Project No. 125209/17 February 2021

PROPOSED CONVERSION OF REDUNDANT BARN TO HOLIDAY ACCOMMODATION
LINK HOUSE FARM, NEWTON BY THE SEA, ALNWICK, NORTHUMBERLAND NE66 3ED

DRAINAGE STATEMENT AND STRATEGY

DRAINAGE STATEMENT
DRAINAGE STRATEGY
AND DESIGN

Victor Thompson
Link House Farm
Newton-by-the-Sea
Alnwick
NE66 3ED

Northpoint
Consulting

14 Brenkley Way
Blezard Business Park
Seaton Burn
Newcastle upon Tyne
NE13 6DS

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DRAINAGE STATEMENT AND STRATEGY

CONTENTS

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DRAINAGE STATEMENT AND STRATEGY

1. INTRODUCTION

The subject Site is part of an agricultural holding and holiday accommodation complex at Link House Farm, Newton-by-the-Sea, Alnwick, Northumberland NE66 3ED, and situated in the Northumberland Coast AONB.

The holiday accommodation currently comprises 12 No. stone-built cottages and 9 No. timber effect clad chalets.

It is situated close to and to the North of West of the recent development of 9 No. holiday chalets granted Planning Approval in 2019 (17/02302/FUL)and now complete. A Site Location Plan is at Appendix 6.1.1.

The subject barn is the 5th of a terrace of large chrysotile asbestos cement roofed structural steel barns (numbered West to East) with a large lean-to attached at the east.

It is intended that barn 4 and the lean-to be demolished, and that barn 5, with roof and cladding removed, be converted to holiday accommodation which will enhance the recent development of 9 Holiday Chalets, adjacent.

A plan and elevation of the existing barns is at Appendix 6.1.2, with that of the proposed at Appendix 6.2.3.

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2. OBJECTIVE OF THE REPORT

The objective of the Report is to determine the drainage strategy to be implemented for the detailed design process for the proposed development.

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3. DESCRIPTION OF APPLICATION AREA

The subject application site is currently occupied by a range of five redundant terraced barns and lean-to running from West by North to East by South, with a large lean-to at the eastern end. The barns are of structural steel portal frames; with blockwork walls to eaves and corrugated chrysotile roof sheeting.

4. ASSESSMENT OF EXISTING DRAINAGE AND POTENTIAL OUTFALLS

Surface Water Drainage

The present barns construction is positively drained and was included within the design of the surface water system for the 9 adjacent chalets recently constructed, and flows to an attenuation pond to the west of the barns.

This system will be used for the proposed development.

Copies of the existing and the proposed surface water system are at Appendix 6.1.4 and 6.1.5, respectively.

A copy of the approved surface water drainage design covering the existing structure is at Appendix 6.2.1..

Foul Water Drainage

There is no foul drainage within the existing barns.

The sewage treatment plant installed to service the adjacent chalets has sufficient capacity to accommodate the discharge from the proposed development.

A plan of the proposed system is at Appendix 6.1.6.

Form FD1 is at Appendix 6.2.2.

A copy of the flows and loads calculations is at Appendix 6.2.3.

5. DRAINAGE STRATEGY

Surface Water

Surface water from the development will be accommodated by the existing approved attenuated barn drainage. All in accordance with the approved system at Appendix 6.2.1.

Foul Water Drainage

Foul water drainage will be accommodated by the existing packaged sewage treatment plant installed for the previous chalet development, all in accordance with Form FDA1 at Appendix 6.2.2, and the flows and loads calculations at Appendix 6.2.3.

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6. APPENDICES

6. APPENDICES

6.1 PLANS

6.1.1 SITE LOCATION PLAN

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Scale\s: 1:1000@A1
Date Drawn: 13 FEB 2021

Client: VICTOR THOMPSON ESQ
Project Title: LINK HOUSE FARM
NEWTON-BY-THE-SEA, EMBLETON NE66 3ED
Drawing Title: PROPOSED CONVERSION OF REDUNDANT BARNS
SITE LOCATION PLAN
SITE CENTRE 423240,626092

Project Number: 125209/17
Drawing Number: N 001B
Revision: 0
Sheet Size: A1

6. APPENDICES

6.1 PLANS

6.1.2 SITE PLAN - EXISTING

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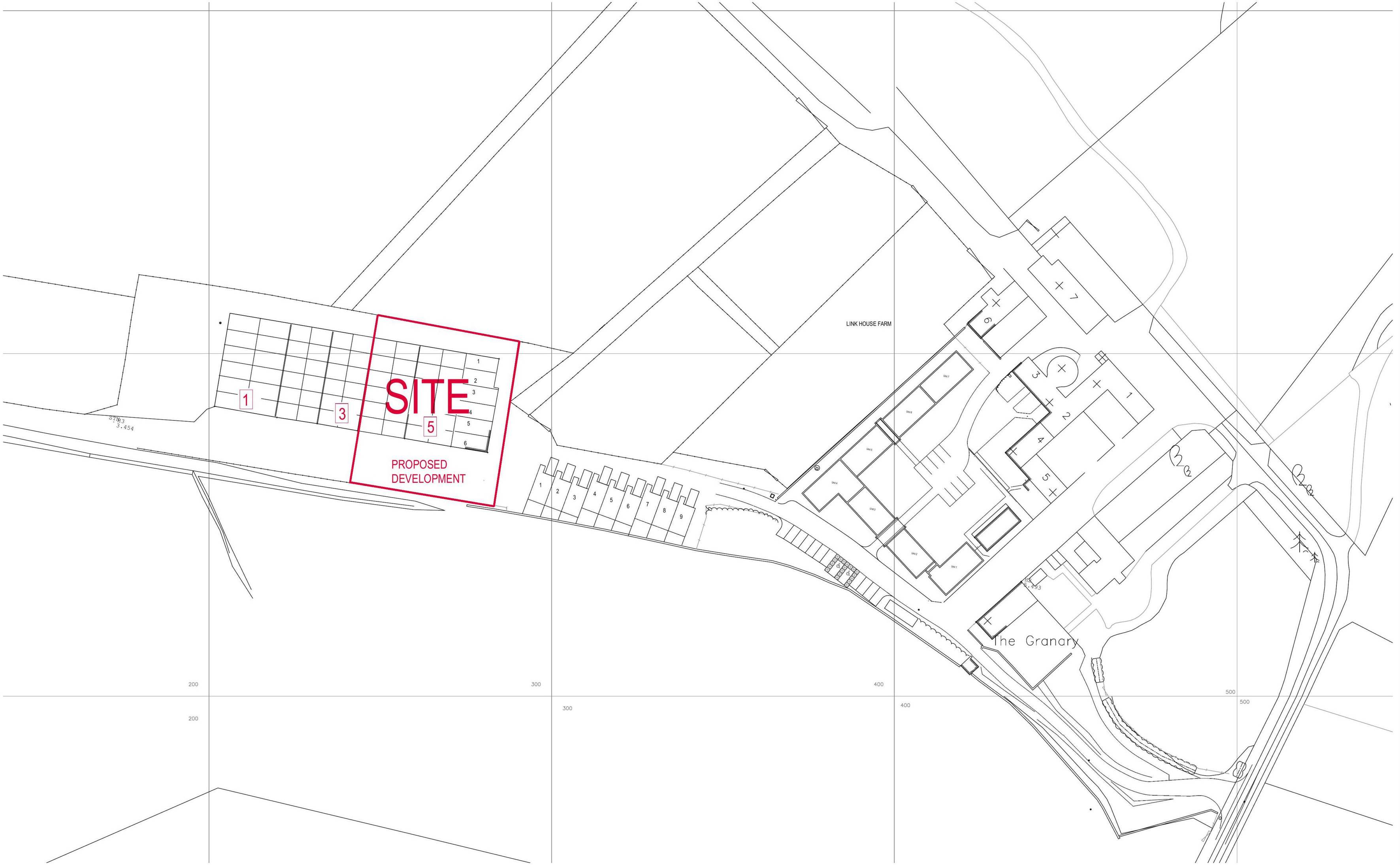

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Date Drawn: 03 MAR 2021

Client: VICTOR THOMPSON ESQ
Project Title: LINK HOUSE FARM
NEWTON-BY-THE-SEA, EMBLETON NE66 3ED
Drawing Title: EXISTING SITE LAYOUT

Project Number: 125209/17
Drawing Number: N 002B
Revision: 0
Sheet Size: A1

6. APPENDICES

6.1 PLANS

6.1.3 SITE PLAN – PROPOSED

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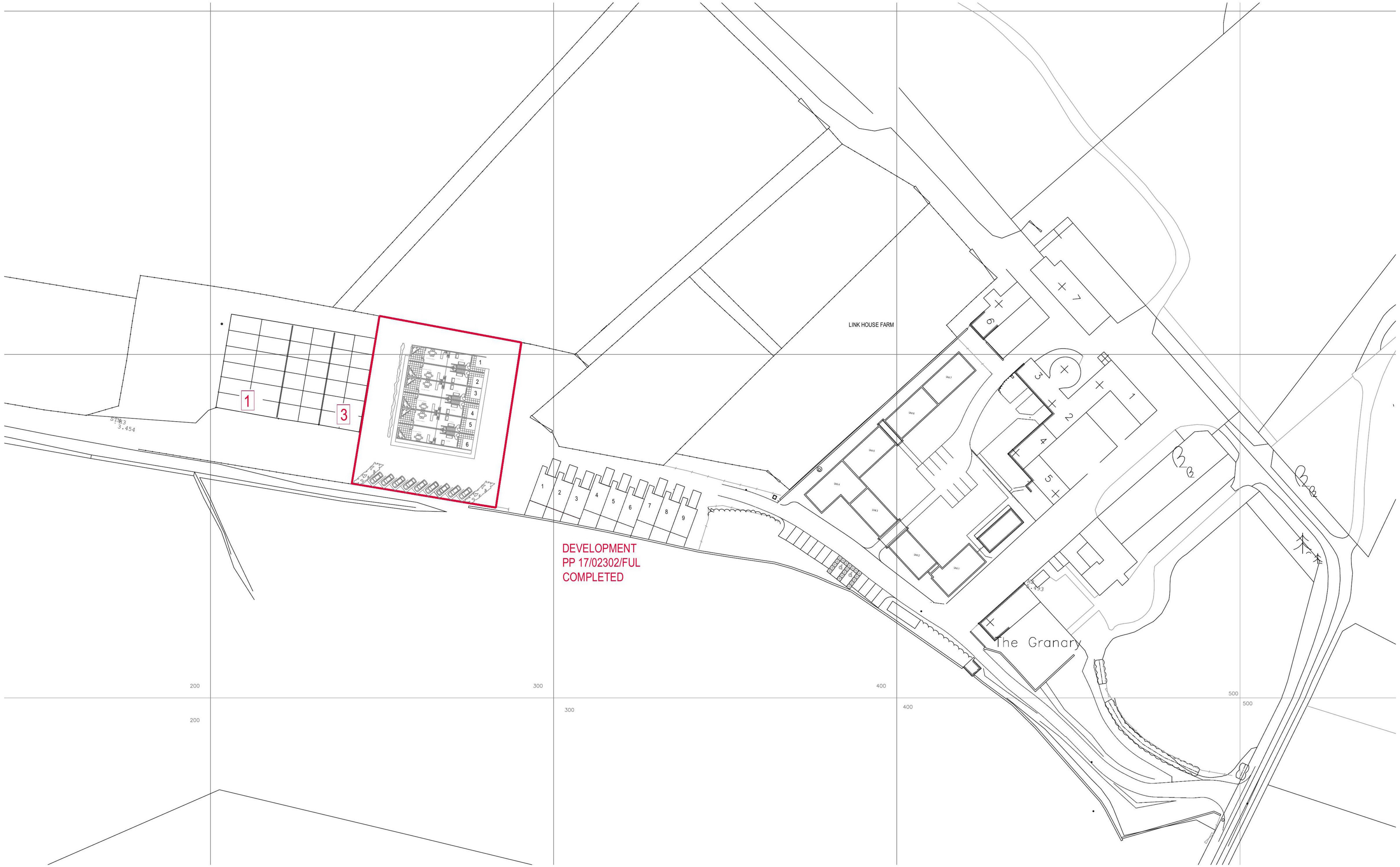

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Date Drawn: 03 MAR 2021

Client: VICTOR THOMPSON ESQ
Project Title: LINK HOUSE FARM
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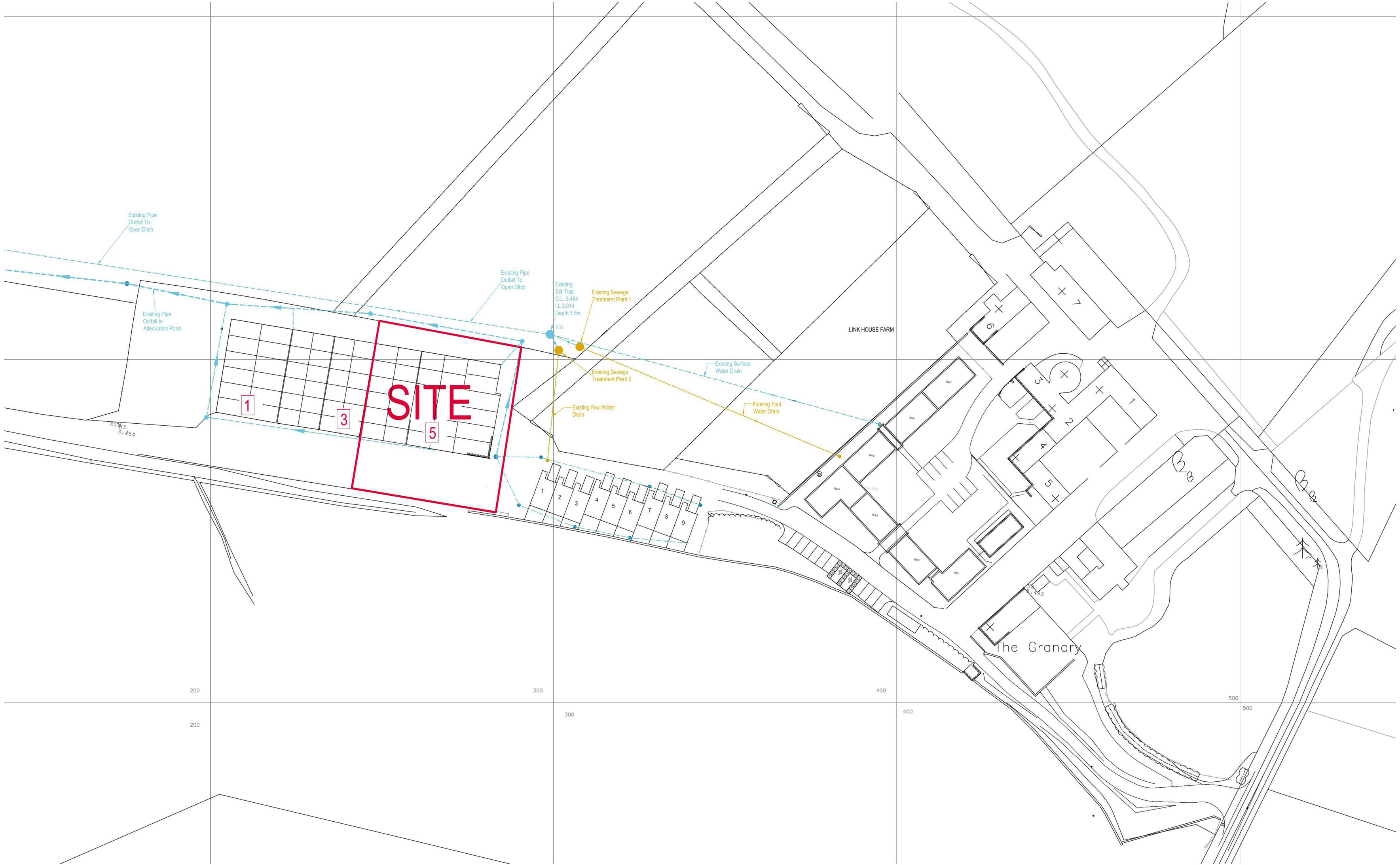
Drawing Title: PROPOSED SITE LAYOUT

Project Number: 125209/17
Drawing Number: N 003B
Revision: 0
Sheet Size: A1

6. APPENDICES

6.1 PLANS

6.1.4 EXISTING SURFACE WATER DRAINAGE LAYOUT



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Client: VICTOR THOMPSON ESQ
Project Title: LINK HOUSE FARM
NEWTON-BY-THE-SEA, EMBLETON NE66 3ED
Drawing Title: EXISTING DRAINAGE LAYOUT

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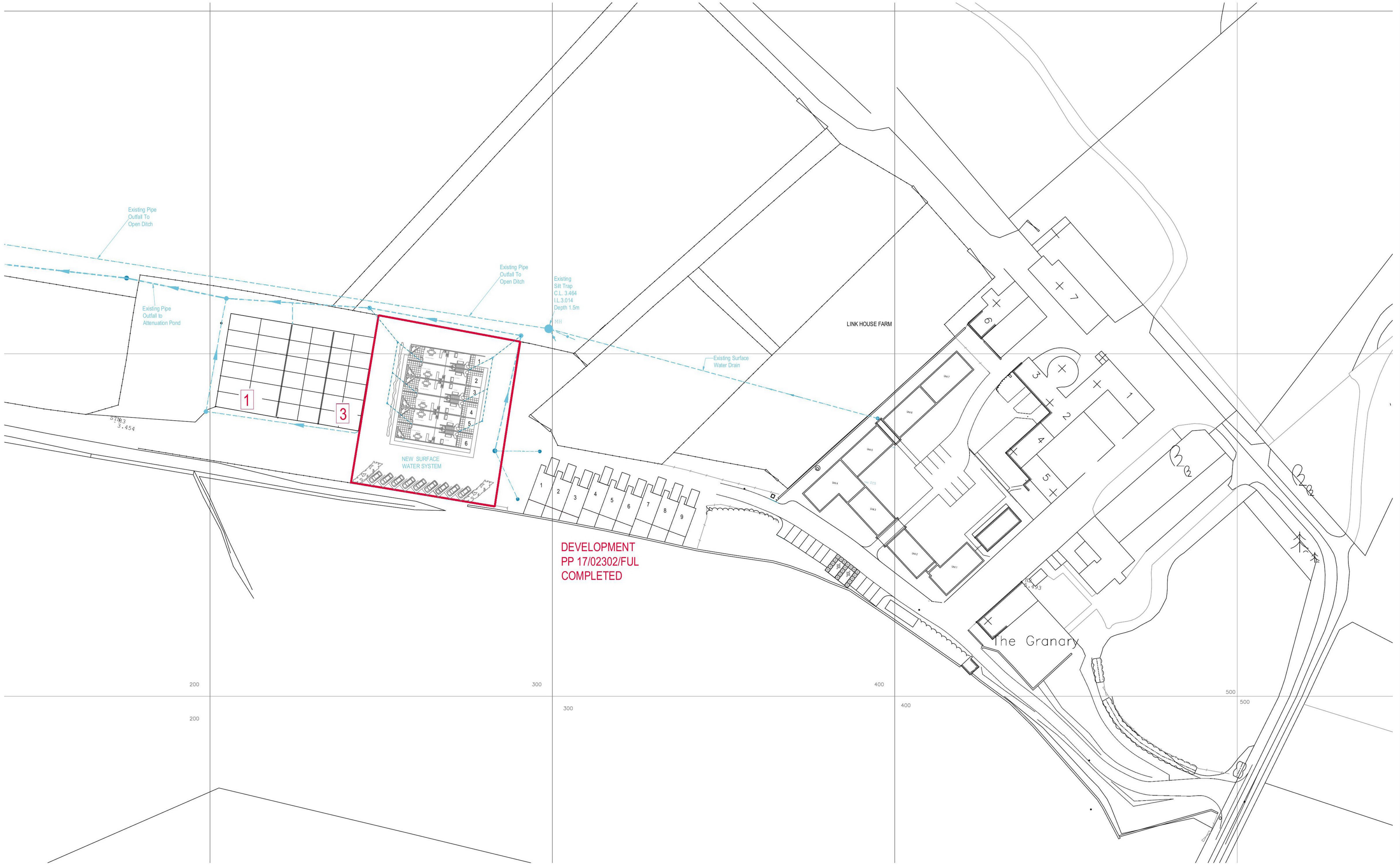
Drawing Number: N 004B
Revision: 0
Sheet Size: A1

6. APPENDICES

6.1 PLANS

6.1.5 PROPOSED SURFACE WATER DRAINAGE LAYOUT



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Date Drawn: 03 MAR 2021

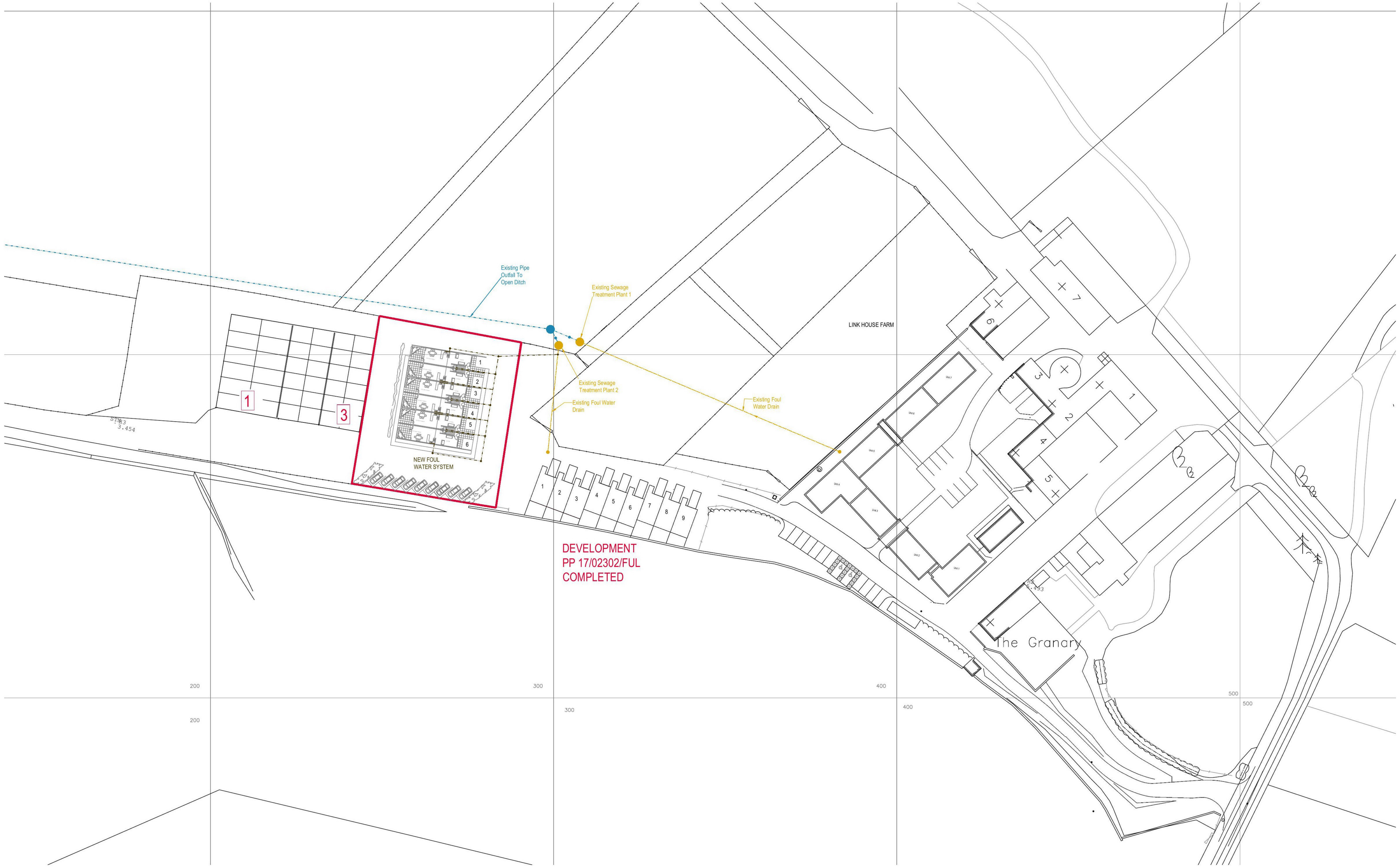
Client: VICTOR THOMPSON ESQ
Project Title: LINK HOUSE FARM NEWTON-BY-THE-SEA, EMBLETON NE66 3ED
Drawing Title: PROPOSED SURFACE WATER LAYOUT

Project Number: 125209/17
Drawing Number: N 005B
Revision: 0
Sheet Size: A1

6. APPENDICES

6.1 PLANS

6.1.6 PROPOSED FOUL WATER DRAINAGE LAYOUT



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Client: VICTOR THOMPSON ESQ
Project Title: LINK HOUSE FARM
NEWTON-BY-THE-SEA, EMBLETON NE66 3ED
Drawing Title: PROPOSED FOUL WATER LAYOUT

Project Number: 125209/17
Drawing Number: N 006B
Revision: 0
Sheet Size: A1

6. APPENDICES

6.2 DOCUMENTS

6.2.1 APPROVED SURFACE WATER DRAINAGE DESIGN FOR CHALETS

Northumberland
County Council

Mr Robin Wood
R & K Wood Planning LLP
1 Meadowfield Court
Meadowfield Ind. Est.
Ponteland
Newcastle upon Tyne
NE20 9SD

Our Ref: 19/03910/DISCON
Your Ref:
Contact: Mr James Hudson
Direct Line: 01670 622646
E-Mail: James.Hudson@northumberland.gov.uk
Date: 6th May 2020

Dear Sir/Madam,

Application to Northumberland County Council – Development Management

Proposal Discharge of conditions : 14 (surface water management) related to planning approval 17/02302/FUL

Location The Shallows Link House Farm Newton-By-The-Sea Alnwick Northumberland NE66 3FJ

Applicant Mr V THOMPSON
Linkhouse Farm, The Link Newton-By-The-Sea NE66 3ED

Thank you for your application for the discharge of planning conditions which was deemed as valid on the 19th September 2019. I have given consideration to the information submitted and have the following comments to make:-

The development hereby permitted shall not be commenced until such time as a scheme for surface water management, including a timetable for the implementation of the scheme and details of adoption and maintenance of all features, has been submitted to, and approved in writing by, the Local Planning Authority. The development shall thereafter be carried out in accordance with the agreed details and timetable.

Reason: To ensure the effective disposal of surface water runoff from the development in accordance with the National Planning Policy Framework.

Comment:

Following consultation with the LLFA (01.10.19, 17.10.2019 and 27.04.2020) it can be considered that details submitted within the following document are suitable to discharge this condition:

- Topographic Survey Surface Water Drainage Strategy Drawing Number 125209/ 17 N015
- Rev 2 Produced by Northpoint consulting dated 13/03/2020
- Microdrainage calculations dated 13/03/2020 Produced by North point Consulting

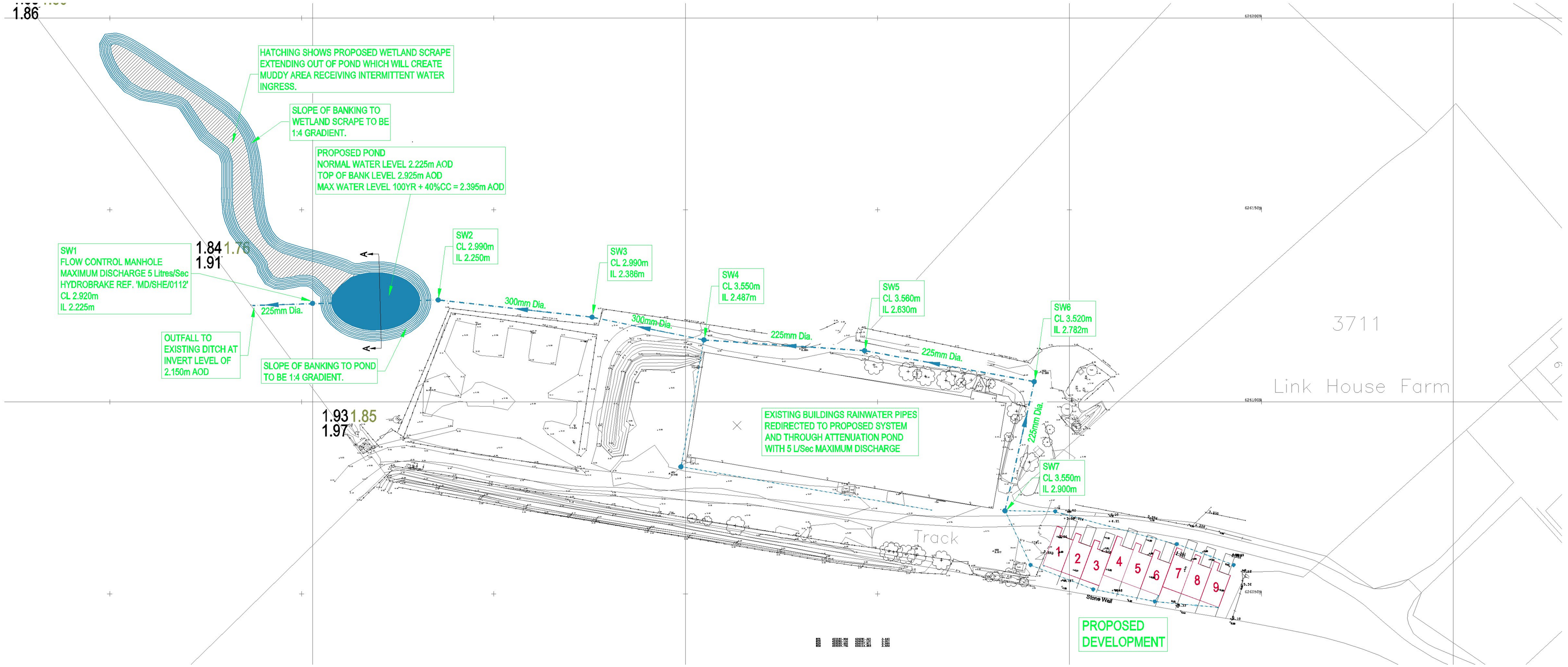
- Attenuation Pond Maintenance Schedule

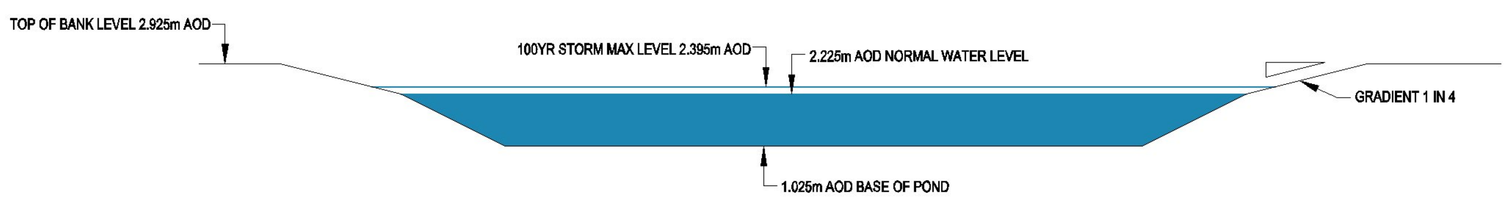
The condition will be discharged upon completion of the works in accordance with the approved details.

Yours faithfully,

[redacted]

Rob Murfin
Director of Planning





TYPICAL POND CROSS SECTION AA
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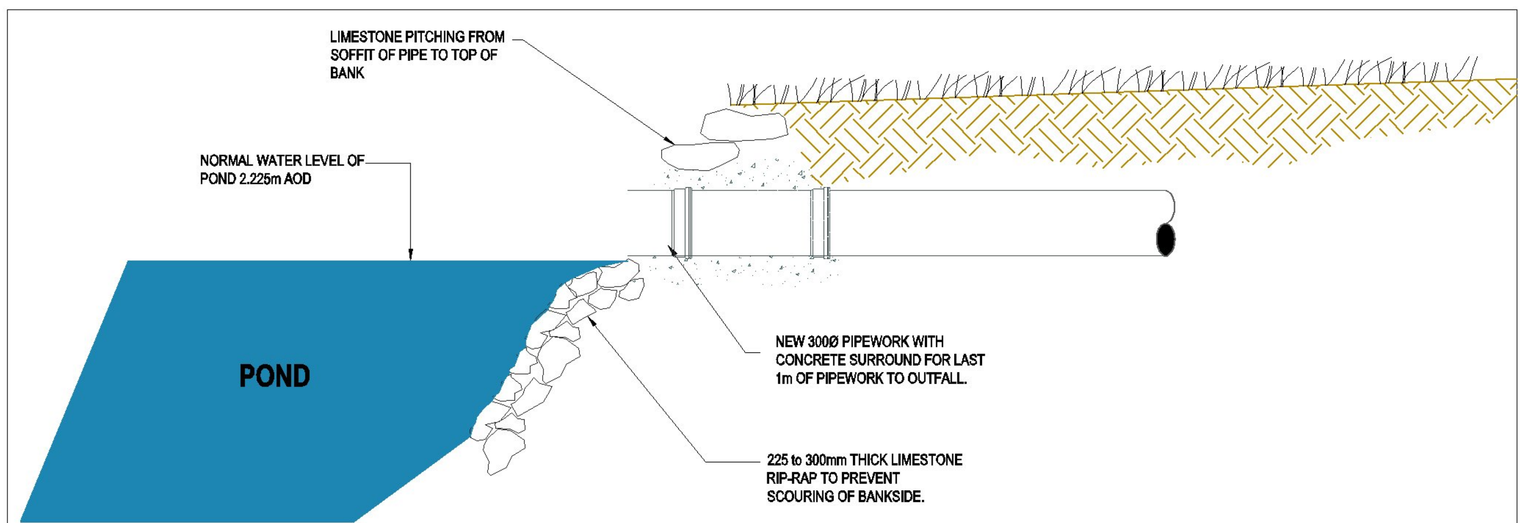

CROSS SECTION OF TYPICAL PROPOSED OUTFALL/HEADWALL
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1	13/03/2020	DW	ABL	WETLAND SCRAPE ADDED FROM POND.
2	16/04/20	DW	ABL	TYPICAL CROSS SECTIONS OF POND AND HEADWALL ADDED.
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Date Drawn: 16 DEC 2019

Client: VICTOR THOMPSON ESQ
Project Title: ROPOSED HOLIDAY CHALETS LINK HOUSE FARM
Drawing Title: TOPOGRAPHIC SURVEY SURFACE WATER DRAINAGE SCHEME

NORTHPOINT

Project Number: 125209/17
Drawing Number: N 015
Revision: 2
Sheet Size: A1

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)	2	Add Flow / Climate Change (%)	0
M5-60 (mm)	17.300	Minimum Backdrop Height (m)	0.200
Ratio R	0.302	Maximum Backdrop Height (m)	1.500
Maximum Rainfall (mm/hr)	100	Min Design Depth for Optimisation (m)	1.200
Maximum Time of Concentration (mins)	30	Min Vel for Auto Design only (m/s)	1.00
Foul Sewage (l/s/ha)	0.000	Min Slope for Optimisation (1:X)	500
Volumetric Runoff Coeff.	0.750		

Designed with Level Inverts

Time Area Diagram for Storm

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.146	4-8	0.119

Total Area Contributing (ha) = 0.265

Total Pipe Volume (m^3) = 10.242

Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
SW7	3.550	0.650	Open Manhole	900 x 675	1.000	2.900	225				
SW6	3.520	0.738	Open Manhole	900 x 675	1.001	2.782	225	1.000	2.782	225	
SW5	3.560	0.930	Open Manhole	900 x 675	1.002	2.630	225	1.001	2.630	225	
SW4	3.550	1.063	Open Manhole	900 x 675	1.003	2.487	225	1.002	2.487	225	
SW3	2.990	0.604	Open Manhole	900 x 675	1.004	2.386	300	1.003	2.386	225	
SW2	2.990	0.740	Open Manhole	900 x 675	1.005	2.250	300	1.004	2.250	300	
SW1	2.990	0.765	Open Manhole	1200	1.006	2.225	300	1.005	2.225	300	
OUTFALL	2.990	0.840	Open Manhole	0		OUTFALL		1.006	2.150	300	

PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	225	SW7	3.550	2.900	0.425	Open Manhole	900 x 675
1.001	o	225	SW6	3.520	2.782	0.513	Open Manhole	900 x 675
1.002	o	225	SW5	3.560	2.630	0.705	Open Manhole	900 x 675
1.003	o	225	SW4	3.550	2.487	0.838	Open Manhole	900 x 675
1.004	o	300	SW3	2.990	2.386	0.304	Open Manhole	900 x 675
1.005	o	300	SW2	2.990	2.250	0.440	Open Manhole	900 x 675
1.006	o	300	SW1	2.990	2.225	0.465	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	34.600	293.2	SW6	3.520	2.782	0.513	Open Manhole	900 x 675
1.001	44.800	294.7	SW5	3.560	2.630	0.705	Open Manhole	900 x 675
1.002	42.000	293.7	SW4	3.550	2.487	0.838	Open Manhole	900 x 675
1.003	29.700	294.1	SW3	2.990	2.386	0.379	Open Manhole	900 x 675
1.004	40.300	296.3	SW2	2.990	2.250	0.440	Open Manhole	900 x 675
1.005	4.000	160.0	SW1	2.990	2.225	0.465	Open Manhole	1200
1.006	15.600	208.0	OUTFALL	2.990	2.150	0.540	Open Manhole	0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.006	OUTFALL	2.990	2.150	0.000	0	0

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
Hot Start (mins)	0	Inlet Coeffiecient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1

Number of Input Hydrographs	0	Number of Storage Structures	1
Number of Online Controls	1	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Region	England and Wales
Return Period (years)	2	M5-60 (mm)	17.300

Synthetic Rainfall Details

Ratio R	0.302	Cv (Winter)	0.840
Profile Type	Summer	Storm Duration (mins)	30
Cv (Summer)	0.750		

Online Controls for Storm

Hydro-Brake Optimum® Manhole: SW1, DS/PN: 1.006, Volume (m³): 1.1

Unit Reference	MD-SHE-0112-5000-0575-5000
Design Head (m)	0.575
Design Flow (l/s)	5.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Diameter (mm)	112
Invert Level (m)	2.225
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.575	5.0
Flush-Flo™	0.190	5.0
Kick-Flo®	0.415	4.3
Mean Flow over Head Range	-	4.2

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake Optimum® as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	3.9	1.200	7.0	3.000	10.8	7.000	16.3
0.200	5.0	1.400	7.6	3.500	11.7	7.500	16.8
0.300	4.8	1.600	8.1	4.000	12.4	8.000	17.4
0.400	4.4	1.800	8.5	4.500	13.2	8.500	17.9
0.500	4.7	2.000	8.9	5.000	13.8	9.000	18.4
0.600	5.1	2.200	9.4	5.500	14.5	9.500	19.0
0.800	5.8	2.400	9.8	6.000	15.0		
1.000	6.5	2.600	10.1	6.500	15.7		

Storage Structures for Storm

Tank or Pond Manhole: SW1, DS/PN: 1.006

Invert Level (m) 2.225

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	735.0	0.700	1450.0	1.400	0.0	2.100	0.0
0.100	833.0	0.800	0.0	1.500	0.0	2.200	0.0
0.200	934.0	0.900	0.0	1.600	0.0	2.300	0.0
0.300	1035.0	1.000	0.0	1.700	0.0	2.400	0.0
0.400	1134.0	1.100	0.0	1.800	0.0	2.500	0.0
0.500	1240.0	1.200	0.0	1.900	0.0		
0.600	1345.0	1.300	0.0	2.000	0.0		

Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	2.000
Hot Start Level (mm)	0	Inlet Coeffiecient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

Number of Input Hydrographs	0	Number of Storage Structures	1
Number of Online Controls	1	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.302
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	17.700	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0	DVD Status	OFF
Analysis Timestep	Fine	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	100
Climate Change (%)	40

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	100	+40%	100/15 Summer				
1.001	15 Winter	100	+40%	100/15 Summer				
1.002	15 Winter	100	+40%	100/15 Summer				
1.003	15 Winter	100	+40%	100/15 Summer				
1.004	15 Winter	100	+40%	100/15 Summer				
1.005	15 Winter	100	+40%	100/15 Summer				
1.006	480 Winter	100	+40%					

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	SW7	3.473	0.348	0.000	0.77	0.0	26.1	FLOOD RISK
1.001	SW6	3.422	0.415	0.000	0.68	0.0	23.2	FLOOD RISK
1.002	SW5	3.355	0.500	0.000	1.07	0.0	36.8	FLOOD RISK
1.003	SW4	3.187	0.475	0.000	1.67	0.0	55.4	SURCHARGED
1.004	SW3	2.905	0.219	0.000	1.34	0.0	94.1	FLOOD RISK
1.005	SW2	2.651	0.101	0.000	1.62	0.0	94.3	SURCHARGED
1.006	SW1	2.395	-0.130	0.000	0.07	0.0	5.0	OK

Attenuation Pond Maintenance Schedule

Linkhouse Farm, Newton by the Sea

Planning Application Number: 17/02302/FUL (9 Holiday Units)

3 Monthly Inspection/Maintenance

- Inspect pond inlet and outlet pipework and clear away any debris and vegetation impeding clear flow of water.
- Remove any litter and floating debris.
- Inspect outlet control manhole and hydrobrake for blockage and silt build up in catchpit sump within chamber. Action clearing and removal of debris as required.
- Check outlet pipework to Ditch is running clear. Action clearing of debris as required.

Inspection Date	By (Name)	Detail Additional Works Required	Additional works completed by: (Insert Company/Name)	Works Completed Date

5 Yearly Maintenance

- Remove excessive vegetation from banks of pond.
- Measure depth of silt within the pond; arrange for removal of excessive silt build up affecting the operation of the pond.
- Remove excessive weed and reed growth within the pond affecting its operation.

Inspection Date	By (Name)	Detail Additional Works Required	Additional works completed by: (Insert Company/Name)	Works Completed Date

6. APPENDICES

6.2 DOCUMENTS

6.2.2 FORM FDA1

Foul Drainage Assessment Form (FDA)

Please note: **You should only use this form for planning related queries. You cannot use it to apply for an Environmental Permit but you may submit a copy of the information you have provided for planning purposes in support of your Environmental Permit application. Further information on how to apply for an environmental permit and general binding rules applicable to small discharges of domestic sewage effluent is available on the gov.uk website.**

APPLICANT DETAILS	
Name	**Victor Thompson**
Address	**Link House Farm, Newton-by-the-Sea,** **Alnwick NE66 3ED✓**
Telephone No	
e-mail	

We will use the information you provide on this form to establish whether non-mains drainage, either a new system or connection to an existing system, would be acceptable. It is important that you provide full and accurate information. Failure to do this will delay the processing of your application.

You must provide evidence that a connection to the public sewer is not feasible.

Other than in very exceptional circumstances, we will not allow the use of non-mains drainage as part of your Planning or Building Regulation application unless you can prove that a connection to the public sewer is not feasible. We do not consider non-mains drainage systems to be environmentally acceptable in locations where it is feasible to connect to a public sewer. Please note that a lack of capacity in, or other operating problems with, the public sewer are not valid reasons to use a non-mains drainage system where it is otherwise feasible to connect to a public sewer.

Where connection to the public sewer is feasible, you may need to get the agreement of either the owners of any land through which the drainage will run or, if you intend to connect via an existing private drain, the owner of that private drain.

The National Planning Practice Guidance and Building Regulations Approved Document H give a hierarchy of drainage options that must be considered and discounted in the following order:

1 Connection to the public sewer
2 Package sewage treatment plant (which can be offered to the Sewerage Undertaker for adoption)
3 Septic Tank
4 If none of the above are feasible a cesspool

You must respond to all the following questions. If you wish to submit additional information please do so, marked clearly “Additional Information”. **In some cases you will be required to provide further information in order to demonstrate that any non-mains foul drainage system proposed is acceptable.**

Feasibility of mains foul sewer connection	YES	NO
Have you provided a written explanation of why it is not feasible to connect to the public foul sewer with this form? *This must include a scaled map showing the nearest public foul sewer connection point - check with your local sewerage undertaker.*	✓	
Is the distance from your site to the closest connection point to the public foul sewer less than the number of properties to be built on the site multiplied by 30m? *(see Guidance Note 2)*		✓
Does your proposal form part of a phased development or planned development of a wider area? *If YES, please provide further details including references of any planning permissions already granted.*		✓

Non-mains connection

Please provide a plan with dimensions that clearly shows the location of the whole system in relation to the proposed development and the position of the key elements e.g. septic tank, drainage fields and points of discharge.

1. Existing system	YES	NO
Do you intend to use an existing non-mains foul drainage system?	✓	
If YES, does the system already have an Environmental Permit issued by the Environment Agency? *(In the case of a cesspool write N/A)* If YES, please provide Environmental Permit reference number.....		✓

2. Discharge	YES	NO
Do you propose to use a package treatment plant?	✓	
Do you propose to use a septic tank?		
Do you propose to use a cesspool? *If YES go to Q4*		
Have you considered having your system adopted by the sewerage undertaker? *(see Guidance Note 7).*		✓
Will all, or any part of, the discharge go to a drainage field or soakaway? *(see Guidance Note 3)* - this includes systems that combine a drainage field with a high level overflow to watercourse *If YES go to Q3.*		
Do you intend to use a system that discharges solely to watercourse? *(see Guidance Note 3) If YES go to Q9.*		✓

3. Water abstraction	YES	NO
Do you receive your water from the public mains supply?		
If not, where do you get your water supply from?		

4. Cesspools *(For methods other than cesspools write N/A)*	YES	NO
Have you provided written justification for the use of a cesspool in preference to more sustainable methods of foul drainage disposal? *(see Guidance Note 4)*		

5. Drainage field design *(For cesspools write N/A)*	YES	NO
Will the system discharge to a drainage field designed and constructed in accordance with British Standard BS6297:2007? If not, why not?		
Will the discharge from the system be located in a Source Protection Zone 1 (SPZ1)?		

6. **Ground Conditions** *(For cesspools write N/A)*	YES	NO
6a. Have you submitted a copy of the percolation test results with this form *(see Guidance Note 6)?* 6b. If NO please explain the justification for not undertaking or submitting these tests.		
6c. Is any part of the system in land which is marshy, water logged or subject to flooding?		
6d. Will the soakaway be located on artificially raised, made-up ground or ground likely to be contaminated? *If YES please provide details as additional information.*		
6e. Have you submitted the results of a trial hole at the site to establish that the proposed drainage field will be above any standing groundwater *(see Guidance Note 6)?*		

7. **Available Land**	YES	NO
Is the application site plus any available area for a soakaway less than 0.025 hectares ($250m^2$)?		

8. **Siting of drainage field/soakaway discharge from a septic tank or package treatment plant or other secondary treatment.** *You may need to make local enquiries to get a full answer to these questions.*	YES	NO
Will it be at least **10m** from a watercourse, permeable drain or land drain?		
Will it be at least **50m** from any point of abstraction from the ground for a drinking water supply (e.g. well, borehole or spring)? *This includes your own or a neighbour's supply.*		
Will the discharge be within a groundwater Source Protection Zone 1? *If yes, you will need to apply for an environmental permit*		
Are there any drainage fields/soakaways within **50m**? *This includes any foul drainage discharge system (other than the subject of this application) or surface water soakaway on either your own or a neighbour's property.*		
Will it be at least **15m** from any building?		
Will there be any water supply pipes or underground services within the disposal system, other than those required by the system? *(For cesspools write N/A)*		
Will there be any access roads, driveways or paved areas within the disposal area? *(For cesspools write N/A)*		

9. **Siting of treatment plant, septic tank or cesspool**	YES	NO
Is it at least **7m** from the habitable part of a building?	✓	
Will there be vehicular access for emptying within **30m?**	✓	
Can the plant, tank or cesspool be maintained or emptied without the contents being taken through a dwelling or place of work?	✓	

10.Expected flow

Please estimate the total flow in litres per day *(see Guidance Note 5).*	**2,400**

11. **General Binding Rules for Small Sewage Discharges**	YES	NO
Does the system meet the requirements of the General Binding Rules for small sewage discharges?		✓

12. Maintenance

How do you propose to maintain the system?

Specialist STP Maintenance Contractor

13. Declaration

I declare that the above information is factually correct.

Name	Signature	Date
Andrew B Lowe **(Applicant's Agent)**	[redacted]	**11 March 2021**

GUIDANCE NOTES:

1) This form is for use with *the* *National Planning Practice Guidance*, *British Standard BS6297:2007 and* *Building Regulations Approved Document H*. It is intended to help Local Planning Authorities establish basic information about your non-mains drainage system and decide whether you need to submit a more detailed site assessment. If a detailed site assessment is requested but not submitted, your planning application might be refused.

2) Where the distance from a site to the closest point of connection to the foul sewer is less than the number of properties that are proposed to be built on that site multiplied by 30m an Environmental Permit will be required and an applicant will need to demonstrate as part of any application for such a permit why connection to the public foul sewer is not feasible.

Number of domestic properties served by the sewage treatment system [ ] x 30 metres = Answer [ ] metres

3) In addition to Planning Permission and Building Regulation approval **you may also require an Environmental Permit from the Environment Agency (EA). Please note that the granting of Planning Permission or Building Regulation approval does not guarantee the granting of an Environmental Permit. Upon receipt of a correctly filled in application form the EA will carry out an assessment. It can take up to 4 months before the Agency is in a position to decide whether to grant a permit or not**.

4) The use of cesspools is an option of last resort as set out in the non-mains drainage hierarchy of preference in Building Regulations Approved Document H. In principle, a properly constructed and maintained cesspool, being essentially a holding tank with no discharges, should not lead to environmental, amenity or public health problems. However, in practice, it is known that such problems occur as a result of frequent overflows due to poor maintenance, irregular emptying, lack of suitable vehicular access for emptying and even through inadequate capacity. In addition to this the requirement for frequent emptying is usually carried out by a contractor involving road transport with associated environmental costs. For these reasons, the use of cesspools will not normally be considered to be a long-term foul sewage disposal solution. In view of the environmental risks associated with their use, any proposal to use cesspools must be fully justified to the Local Planning Authority

5) Package treatment plants and septic tanks should be designed and sized according to the advice given in the current edition of Flows and Loads, published by British Water. Volumes for larger systems should be calculated based on expected flows arising from the development.

6) You should refer to Building Regulations Approved Document H2 with regard to the general requirements for construction of non mains sewerage systems. **Sections 1.33 to 1.38** deal with the test requirements for trial holes and percolation tests and for convenience the text of these sections is repeated below:

1.33 A trial hole should be dug to determine the position of the standing groundwater table. The trial hole should be a minimum of 1m^2 in area and 2m deep, or a minimum of 1.5m below the invert of the proposed drainage field pipework. The ground water table should not rise to within 1m of the invert level of the proposed effluent distribution pipes. If the test is carried out in summer, the likely winter groundwater levels should be considered. A percolation test should then be carried out to assess the further suitability of the proposed area.

1.34 Percolation test method – A hole 300mm square should be excavated to a depth 300mm below the proposed invert level of the effluent distribution pipe. Where deep drains are necessary the hole should conform to this shape at the bottom, but may be enlarged above the 300mm level to enable safe excavation to be carried out. Where deep excavations are necessary a modified test procedure may be adopted using a 300mm earth auger. Bore the test hole vertically to the appropriate depth taking care to remove all loose debris.

1.35 Fill the 300mm square section of the hole to a depth of at least 300mm with water and allow it to seep away overnight.

1.36 Next day, refill the test section with water to a depth of at least 300mm and observe the time, in seconds, for the water to seep away from 75% full to 25% full level (i.e. a depth of 150mm). Divide this time by 150mm. The answer gives the average time in seconds (Vp) required for the water to drop 1mm.

1.37 The test should be carried out at least three times with at least two trial holes. The average figure from the tests should be taken. The test should not be carried out during abnormal weather conditions such as heavy rain, severe frost or drought.

1.38 Drainage field disposal should only be used when percolation tests indicate average values of V_p of between 12 and 100 and the preliminary site assessment report and trial hole tests have been favourable. This minimum value ensures that untreated effluent cannot percolate too rapidly into groundwater. Where V_p is outside these limits effective treatment is unlikely to take place in a drainage field. However, provided that an alternative form of secondary treatment is provided to treat the effluent from the septic tanks, it may still be possible to discharge the treated effluent to a soakaway.

N.B. When determining whether a discharge may be made under statutory General Binding Rules one of the requirements is that any drainage field must be designed and constructed in accordance with BS6297:2007. This specifies that the minimum percolation rate under that standard is 15s/mm and any discharge made to ground where the percolation rate is less than 15s/mm is subject to the granting of an Environmental Permit.

7) Developers may requisition a sewer from the Sewerage Undertaker to connect their development to the public sewer. Should this not be feasible on the grounds of cost and practicability, on site treatment in the form of package plants and their associated sewers (if constructed to an acceptable standard) can be offered to the sewerage undertaker for adoption. This approach is in support of advice from the Government contained in the National Planning Practice Guidance Developers are urged to discuss their requirements with the Sewerage Undertaker at the earliest possible opportunity.

8) Glossary

Package treatment plant

A package treatment plant is a system which offers varying degrees of biological sewage treatment and involves the production of an effluent which can be disposed of to ground via a drainage field or direct to a watercourse. There are many varieties of package treatment plant but all involve settling the solids before and/or after a biological treatment stage and almost all use electricity. Package treatment plants usually treat sewage to a higher standard than septic tanks but are vulnerable in the event of power failures and require more regular servicing and maintenance to ensure that they work effectively. The type of system chosen should be appropriate to the type of development proposed and take account of variations in flow and periods of inactivity, for example where the system will serve holiday accommodation where occupation and maintenance may be more irregular.

Septic tank
A septic tank is a two or three chamber system, which retains sewage from a property for sufficient time to allow the solids to form into sludge at the base of the tank, where it is partially broken down. The remaining liquid in the tank then drains from the tank by means of an outlet pipe.

Effluent from a septic tank is normally disposed of to ground via a drainage field and receives further treatment in the soils surrounding that drainage field, so that it does not generate a pollution risk to surface waters or groundwater resources (underground water). The most commonly used form of drainage field is a subsurface irrigation area, comprising a herringbone pattern of interconnecting dispersal pipes laid in shallow, shingle filled trenches. The dispersal pipes within the drainage field should be located at as shallow a depth as possible, usually within 1 metre of the ground surface. A septic tank typically needs to be desludged at least once a year in order to ensure that it continues to work effectively.

Cesspool
A cesspool is a covered watertight tank used for receiving and storing sewage and has no outlet. It relies on road transport for the removal of raw sewage and is therefore the least sustainable option for sewage disposal. It is essential that a cesspool is, and remains, impervious to the ingress of groundwater or surface water.

6. APPENDICES

6.2 DOCUMENTS

6.2.3 FLOWS AND LOADS CALCULATIONS

Northpoint
Consulting

Northpoint Consulting Ltd
14 Brenkley Way
Blezard Business Pk
Newcastle upon Tyne
NE 13 6DS
Tel : 0191 217 1952
e-mail: office@northpointconsulting.co.uk

Project **Holiday Accommodation, Link House Farm, Newton**

Client **Victor Thompson**

Date: **21 February 2021**

Subject **STP Plant Sizing - Flows and Loads 4**

Project Ref: **125208/17**

Item	Description	Population Per F & L 4	Unit	Rate litres/day	Total Volume m^3/day
	Existing Accommodation served by STP2				
	Holiday Units - 9 Units Total 9no. 2 bed units @4p	36	nr	150	5.40
	Proposed Accommodation per Application				
	Holiday Units - 6 Units Total 6no. 2 bed units @4p	20	nr	150	3.00
		56			8.40
	Volume Balancing	**45**			
	Summary				
	STP2 is WPL 8/9	**46/55**			
	<u>Existing STP2 will accommodate Proposed Development</u>				
				Total volume m^3/day	**6.70**