

ATTACHMENT D2 OPERATION OF WASTE FACILITIES

Operations to backfill the existing (and future) quarry voids at Huntstown with inert soils and stone are addressed by the original waste licence application and the recent review thereof, and as such, are not re-visited herein. The conditions attaching to existing licensed recovery activities are set out in the relevant planning permissions (Ref FW12A-0022 and FW16A-0120) and the current waste licence (Ref. W0277).

Backfilling of the quarry voids using inert soil and stone and the recovery of construction and demolition waste comprise the following classes of waste activity identified in the Fourth Schedule of the Waste Management Acts 1996 – 2015:

- *Class R3 : Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes).* This activity applies to the importation and use of topsoil for use in final restoration of the backfilled landform.
- *Class No. R5 - recycling and reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials (Principal Activity).* This activity covers the recovery of soil and stone through deposition (for the purposes of improvement or development of land) and the recovery of construction and demolition waste / production of recycled aggregate. .
- *Class No. R13 (storage of waste pending any of the operations R1 to R12).* This activity will be limited to the storage of imported wastes for recovery purposes at the facility (e.g. stockpiling of imported soil and stone or C&D waste).

It is envisaged that in future, materials conforming to the following waste (EWC) codes will be recovered at the licensed facility:

Soil Recovery Facility

- 17 05 04 Soil and stones other than those mentioned in 17 05 03.
- 17 05 06 Dredging spoil other than those mentioned in 17 05 05
- 20 02 02 Soil and stone from municipal facilities

Construction and Demolition Waste Recovery Facility

- 15 01 07 Glass Packaging
- 17 01 01 Concrete
- 17 01 02 Bricks
- 17 01 03 Tiles and Ceramics
- 17 01 07 Mixtures of Concrete, bricks, tiles and ceramics
- 17 02 01 Wood
- 17 02 02 Glass
- 17 02 03 Plastic
- 17-03 02 Bituminous mixtures other than those mentioned in 17 03 01
- 17 04 05 Iron and Steel
- 19 12 05 Glass from Mechanical Treatment
- 20 01 02 Glass from Municipal Waste

SITE PREPARATION WORKS

Existing C&D Recovery Facility – Central Quarry

C&D waste recovery activities will continue at the existing facility at the Central Quarry for a short-term period (of 2-3 years) pending re-location of the facility to the north-eastern corner of the Huntstown property.

Soil across much of this area has previously been stripped, leaving mineral subsoil / rock exposed at the ground surface. The area has been used intermittently for storage of rock, aggregate, C&D waste and recycled aggregates in the past. There are some pockets of mature / scrub vegetation adjoining the area and where these exist, efforts will be made to avoid damaging them.

No site development works will be required for the established recovery facility, other than a possible re-grading of the ground surface to ensure that all surface water run-off is directed toward the quarry void and the pond / sump at the quarry floor.

Replacement C&D Recovery Facility – North Eastern Corner

At the proposed replacement facility on greenfield, previously undeveloped, lands in the north-eastern corner of the Roadstone landholding, it is envisaged that the existing soil cover will be stripped and used to infill a gap in the existing perimeter screening berm along the northern / north-eastern boundary, to raise the existing berm height by up to 1m and to extend the crest width to a minimum of 2m wide. Supplementary soil materials will be sourced from the adjoining soil waste recovery facility as required.

Some semi-mature deciduous trees which are currently growing in a thicket along the eastern boundary of the facility will be uprooted and transplanted along the northern slope / crest of the perimeter berm in order to soften the visual impact of the recovery facility and enhance the screening provided to it from distant viewing points to the north-east.

Following site stripping, crushed rock will be placed over the exposed mineral subsoil and/or weathered bedrock and compacted to form a hardstanding, typically 300mm to 500mm deep. The upper surface of the hardstanding will be graded so as to fall very gradually from east to west, toward an open collector channel running along the western boundary of the facility, along the eastern verge of the access road and the western side of the recovery facility. The existing pond at the south-western corner will be deepened and enlarged in order to capture and retain any increased surface water run-off from the replacement facility. A floating pump will be placed at the pond to transfer water intermittently across to existing settlement ponds when water levels rise to a prescribed level.

It is intended to erect a recovery shed at the proposed replacement facility which will principally house C&D crushing / screening plant and help reduce potential noise and fugitive dust emissions. A network of buried drainage pipes will be installed around the shed and will be connected to an open grassed channel (swale) which will run north-south along the eastern boundary of the facility and discharge to the channel of a former natural stream which runs east toward the Ballystrahan Stream.

It is not proposed to seal / concrete any of the proposed hardstand area at the relocated facility as it is intended to facilitate continued diffuse input of surface water / rainfall into the underlying relatively permeable mineral soil and/or weathered rock.

It is anticipated that final formation levels across the proposed replacement recovery facility, at the top of the hardstanding surface, will be close to the existing average ground level, around 78mOD. The finished formation will also largely follow the fall of the existing ground surface, falling west and/or south at gradients of no more than 1:200.

Method and Safety Statements for Construction Works

Any additional infrastructure required at the application site, over and above that which is currently in place, will be constructed in accordance with a detailed construction method statement and health and safety plan prepared by Roadstone Ltd. and/or its external work Contractors.

Material Requirements

The proposed development works at the replacement recovery facility will entail excavation, handling or placement of the following quantities of materials

Table 2-1
Material Requirements

Material	Quantity
Excavated Soil	14,700 m ³
Modification of Perimeter Berms	20,200 m ³
Crushed Rock Hardstand (typically 6' or 200mm down)	22,000 m ³
Sub-surface Drainage Pipework	230 m
Open Channel / Swale Construction	330m

Material Balance

As noted above, approximately 14,700m³ of soil / topsoil excavated at the site of the relocated facility will be used to modify the existing perimeter berm. This will be supplemented by materials from existing soil / subsoil stockpiles around the North Quarry and West Quarry. The topsoil / subsoil materials will be held in the perimeter stockpile pending its ultimate use for long-term restoration purposes.

Importation of Construction Materials

Any construction materials required to construct site infrastructure, hardcore, drainage stone and concrete will be sourced from Roadstone quarries and/or concrete production facilities. Other elements, will be sourced from specialist suppliers as required.

Capacity and Lifespan

This licence review application provides for an increase in the maximum permitted C&D waste intake from 24,950 tonnes per annum to 95,000 tonnes per annum. It is not however certain that the increased C&D waste intake limit will be reached every year the facility continues in operation. There are many factors which will influence the C&D waste intake rate, including, but not limited to :

- Availability of acceptable inert C&D materials from the adjacent production facilities and local construction sites;
- Publication of 'End-of-Waste' criteria for recycled aggregates produced from inert construction and demolition waste
- Prevailing economic climate and related construction industry output;
- Distance of construction projects from the facility (and scale or duration of activity);
- Logistical / programming constraints at sites generating inert materials;
- Disruptions along the existing local and national road network.

WASTE ACCEPTANCE AND HANDLING

Inert C&D waste is accepted at the Huntstown recovery facility between 08.00 hours and 19.00 hours each weekday (Monday to Friday) and between 08.00 hours and 13.00 hours on Saturdays. No materials are accepted at any other time including Sundays and Public Holidays.

Insofar as practicable, the source of each large consignment of C&D waste imported to the facility for recycling is identified in advance and subject to review (possibly including some characterisation testing) to confirm that they will be segregated at source and can be classified as inert. Ideally, and particularly for larger waste consignments, some characterisation testing will be undertaken in advance by customers / clients / contractors before consigning any C&D waste to the facility.

Operating procedures at the recovery facility require all C&D forwarded for recovery purposes to be pre-sorted at source, inert and free of non-inert waste, specifically inclusions such as plaster / plasterboard, metal, timber, plastic / PVC, rubber, wiring / cabling, metal or any non-hazardous / hazardous domestic, commercial or industrial wastes.

Separated C&D wastes will generally be sourced from the adjoining construction materials production operations or will be imported from external construction sites by HGV or tipper truck. Only in very exceptional circumstances, where a high degree of confidence exists about the source / prior segregation of the imported C&D waste, will skip waste be accepted at the facility.

CCTV cameras mounted around the weighbridge(s) and weighbridge office(s) are used to inspect all consignments being imported to the recovery facility. Any waste materials that are deemed to be unacceptable for recovery at the facility on the basis of a visual inspection at the weighbridge are rejected and directed to an alternative authorised waste recovery facility.

All inert C&D materials imported to the facility are unloaded (end-tipped) from HGVs / trucks to build up stockpiles of unprocessed waste within a defined outdoor stockpiling area on a hardstand surface. Waste consignments are visually inspected by site personnel at that point to confirm that there is no intermixed non-inert construction or demolition waste or inclusions of non-hazardous or hazardous waste placed within it.

If, following acceptance of waste, there is any subsequent grounds for concern about the nature of the C&D wastes imported to site, it is segregated and transferred to the waste inspection and quarantine area for closer inspection and classification. A detailed record will be kept of all such inspections.

A representative sample is taken from one in every 120 loads of inert C&D waste accepted at the facility and subjected to compliance testing by Roadstone. These data are used to confirm that the accepted soils are inert and comply with acceptance criteria.

Laboratory testing of C&D waste is undertaken off-site at an ILAB / UKAS accredited geo-environmental laboratory. All compliance / validation testing and laboratory testing required to confirm the inert classification of imported soil and stone waste soil is undertaken by an accredited laboratory.

A draft copy of an amended Waste Handling and Acceptance Plan for this facility is provided in Attachment H2 of this waste licence review application.

Processing of Waste

The recovery of C&D waste is carried out on an intermittent (or 'campaign') basis, according as waste material accumulates in unprocessed stockpiles and demand for recycled product dictates. The size of unprocessed waste stockpiles therefore varies according to availability of waste, the stage of recycling operations and/or the demand for the finished recycled aggregate product.

It is estimated that up to 1 years annual C&D waste intake (ie. 95,000 tonnes) could be stored at the recovery facility over an area of 1.2 to 1.5 hectares. This suggests a maximum waste stockpile height of between 6m and 8m.

Construction and demolition waste held in 'unprocessed' stockpiles is recovered by excavating it using a loading shovel / front-end loader and tipping it into a mobile crusher in order to produce secondary aggregates of varying nominal size. At the present time, the crushing process is undertaken on the floor of the Central Quarry, but in the medium-to-long term, after the recovery facility has been relocated to the north-eastern corner of the landholding, it will be undertaken within the planned recovery shed which will be open on two sides.

The recovered / recycled aggregates are then transferred by loading shovel / front-end loader from production stockpiles at the crusher to 'processed' stockpiles at a separate outdoor stockpiling area, also on a hardstand surface. They are then stored on-site pending their subsequent sale and export off-site.

As with unprocessed waste, it is estimated that up to 1 year's annual output of recovered / recycled aggregates (ie. 95,000 tonnes) could be stored at the recovery facility over an area of 1.2 to 1.5 hectares. This suggests a maximum processed stockpile height of between 6m and 8m.

The recovered / recycled (secondary) aggregate is transferred from processed stockpiles to HGVs using a loading shovel / front-end loader on an ongoing, intermittent basis as demand for recycled aggregates dictates. When not loading recovered aggregates, it is likely that the loading shovel will be assigned to other duties within the recovery facility or to other (non-C&D waste related) duties within the wider Huntstown Quarry complex.

No sorting of waste materials other than separation of reinforcement from concrete is undertaken at the recycling facility, as all imported waste is required to be sorted and segregated at source, before being brought to the waste recovery facility. Reinforcement separated from concrete is stored in skips at the recovery area before being transferred to the quarantine facility and/or removed off site by an authorised waste collector.

The schematic layout of the existing C&D waste recovery facility at the Central Quarry is shown on Drawing D2-1, while that of the planned replacement facility at the north-eastern corner of the quarry complex is shown on Drawing D2-2.

Removal of Materials Off-Site

Any non-hazardous or hazardous wastes identified within the inert C&D waste imported to the recovery facility is separated and transferred to the waste inspection and quarantine shed, pending subsequent removal off-site to authorised waste disposal or recovery facilities by permitted waste collectors.

On the basis of experience gained to date in operating this and other C&D waste recovery facilities in the Greater Dublin Area however, Roadstone anticipates that the quantities of such wastes requiring transfer / removal off-site are likely to be very low.

In addition to CCTV inspection at the weighbridge(s), visual inspection and in-situ monitoring of imported C&D waste materials is undertaken by site-based personnel overseeing operations at unprocessed stockpiles at the existing (and planned future) recovery area.

Should any non-inert or non-C&D waste be identified amongst incoming waste consignments, the entire waste consignment will be rejected and reloaded onto the HGV / tipper truck and the haulier directed to remove the waste off-site to another authorised (ie. permitted or licensed) facility.

In the unlikely event that suspected contamination is identified subsequently, during waste handling and processing / crushing, it will be segregated from the main waste stockpiles and transferred to the covered waste inspection and quarantine shed pending closer inspection and testing to establish whether it is inert or not. Suspect waste will be identified on the basis of visual inspection (unusual colour, intermixed wastes etc.) or by smell. Detailed records will be kept of all inspections and testing of suspect wastes.

Should inspections and/or testing of suspect C&D waste at the inspection and quarantine shed indicate it is non-inert and cannot be accepted or handled at the C&D waste recovery facility, it will be placed in skips and/or covered pending removal off-site by permitted waste collectors to an authorised waste disposal or recovery facility.

Any occasional metal waste encountered amongst the waste is separated and placed in a skip pending removal off site to an authorised waste recovery facility. Other non-inert waste (timber, plastic etc.) is also be separated and placed in a skip pending removal to an authorised waste facility.

Any scrub vegetation or trees removed as part of the site clearance and site establishment works will be removed and mulched.

Only operators and/or haulage firms holding valid current waste collection permits will be engaged to transfer these waste streams to other waste disposal or recovery facilities.

ENVIRONMENTAL MONITORING

General

There is an established programme of environmental monitoring in connection with ongoing rock extraction, aggregate processing, concrete production and waste recovery activities across the Huntstown Complex. This environmental monitoring programme complies with the requirements of existing planning permissions and effluent discharge licences in respect of these activities granted by Fingal County Council. The existing monitoring programme also complies with the requirements of the existing waste licence in respect of soil waste recovery activities issued by the EPA (Ref. W0277).

Roadstone operates an environmental management programme to monitor and manage emissions from its established on-site operations. Limit values for environmental emissions arising from these activities are identified by the EPA waste licence and other consents (as appropriate).

Environmental sampling, monitoring and testing is generally undertaken by Roadstone in-house personnel, with support from independent external consultants as and when required. Records of environmental monitoring and testing are held on-site and forwarded to the EPA and/or Local Authority as required under the terms of the waste licence and various consents.

Details of monitoring arrangements for dust, water and noise emissions from the proposed waste recovery facility are provided in Attachments F2 to F6 of this waste licence review application and in Chapter 2 of the Environmental Impact Statement which accompanies it. All proposed environmental monitoring locations for these environmental media are identified in Drawing D2-3. Details of other monitoring requirements at the waste recovery facility are identified and discussed briefly below.

Dust Monitoring

Dust emissions associated with established extraction, concrete and asphalt production and inert waste recovery activities within Roadstone's landholding at Huntstown are currently monitored on a monthly basis using Bergerhoff dust gauges at 6 No. locations (designated D1 to D5 and D7) shown on Drawing D2-3. These gauges are located close to emission sources or potentially sensitive receptors located beyond Roadstone's property boundary.

It is proposed that the existing dust monitoring stations will remain in place and that one former monitoring station (D6) will be re-established along the boundary of the replacement facility in the north-eastern corner of the Roadstone landholding prior to commencement of C&D waste recovery activities (subject to EPA review). Monitoring will continue for the duration of the waste recovery activity and for a short duration thereafter, as required by the facility closure and aftercare plan.

Ecological Monitoring

The existing waste licence (Ref W0277) requires Roadstone to carry out an annual breeding bird survey, unless otherwise required by the Agency. The survey is required to record the number of birds of conservation concern utilising the site. The most recent (2017) breeding bird survey conducted at the existing licenced facility (at the North Quarry) recorded a total of 20 species of birds at the facility and in the area immediately surrounding it. The majority of species either occurred in numbers that were not significant at the regional or local level and/or are species of low or no conservation concern.

Given the history of extractive activities at the Central Quarry and grazing activities on the seasonal grassland at the planned replacement facility and the absence of any rare or protected species across the quarry complex, it is envisaged that there will be no requirement for ecological monitoring or reporting for waste recovery operations at either location.

Groundwater Monitoring

At the present time, there are 7 No. groundwater monitoring wells installed around the Huntstown Quarry Complex. Of these 1 No. is located in close proximity to the existing recovery facility at the Central Quarry (GW02), while 2 No others (GW03 and GW07) are located to the south-east and centre of the planned replacement facility, at the locations shown in Drawing D2-3.

At the present time, groundwater sampling is undertaken on a quarterly basis. Testing of physical parameters is undertaken on collected samples on a quarterly basis, in accordance with the requirements of the existing waste licence (Ref. W0277) while testing of chemical parameters is undertaken on either a bi-annual or annual basis (depending on the parameter).

The principle objective of groundwater testing is to assess ground water quality and to confirm that on-going waste recovery activities are having no detrimental impact on groundwater quality. The groundwater wells will be monitored for the duration of waste recovery activities at the licensed site and for a short duration thereafter, as required by the facility closure and aftercare plan.

Groundwater levels are also recorded on a quarterly basis in accordance with waste licence requirements. Further detail on groundwater quality and testing is presented in Section 6 of the Environmental Impact Statement which accompanies this waste licence review application.

Meteorological Monitoring

No meteorological monitoring is undertaken at the existing waste recovery facility. However, given that it is located 6km west of Dublin Airport, it is considered reasonable to refer to temperature, rainfall, sunshine, wind speed and direction records obtained at the weather station at Dublin Airport, as and if required.

Noise Monitoring

Noise emissions associated with ongoing rock extraction, aggregate processing, concrete production and waste recovery activities within Roadstone's landholding at Huntstown are monitored on a quarterly (ie. three monthly) basis at 4 No. locations (designated N1 to N4), all of which are located close to the Roadstone property boundary.

It is proposed that the existing noise monitoring stations will remain in place and that one additional dedicated monitoring station (N5) will be established prior to commencement of C&D waste recovery activities at the replacement facility in the north-eastern corner of the Roadstone landholding (subject to EPA review). Monitoring will continue for the duration of the licensed recovery activities and will also continue for a short duration thereafter, as required by the facility closure and aftercare plan.

Noise monitoring is undertaken using a Larson Davis Model 824 Sound Level Meter, calibrated using a Larson Davies Acoustic Calibrator CAL 200 (or equivalent). Noise monitoring locations are indicated in Drawing D2-3.

Odour Monitoring

As the materials being recovered at the facility are not organic or biodegradable and do not therefore emit odorous gases, the on-site recovery activities do not give rise to odour nuisance. Accordingly, no provision has been made for odour monitoring at the facility.

Site staff will report, record and investigate any odour emissions in the highly unlikely event that a complaint is ever made about odours emanating from the recovery facility.

Surface Water Monitoring

As required by the existing waste licence, surface water sampling at the existing recovery facility is currently undertaken on a weekly basis at monitoring location W4, immediately downstream of the dedicated polishing pond (reed bed). This pond is the last in a series of treatment ponds which treats all surface water run-off which currently emanates from the licensed soil recovery activities at the North Quarry and West Quarry. It is envisaged that the same ponds will, in future also treat surface water run-off emanating from the planned replacement C&D recovery facility in the north-eastern corner of the Roadstone landholding, and that as such, monitoring location W4 will also serve as the control point for newly licensed C&D waste recovery activities at that location.

Testing of key chemical parameters is undertaken on collected samples on a weekly basis, while testing of other chemical parameters is undertaken on either a bi-annual or annual basis (depending on the parameter). Further detail on surface water quality and testing is presented in Section 6 of the Environmental Impact Statement which accompanies this waste licence review application.

Surface water sampling and testing is also undertaken at monitoring location W1, immediately downstream and east of the settlement lagoons which serve the central infrastructure area and existing recovery facility at the Central Quarry.

Surface water monitoring is also undertaken upstream and downstream of the discharge to the Ballystrahan Stream, a tributary stream of the Ward River, in accordance with the requirements of the existing Local Authority discharge licence in respect of quarry related activity (Ref. No WPW/F/008-01).

It is envisaged that surface water discharge from the Central Quarry will be sampled and monitored at location W2, immediately upstream of its confluence / discharge into the settlement lagoons which serve the central infrastructure area. In this way, the environmental performance at the C&D waste recovery facility can be monitored independently of other site based activities at the quarry complex.

Occasional sampling and testing is / will also be undertaken on samples taken from any temporary surface water features or ponds which may either be created or form naturally at low points within the Central Quarry or at the replacement recovery facility (W5 and W6 respectively). These and other established surface water monitoring locations at the Huntstown facility are shown on Drawing D2-3.

The principal objective of surface water monitoring is to assess water quality and to confirm there is no contamination associated with waste recovery activities on-site. Surface waters will be monitored for the duration of the C&D waste recovery activity and will also continue for a short duration thereafter, as may be required by the facility closure and aftercare plan.

PLANNED FINAL RESTORATION

Existing Recovery Facility – Central Quarry

On cessation of C&D waste recovery activity at the Central Quarry, any remaining stockpiles of unprocessed C&D waste will be crushed and added to processed waste stockpiles. These stockpiles will in turn be gradually run down as recycled secondary aggregate is sold to the market. All processing plant, machinery and/or related site infrastructure will be removed from the area.

No formal restoration works will be undertaken at the Central Quarry given the planned commencement of quarrying / rock extraction activities at this location following cessation and relocation of recovery activities. All processing plant, machinery and/or related site infrastructure will be removed from the area.

Relocated Recovery Facility – North-Eastern Corner

On cessation of C&D waste recovery activity at the north-eastern corner of the landholding, any remaining stockpiles of unprocessed C&D waste will be crushed and added to processed waste stockpiles. These stockpiles will in turn be gradually run down as recycled secondary aggregate is sold to the market.

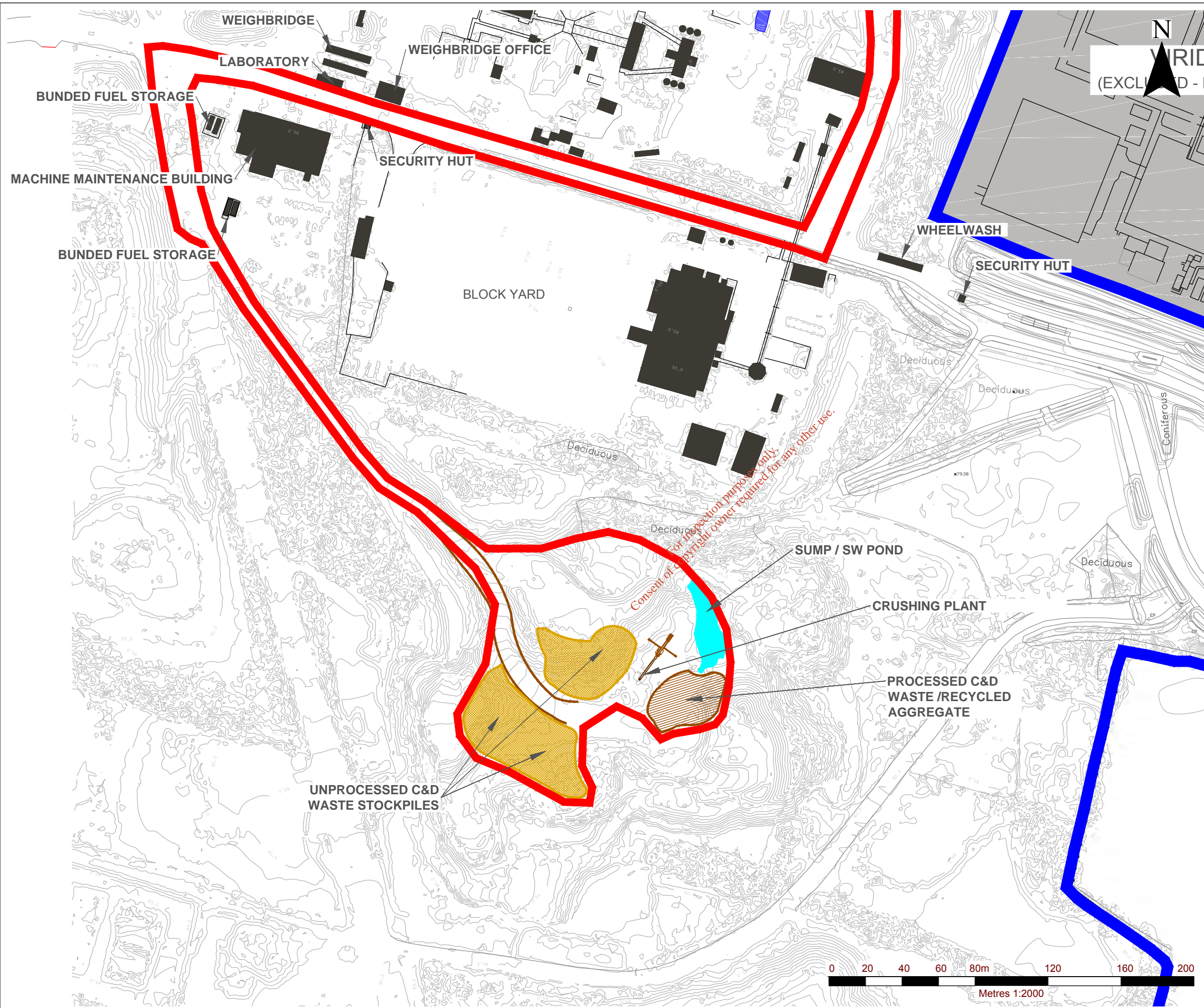
The granular materials forming the hardstanding layer will be excavated in phases as space is freed up and will be recovered on site. It is expected that a minor residual volume of hardstanding material remaining at the end will either be re-used around the Huntstown Quarry Complex or recycled at an alternative, off-site C&D waste recovery facility.

The waste recovery shed will be dismantled to ground / foundation level and, insofar as possible, all structural elements (steelwork, wall cladding wall panels etc.) will be recycled and/or recovered. All processing plant and machinery will be removed and any related site infrastructure will be decommissioned and/or removed as appropriate.

As the hardstanding layer is excavated and recycled, a replacement cover layer comprising a combined 300mm of topsoil and mineral subsoil will be placed over the exposed in-situ soil. This material may be sourced from the perimeter screening berm around the recovery facility or from other soil stockpiles around the Huntstown Complex.

The upper surface of the reinstated ground will be graded so as to ensure that any surface water run-off will be intercepted and/or channelled southwards toward the existing stream channel which runs along the southern boundary of the recovery facility. This stream in turn will flow to the Ballystrahan Stream and onwards to the Ward River. The surface will be seeded with a native grass mix in order to restore the land to seasonal grassland over time. Summary details of the proposed site restoration works are provided in Drawing D2-4.

0180.00166.0.FIG_D2-1.Central Quarry C&D Recovery Facility.dwg



NOTES

- EXTRACT FROM 1:2,500 ORDNANCE SURVEY DIGITAL SHEET NO'S. 3062-A, 3062-B, 3062-C, 3062-D, 3063-A, 3063-C, 3130-A & 3130-B.
- ORDNANCE SURVEY IRELAND LICENCE NO. SU 0000716 (C) ORDNANCE SURVEY & GOVERNMENT OF IRELAND

LEGEND

- ROADSTONE LIMITED LAND INTEREST (c. 200.3 ha)
- APPLICATION AREA (c. 8.27 ha)



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ROADSTONE LIMITED
WASTE LICENCE REVIEW APPLICATION

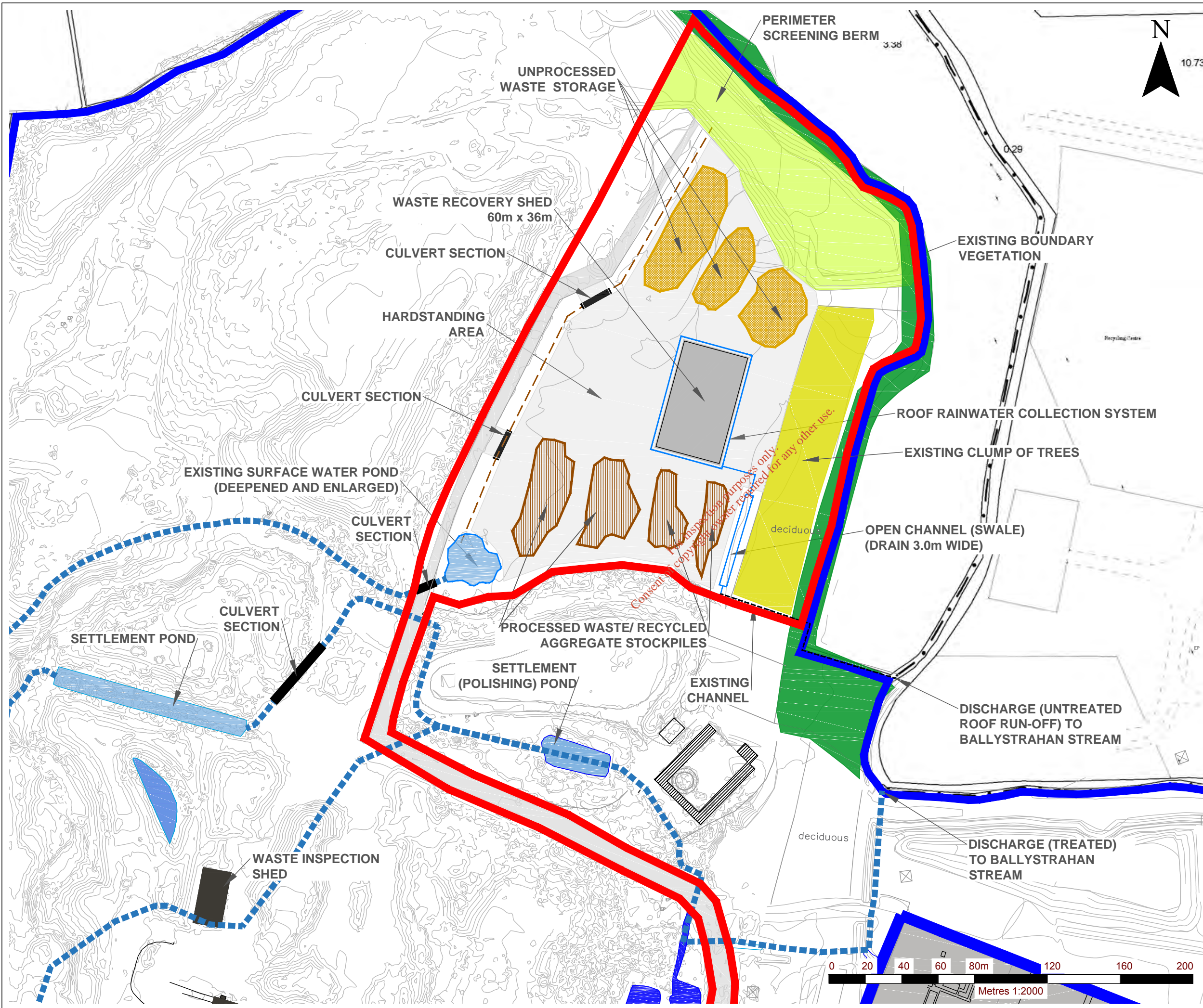
C&D WASTE RECOVERY FACILITY
HUNTSTOWN QUARRY, FINGLAS, DUBLIN 11

CENTRAL QUARRY
C&D WASTE RECOVERY FACILITY

DRAWING D2-1

Scale 1:2,000 @ A3 Date JUNE 2017

0180.00.166.0.FIG_D2-2.Relocated C&D Recovery Facility.dwg



NOTES

1. EXTRACT FROM 1:2,500 ORDNANCE SURVEY DIGITAL SHEET NO'S. 3062-A, 3062-B, 3062-C, 3062-D, 3063-A, 3063-C, 3130-A & 3130-B.

2. ORDNANCE SURVEY IRELAND LICENCE NO. SU 0000716 (C) ORDNANCE SURVEY & GOVERNMENT OF IRELAND

LEGEND

	ROADSTONE LIMITED LAND INTEREST (c. 200.3 ha)
	APPLICATION AREA (c. 8.27 ha)
	STORMWATER DRAINAGE (ROOF RUN-OFF)
	COLLECTOR CHANNEL FOR SURFACE WATER RUN-OFF (FROM HARDSTAND AREA)
	SURFACE WATER RUN-OFF (FOR TREATMENT)

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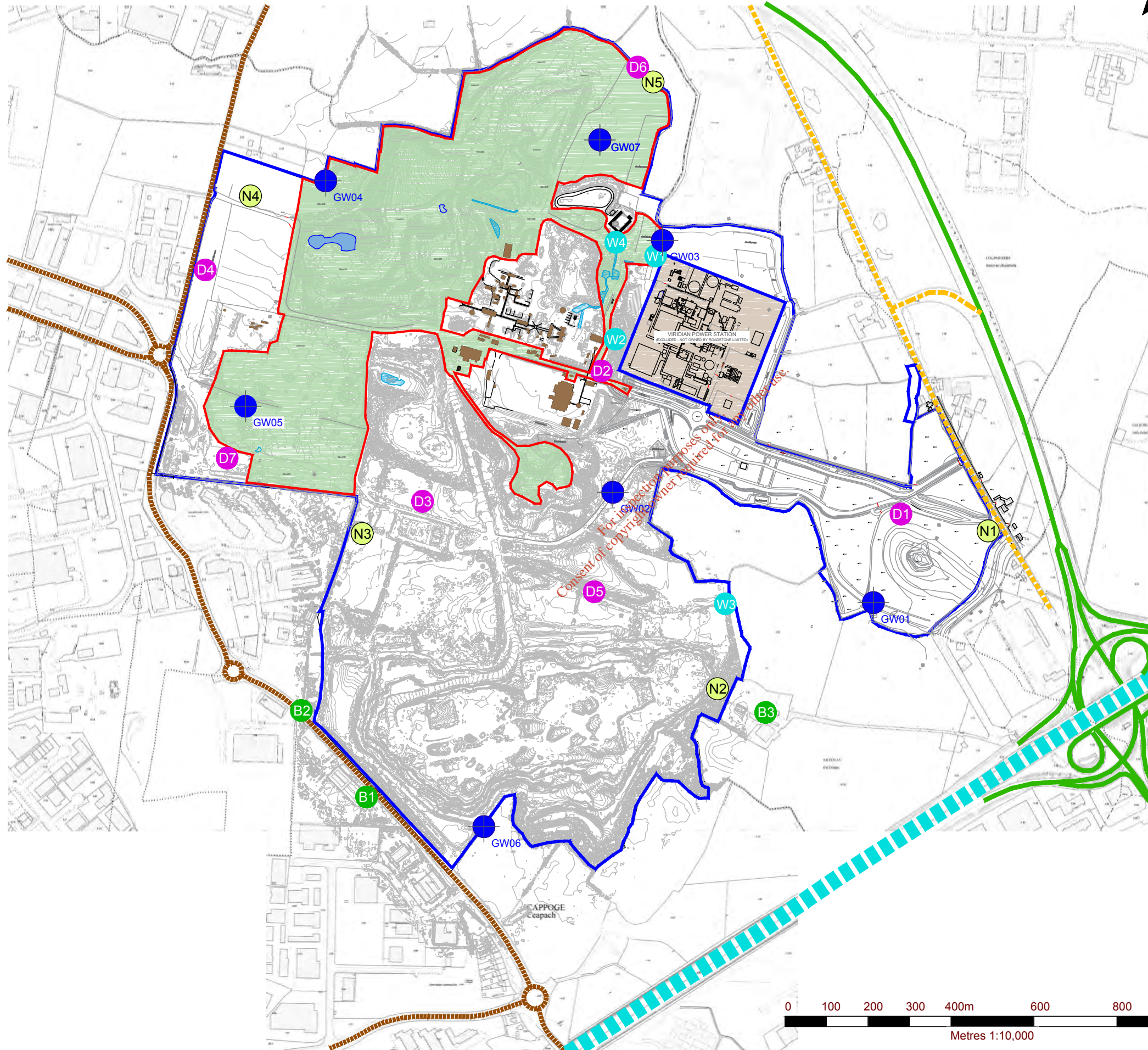
ROADSTONE LIMITED
WASTE LICENCE REVIEW APPLICATION

C&D WASTE RECOVERY FACILITY
HUNTSTOWN QUARRY, FINGLAS, DUBLIN 11

RELOCATED C&D RECOVERY FACILITY
PROPOSED LAYOUT

DRAWING D2-2

Scale 1:2,000 @ A3 Date JUNE 2017



NOTES
 1. EXTRACT FROM 1:2,500 ORDNANCE SURVEY DIGITAL SHEET NO'S. 3062-A, 3062-B, 3062-C, 3062-D, 3063-A, 3063-C, 3130-A & 3130-B.
 2. ORDNANCE SURVEY IRELAND LICENCE NO. SU 0000717 (C) ORDNANCE SURVEY & GOVERNMENT OF IRELAND

LEGEND

	ROADSTONE LIMITED LAND INTEREST (c. 200.3 ha)
	APPLICATION AREA (c. 55.0 ha)
	N2 DUAL CARRIAGEWAY
	NORTH ROAD (R135)
	LOCAL ROAD
	M50 MOTORWAY
	NOISE MONITORING LOCATION
	DUST MONITORING LOCATION
	GROUNDWATER MONITORING WELL LOCATION
	SURFACE WATER MONITORING LOCATION
	BLAST MONITORING LOCATION

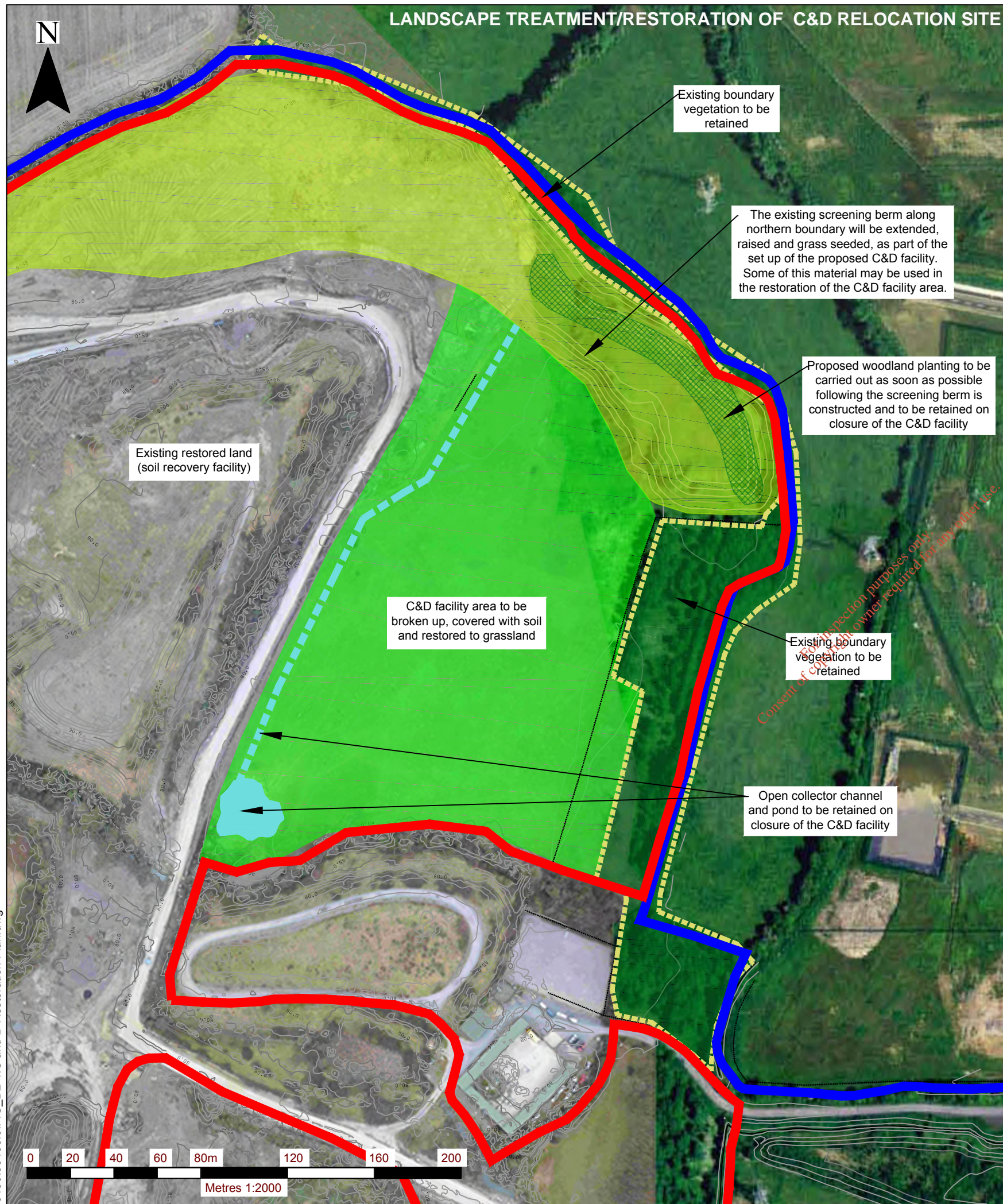
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ROADSTONE LIMITED
 WASTE LICENCE REVIEW APPLICATION
HUNTSTOWN C&D WASTE RECOVERY FACILITY
 NORTH ROAD, FINGLAS, DUBLIN 11
 ENVIRONMENTAL MONITORING LOCATIONS

DRAWING D2-3
 Scale 1:10,000 @ A3 Date JUNE 2017



LANDSCAPE TREATMENT/RESTORATION OF C&D RELOCATION SITE



Landscape Proposals (to be carried out as part of the setting up of the relocated C&D Facility):

- The existing berm along the northern boundary will be raised to a level of 83m AOD (note: existing level 82m AOD) and will be extended to meet the existing berm adjoining the western boundary of the application area, using the material to be stripped from the remainder of the site.
- Topsoil and subsoil will be stripped separately and the topsoil will be placed on the berm last. All areas of the berm, which were disturbed in the process, except for the woodland planting area, will be grass seeded.
- Woodland planting to be carried out on the northern slopes of the extended berm, as per the planting mix below. This planting will augment the existing vegetation present along the northern and eastern site boundary, in particular in height, and will help screen the vast majority of the proposed development in view from locations to the northeast (i.e. the elevated section of the N2 in particular).
- As an alternative to the tall feathered trees included in the below woodland mix, it will be attempted to transplant some of the semi-mature trees which are planted in 5 rows along the eastern site boundary onto the screening berm. About 20 trees will be taken from the two westernmost rows of trees, using suitable transplanting equipment for large trees (e.g. a tree spade), ensuring that large parts of the root system will be moved with the tree. This will leave a minimum of 3 rows of semi-mature trees along the eastern boundary intact, which provide effective screening in views from locations to the east.

Restoration Proposals (to be carried out on closure of the relocated C&D Facility):

- All stockpiles, the waste recovery shed and all processing plant and machinery will be removed from the site. The open water channel to the east of the access road along the western site boundary and the pond in the southwestern corner of the site will be retained.
- The hardstanding layer will be excavated and recycled. A replacement cover layer comprising a combined 300mm of topsoil and mineral subsoil will be placed over the exposed in-situ soil. This material may be sourced from the perimeter screening berm around the recovery facility or from other soil stockpiles around the Huntstown Complex.
- The whole area will be graded to fall gently towards the stream to the south of the site and grass seeded.

General Notes:

- All plant handling, planting and establishment works will be carried out in accordance with current best practice (e.g. CPSE - "Handling and Establishing Landscape Plants", available on gohelios.co.uk).
- Works are to take place in the appropriate planting season (e.g. bareroot planting: November to March only) and in favourable weather conditions.
- The tall feathered trees/transplanted semi-mature trees are to be staked appropriately.
- All transplants to be supplied with spiral guards.
- Planting will be carried out by a suitably qualified landscape contractor.
- Establishment maintenance will be carried out for 3 years following the planting works. This will include weed control, replacement planting where required and the adjustment/removal of tree ties and spiral guards.

NATIVE WOODLAND PLANTING MIX:

To be planted at 1.5m centres (2,250sq.m. in total = 1,000 plants). Tall feathered trees (if required, see text above) to be planted near the top of the berm in same species groups of 3. Transplants & container grown plants to be randomly planted in same species groups of 8-12.

No.	Plant Name	Common Name	Height (cm)	Age/Size	%
Tall Feathered Trees					
20	Betula pubescens	Downy birch	175-200	2xTr	2
20	Quercus robur	Pedunculate oak	175-200	2xTr	2
Transplants					
80	Betula pubescens	Downy birch	60-90	1+1	8
150	Corylus avellana	Hazel	60-90	1+0	15
150	Crataegus monogyna	Hawthorn	60-90	1+1	15
150	Ligustrum vulgare	Wild privet	60-80	1+1	15
100	Prunus padus	Bird cherry	60-90	1+0	10
150	Prunus spinosa	Blackthorn	60-90	1+0	15
80	Quercus robur	Pedunculate oak	60-90	1+1	8
Container Grown Shrubs					
100	Ilex aquifolium	Holly	60-80	2Lt	10

NOTES

- Orthomosaic produced from Aerial Photography flown March 2016 by SLR Consulting Ireland (IAA Permit No. 04/2015).
- Orthomosaic was merged with aerial from www.bing.com/maps to show wider area in October 2016.
- Orthomosaic produced using Ground Control Points; Related to Irish Transverse Mercator Coordinate System & OS Malin Head Level Datum.
- The accuracy of the orthomosaics and the digital elevation models (DEM) strongly depends on the flight height, lighting conditions, availability of textures, image quality, overlap, and type of terrain. Contours / 3D data relates to the surface model and not terrain levels. All Dimensions and Levels are to be checked on site. Any deviation or discrepancy from this Orthomosaic to be referred to SLR Consulting Ireland.

LEGEND

- ROADSTONE LTD. LAND OWNERSHIP BOUNDARY
- APPLICATION AREA
- EXISTING DENSE VEGETATION ALONG NORTHERN AND EASTERN BOUNDARY TO BE RETAINED
- SCREENING BERM TO BE EXTENDED, RAISED AND GRASS SEEDED
- WOODLAND PLANTING ON NORTHERN SLOPES OF SCREENING BERM
- C&D FACILITY AREA TO BE CLEARED, COVERED WITH SOIL AND GRASS SEEDED
- OPEN COLLECTOR CHANNEL AND POND TO BE RETAINED



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WASTE LICENCE REVIEW APPLICATION
HUNTSTOWN C&D WASTE RECOVERY FACILITY
NORTH ROAD, FINGLAS, DUBLIN 11
LANDSCAPE AND RESTORATION PLAN

DRAWING D2-4

Scale 1:2,000 @ A3 Date JUNE 2017