

Land North of Bronwyfya Road, Wrexham - Flood Risk Statement

Version 4

February 2024

Prepared for:

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Contract

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This report describes work commissioned by Innova Renewables Developments by an instruction dated 28th March 2023. The Client's representative for the contract was William Griffiths of Innova Renewables Developments. Erica Skinner of JBA Consulting carried out this work.

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Abbreviations

AEP	Annual Exceedance Probability
BGS	British Geological Survey
FCA	Flood Consequence Assessment
FMfP	Flood Map For Planning
FRS	Flood Risk Statement
LiDAR	Light Detection And Ranging
NGR	National Grid Reference
NRW	Natural Resources for Wales
OS	Ordnance Survey
OS NGR	Ordnance Survey National Grid Reference
PFRA	Preliminary Flood Risk Assessment

1 Introduction

1.1 Terms of Reference

JBA Consulting (JBA) were commissioned by Innova Renewables Developments in March 2023 to undertake a Flood Risk Statement (FRS) to support a planning application for the development for a proposed energy storage location at land north of Bronwylfa Road, Rhostyllen, Wrexham.

2 Site Description

2.1 Site Summary

The main development site is broadly triangular in shape, comprising a single agricultural field parcel and extends to approximately 5.5 ha in area. The site's boundaries feature a broad tree belt to the north and east, with hedgerows to the south and west. A former railway line runs along the northern boundary (set at a higher level and bounded by the mature vegetation) whilst the A483 lies to the east which is also elevated and bounded by mature established vegetation. The B5097 / Bronwylfa Road forms the southern boundary and Cadwgan Lane, a single-track road, forms the western boundary.

An existing vehicular access is located at the main development site's southern boundary from the B5097.

The land to the west of Cadwgan Lane comprises an L-shaped agricultural field and extends to approximately 3.4ha. It is bounded a tree belt to the north, Bersham Cricket Club to the southwest, and the B5097 / Bronwylfa Road to the south. An access track for abnormal loads extending to approximately 0.2ha is proposed on the southern part of this field.

Agricultural land and uses form the site's predominant surroundings to the north, south and west with pockets of residential properties dispersed throughout. To the east of the site (approx. 500m), on the opposite side of the A483, is the village of Rhostyllen. The Legacy National Grid Substation, which the proposals will connect to, is located approximately 750m west of the site.

Wrexham City Centre is located approximately 3km north-east.

Site details are summarised in Table 2-1, and a site location plan is shown in Figure 2-1.

Table 2-1 Site Summary

Site name	Legacy Substation
Main Site area	5.5 ha
Existing land use	Greenfield
Proposal	Energy storage and substation
OS NGR	SJ 30707 48525
Local Planning Authorities	Wrexham County Borough Council
Lead Local Flood Authority	Wrexham County Borough Council

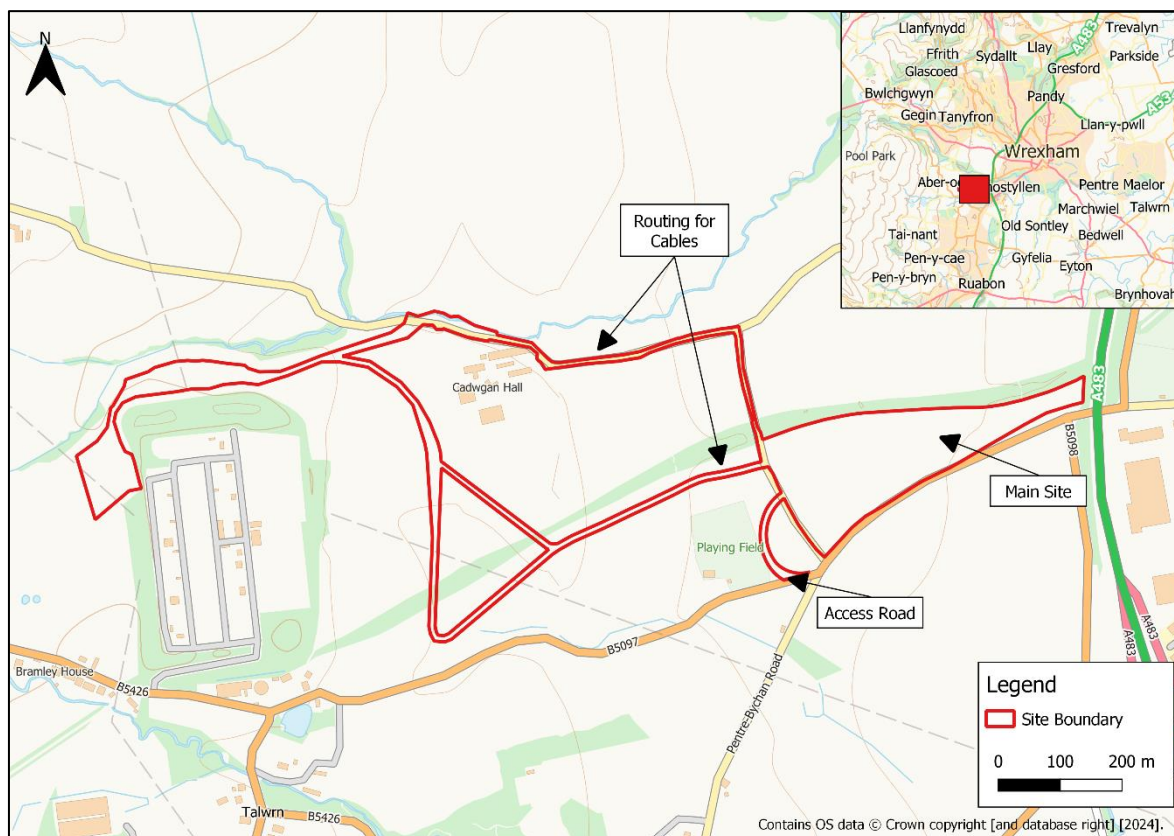


Figure 2-1 Site Location

2.2 Site Topography

A topographic survey undertaken by RPS Group in March 2023 has been conducted across the Main Site only and is shown in Appendix A. The topographic survey indicates that ground levels on the Main Site are highest in the west along the northern boundary at approximately 116.36mAOD. A raised area of ground in the south-west of the site is shown to be at approximately 116.22mAOD. From these highest points, ground levels fall in a general easterly direction to approximately 105.61mAOD in the eastern boundary of the site.

Levels across the cable routing areas reach approximately 151mAOD near the power station.

Figure 2-2 shows Natural Resources Wales (NRW) Open Source 1m Light Detection and Ranging (LiDAR) data, which provides an alternative illustration of the site's topography.

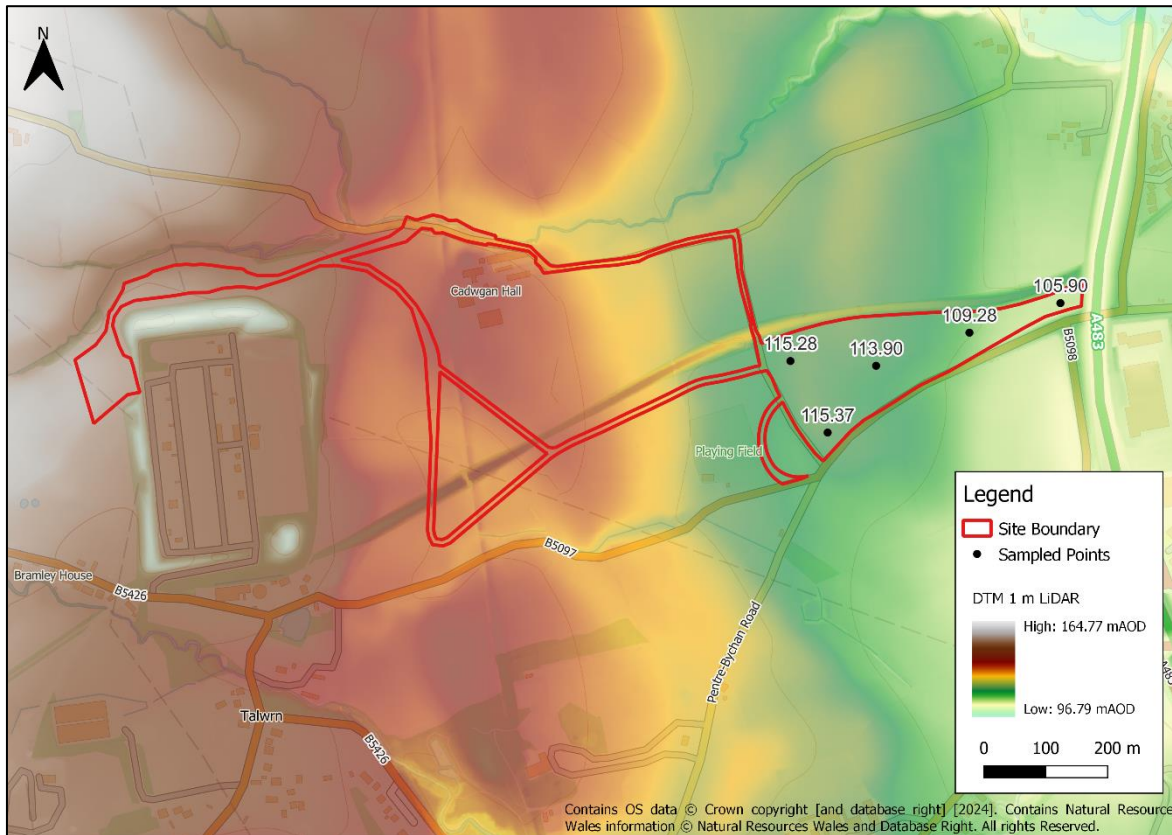


Figure 2-2 LiDAR Topographic data from NRW (1m resolution) with sample points

2.3 Soils and Geology

The geology of the site has been assessed using the British Geological Survey (BGS) GeoIndex¹. The bedrock is shown to be Etruria Formation in the east comprised of mudstone, and Pennine Lower Coal Measures Formation and Pennine Middle Coal Measures Formation in the west, comprised of mudstone, siltstone and sandstone. The superficial geology is formed of Devensian Till, comprised of Diamicton in the east, and far west for the cable routing, and Devensian Glaciofluvial Deposits, comprised of sand and gravel in the west.

The soils on the site have been assessed on the Cranfield University Soilscape viewer² and are shown to be freely draining slightly acid loamy soils.

¹ <https://mapapps2.bgs.ac.uk/geoindex/home.html>

² <https://www.landis.org.uk/soilscales/index.cfm>

2.4 Watercourses

No watercourses cross the proposed development site. The River Clywedog, an NRW Main River, flows in a general easterly direction approximately 500m to the north of the site, as shown in Figure 2-3. An unnamed ordinary watercourse (a tributary to the River Clywedog) flows adjacent to the northern cable routing spur and approximately 250m to the north-west of the Main Site. Approximately 550m to the south of the site is the Pentrebychan Brook, which flows into the Glanyrafon Brook to the eastern side of the A483. The Glanyrafon Brook then flows in a general easterly direction before converging with the River Clywedog around 2km to the east of the site.

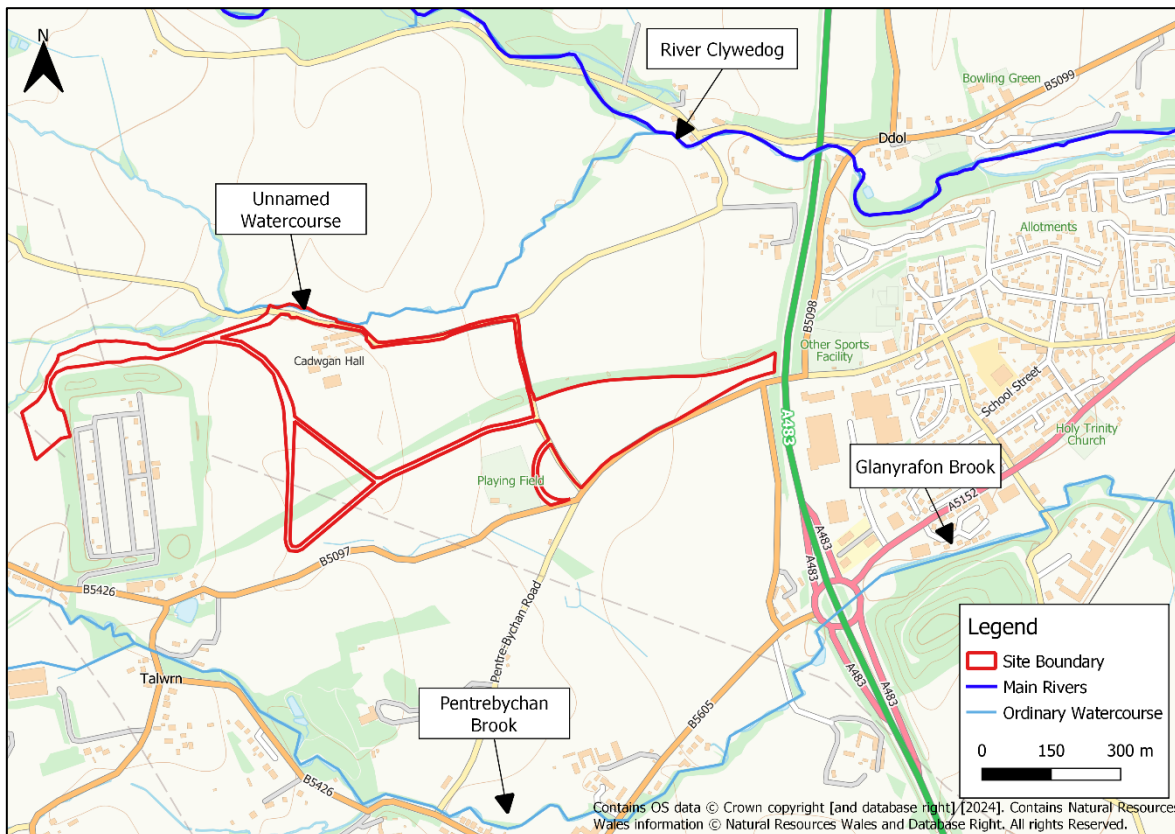


Figure 2-3 Nearby Watercourses

2.5 Development Proposal

The proposal comprises installation and operation of an Energy Storage System (ESS) including energy storage units, substation, site access, cable connection, landscaping and ancillary infrastructure. It should be noted that the two cable routes shown are options, where only one will be delivered. A masterplan for the proposed development site is contained in Appendix B.

Access for construction and operation will be from the existing B5097 access and the new access established from the unnamed lane on the site's western boundary.

As part of the development proposals, a desk-based cut and fill exercise has been undertaken to alter ground levels across the site. A plan of the proposed ground levels across the site is included within Appendix A.

The proposed ESS development comprises:

- 400kV Substation with Gas Insulated Switchgear (GIS) building & Transformers;
- Energy storage containers;
- 33kV transformer bays;
- Medium Voltage (MV) Skid – Inverters & Transformers;
- Control buildings;
- Access from the adopted highway;
- Internal access road and crushed stone tracks;
- Drainage infrastructure, landscape, and ecological planting; and
- Security fencing and CCTV.

A masterplan for the proposed development site is shown in Appendix B.

3 Planning Policy and Flood Risk

3.1 Planning Context

Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales. These policies have the aim that all development in Wales is sustainable and improve the social, economic, environmental, and cultural wellbeing of Wales as set out in the Wellbeing of Future Generations Act 2015.

Technical Advice Note 15 (TAN-15), introduced by the Welsh Government in 2004, provides technical guidance relating to development planning and flood risk in Wales. The initial requirements of TAN-15 are to identify the vulnerability classification(s) and flood zones relevant to the proposed development, and to apply this information to the application of the justification tests.

Update drafts for TAN-15 were released in October 2021 and January 2023 and the final update was due to be implemented in June 2023. However, Welsh Government subsequently suspended the implementation of the new TAN-15 and it is uncertain as to when this shall now come into force, although the best estimate at this time is 2024.

Although the new TAN-15 is not a material consideration, Welsh Government and NRW advise that some consideration is given to the draft Flood Map for Planning (FMfP) as best available information.

3.2 Vulnerability Classification

TAN-15 assigns one of three flood risk vulnerability classifications to a development, as shown in Table 3-1. The proposed development is for an energy storage location and is consequently classified as 'Less Vulnerable' Development.

Table 3-1 Development Categories Defined by TAN-15

Development category	Types
Emergency services	Hospitals, ambulance stations, fire stations, police stations, coastguard stations, command centres, emergency depots and buildings used to provide emergency shelter in time of flood.
Highly vulnerable development	All residential premises (including hotels and caravan parks), public buildings, (e.g., schools, libraries, leisure centres), especially vulnerable industrial development and waste disposal sites.
Less vulnerable development	General industrial, employment, commercial and retail development, transport and utilities infrastructure , car parks, mineral extraction sites and associated processing facilities, excluding waste disposal sites.

3.3 Development Advice Map Classification

The Development Advice Map (DAM) is used to trigger different planning actions based on a precautionary assessment of fluvial and tidal flood risk.

Figure 3-1 shows that the main site is located within DAM Zone A, which are areas considered to be at little or no risk of fluvial or tidal/coastal flooding..

A small section of the cable routing area to both the northern and southern spur is located within DAM Zone C2. Zone C2 is defined as areas of the floodplain without significant flood defence infrastructure.

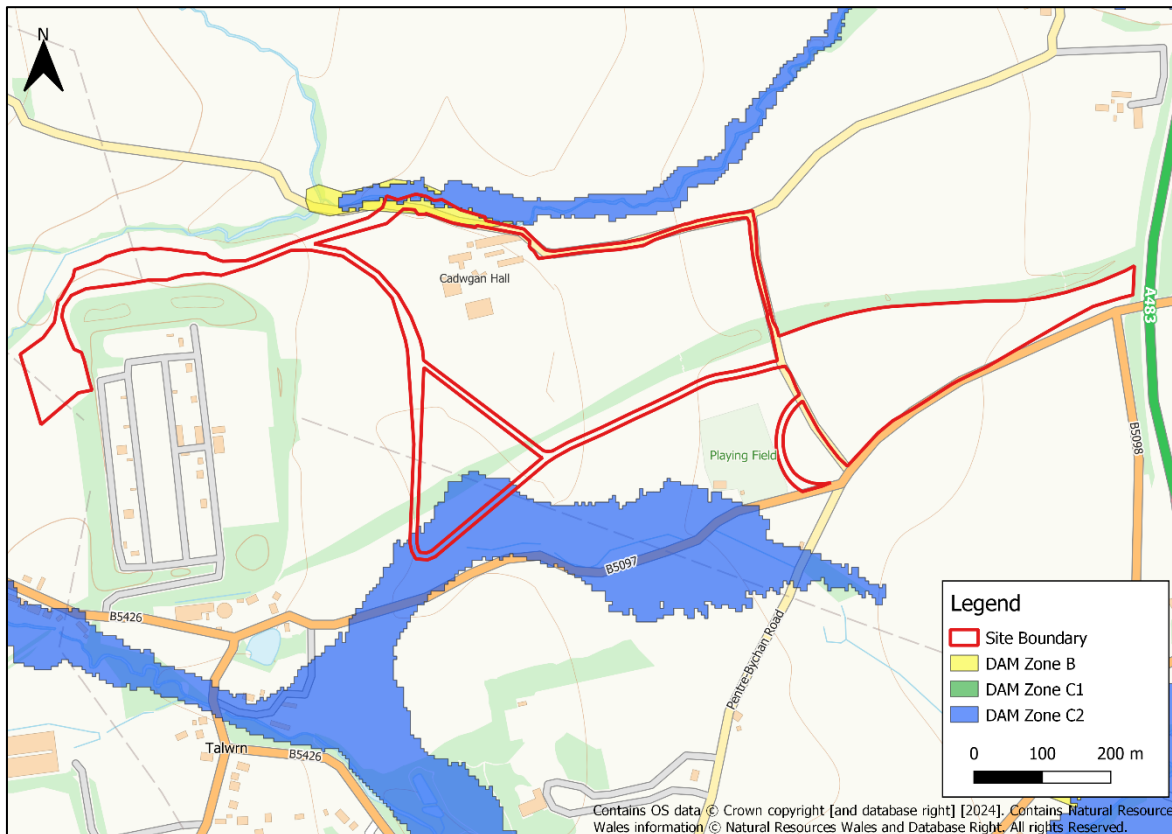


Figure 3-1 Development Advice Map

3.4 Flood Map for Planning Classifications

3.4.1 Flood Map for Planning - Rivers

As shown in Figure 3-2, the entirety of the proposed development site is located within Flood Zone 1 for the Flood Map for Planning for Rivers, representing areas which have less than 1 in 1000 (0.1%) chance of flooding in a given year, including climate change.

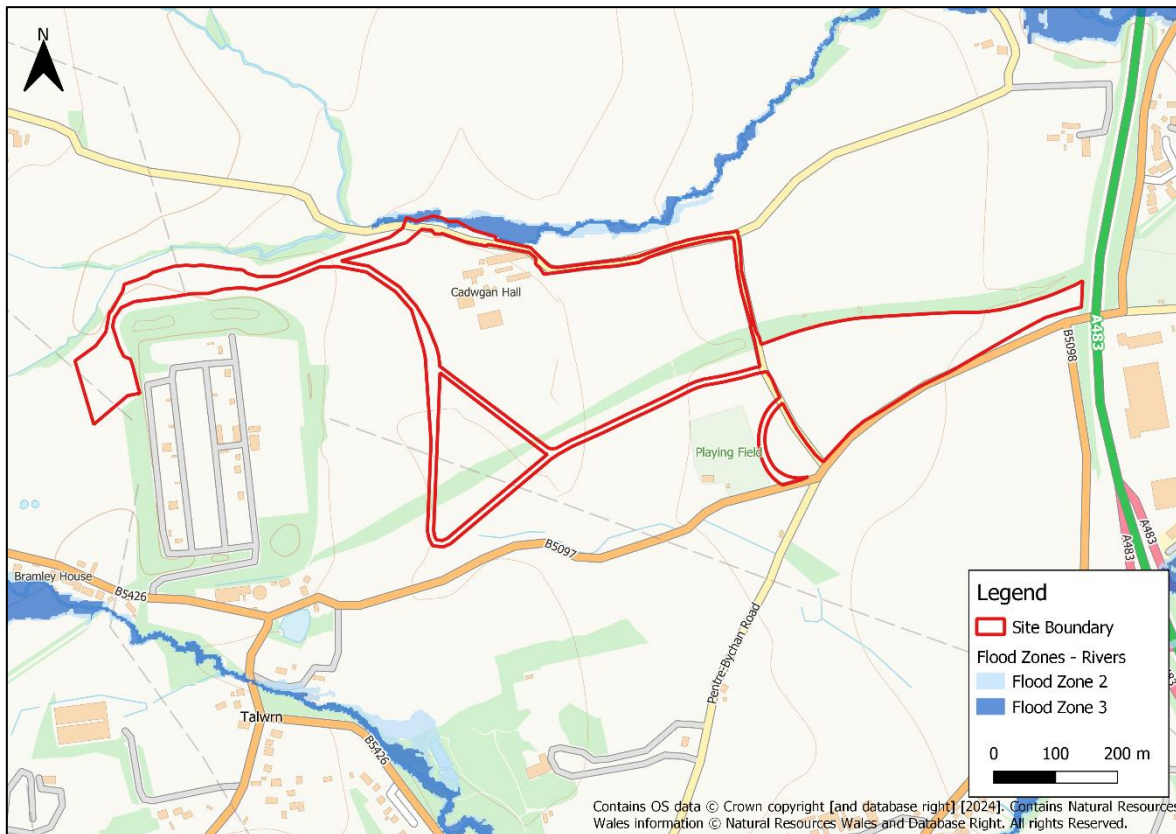


Figure 3-2 Flood Map for Planning – Rivers

3.5 Summary of Planning Policy Position

Under the extant TAN-15 the DAM is used to trigger different planning actions. Any site located within Zone C2 triggers the requirement for an FCA. The zone is used to indicate that only less vulnerable development should be considered subject to application of the justification test, including acceptability of the consequences.

However, in response to the release of the Flood Map for Planning in September 2021, NRW issued a letter to Local Planning Authorities in January 2022 outlining their approach to development management consultations where flood risk is a material consideration. Key to their consideration is that the DAM map is out of date, having not been updated for over 2 years, with no future updates expected. The Flood Map for Planning therefore constitutes the best available spatial information on flood risk, and is updated every 6 months. Consequently, NRW consider both the DAM and Flood Map for Planning as part of the consultation process.

If a site is shown to be at risk of flooding on the DAM but not at risk on the Flood Map for Planning, NRW will raise 'no objection' to a planning consultation. For these sites, it is likely to be unnecessary to prepare an FCA.

As the proposed development site is located fully in Flood Zone 1 of the Flood Map for Planning for rivers and seas, a full FCA is therefore not required. However, a Flood Risk Statement has been prepared to comprehensively assess flood risk associated with the

proposed development site, with the site assessed against the Acceptability Criteria of TAN15. The Justification Test is not required.

4 Flood Risk Assessment

This section assesses the risk to the proposed development site from all sources of flooding, based solely on a desk-based analysis of existing flood risk data.

4.1 Review of Existing Flood Risk Data

The latest available information on flood risk at the site, published by Natural Resources Wales (NRW) is summarised in Table 4-1 below.

Table 4-1 Summary of Flood Risk

Source of Flooding	Onsite Presence	Description
Flood Risk from Rivers	✗	The site is at very low risk of river flooding.
Flood Risk from the Sea	✗	The site is at very low risk of tidal flooding.
Flood Risk from Surface Water and Small Watercourses	✓	The site is at low risk of surface water flooding.
Flood Risk from Groundwater	✗	The site is at very low risk of flooding from groundwater.
Flood Risk from Reservoirs	✓	The site is at low risk of flooding from reservoirs.
Flood Risk from Sewers	✗	There are no sewerage infrastructures crossing or in the vicinity of the site at the site, therefore the risk of sewer flooding at the site is very low.

4.2 Historical Flooding

NRW's map of recorded flood extents does not show any evidence of historic flooding on the site. Wrexham's Local Flood Risk Management Plan³ states that 'Historically, flooding incidents have resulted as a result of intense rainfall events overloading the existing drainage infrastructure, the vast majority of which is below ground via highway or sewer drainage system or culverted watercourses.' There is however no specific mention of historic flooding to the proposed development site itself.

4.3 Flood Risk from Rivers

NRW's Flood Risk Assessment Wales (FRAW) flood mapping indicates that the site is located outside of the Flood Risk from Rivers mapping, as shown in Figure 4-1. The site is therefore at **very low** risk of fluvial flooding (<0.1% AEP).

³ https://wrexham-consult.objective.co.uk/portal/ldp/dldp/ldp_deposit?pointId=4207408#document-4207408

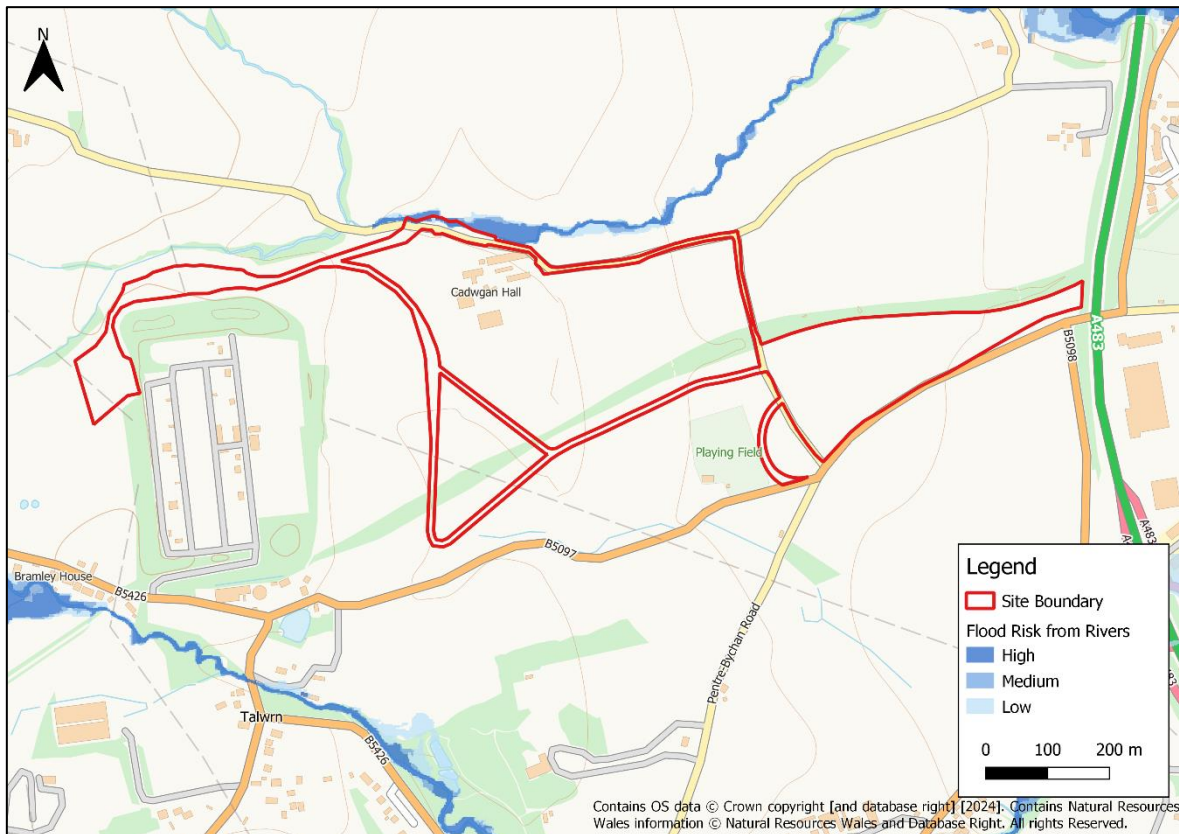


Figure 4-1 FRAW map – Risk of flooding from rivers

4.4 Flood Risk from the Sea

Due to the site's location inland, the site is at **very low risk** of tidal flooding. This is shown by a transparent layer on NRW mapping, and therefore no figure has been provided.

4.5 Flood Risk from Surface Water and Small Watercourses

Surface water flooding occurs when rain falling on saturated ground flows overland, following the local topography. Surface water flooding and subsequent overland flow can therefore pose a risk to both the development site and the surrounding land. The overland flow may originate from the site itself or adjoining land at a higher elevation from which flow migrates onto the development.

The Natural Resources Wales (NRW) flood map for surface water and small watercourses, as shown in Figure 4-2, identifies the site as being predominantly at very low risk of surface water flooding (i.e. less than 1 in 1000 (<0.1% AEP) chance of flooding from rainfall in any given year).

A small area in the east of the site is shown to be at high risk of surface water flooding. (i.e. greater than 1 in 30 (>3.3% AEP) chance of flooding in any given year). This surface water flood risk is likely a result of a localised depression in the site topography. Development proposals do not result in a change in ground levels in this area of the site, and no built

development is proposed for this area. Consequently, there shall be no change in risk as a result of the proposals.

Surface water and small watercourse mapping also indicates the presence of surface water flow paths and ponding along the north-western boundary of the main development site. Ground levels at this location fall away from the proposed development site, and it is therefore considered that there is very low risk of these flows entering the development.

An area outside of the red line boundary, located between the proposed access road and main development site, is at high risk of surface water flooding, meaning there is a greater than 1 in 10 (>3.3% AEP) chance of flooding in any given year. This surface water risk is a result of a localised depression, retaining surface water at this location. Bronwylfa Road, the development site, and the access road are raised above this area of high surface water flood risk.

Along the proposed access road, a small area of the road at its' southernmost extent is shown to be at high risk of surface water flooding, as shown in Figure 4-3. NRW's Flood Hazard Mapping indicates that flood depths of up to 90mm are predicted during High Risk events. Minor alterations in ground levels are proposed across the access road, however it is not anticipated that the surface water flow path shall be interrupted as a result of the proposed access road, with flows retained across the road towards the localised depression to the east. Site constraints, primarily the requirement for abnormal load vehicle tracking along the access road, require the road to be positioned at this location, at the proposed width as shown. However, the width of the road (approximately 17m) is solely as a requirement for abnormal load routing. Consequently, during everyday use of the access road, vehicles (including emergency services) shall be able to utilise the remainder of the road located outside of the area of flood risk for access and egress to the development site. It is recommended, that abnormal load deliveries are scheduled around local weather warnings to avoid surface water flood risk constraints or impacts to the development.

Once operational, the new access road will be used, at most, once per month as maintenance vehicles will access the site either from the B5097 access or the new access on the western boundary directly from Cadwgan lane.

There is a very low risk of surface water and small watercourse flooding across the cable routing areas of the development site.

Consequently, the risk of surface water flooding across the development site is **low**.

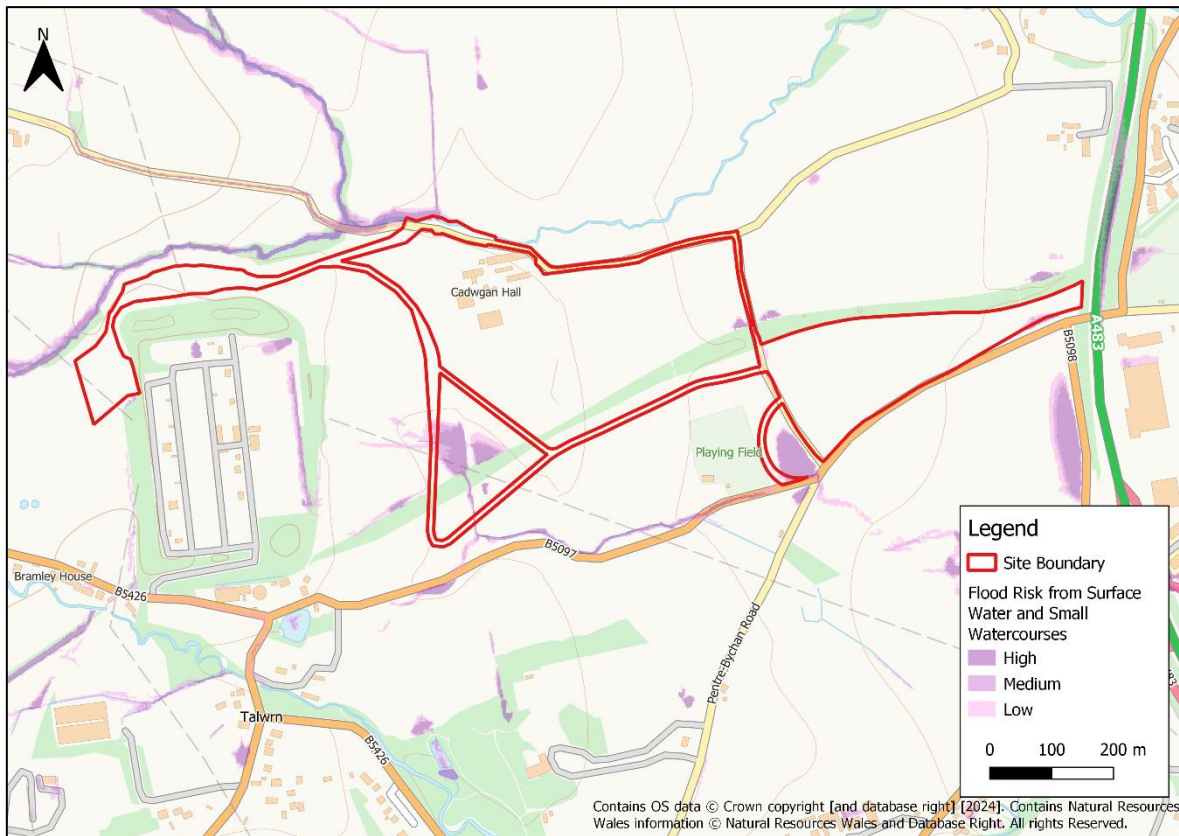


Figure 4-2 FRAW map - Risk of flooding from surface water and small watercourses

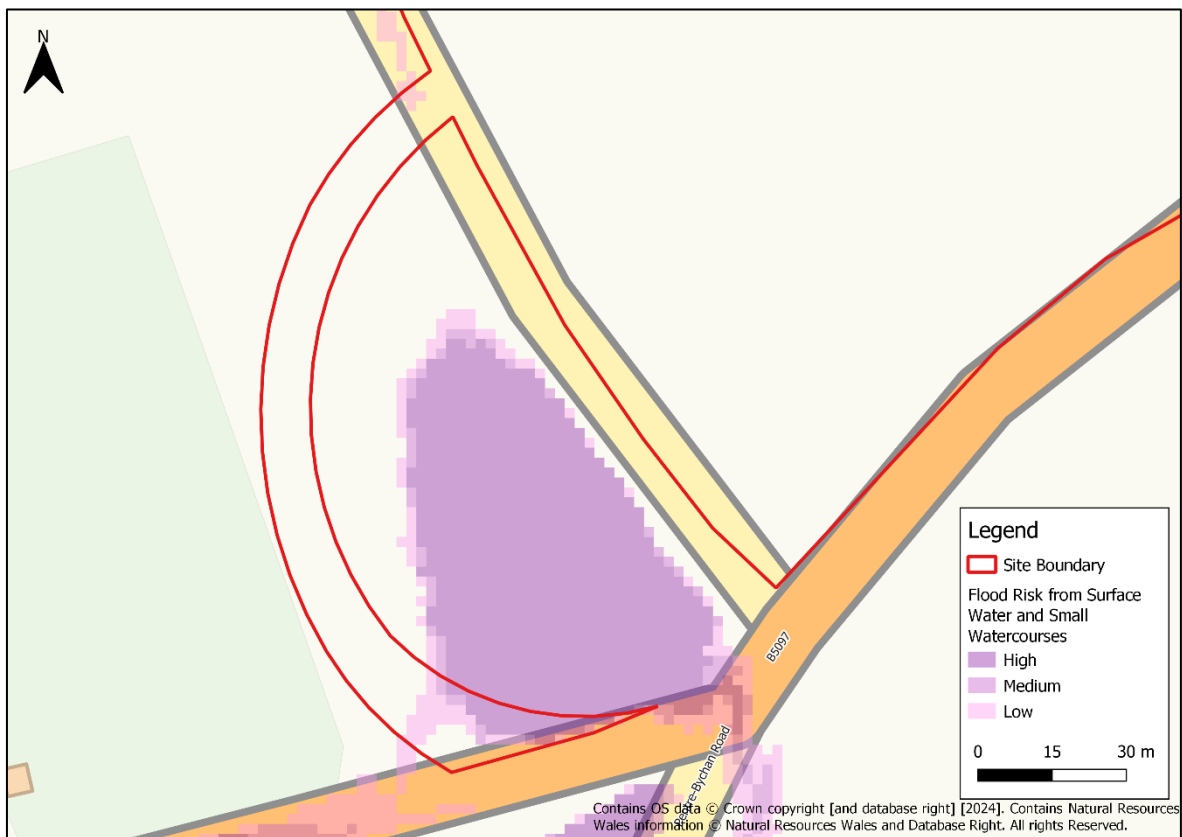


Figure 4-3 FRAW - Risk of flooding from surface water to the access road

4.6 Flood Risk from Groundwater

Groundwater flooding is caused by unusually high groundwater levels. It occurs as excess water emerges at the ground surface or within manmade structures such as basements. Groundwater flooding tends to be more persistent than surface water flooding, in some cases lasting for weeks or months, and can result in damage to property. This risk of groundwater flooding depends on the nature of the geological strata underlying the site and the local topography.

Wrexham's Local Flood Risk Management Plan⁴ states that 'The PFRA identified no records of past groundwater flooding within the County Borough'. It can therefore be concluded that the risk of groundwater flooding at the site is **very low**.

4.7 Flood Risk from Reservoirs

NRW flood maps indicate that the proposed development site is partially located within an area at risk of reservoir flooding, as shown in Figure 4-4. The site is at risk of flooding from two reservoirs: the Ty-Mawr and Cae-Llwyd; located approximately 1.7 km and 2.3 km to the west of the site. As a result of regular inspections covered by the 1975 Reservoir Act, it is extremely unlikely that a reservoir would fail, and therefore the risk of reservoir flooding is considered to be **low**.

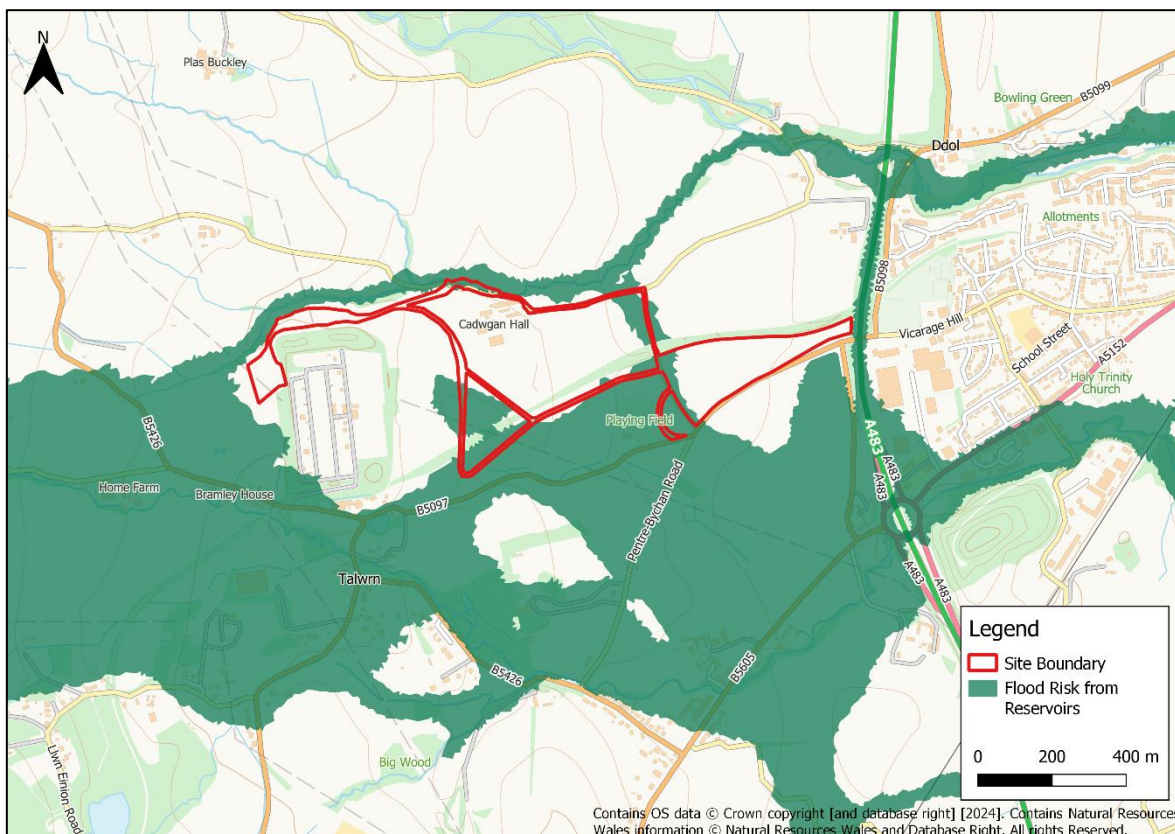


Figure 4-4 Risk of reservoir flooding

⁴ https://wrexham-consult.objective.co.uk/portal/ldp/dldp/ldp_deposit?pointId=4207408#document-4207408

4.8 Flood Risk from Sewers

A Utilities Search Report provided by Cronerstone Projects Ltd dated 25th August 2022 is shown in Appendix C. This highlights that there are no sewerage infrastructures crossing or in the vicinity of the site. It can therefore be concluded that the risk of sewer flooding at the site is **very low**.

5 Assessment of Acceptability Criteria

To adopt a precautionary approach, this FRS will still demonstrate how all aspects of the Acceptability Criteria will be satisfied in full. This has been detailed in Table 5-1 below.

Table 5-1 Assessment of accessibility criteria

TAN 15 Justification Criteria	Comments	Achieved
Developer is required to demonstrate that the site is designed to be flood free for the lifetime [Ref: TAN-15 A1.5] of development for a 1 in 100 (1%) chance (fluvial) and 1 in 200 (0.5%) chance (tidal) flood event including an allowance for climate change in accordance with TAN-15 table A1.14.	The proposed development site is located outside of both the fluvial and tidal flooding extents and is therefore flood free in all design events.	Yes
The development should be designed so that in an extreme (1 in 1000 chance) event there would be less than 600mm of water on access roads and within the property.	The proposed development site is located outside of both the fluvial and tidal flooding extents and is therefore flood free in all design events.	Yes
No flooding elsewhere.	The proposed development is located outside of both the fluvial and tidal flooding extents and development will therefore not result in an increase in flood risk to third parties.	Yes
Flood defences must be shown by the developer to be structurally adequate particularly under extreme overtopping conditions (i.e. that flood with a 1 in 1000 chance of occurring in any given year).	N/A. The site is not served by any formal flood defences.	N/A
The developer must ensure that future occupiers of development are aware of the flooding risks and consequences.	N/A - the site is not predicted to flood in all design events.	N/A
Effective flood warnings are provided at the site.	N/A - the site is not predicted to flood in all design events.	N/A
Escape/evacuation routes are shown by the developer to be operational under all conditions.	N/A - the site is not predicted to flood in all design events.	N/A

TAN 15 Justification Criteria	Comments	Achieved
The development is designed by the developer to allow the occupier of the facility for rapid movement of goods/possessions to areas away from flood waters.	N/A - the site is not predicted to flood in all design events.	N/A
Development is designed to minimise structural damage during a flooding event and is flood proofed to enable it to be returned to its prime use quickly in the aftermath of the flood.	N/A - the site is not predicted to flood in all design events.	N/A

6 Conclusions and Recommendations

JBA Consulting (JBA) were commissioned by Innova Renewables Developments to undertake a Flood Risk Statement (FRS) to support a planning application for the development for a proposed energy storage location at land north of Bronwylfa Road, Rhostyllen, Wrexham.

The proposed development site is located to the west of Rhostyllen, Wrexham. The main site area (excluding the route for cables) is approximately 5.5 ha in size and is greenfield in nature, previously used for pastoral farming purposes. The site is bound to the east by the A483 and to the south by B5097, which provides existing access. An unnamed minor road bounds the western boundary of the main site, and adjacent to the northern boundary is a disused railway line. The area allocated within the boundary for cable routing is located to the west across the adjacent field.

Development proposals for the site are for the installation and operation of an Energy Storage System (ESS) including energy storage units, substation, site access, cable connection, landscaping and ancillary infrastructure. It should be noted that the two cable routes shown are options, where only one will be delivered.

The main development site is located within DAM Zone A, which are areas considered to be at little or no risk of fluvial or tidal/coastal flooding. Zone A is used to indicate that the Justification Test is not applicable and there is no need to consider flood risk further.

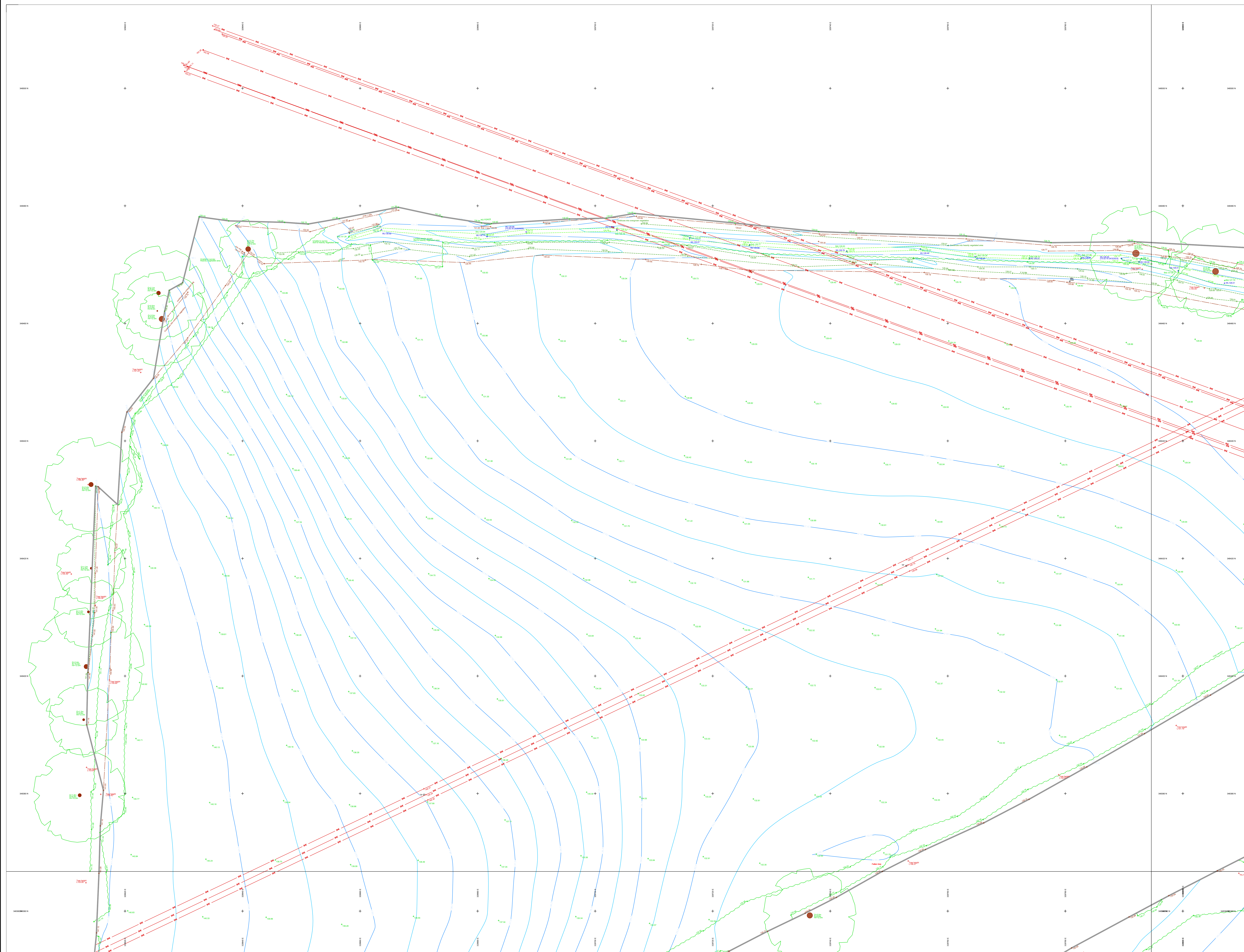
A small section of the cable routing area is located within DAM Zone C2, but as stated in a letter by NRW in January 2022 'If a site is shown to be at risk of flooding on the DAM (i.e. within Zone C, but not at risk on the new FMfP, we would raise 'no objection'. The site is located with Flood Zone 1 of the FMfP. Consequently, a full FCA is not required and the site has not been assessed against the Justification Test. An assessment against the acceptability criteria has been undertaken for completeness.

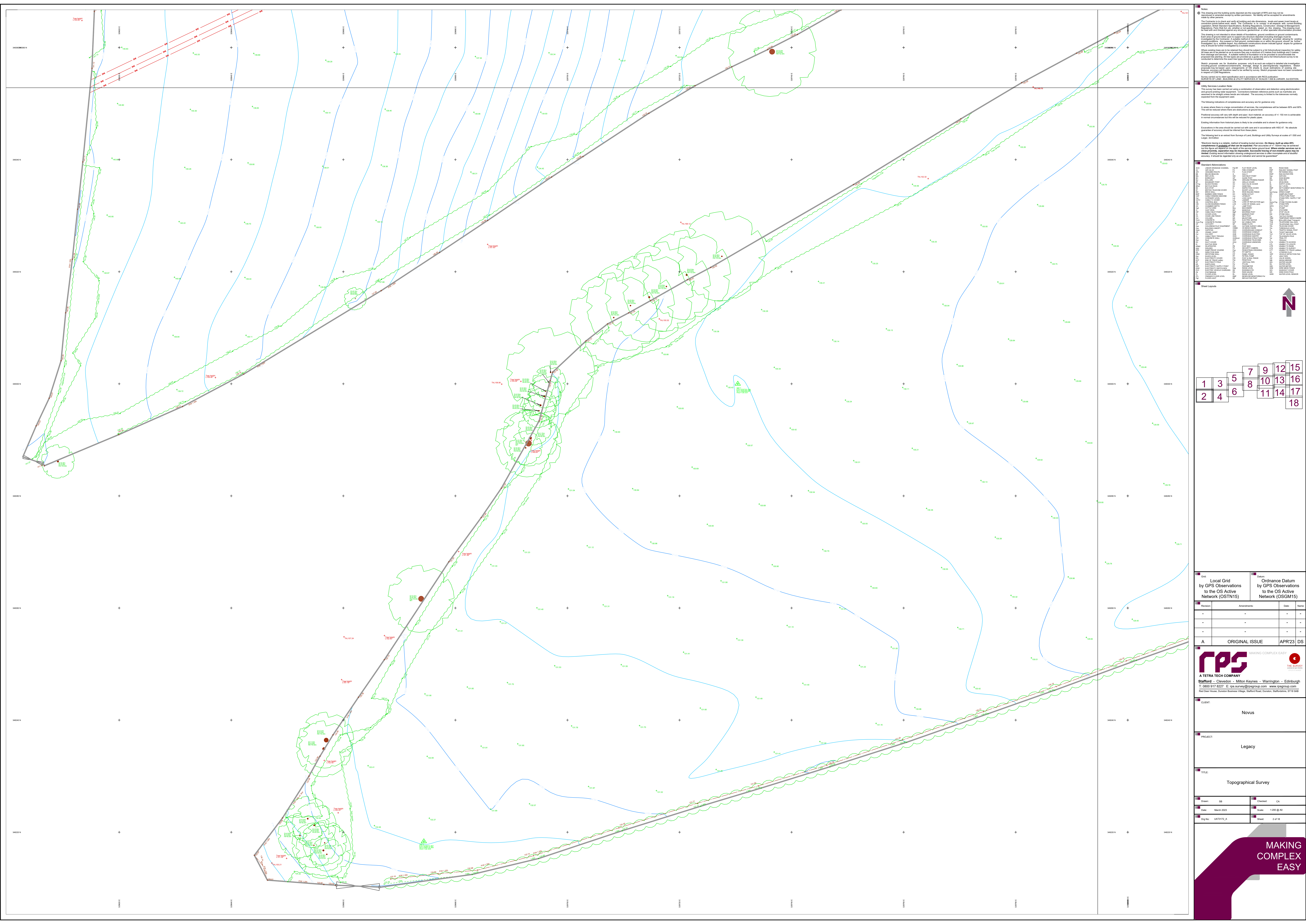
The main development site is at low risk of reservoir flooding and is at very low risk of fluvial, tidal, groundwater and sewer flooding.

The site is shown to be at risk of surface water flooding however this risk will be mitigated through the application of SuDS, in accordance with the statutory standards for SuDS in Wales. Consequently, the residual risk of surface water flooding will be low.

All aspects of the Acceptability Criteria set out in TAN-15 have been assessed and shown to be satisfied. Consequently, we conclude that on the grounds of flood risk, the proposed development meets the requirements set out in TAN-15 and the aims of Planning Policy Wales.

A Topographic Survey

[illegible]



Notes:

- 1. This drawing is for the building works required on the site of the proposed road and is not to be used for any other purpose. The Client is to ensure that the proposed road is in accordance with the relevant planning and building regulations. The Client is to ensure that the proposed road is in accordance with the relevant planning and building regulations. The Client is to ensure that the proposed road is in accordance with the relevant planning and building regulations.
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Utility Services Location Notes:

The survey has been carried out using a combination of observation and detection using geophysical methods. The survey has been carried out using a combination of observation and detection using geophysical methods. The survey has been carried out using a combination of observation and detection using geophysical methods.

The following indicates of completeness and accuracy are for guidance only.

In areas where there is a large concentration of services, the completeness will be between 80% and 90%. The accuracy will be between 100mm and 200mm.

Practical accuracy will vary with depth and age of data collected, an accuracy of +/- 150mm is achievable in normal circumstances. In this case the accuracy is +/- 100mm.

Existing information from historical plans is likely to be unreliable and is shown for guidance only.

Excavations in the area should be carried out with care and in accordance with HSE 47. No service location or accuracy should be relied upon from this plan.

The following is an extract from the Survey of Land, Buildings and Utility Services at scales of 1:500 and 1:250.

Stations having a value of 100.00 are shown for guidance only. The survey has been carried out using a combination of observation and detection using geophysical methods. The survey has been carried out using a combination of observation and detection using geophysical methods. The survey has been carried out using a combination of observation and detection using geophysical methods.

Standard Abbreviations

Abbreviation	Meaning
AC	Asphalt Concrete
AD	Asphalt Driveway
AG	Asphalt Gravel
AL	Asphalt Laid
AS	Asphalt Surface
BS	Bituminous Surface
CA	Concrete
CB	Concrete Block
CC	Concrete Curb
CD	Concrete Driveway
CE	Concrete Edge
CF	Concrete Footing
CG	Concrete Gravel
CH	Concrete Hinge
CI	Concrete Inlet
CJ	Concrete Joint
CK	Concrete Kerb
CL	Concrete Laid
CM	Concrete Mass
CS	Concrete Slab
CT	Concrete Trench
CU	Concrete Upright
CV	Concrete Veneer
CW	Concrete Wall
CA	Concrete Area
CB	Concrete Block
CC	Concrete Curb
CD	Concrete Driveway
CE	Concrete Edge
CF	Concrete Footing
CG	Concrete Gravel
CH	Concrete Hinge
CI	Concrete Inlet
CJ	Concrete Joint
CK	Concrete Kerb
CL	Concrete Laid
CM	Concrete Mass
CS	Concrete Slab
CT	Concrete Trench
CU	Concrete Upright
CV	Concrete Veneer
CW	Concrete Wall

Sheet Layouts

1 3 5 7 9 12 15
2 4 6 8 10 13 16
11 14 17 18

N

Grid

Local Grid by GPS Observations to the OS Active Network (OSTN15)

Ordnance Datum by GPS Observations to the OS Active Network (OSGM15)

Revision	Amendment	Date	Name
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

A ORIGINAL ISSUE APR23 DS

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A TETRA TECH COMPANY

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Red Deer House, Division Business Village, Moffat Road, Dunfermline, Fife KY10 9AD

CLIENT:

Novus

PROJECT:

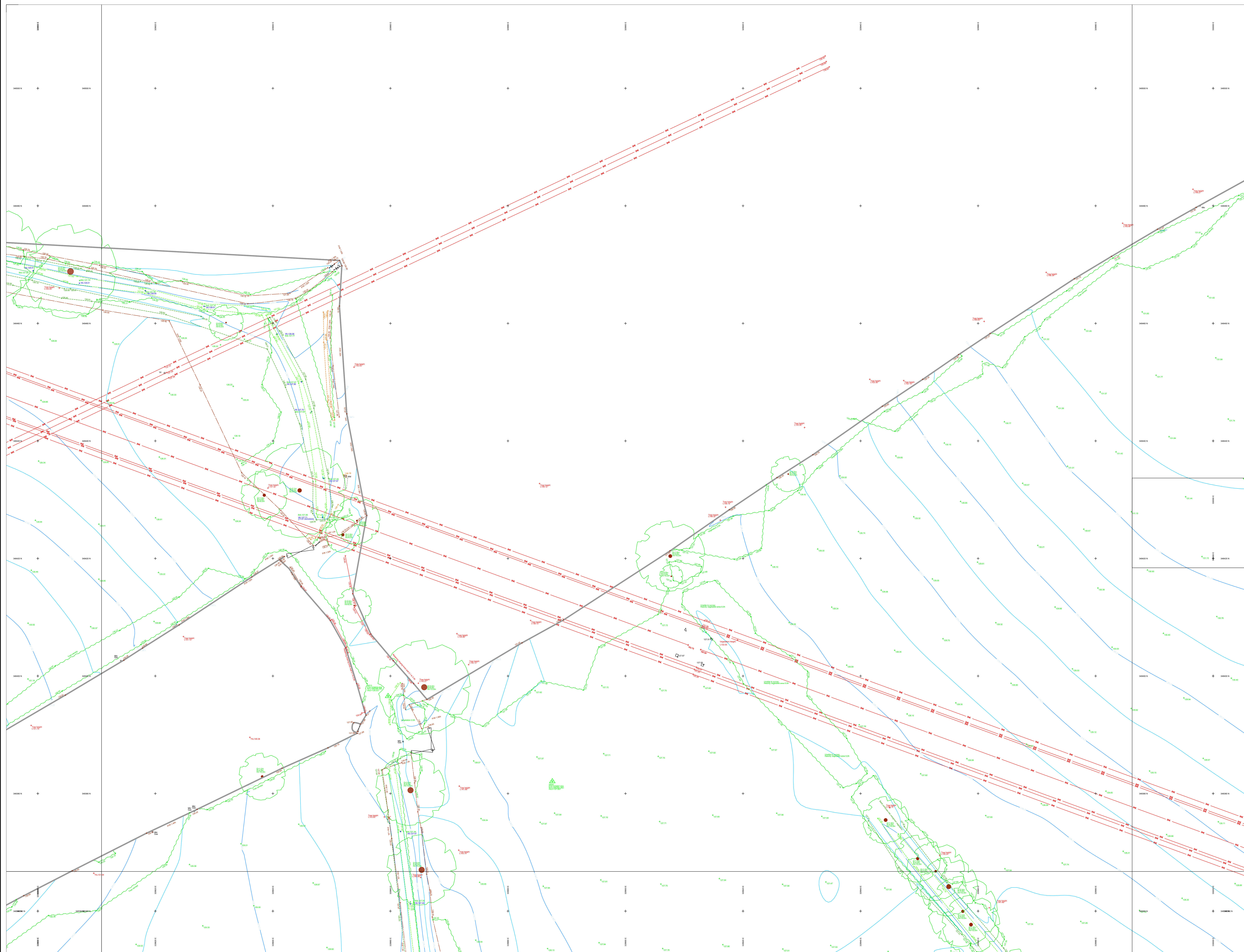
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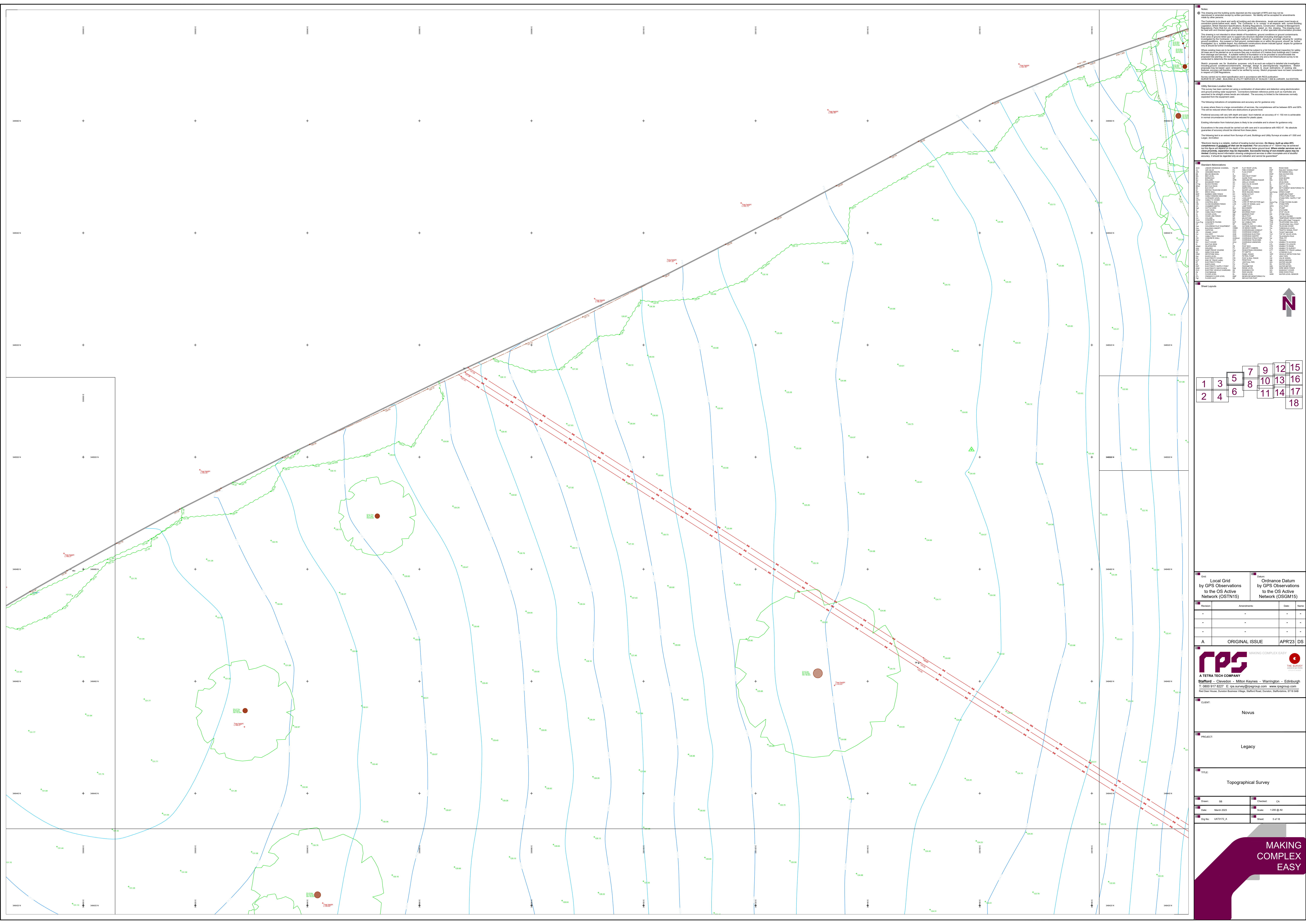
TITLE:

Topographical Survey

Drawn	SB	Checked	CA
Date	March 2023	Scale	1:200 @ A0
Proj Ref	LAT73712_A	Sheet	2 of 18

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[illegible]



Notes:

1. The Contractor is to check and verify all existing and proposed boundaries, levels and areas shown on this plan and to be satisfied that they are correct. The Contractor is to be responsible for any errors or omissions in the plan and to be responsible for any errors or omissions in the plan and to be responsible for any errors or omissions in the plan.

2. The Contractor is to be responsible for any errors or omissions in the plan and to be responsible for any errors or omissions in the plan and to be responsible for any errors or omissions in the plan.

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Utility Services Location Note:

The following table lists the utility services shown on this plan and their approximate locations. The accuracy of the information is not guaranteed and is for guidance only. The Contractor is to be responsible for any errors or omissions in the plan and to be responsible for any errors or omissions in the plan and to be responsible for any errors or omissions in the plan.

Utility Service	Approximate Location
Electricity	Along the main road alignment
Water	Along the main road alignment
Gas	Along the main road alignment
Telecommunications	Along the main road alignment
Other	Along the main road alignment

Standard Abbreviations:

Abbreviation	Meaning
AL	As Laid
AS	As Shown
CL	Center Line
CR	Center Road
DR	Drainage
ER	Electricity
FR	Footpath
GR	Gravel
HR	Highway
IR	Iron
LR	Low Road
MR	Main Road
NR	North Road
OR	Other
PR	Proposed
QR	Quarry
RR	Road
SR	Side Road
TR	Terrace
UR	Urban
VR	Village
WR	Water
XR	Other

Sheet Layouts:

Sheet	Area
1	Area 1
2	Area 2
3	Area 3
4	Area 4
5	Area 5
6	Area 6
7	Area 7
8	Area 8
9	Area 9
10	Area 10
11	Area 11
12	Area 12
13	Area 13
14	Area 14
15	Area 15
16	Area 16
17	Area 17
18	Area 18

Local Grid by GPS Observations to the OS Active Network (OSM15)

Ordnance Datum by GPS Observations to the OS Active Network (OSM15)

Revision	Amendment	Date	Author
1			
2			
3			
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16			
17			
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Client: Novus

Project: Legacy

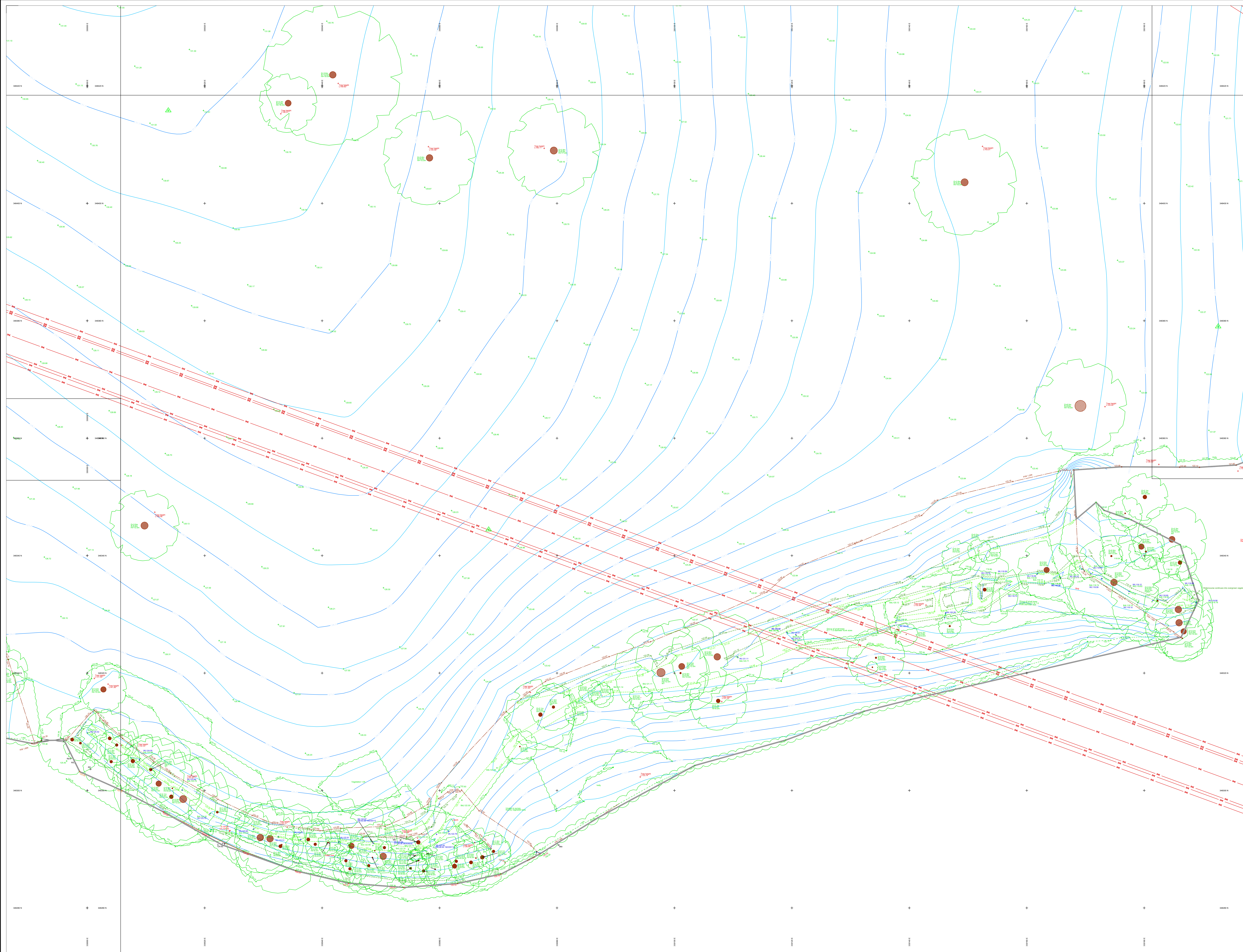
Title: Topographical Survey

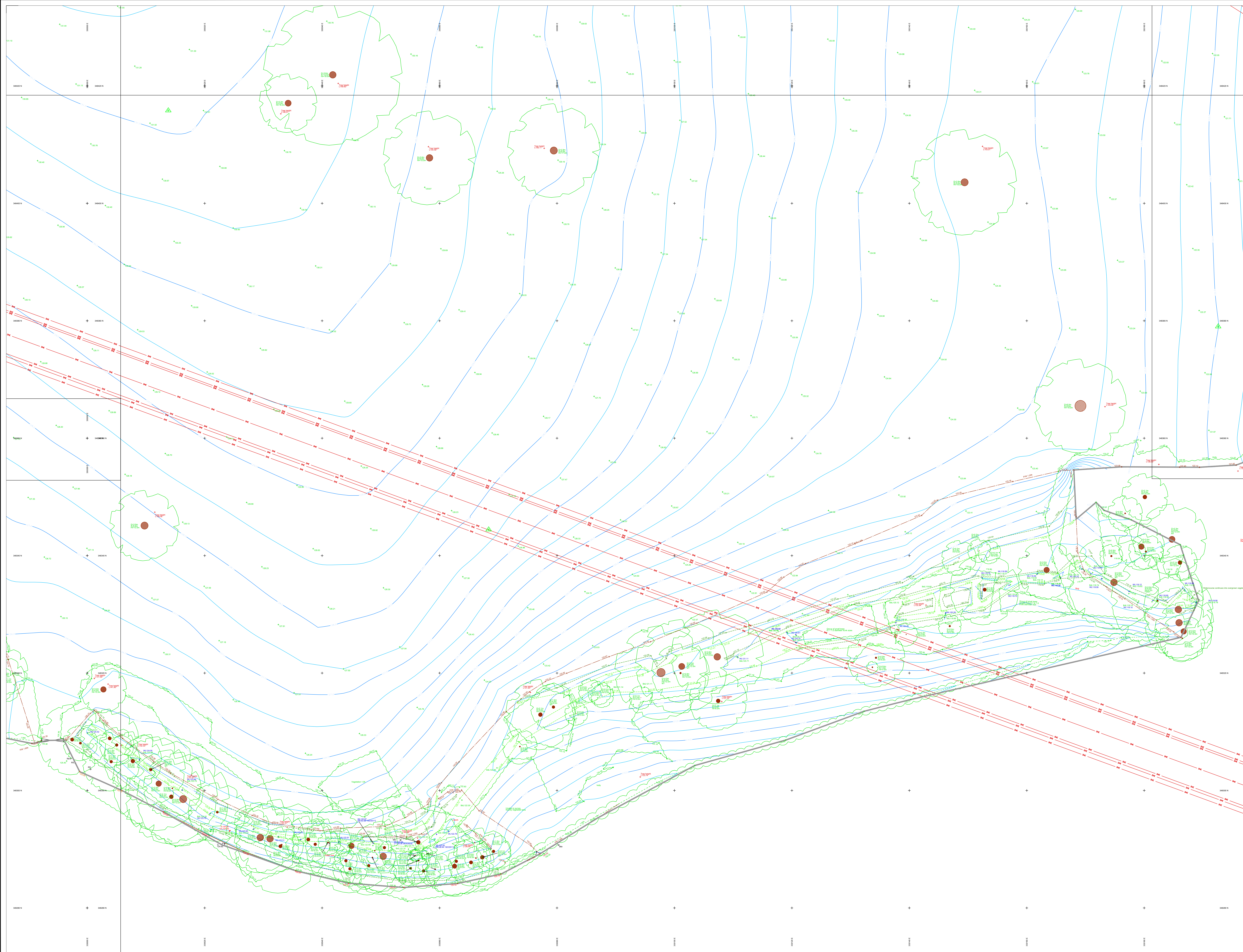
Drawn: SB **Checked:** CA

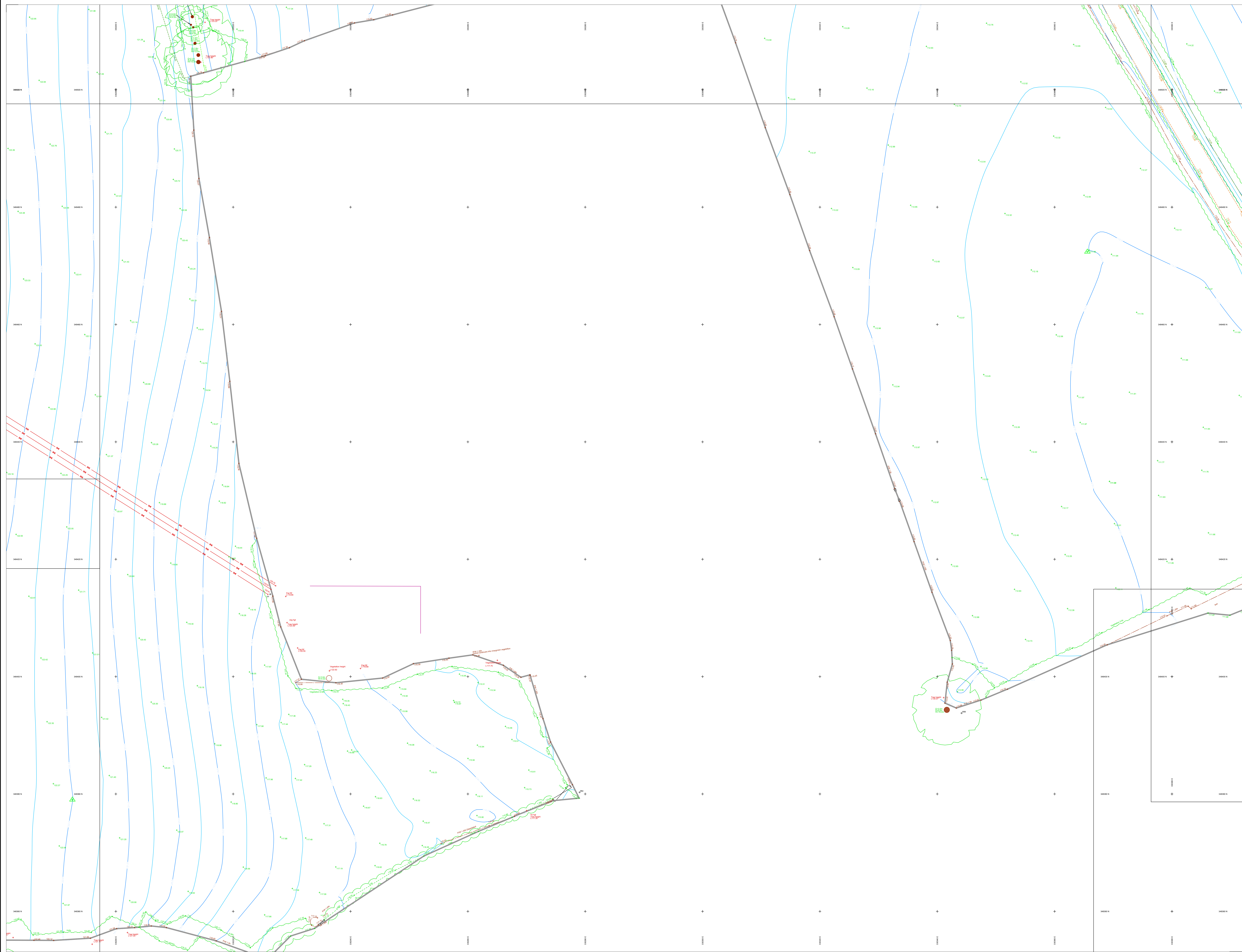
Date: March 2023 **Scale:** 1:200 @ A0

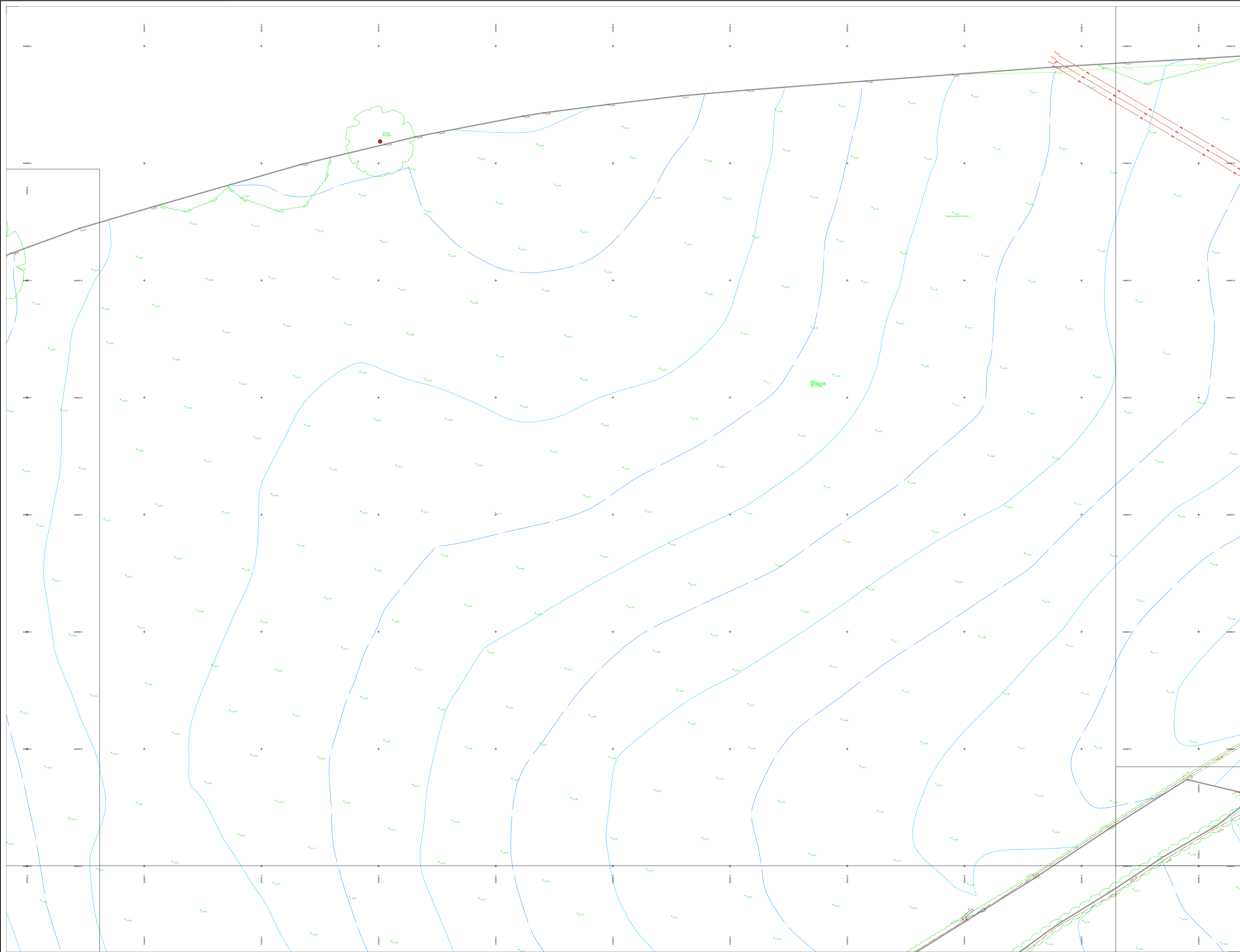
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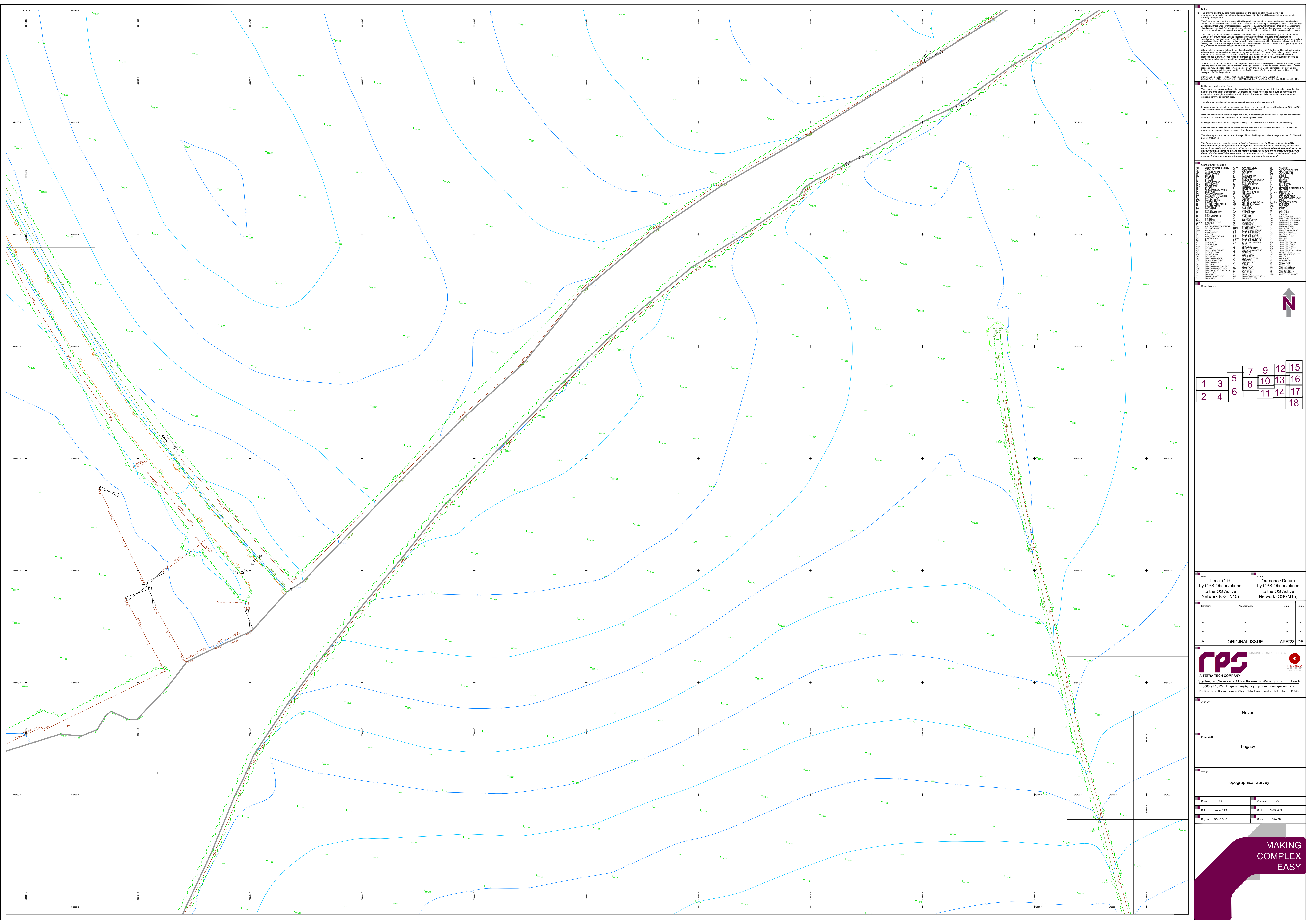
MAKING COMPLEX EASY

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Notes:

1. The Contractor is to check and verify all existing and proposed levels, and to ensure that all levels are correct and consistent with the design. The Contractor is to ensure that all levels are correct and consistent with the design. The Contractor is to ensure that all levels are correct and consistent with the design.

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Utility Services Location Note:

The following table lists the utility services located on the site. The table lists the utility services located on the site. The table lists the utility services located on the site.

Utility Service	Location	Depth
Water	100m	1.0m
Gas	100m	1.0m
Electricity	100m	1.0m
Telecommunications	100m	1.0m
Other	100m	1.0m

Standard Abbreviations:

Abbreviation	Meaning
AS	As Shown
BS	Best Practice
CA	Check and Amend
CD	Check and Draw
CE	Check and Engineer
CF	Check and Finish
CG	Check and Grade
CH	Check and Hatch
CI	Check and Issue
CJ	Check and Join
CK	Check and Key
CL	Check and Label
CM	Check and Measure
CP	Check and Plot
CQ	Check and Quote
CR	Check and Record
CS	Check and Sign
CT	Check and Title
CU	Check and Update
CV	Check and Verify
CW	Check and Write
CX	Check and X
CY	Check and Y
CZ	Check and Z

Sheet Layouts:

Sheet	Area
1	100m
2	100m
3	100m
4	100m
5	100m
6	100m
7	100m
8	100m
9	100m
10	100m
11	100m
12	100m
13	100m
14	100m
15	100m
16	100m
17	100m
18	100m

Local Grid by GPS Observations to the OS Active Network (OSGN15)

Ordnance Datum by GPS Observations to the OS Active Network (OSGN15)

Revision	Amendment	Date	Author
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10

CLIENT: Novus

PROJECT: Legacy

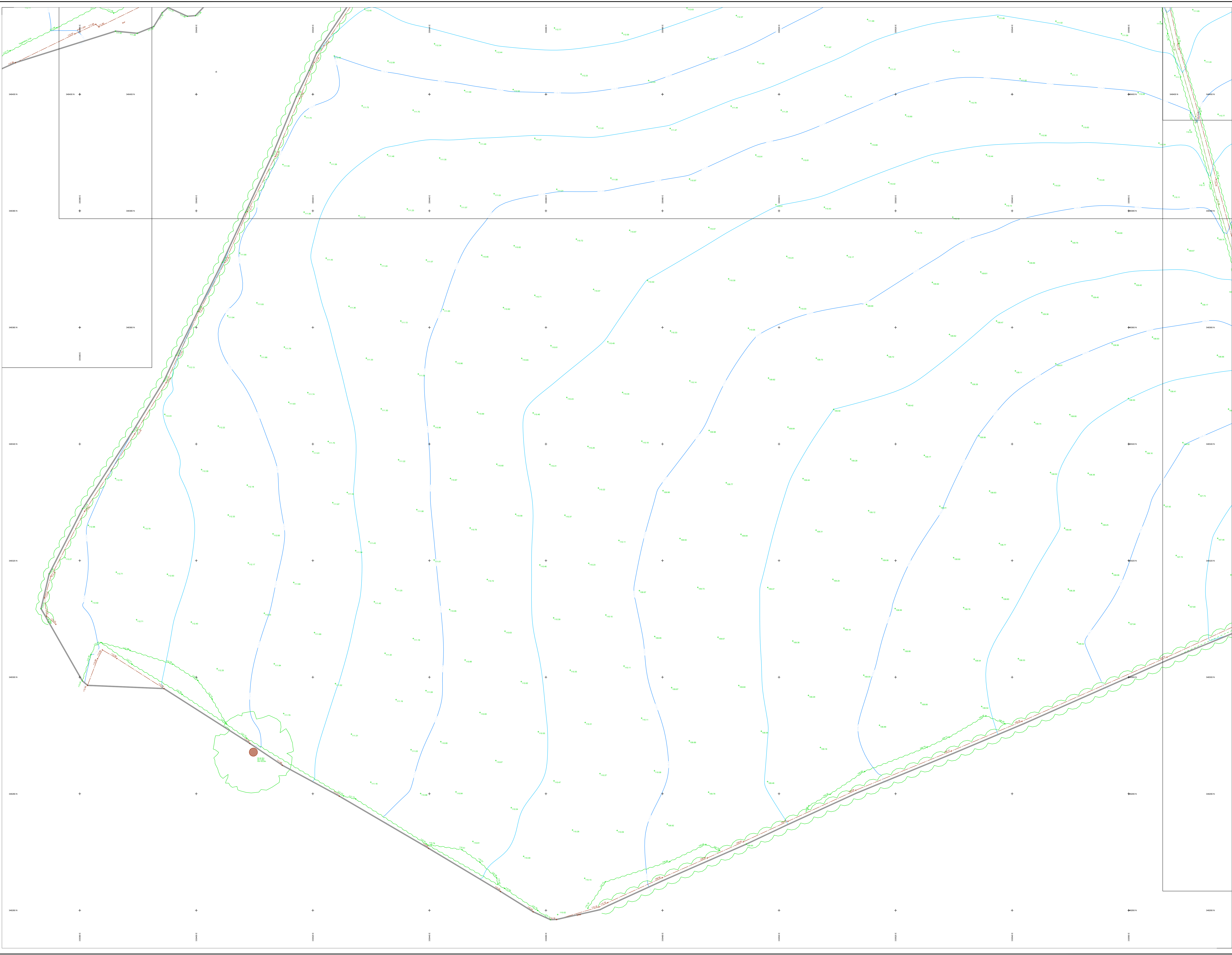
TITLE: Topographical Survey

Drawn: SB **Checked:** CA

Date: March 2023 **Scale:** 1:200 @ A0

Proj Ref: LAY7372_A **Sheet:** 10 of 18

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Notes:

1. The Contractor is to check and verify all building and site dimensions, levels and areas shown on the drawings and to report any discrepancies to the Surveyor. The Contractor is to be responsible for any errors or omissions in the drawings and to ensure that the drawings are accurate and complete. The Contractor is to be responsible for any errors or omissions in the drawings and to ensure that the drawings are accurate and complete.

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Utility Services Location Notes:

The following table lists the utility services located on the site. The table is divided into two columns: 'Utility Service' and 'Location'. The 'Utility Service' column lists the type of utility service, and the 'Location' column lists the location of the service. The table is as follows:

Utility Service	Location
Electricity	At the top of the site, near the road.
Gas	At the top of the site, near the road.
Water	At the top of the site, near the road.
Waste	At the top of the site, near the road.
Telecommunications	At the top of the site, near the road.
Other	At the top of the site, near the road.

Standard Abbreviations:

Abbreviation	Meaning
AS	As Shown
BS	By Survey
CS	By Contour
DS	By Datum
ES	By Elevation
FS	By Finish
GS	By Ground
HS	By Height
IS	By Index
LS	By Level
MS	By Method
NS	By Name
OS	By Order
PS	By Position
QS	By Quantity
RS	By Rate
SS	By Size
TS	By Time
US	By Unit
VS	By Value
WS	By Weight
XS	By X-axis
YS	By Y-axis
ZS	By Z-axis

Sheet Layouts:

The following table lists the sheet layouts for the project. The table is divided into two columns: 'Sheet' and 'Layout'. The 'Sheet' column lists the sheet number, and the 'Layout' column lists the layout type. The table is as follows:

Sheet	Layout
1	Plan
2	Plan
3	Plan
4	Plan
5	Plan
6	Plan
7	Plan
8	Plan
9	Plan
10	Plan
11	Plan
12	Plan
13	Plan
14	Plan
15	Plan
16	Plan
17	Plan
18	Plan

Local Grid by GPS Observations to the OS Active Network (OSGN15)

Ordnance Datum by GPS Observations to the OS Active Network (OSGN15)

Revision	Amendment	Date	Name
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

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CLIENT:

Novus

PROJECT:

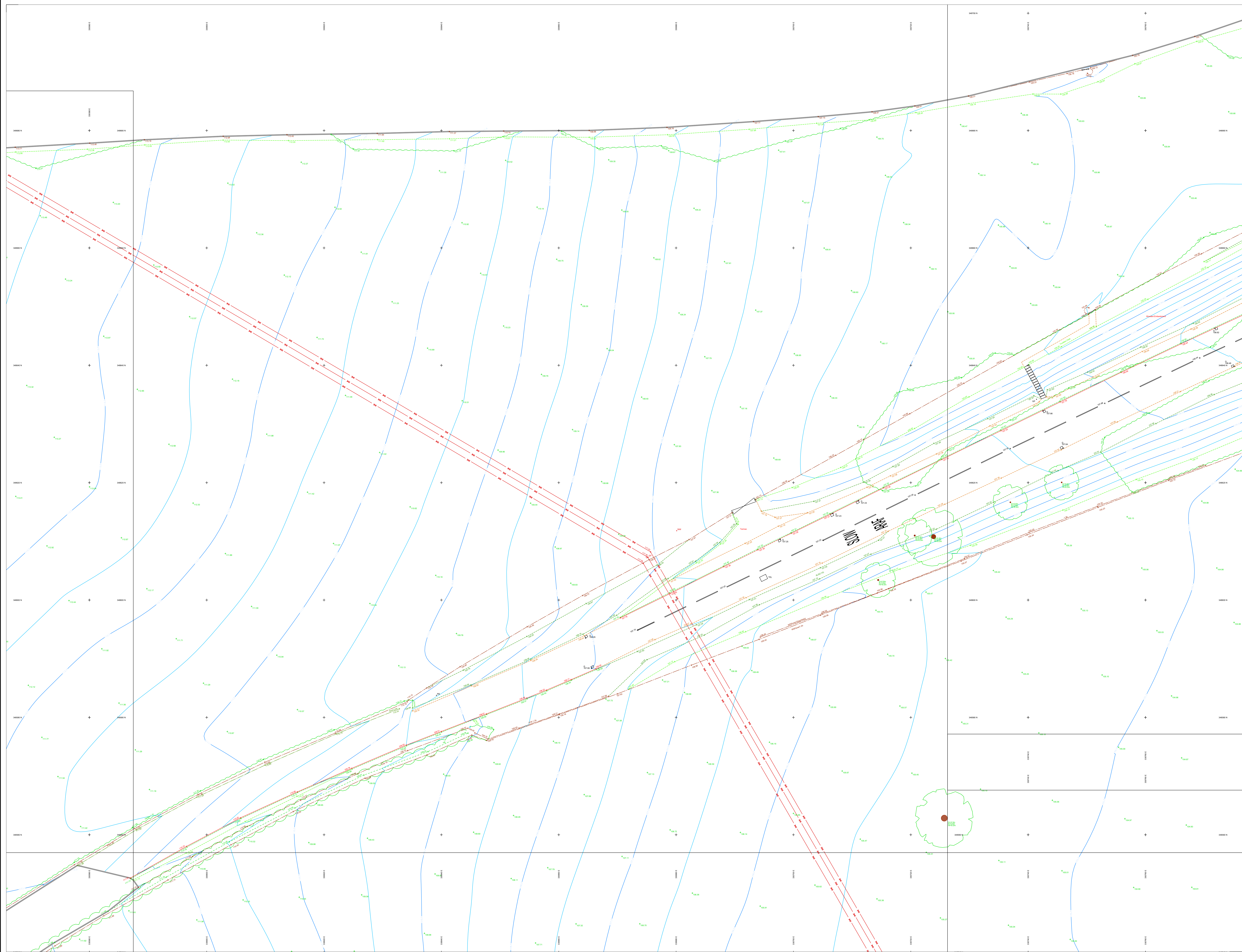
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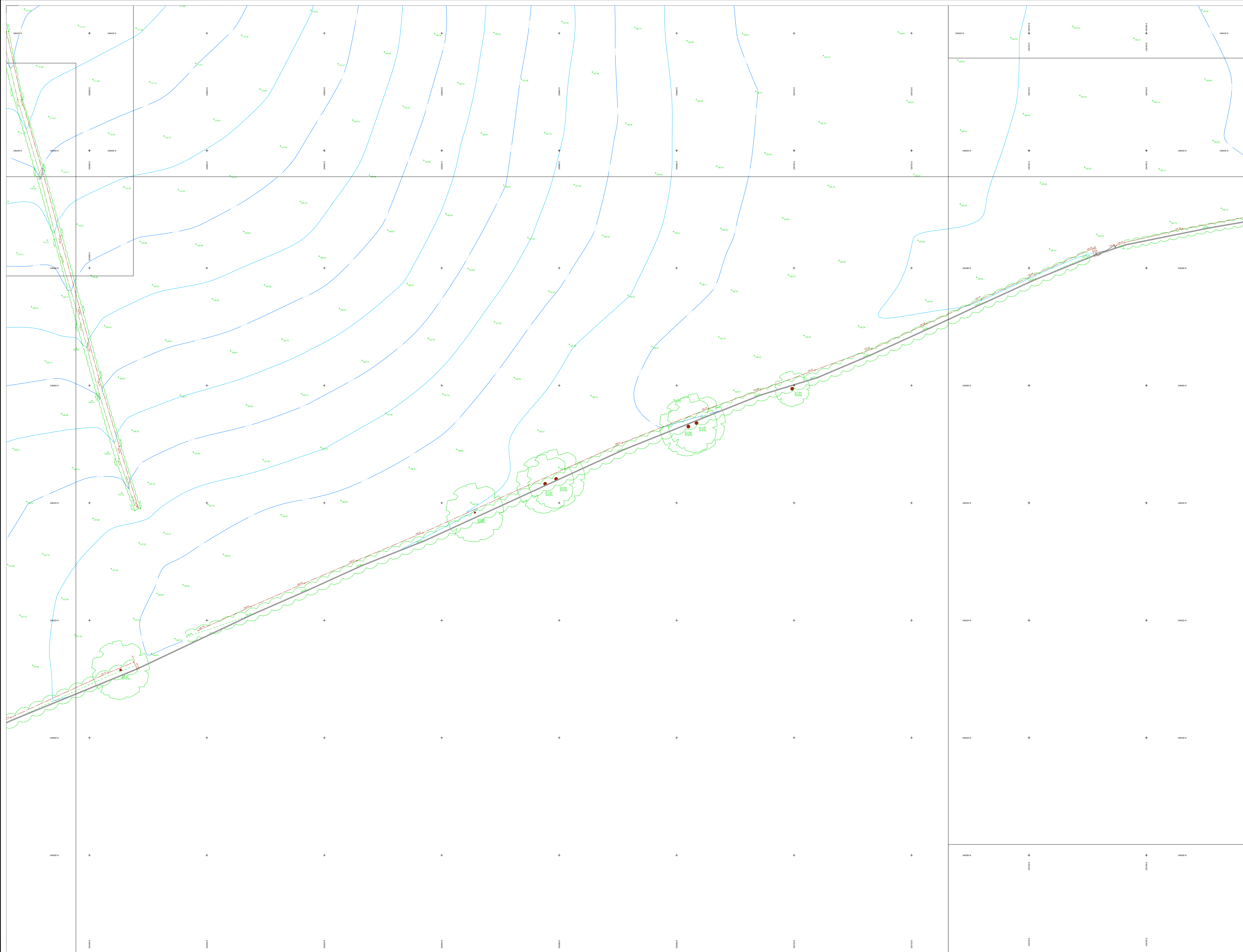
TITLE:

Topographical Survey

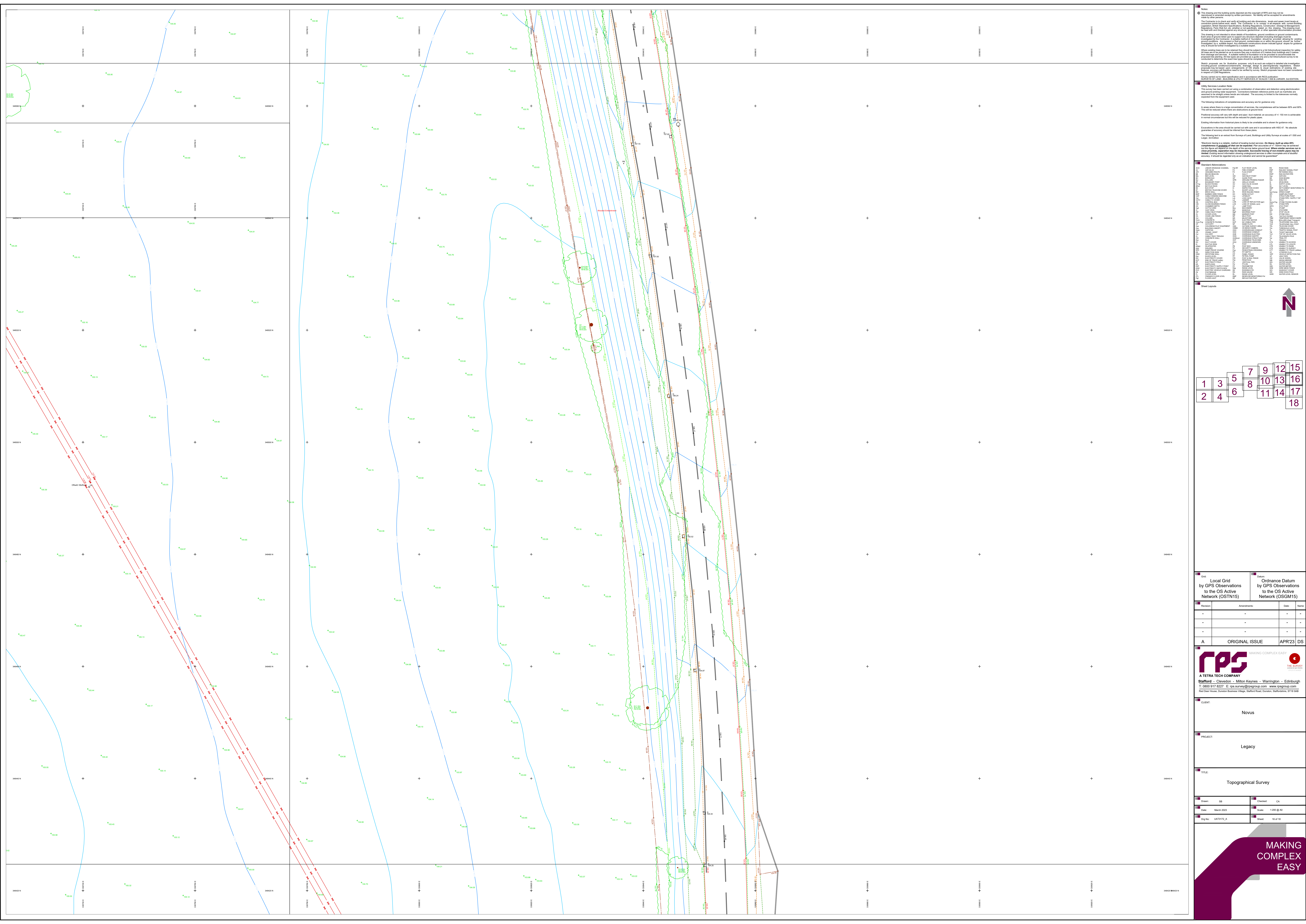
Drawn:	SB	Checked:	CA
Date:	March 2023	Scale:	1:200 @ A0
Proj Ref:	LAT73712_A	Sheet:	11 of 18

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[illegible]

[illegible]

[illegible]



Notes:

1. The Contractor is to check and verify all building work, including all foundations, walls and external works, against the approved plans and specifications. The Contractor is to be responsible for ensuring that all work is carried out in accordance with the approved plans and specifications. The Contractor is to be responsible for ensuring that all work is carried out in accordance with the approved plans and specifications. The Contractor is to be responsible for ensuring that all work is carried out in accordance with the approved plans and specifications.

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Utility Services Location Notes:

The survey has been carried out using a combination of observation and detection using electronic means. The survey has been carried out using a combination of observation and detection using electronic means. The survey has been carried out using a combination of observation and detection using electronic means. The survey has been carried out using a combination of observation and detection using electronic means.

The following table provides a summary of the utility services located on the site. The table provides a summary of the utility services located on the site. The table provides a summary of the utility services located on the site. The table provides a summary of the utility services located on the site.

Utility Service	Location	Depth (m)	Notes
Water	100.00	1.0	Water main
Gas	100.01	1.0	Gas main
Electricity	100.02	1.0	Electricity main
Telecommunications	100.03	1.0	Telecommunications main

Standard Abbreviations:

Abbreviation	Full Name
AS	Asphalt
BS	Brick
CS	Concrete
DS	Duct
ES	Electricity
FS	Fence
GS	Gravel
HS	Hardcore
IS	Iron
JS	Joint
KS	Keystone
LS	Lime
MS	Masonry
NS	Natural
OS	Open
PS	Paving
QS	Quarry
RS	Road
SS	Soft
TS	Turf
US	Upland
VS	Vegetation
WS	Water
XS	Excavation
YS	Yard
ZS	Zone

Sheet Layouts:

1 3 5 7 9 12 15
2 4 6 8 10 13 16
11 14 17 18

Local Grid by GPS Observations to the OS Active Network (OSTN15)

Ordnance Datum by GPS Observations to the OS Active Network (OSGM15)

Revision	Amendment	Date	Author
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

A ORIGINAL ISSUE APR'23 DS

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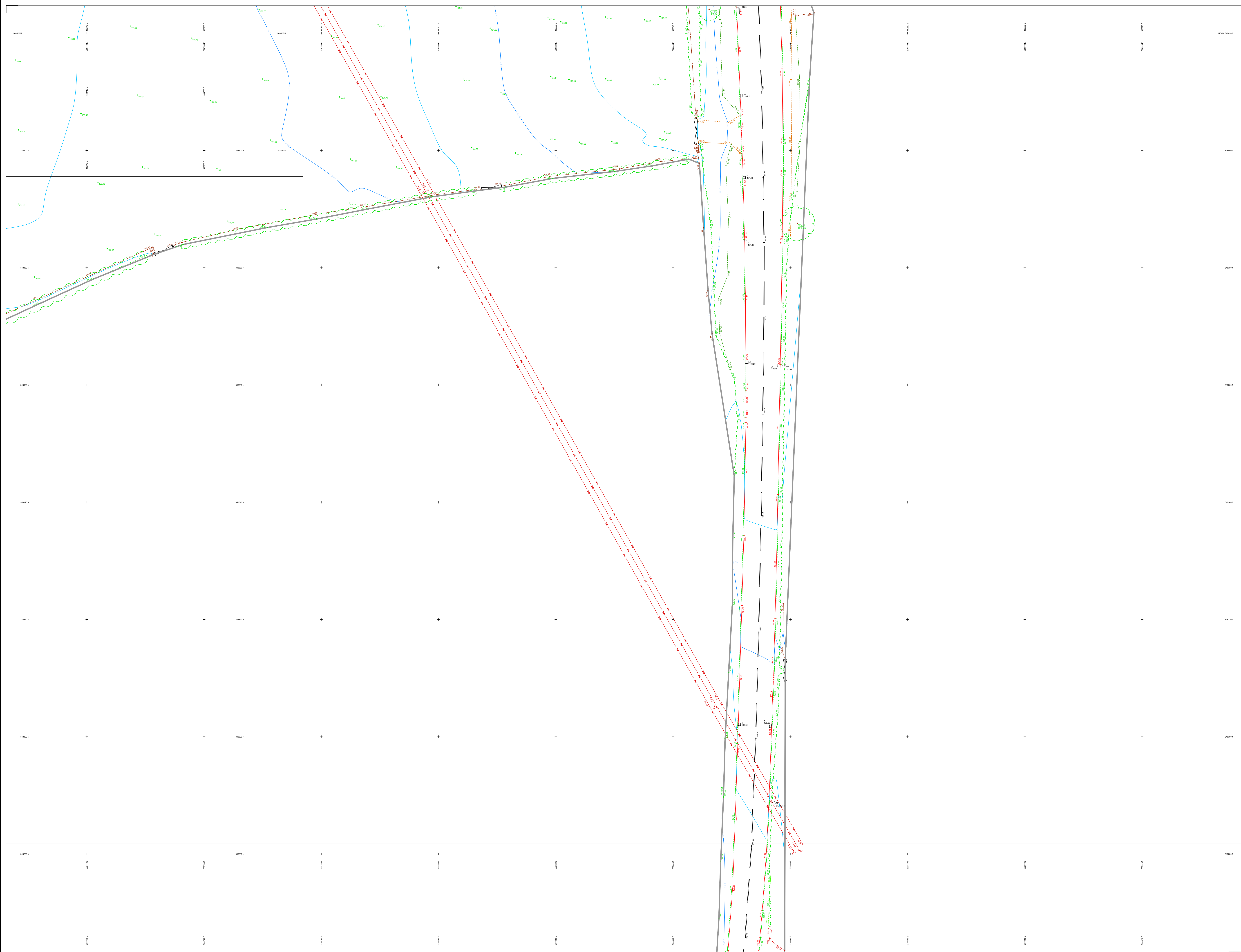
CLIENT: Novus

PROJECT: Legacy

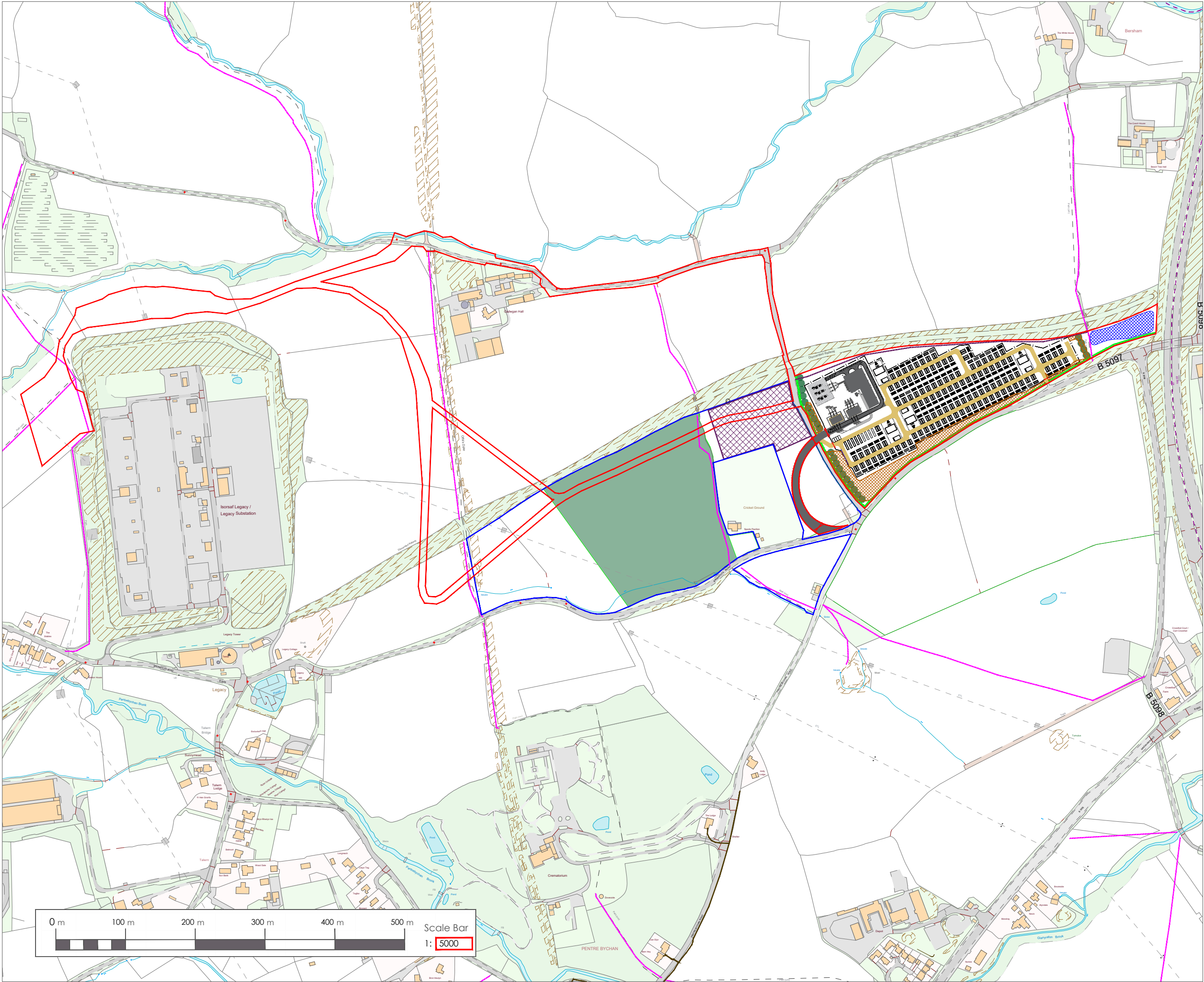
TITLE: Topographical Survey

Drawn	SB	Checked	CA
Date	March 2023	Scale	1:200 @ A0
Proj Ref	LAT73772_A	Sheet	16 of 18

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[illegible]

B Development Plans



KEY:

- Development Boundary
- Additional Land Within Applicants Control
- ESS Unit
- 400kV Substation
- 33kV Bay
- Access Track
- Access Road
- Permissive Footpath
- Bund
- Attenuation Basin
- Construction Compound
- Ecological Enhancement Area
- Woodland Planting
- Hedgerow Enhancement
- Fenceline
- Access Gate
- Water Container
- Storage Container
- Office Container
- Parking Spaces
- ProW



DATE: 16/02/2024

PROJECT TITLE:

Legacy

DRAWING TITLE:

Layout Plan

DRAWING VERSION NUMBER:

V10

SCALE: 1:5000

PAGE SIZE: A3

DRAWN BY: QR

APPROVED BY: WG

C Extract of Utilities Search Report

Utilities Search Report



Thursday, 25 Aug 2022
Penny Brierley Ltd T/A X-Press
489507 IAP
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enquiries@cornerstoneprojects.co.uk
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VAT Reg. No. 851 4941 19
Company No. 5132353

Registered in England. Registered Address : Cornerstone Projects Ltd, 91 Market Street, Hoylake, Wirral CH47 5AA

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WATER



GENERAL CONDITIONS AND PRECAUTIONS TO BE TAKEN WHEN CARRYING OUT WORK ADJACENT TO SEVERN TRENT WATER'S APPARATUS

Please ensure that a copy of these conditions is passed to your representative and/or your contractor on site. If any damage is caused to Hafren Dyfrdwy (HD) apparatus (defined below), the person, contractor or subcontractor responsible must inform HD immediately on: **0800 085 8033 (24 hours)**

- a) These general conditions and precautions apply to the public sewerage, water distribution and cables in ducts including (but not limited to) sewers which are the subject of an Agreement under Section 104 of the Water Industry Act 1991(a legal agreement between a developer and HD, where a developer agrees to build sewers to an agreed standard, which HD will then adopt); mains installed in accordance with an agreement for the self-construction of water mains entered into with HD and the assets described at condition b) of these general conditions and precautions. Such apparatus is referred to as "HD Apparatus" in these general conditions and precautions.
- b) Please be aware that due to The Private Sewers Transfer Regulations June 2011, the number of public sewers has increased, but many of these are not shown on the public sewer record. However, some idea of their positions may be obtained from the position of inspection covers and their existence must be anticipated.
- c) On request, STW will issue a copy of the plan showing the approximate locations of HD Apparatus although in certain instances a charge will be made. The position of private drains, private sewers and water service pipes to properties are not normally shown but their presence must be anticipated. This plan and the information supplied with it is furnished as a general guide only and HD does not guarantee its accuracy.
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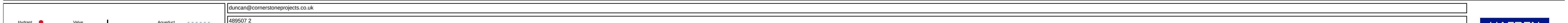
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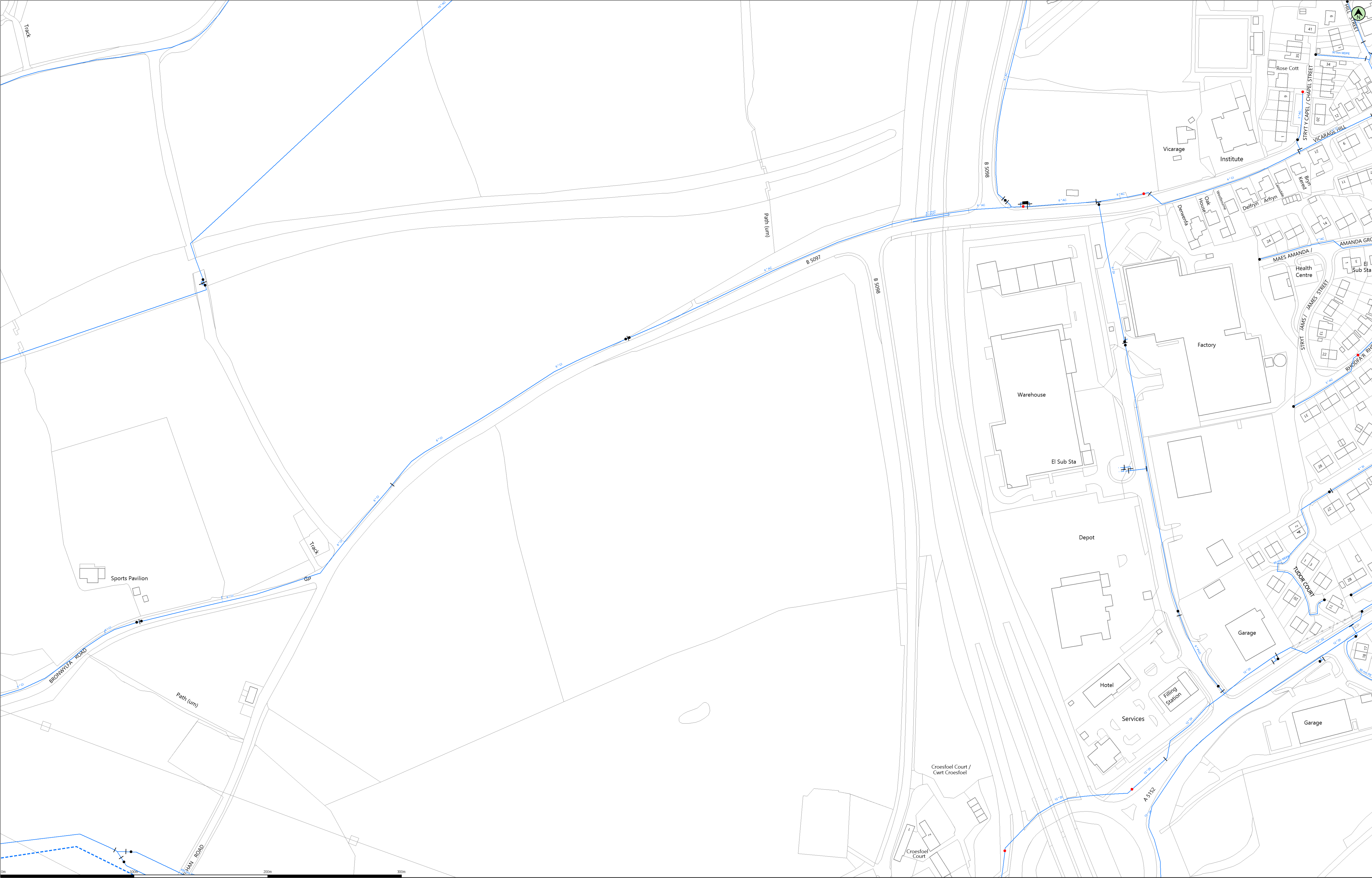
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- | | | |
|---------|----------------|----------------------------|
| Hydrant | Valve | Aqueduct |
| Washout | Water Main | Duct |
| Meter | Abandoned Pipe | Service Pipe/ Private Pipe |

duncan@cornerstoneprojects.co.uk
489507 IAP



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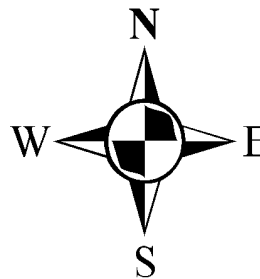
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SEWER



Dŵr Cymru
Welsh Water

LAND AT BRONWYLFA ROAD, RHOSTYLLLEN



LEGEND(Representative of most common features)

Waste network:	Foul chamber	Surface water chamber	Outfall
Combined chamber	Combined sewer	Combined sewer overflow	Special purpose chamber
Treatment works	Pumping station	Private sewer	Private sewer subject to Sect. 104 adoption agreement
Private Sewer Transfer	Lateral Drain	Inspection Chamber	

NB: Sewer symbol colour indicates the type.
RED - Combined
GREEN - Surface Water
BROWN - Foul
Purple - Former S24 sewers (for indicative purposes only)

Notes:

Whilst every reasonable effort has been taken to correctly record the pipe material of DCWW assets, there is a possibility that in some cases pipe material (other than Asbestos Cement or Pitch Fibre) may be found to be asbestos cement (AC) or Pitch Fibre (PF). It is therefore advisable that the possible presence of AC or PF pipes be anticipated and considered as part of any risk assessment prior to excavation

Dŵr Cymru Cylchreith (the Company) gives the information as to the position of its underground apparatus by way of general guidance only and on the understanding that it is based on the best information available and no warranty is given by the Company as to its correctness or in the event of inaccuracies or other works made in the vicinity of the Company's apparatus. The onus of locating apparatus before carrying out any excavations rests entirely on you. The information which is supplied by the Company is done so in accordance with statutory requirements of sections 189 and 189A of the Water Industry Act 1991 which is based upon the best information available and, in particular, but without prejudice to the generality of the foregoing, it should be noted that the records that are available to the Company may not disclose the existence of a water main, service pipe, sewer, lateral drain or disposal main and any associated apparatus laid before 1 September 1989, or, if they do, the particulars thereof including their position underground may not be accurate. It must be understood that the furnishing of this information is intended without prejudice to the provisions of the New Roads and Street Works Act 1991 and the Company's right to be compensated for any damage to its apparatus.

**EXACT LOCATIONS OF ALL APPARATUS
TO BE DETERMINED ON SITE.**

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