelines on what constitutes a licensable activity. N.B. there is no provision in law for the capture of badgers for development purposes and therefore it is not possible to obtain a licence to translocate badgers from one area to another.

Water vole

Water voles *Arvicola amphibious* receive protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under the Act it an offence to:

- Intentionally capture, kill or injure water voles
- Damage, destroy or block access to their places of shelter or protection (on purpose or by not taking enough care)
- Disturb them in a place of shelter or protection (on purpose or by not taking enough care)
- Possess, sell, control or transport live or dead water voles or parts of them (not water voles bred in captivity)

It is generally agreed that a place of shelter or protection used by water voles includes a network of active burrows and/or any nests that have been constructed within the burrow system or above ground amongst dense vegetation.

Implication for development works

Licences can't be issued for the specific purpose of development. A Displacement Licence issued by the relevant countryside agency (e.g. Natural England) will be required for works where intentional damage or destruction of water vole burrows, and/or disturbance to water voles occupying burrows, is caused, by use of the 'displacement' mitigation method prior to carrying out lawful development works.

For the purposes of this licence, 'displacement' means removal of vegetation followed, where appropriate, by a destructive search of the burrows, where the intention is to displace water voles from their burrows. Water draw-down or removal may be used in parallel with vegetation removal, where appropriate.

In some circumstances Natural England will consider issuing a licence in relation to a development proposal if the licensed action is going to provide a conservation benefit for water voles. If you need planning permission, this must be obtained prior to submitting a licence application.

Invasive Plant Species

Certain species of plant, including Japanese knotweed *Fallopia japonica*, giant hogweed *Heracleum mantegazzianum* and Himalayan balsam *Impatiens glandulifera* are listed on Part II of Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) in respect to Section 14(2). Such species are generally non-natives whose establishment or spread in the wild may be detrimental to native wildlife. Inclusion on Part II of Schedule 9 therefore makes it an offence to plant or otherwise cause these species to grow in the wild.

Implication for development works

Although it is not an offence to have these plants on your, it is an offence to cause these species to grow in the wild. Therefore, if they are present on site and development activities (for example movement of spoil, disposal of cut waste or vehicular movements) have the potential to cause the further spread of these species to new areas, it will be necessary to ensure appropriate measures to prevent this prior to the commencement of works.

International and National Legislation: Habitats

Statutory Designations: International

Special Protection Areas (SPAs) and Special Areas of Conservation (SACs)

Special Protection Areas (SPAs), together with Special Areas of Conservation (SACs) form the Natura 2000 network. The Government is obliged to identify and classify SPAs under the EC Birds Directive (Council Directive 2009/147/EC (formerly 79/409/EEC)) on the Conservation of Wild Birds).

- ***Special Protection Areas*** are areas of the most important habitat for rare (listed on Annex I of the Directive) and migratory birds within the European Union. Protection afforded SPAs in terrestrial areas and territorial marine waters out to 12 nautical miles (nm) is given by The Conservation of Habitats & Species Regulations 2017 (as amended). The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended) provide a mechanism for the designation and protection of SPAs in UK offshore waters (from 12-200 nm).
- ***Special Areas of Conservation*** are areas which have been identified as best representing the range and variety of habitats and (non-bird) species listed on Annexes I and II to the Directive within the European Union. The Government is obliged to identify and designate SACs under the EC Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora). SACs in terrestrial areas and territorial marine waters out to 12 nm are protected under The Conservation of Habitats & Species Regulations 2017 (as amended). The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended) provide a mechanism for the designation and protection of SACs in UK offshore waters (from 12-200 nm).

Ramsar

Ramsar sites are designated under the Convention on Wetlands of International Importance. The Convention provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources, in particular it recognises wetlands as ecosystems that are globally important for biodiversity conservation. Wetlands can include areas of marsh, fen, peatland or water and may be natural or artificial, permanent or temporary. Wetlands may also incorporate riparian and coastal zones adjacent to the wetlands. Ramsar sites are underpinned through prior notification as Sites of Special Scientific Interest (SSSIs) and as such receive statutory protection under the Wildlife & Countryside Act 1981 (as amended) with further protection provided by the Countryside and Rights of Way (CRoW) Act 2000. Policy statements have been issued by the Government in England and Wales highlighting the special status of Ramsar sites. This effectively extends the level of protection to that afforded to sites which have been designated under the EC Birds and Habitats Directives as part of the Natura 2000 network (e.g. SACs & SPAs).

Statutory Designations: National

Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNR)

Sites of Special Scientific Interest are nationally important areas of special scientific interest, designated for their flora, fauna, or geological or physiographical features, under the National Sites and Access to the Countryside Act 1949 and latterly the Wildlife & Countryside Act 1981 (as amended). National Nature Reserves are declared by the countryside agencies under the same legislation. As well as underpinning other national designations the system also provides statutory protection for terrestrial and coastal sites which are important within a European context (Natura 2000 network) and globally (such as Wetlands of International Importance). See subsequent sections for details of these designations. Improved provisions for the protection and management of SSSIs have been introduced by the Countryside and Rights of Way Act 2000 (in England and Wales).

Statutory Designations: County

Local Nature Reserves (LNRs)

LNRs are statutory sites of lower conservation value designated under national legislation. LNR designation is declared for sites holding special wildlife or geological interest at a local level and are managed for nature conservation, and provide opportunities for research and education and enjoyment of nature.

Non-Statutory Designations

Non-statutory sites designated under local legislation are areas considered to be of local conservation interest. These may be designated by local authorities as ***Local Wildlife Sites (LWS)***, also known as ***County Wildlife Sites (CWS), Local Nature Conservation Sites (LNCS), Sites of Biological Importance (SBIs)*** or ***Sites of Importance for Nature Conservation (SINCs)***. may vary between counties.

Together with the statutory designations, these are defined in local and structure plans under the Town and Country Planning system and are a material consideration when planning applications are being determined. The criteria for designation and the level of protection afforded to these sites through local planning policies and development frameworks may vary between counties.

National Planning Policy

The National Planning Policy Framework (NPPF)

The National Planning Policy Framework (NPPF) replaced Planning Policy Statement (PPS9) in April 2012 as the key national planning policy concerning nature conservation. The NPPF emphasises the need for suitable development and specifies the need for protection of designated sites and priority habitats and priority species. An emphasis is also made for the need for ecological networks via preservation, restoration and re-creation. The protection and recovery of priority species – those listed as UK Biodiversity Action Plan priority species – is also listed as a requirement of planning policy.

In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that:

- Designated sites are protected from adverse harm;
- Planning permission is refused where significant harm from a development cannot be avoided, adequately mitigated, or, as a last resort, compensated for;
- Opportunities to incorporate biodiversity in and around developments are encouraged;
- Planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland; and
- Protection should be given to biodiversity within areas designated for their landscape value to include National Parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to landscape and scenic beauty.

The Natural Environment and Rural Communities (NERC) Act 2006, (as amended)

The Natural Environment and Rural Communities (NERC) Act came into force on 1st October 2006. Section 40 of the Act requires all public bodies to have regard to biodiversity conservation when carrying out their functions. The Act includes a list of habitats and species of 'principal importance for the conservation of biodiversity' in England. They are referred to in this report as ***Species of Principal Importance and Habitats*** or ***Principal Importance***. Local Authorities are required to consider the needs of these habitats and species when making decisions such as on planning application A developer must show that their protection has been adequately addressed within a development proposal.

Local Planning Authority's planning policy

The Local Planning Authority has policies relating to biodiversity conservation. For details, please see the planning website for the relevant authority.

Regional and Local BAPs

Many local authorities in the UK have also produced a local Biodiversity Action Plan (LBAP) at the County or District level. For details, please see the planning website for the relevant authority.

The Hedgerow Regulations 1997

The Hedgerow Regulations 1997 are intended to protect 'important' countryside hedgerows from destruction or damage by controlling their removal through a system of notification. A hedgerow is considered important if it:

- has existed for 30 years or more; and
- satisfies at least one of the criteria listed in Part II of Schedule 1 of the Regulations.

Schedule 1 criteria are related to the presence of protected plants and animals, or a high diversity of woody species and other qualifying features, e.g. connectivity to other hedgerows, woodlands or ponds, and the presence of standard trees.

Under the Regulations, it is a criminal offence to remove or destroy certain hedgerows without permission from the local planning authority. Countryside hedgerows are defined as those on or adjoining:

- common land;
- village greens;
- SSSIs (including all NNRs, SPAs and SACs);
- LNRs, and;
- land used for agriculture, forestry or the breeding or keeping of horses, ponies or donkeys are covered by these regulations.

Garden hedgerows, e.g. within or marking the boundary of the curtilage of a dwelling-house, are exempt from The Hedgerow Regulations.

Species Legislation

The following table provides an overview of legislation regarding species.

Protected Species	Legislation			
	Wildlife & Countryside Act, 1981	The Conservation of Habitats and Species Regulations, 2010	Natural Environment & Rural Communities (NERC) Act, 2006	Protection of Badgers Act, 1992
Plants (certain 'rare' species)	✓	✓[3]	✓	
Invertebrates (certain 'rare' species)	✓	✓[4]	✓	
White-clawed Crayfish	✓		✓	
Great Crested Newt, Natterjack Toad, Pool Frog	✓	✓	✓	
Other amphibians	✓[5]		✓	
Sand Lizard, Smooth Snake	✓	✓[6]	✓	
Other reptiles	✓[7]		✓	
Barn Owl	✓[8]	✓	✓	
Breeding Birds	✓	✓	✓	
Wintering Birds (certain 'rare' species)	✓	✓	✓	
Bats	✓	✓	✓	
Dormouse	✓	✓	✓	
Water Vole	✓		✓	
Otter	✓	✓	✓	
Badger				✓

3 Nine species present in the UK with very specialised habitat requirements are European Protected Species
4 Fisher's Estuarine Moth, Large Blue Butterfly and Lesser Whirlpool Ram's-horn Snail are European Protected Species
5 The four other native amphibian species (smooth and palmate newts, common frog and common toad) are protected against trade only under this act.
6 Smooth Snake and Sand Lizard are European Protected Species
7 The four other native reptile species (common lizard, slow worm, grass snake and adder) are protected against intentional killing, injuring and trade under this act.
8 Barn owl are a Schedule 1 species and afforded greater protection than provided as standard under the WCA 1981.

Appendix 3

Valuing Ecological Receptors: scale of value (based on Hill et al, 2005)

Value	Examples
International	Statutory sites designated under international conventions or related national legislation, for example: ▪ Wetlands of International Importance (Ramsar sites) ▪ Special Areas of Conservation (SAC) ▪ Special Protection Areas (SPA)
National	Statutory sites designated under national legislation, for example: ▪ Sites of Special Scientific Interest (SSSI) (England, Wales, Scotland) ▪ National Nature Reserves (NNR) (UK) Significant viable areas of habitats, or populations or assemblages of species of principal importance for the conservation of biodiversity: England and Wales (Section 41 species and habitats) of such size and quality as might qualify for SSSI designation. Populations or assemblage of Red Listed, Rare or Legally Protected Species, as might qualify for SSSI designation, for example: ▪ Species of conservation concern, ▪ Red Data Book (RDB) species ▪ Birds of Conservation Concern (Red List species) ▪ Nationally rare and nationally scarce species ▪ Legally protected species
County	Statutory sites of lower conservation value designated under national legislation, for example: ▪ Local Nature Reserves (LNR) (UK) Non-statutory sites designated under local legislation, for example: ▪ County Wildlife Sites (CWS) ▪ Local Wildlife Sites (LWS) ▪ Roadside Nature Reserves/protected roadside verges (RNR) Viable areas of habitat or populations of species of principal importance for the conservation of biodiversity: England and Wales (Section 41 species and habitats) of such size and quality as might qualify for designation at the county level. Other non-designated sites which meet the criteria for designation at this level.
District/ Borough	Sites or features not meeting criteria for County designation, but that are considered to appreciably enhance the habitat resource within the context of the local District or Borough, for example:

	▪ Ancient woodland ▪ Diverse/ecological valuable and cohesive hedgerow network ▪ Significant cluster or group of ponds ▪ Veteran/Ancient trees Viable areas of habitat or populations of species of principal importance for the conservation of biodiversity: England and Wales (Section 41 species and habitats) but not qualifying for designation at the county level.
Parish	Areas of habitat considered to appreciably enhance the ecological resource within the context of the local parish, e.g. species-rich hedgerows. Small areas of habitat or populations of species of principal importance for the conservation of biodiversity: England and Wales (Section 41 species and habitats)
Site only	Ecological feature or resource not meeting any of the above criteria.

Note: there is much overlap in designations and lists of important species, and many sites, habitats and species appear on several. Where a site, habitat or species has multiple designations or levels of protection, normally the highest level would be the level at which impacts are assessed.

Appendix 4

Site Photos

Photograph 1 – Scrub habitat along the western boundary. The newly planted species-rich hedgerow can be seen. Photo looking north.

Photograph 2 – Parcel of arable land at the west of the site.

Photograph 3 – Tall ruderal vegetation at the west of the site. Heras fencing separates the proposed development site from the compound for the adjacent development.

Photograph 4 – Pond 1 along the southern boundary of the site. The pond was categorised as 'Average' in the HSI assessment. Further surveys are required.

Photograph 5 – Tall ruderal vegetation at the south of the site.

Photograph 6 – Section of wet ditch along the southern boundary of the site. The broadleaved woodland adjacent to the site can be seen.

Photograph 7 – Wet ditch along the southern boundary of the site.

Photograph 8 – Dry ditch bisecting the two parcels of arable land.

Photograph 9 – Large parcel of arable land at the east of the site. photo looking north.

Photograph 10 – Pond 2 at the north eastern corner of the site. The pond was categorised as 'Below Average' in the HSI assessment. Further surveys are required.

Photograph 11 – Scattered scrub along the northern boundary. Photo looking west.

Appendix 5

Artificial Lighting and Wildlife (Bat Conservation Trust)

Appendix 6

Link Your Garden (Hedgehog Street)

APPENDIX 4
HERITAGE ASSETS – PRELIMINARY ASSESSMENT OF SETTING AND POTENTIAL IMPACT OF DEVELOPMENT

Land South of Norwich Road, Hingham

Heritage Assets : Preliminary assessment of setting and potential impact of development

David Edleston BA(Hons) Dip Arch RIBA IHBC

Conservation Architect & Historic Built Environment Consultant

Tel : 01603 721025

May 2018

Cover photograph 01 : View into the site towards the south west from the north east corner on Norwich Road

1.0 Introduction

1.1 This report considers the potential impact of the proposed development of land South of Norwich Road, Hingham for approximately 80 residential dwellings on heritage assets, the purpose of which is to assist with preparing initial proposals for the development and to ensure that it is in accordance with the requirements of Section 12 of the NPPF. It identifies those heritage assets likely to be affected by the development and makes an initial assessment of their significance, including the contribution of setting and the likely impact of development on their significance. In order to minimise any harm to the setting of heritage assets, those issues which should be taken into consideration in designing the proposed scheme, are also set out.

1.2 The report has been commissioned by Abel Homes and prepared by David Edleston who is a member of the Royal Institute of British Architects and the Institute of Historic Building Conservation. He has over 30 years experience in dealing with design and development affecting the historic built environment in both the public and private sectors, including acting as an expert witness on cultural heritage at several major public inquiries; listed building casework; Conservation Area designation, character appraisals and enhancement schemes; preparation of design guidance and adoption as SPDs; Heritage Statements; Statements of Significance and Heritage Impact Assessments.

2.0 The Site and its Context

2.1 The site is located within the Parish of Hingham on the eastern side of the settlement. The B1108 Norwich Road forms the northern boundary of the site, beyond which lies a small industrial estate with a mix of office, light industrial and retail/trade uses and residential development on Lincoln Avenue. A detached dwelling lies adjacent to the north east corner of the site on Norwich Road. Open arable, agricultural land adjoins the eastern boundary and to the south, the boundary is formed by the large rear gardens of several residential properties, which form a predominantly linear development along Seamere Road, along with a number of agricultural buildings. A new residential development of 88 dwellings, The Hops, recently undertaken by Abel Homes forms the western boundary of the site.

02 : Site Location outlined in red *© Google maps*

3.0 Heritage Assets : Significance & Setting

3.1 The National Heritage List for England includes a total of 99 designated heritage assets within the Parish of Hingham, all of which are listed buildings with 2 Grade I listed; 6 Grade II* listed and 91 Grade II listed. The majority of these listed buildings are concentrated within the historic core of Hingham. There are no listed buildings within the proposed development site. However, there are two Grade II listed buildings, Blenheim Cottage and Lilac Farmhouse on Seamere Road which adjoin the southern boundary of the site. Although some distance away, the tower of the Grade I listed Church of St Andrew is visible from within the site and in a number of views when approaching the site from the east. The historic core of the settlement is also designated as a Conservation Area, with a further area around Mill Corner and Hall Moor Road. However, as the site is located some distance away from the Conservation Area boundary, it does not fall within the wider setting of the area and development will not therefore have an impact on its character and appearance.

3.2 **Blenheim Cottage, 28 Seamere Road** : Blenheim Cottage is a Grade II listed, timber framed building dating from the 17th and 18th centuries with roughcast walls and a pantiled roof. Its significance is derived mainly from its traditional vernacular character and the use of locally distinctive materials and details which include gabled dormers, chimney and bargeboards. There are several later alterations and additions including a gabled porch to the front and extensions to the side and rear.

03 : Blenheim Cottage looking to north west from Seamere Road

3.3 **Lilac Farmhouse, 42 Seamere Road** : Lilac Farmhouse is a Grade II listed, timber framed building dating from the 17th century being partly roughcast and partly weatherboarded externally with a black glazed pantile roof. Its significance is derived from its architectural character, including local materials and details such as casement windows, boarded door and chimney along with an open hall to the west end and exposed timber framing internally. It is also of historic significance and is recorded as the Friends Meeting House on the 1883 edition of the OS Map.

04 : Lilac Farmhouse looking north from Seamere Road

3.4 **Church of St Andrew, Attleborough Road** : The Church of St Andrew is a Grade I listed building dating from the 14th century being a fine example of Decorated Architecture. Built of flint with stone dressings and a slate roof, it has a nave with clerestorey, north and south aisles, chancel and a large west tower. Its significance is derived from its considerable architectural, historic, archaeological and artistic interest as the most important building in Hingham having been the spiritual focus of community life for centuries and a key part of the townscape and traditional scene.

05 : Church of St Andrew looking east from Attleborough Road

3.5 **Setting of Blenheim Cottage** : Blenheim Cottage is set back a short distance from its southern boundary which adjoins the road, in a slightly elevated position. Its immediate setting is formed by its relationship with Seamere Road, where it can be experienced from a variety of viewpoints when travelling in either direction along the road. There are several trees and hedges which surround the building and the extent to which it can be seen is subject to seasonal change, although its roof and dormers are likely to be visible to some degree above the southern hedge at most times of the year. The building is clearly visible when passing the access drive where there are more open views and it can be seen alongside the outbuilding. The northern boundary to Blenheim Cottage is formed by several trees and hedgerows and there are views towards the north on the east and west sides, where the building can be seen in conjunction with the boundary trees and hedgerows along the horizon, with open land beyond. The overall setting of the building is distinctly rural in character and historic maps illustrate that its setting has remained relatively unchanged over time.


06 & 07 : Approach to Blenheim Cottage looking west along Seamere Road


08 & 09 : More open views of the building on approach to the access drive


10 & 11 : View looking north and to the east along Seamere Road where the roof and dormers are visible above the southern hedge, although the extent to which the building is visible is subject to seasonal changes in surrounding vegetation

12 & 13 : The wider setting of Blenheim Cottage looking north on the west and east sides of the building. Here it can be seen in conjunction with the trees and hedgerows which form the northern boundary on the horizon and open land beyond

3.6 **Setting of Lilac Farmhouse** : Lilac Farmhouse is set back from its southern boundary which adjoins Seamere Road on a slightly elevated level. Its immediate setting is experienced when travelling along the road in either direction, where there are glimpses of the building from the access drive along with other outbuildings and views over the southern hedge. There are several trees and hedges surrounding the building and the degree to which it is visible is subject to seasonal changes. Its eastern boundary adjoins open farmland and due to the proximity of the building to this boundary, the east gable is clearly visible in this open setting from Seamere Road against a backdrop of mature trees which extend to the north and south. Looking to the west from Seamere Road, Lilac Farmhouse can also be seen in the same view as the tower of the Church of St Andrew which lies further to the north. The overall setting of Lilac Farmhouse is distinctly rural in character where it is experienced as a traditional built feature in the wider landscape. Historic maps illustrate that this has remained relatively unchanged over time. A recent change has been the residential development at The Hops where the roofscape is just visible on the horizon in some views towards the west from Seamere Road.

14 & 15 : The wider rural landscape setting of the farmhouse in views to the west


16 : East gable of Lilac Farmhouse adjoining the boundary with the open agricultural landscape & 17 : Looking west from Seamere Road where Lilac Farmhouse and the tower of the Church of St Andrew can be seen in the same view


18 & 19 : Immediate setting of the farmhouse from Seamere Road where it can be seen alongside other outbuildings and from the access drive


20 & 21 : Views looking north from Seamere Road where there are various glimpses of Lilac Farmhouse depending upon the season and views over the southern boundary hedge

3.7 **Setting of Church of St Andrew** : The Church of St Andrew is a prominent and distinctive building in the rich and varied townscape of Hingham. Its setting is wide with the tower being a focal point in many key views. The setting of the church makes an important contribution to its significance and the ability to experience the building in the wider landscape, particularly as landmark feature in the approaches to Hingham, creates a strong sense of place. Travelling towards Hingham from the east along the Norwich Road, the church tower first becomes visible as a feature on the horizon near the junction with Seamere Road, where it is seen in an open, rural landscape setting. The church tower continues to remain in view for some distance on the approach to Hingham, although its setting varies, becoming more urban in character, with surrounding trees and the roofscape of residential development forming the foreground. However, the tower continues to remain the dominant visual element in these views.

22 & 23 : Approaching Hingham from the east along Norwich Road, where the tower of the Church of St Andrew first comes into view near the junction with Seamere Road, in an open, rural landscape setting

24 & 25 : Further along Norwich Road, the built-up character of Hingham begins to be revealed as the setting, in the wider rural landscape, although the tower remains a key feature on the skyline


26 & 27 : From the first building on the south of Norwich Road at the entrance to Hingham, the setting begins to become more urban in character


28 : At some points along Norwich Road the tower is seen in a more rural setting with mature trees and hedgerows along the roadside & 29 : From within the proposed development site, the roofscape of recent residential development and mature trees form the setting of the church


30 & 31 : Views looking west across the proposed development site where the urban edge created by recent residential development is the setting for the church tower

4.0 Key Policies & Guidance

4.1 In relation to heritage assets, the following key policies and guidance are relevant when considering the proposed development of the site :-

4.2 **Planning Practice Guidance : Conserving & enhancing the historic environment** sets out the main legislative framework for planning and the historic environment and states : *'Any decisions relating to listed buildings must address the statutory considerations of the Planning (Listed Buildings and Conservation Areas) Act 1990 (see in particular sections 16,66 and 72) as well as satisfying the relevant policies within the National Planning Policy Framework and the Local Plan'.*

4.3 **Section 66(1)** of the **Planning (Listed Buildings and Conservation Areas) Act 1990** states *'In considering whether to grant planning permission for development which affects a listed building or its setting, the local planning authority or as the case may be, the Secretary of State, shall have regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses'.*

4.4 **National Planning Policy Framework**, Section 12 : Conserving & enhancing the historic environment

4.5 **Joint Core Strategy for Broadland, Norwich and South Norfolk, Adopted March 2011, amendments adopted January 2014** : Policies 1 and 2 address the protection of environmental assets (including built environment and heritage assets) and promote good quality design that respects the historic environment taking account of conservation area appraisals and the wider landscape.

4.6 **South Norfolk Local Plan, Development Management Policies Document, Adoption Version, October 2015 :** Policy DM 4.10 Heritage Assets

4.7 **Historic England Guidance : Historic Environment Good Practice Advice in Planning : GPA2 'Managing Significance in Decision-Taking in the Historic Environment' July 2015 and GPA3 'The Setting of Heritage Assets' Dec 2017**

5.0 Potential Impact and Key Considerations for Development of the Site

5.1 The site lies within the setting of the Church of St Andrew and adjoins the boundary of Blenheim Cottage and Lilac Farmhouse. Development of the site therefore has the potential to affect the setting of these designated heritage assets.

5.2 Although Blenheim Cottage is not visible from within the site, there are views to the north from Seamere Road where the trees which form the southern boundary of

the site can be seen as part of the wider setting to the east and west (see photos 12 & 13). At present these trees and hedgerows are visible on the horizon with open land beyond, which contribute to the rural character of the wider setting of Blenheim Cottage. Although subject to seasonal changes, development of the site has the potential to change this setting to a more urban character, with buildings, particularly the roofscape being visible through the trees. This should be taken into account in designing any proposed layout and consideration given to height and scale and the scope for setting buildings away from the boundary. Additional planting should also be considered to reinforce the existing screening and retain the existing rural character of the wider setting of Blenheim Cottage.

5.3 Lilac Farmhouse is not visible from within the site. However, there are views to the west from Seamere Road where the farmhouse is seen along with a number of trees and hedgerows which form the eastern boundary of the site (see photo 14). Although the roofscape of recent residential development can just be seen on the horizon in some views, the wider setting of Lilac Farmhouse is predominantly rural in character. There are also some views to the west where both Lilac Farmhouse and the tower of the Church of St Andrew can be seen (see photo 17). Development of the site has the potential to change the existing rural setting to one with a more urban character. Consideration should be given to scale, height and the scope for positioning buildings back from the boundary along with additional tree screening to minimise any harmful impact on the wider rural setting whilst ensuring that key views of the church tower are retained.

5.4 The tower of the Church of St Andrew is an important landmark feature on the approach to Hingham from the east and its wider setting changes from a distinctly open, rural character to a more urban one as the built up area of Hingham is reached. There are also views of the tower from within the site where its setting is formed by the recent residential development and mature trees (see photo 29). The eastern boundary of the site runs alongside the first building on the south of Norwich Road (see photos 26 & 27). The layout of any development should be informed by key views of the church tower with a view to ensuring that they are retained. The position, scale, height, form and massing of any new buildings should be carefully considered, particularly along the eastern boundary to minimise the impact on the setting of the church and avoid obscuring views of the tower on the approach to Hingham. Consideration should also be given to the interface between any built development and open land to the east of the site through the introduction of planting to avoid a hard urban edge and create a rural character to the wider setting of the church on the approach to and at the point of arrival in Hingham.

5.5 Key legislative and policy considerations include Section 66(1) of the Planning (Listed Buildings and Conservation Areas) Act 1990 and the desirability of preserving the setting; Section 12 of the National Planning Policy Framework, particularly paragraph 132 relating to the impact of development on setting; and Policy DM 4.10

Heritage Assets of the South Norfolk Local Plan, Development Management Policies Document.

5.6 Any new development will affect the setting of the Church of St Andrew, which is a Grade I listed building and as a consequence, there is a statutory requirement for the Local Planning Authority to consult Historic England on any proposals, for their views on the impact of the development.

5.7 A planning application will need to be supported with a Heritage Statement in accordance with paragraph 128 of the National Planning Policy Framework. This should include an assessment of the significance of the heritage assets affected by the development including the contribution of setting together with an assessment of the impact of the development. The statement will need to provide justification for the proposals including mitigation measures included in the development to minimise any harm.

Appendix A : Statutory list descriptions

Blenheim Cottage, Seamere Road, Hingham

List entry number : 1171755

Grade : II

Date first listed : 27 January 1977

HINGHAM SEAMERE ROAD TG 00 SW 1/108 Blenheim Cottage (No 28) 27.1.77 II

House. C17/18. Timber frame, now roughcast and much altered. Two storeys. Pantile roof with gable ends. Two gabled dormers with new casements with glazing bars. Two new ground floor two light casements with glazing bars. Modern gabled porch at centre. Lean-to at each end. Rebuilt chimney stack. Modern additions at rear.

Lilac Farmhouse, 42 Seamere Road, Hingham

List entry number : 1051153

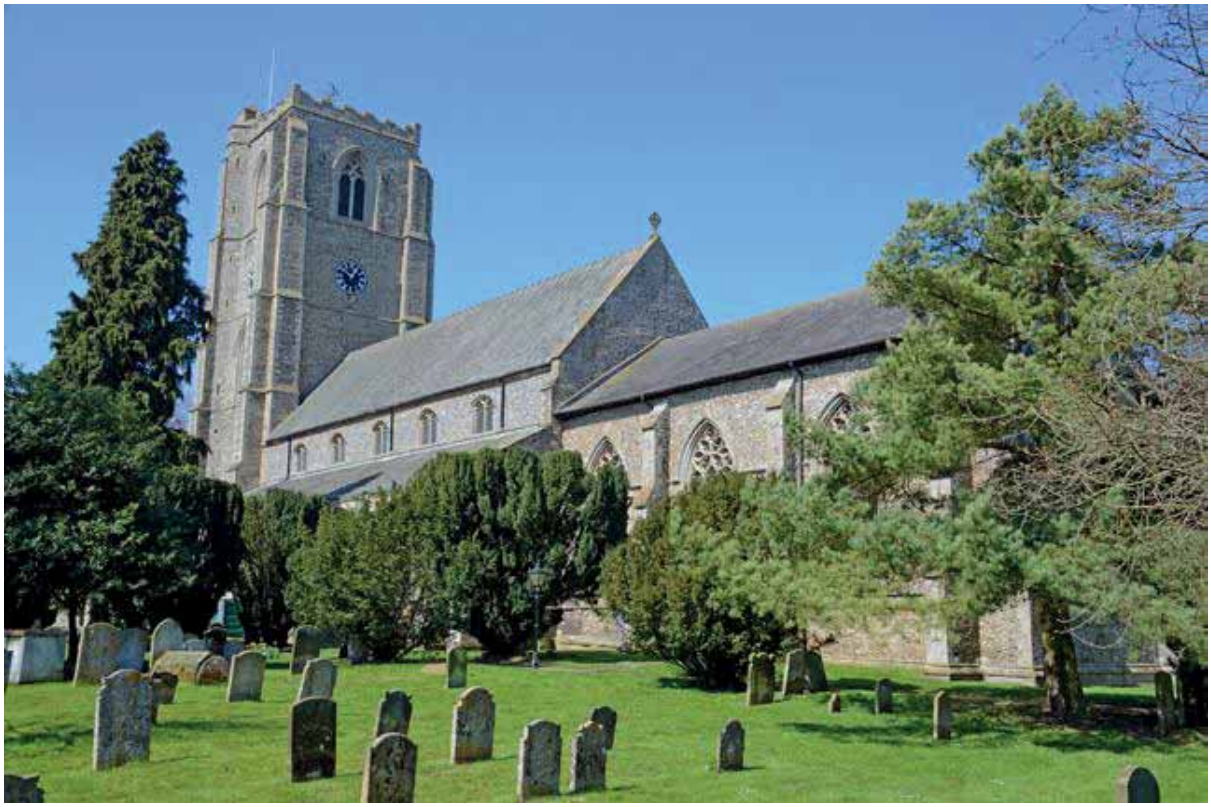
Grade : II

Date first listed : 27 January 1977

HINGHAM SEAMERE ROAD TG 00 SW 1/115 Lilac Farmhouse (No 42) 27.1.77 II

House. C17. Timber framed, roughcast, west half weatherboarded. Black glazed pantile roof with gable ends. Two storeys. West end open hall and reputed to have been Quaker's Meeting House. At time of survey, 1976, being renovated. First floor three new 2-light casements with glazing bars. Ground floor right hand large 3-light casement and left hand 4-light French window, both with glazing bars. Central vertical boarded door. Large brick chimney stack at east end rendered. Later outshut at rear. Interior : Exposed timber framing and chamfered beams, west end open hall.

Church of St Andrew, Attleborough Road, Hingham



List entry number : 1051162

Grade : I

Date first listed : 26 November 1959

HINGHAM ATTLEBOROUGH ROAD TG 0202-0302 (east side) 3/6 26.11.59. Church of St Andrew.

GV I

Parish Church. Built 1319-59. A fine large Decorated church. Flint with stone dressings and slate roofs. Comprising :- nave with clerestorey, north and south aisles, chancel, two-storey north east vestry, south porch and west tower. The large west tower in five storeys has set-back buttresses, embattled parapet, corner turret, patterned frieze at base and over west doorway, and Decorated windows and 11 openings. Ballflower friezes below eaves of aisles and nave. Long chancel with much altered east window containing German glass of circa 1500. Decorated chancel and aisle windows. Perpendicular clerestorey windows. Interior : tall arcades of six bays, hammerbeam roof. Thomas Lord Morley tomb is an extremely fine C15 wall monument.

APPENDIX 5
FLOOD RISK AND DRAINAGE STRATEGY

RichardJackson
Engineering Consultants

Our Ref: 48851/JDP/MJD
Your Ref:

02 March 2018

Mr D Piper
Abel Homes Ltd
Neaton Business Park
Norwich Road
Watton
Norfolk
IP25 6JB

Dear Mr Piper,

Re: Land South of Norwich Road, Hingham– Flood Risk Assessment

I refer to our instructions to assess the preliminary surface water drainage strategy for the above site as indicated on **Figure 1**. The referenced "Phase 1" development relates to the neighbouring existing/being constructed Abel Homes development to the west of this site.

The site compromises of greenfield land and is approximately 13ha in size. The main access will be off Norwich Road, with a potential pedestrian link and vehicular access to the west into Phase 1. Our assessment for a surface water strategy on the land south of Norwich Road, Hingham, has been made on the basis of approximate number of 250 proposed dwellings.

The Flood Risk and Drainage Strategy has been carried out in accordance with the National Planning Policy Framework (NPPF) – Planning Practice Guidance on Flood Risk and Coastal Change, published by the Department for Communities and Local Government (DCLG). Reference is also made to the Norfolk County Council, Lead Local Flood Authority (LLFA) Guidance, dated April 2017.

The topography of the site falls to the low point in the south western corner, which is at approximately 44.9m AOD. The high point is in the north eastern corner which is at the 57.4m AOD.

Proposed Development

The site is proposed for residential development and the total site area is approximately 13Ha. The site has an existing Public Right of Way (PROW) that creates a small south western parcel of approximately 1.6Ha, and this contains the surface and foul water disposal from the phase 1 development that forms the western boundary of the site.

For the purposes of establishing the likely drainage parameters for the site, the site area of 13Ha, with a density of impermeable area at 40% to 50%, will be

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used to provide a range of necessary water attenuation and/or storage. Additionally, an area of 10% of the overall site area will be assumed to be highways.

Existing Flood Sources

When assessing any development site, there are four potential sources of flooding which need to be considered both in terms of their effect on the development itself and its end users and that caused to others. The main sources of flooding that need to be considered are as follows:

- Fluvial and/or tidal flooding;
- Ground water;
- Overloading of the existing drainage network;
- Surface water flooding.

Fluvial and Tidal Sources of Flooding

From investigation of the existing watercourses and the Environment Agency (EA) floodplain maps, there are no identified influences of fluvial or tidal flooding at the site and the site is in Flood Risk Zone 1. Therefore this has not been investigated further. An indication of the associated EA mapping is shown on **Figure 2**.

Groundwater Vulnerability

The ground investigation from the Phase 1 development produced by Plandescil Consulting Engineers was used for an indicative assessment for the proposed development. There were trial holes undertaken in October 2014 to a maximum depth of 3m, and groundwater was not observed in any of the trial holes.

Additionally, Plandescil Consulting Engineers produced the FRA for the Phase 1 development which included mapping from the British Geological Survey showing the Hydrogeology mapping. The mapping indicates that the groundwater will be between 40 and 50 metres above ordnance survey datum. Using the data from the trial holes located in Phase 1, it is believed that the groundwater will be approximately 5m below ground level at the lowest point in the site.

The EA defines groundwater Source Protection Zone around all major groundwater abstraction points. Source Protection Zones (SPZ) are defined to protect areas of groundwater that are used for potable supply, (including mineral and bottled water) or for use in the production of commercial food and drinks. There are no groundwater source protection zones in the vicinity of the site. For the EA groundwater source protection zones of the site, see **Figure 3.**

In addition, the Groundwater Vulnerability Zone Maps see **Figure 3** show that the site is predominantly in the medium risk for groundwater vulnerability. The north east corner of the site is shown to be a ‘soluble rock risk’, this will require further investigation with trial pits to identify the geology of the site.

If soluble rocks, such as chalk, are present within the site then further consideration will be required for distances of any infiltration methods and their proximity to permanent buildings. This does not preclude the use of soakaways, however, further precautions may need to be made during design and construction.

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The surface water storage for Phase 1 is in the south western corner of that Phase. Due to the topography of the site, surface water storage will be located in the south west of this additional Phase. Infiltration testing to BRE digest 365 will need to be undertaken to obtain accurate information.

Existing Surface Water System and Ground Conditions

Abel Homes Ltd have provided us with the surface water drainage strategy for the Phase 1 development to the west and it shows that Highway surface water sewers, lead to cellular storage crates before discharging into an existing ditch in the south west corner of the development site.

Using the Plandescil report previously mentioned, the infiltration rates based on the Phase 1 report, suggests permeability of soils ranging from 7.7×10^{-6} m/s to 9.47×10^{-6} m/s. A ground investigation of Phase 1 in 2014 provided data indicating no water strike at 3.0m below ground level, thus, soakaways or other infiltration devices could be utilised on the site, it is likely that this strategy could be used for the additional proposed site also.

The existing surface water flooding for the 1 in 100 and 1 in 1000 year events have been investigated and are shown on **Figure 4** and **Figure 5** respectively. There is some minor flooding within in the site for the 1 in 100 year event and consideration to this area of the site is to be kept clear of development and managed for potential exceedance events. The 1 in 1000 year event shows some amounts of surface water flooding, likely due to the topography of the site, the proposed surface water drainage strategy will incorporate attenuation of water and therefore should mitigate this risk within the new development.

Any new systems of drainage should consider the flow from the site and suitable SuDS to accommodate storage before discharging into the ground.

Flood Risk Impact

It has been determined using the Ordnance Survey and topographical survey level information available, that surface water runoff from the site will occur in a south westerly direction.

A proportion of rainfall falling across the existing site will also infiltrate into the soils of the site given the current ground conditions. A proportion of this infiltrating surface water will also contribute to any groundwater recharge. Ground permeability has been checked for the site as mentioned.

To determine the rainfall data for the site when undertaking the detail design, the Flood Estimation Handbook (FEH) data would be used for establishing the critical rainfall scenario where this is greater than 1 hour. The FEH data will be used and only Rainfall Studies Report rainfall (FSR) used for storms of less than 1 hour.

If the drainage calculations show a need for critical storms under 1 hour, then the FSR will be used. The FEH data normally provides higher rainfall intensity parameters however, for the assessment at this stage the FEH rainfall data will provide a strategic level of storage or attenuation required for the development sites.

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Soil Types and SuDS Suitability

The NPPF and appropriate guidance indicates that the FRA should identify the risks of flooding and manage those risks to ensure the site remains safe. One way to manage the flood risk is to incorporate Sustainable Drainage Systems (SuDS) within proposals for new sites. There is a general requirement that SuDS be installed where appropriate, in order to limit the amount of surface water runoff entering drainage systems and to return surface water into the ground to follow its natural drainage path. This advice is also replicated in the SuDS Manual C753 (2015).

The details of the ground conditions have yet to be determined through a full ground investigation but advice on the use of SuDS/soakaways is such that they could be used. The permeability of the site has been determined as being between 7.7 x 10^{-6} m/s to 9.47 x 10^{-6} m/s based on the soil type for the neighbouring site.

SuDS Assessment

The suitability of the use of SuDS on the site is based on the criteria as set out in the Ciria document C753 dated November 2015, where in Chapter 26 the appropriateness of SuDS can be established. The table below suggests the potential SuDS selection for Highways and Private Drives and also for Private Roof

Table A – SuDS Selection

Type of SuDS	Highways & Private Drives TSS=0.5 Metal=0.4 Hydrocarbons=0.4	Private Roofs TSS=0.2 Metals=0.2 Hydrocarbons=0.05
Filter Strip		✓
Filter Drain		✓
Swale	✓	✓
Permeable Paving	✓	✓
Detention Basin	✓	✓
Pond	✓	✓
Wetland	✓	✓
Soakaway (surrounded with infiltration materials)		✓
Infiltration Trench		✓

Using the **Table A** above which is derived from **Table 26.3** and **26.4** of Ciria C753 then it can be concluded that the better SuDS' choices for the site are as set out below;

Private Drives – Permeable paving to soakaway

Residential Roofs – To soakaway or permeable paving

Highways – To Swales or Infiltration Basin or Detention Basin

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A surface water strategy is therefore proposed to utilise the permeable paving and soakaways for the drives and private roof areas and swales and/or infiltration basins for the highway water for events up to the 1 in 100 year storm event, plus climate change at 40%. This strategy is based on the SuDS management train and also the favourable soakage rates as previously indicated.

Flood Risk Management

Having determined that the soils across both sites do possess sufficient infiltration capacity for the use of infiltration devices, the methods of surface water disposal have been investigated, to determine the feasibility of discharging and treating the water prior to it entering the ground.

To determine the appropriate use of the SuDS features, the pollution indices were used to determine the type of SuDS to be used. For the purposes of the design for the site, which has yet to be detailed and is only at masterplan stage, a selection of likely solutions have been prepared for different house types, drive areas and widths of highway.

The private drives will provide permeable paving to act as a pollution treatment and then the water can be collected and drain towards the soakaway proposed for the private dwelling. The permeability rate of 7.77 x 10^{-6}m/s or 0.02797m/hr as indicated as the lower permeability rate will be used for a robust assessment. Suggested sizes for the private dwelling drainage are indicated on **Table B** below:

Table B – Indicative SuDS Storage Sizes

Dwelling Type	Dwelling Area (m^2)	Garage Area (m^2)	Private Drive Area (m^2)	Total Area (m^2)	1 in 100 year plus 40% CC Storage (LxWxH)m
A	48	N/A	42	90	2.5 x 3.5 x 0.8 Vol = 6.8m^3
B	56	23	29	106	2.0 x 3.5 x 1.2 Vol = 8.6m^3
C	65	45	19	129	2.5 x 3.5 x 1.2 Vol = 10.3m^3
D	116	45	124	285	5.5 x 3.0 x 1.6 Vol = 25.2m^3

The dwelling, garage and drive areas have been based on the Phase 1 layout, and the dwelling types that are used.

The highway water will be directed towards the swales and/or infiltration basins which are to be positioned in the Public Open Space in the south west corner of the site. The size will be determined by the exact dimensions of the roads and footways going to the swales/infiltration basin but an indication of the sizes are given in this Chapter. For purposes of being robust, a permeability rate of 7.77 x 10^{-6} m/s or 0.02797m/hr will be used.

For an estimated Highways SuDS sizing see **Table C** below which shows swales and **Table D** shows catchments of larger areas in infiltration basins:

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Table C – Highway Swale / Infiltration Design for smaller areas

Overall Highway Width (m)	Length of Highway (m)	Swale Profile	1 in100 year storm plus 40% CC	
			Depth (m)	Volume (m^3)
4.8 + 1.0 = 5.8m	10m	Side Slope = 1 in 4 Base Width = 1.0m	0.254	3.7
4.8 + 1.5 + 1.5 = 7.8m	10m	Side Slope = 1 in 4 Base Width = 1.0m	0.304	5.2
6.0 + 1.8 + 1.8 = 9.6m	10m	Side Slope = 1 in 4 Base Width = 1.0m	0.349	6.6

For an estimated Highways SuDS sizing see **Table D** below:

Table D – Highway Infiltration Basin Design for Larger areas

Overall Highway Width (m)	Length of Highway (m)	Basin Profile	1 in100 year storm plus 40% CC	
			Depth (m)	Volume (m^3)
5.8m	250m	Side Slope = 1 in 4 Area = 276m2	0.612	106
7.8m	250m	Side Slope = 1 in 4 Area = 320m2	0.654	151
9.6m	250m	Side Slope = 1 in 4 Area = 430m2	0.544	179

Table E – Highway Infiltration Basins / Detention Basins

Overall Highway Area	Potential Outflow	Area of Basin	1 in100 year storm plus 40% CC	
			Depth (m)	Volume (m^3)
0.216 Ha	0.8 l/s	186m^2	Approx. 0.8m	148
1.344 Ha	2.2 l/s	1370m^2	Approx. 0.8m	996

For the scenarios of drainage and areas required for the SuDs as outlined in Tables C & E, an indicative strategy is shown on Drawing **48851-PP-SK04**.

The alternative options shown on Table D are not indicated on the drawing but could be implemented across the site if required as an alternative.

Cont'd.../

Summary

It can be seen from the indicative ground conditions taken from the ground investigation produced for the site to the west of the proposed that infiltration is likely to be suitable. Further intrusive investigations are required in order to determine infiltration rates for the proposed, and confirm the underlying geology within the site boundary. If chalk is present within the site then, an easement distance from soakaways to buildings will have to be agreed with the LLFA.

An infiltration strategy, with above ground storage, would be in accordance with National and Local planning policy, by treating the water for quality and quantity on site, thus not creating a detrimental effect downstream of the site.

The sizes of the soakaways for the houses might be a little large to fit into back gardens, so if this is the case, then alternative arrangements for the water in line with the areas and volumes indicated for the highways could be introduced for the water from the private dwellings. Sufficient land must be set aside for accommodating the swales / infiltration facilities.

An indicative area of drainage needed for the highways is shown on drawing **48851-PP-SK04** showing the infiltration basins and locations, subject to further masterplanning processes.

Matters	Comment	Satisfactory	Needs some Upgrade	Not Satisfactory
Flood Risk Zone	The site is in Flood Risk Zone 1. Suitable for residential development			
High Risk Surface Water Flooding	There are no existing surface water flooding issues of High Risk			
Medium Risk Surface Water Flooding	There are no existing surface water flooding issues of Medium Risk.			
Low Risk Surface Water Flooding	There are no existing surface water flooding issues of Low Risk which can not be accommodated within the development drainage strategy			
Proposed Surface Water Drainage	The proposals are likely to conform to the SuDS Manual and LLFA guidance for use of infiltration devices which are dependant upon a detailed site investigation to determine the permeability rate for the site			

I trust the foregoing is satisfactory but if we can be of any further assistance, please do not hesitate to contact us.

Yours sincerely

Martin Doughty BEng (Hons), CEng, FCIHT, FICE, MAPM
Director on behalf of Richard Jackson Limited

Enc Figures 1, 2, 3, 4 & 5
48851/PP/SK04 – Preliminary Surface Water Drainage Strategy

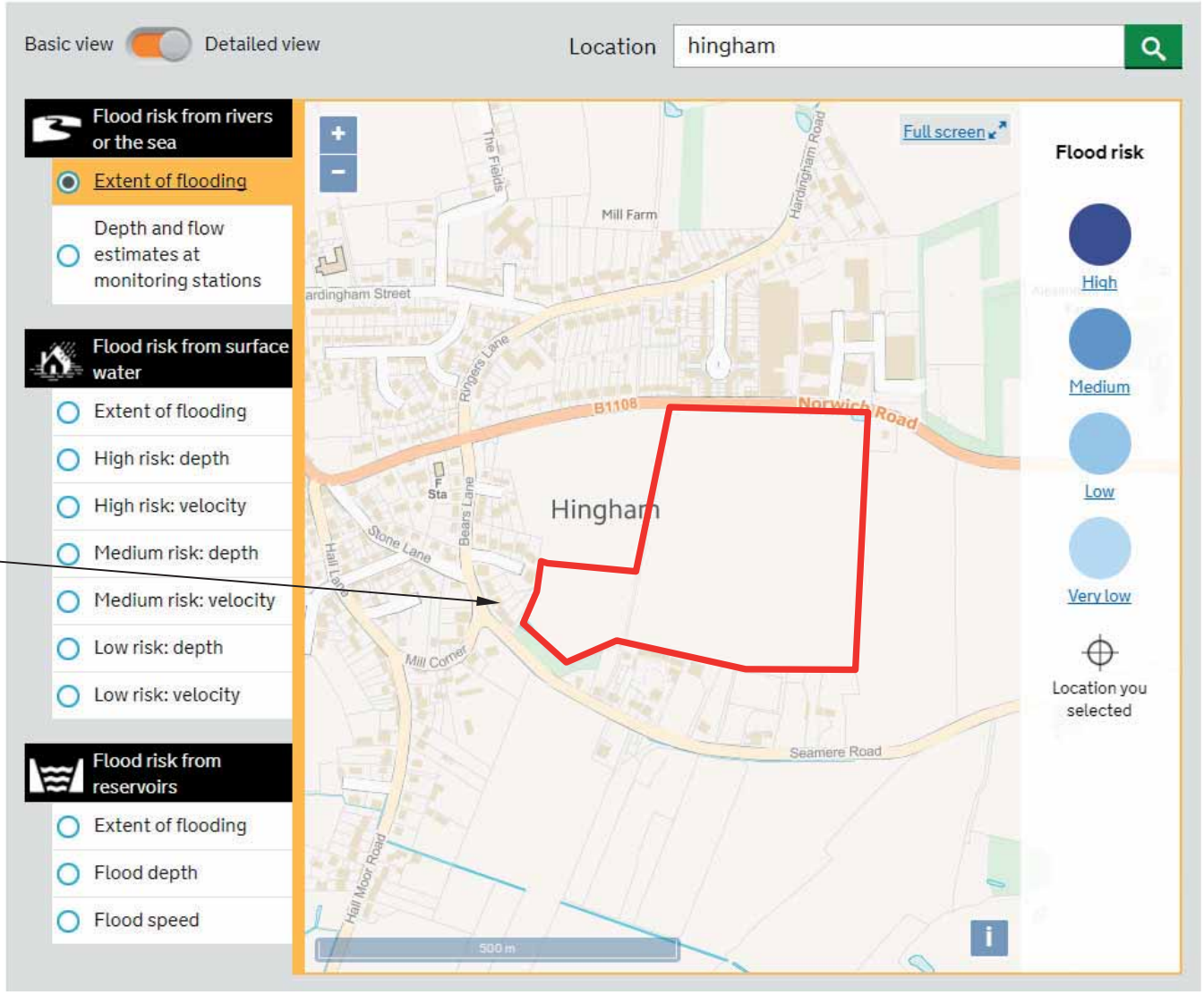
THE SITE

THE SITE

Site location grid reference 603043, 302031
and postcode NR9 4LS

Client:	Drawing Title:		
Abel Homes Ltd	**Site Location Plan**		
Job Title:	Date:	Job No:	Dwg No:
Land south of Norwich Road, Hingham	**07.02.18**	**48851**	**Fig. 1 (NTS)**

RichardJackson Engineering Consultants
4 The Old Church, St Matthews Road, Norwich, NR1 1SP
Tel. 01603 230240
www.richardjackson.uk.com



THE SITE

Site location grid reference 603043, 302031 and postcode NR9 4LS

Client:	Drawing Title:		
Abel Homes Ltd	**Environment Agency Flood Plan (Rivers and Sea)**		
Job Title:	Date:	Job No:	Dwg No:
Land South of Norwich Road, Hingham	**13.02.18**	**48851**	**Fig. 2 (NTS)**

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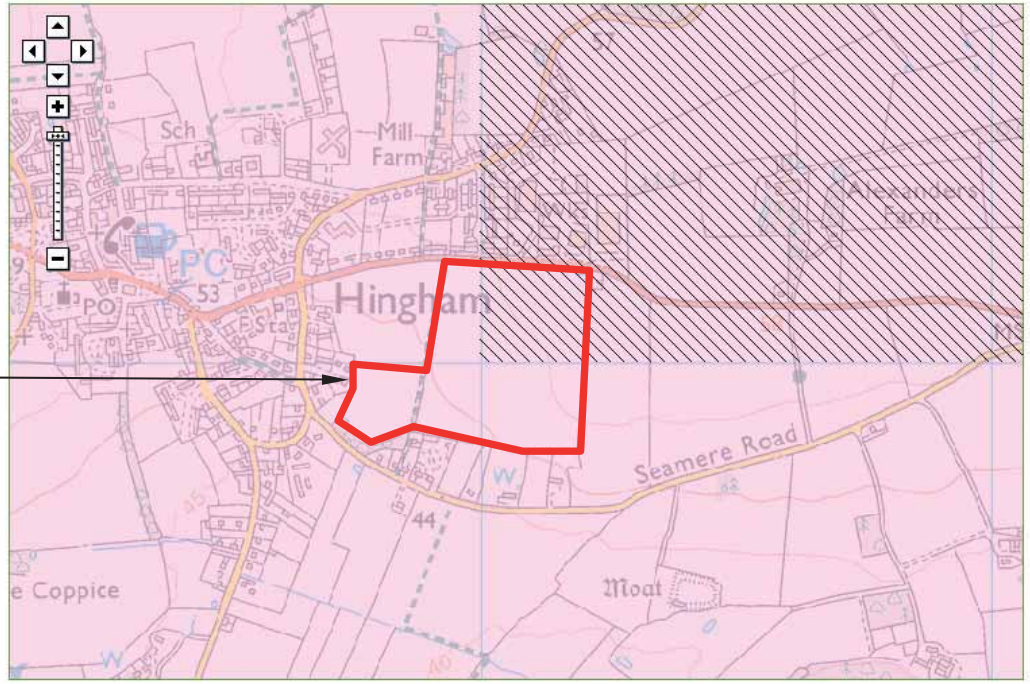
THE SITE

Map legend

- Groundwater source protection zones
- BGS Aquifer Maps - Superficial Deposits Designation
- BGS Aquifer Maps - Bedrock Designation
- Groundwater Vulnerability Zones
  - Local Information
  - Soluble Rock Risk
  - High
  - Medium-High
  - Medium
  - Medium-Low
  - Low
  - Unproductive
- Other national environmental organisations
  - Natural Resources Wales Area of responsibility
  - Scottish Environment Protection Agency Area of responsibility

Hingham, Norfolk at scale 1:10,000

Other maps · Data search · Text only version



More about Groundwater

Groundwater Source Protection Zones:

Groundwater provides a third of our drinking water. We ensure that your water is safe to drink defining Source Protection Zones. These zones help to monitor the risk of contamination from any activities that might cause pollution in the area.

The Source Protection Zones are not displayed at scales greater than 1:20,000 (Ordnance Survey 1:50,000 scale) as the data was only modelled to this level and is not accurate pass this. They should not be compared against field boundaries.

Site location grid reference 603043, 302031 and postcode NR9 4LS

Client:	Drawing Title:		
Abel Homes Ltd	**Environment Agency Flood Plan (Groundwater)**		
Job Title:	Date:	Job No:	Dwg No:
Land South of Norwich Road, Hingham	**13.02.18**	**48851**	**Fig. 3 (NTS)**

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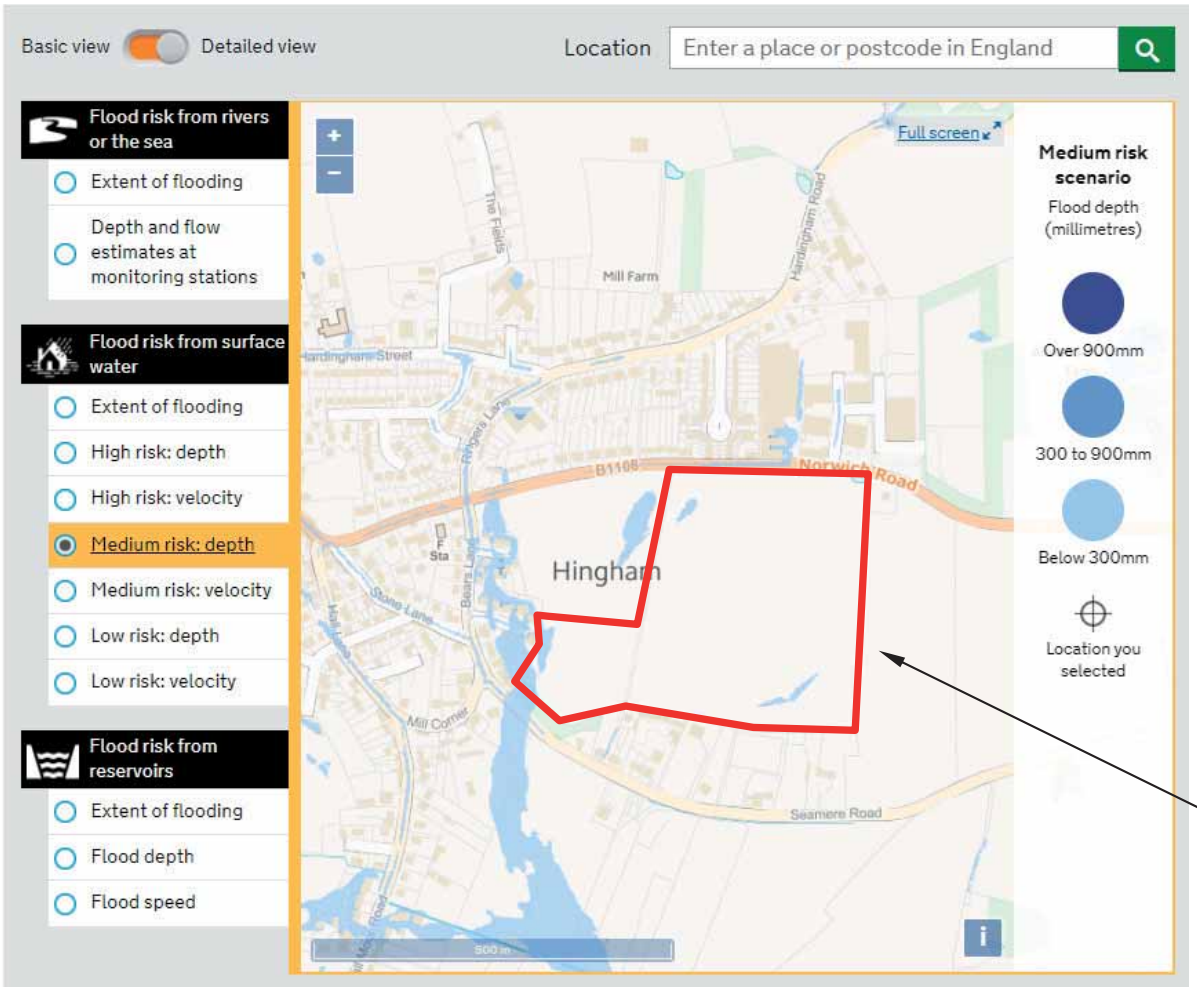

Site location grid reference 603043, 302031 and postcode NR9 4LS

Client:	Drawing Title:		
Abel Homes Ltd	**Surface Water Flood Mapping (Medium Risk)**		
Job Title:	Date:	Job No:	Dwg No:
Land South of Norwich Road, Hingham	**13.02.18**	**48851**	**Fig. 4 (NTS)**

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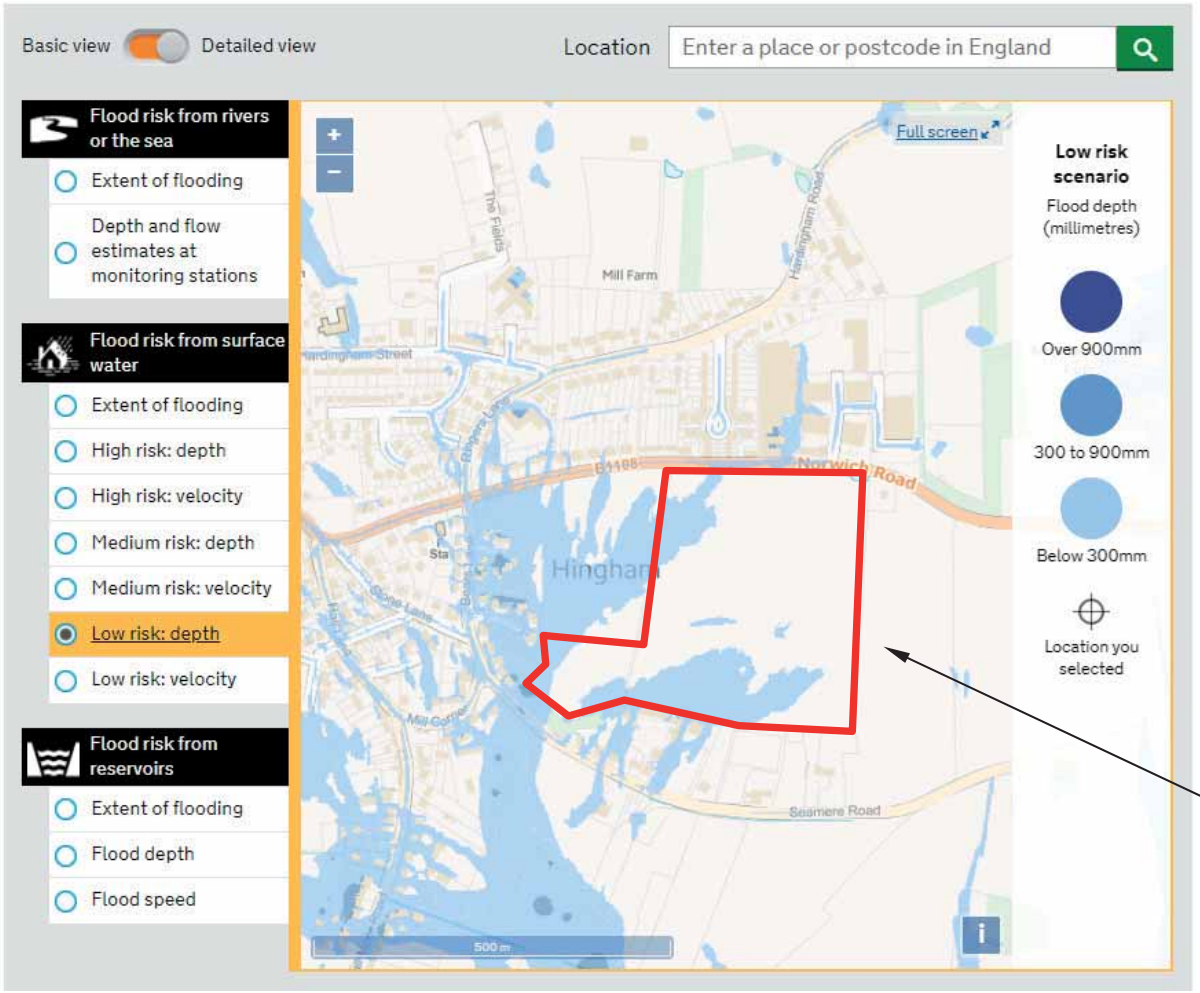

Site location grid reference 603043, 302031 and postcode NR9 4LS

Client:	Drawing Title:		
Abel Homes Ltd	**Surface Water Flood Mapping (Low Risk)**		
Job Title:	Date:	Job No:	Dwg No:
Land South of Norwich Road, Hingham	**13.02.18**	**48851**	**Fig. 5 (NTS)**

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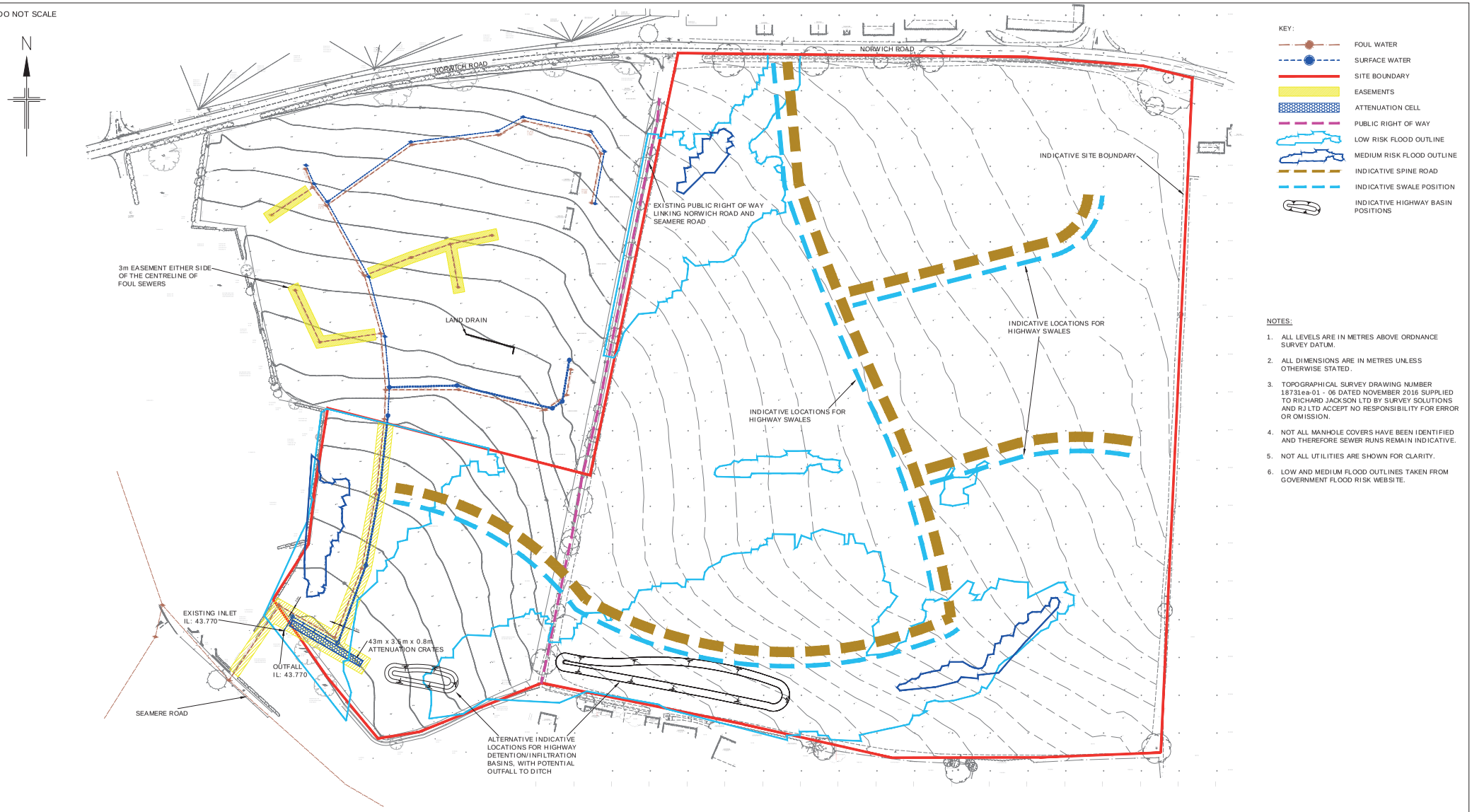
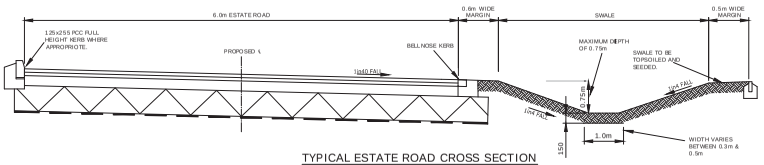
DO NOT SCALE

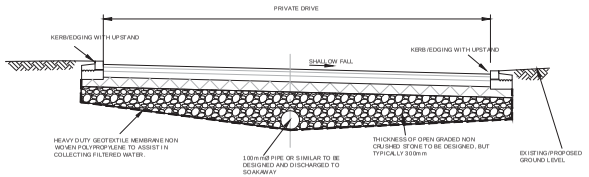


NOTES:

1. ALL LEVELS ARE IN METRES ABOVE ORDNANCE SURVEY DATUM.
2. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
3. TOPOGRAPHICAL SURVEY DRAWING NUMBER 18731ea-01 - 06 DATED NOVEMBER 2016 SUPPLIED TO RICHARD JACKSON LTD BY SURVEY SOLUTIONS AND RJ LTD ACCEPT NO RESPONSIBILITY FOR ERROR OR OMISSION.
4. NOT ALL MANHOLE COVERS HAVE BEEN IDENTIFIED AND THEREFORE SEWER RUNS REMAIN INDICATIVE.
5. NOT ALL UTILITIES ARE SHOWN FOR CLARITY.
6. LOW AND MEDIUM FLOOD OUTLINES TAKEN FROM GOVERNMENT FLOOD RISK WEBSITE.



TYPICAL ESTATE ROAD CROSS SECTION
SCALE NTS



TYPICAL CROSS SECTION OF THE PRIVATE DRIVE AND PERMEABLE PAVING
SCALE NTS

REV	DATE	DESCRIPTION	DRAWN	CHKD

REVISIONS

Project: LAND SOUTH OF NORWICH ROAD, HINGHAM	Title: PRELIMINARY SURFACE WATER DRAINAGE STRATEGY	Client: ABEL HOMES LTD	Drawn: J. PITCHER; Date: 20/02/18; Job Manager: M. DOUGHTY; Checked: J. PITCHER; Approved: M. DOUGHTY; Scale: 1:1000@A1

This drawing is to be read in conjunction with all other Engineer's drawings and all other project information. Any discrepancy between the Engineer's drawings and other project information is to be reported to the Engineer immediately.

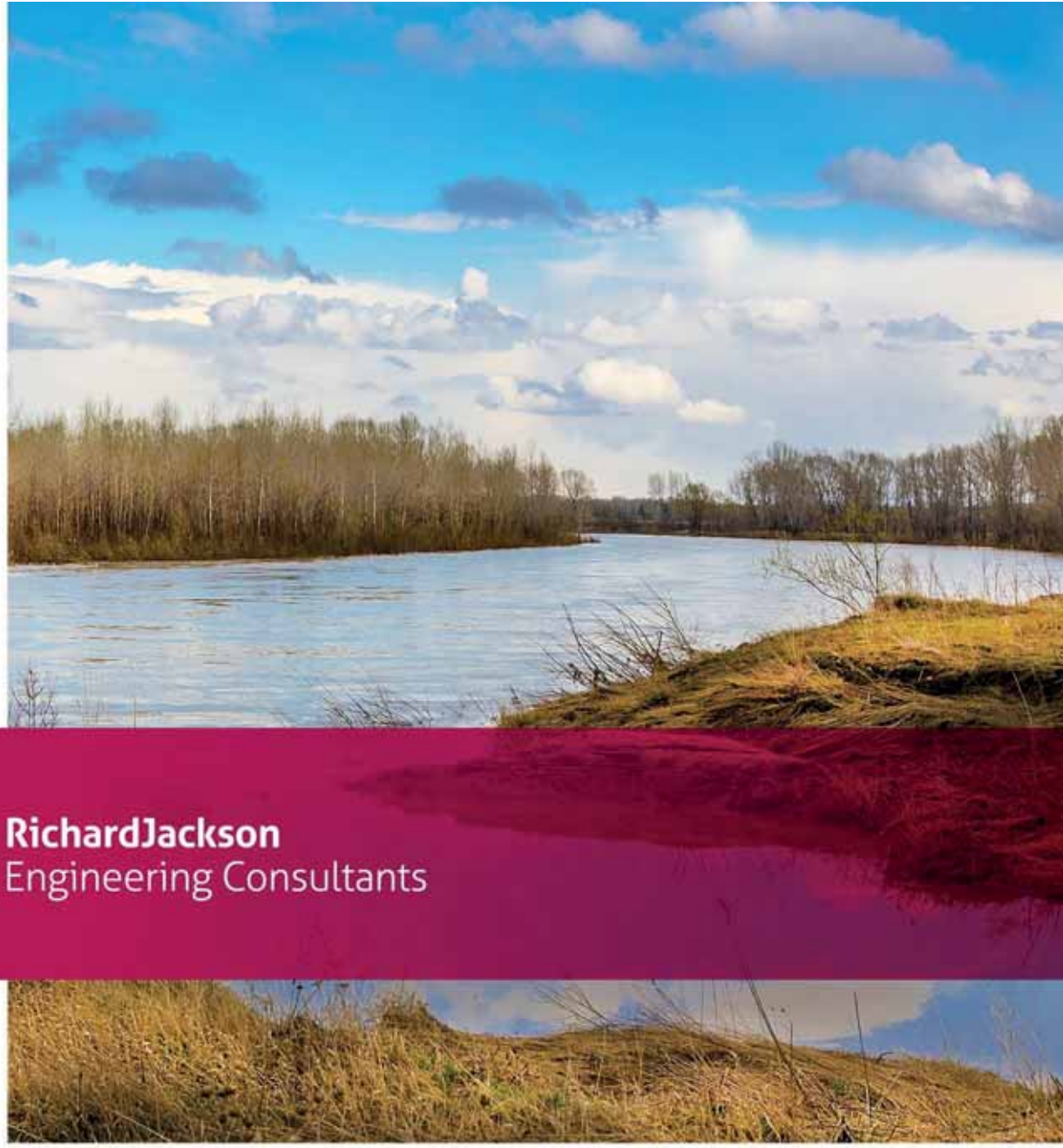
RichardJackson Engineering Consultants
Bill The Crescent, Colchester, Essex CO4 9YQ — Tel: 01206 228800
3rd Floor, Rennie House, 57-60 Aldgate High Street, London EC3N 1AL — Tel: 020 7446 9910
5 Quern House, Mill Court, Great Shelford, Cambs CB22 5LD — Tel: 01223 3147 94
4 The Old Church, St. Matthews Road, Norwich, Norfolk NR1 1SP — Tel: 01603 2302 40
The Wheelhouse, Bonds Mill, Stonehouse, Gloucestershire GL10 3RF — Tel: 01172 0200 70
Email Address: mail@rj.uk.com — Website: http://www.rj.uk.com

Drawing No.: 48851-PP-SK04
Revision:

Drawing Status:
☒ INFORMATION ☐ APPROVAL ☐ COSTING
☐ TENDER ☐ CONSTRUCTION ☐ AS CONSTRUCTED

A1

APPENDIX 6
FOUL SEWAGE AND UTILITIES ASSESSMENT



RichardJackson
Engineering Consultants

FOUL SEWAGE & UTILITIES ASSESSMENT

Land South of Norwich Road, Hingham

Abel Homes Ltd

February 2018

Project no: 48851

RichardJackson
Engineering Consultants

Document Review Sheet: -

Document prepared by: -	Lauren Gray on behalf of Richard Jackson Ltd
Date: -	20 February 2018
Document checked by: -	Martin Doughty BEng (Hons) CEng FICE FCIHT MAPM on behalf of Richard Jackson Ltd
Date: -	1 March 2018
Document Approved by: -	Martin Doughty BEng (Hons) CEng FICE FCIHT MAPM on behalf of Richard Jackson Ltd
Date: -	2 March 2018

Document Status

DRAFT ☐ FINAL ☒

Revision Status

Issue	Date	Description	Prepared	Checked	Approved

RichardJackson Engineering Consultants

Contents:-

Figures / Drawings

Appendix

1. INTRODUCTION

1.1. Richard Jackson Ltd has been instructed by Abel Homes Ltd to undertake a foul sewage and utilities assessment to support a planning application on land south of Norwich Road, Hingham. The proposed development land is proposed to be accessed off Norwich Road, and is for approximately 250 dwellings.

1.2. The proposal site comprises a greenfield site, currently used as agricultural land. The site is bound by Norwich Road (B1108) to the north and the dwellings of Seamere Road to the south, see **Figure 1**. To the west of the site is a Public Right of Way footway linking Norwich Road and Seamere Road with a residential housing estate currently under construction adjacent and beyond that the centre of the village of Hingham. Surrounding the site from the east, are agricultural fields.

1.3. **Figure 1** illustrates the location and extent of the proposed site, equating to a developable area of approximately 13ha. This site has an approximate Ordnance Survey midpoint of 603043E, 302031N and Postcode NR9 4LS.

1.4. The topography of the site falls to the low point in the south western corner, which is at approximately 44.9m AOD. The high point is in the north eastern corner which is at the 57.4m AOD.

1.5. The site lies next to an existing development being constructed by Abel Homes Ltd and this is referred to herein as “Phase 1”.

1.6.

2. EXISTING UTILITIES

2.1. To enable an assessment into existing mains utilities apparatus located on and around the immediate vicinity of the site, mains records plans were collated from the client records of the relevant statutory utility companies. The table below provides a summary of the responses received from the companies data provided:

Table 2.1 – Existing Statutory Utility Providers

Company	Plant Present	Plant Affected
Energetics	No	No
UK Power Networks	Yes	Unlikely
National Grid Gas Plc	No	No
GTC	No	No
Anglian Water (Foul)	Yes	Yes
Anglian Water (Potable)	Yes	No
Transmitters	No	No
Mast Data	No	No
CityFibre	No	No
euNetworks	No	No
BT	Yes	No
BSKYB	No	No
Virgin Media	No	No
Vodafone (Ex Cables & Wireless)	No	No
Logica	No	No
Colt	No	No
Instalcom Limited	No	No
KPN	No	No
SOTA	No	No
TATA	No	No
Vtesse	No	No
Verizon Business	No	No
Interoute	No	No
KCOM	No	No
Trafficmaster	No	No
Network Rail	No	No

2.2. To identify the main services, a brief description of each company's apparatus is indicated below. Where the apparatus is affected, the records are located in the attached appendices. Note the records plans obtained from the statutory utilities typically show approximate routes of mains only, not service cables, ducts or pipes, or private services which are unrecorded and appropriate precautions to identify utility infrastructure should always be undertaken prior to any excavating operations.

Gas

2.3. The local mains gas distribution network is operated by Cadent Gas Ltd. Cadent Gas Ltd mains records, provided in **Appendix A,** indicate that in the immediate vicinity of the site there is not a gas distribution network.

UK Power Networks

2.4. The existing electrical distribution network is operated by Eastern Power Networks Plc, trading as UK Power Networks. Mains records plans provided in **Appendix B** indicate that UK Power Networks has electrical plant on and in the vicinity of the site.

2.5. The records show that there are two underground high voltage cables located in the northern side of Norwich Road. The high voltage power cable enters the Phase 1 development along the spine road. One high voltage cable comes from the substation on the northern side of Norwich Road, to the west of the industrial units. The other high voltage cable comes from the substation on the eastern side of Bears Lane, north of Drinkwater Close.

2.6. In the north eastern corner of the site there are two poles, with overhead electricity lines that appear to serve the dwelling that borders the north east corner. This would likely be able to remain in situ, providing that no accesses are required within that location. The likely easement for the cable travelling to the house would be approximately 3m on either side, however, this will need to be confirmed with UKPN.

2.7. From the main spine road of Phase 1, there are multiple low voltage cables around the Phase 1 development site providing power to dwellings. The apparatus should not be affected by the development.

2.8. To the south of the development around Seamere Road, there are overhead high voltage cables, from Bear's Lane, that travel in a southwest direction from Seamere Road, to the south of the site boundary. This apparatus will not be affected by the development.

Street Lighting

2.9. Internet mapping indicates that there is one street lighting that is located on Norwich Road where the proposed access is located. The lighting column will need to be relocated, therefore £1,000 should be budgeted for one column relocation.

Anglian Water (Potable)

2.10. Potable water mains records, provided in **Appendix C**, indicate that Anglian Water has 5" CI main located to the north of the site boundary along Norwich Road. This should not be affected by the development as it is situated underneath the northern footway of Norwich Road.

2.11. There are additional 90mm HPPE/PE100 mains serving Phase 1 of the development, along the main development spine road following the west footway. This should also not be affected by the proposed development.

2.12. Further, to the south of the site, following Seamere Road, there is decommissioned 90mm MDPE/PE80 pipe in the southern verge.

Anglian Water (Sewers)

2.13. Sewer records, provided in **Appendix D**, indicate that Anglian Water has assets that run throughout Phase 1 to the west of the site boundary. The foul water sewers have been recorded as 150mm diameter VC, along the spine road of Phase 1. The sewer leaves the Phase 1 site at the south of the main spine road, crossing the site boundary, and joining the 225mm pipe under Seamere Road to the foul water pumping station on the southern verge of Seamere Road. The apparatus may be affected by the development due to the extent of the 3m easements on either side of the pipes from the centreline, however the proposed development is likely to be created avoiding the existing infrastructure.

2.14. Surface Water sewer assets are located to the west and south of the site boundary. To the west, the surface water sewer network compromises of 450mm pipes through Phase 1 distributing to the dwellings through the spine road. These pipes continue to an attenuation crate feature in the south west corner of the site boundary. The apparatus may be affected by the development as the attenuation crates also have 3m easements. However these also are likely to be avoided.

BT

2.15. BT mains records, provided in **Appendix E**, indicate that telecoms apparatus is present in the adjacent to the site boundary, following Norwich Road, Seamere Road and within the Phase 1 development.

2.16. These records show existing overhead lines over Norwich Road beyond the south east corner of the site boundary, with the poles in the verge to the south of Norwich Road. The overhead cables are then grounded and are situated underneath the footway on the north of Norwich Road. The cables continue underground along the northern footway following Norwich Road connecting to the dwellings on the north of Norwich Road and into the Phase 1 development.

2.17. There is also a BT cable to the south of the site boundary located along the verges in Seamere Road, with overhead cables connecting the existing dwellings. The apparatus should not be affected by the proposed development.

2.18. A speculative search using BT's online Broadband Availability Checker (which gives an initial indication of the availability of broadband services for a particular phone line or postcode) has been performed using the postcode NR9 4LS. The search output shown in **Appendix E** indicates that Unlimited Broadband is available. Standard broadband connection delivers a downstream line rate of a minimum of 3.5 Mbps with a typical downstream range between 10 and 19.5 Mbps. It should be noted however that these figures are indicative and the most accurate results can be obtained from a telephone number check.

3. PROPOSED UTILITIES

3.1. Although the above statutory utilities mentioned in Chapter 2 were not consulted to obtain costings for the connections to the proposed development, this section outlines the likelihood of the site being suitable for all statutory utility connections.

3.2. Using all of the information supplied by the statutory utility companies and the information from Abel Homes Ltd regarding the development to the west of the site it has been concluded that Cadent Gas Ltd, UK Power Networks and BT could all provide apparatus into the development site. UKPN would likely require an onsite substation.

3.3. Connection to Anglian Water foul water sewers also appears feasible due to the topography of the proposed development land, which falls towards the south west corner of the proposed site, to connect into the existing infrastructure, which then falls into Seamere Road. Correspondence would be required with Anglian Water to see if the existing pumping station on Seamere Road would have capacity for the development and whether any upgrades would be required.

3.4. The disposal of surface water appears feasible through infiltration techniques and if necessary, correspondence could be conducted with Anglian Water to identify whether they would be suitable for adoption, otherwise these could be adopted privately or by the highway authority.

4. CONCLUSIONS

4.1. It has been demonstrated that although there are existing services, these can be accommodated within the proposed development area.

4.2. Where necessary, any existing services that are crossing the site can be diverted appropriately and thus do not prevent the site from key development.

4.3. A brief overview of the proposed services indicates that the location of existing services are likely to be deliverable for new connections to take place for construction of the proposed development.

5. LIMITATIONS

5.1. This report has been produced for the sole use of Abel Homes Ltd as outlined above in **Section 1**.

5.2. The contents of this report should not be relied upon by others without the written authority of Richard Jackson Ltd. If any unauthorised third party makes use of this report, they do so at their own risk and Richard Jackson Ltd owes them no duty of care or skill. All information provided by others is taken in good faith as being accurate, however Richard Jackson Ltd cannot, and does not, accept any liability for the detailed accuracy, errors or omissions in such information.

5.3. No evidence of other utility apparatus has been provided by the client. Note that the records plans obtained from the statutory utilities typically show approximate routes of mains apparatus only, not service cables, ducts, or pipes, which are unrecorded. This assessment also does not rule out the potential for further private services to exist and usual searches and precautions should be undertaken when carrying out any excavation or probing work. Therefore, a check must be undertaken when carrying out any work beneath the ground, prior to any excavation taking place.

RichardJackson Engineering Consultants

Figures

THE SITE

THE SITE

Site location grid reference 603043, 302031
and postcode NR9 4LS

Client:	Drawing Title:		
Abel Homes Ltd	**Site Location Plan**		
Job Title:	Date:	Job No:	Dwg No:
Land south of Norwich Road, Hingham	**07.02.18**	**48851**	**Fig. 1 (NTS)**

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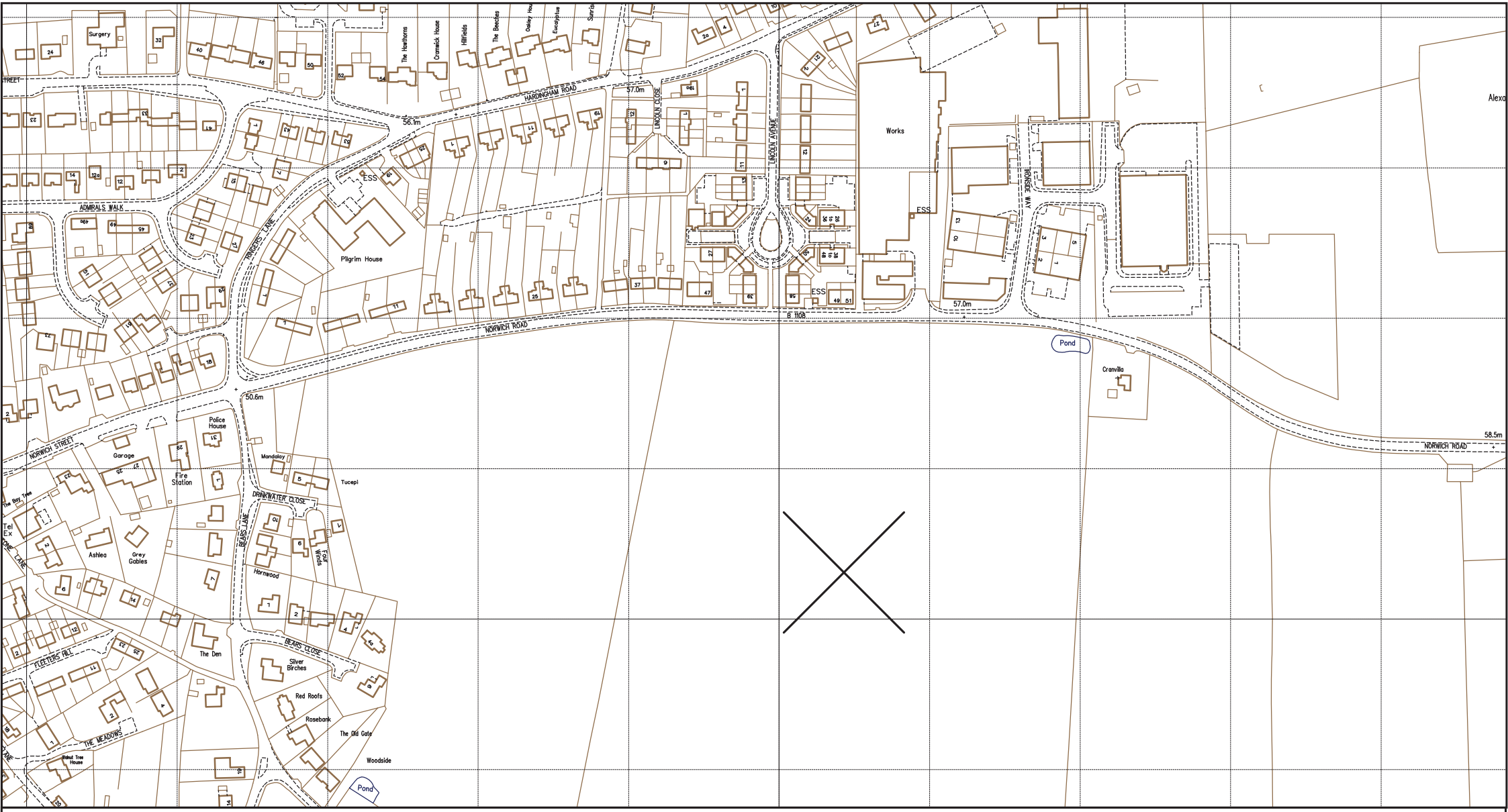
4 The Old Church, St Matthews Road, Norwich, NR1 1SP
Tel. 01603 230240
www.richardjackson.uk.com

RichardJackson Engineering Consultants

Appendix A



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DATE: 09/02/2018	IP MAINS
EXTRACT DATE: 06/12/2017	LHP MAINS
MAP REF: TG0202	
CENTRE: 602983, 302142	

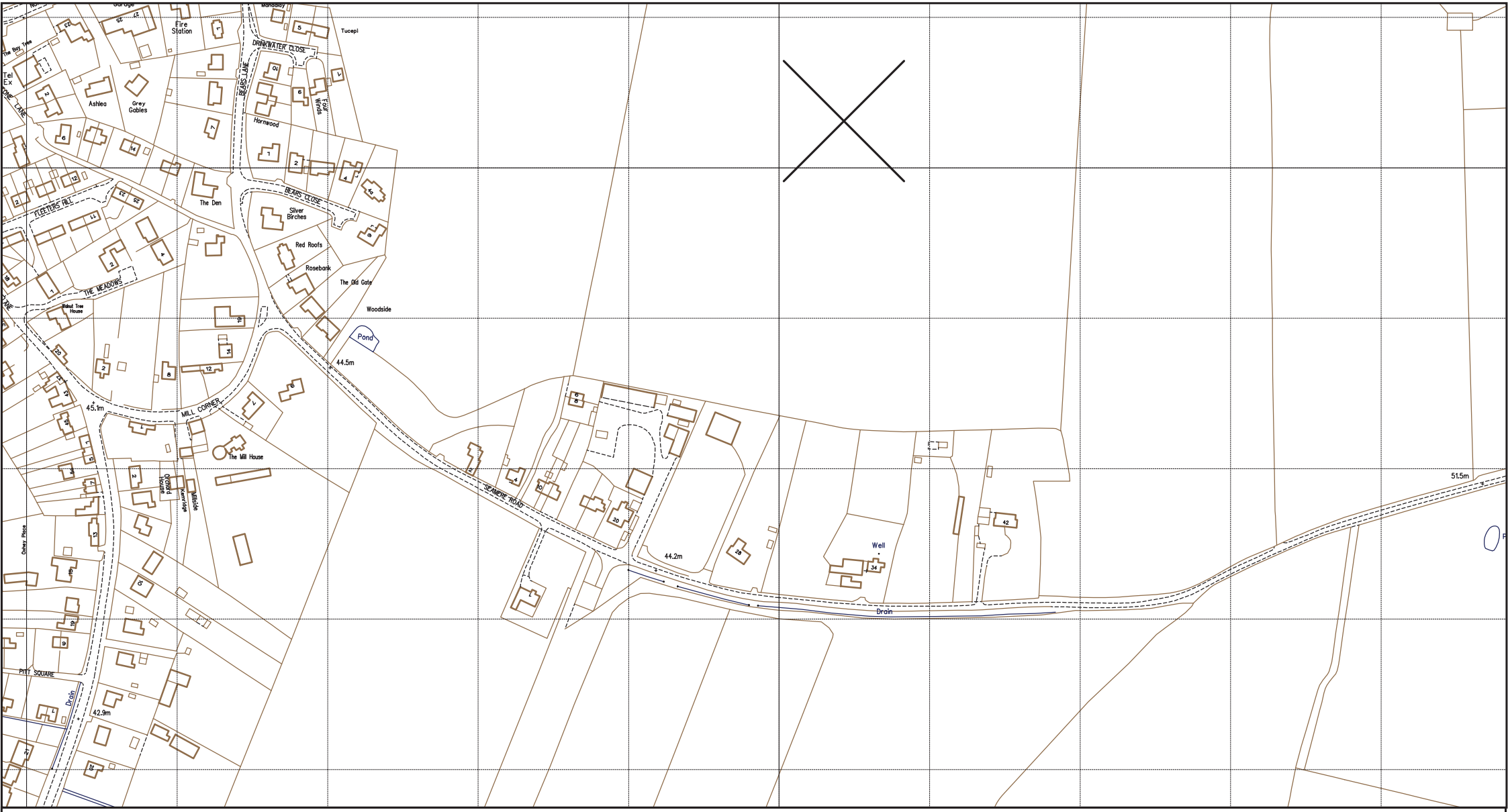
Some examples of Plant Items:

Valve | Depth of Cover | Syphon | Diameter Change | Material Change | Out of Standard Service

This plan shows those pipes owned by Cadent Gas Ltd in their role as a Licensed Gas Transporter (GT). Gas pipes owned by other GTs, or otherwise privately owned, may be present in this area. Information with regard to such pipes should be obtained from the relevant owners. The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Service pipes, valves, syphons, stub connections, etc. are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Cadent Gas Ltd or their agents, servants or contractors for any error or omission. Safe digging practices, in accordance with HS(G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near gas apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue. Further information on all DR4s can be determined by calling the DR4 hotline on 01455 892426 (9am-5pm) A DR4 is where a potential error has been identified within the asset record and a process is currently underway to investigate and resolve the error as appropriate.

MAPS Viewer Version 5.8.0.1

Local Machine



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MAP REF: TG0201	
CENTRE: 602983, 301842	

Some examples of Plant Items:

Valve | Depth of Cover | Syphon | Diameter Change | Material Change | Out of Standard Service

This plan shows those pipes owned by Cadent Gas Ltd in their role as a Licensed Gas Transporter (GT). Gas pipes owned by other GTs, or otherwise privately owned, may be present in this area. Information with regard to such pipes should be obtained from the relevant owners. The information shown on this plan is given without warranty, the accuracy thereof cannot be guaranteed. Service pipes, valves, syphons, stub connections, etc. are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Cadent Gas Ltd or their agents, servants or contractors for any error or omission. Safe digging practices, in accordance with HS(G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all persons (either direct labour or contractors) working for you on or near gas apparatus. The information included on this plan should not be referred to beyond a period of 28 days from the date of issue. Further information on all DR4s can be determined by calling the DR4 hotline on 01455 892426 (9am-5pm) A DR4 is where a potential error has been identified within the asset record and a process is currently underway to investigate and resolve the error as appropriate.

MAPS Viewer Version 5.8.0.1

Local Machine

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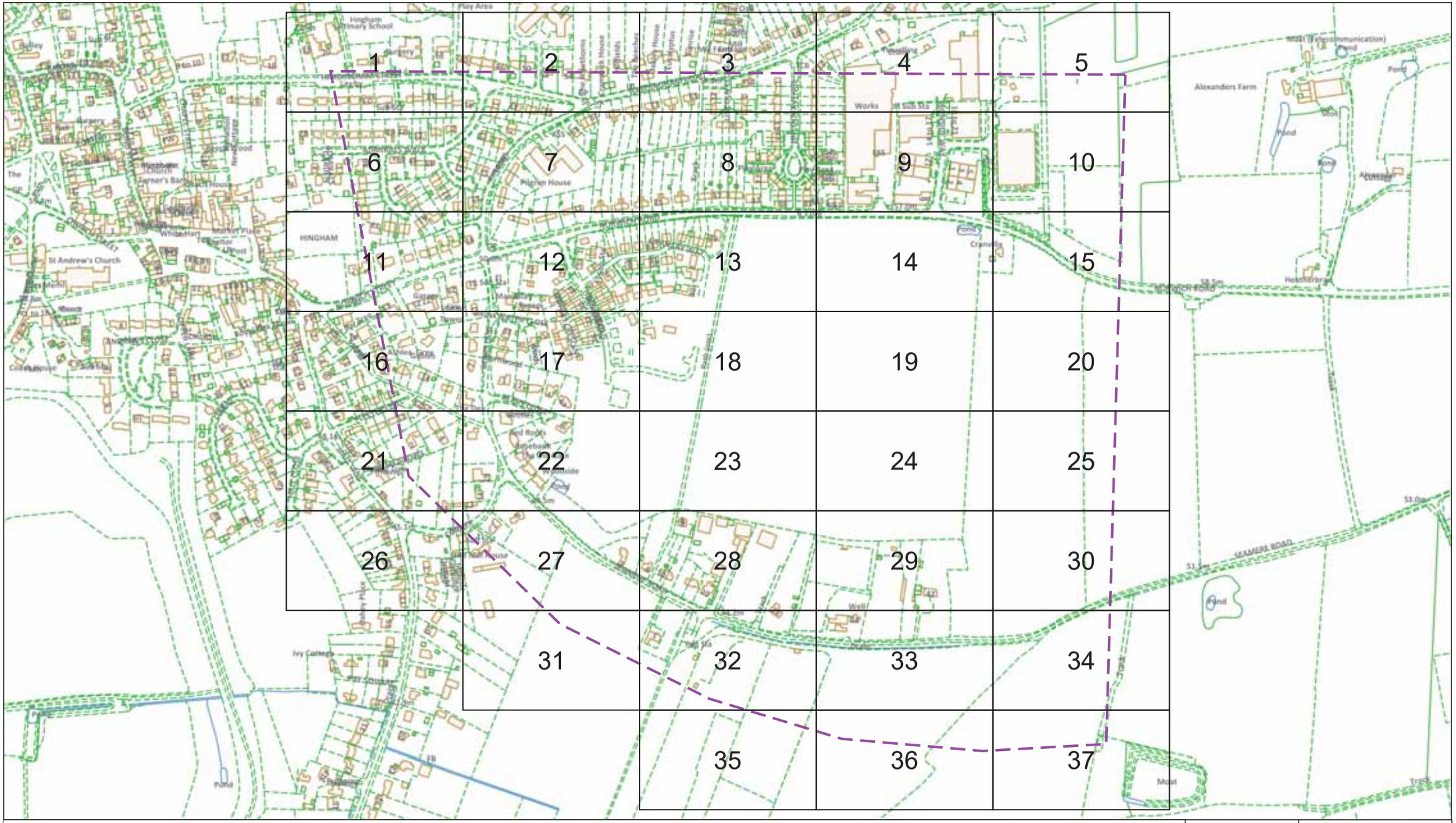
Appendix B



Dig Sites Area: Line:

The quality and accuracy of any print will depend on your printer, your computer and its print settings. Measurements scaled from this plan may not match measurements between the same points on the ground.

This plan must be used with the attached 'Symbols' document.

Date Requested: 08/02/2018
Job Reference: 12184163
Site Location: 602109 301367
Requested by:
Mr Duncan Phillips
Your Scheme/Reference: 48851

Scale: 1:4100 (When plotted at A3)

1. The position of the apparatus shown on this drawing is believed to be correct but the original landmarks may have been altered since the apparatus was installed.
2. The exact position of the apparatus should be verified - use approved cable avoidance tools prior to excavation using suitable hand tools.
3. It is essential that trial holes are carefully made avoiding the use of mechanical tools or picks until the exact location of all the cables have been determined.
4. It must be assumed that there is a service cable into each property, lamp column and street sign, etc.
5. All cables must be treated as being live unless proved otherwise by UK Power Networks.
6. The information proved must be given to all people working near UK Power Networks plant and equipment. Do not use plans more than 3 months after the issue date for excavation purposes.
7. Please be aware that electric cables/lines belonging to other owners of licensed electricity distribution systems may be present and it is your responsibility to identify their location.

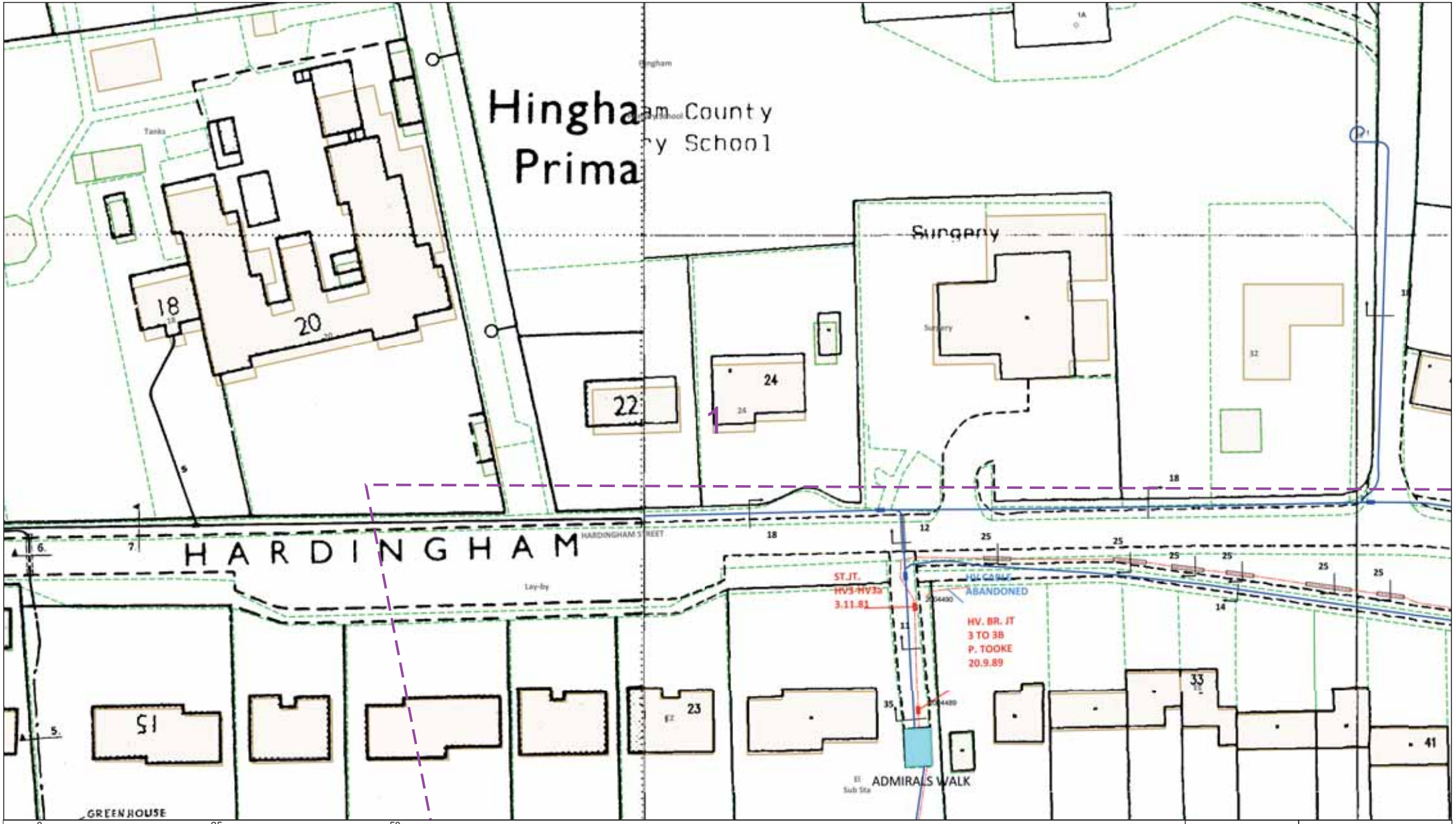
1. UK Power Networks does not warrant that the information provided to you is correct. You rely upon it at your own risk.
2. UK Power Networks does not exclude or limit its liability if it causes the death of any persons or causes personal injury to a person.
3. Subject to paragraph 2 UK Power Networks has no liability to you in contract, in tort (including negligence), for breach of statutory duty or otherwise for any loss, damage, cost, claims, demands, or expenses that you or any third party may suffer or incur as a result of using the information provided whether for physical damage to property or for any economic loss (including without limitation loss of profit, loss of opportunity, loss of savings, loss of goodwill, loss of business, loss of use) or any special or consequential loss or damage whatsoever.
4. This plan has been provided to you on the basis of the terms of use set out in the covering letter that accompanies this plan. If you do not accept and/or do not understand the terms of use set out in the covering letter you must not use the plan and must return it to the sender of the letter.
5. You are responsible for the security of the information provided to you. It must not be given, sold or made available upon payment of a fee to a third party.

UK Power Networks

IF IN DOUBT - ASK!
PHONE 0800 056 5866
EMERGENCY - If you damage a cable or line
Phone 0800 783 8838
(24hrs) URGENTLY

ALWAYS LOOK UP BEFORE YOU START WORK
Refer to HSE Guidance note GS6

Maps produced at 1:2500 scale are Geo-Schematics which show LV mains cables and overhead lines (in some cases all voltages). Prior to carrying out excavations you must refer to the 1:500 records to determine the location of all known underground plant and equipment.



0 25 50
metres

Dig Sites Area: Line:

The quality and accuracy of any print will depend on your printer, your computer and its print settings. Measurements scaled from this plan may not match measurements between the same points on the ground.

This plan must be used with the attached 'Symbols' document.

Date Requested: 08/02/2018
Job Reference: 12184163
Site Location: 602109 301367
Requested by:
Mr Duncan Phillips
Your Scheme/Reference: 48851

Scale: 1:500 (When plotted at A3)

1. The position of the apparatus shown on this drawing is believed to be correct but the original landmarks may have been altered since the apparatus was installed.
2. The exact position of the apparatus should be verified - use approved cable avoidance tools prior to excavation using suitable hand tools.
3. It is essential that trial holes are carefully made avoiding the use of mechanical tools or picks until the exact location of all the cables have been determined.
4. It must be assumed that there is a service cable into each property, lamp column and street sign, etc.
5. All cables must be treated as being live unless proved otherwise by UK Power Networks.
6. The information proved must be given to all people working near UK Power Networks plant and equipment. Do not use plans more than 3 months after the issue date for excavation purposes.
7. Please be aware that electric cables/lines belonging to other owners of licensed electricity distribution systems may be present and it is your responsibility to identify their location.

1. UK Power Networks does not warrant that the information provided to you is correct. You rely upon it at your own risk.
2. UK Power Networks does not exclude or limit its liability if it causes the death of any persons or causes personal injury to a person.
3. Subject to paragraph 2 UK Power Networks has no liability to you in contract, in tort (including negligence), for breach of statutory duty or otherwise for any loss, damage, cost, claims, demands, or expenses that you or any third party may suffer or incur as a result of using the information provided whether for physical damage to property or for any economic loss (including without limitation loss of profit, loss of opportunity, loss of savings, loss of goodwill, loss of business, loss of use) or any special or consequential loss or damage whatsoever.
4. This plan has been provided to you on the basis of the terms of use set out in the covering letter that accompanies this plan. If you do not accept and/or do not understand the terms of use set out in the covering letter you must not use the plan and must return it to the sender of the letter.
5. You are responsible for the security of the information provided to you. It must not be given, sold or made available upon payment of a fee to a third party.

UK Power Networks

IF IN DOUBT - ASK!
PHONE 0800 056 5866
EMERGENCY - If you damage a cable or line
Phone 0800 783 8838
(24hrs) URGENTLY

LOOK OUT LOOK UP

ALWAYS LOOK UP BEFORE YOU START WORK
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