

N52 Grange to Clontail

Outline Construction & Demolition Waste Management Plan

Meath County Council

29/09/2020

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1. Introduction

This Outline Construction and Demolition (C&D) Waste Management Plan (WMP) has been prepared by WS Atkins Ireland Ltd. (Atkins) on behalf of Meath County Council (the applicant) as part of the supporting documents required for Part 8 planning application for the proposed realignment of the N52 Grange to Clontail Scheme. The principle objective of this Outline WMP is to provide a framework at the planning stage of the project to facilitate the development of a project specific Detailed C&D WMP by the Contractor.

1.1. Aim of the Plan

The purpose of this plan is to provide sufficient information to ensure that the management of construction waste is undertaken in accordance with all relevant legislation and best practice standards (as set out in Section 2 of this document). This plan aims specifically to ensure the guiding principles of responsible waste management (prevent, reuse, recycle, recover) are implemented throughout the project, thereby limiting the volume of waste disposed of to landfill.

1.2. Need for the Plan

Within Section 3.1 of the guidelines (DoEHLG, 2006) relevant thresholds for developments are identified which there is a requirement for the preparation of a project specific Detailed C&D WMP. This Outline WMP has been prepared as the proposed development falls under the following criterion:

‘Civil Engineering projects producing in excess of 500m³ of waste, excluding waste materials used for development works on the site.’

This document applies only to the construction stage of the proposed development.

1.3. Methodology

This document has been prepared in accordance with the relevant industry standard guidance document; ‘Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects’ (Department of Environment, Heritage and Local Government (DoEHLG), 2006) and ‘The Management of Waste from National Road Construction Projects’ (Transport Infrastructure Ireland (TII), 2017);

In addition, the following relevant best practice guidance documents have also been consulted:

- ‘Waste Classification: List of Waste & Determining if Waste is Hazardous or Non-Hazardous’ (EPA, 2015);
- ‘A review of Design and Construction Waste Management Practices on Selected Case Studies – Lessons Learned’ (EPA, 2015);
- ‘Design out Waste: Preparation of Waste Reduction Factsheets for Design Teams’ (EPA, 2015); and,
- ‘Development of an Audit Methodology to Generate Construction Waste Projection Indicators for the Irish Construction Industry’ (EPA, 2009).

1.4. Format of the Plan

This is a live document, which will be updated throughout the project lifecycle. This document will provide a framework for waste management and will clearly identify the processes that will be implemented onsite, whilst also seeking to ensure compliance with relevant waste legislation, government policy objectives and project specific waste objectives. The Plan will provide a mechanism for monitoring and auditing waste management performance and compliance for the duration of the project. This document provides a detailed overview of key waste management considerations for the project at this preliminary stage, while also allowing for further refinement as the project progresses through to the design and construction stages.

It will be the responsibility of the appointed Contractor to develop this document further and to prepare a project specific Detailed C&D WMP, as more information becomes available and there is more certainty in terms of the proposed project layout, construction methods, programme and waste streams.

1.5. Roles & Responsibilities

For the purposes of clarity, the roles and responsibilities of the project team for the proposed development should be determined at the very outset of the construction stage of this project. Key roles are typically performed by the client, engineer, and Contractor. Specific details will be determined during the detailed design and contract stage.

The Contractor should assign any sub-contractors' responsibility for the purchase of raw materials and for the management of wastes arising from their activities, thereby ensuring that available resources are not expended in an extravagant manner at the expense of the main Contractor. A waste manager will be assigned and be responsible for features of waste management at various phases of the project, along with delivering the objectives of the detailed waste management plan. The waste managers responsibilities are outlined further in Section 7 and 8 of this document.

1.6. Project Details

The proposed scheme comprises the realignment of the N52 carriageway from Grange to Clontail in Co. Meath and all associated site works including drainage and landscaping. The route includes 0.7 km of online and 4.1 km of offline sections and runs between a proposed roundabout to the west and a tie-in point to the east. The project will consist of a Type 2 Single Carriageway, all-purpose road with a 3.50m lane in each direction constructed to the geometric standards of TII Publication DN-GEO-03031 (Rural Road Link Design) and TII Standard Construction Detail CC-SCD-00002 with a Design Speed of 100kmph considered to be appropriate for the proposed scheme.

The proposed project is located within the vicinity of the existing section of the N52 between Grange and Clontail in north County Meath. The surrounding land use is predominantly agricultural in nature. The proposed route starts to the west of the Junction of the N52 and the R162 Kingscourt to Navan Road, before intercepting the existing N52 road at Stokes Cross / Fringestown and following the alignment of the N52 to terminate at Clontail. For the purposes of this report the general layout of the proposed route is depicted in Figure 1.1.

1.7. List of Acronyms

The following list of abbreviations have been used within this document;

- AOD – Above Ordnance Datum
- C&D - Construction and Demolition
- DoEHLG - Department of Environment, Heritage and Local Government
- EPA - Environmental Protection Agency
- EWC - European Waste Catalogue
- LoW - List of Waste
- MCC – Meath County Council
- NWCPO - National Waste Collection Permit Office
- PSCS - Project Supervisor Construction Stage
- PSDP - Project Supervisor for the Design Process
- SDS - Safety Data Sheet
- TII – Transport Infrastructure Ireland
- WAC - Waste Acceptance Criteria
- WMP - Waste Management Plan

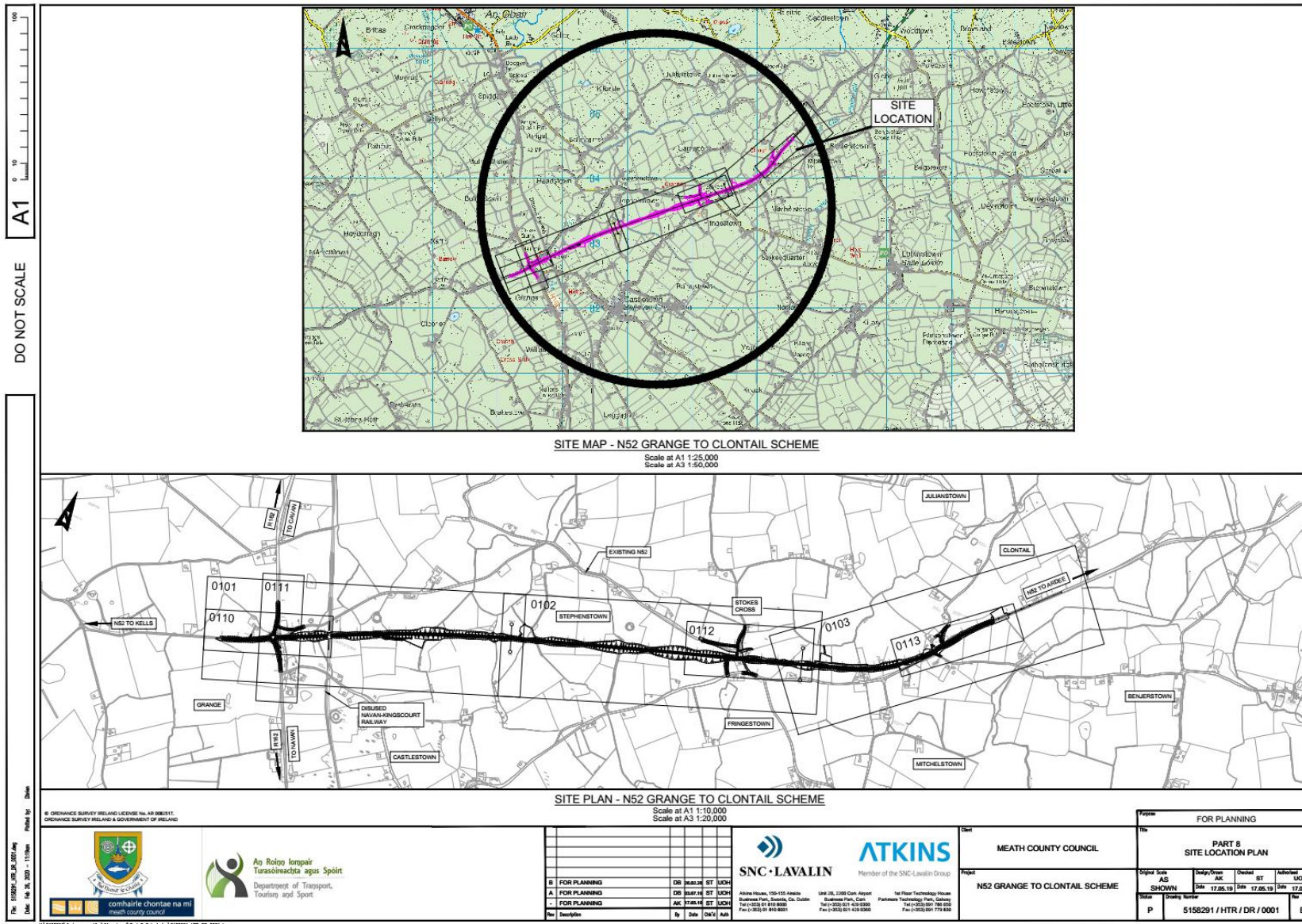


Figure 1.1 - Site Location

2. Waste Management – Policies, Legislation And Guidance

2.1. National Level

The implementation of the Waste Management Act in 1996 provided a legal basis for waste management, practice and infrastructure in Ireland. Following the implementation of this Act government policy moved from primarily relying on landfill disposal towards a more sustainable system of waste treatment through the promotion of recycling and recovery. The policy document entitled 'Changing our ways' (DoEHLG, 1998) set specific targets for recycling and consolidated the now familiar waste hierarchy of prevention, preparing for re-use, recycling, other recovery and disposal (TII, 2017). This approach was supported by subsequent legislation.

In 2002, the policy statement 'Preventing and Recycling Waste: Delivering Change' (DoEHLG, 2002) specifically focused on waste prevention and recycling. This document emphasised the importance of adopting a hierarchical approach, with prevention highlighted as the most desirable option. Various national waste prevention programmes and best practice guidance documents were subsequently delivered by the government.

The relevant guidance document in respect of the preparation of waste management plans for the construction sector was subsequently published by the DoEHLG in 2006. This document, entitled 'Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects' clearly sets out recommendations for the development of C&D WMPs. The purpose of these guidelines was to promote an integrated approach to the management of C&D waste, which all parties from planners, designers, Contractors and regulators can adopt throughout the project lifecycle, to ultimately minimise the generation of C&D waste and to establish specific thresholds for the requirement of a C&D WMP.

In 2011 the revised EU Waste Framework Directive was transposed into Irish law by the European Commission (Waste Framework Directive) Regulations 2011 (SI 126 of 2011) (EC, 2008). The Waste Framework Directive focussed on sustainable and efficient materials management strategy and provides a legal basis for the waste hierarchy. Therefore, the waste hierarchy presented in Figure 3.1 should be applied as a priority for this project.

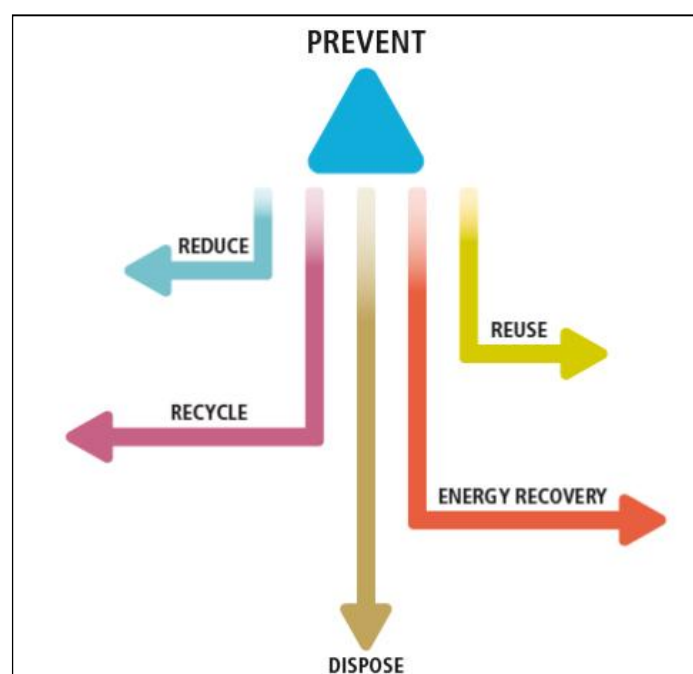


Figure 2.1 - Accepted Best Practice Waste Hierarchy (EPA, 2018)

In 2012 the Government published a new policy document entitled 'A Resource Opportunity Waste Management Policy in Ireland' (DoECLG, 2012). This document sets out the steps to be implemented on a national scale in order to make further progress on resource efficiency and seeking the elimination of landfilling of municipal waste in Ireland. This approach is further supported by subsequent guidance including the EPA

publication 'Green Procurement: Guidance for the Public Sector' (EPA, 2014), which clearly states the following Core Green Public Procurement (GPP) Criteria for the Construction sector:

- Construction environmental management plan;
- Staff training;
- Management of fuel and hazardous substances;
- Use of secondary aggregate and recycled materials;
- Water Management; and,
- Waste Management.

The 'Green Procurement: Guidance for the Public Sector' publication clearly sets out the responsibility of the Contractor with regard to waste management and disposal, as follows:

'The Contractor must apply appropriate measures in order to reduce and recover waste that is produced during the construction activity. The Contractor shall prepare and submit a waste management plan with its tender which shall form part of the Construction Management Plan to be agreed with the Contracting Authority in advance of the commencement of works. The waste management plan must be prepared in accordance with the Department of Environment, Community and Local Government Best practice guidelines on the preparation of waste management plans for construction and demolition projects (2006).

'Contractors are responsible for disposing of all waste generated under the contract in accordance with the Waste Management Act 1996 as amended. The Contractor must have full use of, or access to, waste disposal facilities with appropriate licenses and permits. The Contractor must provide copies of valid EPA Waste licences and Local Authority Waste Permits (including those relating to their subcontractors or brokers, where applicable) for collection and waste treatment/disposal/export facilities (EPA, 2014).'

TII published a document entitled 'The Management of Waste from National Road Construction Projects' in 2017, which focuses on the effective management of waste, arising from the construction of National Road Schemes. This document is intended for all parties involved during the construction of road schemes including designers, local authorities and Contractors (TII, 2017). This document aims to;

- *'Help all parties understand the complicated legal framework which governs the management of wastes generated by national road construction projects'*
- *'Set out good practice to ensure that effective waste management remains a priority throughout the design and construction stages of national road projects; the purposed being to minimise the environmental impacts of roads-related construction waste, as well as the volume of the actual waste being generated and to facilitate compliance with the provisions of the Waste Management Acts; and'*
- *'Provide information to facilitate an effective dialogue between road Contractors, relevant statutory bodies and third parties on how waste should be correctly handled in a road-building context.'*

2.2. Regional Level

The relevant Regional Waste Management Plan for Meath County Council is the Eastern-Midlands Region Waste Management Plan 2015-2021. The Eastern-Midlands Region encompasses the following local authorities: Dublin City, Dún Laoghaire-Rathdown, Fingal, South Dublin, Kildare, Louth, Laois, Longford, Meath, Offaly, Westmeath and Wicklow. The regional plan, which was launched in May 2015, provides the framework for waste management up to 2021 and sets out a range of policies and actions in order to meet mandatory and performance targets. The key objectives of this plan are as follows:

- **Prevent waste:** a reduction of one per cent per annum in the amount of household waste generated over the period of the plan;
- **Increase recycling:** increase the recycling rate of municipal waste to 50 per cent by 2020; and,
- **Further reduce landfill:** eliminate all unprocessed residual municipal waste going to landfill from 2016.

The overarching objectives of the Eastern-Midlands Region Waste Management Plan 2015-2021 have been incorporated into the latest development plan pertinent to this site i.e. Meath Development Plan 2015-2021 (MCC). MCC are 'committed to the requirements of EU and National Waste Management legislation and policies transposed at a regional level through the current North East Waste Management Plan 2005 to 2010

and are committed to the requirements of any replacement Plan for this region or any modified region incorporating County Meath insofar as Meath Local Authorities role permits.'

The Meath Development Plan 2013-2019 sets out the following policies with regards to construction and demolition waste management:

'To encourage the recycling of construction and demolition waste and the reuse of aggregate and other materials in future construction projects'; and

'To require developers to prepare construction and demolition waste management plans for new construction projects over certain thresholds which shall meet the relevant recycling/recovery targets for such waste in accordance with the national legislation and national and regional waste management policy' (MCC, 2013).

2.3. Waste Legislation

It will be the Contractor's responsibility to ensure that they are familiar and comply with the requirements of all relevant waste legislation for the duration of the project. The following non-exhaustive list of legislative requirements typically apply to the construction stage of major developments:

- Waste Framework Directive 2008/98/EC of the European Parliament and Council on waste, as amended, 2018 (S.I. 2018/851);
- European Communities (Waste Directive) Regulations 2011 (SI 126 of 2011) as amended 2016 (S.I. 315 of 2016);
- Waste Management Act of 1996, 2001 and 2003;
- Litter Pollution Act of 1997, and as amended in 2009 and 2017;
- Litter Pollution Regulations 1999, S.I. No. 359 of 1999);
- European Communities (Waste Electrical and Electronic Equipment) Regulations 2011 (S.I. 355 of 2011), as amended 2011 (S.I. No. 397 of 2011) 2013, (S.I. No. 32 of 2013);
- European Union (Waste Electrical and Electronic Equipment) Regulations 2014 (S.I. No. 149 of 2014) and 2019 (S.I. No. 233 of 2019);
- Waste Management (Facility Permit and Registration) Regulations 2007, S.I. No. 821 of 2007, as amended, 2008 (S.I. No. 86 of 2008), 2015 (S.I. No. 198 of 2015), 2019 (S.I. No. 250 of 2019);
- Waste Management (Collection Permit) Regulations 2007, S.I. No. 820 of 2007), as amended, 2015 (S.I. No. 197 of 2015), 2016 (S.I. No. 24 of 2016);
- Waste Management (Licensing) Regulations 2004 (S.I. No. 395 of 2004) as amended 2010 (S.I. No. 350 of 2010);
- Waste Management (Miscellaneous Provisions) Regulations, 1998, S.I. No. 164 of 1998;
- Waste Management (Landfill Levy) Regulations 2008, S.I. No. 199 of 2008, as amended 2009, (S.I. No. 550 of 2009), 2010 (S.I. No. 31 of 2010), 2012 (S.I. No. 221 of 2012), 2013 (S.I. No. 194 of 2013), 2015 (S.I. No. 189 of 2015), 2019 (S.I. No. 182 of 2019);
- Waste Management (Hazardous Waste) Regulations, 1998, as amended, 2000 (S.I. No. 73 of 2000);
- Waste Management (Shipment of Waste) Regulations 2007, S.I. No. 419 of 2007;
- Waste Management (Movement of Hazardous Waste) Regulations, 1998 (S.I. No. 147 of 1998);
- European Communities (Shipments of Hazardous Waste Exclusively within Ireland) Regulations 2011, S.I. No 324 of 2011;
- European Communities (Transfrontier Shipment of Waste) Regulations 1994 (S.I. No. 121 of 1994);
- Waste Management (Transfrontier Shipment of Waste) Regulations 1998, as amended, 2014 (S.I. No. 861 of 2014);
- Waste Management (Tyres and Waste Tyres) Regulations 2007 (S.I. No. 664 of 2007), 2017, as amended (S.I. No. 400 of 2017) and 2018 (S.I. No. 96/2018);
- European Union (Batteries and Accumulators) Regulations 2014, S.I. No. 283 of 2014, as amended, 2014 (S.I. No. 349 of 2014), 2015 (S.I. No. 347 of 2015);
- Waste Management (Registration of Brokers and Dealers) Regulations 2008, SI No. 113 of 2008;
- Waste Management (Prohibition of Material Disposal by burning) Regulations 2009, S.I. No. 286 of 2009, as amended 2013 (S.I. No. 504 of 2013), 2017 (S.I. No. 599 of 2017);

- European Communities (Waste Directive) Regulations 2011, S.I. No. 126 of 2011, as amended 2016 (S.I. No. 315 of 2016);
- European Waste Catalogue (EWC) and Hazardous Waste List 2002;
- Waste Management (Food Waste) Regulations 2009, S.I. No 508 of 2009, as amended, 2015 (S.I. No. 430 of 2015);
- European Union (Properties of Waste Which Render It Hazardous) Regulations 2015, S.I. No. 233 of 2015 as amended 2018 (S.I. No. 383/2018);
- Air Pollution Act, 1987 (Emission Limit Values for use of Asbestos) Regulations, 1990, S.I. No. 28 of 1990, as amended 1996 (S.I. No. 264/1996);
- EC (Control of Emissions of Gaseous & Particulate Pollutants from Non-Road Mobile Machinery) Regulations 2007, S.I. No.147 of 2007, as amended, 2011 (S.I. No. 263 of 2011), 2012 (S.I. No. 407 of 2012), 2013 (S.I. No. 417 of 2013), 2016 (S.I. No. 2016/1628);
- The EU Regulation 2037/2000 (CFC's, HCFC's, Halons) - Ozone Depleting Substances. Control of Substances that Deplete the Ozone Layer Regulations 2006, S.I. No 281 of 2006, as amended, 2011 (S.I. No. 465 of 2011);
- EU F Gas Regulations 2014, S.I. No. 517 of 2014;
- Waste Management (Packaging) Regulations 2014 (S.I. 282 of 2014) as amended 2015 (S.I. No 542 of 2015);
- Planning and Development Acts 2000 to 2015, as amended 2018 and 2019; and
- Protection of Environment Act 1992 as amended 2003 and 2017.

2.4. Relevant Guidance

The purpose of the DoEHLG (2006) guidelines (*'Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects'*) was to establish a common framework and standard methodology for the preparation of WMPs within the Construction sector. This document provides a clear definition of C&D waste:

'Construction and demolition waste is defined as waste which arises from construction, renovation and demolition activities, together with all waste categories mentioned in chapter 17 of the European Waste Catalogue (EWC). Also included within the definition are surplus and damaged products and materials arising in the course of construction work or used temporarily during the course of onsite activities.'

The following specific objectives are set out within the guidelines:

- To promote a clear, integrated strategy for the management of C&D waste which is followed throughout the project lifecycle;
- To set out a process which the client, planner, designer, Contractor, sub-contractors and suppliers can engage in proactively in order to reduce C&D waste and to improve waste management procedures;
- To provide a standardised platform for designers, developers, practitioners and competent authorities in order to assess the robustness and adequacy of C&D WMPs; and,
- To provide guidance as to when a C&D WMP is required through the establishment of clear thresholds.

One of the key principles set out in the guidelines (DoEHLG, 2006) is the prevention of waste and this concept should be at the core of each project from the planning and preliminary design stages through to the construction and operational phases. Specifically, the guidance states; *'During the inception and preliminary planning stages of the project, special attention should be given to the development of a C&D waste management approach, which should establish goals for the diversion of waste from landfill and focus upon waste prevention, reuse and recycling opportunities'*. Every effort will be made to prevent and limit the amount of waste generated at the very outset of this project.

3. Description of the project

3.1. Location, Nature and Scale of the Project

The proposed scheme is 4.8km in length. It commences in the townland of Grange at its western extent. It commences to the west of the existing R162/N52 staggered junction which is proposed to be upgraded to a roundabout. After the proposed roundabout junction of the R162/N52, the scheme continues in a north easterly direction, where it crosses over the disused Navan to Kingscourt railway line. The scheme then continues northeast, crossing the Headstown Stream. It continues in a north-easterly direction, crossing the Stephenstown Stream and a minor drainage ditch, and crosses the existing N52 and the L34013 at grade at Stokes Cross junction. The proposed scheme then takes a more north easterly direction where it comes close to the Carnacop Stream. The scheme continues in a north-easterly direction, crossing the L74102, after which it eventually ties into the existing N52 in the townland of Clontail. 2no. properties will require demolishing - a commercial facility which produces concrete mouldings and statues etc at Ch 3610 and a domestic house at Ch 4020 - as part of this scheme, as indicated on Figure 3-1 and in Appendix A The scheme will involve the construction of one major junction in the form of a roundabout at the R162/N52 crossing, two minor priority junction (staggered) and the eventual tie-in to the existing N52. The proposed route will cross over the existing disused Navan to Kingscourt railway line. There will be 4no. watercourse crossings including crossings of the Headstown stream, Stephenstown stream and 2no. unnamed streams as shown on Figure 3-1 below.

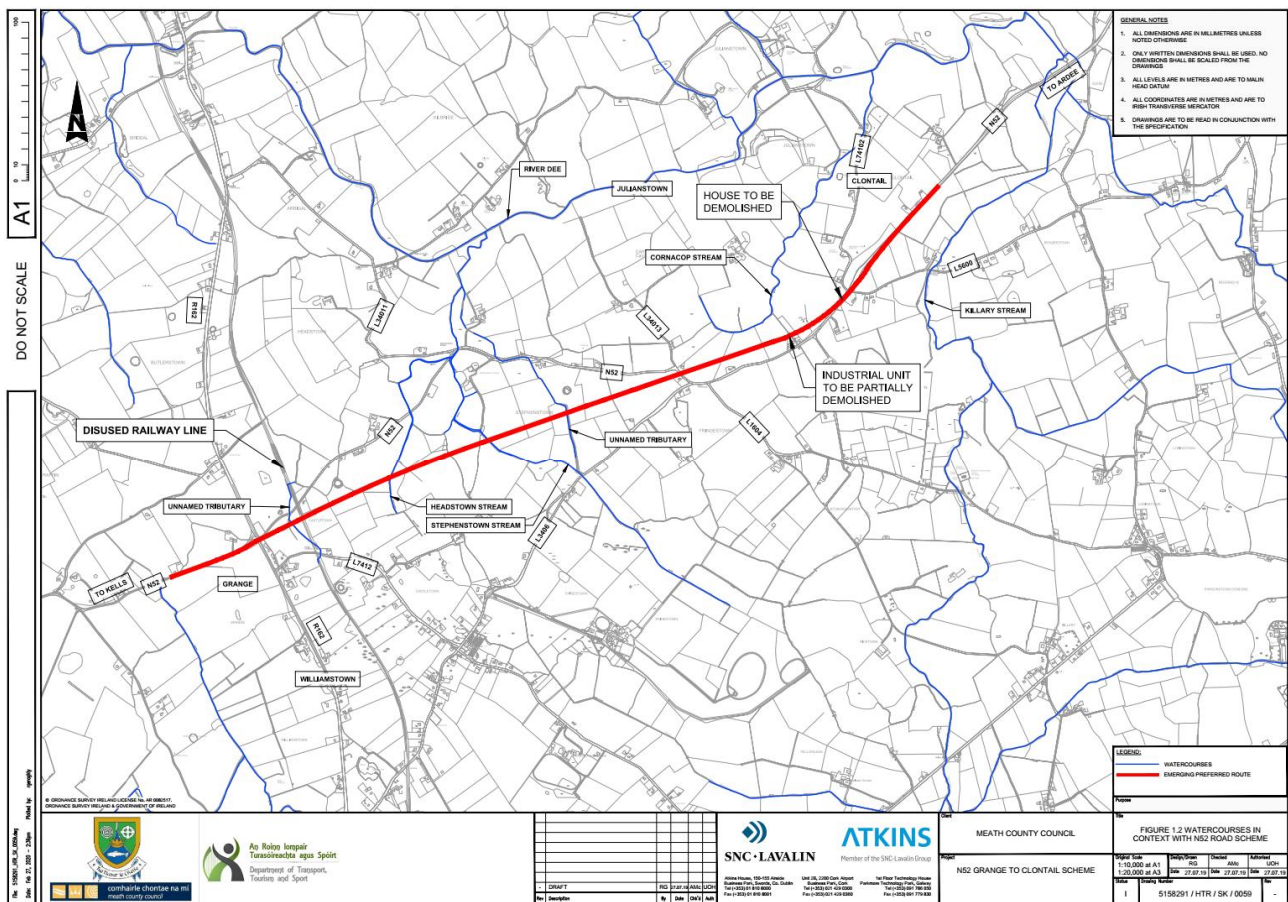


Figure 3-1 – Key Constraints

A Type 2 Single Carriageway, all-purpose road with a 3.50m lane in each direction will be constructed to the geometric standards of DN-GEO-03031 and TII Standard Construction Detail CC-SCD-00002 with a Design Speed of 100km/h. This road cross section provides facilities for pedestrians and cyclists in the form of a two-way facility located on one side of the road. It can cater for approximate capacities of up to 8,600 AADT. Refer to Figure 3-2 for the proposed Type 2 Single Carriageway Cross Section.

The proposed corridor cross-sections will, where practicable, also account for the inclusion of Clear Zones (as defined in TII Publication DN-REQ-03034) to provide forgiving roadsides, and maintenance areas (as defined in accordance with DN-GEO-03036). Required Clear Zone widths for 100km/h National Roads are min. 8.0m.

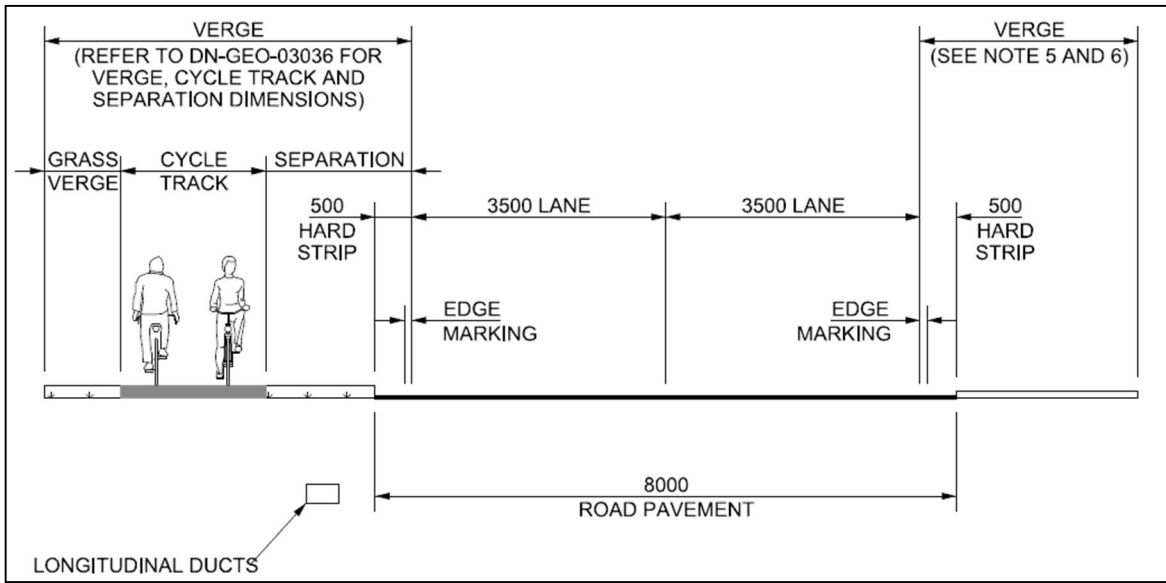


Figure 3-2 - Type 2 Single Carriageway (extract from CC-SCD-00002)

This road type consists of an overall paved road width of 8.0m which comprises 2 No. 3.50m trafficked lanes and 2 No. 0.5m hard strips along each verge, with provision for an off-line cycle track in one of the verges.

4. Demolition Plan

The scheme will be developed both online and offline between the townlands of Grange in the west and Clontail in the east. In general, the scheme alignment has sought to avoid existing dwellings and properties where possible. However, 1no. residential property and 1no commercial property will be acquired to accommodate the scheme development; this is required principally as a result of the upgrade works being carried out on the online section. It is expected that both of these properties will be demolished as part of the scheme.

A detailed Demolition Plan shall be prepared by the appointed Contractor and included as an integral part of the Project C&D Waste Management Plan. A principal objective of the Demolition Plan will be to ensure that where a building or structure requires demolition, the sequence of operations to be followed is predetermined and documented, thereby ensuring that an appropriately selective dismantling/demolition methodology is employed.

Special attention should be paid to the sorting/segregation arrangements employed to separate the demolished structure into individual material fractions. In addition, the transportation and reception arrangements associated with the movement of materials to other construction sites for reuse or reprocessing should also be considered.

Health and Safety procedures should be adhered to in accordance with the requirements of the relevant authorities in the removal of hazardous waste material during the demolition process. The procedures and processes for removal of hazardous waste material will be identified in the detailed C&D Waste Management Plan by the appointed Contractor. Special or hazardous wastes should be retained in isolation from other wastes to avoid further contamination. Certain C&D materials are hazardous e.g. lead, tars, adhesives, sealants. Asbestos containing construction materials are classified as hazardous (see European Waste Catalogue Codes in Appendix 2 of the 'Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects' for a schedule of hazardous construction materials). If such materials are mixed with non-hazardous materials e.g. lead-based paint tins discarded onto a stockpile of brick and concrete, the entire quantity of material becomes hazardous and must be managed as hazardous waste.

5. Construction Details

As detailed in Section 3.1 above the scheme will involve the construction of a single carriageway with a cycleway to the northern side. It will involve the construction of a roundabout at the junction of the R162. 4No. watercourses will be culverted. The scheme crosses the existing but unused Navan to Kingscourt railway line.

Areas of soft ground have been identified which will require excavation and disposal and will contribute to the overall fill requirement of the scheme.

The most undulating section of the route is from Ch 1310 to Ch 3400. Here, ground level rises from 49m AOD at Ch 970 to 77m AOD at Ch 2500.

There are eight main cuttings along the route extending to maximum depths of approximately 8 to 10m.

There are eight main embankments area along the route, extending to heights of approximately 8 to 9m.

The embankments along the scheme will have side slopes of 1V:3H. The cuttings will typically have side slopes of 1V:2.5H with the exception of a deep cutting at approximately Ch 2400 to Ch 2700. This cutting will have side slopes of 1V:3H.

It is anticipated that the construction works will generate ca. 137,900m³ of unsuitable material with ca. 91,900m³ of imported fill required. These are preliminary figures at this juncture.

6. Wastes Arising including Proposals for Minimisation/Reuse/Recycling

A construction and demolition Waste Manager will be appointed by the Contractor to take responsibility for all aspects of waste management at the different stages of the Project.

Waste materials generated during the construction stage will primarily comprise topsoil, subsoil and excavated bedrock (via. excavation during the installation of drainage networks and underground utilities and culverts). Mixed C&D waste will be generated by the demolition of 1no. house and 1no. commercial premises along the scheme including bricks, blocks tiles slate, glass and timber. The presence of possible asbestos cannot be screened out at this stage. Timber and organic vegetation waste will arise as a result of the removal of hedgerows and canteen waste will be generated by construction workers onsite.

In accordance with good practice, excavated soils will be reused onsite where feasible. It is anticipated that all topsoil excavated will be used for boundary treatment and landscaping purposes. Given that the site is predominantly greenfield in nature (both currently and historically), it is assumed that all of the soils excavated during the construction stage will be native material. Therefore (subject to appropriate testing), such materials should largely be suitable for onsite reuse. Contaminated soil may be associated with the railway line and a hardstanding area adjacent to the R128.

According to the EPA *'Correct classification is the foundation for ensuring that the collection, transportation, storage and treatment of waste is carried out in a manner that provides protection for the environment and human health and in compliance with legal requirements.'* Hence soils requiring offsite disposal must be characterised as per the requirements of the relevant Waste Acceptance Criteria (WAC) under the European Communities Council Decision ((EC) 92003/33/EC) 'council decision of 19 December 2002 establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC'. Soils requiring offsite disposal will also require waste classification in strict accordance with the requirements of the EPA as set out in the following document 'Waste Classification List of Waste & Determining if Waste is Hazardous or Non-hazardous' (EPA, 2015). All waste soils removed from site must be transported by appropriately permitted hauliers and must be disposed of to an appropriately authorised disposal / recovery facility (via. valid Certificate of Registration, Waste Facility Permit, or Waste Facility Licence). The construction phase of the development may generate waste such as construction and demolition (C&D) waste, Mixed Municipal Waste (MMW), Recyclables such as plastic wrapping, wooden pallets, paper and/or waste electrical and electronic equipment (WEEE). The following steps will be implemented as part of the management plan to minimise the amount of waste generated onsite;

- Materials will be ordered on an 'as needed' basis which will reduce the amount of unwanted material being brought onto the site;
- Materials shall be stored and handled in a careful manor to ensure no damage occurs to the materials; and,
- Regular internal audits will be undertaken to ensure efficiency waste is been disposed of appropriately.

It is proposed that all waste generated onsite will be segregated into each waste type as per the relevant List of Waste (LoW) code. The LoW code (also referred to European Waste Catalogue (EWC) code). All waste will be removed on a regular basis from the onsite work. All waste materials will be removed offsite by a suitably permitted waste haulage Contractor who holds a current valid waste collection permit issued by the National Waste Collection Permit Office (NWCPO). All waste generated during the proposed development will be disposed of by the Contactor in accordance with all relevant waste management legislation.

6.1. Potentially Hazardous Wastes to be produced

6.1.1. Fuels, Oils and Chemicals

Hazardous materials (fuels, oils, bituminous and chemicals) will be used at the site during the Construction Phase. As per industry standards any fuel and oils temporarily stored onsite will be stored in double skinned / appropriately bunded storage tanks, in a secure dedicated fuel storage location onsite. All other chemicals including paints, varnishes, glues, adhesives, degreasing agents and cleaning agents will be securely stored

in a dedicated temporary bunded chemical store onsite. All machinery including any generators / pumps used onsite should be checked at the start of each work shift for evidence of any fuel or oil leaks (and removed offsite for any repairs as may be required).

Fuel, oil and chemical spill kits should be available at the designated storage areas, along with the relevant Safety Data Sheet (SDS). SDS documents contain information on the potential hazards (health, fire, reactivity and environmental) and how to work safely with the relevant chemical. All site operatives should receive training in appropriate refuelling methods and machinery checks, and chemical handling methods to be implemented onsite. Taking account of these control measures, along with the fact that the volumes of paints, varnishes, glues, adhesives etc. will be minor, it is not expected that any waste fuel, oil or chemicals will be generated during the construction phase. Hazardous material will be removed offsite by a suitably permitted waste haulage Contractor who holds a current valid waste collection permit issued by the National Waste Collection Permit Office (NWCPO). The transfer of hazardous waste will be notified to the National TFS Office managed by Dublin City Council in advance and a Waste Transfer form will be completed for each load.

6.1.2. Contaminated Soils

Based on available information 2 no. possible sources of contamination have been identified onsite, where the route crosses the railway line and the demolition of the industrial facility as shown on Figure 3-1 above.

Excavation works during the construction phase should be monitored and in the unlikely event that contaminated materials are encountered at these locations or any other location along the proposed route this soil will need to be segregated from all uncontaminated soils, temporarily stored (any stockpiles should be lined and covered by heavy duty 1000 gauge plastic) sampled and analysed for relevant parameters (Waste Acceptance Criteria suite e.g. Rilta Disposal Suite). Any contaminated soils must be characterised as per the requirements of the relevant Waste Acceptance Criteria (WAC) under the relevant European Communities Council Decision (EC) (92003/33/EC), and classified in accordance with the requirements of the EPA as set out in the following documents 'Waste Classification List of Waste & Determining if Waste is Hazardous or Non-hazardous' (EPA, 2015). Any contaminated soils must be transported by appropriately permitted hauliers and disposed of to an appropriate EPA licensed Waste Facility in accordance with all relevant waste management legislation.

6.1.3. Non-native Invasive Species

Meath County Council advised that Japanese knotweed (*Fallopia japonica*) was reported to the west of the disused railway line immediately north of the existing N52, and to the north of the proposed route along the existing N52. These locations should be cordoned off during construction works. A site walkover survey of the general study area undertaken by an experienced Atkins Senior Ecologist in August 2018, found no evidence of invasive species along the proposed scheme.

However a pre-construction invasive species survey will need to be carried out by the Contractor along the proposed route. In the highly unlikely event that any non-native invasive species including Japanese knotweed (*Fallopia japonica*) are identified prior to or during construction activity, appropriate measures (designed, scoped and managed by a relevant specialist) will be required in order to remediate any identified Japanese knotweed stems and any soils impacted by the plant roots.

In regard to non-native invasive species the following points should be noted;

- Regulations 49 and 50 of Part 6 of the European Communities (Birds and Natural Habitats) Regulations, 2011 (S.I. No. 477 of 2011) outlines the legal context for the prohibition of the introduction and dispersal of certain plant and animal species. Specifically, Section 49, paragraph 2 states that any person without the required licence "who plants, disperses, allows or causes to disperse, spreads or otherwise causes to grow" any plant species listed in Part 1 of the Third Schedule within the State shall be guilty of an offence.
- Under Section 50 paragraph 1, a person without the required licence "shall be guilty of an offence if he or she has in his or her possession for sale, or for the purposes of breeding, reproduction or propagation, or offers or exposes for sale, transportation, distribution, introduction or release" of any plant species listed in Part 1 of the Third Schedule or anything from which "a plant referred to in Part 1 of the Third Schedule can be reproduced or propagated or "a vector material listed in Part 3 of the Third Schedule".

6.2. Summary of Potential Waste Streams (LoW / EWC Codes)

A summary of the main hazardous and non-hazardous waste streams, which could arise during the construction phase is presented below, along with the relevant List of Waste (LoW) code. The LoW code (also referred to as European Waste Catalogue (EWC) code) serves as a common method of characterising various waste streams. Assignment of waste codes will determine how and where the generated waste can be disposed of. LoW codes must be selected for each waste type – a full description of each code is available on the EPA website¹.

It should be noted that the summary list presented in Table 2.1 is a non-exhaustive list and it will be the Contractor's responsibility to ensure all waste streams generated onsite during the construction phase for this project are appropriately characterised, managed and disposed of in accordance with all relevant waste management legislation.

Table 6.1 - Summary list of LoW Codes, which may be relevant to the site (See also Note 1)

Waste Material	LoW Code
Concrete, bricks, tiles and ceramics	
concrete	17 01 01
bricks	17 01 02
tiles and ceramics	17 01 03
mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	17 01 07
Wood, glass and plastic	
wood	17 02 01
glass	17 02 02
plastic	17 02 03
Bituminous mixtures, coal tar and tarred products	
bituminous mixtures	17 03 02
metals (including their alloys)	
mixed metals	17 04 07
Soil (including excavated soil from contaminated sites), stones and dredging spoil	
soil and stones containing hazardous substances	17 05 03*
soil and stones other than those mentioned in 17 05 03	17 05 04
Gypsum-based construction material	
Gypsum-based construction material	17 08 02
Other construction and demolition wastes	
mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	17 09 04
Miscellaneous Waste	

¹ https://www.epa.ie/pubs/reports/waste/stats/wasteclassification/EPA_Waste_Classification_2015_Web.pdf

Waste Material	LoW Code
Paper and cardboard	20 01 01
biodegradable waste (Green waste)	20 02 01
batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries	20 01 33*
batteries and accumulators other than those mentioned in 20 01 33	20 01 34
Waste fuel oil and diesel	13 07 01*
Waste petrol	13 07 02*
Waste other fuels (including mixtures)	13 07 03*
Chemicals – Solvents	20 01 13*
Chemicals – Pesticides	20 01 19*
Chemicals - paint, inks, adhesives and resins containing hazardous substances	20 01 27*
Chemicals - paint, inks, adhesives and resins other than those mentioned in 20 01 27	20 01 28
Chemicals - detergents containing hazardous substances	20 01 29*
Chemicals - detergents other than those mentioned in 20 01 29	20 01 30
insulation materials other than those mentioned in 17 06 01 and 17 06 03	17 06 04

Note 1: The use of an asterisk on a LoW code denotes that the material is characterised as hazardous.

7. Waste Management

7.1. Soil Generation

It is anticipated that the construction works will generate ca.137,900m³ of unsuitable material (with ca. 91,900m³ of imported fill required). It should be considered that these are preliminary design figures which will be rationalised as the detailed design progresses. Contaminated soil may be encountered in the vicinity of the railway crossing and the commercial facility that will be removed.

7.2. Construction Waste Management & Disposal Costs

In terms of waste management and disposal costs, at this preliminary juncture it would not be feasible to estimate the total cost of waste management and disposal associated with the proposed development. Estimated costs will be determined by the Contractor and presented within the project specific detailed C&D WMP.

7.3. Proposed Management Strategy for each Waste Stream

One of the key principles set out in the guidelines (DoEHLG, 2006) is the prevention of waste and this concept should be at the core of each project from the planning and preliminary design stages through to the construction and operational phases. Specifically, the guidance states:

'During the inception and preliminary planning stages of the project, special attention should be given to the development of a C&D waste management approach, which should establish goals for the diversion of waste from landfill and focus upon waste prevention, reuse and recycling opportunities.'

Every effort should be made to prevent and limit the amount of waste generated at the very outset of the project. At the preparatory phase of the construction phase the following measures will aid the prevention of waste in the first instance:

- Schedule and plan delivery of materials on an 'as needed' basis to limit any surplus materials;
- Schedule and plan delivery of materials in sufficient dimensions so as to optimise the use of these materials onsite;
- Careful handling of materials will limit the potential for any damage; and,
- Where feasible, ensure that sub-contractors are responsible for the provision of the materials they require onsite; this will help reduce any surplus waste.

The majority of the waste that will be generated onsite includes topsoil and subsoil and this is quantified below. The Contractor will be required to satisfy themselves of the quantity of the remaining waste streams that may be generated onsite. Each waste stream will be managed onsite as follows:

7.3.1. Native Non-Contaminated Soils

The estimated volume of soil generated during the construction phase (ca. 137,900m³) will be minimised by reducing / eliminating the need for excavation and importing of capping layers. Lime stabilisation may also be used to reduce the amount of waste soils generated onsite. Topsoil will be reused onsite for landscaping purposes. The balance of soil materials excavated from the site will be reused where possible, and infill where appropriate, ensuring that any residual soil waste is kept to a minimum. Any surplus soil will be characterised and removed offsite in accordance with all relevant waste management legislation.

7.3.2. Contaminated Soils

The proposed handling of contaminated soils is outlined in Section 6.1.1.

7.3.3. C&D Waste

Bricks blocks and stone will be segregated particularly during the demolition of the 1 no. residential premises and the 1 no. commercial premises. This waste will be stored in dedicated skips and transferred to a C&D waste recovery facility for recovery.

7.3.4. Mixed C&D Waste

Following segregation onsite, any residual mixed C&D waste will be collected in containers specifically for mixed C&D waste; these will be removed offsite for subsequent offsite separation and disposal at a waste disposal / recovery facility.

7.3.5. Wood / Timber

Timber waste will be segregated in order to prevent contamination by other wastes and will be stored so as to limit the potential for this material to rot. Wooden pallets will be returned to relevant suppliers where possible. Timber offcuts will be reused onsite where feasible. A covered receptacle for waste wood will be placed in the waste storage area, prior to removal from site for recycling. All such timber will be free from chemical treatment.

7.3.6. Metals

Metal waste will be generated during the project. All waste metal will be segregated for subsequent offsite disposal at the waste disposal / recovery facility for reuse and recycling. Given the significant scrap value associated with metal waste, this waste will be stored in a dedicated container within a secure part of the site, and regular collections from site to the waste recycling facility will limit the potential for unauthorised entry and theft.

7.3.7. Paper, plastics and Packaging

Packaging wastes will be removed (paper / cardboard / plastic / general waste) offsite for subsequent offsite separation and disposal / recycled at a waste disposal / recovery facility. Waste packaging will be stored in dedicated containers in the waste storage area for collection and subsequent segregation and recycling.

7.3.8. Canteen / Office Waste

Onsite staff canteens will generate food and packaging waste. Dedicated containers will be provided at each canteen to permit easy segregation of these wastes; brown bins will be provided for compostable food waste, green bins will be provided for dry recyclables (packaging, hard plastic, paper, cardboard, tetrapak etc.) and black bins will be provided for any residual waste.

7.3.9. Other wastes

In addition to the above waste streams, other waste materials will be generated during the construction phase. These residual wastes will typically comprise non-recycling waste such as soiled paper / cardboard / plastics / cloth and canteen food waste. These materials will be stored separately to all other waste streams in order to prevent any cross contamination.

All C&D waste materials will be segregated onsite into the various waste streams, via. dedicated skips and storage areas. Waste will be removed from site by a suitably permitted waste haulage Contractor. The Contractor should clearly identify all proposed waste haulage Contractors within the project specific detailed C&D WMP. Each waste haulage Contractor must hold a current valid waste collection permit issued by the National Waste Collection Permit Office (NWCPPO). All waste materials generated during the construction phase must be removed offsite to an appropriately permitted or licenced waste disposal / recovery facility.

7.4. Tracking and Documentation Procedures for Off-Site Waste

All waste transport and disposal / recovery must be carried out in accordance with relevant waste management legislation (outlined in Section 2) and any subsequent future legislation which may apply. A nominated Waste

Manager for the project will be responsible for ensuring correct tracking and documentation procedures are undertaken for all waste removed from site during the project. Each consignment of waste removed from site will be tracked and recorded. A site record detailing the date, truck registration, waste type, estimated volume and destination will be filed onsite for each consignment, along with the corresponding truck docket and weighbridge record at the offsite disposal / recovery destination. A copy of the relevant waste collection permits and waste permit / waste licence for the relevant disposal / recovery facilities will be available onsite for the duration of the project.

8. Training Awareness and Competence

8.1. Waste Manager - Training and Responsibilities

The Contractor will nominate a waste manager for the duration of the construction phase. The waste manager will be responsible for the efficient operation of onsite waste management procedures. They will also be responsible for ensuring that all waste removed offsite is appropriately characterised (under the correct LoW code), transported and disposed of in accordance with all relevant waste management legislation. It will be the waste managers responsibility to maintain all waste management and disposal / recovery records onsite throughout the project. These site records should be made available for viewing by the Client, Employer's Representative and statutory consultees (MCC, EPA) as required.

The waste manager should be appropriately trained in the correct documentary procedure, waste auditing and best practice methods in onsite waste minimisation and waste management. It will be the waste managers responsibility to implement the project specific detailed C&D WMP during the construction phase. Onsite toolbox talks with site operatives to highlight any specific waste management concerns will also be carried out should the need arise.

8.2. Site Operatives - Training and Responsibilities

All site personnel should receive waste management information as part of their initial site briefing from the waste manager. The initial briefing should include a discussion of the key points set out in the project specific detailed C&D WMP, along with the specific procedures to be implemented onsite in order to segregate and appropriately store the generated waste and key control measures such as refuelling procedures and oil, fuel and chemical storage requirements. This will ensure that all onsite personnel are familiar with the site-specific waste management strategy. The project specific detailed C&D WMP should be available onsite for the full duration of the Construction Phase.

9. Record Keeping

The Contractor, through the appointed waste manager, will be responsible for ensuring that the full details of all materials deliveries, materials movements and C&D waste generated are recorded during the construction phase. Each C&D waste consignment removed from site will be tracked and documented in order to ensure full traceability of the material from site to the final destination. A single record will be completed for each individual consignment. An example of a waste tracking sheet is included as Appendix B.

The Contractor will also receive printed receipts / weighbridge records from the waste disposal / recovery facilities for each individual consignment. These records will enable the Contractor to accurately quantify the total volume of waste removed for offsite disposal / recovery for each individual waste stream. These records will be maintained onsite and will be made available for auditing of the project specific detailed C&D WMP.

10. Outline Waste Audit Procedures

According to DoEHLG (2006), a waste audit represents a systematic study of the waste management practices applied in the project and is required in order to highlight firstly, the potential issues that can arise during the waste management process and, secondly, the benefits of waste prevention and minimisation. Therefore, waste audits should be carried out routinely onsite by the Waste Manager. The specific audit plan will be set out by the Contractor within the project specific detailed C&D WMP. However, at this preliminary stage the following measures will be undertaken as a minimum:

- When materials arrive on site, they will be properly recorded including the assignment of such materials to specific uses within the works;
- A review will be undertaken of onsite waste management practices in order to identify any improvements which may be required;
- Onsite waste management processes from materials delivery through to waste disposal / recovery (including the quantity, type and composition of all waste) will be reviewed in order to identify any opportunities for waste reduction;
- Corrective actions will be highlighted and implemented following each audit. Such actions include applying 'lessons learned' regarding efficient waste management on this project to other projects in the future to enable further waste reduction; and
- The key steps and findings from each waste audit should be presented in a summary report.

Separately a routine waste report (i.e. waste validation report), which clearly presents the types and total quantities of waste removed from site for subsequent disposal / recovery, transport details and the final destination of each waste stream will be prepared by the Contractor. This report will include all required tracking documentation, including any site records, truck dockets and weighbridge receipts (final destination). The guidelines (DoEHLG, 2006) state that *'these summary reports should be prepared within three months of the end of each calendar year. Where the period of construction is greater than one year, reports should be submitted as required by the local authority'* (DoEHLG, 2006).

11. Consultation with Relevant Bodies

Appropriate consultation will be undertaken with relevant bodies by various members of the project team as required throughout the project. Relevant consultees include, but are not limited to, the following:

- MCC (as the relevant local authority for waste matters);
- The EPA (as the relevant regulatory body for environmental matters);
- NWCPO;
- Permitted hauliers; and,
- Suitably permitted / licenced waste disposal / recovery facilities.

12. References

- Department of Environment, Heritage and Local Government (DoEHLG), 2012. 'A Resource Opportunity - Waste Management Policy in Ireland'.
- Department of Environment, Heritage and Local Government (2006) 'Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects'.
- Department of Environment, Heritage and Local Government (1998) 'A Policy Statement – Waste Management - Changing our ways'.
- Department of Environment, Heritage and Local Government (2002) 'Preventing and Recycling Waste: Delivering Change'.
- Eastern Midlands Waste Regional Office, 2015. 'Eastern-Midlands Region Waste Management Plan 2015-2021'.
- European Communities (2011) European Commission (Waste Framework Directive) Regulations 2011 (S.I. 126 of 2011) (EC, 2008).
- European Communities (2011) European Communities (Birds and Natural Habitats) Regulations, 2011 (S.I. No. 477 of 2011).
- European Communities Council Decision (2003) 'Council decision of 19 December 2002 establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC' (2003/33/EC). Environmental Protection Agency (2018) EPA Envision webmapping. Available at <http://gis.epa.ie/Envision>. Consulted September 2019.
- Environmental Protection Agency (2009) 'Development of an Audit Methodology to Generate Construction Waste Projection Indicators for the Irish Construction Industry'. STRIVE Report Series No. 26.
- Environmental Protection Agency (2014) 'Green Procurement: Guidance for the Public Sector'.
- Environmental Protection Agency (2015) 'A review of Design and Construction Waste Management Practices on Selected Case Studies – Lessons Learned'.
- Environmental Protection Agency (2015) 'Design out Waste: Preparation of Waste Reduction Factsheets for Design Teams'.
- Environmental Protection Agency (2015) 'Waste Classification: List of Waste & Determining if Waste is Hazardous or Non-Hazardous'.
- European Union (2014) European Union (Waste Electronic Equipment) Regulations 2008 (S.I. 556/2008) (as amended).
- European Communities Council Decision (2003) 'Council decision of 19 December 2002 establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC' (2003/33/EC).
- Meath County Council (MCC) (2013) 'Meath County Development Plan 2013-2019'.
- Transport Infrastructure Ireland, (2017). 'The Management of Waste from National Road Construction Projects'.
- Waste Electrical and Electronic Equipment Directive 2002/96/EC (as amended).

Appendix A. Drawings



Planning and Development Act 2000 as amended (Part XI)
Planning and Development Regulations 2001-2015 (Part 8)

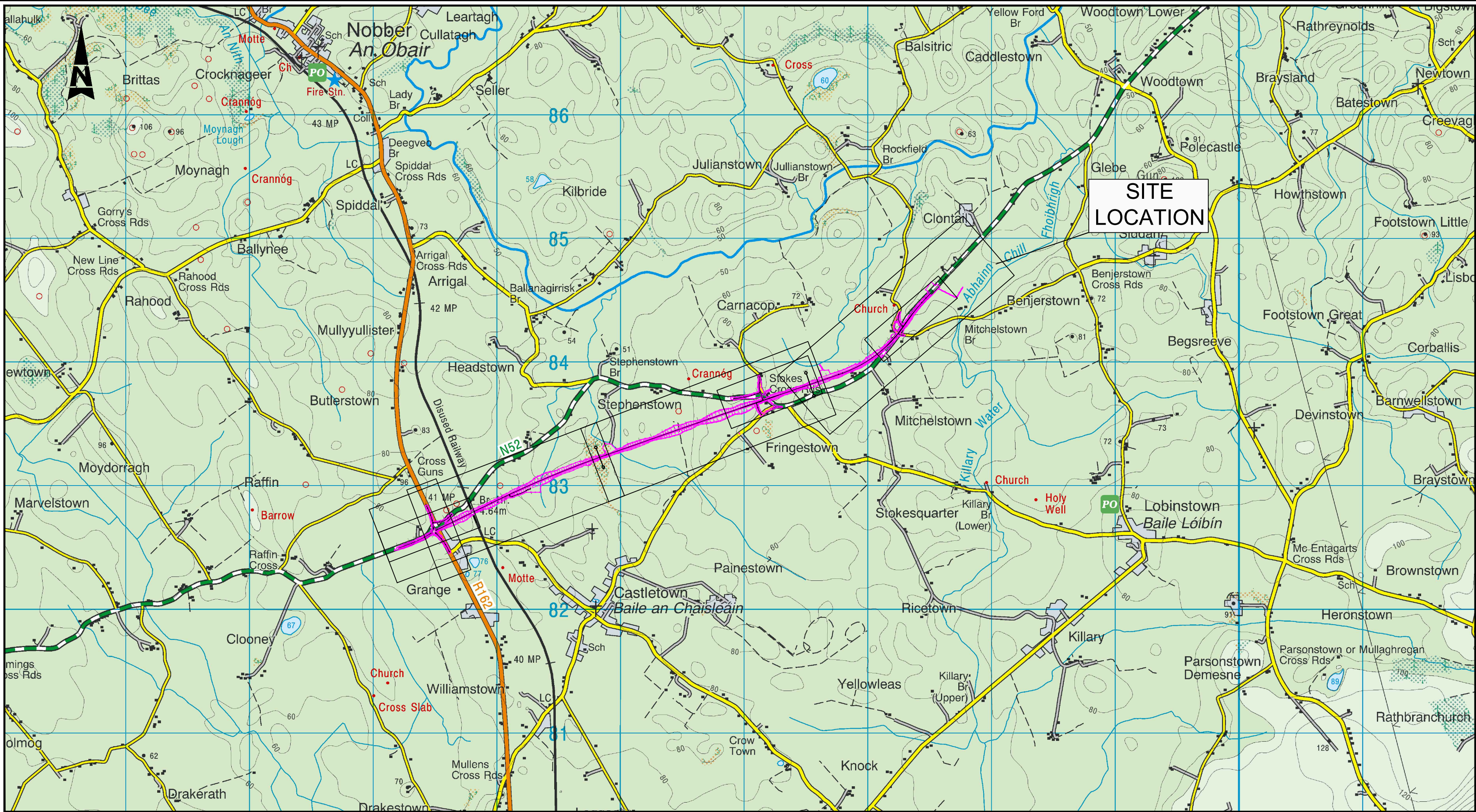
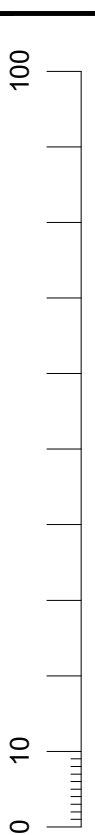
N52 GRANGE TO
CLONTAIL SCHEME

N52 GRANGE TO CLONTAIL SCHEME		
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5158291 / HTR / DR / 0001	PART 8 - SITE LOCATION MAP	D
5158291 / HTR / DR / 0101	PART 8 - HORIZONTAL & VERTICAL ALIGNMENT-MAINLINE - SHEET 1 OF 3	D
5158291 / HTR / DR / 0102	PART 8 - HORIZONTAL & VERTICAL ALIGNMENT-MAINLINE - SHEET 2 OF 3	D
5158291 / HTR / DR / 0103	PART 8 - HORIZONTAL & VERTICAL ALIGNMENT-MAINLINE - SHEET 3 OF 3	D
5158291 / HTR / DR / 0110	PART 8 - HORIZONTAL & VERTICAL ALIGNMENT-SIDE ROADS-SHEET 1 OF 4	D
5158291 / HTR / DR / 0111	PART 8 - HORIZONTAL & VERTICAL ALIGNMENT-SIDE ROADS-SHEET 2 OF 4	D
5158291 / HTR / DR / 0112	PART 8 - HORIZONTAL & VERTICAL ALIGNMENT-SIDE ROADS-SHEET 3 OF 4	D
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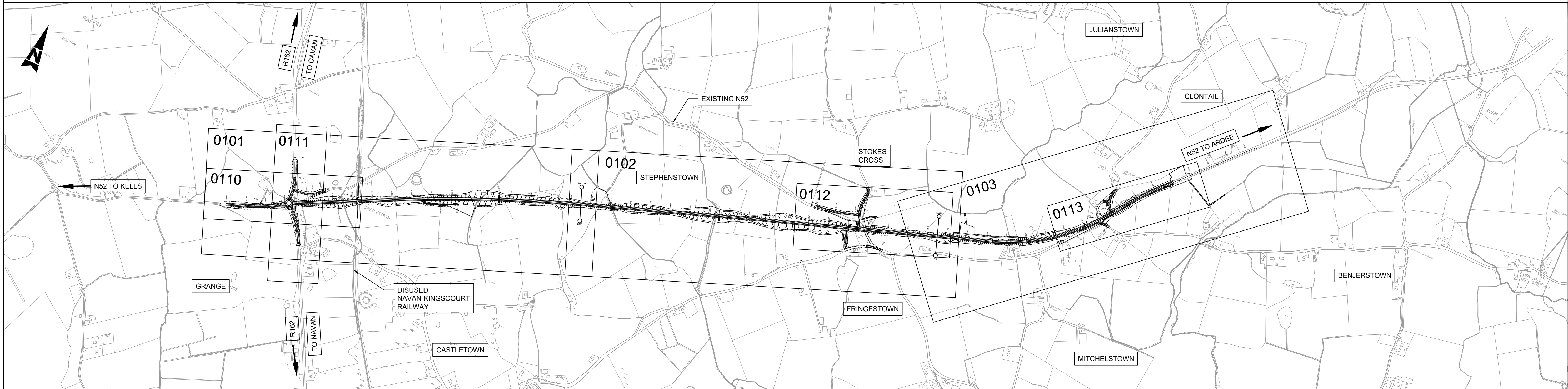
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Scale at A3 1:50,000



SITE PLAN - N52 GRANGE TO CLONTAIL SCHEME

Scale at A1 1:10,000
Scale at A3 1:20,000

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Rev	Description	By	Date	Chk'd	Auth
D	FOR PLANNING	JD	18.09.20	ST	UOH
C	FOR PLANNING	DB	13.08.20	ST	UOH
B	FOR PLANNING	DB	26.02.20	ST	UOH
A	FOR PLANNING	DB	03.07.19	ST	UOH
-	FOR PLANNING	AK	17.05.19	ST	UOH



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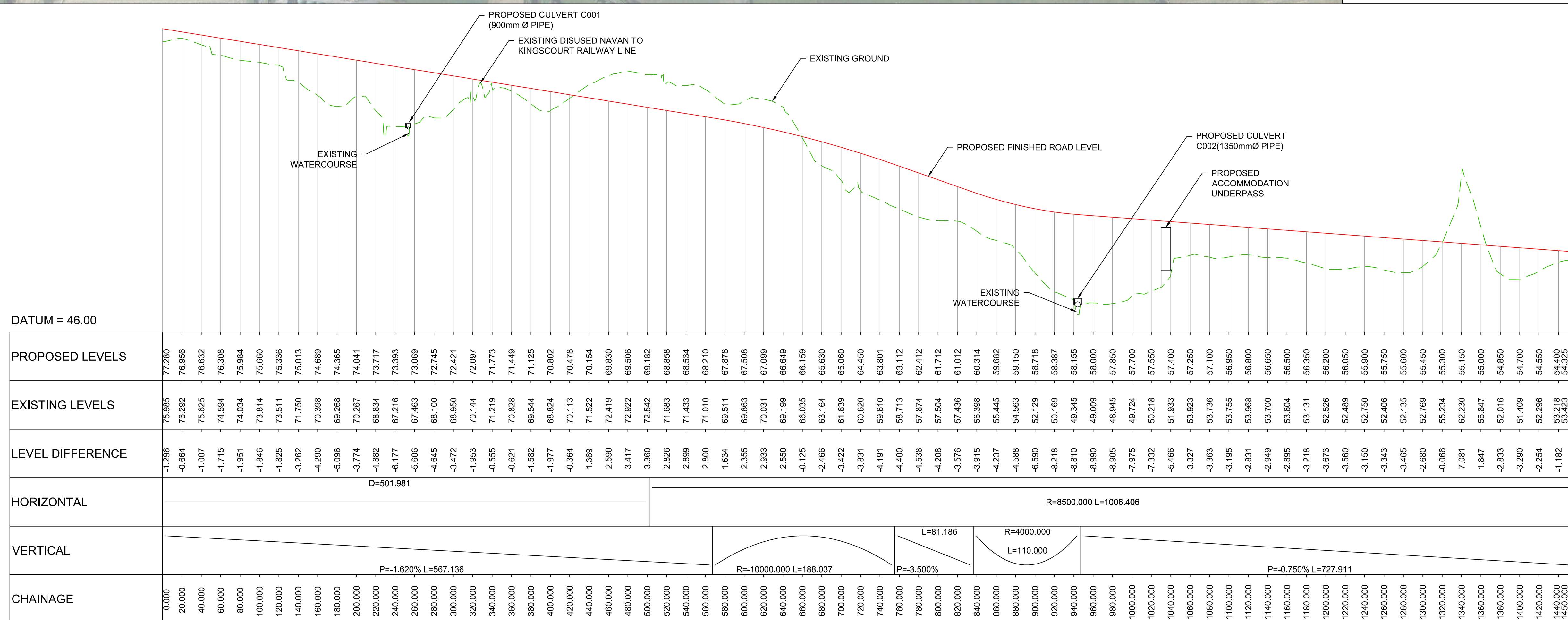
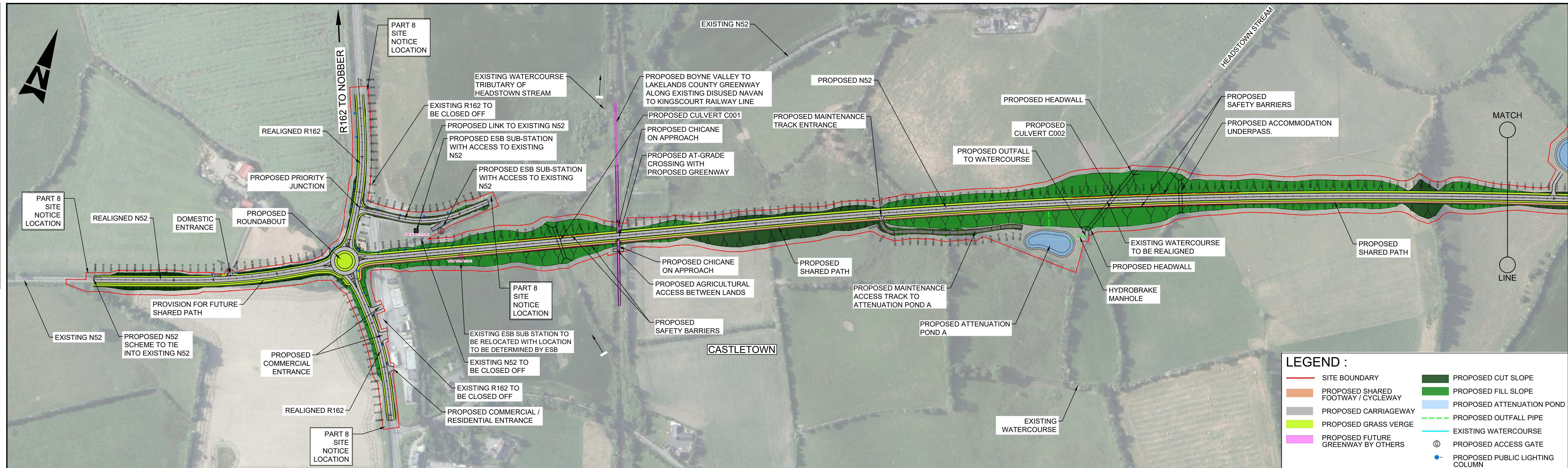
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Client	MEATH COUNTY COUNCIL
Project	N52 GRANGE TO CLONTAIL SCHEME

Purpose	FOR PLANNING
Title	PART 8 SITE LOCATION PLAN
Original Scale	AS SHOWN
Design/Drawn	AK
Checked	ST
Authorised	UOH
Date	17.05.19
Date	17.05.19
Date	17.05.19
Status	P
Drawing Number	5158291 / HTR / DR / 0001
Rev	D

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Date: Sep 21, 2020 - 9:24am
Plotted by: J.Donofrio

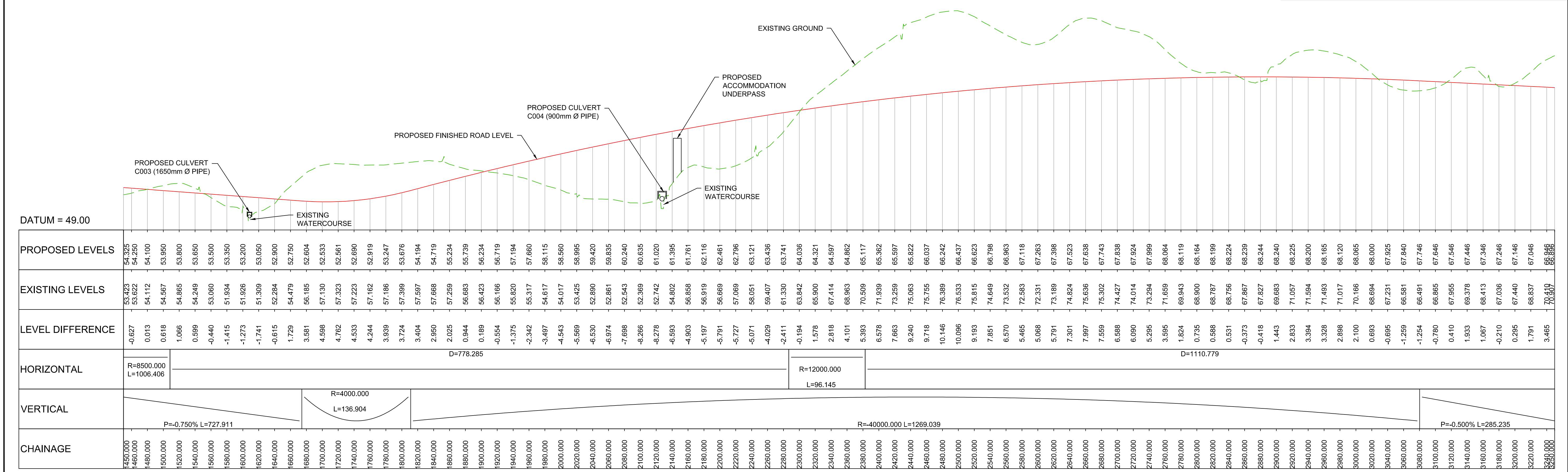
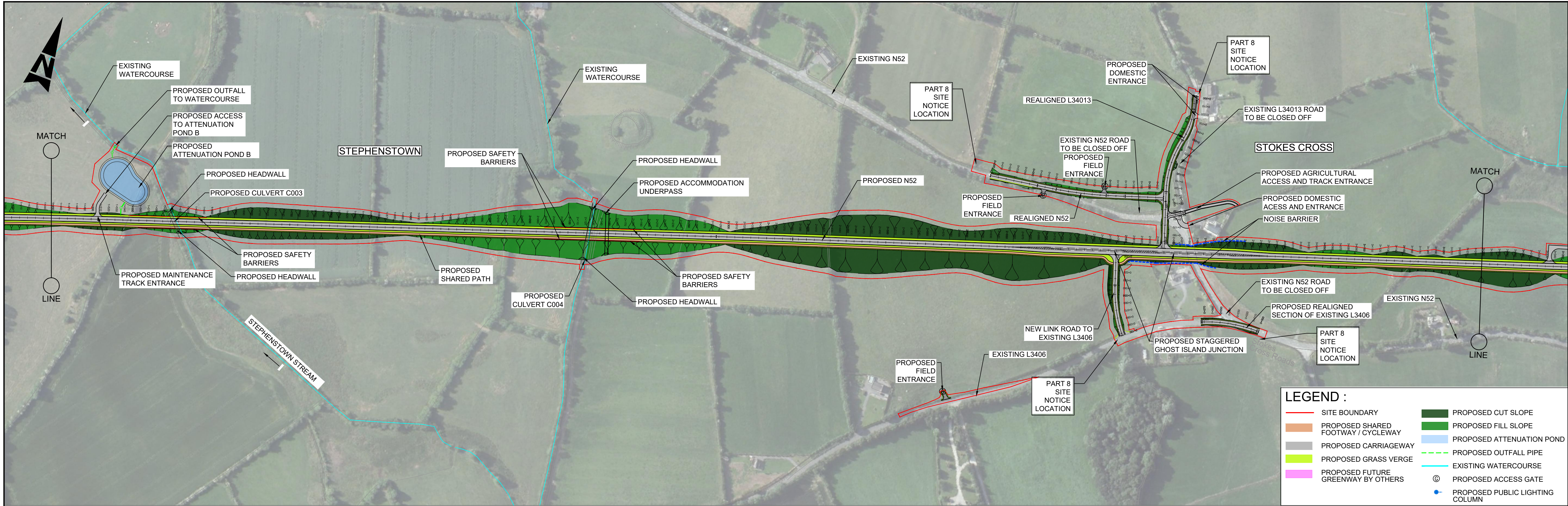


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B	FOR PLANNING	DB	26.02.20	ST	UOH
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Rev	Description	By	Date	Chk'd	Auth

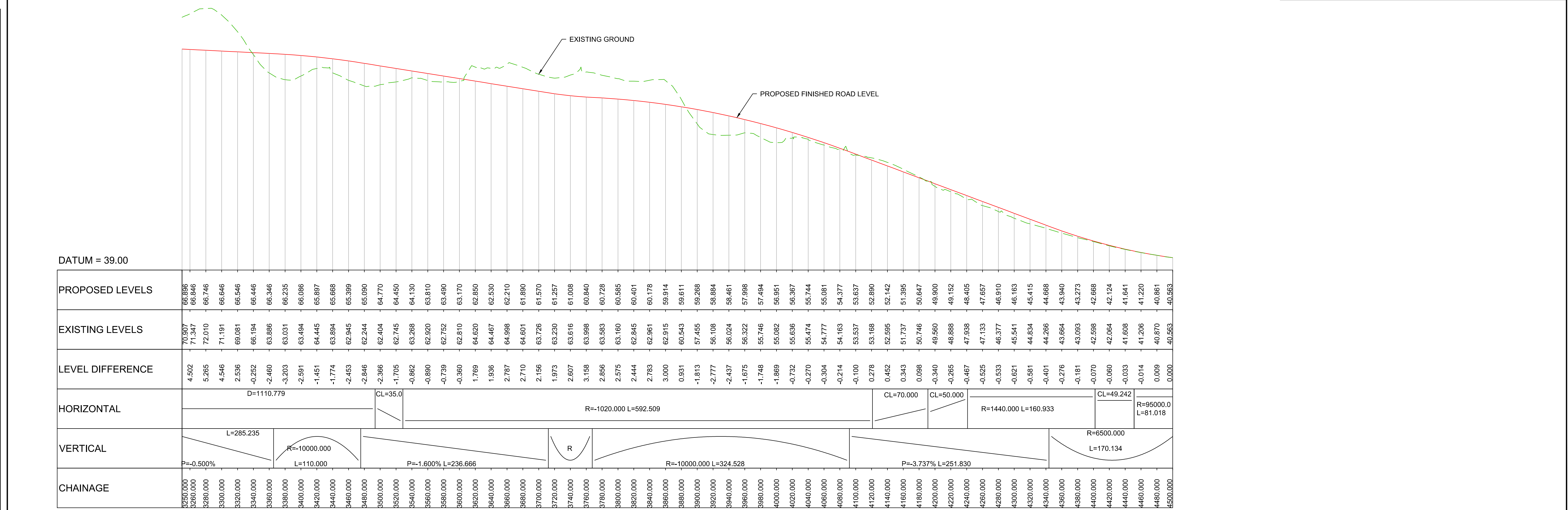
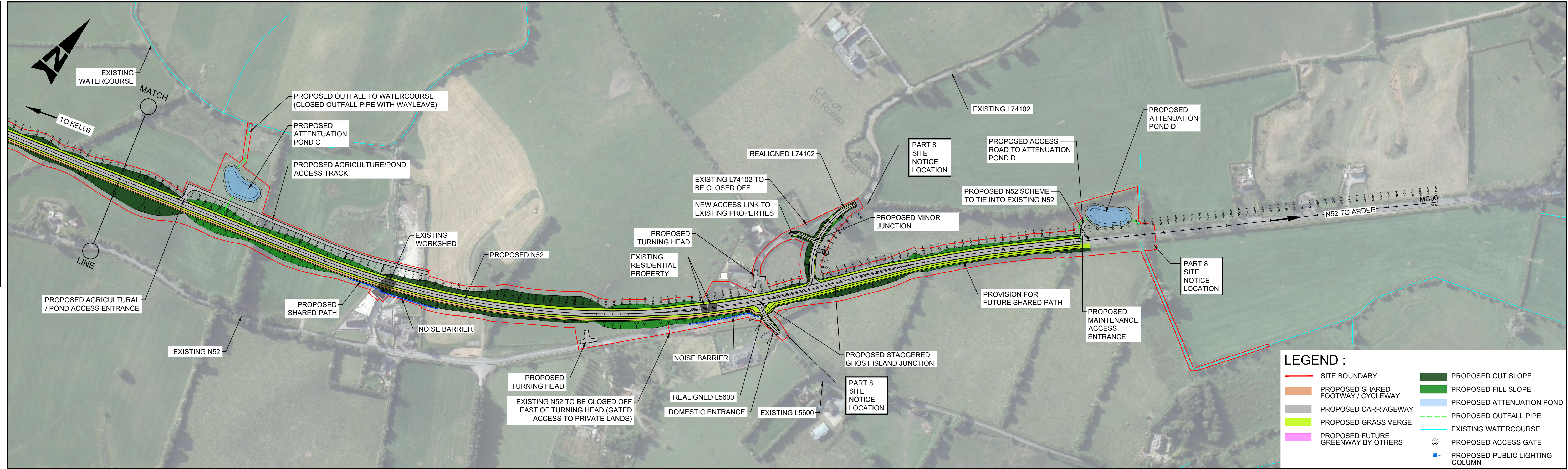
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Client		MEATH COUNTY COUNCIL	
Project		N52 GRANGE TO CLONTAIL SCHEME	
Purpose		FOR PLANNING	
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Checked	ST	Authorised	UOH
Date	17.05.19	Date	17.05.19
Status	P	Drawing Number	5158291 / HTR / DR / 0102
Rev			D



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D	FOR PLANNING	JD	18.09.20	ST	UOH
C	FOR PLANNING	DB	13.08.20	ST	UOH
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Client
MEATH COUNTY COUNCIL

Project
N52 GRANGE TO CLONTAIL SCHEME

Purpose
FOR PLANNING

Title
PART 8
HORIZONTAL AND VERTICAL ALIGNMENT
MAINLINE - SHEET 3 OF 3

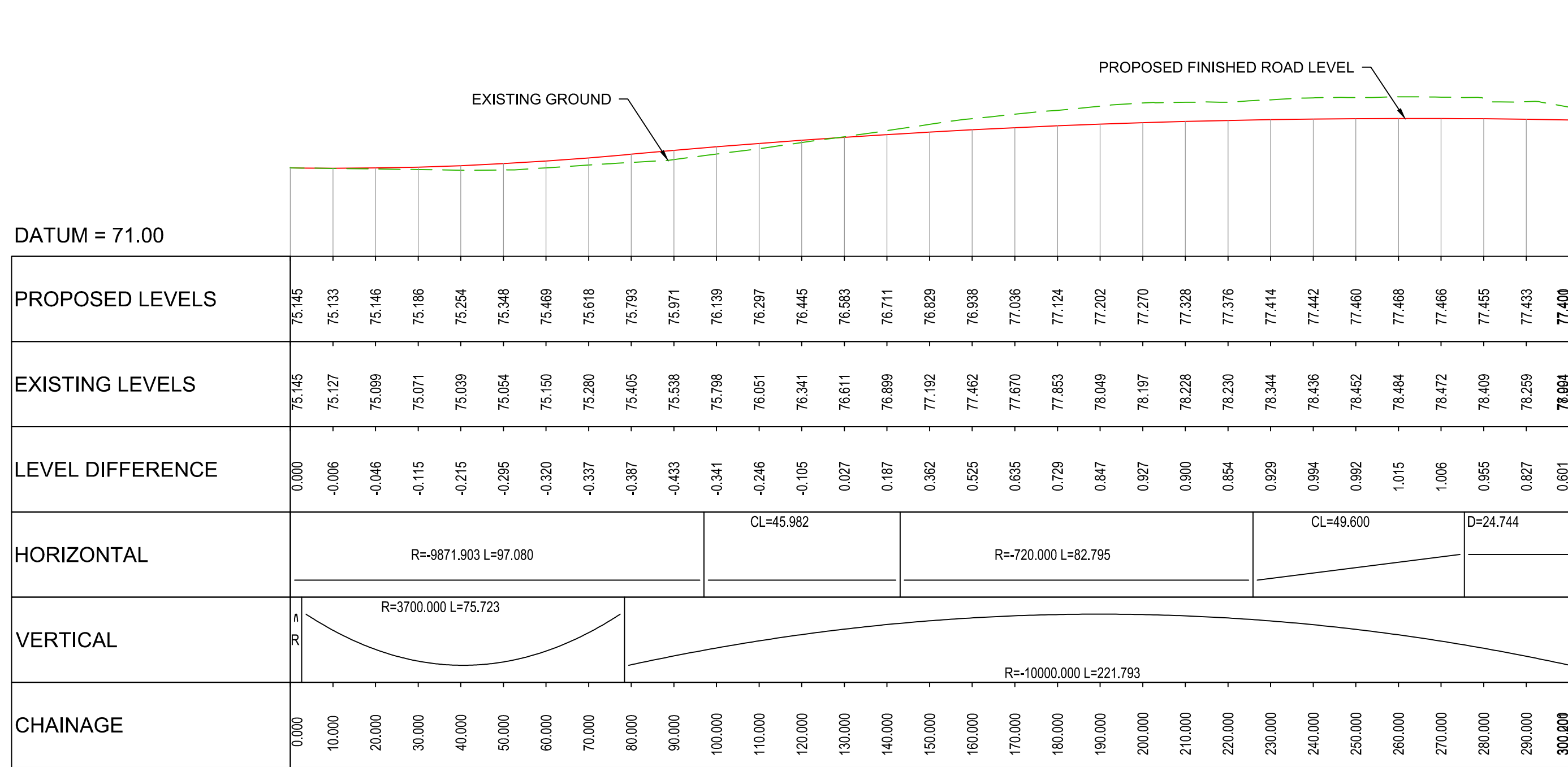
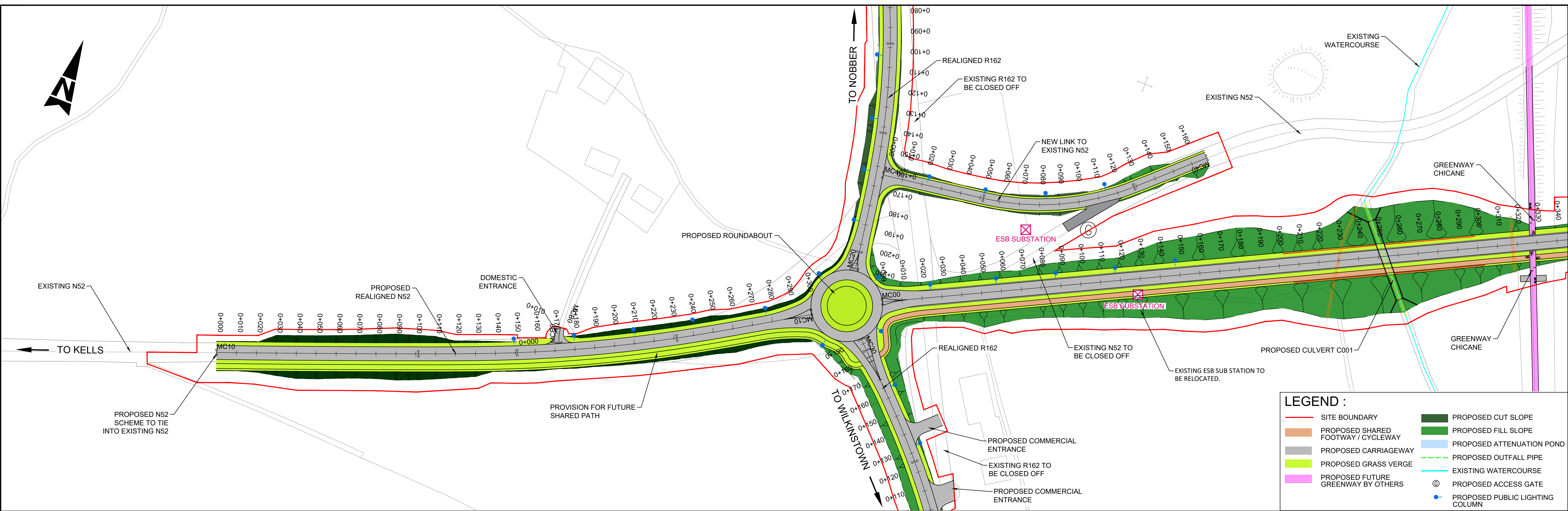
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Status P	Drawing Number 5158291 / HTR / DR / 0103		Rev D

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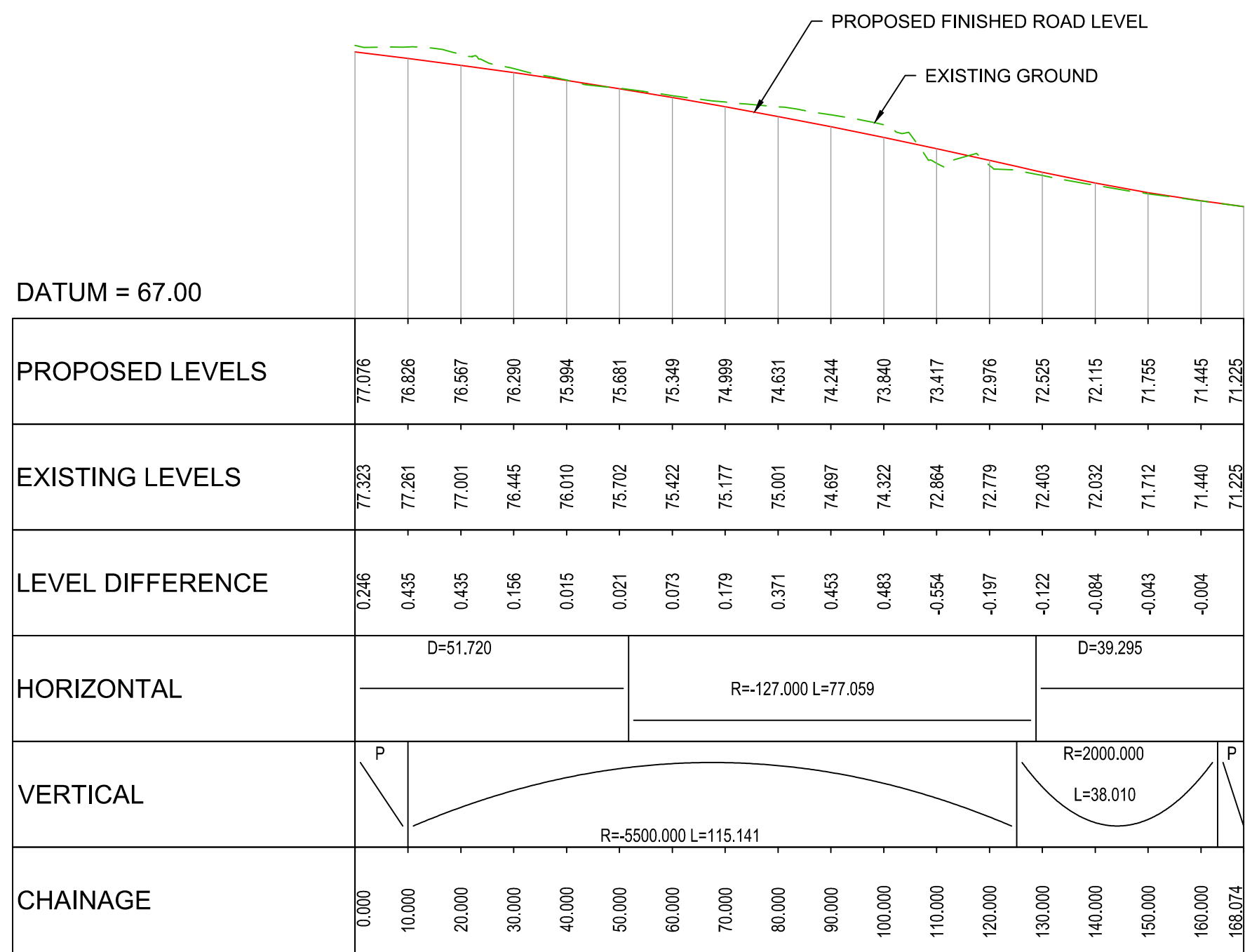
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DO NOT SCALE

File: 5158291_HTR_DR_0110.dwg
Date: Sep 23, 2020 - 10:39am
Plotted by: stabin



LONGITUDINAL SECTION - MC10
SCALE 1:1000 Horizontal, 1:200 Vertical @ A1
SCALE 1:2000 Horizontal, 1:400 Vertical @ A3



LONGITUDINAL SECTION - MC40
SCALE 1:1000 Horizontal, 1:200 Vertical @ A1
SCALE 1:2000 Horizontal, 1:400 Vertical @ A3

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B	FOR PLANNING	DB	26.02.20	ST	UOH
A	FOR PLANNING	DB	03.07.19	ST	UOH
-	FOR PLANNING	AK	17.05.19	ST	UOH
Rev	Description	By	Date	Chk'd	Auth

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Client
MEATH COUNTY COUNCIL

Project
N52 GRANGE TO CLONTAIL SCHEME

Purpose FOR PLANNING					
Title PART 8 HORIZONTAL AND VERTICAL ALIGNMENT SIDE ROADS - SHEET 1 OF 4					
Original Scale 1:1000 at A1 1:2000 at A3	Design/Drawn AK	Checked ST	Authorised UOH		
Status P	Drawing Number 5158291 / HTR / DR / 0110	Date 17.05.19	Date 17.05.19	Rev D	

A1

DO NOT SCALE

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Date: Sep 23, 2020 - 10:35am

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Rev	Description	By	Date	Chk'd	Auth

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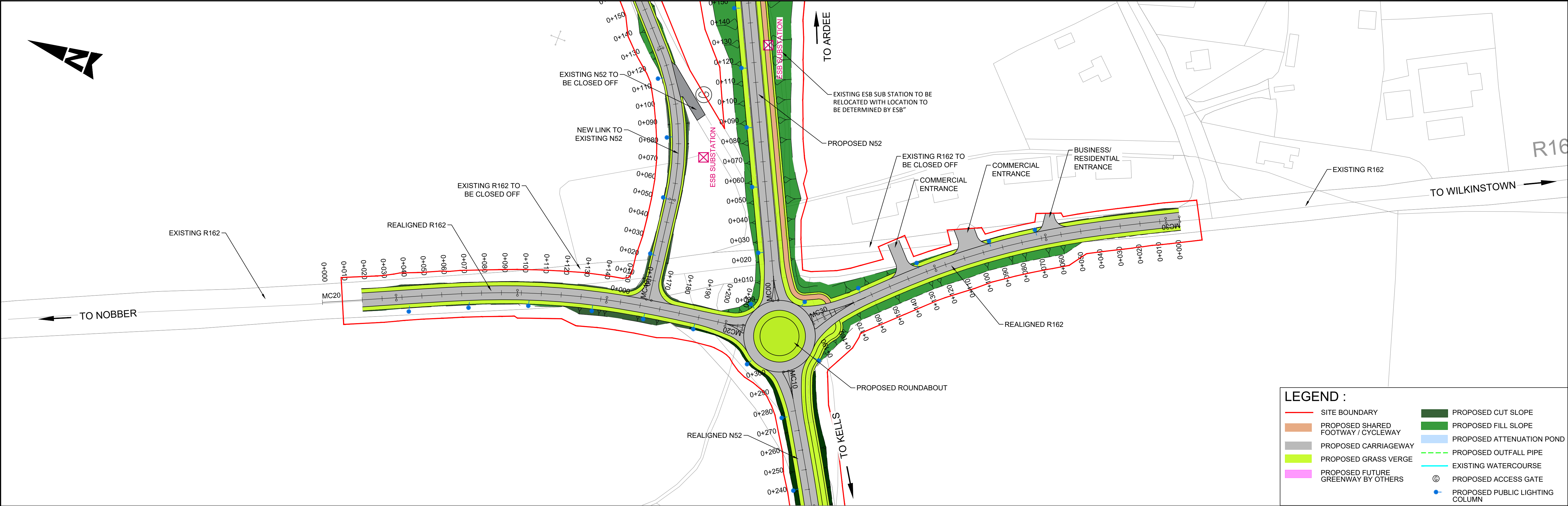
Unit 2B, 2200 Cork Airport
Business Park, Cork
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Fax (+353) 021 429 0360

1st Floor Technology House
Parkmore Technology Park, Galway
Tel (+353) 091 786 050
Fax (+353) 091 779 830

Client
MEATH COUNTY COUNCIL

Project
N52 GRANGE TO CLONTAIL SCHEME

Purpose FOR PLANNING			
Title PART 8 HORIZONTAL AND VERTICAL ALIGNMENT SIDE ROADS - SHEET 2 OF 4			
Original Scale 1:1000 at A1 1:2000 at A3	Design/Drawn AK	Checked ST	Authorised UOH
Status P	Drawing Number 5158291 / HTR / DR / 0111	Date 17.05.19	Date 17.05.19
		Rev D	



LEGEND :	
	SITE BOUNDARY
	PROPOSED SHARED FOOTWAY / CYCLEWAY
	PROPOSED CARRIAGEWAY
	PROPOSED GRASS VERGE
	PROPOSED FUTURE GREENWAY BY OTHERS
	PROPOSED CUT SLOPE
	PROPOSED FILL SLOPE
	PROPOSED ATTENUATION POND
	PROPOSED OUTFALL PIPE
	EXISTING WATERCOURSE
	PROPOSED ACCESS GATE
	PROPOSED PUBLIC LIGHTING COLUMN

DATUM = 72.00

PROPOSED LEVELS	79.908 79.713 79.526 79.348 79.177 79.014 78.850 78.708 78.539 78.353 78.148 77.925 77.710 77.528 77.379 77.264 77.182 77.133 77.118 77.136 77.188 77.272 77.300
EXISTING LEVELS	79.908 79.708 79.525 79.350 79.177 79.015 78.857 78.691 78.527 78.363 78.197 77.968 77.884 77.757 77.624 77.675 77.688 77.118 77.536 77.415 77.365 76.928 76.838
LEVEL DIFFERENCE	0.000 -0.005 -0.001 0.003 0.000 0.001 -0.002 -0.017 -0.013 0.010 0.050 0.043 -0.025 0.229 -0.146 0.412 0.507 -0.015 0.218 0.278 0.177 -0.544
HORIZONTAL	R=3555.015 L=37.124 CL=60.900 R=360.000 L=44.952 CL=60.900 D
VERTICAL	R=12496.860 L=63.639 R=5500.000 L=46.339 R=3000.000 L=102.645
CHAINAGE	0+000 10+000 20+000 30+000 40+000 50+000 60+000 70+000 80+000 90+000 100+000 110+000 120+000 130+000 140+000 150+000 160+000 170+000 180+000 190+000 200+000 210+000 212.693

LONGITUDINAL SECTION - MC20
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SCALE 1:2000 Horizontal, 1:400 Vertical @ A3

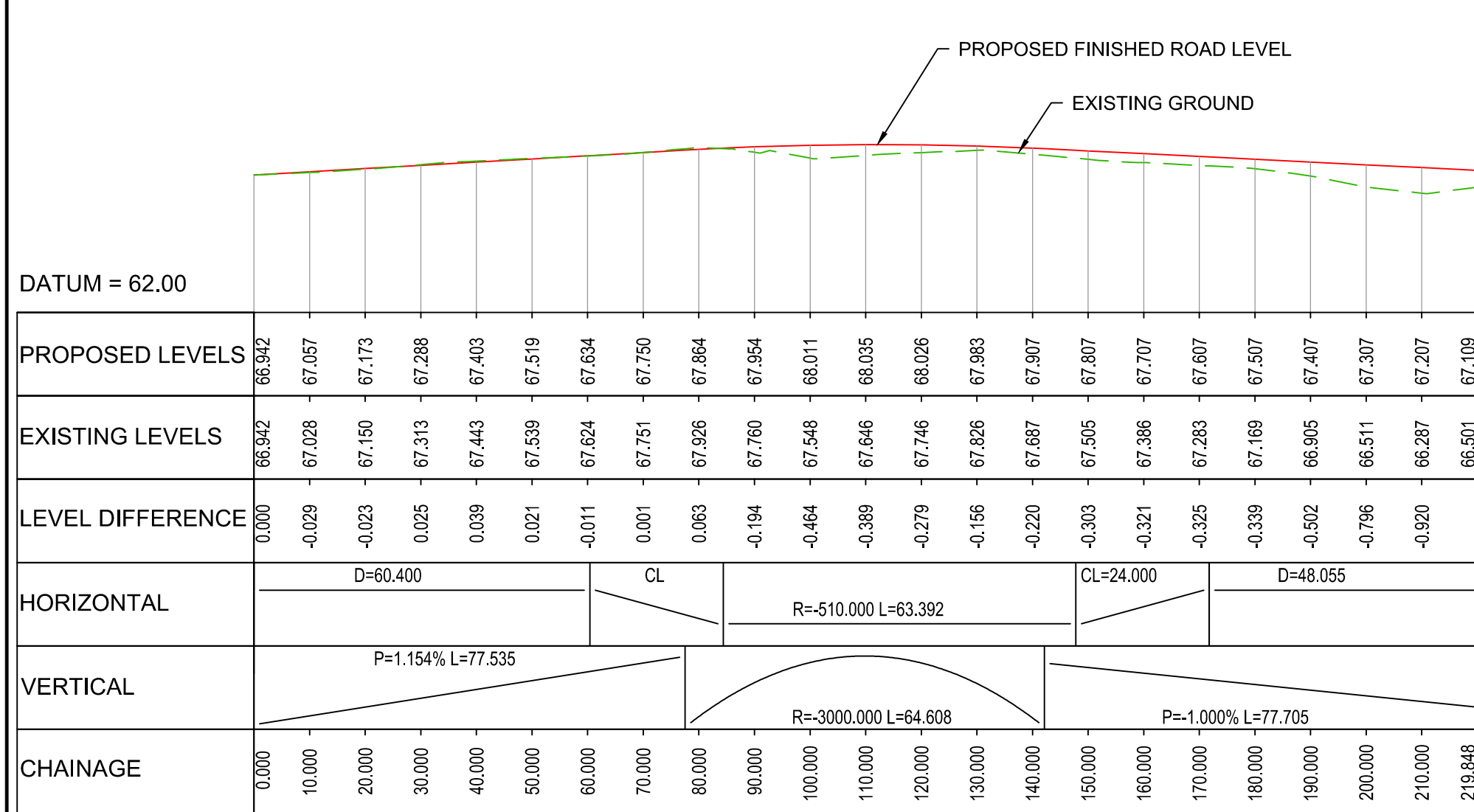
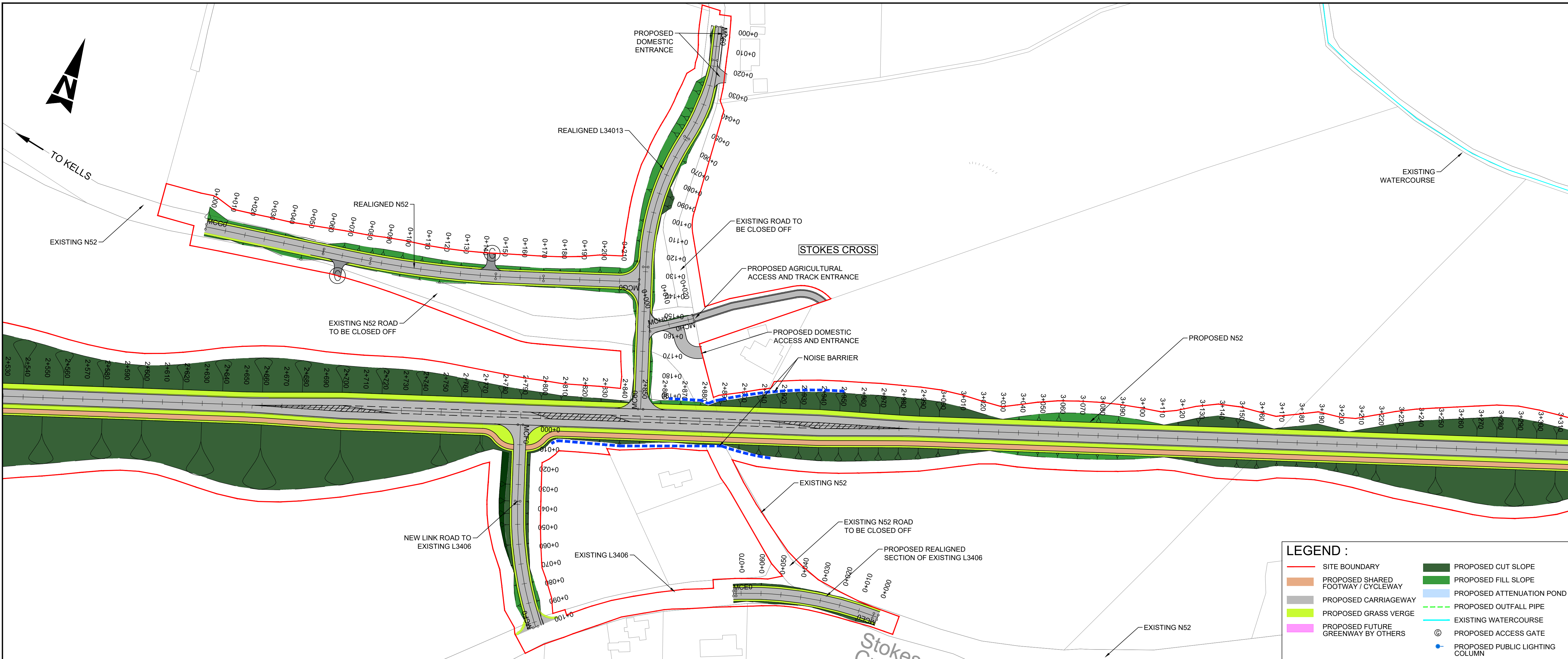
DATUM = 71.00

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EXISTING LEVELS	76.300 76.174 76.032 77.850 77.680 77.519 77.359 77.210 77.054 76.865 76.728 76.086 75.561 75.512 75.442 75.287 75.336 75.169 75.357 76.491 76.835
LEVEL DIFFERENCE	0.000 0.004 0.006 -0.004 -0.002 0.000 -0.002 0.000 -0.012 -0.065 -0.096 -0.672 -1.168 -1.227 -1.346 -1.587 -1.638 -1.905 -1.817 -0.784
HORIZONTAL	D CL=60.900 R=360.000 L=57.688 CL=60.900 D
VERTICAL	P R=14721.798 L=61.706 R=2600.000 L=61.350 P=1.002% L=44.036
CHAINAGE	0+000 10+000 20+000 30+000 40+000 50+000 60+000 70+000 80+000 90+000 100+000 110+000 120+000 130+000 140+000 150+000 160+000 170+000 180+000 190+000 200+000 210+000 212.693

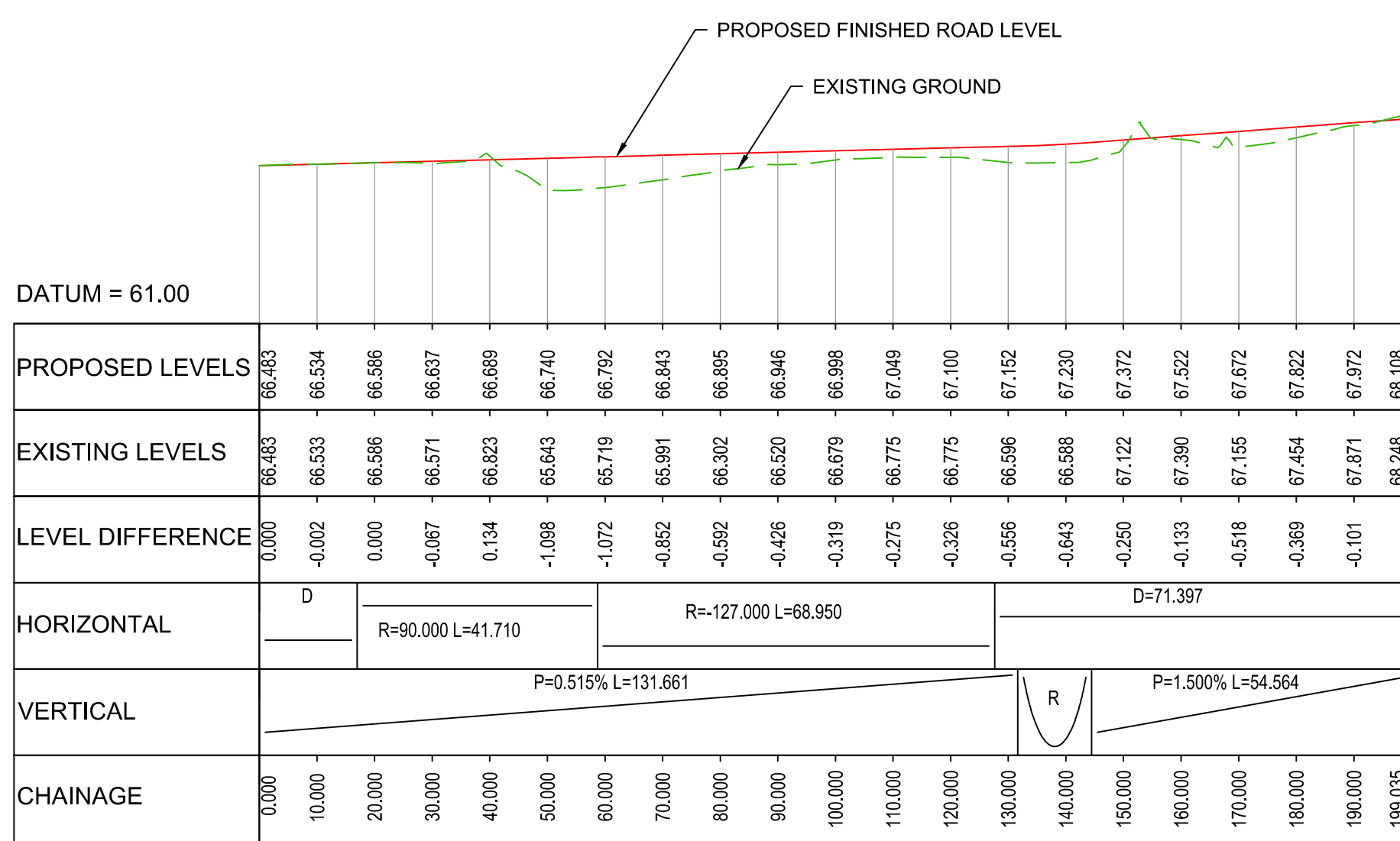
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SCALE 1:2000 Horizontal, 1:400 Vertical @ A3

A1

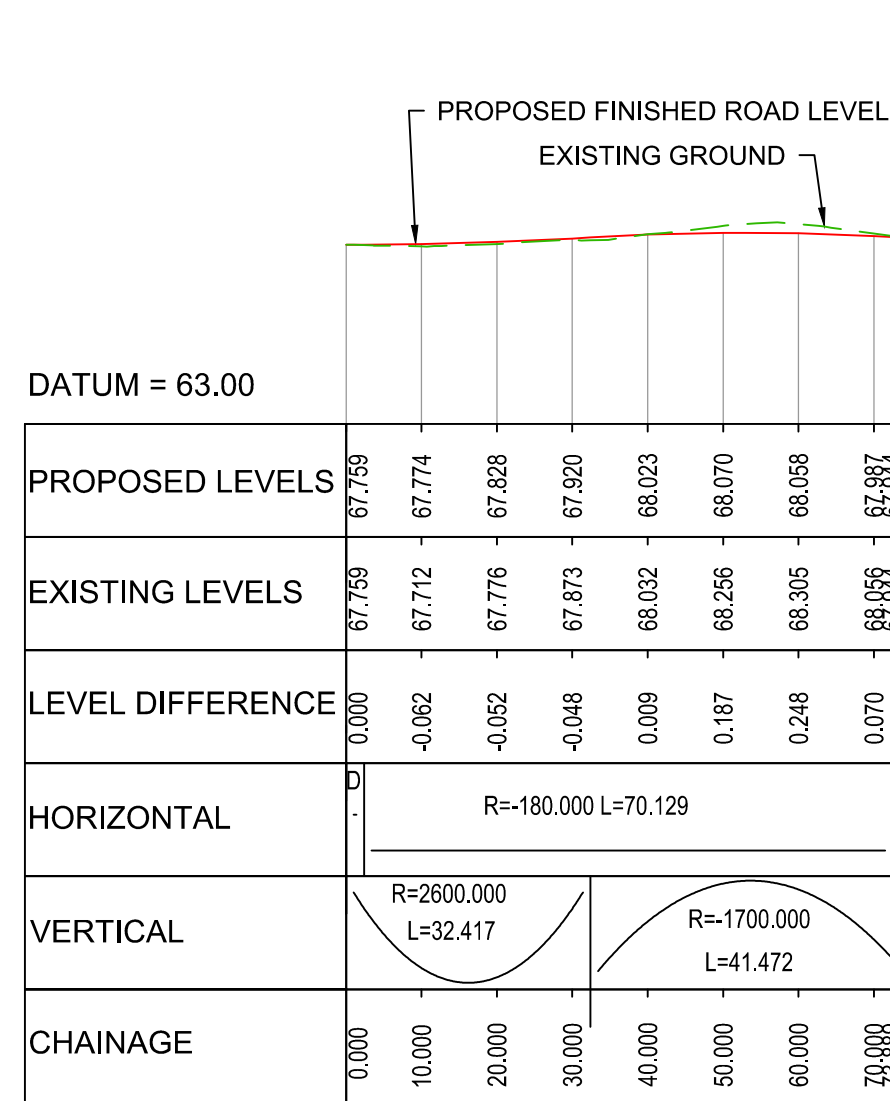
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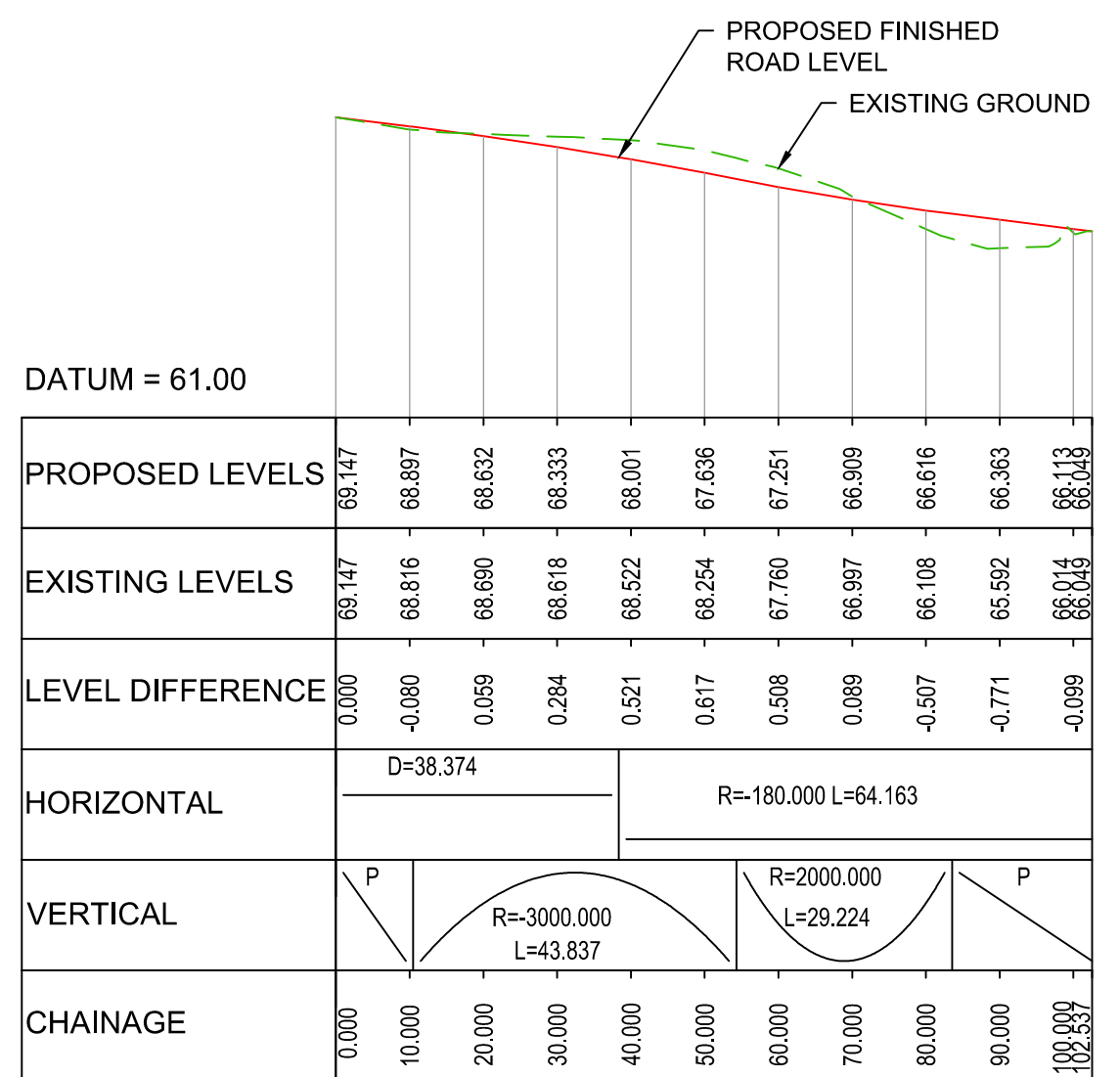
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SCALE 1:1000 Horizontal, 1:200 Vertical @ A1
SCALE 1:2000 Horizontal, 1:400 Vertical @ A3



LONGITUDINAL SECTION - MC60
SCALE 1:1000 Horizontal, 1:200 Vertical @ A1
SCALE 1:2000 Horizontal, 1:400 Vertical @ A3



LONGITUDINAL SECTION - MCE0
SCALE 1:1000 Horizontal, 1:200 Vertical @ A1
SCALE 1:2000 Horizontal, 1:400 Vertical @ A3



LONGITUDINAL SECTION - MCF0
SCALE 1:1000 Horizontal, 1:200 Vertical @ A1
SCALE 1:2000 Horizontal, 1:400 Vertical @ A3

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Department of Transport,
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D	FOR PLANNING	JD	18.09.20	ST	UOH
C	FOR PLANNING	DB	06.07.20	ST	UOH
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A	FOR PLANNING	DB	03.07.19	ST	UOH
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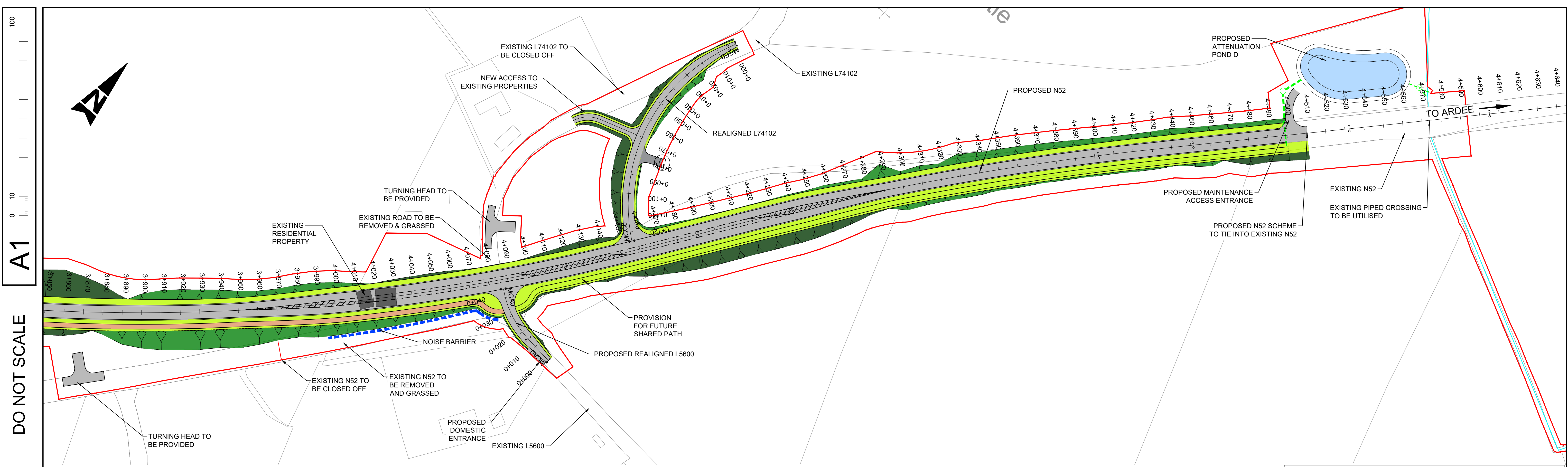
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Client
MEATH COUNTY COUNCIL

Project
N52 GRANGE TO CLONTAIL SCHEME

Purpose FOR PLANNING			
Title PART 8 HORIZONTAL AND VERTICAL ALIGNMENT SIDE ROADS - SHEET 3 OF 4			
Original Scale 1:1000 at A1 1:2000 at A3	Design/Drawn AK	Checked ST	Authorised UOH
Status P	Date 17.05.19	Date 17.05.19	Date 17.05.19
Drawing Number 5158291 / HTR / DR / 0112	Rev D		



12A

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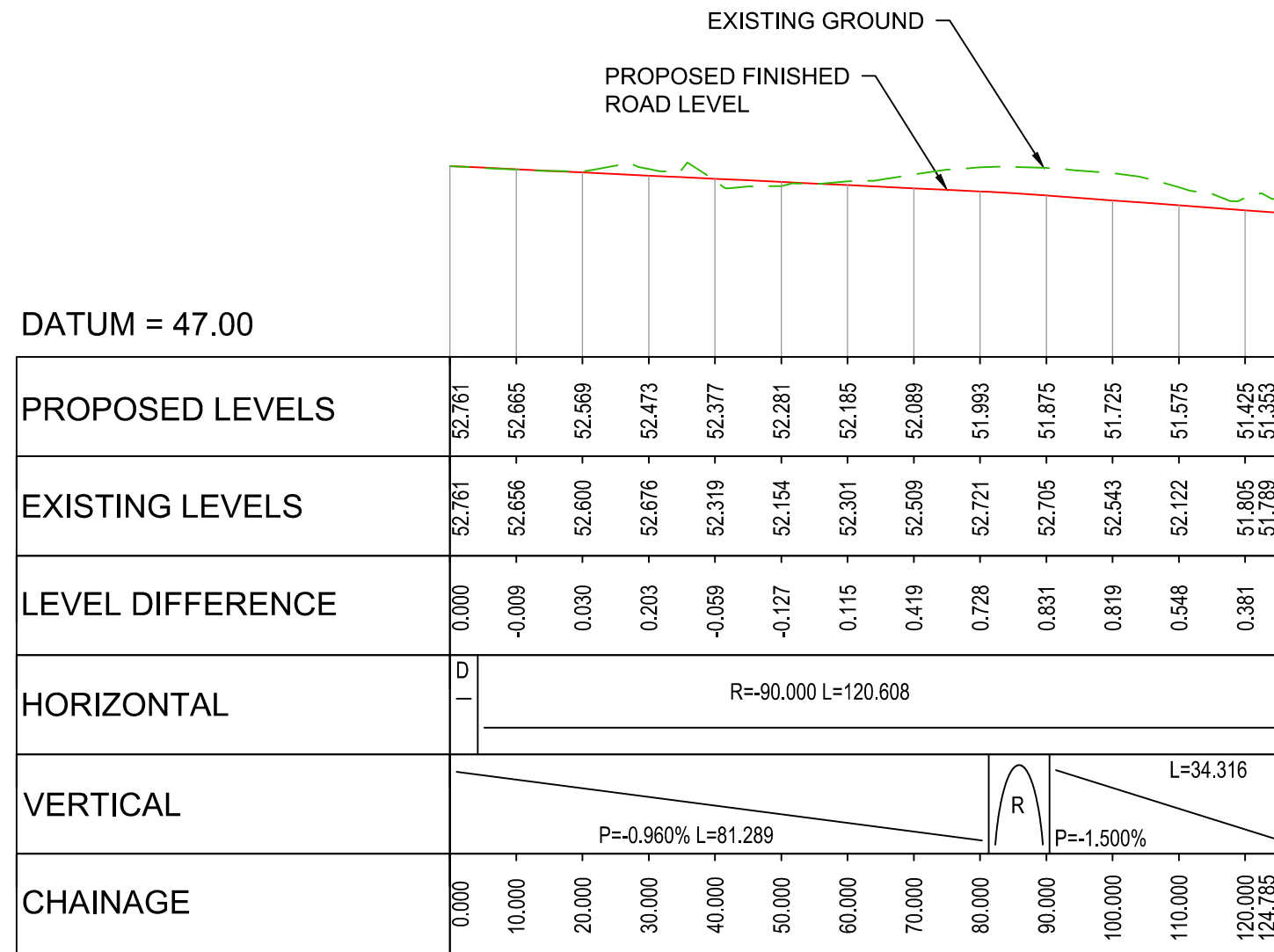
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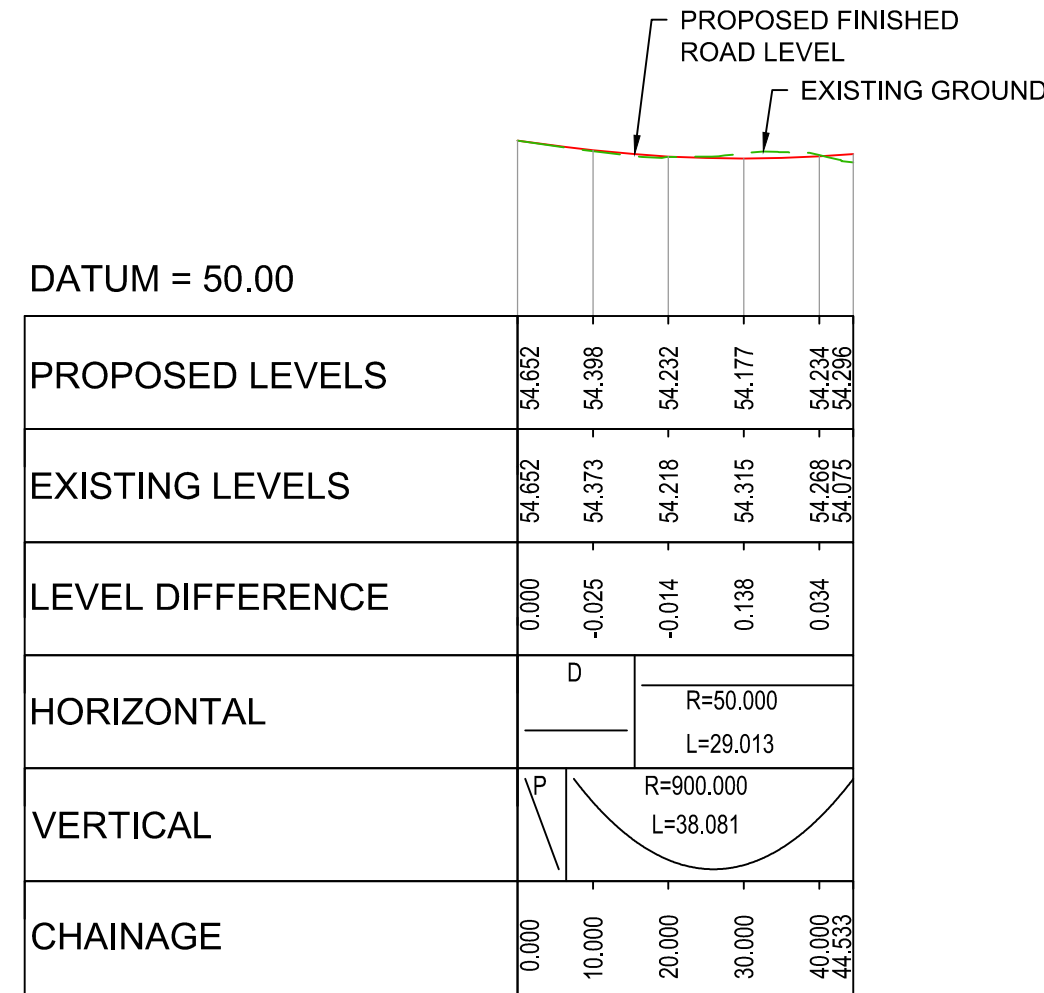
A1

DO NOT SCALE

LEGEND :	
	SITE BOUNDARY
	PROPOSED SHARED FOOTWAY / CYCLEWAY
	PROPOSED CARRIAGEWAY
	PROPOSED GRASS VERGE
	PROPOSED FUTURE GREENWAY BY OTHERS
	PROPOSED CUT SLOPE
	PROPOSED FILL SLOPE
	PROPOSED ATTENUATION POND
	PROPOSED OUTFALL PIPE
	EXISTING WATERCOURSE
	PROPOSED ACCESS GATE
	PROPOSED PUBLIC LIGHTING COLUMN



LONGITUDINAL SECTION - MCC0
SCALE 1:1000 Horizontal, 1:200 Vertical @ A1
SCALE 1:2000 Horizontal, 1:400 Vertical @ A3



LONGITUDINAL SECTION - MCA0
SCALE 1:1000 Horizontal, 1:200 Vertical @ A1
SCALE 1:2000 Horizontal, 1:400 Vertical @ A3

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Date: Sep 23, 2020 - 10:24am
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Department of Transport,
Tourism and Sport

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B	FOR PLANNING	DB	26.02.20	ST	UOH
A	FOR PLANNING	DB	03.07.19	ST	UOH
-	FOR PLANNING	AK	17.05.19	ST	UOH
Rev	Description	By	Date	Chk'd	Auth

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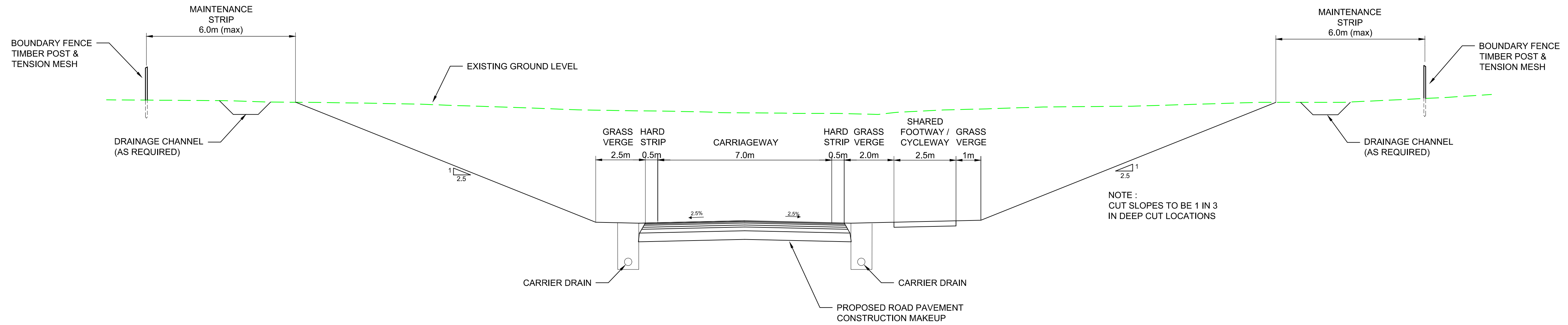
Unit 2B, 2200 Cork Airport
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Fax (+353) 021 429 0360

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Parkmore Technology Park, Galway
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Client		MEATH COUNTY COUNCIL		Purpose		FOR PLANNING	
Project		N52 GRANGE TO CLONTAIL SCHEME		Title		PART 8 HORIZONTAL AND VERTICAL ALIGNMENT SIDE ROADS - SHEET 4 OF 4	
Original Scale		1:1000 at A1 1:2000 at A3		Design/Drawn		AK	
Status		P		Checked		ST	
Drawing Number		5158291 / HTR / DR / 0113		Date		17.05.19	
Rev		D		Authorised		UOH	
Date		17.05.19		Date		17.05.19	

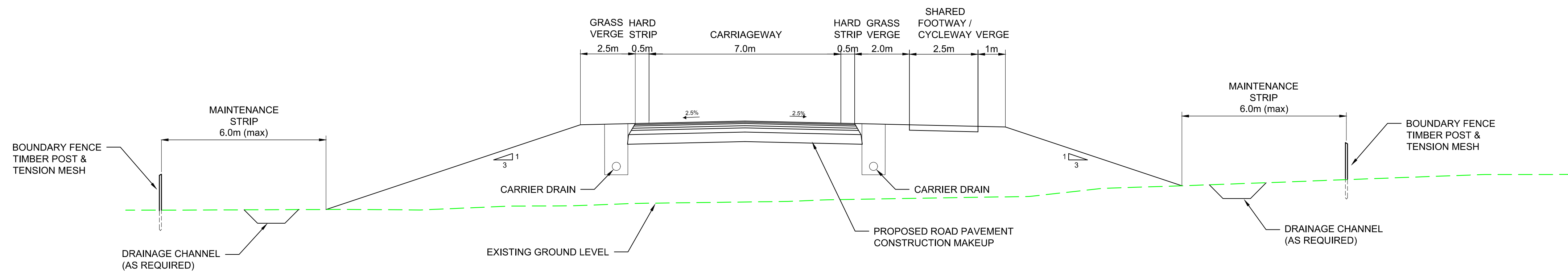
A1

DO NOT SCALE



TYPICAL PROPOSED N52 CROSS SECTION (IN CUT)

Scale at A1 1:10
Scale at A3 1:20



TYPICAL PROPOSED N52 CROSS SECTION (IN FILL)

Scale at A1 1:10
Scale at A3 1:20

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B	FOR PLANNING	DB	26.02.20	ST	UOH
A	FOR PLANNING	DB	03.07.19	ST	UOH
-	FOR PLANNING	AK	17.05.19	ST	UOH

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Client	MEATH COUNTY COUNCIL		
Project	N52 GRANGE TO CLONTAIL SCHEME		

Purpose FOR PLANNING			
Title PART 8 TYPICAL CROSS SECTION			
Original Scale AS SHOWN	Design/Drawn AK Date 17.05.19	Checked ST Date 17.05.19	Authorised UOH Date 17.05.19
Status P	Drawing Number 5158291 / HTR / DR / 0114		Rev D

DO NOT SCALE

File: 5158291_HTR_DR_0115.dwg
Date: Sep 22, 2020 - 11:43am
Plotted by: JDenofra



SCALE at A1 1:100
SCALE at A3 1:200



Scale at A1 1:50
Scale at A3 1:100



Scale at A1 1:50
Scale at A3 1:100



SCALE at A1 1:20
SCALE at A3 1:40



SCALE at A1 1:20
SCALE at A3 1:40



SCALE at A1 1:20
SCALE at A3 1:40



Scale at A1 1:50
Scale at A3 1:100

GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE
2. ONLY WRITTEN DIMENSIONS SHALL BE USED. NO DIMENSIONS SHALL BE SCALED FROM THE DRAWINGS
3. ALL LEVELS ARE IN METRES AND ARE TO MALIN HEAD DATUM
4. ALL COORDINATES ARE IN METRES AND ARE TO IRISH TRANSVERSE MERCATOR
5. DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE SPECIFICATION

Purpose

FOR PLANNING

PART 8
UNDERPASS 1 CH1050

Original Scale
AS
SHOWN

Design/Drawn	JD
Date	04.0

Checked	ST
Date	04.06.18

Authorised	UOH
Date	04.06

Status

P

5158291 / HTR / DR / 0115

D



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**Department of Transport,
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B	FOR PLANNING		DB	26.02.20	ST	UOH			
A	FOR PLANNING		DB	03.07.19	ST	UOH			
-	FOR PLANNING		JD	04.06.18	ST	UOH			
Rev	Description		By	Date	Chk'd	Auth.			



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Client

MEATH COUNTY COUNCIL

Project

N52 GRANGE TO CLONTAIL SCHEME

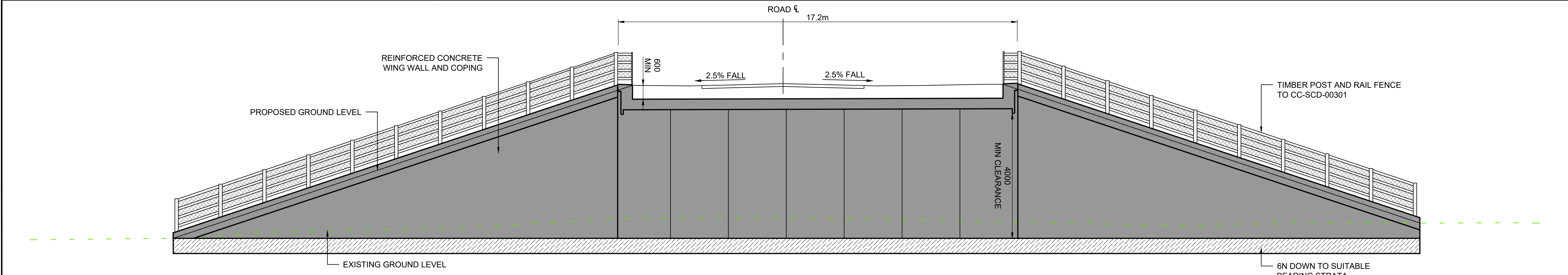
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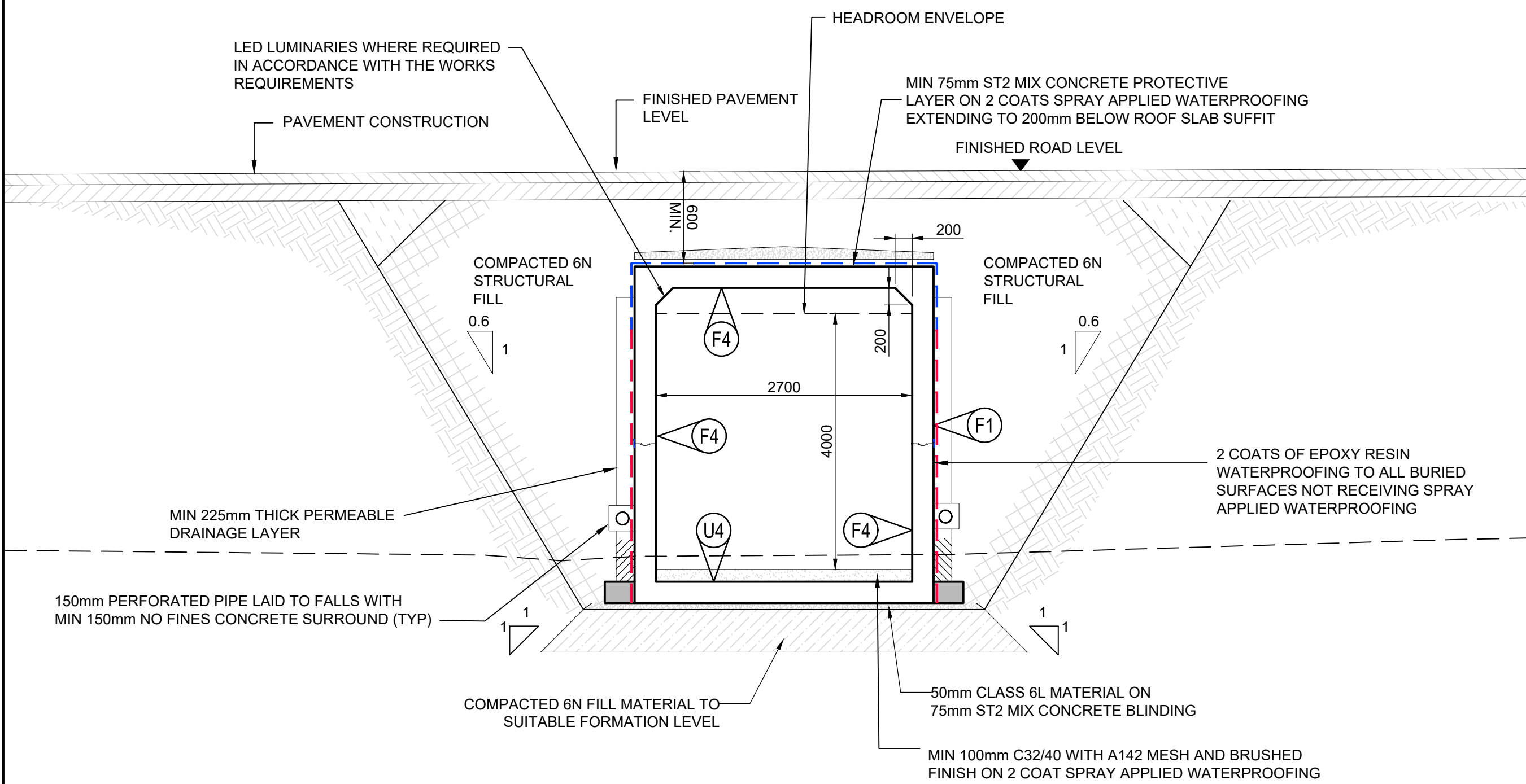
Date: Sep 22, 2020 - 11:44am

Plotted by: JDonofrio



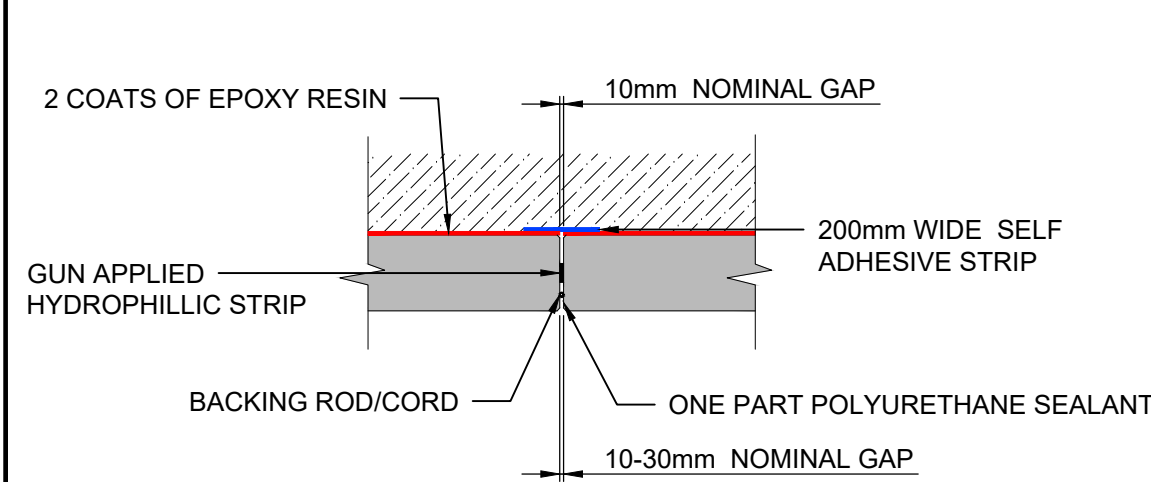
LONG SECTION ALONG UNDERPASS 2 CH2150 CENTRELINE

SCALE at A1 1:100
SCALE at A3 1:200



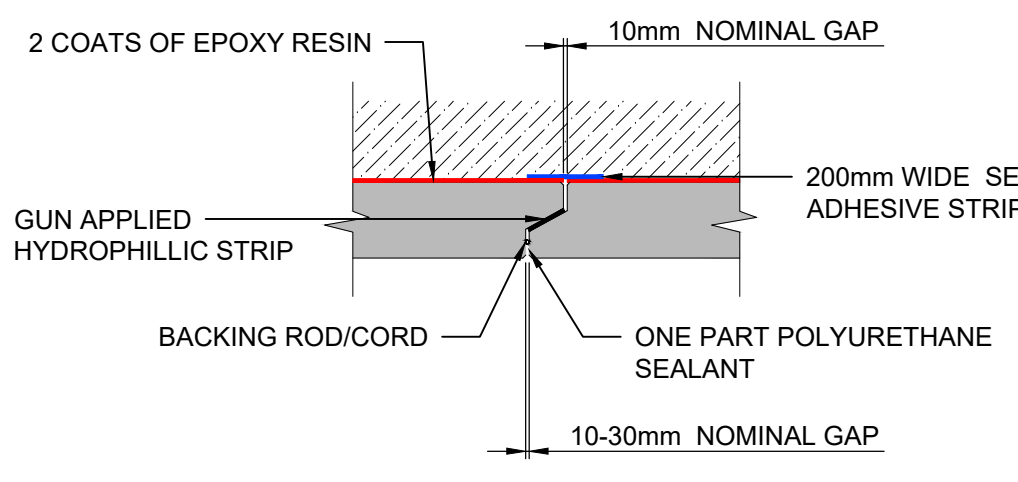
TYPICAL CROSS SECTION

Scale at A1 1:50
Scale at A3 1:100



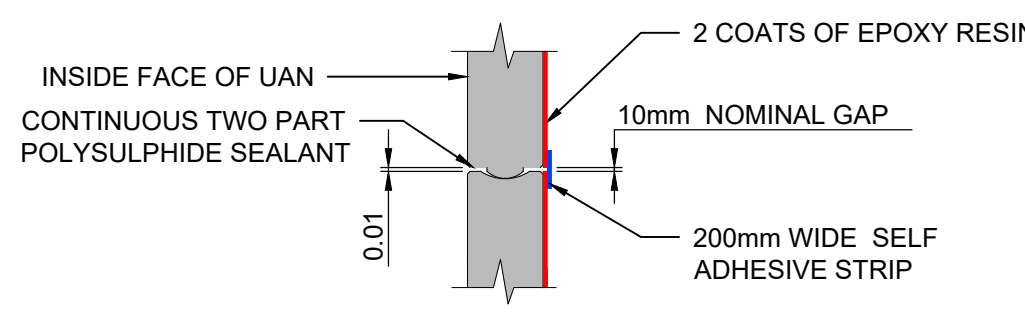
TYPICAL FLAT JOINT DETAIL

SCALE at A1 1:20
SCALE at A3 1:40



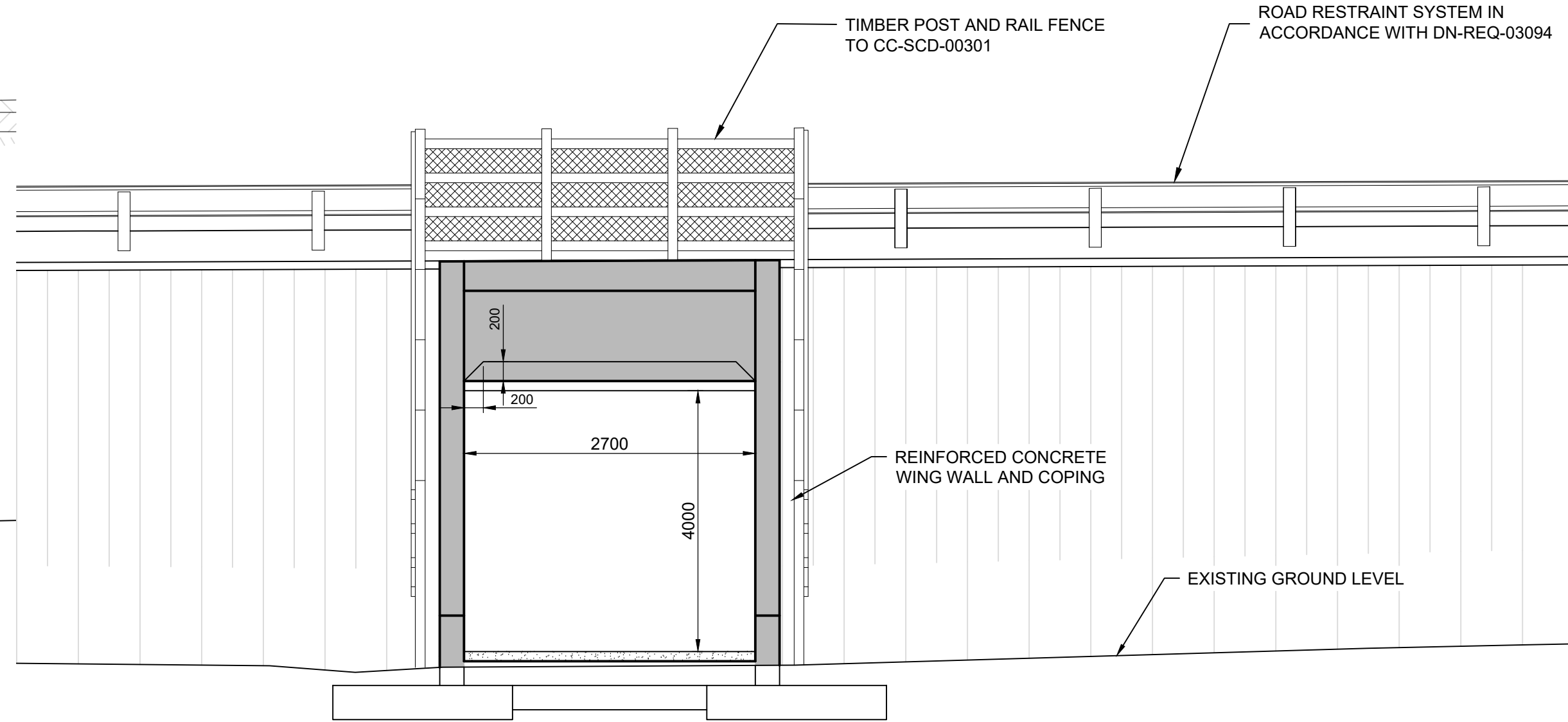
TYPICAL STANDARD JOINTING DETAIL

SCALE at A1 1:20
SCALE at A3 1:40



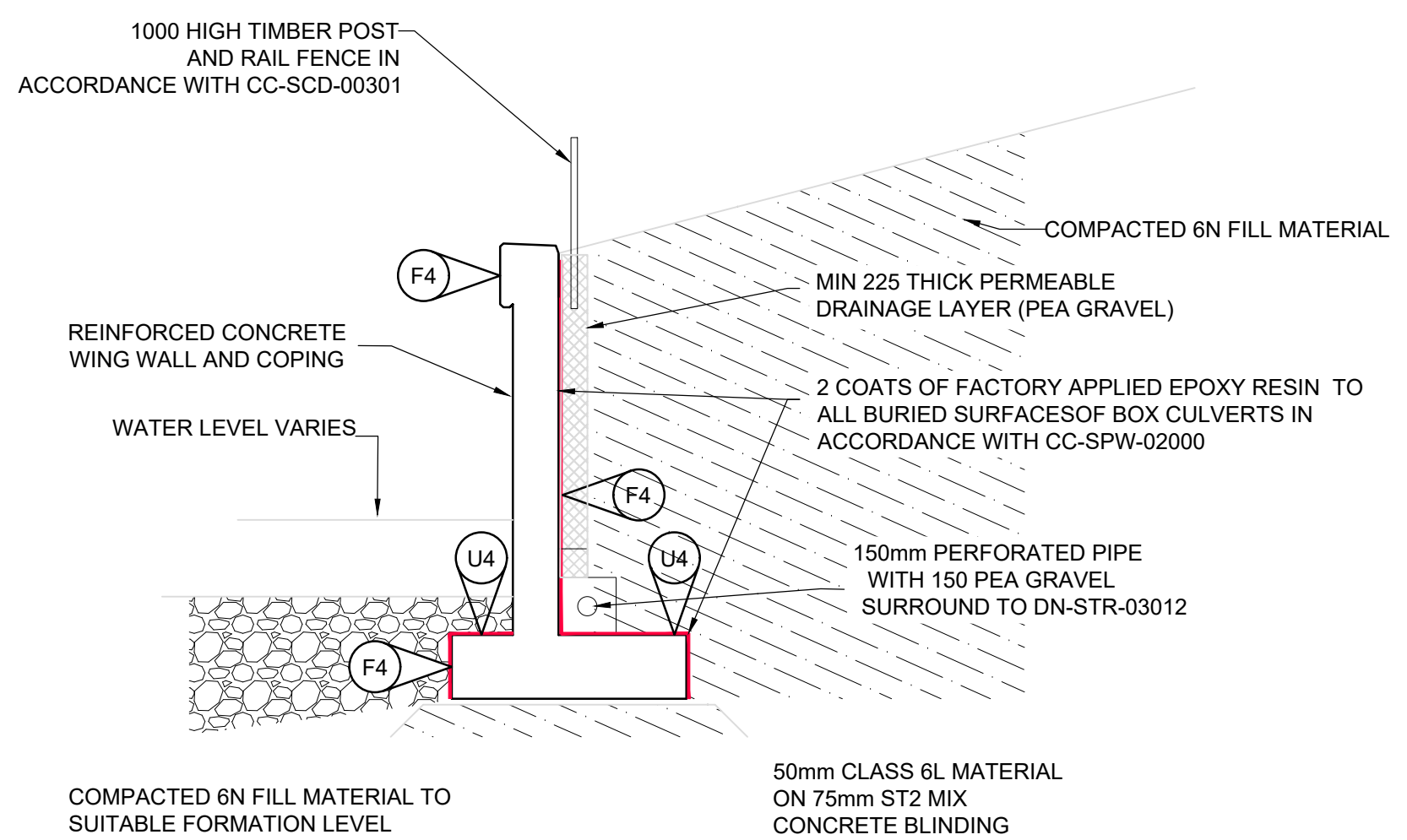
TYPICAL UNIT TO UNIT JOINT DETAIL

SCALE at A1 1:20
SCALE at A3 1:40



ELEVATION OF UNDERPASS

Scale at A1 1:50
Scale at A3 1:100



TYPICAL SECTION THROUGH WINGWALL

Scale at A1 1:50
Scale at A3 1:100

GENERAL NOTES

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2. ONLY WRITTEN DIMENSIONS SHALL BE USED. NO DIMENSIONS SHALL BE SCALED FROM THE DRAWINGS
3. ALL LEVELS ARE IN METRES AND ARE TO MALIN HEAD DATUM
4. ALL COORDINATES ARE IN METRES AND ARE TO IRISH TRANSVERSE MERCATOR
5. DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE SPECIFICATION

Purpose FOR PLANNING

PART 8
UNDERPASS 2 CH2150

Original Scale		Design/Drawn	Checked	Authorised
AS		JD	ST	UOH
SHOWN		Date 04.06.19	Date 04.06.19	Date 04.06.19
Status	Drawing Number			Rev
P	5158291 / HTR / DR / 0116			D

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A	FOR PLANNING	DB	03.07.19	ST	UOH
-	FOR PLANNING	JD	04.06.19	ST	UOH

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Client
MEATH COUNTY COUNCIL

Project
N52 GRANGE TO CLONTAIL SCHEME

Appendix B. Waste Tracking Form

N52 Grange to Clontail

Construction & Demolition Waste Management Plan – Waste Tracking Form Template

[illegible]

WS Atkins Ireland Limited
Atkins House
150 Airside Business Park
Swords
Co. Dublin
K67 K5W4