Drainage Philosophy

18T1690- Evistones Cottages, Rochester, Northumberland

Billinghurst George & Partners
Civil & Structural Engineers, Building Surveyors
Wellington House, Wellington Court, Preston Farm, Stockton-on-Tees, TS18 3TA
T: 01642 876 470 E: consulting@bgp-teesside.co.uk @BGPconsulting

Drainage Philosophy

Project: Evistones Cottages, Rochester, Northumberland

Client: Mr & Mrs Pritchard

BGP Job No: 18T1690

Document Checking:

Prepared By: J Herbert – Design Technician

[redacted]

Checked By: S Ramshaw – Associate Director

[redacted]

Issue	Date	Status	Checked for Issue
001	19/02/2020	Planning	SR
002	10/07/2020	Planning	SR

Contents

Appendices

1. Executive Summary / Project Background

1.1. This Drainage Philosophy has been prepared to supplement the Proposed Drainage Scheme for planning for a new cottage and multi-use garage on a brownfield site that is currently used for agricultural purposes in Rochester, Northumberland. See Appendix A for the site location.

1.2. A hierarchy for the appropriate disposal of surface water is included within Building Regulations Part H3 which states the following:

> *"Rainwater from a system provided … shall discharge to one of the following, listed in order of priority:*
>
> *1) An adequate soakaway or some other adequate infiltration system; or, where this is not reasonably practicable,*
> *2) A watercourse; or, where that is not reasonably practicable,*
> *3) A sewer."*

1.3. The following Drainage Philosophy addresses each element of the above hierarchy and details how the surface water and foul water will be discharged from site.

1.4. BGP have prepared this report based on the current information available. This report is subject to change should the information change or new information be presented.

2. Existing Site & Drainage

2.1. Site Location

2.1.1 Site Name: Evistones Cottages

2.1.2 Site Address: Evistones Cottages, Rochester, Northumberland.

2.1.3 OS Grid Reference: 383323, 596658

2.1.4 National Grid Reference: NT789005

2.2. Site Description

2.2.1 Site Area: 0.2250Ha

2.2.2 Existing Land Use: Residential (cottage), Agricultural Buildings and Garages

2.2.3 Proposed Land Use: Residential (cottage) and Garages

2.2.4 Local Planning Authority: Northumberland County Council (NCC)

2.2.5 Sewer Undertaker: Northumbrian Water (NWL)

2.2.6 The site is located approximately 2km west of Otterburn Camp on a Brownfield parcel of land which is currently used for residential and agricultural uses. The site is bounded by farmland in all directions and a watercourse/beck to the south.

2.3. Site Levels

2.3.1 A topographical survey was sourced by Michael Hall Associates in November 2017 and can be viewed in Appendix C.

2.3.2 From the topographical it can be noted that the site falls from north to south from 203.0m to 198.0m AOD however local to the development is relatively flat at 203.0m AOD.

2.4. Existing Watercourses

2.4.1. The nearest named watercourse is the River Rede, which is located approximately 0.8km northeast of the site. The watercourse runs from Northwest to Southeast through the surrounding landscape.

2.4.2. There is an unnamed beck to the south approx. 80m from site which the current development discharges to.

2.5 Existing Public and Private Drainage

2.5.1 No public sewers are located within the nearby vicinity of the site.

3. Proposed Site Details

3.1. Development Proposals

3.1.1. The proposals are the construction of a new cottage and multi-use garage in Rochester, Northumberland. See Appendix A for the Site Location plan.

3.1.2. The proposed site layout within Appendix B indicates that the proposals will be constructed in the location of the (to be) demolished existing cottage and out buildings.

3.1.3. The proposed site layout within Appendix B indicates the construction of a new area of courtyard and turning area to the rear of the existing courtyard. Works to the existing tarmac will be required to enable the tie in detail of new to existing.

3.1.4. The development is to remain private and is developed on private property.

4. Surface Water Drainage Proposals

4.1. Existing Drainage Regime

4.1.1 A topographical survey was sourced by Michael Hall Associates in November 2017 (Appendix C) and shows chambers located to the existing property perimeter.

4.1.2 The existing drainage network to the property has been investigated and can be confirmed that the surface and foul water are drained in separate systems.

4.1.3 The surface water system to the property and outbuildings drains via gravity throughout a network within the courtyard and outfalls to an existing beck approx. 80m south of the site.

4.1.4 The foul water from the existing main house drains to a treatment works.

4.1.5 The foul water from the existing cottage drains to a septic tank.

4.1.6 No public drainage was identified within the site.

4.2. Current Guidelines

4.2.1. In accordance with Building Regulations and NPPF the disposal of surface water has been considered in the following order of priority; discharge to ground, where not reasonably practicable, a watercourse, or where not reasonably practicable a sewer.

4.3. Discharge to Ground

4.3.1. Discharge of the surface water to ground via infiltration is suited to sites which have ground conditions made up of gravel, sand or a mixture of the two. Sands and gravels permit rapid dispersion and infiltration of surface water which is necessary to ensure that overland flooding does not occur during intense rainfall periods.

4.3.2. It is deemed impractical to discharge to ground when an existing connection is available from another source.

4.4. Discharge to a Watercourse

4.4.1. The nearest named watercourse is the River Rede, which is located approximately 0.8km northeast of the site. The watercourse runs northwest to southeast throughout the surrounding landscape.

4.4.2. An existing unnamed watercourse is located onsite and an existing connection from the property already discharges to this location.

4.4.3. Due to the existing connection, it is deemed acceptable to connect into the watercourse.

4.4.4. Therefore, as per the hierarchy within Building Regulations Part H3, it is deemed necessary to discharge the surface water to a nearby watercourse.

4.5. Discharge to a Sewer

4.5.1. The surface water currently discharges to an existing beck. No public sewer in located within close vicinity of the site.

4.6. Surface Water Proposals

4.6.1. See Appendix D for Proposed Drainage Plan.

4.6.2. Surface water flows from the new buildings will be discharged at a rate as per the existing buildings arrangement into the new surface water system to the buildings perimeter. This will be provided in the new systems and is to discharge to the beck to mimic the existing arrangement.

4.6.3. It is recommended that silt traps are included in all manholes immediately prior to entering the final outfall sewer to avoid silt deposits in the beck.

5. Foul Water Drainage Proposals

5.1. See Appendix D for the 'Proposed Drainage Plan'.

5.2. The foul drainage within site is to remain private and adjusted in line with current legislation.

5.3. The proposed foul drainage outfall location is into a new treatment plant to the rear of the garage which following treatment will drain via gravity into the proposed surface water network which ultimately discharges to the beck. The existing treatment works will remain status quo.

5.4. The existing septic tank within the woods will become redundant.

6. Conclusion

6.1. Based on the report, we can conclude:

6.2. It is not possible or practicable to discharge the surface water to ground.

6.3. The existing site discharges to the nearby beck and the proposed development should mimic this arrangement.

6.4. Therefore not practicable to discharge the surface water to a sewer.

6.5. The proposals are the construction of a new cottage and garages on a brownfield site that is currently used for residential and agricultural purposes. See Appendix A for site location plan.

6.6. A proposed drainage scheme has been recommended within Appendix D.

6.7. We conclude that the proposals will not increase flood risk elsewhere and are in keeping with current guidelines.

6.8. This statement has been prepared with reference to the information available at the time of writing. The details of the report may be revised upon receipt of additional or further information.

Report No: 18T1690-DP001

Report Title: Drainage Philosophy – Evistones Cottages, Rochester, Northumberland

James Herbert – Design Technician
Date: 10/07/2020

Stephen Ramshaw – Associate Director
Date: 10/07/2020

For and on behalf of Billinghurst George & Partners

Appendix A

Site Location Plan


A68
Rochester
A68
A68
Evistones Cottage
Horsley
A68
A68

Appendix B

Proposed Site Layout

FIELD

Note:
Refer to Rural Solutions Landscape proposals for full details of external works, hard surfacing and planting proposals

TERRACE

Lawn

Dashed red lines indicate footprint of existing buildings

STABLE COURTYARD

Lawn

Kitchen Garden

BARN BEYOND

Rev B PS 22-06-20 Single storey extension increased 3m.
Rev A PS 11-02-20 Updated to suit approved Cottage layout, with alterations to Kitchen and Gym openings indicated only.

MICHAELHALLASSOCIATES
Architecture & Project Management

Bethel Hall
Morton Lane
East Morton
West Yorkshire
BD20 5UE

T: 01274 512639
E: mike@michaelhall-associates.co.uk

Proposed Development
Evistones Farm
Rochester
for
James Pritchard

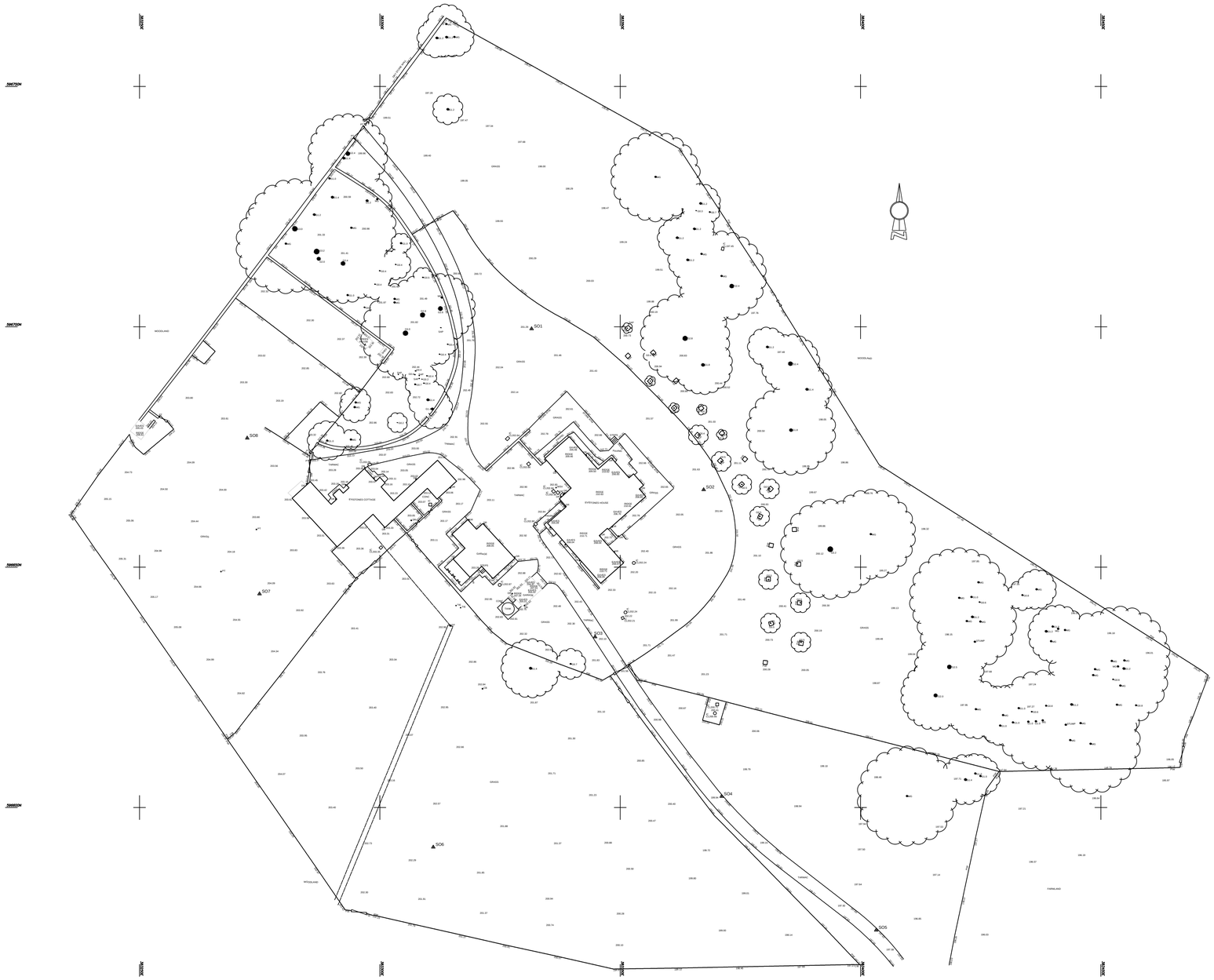
Proposed Site Layout

Date:	Drawn By:	Checked By:	Scale: A1@
Jul' 19	PS		1:200

Project No:	Drawing No:	Revision:
3317	041	B

Appendix C

Topographical Survey



MICHAELHALLASSOCIATES
Architecture & Project Management

Bethel Hall
Morton Lane
East Morton
West Yorkshire
BD20 5UE

T: 01274 512639
E: mike@michaelhall-associates.co.uk

Proposed Development
Evistones Cottage
Rochester
for
Mr & Mrs Pritchard

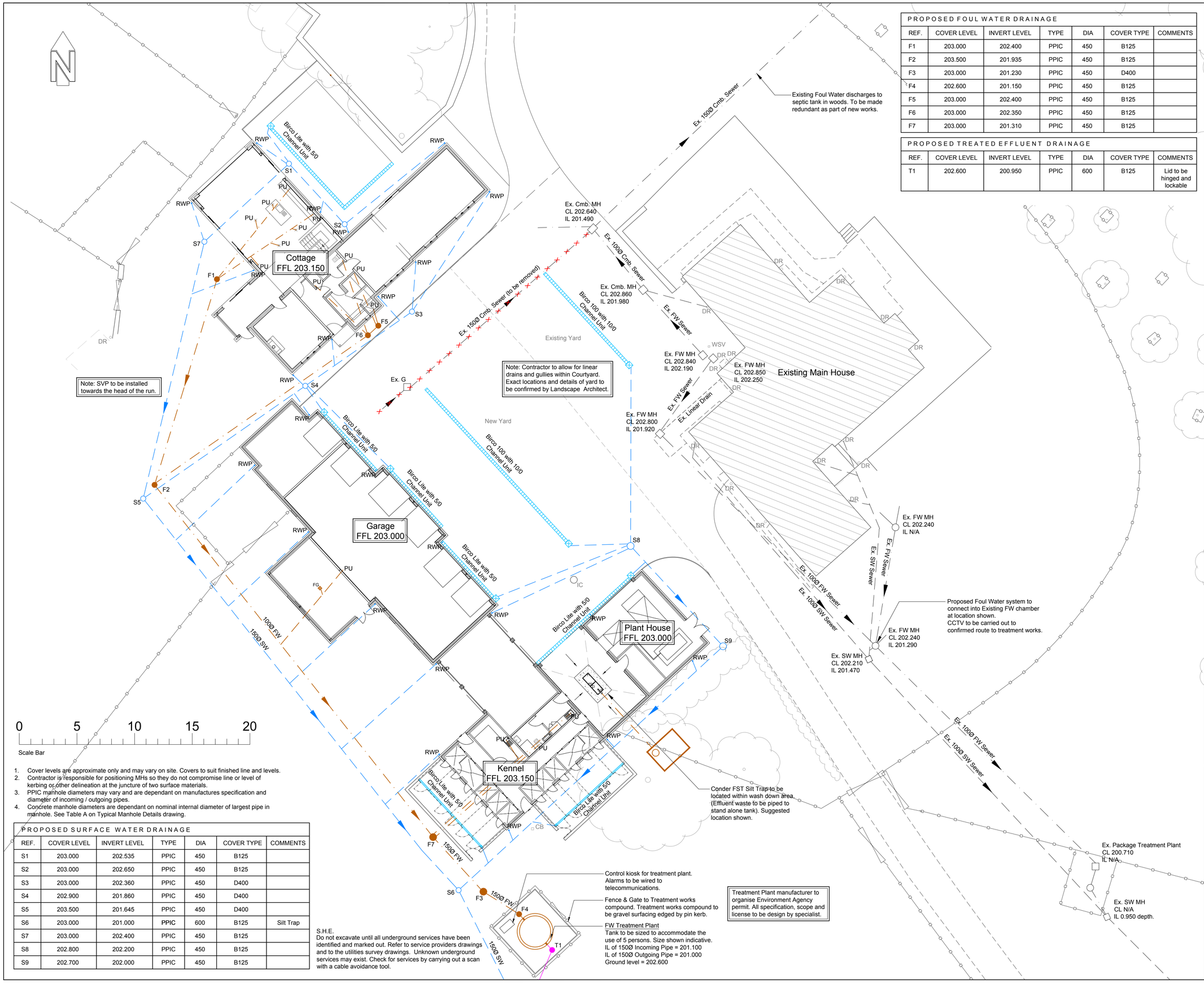
Existing Site Survey
SO

Date:	Drawn By:	Checked By:	Scale: A1@
Nov' 17	PS		1:500

Project No:	Drawing No:	Revision:
3317	002	-

Appendix D

Proposed Drainage Plan



1. Cover levels are approximate only and may vary on site. Covers to suit finished line and levels.
2. Contractor is responsible for positioning MHs so they do not compromise line or level of kerbing or other delineation at the juncture of two surface materials.
3. PPIC manhole diameters may vary and are dependant on manufactures specification and diameter of incoming / outgoing pipes.
4. Concrete manhole diameters are dependant on nominal internal diameter of largest pipe in manhole. See Table A on Typical Manhole Details drawing.

PROPOSED SURFACE WATER DRAINAGE

REF.	COVER LEVEL	INVERT LEVEL	TYPE	DIA	COVER TYPE	COMMENTS
S1	203.000	202.535	PPIC	450	B125	
S2	203.000	202.650	PPIC	450	B125	
S3	203.000	202.360	PPIC	450	D400	
S4	202.900	201.860	PPIC	450	D400	
S5	203.500	201.645	PPIC	450	D400	
S6	203.000	201.000	PPIC	600	B125	Silt Trap
S7	203.000	202.400	PPIC	450	B125	
S8	202.800	202.200	PPIC	450	B125	
S9	202.700	202.000	PPIC	450	B125	

S.H.E.
Do not excavate until all underground services have been identified and marked out. Refer to service providers drawings and to the utilities survey drawings. Unknown underground services may exist. Check for services by carrying out a scan with a cable avoidance tool.

Control kiosk for treatment plant. Alarms to be wired to telecommunications.

Fence & Gate to Treatment works compound. Treatment works compound to be gravel surfacing edged by pin kerb.

FW Treatment Plant
Tank to be sized to accommodate the use of 5 persons. Size shown indicative.
IL of 150Ø Incoming Pipe = 201.100
IL of 150Ø Outgoing Pipe = 201.000
Ground level = 202.600

Treatment Plant manufacturer to organise Environment Agency permit. All specification, scope and license to be design by specialist.

PROPOSED FOUL WATER DRAINAGE

REF.	COVER LEVEL	INVERT LEVEL	TYPE	DIA	COVER TYPE	COMMENTS
F1	203.000	202.400	PPIC	450	B125	
F2	203.500	201.935	PPIC	450	B125	
F3	203.000	201.230	PPIC	450	D400	
F4	202.600	201.150	PPIC	450	B125	
F5	203.000	202.400	PPIC	450	B125	
F6	203.000	202.350	PPIC	450	B125	
F7	203.000	201.310	PPIC	450	B125	

PROPOSED TREATED EFFLUENT DRAINAGE

REF.	COVER LEVEL	INVERT LEVEL	TYPE	DIA	COVER TYPE	COMMENTS
T1	202.600	200.950	PPIC	600	B125	Lid to be hinged and lockable

DO NOT SCALE

Notes

1. All works to be carried out in accordance with:
   - 1.1 "Sewers for Adoption" The contractor should note the new changes regarding adoption of sewers and construction methods.
   - 1.2 BS EN 752 "Drain and sewer system outside buildings".
2. All levels shown are in metres and are relative to ordnance datum (m AOD).
3. Invert levels of all existing chambers and connection points are to be confirmed and engineer advised prior to commencement of any Drainage Works.
4. Concrete bed and surround is required to all gully leads and to all pipes in highways/hardstanding where cover to pipe <1200mm
5. All pipes to be either extra strength V.C. to BS 65 or PVC to BS 4660 or BS 5481 `UPONOR ULTRARIB' or concrete pipes Class 120 to BS 5911
6. All RWP & PU positions should be taken from the Architects drawings.
7. Existing sewer positions are indicative and are not to be used in conjunction with design. Contractor to confirm location.
8. All RWP connections to proposed manholes to be 100Ø. All Surface water sewers between manholes to be 150Ø unless noted otherwise.
9. CCTV to be carried out prior to construction.
10. All FW drains to be 100Ø UNO.
11. Contractor is responsible for positioning of MHs so they do not sit between two surface materials.
12. All proposed foul water to be directed towards new treatment works.

Legend

- Proposed SW Sewer
- Proposed FW Sewer
- Proposed Treated Effl.
- Existing SW Sewer
- Existing FW Sewer
- Existing Combined Sewer
- Existing Gully (DR)
- Rainwater Pipe (RWP)
- Rodding Eye (RE)
- Linear Drain with Outlet Unit (SW)
- Linear Drain with Outlet Unit (FW)
- Foul Penetration in Floor Slab (Located Indicatively) (PU)
- Foul Gully (FG)

Issued for Planning	JJH	P2	SR	10/07/2020
Issued for Planning	JJH	P1	SR	19/02/2020
AMENDMENT	BY	REV	CHK	DATE

Rev P = Preliminary T = Tender C = Construction LCI = Last Construction Issue

In instances where this drawing completes or partly completes a contract, Billinghurst George & Partners will consider that it's product has been validated, unless in a period not exceeding 90 working days, the client advises to the contrary.

Client
Mr & Mrs Pritchard

Project
Evistones Cottages
Rochester

Drawing Title
Proposed Drainage Plan
Sheet 1 of 2

Drawn	J. Herbert	Date	Feb 2020
Checked	S. Ramshaw	Date	Feb 2020
Scale	1:150	Original Size	A1

Billinghurst George & Partners
CIVIL & STRUCTURAL ENGINEERS
BUILDING SURVEYORS
1st Floor, Wellington House, Wellington Court,
Stockton-on-Tees, TS18 3TA
T 01642 876 470 @BGPconsulting
E consulting@bgp-teesside.co.uk - W www.bgp-consulting.co.uk

Drg. No. 18T1690-180 Rev. P2

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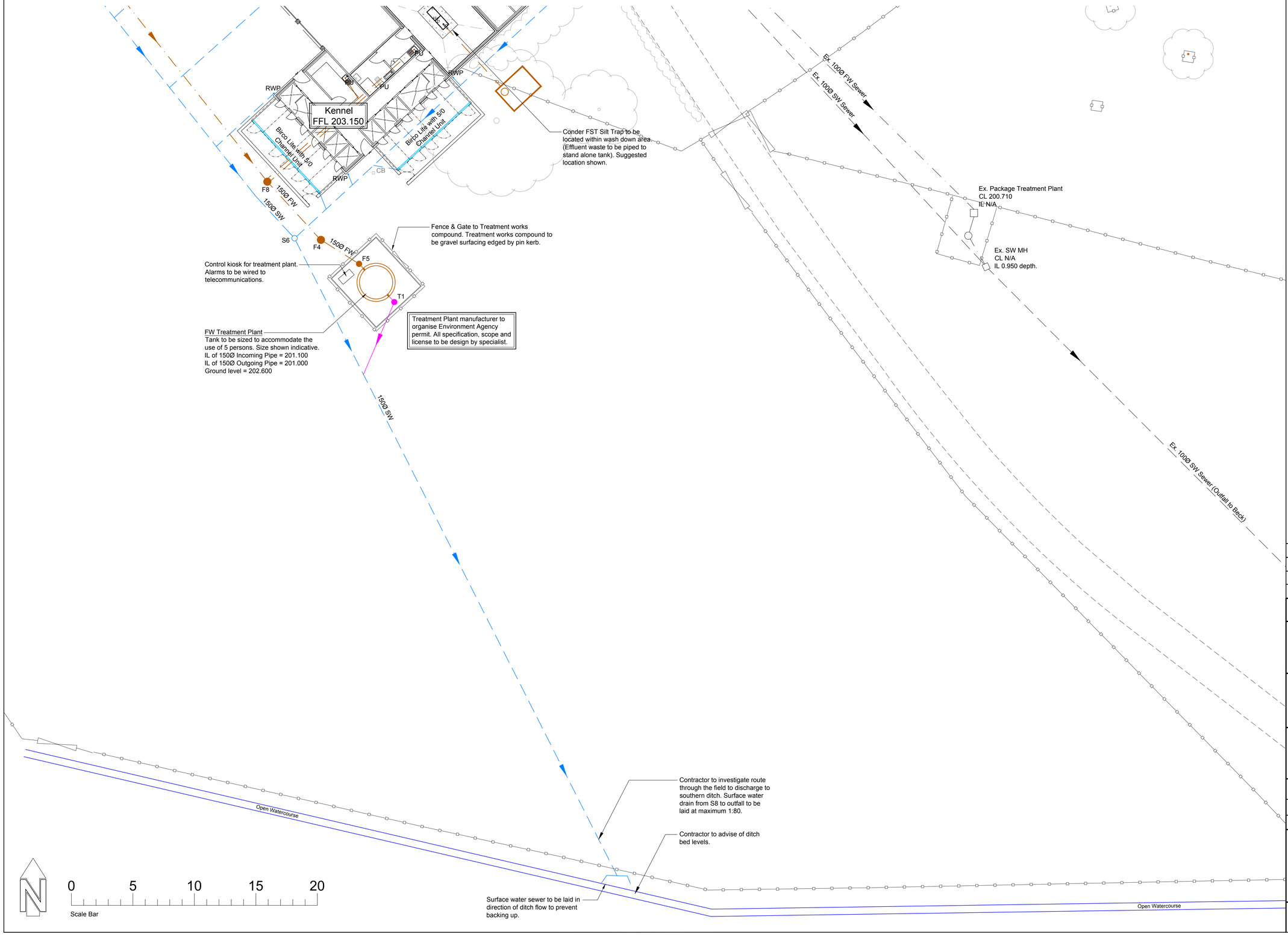

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Project
Evistones Cottages
Rochester

Drawing Title
Proposed Drainage Plan
Sheet 2 of 2

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Billinghurst George & Partners
CIVIL & STRUCTURAL ENGINEERS
BUILDING SURVEYORS
1st Floor, Wellington House, Wellington Court,
Stockton-on-Tees, TS18 3TA
T 01642 876 470 @BGPconsulting
E consulting@bgp-teeside.co.uk - W www.bgp-consulting.co.uk

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