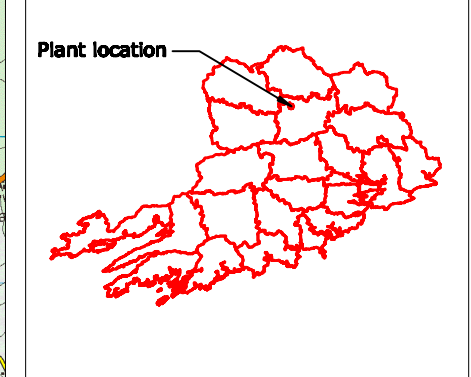


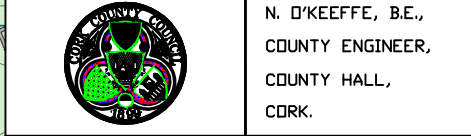
- ### NOTES
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  2. This drawing is to be read in conjunction with the Specification.
  3. This drawing is to be read in conjunction with all other contract drawings.



Key Map

No.	Date	Drawn	Survey	Checked	Revision	Description

Cork County Council,  
Northern Division.

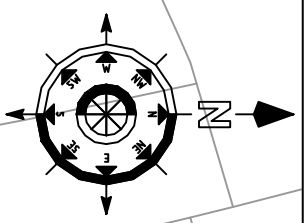
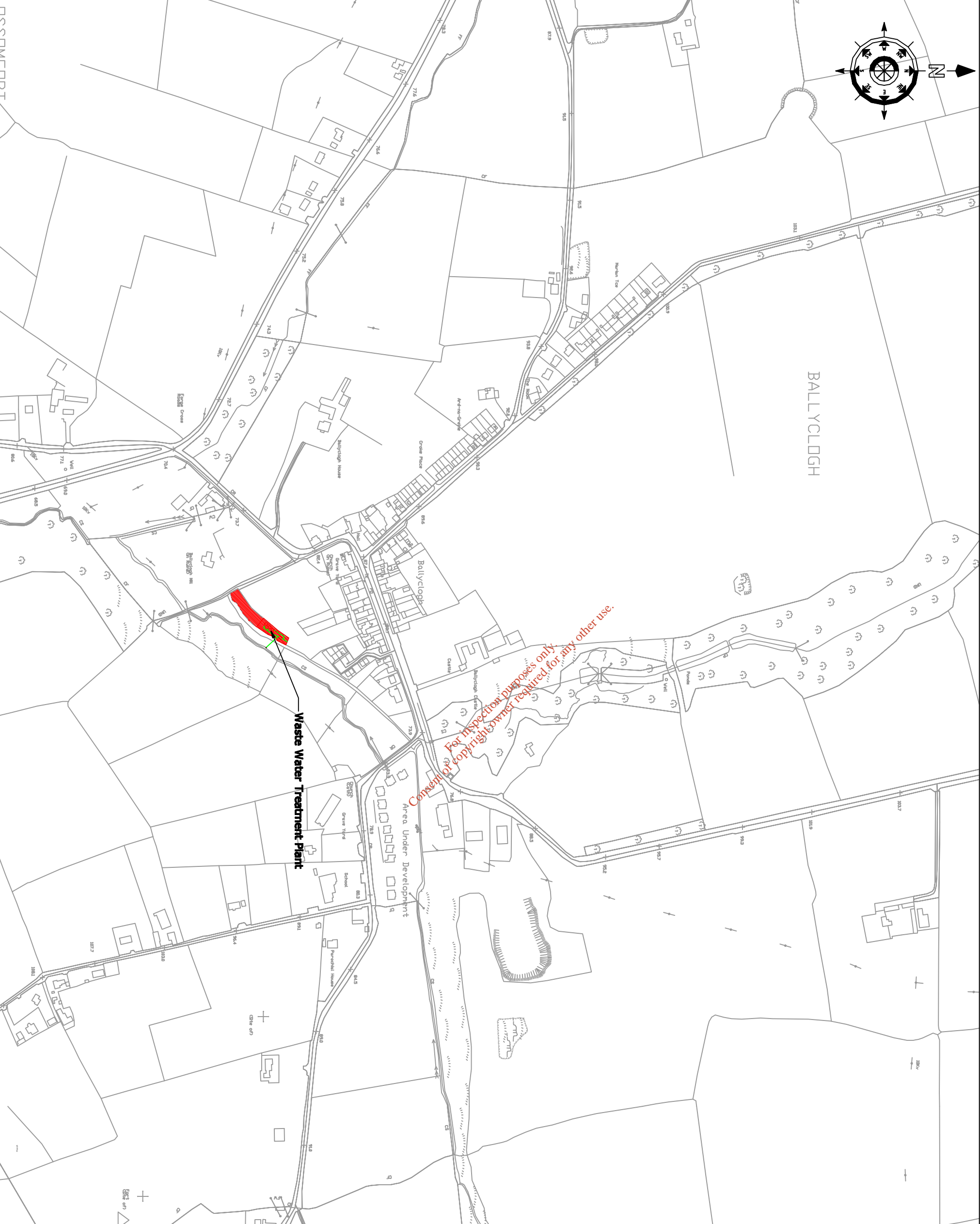


Job Title: **Ballyclogh & Environs  
Waste Water Discharge  
Licence Application**

Drawing Title:  
**Location Map  
Scale - 1:50,000  
Attachment A1 - Map 1**

Scales: <b>1:50,000 @ A3</b>	Surveyed by: <b>D.L.</b>	Drawn by: <b>D.L.</b>
Designed by: <b>E.M.</b>	Checked by: <b>P.C.</b>	Date: <b>June 2009</b>
Drawing number: <b>A1 - Map 1</b>	Rev: <b>-</b>	





**NOTES**

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3. This drawing is to be read in conjunction with all other contract drawings.

No.	Date	Drawn/Checked	Revision Description

Cork County Council,  
Northern Division.

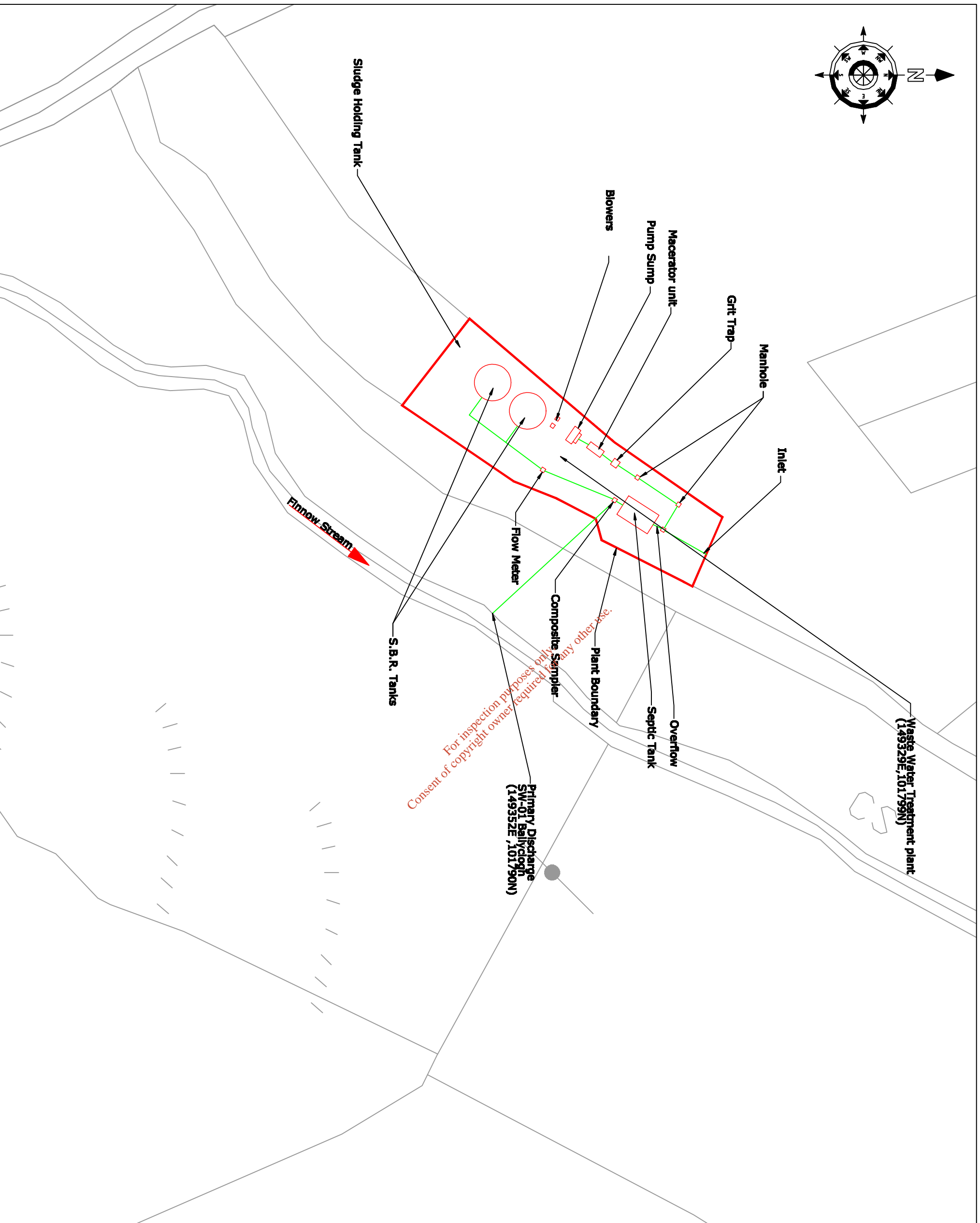
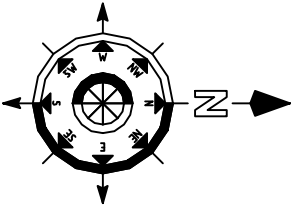


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COUNTY ENGINEER,  
COUNTY HALL,  
CORK.

Job Title:  
**Ballyclogh & Environs  
Waste Water Discharge  
Licence Application**

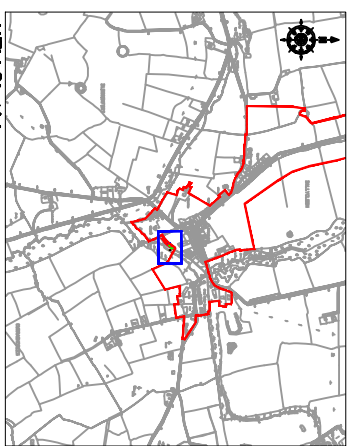
Drawing Title:  
**Site Locations of W.W.T.P.  
& Pumping stations  
Attachment A1 - Map 2**

Scales:	1:5,000 @ A3	Drawn by:	DL
Designed by:	EM	Checked by:	FL
Drawing number:	A1-Map 2	Date:	June 2009
		Rev:	-



**NOTES**

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No.	Date	Drawn/Checked	Revision Description

Cork County Council,  
Northern Division.

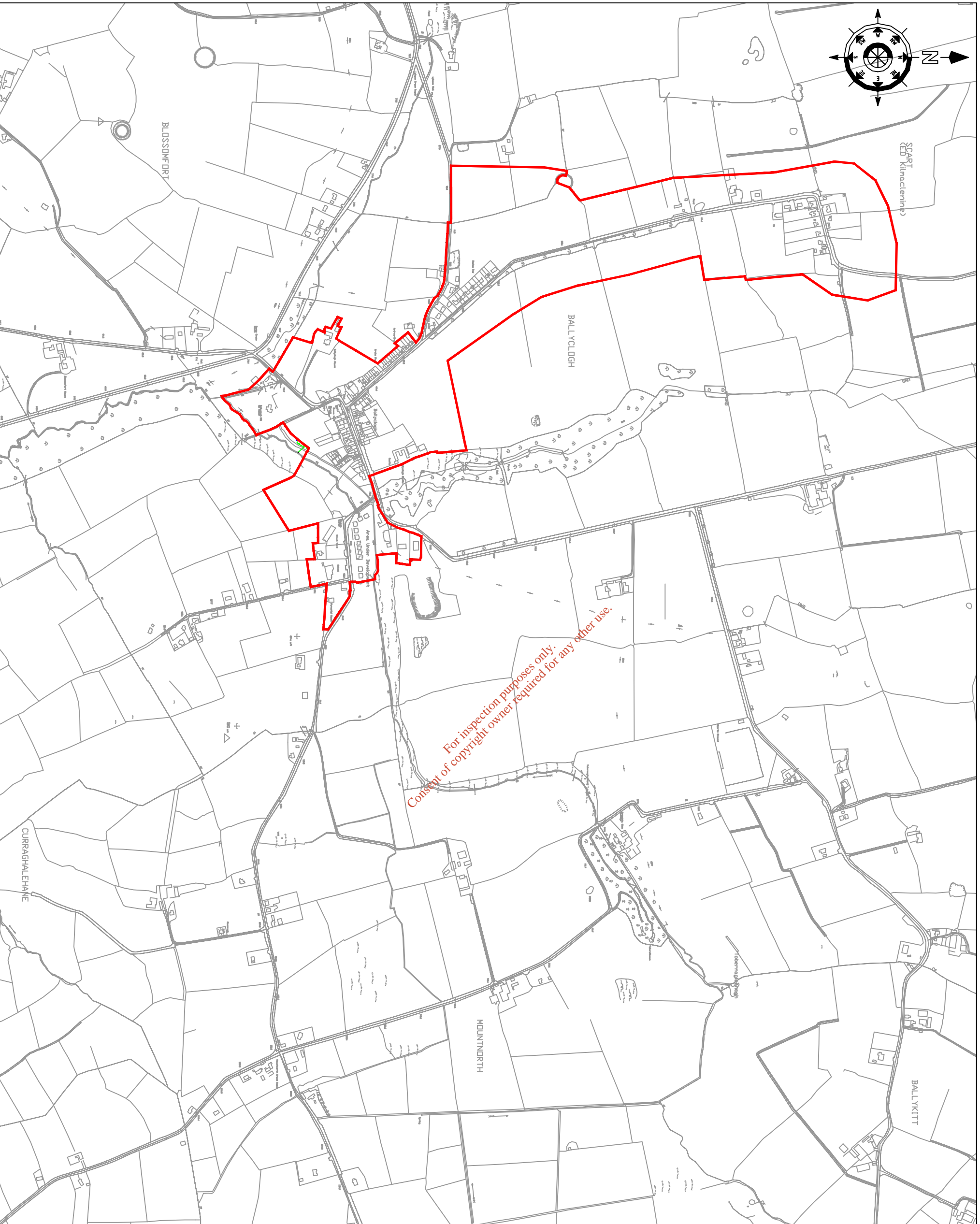


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COUNTY HALL,  
CORK.

Job Title:  
**Ballycogh & Environs  
Waste Water Discharge  
Licence Application**


Drawing Title:  
**Waste Water Treatment Plant  
Site Layout  
Attachment A1 - Map 3**

Scales:		Surveied by:	Drawn by:
1:500 @ A3	D.L.	D.L.	D.L.
Designed by:	Checked by:	Date:	
E.M.	P.C.	June 2009	
Drawing number:		Rev:	
<b>A1 - Map 3</b>		-	

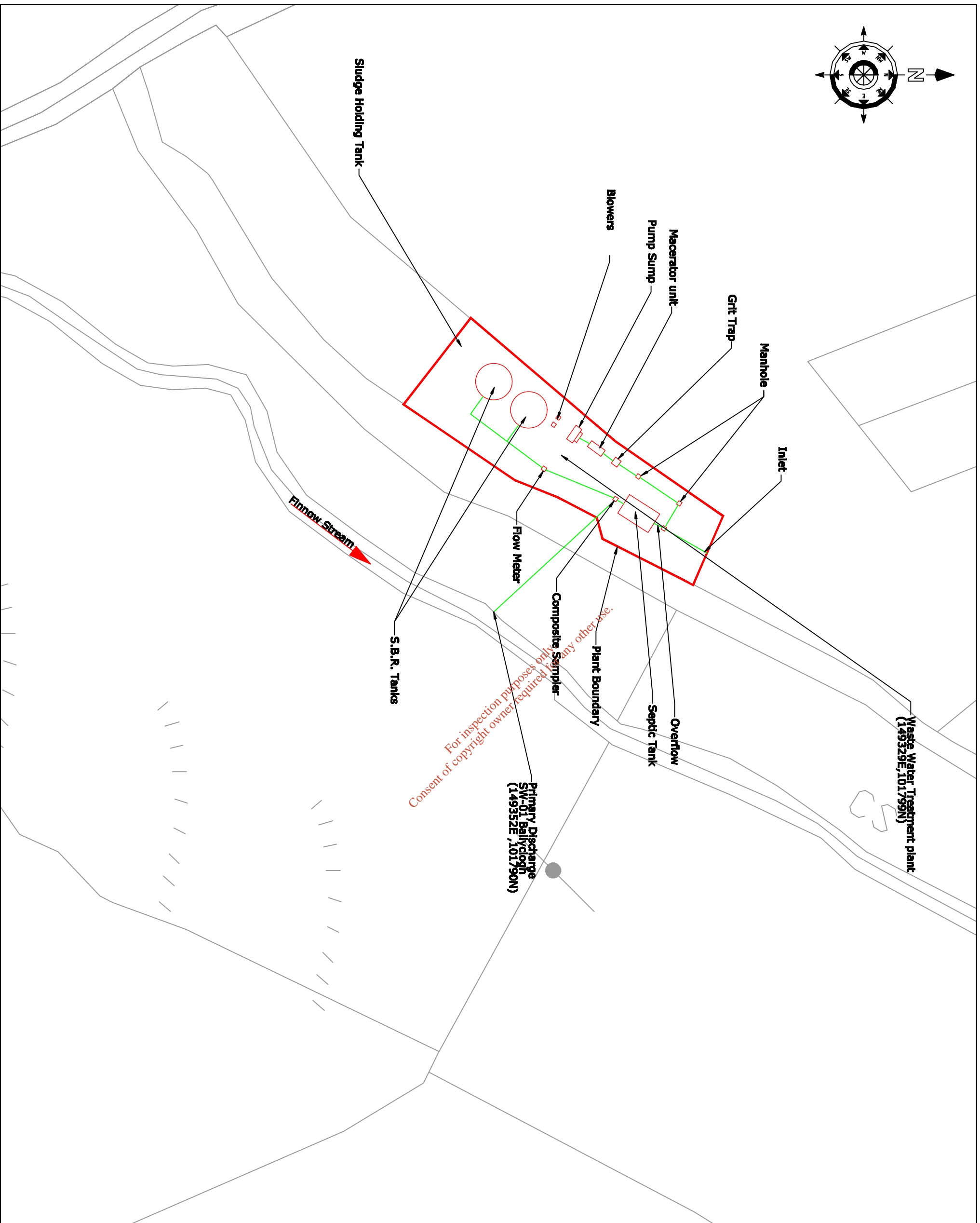
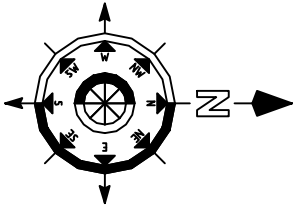


**NOTES**

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3. This drawing is to be read in conjunction with all other contract drawings.

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<p><b>Job Title:</b> Ballyclogh &amp; Environs Waste Water Discharge Licence Application</p>			
<p><b>Drawing Title:</b> Agglomeration Boundary Attachment B1 - Map 4</p>			
<p><b>Scales:</b> 1:50,000 @ A3</p>		<p><b>Drawn by:</b> D.L.</p>	
<p><b>Designed by:</b> E.M.</p>		<p><b>Checked by:</b> F.C.</p>	
<p><b>Drawing number:</b> B1 - Map 4</p>		<p><b>Date:</b> June 2009</p>	





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No.	Date	Drawn/Checked	Revision Description

Cork County Council,  
Northern Division.



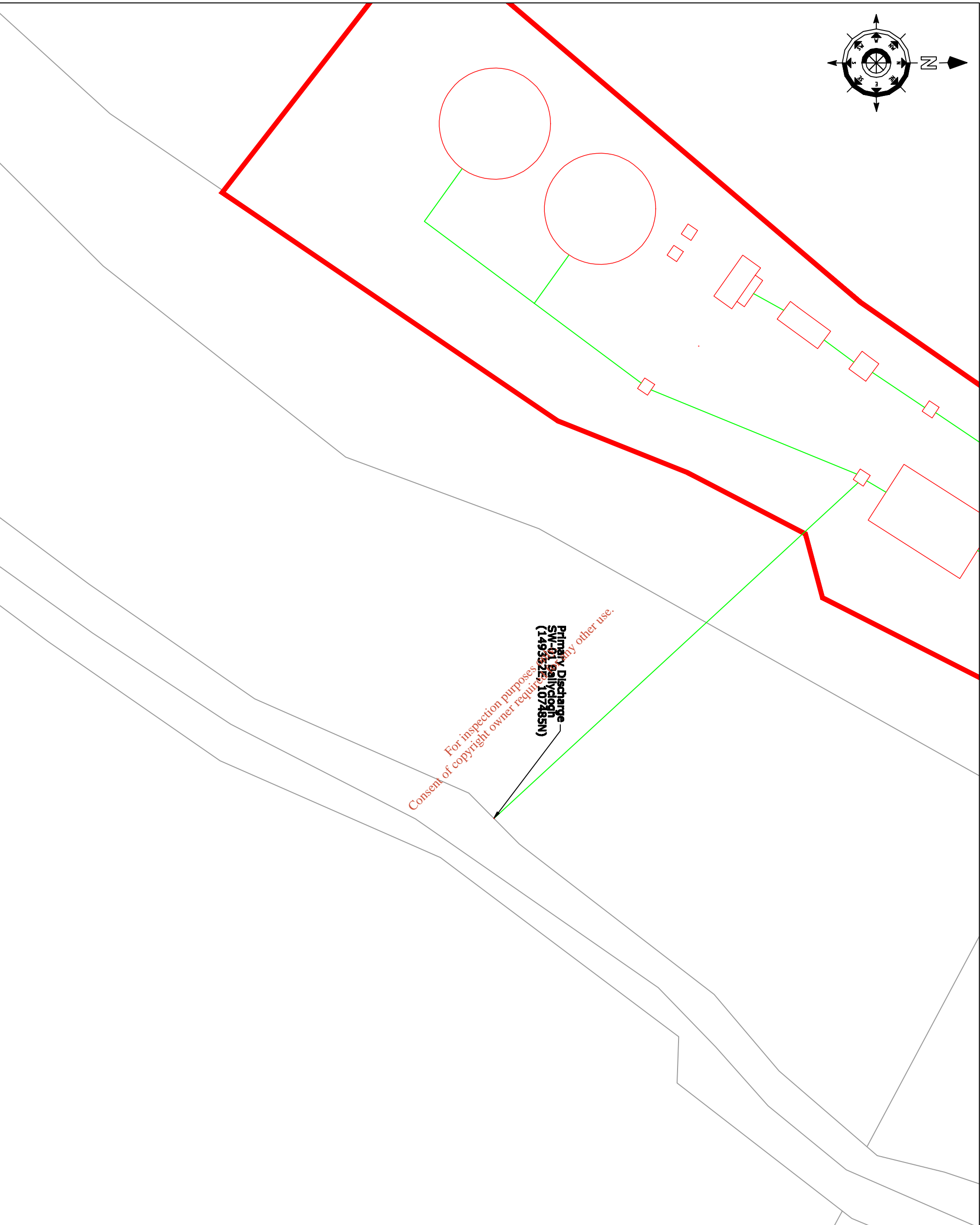
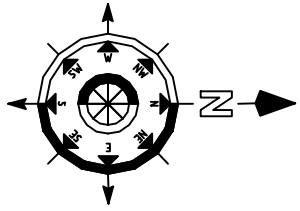
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COUNTY ENGINEER,  
COUNTY HALL,  
CORK.

Job Title:  
**Ballycogh & Environs  
Waste Water Discharge  
Licence Application**

Drawing Title:  
**Waste Water Treatment Plant  
Site Layout  
Attachment B2 Map 5**

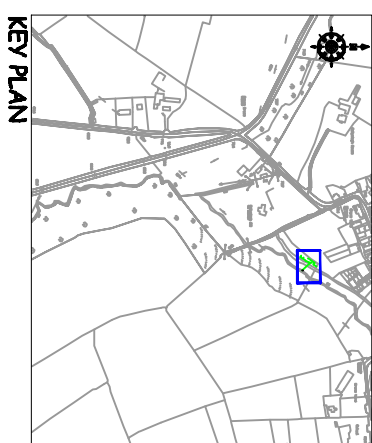
Scales:		Drawn by:	Date:
1:500 @ A3	D.L.	D.L.	June 2009
Designed by:	Checked by:	Date:	
E.M.	P.L.	June 2009	
Drawing number:	Rev:		
B2 Map 5	-		





**NOTES**

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**KEY PLAN**

No.	Date	Drawn/Checked	Revision Description

Cork County Council,  
Northern Division.



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CORK.

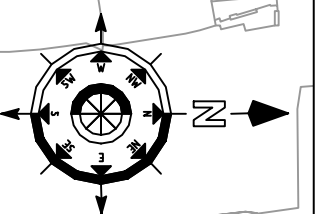
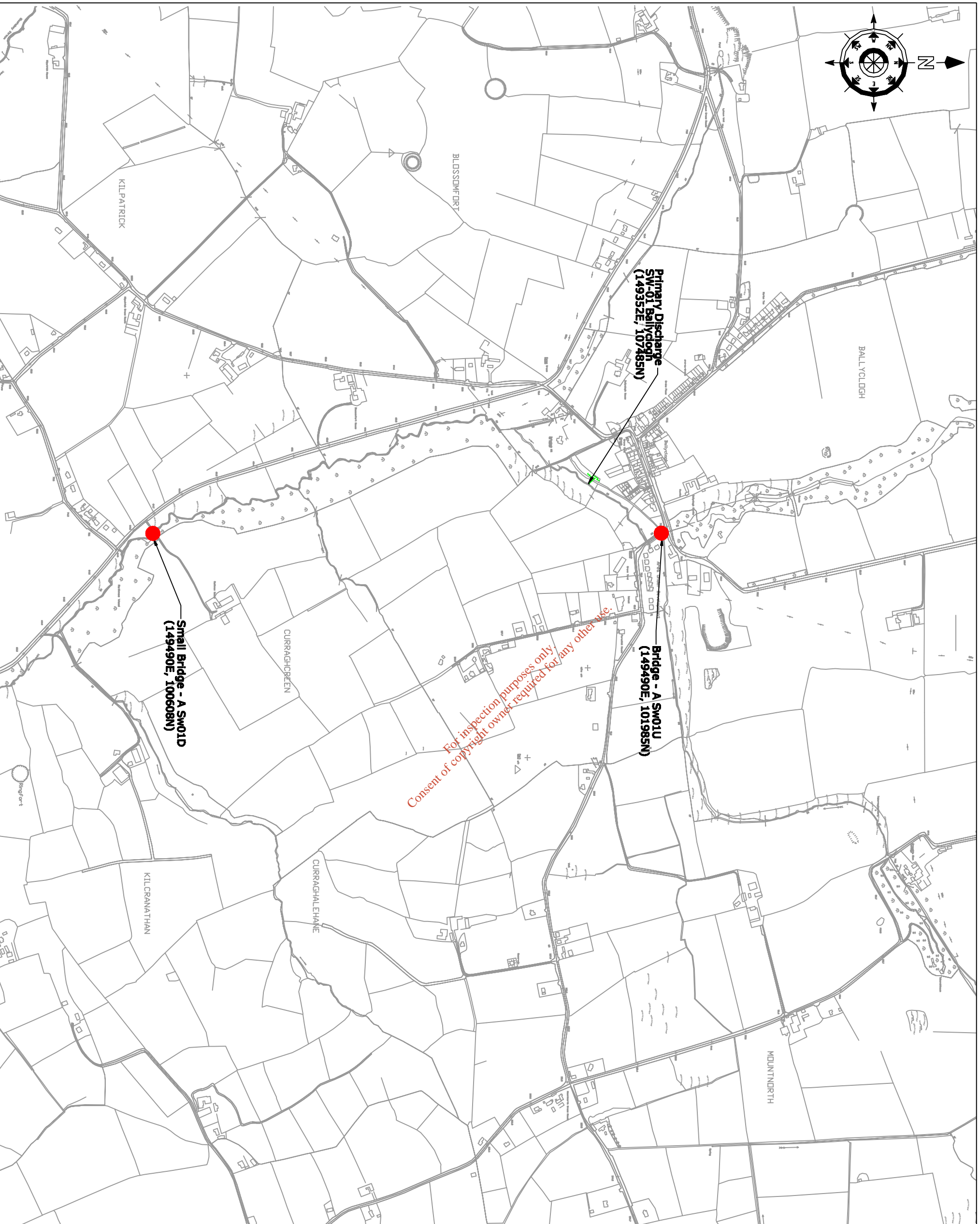
Job Title:  
**Ballyclogh & Environs  
Waste Water Discharge  
Licence Application**

Drawing Title:

**Location of Primary Discharge  
Point SW01 - Glen  
Attachment B3 - Map 6**


Scales:	1:500 @ A3	Drawn by:	DL
Designed by:	EM	Checked by:	FL
Date:	June 2009	Rev:	-
Drawing number:	<b>B3 - Map 6</b>		



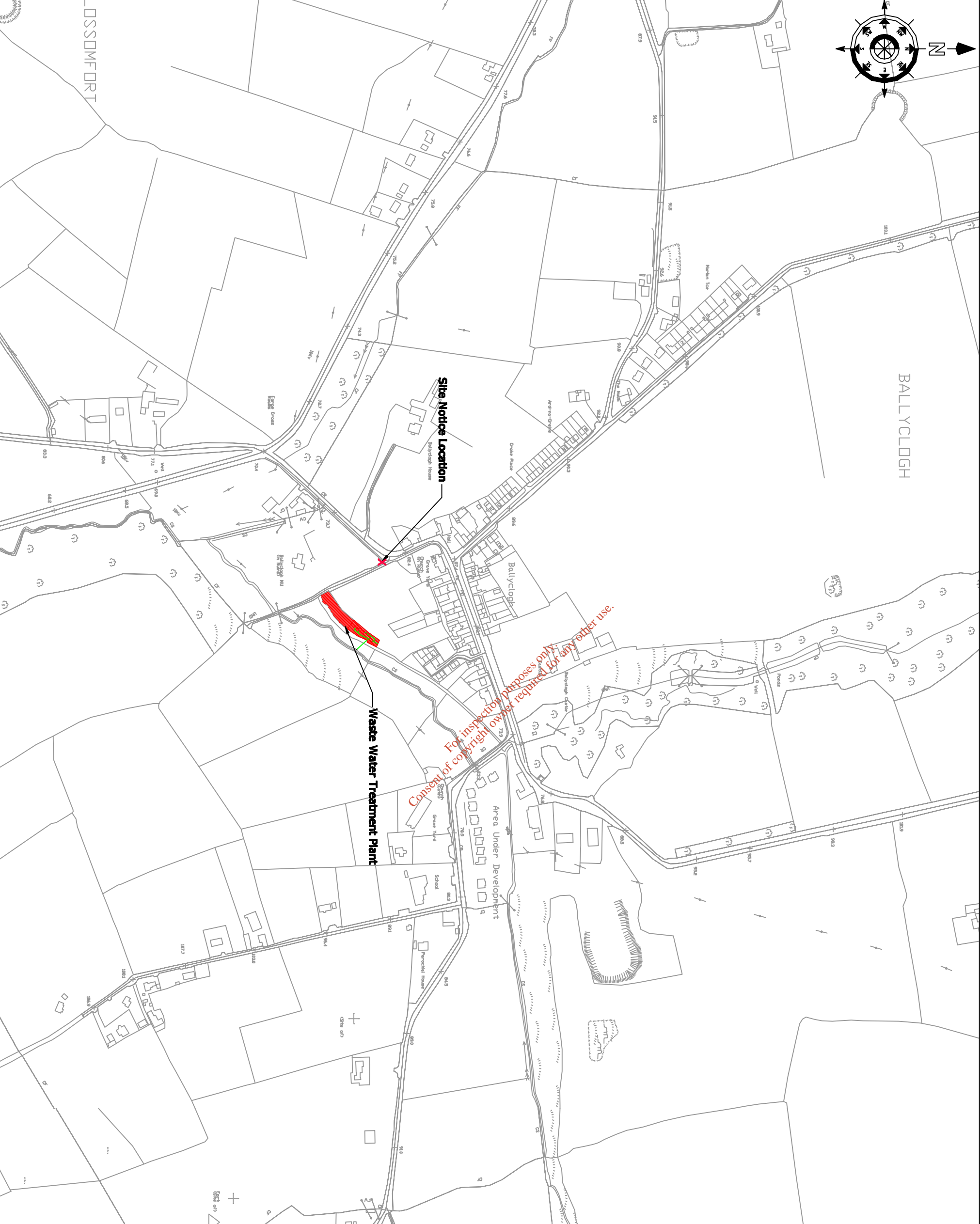
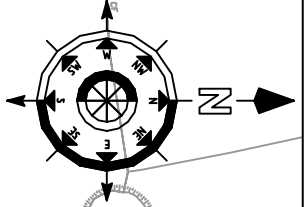


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 <p><b>Cork County Council, Northern Division.</b></p> <p>N. O'KEEFE, B.E., COUNTY ENGINEER, COUNTY HALL, CORK.</p>			
<p><b>Job Title:</b> Ballyclogh &amp; Environs Waste Water Discharge Licence Application</p>			
<p><b>Drawing Title:</b> Locations of sampling points Attachment B3 - Map 7</p>			
<p><b>Scales:</b> 1:10,000 @ A3</p>		<p><b>Drawn by:</b> DL</p>	
<p><b>Designed by:</b> E.M.</p>		<p><b>Checked by:</b> F.L.</p>	
<p><b>Drawing number:</b> B3 - Map 7</p>		<p><b>Date:</b> June 2009</p>	
		<p><b>Rev:</b> -</p>	





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<p><b>Job Title:</b> Ballyclogh &amp; Environs Waste Water Discharge Licence Application</p>			
<p><b>Drawing Title:</b> Location of Site Notice Attachment B8 - Map 8</p>			
<p><b>Scales:</b> 1:5,000 @ A3</p>		<p><b>Drawn by:</b> D.L.</p>	
<p><b>Designed by:</b> E.M.</p>		<p><b>Checked by:</b> F.L.</p>	
<p><b>Drawing number:</b> B8 - Map 8</p>		<p><b>Date:</b> June 2009</p>	
		<p><b>Rev:</b> -</p>	

No.	Date	Drawn/Checked	Revision Description





## CORK COUNTY COUNCIL

### SITE NOTICE

#### APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTEWATER DISCHARGE LICENCE

In accordance with the Waste Water Discharge (Authorisation) Regulations 2007, Water Services Northern Division, Cork County Council, Annabella, Mallow is applying to the Environmental Protection Agency for a Waste Water Discharge Licence for the agglomeration of Ballyclough at the following locations:

Plant Name	Location	National Grid Ref.
Ballyclough	Ballyclough	149318E, 101474N

Discharge	Function	Townland	Receptor	Grid Reference
Primary	main	Ballyclough	Finnow Stream	149349E, 101796N

A copy of the application for the Waste Water Discharge Licence and such further information relating to the application as may be furnished to the Agency in the course of the Agency's consideration of the Application shall as soon as is practicable after receipt by the Agency be available for inspection or purchase at the

- Environmental Protection Agency, PO Box 3000, Johnstown Castle Estate, Co. Wexford, Lo Call 1890 335599 Telephone: 053-9160600 Fax: 053-9160699 Email: info@epa.ie

and at

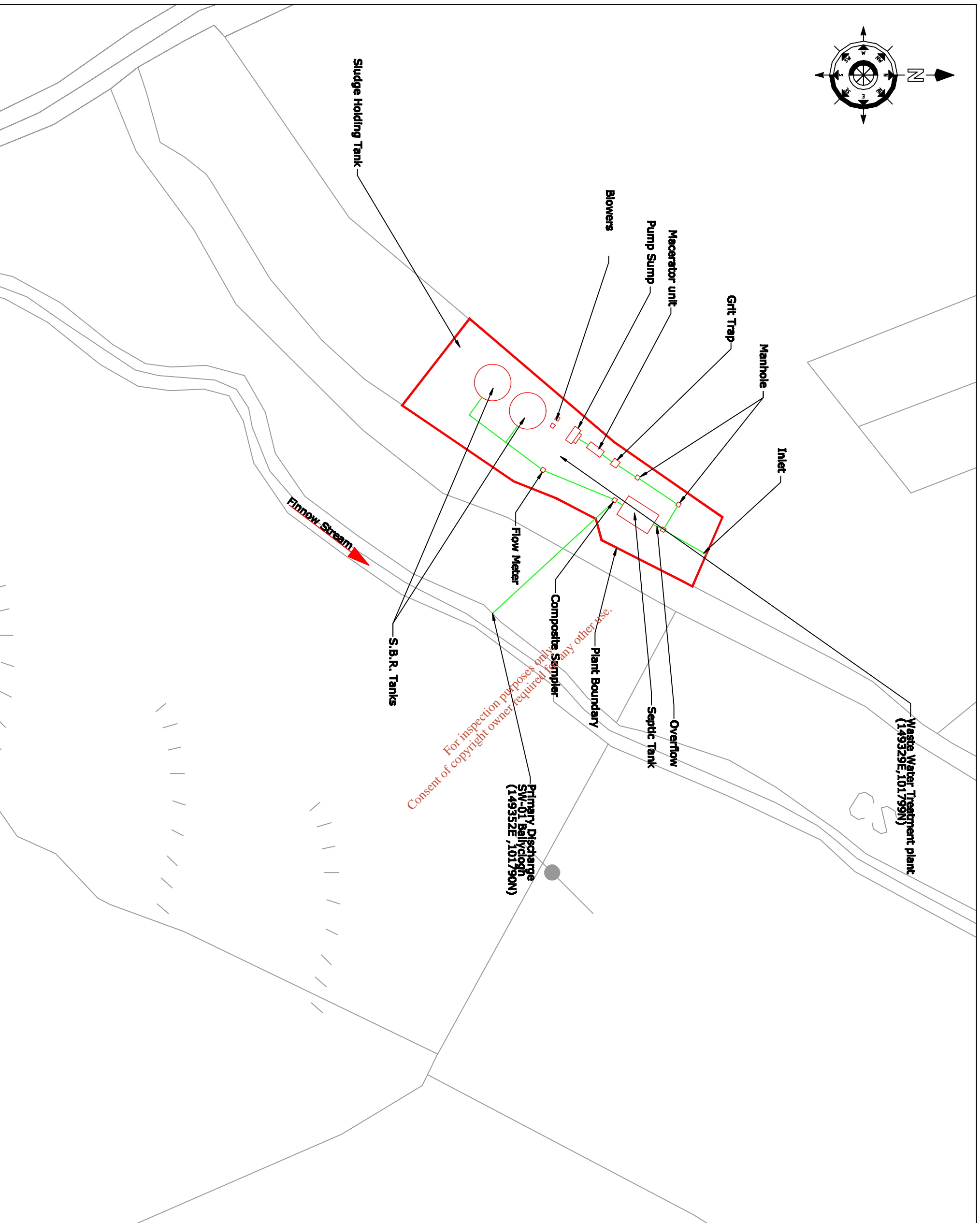
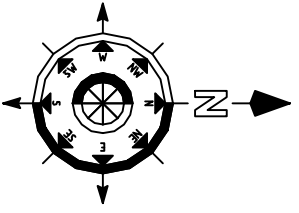
- Cork County Council Offices, Annabella, Mallow, Co. Cork, Telephone: 022-21123 Fax: 022-21983

Submissions in relation to the application may be made to the Environmental Protection Agency at its headquarters described above.



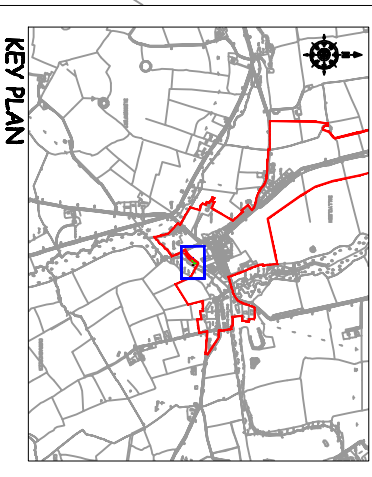







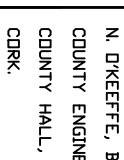
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No.	Date	Drawn/Checked	Revision Description

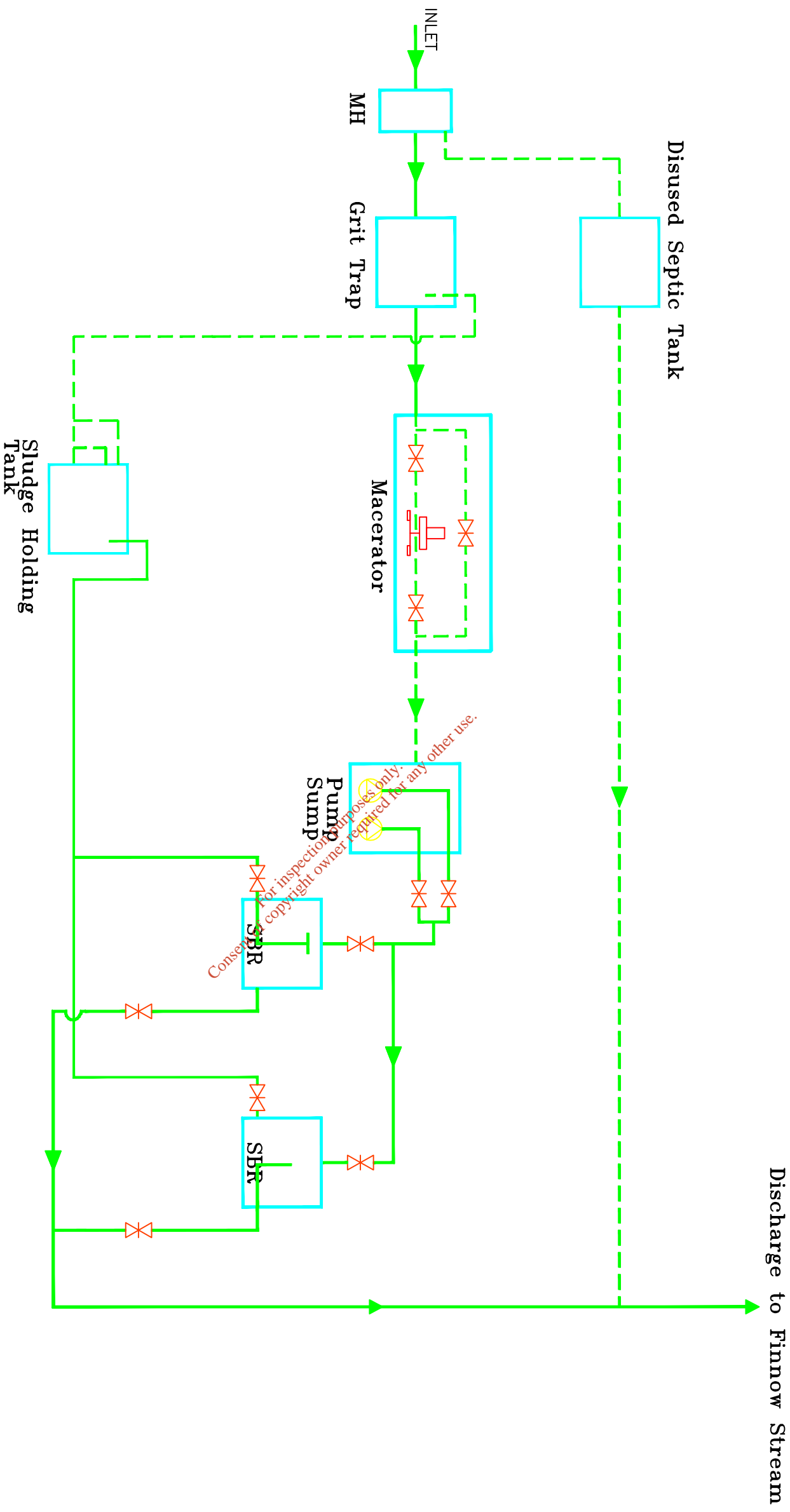
	
<b>Cork County Council,</b> Northern Division.	
	<b>N. O'KEEFE, B.E.,</b> COUNTY ENGINEER, COUNTY HALL, CORK.

<b>Job Title:</b> Ballycogh & Environs Waste Water Discharge Licence Application	
<b>Drawing Title:</b> Waste Water Treatment Plant Site Layout Attachment C1 - Map 9	
<b>Scales:</b> 1:500 @ A3	Drawn by: D.L.
Designed by: E.M.	Checked by: F.C.
Drawing number: C1 - Map 9	Date: June 2009



- NOTES**
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  2. This drawing is to be read in conjunction with the Specification.
  3. This drawing is to be read in conjunction with all other contract drawings.



No.	Date	Drawn/Checked	Revision Description

Cork County Council,  
Northern Division.



N. O'KEEFE, B.E.,  
COUNTY ENGINEER,  
COUNTY HALL,  
CORK.

Job Title:  
**Ballyclogh & Environs  
Waste Water Discharge  
Licence Application**

Drawing Title:  
**Schematic showing Existing  
Treatment Plant Process  
Attachment C1-Drawing 1**

Scales:		Drawn by:	DL
1:5000 @ A3	DL	Checked by:	DL
Designed by:	EM	Date:	June 2009
Checked by:	FL	Rev:	-
Drawing number:	<b>C1 Drawing 1</b>		













## Attachment E4 Ballyclough Inlet Table E4

Sample Date	28/01/2009	11/02/2009	10/03/2009	16/04/2009	
Sample	Influent	Influent	Influent	Influent	Average
Sample Code	GT122			GT695	
Flow M <sup>3</sup> /Day	*	*	*	*	
pH	7.9	8.5	8.4	8.6	8.35
Temperature °C	*	*	*	*	
Cond 20°C	1020	1128	1120	1180	1112
SS mg/L	128	364	145	310	236.75
NH <sub>3</sub> mg/L	44.3	41	79.3	35	49.9
BOD mg/L	185	460	231	630	376.5
COD mg/L	406	1243	659	1328	909
TN mg/L	48.6	62	48	70	57.15
Nitrite mg/L	<0.004	*	*	*	<0.004
Nitrate mg/L	<0.405	*	*	*	<0.405
TP mg/L	8.5	7.9	6	8.2	7.65
O-PO4-P mg/L	4.47	5	4	2.7	4.0425
SO4 mg/L	46.6	*	*	*	46.6
Phenols µg/L	<0.10	*	*	*	<0.10
Atrazine µg/L	<0.01	*	*	*	<0.01
Dichloromethane µg/L	<1	*	*	*	<1
Simazine µg/L	<0.01	*	*	*	<0.01
Toluene µg/L	<1	*	*	*	<1
Tributyltin µg/L	not required	*	*	*	not required
Xylenes µg/L	<1	*	*	*	<1
Arsenic µg/L	<0.96	*	*	*	<0.96
Chromium ug/L	<20	*	*	<20	<20
Copper ug/L	26.5	*	*	53.3	39.9
Cyanide µg/L	<5	*	*	*	<5
Fluoride µg/L	28	*	*	*	28
Lead ug/L	<20	*	*	<20	<20
Nickel ug/L	<20	*	*	<20	<20
Zinc ug/L	<20	*	*	158.2	<20
Boron ug/L	<20	*	*	136.5	<20
Cadmium ug/L	<20	*	*	<20	<20
Mercury µg/L	<0.2	*	*	*	<0.2
Selenium µg/L	1.4	*	*	*	1.4
Barium ug/L	<20	*	*	21.2	<20

value at 1/2 of LOD for statistical purposes =

## Attachment E4 Ballyclough Discharge Outlet Table E4

Sample Date	24/08/2008	23/10/2008	28/01/2009	11/02/2009	10/03/2009	12/03/2009	16/04/2009	
Sample	Effluent	Effluent	Effluent	Effluent	Effluent	Effluent	Effluent	Average
Sample Code			GT123	GT273	GT393	GT355	GT696	
Flow M <sup>3</sup> /Day	*	*	*	*	*	*	*	
pH	*	7.7	7.8	7.9	7.7	7.7	7.7	7.75
Temperature °C	*	*	*	*	*	*	*	
Cond 20°C	*	*	136	1192	1095	*	1107	882.5
SS mg/L	3	4	1.25	2	4	1.25	38	7.642857
NH <sub>3</sub> mg/L	*	*	0.05	0.1	0.23	*	3.5	0.97
BOD mg/L	1.09	1.65	2	1	9	3	6	3.391429
COD mg/L	22	10.5	10.5	19	43	27	95	32.42857
TN mg/L	*	*	8.3	23	26	15.8	6	15.82
Nitrite mg/L	*	*	0.166	*	*	*	*	0.166
Nitrate mg/L	*	*	7.27	*	*	*	*	7.27
TP mg/L	*	*	3.4	5	10.2	2.7	2.6	4.78
O-PO <sub>4</sub> -P mg/L	*	*	1.85	3.9	9.8	*	2.1	4.4125
SO <sub>4</sub> mg/L	*	*	37.6	*	*	*	*	37.6
Phenols µg/L	*	*	<0.10	*	*	*	*	<0.10
Atrazine µg/L	*	*	<0.01	*	*	*	*	<0.01
Dichloromethane	*	*	<1	*	*	*	*	<1
Simazine µg/L	*	*	<0.01	*	*	*	*	<0.01
Toluene µg/L	*	*	<1	*	*	*	*	<1
Tributyltin µg/L	*	*	not required	*	*	*	*	not required
Xylenes µg/L	*	*	<1	*	*	*	*	<1
Arsenic µg/L	*	*	<0.96	*	*	*	*	<0.96
Chromium ug/L	*	*	<20	<20	<20	<20	<20	<20
Copper ug/L	*	*	<20	<20	<20	<20	<20	<20
Cyanide µg/L	*	*	<5	*	*	*	*	<5
Fluoride µg/L	*	*	31	*	*	*	*	31
Lead ug/L	*	*	<20	<20	<20	<20	<20	<20
Nickel ug/L	*	*	<20	<20	<20	<20	<20	<20
Zinc ug/L	*	*	10	21	10	10	52.7	20.74
Boron ug/L	*	*	10	42	47.2	38.9	<20	34.525
Cadmium ug/L	*	*	<20	<20	<20	<20	<20	<20
Mercury µg/L	*	*	<0.2	*	*	*	*	<0.2
Selenium µg/L	*	*	1.2	*	*	*	*	1.2
Barium ug/L	*	*	<20	<20	<20	<20	<20	<20

value at 1/2 of LOD for statistical purposes =



## Attachment E4 Ballyclough Upstream Table E4

Sample Date	24/09/2008	23/10/2008	28/01/2009	11/02/2009	10/03/2009	12/03/2009	16/04/2009	
Sample	River	River	River	River	River	River	River	Average
Sample Code			GT124	GT274	GT394	GT349	GT697	
Flow M <sup>3</sup> /Day	*	*	*	*	*	*	*	
pH	*	*	7.8	7.9	7.9	*	7.9	7.875
Temperature °C	*	*	*	*		*	*	
Cond 20°C	*	*	506	604	551	*	481	535.5
SS mg/L	*	*	5	<1	2	*	10	5.666667
NH <sub>3</sub> mg/L	*	*	0.05	0.05	0.025	*	0.025	0.0375
BOD mg/L	*	*	<1	<2	<2	*	<2	<2
COD mg/L	*	*	10.5	8	5	*	15	9.625
TN mg/L	*	*	6	6	5	*	4	5.25
Nitrite mg/L	*	*	0.0213	*	*	*	*	0.0213
Nitrate mg/L	*	*	6.66	*	*	*	*	6.66
TP mg/L	*	*	0.1	0.07	0.16	*	0.1	0.1075
O-PO4-P mg/L	0.025	0.025	0.025	0.07	0.14	0.025	0.06	0.052857
SO4 mg/L	*	*	<30	*	*	*	*	<30
Phenols µg/L	*	*	<0.10	*	*	*	*	<0.10
Atrazine µg/L	*	*	<0.01	*	*	*	*	<0.01
Dichloromethane	*	*	<1	*	*	*	*	<1
Simazine µg/L	*	*	<0.01	*	*	*	*	<0.01
Toluene µg/L	*	*	<1	*	*	*	*	<1
Tributyltin µg/L	*	*	not required	*	*	*	*	not required
Xylenes µg/L	*	*	<1	*	*	*	*	<1
Arsenic µg/L	*	*	<0.96	*	*	*	*	<0.96
Chromium ug/L	*	*	<20	<20	<20	<20	<20	<20
Copper ug/L	*	*	<20	<20	<20	<20	<20	<20
Cyanide µg/L	*	*	<5	*	*	*	*	<5
Fluoride µg/L	*	*	33	*	*	*	*	33
Lead ug/L	*	*	23	<20	<20	<20	<20	23
Nickel ug/L	*	*	<20	<20	<20	<20	<20	<20
Zinc ug/L	*	*	<20	<20	<20	<20	<20	<20
Boron ug/L	*	*	<20	<20	<20	<20	<20	<20
Cadmium ug/L	*	*	<20	<20	<20	<20	<20	<20
Mercury µg/L	*	*	<0.2	*	*	*	*	<0.2
Selenium µg/L	*	*	1.8	*	*	*	*	1.8
Barium ug/L	*	*	47	10	10	10	10	17.4

value at 1/2 of LOD for statistical purposes =

## Attachment E4 Ballyclough Downstream Table E4

Sample Date	24/08/2008	23/10/2008	28/01/2009	11/02/2009	10/03/2009	12/03/2009	16/04/2009
Sample	River	River	River	River	River	River	River
Sample Code			GT125	GT275	GT395	GT348	GT698
Flow M <sup>3</sup> /Day	*	*	*	*	*	*	*
pH	*	*	7.90	8.00	8.10	*	8.00
Temperature °C	*	*	*	*	*	*	*
Cond 20°C	*	*	467	578	491	*	398
SS mg/L	*	*	5	1	1	*	3
NH <sub>3</sub> mg/L	*	*	0.05	0.05	0.025	*	0.06
BOD mg/L	*	*	0.5	1	1	*	3
COD mg/L	*	*	10.5	2.5	12	*	32
TN mg/L	*	*	5.1	6	3.7	*	3
Nitrite mg/L	*	*	0.0105	*	*	*	*
Nitrate mg/L	*	*	5.41	*	*	*	*
TP mg/L	*	*	0.1	0.1	0.14	*	0.17
O-PO4-P mg/L	0.025	0.025	0.025	0.09	0.1	0.025	0.13
SO4 mg/L	*	*	<30	*	*	*	*
Phenols µg/L	*	*	<0.10	*	*	*	*
Atrazine µg/L	*	*	<0.01	*	*	*	*
Dichloromethane	*	*	<1	*	*	*	*
Simazine µg/L	*	*	<0.01	*	*	*	*
Toluene µg/L	*	*	<1	*	*	*	*
Tributyltin µg/L	*	*	not required	*	*	*	*
Xylenes µg/L	*	*	<1	*	*	*	*
Arsenic µg/L	*	*	<0.96	*	*	*	*
Chromium ug/L	*	*	<20	<20	<20	<20	<20
Copper ug/L	*	*	<20	<20	<20	<20	<20
Cyanide µg/L	*	*	<5	*	*	*	*
Fluoride µg/L	*	*	36	*	*	*	*
Lead ug/L	*	*	<20	<20	<20	<20	<20
Nickel ug/L	*	*	<20	<20	<20	<20	<20
Zinc ug/L	*	*	<20	<20	<20	<20	<20
Boron ug/L	*	*	<20	<20	<20	<20	<20
Cadmium ug/L	*	*	<20	<20	<20	<20	<20
Mercury µg/L	*	*	<0.2	*	*	*	*
Selenium µg/L	*	*	1.7	*	*	*	*
Barium ug/L	*	*	45	10	10	10	10

value at 1/2 of LOD for statistical purposes =



<b>Average</b>
8.00
483.5
2.5
0.04625
1.375
14.25
4.45
0.0105
5.41
0.1275
0.06
<30
<0.10
<0.01
<1
<0.01
<1
not required
<1
<0.96
<20
<20
<5
36
<20
<20
<20
<20
<20
<20
<0.2
1.7
17

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