ATTACHMENT NUMBER D1

Infrastructure

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Description of Site Infrastructure

any other use

D1.1 DESCRIPTION OF SITE INFRASTRUCTURE

The sections below (D1.A to D1.R) refer to Page 19 of the waste licence application form.

D1.A FACILITY SECURITY ARRANGEMENTS

The site will be completely enclosed with a pallisade fence to the road frontage (south) and chain link fencing on the rear and east and west boundaries. There will be one entrance to the site from the R152 road to the south-east of the site. The site entrance details are shown on Drawing Nos. 2666-49-DR-004 and 2666-49-DR-005 in Attachments D1.2 and D1.3.

There will be manned security on site during daytime hours only. There will be an electronic gate at the site entrance, which will remain open during office hours and community recycling park opening hours.

A closed circuit television (CCTV) system will be installed for all areas around the site, and at night the cameras will be monitored in the control room of the waste to energy plant.

D1.B&C DESIGN OF FACILITY ROADS AND HARD-STANDING AREAS

ACOT

The layout of the proposed roads and paved areas can be seen on Drawing No. 2666-49-DR-002. All site access roads and car parks will have an asphalt wearing surface while the ramp up to the waste reception hall will have a concrete pavement. Roads and car parks will generally be kerbed with concrete kerbs.

D1.D WEIGHBRIDGE

Two weighbridges will be provided at the facility. These bridges will be used to quantify the weights of materials both entering and leaving the site. The locations of the weighbridges are shown on Drawing No. 2666-22-DR-012 in Attachment D1.5.

D1.E WHEELWASH

There will be no wheelwash at the facility as all roads will be hard-surfaced. However, a wheelwash will be provided during the construction phase of the project for all vehicles leaving site, other than private cars and vans.

D1.F LABORATORY FACILITIES

There will be no laboratory facilities on site as testing and analysis will be carried out off-site. However, continuous monitoring will be carried out at different stages throughout the waste to energy plant. Fixed installed emissions monitoring equipment will be provided at the stack for continuous monitoring of emissions of dust, Total Organic Carbon (TOC), Hydrochloric acid (HCl), Sulphur dioxide (SO₂), Nitrogen oxides (NO_x), Oxygen (O₂) and Carbon monoxide (CO). Continuous sampling of dioxins will also be carried out at the stack. The AMESA dioxin/furan monitoring system, or equivalent, will be installed, which is used for measuring dioxins/furans in other plants that comply with the German Environmental Regulation 17BIm SchV and TA Luft. Further details on the AMESA dioxin/furan monitoring system are included in Attachment J1.1.

D1.G FUEL STORAGE AREAS

Small quantities of natural gas will be used on site for start up and potentially for auxiliary firing. Natural gas will be supplied from the nearby low-pressure gas pipeline running along the R152 road.

There will be two transformers located within the transformer compound on site. These will contain a large volume of polychlorinated biphenyl(PCB)-free oil and will be bunded appropriately.

Diesel will be required for fuelling of loaders. A 5,000 litre diesel tank will be located within the waste to energy plant building, and will be bunded appropriately to fully contain any spillages. For further details on diesel, see Table 1.10 in Attachment E5.2.

Waste oil will be accepted in the Community Recycling Park. The waste oil area will be properly bunded to fully contain any spillages which could negatively impact on soil or groundwater.

D1.H WASTE QUARANTINE AREAS

Indaver Ireland will operate a waste quarantine area within the reception hall of the waste to energy plant. This designated area will be used as a holding area for waste that has been refused acceptance to the plant. The waste will be held in this area for a short period to allow the waste contractor time to arrange collection from the plant, if necessary. All refused loads of waste will be recorded. Reasons for refusal, quantities and other comments will be noted and this information will be given both to the waste contractors and the Environmental Protection Agency as necessary. Draft waste acceptance and handling procedures are included Attachments E3.3 and E4.1 respectively.

The location of the waste quarantine area is shown on Drawing No. 2666-22-DR-020 in Attachment D1.4.

D1.I WASTE INSPECTION AREAS

A waste inspection area will be provided within the waste acceptance/reception hall of the waste to energy plant.

This designated area will be used by Indaver to ensure that wastes arriving at the plant are only those that are permitted under the site waste licence. It is proposed that the waste inspection area will be used for two purposes, namely, inspecting waste deliveries from new waste contractors, and ongoing "spotchecks" for existing waste contractors.

All new contractors bringing waste to the facility will be required to have a percentage of their loads inspected for an initial trial period. This is to ensure that the contractor understands the types of waste that can be disposed of at the facility,

whilst also ensuring that materials not permitted under the site waste licence do not enter the plant.

In addition, on occasion, existing waste contractors will be required to deposit the contents of their vehicles into the waste inspection area, which will ensure that the contractors maintain a vigilance in relation to the types of material that they collect. Frequent inspections of the waste will be required to ensure that all contractors are in compliance with Indaver Ireland's waste acceptance procedures.

The location of the waste inspection area is shown on Drawing No. 2666-22-DR-020 in Attachment D1.4.

D1.J TRAFFIC CONTROL

A speed limit of 10 miles/hour will be set to control traffic on site.

There will be two roundabouts on site, one within the Community Recycling Park which will allow one way traffic flow through the park and the other which will control traffic between the waste to energy plant and the community recycling park and administration building.

D1.K&L ALL SERVICES, SEWERAGE AND SURFACE WATER DRAINAGE INFRASTRUCTURE

The layout of the proposed site services can be seen on Drawing No. 2666-22-DR-012 in Attachment D1.5.

SURFACE WATER DRAINAGE SYSTEM

All surface water run-off from hard-surfaced areas and building roofs on site will discharge via one of two petrol interceptors to an underground storage tank with approximately 1500 m³ capacity. Surface water from the transformer area will discharge through a full retention oil separator (Class 1) to the underground storage tank.

The water stored in the underground storage tank will be used as process water (approximately $10m^3/hr$). During periods of prolonged heavy rainfall, such as in the case of a 1 in 20 year storm, the excess water will discharge from the underground storage tank through an overflow pipe into the existing wet drain to the west of the site.

Some of the existing land drains/ditches on site will be retained and piped to discharge into the underground storage tank. Surface water run-off from areas of non-hardstanding within the site will discharge into these land drains, which will discharge into the underground storage tank.

The remaining land drains/ditches on site will regraded and rerouted to maintain the existing surface water run-off regime from areas outside the site to the existing wet drain to the west of the site.

SEWERAGE

Domestic sewage from toilets, changing and kitchen areas will discharge via the foul drainage system into an on-site effluent treatment system and will then percolate through perforated pipes into the ground.

Suitable material will be imported to build a percolation area according to the EPA guidelines. A reserve percolation area will be provided in the event of the main area malfunctioning in the future.

TRADE EFFLUENT

There will be no trade effluent from the site.

FIRE MAIN

A fire main system will be installed to connect the buildings with the fire fighting pump house and the water storage tank. The water storage tank will have a capacity of 2,000m³, two thirds of which, approximately 1,300m³, will be continuously reserved for the fire system. This water will be supplied from the underlying aquifer beneath the site. The other 706m³ will be used as process water.

PROCESS WATER SUPPLY

Process water will be supplied from the underground storage tank (1,500m³ capacity) and from the water storage tank (2,000m³ capacity, one third of which, 700m³, will be used for process water) which will be supplied by the aquifer beneath the site. The approximate water requirement is 15m³ per hour.

POTABLE WATER

Potable water will be supplied from the Public Water Mains, which runs along the R152 road. Potable water will be supplied for domestic use only.

D1.M&N PLANT SHEDS, GARAGES AND EQUIPMENT COMPOUNDS AND FACILITY ACCOMMODATION

The main buildings on site will be as follows:

- Waste to Energy Plant including: Reception Hall, Waste Bunker, Operations and Turbine Building, Furnace, Flue Gas Treatment Building, Ash Handling Plant, Solidification Unit and Materials Recycling Facility (Sorting Plant)
- Warehouse
- Administration Building
- Firewater Pumphouse
- Two Security Areas

The locations of these buildings are shown on Drawing No. 2666-22-DR-010 in Attachment D1.6.

FIRE CONTROL SYSTEM INCLUDING WATER SUPPLY **D1.0**

The whole of the plant will be designed and provided with adequate fire protection and detection systems and will be consistent with the requirements of Meath County Council and building regulations and Indaver's Insurer's requirements. Indaver Ireland will be applying for a Fire Certificate and have been in consultation with the Fire officer to ensure that the Fire protection and Fire fighting system are in accordance with his requirements.

The system for fire fighting shall be as follows:

- Fire wall compartmentation
- Fixed water canon
- Fixed sprinkler systems (where necessary)
- Fire detection and alarm systems
- Smoke ventilation
- Hydrants and hose reels
- Dry/Wet rising mains
- Portable fire extinguishers
- On site water buffer

ction purposes only any other use FIRE WALL COMPARTMENTATION

The Buildings will be divided into fire areas and fire separation compartments. In general every building forms a separate fire compartment and inside that area are further fire separation compartments. In order to minimise potential loss and improve fire safety. Special attention shall be paid to fire barriers and penetration seals in separating walls and floors all over the plant.

WATER CANON SYSTEMS

The Waste Bunker will be protected by a fixed canon system. As the waste bunker is permanently monitored by the crane operator, a fire can be detected at an early stage by the operator of the mechanical grab. Should the crane operator fail to detect a fire, automatic fire detection systems will activate an alarm in the control room. However, a localised fire can usually be more quickly detected by the human eye than by the fire detection systems installed.

In the event of a fire, it is usually quite simple to lift the part of waste on fire into the hoppers from whence it goes into the furnace. This waste is then covered by placing another layer of waste into the hopper.

Should the fire become uncontrollable by this method, the fire can be put out using one of a number of water cannons. The crane operators will be trained in fire fighting techniques. All firewater will be contained within the bunker, eliminating the need for a firewater retention pond.

A pressure switch shall be installed for alarm annunciation in the control room to indicate fire water system operation.

FIRE DETECTION SYSTEMS

A fire alarm system will cover the entire plant and will provide a high level of protection for both personnel and property. The fire alarm system shall comprise of local detectors, manual call points, local alarm bells, remote alarm and a fire alarm/control panel.

LOCAL CALL POINTS

In the event of a fire alarm being activated, an audible and visual indication will be provided. A central control panel will be provided in the control room. Some fire alarm signals will be relayed to the automation control system and composite fire signals will be relayed to enable emergency response actions to be effected.

SMOKE VENTILATION

Smoke vents (Double Leaf Fire Vents) shall be installed on the roofs of the main process building. Smoke ventilation shall use natural ventilation generated by the temperature difference of smoke and air.

The elevated temperatures generated during a fire will operate smoke vents. by means of a fusible link Smoke vents can also be opened manually and from a remote control panel.

The cable gallery in the electrical/control building is provided with dedicated natural smoke extract through side wall pneumatically operated smoke flaps.

The total area of the smoke vents shall be approximately 1% of the floor area of each smoke-ventilated space.

EXTERNAL HYDRANTS AND HOSE REELS

Hose reels for the ground floor levels shall be located in such a way that any area of the buildings may be covered by at least two jets from hoses.

Hose reels shall be installed at intermediate landing levels (outside each protected stairwell) throughout the height of the main process building up to the 25m level. These hose reels will be served by the site fire main in order to provide the necessary pressure at high level to ensure acceptable operation.

External hydrants shall be positioned around the plant at a maximum spacing of 50m between adjacent hydrants and in accordance with the Building Regulation Requirements.

DRY RISING MAINS OR WET RISING MAINS

For the main process building dry rising or wet rising mains shall be installed.

Each dry riser or wet riser will be installed with landing valves where required, a inlet at the bottom and an automatic release valve at the uppermost point in the riser.

PORTABLE FIRE EXTINGUISHERS

Fire extinguishers of an appropriate type shall be located throughout the areas as required.

The type of extinguishers will be determined according to the risk. The following types can be used:

- Dry powder
- CO₂
- Water/foam

FIREWATER SUPPLY

The Firewater pumps will be located in a separate compartment in the fire water pumphouse. The water reservoir for firewater will be integrated with process water storage for the plant. The Water reservoir shall guarantee water supply for 60 minutes use with maximum water consumption.

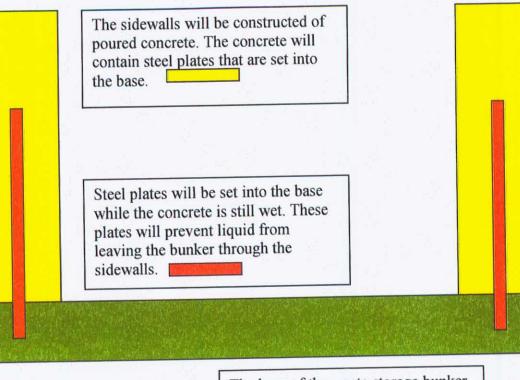
The fire water pump station will be equipped with pumps. The fire water network and pumps are common for external hydrants, hose reels and wet sprinkler systems and fixed canon systems.

Firewater will be stored on site in a 2,000 m^3 storage tank, which will be supplied from the underlying aquifer beneath the site. This tank will serve to store process water and fire water. The bottom two thirds (about 1,300 m^3) of the tank will be dedicated for firewater. There will be firewater pumps to circulate the water around the fire fighting system in the event of a fire. These pumps can be activated from a number of locations around the site.

The 12,000 m³ waste bunker will be designed to retain any firewater generated within the bunker. It will be constructed from one monolithic concrete slab as the base. Any potential points for leakage will be sealed with cold concrete seals. A steel plate will also be installed. The plate will be half in the wall and half in the base of the bunker to a depth of 10cm to prevent any possibility of leakage (See sketch overleaf). In the event of a large volume of firewater remaining in the bunker as a result of use of the water cannons, the water will be removed from the bunker by vacuum tanker and sent off-site for biological treatment.

A firewater retention study will be completed prior to construction of the facility to ensure that the above retention measures are satisfactory.

Indaver Ireland



The base of the waste storage bunker will be constructed of monolithic concrete. offe

Sketch of Bunker Construction on perfective

CIVIC AMENITY FACILITIES **D1.P**

A Community Recycling Park will be located at the front of the facility and will offer as wide a range of recycling opportunities as possible. Likely categories of recyclable waste accepted are as follows:

- Cardboard
- Newspaper and magazines
- Glass .
- Aluminium drink cans
- Textiles (clothes and blankets, for example)
- Footwear
- Batteries
- Waste oils
- Wood

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Individual waste streams will be deposited into dedicated containers by members of the public. The storage containers will be kept in shelters as necessary, which will be planted with an organic green roof system on the roof to improve the visual appearance of the area from the road. The containers will be emptied as they become full. The layout of the recycling park is shown in Drawing No. 2666-22-DR-002 in Attachment D1.7.

The community recycling park will be open six days a week and will be staffed continuously during opening hours to monitor deliveries of waste and ensure that no inappropriate waste is delivered. As no organic kitchen waste will be accepted at the park there will not be a problem with odour or vermin. Otherwise, the area will be kept clean and odour free through good housekeeping practices: regular washing and sweeping of the area and monitoring of waste deliveries. The park will be fitted with hand-washing facilities and car vacuum cleaners for use by the public after depositing the materials.

Environmental literature will be available to members of the public from the recycling park staff. This literature will provide details to members of the public on issues relating to how to use the park correctly, home composting and household waste management. Copies of this information are included in Attachment G of the EIS Additional Information.

A designated public education area will be provided within the administration building of the facility, where lectures, discussions and talks will take place with intersted groups such as local schools and youth groups.

D1.Q ANY OTHER WASTE RECOVERY INFRASTRUCTURE

A materials recycling facility (MRF) will be located in a separate section of the waste acceptance hall from the waste to energy plant. This area will be maintained under negative air pressure to prevent any odours that may arise being released to atmosphere thus preventing a public nuisance. This air will be used as combustion air in the incineration process. It is expected that the facility will process 20,000 tonnes of dry recyclable waste material per annum.

The typical types of recyclable wastes arising from the industrial/commercial sector include paper, cardboard, plastic, wood and metals.

D1.R ANY OTHER INFRASTRUCTURE

The following staff facilities will be provided for at the waste management facility

• Community Recycling Park

Hand wash facilities will be provided for both staff and members of the public.

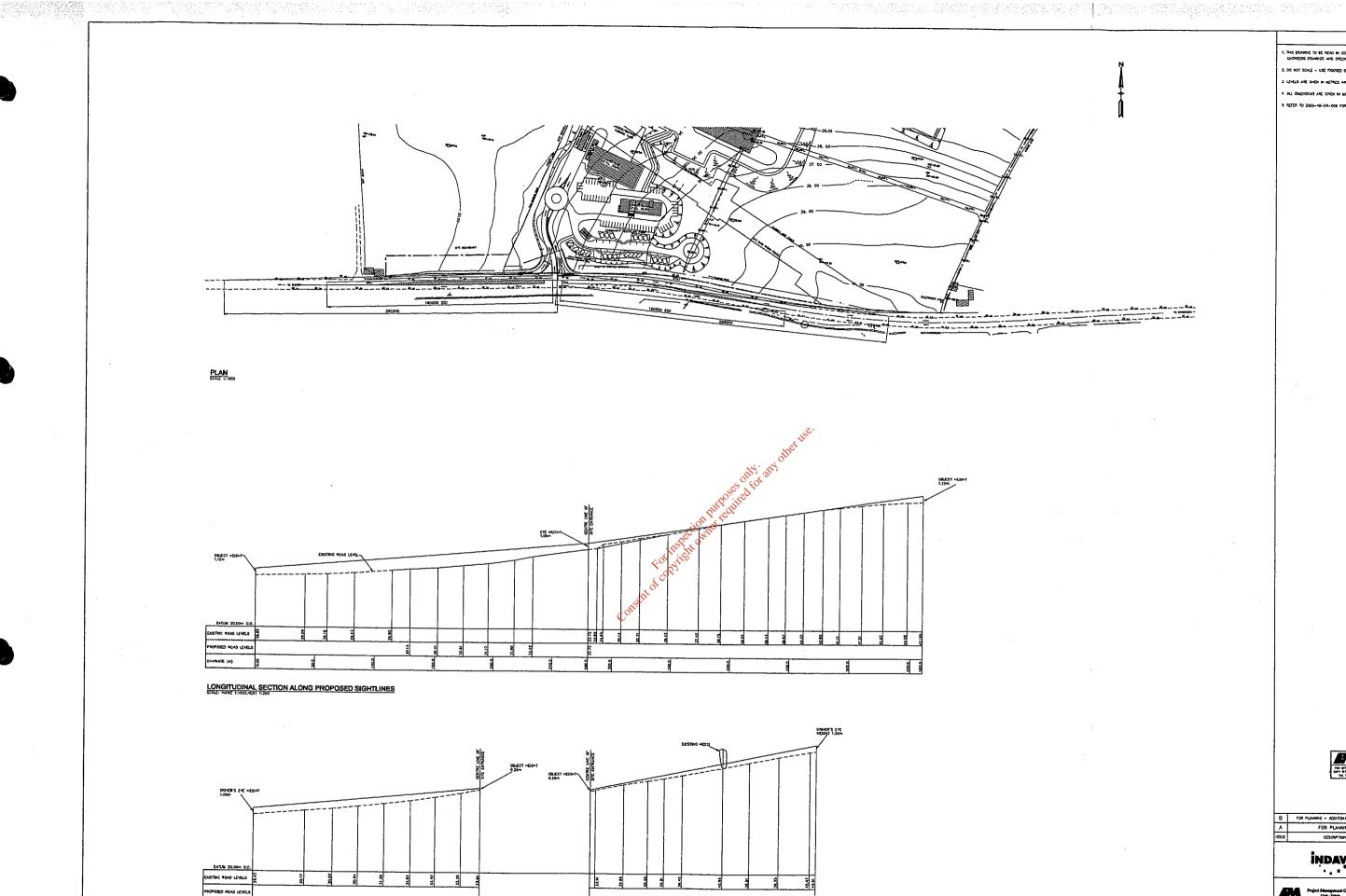
Administration Building

Ladies and Gents toilet facilities will be located within the administration building. In addition, a canteen and food preparation area will also be located within this building.

Main Waste to Energy Plant Building

Drawing No. 2666-49-DR-004: Site Entrance Details

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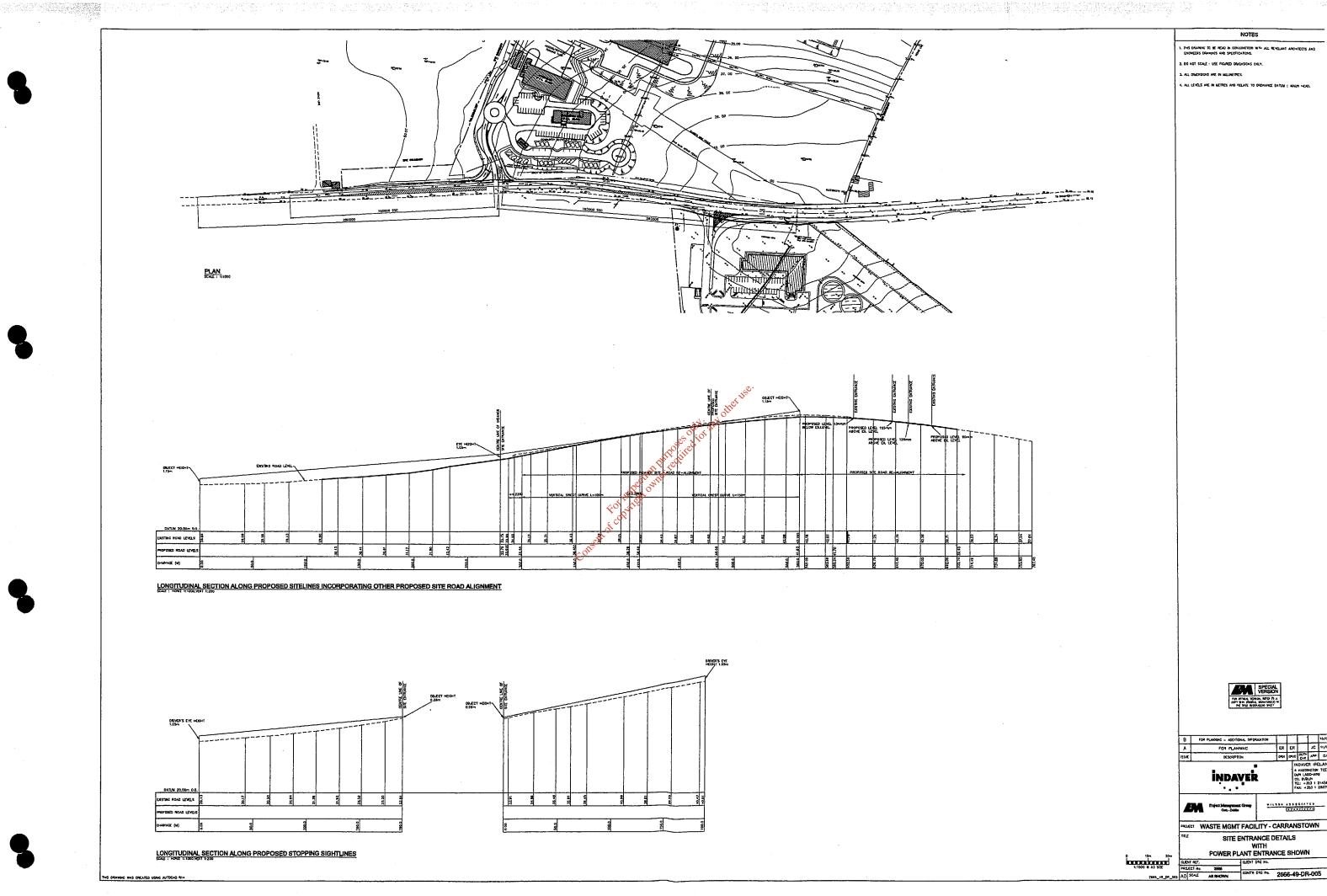
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Drawing No. 2666-49-DR-005: Site Entrance Details with Proposed Power Plant Entrance shown

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Drawing No. 2666-22-DR-020: Location of Waste Quarantine and Waste Acceptance Areas

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Drawing No. 2666-22-DR-012: Proposed Site Drainage Layout

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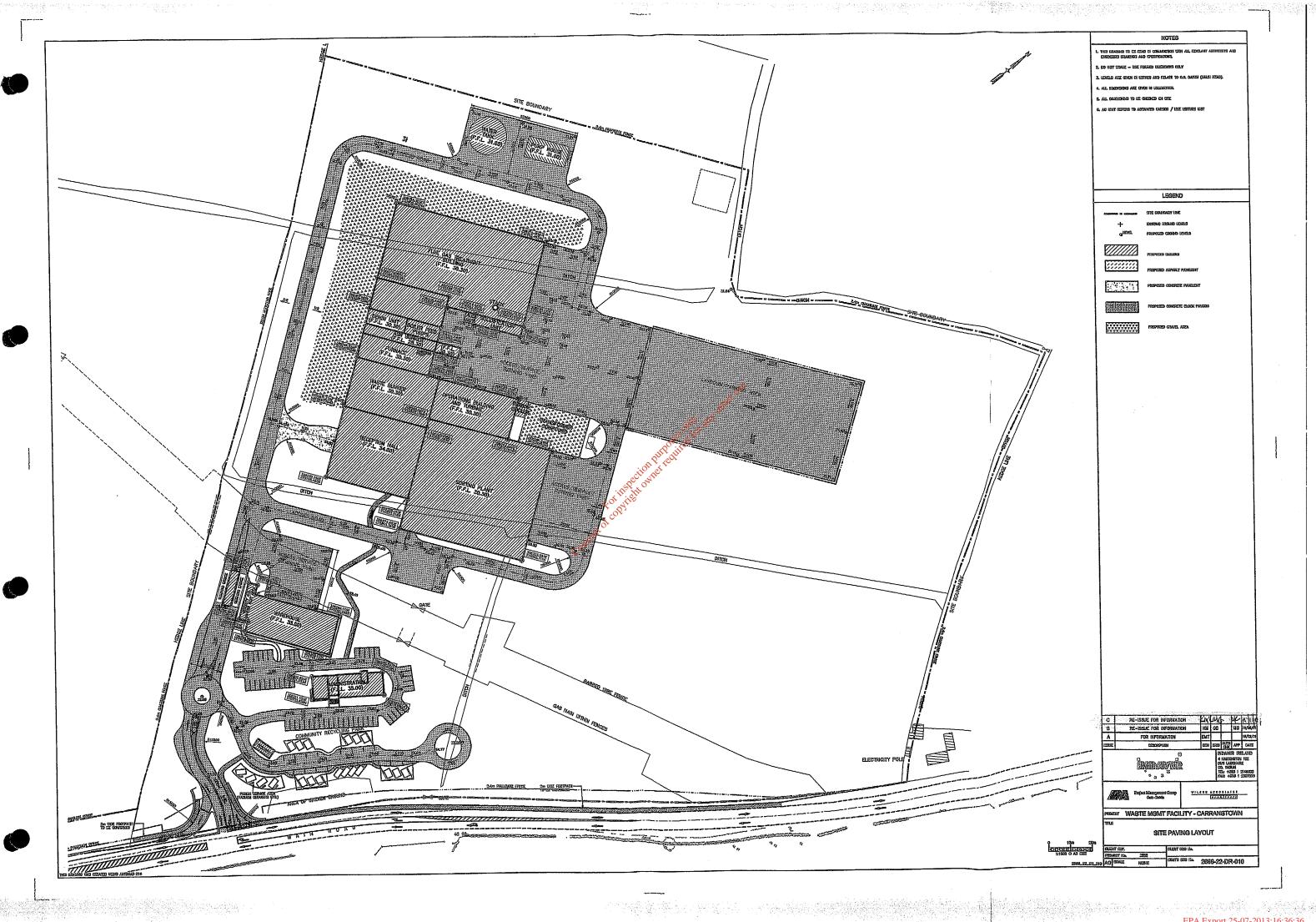
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Application Form-Volume 1 -Drawing-2

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Drawing No. 2666-22-DR-010: Proposed Site Paving Layout

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Drawing No. 2666-22-DR-002: Layout of Community Recycling Park

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