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Attachments

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Attachment A.1
Supporting Information

Attachment Dunmanway - A1 – 01 Layout of Dunmanway WWTP

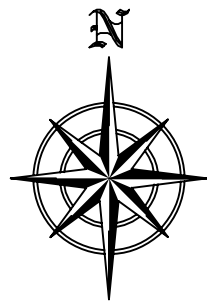
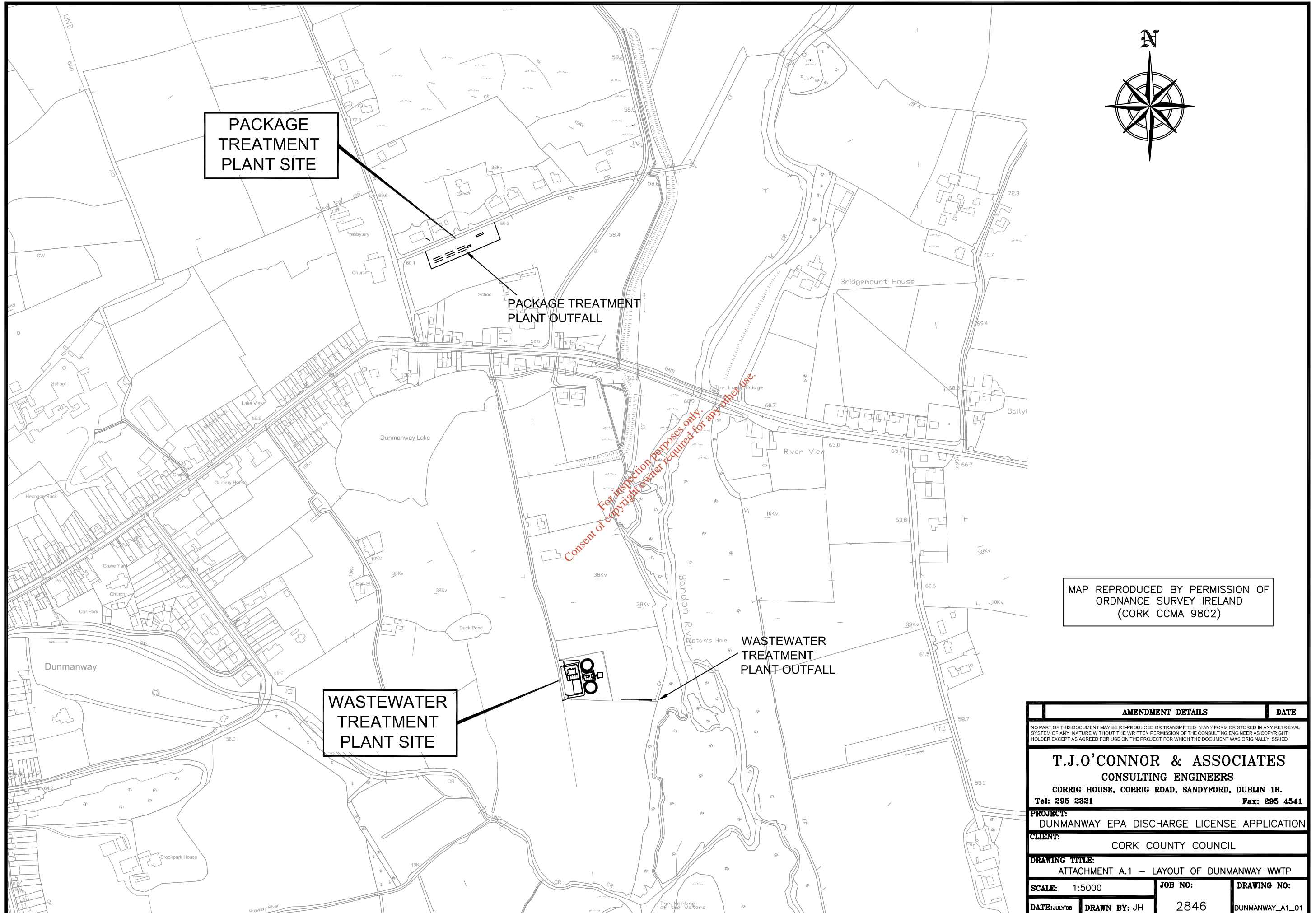
Attachment Dunmanway - A1 – 02 Layout of Dunmanway WWTP
(Proposed)

Attachment Dunmanway - A1 – 03 General Site Layout (Existing WWTP)

Attachment Dunmanway - A1 – 04 General Site Layout (Proposed WWTP)

Attachment Dunmanway - A1 – 05 General Site Layout - Dun Ogra Housing
Development

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**PACKAGE
TREATMENT
PLANT SITE**

**PACKAGE TREATMENT
PLANT OUTFALL**

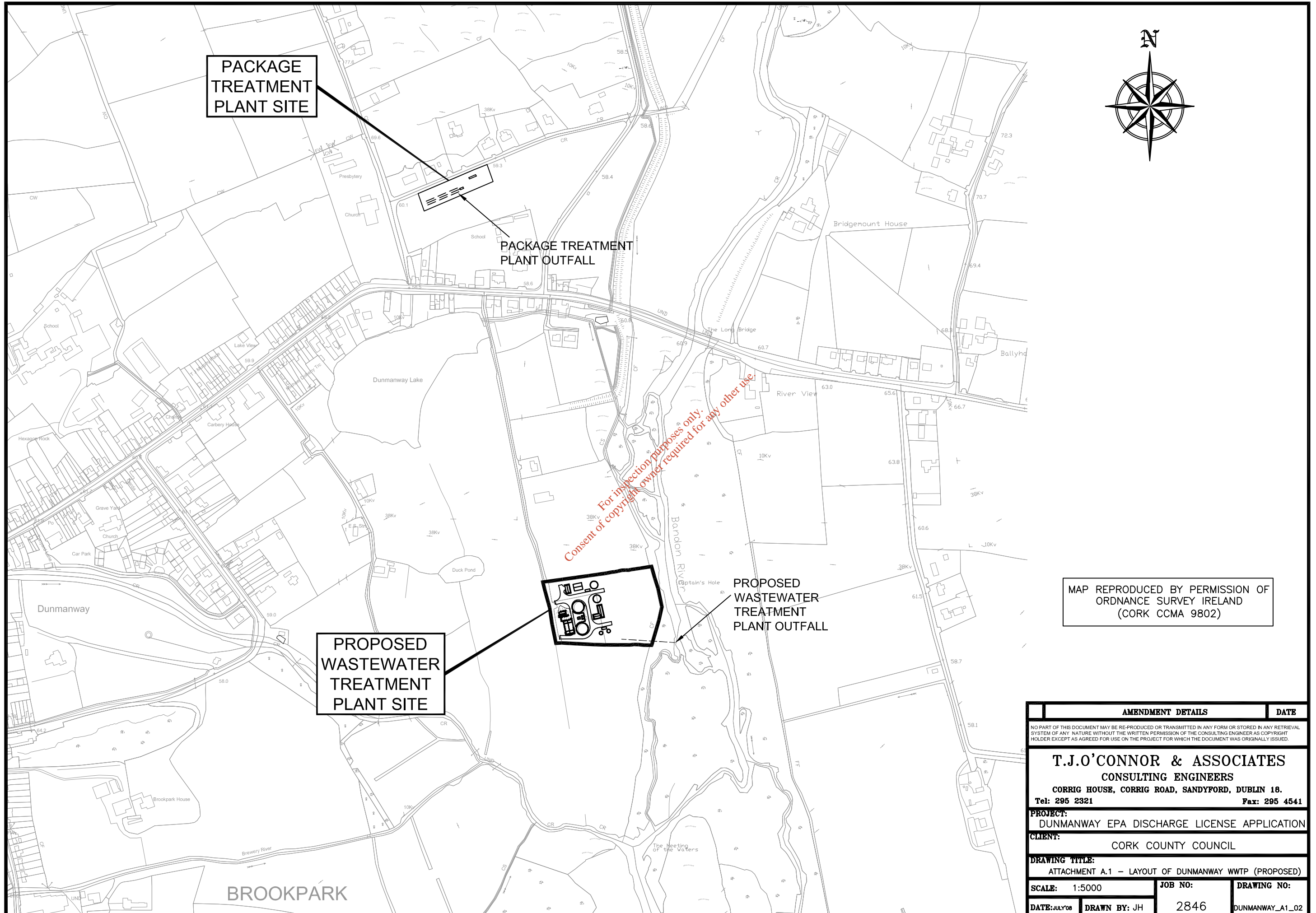
**WASTEWATER
TREATMENT
PLANT SITE**

**WASTEWATER
TREATMENT
PLANT OUTFALL**

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PROJECT: DUNMANWAY EPA DISCHARGE LICENSE APPLICATION		
CLIENT: CORK COUNTY COUNCIL		
DRAWING TITLE: ATTACHMENT A.1 – LAYOUT OF DUNMANWAY WWTP		
SCALE: 1:5000	JOB NO:	DRAWING NO:
DATE: JULY 08	DRAWN BY: JH	2846
		DUNMANWAY_A1_01



PACKAGE
TREATMENT
PLANT SITE

PACKAGE TREATMENT
PLANT OUTFALL

PROPOSED
WASTEWATER
TREATMENT
PLANT SITE

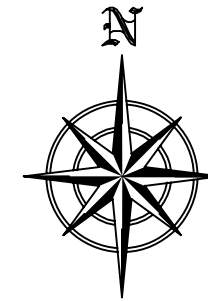
PROPOSED
WASTEWATER
TREATMENT
PLANT OUTFALL

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SCALE: 1:5000	JOB NO: 2846	DRAWING NO: DUNMANWAY_A1_02
DATE: JULY 08	DRAWN BY: JH	



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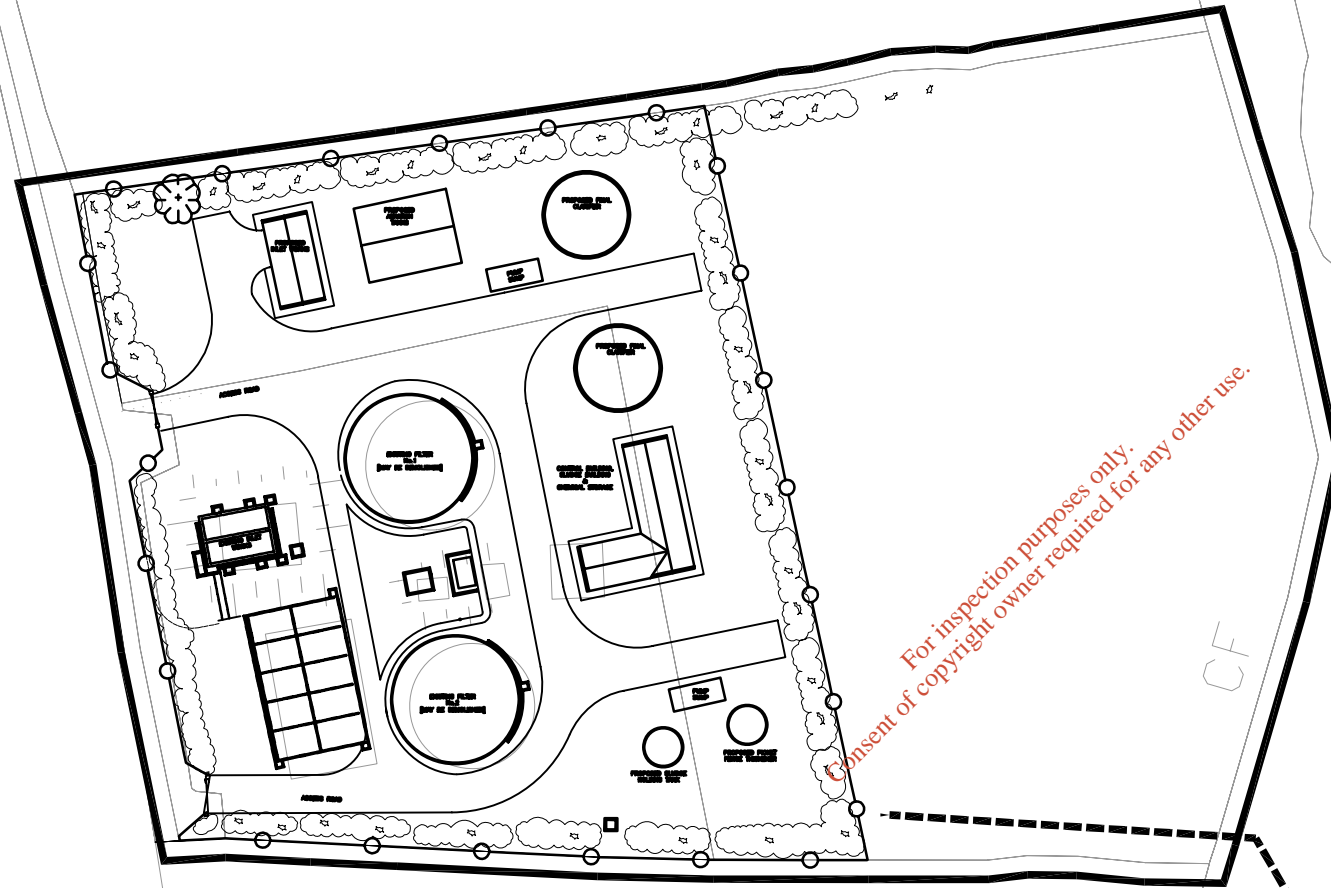
WASTEWATER TREATMENT
PLANT OUTFALL

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CLIENT: CORK COUNTY COUNCIL		
DRAWING TITLE: ATTACHMENT A.1 - GENERAL SITE LAYOUT (EXISTING WWTP)		
SCALE: 1:1000	JOB NO:	DRAWING NO:
DATE: JULY 08	DRAWN BY: JH	2846 DUNMANWAY_A1_03



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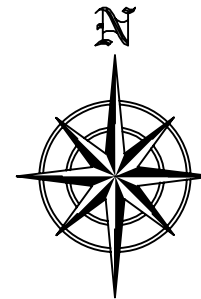
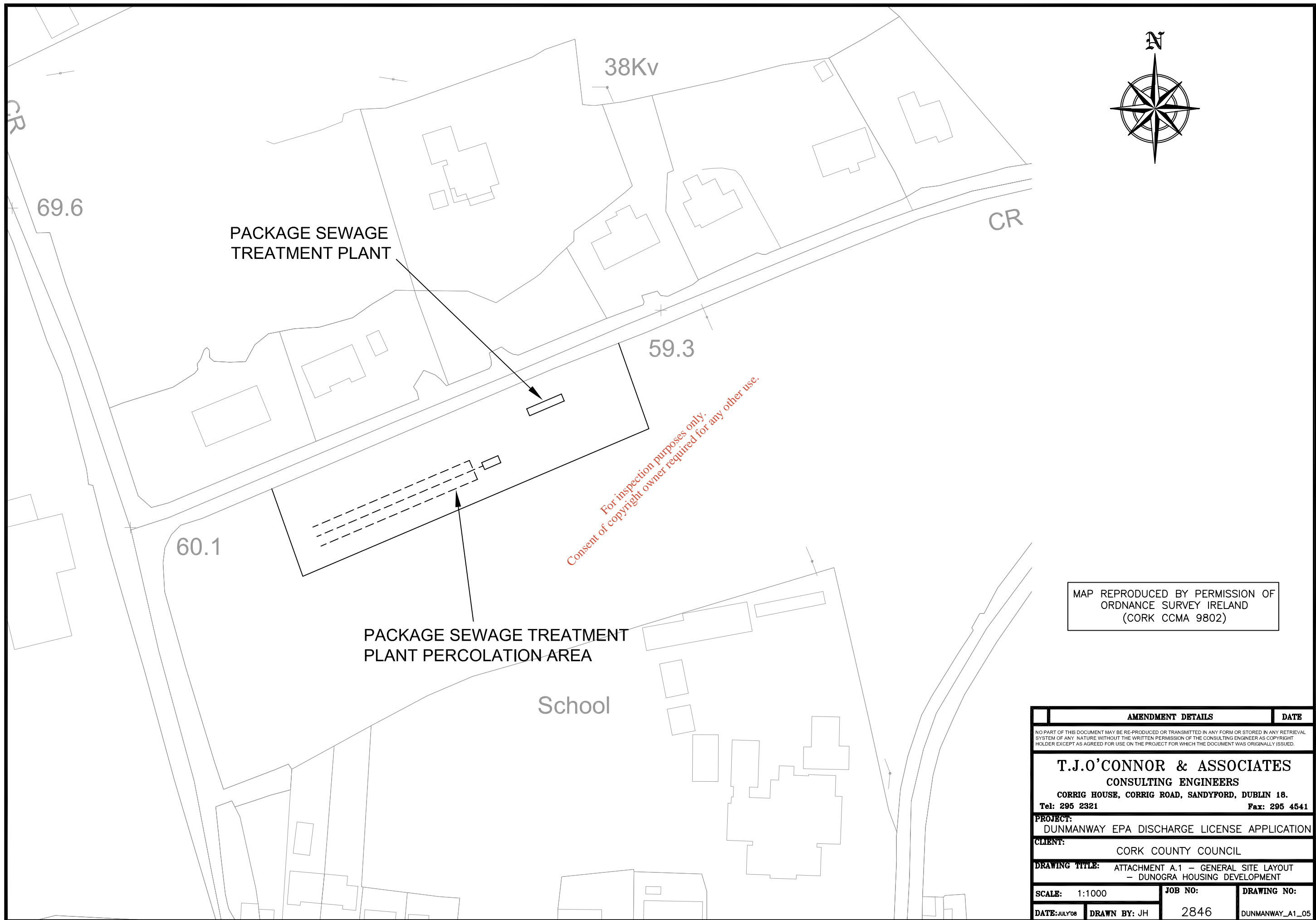
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PROPOSED WASTEWATER
TREATMENT PLANT OUTFALL

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SCALE: 1:1000	JOB NO:	DRAWING NO:
DATE: JULY 08	DRAWN BY: JH	2846
		DUNMANWAY_A1_04



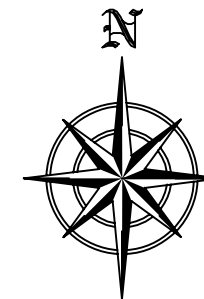
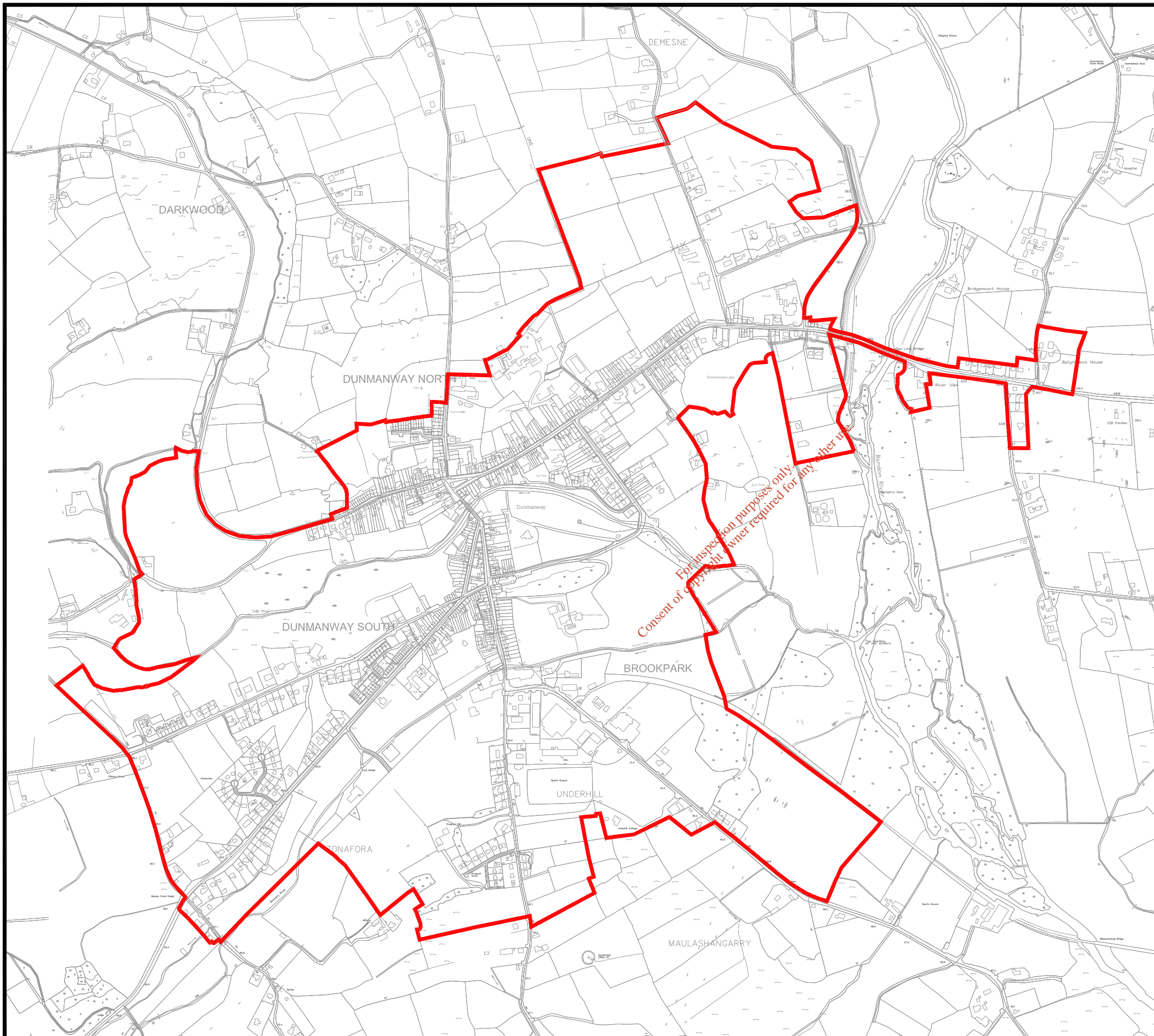
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CLIENT: CORK COUNTY COUNCIL		
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SCALE: 1:1000	JOB NO:	DRAWING NO:
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Attachment B.1

Attachment Dunmanway - B1 – 06 Agglomeration Area

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AGGLOMERATION AREA



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DRAWING TITLE: ATTACHMENT B.1 – AGGLOMERATION AREA		
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DATE: JULY 08	DRAWN BY: JH	2846
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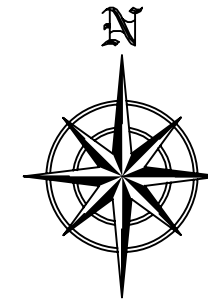
Attachment B.2 Location of Associated Waste Water Treatment Plant(s)

Attachment Dunmanway – B2 – 07 Location of Dunmanway WWTP
(Existing)

Attachment Dunmanway – B2 – 08 Location of Dunmanway WWTP
(Proposed)

Attachment Dunmanway – B2 – 09 Location of Package Treatment Plant –
Dun Ogra Housing Development

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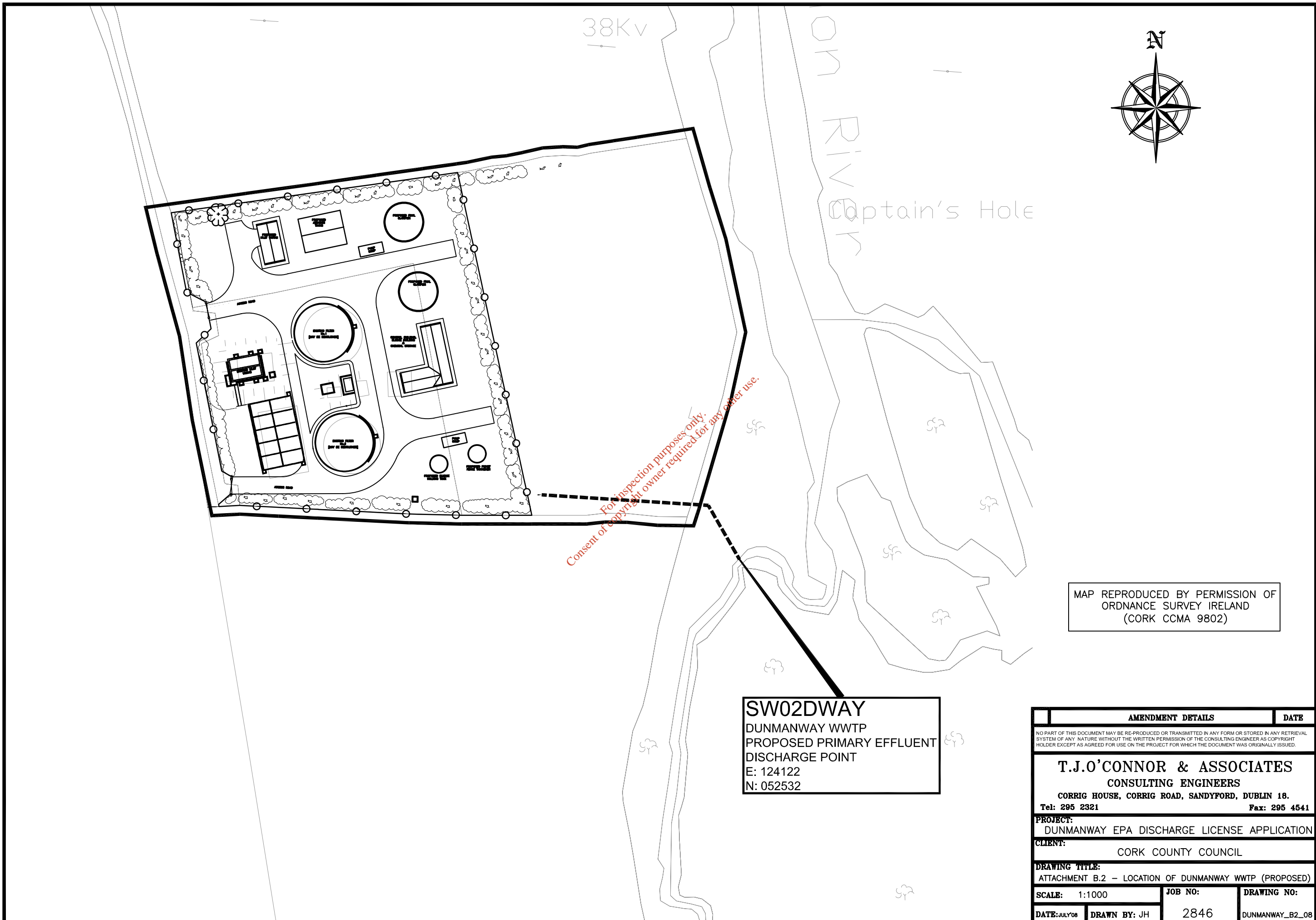
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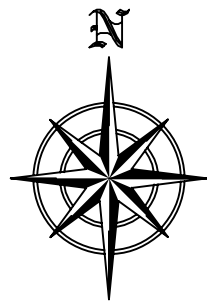
SW01DWAY
DUNMANWAY WWTP
PRIMARY EFFLUENT
DISCHARGE POINT
E: 124142
N: 052545

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CLIENT: CORK COUNTY COUNCIL	
DRAWING TITLE: ATTACHMENT B.2 - LOCATION OF DUNMANWAY WWTP (EXISTING)	
SCALE: 1:1000	JOB NO: 2846
DATE: JULY 08	DRAWN BY: JH
	DUNMANWAY_B2_07



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OM River
Captain's Hole

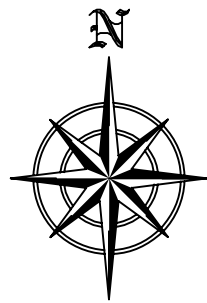
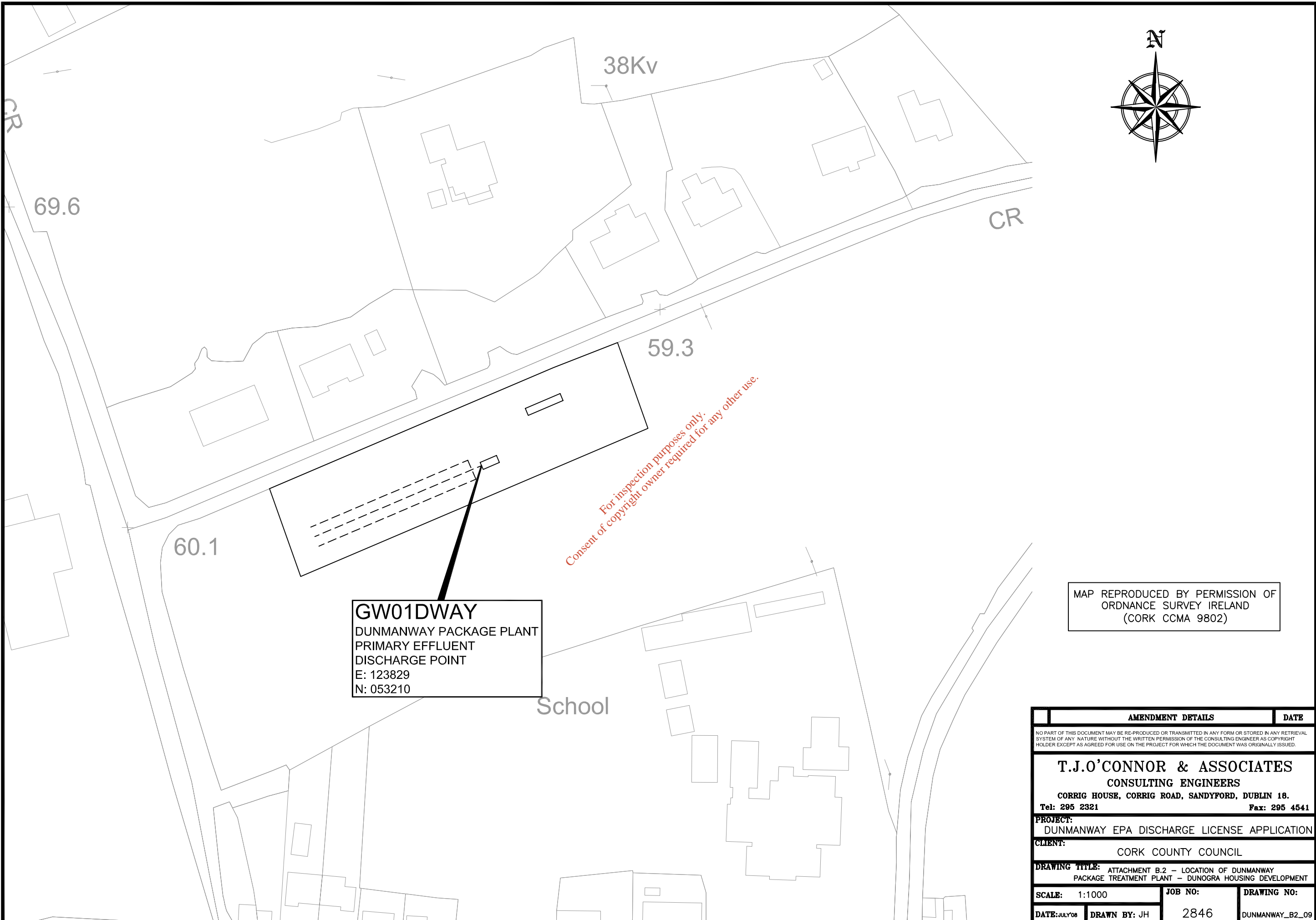


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SW02DWAY
DUNMANWAY WWTP
PROPOSED PRIMARY EFFLUENT
DISCHARGE POINT
E: 124122
N: 052532

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CLIENT: CORK COUNTY COUNCIL		
DRAWING TITLE: ATTACHMENT B.2 - LOCATION OF DUNMANWAY WWTP (PROPOSED)		
SCALE: 1:1000	JOB NO:	DRAWING NO:
DATE: JULY 08	DRAWN BY: JH	2846 DUNMANWAY_B2_08



GW01DWAY
 DUNMANWAY PACKAGE PLANT
 PRIMARY EFFLUENT
 DISCHARGE POINT
 E: 123829
 N: 053210

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CLIENT: CORK COUNTY COUNCIL		
DRAWING TITLE: ATTACHMENT B.2 - LOCATION OF DUNMANWAY PACKAGE TREATMENT PLANT - DUNOGRA HOUSING DEVELOPMENT		
SCALE: 1:1000	JOB NO:	DRAWING NO:
DATE: JULY08	DRAWN BY: JH	2846 DUNMANWAY_B2_09

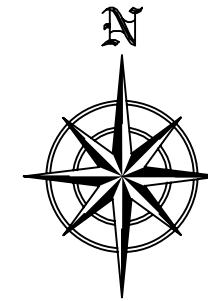
Attachment B.3 Location of Primary Discharge Point

Attachment Dunmanway – B3 – 10 Location of Primary Discharge Point
(Existing)

Attachment Dunmanway – B3 – 11 Location of Primary Discharge Point
(Proposed)

Attachment Dunmanway – B3 – 12 Location of Primary Discharge Point –
Dun Ogra Housing Development

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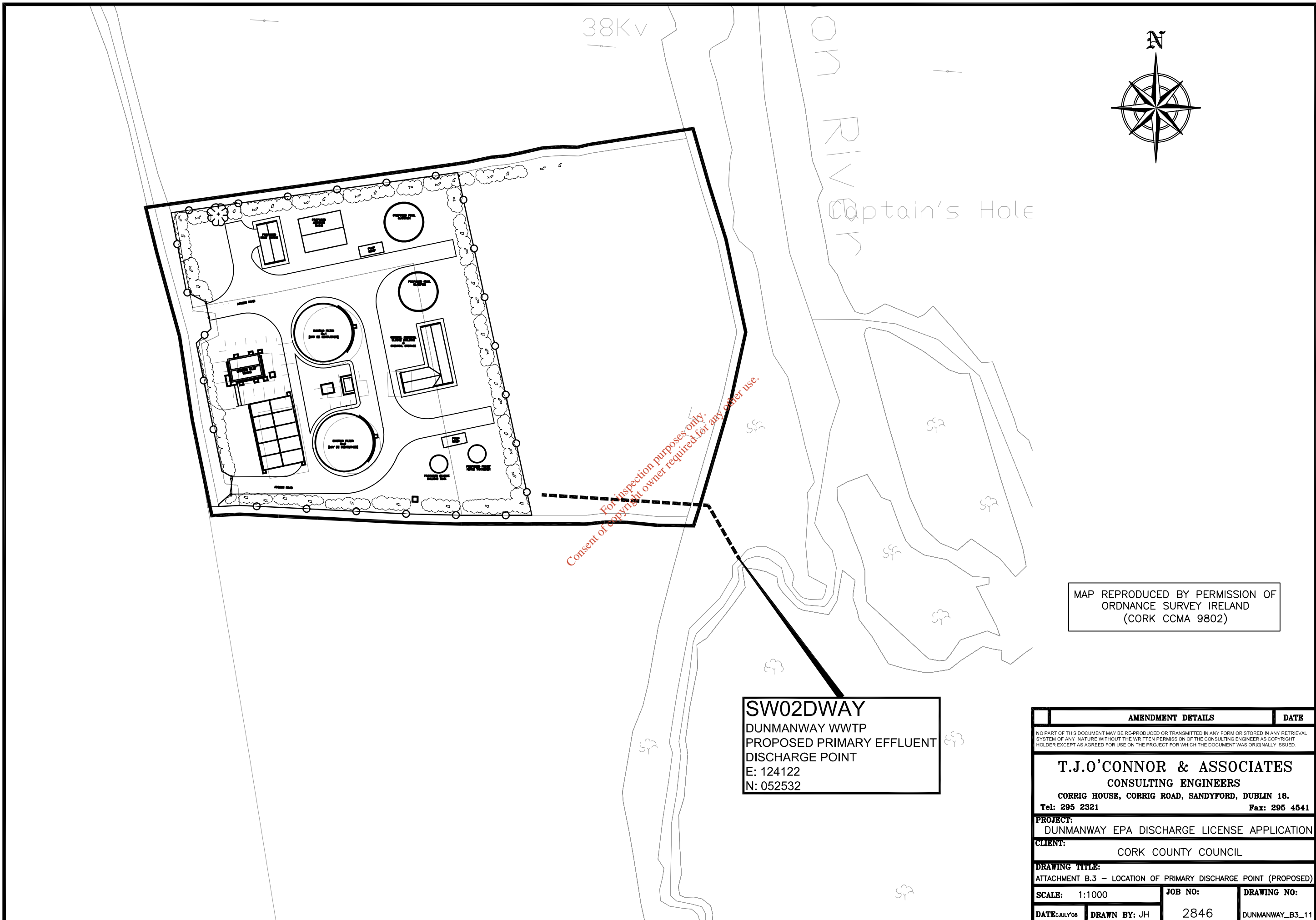
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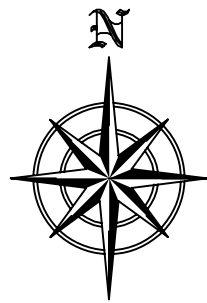
SW01DWAY
DUNMANWAY WWTP
PRIMARY EFFLUENT
DISCHARGE POINT
E: 124142
N: 052545

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CLIENT: CORK COUNTY COUNCIL		
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Captain's Hole

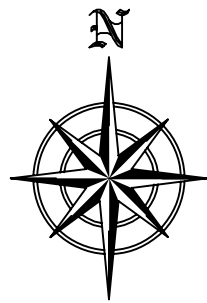
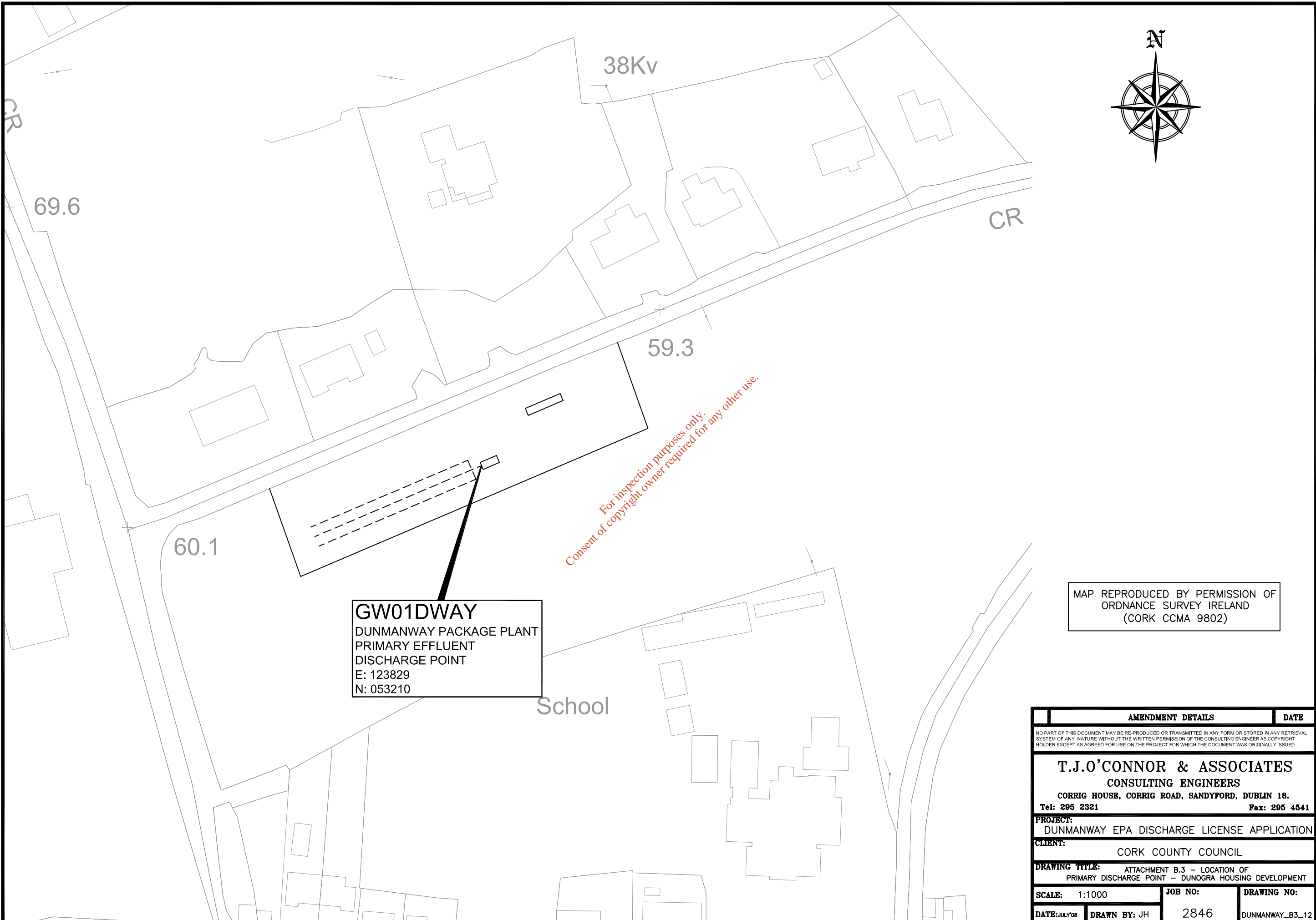


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SW02DWAY
DUNMANWAY WWTP
PROPOSED PRIMARY EFFLUENT
DISCHARGE POINT
E: 124122
N: 052532

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CLIENT: CORK COUNTY COUNCIL		
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SCALE: 1:1000	JOB NO:	DRAWING NO:
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GW01DWAY
 DUNMANWAY PACKAGE PLANT
 PRIMARY EFFLUENT
 DISCHARGE POINT
 E: 123829
 N: 053210

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SCALE: 1:1000	JOB NO:	DRAWING NO:
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Attachment B.4 Location of Secondary Discharge Point

Attachment Dunmanway – B4 – 13 Location of Secondary Discharge Points

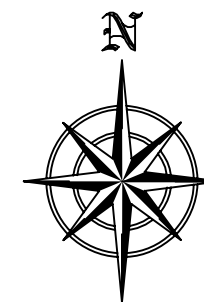
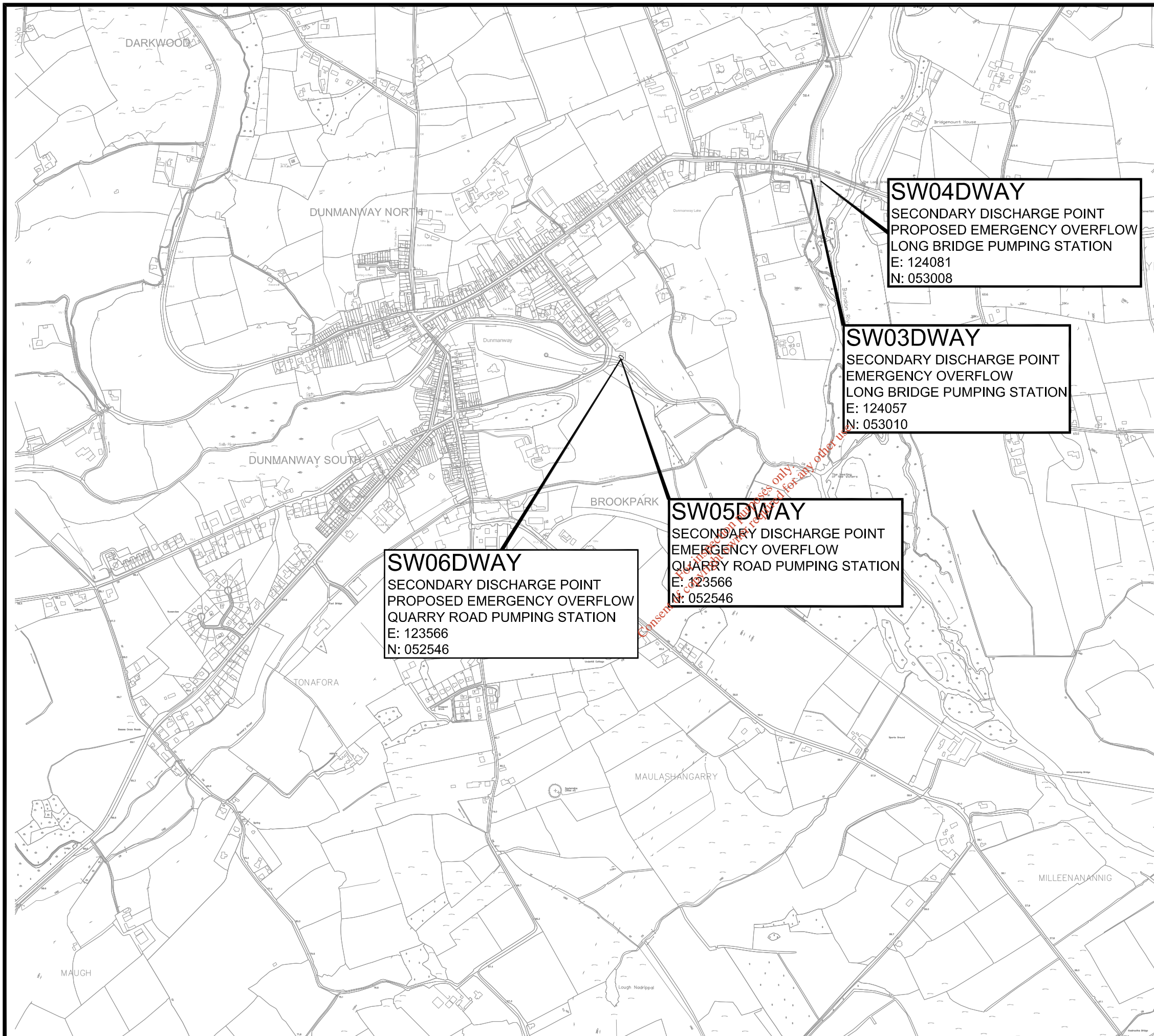
Attachment Dunmanway – B4 – 14 Location of Secondary Discharge Points
(Existing)

Attachment Dunmanway – B4 – 15 Location of Secondary Discharge Points
(Proposed)

Attachment Dunmanway – B4 – 16 Location of Secondary Discharge Points
(Existing)

Attachment Dunmanway – B4 – 17 Location of Secondary Discharge Points
(Proposed)

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SW04DWAY
 SECONDARY DISCHARGE POINT
 PROPOSED EMERGENCY OVERFLOW
 LONG BRIDGE PUMPING STATION
 E: 124081
 N: 053008

SW03DWAY
 SECONDARY DISCHARGE POINT
 EMERGENCY OVERFLOW
 LONG BRIDGE PUMPING STATION
 E: 124057
 N: 053010

SW05DWAY
 SECONDARY DISCHARGE POINT
 EMERGENCY OVERFLOW
 QUARRY ROAD PUMPING STATION
 E: 123566
 N: 052546

SW06DWAY
 SECONDARY DISCHARGE POINT
 PROPOSED EMERGENCY OVERFLOW
 QUARRY ROAD PUMPING STATION
 E: 123566
 N: 052546

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		DUNMANWAY_B4_13

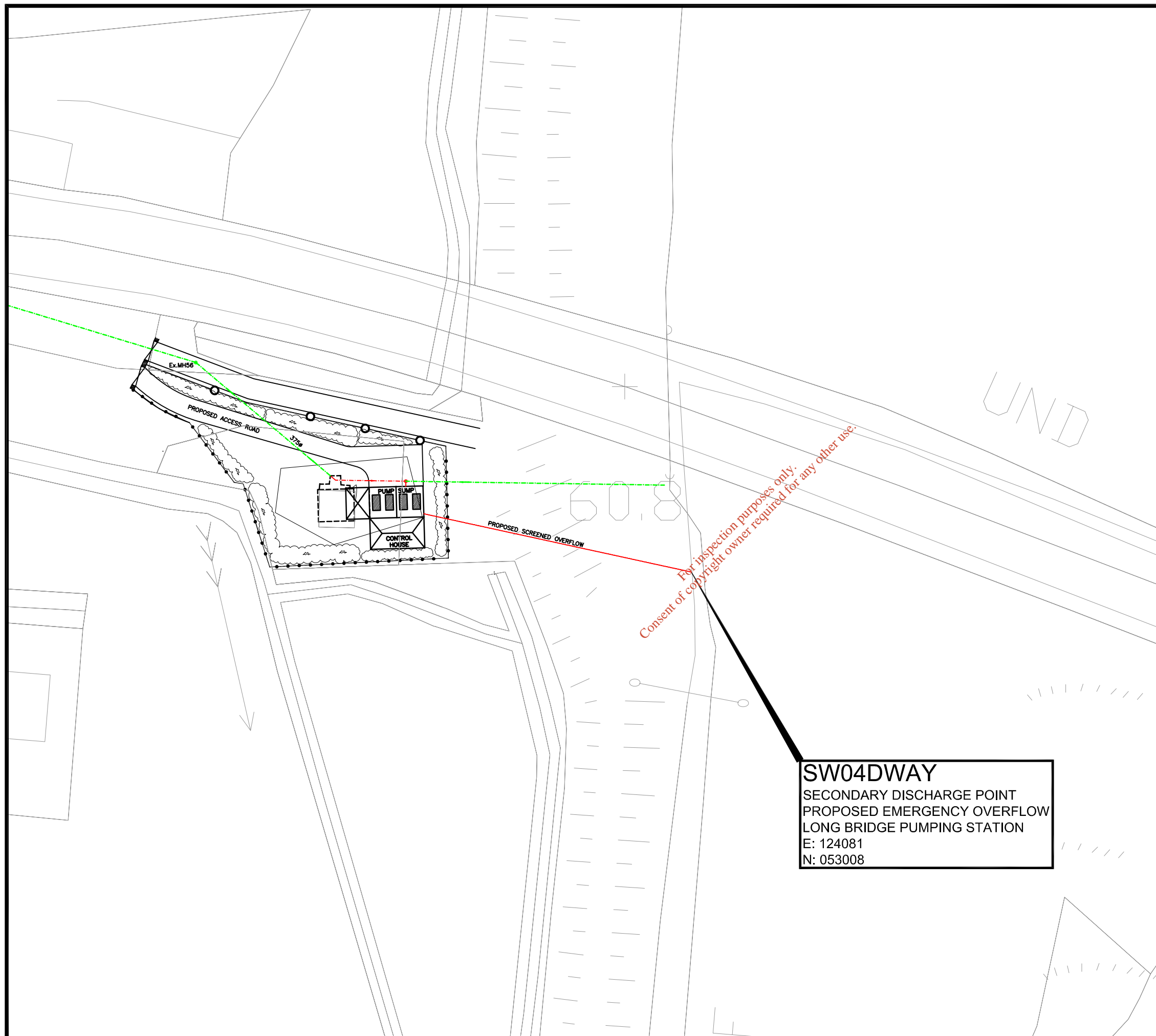
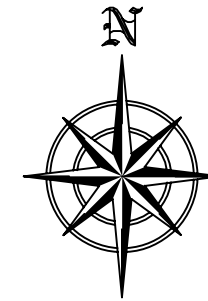


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SW03DWAY
SECONDARY DISCHARGE POINT
EMERGENCY OVERFLOW
LONG BRIDGE PUMPING STATION
E: 124057
N: 053010

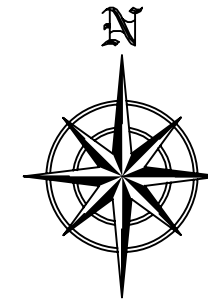
AMENDMENT DETAILS		DATE
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T.J.O'CONNOR & ASSOCIATES CONSULTING ENGINEERS CORRIG HOUSE, CORRIG ROAD, SANDYFORD, DUBLIN 18. Tel: 295 2321 Fax: 295 4541		
PROJECT: DUNMANWAY EPA DISCHARGE LICENSE APPLICATION		
CLIENT: CORK COUNTY COUNCIL		
DRAWING TITLE: ATTACHMENT B.4 - LOCATION OF SECONDARY DISCHARGE POINTS (EXISTING)		
SCALE: 1:500	JOB NO: 2846	DRAWING NO: DUNMANWAY_B4_14
DATE: JULY 08	DRAWN BY: JH	



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(CORK CCMA 9802)

SW04DWAY
SECONDARY DISCHARGE POINT
PROPOSED EMERGENCY OVERFLOW
LONG BRIDGE PUMPING STATION
E: 124081
N: 053008

AMENDMENT DETAILS		DATE
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PROJECT: DUNMANWAY EPA DISCHARGE LICENSE APPLICATION		
CLIENT: CORK COUNTY COUNCIL		
DRAWING TITLE: ATTACHMENT B.4 - LOCATION OF SECONDARY DISCHARGE POINTS (PROPOSED)		
SCALE: 1:500	JOB NO:	DRAWING NO:
DATE: JULY 08	DRAWN BY: JH	2846
		DUNMANWAY_B4_15



59.0

6020

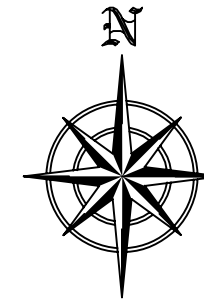
CR

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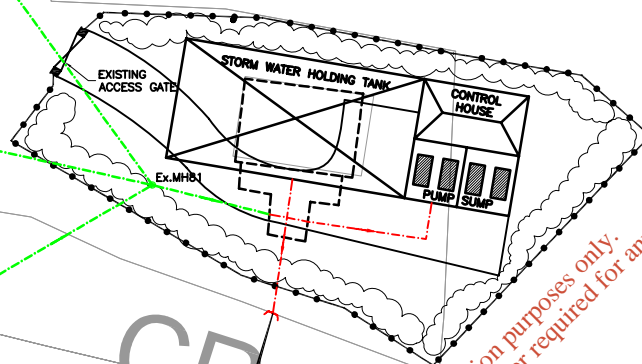
SW05DWAY
SECONDARY DISCHARGE POINT
EMERGENCY OVERFLOW
QUARRY ROAD PUMPING STATION
E: 123566
N: 052546

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AMENDMENT DETAILS		DATE
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PROJECT: DUNMANWAY EPA DISCHARGE LICENSE APPLICATION		
CLIENT: CORK COUNTY COUNCIL		
DRAWING TITLE: ATTACHMENT B.4 - LOCATION OF SECONDARY DISCHARGE POINTS (EXISTING)		
SCALE: 1:500	JOB NO:	DRAWING NO:
DATE: JULY 08	DRAWN BY: JH	2846
		DUNMANWAY_B4_16



59.0



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SW06DWAY
 SECONDARY DISCHARGE POINT
 PROPOSED EMERGENCY OVERFLOW
 QUARRY ROAD PUMPING STATION
 E: 123566
 N: 052546

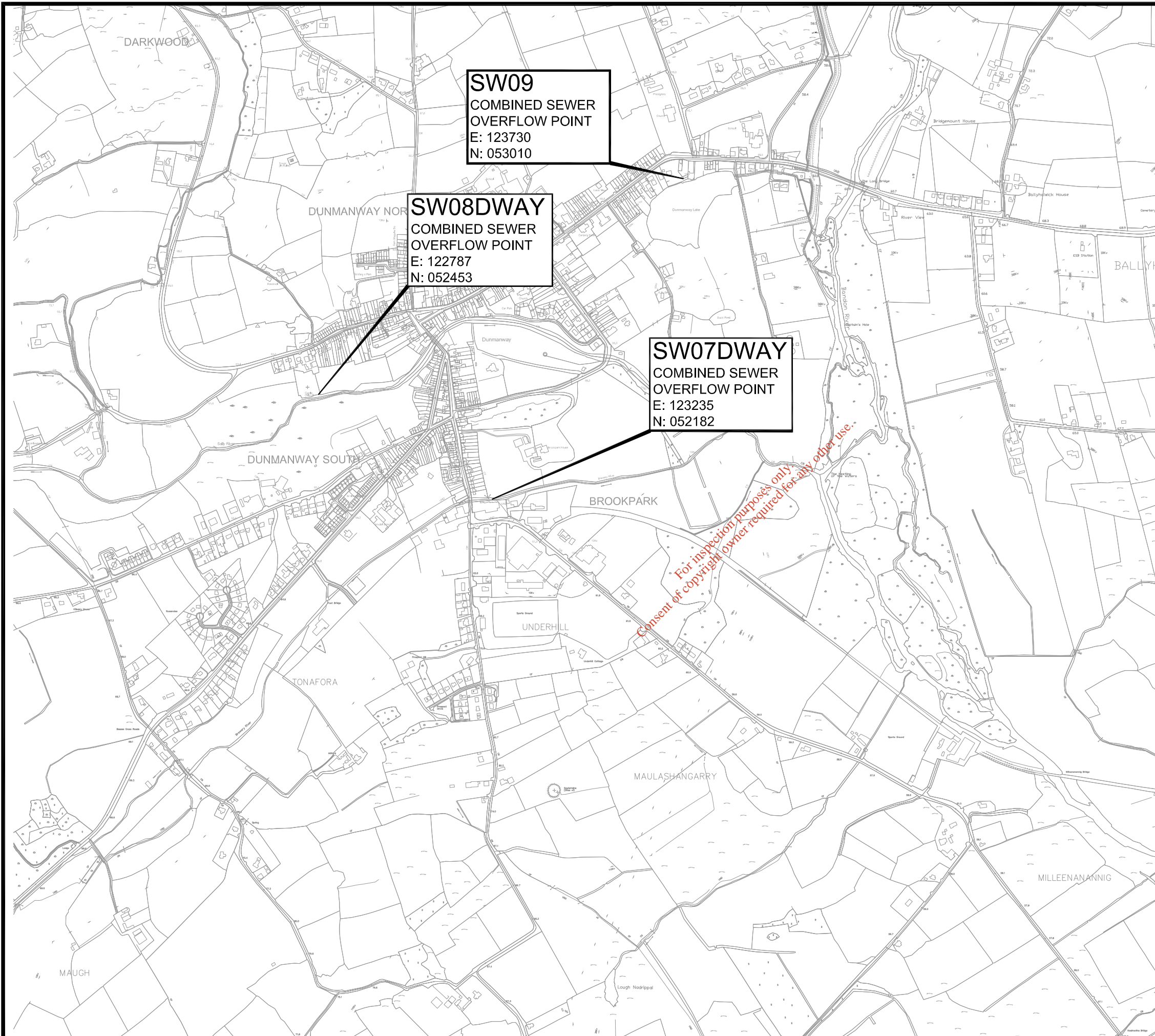
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PROJECT: DUNMANWAY EPA DISCHARGE LICENSE APPLICATION		
CLIENT: CORK COUNTY COUNCIL		
DRAWING TITLE: ATTACHMENT B.4 - LOCATION OF SECONDARY DISCHARGE POINTS (PROPOSED)		
SCALE: 1:500	JOB NO:	DRAWING NO:
DATE: JULY 08	DRAWN BY: JH	2846
		DUNMANWAY_B4_17

Attachment B.5 Location of Storm Water Overflow Points

Attachment Dunmanway – B5 – 18 Location of Storm Water Overflow Points

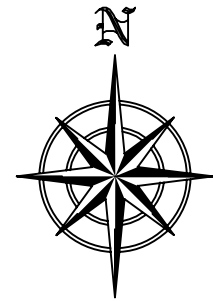
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SW09
 COMBINED SEWER
 OVERFLOW POINT
 E: 123730
 N: 053010

SW08DWAY
 COMBINED SEWER
 OVERFLOW POINT
 E: 122787
 N: 052453

SW07DWAY
 COMBINED SEWER
 OVERFLOW POINT
 E: 123235
 N: 052182



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AMENDMENT DETAILS		DATE
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T.J.O'CONNOR & ASSOCIATES CONSULTING ENGINEERS CORRIG HOUSE, CORRIG ROAD, SANDYFORD, DUBLIN 18. Tel: 295 2321 Fax: 295 4541		
PROJECT: DUNMANWAY EPA DISCHARGE LICENSE APPLICATION		
CLIENT: CORK COUNTY COUNCIL		
DRAWING TITLE: ATTACHMENT B.5 – LOCATION OF STORMWATER OVERFLOW POINTS		
SCALE: 1:10000	JOB NO:	DRAWING NO:
DATE: JULY 08	DRAWN BY: JH	2846
		DUNMANWAY_B5_18

Attachment B.6 Planning Permissions

The most recent planning permission, including a copy of all conditions, is contained in the Co. Manager's Report on the Dunmanway Sewerage Scheme in accordance with the provisions of Part 8 of the Planning & Development Regulations 2001 dated January 2005. A copy of this report is reproduced here.

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Comhairle Chontae Chorcaí Cork County Council

County Hall,
Cork, Ireland.

Tel. No: (021) 4276891

Fax No: (021) 4276321

Web: <http://www.corkcoco.com/>



Mr. Niall O'Mahony,
Senior Engineer,
Cork County Council,
Courthouse,
Skibbereen,
Co. Cork.

Direct Dial: 021-4285454

Fax: 021-4345425

Email: corporate.affairs@corkcoco.ie

15th February, 2005.

Re: Report under Article 179(3)(b) of the Planning & Development Act, 2000

Dunmanway Sewerage Scheme

I refer to your letter dated 4th February, 2005, in connection with the above.

At the meeting of Cork County Council held on 14th February, 2005, the recommendation of the Western Committee was approved.

MAURICE MANNING,
A/HEAD OF CORPORATE AFFAIRS.



Recycled

Comhairle Chontae Chorcaí

CORK COUNTY COUNCIL
(WESTERN DIVISION)



Dunmanway Sewerage Scheme

PLANNING AND DEVELOPMENT ACT 2000

**County Manager's Report on the Dunmanway
Sewerage Scheme in accordance with the
provisions of Part 8 of the Planning and
Development Regulations 2001.**

PROJECTS SECTION
WESTERN DIVISION

January 2005

1 DESCRIPTION OF THE NATURE AND EXTENT OF THE SCHEME

The existing collection system, including pumping stations at the Quarry Road and at Long Bridge, collects wastewater from Dunmanway and its environs. The pumping stations pump the collected wastewater to the treatment plant. An Imhoff tank provides primary treatment for the sewage followed by secondary treatment in two percolating filters. The treated effluent discharges via a 225 mm outfall to the Bandon River. Excess flows are overflowed at the pumping stations to the adjacent rivers.

Due to the increasing load on the existing plant and the need to provide a satisfactory effluent quality, it is proposed to upgrade and expand the existing wastewater treatment plant to cater for the future increased loads. This proposal is in accordance with the County Cork Development Plan 2003 and with the Preliminary Report on the Dunmanway Sewerage Scheme prepared by M.C. O'Sullivan's in July 2001 and subsequent amendments to this report by T.J. O'Connor & Associates in 2004. This plant will be designed to serve a population equivalent of 3,500 persons. This will cater for population growth and development demand for the next twenty years. It is proposed to expand the existing treatment plant site since it is of limited area. The wastewater treatment plant will be screened to reduce its visual intrusion. It is intended that there will be green space between the boundaries of the works and the nearest dwellings or business premises in accordance with County Development Plan guidelines.

The Department of the Environment, Heritage and Local Government has directed that the wastewater treatment works be procured through a Design, Build and Operate form of contract in conjunction with a number of other schemes in West Cork. The scope of works for the scheme will include the construction of new pumping stations and stormwater holding tanks at Quarry Road and Long Bridge. An **indicative** layout of the works is included in Dwg. No. 1339-3(DY)-P01. The final layout of the site will be governed by the contractor's proposals for the site.

It is proposed to discharge the treated effluent to the Bandon River by gravity via a new outfall situated approx 10m downstream of the existing outfall.

The new wastewater treatment plant will consist of preliminary and secondary treatment and nutrient removal or their equivalent, to achieve a final effluent of 25 mg/l BOD; 35 mg/l SS; 125 mg/l COD; 1.5 mg/l TP. Mitigation measures will be installed to maintain noise and odour emissions within recognised and acceptable limits at the site boundary. Standby power generation will be available on site in case of power failure. Thickened sludges will be transported by tanker or skip off site for further treatment or disposal in accordance with the County Sludge Management Plan. Screenings arising from the preliminary treatment stage will be disposed of to the Cork Co. Co. Landfill site.

The control house and any other building which may be located at the treatment works site will be constructed in blockwork with render finish, incorporating masonry panels using locally quarried stone, and slated pitched roofs. The appearance of the buildings will reflect the local traditional building styles. The paved areas will consist of concrete pavement and macadam. A 2.2m high palisade fence will enclose the treatment works with stockproof fencing providing protection to the screen planting which will be provided to the external boundaries. The access road to the treatment works will be surfaced in macadam.

The layout for the wastewater treatment works shown on Dwg. No.1339-3 (DY)-P01 is indicative of the layout type, which will be proposed by the successful tenderer for the construction of the works. The Design Build Operate form of Contract provides for the Contractor to prepare the detailed design of the Works in order to achieve savings in construction costs and in order to obtain the most technologically advanced treatment processes. The final design and layout proposed by the successful tenderer may not resemble the indicative layout in every detail. However, the tenderers for the scheme will be obliged to ensure that the visual and other impacts of the final scheme layout and processes will not be any greater than those of the plant layout shown in the drawings.

The existing treatment works is served with a connection from the Dunmanway water supply scheme. This connection may have to be upgraded to meet the requirements of the upgraded treatment facilities. Additional power supply, if required, will be brought to the site from the nearest available location in accordance with the requirements of the Electricity Supply Board.

Drawings Accompanying This Application:

Dwg. No. 1339-3(DY)-P01 – Dunmanway - Indicative Site Layout of the proposed Wastewater Treatment Works.

Dwg. No. 1339-3(DY)- P02 –Sections through Proposed Dunmanway WWTP Site.

Dwg. No. 1339-3(DY)- P03 – Pumping Station Layout Plans – Long Bridge and Quarry Road.

2 PLANNING EVALUATION

(a) Development Control: -

See attached report by Senior Planner in appendix 1. The proposed development is consistent with the proper planning and sustainable development of the area.

(b) Development Plan: -

The proposed development is consistent with the overall strategy and main policy as outlined in chapter 5 (Transport & Infrastructure) of Volume 1 of the Cork County Development Plan 2003, which states that:

- *Investment in the county's infrastructure should be made in a sustainable and efficient manner in order to promote the social and economic well being of the county and its population.*

The proposed development is consistent with the objective for Sewerage Infrastructure as outlined in section 5.2 (Water Supplies, Sewerage and Drainage), which states that (INF 2-5):

- *It is an objective generally to provide support for the funding of sewerage infrastructural requirements as identified by the County Council in order to accommodate the planned levels of growth expected for the county.*
- *It is an objective generally to improve and extend the sewerage infrastructure to serve the planned levels of growth, during the lifetime of this plan, in order to facilitate development.*

The proposed development is adjacent to pNHA-1035 (Bandon Valley South of Dunmanway) and partly within cSAC-2171 Bandon River and is consistent with the Specific Objectives (Heritage and Amenity) as outlined in chapter 3 Volume 2, which states that (ENV 2-5 & ENV 2-6):

- *It is an objective to maintain the conservation value of all Natural Heritage Areas proposed for designation by Duchas the Heritage Service, either before or during the lifetime of this plan.*
- *It is an objective to maintain the conservation value of those sites identified by Duchas the Heritage Service as candidate Special Areas of Conservation as well as any other sites that may be so identified during the lifetime of this plan.*

The proposed development is not visible from any Scenic Route as outlined in Chapter 4, Volume 2.

The proposed development is consistent with the Specific Zoning Objectives (Main Settlements) outlined in Settlement 13 Dunmanway in Volume 3 of the Cork County Development Plan 2003, which state that:

- Key Planning Consideration 13.1.7 "*The waste water treatment plant, discharges to the River Bandon and is presently overloaded. The upgrading of the plant is in the planning stage*".
- Objective No. R-04 Specific Zoning Objective for "low density residential development individual sites" is close to existing Wastewater Treatment Plant.
- Objective No. R-07 Specific Zoning Objective for "medium density residential development, to include a mix of houses types and sizes with amenity walk along northern boundary of site. Provision for nursing home" is adjoining to existing Sackville Street Pumping Station.
- Objective No. U-02 Specific Zoning Objective for "local access road" is close to existing Wastewater Treatment Plant.
- Objective No. U-03 Specific Zoning Objective to "provide pedestrian walkways connecting open space to town centre and Dunmanway Lake" is close to existing Sackville Street Pumping Station.

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3 SUBMISSIONS RECEIVED

Submissions were received from the following:

	Name	Address	Date
1	South Western regional Fisheries Board	1 Nevilles Terrace, Masseytown, Macroom.	27-Oct-04
2	DEHLG (Archaeology)	Harcourt Lane, Dublin2	29-Oct-04
3	DEHLG (Nature Conservation)	Harcourt Lane, Dublin2	9-Dec-04

4 SUMMARY OF ISSUES IN SUBMISSIONS

Our Consulting Engineer, T.J. O'Connor & Associates and ourselves have considered the issues and our detailed responses to each of the submissions are contained in appendix 2. A summary of the issues and responses is outlined below:

1. With respect to the proposed pumping stations (Quarry Road & Long Bridge) it is stated that the pumping stations will each have an overflow pipe discharging to adjacent freshwater to cater for power failure or extreme storm events. That it would be more appropriate to provide a back-up power supply and the separation of storm water from sewer system, to avoid the need for an overflow – Backup power generation will be provided. The problem of excessive stormwater entering the network of sewers has been examined and will be addressed as part of a separate network contract.
4. The Board would ask that consideration be given to the manner in which all construction works and particularly those close to surface water channels are carried out with a view to minimising suspended solids pollution - The Contractor will be obliged to submit a method statement for approval by the Engineer detailing the manner in which he proposes to undertake the proposed riverside works without generating high levels of silt.
3. That an underwater archaeological assessment (riverine and riverbank survey) be undertaken. This survey should include a detailed desktop survey, an intra-riverine diver and wading survey, a metal detection survey and a survey of the associated river banks - As there are no proposed works to take place in the river, it is not proposed to undertake an underwater archaeological assessment.
4. That consideration is given to creating a constructed wetland in the field between the WWTP and the alluvial part of the river, into which the effluent is first discharged before being subsequently discharged to the channel of the River Bandon. This would encourage natural restoration of the river channel currently affected by WWTP discharge – The Design Build and Operate contract will be based on performance parameters including those related to effluent quality. If the successful contractor feels that the construction of a wetland between the works and the river bank will be of benefit in achieving these parameters then due consideration will be given to their proposals.

5 MODIFICATIONS

No modifications to the Part 8 documentation are recommended. Some conditions in the proposed Design Build & Operate Contract may be modified or strengthened to take on board some of the issues outlined above.

6 RECOMMENDATION

I recommend that the proposed upgrading of the Wastewater Treatment Works, access roads, pumping stations and associated foul sewage rising mains and outfalls at Dunmanway North, Dunmanway, be proceeded with as recommended in this report.

Signed: -

County Manager

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Appendix 1

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Comhairle Chontae Chorcaí Cork County Council

Planning Section
Cork Road
Skibbereen
Co. Cork



Tel: (028) 40340
Fax: (028) 21660

web: <http://www.corkcoco.com/>

Mr. Niall O'Mahony
Senior Engineer
Cork County Council
The Courthouse
Skibbereen
Co. Cork

Date: 21st January 2005

Dunmanway Water Supply Scheme

I refer to the above-mentioned Part VIII proposals that were forwarded to this office.

I have examined the proposals and I am satisfied that they are generally in accordance with the proper planning and sustainable development of the area and, in particular, with the County Development Plan objectives for improving and extending water and sewerage infrastructure in the county to accommodate planned levels of growth.

Yours faithfully,



Brendan O'Sullivan
Senior Planner

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Appendix 2

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COPY

No.	Condition	Reason
1	The proposed development shall be carried out in accordance with the plans, drawings and site layout submitted on 09/06/06 and as amended on 04/08/06 except where otherwise required by the conditions of this schedule.	In the interests of clarity and orderly development.
2	On completion of the upgrading of the town treatment plant, the development shall be connected to the public sewer to the Council's satisfaction at the developer's own expense	In the interests of orderly development and to ensure satisfactory permanent foul drainage arrangements to serve the development
3	The treatment plant shall be decommissioned and the area reinstated to the satisfaction of the Planning Authority within two months of connection to the upgraded public sewer in accordance with details submitted to the Planning Authority on 04/08/06.	In the interests of the proper planning and sustainable development of the area.
4	The structure shall be removed on the expiration of the period of 5 year(s) beginning on the date of the grant of this Permission or on connection to the public sewer, whichever is sooner	A structure of this type is not acceptable in this location on a permanent basis
5	Construction activities shall be carried out such that no noise nuisance is caused to adjoining residences	To safeguard the amenities of the area.
6	All site operations shall be carried out in such a manner as to ensure that no odour or dust nuisance occurs off site	To safeguard the amenities of the area
7	<p>The proposed wastewater treatment unit shall comply with Irish Regulations:</p> <ul style="list-style-type: none"> a) SR6 1991, 'Septic Tank Systems; Recommendations for Domestic Effluent treatment and Disposal for Single Dwelling House'. b) EPA Wastewater Treatment Manual, treatment Systems for Single Houses 2000. c) EPA Wastewater Treatment Manual Manual, Treatment Systems for Small Communities, Business, Leisure Centre and Hotels, 2000. 	To safeguard the amenities of the area

No.	Condition	Reason
8	The treatment unit shall be properly maintained and desludged when necessary	To safeguard the amenities of the area
9	<p>Noise levels emanating from the proposed development when measured at the site boundaries shall not exceed 55dBA (15 minute L_{eq}) between 08.00 hours and 20.00 hours, Monday to Saturday inclusive, and shall not exceed 45 dBA at any other time. Measurements shall be made in accordance with ISO recommendation R.1996/1 "Acoustics - Description and Measurement of Environmental Noise, Part 1: Basic Quantities and Procedures."</p> <p>At no time shall the noise generated on site result in an increase in noise level of more than 10 dBA above background levels at the boundaries of adjoining premises. Background noise level shall be interpreted as the mean minimum sound level at the relevant place and time in the absence of noise from the premises the subject of the application.</p> <p>If noise contains a discrete, continuous tone (whine, hiss screech, hum etc.), or if there are distinctive impulses in the noise (bangs, clicks, clatters or thumps), or if the noise is irregular enough in character to attract attention, a penalty of + 5dbA will be applied to the measured noise level and this increased level shall be used in checking compliance with the specified levels.</p>	To safeguard the amenities of the area
10	<p>Any solid wastes arising on the site shall be recycled as far as possible. Materials exported from the site for recovery, recycling or disposal shall be managed at an approved facility. Adequate on site arrangements shall be made to the satisfaction of the Planning Authority for the storage of recyclable materials prior to collection</p>	To safeguard the amenities of the area
11	Any storage tanks areas and drum storage areas shall be rendered impervious to the materials stored therein. In addition, storage tank areas shall be bunded, either locally or remotely, to a volume of 110% of the largest tank within each individual bunded area. Drum storage areas shall	To safeguard the amenities of the area

No.	Condition	Reason
	be banded to a volume equal to 110% of the sum of the volumes of the largest five drums likely to be stored therein. The height of the bund for any drum storage area shall be not less than 300 millimetres.	

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DESIGN CALCULATIONS FOR DISPOSAL SYSTEM

Effluent Disposal

We are assuming a T- Value 5.5

Sand Polishing Filter

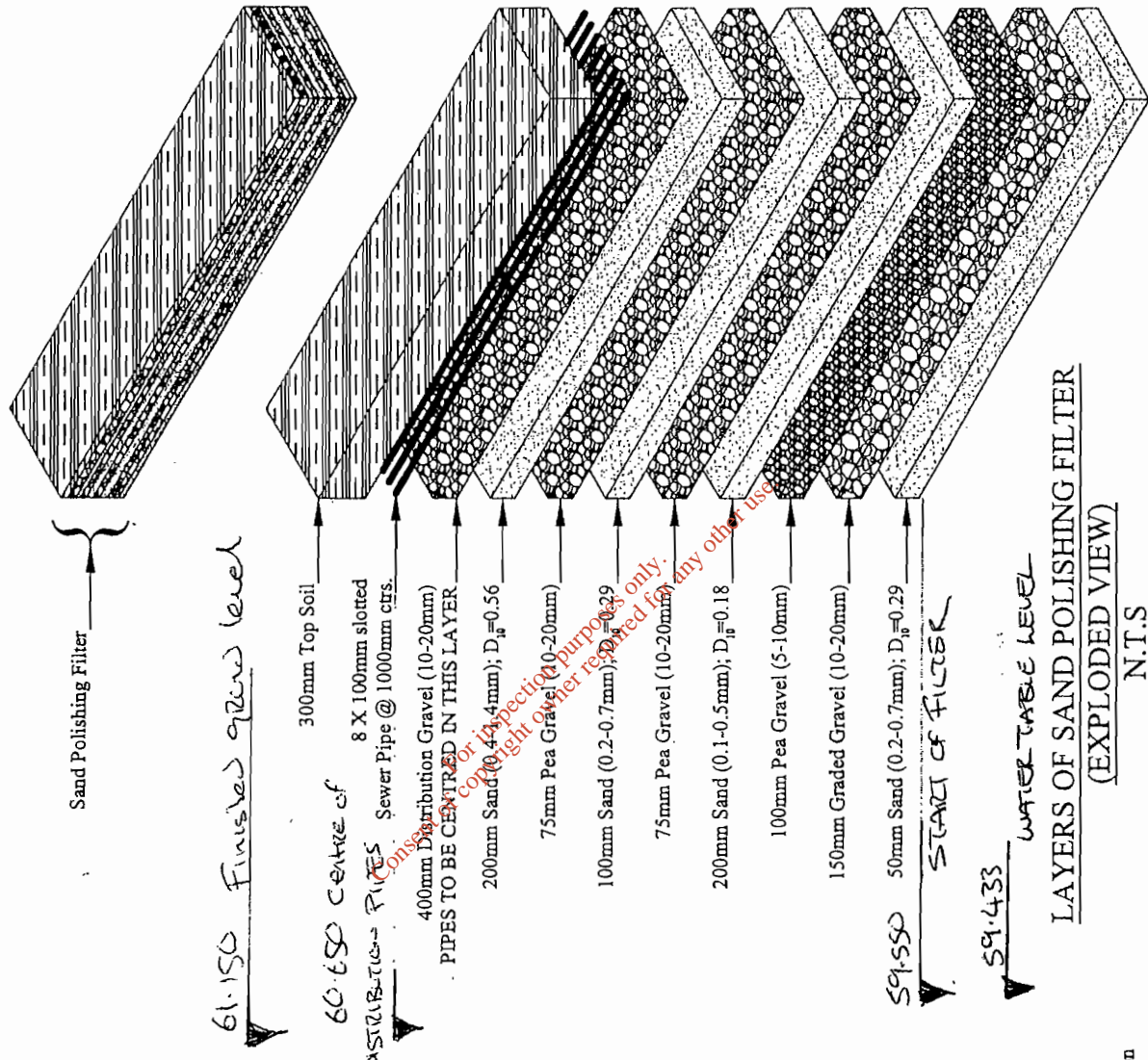
Total Hydraulic Load	= 25,920/day
Loading to filter	= 60l.m ² /day
Area for filter	= 432m ²

Polishing filter to be constructed in accordance with EPA Guidelines" Treatment Systems for Single Houses " Page 41 – 49

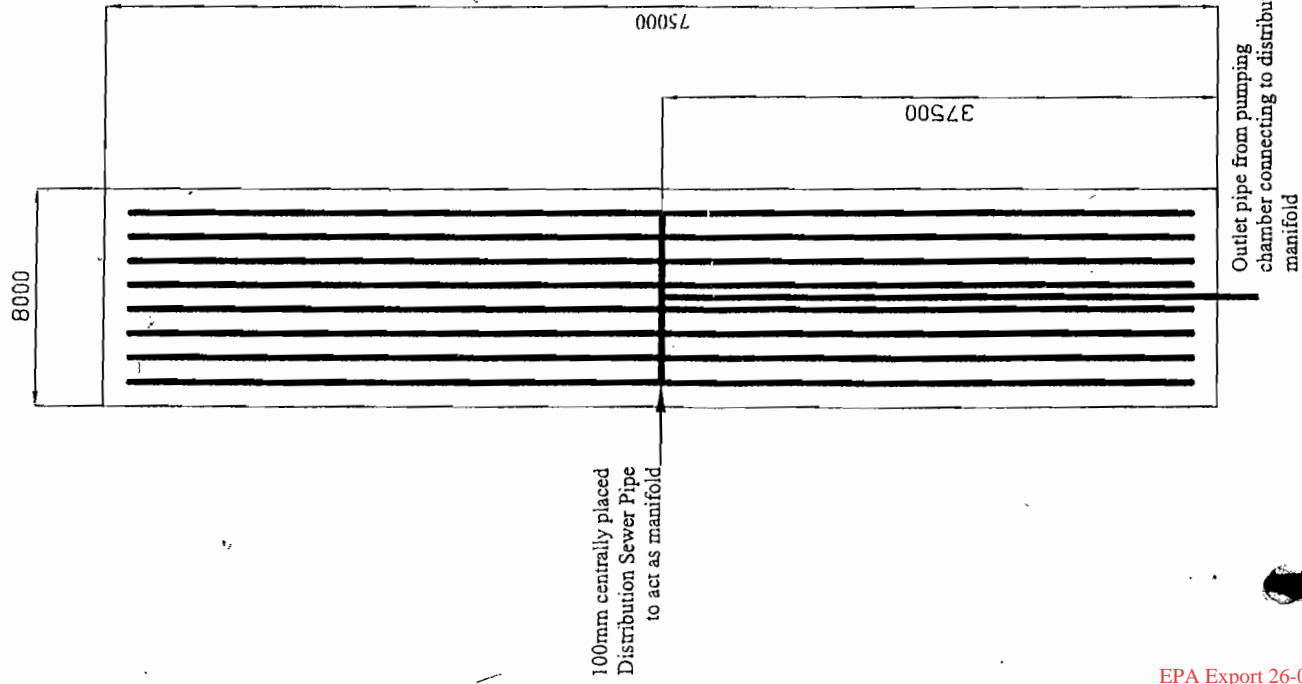
Taking into account your poor percolation we recommend the installation of engineered designed lined sand polishing bed 432m² in area. Across the entire area of the sand polishing filter, the topsoil and subsoil shall be dug out to a depth of 1500mm. The walls of this excavation should then be lined with an EPDM/rubber liner (to extend min. 200mm above existing ground level) and filled with 50mm of sand (0.2-0.7mm), 150mm graded gravel (5-30mm), 100mm pea gravel (5-10mm), 200mm sand (0.1-0.5mm), 75mm pea gravel (10-20mm), 100mm sand (0.2-0.7mm), 75mm pea gravel (10-20mm), 200mm sand (0.4-1.4mm), 100mm distribution gravel (10-20mm) in which pressure distribution pipes are placed. This should be overlain with 300mm of washed stone (10-20mm), this is then covered with a permeable geo textile and 250mm depth of topsoil. This will lead to a top surface, which is ~~100mm above the original ground level~~. At A PROPOSED level of 61.150. The installation of a sand-polishing filter will further purify the treated effluent being discharged to groundwater. A sand-polishing filter will result in a final effluent standard of 10mg/l BOD and 10mg/l SS.

IF IN DOUBT 'K' DO NOT SCALE OFF THIS DRAW 3

REF: CE DRAWINGS	REV:			
DRAWING NO.:				
SCHEDULE OF BUILDERSWORK OPES & LEVELS Centerline of pipe on plan equals centerline of manhole. All pipes passing through unless noted otherwise.				
File: Pipe Size (W x H)	Invert Level			
HAZARDOUS ZONE RATINGS:				
GENERAL NOTES: 1. All power ducts to be 150mm unless noted otherwise. 2. All latent ducts to be 100mm unless noted otherwise. 3. All power and latent ducts to be separated by a minimum distance of 725mm center to center. 4. All pipe invert levels taken from underside of outside diameter unless noted otherwise.				
0	AL	PO. DATE	INITIAL	ISSUE
Rev	Drawn/Checked	Date	Description	
CONTRACTOR: [Signature]				
Drawing Status:				
Contract:				
Client:				
Consultant:				
Drawing Title: SAND POLISHING FILTER SCHEMATIC				
Scale:	Drawn By: AL	Proj:	Date:	15.05.06
Revision:	0	Revision:	0	

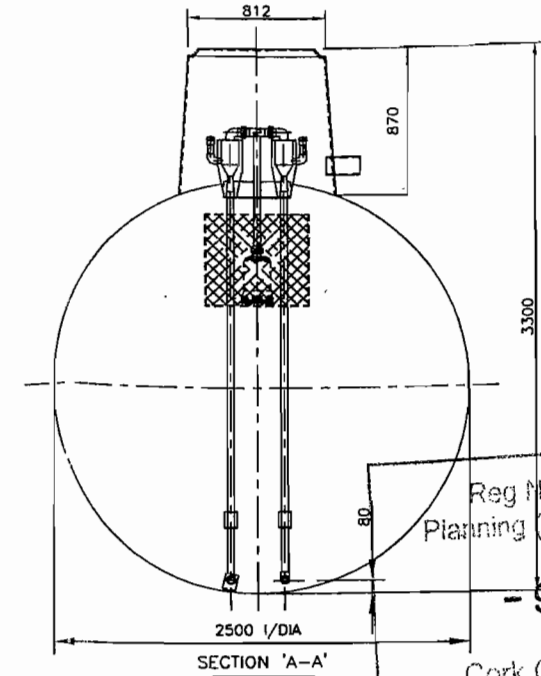
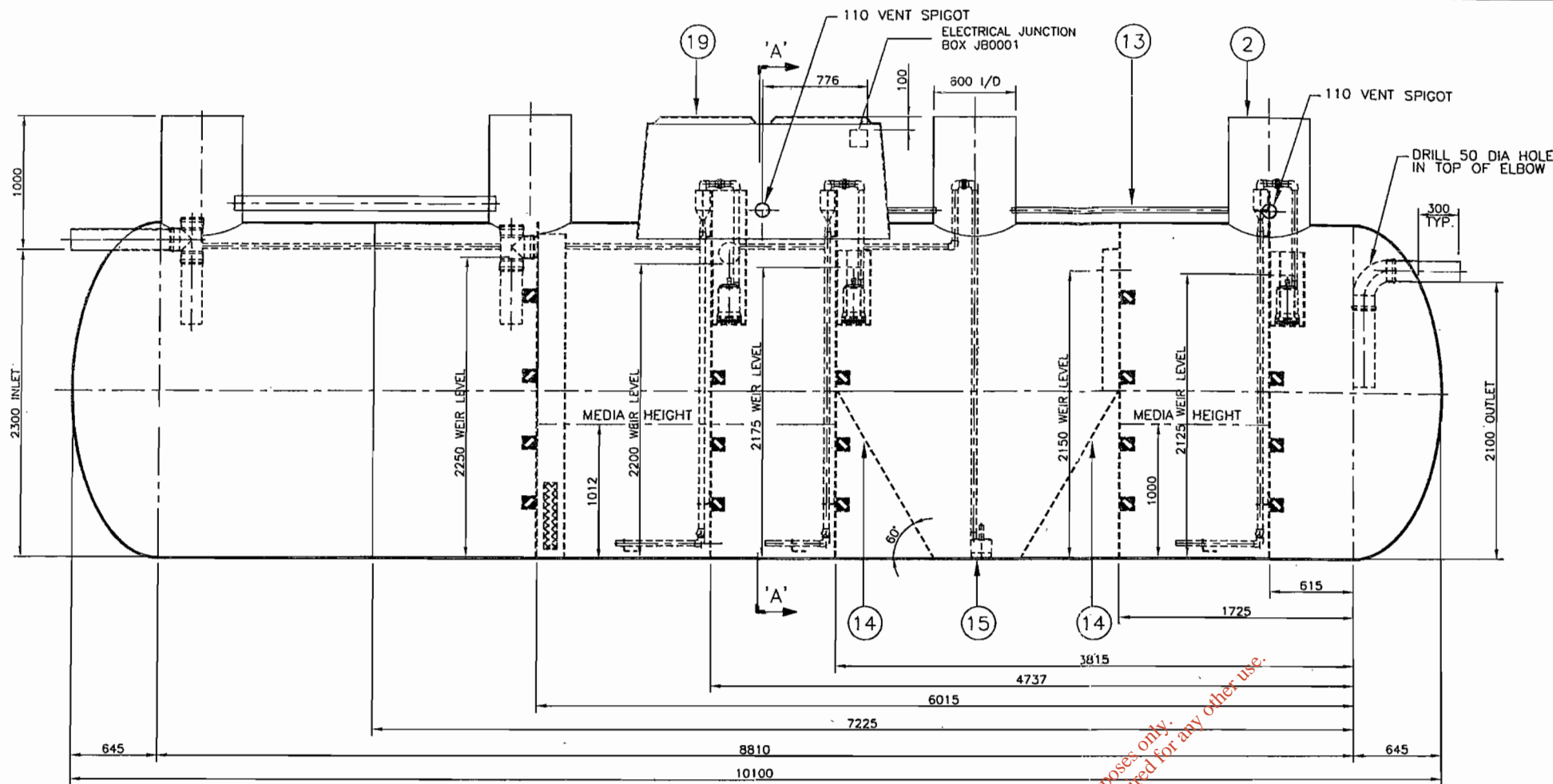


WATER TABLE LEVEL
 LAYERS OF SAND POLISHING FILTER
 (EXPLODED VIEW)
 N.T.S



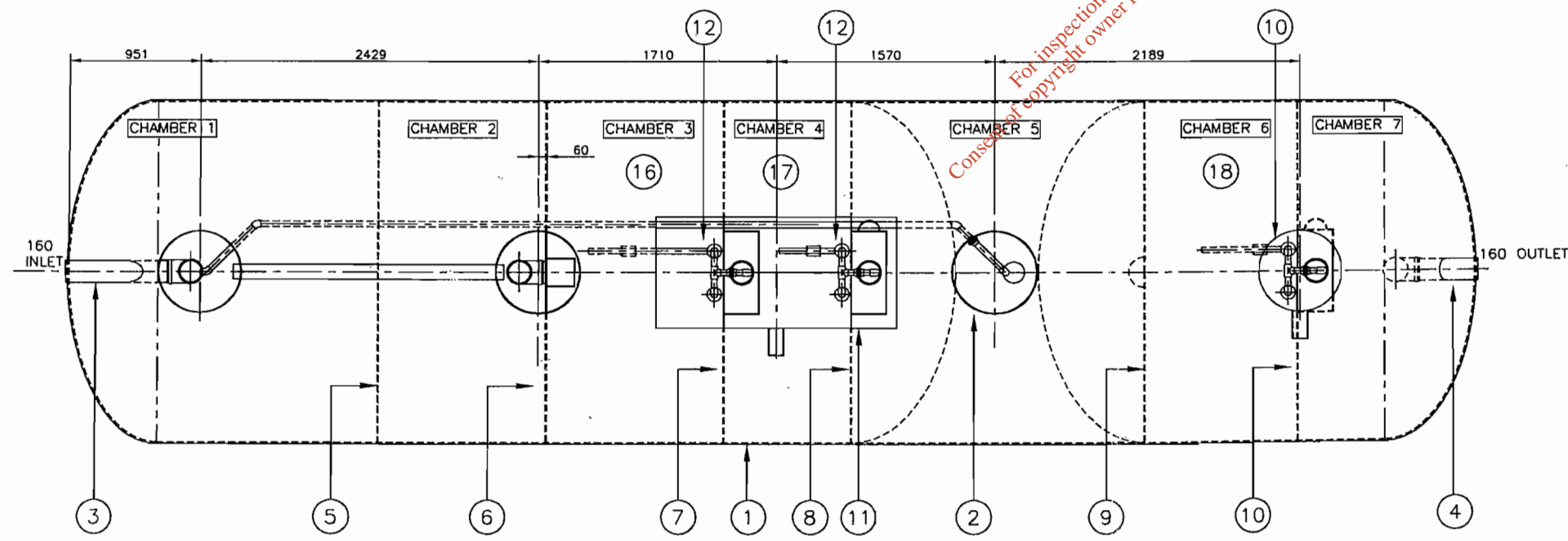
100mm centrally placed Distribution Sewer Pipe to act as manifold

Outlet pipe from pumping chamber connecting to distribution manifold



Reg No. _____
 Planning (West) Department
 - 9 JUN 2006
 Cork County Council
 Norton House, Skibbereen, Co. Cork

IMPORTANT NOTES.
 1. ALL PIPEWORK CUT-OUTS AND CIRCULAR HOLES ARE TO BE CUT USING HOLE SAWS AND NOT SIDE CUTTERS.
 2. ALL TURRETS ARE TO BE TRIMMED TO THE PROFILE OF THE TANK TO ALLOW FOR ADEQUATE VENTILATION.
 3. OVERFLOW LEVELS BETWEEN ADJACENT COMPARTMENTS ARE TO BE CHECKED AGAINST THE DRAWING PRIOR TO DESPATCH.
 4. REMOVE THE RETURN FLANGE ON THE BAFFLES AT ACCESS POSITIONS.
 5. ALL PIPES, PUMP BOXES, DIP DUCTS AND INTERNAL ITEMS ARE TO BE CUT AND TRIMMED NEATLY TO PREVENT ROUGH EDGES AND LOOSE FIBRES.



ITEM No	DESCRIPTION	PART No.	QTY	REMARKS
20	BAFFLE EXTENSIONS	BFO031	3	
19	600x600 UNVENTED COVERS/FRAME	-	2	STOCK No. 29018
18	MEDIA - CHAMBER 6	-	1	8 - BAGS
17	MEDIA - CHAMBER 4	-	1	7 - BAGS
16	MEDIA - CHAMBER 3	-	1	8 - BAGS
15	SLUDGE PUMP ASSY	CP.9937	1	
14	BAFFLE ANGLED	CP.9829	2	
13	CABLE DUCTING ASSY	MC.0007	2	
12	VENTFLO ASSY	CP.9941	3	
11	RECT. TURRET	CP.9906	1	
10	BAFFLE 6 ASSY	CP.9972	1	Inc. Pump Box
9	BAFFLE 5 ASSY	CP.9971	1	
8	BAFFLE 4 ASSY	CP.9970	1	Inc. Pump Box
7	BAFFLE 3 ASSY	CP.9693	1	Inc. Pump Box
6	BAFFLE 2 ASSY	CP.9692	1	Inc. Dip Pipe/Sludge Pipe
5	BAFFLE 1 ASSY	CP.9691	1	Inc. Baffle Flaps
4	OUTLET - 160 DIA.	CP.9690	1	
3	INLET - 160 DIA.	CP.9689	1	
2	600 DIA TURRET	CP.9688	4	
1	CT150 STRUCTURE	ST.0034	1	Class 2 Shell

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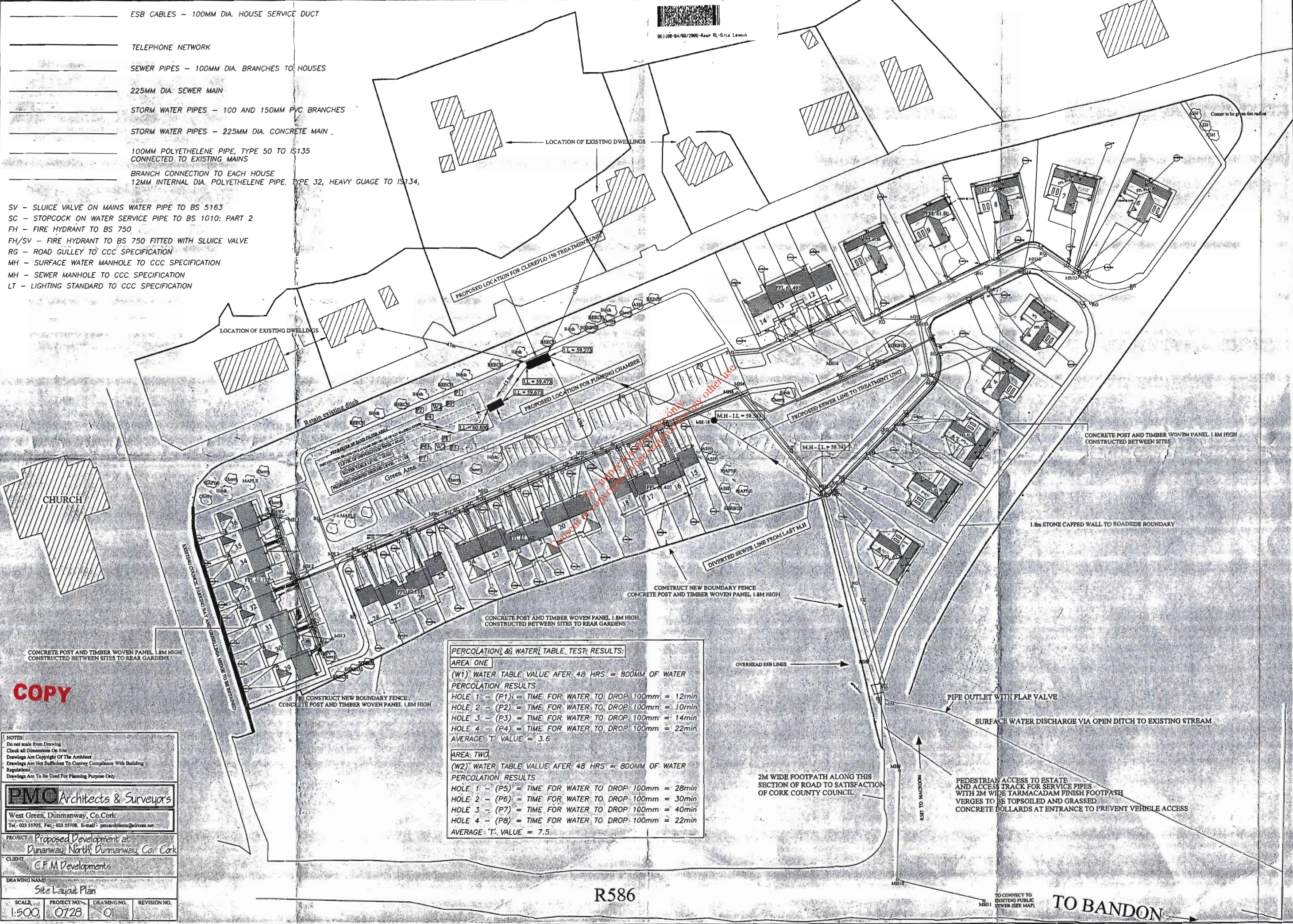
STANDARD GENERAL ARRANGEMENT
 FOR A CT150 CLEREFLO TREATMENT PLANT.
 51,000 Litre Gross Capacity.

REV.	DATE	BY	CHKD.	APPD.	DESCRIPTION
2	21.04.04	RU	IW	IW	SHELL WAS CLASS 1.
1	12/02/04	RU	IW	IW	ISSUED FOR MANUFACTURE
00	06/02/04	R.U.	I.W.	I.W.	SENT FOR APPROVAL

A3 THIS DRAWING IS THE PROPERTY OF CONDER PRODUCTS LIMITED AND MUST NOT BE COPIED WHOLLY OR IN PART WITHOUT WRITTEN PERMISSION. (DO NOT SCALE, IF IN DOUBT ASK)

TOLERANCES (UNLESS NOTED OTHERWISE)
 GENERAL LINEAR DIMS : +/- 5mm
 ANGULAR DIMENSIONS : +/- 1/2'

DRAWN	CHECKED	APPROVED	SCALE	DRAWING No.	REV.
R.U.	IW	DD	N.T.S.	CT150-GA	2
DATE	DATE	DATE			
06/02/04	06/02/04	06/02/04			



- ESB CABLES - 100MM DIA. HOUSE SERVICE DUCT
- TELEPHONE NETWORK
- SEWER PIPES - 100MM DIA. BRANCHES TO HOUSES
- 225MM DIA. SEWER MAIN
- STORM WATER PIPES - 100 AND 150MM PVC BRANCHES
- STORM WATER PIPES - 225MM DIA. CONCRETE MAIN
- 100MM POLYETHYLENE PIPE, TYPE 50 TO IS135 CONNECTED TO EXISTING MAINS
- BRANCH CONNECTION TO EACH HOUSE 12MM INTERNAL DIA. POLYETHYLENE PIPE, TYPE 32, HEAVY GAUGE TO IS134.

- SV - SLUICE VALVE ON MAINS WATER PIPE TO BS 5163
- SC - STOPCOCK ON WATER SERVICE PIPE TO BS 1010: PART 2
- FH - FIRE HYDRANT TO BS 750
- FH/SV - FIRE HYDRANT TO BS 750 FITTED WITH SLUICE VALVE
- RG - ROAD GULLEY TO CCC SPECIFICATION
- MH - SURFACE WATER MANHOLE TO CCC SPECIFICATION
- MH - SEWER MANHOLE TO CCC SPECIFICATION
- LT - LIGHTING STANDARD TO CCC SPECIFICATION

PERCOLATION & WATER TABLE TEST RESULTS:

AREA ONE
(W1) WATER TABLE VALUE AFTER 48 HRS = 800MM OF WATER
PERCOLATION RESULTS
HOLE 1 - (P1) = TIME FOR WATER TO DROP 100mm = 12min
HOLE 2 - (P2) = TIME FOR WATER TO DROP 100mm = 10min
HOLE 3 - (P3) = TIME FOR WATER TO DROP 100mm = 14min
HOLE 4 - (P4) = TIME FOR WATER TO DROP 100mm = 22min
AVERAGE 'T' VALUE = 3.6

AREA TWO
(W2) WATER TABLE VALUE AFTER 48 HRS = 800MM OF WATER
PERCOLATION RESULTS
HOLE 1 - (P5) = TIME FOR WATER TO DROP 100mm = 28min
HOLE 2 - (P6) = TIME FOR WATER TO DROP 100mm = 30min
HOLE 3 - (P7) = TIME FOR WATER TO DROP 100mm = 40min
HOLE 4 - (P8) = TIME FOR WATER TO DROP 100mm = 22min
AVERAGE 'T' VALUE = 7.5

COPY

NOTES:
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Check all Dimensions On Site
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Drawings Are Not Sufficient To Convey Compliance With Building Regulations
Drawings Are To Be Used For Planning Purpose Only

PMC Architects & Surveyors
West Green, Dunmanway, Co. Cork
Tel: 023 55701, Fax: 023 55708, E-mail: pmcarchitects@eircom.net

PROJECT: Proposed Development at Dunmanway, North, Dunmanway, Co. Cork

CLIENT: C.F.M. Developments

DRAWING NAME: Site Layout Plan

SCALE	PROJECT NO.	DRAWING NO.	REVISION NO.
1:500	0728	01	

R586

TO BANDON

Attachment B8

A copy of the site notice and a drawing showing its location

Attachment Dunmanway – B8 – 19 Location of Site Notice

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Newspaper Advertisement

Cork County Council Western Division

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTEWATER DISCHARGE LICENCE

In accordance with the Waste Water Discharge (Authorisation) Regulations 2007, Water Services Western Division, Cork County Council, Courthouse, Skibbereen is applying to the Environmental Protection Agency for a Waste Water Discharge Licence for Dunmanway agglomeration at the following locations:

Plant Name	Location	National Grid Ref.
Dunmanway WWTP	Dunmanway	E123994 N052577

Discharge	Function	Townland	Receptor	Grid Reference
Primary	Main	Milleenanannig	Bandon River	E124142 N052545
Secondary	Emergency	Milleenanannig	Bandon River	E124057 N053010
Secondary	Emergency	Dunmanway North	Dirty River	E123566 N052546

Cork County Council proposes to upgrade the wastewater treatment plant at Dunmanway North, Dunmanway, Co. Cork, Grid Reference (E123994, N052577). It is proposed to discharge treated wastewater from this plant to the River Bandon. The proposed location is detailed in the table below:

Discharge Type	Function	Townland	Receptor	Grid Reference
Primary	Main	Milleenanannig	River Bandon	E124122 N052532

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 Water Services (Western Division), Courthouse, Skibbereen, Co. Cork ; Telephone: 028-21299 Fax: 028-21995.

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



CORK COUNTY COUNCIL

SITE NOTICE

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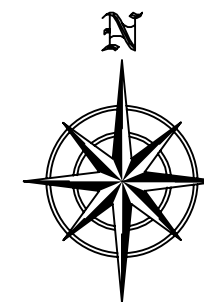
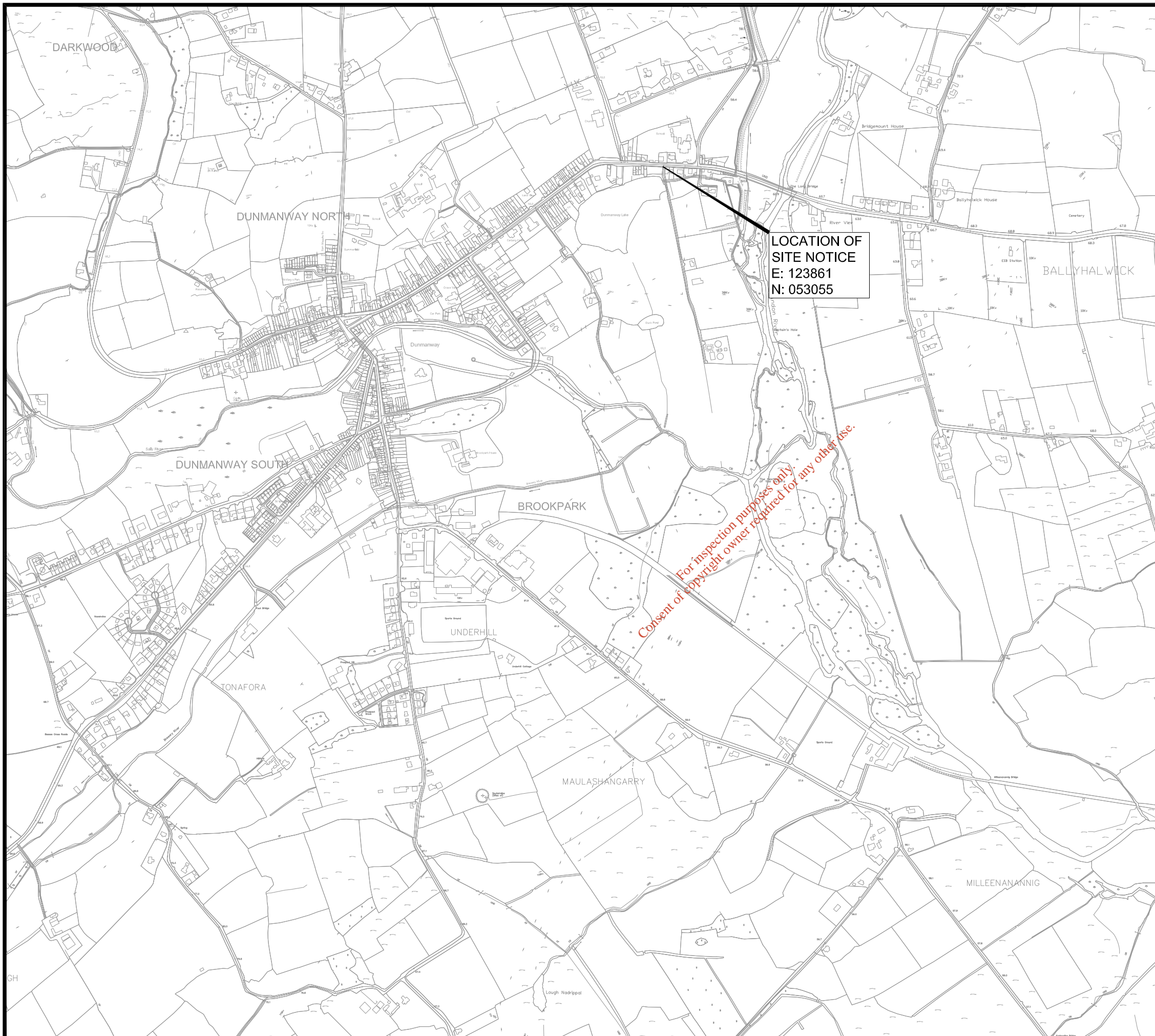
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- and at
- Cork County Council Water Services (Western Division), Courthouse, Skibbereen, Co. Cork ; Telephone: 028-21299 Fax: 028-21995.

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



LOCATION OF
SITE NOTICE
E: 123861
N: 053055

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MAP REPRODUCED BY PERMISSION OF
ORDNANCE SURVEY IRELAND
(CORK CCMA 9802)

AMENDMENT DETAILS		DATE
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T.J.O'CONNOR & ASSOCIATES CONSULTING ENGINEERS CORRIG HOUSE, CORRIG ROAD, SANDYFORD, DUBLIN 18. Tel: 295 2321 Fax: 295 4541		
PROJECT: DUNMANWAY EPA DISCHARGE LICENSE APPLICATION		
CLIENT: CORK COUNTY COUNCIL		
DRAWING TITLE: ATTACHMENT B.8 - LOCATION OF SITE NOTICE		
SCALE: 1:10000	JOB NO:	DRAWING NO:
DATE: JULY 08	DRAWN BY: JH	2846
		DUNMANWAY_B8_19

Attachment B9 (iii) Fees

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Attachment B10 Capital investment Programme

Water Services Investment Programme 2007-2009

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Cork County

Water Services Investment Programme 2007 - 2009

Schemes at Construction	W/S	Est. Cost	Schemes to start 2009 contd.	W/S	Est. Cost
Cork North			Cork South		
Mitchelstown Sewerage Scheme (Nutrient Removal)	S	221,000	Ballincollig Sewerage Scheme (Upgrade) (G)	S	22,248,000
Cork South			Cork Lower Harbour Sewerage Scheme (excl. Crosshaven SS)	S	73,542,000
Ballyvourney/ Ballymakeery Sewerage Scheme	S	3,049,000	Shannagary/ Garryvoe/ Ballycotton Sewerage Scheme	S	3,780,000
Cobh/ Middleton/ Carrigtwohill Water Supply Scheme	W	10,135,000	Youghal Sewerage Scheme	S	14,420,000
Cork Lower Harbour Sewerage Scheme (Crosshaven SS) (G)	S	4,850,000	Cork West		
Cork Water Strategy Study (G)	W	941,000	Ballydehob Sewerage Scheme	S	683,000
Kinsale Sewerage Scheme	S	20,000,000	Bantry Water Supply Scheme	W	14,935,000
Middleton Sewerage Scheme (Infiltration Reduction) (G)	S	2,078,000	Clonakilty Sewerage Scheme (Plant Capacity Increase)	S	3,677,000
		41,274,000	Courimacsherry/ Timoleague Sewerage Scheme	S	2,472,000
Schemes to start 2007			Dunmanway Regional Water Supply Scheme Stage 1	W	12,669,000
Cork North					164,629,000
North Cork Grouped DBO Wastewater Treatment Plant (Buttevant, Doneraile & Kilbrin)	S	5,150,000	Serviced Land Initiative		
Cork West			Cork North		
Skibbereen Sewerage Scheme	S	20,000,000	Ballyclough Water Supply Scheme	W	139,000
		25,150,000	Ballyhooley Improvement Scheme	W/S	139,000
Schemes to start 2008			Broghill/Rathgoggin Sewerage Scheme	S	406,000
Cork North			Bweng Water Supply Scheme	W	115,000
Mallow/ Ballyvinitier Regional Water Supply Scheme (H) W		8,652,000	Churchtown Sewerage Scheme (incl. Water)	W/S	543,000
Mallow Sewerage Scheme (H)	S	5,408,000	Clondulane Sewage Treatment Plant	S	417,000
Cork South			Freemount Sewerage Scheme	S	150,000
Ballincollig Sewerage Scheme (Nutrient Removal) (G)	S	948,000	Pike Road Sewerage Scheme (incl. Water)	W/S	2,080,000
Ballingeary Sewerage Scheme	S	1,296,000	Rathcormac Sewerage Scheme (incl. Water)	W/S	555,000
Bandon Sewerage Scheme Stage 2	S	14,729,000	Spa Glen Sewerage Scheme	S	736,000
City Environs (CASP) Strategic Study (G)	S	153,000	Uplands Fermoy Sewerage Scheme (incl. Water)	W/S	1,174,000
Cloghroe Sewerage Scheme (Upgrade)	S	683,000	Watergrasshill Water Supply Scheme (incl. Sewerage) (G)	W/S	4,151,000
Coachford Water Supply Scheme	W	1,318,000	Cork South		
Garretstown Sewerage Scheme	S	2,153,000	Ballincollig Sewerage Scheme (Barry's Rd Foul and Storm Drainage) (G)	S	1,164,000
Inniscarra Water Treatment Plant Extension Phase 1	W	2,678,000	Belgooley, Water Supply Scheme (incl. Sewerage)	W/S	2,913,000
Little Island Sewerage Scheme (G)	S	2,200,000	Blamey Water Supply Scheme (Ext. to Station Rd) (G)	W	416,000
Cork West			Carrigtwohill Sewerage Scheme (Treatment and Storm Drain) (G)	S	7,632,000
Bantry Sewerage Scheme	S	7,148,000	Castlematyr Wastewater Treatment Plant Extension	S	1,200,000
Dunmanway Sewerage Scheme	S	2,153,000	Crookstown Sewerage Scheme (incl. Water)	W/S	1,200,000
Leap/ Baltimore Water Supply Scheme	W	6,365,000	Dripsey Water Supply Scheme (incl. Sewerage)	W/S	1,112,000
Shull Water Supply Scheme	W	5,253,000	Glounthane Sewerage Scheme (G)	S	1,576,000
		61,137,000	Innishannon Sewerage Scheme	S	277,000
Schemes to start 2009			Innishannon Wastewater Treatment Plant	S	694,000
Cork North			Kerry Pike Sewerage Scheme	S	832,000
Banteer/Dromahane Regional Water Supply Scheme	W	1,576,000	Kerry Pike Water Supply Scheme	W	416,000
Conna Regional Water Supply Scheme Extension	W	2,627,000	Killeagh Wastewater Treatment Plant Extension	S	1,200,000
Cork NE Water Supply Scheme	W	4,326,000	Killeagh Water Supply Scheme (includes Sewerage)	W/S	485,000
Cork NW Regional Water Supply Scheme	W	6,046,000	Killeens Sewerage Scheme	S	420,000
Millstreet Wastewater Treatment Plant (Upgrade)	S	1,628,000	Kilnagleary Sewerage Scheme	S	694,000
			Middleton Wastewater Treatment Plant Extension	S	4,050,000

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Cork County contd.

Water Services Investment Programme 2007 - 2009

Serviced Land Initiative contd.	W/S	Est. Cost	Schemes to Advance through Planning cond.	W/S	Est. Cost
Cork South contd.			Cork South		
Mogeely, Castlemartyr & Ladysbridge Water Supply Scheme	W	2,566,000	Carrigtwohill Sewerage Scheme (G)	S	20,000,000
North Cobh Sewerage Scheme (G)	S	3,193,000	Cork Sludge Management (G)	S	14,420,000
Riverstick Water Supply Scheme (incl. Sewerage)	W/S	525,000	Cork Water Supply Scheme (Storage - Mount Emla, Ballincollig & Chetwind) (G)	W	8,500,000
Rochestown Water Supply Scheme	W	2,700,000	Inniscarra Water Treatment Plant (Sludge Treatment)(G)W		5,356,000
Saleen Sewerage Scheme	S	1,051,000	Macroom Sewerage Scheme	S	5,150,000
Youghal Water Supply Scheme	W	2,300,000	Minane Bridge Water Supply Scheme	W	1,421,000
Cork West			Cork West		
Castletownshend Sewerage Scheme	S	1,576,000	Bantry Regional Water Supply Scheme (Distribution)	W	9,455,000
		50,797,000	Cape Clear Water Supply Scheme	W	1,679,000
Rural Towns & Villages Initiative			Rural Towns & Villages Initiative		
Cork North			Cork North		
Buttevant Sewerage Scheme (Collection System)	S	2,446,000	Castletownbere Regional Water Supply Scheme	W	8,405,000
Doneraile Sewerage Scheme (Collection System)	S	1,738,000	Glengarriff Sewerage Scheme	S	2,500,000
			Roscarberry/Owenahincha Sewerage Scheme	S	1,576,000
			Skibbereen Regional Water Supply Scheme Stage 4	W	7,880,000
					95,646,000
Cork South			Cork South		
Innishannon (Ballinadee/ Ballinspittle/ Garrettstown) Water Supply Scheme	W	6,726,000	Water Conservation Allocation		12,206,000
			Asset Management Study		300,000
Cork West			Cork West		
Ballylicky Sewerage Scheme	S	2,159,000	South Western River Basin District (WFD) Project ¹		9,400,000
Baltimore Sewerage Scheme	S	9,162,000			
Castletownbere Sewerage Scheme	S	9,202,000			
Schull Sewerage Scheme	S	3,523,000			
		24,950,000	Programme Total		485,489,000
Schemes to Advance through Planning					
Cork North					
Mitchelstown North Galtees Water Supply Scheme	W	3,152,000			
Mitchelstown Sewerage Scheme	S	3,000,000			
Newmarket Sewerage Scheme	S	3,152,000			

¹ This project is being led by Cork County Council on behalf of other authorities in the River Basin District

(H) Refers to a Hub as designated in the National Spatial Strategy

(G) Refers to a Gateway as designated in the National Spatial Strategy

Attachment B11 Relevant correspondence in relation to a Section 63 notice

No relevant correspondence

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Attachment B12 Foreshore Act Licences

Not applicable

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Attachment C1 Operational information Requirements

Existing Wastewater Treatment Plant

The existing wastewater treatment plant in Dunmanway is located in the townland of Dunmanway North approximately 60km west of Cork City (see Drg No. Dunmanway – A1 - 01 in attachment A1). This plant treats the domestic sewage from the town and its immediate environs as well as non domestic/industrial flows. The extent of the agglomeration is shown on Drg. No. Dunmanway - B1 - 06 in Attachment B1.

The original design capacity of the existing WWTP is 1000p.e. while the future capacity is set at 3,500p.e. The WWTP was constructed in the 1960's and has seen no significant upgrade since then. The existing WWTP does not incorporate an inlet works with screens and grit traps. The load to the existing plant is in excess of the design capacity that the plant was constructed to serve. Therefore the discharge standard for BOD and SS cannot be met on occasions. Furthermore, the hydraulic load of the primary settlement tanks (Imhoff tanks) and the humus tanks is excessive.

The outfall from the existing wastewater treatment plant discharges to the River Bandon within an Area designated as an SAC.

The existing wastewater treatment plant was built approximately 40 years ago. It was designed for a capacity of 1,000 PE and would have been intended to achieve the Royal Commission Effluent Treatment Standards of the time.

The treatment works is typical for its size and time of construction, comprising 2 No. Imhoff Tanks for primary settlement, 2 No. percolating filters for secondary treatment and final humus tanks prior to discharge to the River Bandon via an outfall sewer. The sludge which is settled and partly stabilised in the Imhoff tanks is drawn off manually to sludge drying beds. There is no provision for humus sludge drawoff.

Drawing No. Dunmanway_A1_03 shows a view from the inlet chamber at the WWTP with the Imhoff tanks on the left and the drying beds and trickling filters on the right.

Based on the design capacity of the pumps installed in 1993, the current maximum influent flow from the pumping stations is 148 m³/h. However, it is reported by the caretaker for the scheme that the forward pumping capacity is greatly reduced when several pumps are operating simultaneously and it is considered unlikely that this maximum flow rate is achieved at present.

The design capacity of the existing WWTP is 1,000 PE, while the future capacity is set at 3,500 PE. The load to the existing plant and especially the trickling filters will become so high, that the discharge standard for BOD cannot be met. Furthermore, the hydraulic load of the primary settlement

tanks (Imhoff tanks) and the humus tanks will be excessive. Finally, the existing WWTP does not incorporate an inlet works with screens and grit traps. This will have to be constructed in the upgraded WWTP.

It can be concluded, that the existing WWTP can hardly be re-used. Almost all process units have to be renewed or extended. Taking the structural status of the superstructures and plant into account, it is recommended to construct a new wastewater treatment plant at the same site.

It is proposed to construct a new wastewater treatment plant on an extended site at the location of the existing waste water treatment plant in Dunmanway. The wastewater treatment plant will cater for a design population of 3,500pe. This includes for pollution loads from non-domestic sources such as shops, hotels, restaurants and local industries. No phasing of the upgrading of the WWTP is proposed.

The design flows to the plant are based on a contributing population of 2,404 p.e. with an expansion capacity to 3,500p.e. The effluent requirements specified for the proposed Wastewater Treatment Plant are as follows:

Table A.1: Effluent Requirements

Parameters	Concentration (mg/l)	Maximum Concentration (mg/l)	Minimum Percentage Reduction
BOD	*25mgO ₂ /l	50 mgO ₂ /l	90
Suspended Solids	*35mg/l	70mg/l	90
COD	*125mgO ₂ /l	250mgO ₂ /l	75
Phosphorus	*1.5mg/l		80

* Standard to be achieved in 95% of samples or more

An indicative layout of the proposed wastewater treatment plant is shown on Drg. No. Dunmanway – A1 - 04 in Attachment A1.

A summary of the proposed treatment processes is presented below:

Preliminary Treatment	Preliminary Treatment of the incoming sewage is carried out at the inlet works. Inlet works machinery unit comprising 2 No. continuous band screens (duty/standby) with 6mm spacing grit trap with bypass to remove screenings, grit and larger solids. Screenings are washed, compacted and bagged. Grit is classified and washed for disposal to landfill. Inlet works are envisaged in a building approximately 10m x 5m in plan and air treatment equipment will be provided for odour control.
Secondary Treatment	This stage comprises biological oxidation of the

	sewage by an activated sludge process followed by a settling stage. The dimensions of the two aeration basins are 5m x 12.5m each and 4m (liquid) deep. The two final clarifiers have a diameter of 11m.
Sludge Treatment	The sludge removed from the final clarifiers would be directed to a picket fence thickener. The thickened sludge will be stored in a sludge holding tank. Its volume is reduced so that it is suitable for transportation to the regional sludge hub centre for stabilisation and reuse. Both picket fence thickener and the sludge holding tank have a diameter of 4m and will be 5m high.
Phosphorus Removal	Phosphorus will be chemically removed by dosing a coagulant into the splitter box ahead of the aeration tanks.

The wastewater from Dunmanway is pumped from the Quarry Road Pumping Station to the wastewater treatment plant via a 150 mm dia. rising main and from the Long Bridge Pumping Station via a 100 mm dia. rising main. The rising main from the Quarry Road Pumping Station is 427m long with a 5m static lift. The rising main from the Long Bridge Pumping Station is 445m long and this main has a 4m static lift. Both rising mains are pvc pipelines and they were installed in the early 1960's as part of the Dunmanway Sewerage Scheme.

Description of Pumping Stations

The pumping stations were constructed approximately 35 years ago. The pump sumps and superstructures have not been altered in the intervening years. Significant works are required at both pumping stations to refurbish the buildings and to comply with Health & Safety Legislation.

Pumps were replaced in both stations approximately 11 years ago. However, one of the original Compton and Parkinson pumps still operates in the Quarry Road Pumping Station. This pump bears a date of Manufacture of 1959 on the identification plate. A similar pump is also in place in the dry well but has not operated since the 2 newer pumps were installed in 1993. Details of the pumps in the Quarry Road Pumping Station are as follows:

Quarry Road Pumping Station

- 2 No. Compton & Parkinson 7.5hp pumps 1430rpm, 330V 3 phase, installed 1959-60, (only one operational).
- 2 No. Zenit 550/80/4 1460rpm 4kW 380V 3 phase pumps (80mm dia outlet port) capable of delivering 17.4l/s against a head of 10.3m.

The three operational pumps work on a duty/assist/standby arrangement. Friction losses on the rising main are considerable and it is reported that the

discharge from the pumps when two or more pumps are operating is less than the original design figures advised by the suppliers, EPS. There is no recent record information on the actual discharge from these pumps. The only indication of forward pumping capacity is the flow rate recorded at the inlet to the WWTP during the Nov/Dec 2003 Flow and Load Survey carried out by Water Technology Ltd.



Figure SW05Dway-01 - Surcharged Inlet Quarry Road Pumping Station

Long Bridge Pumping Station

The pumps at the Long Bridge Pumping Station were replaced at the same time as the 2 new pumps were installed in the Quarry Road Pumping Station in 1993. The pumps installed in the Long Bridge Pumping Station were 2 No. Zenit 300/80//4 4.0kW 380V 3Phase 1460rpm sewage pumps with outlet ports of 80mm diameter.



Figure SW03Dway-01 - Long Bridge Pumping Station

The pumps were designed to be cooled by means of circulation of screened effluent through cooling jackets. However, problems have been experienced with this system and in the case of the Quarry Road Pumping Station a temporary clean water supply has been installed with re-circulation to a

header tank. This system needs to be replaced by a purpose made installation.

From inspection of the flow logs for the inlet to the wastewater treatment plant for the 7day period from 27th Nov to 3rd Dec 2003 it is possible to say that the design discharges for the pumps are not being achieved. The maximum discharge into the pumping station in any 2-minute interval over the 7day period of the flow survey was 28.25l/s. This coincided with the highest rainfall intensity recorded in the 7day period. However, this figure is less than the design total flow rate for all pumps operating of 41.14l/s

Current Problems

In addition to the cooling problems of the pumps in both pumping stations, overflows regularly occur at both stations.



Figure SW05Dway-02 - Overflow from Quarry Road Pumping Station

This is caused by high stormwater flows entering the collection system in combination with inadequate storm water retention at the pumping stations, limited pump capacity and small rising mains. The frequency of overflows needs to be reduced in order to comply with the Urban Wastewater Regulations.

Design of the Pumping Stations

The significance of the stormwater overflows should be taken into account, i.e., the effect of the storm overflows on the receiving waters. The available dilution in the receiving water is used for determining the size of storage tanks to be provided at an overflow. This dilution factor is the ratio between the 95-percentile flow (Q_{95%}) of the river and the average DWF.

The Q_{95%} of the Dirty River is calculated as 468m³/h, using the “Hydra” software package. The average DWF for the Quarry Road PS is 675m³/ 24 = 28 m³/h. The dilution factor is hence 468 / 28 = 16.

The Scottish Development Department (SDD) has developed a method for estimating the effects of overflows at the river. According to this method, when a dilution factor in excess of 8 is available in the receiving water the overflow can be set at the Formula A level and no stormwater storage is necessary.

In the same way, the dilution factor for the overflow to the River Bandon from the Long Bridge Pumping Station might be calculated. Due to the lower capacity of this pumping station and the greater flows in the River Bandon, the dilution factor is even higher. The Long Bridge Pumping Station can be designed in the same way as the Quarry Road Pumping Station.

Stormwater Tanks

The use of stormwater tanks is recommended as an alternative to the upsizing of downstream capacity for reducing or eliminating stormwater overflows. They work on the principle that flows in excess of the downstream capacity can be contained until the storm has sufficiently abated to allow the stored stormwater be returned to the sewer. The tanks are generally sized to contain the overflow that would arise from a storm with a specific return period. With a calibrated hydraulic model, the volume of the tanks and the overflow frequency can be calculated. This information is not available in the case of Dunmanway; hence a pragmatic approach has to be adopted.

Furthermore, the maximum flow of 7DWF and consequently overflows when the flow exceeds 7DWF has to be investigated. At the moment, high flows are arising in the Quarry Road Pumping Station during stormwater conditions. Also during dry weather periods, there is never a period without influent. This seems to be caused by infiltration in the sewer system. For example, the maximum flow during the Nov/Dec 2003 flow study exceeded $700\text{m}^3/\text{h}$.

In recent years, overflows to the Dirty River have been noticed frequently. The high number of overflows has resulted in complaints from residents and the South Western Regional Fisheries Board. This number should be decreased significantly. However, a detailed model of the sewer system and the rainfall is necessary for estimation of the frequency of overflows. This information is currently not available.

Based on the existing information of the sewer system and the local rainfall, it is likely that the stormwater flows will frequently exceed 7DWF. This would result in overflows, when the pumping station is designed. We have assumed that the system should be designed for a maximum flow of 12 DWF.

It is proposed to construct a stormwater tank at the Quarry Road Pumping Station with a storage capacity of 9DWF for 2 hours. The best location for this stormwater tank is the location of the existing pumping station.

Similarly, for the Long Bridge Pumping Station, the same design criterion for stormwater storage of 9DWF for 2 hours has been adopted. There are no indications that the flows are often higher than this figure.

Based on the foregoing, the maximum flows from both pumping stations to the WWTP are as follows:

Quarry Road : $85\text{ m}^3/\text{h}$

Long Bridge : 15 m³/h

Due to the fact that both the Quarry Road and Long Bridge Pumping Stations will pump with a maximum pump capacity of 3DWF, the maximum flow arriving at the WWTP is 100m³/hr.

Conclusion

The current structural and mechanical/electrical status of both pumping stations in Dunmanway is such that substantial works are required to refurbish the buildings and to comply with the Health & Safety Legislation. Furthermore, the capacity of the existing pumps is not sufficient to cater for the future flows. Therefore, it is proposed to construct new pumping stations at the current sites.

The Long Bridge pumping station shall be designed and constructed to transfer flows up to the design flow of 15 m³/hr to the treatment works. The design flow from the Quarry Road Pumping Station shall be 85 m³/hr. During stormwater flow conditions, when the total flow exceeds the design flow of the WWTP, the first flush shall be stored in the stormwater holding tanks at the Pumping Stations. In the event that the stormwater holding tanks are filled and the stormwater event continues, the stormwater tank shall be operated as a pre-clarification tank without sludge withdrawal. Overflows from the stormwater holding tank at the Long Bridge Pumping Station shall be discharged via a new outfall pipe to the River Bandon after screening (see drawing Dunmanway_C1_20). The overflow from the Quarry Road Pumping Station shall be discharged to the Dirty River after screening. The pumping stations shall be equipped with facilities to allow the standby power generator at the WwTP, or alternatively provision to connect a mobile generator, to power the pumps in the event of a power failure. The invert level of the Quarry Road Pumping Station sump shall be reduced to lessen the incidence of surcharging of the main sewer.

Design criteria:-

	Quarry Road PS	Long Bridge PS	
Inlet Sewer Diameter	600	375/300	mm
Inlet Sewer Minimum Invert level	55.00	54.90	mOD
Max. pump capacity	85	15	m ³ /h
Min. overflow capacity	338	33	m ³ /h

On termination of storm conditions, and reduction of the total inflow to the plant below the design capacity, the contents of the stormwater holding tanks (water and sludge) shall be pumped to the WWTP but the rate of stormwater return shall be:

- not greater than 70% of DWF
- such that the total flow to the treatment works is not greater than the design capacity

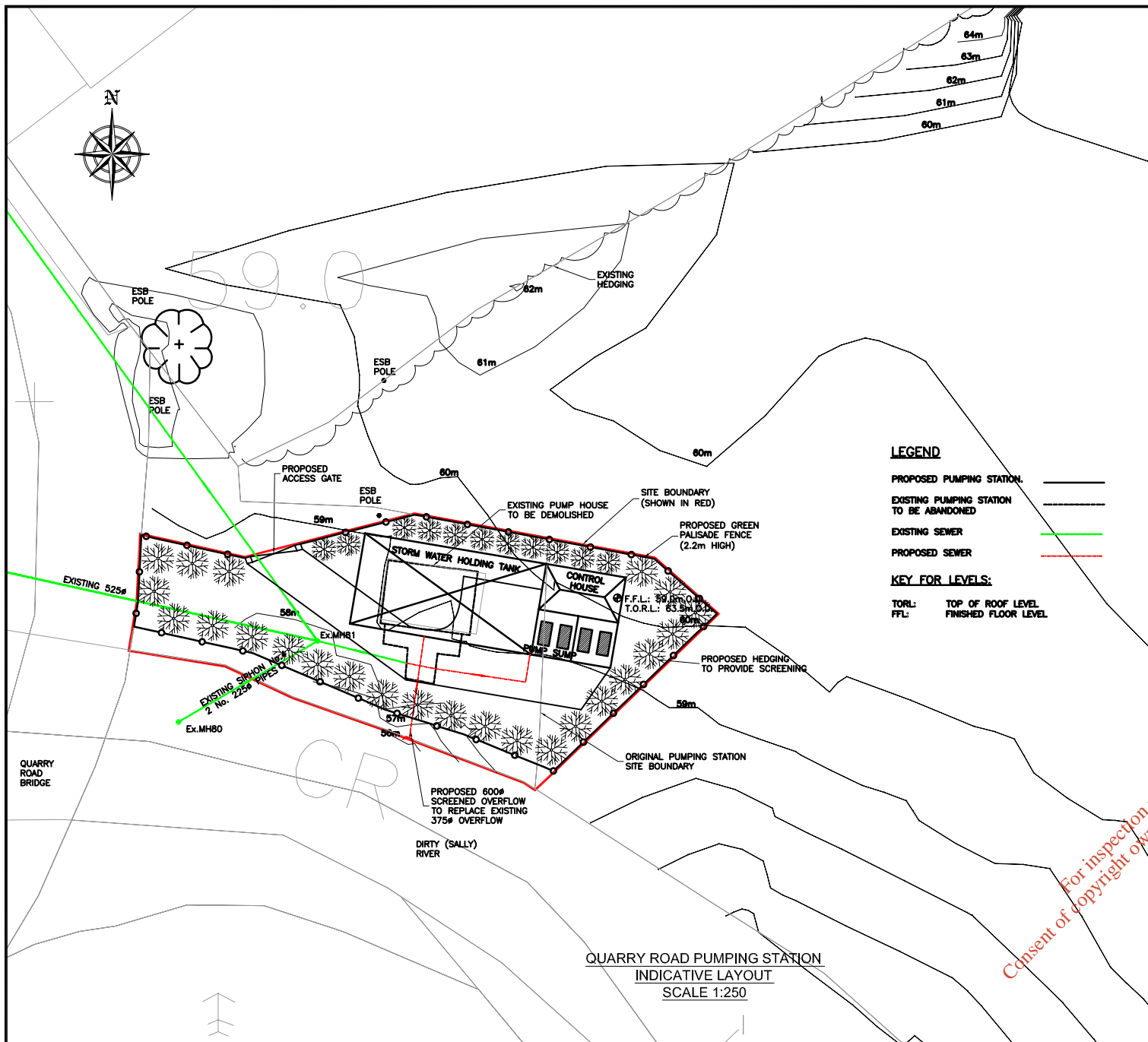
The stormwater holding tanks shall be provided with an automatic proprietary storm tank cleaning system.

The design of the stormwater holding tanks shall be based on the storm flow below.

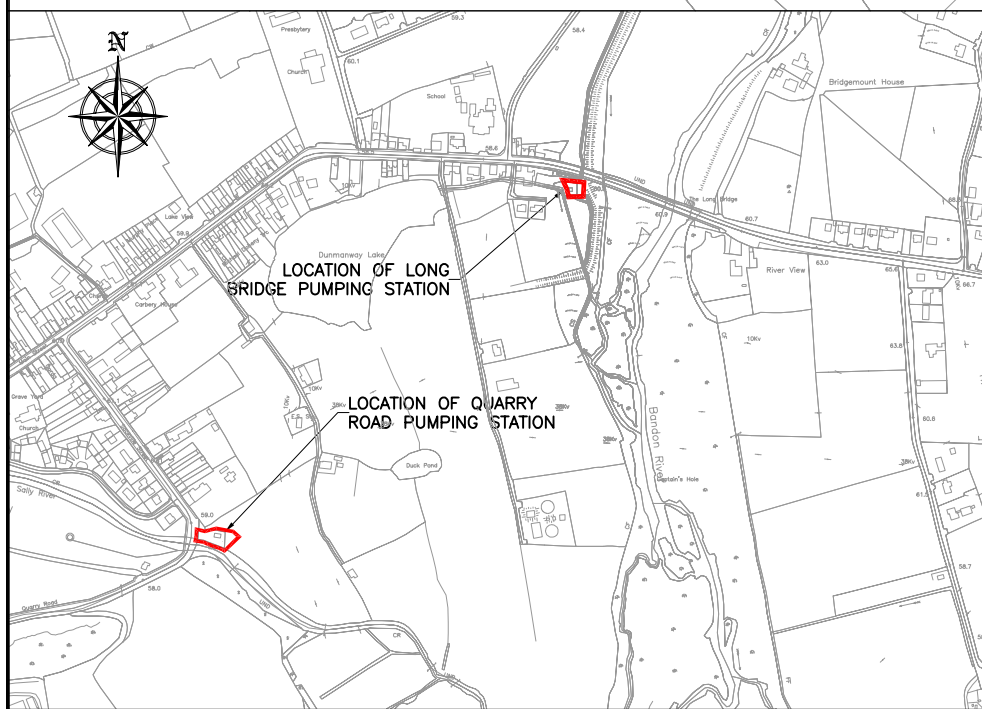
Design criteria:-

	Quarry Road PS	Long Bridge PS	
Max. storm flow to storage	258	15	m ³ /h
Min. storage capacity at stormwater flow	2	2	hr
Min. volume stormwater holding tanks	515	30	m ³

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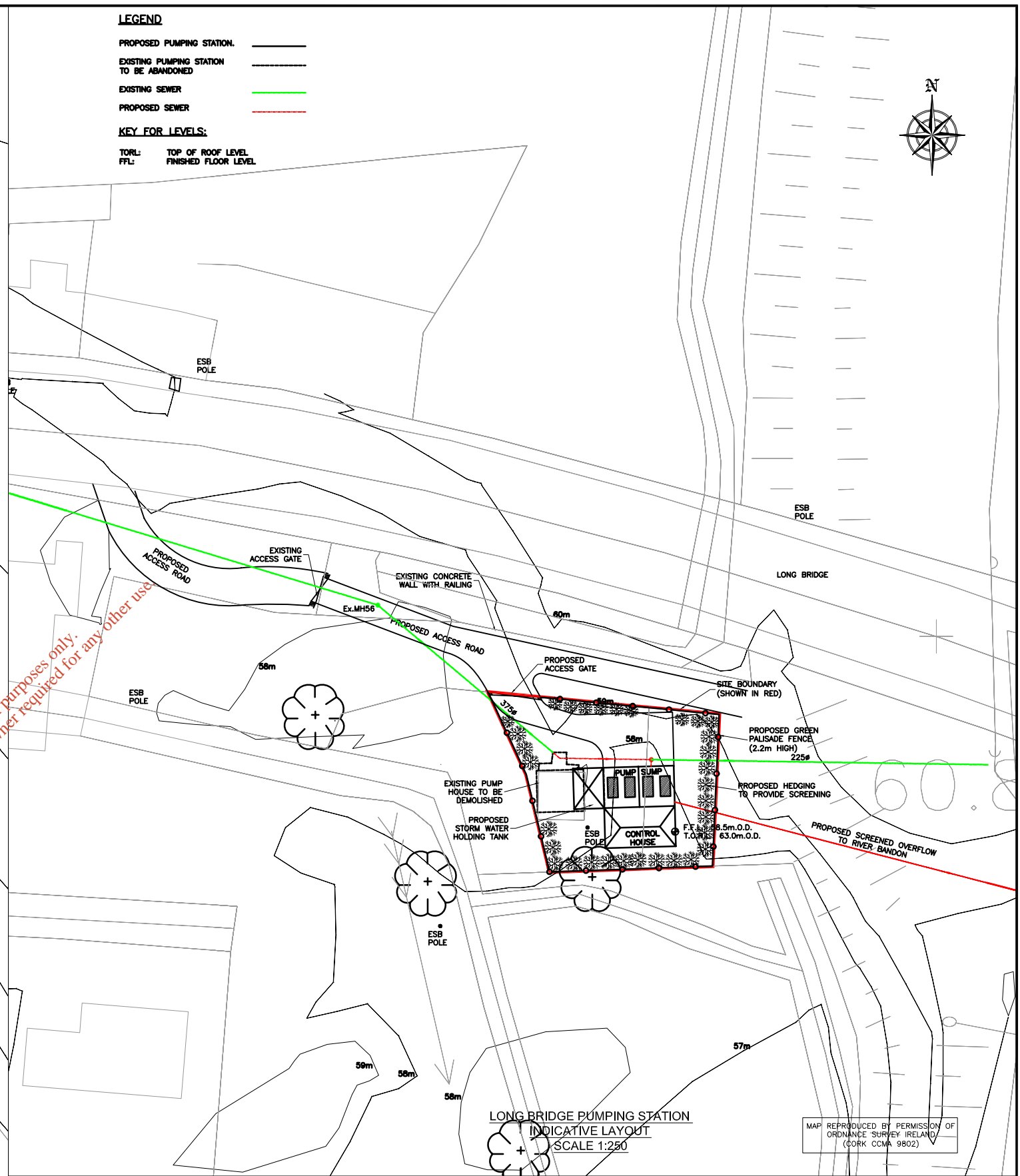


QUARRY ROAD PUMPING STATION
INDICATIVE LAYOUT
SCALE 1:250

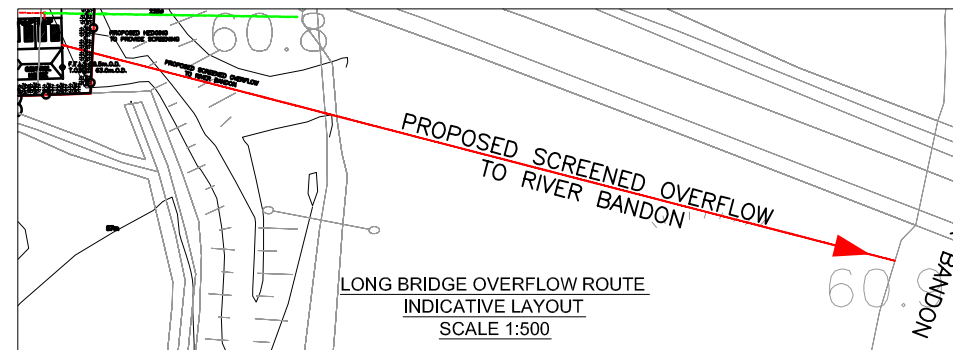


SITE LOCATION MAP
SCALE 1:5000

- Notes:
1. All levels given are in metres A.O.D. (Malin Datum)
 2. All dimensions are in metres unless otherwise stated
 3. The layout shown here is INDICATIVE only, and the actual layout of the pumping station works will depend on the Contractor's Design Proposal.
 4. CONTOURS are based on Hydrographic Surveys topographical survey information.



LONG BRIDGE PUMPING STATION
INDICATIVE LAYOUT
SCALE 1:250

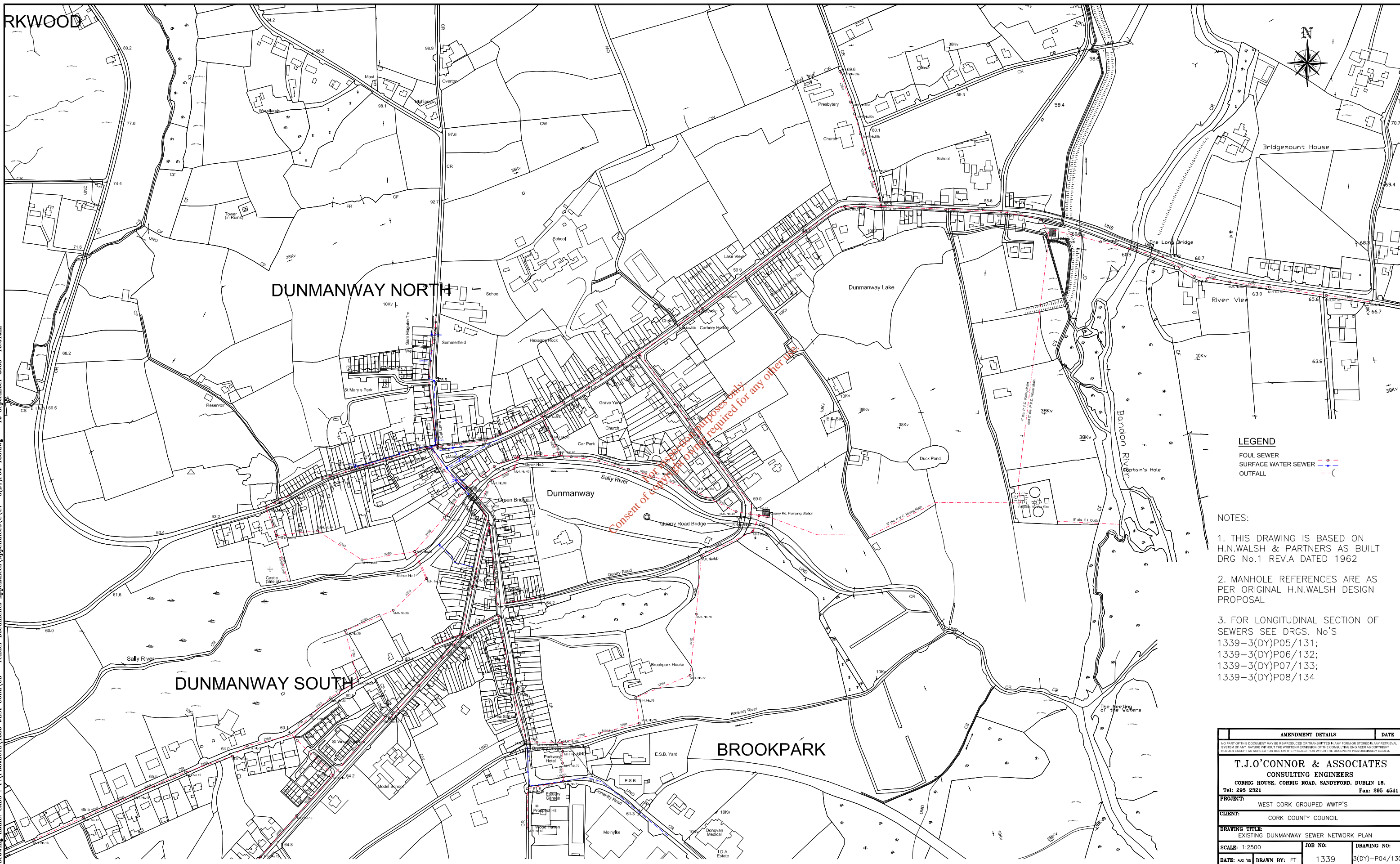


LONG BRIDGE OVERFLOW ROUTE
INDICATIVE LAYOUT
SCALE 1:500

MAP REPRODUCED BY PERMISSION OF
ORDNANCE SURVEY IRELAND
(CORK CCMA 9802)

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CORRIG HOUSE, CORRIG ROAD, SANDYFORD, DUBLIN 18. Tel: 295 2321 Fax: 295 4541		
PROJECT: DUNMANWAY EPA DISCHARGE LICENSE APPLICATION		
CLIENT: CORK COUNTY COUNCIL		
DRAWING TITLE: ATTACHMENT C.1 - SITE LOCATION MAP & INDICATIVE LAYOUTS OF PUMPING STATIONS		
SCALE: 1:250, 1:5000	JOB NO:	DRAWING NO:
DATE: JULY 08	DRAWN BY: JH	2846
		DUNMANWAY_C1_20

Drawing name: CADS - F:\PROJECTS\1339 WEST CORK CD - Tender Documents Appendices\Appendices\C7 - 3(DY)P04-130.dwg 19 September 2008 10:01am



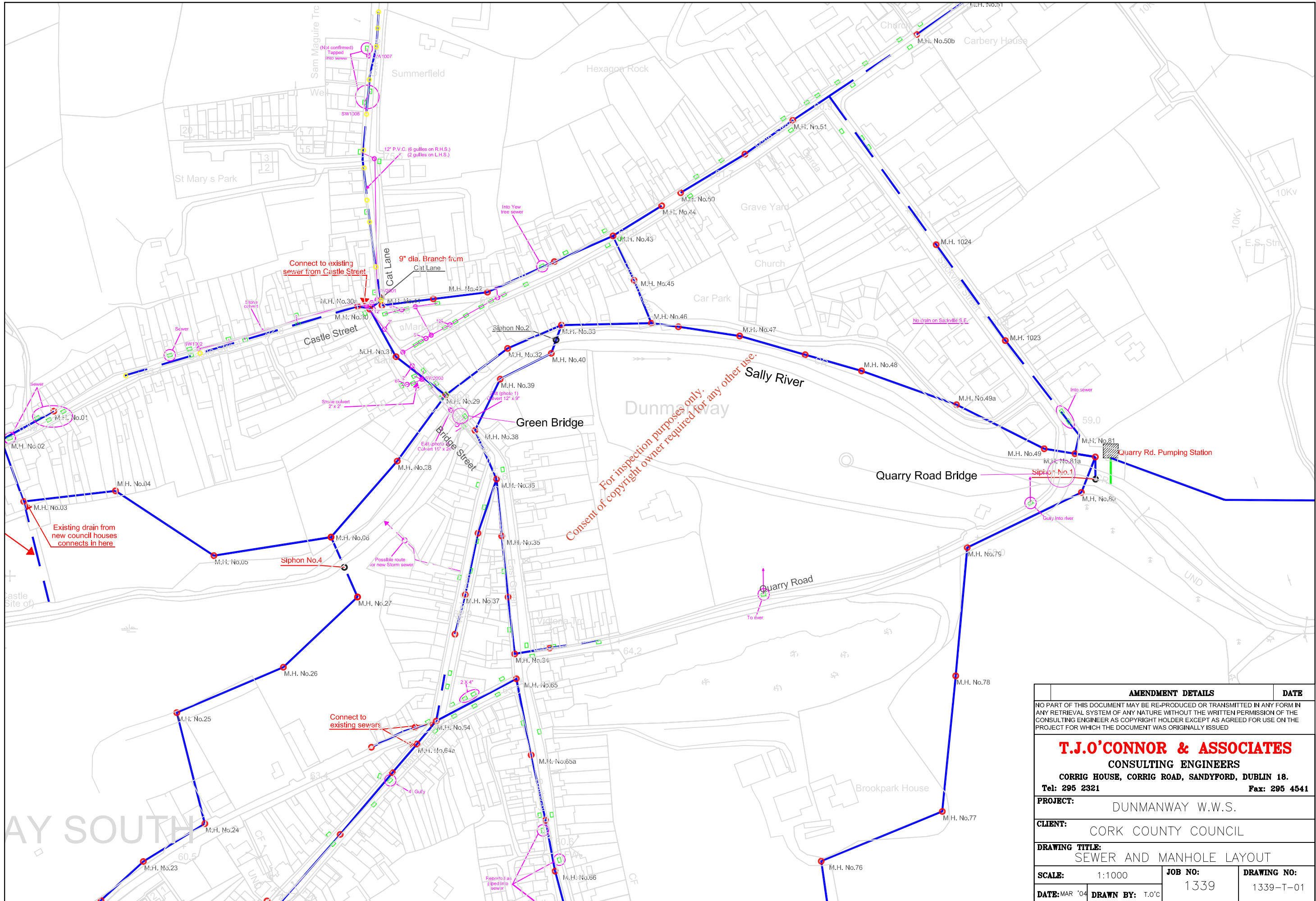
LEGEND

- FOUL SEWER
- SURFACE WATER SEWER
- OUTFALL

NOTES:

1. THIS DRAWING IS BASED ON H.N.WALSH & PARTNERS AS BUILT DRG No.1 REV.A DATED 1962
2. MANHOLE REFERENCES ARE AS PER ORIGINAL H.N.WALSH DESIGN PROPOSAL
3. FOR LONGITUDINAL SECTION OF SEWERS SEE DRGS. No's
1339-3(DY)P05/131;
1339-3(DY)P06/132;
1339-3(DY)P07/133;
1339-3(DY)P08/134

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PROJECT: WEST CORK GROUPED WWTP'S		
CLIENT: CORK COUNTY COUNCIL		
DRAWING TITLE: EXISTING DUNMANWAY SEWER NETWORK PLAN		
SCALE: 1:2500	JOB NO:	DRAWING NO:
DATE: AUG '08	DRAWN BY: FT	1339 3(DY)-P04/130



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CLIENT:	CORK COUNTY COUNCIL	
DRAWING TITLE:	SEWER AND MANHOLE LAYOUT	
SCALE:	1:1000	JOB NO: 1339
DATE: MAR '04	DRAWN BY: T.O'C	DRAWING NO: 1339-T-01