APPENDIX 4-4

DRAINAGE STRATEGY REPORT

The Hodson Bay Waterfront Park Project is co-funded by the Government of Ireland and the European Union through the EU Just Transition Fund

Hodson Bay Waterfront Park

Drainage Strategy

AUGUST 2026

PREPARED FOR

Roscommon County Council

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CIVIC

Drainage Strategy

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1. Introduction

Roscommon County Council has appointed Civic to prepare a Drainage Strategy report to support the planning submission for the Hodson Bay Waterfront Park. This report will review and present the following:

- Surface water drainage strategy; and
- Foul water drainage strategy.

The following data informs the report:

- Topographic survey information by TST Engineering
- Asset records from Uisce Éireann
- Existing Hodson Bay Hotel layout plans
- Proposed Development layout plans prepared by OKRA (Landscape Architect) and RKD (Architect)
- Flood Risk Assessment prepared by Civic

This report sets out the anticipated measures to be incorporated into the detailed design stage to control both the quantity and quality of surface water discharge from the Proposed Development.

2. Existing Site

2.1. Site Description

The site is located along the waterfront of Hodson Bay, Lough Ree, including the connecting road between Hodson Bay and N61. The waterfront is currently utilised by several facilities including the Hodson Bay Marina and Bay Sports. Hodson Bay Hotel is adjacent, and Hodson Bay Golf Course is to the west of the northern half of the site. The Proposed Development falls within the Roscommon County Council area.

The centre of the site is located at Irish National Grid Reference N 00849 46361. The Proposed Development covers an area of approximately 8.927ha and is shown in the red line boundary in Figure 1. Figure 1a shows an aerial drone survey completed by MKO, focusing on the marina area where the development is located.

Figures 1 and 1a Existing Site Boundary and Drone Survey

2.2. Existing Watercourse

The site is adjacent to Lough Ree, a large freshwater lake forming part of the River Shannon system. Water levels within the lough are subject to seasonal variations and can be elevated during prolonged wet weather periods, as evidenced by historical flood events. The Office of Public Works (OPW) monitors and manages water levels within the River Shannon system, with ongoing development of flood relief schemes.

2.3. Existing Drainage

Information on the existing foul sewer network has been obtained from Uisce Éireann and is shown in Appendix A. An Uisce Éireann wastewater pump station has been identified within the site boundary. The gravity sewer in the vicinity serves the Hodson Bay area, which drains southward toward the N61 to a wastewater treatment plant.

A survey has been undertaken by TST Engineering which identified manhole locations within the site as shown in Appendix B. Additional gully locations were added to the map after a site visit by Civic dated 20.11.25. Further information on cover levels, invert levels and pipe sizes is required to fully assess the capacity of the existing network

and the feasibility of connection points. Any necessary upgrades will be identified and coordinated with Uisce Éireann and Roscommon County Council.

Existing surface and foul water infrastructure for the Hodson Bay Hotel Athlone Spa/Leisure Centre is shown in Appendix C. The existing layout plans have been overlaid with the TST Engineering survey in Appendix B to determine the existing network routes. Appendix C identifies MHF34 which connects via gravity to the Uisce Éireann wastewater pump station. These drawings identify two surface water outfall pipes into Lough Ree with a diameter of 225mm.

2.4. Topography

The topographic survey of the site dated September 2025 was prepared by TST Engineering. The survey indicates that ground levels across the Proposed Development range from approximately 35.0m OD along the Lough Ree shoreline to ~40.0m OD to the north of Hodson Bay Hotel. The road corridor linking to N61 rises gradually inland reaching ~45.0m OD. The general gradient indicates that surface water runoff naturally drains toward Lough Ree. The promenade and marina represent the lowest point of the development before the receiving waterbody.

2.5. Geology and Ground Conditions

A review of mapping from the Geological Survey Ireland Spatial Resources indicates that the northern and southern extents of the site are mapped as till derived from limestone, the central area is gravels derived from limestone and a section of the road corridor is identified as cutover raised peat. The gravel deposits exhibit variable permeability, while the till and peat soils are generally less permeable and prone to seasonal saturation and shallow groundwater.

Bedrock comprises limestone. Limestone within the Shannon basin can act as a regionally important aquifer where fractured, although the overlying subsoils may locally limit vertical groundwater movement. Groundwater vulnerability mapping classifies the site as having moderate and high vulnerability, indicating that the subsoil provides a reasonable degree of protection to the underlying aquifer in moderate areas. Given the proximity to Lough Ree, groundwater levels are likely influenced by lake levels during prolonged high-water conditions.

2.6. Flood Risk Assessment

A Flood Risk Assessment (FRA) has been prepared to support the planning application for the Proposed Development. Flood risk at the site arises from elevated lake levels within Lough Ree during extreme, catchment-wide rainfall events. The proposed Finished Floor Level of 38.0m OD incorporates a 0.5m freeboard allowance above the design flood level. The design flood level of 37.5m OD was derived from Catchment Flood Risk Assessment and Management predictive modelling and long term OPW hydrometric analysis providing resilience to 0.1% Annual Exceedance Probability inclusive of climate change and residual uncertainty. While sections of the retained promenade access may be inundated during extreme events, the gradual nature of lake flooding and the non-residential use of the building ensure that residual risk is low and manageable.

For more details refer to Civic’s FRA report 31022-RP-CIV-CE-00200.

3. Proposed Development

The Hodson Bay Waterfront Project is a multi-disciplinary project aimed at enhancing the Hodson Bay area into a flagship tourism facility. The project's key objectives include improving the visitor experience, developing a continuous promenade, extending the marina, reimagining the water play experience, and creating a sustainable access, parking, and transport strategy.

The project is funded by Roscommon County Council and Waterways Ireland, with support from Failte Ireland under the EU Just Transition Fund.

The primary goals of the Hodson Bay Waterfront Project are to:

- Enhance the visitor experience and increase dwell time.
- Improve physical and visual connectivity with the River Shannon and Lough Ree.
- Enhance the functionality and attractiveness of the waterfront area.
- Improve access arrangements through sustainable transport measures and parking solutions.

The project scope comprises the following key elements:

- **Promenade Development:** Development of a continuous promenade along the shoreline, including a sun deck and marina square with gardens.
- **Marina Development:** Extension and improvement of the existing marina, including new berths, boat servicing facilities, and improved access to the water.
- **Reimagined Water Play Experience:** Redevelopment of the water sports facility, including amenities such as toilets, showers, and a café.
- **Access, Parking & Transport Strategy:** Implementation of a revised access strategy, including a transport mobility hub, active travel hubs, improved pedestrian and cycle access, and a revised parking strategy.

The new water sports facilities and café are proposed to have Finished Floor Levels at 38.0m OD in line with site specific flood risk analysis. Carriageway levels throughout Hodson Bay are proposed to be retained at their existing levels. All new landscaping and infrastructure below 38.0m OD will be designed to be flood resilient in scenarios of extreme flood conditions.

4. Legislation, Policy and Guidance

The surface and foul water drainage strategy has been prepared in accordance with the following policies and guidelines

- National Planning Framework (NPF), Project Ireland 2024 (April 2025);
- Roscommon County Development Plan 2022-2028
- Greater Dublin Strategic Drainage Study; Technical Document Volume Two (2005)
- Uisce Éireann Code of Practice for Wastewater Infrastructure (August 2025)
- Implementation of Urban Nature-based Solutions; Guidance Document for Planners, Developers and Developer Agents (January 2025)
- CIRIA Sustainable Urban Drainage Systems (SuDS) Manual C753 (2015)
- CIRIA Control of Water Pollution from Construction Sites C532 (2001)
- CIRIA Control of Water Pollution from Linear Construction Sites C648 (2006)

4.1. National Planning Framework

The NPF sets out the Governments planning policies for Ireland and provides guidance on its application. The NPF outlines National Policy Objectives (NPO), where NPO 77-81 relate to water resource management as follows:

- NPO 77 - Enhance water quality and resource management by ensuring that River Basin Management Plan objectives are fully considered throughout the physical planning process. Integrating sustainable water management solutions, such as SuDS, non-porous surfacing and green roofs, and nature-based solutions, to create safe places.
- NPO 78 - Promote sustainable development by ensuring flooding and flood risk management informs place-making by: Avoiding inappropriate development in areas at risk of flooding that do not pass the Justification Test, in accordance with the Guidelines on the Planning System and Flood Risk Management; Taking account of the potential impacts of climate change on flooding and flood risk, in line with national policy regarding climate adaptation.
- NPO 79 - Support the management of stormwater, rainwater and surface water flood and pollution risk through the use of nature-based solutions and sustainable drainage systems, including the retrofitting of existing environments to support nature-based solutions.
- NPO 80 - Support the retrofitting of existing environments to cater for surface water run-off through the use of nature-based solutions.
- NPO 81 - Support the implementation by Uisce Éireann, Local Authorities and other parties with drainage responsibilities of Integrated Wastewater and Drainage Management Plans on a prioritised risk basis in accordance with the requirements of the RBMP and EU Water Directives.

The core objectives established in the NPF can be summarised to the following:

- Avoiding inappropriate development in areas at risk of flooding;
- Avoiding new developments increasing flood riskelsewhere, including that which may rise from surface run off;
- Ensuring effective management of residual risks for developments permitted in floodplains;
- Avoiding unnecessary restriction of national, regional or local economic and social growth;
- Improving the understanding of flood-risk and ensure flood risk management in accordance with best practice;
- Prioritising nature-based solutions to manage water in terms of both quantity and quality and promote climate change mitigation strategies.

4.2. Roscommon County Development Plan

The Council will require that surface water be disposed of onsite (where possible), and the on-site drainage infrastructure will subsequently regulate the rate of discharge to established water bodies. Developers will also be required, in all cases to provide separate surface water and foul water drainage systems. Section 14.6 of the Roscommon County Development Plan (CDP) sets out the following applicable flood risk management policy objectives:

- ITC 7.47 – Support the improvement of storm water infrastructure to improve sustainable drainage and reduce the risk of flooding in urban environments.
- ITC 7.48 – Ensure new development is adequately serviced with surface water drainage infrastructure which meets the requirements of the Water Framework Directive, associated River Basin Management Plans and

CFRAM Management Plans. Furthermore, the Council will undertake its obligations under the European Union (Good Agricultural Practice for Protection of Waters) Regulations 2017.

- ITC 7.49 – Ensure that developments in urban areas, both within developments and within the public realm, seek to minimise and limit the extent of hard surfacing and paving and require the use of sustainable drainage techniques for new development or for extensions to existing developments, in order to reduce the potential impact of existing and predicted flooding risks.
- ITC 7.50 – Require the provision of separate foul and surface water drainage systems.

The Roscommon CDP states that one of its objectives is to "For new developments, Roscommon County Council will require that all developments incorporate SuDS as part of the development proposals. SuDS are effective technologies which aim to reduce flood risk, improve water quality and enhance biodiversity and amenity. New developments should also minimise the areas of impermeable surfaces such as road, parking and patio surfaces and porous surface materials (e.g. permeable paving) should be utilised where practicable".

4.3. Greater Dublin Strategic Drainage Study

In lieu of hydraulic guidance the Greater Dublin Strategic Drainage Study (GDSDS) which outlines regional drainage policies and design criteria for SuDS in the Greater Dublin Area has been used. GDSDS aligns with broader environmental and planning policies stating SuDS is mandatory for new development unless proven infeasible, with alternative pollutant controls required where it can't be provided. SuDS require that surface water runoff be separated from foul flows and controlled on site, with the view of minimising discharge of stormwater from the site.

Drainage systems must be hydraulically controlled before discharge, with Table 1 below detailing control objectives for different storm return periods in line with this guidance. All designs should also incorporate allowances related to climate change.

Table 1 Drainage Hydraulic Criteria Requirements

Return Period (years)	Requirements
<1	Minimum 5mm (10mm preferred) interception storage, where runoff to receiving waters can be prevented.
1	Maximum discharge rate equal to 1-year greenfield site peak runoff rate or 2l/s/ha whichever is the greater.
30	No flooding on site except where specifically planned flooding is approved.
100	Maximum discharge rate equal to 100-year greenfield site peak runoff rate.
	No internal property flooding. Planned flood routing and temporary flood storage accommodated on site for short high intensity storms.
	Floor levels at least 500mm above maximum river level and adjacent on-site storage retention.
	No flooding of adjacent urban areas. Overland flooding managed within the development.

The drainage design is structured around four tiers of control which are pollution prevention, source control, site control, and regional control. This ensures both runoff quantity and quality are addressed at appropriate scales.

4.4. Uisce Éireann Code of Practice for Wastewater Infrastructure

The Uisce Éireann (formerly Irish Water) Code of Practice outlines the technical requirements for the design, construction, and commissioning of wastewater infrastructure associated with commercial, industrial, and private developments intended for adoption by Uisce Éireann. The process for Wastewater Infrastructure given by Uisce Éireann is as follows:

- Pre-Connection Enquiry;
- Design Submission;
- Connection Application;
- Connection Offer (followed by acceptance and payment);
- Construction Stage (including Irish Water supervision, inspection, etc.);
- Commissioning Stage (including infrastructure documentation inspection, etc.);
- Connection of infrastructure to Irish Water asset (on issue of a Conformance Certificate);
- Vesting;
- Defects Liability Stage;
- Completion (on issue of a Completion Certificate).

5. Surface Water Drainage Strategy

5.1. Point of Discharge

Surface water is proposed to discharge to Lough Ree via existing outfalls. Appendix C identifies two 225mm diameter outfalls, one in the marina carpark and one by the marina ramp. A site inspection was carried out on 18.11.25 where the marina ramp outfall was visually identified as shown in Figure 2. Three other outfall locations have been assumed based on a historic survey which shows existing surface water manhole covers and levels in Appendix B. In total there are assumed to be five outfalls for the site. A survey of the foreshore is required to confirm the location, condition and capacity of existing outfalls. Subject to survey findings, existing outfalls will be reused where feasible. Where existing outfalls are found to be unsuitable or insufficient, new outfalls to Lough Ree will be constructed. All outfalls are proposed to have non-return valves to prevent backup of the network during high water levels in Lough Ree.

Figure 2 Existing Surface Water Outfall at Coordinates X 600858.83, Y 746382.36 (ITM).

5.2. Drainage Hierarchy and Management Levels

A hierarchy of preferred drainage discharge methods is outlined in Implementation of Urban Nature-based Solutions. Table 2 evaluates how the site runoff can be discharged according to the hierarchy.

Table 2 Drainage Hierarchy and Suitability for the Site.

	Discharge Method	Suitability for the Proposed Development
1	Use surface water runoff as a resource.	Applicable – Partial. Tree pits, rain gardens and bioretention systems will utilise surface water runoff to support planting and landscaping across the site.
2	Provide interception of rainfall through the use of nature-based SuDS approaches.	Applicable – Primary Strategy. The drainage strategy is centred on having source and site control SuDS measures including permeable/porous surfacing, tree pits, rain gardens and bioretention depressions. These features intercept, store and attenuate rainfall across the developed portion of the site prior to discharge.
3	Where appropriate, infiltrate runoff into the ground.	Not Applicable – Permeable paving and bioretention features are designed to attenuate and discharge with no infiltration at this stage.
4	Discharge to an open surface water drainage system.	Applicable – Preferred Discharge Route. Residual surface water runoff, following attenuation through the SuDS network, will discharge to Lough Ree via the existing outfalls and overland drainage regime.
5	Discharge to a piped surface water drainage system.	Not Preferred. No piped public surface water sewer is available in the vicinity of the site. The existing system outfalls to Lough Ree.
6	Discharge to a combined sewer.	Not Applicable. Discharge to a combined sewer is not proposed and would be contrary to best practice and guidance.

Effective surface water management follows a hierarchy which prioritises source control, with site control second, followed by regional control measures as described in Table 3. Nature-based solutions (NBS) are integral to this hierarchy, often referred to under the umbrella term SuDS.

Table 3 Nature-Based Solutions Management Levels

Management Level	Goal	NBS/SuDS Examples
Source Control (Priority 1)	Manage runoff at the point where rain falls.	Permeable/porous surfacing, Rain Gardens (Bioretention areas), Green Roofs, Rainwater Harvesting.
Site Control (Priority 2)	Manage runoff from small areas (e.g., parking lots, small developments).	Swales, Filter Strips, Detention/Infiltration Basins.
Regional Control (Priority 3)	Manage runoff from larger catchments.	Constructed Wetlands, Large Detention Ponds, Floodplain Restoration.

NBS offer a sustainable and resilient approach to managing surface water runoff, moving away from conventional infrastructure like pipes and drains. They utilise natural processes to infiltrate, filter, store, and evaporate rainwater, reducing flood risk, improving water quality, and creating ecological and amenity benefits.

5.3. Proposed Strategy

The site is located in close proximity to Lough Ree, the surface water drainage strategy has been developed with water quality as a primary consideration alongside NBS and SuDS hierarchy. The overall strategy for the site follows a best endeavours approach, involving intentional grading of the site to convey runoff to SuDS features, therefore reducing surface water runoff entering conventional drainage systems and attenuating the runoff at source and reducing discharge to Lough Ree via five assumed outfalls. Catchments will be routed as far as practicable to a nature-based attenuation solution. Where select areas of new development cannot be routed to attenuation due to topographical constraints a pragmatic approach has been taken to not introduce below ground attenuation measures to ensure gravity discharge to Lough Ree can be maintained. All surface water runoff from car parking and other vehicular areas will be routed through hydrocarbon interceptors combined with a full retention silt/suspended solids trap prior to discharge. The proposed surface water drainage layouts can be seen in Appendix D.

The greenfield runoff rate for the site calculated using IH124 method is 20l/s. The proposed drainage strategy delivers significant betterment relative to the existing developed condition through nature-based SuDS measures and source control. While the proposed total discharge rate outlined in Table 5 is above the greenfield runoff rate, this represents a pragmatic and robust approach given the site's constraints. Due to existing topography, the site levels in relation to Lough Ree and the reliance on gravity network drainage achieving full greenfield runoff rates is not considered practicable without substantial additional storage infrastructure and a possible pumped surface water drainage system, which would have considerable power requirements, and increase flood risk should failure of the system occur.

The SuDS solutions have been developed in close coordination with the OKRA, the Landscape Architect and the public realm plan is shown in Appendix E. The undeveloped portion of the site retains its existing drainage characteristics, and the SuDS strategy delivers a demonstrable betterment in both runoff rate and water quality over the existing situation. Green infrastructure has been prioritised across the site to attenuate more common rainfall events. Rainwater pipes are proposed to route externally down the façade of buildings to enable connection to the SuDS features on the site.

The Proposed Development for the drainage strategy is ~3.73ha of the total site area of 8.927ha. The remaining ~5.197ha is the active travel corridor which retains its existing network and drainage regime, with no material alteration to runoff behaviour from these areas. Existing gullies along the active travel corridor will be relocated to the carriageway to accommodate proposed footway widening.

5.4. Drainage Modelling

The surface water network has been modelled in Causeway Flow, adopting a 100-year (1% Annual Exceedance Probability) return period for pipe sizing throughout, with a further 20% allowance built in for climate change. Modelling of the proposed development was carried out using the FSR method. The following should be noted:

- The pipe network is initially sized against a 5-year return period storm, applied under the model's Design Settings.

- Network performance is then checked against a 100-year storm incorporating a 20% climate change allowance, together with the relevant M5-60 rainfall depth, ratio R, and winter/summer volumetric runoff coefficients (Cv). This is applied under the model's Simulation Settings.

SuDS features will incorporate connections to inspection chambers/manholes fitted with flow control devices where appropriate to restrict discharge and allow for full utilisation of SuDS attenuation.

Due to the increase in contributing catchment areas of the post-development scheme, the existing drainage network will require upgrades in part to accommodate the additional surface water flows generated.

5.4.1. Catchment Areas

Contributing catchment area for each assumed outfall, pre-development and post-development.

Table 4: Comparison of Pre- and Post-Development Catchment Areas

Outfall	Pre-Dev Area (ha)	Post-Dev Area (ha)	Change (ha)	Change to Pre-Dev (%)
SMH-OUT1	0.906	0.869	−0.037	−4.1%
SMH-OUT2	1.283	1.588	+0.305	+23.8%
ASSOUT_N_1	0.299	0.160	−0.139	−46.5%
ASSOUT_N_2	0.345	0.349	+0.004	+1.2%
ASSOUT_N_3	0.411	0.764	+0.353	+85.9%
Total	**3.244**	**3.730**	**+0.486**	**+15.0%**

5.4.2. Total Discharges from Development (Peak Outflows)

The pre-development critical storm outflows were compared to that of the post-development. The outfall location and references are shown on the proposed surface water layout plans in Appendix D.

Table 5: Comparison of Pre- and Post-Development Outflow During Critical Storm Periods (l/s)

Outfall	Pre-Dev Critical (l/s)	Post-Dev Critical (l/s)	Δ Critical (l/s)	Δ Critical (%)
SMH-OUT1	249.6	33.8	-215.8	−86.5%
SMH-OUT2	294.6	34.2	-260.4	−88.4%
ASSOUT_N_1	92.9	57.8	-35.1	−37.8%
ASSOUT_N_2	114.7	25.2	-89.5	−78.0%
ASSOUT_N_3	137.2	98.1	-39.1	-28.50%
Total	**889.0**	**249.1**	**-639.9**	**−72.0%**

As can be seen from Table 5 with the addition of SuDS attenuation and suitable flow control measures, the outflow from the site was reduced by a value of 596.7l/s for the design rainfall event including a 20% allowance for climate change.

The proposed development reduced discharge rate to a total value of 249.1l/s over five outfalls in the critical storm event.

5.4.3. Summary of Storm Water Drainage Design

The following table describes the stormwater drainage design parameters used for modelling with Causeway Flow.

Table 6: Drainage Design Parameters Summary

Description	Value
Return Periods	Pipe Design: 1 in 5 Year (20% AEP) Network Design: 1 in 100 year (1% AEP)
Climate Change Factor	20%
M5-60	14.500
Ratio, R	0.271
SAAR	965mm
Flow Reductions and Outflow Control Devices	Flow restricted to a minimum of 2l/s (to account for minimum allowable orifice size of 50mm). Flow control devices have been used where suitable.

5.5. Sustainable Urban Drainage Systems

The surface water management proposals for Hodson Bay will aim to implement NBS as a priority throughout the project area, particularly in landscaped areas and in the proposed additional car parks. A source and site control SuDS strategy is proposed and has been developed with the Landscape Architect to maximise NBS/SuDS including the following:

- Permeable/porous surfacing for car parking and shared surface areas providing storage. Porous asphalt contains a higher percentage of interconnected air voids than conventional asphalt, allowing water to pass through.
- Rain gardens and bioretention systems/depressions, providing surface ponding storage, filtration and passive treatment prior to discharge. Treatment is provided in the form of engineered media to remove certain urban pollutants.
- Tree pits with structural cells, providing interception, storage and amenity.

The proposed surface levels will be designed to drain over a shallow gradient towards the edge of the impervious area and into a SuDS features. The surface water strategy delivers betterment through approximately 9,390m2 of SuDS features including rain gardens, permeable/porous surfacing, bioretention systems and tree pits. These features collectively provide distributed attenuation and multi-stage water quality treatment across the developed portion of the site. Treatment of runoff prior to discharge is a key objective of the strategy given the sensitivity of the receiving waterbody.

5.5.1. Sustainability

The CIRIA SuDS Manual report C753 states that “surface water run-off should be managed for maximum benefit.” The types of benefits that can be achieved by SuDS can be put into four categories, the four pillars of SuDS: water quantity, water quality, amenity and biodiversity. This is outlined in Table 7 below.

Table 7 SuDS Likely Benefits

	SuDS Feature	Water Quantity	Water Quality	Amenity	Biodiversity
Most Benefits	Living roofs	√	√	√	√
↕	Infiltration systems	√	√	√	√
	Dry planted features – Swales, bioretention areas, rain gardens, trees, detention basins	√	√	√	√
	Ponds and wetlands	√	√	√	√
	Pervious & reservoir pavements	√	√		
	Filter strips	√	√		
	Filter drains	√	√		
	Proprietary treatment systems		√		
Least Benefits	Attenuation storage tanks	√			

5.6. Attenuation Strategy

Surface water runoff from the developed area is attenuated through the combined storage across SuDS features. The approximate volume of storage provided by each type of feature is presented in the Table 8 below. The drainage model (Section 5.4) accounts for attenuation storage from permeable/porous surfacing and rain gardens only. Tree pits and bioretention systems can provide attenuation and are proposed on the site, although have been excluded from the model to reflect a worst-case scenario; their contribution will be detailed further at the next design stage.

Given the site location, limited information on the existing network and levels, and the priority of maintaining gravity outfalls to Lough Ree, attenuation tanks have not been considered.

Table 8 Proposed SuDS Features Storage Volume

Proposed SuDS Feature	Layer	Area (m^2) Top Area / Base Area	Depth	Porosity	Storage Volume (m^3)	Total Storage Volume (m^3)
Raingarden	Void storage	3010	0.15	1	452	1084
	Topsoil		0.4	0.3	361	
	Sub-base		0.3	0.3	271	
Permeable/Porous Surfacing	Sub-base	3680	0.35	0.3	386	386
Modelled Storage Volume						1,470
Tree Pits	Topsoil	800	0.5	0.2	80	80
	Sub-base		0	0.3	0	
	Trench		0	0.3	0	
Bioretention Systems	Void storage	1900 / 1730	0.2	1	363	526
	Topsoil		0.3	0.3	163	
	Sub-base		0	0.3	0	
Additional Estimated Storage Volume						606

5.7. Water Quality

Given the proximity of the site to Lough Ree and the obligations of the Water Framework Directive, water quality treatment is embedded throughout the drainage train. A formal Water Quality Assessment has been undertaken using the Simple Index Approach, in accordance with the CIRIA SuDS Manual (C753). Designing for water quality involves the specification of SuDS components which adequately cleanse and filter pollutants arising from runoff draining into the system. The proposed development comprises areas of non-residential car parking with infrequent change. The pollution hazard level of runoff from the carpark site is low with the hazard indices shown in Table 9.

Table 9 CIRIA Pollution Hazard Indices for Different Land Use Classifications (Table 26.2)

Land Use	Pollution Hazard Level	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Individual property driveways, residential car parks, low traffic roads (e.g. cul-de-sacs, home zones and general access roads) and non-residential car parking with infrequent change (e.g. schools, offices) i.e. < 300 traffic movements/day	Low	0.5	0.4	0.4

The proposed drainage strategy collects the surface water runoff via permeable/porous surfacing and conveys it through perforated pipes to a piped network then through a hydrocarbon interceptor before the runoff outfalls to Lough Ree. The associated mitigation indices are shown in Table 10.

Table 10 Indicative SuDS Mitigation Indices for Discharges to Surface Water (Table 26.3)

Type of SuDS Component	TSS	Metals	Hydrocarbons
Permeable Pavement	0.7	0.6	0.7
Proprietary Treatment Systems	Hydrocarbon and integrated full retention silt separation interceptor		
Sufficient Treatment Provided	✓	✓	✓

For the proposed SuDS the permeable/porous surfacing inlet feature provides an appropriate level of treatment such that the required mitigation indices are achieved or exceeded for all pollutant types (TSS, metals, and hydrocarbons).

Surface water from car parking and other vehicular areas will be routed through a hydrocarbon and integrated full-retention silt separation interceptor in line with policy requirements and given the sensitivity of the receiving waterbody. As a proprietary treatment system, this is assessed under CIRIA C753 not by mitigation index but by demonstrated performance: it must address TSS, metals and hydrocarbons to acceptable levels for frequent events up to approximately the 1-in-1-year return period, for inflow concentrations relevant to the contributing drainage area. Such combined units are a standard, readily available solution and will be sized at detailed design stage based on the extent of proposed car parking.

5.8. Operation and Maintenance

The maintenance regime for the surface water drainage can be divided into three categories: regular maintenance, occasional tasks and remedial works. The frequency of regular maintenance will depend on the specific drainage or SuDS feature, with occasional tasks and remedial works carried out as required. Interceptors will be inspected and desludged regularly in accordance with manufacturer's guidance. Outfalls and non-return valves will be inspected regularly to confirm they remain clear and operational, particularly following storm events or high-water levels in Lough Ree. Specific maintenance needs of the SuDS should also be monitored with schedules adjusted to suit requirements.

Appendix F contains a schedule providing guidance on the type of operational and maintenance requirements that may be appropriate, based on the CIRIA SuDS Manual report C753. The activities listed are generic to the relative SuDS types and represent the minimum maintenance and inspection requirements; the frequency and scope may be adjusted by Roscommon County Council as required.

5.9. Construction Phase Drainage Measures & Prohibited Activities

The below measures should be implemented by the contractor during the construction phase to ensure the protection of drainage systems and management of runoff and pollutants during the construction phase:

- The installation of free-draining aggregate subbase for permeable pavements shall be immediately followed by the installation of a geotextile separating membrane and, where feasible, the laying course and finished surfacing.
- The storage of materials directly onto permeable pavements shall be prohibited. Where storage of materials is unavoidable an impermeable separating membrane shall be laid onto the pavement surface first to prevent silting or contamination of the permeable pavement layers.
- Any fuel, substances or generators that pose a risk of pollution shall be properly stored within appropriately sized containment bunds in line with best practice.

These measures along with the full suite of construction-phase environmental controls will be documented in the Construction Environmental management Plan (CEMP) for the project. Additional measures may be required and shall be agreed upon with the contractor prior to mobilisation on site.

6. Foul Water Drainage Strategy

A pre-connection enquiry for the foul water requirements was submitted to Uisce Éireann on 05.06.26 to assess the technical feasibility and review the available capacity of the Uisce Éireann infrastructure to accept discharge from the site. The application reference number is CDS26004773.

Uisce Éireann sewer network records, provided in Appendix A, show an existing foul water network near the site, but no public sewers within the site boundary. The gravity sewer in the vicinity serves the Hodson Bay area, which drains southward toward the N61 to a wastewater treatment plant. The asset map also shows an existing Uisce Éireann Wastewater Pump Station within the site boundary. Appendix C shows the existing foul water infrastructure for the Hodson Bay Hotel Athlone Spa/Leisure Centre which connects to the pumping station via MHF34. A survey of the existing foul water network is required to confirm the location, condition and capacity.

The proposed development will connect to the existing foul manholes and pipe network to convey to the Uisce Éireann Wastewater Pump Station.

6.1. Proposed Strategy

Foul water will be collected from the water sports pavilion buildings and connected to an existing foul water manhole MHF34 (Appendix C), which connects to the foul water pumping station operated by Uisce Éireann. A sewerage pump out system is proposed on the marina which will convey via a pressure network to the marina washroom facilities. The foul water will be collected from the marina washroom facilities and pumped to a proposed break chamber manhole. It will then be conveyed via gravity into the existing foul water network to the pumping station. The proposed foul water layout plans are included in Appendix G.

6.2. Estimated Foul Loads

The Proposed Development comprises of 16 wash basins, 4 showers, 2 urinals, 15 toilets and an industrial sink. Following the Uisce Éireann Code of Practice for Wastewater Infrastructure, the average and peak flows for the Proposed Development has been estimated. Two separate methods were used to estimate the foul flows, with the most conservative values being taken in each case. The average flow for the development is calculated as 1.63l/s and the peak flow is calculated as 4.9l/s. The full calculations can be found in Appendix H.

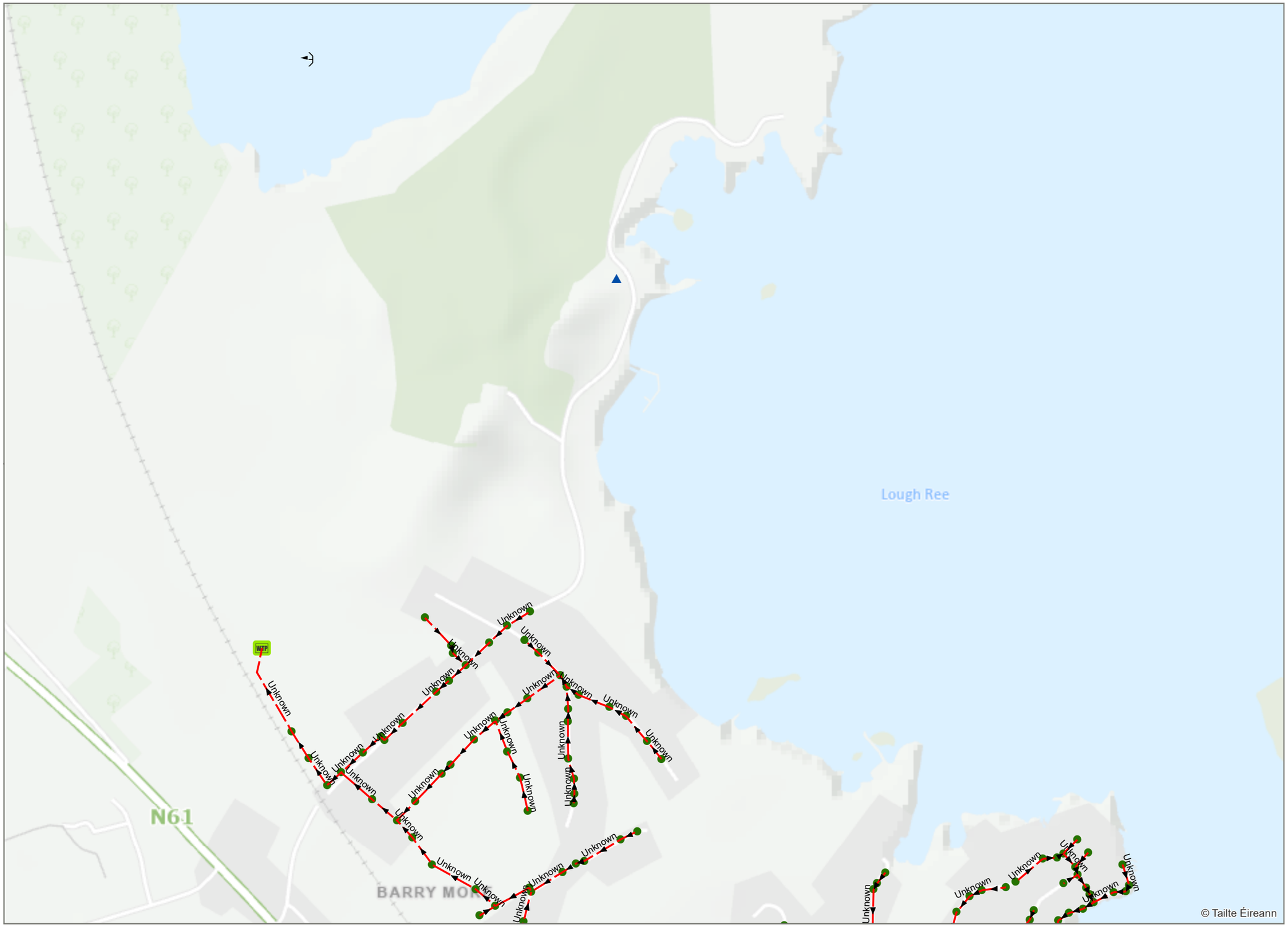
7. Conclusions and Recommendations

Separate foul and surface water drainage systems are proposed. Foul water will connect to the existing Uisce Éireann network, and surface water will discharge to Lough Ree. Further survey works are required to confirm the location, levels and capacity of all existing networks and outfalls.

The surface water strategy delivers betterment through approximately 9,390m^2 of SuDS features including rain gardens, permeable/porous surfacing, bioretention systems and tree pits. These provide approximately 1,470 m^3 of attenuation storage. This attenuation restricts discharge to 249.1l/s across five outfalls in the critical storm event. While this remains above the calculated greenfield runoff rate of 20 l/s, achieving full greenfield rates was not considered practicable given the site's topography and reliance on gravity drainage. Hydrocarbon and integrated silt separation interceptors are included to treat runoff from car parking and vehicular areas prior to discharge to Lough Ree.

A pre-connection enquiry has been submitted to Uisce Éireann for the foul water connection. A Confirmation of Feasibility certificate will be submitted following Uisce Éireann consultation and design vetting.

Appendix A - Uisce Éireann Asset Map



Uisce Éireann
Irish Water

Legend

Sewer Gravity Mains (Irish Water owned)

Liquid Type

- Foul

Sewer Manholes

Manhole Type

- Standard

Sewer Discharge Points

Discharge Type

- Outfall
- Treatment plant
- Pump station

0 60 120 240 m

Coordinate System: TM65 Irish Grid
Projection: Transverse Mercator

Scale @ A3:	1:7,500
Drawing No.:	IW-AGG-2018-000
Drawn By:	JJ
Checked By:	<Add Name>
Approved By:	<Add Name>
Drawn Date	28/07/2025
Checked Date:	<dd/mm/yyyy>
Approved Date:	<dd/mm/yyyy>

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2. Whilst every care has been taken in its compilation, Uisce Éireann gives this information as to the position of its underground network as a general guide only on the strict understanding that it is based on the best available information provided by each Local Authority in Ireland to Uisce Éireann. Uisce Éireann can assume no responsibility for and give no guarantees, undertakings or warranties concerning the accuracy, completeness or up to date nature of the information provided and does not accept any liability whatsoever arising from any errors or omissions.This information should not be relied upon in the event of excavations or any other works being carried out in the vicinity of the Uisce Éireann underground network. The onus is on the parties carrying out excavations or any other works to ensure the exact location of the Uisce Éireann underground network is identified prior to excavations or any other works being carried out. Service connection pipes are not generally shown but their presence should be anticipated.

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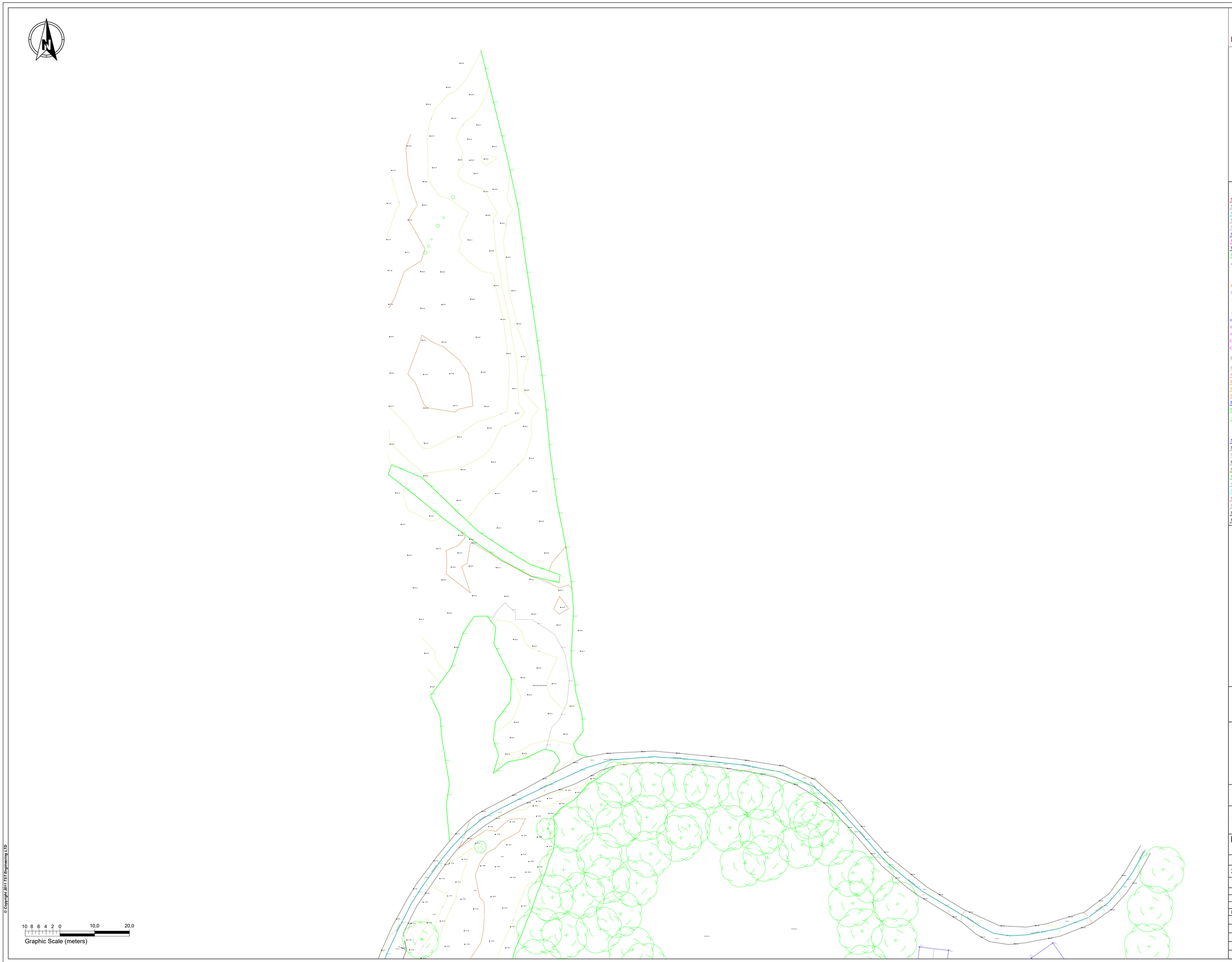
Sewer Network

Appendix B – Existing TST Engineering Survey



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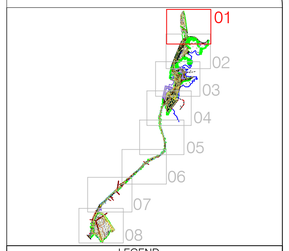
KEYMAP



LEGEND

Street furniture & Services

5.12	Over Head Wires	Sign	Road Sign	GY	Gully	PBOX	Phone Box
5.12	Flowerbed	BO	Bus Stop		Kiosk	GAS	Gas Cover
5.12	Pipe	BO	Bollard		Duct	CPBox	C P Box
5.12	Lift	BEA	Beacon		Bench Seat		
5.12	Barrier	CH	Coalhole Cover	U/G Vent	U/G Car Park Vent		
5.12	Pump	BH	Bore Hole	BIN	Waste Bin		
5.12	Trial Pit	EP	Electricity Pole	Hyd	Hydrant		
5.12	Bus/Tram Shelter	TP	Telegraph pole	FH	Fire Hydrant		
5.12	Postbox	OCS	OCS Pole	EBOX	ESB Box		
	Valve - General	CP	CCTV Camera Pole	ICE	ESB Inspection Cover		
	Water Valve	LS	Lamp Post	TFB	Traffic Control Box		
	Unknown Valve	LUAS	LUAS Technical Cubicle		Gas Valve		
FMH	Foul Manhole		Ticket Vending Machine		Sluice Valve		
SMH	Surface Water MH	WM	Water Meter Cover		Air Valve		
MH	Manholes	ICI	Telecom Inspection Cover		Stop Cock		
AC	Air Conditioning Vents		Monument / Toilets	CPP	C P Post		
ICU	Services Inspection Cover		Tank Storage	MK	Marker Post		
ICTC	Traffic Inspection Cover		Basement: MH, Cover & Pipe	TL	Traffic light		
ICTV	Cable TV Inspection Cover	PM	Parking Meter	DAM	Dished Aerial Mark		
ICES	ESAT Inspection Cover	PAM	Plane Aerial Mark	STAY	Stay for pole		
ICNC	NTL Inspection Cover	SCV	Smart Card Validator	PP	Pipe Protection		
ICEM	Eircom Inspection Cover		Rodding Eye	PCB	Pedestrian Crossing Button		Washout

Natural Features

5.12	Contours Lines	WLVL	Water Level	FWAY	Fair Way
5.12	Surface Change	CRWN	Crown Level	GREEN	Green
5.12	Land Drain	IL	Invert level	TBOX	Tee Box
5.12	Bottom of Slope	BL	Bed Level		
5.12	Top of Slope				
5.12	Ditch				
5.12	Water Edge / Lake / Pond				
5.12	Hedge / Trees Drip Line / Vegetation				
	Tree Coniferous		Tree Deciduous	TOT	Top of Tree

Other

S1 X 100.00 Y 100.00 Z 100.00	Survey Station
	Photo point

Built Features

Roads & Road Markings

5.12	Building	5.12	Fence	S 5.12	Spot Level
5.12	Edge of Road	5.12	Gate	FL 5.12	Floor Level
5.12	Kerb Bottom	5.12	Road Centreline	APEX 5.12	Apex Height
5.12	Kerb Top	5.12	Hoarding	EV 5.12	Eaves Height
5.12	Bridge Abutment	5.12	Property Line	PAR 5.12	Parapet Height
5.12	Bridge Deck	5.12	Road Scar	SOFF 5.12	Soffit Elevation
5.12	Bridge Parapet	5.12	Ramp	STPL 5.12	Step Level
5.12	Building Facade	5.12	Wall / Retaining Wall		Building Canopy / Roof / Overhang
5.12	Footpath / Platform Train & Tram	5.12	Railway / Tram Rail / Grating	5.12	Track
5.12	Damp Proof Course / Verge	TOW 5.12	Top of Wall	CONC	Concrete Pad
5.12	Bridge Pier / Wall & Gate Pillar / LUAS Trackbed	TOF 5.12	Top of Fence		
5.12	Cycleway / Private Landing Area				

OVERVIEW

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Tel. (+353) 1 5373905

Client: Civic Engineers

Project: Hodson Bay

Description: Topographical Survey

Drawing No.: 1607D-25-002 | **1 of 8**

Scale: 1:500 (on A1)

Enclosed with:

Surveyed by: GM,VF
Drawn by: RL
Approved by: SD **Date:** 17-09-2025

REVISIONS

No.	Date	Description
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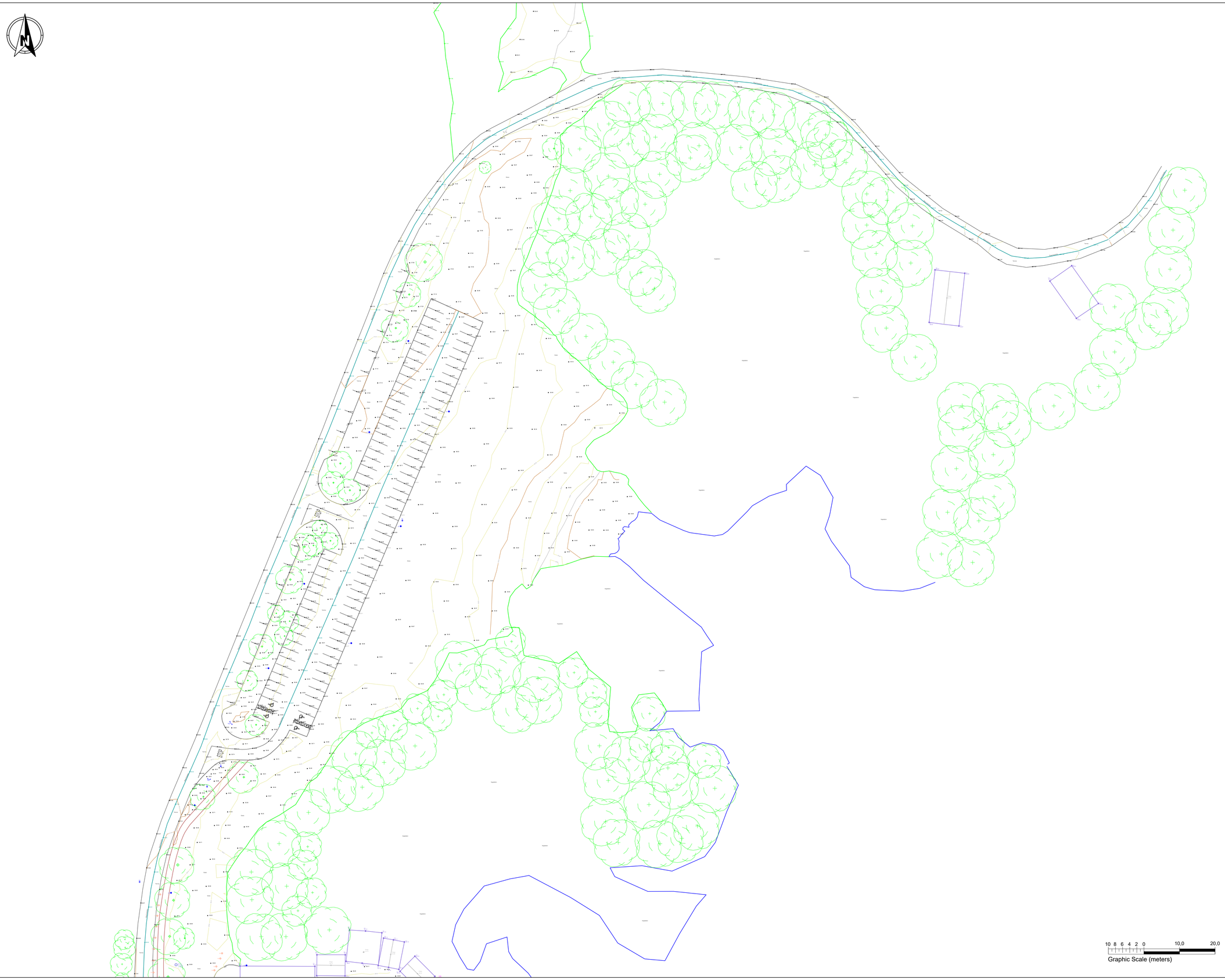

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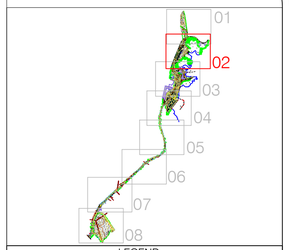

LEGEND

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	Tree Coniferous		Tree Deciduous

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FWAY	Fair Way
GREEN	Green
TBOX	Tee Box

Other

S1	Survey Station		
	Photo point	TOT	Top of Tree

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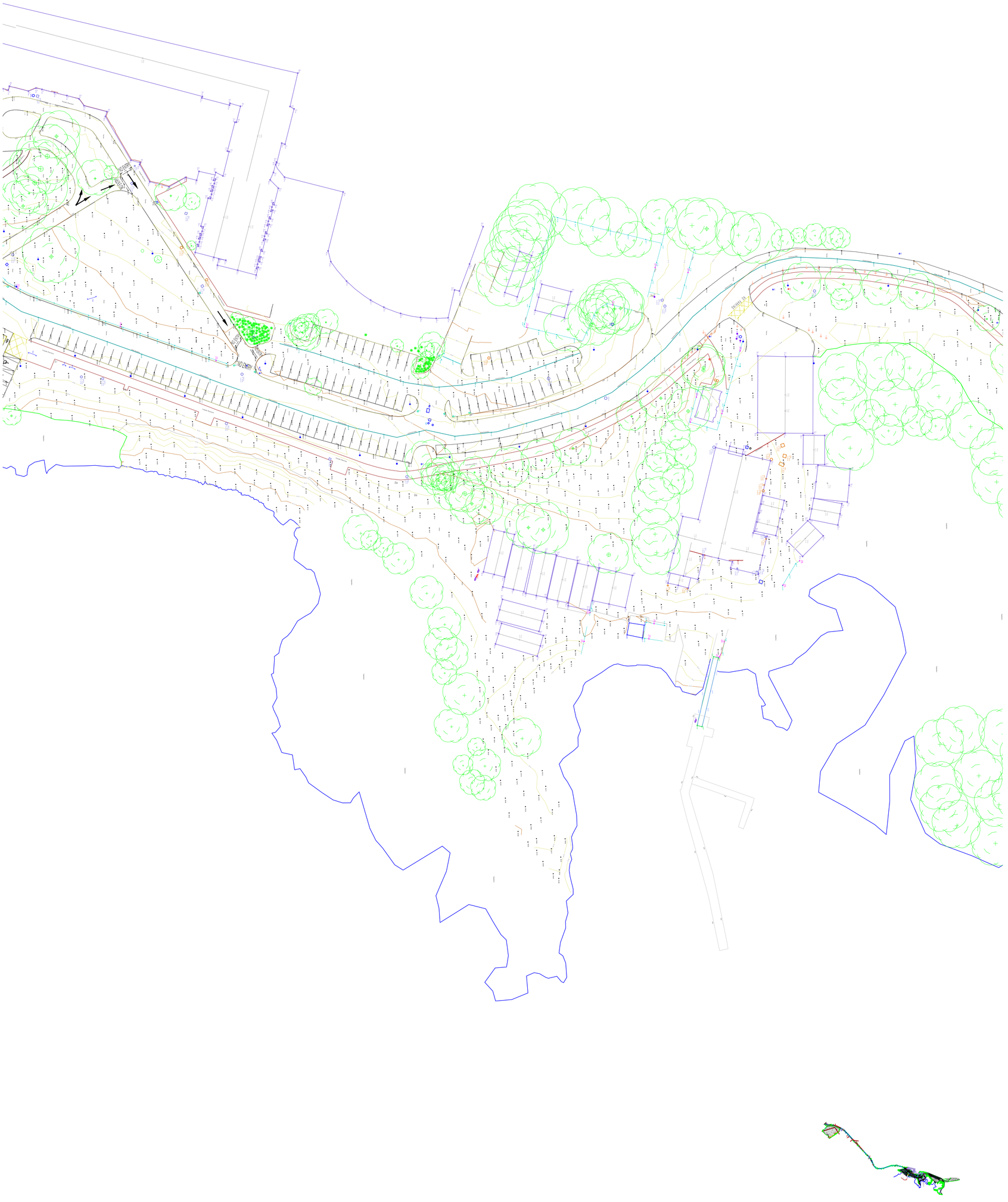

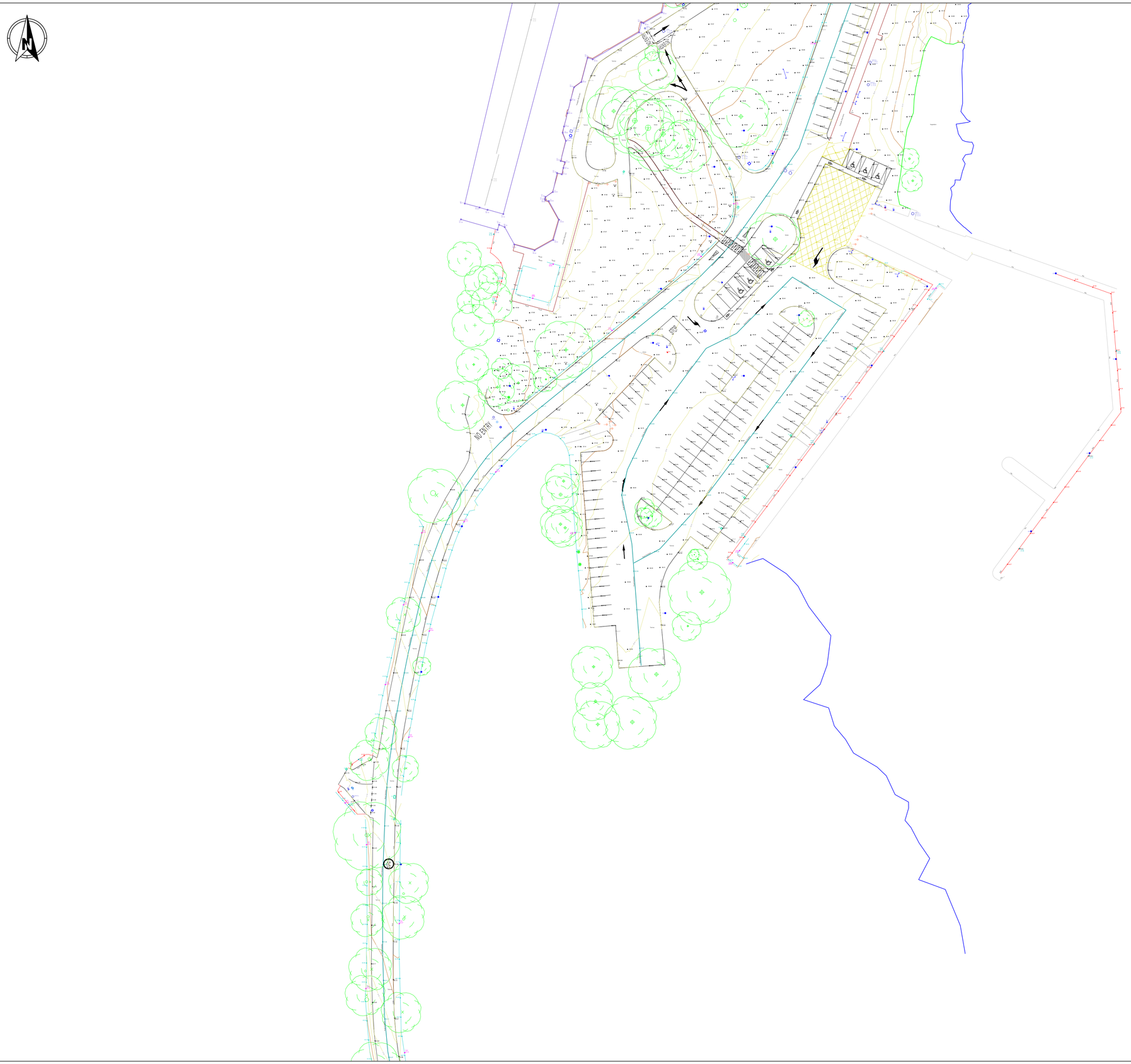

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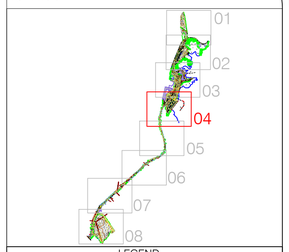

LEGEND

Street furniture & Services

- Over Head Wires
- Flowerbed
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- Barrier
- Pump
- Trial Pit
- Bus/Tram Shelter
- Postbox
- Valve - General
- Water Valve
- Unknown Valve
- FMH Foul Manhole
- SMH Surface Water MH
- MH Manhole
- AC Air Conditioning Vents
- ICM Services Inspection Cover
- ICTC Traffic Inspection Cover
- ICTV Cable TV Inspection Cover
- ICES ESAT Inspection Cover
- ICNC NTL Inspection Cover
- ICEM Eircom Inspection Cover
- Sign RS Road Sign
- BS Bus Stop
- BO Bollard
- BEA Beacon
- CH Coalhole Cover
- BH Bore Hole
- EP Electricity Pole
- TP Telegraph pole
- OCS Pole
- CP CCTV Camera Pole
- LS Lamp Post
- LUAS Technical Cubicle
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- PAM Plane Aerial Mark
- SCV Smart Card Validator
- Rodding Eye
- PCB Pedestrian Crossing Button
- GY Gully
- Kiosk
- Duct
- Bench Seat
- U/G Vent U/G Car Park Vent
- BIN Waste Bin
- Hyd Hydrant
- FH Fire Hydrant
- EBOX ESB Box
- ICE ESB Inspection Cover
- TFB Traffic Control Box
- PBOX Phone Box
- GAS Gas Cover
- CPBox C P Box
- Gas Valve
- Sluice Valve
- Air Valve
- Stop Cock
- CPP C P Post
- MK Marker Post
- TL Traffic light
- DAM Dished Aerial Mark
- STAY Stay for pole
- PP Pipe Protection
- Washout

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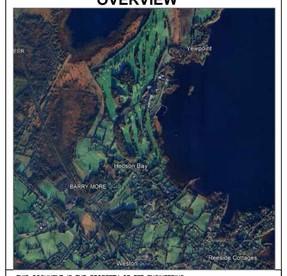

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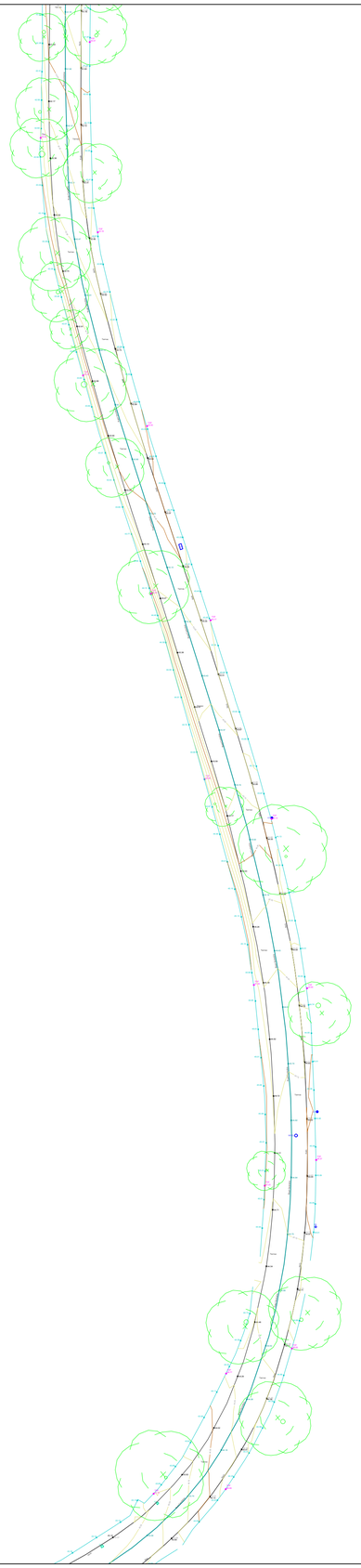

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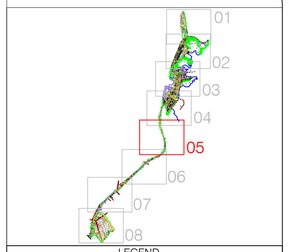

LEGEND

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SMH	Surface Water MH	WM	Water Meter Cover		Air Valve		
MH	Manholes	ICI	Telecom Inspection Cover		Stop Cock		
AC	Air Conditioning Vents		Monument / Toilets	CPP	C P Post		
ICU	Services Inspection Cover		Tank Storage	MK	Marker Post		
ICTC	Traffic Inspection Cover		Basement: MH, Cover & Pipe	TL	Traffic light		
ICTV	Cable TV Inspection Cover	PM	Parking Meter	DAM	Dished Aerial Mark		
ICES	ESAT Inspection Cover	PAM	Plane Aerial Mark	STAY	Stay for pole		
ICNC	NTL Inspection Cover	SCV	Smart Card Validator	PP	Pipe Protection		
ICEM	Eircom Inspection Cover		Rodding Eye	PCB	Pedestrian Crossing Button		Washout

Natural Features

5.12	Contours Lines	WLVL	Water Level	FWAY	Fair Way
5.12	Surface Change	CRWN	Crown Level	GREEN	Green
5.12	Land Drain	IL	Invert level	TBOX	Tee Box
5.12	Bottom of Slope	BL	Bed Level		
5.12	Top of Slope				
5.12	Ditch				
5.12	Water Edge / Lake / Pond				
5.12	Hedge / Trees Drip Line / Vegetation				
	Tree Coniferous		Tree Deciduous	TOT	Top of Tree

Golf

Other

S1	Survey Station		
	Photo point		

Built Features

Roads & Road Markings

5.12	Building	5.12	Fence	S 5.12	Spot Level		
5.12	Edge of Road	5.12	Gate	FL 5.12	Floor Level		
5.12	Kerb Bottom	5.12	Road Centreline	APX 5.12	Apex Height		
5.12	Kerb Top	5.12	Hoarding	EV 5.12	Eaves Height		
5.12	Bridge Abutment	5.12	Property Line	PWS 5.12	Parapet Height		
5.12	Bridge Deck	5.12	Road Scar	SOFF 5.12	Soffit Elevation		
5.12	Bridge Parapet	5.12	Ramp	STPL 5.12	Step Level		
5.12	Building Facade	5.12	Wall / Retaining Wall	5.12	Building Canopy / Roof / Overhang		
5.12	Footpath / Platform Train & Tram	5.12	Railway / Tram Rail / Grating	5.12	Track		
5.12	Damp Proof Course / Verge	TOW 5.12	Top of Wall	CONC	Concrete Pad		
5.12	Bridge Pier / Wall & Gate Pillar / LUAS Trackbed	TOF 5.12	Top of Fence				
5.12	Cycleway / Private Landing Area						

OVERVIEW

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Dublin 12
Ireland
Tel. (+353) 1 5373905

Client: Civic Engineers

Project: Hodson Bay

Description: Topographical Survey

Drawing No.: 1607D-25-002 | **5 of 8**

Scale: 1:500 (on A1)

Enclosed with:

Surveyed by: GM,VF
Drawn by: RL
Approved by: SD **Date:** 17-09-2025

REVISIONS

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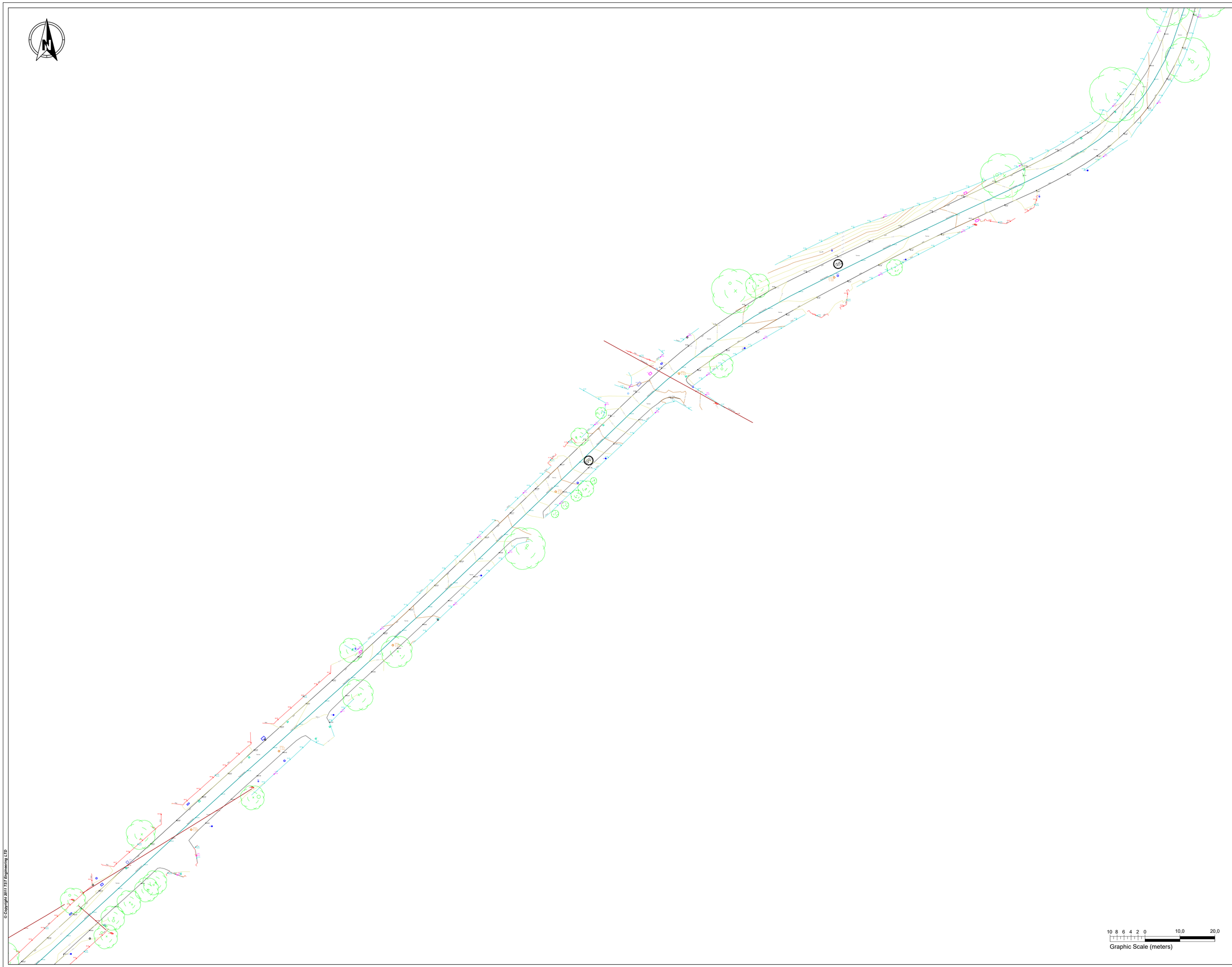

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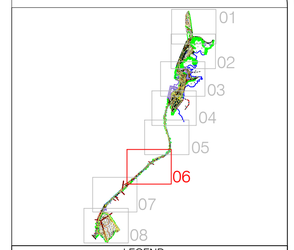

LEGEND

Street furniture & Services

Over Head Wires		Road Sign	Gully	Phone Box	
Flowerbed		Bus Stop	Kiosk	Gas Cover	
Pipe		Bollard	Duct	C P Box	
Lift	BEA	Beacon	Bench Seat		
Barrier	CH	Coalhole Cover	U/G Vent	U/G Car Park Vent	
Pump	BH	Bore Hole	BIN	Waste Bin	
Trial Pit	EP	Electricity Pole	Hyd	Hydrant	
Bus/Tram Shelter	TP	Telegraph pole	FH	Fire Hydrant	
Postbox	OCS	OCS Pole	EBOX	ESB Box	
Valve - General	CP	CCTV Camera Pole	ICE	ESB Inspection Cover	
Water Valve	LS	Lamp Post	TFB	Traffic Control Box	
Unknown Valve	LUAS	LUAS Technical Cubicle		Gas Valve	
FMH	Foul Manhole		Ticket Vending Machine		Sluice Valve
SMH	Surface Water MH	WM	Water Meter Cover		Air Valve
MH	Manholes	ICT	Telecom Inspection Cover		Stop Cock
AC	Air Conditioning Vents		Monument / Toilets	CPP	C P Post
ICU	Services Inspection Cover		Tank Storage	MK	Marker Post
ICTC	Traffic Inspection Cover		Basement: MH, Cover & Pipe	TL	Traffic light
ICTV	Cable TV Inspection Cover	PM	Parking Meter	DAM	Dished Aerial Mark
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ICNC	NTL Inspection Cover	SCV	Smart Card Validator	PP	Pipe Protection
ICEM	Eircom Inspection Cover		Rodding Eye	PCB	Pedestrian Crossing Button		Washout

Natural Features

Contours Lines	WL	Water Level			
Surface Change	CWN	Crown Level			
Land Drain	IL	Invert level			
Bottom of Slope	BL	Bed Level			
Top of Slope					
Ditch					
Water Edge / Lake / Pond					
Hedge / Trees Drip Line / Vegetation					
Tree Coniferous		Tree Deciduous		TOT	Top of Tree

Golf

FWAY	Fair Way
GREEN	Green
TBOX	Tee Box

Other

S1	Survey Station
	Photo point

Built Features

Roads & Road Markings

Building	Fence			S	Spot Level
Edge of Road	Gate			FL	Floor Level
Kerb Bottom	Road Centreline			APEX	Apex Height
Kerb Top	Hoarding			EVE	Eaves Height
Bridge Abutment	Property Line			PAR	Parapet Height
Bridge Deck	Road Scar			SOFF	Soffit Elevation
Bridge Parapet	Ramp			STEP	Step Level
Building Facade	Wall / Retaining Wall				Building Canopy / Roof / Overhang
Footpath / Platform Train & Tram	Railway / Tram Rail / Grating				Track
Damp Proof Course / Verge	Top of Wall	TOW		CONC	Concrete Pad
Bridge Pier / Wall & Gate Pillar / LUAS Trackbed					
Cycleway / Private Landing Area	Top of Fence	TOF			

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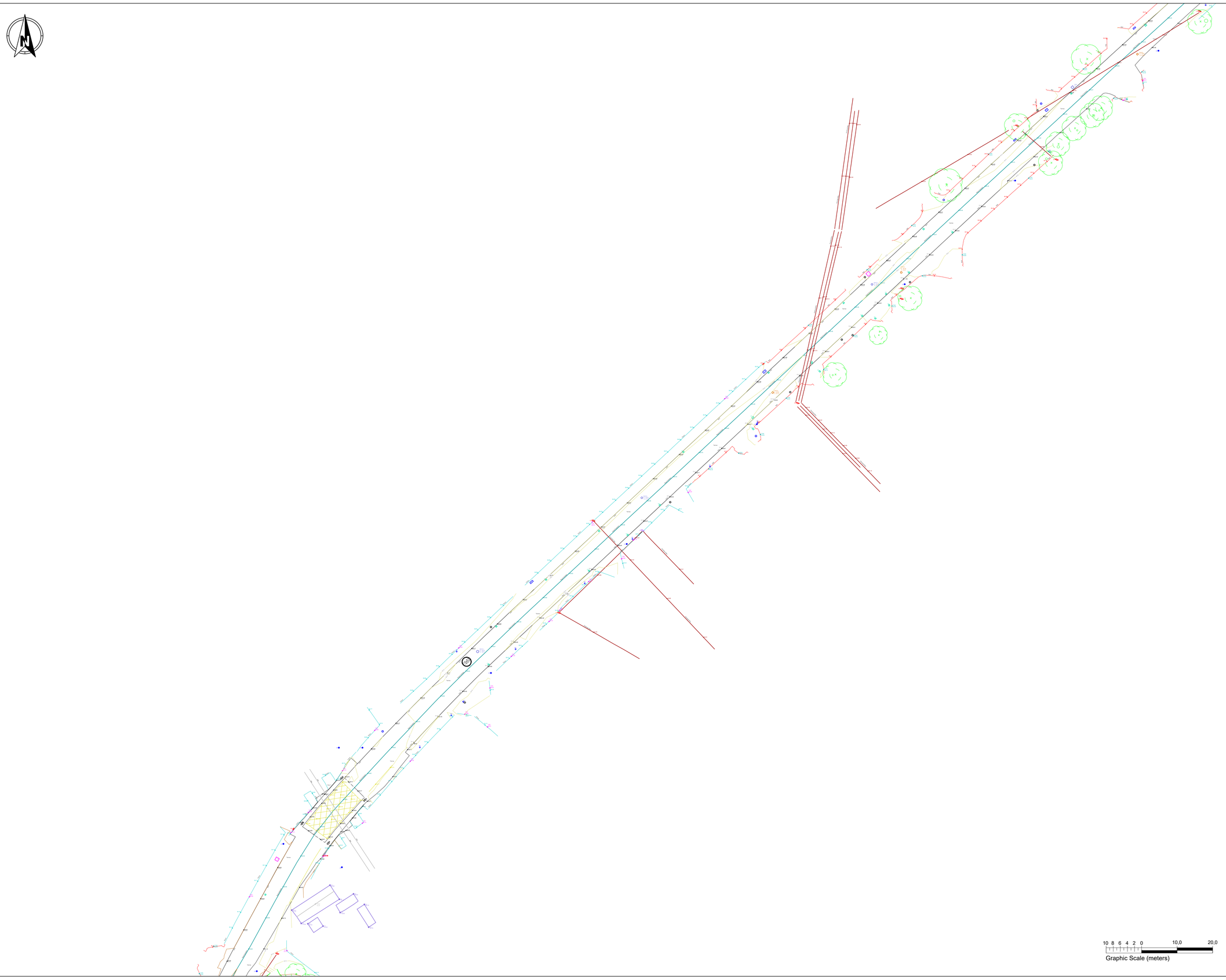

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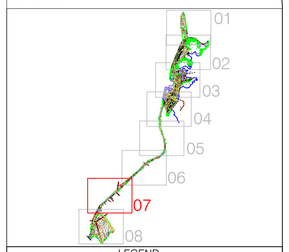

LEGEND

Street furniture & Services

Over Head Wires		Sign RS	Road Sign	GY	Gully	PBOX	Phone Box
Flowerbed		BO	Bus Stop		Kiosk	GAS	Gas Cover
Pipe		BD	Bollard		Duct	CPBox	C P Box
Lift		BEA	Beacon		Bench Seat		
Barrier		CH	Coalhole Cover	U/G Vent	U/G Car Park Vent		
Pump		BH	Bore Hole	BIN	Waste Bin		
Trial Pit		EP	Electricity Pole	Hyd	Hydrant		
Bus/Tram Shelter		TP	Telegraph pole	FH	Fire Hydrant		
Postbox		OCS	OCS Pole	EBOX	ESB Box		
Valve - General		CP	CCTV Camera Pole	ICE	ESB Inspection Cover		
Water Valve		LS	Lamp Post	TFB	Traffic Control Box		
Unknown Valve		LUAS	LUAS Technical Cubicle		Gas Valve		
FMH	Foul Manhole		Ticket Vending Machine		Sluice Valve		
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Top of Slope					
Ditch					
Water Edge / Lake / Pond					
Hedge / Trees Drip Line / Vegetation					
Tree Coniferous		Tree Deciduous			

Golf

FWAY	Fair Way
GREEN	Green
TBOX	Tee Box

Other

S1	Survey Station
	Photo point
TOT	Top of Tree

Built Features

Roads & Road Markings

Building	Fence			Spot Level	
Edge of Road	Gate			Floor Level	
Kerb Bottom	Road Centreline			Apex Height	
Kerb Top	Hoarding			Eaves Height	
Bridge Abutment	Property Line			Parapet Height	
Bridge Deck	Road Scar			Soffit Elevation	
Bridge Parapet	Ramp			Step Level	
Building Facade	Wall / Retaining Wall			Building Canopy / Roof / Overhang	
Footpath / Platform Train & Tram	Railway / Tram Rail / Grating			Track	
Damp Proof Course / Verge	Top of Wall			Concrete Pad	
Bridge Pier / Wall & Gate Pillar / LUAS Trackbed	Top of Fence				
Cycleway / Private Landing Area					

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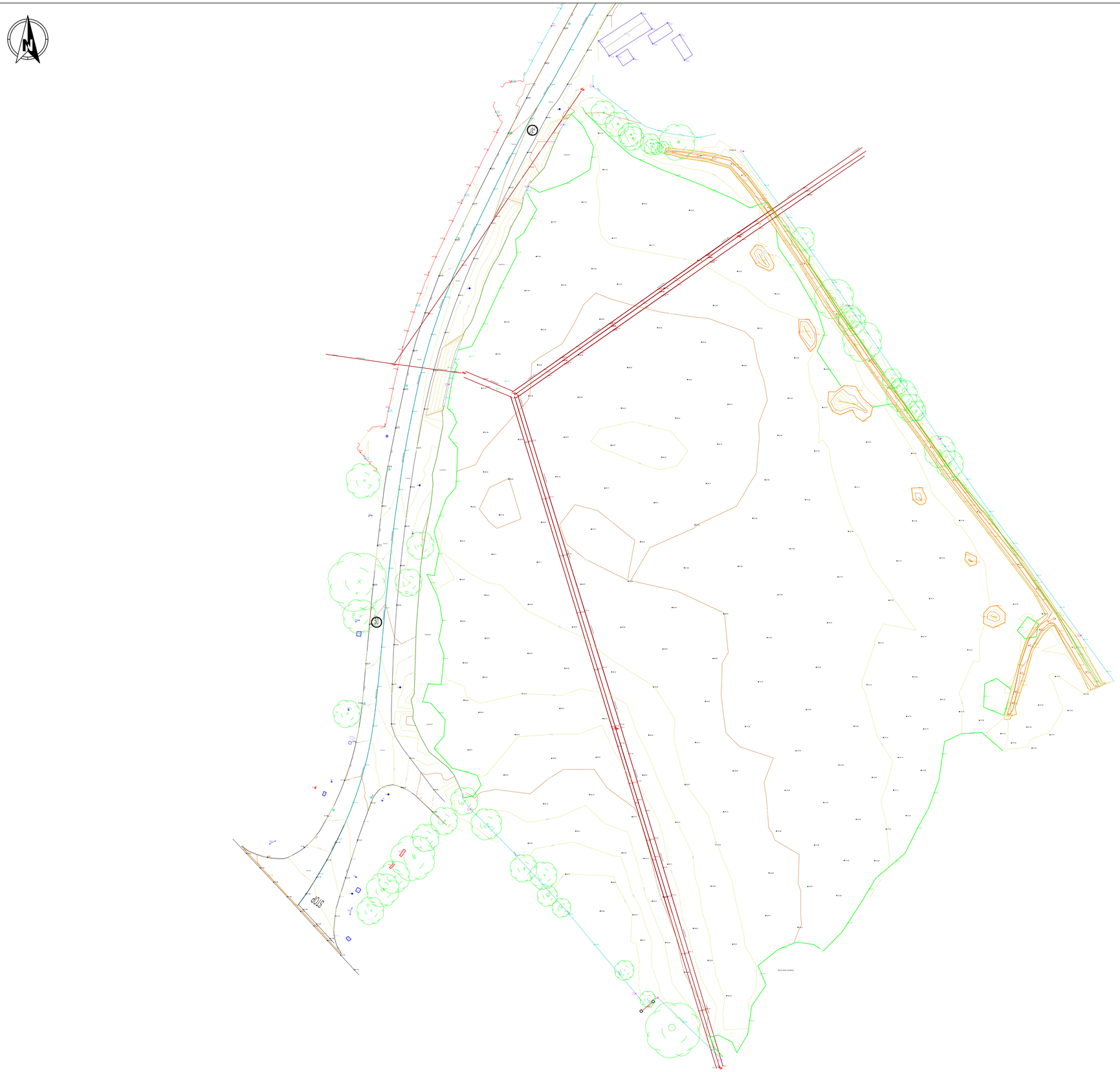

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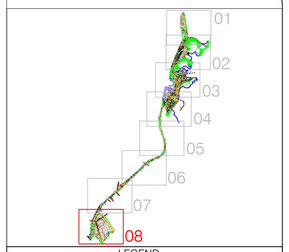

LEGEND

Street furniture & Services

5.12	Over Head Wires	Sign	Road Sign	GY	Gully	PBOX	Phone Box
5.12	Flowerbed	BS	Bus Stop		Kiosk	GAS	Gas Cover
5.12	Pipe	BO	Bollard		Duct	CPBox	C P Box
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5.12	Trial Pit	EP	Electricity Pole	Hyd	Hydrant		
5.12	Bus/Tram Shelter	TP	Telegraph pole	FH	Fire Hydrant		
5.12	Postbox	OCS	OCS Pole	EBOX	ESB Box		
	Valve - General	CP	CCTV Camera Pole	ICE	ESB Inspection Cover		
	Water Valve	LS	Lamp Post	TFB	Traffic Control Box		
	Unknown Valve	LUAS	LUAS Technical Cubicle		Gas Valve		
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ICEM	Eircom Inspection Cover		Rodding Eye	PCB	Pedestrian Crossing Button		Washout

Natural Features

5.12	Contours Lines	WL	Water Level	FWAY	Fair Way
5.12	Surface Change	DWN	Crown Level	GREEN	Green
5.12	Land Drain	IL	Invert level	TBOX	Tee Box
5.12	Bottom of Slope	BL	Bed Level		
5.12	Top of Slope				
5.12	Ditch				
5.12	Water Edge / Lake / Pond				
5.12	Hedge / Trees Drip Line / Vegetation				
	Tree Coniferous		Tree Deciduous	TOT	Top of Tree

Golf

Other

		S1	Survey Station
			Photo point

Built Features

Roads & Road Markings

5.12	Building	5.12	Fence	S 5.12	Spot Level
5.12	Edge of Road	5.12	Gate	FL 5.12	Floor Level
5.12	Kerb Bottom	5.12	Road Centreline	APEX 5.12	Apex Height
5.12	Kerb Top	5.12	Hoarding	EV 5.12	Eaves Height
5.12	Bridge Abutment	5.12	Property Line	PAR 5.12	Parapet Height
5.12	Bridge Deck	5.12	Road Scar	SOFF 5.12	Soffit Elevation
5.12	Bridge Parapet	5.12	Ramp	STR 5.12	Step Level
5.12	Building Facade	5.12	Wall / Retaining Wall		Building Canopy / Roof / Overhang
5.12	Footpath / Platform Train & Tram	5.12	Railway / Tram Rail / Grating	5.12	Track
5.12	Damp Proof Course / Verge	TOW 5.12	Top of Wall	CONC	Concrete Pad
5.12	Bridge Pier / Wall & Gate Pillar / LUAS Trackbed	TOF 5.12	Top of Fence		
5.12	Cycleway / Private Landing Area				

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Drawing No.: 1607D-25-002 | **8 of 8**

Scale: 1:500 (on A1)

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10 8 6 4 2 0 10,0 20,0
Graphic Scale (meters)

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Appendix C – Existing Hodson Bay Hotel Drainage Layout

LEGEND : (PARKING)

EXISTING CAR PARKING SPACES – TOTAL 132

(ABOVE FIGURES INCLUDE 44 No CAR PARKING SPACES AT SHORE)

PROPOSED NEW CAR PARKING SPACES PROVIDED = 68

TOTAL CAR PARKING SPACES PROVIDED TO HOTEL = 200

ALL CAR PARKING SPACES PROVIDED – 2.5m X 5.0m
6m WIDE AISLES – 100mm WIDE THERMOPLASTIC MARKING MATERIAL

SURFACE SPECIFICATION (ROADS + PARKING)

35mm OF 10mm AGGREGATE SIZE DENSE BITUMEN MACADAM WEARING COURSE IN ACCORDANCE WITH TABLE 9/3 OF D.O.E. SPECIFICATION FOR ROAD WORKS

50mm OF 20mm AGGREGATE SIZE DENSE BITUMEN MACADAM BASE COURSE IN ACCORDANCE WITH TABLE 9/1 OF D.O.E. SPECIFICATION FOR ROAD WORKS

225mm CLAUSE 804 MATERIAL (CRUSHED STONE)

CLAUSE 616 GENERAL FILL MATERIAL IN ACCORDANCE WITH D.O.E. SPECIFICATION FOR ROAD WORKS COMPACTED IN MAXIMUM 225mm DEEP LAYERS (OR CLAUSE 803 APPROVED)

NOTES:

ALL TELEPHONE, PUBLIC LIGHTING, CABLE T.V., E.S.B. SERVICES ETC. TO BE LAID UNDERGROUND IN 100mm DIA./125mm DIA. P.V.C. DUCTS WITH PULL WIRES IN ACCORDANCE WITH SERVICE SUPPLIERS DETAILS AND SPECIFICATION (ALLOW FOR INSPECTION MANHOLES AS NECESSARY)

ALL SEWER PIPES WITH LESS THAN 1200MM COVER IN ROADS AND 600MM ELSEWHERE TO BE SURROUNDED IN MINIMUM 150MM THICK CONCRETE (GRADE 35N/20)

THIS DRAWING TO BE READ IN CONJUNCTION WITH ARCHITECTS DRAWINGS
EXACT FINISHED LEVELS TO BE CONFIRMED WITH ARCHS DRAWINGS AND ON SITE

ALL SURFACE WATER PIPES FROM ROAD GULLIES TO MAIN SEWER TO BE 150MM DIA. P.V.C. UNLESS NOTED OTHERWISE

CONCRETE ANCHOR BLOCKS TO BE PROVIDED AT ENDS, AND ALL DIRECTIONAL CHANGES OF WATERMAIN

ALL MANHOLE COVERS TO BE LOADING CLASS D400 AND TO BE LOCKABLE
ALL GULLY GRATINGS TO BE LOADING CLASS C250 IN ACCORDANCE WITH EN124 AND TO BE LOCKABLE – GULLIES PROVIDED AT 1 PER 200sq.m.

ALL SEWER PIPES UP TO AND INCLUDING 300MM DIA. TO BE u.P.V.C.
ALL SEWER PIPES ABOVE 300MM DIA. TO BE CONCRETE SPIGOT AND SOCKET

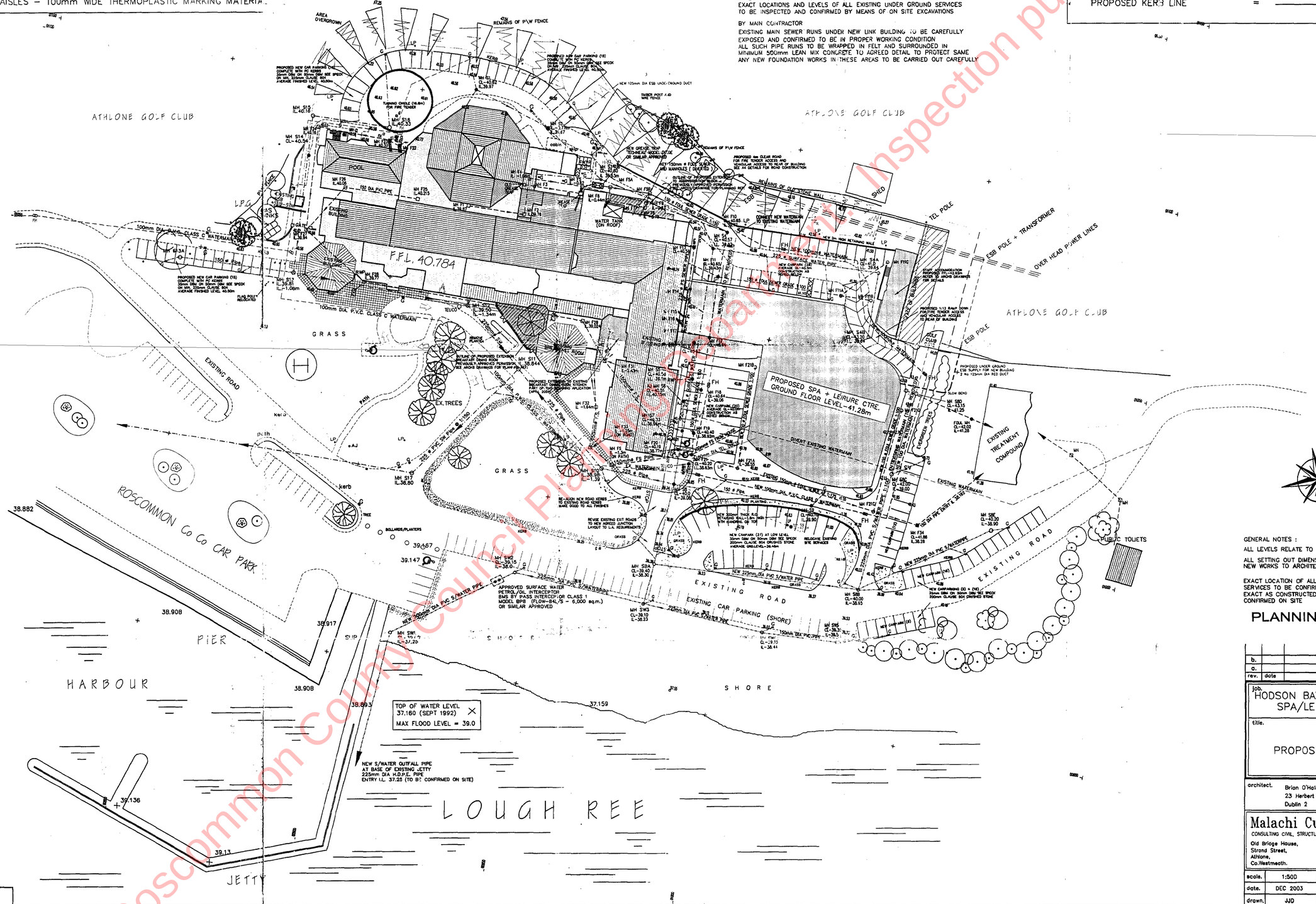
WATERMAIN TO BE 100MM DIA. P.V.C. CLASS 'C', AND OVERLAID WITH A TAPE CONTAINING A TRACER WIRE
EXACT LOCATIONS AND LEVELS OF ALL EXISTING UNDER GROUND SERVICES TO BE INSPECTED AND CONFIRMED BY MEANS OF ON SITE EXCAVATIONS

BY MAIN CONTRACTOR

EXISTING MAIN SEWER RUNS UNDER NEW LINK BUILDING TO BE CAREFULLY EXPOSED AND CONFIRMED TO BE IN PROPER WORKING CONDITION
ALL SUCH PIPE RUNS TO BE WRAPPED IN FELT AND SURROUNDED IN MINIMUM 500mm LEAN MIX CONCRETE TO AGREED DETAIL TO PROTECT SAME
ANY NEW FOUNDATION WORKS IN THESE AREAS TO BE CARRIED OUT CAREFULLY

LEGEND : (SERVICES)

NEW EXTENSION SHOWN THUS	=	
100mm ø CLASS "C" WATERMAIN	=	
FIRE HYDRANT/SLUICE VALVE	=	SV FH
U-GROUND ESB (+P. LIGHTING)	=	LP (Lamp Post)
U-GROUND TELECO	=	
SURFACE WATER SEWER LINE	=	
FOUL SEWER LINE	=	
ROAD GULLY	=	G
EXISTING KERB LINE	=	
PROPOSED KERB LINE	=	



GENERAL NOTES :

ALL LEVELS RELATE TO POOL BEG ORDNANCE DATUM

ALL SETTING OUT DIMENSIONS FOR EXISTING OR PROPOSED NEW WORKS TO ARCHITECTS DRAWINGS

EXACT LOCATION OF ALL EXISTING UNDER GROUND SERVICES TO BE CONFIRMED ON SITE BY MAIN CONTRACTOR
EXACT AS CONSTRUCTED LEVELS AND DIMENSIONS TO BE CONFIRMED ON SITE

PLANNING DRAWING

rev.	date	amendment	by.
b.			
a.			

job.
HODSON BAY HOTEL ATHLONE
SPA/LEISURE CENTRE

title.
PROPOSED SITE LAYOUT

architect. Brian O'Halloran & Associates
23 Herbert Place
Dublin 2

Malachi Cullen & Partners
CONSULTING CIVIL, STRUCTURAL ENGINEERS & PROJECT MANAGERS
Old Bridge House,
Strand Street,
Athlone,
Co.Westmeath.
Tel: (0902) 74264.
Fax: (0902) 78422.
E-mail : info@mcullen.ie

scale.	1:500	drawing number.	rev.
date.	DEC 2003	03-079-02	
drawn.	JJD		

CAD File Ref. No.

Roscommon County Council Planning Inspection purposes only

04-0

NOTES:

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U-GROUND TELECO	=	
SURFACE WATER SEWER LINE	=	
FOUL SEWER LINE	=	01100
ROAD GULLY	=	G
EXISTING KERB LINE	=	
PROPOSED KERB LINE	=	

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6m WIDE AISLES – 100mm WIDE THERMOPLASTIC MARKING MATERIAL

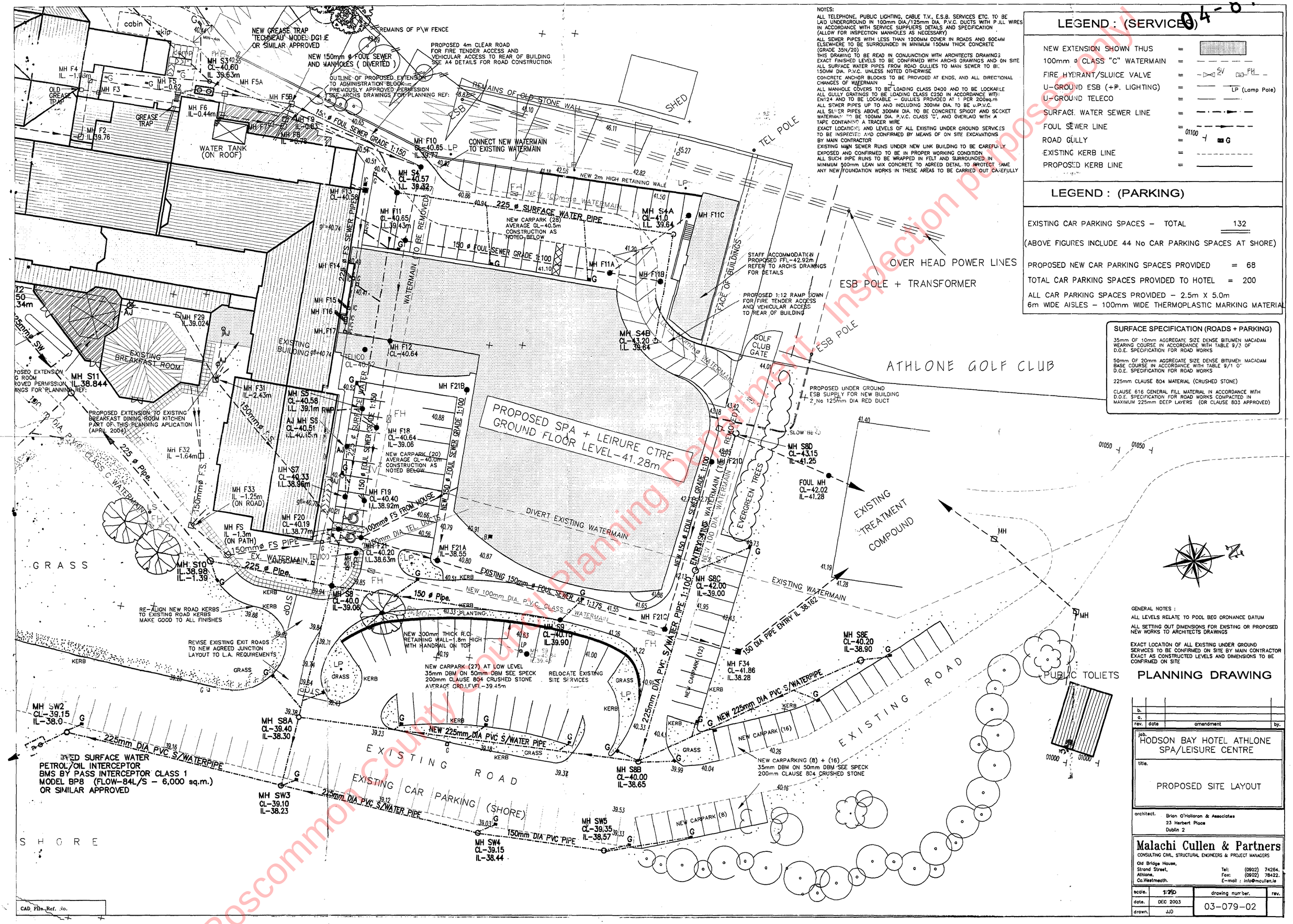
SURFACE SPECIFICATION (ROADS + PARKING)

35mm OF 10mm AGGREGATE SIZE DENSE BITUMEN MACADAM WEARING COURSE IN ACCORDANCE WITH TABLE 9/3 OF D.O.E. SPECIFICATION FOR ROAD WORKS

50mm OF 20mm AGGREGATE SIZE DENSE BITUMEN MACADAM BASE COURSE IN ACCORDANCE WITH TABLE 9/1 OF D.O.E. SPECIFICATION FOR ROAD WORKS

225mm CLAUSE 804 MATERIAL (CRUSHED STONE)

CLAUSE 616 GENERAL FILL MATERIAL IN ACCORDANCE WITH D.O.E. SPECIFICATION FOR ROAD WORKS COMPACTED IN MAXIMUM 225mm DEEP LAYERS (OR CLAUSE 803 APPROVED)



GENERAL NOTES :

ALL LEVELS RELATE TO POOL BEG ORDNANCE DATUM

ALL SETTING OUT DIMENSIONS FOR EXISTING OR PROPOSED NEW WORKS TO ARCHITECTS DRAWINGS

EXACT LOCATION OF ALL EXISTING UNDER GROUND SERVICES TO BE CONFIRMED ON SITE BY MAIN CONTRACTOR EXACT AS CONSTRUCTED LEVELS AND DIMENSIONS TO BE CONFIRMED ON SITE

PLANNING DRAWING

rev.	date	amendment	by.
b.			
a.			

job.
HODSON BAY HOTEL ATHLONE
SPA/LEISURE CENTRE

title.
PROPOSED SITE LAYOUT

architect. Brian O'Halloran & Associates
23 Herbert Place
Dublin 2

Malachi Cullen & Partners
CONSULTING CIVIL, STRUCTURAL ENGINEERS & PROJECT MANAGERS
Old Bridge House,
Strand Street,
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E-mail : info@mcullen.ie

scale.	1:250	drawing number.	rev.
date.	DEC 2003	03-079-02	
drawn.	JJD		

CAD File Ref. No.

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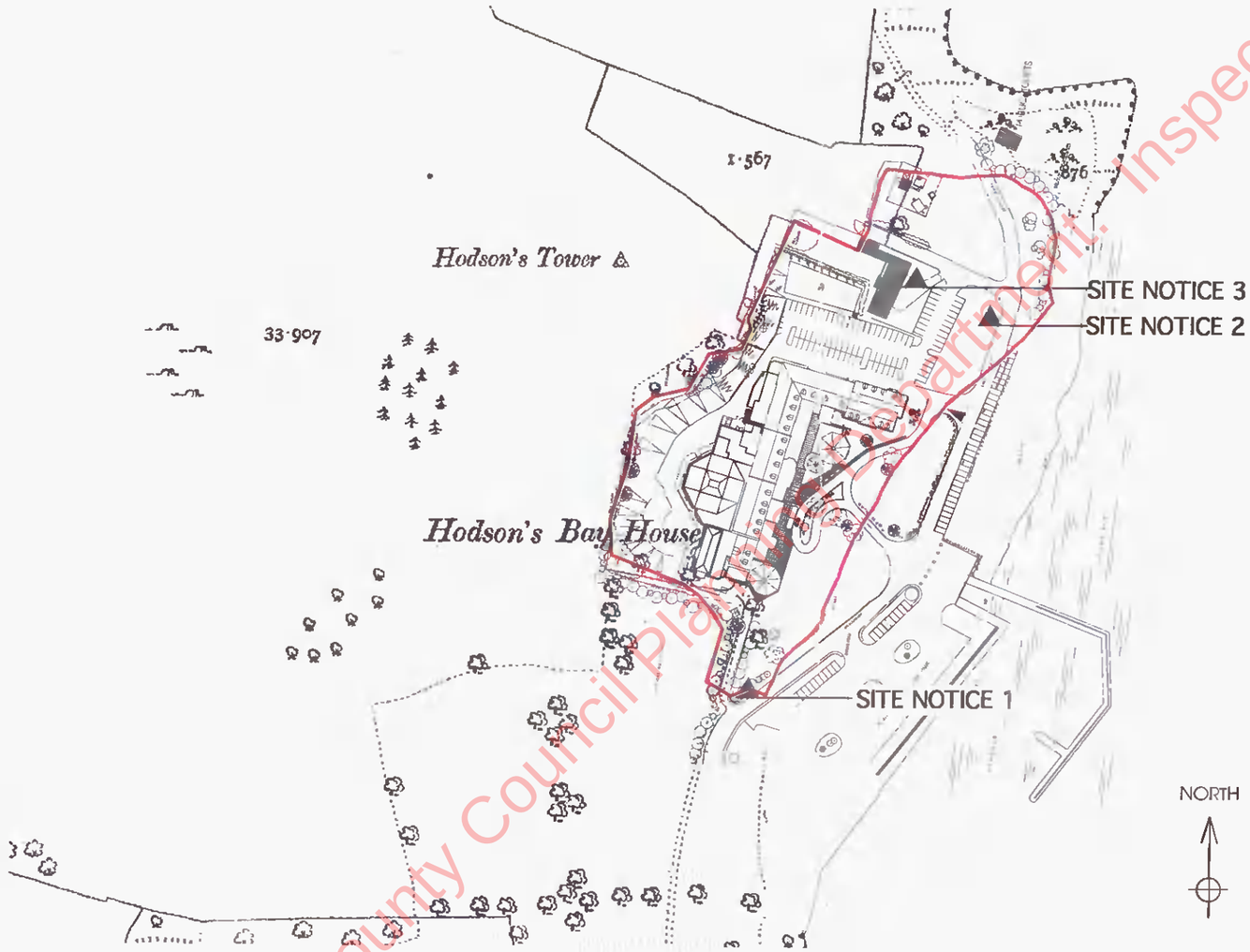

PLANNING APPLICATION

Revision	Description	Date	By	Chkd

BRIAN O' HALLORAN & ASSOCIATES
ARCHITECTS & PROJECT MANAGERS

Project: SPA / LEISURE CENTRE

Client: HODSON BAY HOTEL

Drawing Title: SITE CONTEXT MAP WITH SITE NOTICE LOCATIONS

Job No: 03.47
Drwg No: (PP) 010
Rev:

Scale: 1:2500
Drawn By: GERALD ROGERS
Checked By: Cyril O'Neill
Date: APRIL 2004

19 HERBERT PLACE
DUBLIN 2
IRELAND
TEL: 353-1 676 640
FAX: 353-1 676 7963
EMAIL: firstname.lastnam@boarch.ie

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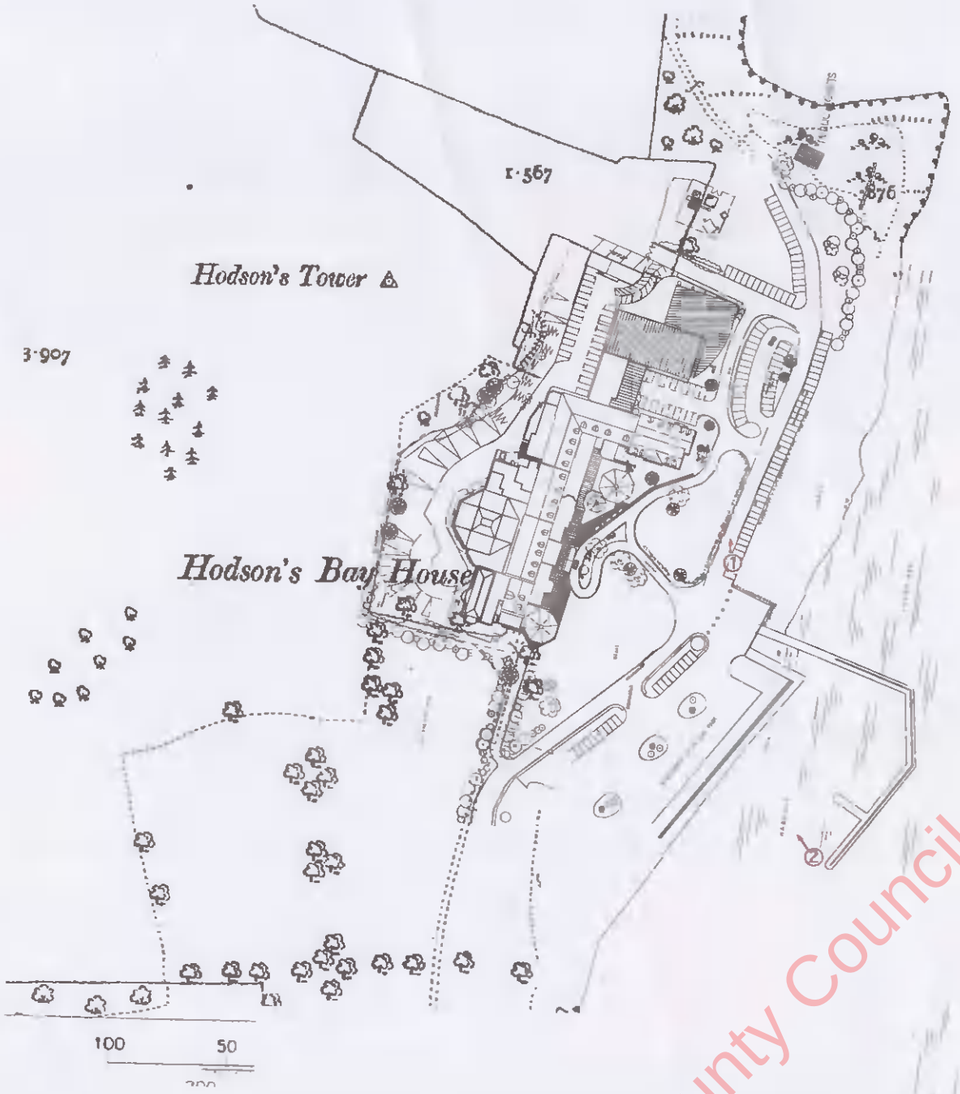

NORTH

KEY

location of viewpoints for photomontage

Revision	Description	Date	By	Chkd

BRIAN O'HALLORAN & ASSOCIATES
ARCHITECTS & PROJECT MANAGERS
23 HERBERT PLACE
DUBLIN 2
IRELAND
TEL +353-1-76401
FAX +353-1-6762963
E-MAIL firstname.lastname@bohaa.ie

Project: SPA / LEISURE CENTRE

Client: HODSON BAY HOTEL

Drawing Title: PHOTOMONTAGE VEIWPOINT LOCATIONS MAP

Job No	Dwg No	Rev
03.47	(PP)011	

Scale	Drawn By
1:2500	GERALD ROGERS
Date: APRIL 2004	Checked By: Cyril O Neill

Roscommon County Council Planning Department. Inspection purposes only!

0 - 813

PLANT SPECIES LIST

Screen Planting to Sewage Treatment Works
14 -16cm.g, 16 -18cm.g trees
Alnus glutinosa - Alder
Fraxinus excelsior - Ash
Betula pubescens - Birch
Fraxinus excelsior - Ash
Crateagus monogyna - Hawthorn - 5m Height

Hedge Planting
Fagus sylvatica - Beech
1.2m high feathered whip hedge
@ 6no. plants per linm in double staggered row

DECORATIVE SHRUB PLANTING
2.0Lt + 3.0Lt pot size @ 4no and 6no per m2

Clematis sp.
Cotinus 'Atropurpurea' "Smoke Bush"
Dicentra 'Alba'
Digitalis 'Albiflora'
Geranium 'Johnstons Blue' "Geranium"
Hedera helix ' Hibernica'
Lavandula angustifolia 'Hidcote' "Lavander"
Perovskia atriplicifolia 'Blue Spire' "Russian Sage"
Prunus 'Otto Lyken' - Laurel
Sarcococca var. humilis "Christmas Box"

Winter Garden
Aralia elata
Camellia species
Fatsia japonica
Jasminium nudiflorum
Myrtus communis
Knipofia galpinii
Phormium tenax
Sarcococca species

LEGEND

Existing Trees

Trees to be removed

Existing grassed areas/ ornamental planting

Proposed Specimen Trees
14 - 16cmg, 16 - 18cmg

Propsed Hedge Planting

Shrub & Groundcover Planting

Grass Seeding

Winter Garden Planting - refer to species list

High Quality Paving Units

04-813

Mitchell + Associates
architects
landscape architects
master planners
Tower 4,
Fumbally Court,
Fumbally Lane,
Dublin 8.
Tel: 01 454 5066
Fax: 01 454 5065
Email: info@mitchellassoc.net

client: Hodson Bay Hotel

project: Extension to the Hodson Bay Hotel

drawing: Landscape Masterplan

status: Planning

scale	date	drawn by	job no	dwg no	revision
1.500	14.04.04	ME	LHOD.001	101	E

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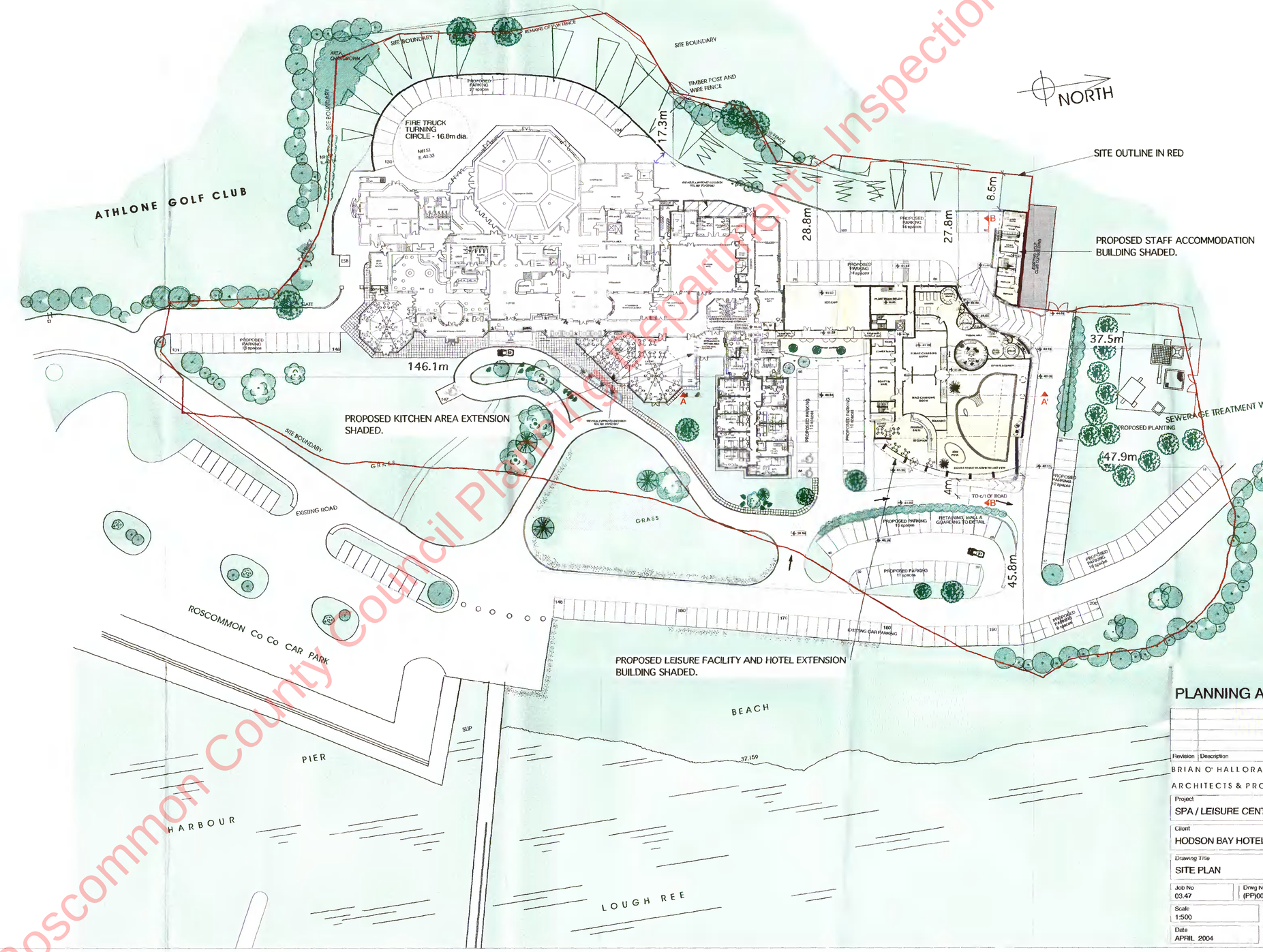

PLANNING APPLICATION

Revision	Description	Date	By	Chkd

BRIAN O' HALLORAN & ASSOCIATES
ARCHITECTS & PROJECT MANAGERS

Project: SPA / LEISURE CENTRE

Client: HODSON BAY HOTEL

Drawing Title: SITE PLAN

Job No: 03.47 | Drwg No: (PP)001 | Rev.

Scale: 1:500 | Drawn By: Mark Carter

Date: APRIL 2004 | Checked By: Cyril O'Neill

23 HERBERT PLACE
DUBLIN 2
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TEL: +353-1-6764017
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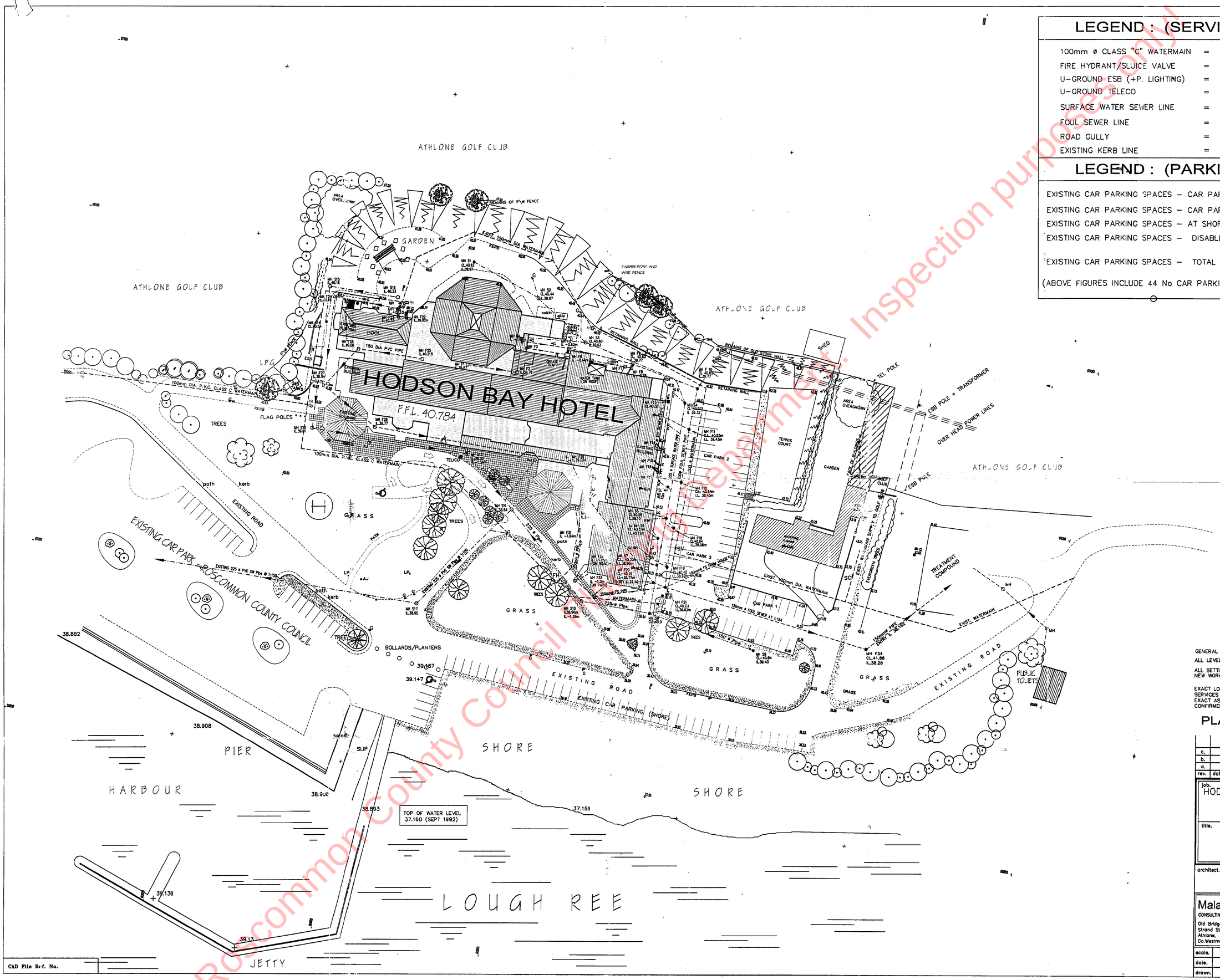
E-MAIL: firstname.lastname@boha.ie

Roscommon County Council Planning Department - Inspection purposes only!



LEGEND : (SERVICES)

100mm ø CLASS "C" WATERMAIN	=	
FIRE HYDRANT/SLUICE VALVE	=	SV FH
U-GROUND ESB (+P. LIGHTING)	=	
U-GROUND TELECO	=	
SURFACE WATER SEWER LINE	=	
FOUL SEWER LINE	=	
ROAD GULLY	=	G
EXISTING KERB LINE	=	

LEGEND : (PARKING)

EXISTING CAR PARKING SPACES – CAR PARK 1 =	25
EXISTING CAR PARKING SPACES – CAR PARK 2 =	62
EXISTING CAR PARKING SPACES – AT SHORE LINE =	44
EXISTING CAR PARKING SPACES – DISABLED	1
EXISTING CAR PARKING SPACES – TOTAL	132

(ABOVE FIGURES INCLUDE 44 No CAR PARKING SPACES AT SHORE)

GENERAL NOTES :

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ALL SETTING OUT DIMENSIONS FOR EXISTING OR PROPOSED NEW WORKS TO ARCHITECTS DRAWINGS

EXACT LOCATION OF ALL EXISTING UNDER GROUND SERVICES TO BE CONFIRMED ON SITE BY MAIN CONTRACTOR EXACT AS CONSTRUCTED LEVELS AND DIMENSIONS TO BE CONFIRMED ON SITE

PLANNING DRAWING

rev.	date	amendment	by.
c.			
b.			
a.			

job. HODSON BAY HOTEL ATHLONE SPA/LEISURE CENTRE

title. SITE SURVEY

architect. Brian O'Halloran & Associates
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Malachi Cullen & Partners
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scale.	1:500	drawing number.	rev.
date.	DEC 2003	03-079-01	
drawn.	JJD		

CAD File Ref. No.

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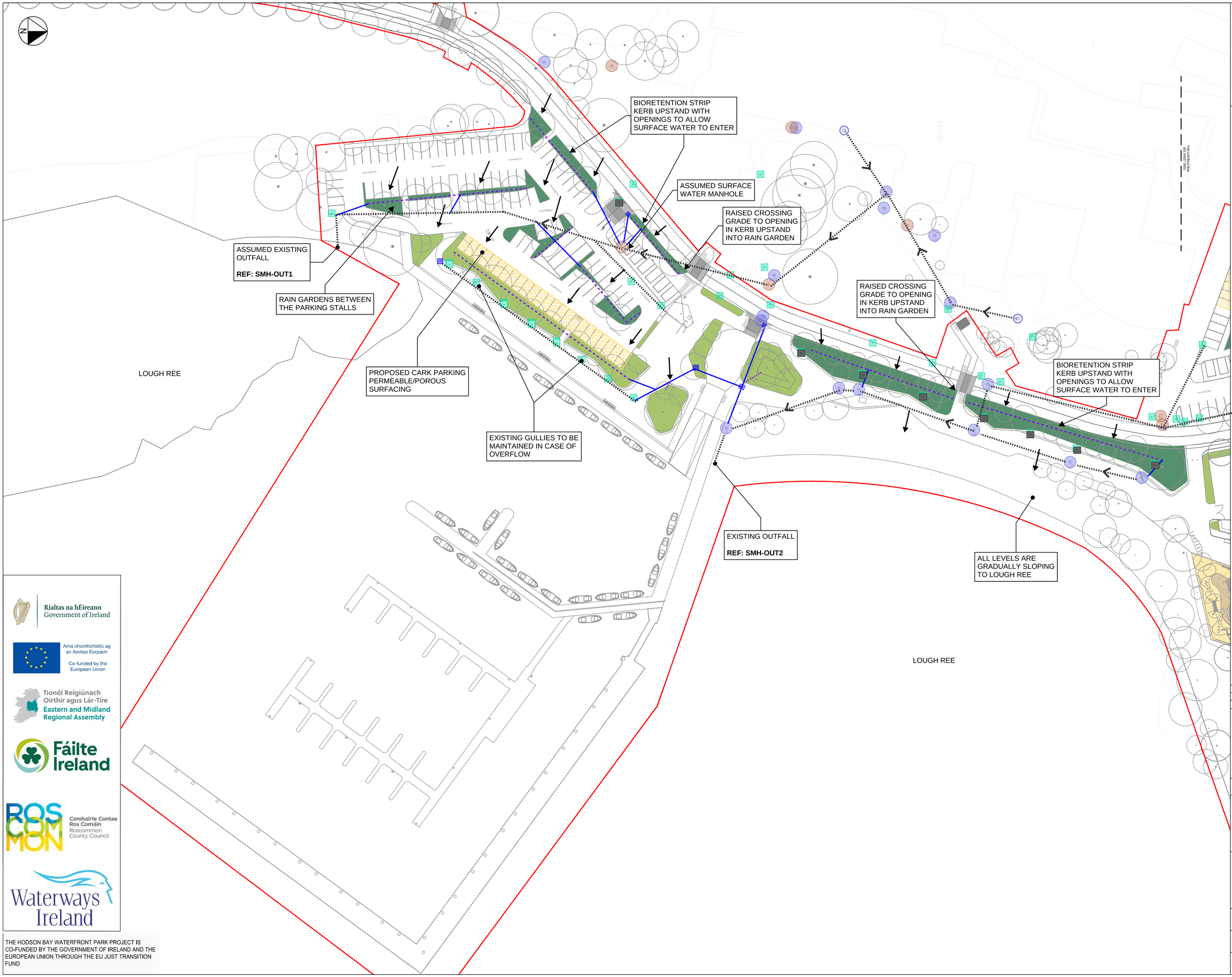
Appendix D – Surface Water Drainage Layout



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4. ALL DISCREPANCIES SHOULD BE REPORTED TO C.A./E.A. PRIOR TO THE COMMENCEMENT OF WORKS.

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KEY:

- SITE BOUNDARY
- EXISTING SURFACE WATER MANHOLE
- EXISTING UNKNOWN DRAINAGE MANHOLE
- EXISTING GULLY TO BE RETAINED
- EXISTING GULLY TO BE ABANDONED
- ASSUMED EXISTING SURFACE WATER PIPE ROUTES
- PROPOSED SURFACE WATER MANHOLE
- PROPOSED INSPECTION CHAMBER
- PROPOSED GULLY
- PROPOSED SURFACE WATER PIPE
- PROPOSED PERFORATED PIPE
- PROPOSED PERMEABLE / POROUS SURFACING
- PROPOSED TREE PITS
- PROPOSED RAIN GARDEN
- PROPOSED BIORETENTION SYSTEM
- PROPOSED GRADING DIRECTION
- FLOW DIRECTION

NOTES:

1. THIS DRAWING WAS PRODUCED USING THE FOLLOWING INFORMATION:
   1.1 LANDSCAPE ARCHITECT OKRA PUBLIC REALM DESIGN DATED JULY 2026.
   1.2 ARCHITECT RKD DESIGN CONCEPT LAYOUTS DATED JUNE 2026.
   1.3 LEVEL PLANS PREPARED BY CIVIC DATED JUNE 2026.
   1.4 HODSON BAY HOTEL SITE LAYOUT PREPARED BY MALACHI CULLEN & PARTNERS DATED DECEMBER 2003.
2. THE POSITIONS OF EXISTING SERVICES SHOWN IN THESE DRAWINGS ARE INDICATIVE ONLY BASED ON AVAILABLE RECORDS. THE LOCATION, CONDITION AND CAPACITY IS TO BE VERIFIED WITH SURVEY.
3. SURFACE WATER IS TO DISCHARGE TO LOUGH REE VIA EXISTING OUTFALLS. EXISTING OUTFALL LOCATIONS AND CAPACITIES ARE TO BE VERIFIED BY SURVEY.
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6. SURFACE WATER DRAINAGE IS DESIGNED IN ACCORDANCE WITH SUSTAINABLE URBAN DRAINAGE SYSTEMS (SuDS) PRINCIPLES. SuDS FEATURES INCLUDING PERMEABLE PAVING, RAIN GARDENS, TREE PITS AND BIORETENTION STRIPS SHALL BE MAINTAINED IN PERPETUITY BY THE RESPONSIBLE PARTY IN ACCORDANCE WITH AN AGREED MAINTENANCE MANAGEMENT PLAN.

DATE	REV	DESCRIPTION	DRAWN	CHKD
15.07.26	1	PLANNING	MF	EB
05.06.26	0	INFORMATION	EB	KW

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PROJECT

HODSON BAY
ROSCOMMON COUNTY COUNCIL

TITLE

PROPOSED SURFACE WATER
SHEET 1

DRAWING STATUS	STATUS CODE
PLANNING	P3

CE PROJECT No.	SCALE @ A1	DATE CREATED	DRAWN	CHECKED
31022	1:500	05.06.26	EB	KW

DRAWING No.	REV
31022-DR-CIV-CE-30001	1

Rialtas na hÉireann
Government of Ireland

Arna chomhchistiú ag an Aontas Eorpach
Co-funded by the European Union

Tionól Reigiúnach Oirthir agus Lár-Tíre
Eastern and Midland Regional Assembly

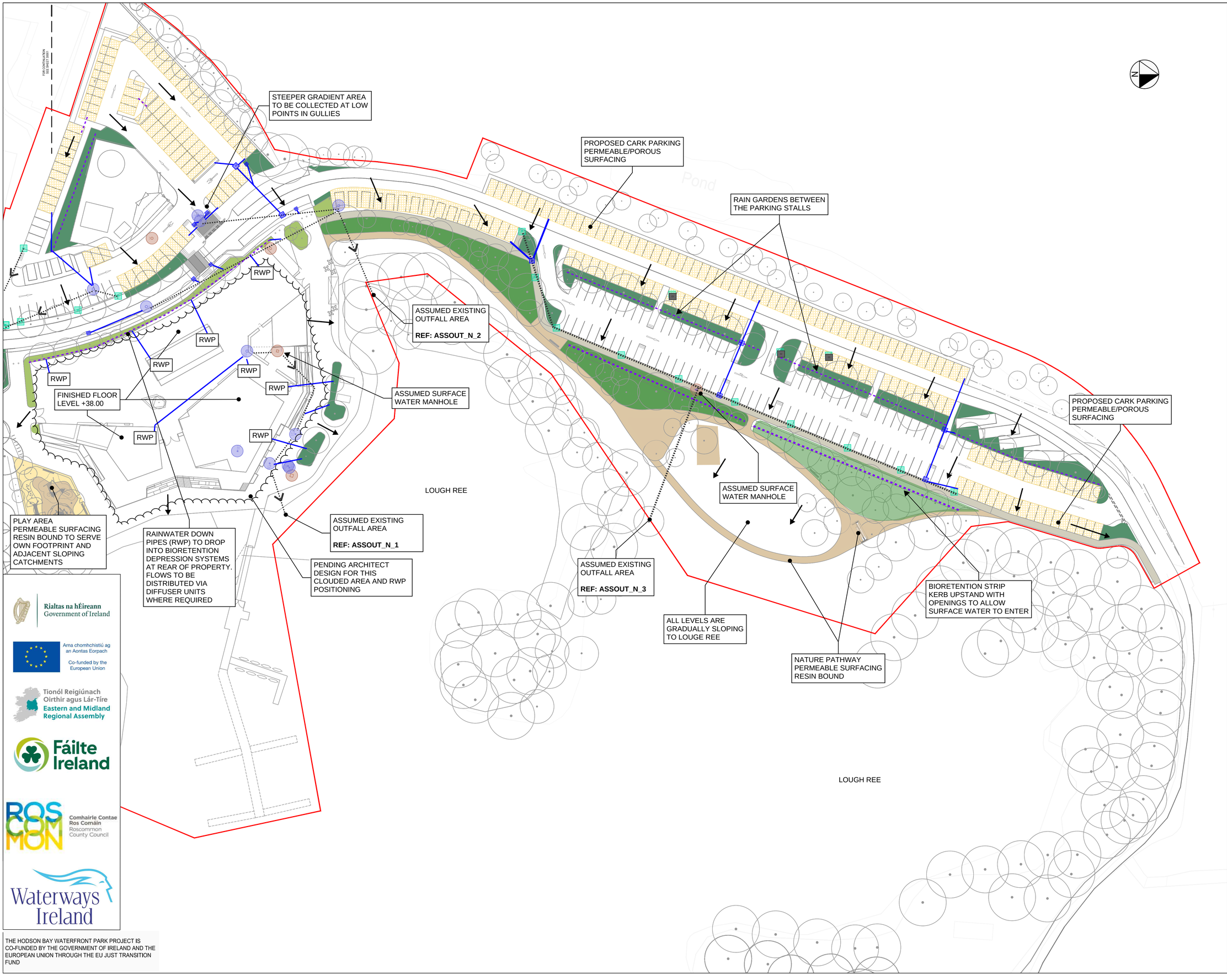
Fáilte Ireland

Comhairle Contae Ros Comáin
Roscommon County Council

Waterways Ireland

THE HODSON BAY WATERFRONT PARK PROJECT IS CO-FUNDED BY THE GOVERNMENT OF IRELAND AND THE EUROPEAN UNION THROUGH THE EU JUST TRANSITION FUND

FILE LOCATION PATH: P:\CIVIC IRELAND\PROJECTS HOT\31022 HODSON BAY\004 BIM\CIVIL\SI\DRAWINGS\31022-CIV-XX-XX-DR-C-31000 - SW.DWG



Rialtas na hÉireann
Government of Ireland

Arma chomhchistiú ag an Aontas Eorpach
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Tionól Reigiúnach Oirthir agus Lár-Tíre
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- FLOW DIRECTION

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DATE	REV	DESCRIPTION	DRAWN	CHKD
15.07.26	1	PLANNING	MF	EB
05.06.26	0	INFORMATION	EB	KW

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PROJECT

HODSON BAY
ROSCOMMON COUNTY COUNCIL

TITLE

PROPOSED SURFACE WATER
SHEET 2

DRAWING STATUS	STATUS CODE
PLANNING	P3

CE PROJECT No.	SCALE @ A1	DATE CREATED	DRAWN	CHECKED
31022	1:500	05.06.26	EB	KW

DRAWING No.	REV
31022-DR-CIV-CE-30002	1

Appendix E – Landscape Architect Public Realm Plan

Legend

GENERAL

- Project area
- Height points
- Dimensions in meters
- Existing property fence
- Existing pontoon
- Water

PAVING

- **Concrete paving with exposed aggregate** Water Promenade
- **Resin bound paving** Playground, Nature Pathway
- **Permeable soft paving** Playground
- **Self bound gravel** Small plaza
- **Concrete tiles paving** Footpaths
- **Timber decking** Quay promenade
- **Permeable paving** Parking stalls
- **Asphalt** Parking lots and carriageway
- **Pedestrian crossings**
- **Tactile paving** Crossings and steps

SITE FIXTURES

- **Built-in high-quality concrete bench** Water Promenade
- **Double-sided bench** Quay Promenade
- **Bench** Nature area
- **Picnic tables** Nature Area
- **Nature play equipment** Playground
- **Bike stands**
- **Lighting** refer to lighting specialist drawings
- **Custom planter with bench** Baysport courtyard
- **High quality concrete steps** with integrated planters Baysport terrace
- **Fence and gates** Baysport

PLANTING BEDS

- **Shrubs and Perennials** Raingardens
- **Shrubs and Perennials** Public Realm
- **Shrubs and Perennials** Baysport terrace and Courtyard
- **Cut Grass** Open Lawn
- **Ornamental grass** Woodland Understorey Grass
- **Exsiting reedbeds**
- **Exsiting grass**

TREES&SHRUBS

- **Proposed large trees** Height: >10 m Refer to Trees planting plan
- **Proposed medium trees** Height: 6-10 m Refer to Trees planting plan
- **Proposed small trees & multi-stem** Height: 3-6 m Refer to Trees planting plan
- **Proposed Hedge** Height: 1-1.5 m Refer to Trees planting plan
- **Existing trees**

DRAFT

N

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-	-	-
-	-	-
-	-	-
-	-	-

CLIENT: ROSCOMMON CITY COUNCIL

Client address: IRELAND

LOCATION:

HODSON BAY

WATERSPORT AND PUBLIC REALM

HODSON BAY CO. ROSCOMMON IRELAND

DOCUMENT NAME: LANDSCAPE LAYOUT (GA)

DATE: 03-07-26

DOCUMENT CODE	STATUS	VERSION	DRAWN BY
001100	-	DRAFT	AF

PHASE	PROJECT NUMBER	SCALE	FORMAT
PLANNING	25-006	1-1000	A0

OKRA

OKRA Landschapsarchitecten
Oudegracht 23
3511 NH Utrecht
The Netherlands

TEAM / CONSULTANTS
OKRA
INGC
CIVIC

FILE NAME: OKRA_HBWP_Public Realm Basemap.dwg

Appendix F – SuDS Maintenance Schedule

Hodson Bay - SuDS Maintenance Schedule

Rev 01 - 12/06/2026

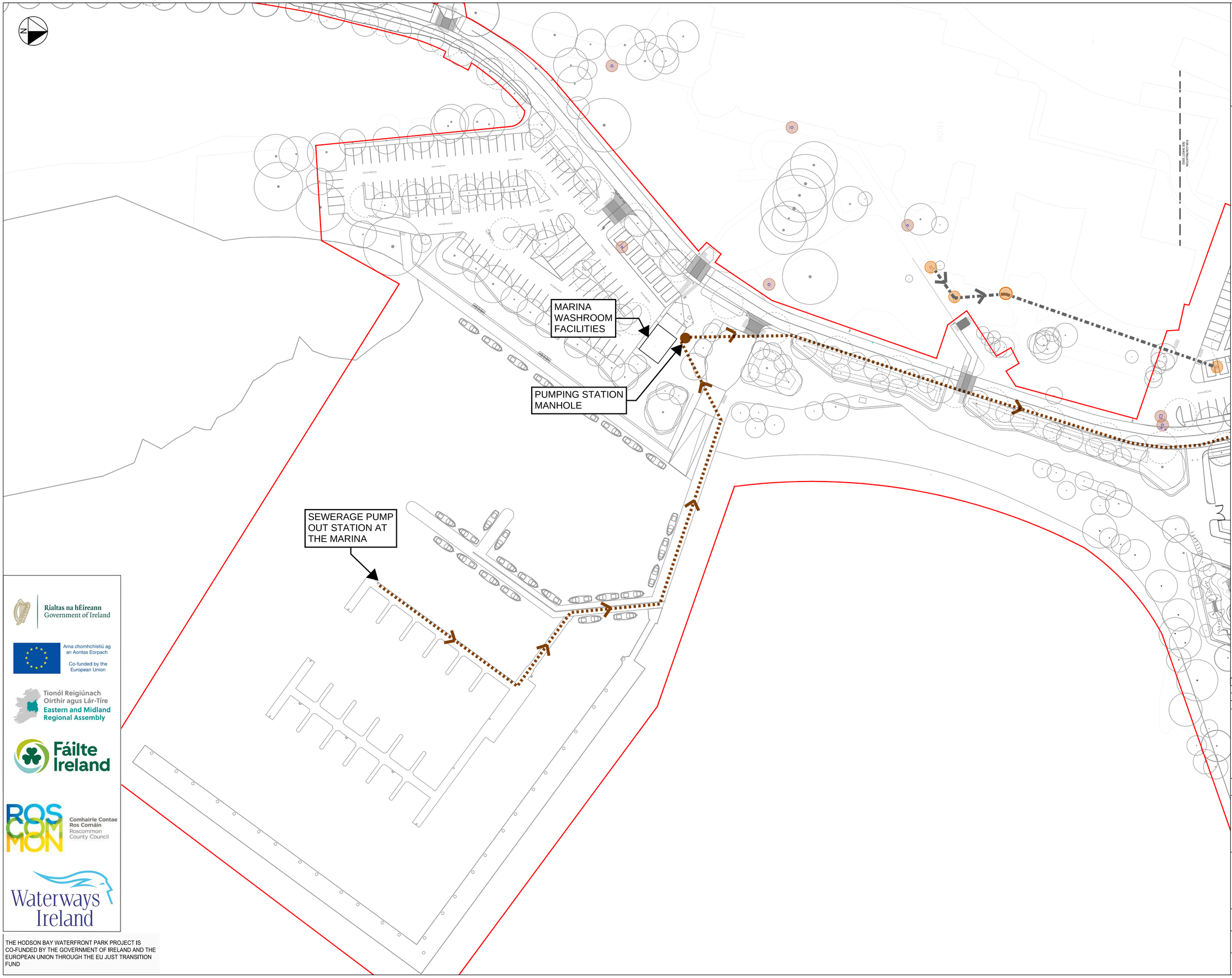
For Planning

The below table is extracted from The SuDS Manual 2015 (CIRIA C753)

Reference No.	Activity / Maintenance Schedule	Required Action	Frequency	Maintenance Responsibility
1	**Rain Gardens (Infiltration Basins)**			
	Regular maintenance	Remove litter, debris and trash	Monthly	Roscommon County Council
		Cut grass - for landscaped areas and access routes	Monthly (during growing season) or as required	
		Cut grass - meadow grass in and around basin	Half yearly: spring (before nesting season) and autumn	
		Manage other vegetation and remove nuisance plants	Monthly at start, then as required	
	Occasional maintenace	Reseed areas of poor vegetation growth	Annually, or as required	
		Prune and trim any trees and remove cuttings	As required	
		Remove sediment from pre-treatment system when 50% full	As required	
	Remedial actions	Repair erosion or other damage by reseeding or re-turfing	As required	
		Realign the rip-rap / erosion control measures	As required	
		Repair or rehabilitate inlets, outlets and overflows	As required	
		Rehabilitate infiltration surface using scarifying and spiking techniques if perforamce deteriorates	As required	
		Relevel uneven surfaces and reinstate design levels	As required	
	Monitoring	Inspect inlets, outlets and overflows for blockages, and clear if required	Monthly	
		Inspect banksides, structures, pipework etc for evidence of physical damage	Monthly	
		Inspect inlets and pre-treatment systems for silt accumulation; establish appropraite silt removal frequencies	Half yearly	
		Inspect infiltration surfaces for compaction and ponding	Monthly	
2	**Filter Drains**			
	Regular maintenance	Remove litter (including leaf litter) and debris from filter drain surface, access chambers and pre-treatment devices	Monthly (or as required)	Roscommon County Council
		Inspect filter drain surface, inlet/outlet pipework and control systems for blockages, clogging, standing water and structural damange	Monthly	
		Inspect pre-treatment systems, inlets and perforated pipework for silt accumulation, and establish appropraite silt removal frequencie	Six monthly	
		Remove sediment from pre-treatment devices	Six monthly, or as required	
	Occasional maintenance	Remove or control tree roots where they are encroaching the sites of the fitler drain, using recommended methods	As required	
		At locations with high pollution loads, remove surface geotextile and replace, and wash or replace overlying filter medium	Five yearly, or as required	
		Clear perforated pipework of blockages	As required	
3	**Tree Pits**			
	Regular maintenance	Remove litter and debris	Monthly (or as required)	Roscommon County Council
		Manage other vegetation and remove nuisance plants	Monthly (at start, then as required)	
		Inspect inlets and outlets	Inspect monthly	
	Occasional maintenance	Check tree health and amange tree appropriately	Annually	
		Remove silt build-up from inlets and surface and replace mulch as necessary	Annually, or as required	
		Water	As required (in periods of drought)	
	Monitoring	Inspect silt accumulation rates and establish appropriate removal frequencies	Half yearly	
4	**Detention Basins**			
	Regular maintenance	Remove litter and debris	Monthly	Roscommon County Council
		Cut grass – for spillways and access routes	Monthly (during growing season), or as required	
		Cut grass – meadow grass in and around basin	Half yearly (spring – before nesting season, and autumn)	
		Manage other vegetation and remove nuisance plants	Monthly (at start, then as required)	
		Inspect inlets, outlets, and overflows for blockages, and clear if required	Monthly	
		Inspect banksides, structures, pipework etc for evidence of physical damage	Monthly	
		Inspect inlets and facility surface for silt accumulation. Establish appropriate silt removal frequencies.	Monthly (for first year), then annually or as required	
		Check any penstocks and other mechanical devices	Annually	
		Tidy all dead growth before start of growing season	Annually	
		Remove sediment from inlets, outlet and forebay	Annually (or as required)	
		Manage wetland plans in outlet pool – where provided	Annually	
	Occasional maintenance	Reseed areas of poor vegetation growth	As required	
		Prune and trim any trees and remove cuttings	Every 2 years, or as required	
		Remove sediments from inlets, outlets, forebay and main basin when required	Every 5 years, or as required (likely to be minimal requirements where effective upstream source control is provided)	
	Remedial actions	Repair erosion or other damage by reseeding or re-turfing	As required	
		Realignment of rip-rap	As required	
		Repair/rehabilitation of inlets, outlets, and overflows	As required	
		Relevel uneven surfaces and reinstate design levels	As required	

Reference No.	Activity / Maintenance Schedule	Required Action	Frequency	Maintenance Responsibility
5	**Pervious Pavement**			
	Regular maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface)	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations – pay particular attention to areas where water runs onto previous surface from adjacent impermeable areas as this area is most likely to collect the most sediment	Roscommon County Council
	Occasional maintenance	Stabilise and mow contributing and adjacent areas	As required	
		Removal of weeds or management using glyphospate applied directly into the weeds by an applicator rather than spraying	As required – once per year on less frequently used pavements	
	Remedial actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50 mm of the level of the paving	As required	
		Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material	As required	
		Rehabilitation of surface and upper substructure by remedial sweeping	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging)	
	Monitoring	Initial inspection	Monthly for three months after installation	
		Inspect for evidence of poor operation and/or weed growth – if required, take remedial action	Three-monthly, 48 h after large storms in the first six months	
		Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually	
		Monitor inspection chambers	Annually	
6	**Proprietary Treatment Systems**			
	Regular maintenance	Remove litter and debris, follow product manufacturers operation and maintainance manual where provided.	Monthly or as required	Roscommon County Council
	Occasional maintenance	Inspection and monitoring	Regularly during first year of installation Every 6 months after the first year of installation (and after large storms)	
		Oil and Floatables removal	Annually, with sediment removal (and following a spill in the drainage area)	
		Sediment management. Removal of accumulated silt from system.	Annually or as required (and following a spill in the drainage area)	
	Remedial actions	Structure rehabilitation/repair	As required	

Appendix G – Foul Water Drainage Layout



STANDARD NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S AND ENGINEER'S DRAWINGS AND THE SPECIFICATIONS.
2. THIS DRAWING SHOULD NOT BE SCALED.
3. ALL DIMENSIONS ARE TO BE VERIFIED BY THE CONTRACTOR ON SITE.
4. ALL DISCREPANCIES SHOULD BE REPORTED TO C.A./E.A. PRIOR TO THE COMMENCEMENT OF WORKS.

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KEY:

- EXISTING FOUL WATER MANHOLE
- EXISTING UNKNOWN DRAINAGE MANHOLE
- EXISTING PUMPING STATION
- EXISTING FOUL WATER SEWER
- PROPOSED FOUL WATER SEWER
- FLOW DIRECTION
- PROPOSED FOUL WATER MANHOLE
- PROPOSED FOUL WATER RISING MAIN

NOTES:

1. THIS DRAWING WAS PRODUCED USING THE FOLLOWING INFORMATION:
   1.1 LANDSCAPE ARCHITECT OKRA PUBLIC REALM DESIGN DATED JULY 2026.
   1.2 ARCHITECT RKD DESIGN CONCEPT LAYOUTS DATED JUNE 2026.
   1.3 LEVEL PLANS PREPARED BY CIVIC DATED JUNE 2026.
   1.4 HODSON BAY HOTEL SITE LAYOUT PREPARED BY MALACHI CULLEN & PARTNERS DATED DECEMBER 2003
2. UISCE ÉIREANN ASSET MAPS SHOW A PUMPING STATION AND NO FOUL WATER NETWORK IN SITE VICINITY. EXISTING FOUL WATER NETWORK IS ASSUMED TO BE PRIVATE WHICH THEN CONNECTS TO PUMPING STATION.
3. THE POSITIONS OF EXISTING SERVICES SHOWN IN THESE DRAWINGS ARE INDICATIVE ONLY BASED ON AVAILABLE RECORDS. THE LOCATION, CONDITION AND CAPACITY IS TO BE VERIFIED WITH SURVEY.

DATE	REV	DESCRIPTION	DRAWN	CHKD
07.08.26	2	PLANNING	MF	EB
15.07.26	1	PLANNING	MF	EB
05.06.26	0	INFORMATION	EB	KW

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PROJECT

HODSON BAY
ROSCOMMON COUNTY COUNCIL

TITLE

PROPOSED FOUL WATER
SHEET 1

DRAWING STATUS	STATUS CODE
PLANNING	P3

CE PROJECT No.	SCALE @ A1	DATE CREATED	DRAWN	CHECKED
31022	1:500	05.06.26	EB	KW

DRAWING No.	REV
31022-DR-CIV-CE-30011	2

Rialtas na hÉireann
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Tionól Reigiúnach Oirthir agus Lár-Tíre
Eastern and Midland Regional Assembly

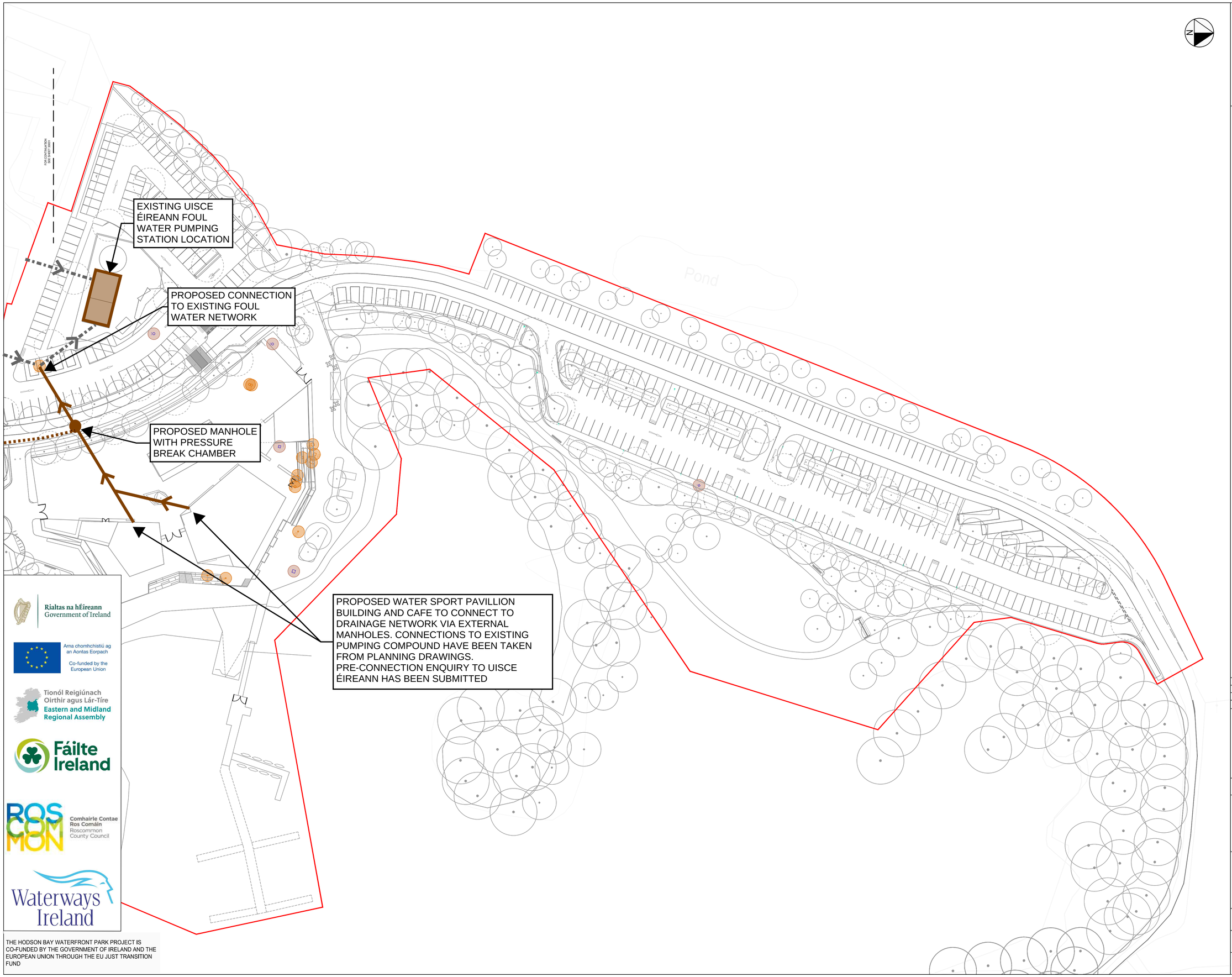
Fáilte Ireland

ROSCOMMON
Comhairle Contae Ros Comáin
Roscommon County Council

Waterways Ireland

THE HODSON BAY WATERFRONT PARK PROJECT IS CO-FUNDED BY THE GOVERNMENT OF IRELAND AND THE EUROPEAN UNION THROUGH THE EU JUST TRANSITION FUND

FILE LOCATION PATH: P:\CIVIC IRELAND\PROJECTS HOT\31022 HODSON BAY\004 BIM\CIVIL\SIDRAWINGS\31022-CIV-XX-XX-DR-C-32000 - FW.DWG



Rialtas na hÉireann
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07.08.26	2	PLANNING	MF	EB
15.07.26	1	PLANNING	MF	EB
05.06.26	0	INFORMATION	EB	KW

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PROPOSED FOUL WATER
SHEET 2

DRAWING STATUS	STATUS CODE
PLANNING	P3

CE PROJECT No.	SCALE @ A1	DATE CREATED	DRAWN	CHECKED
31022	1:500	05.06.26	EB	KW

DRAWING No.	REV
31022-DR-CIV-CE-30012	2

Appendix H – Foul Water Flow Calculations

Reference	Calculation	Output

From Uisce Eirann Code of Practice for Wastewater Infrastructure (July 2020) Appendix C, the following flows have been rationalised for the development

Per person / activity / day	Persons	Flow (litres)	Total Flow (l)
Restaurants - Snack bars & bar meals	300	15	4500
Toilet (WC) per use	300	10	3000
Toilet (Urinal) per use	300	5	1500
Shower	300	40	12000
Health Club/ Sport Centre	300	50	15000

TOTAL AVERAGE FLOW **36000 l**

To convert to l/s

$$36000 \div 8 \div 60 \div 60 = 1.25\ l/s$$

Qavg. = 1.25l/s

Per person / activity / day	Persons	Flow (litres)	Total Flow (l)
Restaurants - Snack bars & bar meals	600	15	9000
Toilet (WC) per use	600	10	6000
Toilet (Urinal) per use	600	5	3000
Shower	600	40	24000
Health Club/ Sport Centre	600	50	30000

TOTAL PEAK FLOW **72000 l**

To convert to l/s

$$72000 \div 8 \div 60 \div 60 = 2.3\ l/s$$

Qww = 2.3 l/s

Reference	Calculation	Output

Using BS EN 12056-2:2000 Gravity drainage systems inside buildings, Table 2 Discharge Unit method:
Taking a frequency factor (K) = 0.70 (frequent use)

Appliance	Number	System I DU (l/s)	Total Flow (l/s)
Wash basin, bidet	16	0.50	8
Shower, with plug	4	0.80	3.2
Single urinal with cistern	2	0.80	1.6
Kitchen Sink	1	0.80	0.8
WC with 9,0l cistern	15	2.50	37.5

TOTAL (∑DU) = 51

$$Q_{ww} = K\sqrt{\Sigma DU}$$

where:

Q_{ww} = Waste water flowrate (l/s)
K = Frequency factor
ΣDU = Sum of discharge units

Qww = $0.7\sqrt{51}$
= 4.90 l/s

Taking the average flow as (Qww/3)

Qavg. = 1.63 l/s

Therefore, taking the more conservative value from both methods
Qavg. = 1.63 l/s
Qww = 4.9 l/s

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