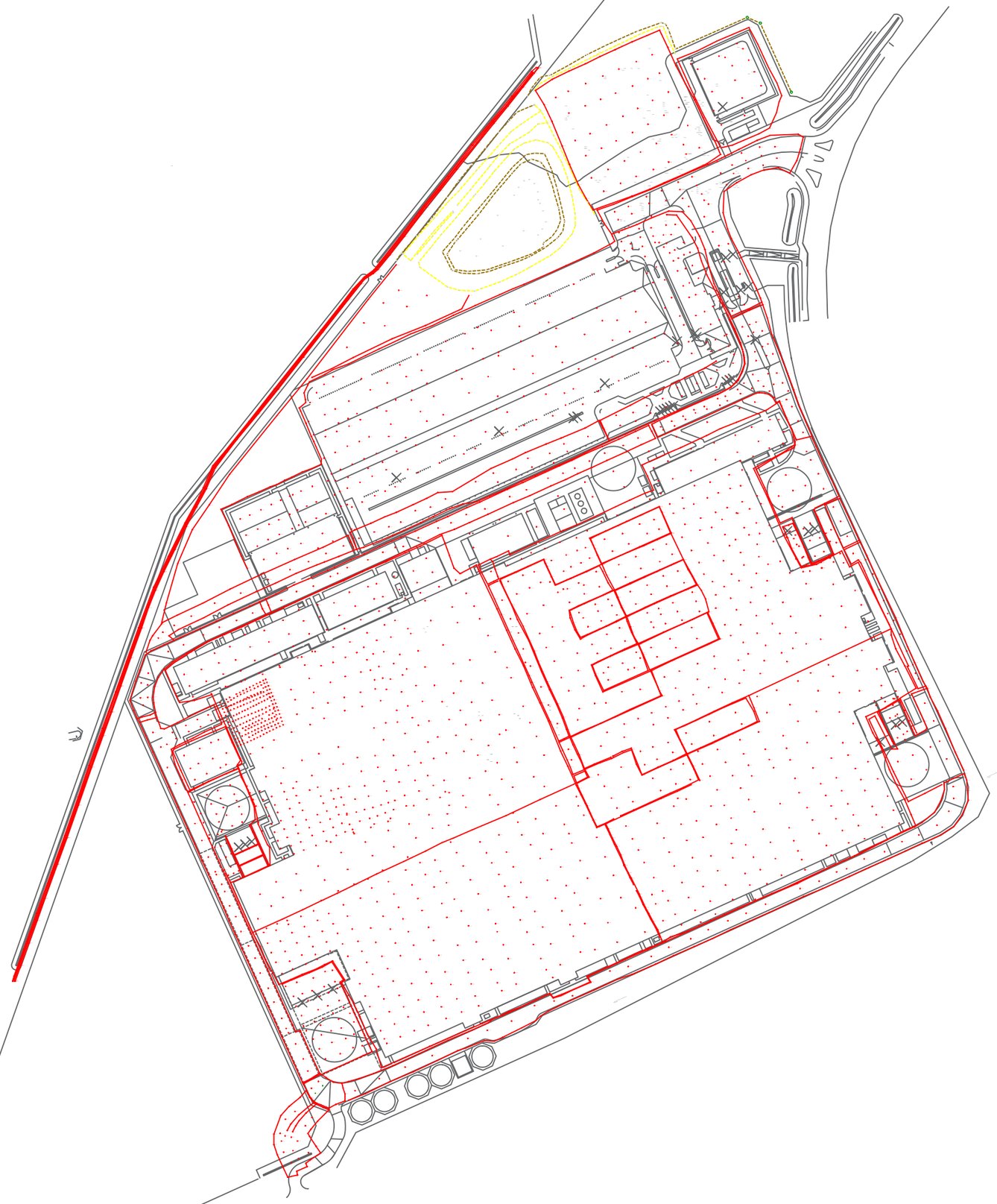

General Notes

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Disclaimer

North East Earthworks Ltd.

ABBREVIATIONS

RWP	RAINWATER PIPE	WP	WASTE PIPE
	MANHOLE	STN	STATION CONTROL
IC	INSPECTION CHAMBER	GUL	GULLEY
SV	STOP VALVE	GV	GAS VALVE
BT	BT CHAMBER	EP	ELECTRIC POLE
TP	TELEGRAPH POLE	LP	LAMP POST

LEGEND

- TOP OF BATTER
- BOTTOM OF BATTER
- ROAD EDGE
- CHANNEL LINE
- TOP OF KERB
- FOOTPATH
- VERGE
- CENTRE LINE
- FENCE METAL
- FENCE WOOD
- FENCE POST AND RAIL
- TREE CANOPY
- HEDGE LINE
- WALL
- BUILDING

N

No.	Revision/Issue	By	Date

NORTH EAST EARTHWORKS LIMITED

LITTLEBURN INDUSTRIAL ESTATE
LANGLEY MOOR
DURHAM
DH7 8HJ

TEL: 0191 384 4000
FAX: 0191 384 5869

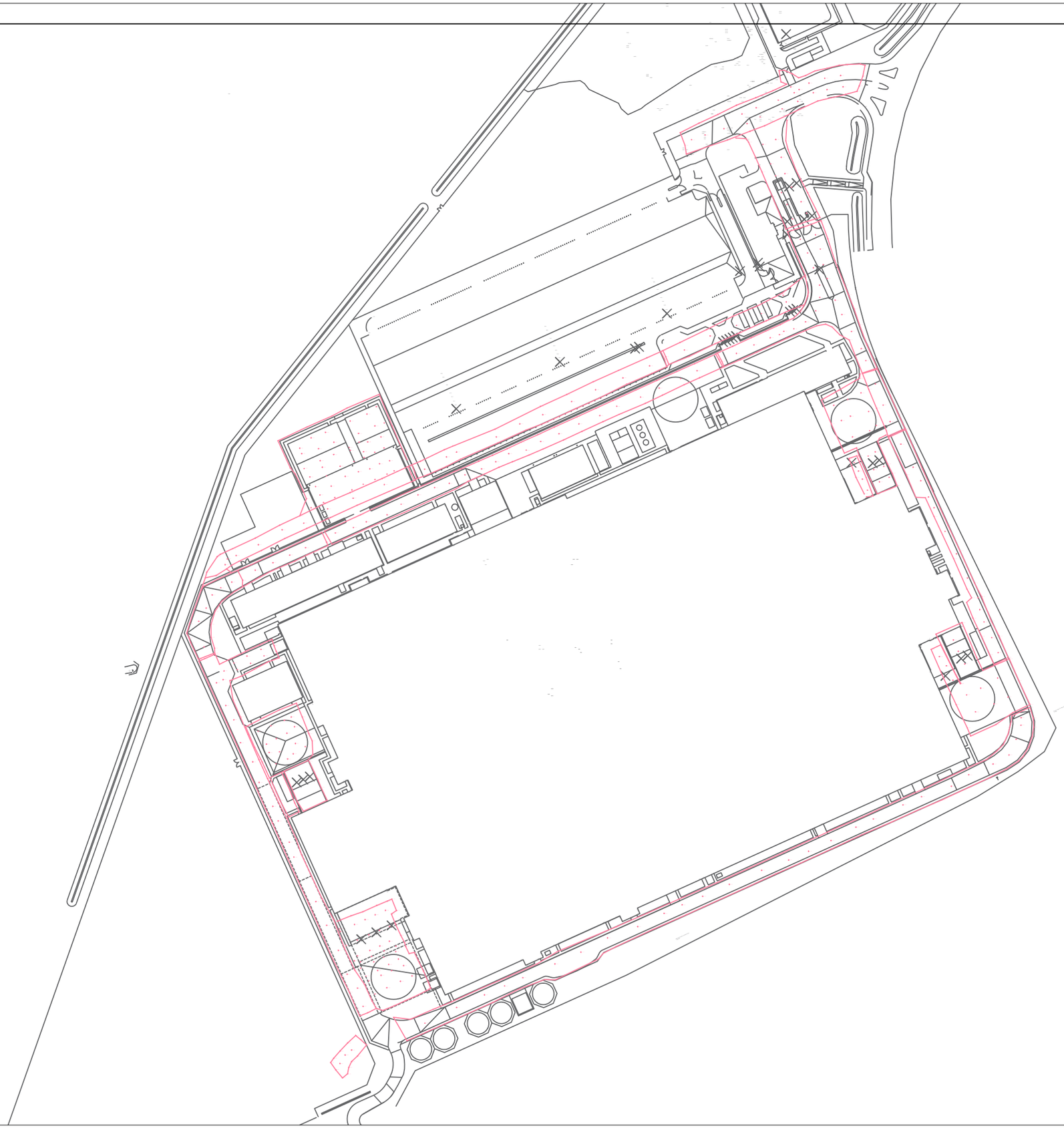
Project Name and Address

ENVISION
INTERNATIONAL
DRIVE
WASHINGTON

Formation

Drawing No: 5002	Sheet: 1OF1
Date: 30/03/23	
Scale: SCALE	

Client	Drawn	Approved
ERGO	HS	BJ



General Notes

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Disclaimer

North East Earthworks Ltd.

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LEGEND

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- CHANNEL LINE
- TOP OF KERB
- FOOTPATH
- VERGE
- CENTRE LINE
- FENCE METAL
- FENCE WOOD
- FENCE POST AND RAIL
- TREE CANOPY
- HEDGE LINE
- WALL
- BUILDING

N

No.	Revision/Issue	By	Date

NORTH EAST EARTHWORKS LIMITED

LITTLEBURN INDUSTRIAL ESTATE
LANGLEY MOOR
DURHAM
DH7 8HJ

TEL: 0191 384 4000
FAX: 0191 384 5869

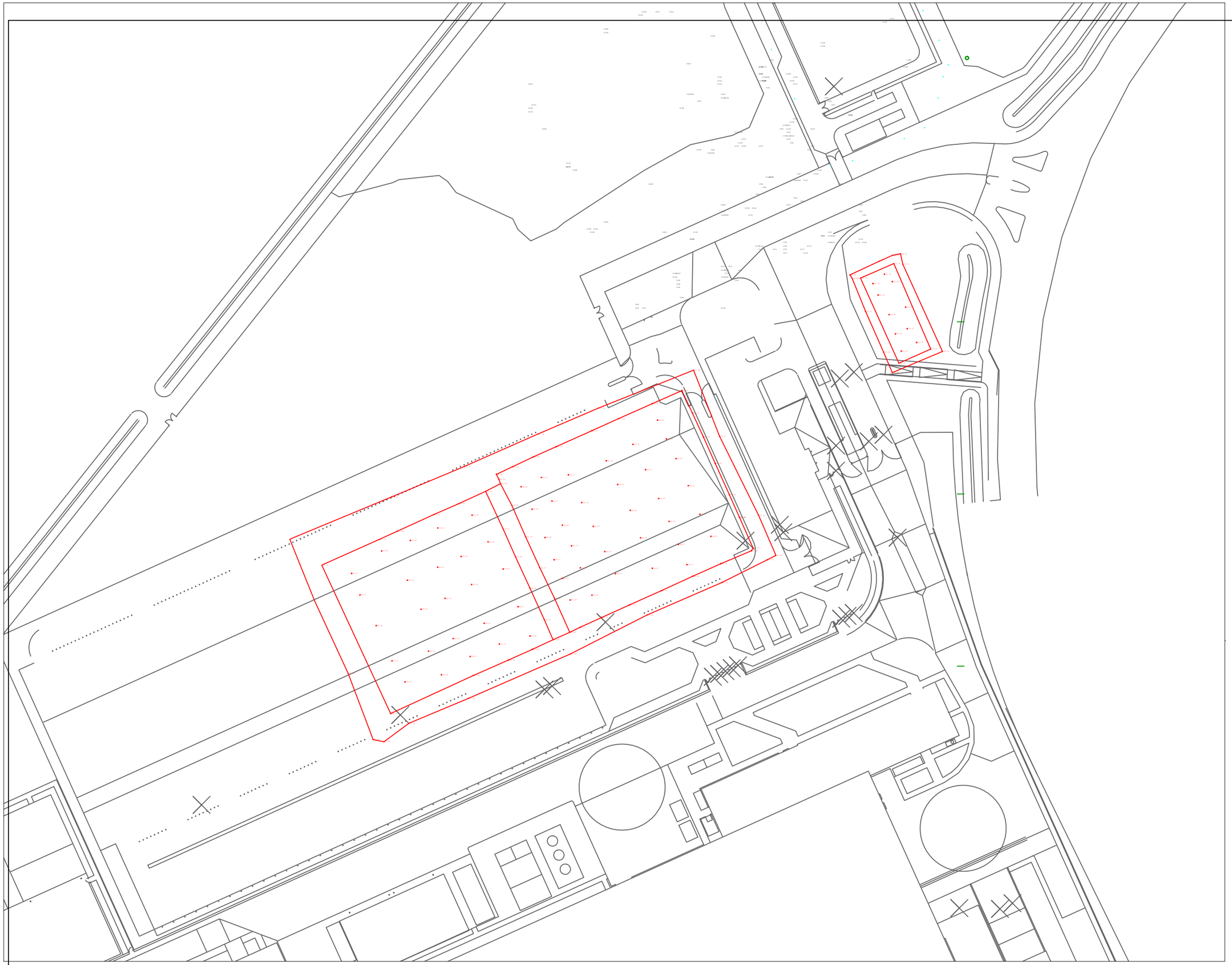
Project Name and Address

ENVISION
INTERNATIONAL
DRIVE
WASHINGTON

6F5 Drawing

Drawing No: 5004	Sheet: 1OF1
Date: 30/03/23	
Scale: SCALE	

Client	Drawn	Approved
ERGO	HS	BJ



General Notes

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Disclaimer

North East Earthworks Ltd.

ABBREVIATIONS

RWP	RAINWATER PIPE	WP	WASTE PIPE
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LEGEND

- TOP OF BATTER
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- ROAD EDGE
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- CENTRE LINE
- FENCE METAL
- FENCE WOOD
- FENCE POST AND RAIL
- TREE CANOPY
- HEDGE LINE
- WALL
- BUILDING

N

No.	Revision/Issue	By	Date

NORTH EAST EARTHWORKS LIMITED

LITTLEBURN INDUSTRIAL ESTATE
LANGLEY MOOR
DURHAM
DH7 8HJ

TEL: 0191 384 4000
FAX: 0191 384 5869

Project Name and Address

ENVISION
INTERNATIONAL
DRIVE
WASHINGTON

Attenuation Tank

Drawing No: 5005	Sheet: 1OF1
Date: 30/03/23	
Scale: SCALE	

Client	Drawn	Approved
ERGO	HS	BJ

Notes

1. This drawing has been prepared in accordance with the scope of RPS's appointment with its client and is subject to the terms and conditions of that appointment. RPS accepts no liability for any use of this document other than by its client and only for the purposes for which it was prepared and provided.
2. If received electronically it is the recipients responsibility to print to correct scale. Only written dimensions should be used.
3. This drawing should be read in conjunction with all other relevant drawings and specifications.
4. The scheme is subject to statutory approvals, surveys and design development.
5. © Crown copyright and database rights 2021 Ordnance Survey 0100031673

N

Schedule of Areas

Site Area (Application Boundary)		63.31 Acres (256,210 m²)
GEA (Gross External Area):		
Main Building	1F	84,050 m²
	2F	15,070 m²
	3F	1,570 m²
Office (two storey)		3,795 m²
Spine core (first floor)		2,865 m²
Bulk Stores Canopy		945 m²
HV/LV Substation		100 m²
Waste Collection Canopy 1		750 m²
Waste Collection Canopy 2		500 m²
Plant Rooms		2,060 m²
Gatehouse		105 m²
Cycle Shelter		35 m²
Total		111,455m²

Car Parking:
(inc. 5% accessible & upto 10% EV charging)

Staff	685
Visitors	40
Total	725

Bicycle and Motorcycle Shelter:
up to 80 spaces

HGVs:
upto 25 spaces (inc docks)

Rev	Description	By	Ckd	Date
P02	Schedule of areas updated.	TSR	TH	16/07/21
P01	First Issue.	TSR	TH	14/07/21

Sherwood House, Sherwood Avenue,
Newark, Nottinghamshire, NG24 1QQ
T: 01636 605 700 E: rpsnewark@rpsgroup.com

Client: Envision AESC

Project: Envision AESC Giga Factory

Title: Proposed Site Layout

RPS Project Number	Scale @ A0	Date Created
NK020439P	1:1250	14/07/21
Task Team Manager	Information Author	Task Information Manager
TH	TSR	TSR

Status: S4 (Suitable For Approval)
Document Number: 101
Revision: P02

rpsgroup.com

25m SCALE 1:1250

APPENDIX IV
PHOTOGRAPHS

PLATE 1 – INSTALLATION OF THE CRATE STORAGE

PLATE 2 – PILING WORKS AND CUT SURFACE

PLATE 3 – CUT SURFACE AND STOCKPILED MATERIALS IN THE SOUTH-WESTERN SITE AREA FOR OFFSITE DISPOSAL

PLATE 4 – LOCALISED SOFT CLAYS ENCOUNTERED WITHIN FOOTPRINT OF FORMER FARM HOUSE

PLATE 5 – STONED-UP LEVELS FOR CONSTRUCTION

PLATE 6 – COMPLETED LEVELS AND STOCKPILED MATERIALS FOR REPLACEMENT WITHIN CRATE STORAGE SYSTEM IN CENTRAL SITE AREA

APPENDIX V
ERGO MATERIALS MANAGEMENT PLAN

MATERIALS MANAGEMENT PLAN

Envision Giga One,
International Drive,
Sunderland,

Prepared for:

ERGO Report: 22-1296-MMP

Issued: July 2022

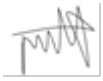
ERGO ENVIRONMENTAL LIMITED

Hoults Yard,
Walker Road,
Newcastle upon Tyne,
NE6 2HL

Tel : + 00 (0) 191 389 6200
http:\\www.ergoenvironmental.com

Registered in England
No.: 11162116

QUALITY ASSURANCE

REMARKS	***RevA – Working copy***
DATE	July 2022
PREPARED BY	J Malley
QUALIFICATIONS	BSc, MSc, MCIWEM C.WEM
SIGNATURE	
CHECKED BY	J Nairn
QUALIFICATIONS	BSc, MSc, MIENvSc, CEnv, FGS
SIGNATURE	
AUTHORISED BY	J Nairn
QUALIFICATIONS	BSc, MSc, MIENvSc, CEnv, FGS
SIGNATURE	
PROJECT NUMBER	22-1296
IMS Template Reference: QR004-1-April 2018	

Materials Management Plan (MMP) Form – July 2022

This form should be completed once the lines of evidence have been marshalled in relation to suitability for use, certainty of use and quantity required.

The answers to the questions posed within this form, together with the supporting information will constitute the MMP and must be provided to the Qualified Person.

A Qualified Person may comment on draft versions of this MMP, but will not complete the Declaration until all the relevant documents, demonstrating lines of evidence have been provided for each site.

The person / organisation who will pay the Declaration fee should confirm that they have read and understand the Terms and Conditions relating to the payment of the Declaration fee to CL:AIRE. These can be found on the CL:AIRE website.

The person / organisation agreeing to pay the Declaration Fee - Name, organisation and contact details inc. email address -	**ERGO Environmental Limited** **Hoults Yard,** **Walker Road,** **Newcastle upon Tyne,** **NE6 2HL** **Prepared by: Jonathan Malley** **Tel: 0191 389 6200** **Email: jmalley@ergoenvironmental.com**

✔ **I confirm I have read and understood the Terms & Conditions.**

Each question must be answered. If the question is not applicable please state this and provide a brief explanation.

1. Specify the scenario to which this MMP relates, as described in the Definition of Waste: Development Industry Code of Practice (DoW CoP) (1, 2, 3 or 4):

✔ 1. Reuse on the Site of Origin
☐ 2. Direct Transfer of clean naturally occurring soil / mineral materials
☐ 3. Cluster Project
☐ 4. Combination of any of the above

In the case of a combination of reuse scenarios, please describe it below:
Reuse on Site of Origin and Direct Transfer of clean naturally occurring unpolluted soils.
(NB: A Declaration is required for reuse on the Site of Origin and for any 2 site arrangement i.e. there is no facility for a combination Declaration)

2. Organisation and name of person preparing this MMP	ERGO Environmental Limited Hoults Yard, Walker Road, Newcastle upon Tyne, NE6 2HL Prepared by: Jonathan Malley Tel: 0191 389 6200 Email: jmalley@ergoenvironmental.com

Document Control

Date issued	**July 2022**
Revision date	
Summary of revision 1	
Summary of revision 2	

Insert additional lines to the table above for any subsequent revisions.
Note - revisions to the MMP do not trigger an additional Declaration by a Qualified Person, unless an additional site is added to the project.
Revisions to the MMP must be recorded and summarised in the Document Control box above.

Site Details

3. Site / Project name(s)	Envision Giga One, International Drive, Sunderland
Reuse / receiving site name:	As Above
Donor site name (if Direct Transfer)	TBC

Landowners

4a. Name of Landowner(s) (full address and contact details) – where excavated materials are to be reused	**Site of Origin:** Envision Giga One, International Drive, Sunderland Contact: Paul Barton – Project Manager Groundworks Services (Durham) Ltd, Littleburn Ind Est, Durham DH7 8HJ Tel: 0191 3782777 Email: pbarton@northeastearthworks.co.uk
4b. Name of Landowner(s) (full address and contact details) – where excavated materials are arising from	1. **Site of Origin** – All as 4a 2. **Donor Site** – TBC as required.

Summary and objectives

5a. Provide a brief description of the planned project and how excavated materials are to be reused.	From calculations completed by Groundworks Services (Durham) it is understood that the development requires reuse of 'cut' materials onsite in areas of 'fill' based on the volumetrics undertaken by the groundworker for the site. It is understood that works will comprise the following: • Cut – 72,876m³ of clays; • Reuse/Fill – 49,876m³ of site won materials to achieve proposed site levels; • Import – c.45,000m³ Type 1/6F2 materials to achieve formation level. • Export of c. 27,000m³ Topsoil to Thrislington Quarry Copies of the cut/fill volumetric assessment are enclosed.

	A volume of chemically and texturally suitable topsoil material (volume TBC) will be reused within the proposed soft landscaping – this should be updated in subsequent revisions to this MMP. All materials requiring offsite disposal will be assessed and managed in accordance with guidance. No importation sources have been identified at present. Works are understood to be undertaken by Groundworks Services (Durham) Ltd.

General Plans and Schematics

6. **Attach** a location plan for the site(s) and a plan of the site(s) which identifies where different materials are to be excavated from, stockpile locations (if applicable), where materials are to be treated (if applicable) and where materials are to be reused.	Plan Document Reference(s): ERGO Drawing 22-1296-001 Site Location Plan ERGO Drawing 22-1296-002 Proposed Development Plan **Drawings for Re-Use on Site of Origin:** Copies of the cut/fill volumetric assessment are enclosed.
7. **Attach** a schematic of proposed materials movement. Where there is only one source area and one placement area briefly describe it. For all other projects a schematic is required.	Volumetric Drawings have not been made available to ERGO. However, it is understood that works will comprise the following: • Cut – 72,876m³ of clays; • Reuse/Fill – 49,876m³ of site won materials to achieve proposed site levels; • Import – c.45,000m³ Type 1/6F2 materials to achieve formation level. It is understood that c. 27,000m³ Topsoil is to be exported to the Thrislington quarry reclamation scheme.

Parties Involved and Consultation – if more than one party please provide additional details for them and identify the location that they will be working e.g. where a site is zoned

8a. Main earthworks contractor(s) (full address and contact details) – Where excavated materials are to be reused	**Site of Origin** Contact: Paul Barton – Project Manager Groundworks Services (Durham) Ltd, Littleburn Ind Est, Durham DH7 8HJ Tel: 0191 3782777 Email: pbarton@northeastearthworks.co.uk

8b. Main earthworks contractor(s) (full address and contact details) - Where excavated materials are arising from	**Site of Origin** As above in Section 8a **Donor Site** - TBD

9. Treatment contractor(s) (full address and contact details) – for treatment on site of origin, or at a Hub site within a fixed STF / Cluster Project	N/A

10. Where wastes and materials are to be transported between sites, provide details of the transport contractor(s) (full address, contact details and waste carriers registration details (if applicable))	Proposed haulage contractor(s) are required for the export and import of the following materials, namely: TBC

11. Provide Local Authority contact details (full address and named contacts) where excavated materials are to be reused	Sunderland City Council 1 Edith St, Hendon, Sunderland SR2 8JS Contact: Rachel Tempest (Waterman Group) Email: rachael.tempest@watermangroup.com Tel: 0161 839 8392 Correspondence shown in Appendix IV

12a. For the site where materials are to be reused and for Hub Site locations provide Environment Agency contact details (full address and named contacts):	North East Tyneside House Newcastle upon Tyne NE4 7AR Contact: NE Waste Team Email: ne-waste@environment-agency.gov.uk Tel: 020 302 50821 Correspondence shown in Appendix IV

For all Cluster Projects: 12b. Attach any relevant documentation from the EA relating to the excavation and reuse of the materials to demonstrate no objection to the proposals (see 3.37 of DoW CoP) If the EA has not been consulted, please explain why (see paragraph 3.39 of the DoW CoP).	EA references: N/A

Lines of Evidence

There is no one single factor that can be used to decide that a substance or object is waste, or when it is, at what point it ceases to be waste; as complete a picture as possible has to be created.

The following sections require completion to ensure the correct decision is made.

If a requested item is not relevant it is important to clearly state why this is so (e.g. no planning permission required because permitted development status exists).

Suitable for use criteria

13. Please describe or provide copies of the required specification(s) for the materials to be reused on each site.	**Document Reference(s):** RPS EARTHWORKS SPECIFICATION – ref: ENV1-RPS-XX-XX-SP-G-111905-P01, Dated May 2022

Where contamination is suspected or known to be present 14a. Please provide copies of or relevant extracts from the risk assessment(s) that has been used to determine the specification for use on the site. **This must relate to the place where materials are to be used.** This must be in terms of (i) human health (ii) controlled waters and (iii) any other relevant receptors. If a risk assessment is not relevant for a particular receptor given the site setting please explain why below:	**Document Reference(s):** 1. RPS – ENV1-RPS-XX-XX-RP-G-114000, dated February 2022 • No contamination was noted during the site investigation • Given the significant depths of cohesive soils the risk to controlled waters is considered to be low risk.
14b. Please attach any relevant documentation from the LA relating to the excavation and reuse of the materials to demonstrate no objection (see 3.37 of the CoP)	**LA Document references:** It is understood that planning application 21/01764/HE4 has been approved with outstanding contaminated land conditions. The Cundall Remediation Strategy has been approved by Sunderland City Council.

14c. Please attach any relevant documentation from the EA relating to the excavation and reuse of the materials to demonstrate no objection (see 3.37 and Table 2 of the CoP)	**LA Document references:** See email from ERGO sent to ne-waste@environmental-agency.gov.uk (Appendix IV).
14d. Please attach any relevant documentation from any other regulators (if relevant) relating to the excavation and reuse of the materials to demonstrate no objection (see 3.37 of the CoP)	**EA Document references:** See email from ERGO sent to Sunderland City Council (Appendix IV).

Where contamination is not suspected	**Document Reference(s)** N/A

15a. Please attach copies or relevant extracts from the Desk Top Study that demonstrates that there is no suspicion of contamination.	
15b. Please attach copies of or relevant extracts from the site investigation/testing reports that adequately characterise the clean materials to be used (if appropriate).	**Document Reference(s)** ENV1-RPS-XX-XX-RPG-114000-P01 Excluding the identified presence of ACM within the structure of the former onsite farmstead (which is understood to have been appropriately demolished and validated)
15c. Please attach copies of any other relevant information (if available) confirming that land contamination is not an issue.	**Document Reference(s)** As 15a

NB: It is your responsibility to assess the nature of the material to be used and that it fits within the limitations of the scenario under which it is to be used

Certainty of use

Various lines of evidence are required to demonstrate that the materials are certain to be used. This includes:

- The production of this MMP
- An appropriate planning permission (or conditions that link with the reuse of the said materials)
- An agreed Remediation Strategy(ies)
- An agreed Design Statement(s)
- Details of the contractual arrangements

Please identify in the following sections what lines of evidence relate to the site(s) **where the materials are to be used**.

16a. Planning Permission(s) relating to the site where materials are to be reused Please provide a copy of the relevant planning permission	**Document Reference:** Planning Permission: 21/01764/HE4
16b. Explain how the reuse of the excavated materials fits within the planning permission(s) for each site.	Volumetric Drawings have been made available to ERGO, denoting the locations where materials to be reused are to be placed as fill and materials to be cut are to arise from.

	From calculations undertaken by the groundworker, it is understood that works will comprise 1,000m3 reused/imported Type 1 material and 1200m3 fill subject to suitability to achieve proposed site levels.
16c. If planning permission is not required for any one site please explain why below e.g. permitted development, clean-up of a chemical spill, surrender of an Environmental Permit, re-contouring within the existing permission.	N/A

Where contamination is suspected or is known to be present 17. Please provide a copy of any Remediation Strategy(ies) that have been agreed with relevant regulators.	**Document Reference(s):** RPS Remediation Strategy - ENV1-RPS-XX-XX-RP-G-114002-P01, dated February 2022.
Where contamination is not suspected 18. Please provide a copy of any Design Statement(s) that have been agreed (e.g. with the planning authority or in the case of permitted developments the client).	**Document Reference(s):** RPS Phase 2 Ground Investigation Report – ENV1-RPS-XX-XX-RP-G-114000-P01, dated February 2022 **Summary of Soil Contamination** 7.2.17 No contaminants of concern were present within the soils tested at concentrations above the AC or in detectable concentrations which would be considered to pose a potential significantly risk to human health receptors. 7.2.18 No asbestos was identified within soils samples across the site. RPS Remediation Strategy - ENV1-RPS-XX-XX-RP-G-114002-P01, dated February 2022.

	3.4 Remediation Options Appraisal 3.4.1 In summary, based on an analysis of the pollutant linkages present on site, the absence of identified significant risk a detailed appraisal of the remediation options is not required. 3.4.2 There is a risk that areas of undiscovered contamination may exist on site. Risks will be managed by maintaining a watching brief during construction and by further investigation where identified. 3.4.3 For the management of these as yet unknown contaminants in soils a strategy based on excavation, potential re-use, treatment and/or disposal is at this stage proposed. When considering the scale of the proposed works and combination of low risk of contaminants, only civil engineering methods are retained as options

Quantity of Use

19. Please provide a breakdown of the excavated materials for each site and how much will be placed at each site or sub area of each site. Where this is not specific to a single readily identifiable source refer to an annotated plan, schematic or attach a tabulated summary.	Volumetric Drawings have not been made available to ERGO, denoting the locations where materials to be reused are to be placed as fill and materials to be cut are to arise from. From calculations undertaken by the groundworker, it is understood that works will comprise; • Cut – 72,876m³ of clays; • Reuse/Fill – 49,876m³ of site won materials to achieve proposed site levels; • Import – c.45,000m³ Type 1/6F2 materials to achieve formation level.

20a. How has consolidation/compaction been considered in the above mass balance calculations?	No allowance has been made for consolidation / compaction in the mass balance calculations which show a balance of materials. Any reduction will therefore create a shortfall on site either during the initial site preparatory stage or during subsequent development phase.
20b. How has loss due to treatment being considered in the above mass balance calculations (if applicable)?	N/A

20c. How has the additional of treatment materials being considered in the above mass balance calculations (if applicable)? Note - An exact figure is not required but one that is reasonable in the circumstances and can be justified if challenged.	N/A

Contingency arrangements

Explain what is to happen in the following situations and **identify the appropriate clauses** in the contract(s) (Such clauses must be provided to the Qualified Person, preferably as a summary document): or

21a. What is to happen to, and who is to pay for out of specification materials?	**Reference:** Groundworks Services (Durham) Ltd has been contracted to re-use the excavated materials from the site of origin to provide a suitable development platform for the works, as specified. Wates Group will ultimately need to pay for out of specification materials.
21b. What is to happen to, and who is to pay for any excess materials?	**Reference:** Any excess materials arising during the works in achieving formation levels will be dispose of off-site at a suitably licenced facility, this will be paid for by Wates Group.
21c. What happens if the project programme slips in relation to excavated materials or materials undergoing treatment?	**Reference:** Additional resources are to be employed by Groundworks Services Ltd and / or extended working hours (subject to those allowed by the planning decision notice) will be actioned to achieve the agreed completion date of the works.
21d. Other identified risk scenarios for the project (relating to excavated materials)?	**Reference:** Further previously unidentified chemical contamination within the reused materials. This is to be assessed by the Consultant and a specific remediation methodology determined and agreed with the relevant authorities (if required). If necessary, an addendum/exemption will be prepared, and the course action agreed with the relevant Regulators.

The Tracking System

Where contamination is suspected or known to be present, state the procedures put in place to:

22a. For all sites please describe the tracking system to be employed to monitor materials movements.	Material Tracking Form (see Appendix V).
Where contamination is suspected or known to be present, state the procedures put in place to: 22b. Prevent contaminants not suitable for the treatment process being accepted	**RPS Remediation Strategy - ENV1-RPS-XX-XX-RP-G-114002-P01, dated February 2022.–** details the requirement for contamination to ensure no unacceptable risks are posed to receptors during and upon completion of the works.
Where contamination is suspected or known to be present, state the procedures put in place to: 22c. Prevent cross contamination of materials not in need of treatment, wastes awaiting treatment and treated materials	As above.
Where contamination is suspected or known to be present, state the procedures put in place to: 22d. Demonstrate that materials that do not require treatment and successfully treated materials reach their specific destination	As above.
Where contamination is suspected or known to be present, state the procedures put in place to: 22e. Ensure that waste for off-site disposal or treatment is properly characterised and goes to the correct facility	As above.

23. Please attach a copy of the tracking forms / control sheets that are to be used to monitor materials movements.	**Document reference(s)** See attached Material Tracking Form (Appendix V).

To include transfer of loads on site into stockpiles prior to treatment (if applicable), stockpiled after treatment (if applicable), stockpiled awaiting use (as appropriate) and final placement.	

For Hub Sites within Cluster Projects & where materials need treatment before reuse 24. Please attach a copy of the Environmental Permit covering the treatment process. Alternatively, if the treatment is covered by a Mobile Plant Permit and associated Deployment Form, attach a copy of the EA agreement to the Deployment Form.	**Permit reference / EA letter reference:** N/A.

Records

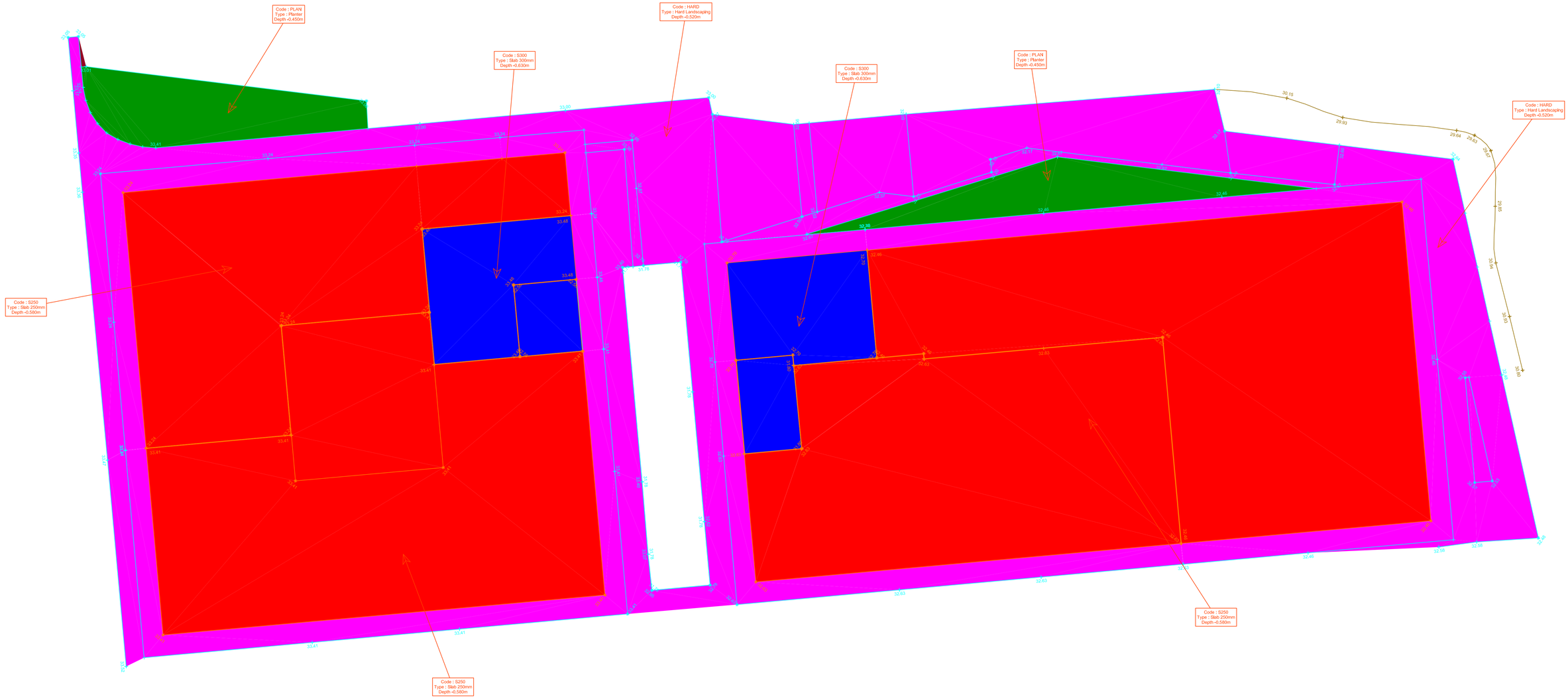
25. Where, and in what form, are records to be kept? Note – records e.g. transfer notes, delivery tickets, Desk Top Study, Site Investigation, Risk Assessment(s), Verification Report(s) need to be kept for at least 2 years after the completion of the works and production of the Verification Report	GWS offices (details as previous) – both paper and electronic copies of surveys to record cut / fill surfaces and volumes together with all other appropriate information listed in Section 3.31 of the CoP Version 2.

Verification Plan

26. Provide or explain the Verification Plan which sets out how you will record the placement of materials and prove that excavated materials have been reused in the correct location and in the correct quantities within the development works (see 3.4 of the DoW CoP).	Document Reference It is anticipated that the final validation/verification report will be issued c. December 2023.

APPENDIX I

DRAWINGS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Depth -0.630m
Code : PLAN
Type : Planter
Depth -0.450m
Code : HARD
Type : Hard Landscaping
Depth -0.520m
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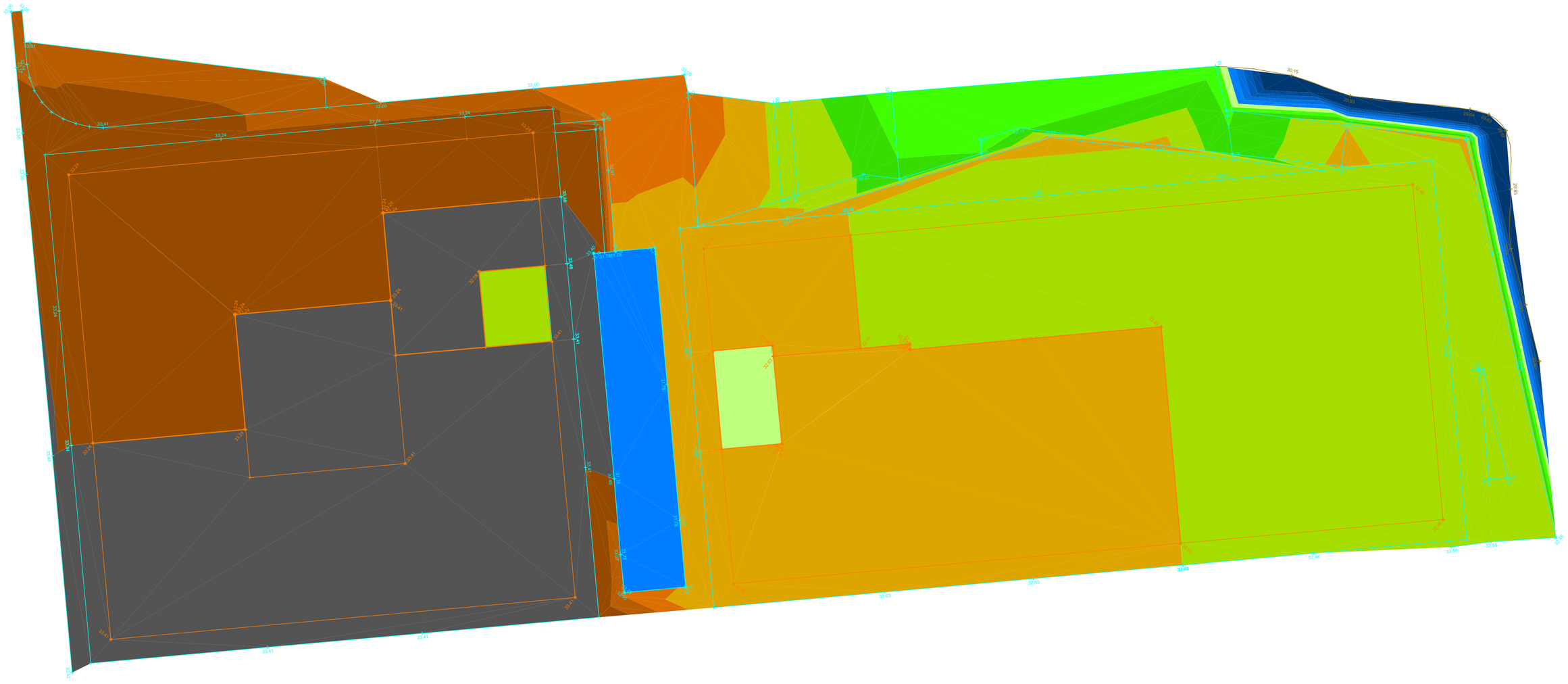
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PROPOSED DTM REV B 3 - PROPOSED DTM REV B 3

AREA AND VOLUME CALCULATION

Volume between current survey : PROPOSED DTM REV B 3 - PROPOSED DTM REV B 3
and other survey : EXISTING DTM REV A - EXISTING DTM REV A

Volumes by surface feature in the current survey :

Surface	Description	Cut area (m^2)	Cut volume (m^3)	Fill area (m^2)	Fill volume (m^3)	Total area (m^2)	Net volume (m^3)
HARD*	Hard Landscaping	1173.919	-410.071	829.020	665.445	2002.939	255.374
PLAN*	Planter	57.524	-6.457	212.087	60.820	269.611	54.363
S250*	Slab 250mm	2432.718	-737.734	996.105	349.594	3428.823	-388.139
S300*	Slab 300mm	225.716	-154.049	145.138	56.720	370.854	-97.328
VOID	Void Surface	0.000	0.000	0.000	0.000	0.000	0.000
	(Undetermined :					23.716	n/a)
None		178.891	-191.422	128.027	145.755	306.918	-45.667
Grand total :		4068.768	-1499.732	2310.377	1278.334	6379.145	-221.398

Note : "FILL" when the CURRENT survey is above the OTHER. All areas are plan areas.

*** WARNING *** no volume determined for the following areas :

Current survey "void" : 23.716

Other survey outside current : 148574.724

* Surface(s) in current survey reduced by the following depth(s) :

HARD 0.520 (m)
PLAN 0.450 (m)
S250 0.580 (m)
S300 0.630 (m)

Surface(s) in other survey reduced for the following depth(s) / area(s) :

GRAS 0.200 (m) 157.595 (m^2)
PAVE 0.200 (m) 1016.502 (m^2)

RETAINING WALL - RETAINING WALL

AREA AND VOLUME CALCULATION

Volume between current survey : RETAINING WALL - RETAINING WALL
and other survey : PROPOSED DTM REV B 3 AND EX MERGE - PROPOSED DTM REV B 3 AND EX MERGE

Volumes by surface feature in the current survey :

Surface	Description	Cut area (m^2)	Cut volume (m^3)	Fill area (m^2)	Fill volume (m^3)	Total area (m^2)	Net volume (m^3)
VOID	Void Surface	0.000	0.000	0.000	0.000	0.000	0.000
	(Undetermined :					8.895	n/a)
None		217.769	-669.377	0.000	0.000	217.769	-669.377
Grand total :		217.769	-669.377	0.000	0.000	217.769	-669.377

Note : "FILL" when the CURRENT survey is above the OTHER. All areas are plan areas.

*** WARNING *** no volume determined for the following areas :

Current survey "void" : 8.895

Other survey outside current : 154750.920

Surface(s) in other survey reduced for the following depth(s) / area(s) :

HARD	0.520 (m)	102.578 (m^2)
PAVE	0.200 (m)	4.286 (m^2)
PLAN	0.450 (m)	16.067 (m^2)

APPENDIX II

PLANNING PERMISSION

City Development
P.O Box 102, Civic Centre
Sunderland SR2 7DN

Telephone: 0191 520 5555
Web: www.sunderland.gov.uk

DPP
Mrs Jen Patterson
Milburn House
Dean Street
Newcastle Upon Tyne
NE1 1LF

Date of Decision 20 November 2020

TOWN AND COUNTRY PLANNING ACT 1990 (AS AMENDED)
TOWN AND COUNTRY PLANNING (GENERAL) REGULATIONS 1992

In pursuance of its powers under the abovementioned Acts and Orders, Sunderland City Council, as local planning authority, has **GRANTED** planning permission for the following development, namely;

Application ref 20/01842/FU4

Proposal Construction of two new buildings for office use (Use Class E) with a range of ancillary uses (Use Class E/F.1/Sui Generis) and associated landscape works

At Plots 16, 17 And 18 of the former Vaux Site, Riverside, Sunderland

Subject to the following conditions:

1. The development to which this permission relates must be begun not later than three years beginning with the date on which permission is granted, as required by section 91 of the Town and Country Planning Act 1990 as amended by Section 51 of the Planning and Compulsory Purchase Act 2004 to ensure that the development is carried out within a reasonable period of time.

2. The development hereby granted permission shall be carried out in full accordance with the following approved plans:

   Proposed Locations Plan (ref: 1390-PL-0001);
   Proposed Site Plan (ref: 1390-PL-0002);
   Existing Location Plan (ref: 1390-PL-0100);
   Existing Site Plan (ref: 1390-PL-0101);
   Existing Site Sections (ref: 1390-PL-0102);
   Proposed Ground Floor Plan (ref: 1390-PL-1000);
   Proposed First Floor Plan (ref: 1390-PL-1001);
   Proposed Second Floor Plan (ref: 1390-PL-1002);
   Proposed Third Floor Plan (ref: 1390-PL-1003);

Proposed Fourth Floor Plan (ref: 1390-PL-1004);
Proposed Fifth Floor Plan (ref: 1390-PL-1005);
Proposed Plant Room Plan (ref: 1390-PL-1006);
Proposed Roof Plan (ref: 1390-PL-1007);

Proposed Ground Floor Plan (ref: 1390-PL-1010);
Proposed First Floor Plan (ref: 1390-PL-1011);
Proposed Second Floor Plan (ref: 1390-PL-1012);
Proposed Third Floor Plan (ref: 1390-PL-1013);
Proposed Fourth Floor Plan (ref: 1390-PL-1014);
Proposed Roof Plan (ref: 1390-PL-1015);

Drainage Design Ground Floor Plan (ref: 1390-PL-1050);
Drainage Design First Floor Plan (ref: 1390-PL-1051);
Drainage Design Second Floor Plan (ref: 1390-PL-1052);
Drainage Design Third Floor Plan (ref: 1390-PL-1053);
Drainage Design Fourth Floor Plan (ref: 1390-PL-1054);
Drainage Design Fifth Floor Plan (ref: 1390-PL-1055);
Drainage Design Plant Room Floor Plan (ref: 1390-PL-1056);
Drainage Design Roof Plan (ref: 1390-PL-1057);

Drainage Design Ground Floor Plan (ref: 1390-PL-1060);
Drainage Design First Floor Plan (ref: 1390-PL-1061);
Drainage Design Second Floor Plan (ref: 1390-PL-1062);
Drainage Design Third Floor Plan (ref: 1390-PL-1063);
Drainage Design Fourth Floor Plan (ref: 1390-PL-1064);
Drainage Design Roof Plan (ref: 1390-PL-1065);

Proposed North Elevation (ref: 1390-PL-2000);
Proposed South Elevation (ref: 1390-PL-2001);
Proposed East Elevation (ref: 1390-PL-2002);
Proposed West Elevation (ref: 1390-PL-2003);

Proposed North Elevation (ref: 1390-PL-2010);
Proposed South Elevation (ref: 1390-PL-2011);
Proposed East Elevation (ref: 1390-PL-2012);
Proposed West Elevation (ref: 1390-PL-2013);

North & South Contextual Elevations (ref: 1390-PL-2030);
East & West Contextual Elevations (ref: 1390-PL-2031);

Proposed Section A-A (ref: 1390-PL-3000);
Proposed Section B-B (ref: 1390-PL-3001);
Proposed Section A-A (ref: 1390-PL-3010);
Proposed Section B-B (ref: 1390-PL-3011);
Proposed Section C-C (ref: 1390-PL-3012);

Remediation Strategy (ref: 1007347.GL.RPT.008 Rev A);

Remediation and Earthworks Strategy (ref: 1007347.GL.SPC.03);

Flood Risk Assessment and Surface Water Drainage Strategy R.4 (ref: 47464-2001-FRA August 2020);

Any material change to the approved plans will require a formal planning application to vary this condition and any non-material change to the plans will require the submission of details and the agreement in writing by the Local Planning Authority prior to any non-material change being made.

Reason:
To ensure the development is carried out in complete accordance with the approved plans and any material and non-material alterations to the scheme are properly considered.

3. The Office Use (Use Class E) hereby approved shall be used for no other purpose (including any other purpose in Class E of the Town and Country Planning (Use Classes) (Amendment) (England) Regulations 2020, or in any provision equivalent to that Class in any statutory instrument revoking and re-enacting that Order with or without modification).

Reason:
In order to define the consent and to accord with CSDP policy SS1.

4. The total development hereby approved shall not exceed 19,511sqm Gross External Area (GEA). Within this total, the maximum amount of floorspace for each use shall not exceed the following net internal areas (NIA):

Building 1
Class E (office) – 7,996sq.m;
Class E (café/restaurant) - 615 sq.m;
Class E (retail) - 105 sq.m; and,
Class E / Class F.1 / Sui Generis (Clubroom to support office function) - 600 sq.m.

Building 2
Class E (office) – 6,736sq.m;
Class E (café/restaurant) – 1,049 sq.m;
Class E (retail) – 31 sq.m; and,
Class F.1 / Sui Generis (Clubroom to support office function) – 653 sq.m.

Reason:
In order to define the consent and to accord with CSDP policy SS1.

5. The building hereby approved shall not be occupied until the approved remediation works have been completed in accordance with the approved Remediation Strategy and a verification report that demonstrates the effectiveness of the remediation works and accords with the terms of the approved Verification Plan has been submitted to and approved, in writing, by the Local Planning Authority.

Reason:
To ensure that risks from land contamination to the future users of the land and neighbouring land are minimised, together with those to controlled waters, property and ecological systems, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors,

in accordance with the National Planning Policy Framework Paragraphs 170, 178, 179, and 183.

6. If, during development, contamination not previously identified is found to be present at the site, the Local Planning Authority shall be notified and appropriate actions submitted to and agreed in writing by the Local Planning Authority prior to development recommencing on that part of the site. The appropriate actions shall include an amendment to the approved remediation strategy detailing how the unsuspected contamination shall be dealt with. The remediation strategy shall be implemented as approved.

   Reason:
   To ensure that risks from land contamination to the future users of the land and neighbouring land are minimised, together with those to controlled waters, property and ecological systems, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors, in accordance with the National Planning Policy Framework Paragraphs 170, 178, 179, and 183.

7. No work shall commence on site until a Construction Environmental Management Plan (CEMP) has been submitted and approved by the Council. The CEMP will include, but no be limited to:

   - Phasing/ Construction programme;
   - Working days/ hours;
   - Route for construction vehicles to take from strategic highway network;
   - Type of construction vehicles;
   - Details of where construction staff will park during the day;
   - Confirmation that construction vehicles can enter and exit site in forward gear;
   - Details of loading/ unloading and storage areas;
   - Measures to control noise and vibration; and,
   - Confirmation of wheel washing facility.

   Reason:
   In order to protect the amenity of the area and to comply with CSDP policies HS1 and HS2.

8. Notwithstanding the submitted plans, no above ground construction shall take place until details of both hard and soft landscape works have been submitted to and approved in writing by the Local Planning Authority and these works shall be carried out as approved. The details shall include proposed finished levels or contours; planting plans including written specifications (including cultivation and other operations associated with plant and grass establishment); schedules of trees, plants, noting species, sizes and proposed numbers/ densities.

   Reason:
   In the interests of visual amenity and nature conservation and to comply with policies NE 1, NE2 and NE3 of the CSDP.

9. The landscaping scheme hereby approved shall be carried out in the first planting season following the occupation of the buildings or the completion of the

development whichever is the sooner, and any trees or plants which within a period of 5 years from the completion of the development die, are removed or become seriously damaged or diseased shall be replaced in the next planting season with others of a similar size and species.

Reason:
In the interests of visual amenity, nature conservation and enhancement and to accord with CSDP policies BH1, NE1, NE2 and NE3.

10. No above ground construction shall commence until schedule and samples of the materials to be used in the construction of the external surfaces of the development hereby approved have been submitted to and approved in writing by the Local Planning Authority. Thereafter the development shall be carried out in accordance with the approved details.

Reason:
To ensure, in accordance with CSDP policies BH1, BH3, BH7 and BH8, the development hereby approved respects and enhances the best qualities of the locality.

11. The building hereby approved shall not be brought into use until details of the external lighting of that building and external areas have been submitted to and approved in writing by the Local Planning Authority. Thereafter the development shall be carried out in accordance with the approved details.

Reason:
In the interests of amenity and highway safety and in accordance with CSDP policies BH1, BH3, BH7, BH8, HS1 and ST3.

12. Prior to the installation of any fixed external ventilation or extraction plant and equipment a noise assessment shall be undertaken and submitted to and approved in writing by the Local Planning Authority. For the avoidance of doubt the noise assessment shall comply with the procedures set out in BS4142:2014 and shall ensure that the rated noise level from all such plant does not exceed the background noise levels (LA90) at the nearest sensitive receptors.

Reason:
To ensure an acceptable level of amenity, in accordance with CSDP policy HS2.

13. No development shall commence until details of the surface water drainage scheme and how it complies with the Flood Risk Assessment and Surface Water Drainage Strategy R.4 (ref: 47464-2001-FRA August 2020), have been submitted to and agreed in writing by the Local Planning Authority. For the avoidance of doubt the agreed scheme shall include plans and sections of the Green Roof. Thereafter the development shall be constructed in complete accordance with the agreed details.

Reason:
In order to ensure provision of a sustainable form of surface water drainage and satisfactory drainage from the site, in accordance with CSDP policies WWE3 and WWE4.

14. Prior to the first occupation of the development, a verification report carried out by a suitably qualified person must be submitted to and approved by the Local Planning Authority, to demonstrate that all sustainable drainage systems have been constructed as per the agreed scheme. This verification report shall include:

- As built drawings (in dwg/shapefile format) for all SuDS components - including dimensions (base levels, inlet/outlet elevations, areas, depths, lengths, diameters, gradients etc) and supported by photos of installation and completion.
- Construction details (component drawings, materials, vegetation).
- Health and Safety file.
- Details of ownership organisation, adoption & maintenance.

Reason:
To ensure that all sustainable drainage systems are designed to the DEFRA non-technical standards for SuDS and comply with CSDP policies WWE3 and WWE4.

15. No groundworks or development shall commence until a programme of archaeological fieldwork has been completed. This shall be carried out in accordance with a specification provided by the Local Planning Authority.

Reason:
The site is located within an area identified as being of potential archaeological interest. The investigation is required to ensure that any archaeological remains on the site can be preserved wherever possible and recorded, in accordance with paragraph 199 of the NPPF, Core Strategy Policies BH8 and BH9, and saved Unitary Development Plan Policies B11, B13 and B14.

16. The building(s) shall not be occupied/brought into use until the final report of the results of the archaeological fieldwork undertaken in pursuance of condition 14 has been submitted to and approved in writing by the Local Planning Authority.

Reason:
The site is located within an area identified as being of potential archaeological interest. The investigation is required to ensure that any archaeological remains on the site can be preserved wherever possible and recorded, in accordance with paragraph 199 of the NPPF, Core Strategy Policies BH8 and BH9, and saved Unitary Development Plan Policies B11, B13 and B14.

17. The buildings shall not be occupied/ brought into use until a report detailing the results of the archaeological fieldwork undertaken has been produced in a form suitable for publication in a suitable and agreed journal and has been submitted to and approved in writing by the Local Planning Authority prior to submission to the editor of the journal.

Reason:
The site is located within an area identified as being of potential archaeological interest and the publication of the results will enhance understanding of and will allow public access to the work undertaken in accordance with paragraph 199 of the NPPF, Core Strategy Policies BH8 and BH9, and saved Unitary Development Plan Policies B11, B13 and B14.

18. No groundworks or development shall commence until the developer has appointed an archaeologist to undertake a programme of observations of groundworks to record items of interest and finds in accordance with a specification provided by the Local Planning Authority. The appointed archaeologist shall be present at relevant times during the undertaking of groundworks with a programme of visits to be agreed in writing by the Local Planning Authority prior to groundworks commencing.

Reason:
The site is located within an area identified as being of potential archaeological interest. The observation is required to ensure that any archaeological remains on the site can be preserved wherever possible and recorded, and , if necessary, emergency salvage undertaken in accordance with paragraph 199 of the NPPF, Core Strategy Policies BH8 and BH9 and saved Unitary Development Plan Policies B11, B13 and B14.

19. The building(s) shall not be occupied/brought into use until the report of the results of observations of the groundworks pursuant to condition 17 has been submitted to and approved in writing by the Local Planning Authority.

Reason:
The site is located within an area identified as being of potential archaeological interest. The investigation is required to ensure that any archaeological remains on the site can be preserved wherever possible and recorded, to accord with paragraph 199 of the NPPF, Core Strategy Policies BH8 and BH9 and saved Unitary Development Plan Policies B11, B13 and B14.

20. Within 6 calendar months of the completion of each building hereby approved, a Post Construction Review undertaken by a licensed assessor and a BRE Final Code Certificate shall be submitted to and approved in writing by the Local Planning Authority. For the avoidance of doubt, the results of the report shall conclude that the development has been constructed to the BREEAM 'Excellent' rating, or equivalent accreditation, unless otherwise agreed in writing by the Local Planning Authority.

Reason:
In the interests of sustainability, in accordance with CSDP policy BH2.

21. The development hereby approved shall be carried out and operated in accordance with the Travel Plan, Plots 16 - 18, ref: 47464/5501 Rev D.

Reason:
To encourage sustainable forms of transport, in accordance with CSDP policy ST3.

22. Before a part of the buildings, hereby approved, that is to be used for the preparation and serving of food on a commercial basis is fitted out, details of a scheme for the extraction of cooking fumes and odours, and for the prevention of odour penetration through the building shall be submitted to and approved in writing by the Local Planning Authority. For the avoidance of doubt there shall be no externally mounted plant or equipment on any active frontage. Thereafter, the scheme shall be implemented in full accordance with the approved details prior to the development being brought into use and thereafter shall be retained at all times.

Reason:
In the interests of the protecting the amenity of the occupiers of the premises and neighbouring premises and to accord with CSDP policy HS1.

Informatives:

NOTE 1:
The condition requiring the development to be carried out in accordance with the approved plans has been imposed so that minor material amendments and non-material amendments can be made to the scheme, after the issue of this permission, by application under s73 or s96A of the Town and Country Planning Act 1990 (as amended) respectively. Where proposed amendments to the approved development are substantial and fundamentally change the scheme a new full application will need to be submitted to the Local Planning Authority.

NOTE 2:
COMPLIANCE WITH CONDITIONS PRECEDENT
This planning permission is subject to conditions which, in order to discharge them, require the submission of additional details and written approval of those details before the commencement of the development. This type of condition is called a condition precedent and failure to discharge such a condition prior to commencement of the development on site will make the development unlawful and liable to enforcement action.

NOTE 3:
The Local Planning Authority can only provide you with a formal written response to your request to discharge your condition(s) once a fee of £116.00 (commercial applications)(current rate subject to increase) per request has been paid to the Council as Local Planning Authority, together with any supporting information. A single request may cover the discharge of one or more conditions but each subsequent request attracts its own fee. Subject to the required details or actions being satisfactory, a written confirmation of the discharge of conditions(s) will be issued. The Council endeavours to discharge simple conditions within 21 days of the receipt of the request and complex ones within 8 weeks.

NOTE 4:
The Local Planning Authority has acted positively and proactively in determining the application by identifying matters of concern within the application whilst taking into account all the environmental information before reaching its decision. As a result, the Local Planning Authority has been able to grant planning permission for an acceptable proposal, in accordance with the presumption in favour of sustainable development, as set out within the National Planning Policy Framework.

PLEASE NOTE THAT THIS IS NOT BUILDING REGULATION APPROVAL

BUILDING CONTROL CAN BE CONTACTED ON 0191 561 1550 FOR FURTHER ADVICE

Peter McIntyre
Executive Director City Development

TOWN AND COUNTRY PLANNING ACT 1990

NOTIFICATION TO BE SENT TO AN APPLICANT WHEN A LOCAL PLANNING AUTHORITY REFUSE PLANNING PERMISSION OR GRANT IT SUBJECT TO CONDITIONS

Appeals to the Secretary of State

- If you are aggrieved by the decision of your local planning authority to refuse permission for the proposed development or to grant it subject to conditions, then you can appeal to the Secretary of State under section 78 of the Town and Country Planning Act 1990.

- As this is a decision on a planning application relating to the same or substantially the same land and development as is already the subject of an enforcement notice REF: [ ], if you want to appeal against your local planning authority's decision on your application, then you must do so within 28 days of the date of this notice.

- If an enforcement notice is served relating to the same or substantially the same land and development as in your application and if you want to appeal against your local planning authority's decision on your application, then you must do so within: 28 days of the date of service of the enforcement notice, or within 6 months [12 weeks in the case of a householder appeal] of the date of this notice, whichever period expires earlier.

- As this is a decision to refuse planning permission for a householder application, if you want to appeal against your local planning authority's decision then you must do so within 12 weeks of the date of this notice.

- As this is a decision to refuse planning permission for a minor commercial application, if you want to appeal against your local planning authority's decision then you must do so within 12 weeks of the date of this notice.

- As this is a decision to refuse express consent for the display of an advertisement, if you want to appeal against your local planning authority's decision then you must do so within 8 weeks of the date of receipt of this notice.

- If you want to appeal against your local planning authority's decision then you must do so within 6 months of the date of this notice.

- Appeals must be made using a form which you can get from the Secretary of State at Temple Quay House, 2 The Square, Temple Quay, Bristol BS1 6PN (Tel: 0303 444 0000) or online at www.planningportal.co.uk.

- The Secretary of State can allow a longer period for giving notice of an appeal but will not normally be prepared to use this power unless there are special circumstances which excuse the delay in giving notice of appeal.

- The Secretary of State need not consider an appeal if it seems to the Secretary of State that the local planning authority could not have granted planning permission

for the proposed development or could not have granted it without the conditions they imposed, having regard to the statutory requirements, to the provisions of any development order and to any directions given under a development order.

- In practice, the Secretary of State does not refuse to consider appeals solely based on their decision on direction given by the Secretary of State.

Purchase Notices

If either the local planning authority or the Secretary of State refuses permission to develop land or grants it subject to conditions, the owner may claim that the owner can neither put the land to a reasonably beneficial use in its existing state nor render the land capable of a reasonably beneficial use by the carrying out of any development which has been or would be permitted.

In these circumstances, the owner may serve a purchase notice on the Council (that is where the land is situated in a National Park, National Park authority for that Park, or in other cases the district council (or county council which is exercising the functions of a district council in relation to an area for which there is no district council), London borough council or Common Council of the City of London in whose area the land is situated) This Notice will require the Council to purchase the owner's interest in the land in accordance with the provisions of Chapter I of Part VI of the Town and Country Planning Act 1990.

Important

This decision refers only to that required under the Town and Country Planning Acts and **does not include approval under the Building Regulations** (including their application by Section 24(1) of the Tyne and Wear Act 1980 in respect of Fire Brigade Access) or any other appropriate regulation, enactment, byelaw or order.

APPENDIX III

ERGO REMEDIATION STRATEGY REPORT

APPENDIX IV

CORRESPONDENCE FROM REGULATORY AUTHORITIES

Jonathan Malley

From: Jonathan Malley
Sent: 29 June 2022 17:11
To: DC
Subject: Evision Giga One MMP - 21/01764/HE4

To whom it may concern,

We are in the process of preparing an MMP for Groundworks Services (Durham) Ltd on behalf of their Client, Wates Group, for Land to the North of Washington Road And West of International Drive at the proposed Envision Giga One plant (ref 21/01764/HE4) which will involve the reuse of site won materials (subject to suitability) and importation of suitable material to achieve proposed developments where a requirement is identified to create proposed development platforms and facilitate the enabling works to be completed efficiently for the proposed development. It is understood that Sunderland City Council have discharged relevant contaminated land conditions for the development following a review of the Phase II Site Investigation and have recently approved the Remediation Strategy for the site completed by RPS.

The works covered by the MMP will predominantly comprise the reuse of site won materials to regrade the site, minimising lorry movements associated with the export and import of materials. However, where a net deficit of material is identified, a requirement to import chemically and texturally suitable material will still be required.

From calculations undertaken by the GWS (Durham) Ltd as part of their Cut/fill volumetric assessment, it is understood that works will comprise a total cut of 72,876m3 and fill/reuse of 49,876m3 of subsoils and topsoil materials. Additionally, the c.45,000m3 of Type 1/6F2 material will be required to be imported to site as part of these works.

It is understood a net excess of c.27,000m3 of topsoil material will be exported from the site as part of the scheme.

At present no requirement for the importation of chemically and texturally suitable topsoil and subsoil materials has been identified.

Should this be deemed necessary subsequently, a revision to the MMP will be prepared with appropriate discussion. Any donor site for material import will be confirmed with revisions to the MMP.

Upon completion of the MMP document we will submit for Qualified Persons (QP) declaration with a suitable practitioner.

Please let me know if you have any queries regarding this

Many thanks

Jonathan Malley

Principal Consultant

Mobile: 07554 176637
Office: 0191 3896200
Email: jmalley@ergoenvironmental.com
Web: www.ergoenvironmental.com

Maling Exchange, Hoults Yard, Walker Rd, Newcastle upon Tyne, NE6 2HL

Jonathan Malley

From: Jonathan Malley
Sent: 29 June 2022 17:12
To: NE-Waste
Subject: Evision Giga One MMP - 21/01764/HE4

To whom it may concern,

We are in the process of preparing an MMP for Groundworks Services (Durham) Ltd on behalf of their Client, Wates Group, for Land to the North of Washington Road And West of International Drive at the proposed Envision Giga One plant (ref 21/01764/HE4) which will involve the reuse of site won materials (subject to suitability) and importation of suitable material to achieve proposed developments where a requirement is identified to create proposed development platforms and facilitate the enabling works to be completed efficiently for the proposed development. It is understood that Sunderland City Council have discharged relevant contaminated land conditions for the development following a review of the Phase II Site Investigation and have recently approved the Remediation Strategy for the site completed by RPS.

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It is understood a net excess of c.27,000m3 of topsoil material will be exported from the site as part of the scheme.

At present no requirement for the importation of chemically and texturally suitable topsoil and subsoil materials has been identified.

Should this be deemed necessary subsequently, a revision to the MMP will be prepared with appropriate discussion. Any donor site for material import will be confirmed with revisions to the MMP.

Upon completion of the MMP document we will submit for Qualified Persons (QP) declaration with a suitable practitioner.

Please let me know if you have any queries regarding this

Many thanks

Jonathan Malley

Principal Consultant

Mobile: 07554 176637
Office: 0191 3896200
Email: jmalley@ergoenvironmental.com
Web: www.ergoenvironmental.com

Maling Exchange, Hoults Yard, Walker Rd, Newcastle upon Tyne, NE6 2HL

Jonathan Malley

From: Dingwall, Julie <julie.dingwall@environment-agency.gov.uk>
Sent: 30 June 2022 19:04
To: Jonathan Malley
Cc: NE-Waste
Subject: Envision Giga One MMP proposal - 21/01764/HE4

Good afternoon Jonathan

Thank-you for your proposal to re-use soil materials at the Site of Origin and potentially Directly Transfer clean naturally occurring soils from a Donor Site(s) to a development on Land to the North of Washington Road And West of International Drive known as Envision Giga One Plant under the CL: AIRE Definition of Waste: Development Industry Code of Practice (DoW CoP). I can confirm on condition that the DoW CoP is followed in full the EA currently has no objections to the re-use of soil materials at the proposed development.

The information below provides advice and guidance for the re-use of soil and mineral materials at a development site.

The CL: AIRE DoW CoP sets out the lines of evidence that are needed to demonstrate that the excavated materials are not or have ceased to be waste. These are based on four factors:

- Protection of human health and the environment (acceptable risk assessment of pollution)
- Suitability for use without further treatment (no further processing and/or treatment, as demonstrated by a specification and a site specific risk assessment including chemical, geotechnical properties and biological aspects);
- Certainty of Use (outlined in the Remediation Strategy and Material Management Plan);
- Quantity of Material (outlined in the Remediation Strategy and Material Management Plan); and

To demonstrate the factors a Materials Management Plan (MMP) needs to be produced to ensure all factors are considered and the correct determination is made. A Verification Plan needs to be set out in the MMP and must identify the recording method of materials being placed, as well as the quantity of materials to be used. It should also contain a statement on how the use of the materials relate to the remediation or design objectives.

In general, any material that has to be treated in order to render it suitable for its intended use is considered to be a waste and waste controls apply.

To demonstrate this to the Environment Agency's satisfaction, the processes and requirements detailed in the DoW CoP need to be followed in full.

Requirements include:

- desktop study of the site
- conceptual modelling of the site(s) concerned
- site investigation details (if appropriate)
- and any details of contamination (if relevant)

Regardless of whether the site is contaminated or not there the following documents should be produced:

- Risk Assessments
- Options Appraisal Report
- Remediation Strategy (Contaminated soils) **or** Design Statement (Clean naturally occurring soils)

- Materials Management Plan
- Verification Report once the work is completed.

The decision to use the CL: AIRE Definition of Waste: Development Industry Code of Practice is the responsibility of the holder of the materials. The project manager should collate all relevant documents; permissions, site reports, MMP etc. and consult with an independent Qualified Person (QP) to confirm that the site meets the requirements and tests for use of the DoW CoP. The Qualified Person must review the documentation and let the developer know that a Verification Report will be required before signing a Declaration. If the site meets the tests that materials are suitable for re-use, certain to be re-used, are not excessive in volume and pose no risk to the environment or harm to human health then the QP can make a formal Declaration to CL: AIRE. The formal Declaration must be submitted to CL: AIRE and the Environment Agency by a Qualified Person before any transfer occurs. In these circumstances the Qualified Person is meeting the requirements of the Regulator to ensure appropriate environmental and human health protection is in place for the development to go ahead. For clarification, it is important to note that DoW CoP Declarations cannot be made retrospectively.

Please find the link to the CL: AIRE website below:

CL: AIRE Definition of Waste: Development Industry Code of Practice (DoW CoP) guidance can be found via the following link:
http://www.claire.co.uk/projects-and-initiatives/dow-cop/28-framework-and-guidance/111-dow-cop-main-document

In addition the following advice may relate and support the re-use of materials onsite.

If asbestos is found within the soil materials on site, it is possible for the re-use of some of the existing soil materials that have been impacted by asbestos. If asbestos contaminated materials are visible there is a requirement for trained specialists to oversee an asbestos watching brief and have measures in place to hand pick observable pieces of asbestos. The soil materials that do not contain visible asbestos fragments, are classified as non-hazardous and are below the asbestos hazardous waste threshold of 0.1% can be reused. It is assumed that these soil materials would be placed beneath appropriate clean cover along with a membrane. It is not acceptable for soils containing observable asbestos fragments to be incorporated into the permanent development.

Inert waste such as concrete and bricks, resulting from demolished site structures can be crushed to the appropriate specifications under CL: AIRE Definition of Waste: Development Industry Code of Practice (DoW CoP). Please be aware that asphalt and tarmacadam cannot be re-used under CL: AIRE DoW CoP, however these materials can be crushed and re-used on site under the Wrap QP – Aggregates from Inert Waste. Tests must be carried out to ensure there is no presence of coal tar. If coal tar is identified this must be removed and either treated or disposed of as a hazardous waste. You must ensure all measures are taken to comply with the Wrap QP – Aggregates from Inert Waste which includes having Factory Production Control (FPC) in place to comply with the quality protocol and the BS EN standard for the product you are making. FPC is a record of all your policies and methods for managing the waste material. It must include:

- how you assess and record input waste, your method statement of production (MSP), processing techniques, product testing, and staff training – set out each step and result, and specify how long you keep these records
- a description of the delivery documents you give to customers
- regular reviews to ensure practices and methods are up-to-date and work properly – you must keep a record of these reviews and detail any actions or changes you make
- a policy for managing any subcontractors
- a named representative responsible for the FPC and its correct use

The following materials are outside the scope of the DoW CoP:

- Soils which have been contaminated with injurious invasive weeds except for soils that are used on the site of production in accordance with relevant best practice guidance, e.g. Japanese Knotweed Code of Practice;
- Specific excavated infrastructure material, such as pipework and storage tanks;

- General construction wastes, e.g. plasterboard, glass, wood, etc;
- Demolition wastes with exception of crushed brick and concrete
- Extractive waste within the scope of Mining Waste Directive (2006), for which alternative regulatory provisions have been made.

Please note that if colliery spoil (including red shale) is discovered on site it cannot be re-used under CL: AIRE DoW CoP. Colliery spoil is not considered extractive waste under the Mining Waste Directive (MWD) 2008, but it does fall to a Waste Framework Directive (WFD) waste classification. If the spoil was deposited prior to the introduction of the MWD 2008, the deposited material will currently be exempt from a mining waste permit. Although, if any of the uncontaminated colliery spoil within the hot spot areas is excavated for the purpose of further mineral extraction then the remaining waste would be extractive waste (as defined under the MWD) and would require a mining waste permit. However, if the colliery spoil is excavated for another purpose, such as outlined in this proposed development, the colliery spoil reverts to waste as defined in the WFD and falls outside the scope of CL: AIRE DoW CoP. These materials are not acceptable for re-use under CL: AIRE DoW CoP. If you wish to re-use these materials on site it would be necessary to obtain the most suitable environmental permit. It should be noted that colliery spoils are prone to acid rock drainage generating iron oxide rich leachates.

Materials not used in accordance with the DoW CoP process in full may be deemed as waste and will require a relevant permit for deposit. Materials to be re-used on the site under a 'Site of Origin scenario' must not have been previously imported to the site as waste or have been stored as waste without authorisations in place, for example a historical illegal deposit or stockpiled discarded waste materials. You cannot use these materials under DoW CoP 'Site of Origin' scenario and you will require an appropriate waste authorisation such as an environmental permit to carry out re-use/deposit activities. Materials illegally deposited or deposited at inappropriate sites may be subject to relevant landfill taxes, payable by all parties. Only robust due diligence is a defense against joint liability.

If you require to re-use soil and mineral materials that fall outside the scope of CL: AIRE DoW CoP or that the materials have been discarded/assessed as waste there maybe potential to still re-use them under a waste exemption or waste permit. This link provides information to waste exemptions on the GOV.UK webpage: Using waste: waste exemptions - GOV.UK (www.gov.uk) and this link provides permitting advice & guidance: Standard rules: environmental permitting - GOV.UK (www.gov.uk) Please note, that all environmental permits require surrender when a site is no longer operational.

Any pre-application queries are now co-ordinated by the Permitting and Support Centre (P&SC) for both simple and complex applications. The basic level of pre-application advice is free. If you require more in depth advice, an enhanced pre-application service is available. The enhanced service costs £100 an hour plus VAT. The following link will take you to the relevant pre-application page on the GOV.UK: https://www.gov.uk/government/publications/environmental-permit-pre-application-advice-form The webpage also includes an explanation about basic and enhanced pre-app and any associated costs.
If you cannot access the form, please contact the Environment Agency and they will send you a paper copy.
Email: enquiries@environment-agency.gov.uk

In summary, providing that the DoW CoP is followed in full we currently have no objections to materials re-use, in accordance with our position statement.

If you have any questions relating to the re-use of soil materials at the development sites or the advice provided in this e-mail, please do not hesitate to contact me.

Further communication should be directed via:
NE-Waste@environment-agency.gov.uk

Kind regards

Julie

Julie Dingwall

Julie Dingwall BSc(Hons) MSc PIEMA
Waste Technical Specialist, Waste Central Team

☎ **Direct** 02084746503
julie.dingwall@environment-agency.gov.uk

✉ **Environment Agency – North East Area**
Tyneside House | Skinnerburn Road | Newcastle Business Park | Newcastle-upon-Tyne | NE4 7AR

National Customer Contact Centre - 03708 506 506

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APPENDIX V

MATERIAL TRACKING FORM

MATERIALS TRACKING FORM

SITE OF ORIGIN/DIRECT TRANSFER SITE/STF/HUB: **DATE:**
LOCATION OF EXCAVATION:
GRID REF: **OTHER:**

Excavated Material Classification Type:	

PLACEMENT LOCATION:
GRID REF: **OTHER:**

Survey Undertaken:	**Details:**
Photographs Taken:	**YES / NO** **Number:** **Ref Nos:**
Samples Taken:	**YES / NO** **Number:**
Chemical Testing Scheduled:	**YES / NO** **Details:**
Geotechnical Testing Scheduled:	**YES / NO** **Details:**
Comments:	

APPENDIX VI
TRANSFER NOTES

DUTY OF CARE: WASTE TRANSFER NOTE

SECTION A – DESCRIPTION OF WASTE

1. Describe the waste being transferred – EWC Code: 1 - 7 - 0 - 5 - 0 - 4

   EWC Description: SOILS & STONES

   SIC code: 41:100

2. How is the waste contained? 8W ☑ 6W ☐ 4W ☐ Skip ☐

   Other ☐ Please describe:

3. What is the quantity of waste (number of loads, weight, etc?) 60,000

SECTION B – PRODUCER OF WASTE

1. Name of company: WATES
2. Address of company: 1ST FLOOR, 3175 CENTURION WAY, THORPE PARK, LEEDS, LS15 8ZB
3. Location of waste (if different to above): ENVISION GIGA ONE, INTERNATIONAL DRIVE, WASHINGTON, SR5 3FH.
4. I confirm that the waste management hierarchy has been applied to the waste in Section A as required by Regulation 12 of the Waste (England & Wales) Regulations 2011 ☑ *please tick to confirm*
5. I certify below that the waste in Section A will be transferred to the carrier detailed in Section C

   Date of transfers FROM 13.06.2022 TO

   Full Name: ANDY GEIER (BLOCK CAPITALS) Signed: Date: 13.06.2022

SECTION C – WASTE CARRIER

1. Name and address of company: NORTH EAST TIPPERS LIMITED

   LITTLEBURN INDUSTRIAL ESTATE, LANGLEY MOOR, DURHAM, DH7 8HJ

   Registered Waste Carrier Registration No: CBDU191566

   Issued by: ENVIRONMENT AGENCY.

   Signed:

SECTION D – WASTE DISPOSAL

1. Trading name and address: LAFARGE AGGREGATES LIMITED
2. Address to which waste is delivered: THRISLINGTON QUARRY, DURHAM, DL17 9EG
3. Waste management licence no.: EPR/GB3736AC.
4. Full name (BLOCK CAPITALS) JOSH PILMORE.

   Signed: Representing: TARMAC LTD

Copies to: Producer / Carrier / Disposal Site

(version 3, 10/11)

Appendix D
CONTRACTORS SUMMMARY

GROUNDWORK SERVICES DURHAM LTD

Envision Giga One – Wates – Bulk Earthworks & Granular Fill Methodology

Topsoil Strip

- Topsoil from the entire site was stripped using bulldozers, they pushed the topsoil into windrows which makes it easier to load into the dumpers.
- The windrows were then loaded into the back of articulated dumpers by a 360 excavator.
- The topsoil was transported to the stocking area which is the triangular piece of land to the west of zones 1 and 6.
- The volume of topsoil retained onsite is around 27,000m³. The stockpile did not exceed 2m in height and was controlled and sealed using a bulldozer to ensure the topsoil did not degrade and is suitable for reuse onsite. The surplus topsoil was removed from site in road wagons.

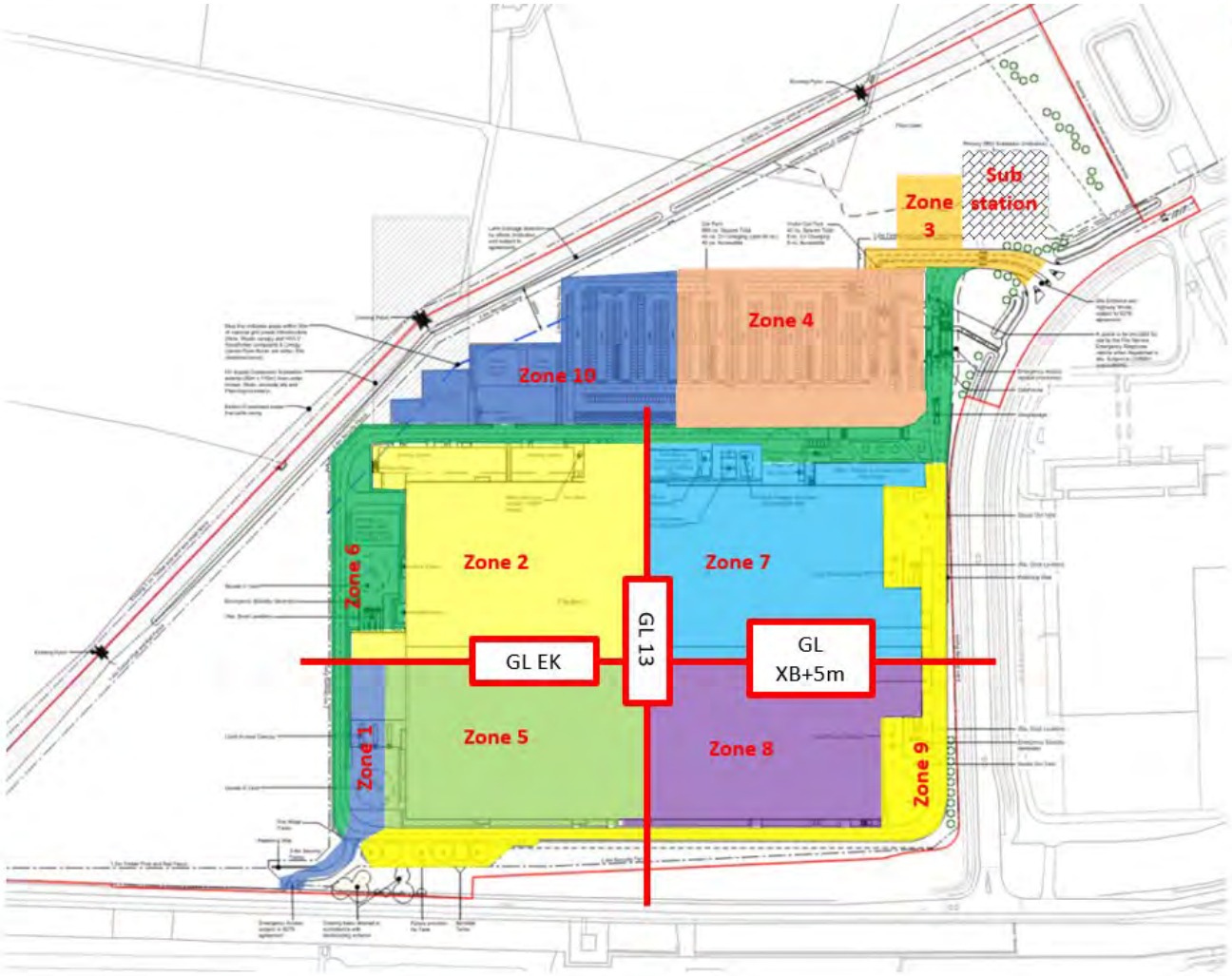
Cut and Fill to Formation

- Excavation to reduced level will be carried out using a 360° excavator, loading directly into articulated dump trucks. The line and level are controlled using a GPS enabled bulldozer.
- Zone 6 and Zone 2 were excavated to formation level creating a volume of 17,500 m³. The clay from Zone 6 and 2 was stockpiled on Zone 5 as the topsoil had not yet been cleared from Zones 7 and 8.
- The stockpiled clay and the cut in Zone 5 (30,000m³) was then used to build up the levels within Zones 7 and 8 to formation level.
- During the placement of clay in Zones 7 and 8 the weather was extremely hot and the clay was drying out and we needed to keep the clay we were placing within its optimum window. To condition the clay and keep it at its optimum the clay was placed in 275mm layers and scarified with the ripper on the bulldozer. Once the layer was scarified water was added to the clay using a tractor and bowser, the layer was then reworked and compacted using the roller.
- Aswell as the hot weather, we had some extremely wet days. The clay layers that became saturated were scarified using the ripper on the back of the bulldozer and left open to allow the sun and wind dry it out. Once it had dried out enough the layer was reworked and compacted.
- The extremes in the weather caused us to have a couple of failures in our testing. The areas that failed were reworked and retested.
- Clay from Zones 4 and 10 we used to build up the levels within Zone 3 (12,000m³)
- The remaining clay from Zones 4 and 10 and the surplus clay from Zone 9 was stockpiles next to the topsoil in the triangular area to the west of Zones 1 and 6. This clay was reused to backfill the attenuation tank situated in Zone 4.

Placing of Piling Mat Stone

- Stone used within the pilling mat was delivered to site using 8 wheeled wagons
- The stone imported to site was places with a GPS bulldozer and compacted using a self-propelled roller. The bulldozer was used to control the line and level of stone.
- There were no issues with the quality of the stone as it was all quarried.

GROUNDWORK SERVICES DURHAM LTD



Appendix E
SITE DIARIES

Site Visit Form
Document Ref: ENV1-RPS-RP-0002

Project Ref:	Project:	Client:
NK020439	**Envision**	**RPS | Consulting UK & Ireland (Newark - Design)**

Site visit made by:	Dale Hack	**Date/Time: 9th June 2022 08:30 to 17:00**
Weather conditions /Temperature:	Light cloud with sunny intervals 16°C to 18°C	
Purpose of visit:	To witness ground compaction trials.	
Activities in progress:	Topsoil strip and bunding of stripped material taking place on the main site area and 278 junction works to International Drive on going.	
Specific items inspected:	The following plant items were being used to carry out the compaction trials as follows: • 1 x Hammtronic H13i smooth boar roller • 1 x Bomag BW213DH smooth boar roller with Pad foot casing fitted • 1 x Volvo A30G dumper • 1 x CAT D6N dozer complete with gps levelling device fitted Main area of the trial location had been pre-rolled with smooth bore roller prior to any material being transferred from the borrow pit to the location of the trial with a plan area of approximately 25m wide by 90m long. Following discussion with North East Earthworks Limited (Sub-Contract Grounds Worker) the intention is to place four layers of excavated material over the trial area in the following method: • Roughly place 350mm of excavated material then level off to 300mm with the dozer over test area • Carry out compaction of each layer of deposited material by means of vibrating compaction with the Padfoot roller with a maximum of eight passes for each layer • Material samples are to be taken after passes two, four, six and eight, consisting of 2 x Cores and 1 x Sand Replacement test • Handheld shear vane testing it to be carried out at each sample location with three shear vanes carried out at each • Plate bearing test are to be carried out after passes four and six *Note: Sand replacement test is to be carried out after passes two, four and six with three core samples taken after pass eight only, following compaction passes two, four, six and eight a small area of material it to be scraped off so as to provide a flat area for testing to be carried out.* First dumper load of excavated material was deposited on the test area at 10:10 and levelled out with the dozer, two passes of the Padfoot roller was carried out and three small areas was levelled out with the blade of the dozer. See Figure 1, Figure 2, Figure 3, and Figure 4 below which provides a visual image of the first layer being levelled out and compacted:	

Figure 1. First batch of excavated material dumped at trial area.

Figure 2. First layer of material being levelled out with dozer.

Figure 3. Vibration compaction of first layer of excavated material with Padfoot roller.

Figure 4. Scraped off area following compaction and sand replacement test being carried out.

Following the scrapping off, of the dimples from the Padfoot roller Sand replacement testing was carried out at one location to the south of the test area along the long length and central to the area over the short length, two core samples were taken, one to the middle and one to the north of the area and both central to the area, shear vane tests were carried out at each location with the following readings as shown in Table 1 below:

Location	Sample	Reading 1	Reading 2	Reading 3	Result
South	Sand	8.4	7.0	7.0	149.3kpa
Middle	Core	7.4	7.6	7.2	148.0kpa
North	Core	9.6	10.0	8.0	184.0kpa

Table 1. Shear vane results after passes 1 and 2.

Reference should be made to Figure 5, Figure 6, Figure 7, Figure 8, and Figure 9 which provide a visual image of the Sand Replacement Test and Core Sample Tests being carried out:

Figure 5. Removal of material for Sand Replacement test.

Figure 6. Filling test cylinder with sand.

Figure 7. Core cylinder and dolly prior to embedment with ram.

Figure 8. Digging out core sample cylinder.

Figure 9. Void left in compacted material following removal of core cylinder.

Following tests samples being taken passes three and four were carried out with the Padfoot roller in vibration mode. Reference should be made to Figure 10, and Figure 11 which provide a visual image of the fill material being compacted again.

Figure 10. Commencement of pass number three to western side of test area.

Figure 11. Material being dumped ready for next layer to be levelled out.

It should be noted that on completion of the third and fourth passes the area was visually inspected and it was noted that the material contained several boulders of varying sizes the larger of which were removed, these boulders only became visible

after the dimples were removed following completion of passes three and four, reference should be made to Figure 12 below which provides a visual image of the type and size of boulder seen.

Figure 12. Boulders encountered within fill material.

Testing was carried out once the dimples had been scraped off, in addition to the Sand Replacement Test and Core Sample a Plate Bearing Test was carried out, plate size was 450mm in diameter and the kentledge by means of the towing spar to the rear of the dozer was utilised. Shear vane tests were carried out at each location with the following readings as shown in Table 2 below:

Location	Sample	Reading 1	Reading 2	Reading 3	Result
South	Sand	8.0	9.2	7.8	166.6kpa
Middle	Core	9.8	10.0	7.4	181.3kpa
North	Core	8.2	8.8	9.4	176.0kpa

Table 2. Shear vane results after passes 3 and 4.

Following the plate bearing test the results suggest that after four passes of the Padfoot roller a CBR value of 3% can be achieved on layer number 1. Reference should be made to Figure 13, and Figure 14 which provide a visual image of the plate bearing test being carried out using the dozer as kentledge:

Figure 13. Plate Bearing Test being set up below dozer.

Figure 14. Plate Bearing Test being carried out following fourth pass of layer 1.

It should be noted that on completion of the testing of passes three and four the Padfoot roller suffered a mechanical breakdown, the padfoot drum had come loose and moved to one side of the roller, fitters were called and the delay between the fourth and fifth pass was three and a half hours approximately.

It was suggested to the technicians carrying out the soil testing that this delay was noted within their test report.

Compaction passes 5 and 6 of the first layer of test material commenced at 14:05 on completion of these passes the dimples left from the Padfoot roller were removed by a 360° tracked excavator and ditching bucket local to the chosen test sites, it should also be noted that the testing was being carried out to the eastern side of the test area so as to gain a full spread of information across the area and not just within the central section. Reference should be made to Figure 15, and Figure 16 which provides a visual image of layer number 1 following the sixth pass of the vibrating Padfoot roller:

Figure 15. Vibration compaction pass six.

Figure 16. Compacted material following pass six.

It should be noted that the dimples left after rolling of the sixth pass have a reduced height, the depth of the dimples after the first pass was approximately 100mm whereas those after the sixth are approximately 50mm to 60mm, it can also be seen that the texture of the material appears to take on a shine.

Figure 17, and Figure 18 provide a visual image of dimple material being scraped off so as to provide a flat surface for testing and that the amount of material being removed is far less than the first couple of passes:

Figure 17. Scraping off dimple material to form flat surface for testing

Figure 18. Prepared surface prior to testing.

Testing was carried out again once the dimples had been scraped off, in addition to the Sand Replacement Test and Core Sample a Plate Bearing Test was again carried out, plate size was 450mm in diameter and the kentledge by means of the cross spar to the underside of the tracked excavator was used this time. Shear vane tests were carried out at each location with the following readings as shown in Table 3 below:

Location	Sample	Reading 1	Reading 2	Reading 3	Result
South	Core	9.0	11.8	9.2	200.0kpa
Middle	Sand	8.0	7.4	8.0	156.0kpa
North	Core	+12.0	+12.0	+12.0	240.0kpa

Table 3. Shear vane results after passes 5 and 6.

Following the plate bearing test the results suggest that after six passes of the Padfoot roller a CBR value of 3% can be achieved on layer number 1 (no change to CBR value after four passes). Reference should be made to Figure 19, figure 20, Figure 21, and Figure 22 which provide a visual image of the testing being carried out and the out using the cross spar of the tracked excavator as kentledge:

Figure 19. Embedded core sample taken after six passes.

Figure 20. Plate Bearing Test using tracked excavator as kentledge.

Figure 21. Collecting soil sample for Sand Replacement test.

Figure 22. Sand in cylinder prior to sand replacement test.

Following sampling and testing carried of pass six excess material created during the scrape off process was back bladed over the test patch prior to carrying out passes seven and eight of the first layer.

Noted during the rolling process that the upper edge of the dimples that remain from the Padfoot roller appeared to be a little more granular in some areas of the test pad the previously seen. Reference should be made to Figure 23, and Figure 24 which provide a visual image of the remaining material following passes seven and eight:

Figure 23. Surface composition following passes seven and eight.

Figure 24. Surface composition following passes seven and eight.

Testing was carried out again once the dimples had been scraped off from the final testing of layer one three core samples were taken instead of the two cores and one sand replacement. Shear vane tests were carried out at each location with the following readings as shown in Table 4 below:

Location	Sample	Reading 1	Reading 2	Reading 3	Result
South	Core	7.4	6.8	6.6	138.6kpa
Middle	Core	9.4	10.0	9.2	190.6kpa
North	Core	7.4	9.8	10.4	184.0kpa

Table 4. Shear vane results after passes 7 and 8.

Compaction of layer one including down time from plant breakdown was four hours with material being dumped on the test pad for the second layer at 15:05.

The same process carried out for layer one was carried out for layer two and with a similar start depth of placed material. The approximate plan area of the test pad due to blading has increased to approximately 8.0m wide x 20.0m long with the following results after passes two, four six and eight.

Reference should be made to Table 5, Table 6, Table 7, and Table 8 below which provides shear vane results for each even numbered pass for layer two.

Location	Sample	Reading 1	Reading 2	Reading 3	Result
South	Core	9.4	9.6	8.2	181.3kpa
Middle	Core	+12.0	10.8	10.2	220.0kpa
North	Core	10.0	8.8	9.6	189.3kpa

Table 5. Shear vane results after passes 1 and 2.

Location	Sample	Reading 1	Reading 2	Reading 3	Result
South	Core	9.6	10.8	9.2	197.3kpa
Middle	Core	11.0	10.2	10.0	208.0kpa
North	Sand	10.4	9.8	9.8	200.0kpa

Table 6. Shear vane results after passes 3 and 4.

Location	Sample	Reading 1	Reading 2	Reading 3	Result
South	Sand	9.0	9.0	9.4	182.6kpa
Middle	Core	9.2	8.8	8.6	177.3kpa
North	Core	11.0	11.0	11.2	221.3kpa

Table 7. Shear vane results after passes 5 and 6.

Location	Sample	Reading 1	Reading 2	Reading 3	Result
South	Core	11.6	10.4	8.8	205.3kpa
Middle	Core	9.0	8.6	10.0	184.0kpa
North	Core	9.8	10.2	9.0	193.3kpa

Table 8. Shear vane results after passes 7 and 8.

Plate bearing test results after passes four and six where 4% and 3% respectively, all passes of the roller were carried out using vibration, with a visual inspection carried out of the pad following passes two, four, six and eight.

Testing on the second layer was completed at 16:50 which provided a test duration for this layer of one hour and three quarters from tipping to completion.

Due to the time taken for the first two layers it was agreed that only three layers would be compacted and tested, this information was communicated to RPS Geotechnical Team prior to this being confirmed as being acceptable.

RPS site representation was not on site for the testing of the final layer (layer three) and the required test pit within the centre of the test pad following completion of the agreed number of test layers.

Reference should be made to Figure 25 to Figure 32 which provide a series of visual images for the laying, compaction, and testing of the second layer of test compaction material:

Figure 25. Dumped material for second test layer.

Figure 26. Spreading layer two material.

Figure 27. Layer two material levelled prior to compaction.

Figure 28. Layer two compaction during passes one and two.

Figure 29. Layer two compaction during passes one and two.

Figure 30. Test pad area following passes three and four during sample taking and testing.

Figure 31. Shear vane testing on completion of passes five and six of layer two.

Figure 32. Compacted material following passes seven and eight of layer two.

North East Earthworks suggested that their intention was to cut the material in from one edge to form the required trial pit on completion of the compaction test and record the individual final layer depths as requested as part of the compaction testing requirements. Also, the Contractor stated that they were intending to remove the test pad on completion of the testing.

Reference should be made to Figure 33 which provides a rough indication as to where the test pad was carried out and the location of the material being extract from for the test.

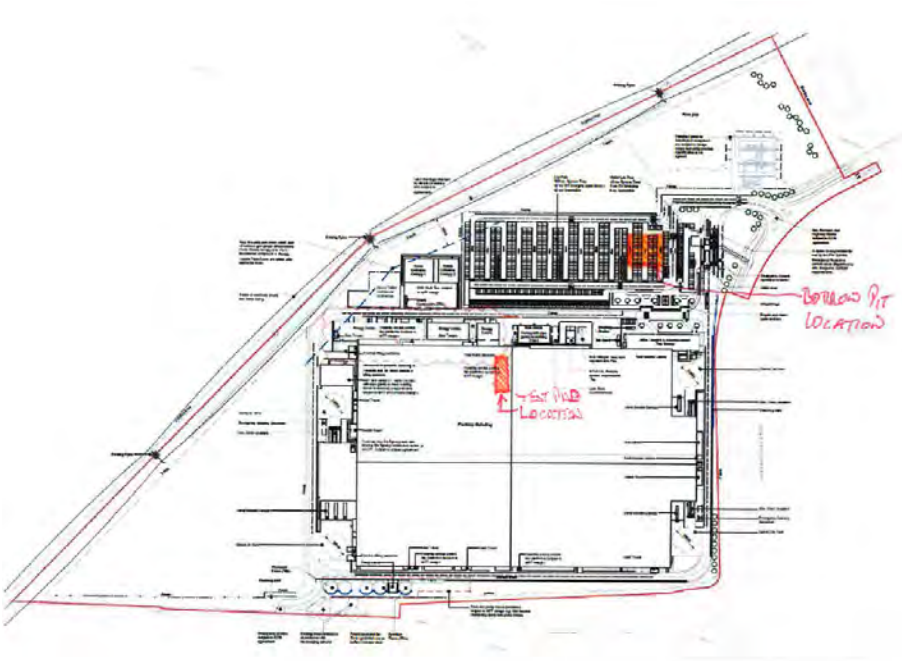


Figure 33. Approximate location of test pad and borrow pit.

Advice given:	Non at this time.

General comments:

Shear vane test results are an initial assessment only and have been provided as a guide at this stage, final results will be provided within the testing report produced by Solmek.

Overall, the general appearance of the site looked tidy with work activities being segregated from each other.

Other activities taken place during the time of the compaction test where the 278 junction works along International Drive to provide access onto the site, erection of hording to the north-east boundary beyond the 278 works, topsoil strip and bunding of material south and west of the trial area.

It was also noted that the majority of the security fencing along the A1290 and International Drive has been completed along with the swale that runs adjacent to International Drive and the site boundary.

Diversion works for the high-pressure existing water main running below the existing footpath.

Reference should be made to Figure 1 to Figure 12 which provide visual images of other work activities taking place on site.

Figure 1. Completed swale running adjacent to public foot path.

Figure 2. Diversion of existing water main.

Figure 3. Formation of island within 278 junction works along International Drive.

Figure 4. Cast lower section and kerb units to island unit of 278 works on International Drive.

Figure 5. Inlet section between swale and transfer pipe adjacent to 278 works along International Drive.

Figure 6. Security fence line along International Drive.

Figure 7. Topsoil strip area inside of site boundary adjacent to International Drive.

Figure 8. View of site from eastern boundary.

Figure 9. View of existing swale running into area of 278 works along Internation Drive.

Figure 10. Longitudinal view along eastern boundary along Internation Drive.

Figure 11. View of site from Southern section of eastern boundary fence line.

Figure 12. View of site from south-eastern boundary line adjacent to A1290

Reviewed by: **(Project Leader or Project Director)**	**Tilo Hoelzel**	**Date: 14/06/22**
Additional notes:		

Notes:

1. The above form is to be completed for each site visit and a copy may be forwarded to the Client for information.
2. This record is to be kept in addition to a Site Supervision diary which if required, will record the above details more fully and will record visitors to site, number of operatives on-site, weather conditions etc.

ENVISION EARTHWORKS SITE VISIT REPORT

Site details			
Client	Wates	**Date:**	22/06/22
Client Staff	Andy Geier	**RPS Consultant:**	Sophie Davis
Weather Conditions:	Sunny	**Report reference**	02
Time on site	7:55	**Time off Site**	12:45

Site Background

The site is located at Land off the A1290, Washington, Sunderland to the north of the Nissan Manufacturing plant. The site comprises a large, relatively flat approximately triangular parcel of land bound by the A19 to the east and the A1290 to the south.

It is proposed to construct a battery manufacturing facility, with associated access infrastructure and hardstanding. The development comprises a single large area building with an approximate geometry of 260m wide by 400m long. An adjacent area of car parking is proposed, approximately 125m wide by 450m long, to the north of the building. A substation is also proposed to the north of the car parking area. Around the buildings and car parking, an area of hardstanding/vehicular access is proposed as well as a highway connection to the local road infrastructure and an emergency access road. Additional ancillary buildings and structures are also proposed at the site including a gate house, office buildings, transformer substation, sprinkler and water tanks and retaining wall to the east of the main building.

Cut/fill earthworks are required to create a level development platform to which this site visit record relates to: topsoil strip in Zones 2 and 5.

Weather on the days leading up to the site visit were generally dry and sunny.

General Site Commentary

Since the last site visit by an RPS representative (Dale Hack on 09/06/22) the excavation of Zone 3 and a section near the vehicle entrance of the site has been undertaken. The section near the vehicle entrance has ceased work due to inaccuracies in the topographical survey which resulted in the delaying of building a concrete pad and wheel washing facilities at the vehicle entrance off A1290.

General Site Commentary

An area approximately 40x80m in the east of Zone 2 was filled last week.

The senior site managers and site foreman informed RPS that they currently are having difficulties with water availability due to the rejection of the application to create a water supply. Water is therefore currently being imported onto site. The lack of water had caused issues with dust suppression issues earlier in the earthworks and is noted on the hazard board at the Wates temporary compound.

Working Area

The activities observed being undertaken during the time of the site visit on 22/06/22 consisted of topsoil stripping of Zone 2 and 5 and storage of cut material from Zone 2 to stockpiles in Zone 7. Two stockpiles of type 1 material were observed stored alongside the stockpile from Zone 2, a large pile and a smaller pile for the temporary road surface. In general, these stockpiles were taller than the 3.00m, please note that the specification states that stockpiles should not be greater than 3.00m in height.

Three small stockpiles (approximately 1.5m in height) were observed opposite the vehicle entrance off the A1290 which were suspected to contain localised contamination from the site of the former farm buildings. These are awaiting results from WAC testing and will be taken off site on Monday. RPS have been provided no further information regarding these nor were RPS informed of the discovery under the RMS watching brief.

Works observed during site visit

The activities in progress observed on this day were topsoil stripping of Zones 2 and 5 with subsequent stockpiling of material from Zone 2. The stockpiles were driven over by the plant in an attempt to seal the moisture into the clay but remained uncovered. A general walkover of the site with the site foreman was undertaken looking around the progress and plans for the different zones.

Specific plant on site

Excavators
1x 30 tonne CASE Excavator
1x 30 tonne Doosan Excavator

Works observed during site visit

1x 225 tonne Volvo Excavator
1x 210 tonne CASE Excavator

Dump trucks
3x A30 Volvo
1x A25 Volvo

Dozers
1x D6W
1x D6 LGP
1x Komatsu 61

Other
1x Bomag Padfoot roller (not running)
1x Bomag Smooth roller (not running)
1x Tractor and water bowser

Testing

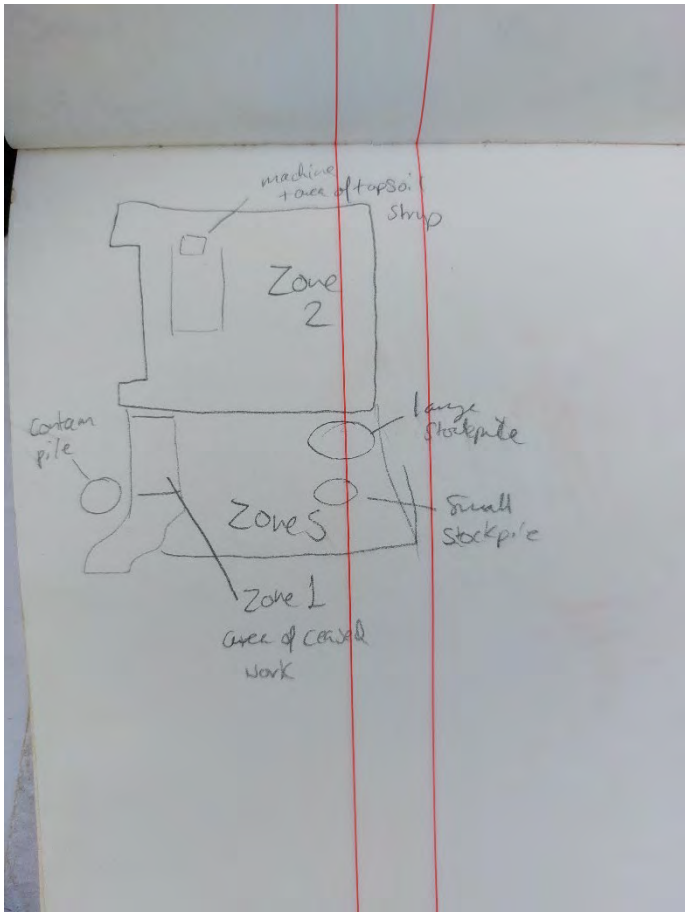
N/A on this visit

Additional Notes

It is anticipated the Wates temporary cabin facilities will move to a permanent location within Zone 3 in 6 – 8 weeks.

A return visit on 23/06/22 will be undertaken where it is anticipated the stockpiled material from Zone 2 will be used to fill Zone 3 which, along with the testing,.

Sketch Plan



Photos

Photo 01: Car park at Wates's temporary compound

Photo 02: Wates temporary cabins

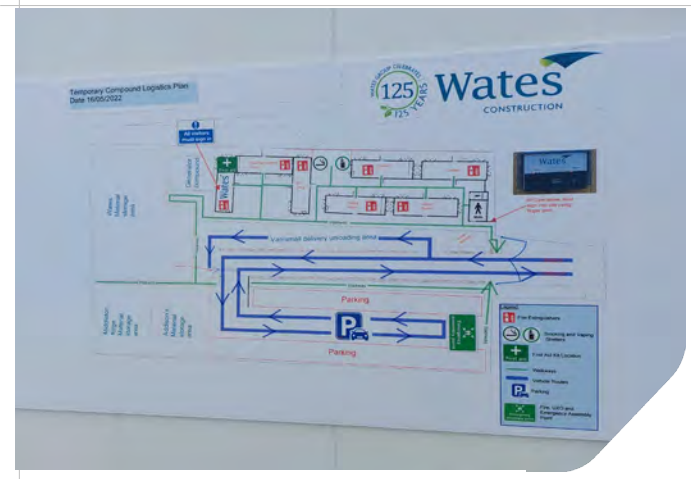


Photo 03: Layout of Wates temporary compound

Photo 04: Stockpiling of cut material from Zone 2

Photo 05: Excavating material from Zone 2

Photo 06: Excavating material from Zone 2

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5 New York Street
Manchester
M1 4JB, United Kingdom

Client: Wates

Project: Sunderland, Battery man plant **Job ref:** JER8968

Checked By: KD **Date:** 22/06/22

Photo 07: Halted works near vehicle entrance of A1290

Photo 08: Water tank and compound off vehicle entrance from A1290

Photo 09: Smaller stockpile for temporary road surface

Photo 10: Stockpiles awaiting WAC testing results

Photo 11: Topsoil bund in Zone 7

Photo 12: Temporary road leading from stockpile in Zone 7 to Zone 3

ENVISION EARTHWORKS SITE VISIT REPORT

Site details			
Client	Wates	**Date:**	23/06/22
Client Staff	Andy Geier	**RPS Consultant:**	Sophie Davis
Weather Conditions:	Sun	**Report reference**	03
Time on site	8:25	**Time off Site**	16:05

Site Background

The site is located at Land off the A1290, Washington, Sunderland to the north of the Nissan Manufacturing plant. The site comprises a large, relatively flat approximately triangular parcel of land bound by the A19 to the east and the A1290 to the south.

It is proposed to construct a battery manufacturing facility, with associated access infrastructure and hardstanding. The development comprises a single large area building with an approximate geometry of 260m wide by 400m long. An adjacent area of car parking is proposed, approximately 125m wide by 450m long, to the north of the building. A substation is also proposed to the north of the car parking area. Around the buildings and car parking, an area of hardstanding/vehicular access is proposed as well as a highway connection to the local road infrastructure and an emergency access road. Additional ancillary buildings and structures are also proposed at the site including a gate house, office buildings, transformer substation, sprinkler and water tanks and retaining wall to the east of the main building.

Cut/fill earthworks are required to create a level development platform to which this site visit record relates to: cut in zone 2 and fill in zone 3.

Weather on the days leading up to the site visit were generally dry and sunny.

General Site Commentary

Since the last visit by an RPS representative (23/06/22 7:55 – 12:45) the cut in Zone 2 had continued and the ground within cells 1,2 and 3 in Zone 3 had been scarified and watered in preparation for fill. The topsoil bunds surrounding Zone 3 (see Fig 1) had also been pushed back from the area of fill to prevent contamination with topsoil materials.

Working Area

The primary working area observed at this site visit was within Zone 3, see sketch with numbered cells, topsoil bund locations and vehicle access route.

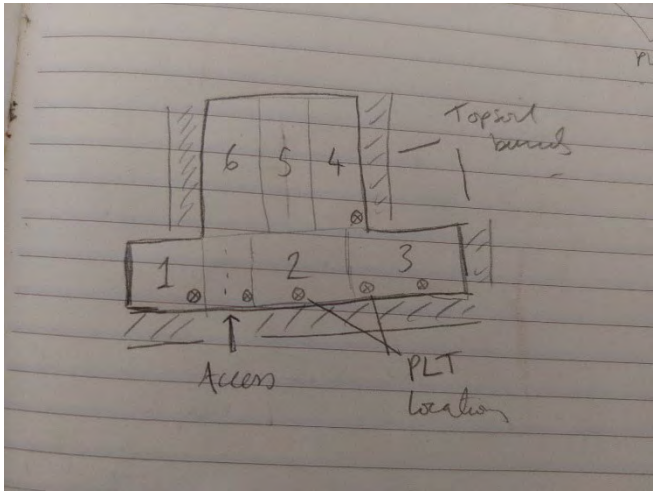

Figure 1 Sketch of Zone 3

Works observed during site visit

The specific works that were observed on this site visit comprised the placement of material and earthworks testing undertaken in Zone 3. Material was excavated from Zone 2 and was brought directly to Zone 3 by three A30 Volvo dump trucks where it was distributed by a Komatsu 61 dozer. The fill process began in the west of Zone 3 in cell 1 and worked anti-clockwise around the site, cell 1 was beginning to be filled when the RPS representative arrived on site. Periodically throughout the day a tractor with attached bowser drove through Zone 3 to distribute moisture to the Pelaw clay and act as a dust suppression method. From when the RPS representative arrived on site until approximately 10:40am a 20 ton CASE CX210E excavator was scarifying cells 4, 5 and 6. After this time it began excavating the topsoil bund on the west of Zone 3 which was taken to the topsoil stockpile in Zone 5 by the A30 Volvo dump trucks for later off-site disposal.

At approximately 9:35am the Bomag BW213DH Padfoot roller began work in cell 1, due to a misinterpretation by the driver who was utilising the ‘continuous pass’ method cells 1 and 2 had 16 passes opposed to eight. The remaining cells were had 8 passes.

Works observed during site visit

At the time of leaving site (16:05) cell 5 was in the process of rolling, the material in cell 6 had been distributed and was ready to be rolled and topsoil was being transported and stockpiled.

Pelaw Clay being placed during the site visit was generally dry, plastic, stiff to very stiff, brown, slightly sandy slightly gravelly clay. Gravel was subrounded to angular, fine to course, sandstone and mudstone. Occasional cobbles of mudstone seen on surface. Sand was fine.

Testing

The testing was undertaken by Exploration & Testing Associates Ltd with the scope of a Plate Load Test, three core cutters and hand shear vane tests every 15m.
At 11:30am the Komatsu 61 bull dozer scraped the dimples off the surface of the location of the first test, and the first Plate Load Test began at 11:40 using the Bomag BW213DH Padfoot roller as a kentledge. Plate Loads 1 and 3 were within the areas that had been subjected to 16 passes opposed to eight and Plate Load 2 was within the temporary road surface used by the machinery for access and egress to Zone 3. All subsequent tests were within the areas of eight passes.

At the time of leaving site (16:05) the Plate Load Test pad area in cell 4 was prepared to be tested on.

Additional Notes

All facilities and working areas were tidy and well-maintained

Photos

Photo 01: Scarifying of cell 6 in Zone 3

Photo 02: Cut from Zone 2 being transported to Zone 3

Photo 03: Distribution of material in cell 1

Photo 04: Tractor distributing water over cells 2 and 3

Photo 05: Padfoot rolling of cell 1

Photo 06: Removal of topsoil bund from the west of cell 6

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260 Park Avenue
Almondsbury, Bristol
BS32 4SY, United Kingdom

Client: Wates

Project: Sunderland battery Man plant Job ref: JER8968

Checked By: KD Date: 23/06/22

Photo 07: Scraping the dimples off the first testing location pad

Photo 08: Plate Load Test 1 under Bomag Padfoot roller

Photo 09: Core cutter test from first location

Photo 10:Voids left from core cutter test

Photo 11: Digging out a core cutter test from location 5

Photo 12: Padfoot rolled surface of cell 3 with evidence of land drains

ENVISION EARTHWORKS SITE VISIT REPORT

Site details			
Client	Wates	**Date:**	28/06/22
Client Staff	Andy Geier	**RPS Consultant:**	Tom Ford
Weather Conditions:	Overcast	**Report reference**	04
Time on site	10.15	**Time off Site**	15:30

Site Background

The site is located at Land off the A1290, Washington, Sunderland to the north of the Nissan Manufacturing plant. The site comprises a large, relatively flat approximately triangular parcel of land bound by the A19 to the east and the A1290 to the south.

It is proposed to construct a battery manufacturing facility, with associated access infrastructure and hardstanding. The development comprises a single large area building with an approximate geometry of 260m wide by 400m long. An adjacent area of car parking is proposed, approximately 125m wide by 450m long, to the north of the building. A substation is also proposed to the north of the car parking area. Around the buildings and car parking, an area of hardstanding/vehicular access is proposed as well as a highway connection to the local road infrastructure and an emergency access road. Additional ancillary buildings and structures are also proposed at the site including a gate house, office buildings, transformer substation, sprinkler and water tanks and retaining wall to the east of the main building.

Cut/fill earthworks are required to create a level development platform to which this site visit record relates to: fill placement within zone 3.

Weather in the days leading up to the site visit was generally wet with period of heavy rainfall.

General Site Commentary

Since the last visit by an RPS representative (23/06/22) the cut in Zone 2 had continued and the engineered fill had been placed in the southern area of Zone 3.

Working Area

The primary working area observed at this site visit was within Zone 3, see sketch with topsoil bunds, vehicle movements and test locations.

Figure 1 Sketch of Zone 3

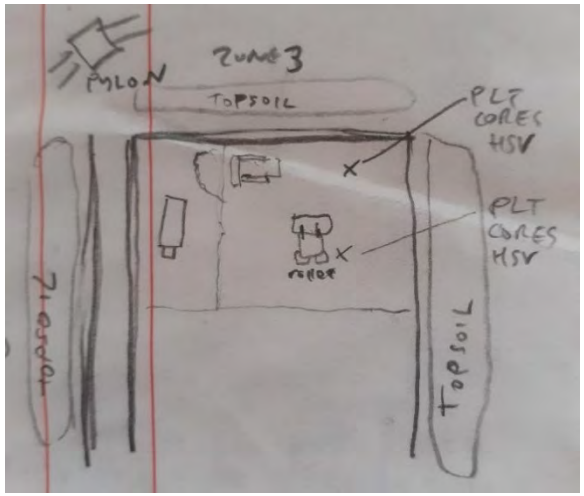


Figure 2 Location of Zone 3 on site

Works observed

The works observed during the site visit comprised transportation and placement of cut material from Zone 2 by a single A30 Volvo dump truck, into the north eastern area of Zone 3. Material was spread here by a Komatsu 61 bulldozer. Previously placed material in the north and north west of Zone 3 was undergoing compaction by Bomag BW213DH padfoot roller of eight passes.

The roller in Zone 3 periodically stopped making passes, to assist as Kentledge for Plate Load Testing.

Works observed

In Zone 2, another Bomag BW213DH padfoot roller was compacting an area of trim on the eastern extent of the zone.

A tractor with bowser trailer drove through Zone 3 to distribute moisture to the Pelaw clay and act as a dust suppression method.

Pelaw Clay being placed during the site visit was generally dry, plastic, stiff to very stiff, brown, slightly sandy slightly gravelly clay. Gravel was subrounded to angular, fine to course, sandstone and mudstone. Occasional fragments of land drain and pottery, and cobbles of mudstone seen on surface. Sand was fine.

Testing

Testing was undertaken by Exploration & Testing Associates Ltd.

Testing observed during the site visit took place at 2 locations approximately 15m apart in Zone 3 (see sketch), Exploration location references 433330E, 559106N, and 4333339E, 559092N.

At each location, testing comprised a plate load test with 455mm plate, core cutter, and hand shear vane. Bomag roller was used as kentledge.

Hand shear vane tests using the small vane (32 x 16mm) recorded results of 12, 10.4, 11.6 at the first location, and 12,11.8 and 10.6 at the second location.

Photos of initial plate load test results are included within the photo appendix.

The North East Earthworks site foreman instructed the operator of the tractor towed bowser to stop spraying water at 13.00, as there was concern that the levels of surface moisture were affecting the results of the plate load testing. Testing was proposed to resume the following day.

Additional Notes

All facilities and working areas were tidy and well-maintained.

Photos

Photo 01: Placement of fill material in Zone 3

Photo 02: Bomag padfoot roller in Zone 3

Photo 03: Zone 3

Photo 04: Plate Load Testing

Photo 05: Distribution of fill material

Photo 06: Spraying in Zone 3

Photo 07: Bomag padfoot roller in Zone 2

Photo 08: Removing Core Cutter

Photo 09: Core from Zone 3

Photo 10: First Plate Load Test results

Photo 11: Second Plate Load Test results

Photo 12: Area of removed Core

ENVISION EARTHWORKS SITE VISIT REPORT

Site details			
Client	Wates	**Date:**	07/07/22
Client Staff	Andy Geier	**RPS Consultant:**	Sophie Davis
Weather Conditions:	Sunny 19°C to 21°C	**Report reference**	05
Time on site	10:00	**Time off Site**	16:50

Site Background

The site is located at Land off the A1290, Washington, Sunderland to the north of the Nissan Manufacturing plant. The site comprises a large, relatively flat approximately triangular parcel of land bound by the A19 to the east and the A1290 to the south.

It is proposed to construct a battery manufacturing facility, with associated access infrastructure and hardstanding. The development comprises a single large area building with an approximate geometry of 260m wide by 400m long. An adjacent area of car parking is proposed, approximately 125m wide by 450m long, to the north of the building. A substation is also proposed to the north of the car parking area. Around the buildings and car parking, an area of hardstanding/vehicular access is proposed as well as a highway connection to the local road infrastructure and an emergency access road. Additional ancillary buildings and structures are also proposed at the site including a gate house, office buildings, transformer substation, sprinkler and water tanks and retaining wall to the east of the main building.

Cut/fill earthworks are required to create a level development platform to which this site visit record relates to: fill placement in Zone 3.

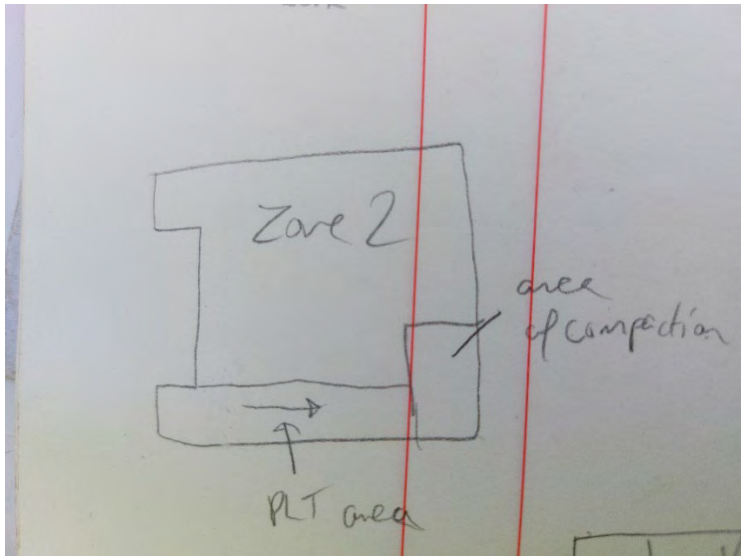
Weather on the days leading up to the site visit were generally dry and sunny.

General Site Commentary

Since the last visit by an RPS representative (28/06/22) the cut in Zone 2 had continued and the engineered fill had been continued across Zone 3. It was noted by the testing engineer from Exploration Ltd that the road networks had also changed slightly.

Working Area

Work was observed within the south section of Zone 2 and the north section of Zone 3.



Works observed

The works observed during this site visit consisted of plate load testing in the southern section of Zone 2 and the compaction by a Bomag BW213DH padfoot roller in the north eastern section of Zone 2. Works were also observed in Zone 3 which consisted of the compaction and fill of the final layer of the north western cells. It was informed the central northern cell was too high so after compaction with a padfoot roller then a smooth roller a bulldozer would be trimming the excess.

A plant operator informed the RPS representative that one of the padfoot rollers had broken down which delayed the compaction of the final layers within Zone 3.

Works observed

Drainage pipes were also in the process of being laid down in Zone 2 (see photo appendix).

A tractor was moving through Zone 3 and the vehicle roadways to distribute moisture to the Pelaw clay and act as a dust suppression method.

Pelaw Clay being placed during the site visit was generally dry, plastic, stiff to very stiff, brown, slightly sandy slightly gravelly clay. Gravel was subrounded to angular, fine to course, sandstone and mudstone. Occasional cobbles of mudstone seen on surface. Sand was fine.

Testing

Two technicians from Exploration & Testing Associates Ltd were present on-site undertaking plate load tests using a 455mm plate. The testing took place along the southern section of Zone 2 parallel to the road way working west to east approximately every 15m. A Komatsu 61 bulldozer and a CASE 30 tonne excavator were used as kentledges (see photo appendix)

The ground conditions were dry and the percentage values were relatively consistent at approximately 4% although a value of approximately 20% was also reported.

It was anticipated to undertake core cutter and sand replacement tests on the final layer in Zone 3 but due to time constraints and the above mentioned broken down roller this was not possible and was anticipated to take place the next morning (08/07/22).

Additional Notes

It was noted by a plant operator from GWS that they had been given instructions regarding levels had been changing, this was told to not be the case by an engineer from Wates. The on-site foreman from GWS was unable to be spoken with to give a debrief of previous works since the last RPS site visit.

All facilities and working areas were tidy and well-maintained.

Photos

Photo 01:padfoot rolled surface of northwest cell in Zone 3

Photo 02: Plate load test in Zone 2

Photo 03:Compacted area in Zone 3

Photo 04:Standpipe in Zone 7

Photo 05:Exploration technicians undertaking plate load testing in Zone 2

Photo 06:Drainage pipe across Zone 2

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260 Park Avenue
Almondsbury, Bristol
BS32 4SY, United Kingdom

Client: Wates

Project: Sunderland battery Man plant Job ref: JER8968

Checked By: KD Date: 07/07/22

Photo 07: Tarmacked vehicle entrance to site

Photo 08: Padfoot roller compacting Zone 3

Photo 09:Dumptruck bringing material to be distributed in Zone 3

Photo 10:Excavator removing topsoil bund

Photo 11: End of the drainage pipe within Zone 2

Photo 12: Start of testing within Zone 2 in south west corner

ENVISION EARTHWORKS SITE VISIT REPORT

Site details			
Client	Wates	**Date:**	14 July 2022
Client Staff	Andy Geier	**RPS Consultant:**	Karen Dale
Weather Conditions:	Cloudy with sunny spells, few drizzle showers in the afternoon with steady breeze	**Report reference**	06
Time on site	9.45	**Time off Site**	15.45

Site Background

The site is located at Land off the A1290, Washington, Sunderland to the north of the Nissan Manufacturing plant. The site comprises a large, relatively flat approximately triangular parcel of land bound by the A19 to the east and the A1290 to the south.

It is proposed to construct a battery manufacturing facility, with associated access infrastructure and hardstanding. The development comprises a single large area building with an approximate geometry of 260m wide by 400m long. An adjacent area of car parking is proposed, approximately 125m wide by 450m long, to the north of the building. A substation is also proposed to the north of the car parking area. Around the buildings and car parking, an area of hardstanding/vehicular access is proposed as well as a highway connection to the local road infrastructure and an emergency access road. Additional ancillary buildings and structures are also proposed at the site including a gate house, office buildings, transformer substation, sprinkler and water tanks and retaining wall to the east of the main building.

Cut/fill earthworks are required to create a level development platform to which this site visit record relates to: witness fill placement within Zone 7, cut within zone 6, removal of stockpile stockpiles from zone 5 and placement of piling matt in zone 2.

Weather on the days leading up to the site visit were generally hot, dry with a gently breeze.

General Site Commentary

Since the last visit by an RPS Representation the cut and fill within Zone 3 has been completed with MOT type 1 placed as final layer. The drainage is being laid ready for the site compound to be developed. It is understood the site cabins will be placed within Zone 3 and that car parking will be placed in Zone 4 and 10 as the area is developed, if appropriate, and the existing compound are will also be used for car parking. Other options are also available.

Zone 2 has been brought to level and the piling matt is being placed, comprising geogrid, Type 1, second layer of geogrid and further Type 1 material. The two layers of geogrid have been requested by the piling contractor. The piling matt is being laid as soon as possible after completion of the cut / fill to protect the final layer. Some of this will be a sacrificial layer.

To protect laid layers of fill, the traffic movements on site have been designed such that plan does not need to run over the placed material at this time. As the project moves forward this might change.

Water issues are continuing on-site with the majority of water been tankered on to site and placed in holding tanks. A significant quantity of water is currently being used on site as dust suppression and this is still not fully addressing the ongoing issues in the dry windy weather. Wates and GWS are looking in to permits to use additives in the water to help with dust suppression.

There is clear segregation of site teams, for those working on the cut and fill elements, those laying the piling matt and those involved with the removal of the topsoil stockpiles.

The stockpile of Type 1 stored in Zone 5 is at a height of approximately 3m and is battered with a ramp.

There are two small windrows approximately 1m in height in Zone 8 of topsoil which is being removed from site.

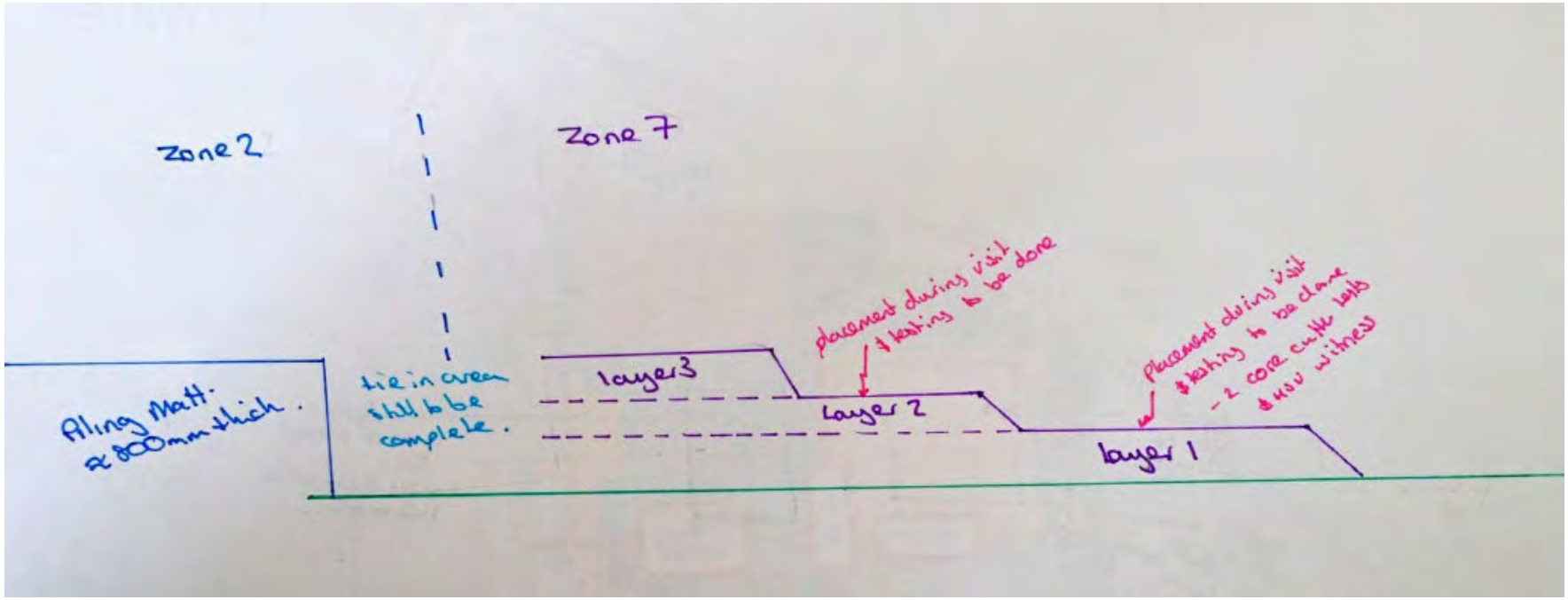
Stockpile in Zone 1 / Zone 2 which is awaiting off site disposal relates to a 1.2m bgl stripe of Made Ground from beneath the former farm buildings. WAC testing has been undertaken. The results of this testing and the exact of the strip should be mark up on a plan and the information forwarded to RPS for inclusion in the validation report.

Working Area

Works undertaken during the visit are shown on the plan below:

Working Area

A sketch plan of the fill in zone 7 is shown below. Please note the plan is for illustration only, the sketch is not to scale and the height of the layers / piling matt and existing ground levels is greatly exaggerated.



Works observed

Clay was excavated from Zone 6, within the docking bay area of the proposed new development using a 30 tonne CASE Excavator (CX370D) with materials placed directly into a Volvo A30 Dump Truck. These materials were then placed in Zone 3 at the base of layer 1, where the material was spread using a CAT D6 dozer.

Works observed

The placed fill was then rolled using a Bomag padfoot roller. The number of passes was not observed during the visit, as the roller was passing over a wider area of material.

The clay material excavated generally comprised of firm brown slightly gravelly to gravelly slightly sandy silty CLAY. Gravel is fine to coarse subangular to subrounded sandstone and mudstone. The excavated material was damp to touch and was plastic in nature. Following compaction the material was stiff with some laminations were visible, these material behaved in a more non-plastic manner. Although none present during the site visit, cobbles/pebbles are known to be present within the clay, evidence of these were seen at the site of the excavation. With cobbles and pebbles over a certain size been removed from the placed material.

Testing

During the visit core cutter and hand shear vane tests were witnessed in two locations on Layer one. The area for the test was prepared by the dozer lightly scraping the surface area to provide a flatten surface.

Although testing was not witnessed, three areas within layer 2 were also prepared by the dozer for moisture content and density core cutter testing, again a very small scrape took place as the dozer moved north to south along the placed layer. This is the perpendicular to the works direction with layers placed east to west and rolled in this direction.

Additional Notes

A meeting between RPS, Wates, GWS and Exploration Testing took place on site to discuss the format of the data received by RPS to assist with the validation works.

Photos

Photo 01: Placement of Type 1 in Zone 3.

Photo 02: Placement of fill (layer 1) in Zone 7.

Photo 03: Fill placement in Zone 7, Layer 1.

Photo 04:Dimpled surface left by pad foot roller.

Photo 05: Core cutter test, zone 7 layer 1.

Photo 06: Core cutter test zone 7 layer 1, to the left Layer 2 is visible.

Photo 07: Dozer spreading fill zone 7, layer 1.

Photo 08: Looking across zone 7 layer 2, the mound marks the edge of the placed fill and the approximate boundary between zone 2 and zone 7.

Photo 09: Looking from zone 7 layer 3 across to the Piling matt in Zone 2.

Photo 10: Placement of second geotextile membrane over type 1 forming the piling matt in Zone 2.

Photo 11: Excavation of cut material in Zone 6, where Cut is deeper due to dock loaders.

Photo 12: Cut in zone 6.

Photo 13: Water storage in south of the site.

Photo 14: Small stockpile of topsoil to be removed from site.

Photo 15: General view across Zone 7 from Zone 3.

Photo 16: General photo across the site from the South west, by the site access.

ENVISION EARTHWORKS SITE VISIT REPORT

Site details			
Client	Wates	**Date:**	19 July 2022
Client Staff	Andy Geier	**RPS Consultant:**	Karen Dale
Weather Conditions:	Very hot.	**Report reference**	07
Time on site	10.15	**Time off Site**	2.30

Site Background

The site is located at Land off the A1290, Washington, Sunderland to the north of the Nissan Manufacturing plant. The site comprises a large, relatively flat approximately triangular parcel of land bound by the A19 to the east and the A1290 to the south.

It is proposed to construct a battery manufacturing facility, with associated access infrastructure and hardstanding. The development comprises a single large area building with an approximate geometry of 260m wide by 400m long. An adjacent area of car parking is proposed, approximately 125m wide by 450m long, to the north of the building. A substation is also proposed to the north of the car parking area. Around the buildings and car parking, an area of hardstanding/vehicular access is proposed as well as a highway connection to the local road infrastructure and an emergency access road. Additional ancillary buildings and structures are also proposed at the site including a gate house, office buildings, transformer substation, sprinkler and water tanks and retaining wall to the east of the main building.

Cut/fill earthworks are required to create a level development platform to which this site visit record relates to: witness fill placement within Zone 7 and placement of piling matt in zone 2.

Weather on the days leading up to the site visit were generally very hot, and dry with a gently breeze. As with much of the UK the site was experiencing the heatwave, meaning that temperature on site were extremely hot and the site was very dry.

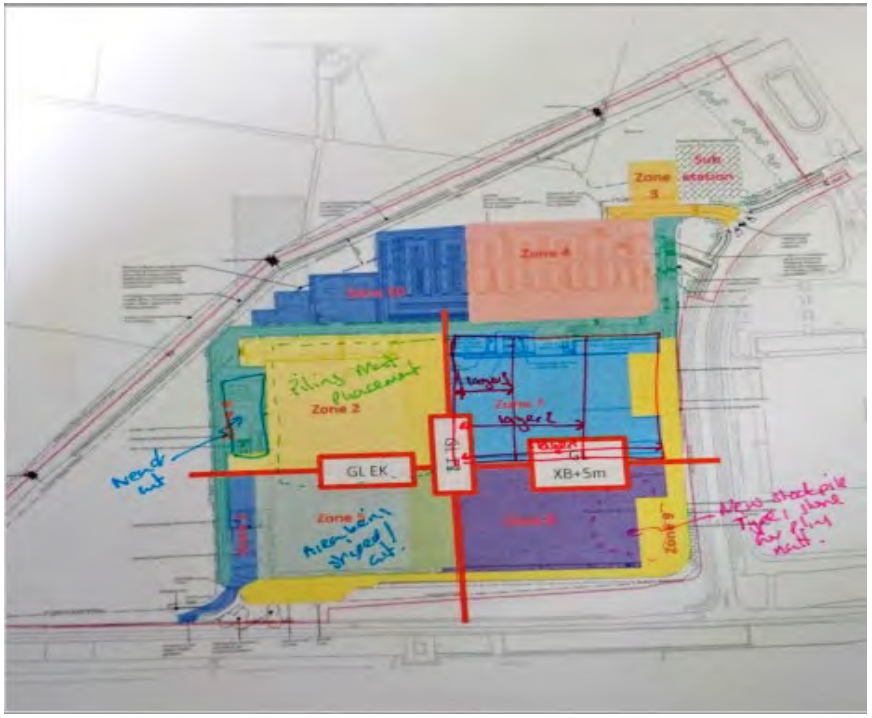
General Site Commentary

Since the last visit by an RPS Representation the first layer has been completed in Zone 7 with works moving on to place the second layer. Cut is still been undertaken in Zone 2 & 6.

Some material was placed in the Haul Road but these works have been halted.

Working Area

Works undertaken during the visit are shown on the plan below:



Works observed

Clay was excavated from Zone 2 using a 30 tonne CASE Excavator (CX370D) with materials placed directly into a Volvo A30 Dump Truck. These materials where then placed in Zone 7 at the base of layer 2, where the material was spread using a CAT D6 dozer. Following this a tractor would dampen the soils slightly and an Excavator would turn the soils over before the tractor undertook a second pass. Once the soils had been wettened the fill was rolled using a Bomag padfoot roller. The roller passed the area 8 times before moving on to the next available area.

Due to moisture control with the weather being so warm, the area rolled at any time was kept to a relatively small area, to allow water to be added to the soils both after placement and prior to rolling. The top layer of layer one was also sprayed prior to the materials placed.

Stockpile of MOT stone is being moved from Zone 5 into Zone 8 to allow cut to continue in Zone 5.

The excavated materials were also being sprayed during excavation to both allow dust suppression but also to add moisture to the soils that are rapidly drying the heat.

The clay material excavated generally comprised of firm brown slightly gravelly to gravelly slightly sandy silty CLAY. Gravel is fine to coarse subangular to subrounded sandstone and mudstone. The excavated material was damp to touch and was plastic in nature, where moisture had been added and dry and non plastic where it had started to dry out.

Testing

During the visit core cutter and hand shear vane tests were witness in two locations on layer two. The area for the test was prepared by the excavator lightly scraping the surface area to provide a flatten surface.

Additional Notes

Conversation with Andy (wates)

Following a further discussion regarding reports / notes of mitigation works where non-compliance test results are recorded. Andy suggested the information is being provided and may have been present on fieldview. (see notes below)

Harry from GWS is providing drawing which should include the areas of mitigation.

Works on site have been a bit slower than usual due to the extreme heat.

Conversation with Luke (wates):

To discuss the information that we are being provided for the mitigation works on going within the cut/fill, as it was understood that the information may be in the QA forms compiled on fieldview.

Zone 3 and haul road are going to be classed as temporary works and therefore outside of the works that RPS need to validate.

Looking over the information provided for Zone 2 which includes information for the piling matt on fieldview, there are surveys showing the soft spots or cobbles / boulders removed. Photos are also included in the hand over documentation. However, there is nothing similar for the base layer or fill layer. Reiterated the fact that we need this to validate and without the information of the mitigation we can't validate.

Upon leaving site it was agreed that Harry would input the mitigation for the noncompliant test results on the fieldview report, pdf the report weekly to be shared with RPS. With the first of these reports issued by end of the week.

Photos

Photo 01:General look across zone 7, showing placement of layer 2.

Photo 02: Dozer placing fill in layer 2 in zone 7.

Photo 03: excavator mixing the placed materials to add moisture prior to rolling.

Photo 04: Water added to placed fill.

Photo 05: Pad foot roller, area prepared for core cutter test, core cutter test been undertaken.

Photo 06:Showing area to be roller by pad foot roller, clearly shows the small areas being rolled to enable moisture to be added due to very hot and dry weather conditions.

ENVISION EARTHWORKS SITE VISIT REPORT

Site details			
Client	Wates	**Date:**	26 July 2022
Client Staff	Andy Geier	**RPS Consultant:**	Karen Dale
Weather Conditions:	Very wet	**Report reference**	08
Time on site	10.45	**Time off Site**	2.30

Site Background

The site is located at Land off the A1290, Washington, Sunderland to the north of the Nissan Manufacturing plant. The site comprises a large, relatively flat approximately triangular parcel of land bound by the A19 to the east and the A1290 to the south.

It is proposed to construct a battery manufacturing facility, with associated access infrastructure and hardstanding. The development comprises a single large area building with an approximate geometry of 260m wide by 400m long. An adjacent area of car parking is proposed, approximately 125m wide by 450m long, to the north of the building. A substation is also proposed to the north of the car parking area. Around the buildings and car parking, an area of hardstanding/vehicular access is proposed as well as a highway connection to the local road infrastructure and an emergency access road. Additional ancillary buildings and structures are also proposed at the site including a gate house, office buildings, transformer substation, sprinkler and water tanks and retaining wall to the east of the main building.

Cut/fill earthworks are required to create a level development platform. Due to heavy rainfall no works were being undertaken at the time of the site visit. Given the conditions on site, RPS agrees with GWS comments that to continue in these conditions would not have produce the quality of earthworks required. Therefore, the would agree that the decision to stand down was a show of good earthworks knowledge and experience.

Weather on the days leading up to the site visit were generally very wet, with a number of very heavy rain shower recorded immediately following a period of very hot and dry weather. Further rainfall was predicted during Tuesday with weather turning drier towards the end of the week.

General Site Commentary

Since the last visit by an RPS Representation, further placement of layer 2 and layer 3 had been undertaken in Zone 7 and Zone 9. Some cut to produce the development platform for the piling matt in Zone 5, with cut starting in Zone 8. Further cut in the deeper cut areas in Zone 6 was also continuing. .

Piling mat was largely complete in Zone 2 and has been extended as appropriate into zone 7. Drainage in Zone 5 was being placed to allow placement of piling mat.

Working Area

No works were being undertaken during the site visit.

Works observed

Although no works were being undertaken at the time of the site visit a walkover across the site. The development platform for the piling matt in zone 5 was at level. The top of the fill in zone 7 had not been roller with a smooth roller following completion and therefore the surface was dimpled which were filled with surface water.

Large volumes of pooled surface water was seen during the workover. Although the site was starting to dry and it appeared that in Zone 5 where the surface was rolled by a smooth roller than infiltration of water may be limited. However, the surface in zone 7 where the surface hadn't been sealed the top layer was very boggy.

Testing

No testing was being undertaken during this visit.

Additional Notes

Further conversations with Andy Gier (wates), Carenza Grant (wates), Paul Mullen (Wates) and Harry Sturrock (GWS) regarding reporting of non-compliant results, mitigation measures and retest data. A template for this reporting has been agreed and weekly meeting set up to confirm all the information is being received.

RPS reiterated the fact that without this information, in written format, for inclusion within the verification report that the works could not be validated.

Photos

Photo 01:General view across Zone 5, showing finished cut level and pooled standing water from heavy rains.

Photo 02: Pooled surface water in Zone 5.

Photo 03: Piling mat in Zone 2.

Photo 04: Piling mat placement on edge of Zone 5.

Photo 05: Drainage being placed beneath the piling mat in Zone 5.

Photo 06: Wet surface area in zone 7 & 8

Photo 07: surface water in Zone 7.

Photo 08: Pooled water in dimples left by padfoot Roller.

Photo 09: Pooled surface water in zone 6, ponded in the areas of deeper cut.

Photo 10: Ponded surface water in zone 6.

ENVISION EARTHWORKS SITE VISIT REPORT

Site details			
Client	Wates	**Date:**	2nd August 2022
Client Staff	Carenza Grant	**RPS Consultant:**	Tom Ford
Weather Conditions:	Rain in morning, drying out	**Report reference**	09
Time on site	10.00	**Time off Site**	15.00

Site Background

The site is located at Land off the A1290, Washington, Sunderland to the north of the Nissan Manufacturing plant. The site comprises a large, relatively flat approximately triangular parcel of land bound by the A19 to the east and the A1290 to the south.

It is proposed to construct a battery manufacturing facility, with associated access infrastructure and hardstanding. The development comprises a single large area building with an approximate geometry of 260m wide by 400m long. An adjacent area of car parking is proposed, approximately 125m wide by 450m long, to the north of the building. A substation is also proposed to the north of the car parking area. Around the buildings and car parking, an area of hardstanding/vehicular access is proposed as well as a highway connection to the local road infrastructure and an emergency access road. Additional ancillary buildings and structures are also proposed at the site including a gate house, office buildings, transformer substation, sprinkler and water tanks and retaining wall to the east of the main building.

Cut/fill earthworks are required to create a level development platform to which this site visit record relates to: witness excavation and trimming of material from Zones 4 and 6, and fill placement in Zone 4, and placement of piling matt in Zone 2.

Weather on the days leading up to the site was generally dry, however on the night before and morning of the visit, a rain shower had occurred, leaving very shallow puddles across Zone 5. Other areas of the site appeared to be relatively dry by mid-morning, whilst the weather was overcast with occasional sun and a steady breeze.

General Site Commentary

Since the last visit by an RPS Representative, further placement of fill had been undertaken in Zone 4. Excavation, fill and drainage for the Dock Leveller had taken place in Zone 6.

Piling mat was largely complete in Zone 2 and has been extended as appropriate into zone 7. A piling rig had commenced piling in Zone 2.

Earthworks contractor was waiting for Zone 5 to dry out to continue installation of drainage within Zone 5, which commenced in the afternoon.

Working Area

Zone 6, Zone 2, Zone 5 and Zone 4.

Works observed

A Komatsu 61 bulldozer was trimming approximately 100mm from the roadway in Zone 6 to reach a finished level for the construction of the road. Plate Load Testing took place here in two locations, using a Bomag BW213DH smooth roller as kentledge.

In Zone 2, extending into Zone 6, geogrid was rolled out and placed, and Type 1 was put down in a double layer by A Komatsu 61 bulldozer.

At the south of zone 4, a Bomag BW213DH padfoot roller was compacting a layers of material excavated from the attenuation basin in Zone 4, and the trimmed material from Zone 6, placed by a Komatsu 61 bulldozer.

A CASE 30 tonne 360 excavator was excavating the attenuation basin.

Shallow puddles were present on the development platform on Zone 5. Whilst waiting for these to dry out, the contractor was installing a drainage run along the boundary of Zone 2 and Zone 5, in order to install drains perpendicular to this across Zone 5.

Testing

On Zone 6, two 450mm Plate load tests, CBR 1 - 433141E 558809N, and CBR 2 - 443114E, 558803N, gave preliminary results of 11.4 and 20.0% respectively.

Approximately 18 core cutters were taken on the placed material in Zone 4. The testing engineer observed that generally, these were mostly dry, with the first 15mm slightly wet.

Additional Notes

A new works compound was being constructed at the site entrance on International Drive.

Photos

Photo 01: Piling rig preparation in Zone 2

Photo 02: Piling Mat installation

Photo 03: Bulldozer trimming 100mm Zone 6

Photo 04: Placing material in Zone 4

Photo 05: Core cutter samples from Zone 4

Photo 06: Core cutter sample taken from Zone 4

Photo 07: Plate load testing in Zone 6

Photo 08: Results of Plate Load Testing

Photo 09: Results of Plate Load Testing

Photo 10: Piling Mat in Zone 2

Photo 11: Drainage along Zone 2 boundary

Photo 12: Drainage installation between Zone 2 and 5

ENVISION EARTHWORKS SITE VISIT REPORT

Site details			
Client	Wates	**Date:**	11th August 2022
Client Staff	Andy Geier	**RPS Consultant:**	Sophie Davis
Weather Conditions:	Dry and sunny 24°C-28°C	**Report reference**	10
Time on site	9:30	**Time off Site**	15:00

Site Background

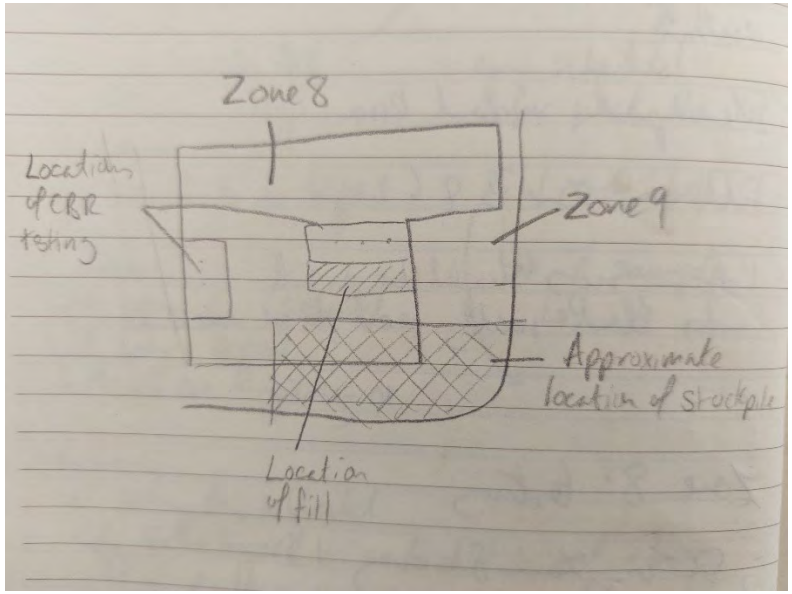
The site is located at Land off the A1290, Washington, Sunderland to the north of the Nissan Manufacturing plant. The site comprises a large, relatively flat approximately triangular parcel of land bound by the A19 to the east and the A1290 to the south.

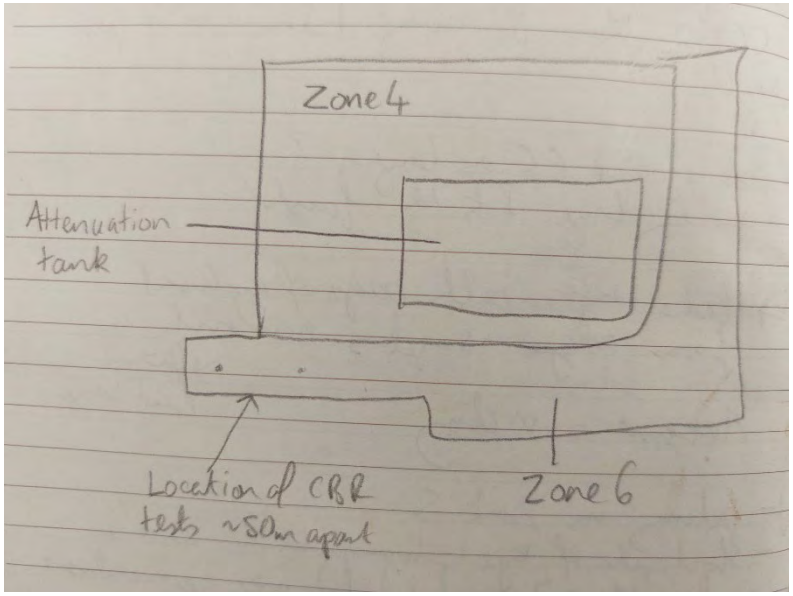
It is proposed to construct a battery manufacturing facility, with associated access infrastructure and hardstanding. The development comprises a single large area building with an approximate geometry of 260m wide by 400m long. An adjacent area of car parking is proposed, approximately 125m wide by 450m long, to the north of the building. A substation is also proposed to the north of the car parking area. Around the buildings and car parking, an area of hardstanding/vehicular access is proposed as well as a highway connection to the local road infrastructure and an emergency access road. Additional ancillary buildings and structures are also proposed at the site including a gate house, office buildings, transformer substation, sprinkler and water tanks and retaining wall to the east of the main building.

Cut/fill earthworks are required to create a level development platform to which this site visit record relates to the fill placement within Zone 8 using the excavated material from Zone 4.

Weather on the days leading up to the site visit were generally dry with high temperatures and low wind speeds.

Working Area





Works observed

In the south of Zone 5 the piling mat was being constructed using the material taken from the Type 1 stock pile in Zone 8 and 9 by a Komatsu 61 bulldozer. This layer was extending from the existing configuration in Zone 2.

In the east of Zone 8 a Bomag BW213DH padfoot roller was compacting a layer of material excavated from the attenuation basin in Zone 4 and a Komatsu 61 bulldozer was distributing the material. A tractor with a water bowser attached was utilised by the foreman to add moisture to the material.

A CASE 30 tonne 360 excavator was excavating the attenuation basin in Zone 4.

Testing

Within Zone 6 CBR tests were being undertaken using a 450mm plate and a Bomag BW213DH smooth roller as a kentledge. The tests were undertaken on natural formation level before capping and were positioned approximately every 50m running west to east. At the first testing location a preliminary result of 5.4% was given.

Core cutter tests were being undertaken in two testing locations within Zone 8 on the placed material of layer 3 approximately every 15m. The testing engineer was obtaining bulk bags of material from each layer after testing to ensure there was sufficient material for laboratory testing.

Additional Notes

A piling rig was working in Zone 2 and work had progressed on the new compound at the site entrance on International Drive.

Photos

Photo 01: Exploration testing engineer undertaking core cutter tests in Zone 8

Photo 02: Exploration testing engineer undertaking core cutter tests in Zone 8

Photo 03: Exploration testing engineer undertaking core cutter tests in Zone 8

Photo 04: Exploration testing engineer undertaking core cutter tests in Zone 8

Photo 05: Exploration testing engineers undertaking CBR testing in Zone 6

Photo 06: Exploration testing engineer pacing out 50m for CBR test placement

Photo 07: Dumptruck collecting Type 1 from stockpile in Zone 8 and 9

Photo 08: View of Zone 2 showing piling matt being laid.

Photo 09: Attenuation basin excavation in Zone 4

Photo 10: Geomembrane and Type 1 forming piling mat in Zone 5

Photo 11: Piling rig in Zone 2

Photo 12: Tractor undertaking dust suppression on roadways

Photo 13: Bulldozer distributing material within Zone 8

Photo 14: Bulldozer distributing material within Zone 8

Photo 15: Bulldozer distributing material within Zone 8

Photo 16: Tractor with water bowser distributing water to Zone 8

Photo 17:Strata of roadways before dust suppression

Photo 18: Bulldozer distributing material within Zone 8

ENVISION EARTHWORKS SITE VISIT REPORT

Site details			
Client	Wates	**Date:**	16/08/22
Client Staff	Andy Geier	**RPS Consultant:**	Sophie Davis
Weather Conditions:	Rain showers	**Report reference**	11
Time on site	9:30	**Time off Site**	14:00

Site Background

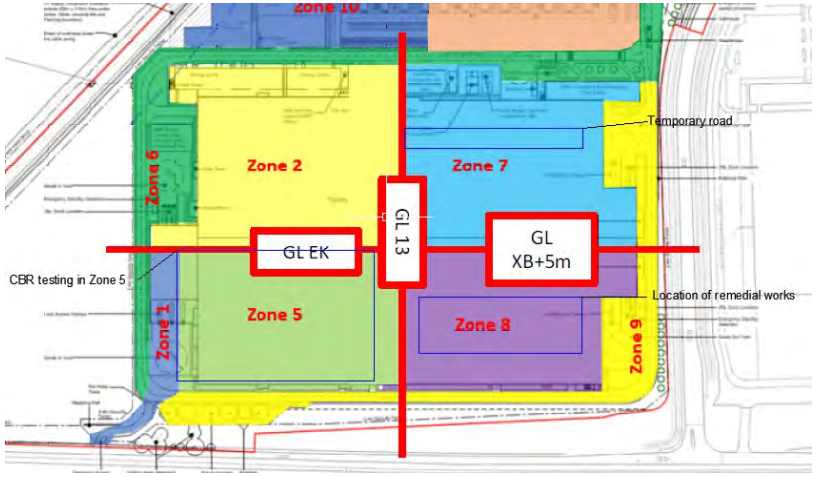
The site is located at Land off the A1290, Washington, Sunderland to the north of the Nissan Manufacturing plant. The site comprises a large, relatively flat approximately triangular parcel of land bound by the A19 to the east and the A1290 to the south.

It is proposed to construct a battery manufacturing facility, with associated access infrastructure and hardstanding. The development comprises a single large area building with an approximate geometry of 260m wide by 400m long. An adjacent area of car parking is proposed, approximately 125m wide by 450m long, to the north of the building. A substation is also proposed to the north of the car parking area. Around the buildings and car parking, an area of hardstanding/vehicular access is proposed as well as a highway connection to the local road infrastructure and an emergency access road. Additional ancillary buildings and structures are also proposed at the site including a gate house, office buildings, transformer substation, sprinkler and water tanks and retaining wall to the east of the main building.

Cut/fill earthworks are required to create a level development platform to which this site visit record relates to the extension of the piling mat within Zone 5 and 7. Remedial work was being undertaken in Zone 8 but fill activities had ceased to focus machinery use on the extension of the piling mat.

Weather on the days leading up to the site visit were generally dry with high temperatures apart from the evening before the described site visit (15/08/22) where a rain shower occurred.

Working Area



Approximate locations of observed working areas in blue consisting of the piling mat in Zone 5, layer 2 in Zone 8 where remedial works were being undertaken and a temporary road in Zone 7.

Works observed

Remedial clay conditioning works within zone 8 was being undertaken on layer 2 following the test failures from the 11/08/22. Prior to the RPS site representative arriving the layer had been scraped using the toothed buckets of on site excavators. Following a rain shower and the addition of water using a tractor with a fitted water bowser, the material was redistributed using a bulldozer. A site representative from GWS informed the RPS site representative that padfoot rolling would begin if the clay was sufficiently dry in the late afternoon.

Extension of the existing piling mat into Zone 7 and 5 was continuing with five dump trucks utilised to transport type 1 from the stock pile within zone 8 and 9.

Testing

Within Zone 5 CBR tests were being undertaken using a 600mm plate utilising a Volvo EC220E Excavator as a kentledge. The testing positioned every 50m.was undertaken on the piling mat comprising a geotextile and type 1 layer

CBR testing was also undertaken in Zone 7 using a 600mm plate utilising a Bomag BW213DH smooth roller as a kentledge. The testing was undertaken on a temporary road surface within Zone 8 on layer 2.

Preliminary results of these tests are within the photo appendix.

Additional Notes

N/A

Photos

Photo 01: CBR test on piling mat in Zone 5

Photo 02: CBR test in relation to current location of piling rig

Photo 03: Preliminary CBR test results from piling mat

Photo 04: Temporary road surface within Zone 7

Photo 05: Preliminary CBR test results from Zone 7 on clay

Photo 06: Temporary road surface in Zone 7

Photo 07: Type 1 stockpile in Zone 8 and 9

Photo 08: Transportation of type 1 material to Zone 7

Photo 09: Bull dozer distributing type 1 into Zone 7

Photo 10: Bull dozer distributing conditioned clay in Zone 8

Photo 11: Conditioned clay before rolling in Zone 8

Photo 12: Attenuation basin in Zone 4

ENVISION EARTHWORKS SITE VISIT REPORT

Site details			
Client	Wates	**Date:**	24/08/22
Client Staff	Andy Geier	**RPS Consultant:**	Sophie Davis
Weather Conditions:	Overcast with heavy rain in the morning	**Report reference**	12
Time on site	9:30	**Time off Site**	2:30

Site Background

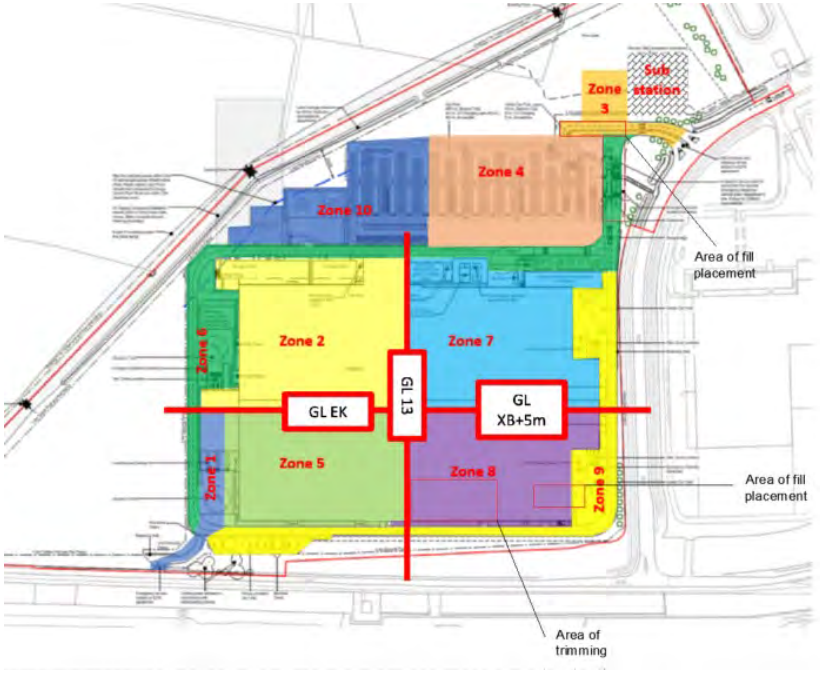
The site is located at Land off the A1290, Washington, Sunderland to the north of the Nissan Manufacturing plant. The site comprises a large, relatively flat approximately triangular parcel of land bound by the A19 to the east and the A1290 to the south.

It is proposed to construct a battery manufacturing facility, with associated access infrastructure and hardstanding. The development comprises a single large area building with an approximate geometry of 260m wide by 400m long. An adjacent area of car parking is proposed, approximately 125m wide by 450m long, to the north of the building. A substation is also proposed to the north of the car parking area. Around the buildings and car parking, an area of hardstanding/vehicular access is proposed as well as a highway connection to the local road infrastructure and an emergency access road. Additional ancillary buildings and structures are also proposed at the site including a gate house, office buildings, transformer substation, sprinkler and water tanks and retaining wall to the east of the main building.

Cut/fill earthworks are required to create a level development platform to which this site visit record relates to Zone 6 in the areas to the north and west of the attenuation basin and Zone 8 and 9 in the south east corner of site.

Weather on the days leading up to the site visit were generally dry and cloudy. Heavy rainfall had however fallen during the morning of the site visit.

Working Area



Working areas observed detailed in red

Works observed

Material was excavated from Zone 4 to the west of the attenuation basin and then paced as engineered fill in Zone 6 to the north and west of the attenuation basin. This was observed to be being placed during the site visit as being in a layer of approximately 200mm by a Cat D6 dozer and was then being rolled by a Bomag 213 DH padfoot roller providing each layer with a total of 8 passes.

Within Zone 8, no further remedial work had been undertaken within the area of test failures as resources had been delegated to the construction of the piling mat and to the fill in Zone 6 to facilitate tarmacadam and curb placement of the access road off International drive. Outside the area that had been identified as having testing failures within Zone 8, the final layer was being trimmed ready for testing.

Within Zone 8 and 9 where the type 1 stockpile was previously located, fill was also being placed using material taken from Zone 4 using a Cat D6 dozer and rolled by a Bomag 213 DH padfoot roller , again providing a total of 8 passes on a loose layer of 200mm.

Testing

No testing was observed in this visit as due to the heavy rainfall in the morning the testing engineers were informed to not attend site. When the weather cleared up the testing engineers were requested on site but due to other work commitments, they were not able to attend site until late afternoon after the RPS representative had left site. They were anticipated to take six core cutter tests with associated hand shear vanes on the most recent layer of placed engineered fill within Zone 6.

Additional Notes

Due to the heavy rainfall in the morning, standing water was observed in padfoot dimples on engineered fill in Zone 6. This may result in softening of this material and should be assessed prior to placement of further material.

Drainage channels were observed being excavated east to west along the northern boundary of Zone 8 in preparation of pipe placement.

Photos

Photo 01: Cat D6 dozer distributing material in Zone 6

Photo 02: Tractor with bowser distributing water in Zone 6

Photo 03: Dump truck delivering excavated material from Zone 4 to Zone 6

Photo 04: Standing water within padfoot dimples in Zone 6

Photo 05: Material being excavated in Zone 4

Photo 06: View of attenuation basin facing south

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Client: Wates

Project: Envision Giga 1 **Job ref: JER8968**

Checked By: PJ **Date: 24/08/2022**

Photo 07: Bulldozer trimming final layer within Zone 8

Photo 08: Bulldozer trimming final layer within Zone 8

Photo 09: Drainage channels being excavated within Zone 8

Photo 10: Compaction of piling mat in Zone 7

Photo 11: Material in southeast of Zone 8 being rolled

Photo 12: View of type 1 stockpile being transported and padfoot rolling of Zone 8

ENVISION EARTHWORKS SITE VISIT REPORT

Site details

Client	Wates	**Date:**	01/09/22
Client Staff	Andy Geier	**RPS Consultant:**	Sophie Davis
Weather Conditions:	Overcast and sunny 16°C – 18°C	**Report reference**	13
Time on site	9:00	**Time off Site**	15:10

Site Background

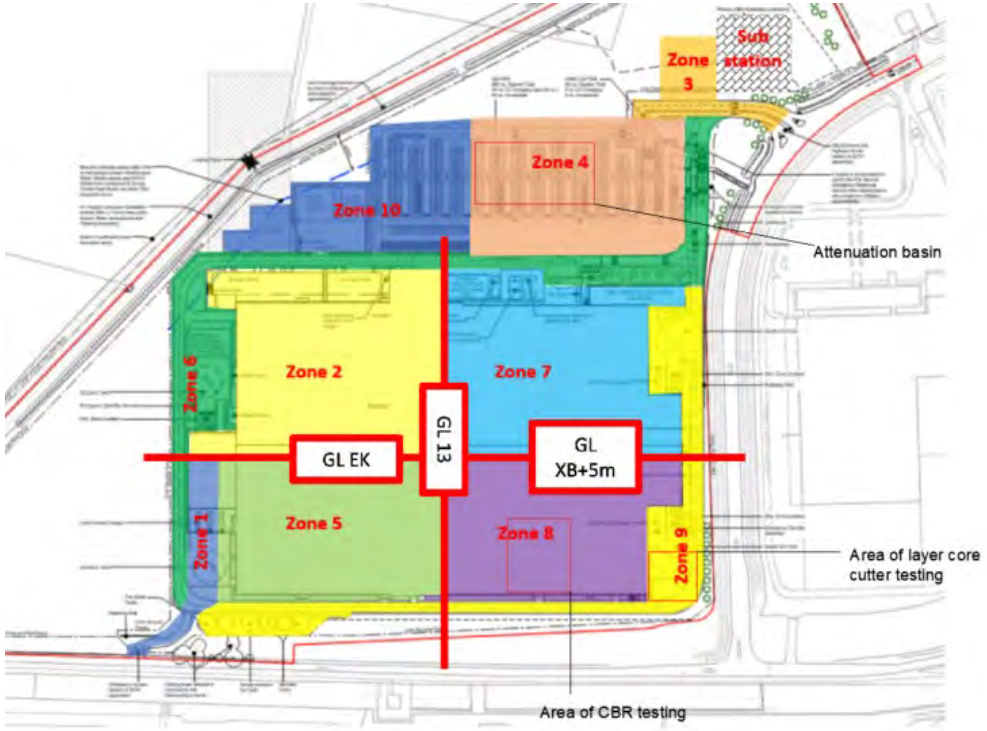
The site is located at Land off the A1290, Washington, Sunderland to the north of the Nissan Manufacturing plant. The site comprises a large, relatively flat approximately triangular parcel of land bound by the A19 to the east and the A1290 to the south.

It is proposed to construct a battery manufacturing facility, with associated access infrastructure and hardstanding. The development comprises a single large area building with an approximate geometry of 260m wide by 400m long. An adjacent area of car parking is proposed, approximately 125m wide by 450m long, to the north of the building. A substation is also proposed to the north of the car parking area. Around the buildings and car parking, an area of hardstanding/vehicular access is proposed as well as a highway connection to the local road infrastructure and an emergency access road. Additional ancillary buildings and structures are also proposed at the site including a gate house, office buildings, transformer substation, sprinkler and water tanks and retaining wall to the east of the main building.

Cut/fill earthworks are required to create a level development platform to which this site visit record relates to the extension of the piling mat and the construction of drainage channels within Zone 8. No engineered fill was anticipated to be placed on this date.

Weather on the days leading up to the site visit were generally dry with occasional showers. On the day before the site visit there was a fine rain shower in the morning followed by hot and dry conditions in the afternoon. The weather during the duration of the visit was dry and sunny, shallow standing water was observed within layer 1 in Zone 8.

Working Area



Approximate locations of observed working areas

Works observed

No placement of engineered fill was undertaken while the RPS consultant was on site. In the location of proposed french drainage within Zone 6 a D6N bulldozer, was being utilised to prepare the surface of the previously emplaced fill in layer 2 prior to excavation of the channels . Previously created excavated French drainage channels were being infilled with gravel using a Volvo EC220E excavator and a Volvo A30G dumptruck (Photo 11).

A Bomag BW213DH smooth roller was working on the final layer of Zone 8 prior to the extension of the piling mat and final layer CBR testing (Photo 07).

A soft spot was found in the invert within the southern area of the attenuation basin at the proposed formation level earlier in the week. The material was removed by excavation of circa 1.00 m bgl and was then backfilled/overfilled and compacted with material taken from Zone 10 adjacent to the basin. Further excavation using a Case CX370D excavator to trim this material to final level was observed during the site visit (Photo 09) was within the basin excavating material.

Testing

Three core cutter tests were observed being taken from layer one in the north east corner of Zone 9. Inspections taken revealed that six tests had also undertaken earlier during the day within the material before the RPS consultant arrived. Whilst RPS did not witness Hand Shear Vane tests being undertaken on the three observed core cutter location tests , evidence of hand shear vane testing was observed on the six other locations.

CBR testing was also observed as being undertaken in Zone 8 using a 600mm plate utilising a Bomag BW213DH smooth roller as a kentledge. The tests were undertaken on the final layer prior to the extension of the piling mat in this zone.

Additional Notes

RPS questioned whether the test results summary spreadsheet was being updated regularly given recent staff changes on site. RPS had issued a further email to the site staff with respect to recent failures in test results and were pending receipt of information regarding remedial works and retest data. AG assured SD that the collation of test results, review and presentation of data was being undertaken by Harry from GWS and that appropriate remedial action was being undertaken were identified.

Photos

Photo 01: Updated hazard board at Wates compound

Photo 02: Wates new offices under construction

Photo 03: Core cutting testing in Zone 9

Photo 04: Bulldozer trimming locations of drainage channels within Zone 8

Photo 05: Water retained on surface in padfoot wells in Zone 8/9

Photo 06: Core cutting testing in Zone 9

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Client: Wates

Project: Envision Giga 1 **Job ref: JER8968**

Checked By: PJ **Date: 01/09/2022**

Photo 07: CBR testing in Zone 8

Photo 08: View of piling mat from Zone 10

Photo 09: Attenuation basin excavation

Photo 10: View of smooth rolled Zone 8 prior to CBR tests and piling mat extension

Photo 11: Drainage channel infilling

Photo 12: Piling trench in Zone 2

RPS | Consulting UK & Ireland
260 Park Avenue
Almondsbury, Bristol
BS32 4SY, United Kingdom

Client: Wates

Project: Envision Giga 1 **Job ref: JER8968**

Checked By: PJ **Date: 01/09/2022**

ENVISION EARTHWORKS SITE VISIT REPORT

Site details			
Client	Wates	**Date:**	07/09/22
Client Staff	Andy Geier	**RPS Consultant:**	Sophie Davis
Weather Conditions:	Fair 17°C - 20°C	**Report reference**	ENV1-RPS-RP-1012
Time on site	9:35	**Time off Site**	12:00

Site Background

The site is located at Land off the A1290, Washington, Sunderland to the north of the Nissan Manufacturing plant. The site comprises a large, relatively flat approximately triangular parcel of land bound by the A19 to the east and the A1290 to the south.

It is proposed to construct a battery manufacturing facility, with associated access infrastructure and hardstanding. The development comprises a single large area building with an approximate geometry of 260m wide by 400m long. An adjacent area of car parking is proposed, approximately 125m wide by 450m long, to the north of the building. A substation is also proposed to the north of the car parking area. Around the buildings and car parking, an area of hardstanding/vehicular access is proposed as well as a highway connection to the local road infrastructure and an emergency access road. Additional ancillary buildings and structures are also proposed at the site including a gate house, office buildings, transformer substation, sprinkler and water tanks and retaining wall to the east of the main building.

Cut/fill earthworks are required to create a level development platform however due to the previous weather conditions no earthworks were being undertaken, therefore this site visit record relates to a general site walkover.

Weather on the days leading up to the site visit consisted of heavy rainfall with a thunderstorm lasting for several hours occurring on 06/09/22.

Working Area

Approximate locations of observed working areas.

Works observed

Due to the weather no engineered fill placement was taking place during the visit, therefore, a general site walkover was undertaken. Piling is continuing in Zone 5 and the construction of pile caps is in progress in Zone 2. Notable work observed included the extension of section 3 of the attenuation basin in Zone 4 which consisted of trimming a further 2.00m of its northern boundary and 4.00m of the western boundary.

Testing

No testing was undertaken on this date as the testing engineer was instructed to leave site due to the forecasted rain showers and the ground conditions from the previous heavy rainfall.

Additional Notes

It was noted by Wates site staff that the extension of the piling mat into Zone 7 had halted while issues regarding drainage channels on international drive had been resolved. Remaining earthworks consist of the excavation of a pond within Zone 10 and the remedial action within Zone 8 followed by the continuation of engineered fill placement.

Photos

Photo 01: Attenuation basin

Photo 02: Attenuation basin being trimmed

Photo 03: piling cap within Zone 2

Photo 04: Dock leveller within Zone 8

Photo 05: Edge of piling mat within Zone 5

Photo 06: Edge of piling mat within Zone 5

RPS | Consulting UK & Ireland
260 Park Avenue
Almondsbury, Bristol
BS32 4SY, United Kingdom

Client: Wates

Project: Envision Giga 1 **Job ref: JER8968**

Checked By: PJ **Date: 08/09/2022**

Photo 07: Mist canon on site perimeter

Photo 08: French drainage channels within Zone 8

Photo 03: Standing water within dock leveller in Zone 8

Photo 04: Piling rig in Zone 5

Photo 05: Zone 5 piling mat

Photo 06: View of Zone 8 where remedial action is required

Appendix F
ORIGINAL SCHEME DRAWINGS

PLANTING SCHEDULE (plants to be selected from the following)

Tree Planting

Abb. Text	Species	Form	Age	Girth	Height	Clear Stem	Root
Acr cm	Acer campestre	Standard (Extra heavy)	3x	16-18cm	400-450cm	min 200cm	RB
Acr cm S	Acer campestre 'Streetwise'	Standard (Extra Heavy)	3x	18-20cm	450-500cm	min 200cm	RB
Acr rbA	Acer rubrum 'Armstrong'	Standard (Extra Heavy)	3x	18-20cm	450-650cm	min 200cm	RB
Aln gl	Alnus glutinosa	Standard (Extra-heavy)	3x	16-18cm	400-450cm	min 200cm	RB
Be pnd	Betula pendula	Standard (Extra heavy)	3x	16-18cm	400-450cm	min 200cm	RB
Be ut	Betula utilis jacquemontii	Standard (Extra Heavy)	3x	18-20cm	450-500cm	min 200cm	RB
Lrd tl	Liriodendron tulipifera	Standard (Extra Heavy)	3x	16-18cm	400-450cm	min 200cm	RB
Mls sy	Malus sylvestris	Standard (Extra Heavy)	3x	16-18cm	450-500cm	min 200cm	RB
Prns cr	Prunus cerasifera	Standard (Extra Heavy)	3x	16-18cm	400-450cm	min 200cm	RB
Pyrs cl C	Pyrus calleryana 'Chanticleer'	Standard (Extra Heavy)	3x	18-20cm	450-500cm	min 200cm	RB
Qr rb	Quercus robur	Standard (Extra Heavy)	3x	16-18cm	400-450cm	min 200cm	RB
Srbs ac	Sorbus aucuparia	Standard (Extra Heavy)	3x	16-18cm	400-450cm	min 200cm	RB
Tl cr GS	Tilia cordata 'Green Spire'	Standard (Extra Heavy)	3x	18-20cm	450-500cm	min 200cm	RB

Native Buffer Planting Mix

Abb. Text	Species	Height	Habit	Age	Root	Centres	Mix %
Crns san	Cornus sanguinea	60-80cm	Branched	1/2	B	1.000	15.00 %
Cr mon	Crataegus monogyna	60-80cm	Branched	1/1	B	1.000	15.00 %
Lgs vl	Ligustrum vulgare	60-80cm	Branched	1/1	B	1.000	30.00 %
Prns sp	Prunus spinosa	60-80cm	Branched	1/1	B	1.000	20.00 %
Rs cn	Rosa canina	60-80cm	Branched	1/1	B	1.000	5.00 %
Vb op	Viburnum opulus	60-80cm	Branched	1/2	B	1.000	15.00 %

Native Hedge Mix

Abb. Text	Species	Root	Height	Habit	Form	Age	Container	Centres (m)	Mix %
Crns sn	Cornus sanguinea	B	60-80cm	Branched		1/2		0.250	15.00 %
Crtg mn	Crataegus monogyna	B	60-80cm		Transplant	1/1		0.250	25.00 %
Cryls av	Corylus avellana	B	60-80cm	Branched		1/2		0.250	15.00 %
Il aq	Ilex aquifolium	C	60-80cm	Leader & Laterals			3L	0.250	15.00 %
Rs ar	Rosa arvensis	B	60-80cm	Branched		1/1		0.250	15.00 %
Vb op	Viburnum opulus	B	60-80cm	Branched	Transplant	1/2		0.250	15.00 %

Shrub Planting

Abb. Text	Species	Container	Root	Height	Habit	Centres (m)
Chsy AP	Choisya 'Aztec Pearl'	3L	C	30-40cm	Bushy	0.600
Crns al A	Cornus alba 'Aurea'	3L	C	60-80cm	Branched	0.600
Eny fr EG	Euonymus fortunei 'Emerald Gaiety'	5-7.5L	C	30-40cm(D)	Bushy	0.450
Grs lt	Griselinia littoralis	3L	C	40-60cm	Bushy	0.600
Hb rk	Hebe rakaiensis	3L	C	20-30cm	Bushy	0.450
Hb S	Hebe sutherlandii	3L	C	20-30cm(D)	Bushy	0.450
Lnc nt M	Lonicera nitida 'Maigreen'	3L	C	30-40cm(D)	Bushy	0.600
Lvn an R	Lavandula angustifolia 'Rosea'	3L	C	20-30cm	Bushy	0.450
Mhn aq A	Mahonia aquifolium 'Apollo'	3L	C	20-30cm	Branched	0.600
Mhn md WS	Mahonia media 'Winter Sun'	3L	C	30-40cm	Bushy	0.600
Olr x hs	Olearia x haastii	3L	C	30-40cm	Bushy	0.600
Prns lauro OL	Prunus laurocerasus 'Otto Luyken'	3L	C	30-40cm	Bushy	0.600
Src cn	Sarcococca confusa	3L	C	20-30cm	Bushy	0.450
Vb dv	Viburnum davidii	3L	C	20-30cm	Bushy	0.450
Vb tn EP	Viburnum tinus 'Eve Price'	3L	C	30-40cm	Bushy	0.500

Wetland Mix

Abb. Text	Species	Root	Height	Habit	Form	Age	Centres	Mix %
Aln gl	Alnus glutinosa	B	175-200cm		Feathered	2x	1.500	20.00 %
Be pb	Betula pubescens	B	125-150cm		Feathered	2x	1.500	10.00 %
Be pnd	Betula pendula	B	175-200cm		Feathered	2x	1.500	5.00 %
Cryls av	Corylus avellana	B	60-80cm	Branched		1/2	1.000	10.00 %
Ppl ng	Populus nigra	B	60-80cm	Leader & Laterals			1.500	10.00 %
Rhmns ct	Rhamnus cathartica	B	60-80cm	Leader & Laterals		1/1	1.000	15.00 %
Rhmns fr	Rhamnus frangula	B	60-80cm	Leader & Laterals		1/1	1.000	15.00 %
Slx cp	Salix caprea	B	125-150cm	Branched	Feathered	2x	1.500	15.00 %

Marginal Planting Mix

Abb. Text	Species	Container	Root	Propagation Method	Centres (m)	Mix %
Ber er	Berula erecta	0.5L	C	Seed or Vegetative	0.400	10.00 %
Clth pl	Caltha palustris	0.5L	C	Seed or Vegetative	0.400	15.00 %
Crx rp	Carex riparia	0.5L	C	Seed or Vegetative	0.400	15.00 %
Epl hir	Epilobium hirsutum	0.5L	C	Vegetative	0.400	10.00 %
Flp ul	Filipendula ulmaria	0.5L	C	Vegetative	0.400	10.00 %
Ir ps	Iris pseudacorus	0.5L	C	Seed or Vegetative	0.400	10.00 %
Lts pd	Lotus pedunculatus	0.5L	C	Seed or Vegetative	0.400	10.00 %
Lyt sl	Lythrum salicaria	0.5L	C	Vegetative	0.400	10.00 %
Phlr ar	Phalaris arundinacea	0.5L	C	Vegetative	0.400	10.00 %

EM1 Basic General Purpose Meadow Mixture
(sow at 40 kg / hectare or 4g / m2)

Composition:
Emorsgate EM1 is a simple meadow mixture suitable for a wide range of soil types. The wild flowers are robust and showy, and the grasses are fine and slow growing.

Wild Flowers (20%)

%	Latin name	Common name
4.0	*Centaurea nigra*	Common Knapweed
0.5	*Knautia arvensis*	Field Scabious
4.4	*Leucanthemum vulgare*	Oxeye Daisy - (Moon Daisy)
3.0	*Poterium sanguisorba* - (*Sanguisorba minor*)	Salad Burnet
0.1	*Prunella vulgaris*	Selfheal
4.5	*Silene dioica*	Red Campion
3.5	*Silene vulgaris*	Bladder Campion

Grasses (80%)

%	Latin name	Common name
8.0	*Agrostis capillaris*	Common Bent
28.0	*Cynosurus cristatus*	Crested Dogstail
24.0	*Festuca rubra*	Red Fescue
4.0	*Phleum bertolonii*	Smaller Cat's-tail
16.0	*Poa pratensis*	Smooth-stalked Meadow-grass

EG21 Fine Lawn Grass Mix
(sow at 250 kg / hectare or 25g / m2)

Composition:
Emorsgate EG21 (or similar approved) contains fine leaved varieties of bent and fescue grasses. This mixture is ideal for producing a first class lawn but also has the qualities required for a low maintenance grass sward.

Grasses (100%)

%	**Latin name**	**Common name**
10	*Agrostis capillaris*	Common Bent
50	*Festuca rubra*	Slender-creeping Red-fescue
40	*Festuca rubra ssp. commutata*	Chewing's Fescue

EM8 Meadow Mixture For Wet Soils
(sow at 40 kg / hectare or 4g / m2)

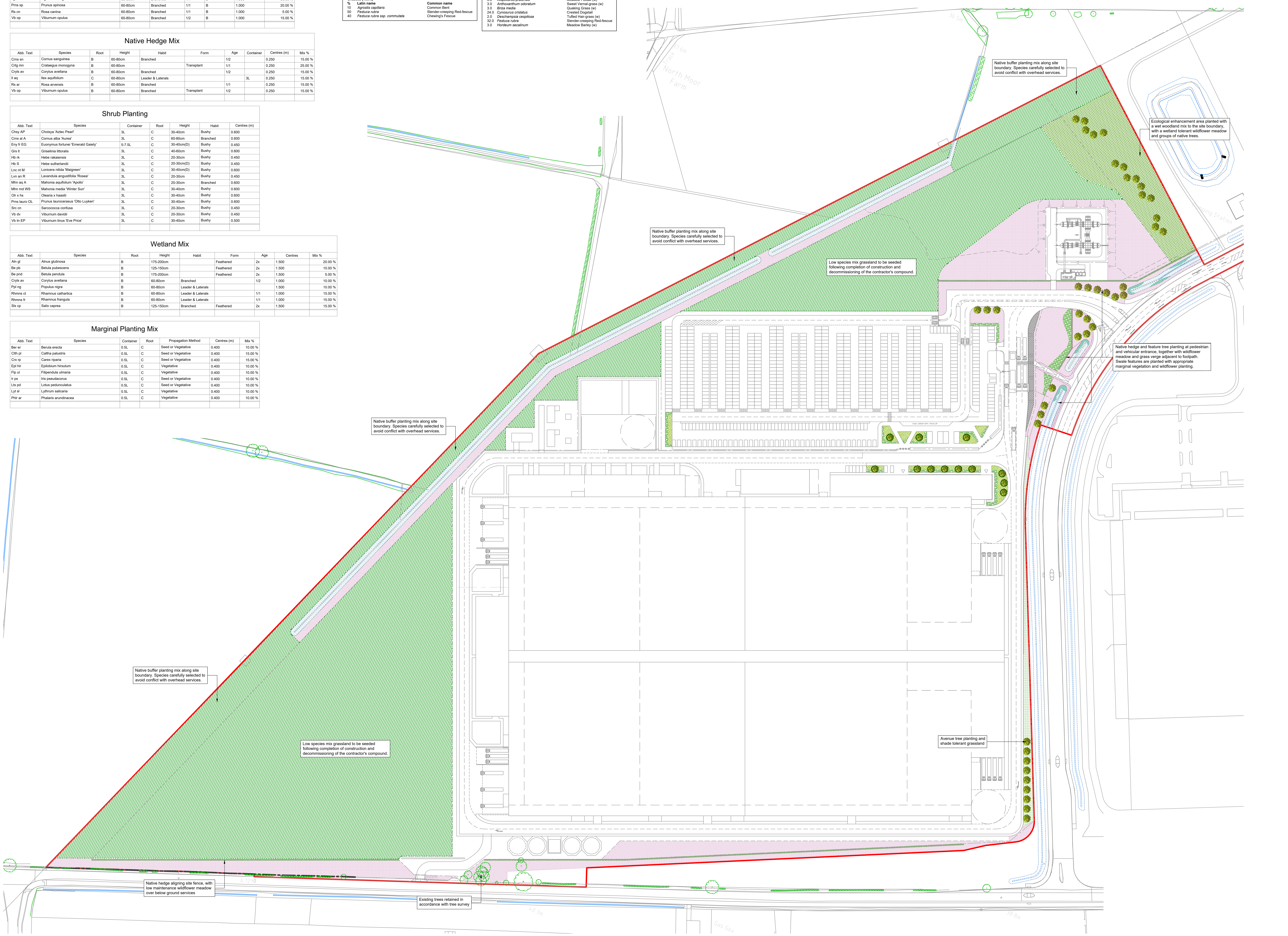
Composition:
EM8 contains species suitable for seasonally wet soils and is based on the vegetation of traditional floodplain and water meadows. Soils in wet meadows may flood for short periods in winter, but are usually well drained in summer.

Wild Flowers (20%)

%	**Latin name**	**Common name**
0.5	*Achillea millefolium*	Yarrow
0.4	*Achillea ptarmica*	Sneezewort
1.0	*Betonica officinalis* - (*Stachys officinalis*)	Betony
3.0	*Centaurea nigra*	Common Knapweed
0.4	*Filipendula ulmaria*	Meadowsweet
3.0	*Galium verum*	Lady's Bedstraw
0.5	*Geranium pratense*	Meadow Crane's-bill
0.5	*Leontodon hispidus*	Rough Hawkbit
1.8	*Leucanthemum vulgare*	Oxeye Daisy - (Moon Daisy)
0.2	*Lotus pedunculatus*	Greater Birdsfoot Trefoil
1.0	*Plantago lanceolata*	Ribwort Plantain
0.5	*Primula veris*	Cowslip
0.4	*Prunella vulgaris*	Selfheal
0.8	*Ranunculus acris*	Meadow Buttercup
0.8	*Rhinanthus minor*	Yellow Rattle
1.4	*Rumex acetosa*	Common Sorrel
0.1	*Sanguisorba officinalis*	Great Burnet
0.3	*Silaum silaus*	Pepper Saxifrage
1.7	*Silene flos-cuculi* - (*Lychnis flos-cuculi*)	Ragged Robin
0.3	*Succisa pratensis*	Devil's-bit Scabious
0.6	*Taraxacum officinale*	Dandelion
0.8	*Vicia cracca*	Tufted Vetch

Grasses (80%)

%	**Latin name**	**Common name**
10.0	*Agrostis capillaris*	Common Bent
3.0	*Alopecurus pratensis*	Meadow Foxtail (w)
3.0	*Anthoxanthum odoratum*	Sweet Vernal-grass (w)
3.0	*Briza media*	Quaking Grass (w)
24.0	*Cynosurus cristatus*	Crested Dogstail
2.0	*Deschampsia cespitosa*	Tufted Hair-grass (w)
32.0	*Festuca rubra*	Slender-creeping Red-fescue
3.0	*Hordeum secalinum*	Meadow Barley (w)



PLANTING SPECIFICATION

EXISTING TREES AND SHRUBS

Where existing trees & shrubs are to be retained they should be subject to a full arboricultural inspection for safety.

Any surgery required shall be in accordance with BS 3998 (2010) 'Tree Work - Recommendations', shall comply with any existing T.P.O requirements and shall require the prior approval of the Landscape Architect.

Avoid damage to branches, trunks and roots of trees. All existing trees & hedges to be retained are subject to BS 5837 (2012) 'Trees in relation to design, demolition and construction - Recommendations', and should be fully fenced off, prior to the commencement of any works, in accordance with Figure 2 (p20) at the full extent of the root protection area, as determined by section 4.6 (p10-11) and Annex D (p40).

No storage of materials, disposal of rubbish, site fires, spillage of oil and chemicals, ground compaction, excavation or changes in level shall be carried out within existing tree / hedge canopies.

PLANTING

All plants and planting to comply with the requirements of all current / relevant British Standard specifications including BS 8545 (2014) 'Trees from Nursery to Independence in the Landscape', BS 3936: Part 1 (1992), Part 2 (1990) and Part 4 (2007) and BS 4043 (1989) where applicable, BS 4428 (1989). All plants to be supplied in accordance with the plant schedule and with regard to imported stock and notifiable diseases within the Plant Health Act 1967 (revised 2009). Any plant material planted outside the recognised planting season (Nov-Feb), to be containerised stock and supplied at the sizes specified. Where possible, trees and shrubs of UK provenance are preferred.

TREE PLANTING

A suitable method of foundation allowing for existing ground conditions is to be provided to accommodate the proposed tree planting. All trees are to be planted as shown ensuring a minimum of 5 metres from buildings and 3 metres from drainage and services. Where necessary, root barriers to be installed (supplier: GreenBlue Urban (www.greenblueurban.com), or equal approved), as recommended by structural engineer. Allow for the use of container grown stock during the period 1 April to 31 October, and field grown stock from 1 November to 31 March.

SHRUB PLANTING

Where a shrub planting mix has been specified, plants to be grouped in 3 No. (min.) to 7 No. (max.) single species groups. Larger species to be located towards the rear of planting beds or towards the centre of an island planting bed. Thorny species to be located centrally within the planting bed.

TOPSOIL REQUIREMENTS

To BS 3882 (2015) 'Specification for topsoil' as qualified by full contract specification. All areas shall be cultivated to a minimum depth of 150mm. Full weed, rubbish and stones over 20mm gauge shall be removed. Earth to be rolled as required and raked in two directions. Applied to all newly planted areas (except wildflower / meadow planting), to manufacturers' recommendations where appropriate.

Shrub / structure planting beds - 450mm depth

Heavy standard tree pits - 1500mm dia. x 450mm depth (450mm depth subsoil to be provided below)

Grass areas (excluding wildflower mix) - 150mm depth

Where necessary increase tree pit dimensions to ensure that tree pits are at least 75mm deeper and 150mm wider than rootball. Break up bottom of pits to a depth of 150mm. Compacted glazed sides of pits should be roughened.

Full analysis of existing and imported topsoil required prior to use.

TOPSOIL IMPROVEMENTS

Applied to all newly planted areas, to manufacturers' recommendations where appropriate.

1) Incorporate 75mm depth of soil conditioner into topsoil during cultivation;
2) Incorporate Enmag CRF granular fertilizer at approx 140g per pit to standard tree pit backfill and 70g per pit to structural / ornamental shrub planting;
3) Watering - supply minimum 54 litres / tree and 4.5 litres / shrub at planting;
4) Mulch - lightly fork over planted areas before applying a 75mm depth 50-100mm grade bark mulch. Note: all trees are to have minimum 300mm dia 'weed free' mulched areas around the base to eliminate the risk of strimmer damage. Ornamental Bark to consist of predominantly matured British Pine Bark with an even nominal particle size distribution of 5-35mm with 0% dust & fines & less than 5% wood content. The product shall be pest, disease & weed free & not have been treated with Methyl Bromide or any additives. The product shall have been tested in accordance with the requirements of BS 4790:1987, for fire resistance. NB - Watering to be carried out prior to application of bark mulch.

PLANT MATERIAL TREATMENT

NB All to be British grown stock and fully hardened off.

Root Dip - Proprietary Root Dip applied to all bare rooted stock (1) at time of lifting at nursery and (2) prior to planting.

Anti-Desiccant - Proprietary anti-desiccant to be applied to foliage of allcontainerised / rootballed material in leaf, specimen conifers and evergreens etc. (1) prior to transportation and (2) during any delay in planting.

Pruning - Allow for pruning of all deciduous trees and shrubs by 1/3rd following planting **at Landscape Architects direction** or as indicated in the planting schedule.

Tree Stakes & Ties - Stakes to be pressure treated, round, smooth and peeled Larch or Chestnut, not less than 100mm in diameter. Advanced nursery stock - double staked with cross bar.

TREE STAKES, TIES & GUARDS

Trees planted within grassed areas to be provided with appropriate conical strimmer guards. Stakes to be pressure impregnated softwood, round, peeled, straight, free of projections and pointed at one end. Minimum length and thickness to be determined as follows:

Tree type	Min Dia.	Overall Height	Height exposed above ground
Ex / Hvy Std	100mm	1.8m	0.6m

Tree type	No. stakes	No. ties
Ex / Hvy Std	2	1

GRASS SEEDED AREAS

Grass seeding generally to BS 4428 (1998) 'Code of practice for general landscape operations'. When topsoil is reasonably dry and workable grade to smooth flowing contours removing all hollows and ridges. Cultivate soil to full depth and break up any compacted topsoil. Apply approved herbicide to control perennial weeds and allow period of time to elapse as recommended by manufacturer before final cultivation. Apply proprietary pre-seeding fertilizer. Reduce top 25mm of topsoil to a fine tilth by further cultivation. Remove stones exceeding 50mm in any dimension. Sow approved grass seed mixture in accordance with suppliers recommendations during appropriate season and weather conditions, e.g. Germinal (www.germinal.com) Mix A2 (Quality Lawn) (or equal approved) at 50gms/m2. Lightly harrow or rake then roll and cross-roll with lightweight roller.

GRASS SEEDED AREAS: ESTABLISHMENT CUT

When grass is between 40-75mm high remove stones and debris exceeding 50mm in any dimension and roll with a lightweight roller. About 48 hours later cut grass to approximately 35mm high. Remove and dispose of all arisings.

WILDFLOWER MANAGEMENT

Do not use fertiliser

Control weeds before sowing. Annual weeds may be hoed, buried or killed with a contract herbicide. Perennial weeds should be eradicated by a translocated glyphosate-based herbicide.

Sow mixtures either from early March to early May, or from early August to mid September, cultivate the ground to provide a fine, weed free seed bed, firm if necessary. Sow evenly at 4gms / m2, thoroughly mix one part seed with four parts dry sand to easily distribute.

Rake seed in lightly with spring-tined rake and firm soil by treading or, preferably, rolling. Water with a fine spray and keep well watered and free from unwanted plants.

Cut the sward every six-eight weeks during the first year after sowing and remove the cuttings, in the following years cut in early spring before growth starts and in October once wild flowers have been shed - remove all cuttings.

PROTECTIVE FENCING

The contractor shall maintain fencing until all site works are complete. The contractor will then remove the fencing and reinstate the ground. The fencing will remain the property of the contractor.

Within the area so fenced, the existing ground level shall be neither raised nor lowered, all excavations shall then be carried out by hand.

The Local Planning Authority shall be advised in writing when the protective fencing has been erected so that it can be checked on site before development commences, and shall thereafter be maintained during the period of construction.

MAINTENANCE

Regular visits (minimum 14 No.) required during the defects liability / rectification period to maintain all planted areas in a weed and litter free condition using a combination of chemical spray and hand weeding to be agreed with the Landscape Architect. Maintenance to include watering, pruning, pest and disease control and re-mulching as required. Grass areas to be mowed at 2 week intervals during the growing season.

Structure planting areas shall be maintained as non competitive weed free environment by repeated applications of a glyphosate based herbicide. Persistent weeds and unwanted scrub shall be spot treated as necessary with an alternative herbicide to be agreed with the Landscape Architect.

Watering shall be carried out as necessary to maintain healthy growth or as required by the Landscape Architect.

NB: Final visit to be immediately prior to handing over and to include a fertilizer treatment of Enmag CRF granular fertilizer at 100g / m2 and a 25mm depth bark mulch top up to all planted areas.

BUFFER PLANTING: FEATHERED TREES AND WHIPS

Notch planting will not be permitted. All feathered trees and whips will be planted in prepared pits 600mm diameter x 600mm deep for feathered trees and 300mm diameter x 300mm deep for whips.

Each plant shall be placed upright in the centre of the pit with the roots spread evenly outwards and downwards without restriction, and backfilled with topsoil (to BS 3882: 2015), incorporating TPMC Tree Planting Compost (Amenity Land Solutions) (or equal approved) well mixed with topsoil backfill at a rate of 50:50 in consolidated layers, shaking the trees to remove voids.

Incorporate Enmag CRF granular fertilizer at approx 140g per pit to feathered tree pit backfill and 70g per pit to structural shrub / whip planting backfill.

Supply water at a minimum 4.5 litres / whip and 18 litres / feathered tree prior to bark mulching.

Feathered trees shall be staked using 1.0m long Larch or Chestnut stakes, round, smooth, and peeled with 75mm diameter at the point and not less than 50mm at the butt end, driven at least 600mm into the ground. Trees will be secured to the stake using a single 'Tom Tie' (www.jtoms.co.uk) or similar approved securely nailed at a point 50mm from the top of the stake to ensure no rubbing or excessive movement.

The plant shall be well firmed, with the soil level 10mm above nursery level to allow for settlement. Clear away surplus soil and after watering apply a minimum 75mm deep x 300mm diameter collar of 50-75mm grade coarse bark mulch. All tree species to be fitted with proprietry rabbit guards such as Tubex Ventex (www.tubex.com) (or equal approved).

SAFETY PRECAUTIONS

The landscape sub-contractor is to take all safety precautions to prevent any injury to any persons. The landscape sub-contractor shall comply with the requirements of the Health & Safety at Work Act 1974 and current Construction, Design and Management Regulations (2015).

All subject to Local Authority approval.

10m SCALE 1:1000

Notes

1. This drawing has been prepared in accordance with the scope of RPS's appointment with its client and is subject to the terms and conditions of that appointment. RPS accepts no liability for any use of this document other than by its client and only for the purposes for which it was prepared and provided.
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3. This drawing should be read in conjunction with all other relevant drawings and specifications.
4. The scheme is subject to statutory approvals, surveys and design development.
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RPS GROUP ARE COMMITTED TO THE PROTECTION OF THE UK ENVIRONMENT AND RECOGNISE THE IMPORTANCE OF RISKS POSED BY IMPORTED PESTS AND DISEASES

1. All trees and shrubs are to be sourced responsibly, in the first instance, from UK Nurseries / suppliers, where they have been propagated and/or grown on for a minimum of 5 years in the UK (2 years for shrubs);
2. In light of this, all suppliers shall be approved, shall share our values and must have a sound Biosecurity Policy / Management Systems in place to demonstrate the traceability of their stock, and an awareness of the prevalence of all current biosecurity threats, both domestically and abroad;
3. The contractor is responsible for ensuring that they operate in strict accordance with the latest guidelines set out by DEFRA, including regularly checking for updates in relation to the latest health controls / diseases; i.e. (http://planthealthportal.defra.gov.uk)
4. Inspections will be carried out at selected nurseries and plant health certification / passports will be sought to identify traceability of tree and shrub stock as required.

Key

Existing trees to be retained and protected (in accordance with Tree Protection Plan LS000125_007)

Existing hedgerow to be retained and protected (in accordance with Tree Protection Plan LS000125_007)

Proposed Soft Landscape

Proposed tree planting

Native buffer planting mix (species selected to avoid conflict with overhead and underground services, to include *cornus* spp, *crataegus monogyna, ligustrum vulgare, prunus spinosa, rosa canina* and *virburnum opulus*).

Proposed native hedge planting (planted in double staggered row, 4 plants per linear metre)

Proposed ornamental shrub / herbaceous planting (species selected to include nectar rich plants for pollinators)

Proposed close mown lawn (EG21) (Supplier: Emorsgate Seeds or equal approved)

Proposed wildflower meadow (EM1) (Supplier: Emorsgate Seeds or equal approved)

Proposed shade tolerant grass (EH1) (Supplier: Emorsgate Seeds or equal approved)

Proposed Swales / Wetland Areas

Proposed wet woodland mix

Proposed marginal planting

Proposed flood meadow (EM8) (Supplier: Emorsgate seeds or equal approved)

Rev	Description	By	Ckd	Date
P02	Planting updated in accordance with ecologists' recommendations.	JBT	TH	14/07/21
P01	First Issue	JBT	TH	14/07/21

rps MAKING COMPLEX EASY

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Client: Envision AESC

Project: Envision AESC Giga Factory

Title: Proposed Landscape Plan

RPS Project Number	Scale @ A0	Date Created
NK020439P	1:1000	14/07/21
Task Team Manager	**Information Author**	**Task Information Manager**
TH	JBT	TSR

Status: S4 (Suitable For Approval)

Document Number: 103 Revision: P03

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General Notes

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2. If received electronically it is the recipients responsibility to print to correct scale. Only written dimensions should be used.
3. This drawing should be read in conjunction with all other relevant drawings and specifications.
4. Designs are subject to PCSA Work Stages 2 VE & 3 design development activities and subsequent detailed design with the wider design and project team, inclusive of update to the project requirement specification.
5. Note: Changes to the the existing pre PCSA planning submission are foreseen to accommodate the ongoing design developments.
6. This drawing should be read in conjunction with the Designer's and Environmental Risk Assessment reference ENV1-RPS-ST-XX-RA-Z-111950.
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Existing Pylon
Existing 1.1m Timber post and wire mesh fence
1.2m Close boarded acoustic timber fence
Flood plain
Primary DNO Substation (indicative)
Existing 1.1m Timber post and wire mesh fence
Land drainage diversion subject to agreement (indicative)
Car Park
685 no. Spaces Total
40 no. EV Charging (upto 80 no.)
40 no. Accessible
Visitor Car Park
40 no. Spaces Total
5 no. EV Charging
5 no. Accessible
1.2m Timber post and wire mesh fence
2.4m Paladin Fence
Site Entrance and Highway Works subject to S278 agreement
A space to be provided for use by the Fire Service Emergency Response vehicle when dispatched to site. Subject to COMAH requirements.
Emergency Access (spatial provisions)
Gatehouse
Weighbridge
Existing Pylon
1.1m Timber post and wire mesh fence
1.2m Close boarded timber fence
20000
2.4m Paladin Fence
Waste Collection Canopy 1
Waste Collection Canopy 2
Blue line indicates areas within 30m of national grid power infrastructure (Note: Waste canopy and HV/LV transformer compound & Energy Centre Plant Room are within 30m clearance zone).
HV Supply Compound Substation extents (60m x 140m) Area under review, (Note: exceeds site and Planning boundary)
HV/LV Txfmr Compound
Extent of overhead power line cable swing
Waste Compactors
20000
B. Cycles
M. Cycles
Energy Centre Plant Rooms
Stair Tower
Energy Centre Plant Room
Energy Centre Plant Room
Bulk Stores Canopy
Smoking Shelter
Bin Store
Office / Wefare & Accommodation (Two Storey)
Multi stack flue, subject to MEP design
Tote Store (Modular) with pipe gantry to building (TBC)
Cold Store (Containerised)
External plant under review
Goods Out Yard
NMP Stores Canopy (TBA) with pipe gantry to building (TBC)
Stair Tower
Goods In Yard
Emergency Standby Generator
3No. Dock Levellers
Switch Room
Factory Building
Level Access Canopy
2No. Dock Levellers
Retaining Wall
Sub-station
Switch Room
Level Access Canopy
2No. Dock Levellers
Emergency Standby Generator
Goods Out Yard
Existing Pylon
Existing 1.1m Timber post and wire mesh fence
2.4m Paladin Fence
Level Access Canopy
Goods In Yard
Fire Water Tanks
Retaining Wall
HGV Layby
Access Road
2.4m Paladin Fence
2.4m Paladin Fence
Emergency Access subject to S278 agreement
Existing trees retained in accordance with landscaping scheme
Future provision for Tank
Sprinkler Tanks
Pylon
INTERNATIONAL DRIVE
A1290
North Moor Farm
Pumping Station
10m
SCALE 1:1000

P03	Energy Centre Plant Rooms separated from main building, Main building moved south 2m	LMA	TSR	25/02/22
P02	General update	LMA	TH	14/12/21
P01	First Issue.	LMA	JAT	08/10/21
Rev	Description	By	Ckd	Date

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Client: Envision AESC / Wates

Project: Giga One

Title: Site Layout

RPS Project Number	Scale @ A0	Date Created
NK020439	1:1000	08/10/21
Task Team Manager	**Information Author**	**Task Information Manager**
TH	LMA	JAT

Status: S2 (Suitable For Information)

Document Number: ENV1-RPS-ST-XX-DR-A-111150 (Project Code - Originator - Function - Space - Type - Role - Number)

Revision: P03

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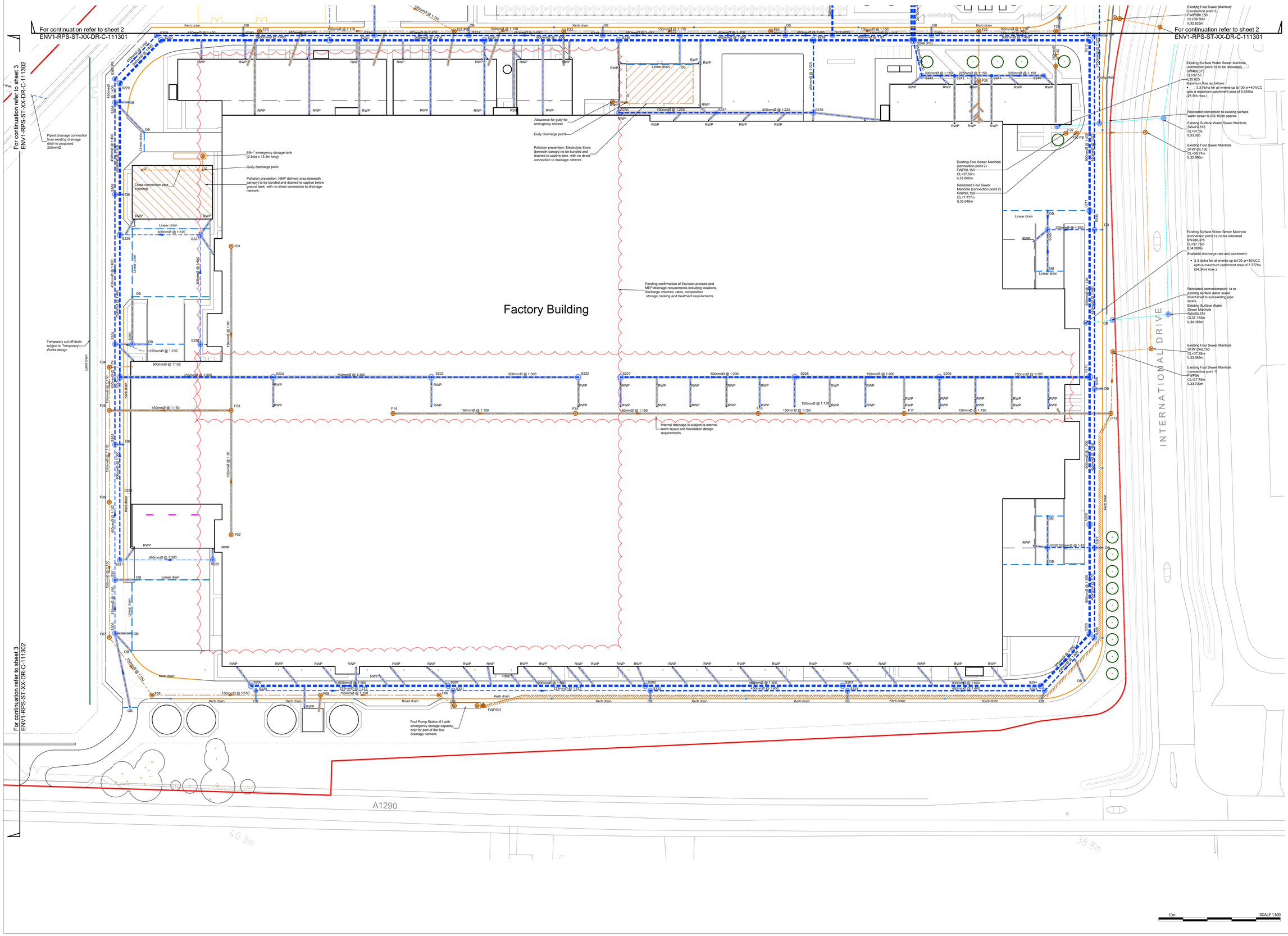

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4. Designs are subject to PCSA Work Stage 3 design development activities and subsequent detailed design with the wider design and project team, inclusive of agreed updates to the project requirements.
5. Changes to the existing pre PCSA planning submission are foreseen to accommodate the ongoing design developments.
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Hazards ⚠ REV P02

RPS-05 Unexploded Ordnance (UXO)
RPS-06 Ground Contamination
RPS-10 Contaminated fire water and rainwater containment
RPS-C-10 Confined / restricted access - manholes, inspection chambers.

Working Assumptions

Scope: This drainage schematic is subject to PCSA Work Stage 3 design development activities and subsequent detailed design with the wider design and project team, inclusive of agreed updates to the project requirements..

1. Outfall rates limited during all events and surcharged during 1in100+40%cc event as per ITT Appendix S - IAMP Site 1 2 - Discharge limits.
2. Allow for internal manholes to be double sealed with internal plates.
3. Pump Stations:
   - 3.1. Allow for duty and standby(assist) pump arrangements in both pump stations.
   - 3.2. Allowance required for variable pump rates.
   - 3.3. ATEX rated chambers.
   - 3.4. Allow for pumps to be linked to BMS/Gatehouse for remote shut down in emergencies.
   - 3.5. Allow for back up power supply / provision for standby generators to be brought to site in even of power outage.
4. Note Client requirement for penstocks to be manually and remotely operable.
5. Foul Water Assumptions:
   - 5.1. Project maximum discharge rates: Allowable DWF = 0.14l/s/ha
     Allowable peak = 0.92l/s/ha
     Developed site area 16ha. Allowable DWF = 2.24l/s max Allowable peak = 14.72/s
   - 5.2. No. of Staff per day
     Office staff (1 shift/day) = 102
     Factory staff (2 shifts/day) = 231 /shift
   - 5.3. Daily Flow per person = 100 l/person/day
   - 5.4. Peak Flow based on shift change = 564 staff changeover in 30 minutes.
6. Pollution Prevention - final details and position of penstocks, separators etc subject to detailed operational requirements and agreement with Local Authority
7. Fire Fighting Water
   - 7.1. The volume of firefighting water required to be attenuated is subject to agreement with local fire authority
     No allowance is made for a dedicated spent fire water tank.
8. Below ground drainage features are subject to ground investigation and review of design ground water level.

SuDS feature schedule

SuDS feature 1 (S367) -
1No. vortex separator 182l/s treatment flow 739 max. flow (3.0m Downstream Defender or equal approved)

SuDS feature 2 (S349a) -
1No. vortex separator 159l/s treatment flow 311/s max flow (1.2m Downstream Defender or equal approved)

SuDS feature 3 (S245a) -
3No. vortex separators 564l/s treatment flow 2423/s max flow (3No. 3.0mØ Downstream Defenders (max flow =2250l/s or equal approved)

SuDS feature 4 (S108) -
1No. vortex separator 54l/s treatment flow 180l/s max. flow (1.8m Downstream Defender or equal approved)

Key:

- 375Ø — FW Sewer (I/D & Gradient)
- 375Ø — SW Sewer (I/D & Gradient)
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- S100 — SW Manhole
- Pump station (Foul / Surface water)
- Pressure main (Foul / Surface water)
- Existing FW sewer
- Existing SW sewer
- Linear drain
- Kerb drain
- Land drain
- Class Z surround (& trench fill to underside of foundation where adjacent foundations)
- OB — Outlet Box
- * RWP — Rainwater Pipe (c/w RE)
- G — Gully
- SDG — Sprinkler Discharge Gully
- RE — Rodding Eye
- PS — Penstock with remotely actuatable valve
- NRV — Non-return Valve
- Surface Water Attenuation tank

Rev	Description	By	Ckd	Date
P02	Drainage layout updated to suit revised building and site layout.	LMA	MM	25/03/22
P01	First Issue.	LMA	MM	10/12/21

MAKING COMPLEX EASY
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Client: Envision AESC / Wates

Project: Envision AESC Giga Factory

Title: Drainage - Foul & Surface Water Drainage Layout - Sheet 1

RPS Project Number	Scale @ A0	Date Created
NK020439	1:500	10/12/21
Task Team Manager	**Information Author**	**Task Information Manager**
TH	LMA	MM

Status: S4 (Fit For Approval)

Document Number: ENV1-RPS-ST-XX-DR-C-111300 Revision: P02

Project Code - Originator - Function - Space - Type - Role - Drawing Number

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10m SCALE 1:500

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REV P02

Hazards

RPS-05 Unexploded Ordnance (UXO)
RPS-06 Ground Contamination
RPS-10 Contaminated fire water and rainwater containment
RPS-G-10 Confined / restricted access - manholes, inspection chambers.

Key:

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- RE — Rodding Eye
- PS — Penstock with remotely actuatable valve
- NRV — Non-return Valve
- Surface Water Attenuation tank

North Moor Farm

37.6m track

Land drain

Land Drainage diversion subject to relevant licenses, and Flood Risk Assessment.

Outfall 01 - Existing Manhole

Outfall 01:
IL=34.900m 225mmØ
Discharge rate controlled by upstream pump to suit specified maximum flows as follows:
- 3.3 l/s/ha for 1-yr
- 6.7 l/s/ha for 30-yr
- 8.0 l/s/ha for 100-yr+40%CC

upto a maximum catchment area of 3.98ha

Outfall 02 Existing Manhole:
IL=34.650m 225mmØ
Discharge rate controlled by upstream pump to suit specified maximum flows as follows:
- 3.3 l/s/ha for 1-yr
- 6.7 l/s/ha for 30-yr
- 8.0 l/s/ha for 100-yr+40%CC

upto a maximum catchment area of 6.3ha.
Plot drainage to take into account surcharged outfall for fluvial flood for 12-hours of 35.80mOd when assessing the 100-yr+40%CC rainfall event.

Piped drainage connection to allow access for maintenance 225mmØ

Pump02 discharge chamber for gravity fall to Outfall 01

Connection point for future phases to discharge to outlet 1b. 3.3 l/s/ha for all events up to100-yr+40%CC upto a maximum catchment area of 0.94ha (3.1l/s max.)

Existing Foul Sewer Manhole (connection point 5)
FWPBAIL150
CL=36.60m
IL32.135m

Attenuation Tank - ATT03 Proposed volume:4325m³ (2.55m deep VersaVoid or equal approved). 5200m³ attenuation for storm events up to 1 in 100yrs+40%CC Plus 125m³ emergency storage in the event of pump station failure as agreed with LLFA. IL=33.300m

SPEL Stormceptor ESR Range By-Pass interceptor ESR18D/C1 (Catchment area=23,750m²) with high level and silt alarms intercepting the car park drainage.

Attenuation Tank - ATT02 Proposed volume:5935m³ (2.15m deep Pluvial Cube or equal approved). 5810m³ attenuation for storm events up to 1 in 100yrs+40%CC. Plus 125m³ emergency storage in the event of pump station failure as agreed with LLFA. IL=34.290

Surface Water Pump Station 02
Discharge rates as follows:
28.0l/s for 1in1yrs storm event
56.9l/s for 1in30yrs storm event
68.0l/s for 1in100yrs+40%CC
(Total roof catchment area=8.5Ha)

Approximate extent of open excavation for attenuation tanks, subject to temporary works design and construction phasing.

Site entrance drainage and swale cross connectivity to be in accordance with S278 works

SPEL Stormceptor ESR Range By-Pass interceptor ESR30/C1 (Catchment area=4,000m²) with high level and silt alarms

Attenuation Tank - ATT01
Proposed volume:533m³ (1.60m deep Pluvial Cube or equal approved). 408m³ attenuation for storm events up to 1 in 100yrs+40%CC. Plus 125m³ emergency storage in the event of pump station failure as agreed with LLFA. IL=33.960m

S108 SuDS feature 4

Existing Foul Sewer Manhole (connection point 4)
FWPBIL150
CL=36.45m
IL32.520m

Surface Water Pump Station 01
Discharge rates as follows:
1.4l/s for all storms up to 1in100yrs+40%CC

S367 SuDS feature 1 — S349s SuDS feature 2 — S245a SuDS feature 3

Pollution prevention: Hazardous Waste Canopy (beneath canopy) to be bunded and drained to captive tank with no direct connection to drainage network.

Potential waste compactor compaction point, provisions to be agreed

Spel Puraceptor Full retention interceptor P700 1CSC (Catchment area = 30,250m2) with high level and silt alarms

Surface Water Pump Station 03
Discharge to existing surface water sewer at 17.5l/s for all events up to 100-yr+40%CC

Rising Main

Pumps 01 + 03 discharge chamber for gravity fall to Outfall 1b with a combined maximum flow rate of 18.9l/s

Existing Foul Sewer Manhole (connection point 3)
FWPIBIL150
CL=36.80m
IL32.825m

Existing Surface Water Sewer Manhole (connection point 1b to be relocated)
SWI40L375
CL=37.55
IL35.825
Maximum flow as follows:
- 3.3 l/s/ha for all events up to100-yr+40%CC upto a maximum catchment area of 6.648ha (21.9l/s max.)

For continuation refer to sheet 1
ENV1-RPS-ST-XX-DR-C-111300

10m SCALE 1:500

Rev	Description	By	Ckd	Date
P02	Drainage layout updated to suit revised building and site layout ENV1-RPS-ST-XX-DR-A-111150 P05	LMA	MM	25/03/22
P01	First Issue.	LMA	MM	10/12/21

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Client: Envision AESC / Wates

Project: Envision AESC Giga Factory

Title: Drainage - Foul & Surface Water Drainage Layout - Sheet 2

RPS Project Number	Scale @ A0	Date Created
NK020439	1:500	10/12/21
Task Team Manager	**Information Author**	**Task Information Manager**
TH	LMA	MM

Status: S4 (Fit For Approval)

Document Number: ENV1-RPS-ST-XX-DR-C-111301
Revision: P02
Project Code - Originator - Function - Space - Type - Role - Drawing Number

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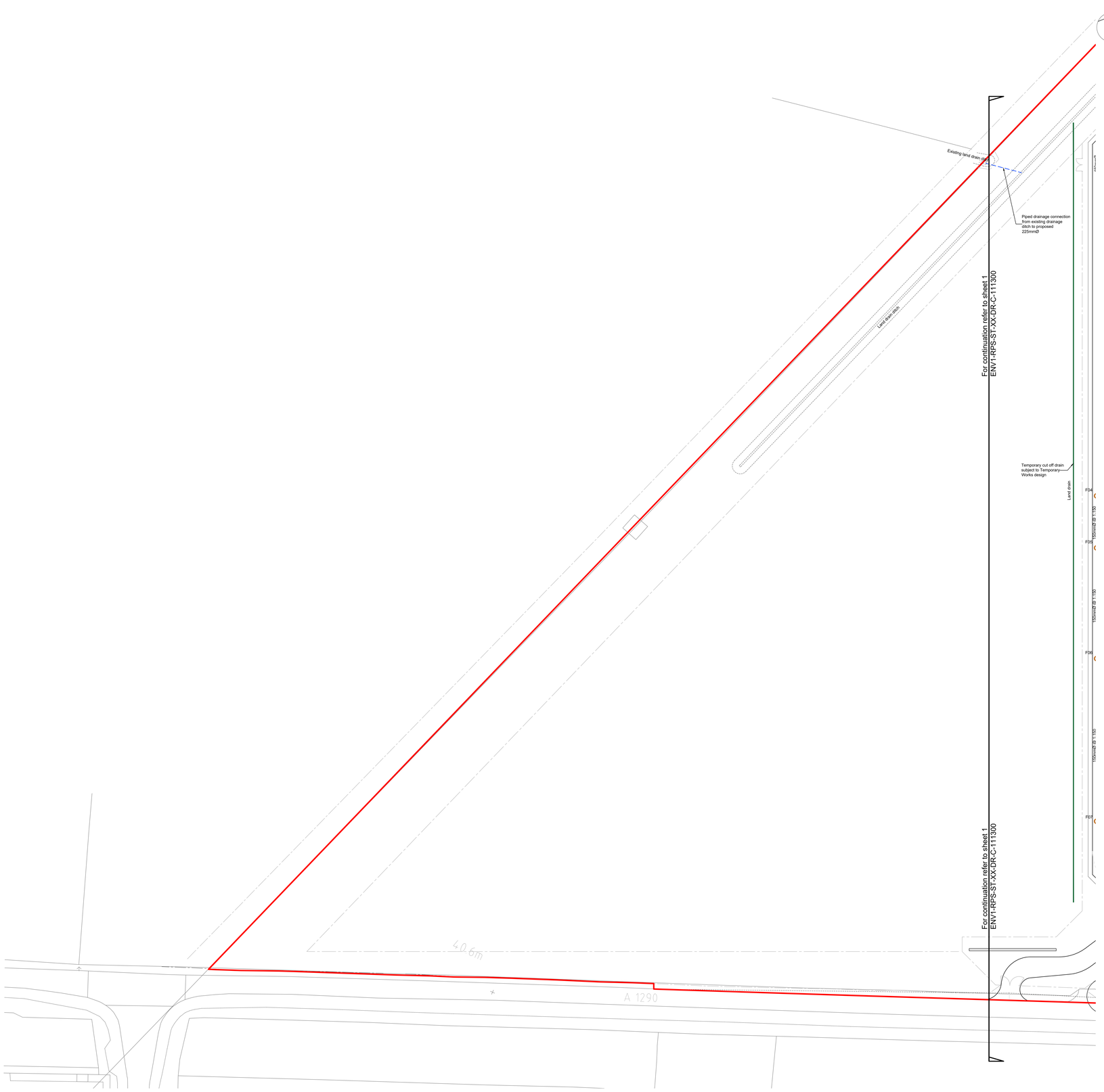

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REV P02

Hazards

RPS-05 Unexploded Ordnance (UXO)
RPS-06 Ground Contamination
RPS-10 Contaminated fire water and rainwater containment
RPS-G-10 Confined / restricted access - manholes, inspection chambers.

Key:

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- Kerb drain
- Land drain
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- OB — Outlet Box
- RWP — Rainwater Pipe (c/w RE)
- G — Gully
- SDG — Sprinkler Discharge Gully
- RE — Rodding Eye
- PS — Penstock with remotely actuatable valve
- NRV — Non-return Valve
- Surface Water Attenuation tank

Rev	Description	By	Ckd	Date
P02	Drainage layout updated to suit revised building and site layout ENV1-RPS-ST-XX-DR-A-111150 P05	LMA	MM	25/03/22
P01	First Issue.	LMA	MM	10/12/21

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Client: Envision AESC Wates

Project: Envision AESC Giga Factory

Title: Drainage - Foul & Surface Water Drainage Layout - Sheet 3

RPS Project Number	Scale @ A0	Date Created
NK020439	1:500	10/12/21
Task Team Manager	**Information Author**	**Task Information Manager**
TH	LMA	MM

Status: S4 (Fit For Approval)

Document Number: ENV1-RPS-ST-XX-DR-C-111302

Revision: P02

Project Code - Originator - Function - Space - Type - Role - Drawing Number

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Surface Water Manhole Schedule (External Hardstandings / Circulation Roads)

Manhole Name	Cover Level (m)	MH Depth (m)	MH Diam., L*W (mm)	Pipes Out PN	Pipes Out Invert Level (m)	Pipes Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)	Manhole Access
KD Outlet	38.290	0.715	Outlet	20.000	37.575	150					
OB (yard)	38.285	1.085	Outlet	21.000	37.200	150					
OB (access)	38.658	1.085	Outlet	22.000	37.573	150					
S300	38.402	1.575	1500	20.001	36.827	375	20.000	37.052	150		1200x675
							21.000	37.052	150		
							22.000	37.052	150		
OB	38.285	1.085	Outlet	23.000	37.200	225					
S301	38.402	1.802	1500	20.002	36.600	450	20.001	36.675	375		1200x675
							23.000	36.825	225		
KD Outlet	38.285	0.715	Outlet	24.000	37.570	225					
S302	38.372	2.138	1500	20.003	36.234	450	20.002	36.234	450		1200x675
							24.000	37.437	225	978	
OB (docks)	37.610	1.085	Outlet	25.000	36.525	150					
OB (yard)	38.285	1.085	Outlet	26.000	37.200	150					
S303	38.470	2.468	1500	25.001	36.002	225	25.000	36.077	150		600x600
							26.000	36.077	150		
S304	38.402	2.696	1500	20.004	35.706	450	20.003	35.706	450		600x600
							25.001	35.931	225		
KD Outlet	38.345	0.715	Outlet	27.000	37.630	150					
S305(IC)	38.402	2.834	900	20.005	35.598	450	20.004	35.568	450		600x600
							27.000	37.397	150	1499	
OB	38.204	1.085	Outlet	28.000	37.119	150					
KD Outlet	38.309	0.715	Outlet	29.000	37.594	150					
S306	38.402	2.899	1500	20.006	35.503	450	20.005	35.503	450		600x600
							28.000	37.003	150	1200	
							29.000	37.003	150	1200	
S307	38.400	2.921	1500	20.007	35.479	450	20.006	35.479	450		600x600
S308	38.450	3.033	1500	20.008	35.417	450	20.007	35.417	450		600x600
KD Outlet	38.426	1.085	Outlet	30.000	37.341	150					
S309(IC)	38.510	3.182	900	20.009	35.328	450	20.008	35.328	450		600x600
							30.000	35.628	150		
OB	38.039	1.085	Outlet	31.000	36.954	225					
S310	38.510	3.317	1500	20.010	35.193	450	20.009	35.193	450		600x600
							31.000	35.418	225		
KD Outlet	38.426	0.715	Outlet	32.000	37.711	150					
S311(IC)	38.510	3.414	900	20.011	35.096	450	20.010	35.096	450		600x600
							32.000	35.396	150		
KD Outlet	38.482	0.715	Outlet	33.000	37.767	150					
S312	38.510	3.551	1500	20.012	34.959	450	20.011	34.959	450		600x600
							33.000	36.459	150	1200	
OB	38.610	1.085	Outlet	34.000	37.525	150					
S313	38.510	3.678	1500	20.013	34.832	450	20.012	34.832	450		600x600
							34.000	36.332	150	1200	
KD Outlet	38.510	0.715	Outlet	35.000	37.795	225					
S314	38.510	3.851	1500	20.014	34.659	450	20.013	34.659	450		600x600
							35.000	36.159	225	1275	
KD Outlet	38.563	0.715	Outlet	36.000	37.848	150					
S320	38.618	1.425	1500	36.001	37.193	225	36.000	37.268	150		1200x675
KD Outlet	38.563	0.715	Outlet	37.000	37.848	225					
S321	38.618	1.785	1500	36.002	36.833	225	36.001	36.833	225		1200x675
							37.000	36.833	225		
KD Outlet	38.563	0.715	Outlet	38.000	37.848	225					
S322	38.618	2.370	1500	36.003	36.248	450	36.002	36.473	225		600x600
							38.000	36.473	225		
KD Outlet	38.563	0.715	Outlet	39.000	37.848	225					
S323	38.618	2.573	1500	36.004	36.046	450	36.003	36.046	450		600x600
							39.000	36.271	225		
KD Outlet	38.563	0.715	Outlet	40.000	37.848	225					
S324	38.618	2.774	1500	36.005	35.844	450	36.004	35.844	450		600x600
							40.000	36.069	225		
S325	38.730	2.961	1500	36.006	35.769	450	36.005	35.769	450		600x600
OB(dock)	37.610	1.085	Outlet	41.000	36.525	150					
OB(yard)	38.337	1.085	Outlet	42.000	37.252	225					
S326	37.989	2.043	1500	41.001	35.946	225	41.000	36.021	150		1200x675
							42.000	35.946	225		
KD Outlet	38.215	0.715	Outlet	43.000	37.500	150					
S327	38.150	2.892	1500	36.007	35.258	450	36.006	35.258	450		600x600
							41.001	35.483	225		
							43.000	35.558	150		
KD Outlet	38.215	0.715	Outlet	44.000	37.500	150					
S328	38.570	3.475	1500	36.008	35.095	450	36.007	35.095	450		600x600
							44.000	35.395	150		
OB(dock)	37.610	1.085	Outlet	45.000	36.525	150					
OB(yard)	38.247	0.905	Outlet	46.000	37.342	225					
S329	38.214	1.934	1500	45.001	36.280	225	45.000	36.355	150		1200x675
							46.000	36.280	225		
KD Outlet	38.215	0.715	Outlet	47.000	37.500	150					
S330	38.150	3.218	1500	36.009	34.932	450	36.008	34.932	450		600x600
							45.001	36.195	225	1038	
							47.000	35.232	150		
KD Outlet	38.535	0.715	Outlet	48.000	37.820	225					
S331	38.650	4.073	1500	36.010	34.577	450	36.009	34.577	450		600x600
							48.000	34.802	225		
KD Outlet	38.426	0.715	Outlet	49.000	37.711	225					
S332	38.600	4.470	1500	36.011	34.130	450	36.010	34.130	450		600x600
							49.000	34.355	225		
S333	38.550	4.901	2100	20.015	33.649	750	20.014	34.529	450	580	600x600
							36.011	33.949	450		
S334	38.462	4.868	2100	20.016	33.594	750	20.015	33.594	750		600x600
Int 03	38.462	5.027	1200	20.017	33.435	750	20.016	33.535	750	100	As required
S335	38.462	5.085	2100	20.018	33.377	750	20.017	33.377	750		600x600
S344	38.235	4.877	2100	20.019	33.358	750	20.018	33.358	750		600x600
SuDS	38.199	4.849	3000	20.020	33.350	750	20.019	33.350	750		As required
OB	37.487	1.085	Outlet	50.000	36.402	225					
S340	37.612	1.425	1500	50.001	36.187	225	50.000	36.187	225		1200x675
KD Outlet	37.517	0.715	Outlet	51.000	36.802	225					
S341	37.737	1.725	1500	50.002	36.012	300	50.001	36.087	225		1200x675
							51.000	36.087	225		
S342	37.791	2.000	1500	50.003	35.791	300	50.002	35.791	300		1200x675
OB	38.274	0.715	Outlet	52.000	37.559	300					
S343	38.213	1.600	1500	52.001	36.613	300	52.000	36.788	300	175	1200x675
S344	38.213	2.067	1500	52.002	36.146	300	52.001	36.146	300		1200x675
OB	37.900	1.085	Outlet	53.000	36.815	300					
S345	37.990	2.156	1500	52.003	35.834	450	52.002	35.984	300		1200x675
							53.000	36.359	300	375	
OB	37.620	1.085	Outlet	54.000	36.535	300					
S346	37.710	2.255	1500	52.004	35.455	600	52.003	35.605	450		1200x675
							54.000	35.755	300		
OB	37.540	1.085	Outlet	55.000	36.455	300					
S347	37.600	2.342	1500	50.004	35.258	750	50.003	35.707	300		1200x675
							52.004	35.408	600		
							55.000	35.708	300		
Int 04	37.540	2.461	1200	50.005	35.079	750	50.004	35.219	750	140	As required
S348	37.540	2.500	1500	50.006	35.040	750	50.005	35.040	750		600x600
Att 03	38.199	4.899	1200	20.021	33.300	225	20.020	33.300	750		As required
							50.006	34.930	750	2155	
SuDS	38.199	4.936	3000	20.022	33.272	225	20.021	33.272	225		As required
S349	38.235	4.982	2100	20.023	33.254	225	20.022	33.254	225		600x600
Pump 03	38.525	5.340	2100	20.024	33.135	150	20.023	33.135	225		As required
S350(spur)	37.700	1.990	1200	56.000	35.710	375					122x625
S351	38.381	3.006	1475	20.025	35.375	375	20.024	35.575	150		600x600
							56.000	35.375	375		
SW46IL375	37.300	2.200	0		OUTFALL		Existing	35.100	375		600x600

Surface Water Manhole Schedule (Main Site Entrance)

Manhole Name	Cover Level (m)	MH Depth (m)	MH Diam., L*W (mm)	Pipes Out PN	Pipes Out Invert Level (m)	Pipes Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)	Manhole Access
Gully	36.550		1200	50.000	35.835	150					
Gully	36.625		1200	51.000	35.910	150					
S101	36.950	1.725	1500	50.001	35.225	225	50.000	35.300	150		1200x675
							51.000	35.300	150		
S102	37.375	2.430	1500	50.002	34.945	225	50.001	34.945	225		1200x675
S103	37.800	1.350	1500	52.000	36.450	150					1200x675
S104	37.675	3.037	1500	50.003	34.638	300	50.002	34.713	225		600x600
							52.000	36.151	150	1363	
OL Kerb Drain	38.120		1200	53.000	37.405	150					
OL Kerb Drain	37.977		1200	54.000	37.262	150					
S105	37.950	1.350	1800	53.001	36.600	225	53.000	36.675	150		1200x675
							54.000	36.675	150		
S106	37.825	3.392	1500	50.004	34.433	375	50.003	34.508	300		600x600
							53.001	36.083	225	1500	
S107	37.900	3.509	1500	50.005	34.391	375	50.004	34.391	375		600x600
Int 01	37.900	3.577	1200	50.006	34.323	375	50.005	34.363	375		As required
SuDS	37.900	3.605	1200	50.007	34.295	375	50.006	34.295	375		As required
Att 01	37.000	3.040	1350	50.008	33.960	225	50.007	34.26	375	450	As required
S109	37.500	3.573	1350	50.009	33.927	225	50.008	33.927	225		
PS01	37.600	3.724	1350	50.010	33.876	150	50.009	33.876	225		As required
S351	37.450	1.875	375					35.575	375		

Surface Water Manhole Schedule (Building Roofs)

Manhole Name	Cover Level (m)	MH Depth (m)	MH Diam., L*W (mm)	Pipes Out PN	Pipes Out Invert Level (m)	Pipes Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)	Manhole Access
S200	38.650	1.900	1800	1.000	36.750	900					1200x675
S201	38.650	2.170	1800	1.001	36.480	900	1.000	36.480	900		1200x675
S202	38.650	2.332	1800	1.002	36.318	900	1.001	36.318	900		600x600
S203	38.650	2.494	1800	1.003	36.156	900	1.002	36.156	900		1200x675
S204	38.787	2.794	1800	1.004	35.993	900	1.003	35.993	900		600x600
S205	38.825	2.890	1800	1.005	35.935	900	1.004	35.935	900		600x600
S206	38.825	2.980	1800	1.006	35.845	900	1.005	35.845	900		600x600
S207	39.000	1.850	1800	2.000	37.150	600					1200x675
S208	39.000	2.325	1800	2.001	36.675	750	2.000	36.825	600		600x600
S209	39.000	2.655	1800	2.002	36.345	750	2.001	36.345	750		600x600
S210	38.850	3.172	2100	1.007	35.687	900	1.006	35.678	900		600x600
							2.002	35.837	750		
S211	38.250	3.130	1800	1.008	35.120	900	1.007	35.120	900		600x600
S212	38.725	3.780	2100	1.009	34.945	900	1.008	34.945	900		600x600
S220	38.645	1.617	1500	3.000	37.028	450					1200x675
S221	38.377	1.477	1500	3.001	36.900	450	3.000	36.900	450		1200x675
S222	39.000	1.850	2100	4.000	37.150	600					1200x675
S223	39.000	2.223	2100	4.001	36.777	750	4.000	36.927	600		1200x675
S224	39.000	2.440	2100	4.002	36.560	750	4.001	36.560	750		600x600
S225	38.330	1.980	2100	3.002	36.350	750	3.001	36.650	450		600x600
							4.002	36.350	750		1200x675
S226	38.730	1.500	1500	5.000	37.230	300					
S227	38.346	1.416	1500	5.001	36.930	300	5.000	36.930	300		1200x675
S228	38.330	2.276	1800	3.003	36.054	900	3.002	36.204	750		1200x675
							5.001	36.654	300		1200x675
S229	38.360	2.461	1800	3.004	35.899	900	3.003	35.899	900		1200x675
S230	38.450	2.612	1800	3.005	35.838	900	3.004	35.838	900		600x600
S231a	38.140	1.050	1500	6.000	37.090	150					1200x675
S231b	38.100	1.325	1500	6.001	36.775	225	6.000	36.850	150		1200x675
S231c	38.140	1.050	1500	7.000	37.090	225					1200x675
S231d	38.100	1.490	1500	6.002	36.610	225	6.001&7.000	36.610	225		1200x675
S231e	38.550	1.645	1500	8.000	37.120	150					1200x675
S232	38.100	1.729	1500	6.001	36.371	225	6.000	36.371	225		1200x675
S233	38.550	2.913	1800	3.006	35.637	900	3.005	35.637	900		600x600
							6.001	36.228	225		
S234	38.550	3.044	1800	3.007	35.506	900	3.006	35.506	900		600x600
S235	38.550	3.154	1800	3.008	35.396	900	3.007	35.396	900		600x600
S236	38.850	1.650	1500	7.000	37.200	450					1200x675
S237(IC)	38.950	1.928	900	7.001	37.022	450	7.000	37.022	450		1200x675
S238	38.950	2.106	1500	7.002	36.844	450	7.001	36.844	450		600x600
S239	38.550	3.314	1800	3.009	35.236	900	3.008	35.236	900		600x600
							7.002	36.712	450	1026	
S240	38.850	1.500	1200	8.000	37.350	225					1200x675
S241(IC)	38.850	1.643	900	8.001	37.207	225	8.000	37.207	225		1200x675
S242(IC)	38.850	1.819	900	8.002	37.031	300	8.001	37.106	225		1200x675
S243	38.850	1.983	1500	8.003	36.867	450	8.002	36.942	300		1200x675
S244	38.625	3.861	2400	1.010	34.764	2x750	1.009	34.764	900		600x600
							3.009	34.764	900		
							8.003	36.564	450	1500	
S245	38.235	3.835	2400	1.011	34.652	2x750	1.010	34.652	2x750		600x600
SuDS feture	38.199	3.807	3x3000	1.012	34.392	2x750	1.011	34.392	2x750		As required
Attuation 02	37.903	3.613	1200	1.013	34.290	450	1.012	34.290	2x750		As required
S246	37.757	3.502	2400	1.014	34.255	450	1.013	34.255	450		600x600
Pump 02	38.850	4.738	2400	1.015	34.112	Pressure main	1.014	34.112	450		As required
S249	38.000	2.650	2100	1.016	35.350	225	1.015	35.475	Pressure main		As required
	35.600	1.576			OUTFALL		1.016	34.024	225		1200x675

Foul Water Manhole Schedule

Manhole Name	Cover Level (m)	MH Depth (m)	MH Diam., L*W (mm)	Pipes Out PN	Pipes Out Invert Level (m)	Pipes Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)	Manhole Access
F01	38.702	1.350	1500		37.352	150		37.352	150		1200x675
F02	38.702	1.652	1500		37.052	150		37.052	150		1200x675
F03	38.702	1.950	1200		36.752	150		36.752	150		600x600
F04	38.702	2.250	1200		36.452	150		36.452	150		600x600
F05	38.702	2.550	1200		36.152	150		36.152	150		600x600
F06	38.702	2.850	1200		35.852	150		35.852	150		600x600
F07	38.702	3.170	1200		35.532	150		35.532	150		600x600
F08	38.578	3.366	1200		35.212	150		35.212	150		600x600
F09	38.544	3.524	1200		35.020	150		35.020	150		600x600
F10	38.231	3.569	1200		34.662	150		34.662	150		600x600
F11	39.000	1.350	1500		37.650	150		37.650	150		1200x675
F12	39.000	1.350	1500		37.650	150		37.650	150		1200x675
F13	39.000	3.035	1200		35.965	150		35.965	150		600x600
								35.965	150		
F14	39.000	3.610	1200		35.659	150		35.659	150		600x600
F15	39.000	3.953	1200		35.315	150		35.315	150		600x600
F16	39.000	4.199	1200		34.801	150		34.801	150		600x600
F17	39.000	4.523	1200		34.477	150		34.477	150		600x600
F18	39.000	4.962	1200		34.038	150		34.038	150		600x600
F19	39.000	5.184	1200		33.816	150		33.816	150		600x600
F20	38.664	5.135	1200		33.529	150		33.529	150		600x600
								34.362	150		
F21	37.965	4.883	1200		33.082	150		33.082	150		600x600
F22	38.474	1.350	1500		37.124	150		37.124	150		1200x675
F23	38.114	1.350	1500		36.764	150		36.764	150		1200x675
F24	38.474	1.824	1500		36.650	150		36.780	150		1200x675
								36.650	150		
F25	38.474	2.391	1200		36.083	150		36.083	150		600x600
F26	38.474	2.958	1200		35.516	150		35.516	150		600x600
F27	38.540	3.591	1200		34.949	150		34.949	150		600x600
F28	38.050	1.350	1500		36.700	150		36.700	150		1200x675
F29	38.598	3.848	1200		34.750	150		34.750	150		600x600
								36.298	150		600x600
F30	38.592	5.848	1200		32.744	150		32.744	150		
								34.506	150		600x600
FPS01					33.840	Pressue main		32.672	150		As required
FWP9IL150	38.800		Existing	Existing	33.600	150		33.800	Pressue main		600x600

Foul drainage schedule Pending confirmation of Envision process and MEP drainage requirements including locations, discharge volumes, rates, composition, storage, tanking and treatment requirements.

General Notes

1. This drawing has been prepared in accordance with the scope of RPS's appointment with its client and is subject to the terms and conditions of that appointment. RPS accepts no liability for any use of this document other than by its client and only for the purposes for which it was prepared and provided.
2. If received electronically it is the recipients responsibility to print to correct scale. Only written dimensions should be used.
3. This drawing should be read in conjunction with all other relevant drawings and specifications.
4. Designs are subject to PCSA Work Stage 3 design development activities and subsequent detailed design with the wider design and project team, inclusive of agreed updates to the project requirements.
5. Changes to the existing pre PCSA planning submission are foreseen to accommodate the ongoing design developments.
6. This drawing should be read in conjunction with the Designer's and Environmental Risk Assessment reference ENV1-RPS-ST-XX-RA-Z-111950.

REV P02

Drawing References
ENV1-RPS-ST-XX-DR-C-111300-111303 Drainage - Foul & Surface Water Drainage Layouts

Drainage Notes
1. Pipes greater than 525mmØ to have safety chains
2. Manholes deeper than 3.00m and pipes greater than 525mmØ to have guard rails and safety chains.
3. All access covers to be D400

Refer to drawing ENV1-RPS-ST-XX-DR-C-111320 for details.

Rev	Description	By	Ckd	Date
P02	Surface water manhole schedules updated the suit latest drainage layout, general notes updated.	LMA	MM	25/03/22
P01	First Issue.	LMA	MM	10/12/21

MAKING COMPLEX EASY
Shenwood House, Sherwood Avenue,
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Client: Envision AESC Wates

Project: Envision AESC Giga Factory

Title: Drainage - Manhole & Linear Drainage Schedules

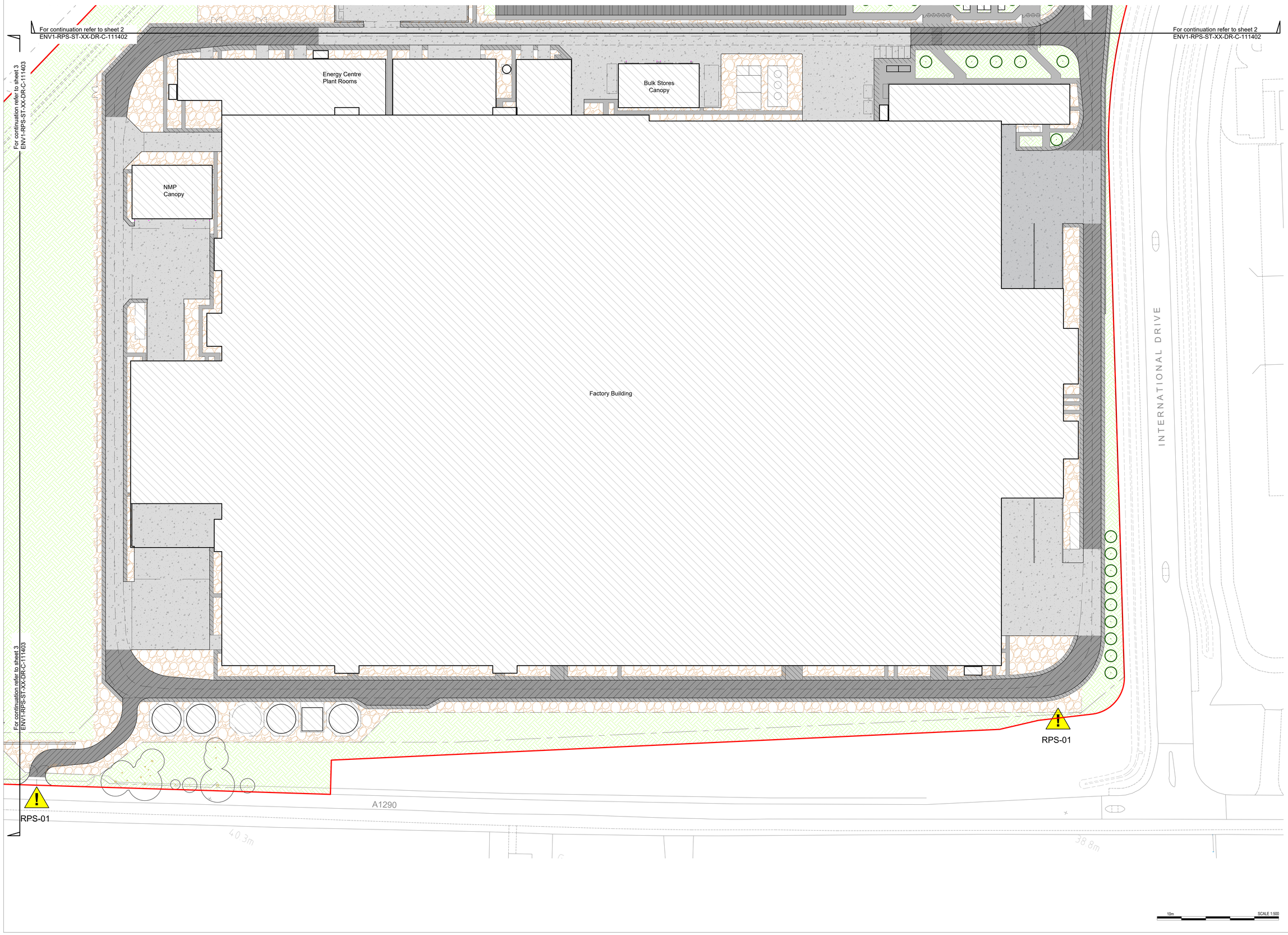
RPS Project Number	Scale @ A0	Date Created
NK020439	1:1	10/12/21
Task Team Manager: TH	Information Author: LMA	Task Information Manager: MM

Status: S4 (Fit For Approval)

Document Number: ENV1-RPS-ST-XX-DR-C-111307 Revision: P02

Project Code - Originator - Function - Space - Type - Role - Drawing Number

rpsgroup.com



REV P03

Hazards

RPS-01 Existing underground, surface and overhead services
RPS-02 Localised flood plain
RPS-03 Localised land drainage
RPS-04 Below ground structures / foundations local to West Moor Farm
RPS-05 Unexploded Ordnance (UXO)
RPS-06 Ground Contamination

Key:

HGV Access and Circulation:
- 40mm AC10 SMA surf 40/60
- 60mm AC20 dense bin 40/60
- 170mm AC2 dense base 40/60

Foundation:
- 200mm Type 1 granular sub-base
- 380mm capping (6F2/6F5)
- Geotextile Membrane laid on formation

Car Park:
- 30mm AC10 SMA surf 40/60
- 60mm AC20 dense bin 40/60
- 100mm AC32 dense base 40/60

Foundation:
- 350mm Type 1 granular sub-base
- Geotextile Membrane laid on formation

Concrete Hardstanding with Joints:
- 200mm C32/40 Air Entrained concrete with A193 mesh on 500g polythene membrane
- 150mm Type 1 granular sub-base
- (110mm capping if formation material frost susceptible)
- Geotextile Membrane laid on formation

Footpaths adjacent to HGV access road and circulation routes:
- 25mm AC6 dense surf 100/150
- 90mm AC20 dense bin 100/150
- 350mm Type 1 granular sub-base
- Geotextile Membrane laid on formation

Pedestrian Only Footpath
- 20mm AC6 dense surf 100/150
- 50mm AC20 dense bin 100/150
- 100mm Type 1 granular sub-bsse
- (280mm capping if formation material frost susceptible)
- Geotextile Membrane laid on formation

Access to DNO Substation (Suitable for infrequent access by light vehicles e.g. vans)
- Gravel filled plastic paver (40mm deep, subject to product selection
- 50mm Bedding layer of 5-20mm Sharp angular gravel
- 150mm Type 3 sub-base
- 260mm capping if formation material frost susceptible)
- Geotextile Membrane laid on formation

Gravel Landscaping

Soft Landscaping
- Refer to architectural drawing 103 for details

Building on Other Foundation
- Refer to relevant structures drawings

Note: Earthing tape to be installed prior to road/pavement construction in line with MEP requirements.

Basis of Design/Assumptions

The designs shown on this drawing are based on the following:

1. An equilibrium CBR of 3% has been adopted in line with the Phase 2 Ground Investigation Report ENV1-RPS-XX-XX-RP-G-114000
2. Design Traffic of no more than 8msa, based on worst case 50 HGVs per day, per plant and allowing for future development and masterplan of 3.5 plants gives 175HGVs per day, 365 days a year for 25 years (Design life and operational days based on client specification) Note: Preliminary data received by email 03/11/21 from Luke Burgess of Wates indicates multiple pate tests reporting CBR values of circa 1% which is too low for pavement designs. Allow for stabilisation of the formation (Cement or Lime) to minimum of 3% CBR.

Rev	Description	By	Ckd	Date
P03	Layout updated to suit revised building and site layout ENV1-RPS-ST-XX-DR-A-111150 P05 General Notes Update	TRu	MM	25/03/22
P02	Extent of construction types updated to suit implemented VE changes to site layout. Permeable paving removed from car park and impermeable car park construction updated to suit. Geotextile membrane to be laid on formations added in line with recommendations of the Phase2 GIR	TRu	MM	03/03/22
P01	First Issue.	CM	MM	10/12/21

MAKING COMPLEX EASY

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Newark, Nottinghamshire, NG24 1QQ
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Client: Envision AESC / Wates

Project: Envision AESC Giga Factory

Title: External Works - External Constructions Layout - Sheet 1

RPS Project Number	Scale @ A0	Date Created
NK020439	1:500	10/12/21
Task Team Manager	**Information Author**	**Task Information Manager**
TH	CM	TSR

Status: S4 (Fit For Approval)

Document Number: ENV1-RPS-ST-XX-DR-C-111401

Revision: P03

Project Code - Originator - Function - Space - Type - Role - Drawing Number

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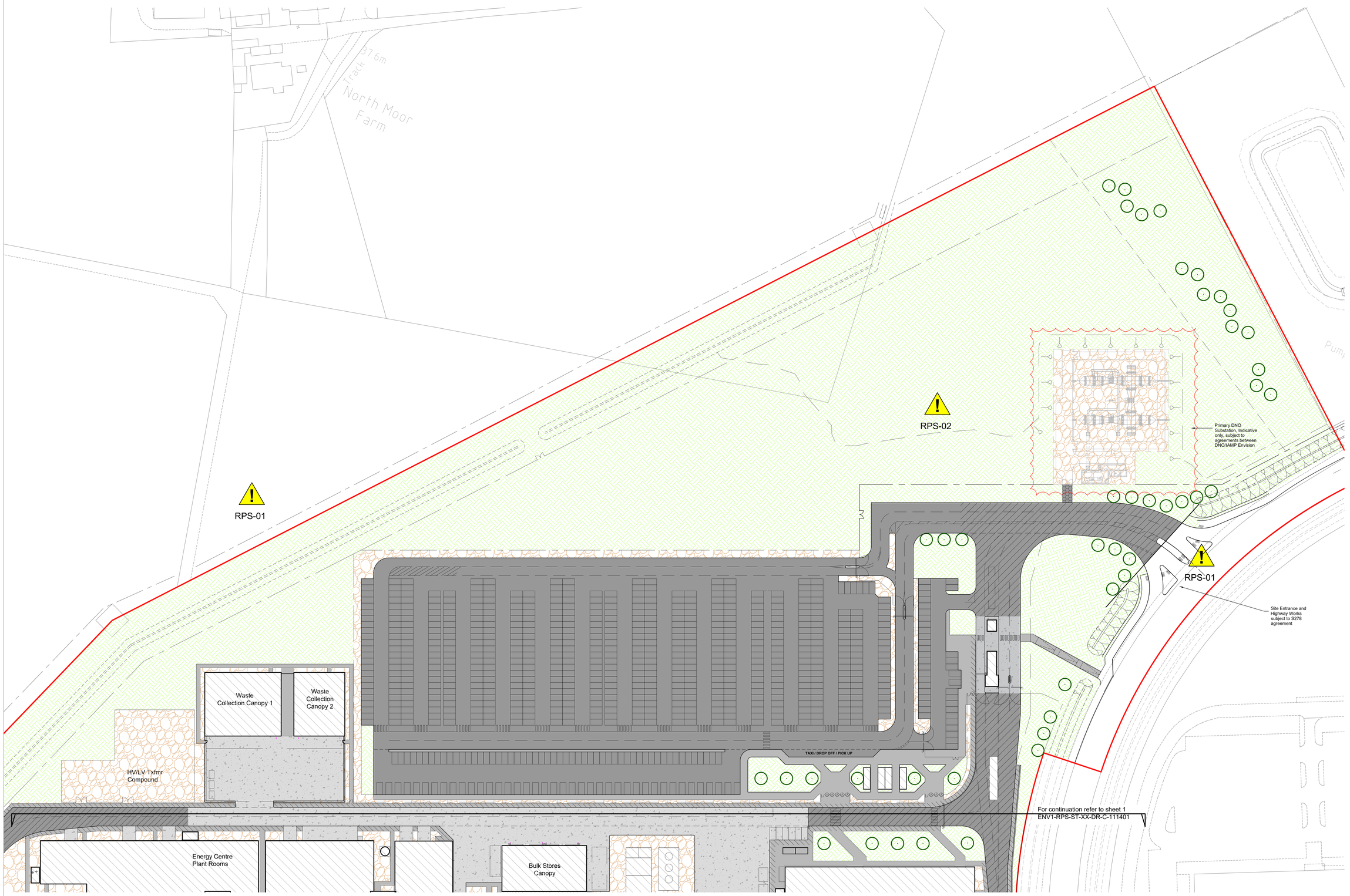
10m SCALE 1:500



REV P03

Hazards

RPS-01 Existing underground, surface and overhead services
RPS-02 Localised flood plain
RPS-03 Localised land drainage
RPS-04 Below ground structures / foundations local to West Moor Farm
RPS-05 Unexploded Ordnance (UXO)
RPS-06 Ground Contamination

Key:

HGV Access and Circulation:
- 40mm AC10 SMA surf 40/60
- 60mm AC20 dense bin 40/60
- 170mm AC2 dense base 40/60

Foundation:
- 200mm Type 1 granular sub-base
- 380mm capping (6F2/6F5)
- Geotextile Membrane laid on formation

Car Park:
- 30mm AC10 SMA surf 40/60
- 60mm AC20 dense bin 40/60
- 100mm AC32 dense base 40/60

Foundation:
- 350mm Type 1 granular sub-base
- Geotextile Membrane laid on formation

Concrete Hardstanding with Joints:
- 200mm C32/40 Air Entrained concrete with A193 mesh on 500g polythene membrane
- 150mm Type 1 granular sub-base
- (110mm capping if formation material frost susceptible)
- Geotextile Membrane laid on formation

Footpaths adjacent to HGV access road and circulation routes:
- 25mm AC6 dense surf 100/150
- 90mm AC20 dense bin 100/150
- 350mm Type 1 granular sub-base
- Geotextile Membrane laid on formation

Pedestrian Only Footpath
- 20mm AC6 dense surf 100/150
- 50mm AC20 dense bin 100/150
- 100mm Type 1 granular sub-bsse
- (280mm capping if formation material frost susceptible)
- Geotextile Membrane laid on formation

Access to DNO Substation (Suitable for infrequent access by light vehicles e.g. vans)
- Gravel filled plastic paver (40mm deep, subject to product selection
- 50mm Bedding layer of 5-20mm Sharp angular gravel
- 150mm Type 3 sub-base
- 260mm capping if formation material frost susceptible)
- Geotextile Membrane laid on formation

Gravel Landscaping

Soft Landscaping
- Refer to architectural drawing 103 for details

Building on Other Foundation
- Refer to relevant structures drawings

Note: Earthing tape to be installed prior to road/pavement construction in line with MEP requirements.

Basis of Design/Assumptions

The designs shown on this drawing are based on the following:

1. An equilibrium CBR of 3% has been adopted in line with the Phase 2 Ground Investigation Report ENV1-RPS-XX-XX-RP-G-114000
2. Design Traffic of no more than 8msa, based on worst case 50 HGVs per day, per plant and allowing for future development and masterplan of 3.5 plants gives 175HGVs per day, 365 days a year for 25 years (Design life and operational days based on client specification) Note: Preliminary data received by email 03/11/21 from Luke Burgess of Wates indicates multiple pate tests reporting CBR values of circa 1% which is too low for pavement designs. Allow for stabilisation of the formation (Cement or Lime) to minimum of 3% CBR.

Rev	Description	By	Ckd	Date
P03	Layout updated to suit revised building and site layout ENV1-RPS-ST-XX-DR-A-111150 P05 General Notes Update	TRu	MM	25/03/22
P02	Extent of construction types updated to suit implemented VE changes to site layout. Permeable paving removed from car park and impermeable car park construction updated to suit. Geotextile membrane to be laid on formations added in line with reccomendations of the Phase2 GIR	TRu	MM	03/03/22
P01	First Issue.	CM	MM	10/12/21

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Client: Envision AESC / Wates

Project: Envision AESC Giga Factory

Title: External Works - External Constructions Layout - Sheet 2

RPS Project Number	Scale @ A0	Date Created
NK020439	1:1000	10/12/21
Task Team Manager	**Information Author**	**Task Information Manager**
TH	CM	TSR

Status: S4 (Fit For Approval)

Document Number: ENV1-RPS-ST-XX-DR-C-111402 Revision: P03

Project Code - Originator - Function - Space - Type - Role - Drawing Number

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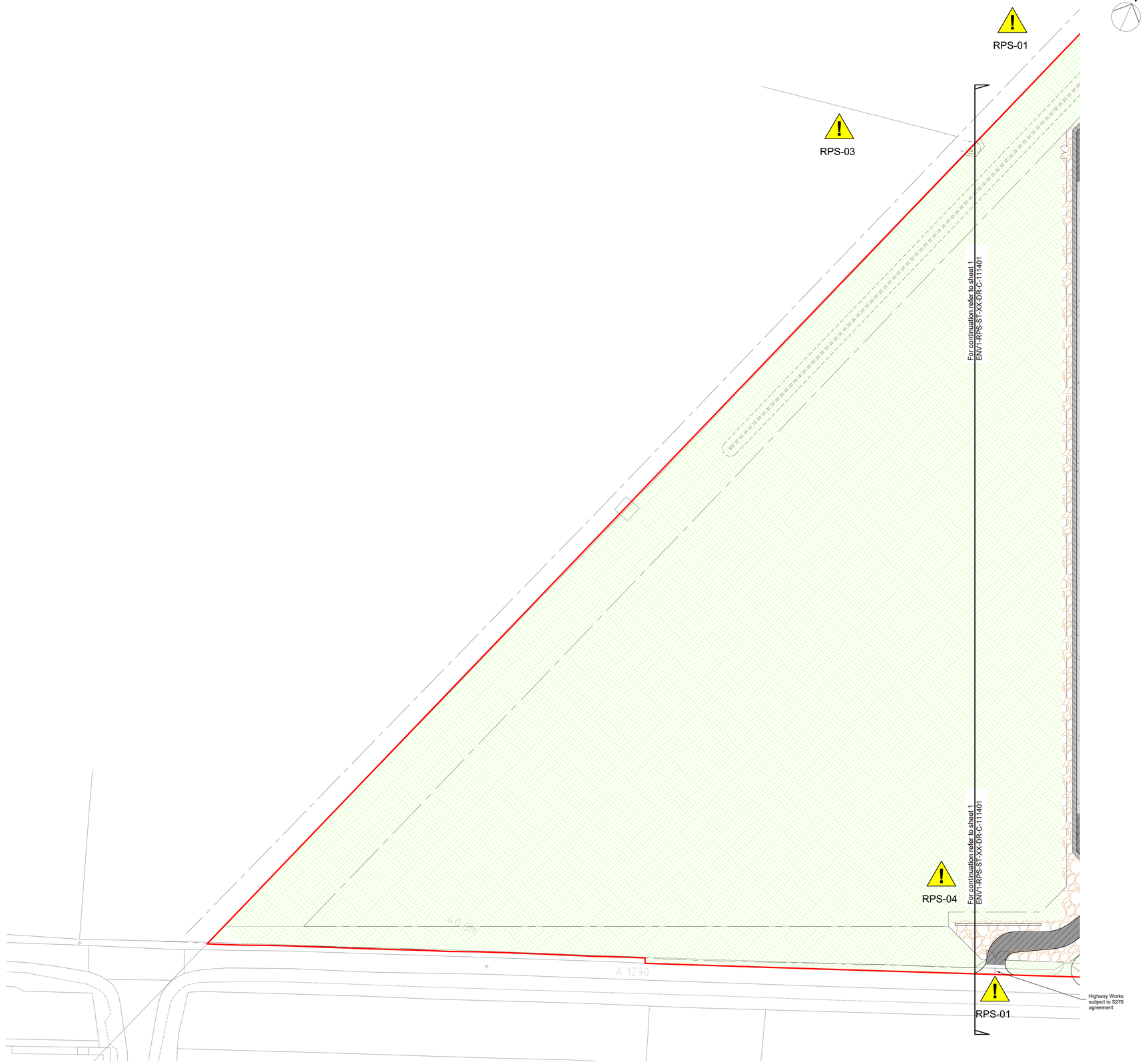
10m SCALE 1:500



REV P03

Hazards

RPS-01 Existing underground, surface and overhead services
RPS-02 Localised flood plain
RPS-03 Localised land drainage
RPS-04 Below ground structures / foundations local to West Moor Farm
RPS-05 Unexploded Ordnance (UXO)
RPS-06 Ground Contamination

Key:

HGV Access and Circulation:
- 40mm AC10 SMA surf 40/60
- 60mm AC20 dense bin 40/60
- 170mm AC2 dense base 40/60

Foundation:
- 200mm Type 1 granular sub-base
- 380mm capping (6F2/6F5)
- Geotextile Membrane laid on formation

Car Park:
- 30mm AC10 SMA surf 40/60
- 60mm AC20 dense bin 40/60
- 100mm AC32 dense base 40/60

Foundation:
- 350mm Type 1 granular sub-base
- Geotextile Membrane laid on formation

Concrete Hardstanding with Joints:
- 200mm C32/40 Air Entrained concrete with A193 mesh on 500g polythene membrane
- 150mm Type 1 granular sub-base
- (110mm capping if formation material frost susceptible)
- Geotextile Membrane laid on formation

Footpaths adjacent to HGV access road and circulation routes:
- 25mm AC6 dense surf 100/150
- 90mm AC20 dense bin 100/150
- 350mm Type 1 granular sub-base
- Geotextile Membrane laid on formation

Pedestrian Only Footpath
- 20mm AC6 dense surf 100/150
- 50mm AC20 dense bin 100/150
- 100mm Type 1 granular sub-bsse
- (280mm capping if formation material frost susceptible)
- Geotextile Membrane laid on formation

Access to DNO Substation (Suitable for infrequent access by light vehicles e.g. vans)
- Gravel filled plastic paver (40mm deep, subject to product selection
- 50mm Bedding layer of 5-20mm Sharp angular gravel
- 150mm Type 3 sub-base
- 260mm capping if formation material frost susceptible)
- Geotextile Membrane laid on formation

Gravel Landscaping

Soft Landscaping
- Refer to architectural drawing 103 for details

Building on Other Foundation
- Refer to relevant structures drawings

Note: Earthing tape to be installed prior to road/pavement construction in line with MEP requirements.

Basis of Design/Assumptions

The designs shown on this drawing are based on the following:
1. An equilibrium CBR of 3% has been adopted in line with the Phase 2 Ground Investigation Report ENV1-RPS-XX-XX-RP-G-114000
2. Design Traffic of no more than 8msa, based on worst case 50 HGVs per day, per plant and allowing for future development and masterplan of 3.5 plants gives 175HGVs per day, 365 days a year for 25 years (Design life and operational days based on client specification) Note: Preliminary data received by email 03/11/21 from Luke Burgess of Wates indicates multiple pate tests reporting CBR values of circa 1% which is too low for pavement designs. Allow for stabilisation of the formation (Cement or Lime) to minimum of 3% CBR.

Rev	Description	By	Ckd	Date
P03	Layout updated to suit revised building and site layout ENV1-RPS-ST-XX-DR-A-111150 P05 General Notes Update	TRu	MM	25/03/22
P02	Extent of construction types updated to suit implemented VE changes to site layout. Permeable paving removed from car park and impermeable car park construction updated to suit. Geotextile membrane to be laid on formations added in line with reccomendations of the Phase2 GIR	TRu	MM	03/03/22
P01	First Issue.	CM	MM	10/12/21

Sherwood House, Sherwood Avenue,
Newark, Nottinghamshire, NG24 1QQ
T: 01636 605 700 E: rpsnewark@rpsgroup.com

Client: Envision AESC Wates

Project: Envision AESC Giga Factory

Title: External Works - External Constructions Layout - Sheet 3

RPS Project Number	Scale @ A0	Date Created
NK020439	1:500	10/12/21
Task Team Manager	**Information Author**	**Task Information Manager**
TH	CM	TSR

Status: S4 (Fit For Approval)

Document Number: ENV1-RPS-ST-XX-DR-C-111403

Revision: P03

Project Code - Originator - Function - Space - Type - Role - Drawing Number

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5. Changes to the existing pre PCSA planning submission are foreseen to accommodate the ongoing design developments.
6. This drawing should be read in conjunction with the Designer's and Environmental Risk Assessment reference ENV1-RPS-ST-XX-RA-Z-111950.
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Hazards

RPS-01 Existing underground, surface and overhead services
RPS-02 Localised flood plain
RPS-03 Localised land drainage
RPS-04 Below ground structures / foundations local to West Moor Farm
RPS-05 Unexploded Ordnance (UXO)
RPS-06 Ground Contamination
RPS-11 Ecology / Existing Habitats

Key:

- Plot boundary
- Retaining wall
- +37.595 Finished levels
- +36.52 Existing levels

Drawing Reference:

ENV1-RPS-ST-XX-DR-C-111405 - Site Finished Levels - Sheet 1
ENV1-RPS-ST-XX-DR-C-111406 - Site Finished Levels - Sheet 2
ENV1-RPS-ST-XX-DR-C-111407 - Site Finished Levels - Sheet 3
ENV1-RPS-ST-XX-DR-C-111408 - Site Finished Levels - Sheet 4
ENV1-RPS-ST-XX-DR-C-111409 - Site Finished Levels - Sheet 5
ENV1-RPS-ST-XX-DR-C-111410 - Site Finished Levels - Sheet 6
ENV1-RPS-ST-XX-DR-C-111411 - Site Finished Levels - Sheet 7
ENV1-RPS-ST-XX-DR-C-111412 - Site Finished Levels - Sheet 8
ENV1-RPS-ST-XX-DR-C-111413 - Site Finished Levels - Sheet 9

Sheet 9
ENV1-RPS-ST-XX-DR-C-111413

Sheet 8
ENV1-RPS-ST-XX-DR-C-111412

Sheet 1
ENV1-RPS-ST-XX-DR-C-111405

Sheet 6
ENV1-RPS-ST-XX-DR-C-111410

Sheet 7
ENV1-RPS-ST-XX-DR-C-111411

Sheet 2
ENV1-RPS-ST-XX-DR-C-111406

Sheet 5
ENV1-RPS-ST-XX-DR-C-111409

Sheet 4
ENV1-RPS-ST-XX-DR-C-111408

Sheet 3
ENV1-RPS-ST-XX-DR-C-111407

RPS-01
RPS-03
RPS-02
RPS-04
RPS-05
RPS-06

In abeyance subject to developed and detailed design development

Allowance for localised retaining wall

Allowance for localised retaining wall

Allowance for localised retaining wall

(Planning level FFL boundary)

North Moor Farm

C01	First issue. Issued for early works construction activities. Drawing Title Change	TRu	MM	11/04/22
P02	Layout updated to suit revised building and site layout ENV1-RPS-ST-XX-DR-A-111150 P05	TRu	MM	25/03/22
	General Notes Updated			
P01	First Issue	LMA	MM	10/12/21
Rev	Description	By	Ckd	Date

Sherwood House, Sherwood Avenue,
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T: 01636 605 700 E: rpsnewark@rpsgroup.com

Client: Envision AESC, Wates

Project: Giga One

Title: External Works - Site Finished Levels - Key Plan

RPS Project Number	Scale @ A0	Date Created
NK020439	1:1000	06/04/22
Task Team Manager	Information Author	Task Information Manager
TH	TRu	MM

Status: S5 (Fit For Construction)

Document Number: ENV1-RPS-ST-XX-DR-C-111404
Project Code - Originator - Function - Space - Type - Role - Number

Revision: C01

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10m SCALE 1:1000

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Key:

- Plot boundary
- Retaining wall
- +37.595 Finished levels
- +36.52 Existing levels

Drawing Reference:

ENV1-RPS-ST-XX-DR-C-111404 - Site Finished Levels - Key Plan
ENV1-RPS-ST-XX-DR-C-111406 - Site Finished Levels - Sheet 2
ENV1-RPS-ST-XX-DR-C-111407 - Site Finished Levels - Sheet 3
ENV1-RPS-ST-XX-DR-C-111408 - Site Finished Levels - Sheet 4
ENV1-RPS-ST-XX-DR-C-111409 - Site Finished Levels - Sheet 5
ENV1-RPS-ST-XX-DR-C-111410 - Site Finished Levels - Sheet 6
ENV1-RPS-ST-XX-DR-C-111411 - Site Finished Levels - Sheet 7
ENV1-RPS-ST-XX-DR-C-111412 - Site Finished Levels - Sheet 8
ENV1-RPS-ST-XX-DR-C-111413 - Site Finished Levels - Sheet 9

For continuation refer to sheet 9
ENV1-RPS-ST-XX-DR-C-111413

For continuation refer to sheet 8
ENV1-RPS-ST-XX-DR-C-111412

For continuation refer to sheet 2
ENV1-RPS-ST-XX-DR-C-111406

TAXI / DROP OFF / PICK UP

In abeyance subject to developed and detailed design development

C01	First issue. Issued for early works construction activities. Drawing Title Change	TRu	MM	11/04/22
P02	Layout updated to suit revised building and site layout ENV1-RPS-ST-XX-DR-A-111150 P05 General Notes Updated	TRu	MM	25/03/22
P01	First Issue	LMA	MM	10/12/21
Rev	Description	By	Ckd	Date

RPS MAKING COMPLEX EASY
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Client: Envision AESC / Wates

Project: Giga One

Title: External Works - Site Finished Levels - Sheet 1

RPS Project Number	Scale @ A0	Date Created
NK020439	1:500	06/04/22
Task Team Manager	**Information Author**	**Task Information Manager**
TH	TRu	MM

Status: S5 (Fit For Construction)

Document Number: ENV1-RPS-ST-XX-DR-C-111405
Project Code - Originator - Function - Space - Type - Role - Number

Revision: C01

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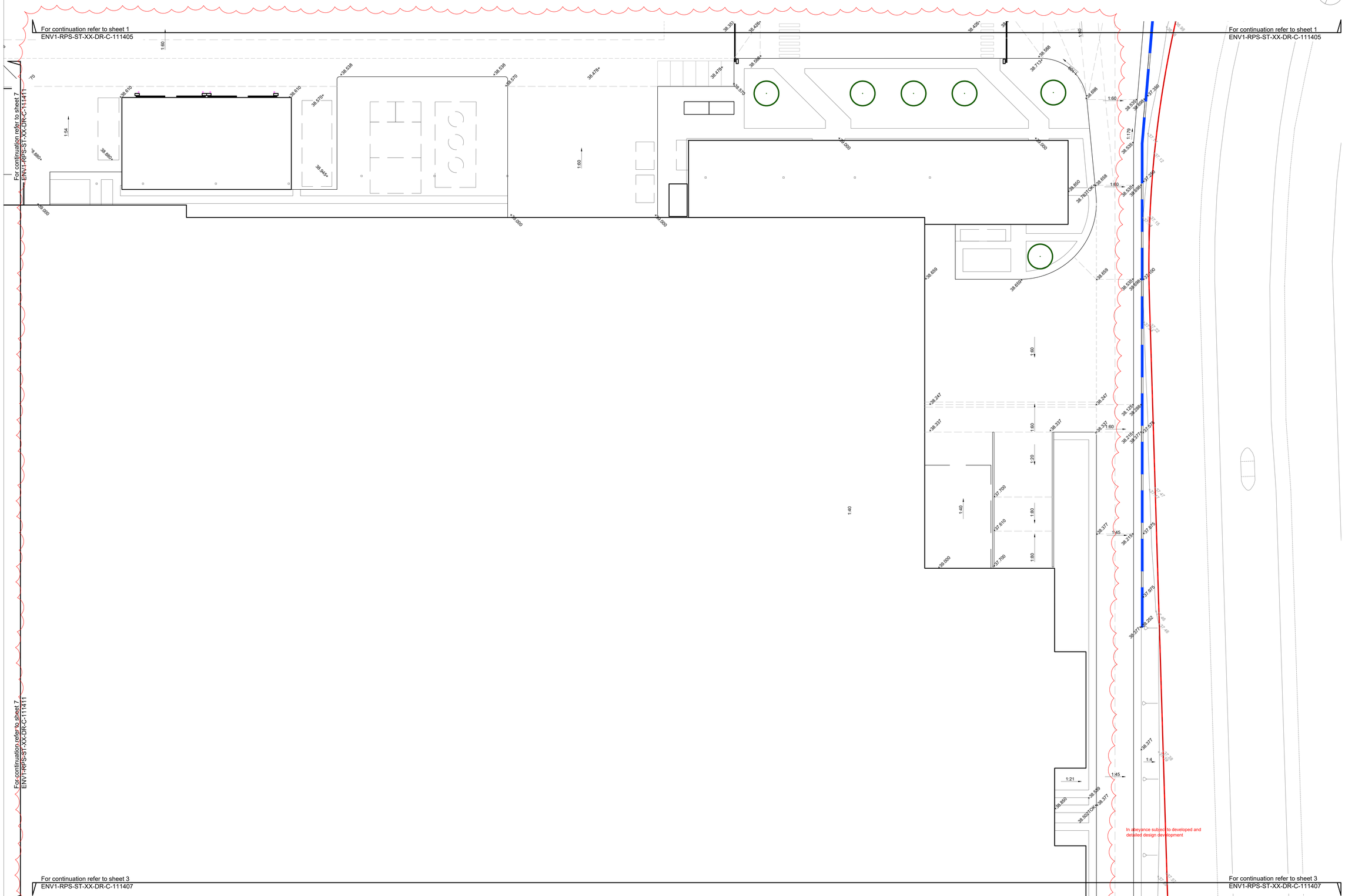

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Key:

- Plot boundary
- Retaining wall
- +37.595 Finished levels
- +36.52 Existing levels

Drawing Reference:

ENV1-RPS-ST-XX-DR-C-111404 - Site Finished Levels - Key Plan
ENV1-RPS-ST-XX-DR-C-111405 - Site Finished Levels - Sheet 1
ENV1-RPS-ST-XX-DR-C-111407 - Site Finished Levels - Sheet 3
ENV1-RPS-ST-XX-DR-C-111408 - Site Finished Levels - Sheet 4
ENV1-RPS-ST-XX-DR-C-111409 - Site Finished Levels - Sheet 5
ENV1-RPS-ST-XX-DR-C-111410 - Site Finished Levels - Sheet 6
ENV1-RPS-ST-XX-DR-C-111411 - Site Finished Levels - Sheet 7
ENV1-RPS-ST-XX-DR-C-111412 - Site Finished Levels - Sheet 8
ENV1-RPS-ST-XX-DR-C-111413 - Site Finished Levels - Sheet 9

Rev	Description	By	Ckd	Date
C01	First issue. Issued for early works construction activities. Drawing Title Change	TRu	MM	11/04/22
P02	Layout updated to suit revised building and site layout ENV1-RPS-ST-XX-DR-A-111150 P05 General Notes Updated	TRu	MM	25/03/22
P01	First Issue	LMA	MM	10/12/21

MAKING COMPLEX EASY
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Client: Envision AESC / Wates

Project: Giga One

Title: External Works - Site Finished Levels - Sheet 2

RPS Project Number	Scale @ A0	Date Created
NK020439	1:250	06/04/22
Task Team Manager: TH	Information Author: TRu	Task Information Manager: MM

Status: S5 (Fit For Construction)

Document Number: ENV1-RPS-ST-XX-DR-C-111406
Project Code - Originator - Function - Space - Type - Role - Number

Revision: C01

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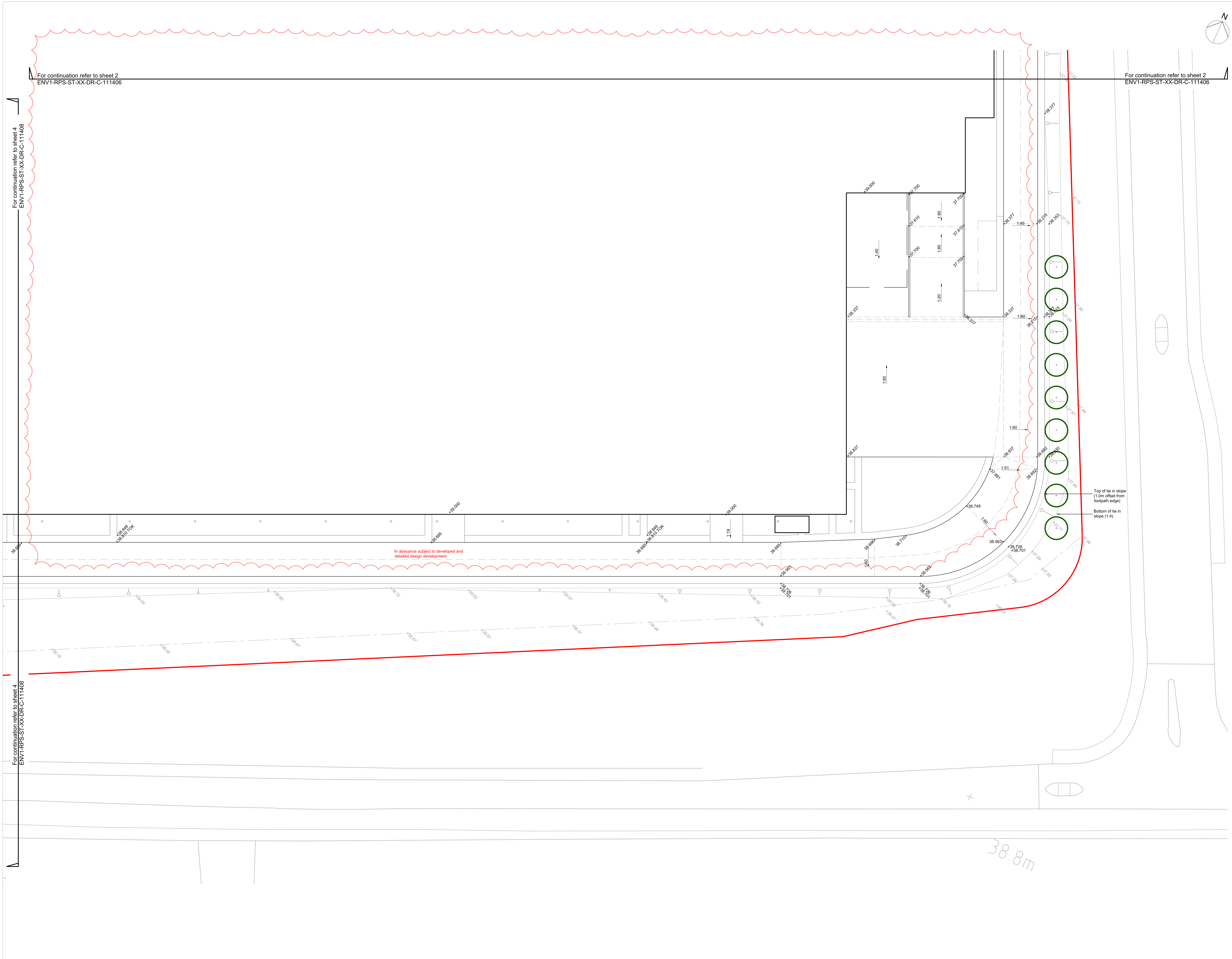

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Key:

(red line)	Plot boundary
(blue dashed line)	Retaining wall
+37.595	Finished levels
+36.52	Existing levels

Drawing Reference:

ENV1-RPS-ST-XX-DR-C-111404 - Site Finished Levels - Key Plan
ENV1-RPS-ST-XX-DR-C-111405 - Site Finished Levels - Sheet 1
ENV1-RPS-ST-XX-DR-C-111406 - Site Finished Levels - Sheet 2
ENV1-RPS-ST-XX-DR-C-111408 - Site Finished Levels - Sheet 4
ENV1-RPS-ST-XX-DR-C-111409 - Site Finished Levels - Sheet 5
ENV1-RPS-ST-XX-DR-C-111410 - Site Finished Levels - Sheet 6
ENV1-RPS-ST-XX-DR-C-111411 - Site Finished Levels - Sheet 7
ENV1-RPS-ST-XX-DR-C-111412 - Site Finished Levels - Sheet 8
ENV1-RPS-ST-XX-DR-C-111413 - Site Finished Levels - Sheet 9

Rev	Description	By	Ckd	Date
C01	First issue. Issued for early works construction activities. Drawing Title Change	TRu	MM	11/04/22
P02	Layout updated to suit revised building and site layout ENV1-RPS-ST-XX-DR-A-111150 P05 General Notes Updated	TRu	MM	25/03/22
P01	First Issue	LMA	MM	10/12/21

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Client

Envision AESC Wates

Project Giga One

Title External Works - Site Finished Levels - Sheet 3

RPS Project Number	Scale @ A0	Date Created
NK020439	1:250	06/04/22
Task Team Manager	Information Author	Task Information Manager
TH	LMA	MM

Status
S5 (Fit For Construction)

Document Number: ENV1-RPS-ST-XX-DR-C-111407 Revision: C01

Project Code - Originator - Function - Space - Type - Role - Number

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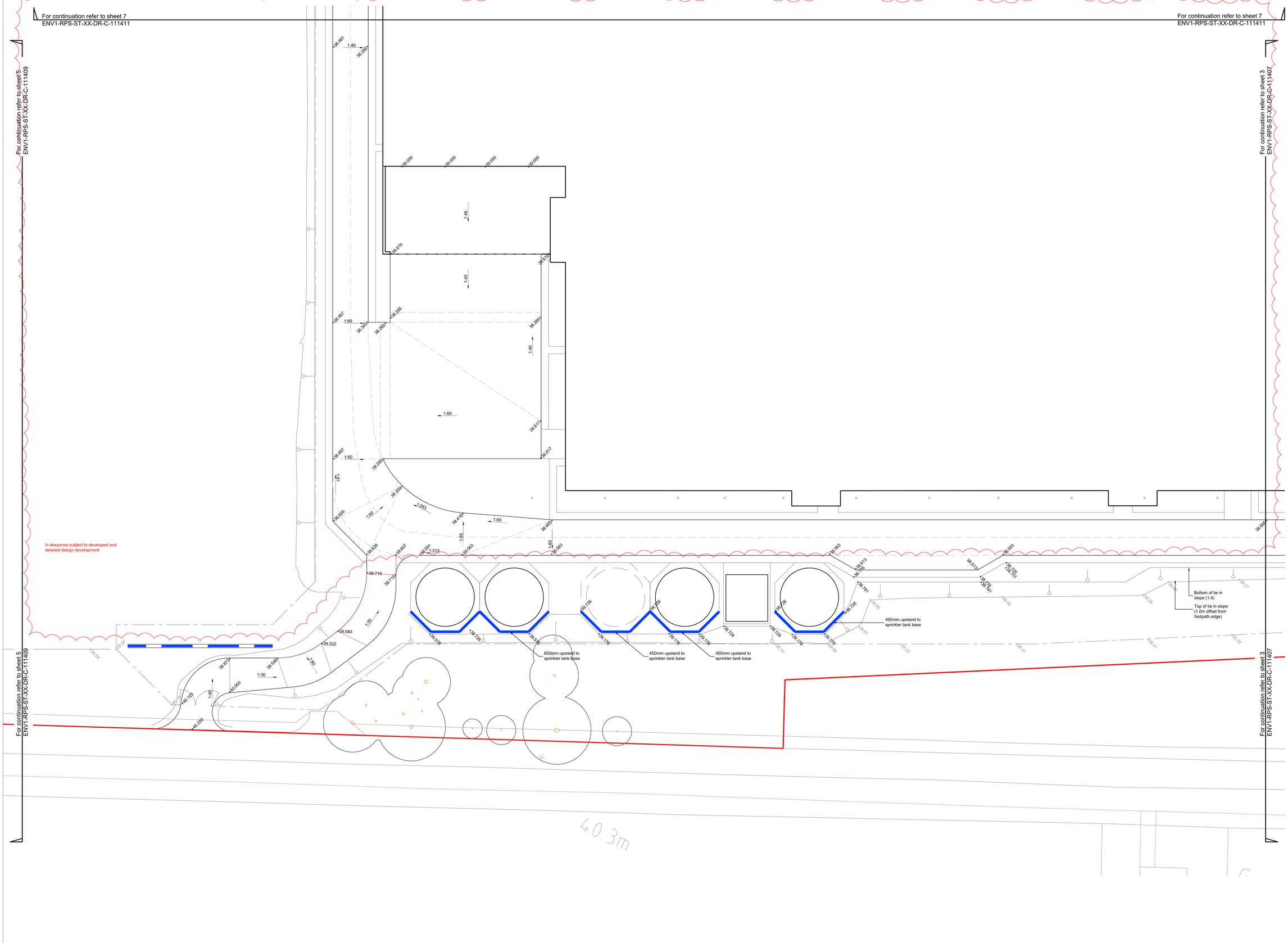
For continuation refer to sheet 7
ENV1-RPS-ST-XX-DR-C-111411

For continuation refer to sheet 7
ENV1-RPS-ST-XX-DR-C-111411

For continuation refer to sheet 5
ENV1-RPS-ST-XX-DR-C-111409

For continuation refer to sheet 3
ENV1-RPS-ST-XX-DR-C-111407



Key:

- Plot boundary
- Retaining wall
- +37.595 Finished levels
- +36.52 Existing levels

Drawing Reference:

ENV1-RPS-ST-XX-DR-C-111404 - Site Finished Levels - Key Plan
ENV1-RPS-ST-XX-DR-C-111405 - Site Finished Levels - Sheet 1
ENV1-RPS-ST-XX-DR-C-111406 - Site Finished Levels - Sheet 2
ENV1-RPS-ST-XX-DR-C-111407 - Site Finished Levels - Sheet 3
ENV1-RPS-ST-XX-DR-C-111409 - Site Finished Levels - Sheet 5
ENV1-RPS-ST-XX-DR-C-111410 - Site Finished Levels - Sheet 6
ENV1-RPS-ST-XX-DR-C-111411 - Site Finished Levels - Sheet 7
ENV1-RPS-ST-XX-DR-C-111412 - Site Finished Levels - Sheet 8
ENV1-RPS-ST-XX-DR-C-111413 - Site Finished Levels - Sheet 9

Rev	Description	By	Ckd	Date
C01	First issue. Issued for early works construction activities. Drawing Title Change	TRu	MM	11/04/22
P02	Layout updated to suit revised building and site layout ENV1-RPS-ST-XX-DR-A-111150 P05 General Notes Updated	TRu	MM	25/03/22
P01	First Issue	LMA	MM	10/12/21

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Client: Envision AESC Wates

Project: Giga One

Title: External Works - Site Finished Levels - Sheet 4

RPS Project Number	Scale @ A0	Date Created
NK020439	1:250	06/04/22
Task Team Manager	Information Author	Task Information Manager
TH	TRu	MM

Status: S5 (Fit For Construction)

Document Number: ENV1-RPS-ST-XX-DR-C-111408
Project Code - Originator - Function - Space - Type - Role - Number

Revision: C01

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Key:

- Plot boundary
- Retaining wall
- +37.595 Finished levels
- +36.52 Existing levels

Drawing Reference:

ENV1-RPS-ST-XX-DR-C-111404 - Site Finished Levels - Key Plan
ENV1-RPS-ST-XX-DR-C-111405 - Site Finished Levels - Sheet 1
ENV1-RPS-ST-XX-DR-C-111406 - Site Finished Levels - Sheet 2
ENV1-RPS-ST-XX-DR-C-111407 - Site Finished Levels - Sheet 3
ENV1-RPS-ST-XX-DR-C-111408 - Site Finished Levels - Sheet 4
ENV1-RPS-ST-XX-DR-C-111410 - Site Finished Levels - Sheet 6
ENV1-RPS-ST-XX-DR-C-111411 - Site Finished Levels - Sheet 7
ENV1-RPS-ST-XX-DR-C-111412 - Site Finished Levels - Sheet 8
ENV1-RPS-ST-XX-DR-C-111413 - Site Finished Levels - Sheet 9

For continuation refer to sheet 6
ENV1-RPS-ST-XX-DR-C-111410

For continuation refer to sheet 6
ENV1-RPS-ST-XX-DR-C-111410

For continuation refer to sheet 4
ENV1-RPS-ST-XX-DR-C-111408

For continuation refer to sheet 4
ENV1-RPS-ST-XX-DR-C-111408

In abeyance subject to developed and detailed design development

+39.77 +40.00 +40.03 +39.98 +39.91 +39.83 +39.80 +39.67 +39.61 +39.55

+0.16m

A 1290

C01	First issue. Issued for early works construction activities.	TRu	MM	11/04/22
Rev	Description	By	Ckd	Date

Shenwood House, Sherwood Avenue,
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Client: Envision AESC / Wates

Project: Giga One

Title: External Works - Site Finsihed Levels - Sheet 5

RPS Project Number	Scale @ A0	Date Created
NK020439	1:250	06/04/22
Task Team Manager: TH	Information Author: TRu	Task Information Manager: MM

Status: S5 (Fit For Construction)

Document Number: ENV1-RPS-ST-XX-DR-C-111409
Project Code - Originator - Function - Space - Type - Role - Number

Revision: C01

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Key:

- Plot boundary
- Retaining wall
- +37.595 Finished levels
- +36.52 Existing levels

Drawing Reference:

ENV1-RPS-ST-XX-DR-C-111404 - Site Finished Levels - Key Plan
ENV1-RPS-ST-XX-DR-C-111405 - Site Finished Levels - Sheet 1
ENV1-RPS-ST-XX-DR-C-111406 - Site Finished Levels - Sheet 2
ENV1-RPS-ST-XX-DR-C-111407 - Site Finished Levels - Sheet 3
ENV1-RPS-ST-XX-DR-C-111408 - Site Finished Levels - Sheet 4
ENV1-RPS-ST-XX-DR-C-111409 - Site Finished Levels - Sheet 5
ENV1-RPS-ST-XX-DR-C-111411 - Site Finished Levels - Sheet 7
ENV1-RPS-ST-XX-DR-C-111412 - Site Finished Levels - Sheet 8
ENV1-RPS-ST-XX-DR-C-111413 - Site Finished Levels - Sheet 9

For continuation refer to sheet 7
ENV1-RPS-ST-XX-DR-C-111411

For continuation refer to sheet 5
ENV1-RPS-ST-XX-DR-C-111409

For continuation refer to sheet 7
ENV1-RPS-ST-XX-DR-C-111411

For continuation refer to sheet 5
ENV1-RPS-ST-XX-DR-C-111409

In abeyance subject to developed and detailed design development

Rev	Description	By	Ckd	Date
C01	First issue. Issued for early works construction activities. Drawing Title Change	TRu	MM	11/04/22
P02	Layout updated to suit revised building and site layout ENV1-RPS-ST-XX-DR-A-111150 P05 General Notes Updated	TRu	MM	25/03/22
P01	First Issue	CM	MM	10/12/21

MAKING COMPLEX EASY

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Client

Envision AESC Wates

Project

Giga One

Title

External Works -
Site Finished Levels - Sheet 6

RPS Project Number	Scale @ A0	Date Created
NK020439	1:250	10/12/21
Task Team Manager	Information Author	Task Information Manager
TH	CM	TSR

Status

S5 (Fit For Construction)

Document Number

ENV1-RPS-ST-XX-DR-C-111410

Project Code - Originator - Function - Space - Type - Role - Number

Revision

C01

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7.

Key:

- Plot boundary
- Retaining wall
- +37.595 Finished levels
- +36.52 Existing levels

Drawing Reference:

ENV1-RPS-ST-XX-DR-C-111404 - Site Finished Levels - Key Plan
ENV1-RPS-ST-XX-DR-C-111405 - Site Finished Levels - Sheet 1
ENV1-RPS-ST-XX-DR-C-111406 - Site Finished Levels - Sheet 2
ENV1-RPS-ST-XX-DR-C-111407 - Site Finished Levels - Sheet 3
ENV1-RPS-ST-XX-DR-C-111408 - Site Finished Levels - Sheet 4
ENV1-RPS-ST-XX-DR-C-111409 - Site Finished Levels - Sheet 5
ENV1-RPS-ST-XX-DR-C-111410 - Site Finished Levels - Sheet 6
ENV1-RPS-ST-XX-DR-C-111412 - Site Finished Levels - Sheet 8
ENV1-RPS-ST-XX-DR-C-111413 - Site Finished Levels - Sheet 9

For continuation refer to sheet 8
ENV1-RPS-ST-XX-DR-C-111412

For continuation refer to sheet 6
ENV1-RPS-ST-XX-DR-C-111410

For continuation refer to sheet 2
ENV1-RPS-ST-XX-DR-C-111406

For continuation refer to sheet 4
ENV1-RPS-ST-XX-DR-C-111408

In abeyance subject to developed and detailed design development

Rev	Description	By	Ckd	Date
C01	First issue. Issued for early works construction activities. Drawing Title Change	TRu	MM	11/04/22
P02	Layout updated to suit revised building and site layout ENV1-RPS-ST-XX-DR-A-111150 P05 General Notes Updated	TRu	MM	25/03/22
P01	First Issue	CM	MM	10/12/21

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Client: Envision AESC / Wates

Project: Giga One

Title: External Works - Fence Finished Levels - Sheet 7

RPS Project Number	Scale @ A0	Date Created
NK020439	1:250	10/12/21
Task Team Manager: TH	Information Author: CM	Task Information Manager: TSR

Status: S5 (Fit For Construction)

Document Number: ENV1-RPS-ST-XX-DR-C-111411 (Project Code - Originator - Function - Space - Type - Role - Number)

Revision: C01

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Key:

- Plot boundary
- Retaining wall
- +37.595 Finished levels
- +36.52 Existing levels

Drawing Reference:

ENV1-RPS-ST-XX-DR-C-111404 - Site Finished Levels - Key Plan
ENV1-RPS-ST-XX-DR-C-111405 - Site Finished Levels - Sheet 1
ENV1-RPS-ST-XX-DR-C-111406 - Site Finished Levels - Sheet 2
ENV1-RPS-ST-XX-DR-C-111407 - Site Finished Levels - Sheet 3
ENV1-RPS-ST-XX-DR-C-111408 - Site Finished Levels - Sheet 4
ENV1-RPS-ST-XX-DR-C-111409 - Site Finished Levels - Sheet 5
ENV1-RPS-ST-XX-DR-C-111410 - Site Finished Levels - Sheet 6
ENV1-RPS-ST-XX-DR-C-111411 - Site Finished Levels - Sheet 7
ENV1-RPS-ST-XX-DR-C-111413 - Site Finished Levels - Sheet 9

For continuation refer to sheet 1
ENV1-RPS-ST-XX-DR-C-111405

In abeyance subject to developed and detailed design development

For continuation refer to sheet 1
ENV1-RPS-ST-XX-DR-C-111406

For continuation refer to sheet 7
ENV1-RPS-ST-XX-DR-C-111411

For continuation refer to sheet 7
ENV1-RPS-ST-XX-DR-C-111411

Rev	Description	By	Ckd	Date
C01	First issue. Issued for early works construction activities.	TRu	MM	11/04/22

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Client: Envision AESC / Wates

Project: Giga One

Title: External Works - Site Finished Level - Sheet 8

RPS Project Number	Scale @ A0	Date Created
NK020439	1:250	10/12/21
Task Team Manager	Information Author	Task Information Manager
TH	LMA	MM

Status: S5 (Fit For Construction)

Document Number: ENV1-RPS-ST-XX-DR-C-111412
Project Code - Originator - Function - Space - Type - Role - Number

Revision: C01

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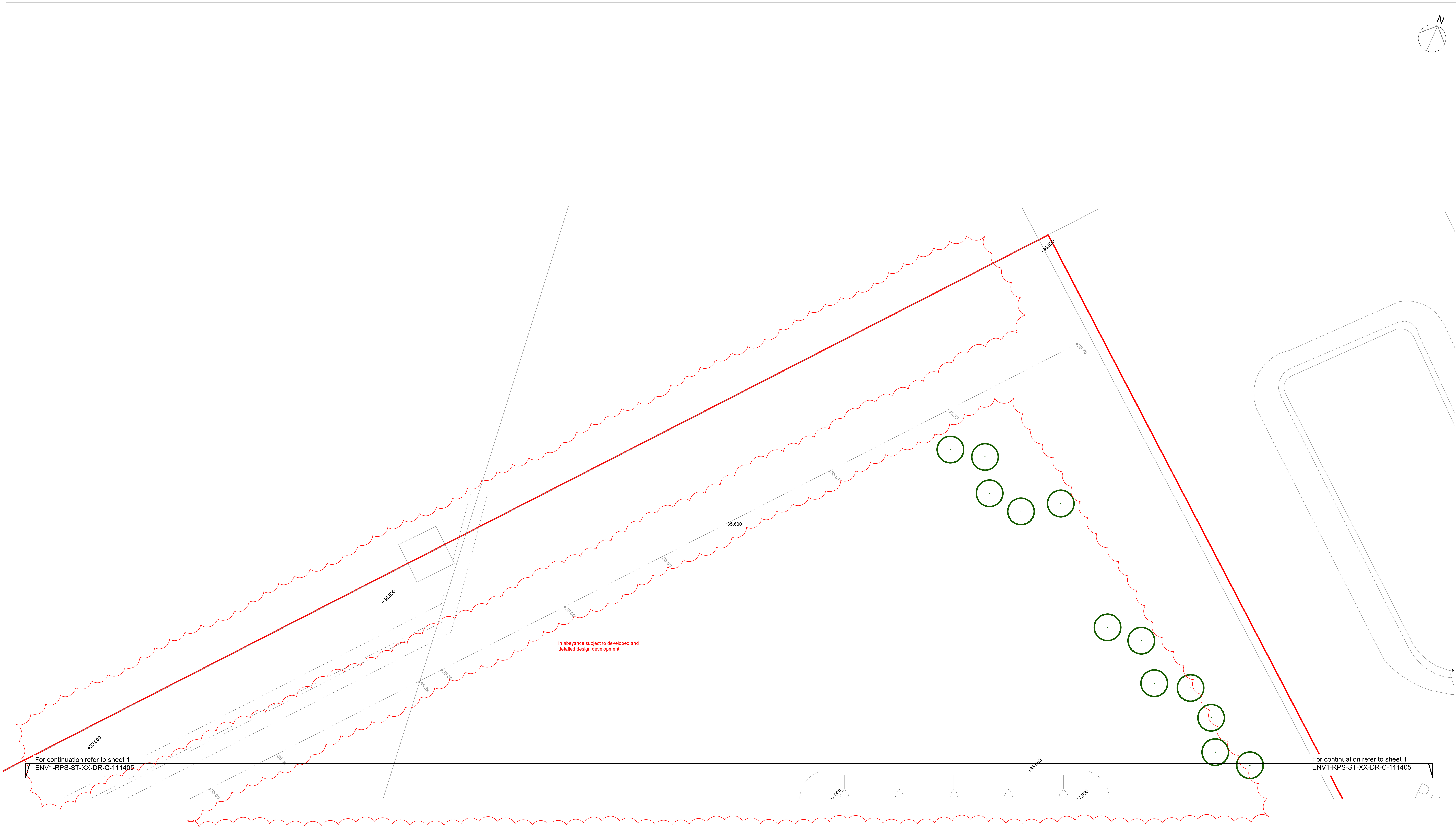

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Key:

(red line)	Plot boundary
(blue dashed line)	Retaining wall
+37.595	Finished levels
+36.52	Existing levels

Drawing Reference:

ENV1-RPS-ST-XX-DR-C-111404 - Site Finished Levels - Key Plan
ENV1-RPS-ST-XX-DR-C-111405 - Site Finished Levels - Sheet 1
ENV1-RPS-ST-XX-DR-C-111406 - Site Finished Levels - Sheet 2
ENV1-RPS-ST-XX-DR-C-111407 - Site Finished Levels - Sheet 3
ENV1-RPS-ST-XX-DR-C-111408 - Site Finished Levels - Sheet 4
ENV1-RPS-ST-XX-DR-C-111409 - Site Finished Levels - Sheet 5
ENV1-RPS-ST-XX-DR-C-111410 - Site Finished Levels - Sheet 6
ENV1-RPS-ST-XX-DR-C-111411 - Site Finished Levels - Sheet 7
ENV1-RPS-ST-XX-DR-C-111412 - Site Finished Levels - Sheet 8

Rev	Description	By	Ckd	Date
C01	First issue. Issued for early works construction activities. Drawing Title Change	TRu	MM	11/04/22
P04	General notes updated	LMA	MM	25/03/22
P03	2.4m high security fence RAL colour specified	LMA	MM	21/03/22
P02	Fencing updated in line with WCL comments ENV1-WCL-XX-XX-DR-J-106036 Rev P01 received 11/03/2022	LMA	MM	16/03/22
P01	First Issue	LMA	TSR	10/12/21

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Client

Envision AESC Wates

Project Giga One

Title External Works - Site Finished Levels - Sheet 9

RPS Project Number	Scale @ A0	Date Created
NK020439	1:250	10/12/21
Task Team Manager	Information Author	Task Information Manager
TH	LMA	TSR

Status
S5 (Fit For Construction)

Document Number	Revision
ENV1-RPS-ST-XX-DR-C-111413	C01

Project Code - Originator - Function - Space - Type - Role - Number

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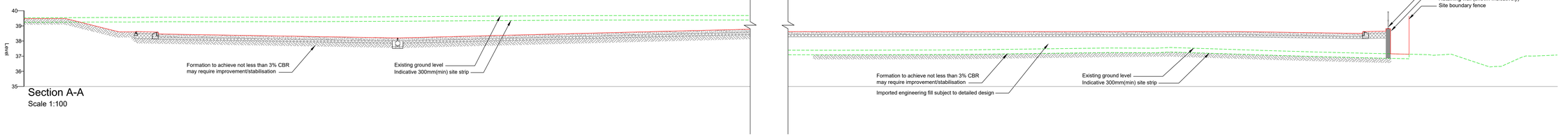
REV P02



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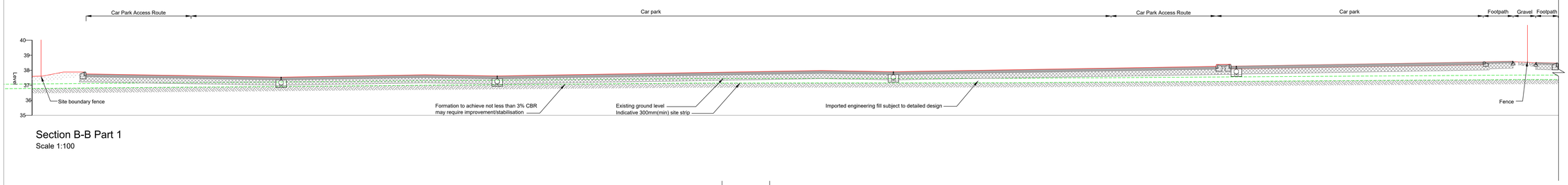

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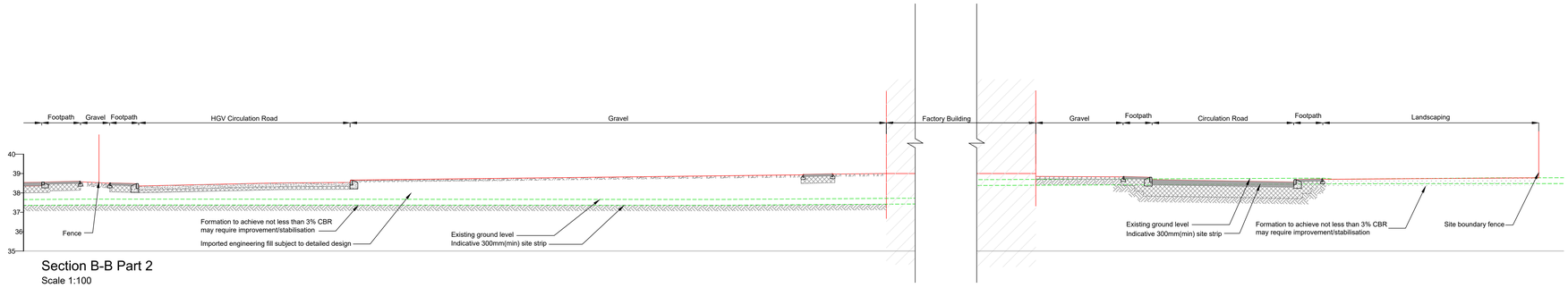

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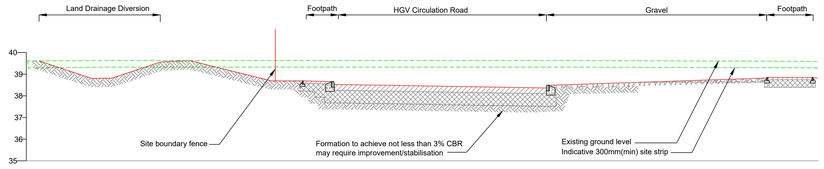

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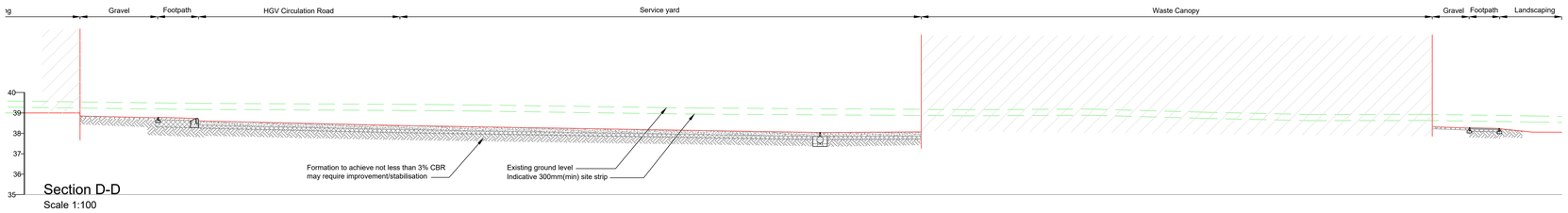
Scale 1:100



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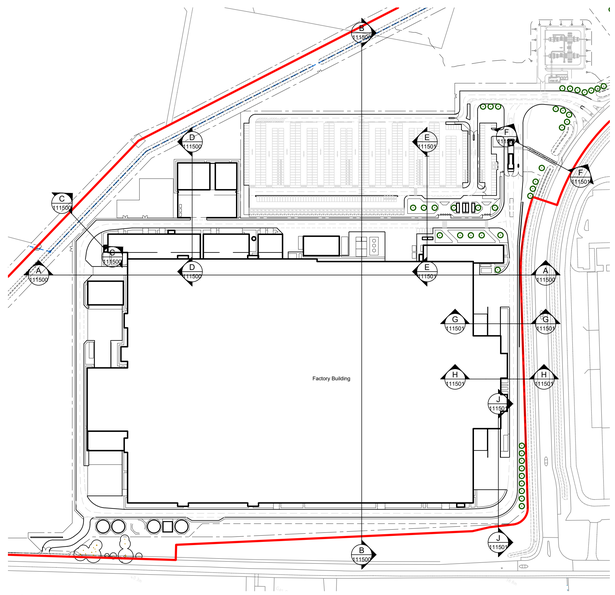
Scale 1:100



Key Plan
Scale 1:2000

Key:
- Concrete
- Asphalt
- Sub base
- Soft Landscaping
- Hard Landscaping
- Formation Level
- Existing Site Profile
- Proposed Site Profile

1m SCALE 1:100

Rev	Description	By	Ckd	Date
P02	Layout updated to suit revised building and site layout ENV1-RPS-ST-XX-DR-A-111150 P05 General Notes Updated	TRu	MM	25/03/22
P01	First Issue.	LMA	MM	14/12/21

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Client: Envision AESC / Wates

Project: Envision AESC Giga Factory

Title: External Works - Site Sections - Sheet 1

RPS Project Number	Scale @ A0	Date Created
NK020439	1:100	14/12/21
Task Team Manager	Information Author	Task Information Manager
TH	LMA	TSR

Status: S4 (Fit For Approval)

Document Number: ENV1-RPS-ST-XX-DR-C-111500 Revision: P02

Project Code - Originator - Function - Space - Type - Role - Drawing Number

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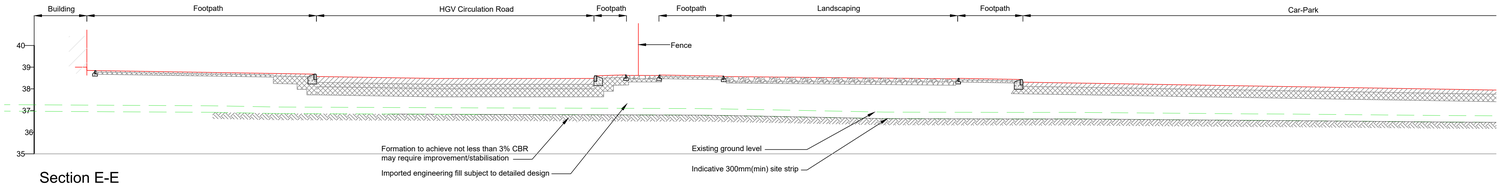
REV P02

N

Key:

- Concrete
- Asphalt
- Sub base
- Soft Landscaping
- Hard Landscaping
- Formation Level
- Existing Site Profile
- Proposed Site Profile



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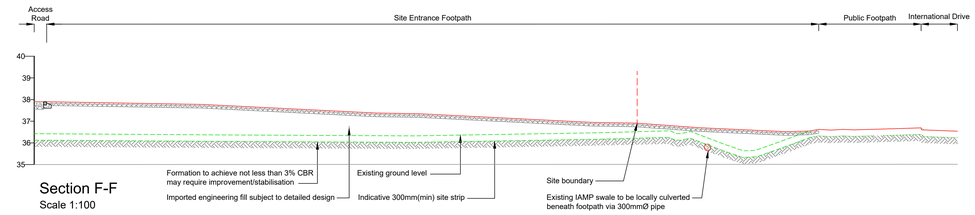
Scale 1:100



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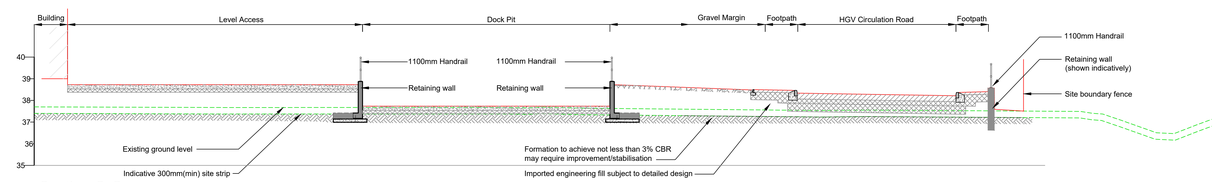
Scale 1:100



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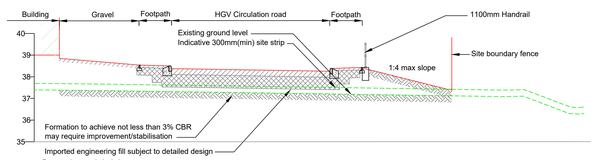

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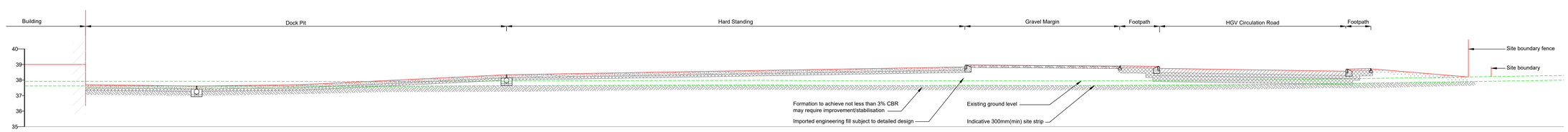

Section J-J
Scale 1:100

1m SCALE 1:100

Rev	Description	By	Ckd	Date
P02	Layout updated to suit revised building and site layout ENV1-RPS-ST-XX-DR-A-111150 P05 General Notes Updated	TRu	MM	25/03/22
P01	First Issue.	LMA	MM	14/12/21

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Client: Envision AESC, Wates

Project: Envision AESC Giga Factory

Title: External Works - Site Sections - Sheet 2

RPS Project Number	Scale @ A0	Date Created
NK020439	1:100	14/12/21
Task Team Manager	**Information Author**	**Task Information Manager**
TH	LMA	TSR

Status: S4 (Fit For Approval)

Document Number: ENV1-RPS-ST-XX-DR-C-111501

Revision: P02

Project Code - Originator - Function - Space - Type - Role - Drawing Number

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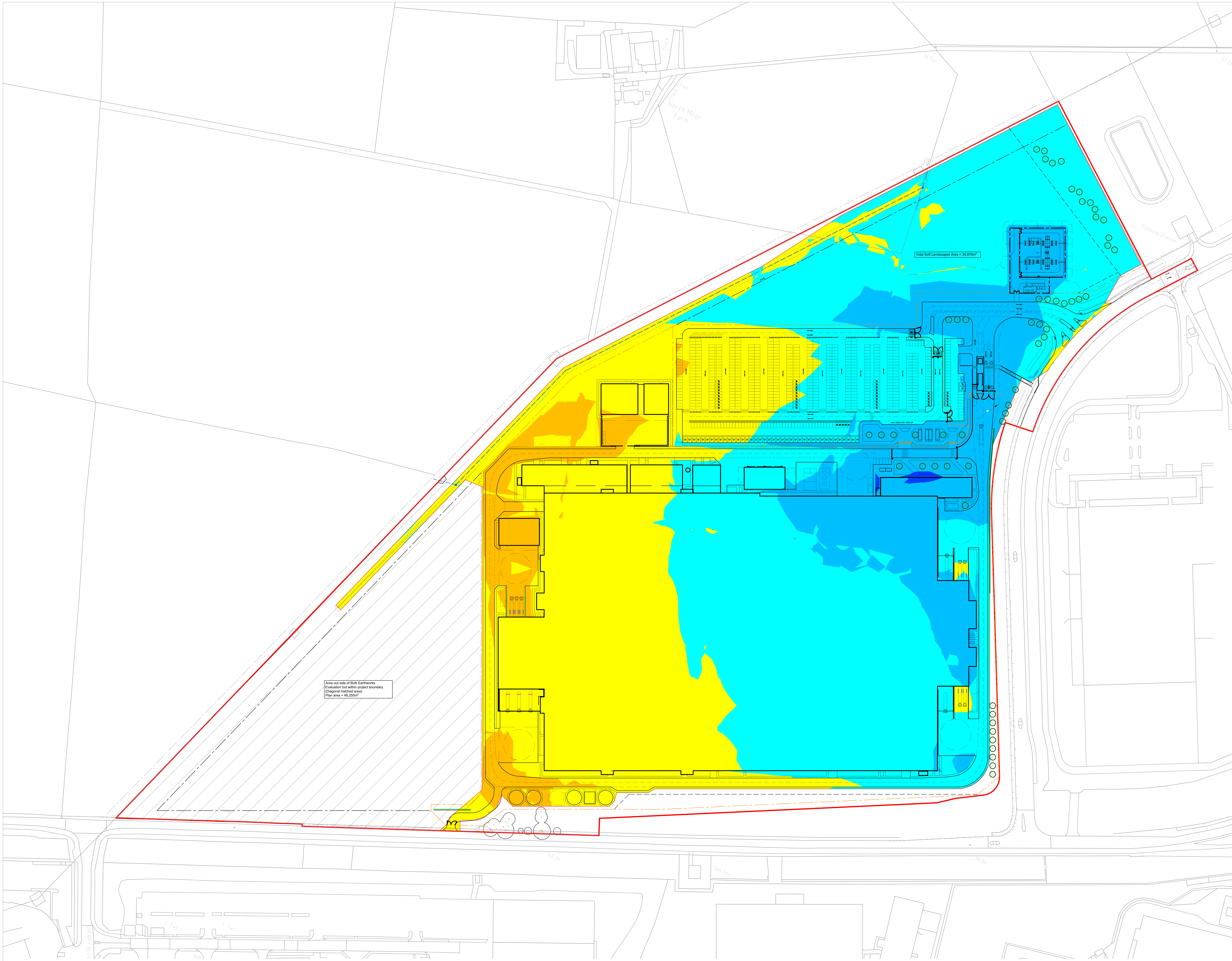

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REV P02

N

Earthworks Notes:

1. The Bulk Earthworks Evaluation is based on topographical information from Academy Geomatics Topographical Survey reference 3511B - 03/11/15 .
2. The Bulk Earthworks Evaluation on this drawing is based on the proposed finished floor level (FFL) indicated.
3. No bulking factors have been applied for volume estimations used for material to be used or removed from site.
4. For the purposed of cut and fill analysis, the following construction depths have been assumed based on 175HGVs per day and a formation CBR of 3%.
   HGV Access and Circulation Road = 850mm
   Car Park and Access Route: 540mm
   Concrete Hardstanding = 460mm
   Footpath (Adjacent HGV Routes = 455mm
   Pedestrian Only Footpath = 450mm
   Main Building = 400mm
   Ancillary Buildings = 350mm
   Hard landscaping = 150mm
   Soft Landscaping = 300mm
5. Dock height taken as 1.3m.
6. 1:4 tie in slopes have been used around the site extents.
7. Coloured areas within the project boundary indicate the extent of Bulk Earthworks Evaluation (i.e. Area to the South West within the project boundary has not been evaluated).
8. Further allowance needs to be made for arisings from e.g. :
   Drainage network (Attenuation tank volumes have been included)
   Foundations
   Piling mats
   Site services and associated ducts and draw pits.
9. Bulk earthworks evaluation is based on the assumption that site won materials can be reused as engineering & structural fill. Review will be required based upon the findings of the detailed site investigation and testing to be conducted.

REV P02

Area / Volume Calculations

Total Site area = 253,400m^2
Developed Site Area = 197,097m^2

Reference Drawings

Data based on Appendix T Tender Information
- Topo Survey - Academy Geomatics 3511B - 03/11/15

Data received from Chris Wells IAMP LLP (Sunderland Council) May 2021
- Estate Road 45 -IAMP_AB_Road_45_Kerbs_2D.dwg.

Subject to topographical survey validation

Area / Volume Calculations

Total Site area = 253400m^2

SURFACE LEVEL DATA

NUMBER	MINIMUM LEVEL	MAXIMUM LEVEL	COLOUR	AREA	VOLUME
1	-3.00	-2.00		0m^2	0m^3
2	-2.00	-1.00		10469.402m^2	2072.310m^3
3	-1.00	0.00		78213.388m^2	42729.231m^3
4	0.00	1.00		92744.659m^2	75427.271m^3
5	1.00	2.00		31800.992m^2	12901.620m^3
6	2.00	3.00		256.226m^2	17.205m^3

Earthworks Cut	40,420m^3
Earthworks Fill	85,509m^3
Net Volume	45,089m^3 Fill
Drainage Arisings - (Attenuation Tanks Only)	12,610m^3
Net Volume incl attenuation (Refer to note 8)	32,479m^3 Fill
Site Strip 300mm (Excluding undeveloped land to the east of the main building)	59,129m^3
Soft Landscaping Volumes (Included in site strip above)	19,127m^3

REV P02

Rev	Description	By	Ckd	Date
P02	Layout updated to suit revised building and site layout ENV1-RPS-ST-XX-DR-A-111150 P05 and ENV1-RPS-ST-XX-DR-C-111401 to 111403 P03 External Constructions Layouts. General Notes Updated	TRu	MM	25/03/22
P01	First Issue.	LMA	MM	14/09/21

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Client: Envision AESC

Project: Giga One

Title: Earthworks - Bulk Earthworks Evaluation - FFL=39.000m CBR=3%

RPS Project Number	Scale @ A0	Date Created
NK020439	1:1000	14/09/21
Task Team Manager	Information Author	Task Information Manager
TH	LMA	MM

Status: S2 (Suitable For Information)

Document Number: ENV1-RPS-ST-XX-SK-C-112903 — Revision: P02

Project Code - Originator - Function - Space - Type - Role - Drawing Number

10m — SCALE 1:1000

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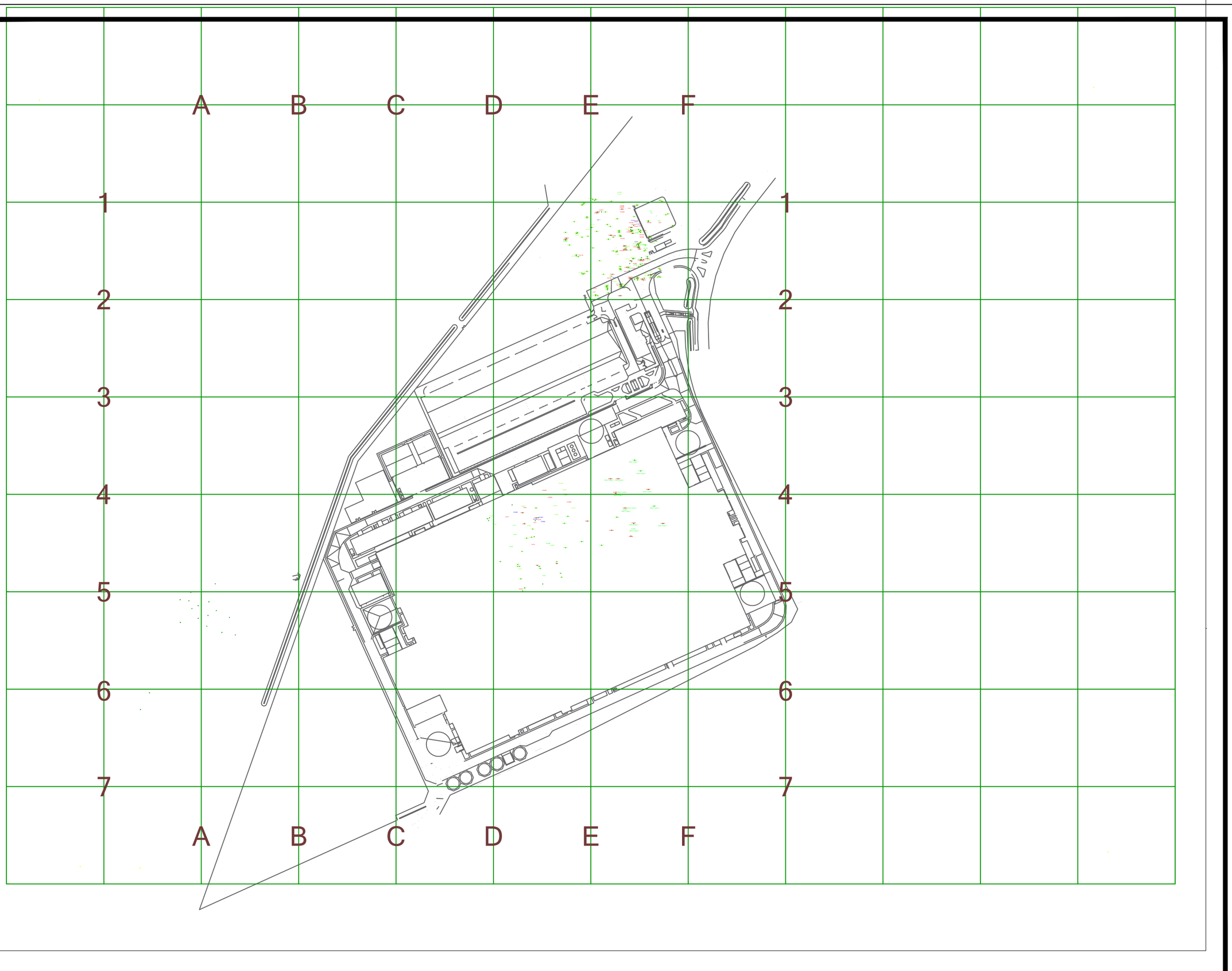
Appendix G
COMPACTION AND HAND VANE TEST RESULTS



General Notes

- Green Pass
- Red Fail
- Blue Retest

Disclaimer

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ABBREVIATIONS

RWP	RAINWATER PIPE	WP	WASTE PIPE
	MANHOLE	STN	STATION CONTROL
IC	INSPECTION CHAMBER	GUL	GULLEY
SV	STOP VALVE	GV	GAS VALVE
BT	BT CHAMBER	EP	ELECTRIC POLE
TP	TELEGRAPH POLE	LP	LAMP POST

LEGEND

- TOP OF BATTER
- BOTTOM OF BATTER
- ROAD EDGE
- CHANNEL LINE
- TOP OF KERB
- FOOTPATH
- VERGE
- CENTRE LINE
- FENCE METAL
- FENCE WOOD
- FENCE POST AND RAIL
- TREE CANOPY
- HEDGE LINE
- WALL
- BUILDING

N

No.	Revision/Issue	By	Date

NORTH EAST EARTHWORKS LIMITED

LITTLEBURN INDUSTRIAL ESTATE
LANGLEY MOOR
DURHAM
DH7 8HJ

TEL: 0191 384 4000
FAX: 0191 384 5869

Project Name and Address

ENVISION
INTERNATIONAL
DRIVE
WASHINGTON

Core Location Plan Zone 7

Drawing No	Sheet
4014	1OF1
Date: 07/07/22	
Scale: SCALE	

Client	Drawn	Approved
WATES	HS	BJ

Zone 7 L

4

CC228

CC223

CC229

CC227

CC224

CC230

CC234

CC225

CC232

CG33

CC231

CC245

CC30

CC226

CC20

CC11

CC251

CG14

CC241

CG19

CC242

CC15

CC247

CC243

CC13

CC12

CC250

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CG53

CC12

CC238

CC232

CC253

CC240

CC230

CC252

CC254

CC30

CC255

CC2

CC5

CC4

CC6

CG24

CC7

CG22

CC8

CC9

CC23

CC1

CC222

CC3

CC10

5

CC18

CC16

CC17

D

E

General Notes

- Green Pass
- Red Fail
- Blue Retest

Disclaimer

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ABBREVIATIONS

RWP	RAINWATER PIPE	WP	WASTE PIPE
	MANHOLE	STN	STATION CONTROL
IC	INSPECTION CHAMBER	GUL	GULLEY
SV	STOP VALVE	GV	GAS VALVE
BT	BT CHAMBER	EP	ELECTRIC POLE
TP	TELEGRAPH POLE	LP	LAMP POST

LEGEND

- TOP OF BATTER
- BOTTOM OF BATTER
- ROAD EDGE
- CHANNEL LINE
- TOP OF KERB
- FOOTPATH
- VERGE
- CENTRE LINE
- FENCE METAL
- FENCE WOOD
- FENCE POST AND RAIL
- TREE CANOPY
- HEDGE LINE
- WALL
- BUILDING

N

No.	Revision/Issue	By	Date

NORTH EAST EARTHWORKS LIMITED

LITTLEBURN INDUSTRIAL ESTATE
LANGLEY MOOR
DURHAM
DH7 8HJ

TEL: 0191 384 4000
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Project Name and Address

ENVISION
INTERNATIONAL
DRIVE
WASHINGTON

Core Location Plan Zone 2

Drawing No: 4013	Sheet: 1OF1
Date: 07/07/22	
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Client: WATES	Drawn: HS / Approved: BJ

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General Notes

- Green Pass
- Red Fail
- Blue Retest

Disclaimer

North East Earthworks Ltd.

ABBREVIATIONS

RWP	RAINWATER PIPE	WP	WASTE PIPE
	MANHOLE	STN	STATION CONTROL
IC	INSPECTION CHAMBER	GUL	GULLEY
SV	STOP VALVE	GV	GAS VALVE
BT	BT CHAMBER	EP	ELECTRIC POLE
TP	TELEGRAPH POLE	LP	LAMP POST

LEGEND

- TOP OF BATTER
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- TOP OF KERB
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- FENCE METAL
- FENCE WOOD
- FENCE POST AND RAIL
- TREE CANOPY
- HEDGE LINE
- WALL
- BUILDING

N

No.	Revision/Issue	By	Date

NORTH EAST EARTHWORKS LIMITED

LITTLEBURN INDUSTRIAL ESTATE
LANGLEY MOOR
DURHAM
DH7 8HJ

TEL: 0191 384 4000
FAX: 0191 384 5869

Project Name and Address

ENVISION
INTERNATIONAL
DRIVE
WASHINGTON

Core Location Plan Zone 3

Drawing No: 4014	Sheet: 1OF1
Date: 20/07/22	
Scale: SCALE	

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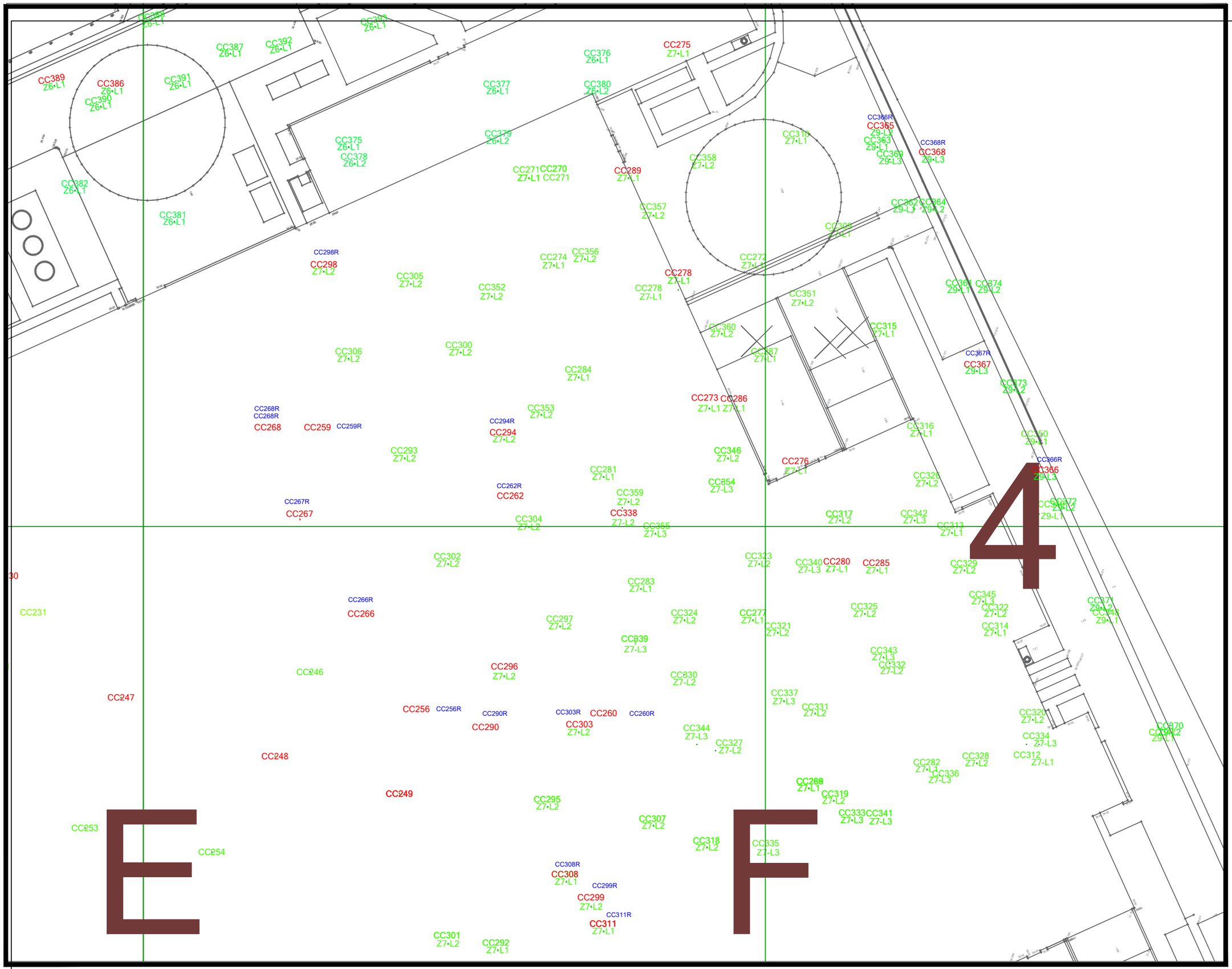
WATES	HS	BJ



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No.	Revision/Issue	By	Date

NORTH EAST EARTHWORKS LIMITED
LITTLEBURN INDUSTRIAL ESTATE
LANGLEY MOOR
DURHAM
DH7 8HJ

TEL: 0191 384 4000
FAX: 0191 384 5869

Project Name and Address

ENVISION
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DRIVE
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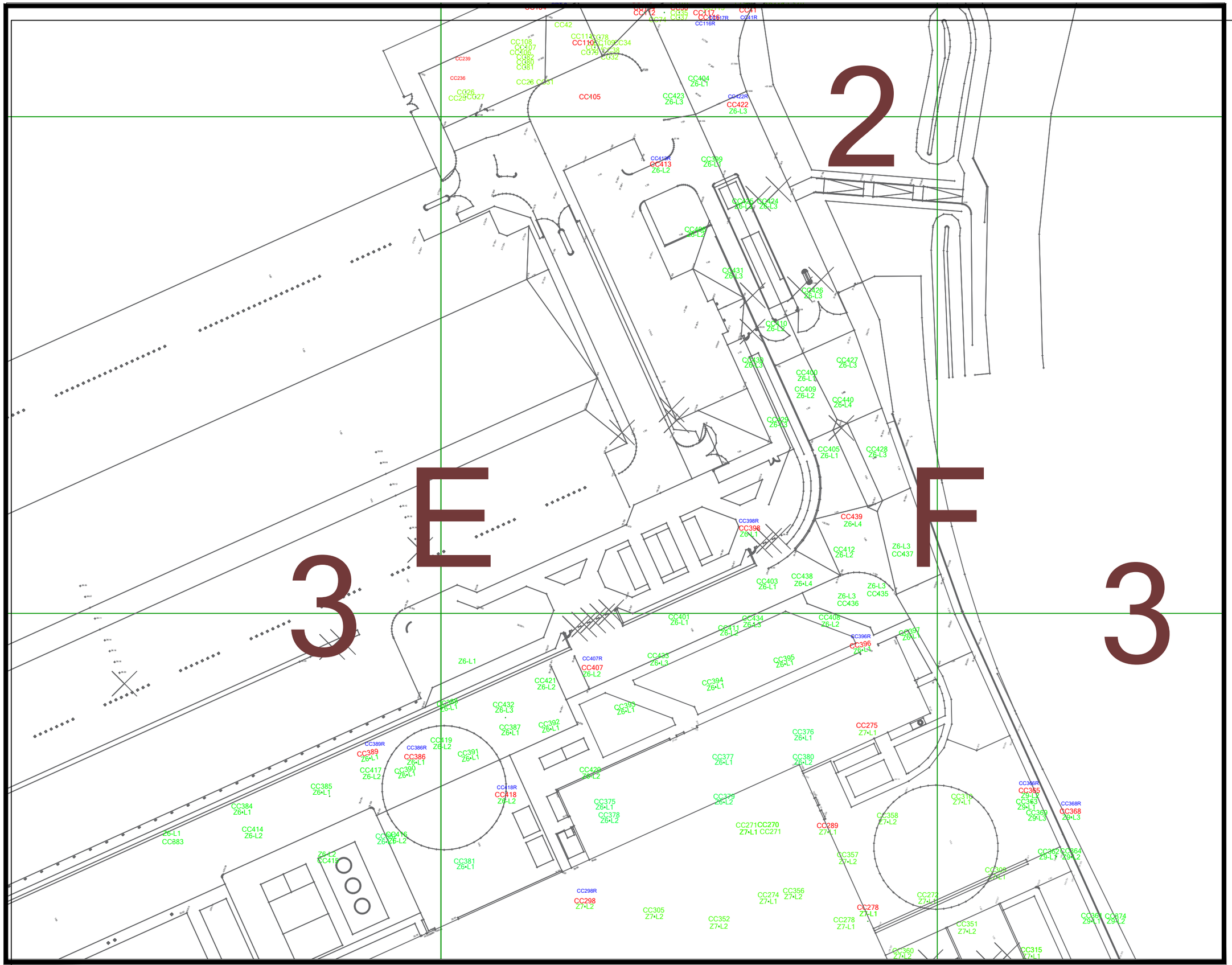
Core Location Plan Zone 7

Drawing No	4031	Sheet	1OF1
Date	01/08/22		
Scale	SCALE		
Client	WATES	Drawn	HS
		Approved	BJ



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No.	Revision/Issue	By	Date

NORTH EAST EARTHWORKS LIMITED

LITTLEBURN INDUSTRIAL ESTATE
LANGLEY MOOR
DURHAM
DH7 8HJ

TEL: 0191 384 4000
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Project Name and Address

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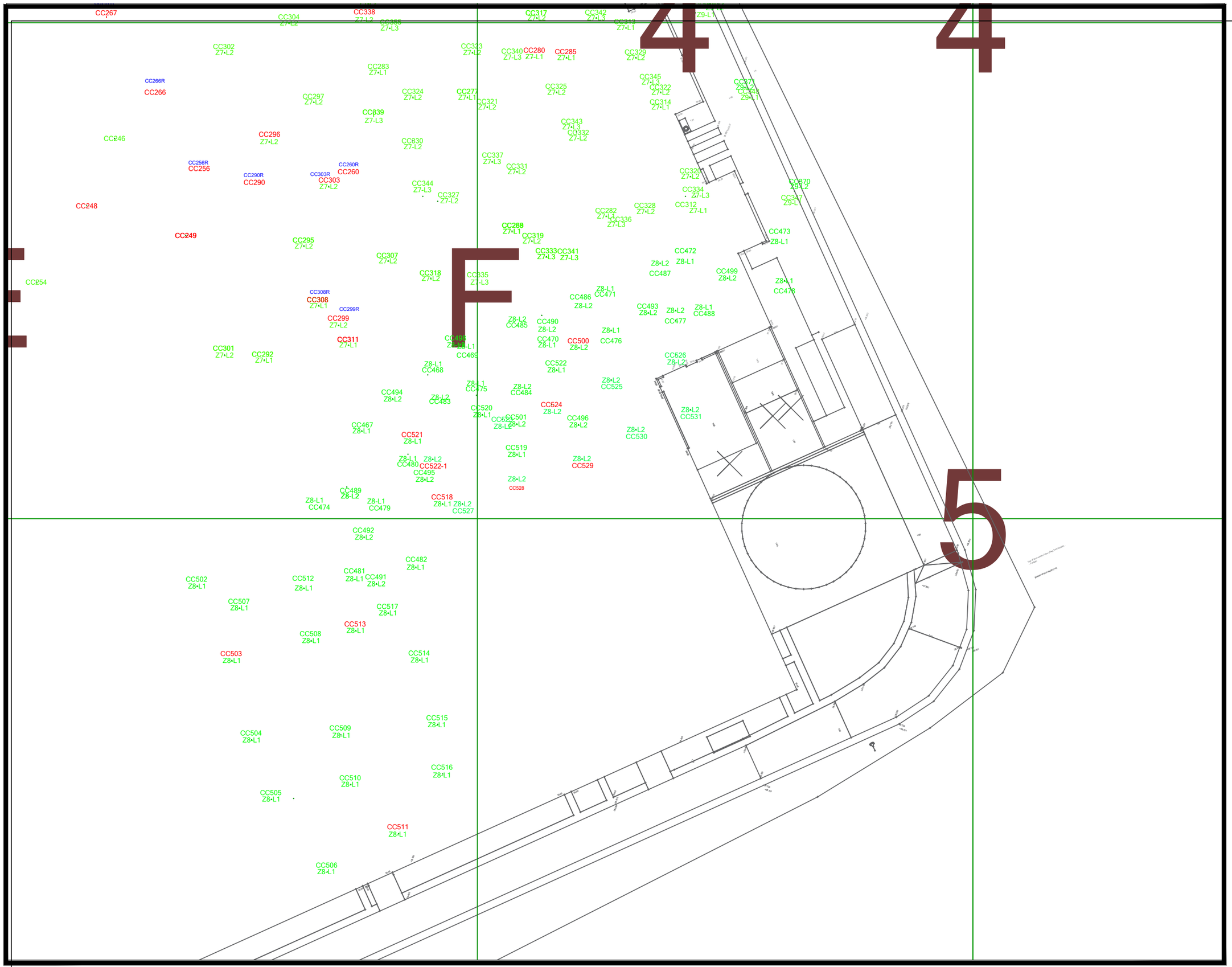
Core Location Plan Zone 6

Drawing No	4035
Sheet	1OF1
Date	08/08/22
Scale	SCALE

Client	Drawn	Approved
WATES	HS	BJ



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NORTH EAST EARTHWORKS LIMITED

LITTLEBURN INDUSTRIAL ESTATE
LANGLEY MOOR
DURHAM
DH7 8HJ

TEL: 0191 384 4000
FAX: 0191 384 5869

Project Name and Address

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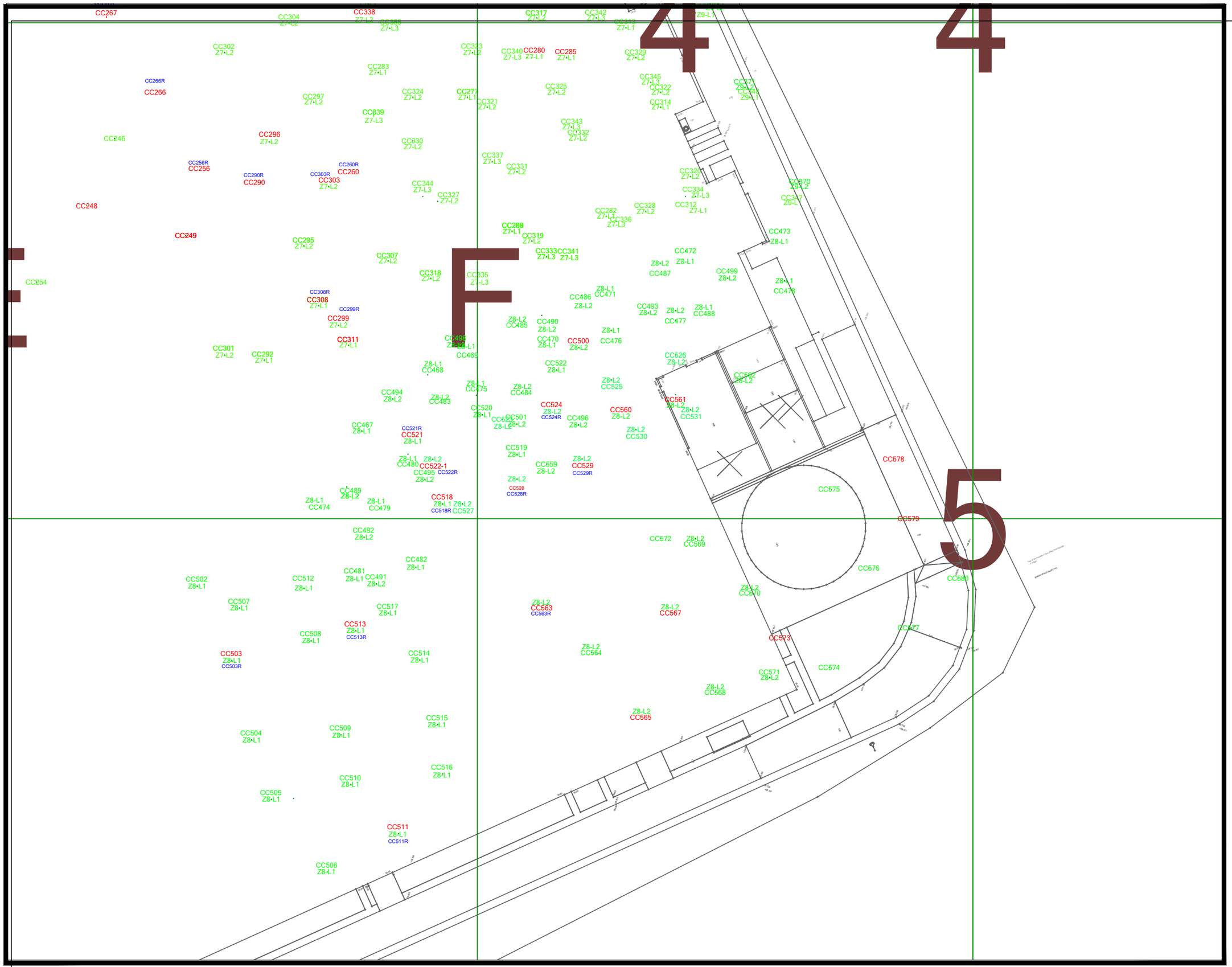
WASHINGTON

Core Location Plan Zone 8

Drawing No: 4040	Sheet: 1OF1
Date: 08/08/22	
Scale: SCALE	

Client	Drawn	Approved
WATES	HS	BJ



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NORTH EAST EARTHWORKS LIMITED

LITTLEBURN INDUSTRIAL ESTATE
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DURHAM
DH7 8HJ

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Project Name and Address

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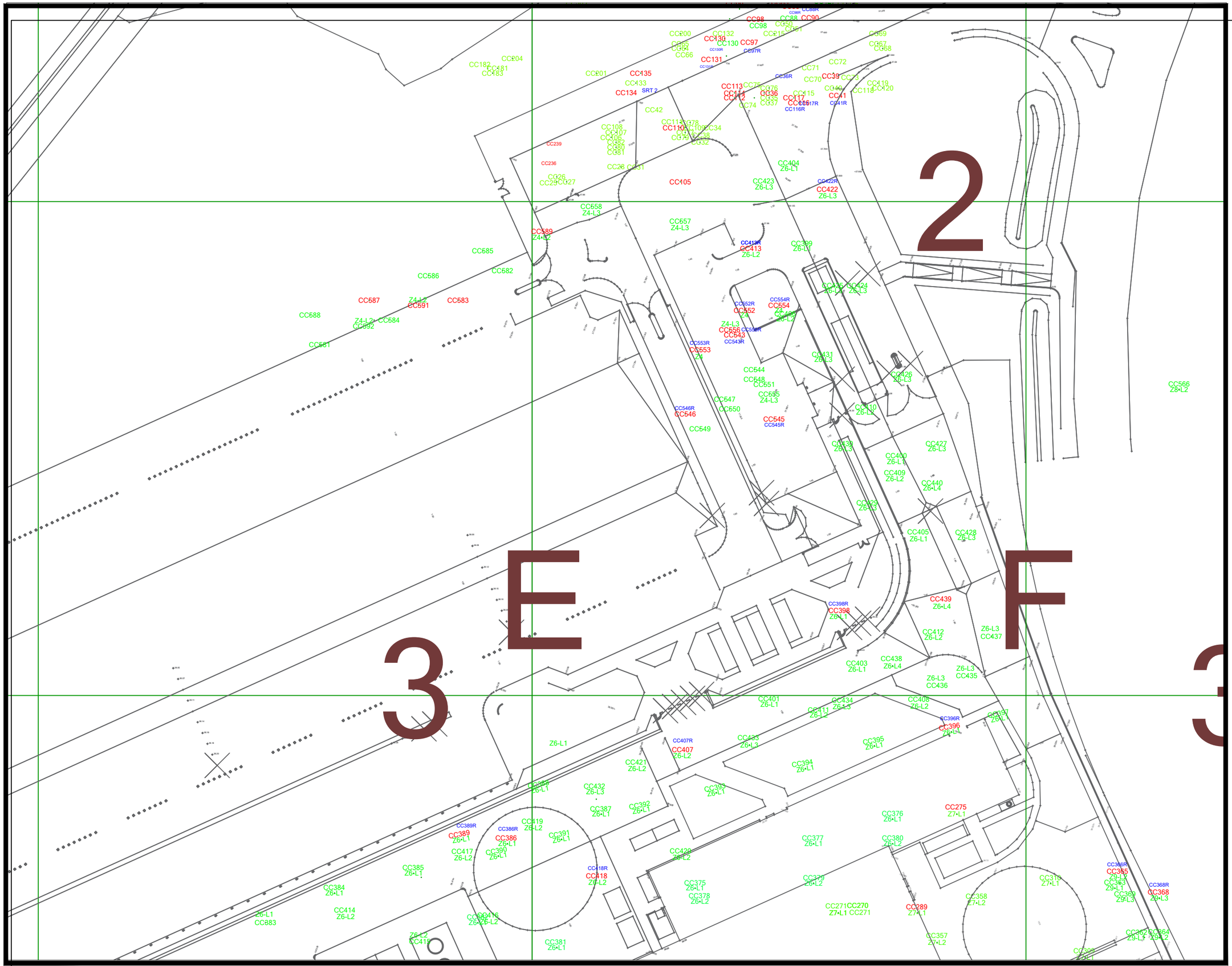
Core Location Plan Zone 8

Drawing No: 4040	Sheet: 1OF1
Date: 08/08/22	
Scale: SCALE	
Client: WATES	Drawn: HS / Approved: BJ



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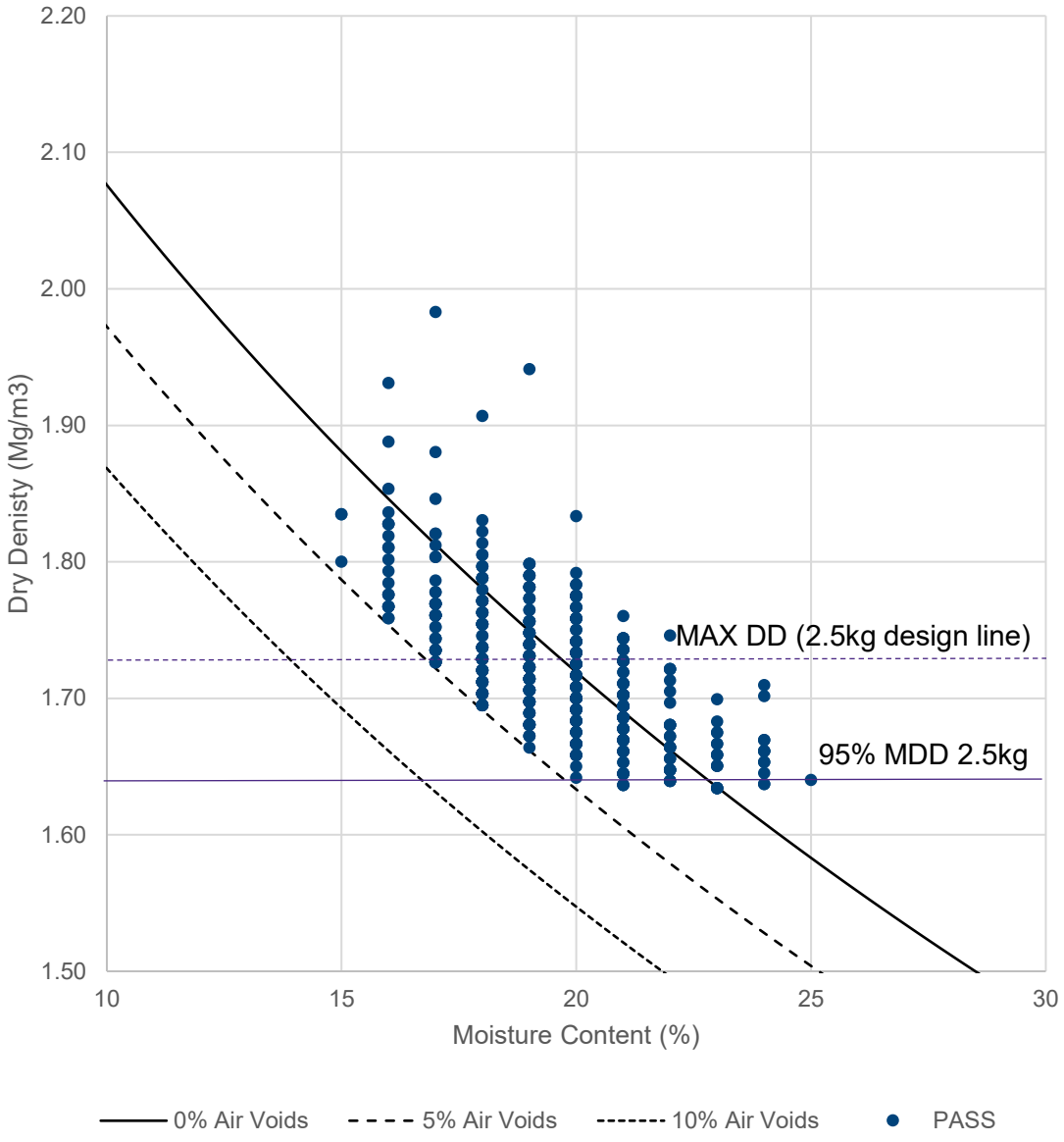
Core Location Plan Zone 8

Drawing No	4040
Date	08/08/22
Scale	SCALE
Sheet	1OF1

Client	Drawn	Approved
WATES	HS	BJ

Test Ref.	Easting	Northing	Elevation	Recorded Bulk Density	Recorded Moisture Content	Bulk Density (Mg/m3)	Moisture (%)	Dry Density (Mg/m3)	Ref MDD (Mg/m3)	Particle Density	Relative Compaction	Air Voids (%)	Remediation Comments	Re-Test Ref. (Awating re-test Passed Failed)	Re-test Remediation Comments	Final Re-Test Ref.
CC398	480685	54.924113	Z6-L1			1.91	8.8	1.76	1.72	2.62	102	17.3	Scarified, wet with bowser and Recompacted	CC398 RT P		
CC402	481139	54.924427	Z6-L1			2.06	36	1.52	1.72	2.62	88	-12.7	Scarified and Recompacted	CC402 RT P		
CC404	480857	54.924421	Z6-L1			2.02	24	1.56	1.72	2.62	91	3.0	Re rolled to increase the compaction	CC404 RT P		
CC405	481601	54.924074	Z6-L1			2.01	29	1.68	1.72	2.62	98	-12.8	Scarified and Recompacted	CC405	Failed. Scarified to air clay and Recompacted	
CC407	480939	54.924064	Z6-L2			1.97	21	1.57	1.72	2.62	91	7.1	Scarified and Recompacted	CC407 RT P		
CC408	481050	54.924260	Z6-L2			2.09	26	1.75	1.72	2.62	102	-12.3	Scarified and Recompacted	CC408 RT P		
CC413	480575	54.923888	Z6-L2			1.95	32	1.48	1.72	2.62	86	-3.8	Scarified to air clay and Recompacted	CC413 RT P		
CC256	433344	558770				2.00	18	1.69	1.72	2.62	98	5.1	Re rolled to increase the compaction	CC256RT P		
CC259	433328	558816				1.99	17	1.71	1.72	2.62	99	5.7	Re rolled to increase the compaction	CC259RT P		
CC260	433374	558770				1.99	24	1.61	1.72	2.62	93.6	-0.1	Re rolled to increase the compaction	CC260RT P		
CC262	433359	558805				1.85	18	1.57	1.72	2.62	91.3	11.8	Re rolled to increase the compaction	CC262RT P		
CC266	433335	558786				1.95	15	1.69	1.72	2.62	98	10.1	Re rolled to increase the compaction	CC266RT P		
CC267	433326	558801				1.89	18	1.60	1.72	2.62	93.0	10.1	Re rolled to increase the compaction	CC267RT P		
CC29-RT						2.06	13	1.82	1.72	2.62	106	6.9	Scarified, wet with bowser and Recompacted	CC29-RTF	Scarified, wet with bowser and Recompacted	
CC124-RT						1.94	23	1.57	1.72	2.62	91.3	4.0	Re rolled to increase the compaction	CC124		
CC273	433391	558819	Z7-L1			2.04	16	1.75	1.72	2.62	102	5.2	Re rolled to increase the compaction	CC273		
CC275	433386	558876	Z7-L1			2.02	25	1.61	1.72	2.62	93.6	-1.7	Scarified to air clay and Recompacted	CC275	.	
CC276	433405	558809	Z7-L1			1.96	24	1.58	1.72	2.62	91.9	1.8	Re rolled to increase the compaction	CC276		
CC278	433386	558838	Z7-L1			1.98	24	1.6	1.72	2.62	93.0	0.5	Re rolled to increase the compaction	CC278		
CC280	433411	558793	Z7-L1			1.99	13	1.76	1.72	2.62	102	9.9	Scarified, wet with bowser and Recompacted	CC280		
CC256-RT						2.06	14	1.81	1.72	2.62	105	5.6	Scarified, wet with bowser and Recompacted	CC256-RT		
CC262-RT						1.97	18	1.67	1.72	2.62	97	6.2	Re rolled to increase the compaction	CC262-RT		
CC285	433418	558793	Z7-L1			1.98	26	1.57	1.72	2.62	91.3	-0.7	Scarified to air clay and Recompacted	CC285		
CC286	433395	558819	Z7-L1			2.02	25	1.62	1.72	2.62	94.2	-2.3	Scarified to air clay and Recompacted	CC286	Scarified to air clay and Recompacted no re test due to borderline result.	
CC289	433378	558856	Z7-L1			1.98	23	1.61	1.72	2.62	93.6	1.5	Re rolled to increase the compaction	CC289		
CC290	433393	588855	Z7-L1			2.00	23	1.62	1.72	2.62	94.2	0.9	Re rolled to increase the compaction	CC290	Re rolled to increase the compaction no re test due to borderline result.	
CC294	433358	558814	Z7-L2			1.94	21	1.61	1.72	2.62	93.6	4.7	Re rolled to increase the compaction	CC294RT F	Re rolled to increase the compaction	CC294RT P
CC295	433365	558755	Z7-L2			1.96	21	1.63	1.72	2.62	94.8	3.6	Re rolled to increase the compaction	CC295	Re rolled to increase the compaction no re test due to borderline result.	
CC297	433367	558784	Z7-L2			1.97	21	1.63	1.72	2.62	94.8	3.6	Re rolled to increase the compaction	CC297	Re rolled to increase the compaction no re test due to borderline result.	
CC298	433329	558841	Z7-L2			1.98	18	1.67	1.72	2.62	97	6.2	Re rolled to increase the compaction	CC298RTP		
CC299	433372	558739	Z7-L2			1.96	18	1.66	1.72	2.62	97	6.8	Re rolled to increase the compaction	CC299RTP		
CC303	433370	558767	Z7-L2			1.95	22	1.60	1.72	2.62	93.0	3.7	Re rolled to increase the compaction	CC303RTP		
CC304	433362	558800	Z7-L2			1.99	22	1.63	1.72	2.62	94.8	1.9	Re rolled to increase the compaction	CC304	Re rolled to increase the compaction no re test due to borderline result.	
CC308	433368	558743	Z7-L1			1.97	23	1.60	1.72	2.62	93.0	2.1	Re rolled to increase the compaction	CC308RTP		
CC309	433412	558847	Z7-L1			2.01	24	1.63	1.72	2.62	94.8	-1.3	Re rolled to increase the compaction	CC309	Re rolled to increase the compaction no re test due to borderline result.	
CC311	433374	558735	Z7-L1			1.97	23	1.60	1.72	2.62	93.0	2.1	Re rolled to increase the compaction	CC311RT F	Re rolled to increase the compaction	CC311RT P
CC232-RT						1.91	20	1.59	1.72	2.62	92	7.5	Scarified, wet with bowser and Recompacted	CC232-RT		
CC328	433434	558762	Z7-L2			1.97	22	1.62	1.72	2.62	94.2	2.5	Re rolled to increase the compaction	CC328	Re rolled to increase the compaction no re test due to borderline result.	
CC338	433377	558803	Z7-L2			1.99	25	1.60	1.72	2.62	93.0	-1.1	Scarified to air clay and Recompacted	CC338	Scarified to air clay and Recompacted	CC338 RT P
CC345	433435	558788	Z7-L3			2.03	16	1.75	1.72	2.62	102	5.2	Scarified, wet with bowser and Recompacted	CC345	Re rolled to increase the compaction no re test due to borderline result.	
CC294-RT						2.02	17	1.72	1.72	2.62	100	5.1	Scarified, wet with bowser and Recompacted	CC294-RT	Re rolled to increase the compaction	CC294-RT
CC311-RT						2.01	17	1.72	1.72	2.62	100	5.1	Scarified, wet with bowser and Recompacted	CC311-RT		
CC365	433419	558862	Z9-L2			1.96	17	1.67	1.72	2.62	97	7.9	Scarified, wet with bowser and Recompacted	CC365RT F	Scarified to air clay and Recompacted	CC365RT P
CC366	433445	558808	Z9-L3			1.96	14	1.71	1.72	2.62	99	10.8	Scarified, wet with bowser and Recompacted	CC366RT P		
CC367	433434	558825	Z9-L3			1.99	18	1.68	1.72	2.62	98	5.6	Re rolled to increase the compaction	CC367RT P		
CC247	433296	558771				1.91	20	1.59	1.72	2.62	92.4	7.5	Re rolled to increase the compaction	CC247		
CC248	433321.13	558762				1.94	19	1.63	1.72	2.62	94.8	6.8	Re rolled to increase the compaction	CC248	Re rolled to increase the compaction no re test due to borderline result.	
CC249	433342	558754				1.97	24	1.59	1.72	2.62	92.4	1.2	Re rolled to increase the compaction	CC249		
CC223	433252	558803				1.90	30	1.47	1.72	2.62	85.5	-0.2	Scarified to air clay and Recompacted	CC223		
CC224	433258	558796				1.89	15	1.64	1.72	2.62	95	12.8	Re rolled to increase the compaction	CC224		
CC227	433274	558799				1.96	17	1.68	1.72	2.62	98	7.3	Re rolled to increase the compaction	CC227		
CC230	433272	558804				1.96	18	1.66	1.72	2.62	97	6.8	Re rolled to increase the compaction	CC230	Re rolled to increase the compaction no re test due to borderline result.	
CC232	433282	558785				2.00	17	1.70	1.72	2.62	99	6.2	Re rolled to increase the compaction	CC232	Re rolled to increase the compaction no re test due to borderline result.	
CC240	433332	559089				1.98	17	1.70	1.72	2.62	99	6.2	Re rolled to increase the compaction	CC240	Re rolled to increase the compaction no re test due to borderline result.	

Test Ref.	Easting	Northing	Elevation	Recorded Bulk Density	Recorded Moisture Content	Bulk Density (Mg/m3)	Moisture (%)	Dry Density (Mg/m3)	Ref MDD (Mg/m3)	Particle Density	Relative Compaction	Air Voids (%)	Remediation Comments	Re-Test Ref. (Awating re-test Passed Failed)	Re-test Remediation Comments	Final Re-Test Ref.
CC6	433265	558729				1.93	21	1.59	1.72	2.62	92.4	5.9	Re rolled to increase the compaction	CC6		
CC7	433245	558727				1.93	19	1.63	1.72	2.62	94.8	6.8	Re rolled to increase the compaction	CC7RTP		
CC11	43233	55880				1.95	18	1.66	1.72	2.62	97	6.8	Re rolled to increase the compaction	CC245		
CC12	433231	55803				1.95	17	1.66	1.72	2.62	97	8.4	Re rolled to increase the compaction	CC244		
CC13	433243	558773				1.80	14	1.58	1.72	2.62	91.9	17.6	Scarified, wet with bowser and Recompacted	CC243P		
CC14	433244	558776				1.86	16	1.60	1.72	2.62	93.0	13.3	Re rolled to increase the compaction	CC241P		
CC15	433246	558776				1.97	19	1.65	1.72	2.62	96	5.7	Re rolled to increase the compaction	CC242P		
CC18	433230	558701				1.95	18	1.66	1.72	2.62	97	6.8	Re rolled to increase the compaction	CC18RTP		
CC418	433279	558844	Z6-L2			1.89	16	1.63	1.72	2.62	94.8	11.7	Re rolled to increase the compaction	CC418RTP		
CC422	433360	559000	Z6-L3			1.93	25	1.55	1.72	2.62	90.1	2.1	Scarified and Recompacted	CC422RTP		
CC439	433383	558918	Z6-L4			1.96	25	1.57	1.72	2.62	91	0.8	Scarified and Recompacted	CC439 RTP		
CC500	433341	558644	Z8-L2			2.02	16	1.74	1.72	2.62	101	5.7	Re rolled to increase the compaction	CC500 RT	Re rolled to increase the compaction no re test due to borderline result.	
CC503	433342	558668	Z8-L2			2	17	1.71	1.72	2.62	99	5.7	Re rolled to increase the compaction	CC503 RT	Re rolled to increase the compaction no re test due to borderline result.	
CC511	433365	558627	Z8-L2			2	15	1.74	1.72	2.62	101	7.5	Re rolled to increase the compaction	CC511 RT		
CC513	433367	558674	Z8-L2			1.98	18	1.68	1.72	2.62	98	5.6	Re rolled to increase the compaction	CC513 RT	Re rolled to increase the compaction no re test due to borderline result.	
CC518	433393	558703	Z8-L1			2.01	17	1.72	1.72	2.62	100	5.1	Re rolled to increase the compaction	CC518 RTP	Re rolled to increase the compaction no re test due to borderline result.	
CC521	433386	558713	Z8-L1			2.04	14	1.78	1.72	2.62	103	7.1	Scarified, wet with bowser and Recompacted	CC521RTP		
CC522-1	433391	558712	Z8-L2			1.97	18	1.68	1.72	2.62	98	5.6	Re rolled to increase the compaction	CC522 RTP		
CC524	433415	558723	Z8-L2			1.99	18	1.69	1.72	2.62	98	5.1	Re rolled to increase the compaction	CC524 RTP	Re rolled to increase the compaction no re test due to borderline result.	
CC528	433408	558708	Z8-L2			2	17	1.71	1.72	2.62	99	5.7	Re rolled to increase the compaction	CC528RTP		
CC529	433420	588711	Z8-L2			2	18	1.69	1.72	2.62	98	5.1	Re rolled to increase the compaction	CC529RTP	Re rolled to increase the compaction no re test due to borderline result.	
CC560	433429	558722	Z8-L2			2	16	1.73	1.72	2.62	101	6.3	Re rolled to increase the compaction	CC560RTP		
CC561	433440	558725	Z8-L2			1.94	18	1.64	1.72	2.62	95	7.9	Re rolled to increase the compaction	CC561RTP		
CC563	433413	558682	Z8-L2			1.97	18	1.68	1.72	2.69	98	7.3	Re rolled to increase the compaction	CC563RTP		
CC565	433433	558660	Z8-L2			1.94	19	1.63	1.72	2.69	95	8.4	Re rolled to increase the compaction	CC565RTP		
CC567	433439	558681	Z8-L2			1.96	18	1.66	1.72	2.69	97	8.4	Re rolled to increase the compaction	CC567RTP		
CC569	433444	558696	Z8-L2			2.03	18	1.72	1.72	2.69	100	5.1	Re rolled to increase the compaction	CC569RTP	Re rolled to increase the compaction no re test due to borderline result.	
CC571	433459	558668	Z8-L2			2.03	18	1.72	1.72	2.69	100	5.1	Re rolled to increase the compaction	CC571RTP	Re rolled to increase the compaction no re test due to borderline result.	
CC542-RT						1.96	20	1.64	1.72	2.69	95	6.2	Re rolled to increase the compaction	CC542-RT	Re Test 20922 awaiting Results	
CC543-RT						2.01	19	1.69	1.72	2.69	98	5.1	Re rolled to increase the compaction	CC543-RTP	Re rolled to increase the compaction no re test due to borderline result.	
CC573	433461	558676				2.02	15	1.75	1.72	2.69	102	8.7	Re rolled to increase the compaction	CC573RTP		
CC576	433479	558690				1.99	19	1.68	1.72	2.69	98	5.6	Re rolled to increase the compaction	CC576 RTP	Re rolled to increase the compaction no re test due to borderline result.	
CC578	433484	558712				1.95	14	1.72	1.72	2.69	100	12	Scarified, wet with bowser and Recompacted	CC578RTP		
CC579	433487	558700				1.94	18	1.64	1.72	2.69	95	9.5	Re rolled to increase the compaction	CC579RTP		
CC583	433285	558980				1.97	20	1.64	1.72	2.69	95	6.2	Re rolled to increase the compaction	CC583RTP		
CC587	433267	558980				1.99	19	1.67	1.72	2.69	97	6.2	Re rolled to increase the compaction	CC587RTP		
CC589	433302	558994	Z4-L2			1.91	16	1.65	1.72	2.69	96	12.3	Scarified, wet with bowser and Recompacted	CC589RTP		
CC590	433291	558385	Z4-L2			1.98	19	1.66	1.72	2.69	97	6.7	Re rolled to increase the compaction	CC590RTP		
CC591	433277	558979	Z4-L2			1.97	21	1.62	1.72	2.69	94	5.8	Re rolled to increase the compaction	CC591RTP		
CC592	433268	558976	Z4-L2			2	19	1.69	1.72	2.69	98	5.1	Re rolled to increase the compaction	CC592 RTP	Re rolled to increase the compaction no re test due to borderline result.	



		Max	Min	Average
2.5kg	Opt MC	19	14	16
	Max DD	1.77	1.63	1.72

95% MDD 2.5kg **1.64 Mg/m3**

Report ref.	Date	Ref. no	Easting/Northing	Shear Stress
L22-429	20/06/2022	1	E43230-N558799	220
L22-429	20/06/2022	2	E43233-N558800	195
L22-429	20/06/2022	3	E433231-N55803	187
L22-429	20/06/2022	4	E433243-N558773	240
L22-429	20/06/2022	5	E433244-N558776	217
L22-429	20/06/2022	6	E43326-N55880	221
L22-433	21/06/2022	1	E433232-N558704	240
L22-433	21/06/2022	2	E433232-N558700	215
L22-433	21/06/2022	3	E433230-N558701	240
L22-462	22/06/2022	1	E433194-N558775	163
L22-462	22/06/2022	2	E433196-N558776	212
L22-462	22/06/2022	3	E433195-N558773	203
L22-462	22/06/2022	4	E433225-N558726	227
L22-462	22/06/2022	5	E433227-N558726	184
L22-462	22/06/2022	6	E433225-N558728	179
L22-463	23/06/2022	1	E433305-N559004	179
L22-463	23/06/2022	2	E433305-N559005	171
L22-463	23/06/2022	3	E433307-N559004	215
L22-463	23/06/2022	4	E433318-N559007	179
L22-463	23/06/2022	5	E433319-N559009	167
L22-463	23/06/2022	6	E433321-N559007	175
L22-463	23/06/2022	7	E433334-N559012	193
L22-463	23/06/2022	8	E433333-N559014	175
L22-463	23/06/2022	9	E433335-N559015	161
L22-463	23/06/2022	10	E433848-N559021	161
L22-463	23/06/2022	11	E433348-N559022	157
L22-463	23/06/2022	12	E433348-N559020	175
L22-463	23/06/2022	13	E433331-N559013	207
L22-463	23/06/2022	14	E433362-N559025	180
L22-463	23/06/2022	15	E433361-N559023	172
L22-463	23/06/2022	16	E433362-N559023	180
L22-463	23/06/2022	17	E433363-N559022	144
L22-463	23/06/2022	18	E43331047-N559056	161
L22-463	23/06/2022	19	E433349-N559055	196
L22-463	23/06/2022	20	E433349-N559057	199
L22-463	23/06/2022	21	E433342-N559070	151
L22-463	23/06/2022	22	E433342-N559071	192
L22-463	23/06/2022	23	E433341-N559072	168
L22-463	23/06/2022	24	E433343-N559071	177
L22-469	24/06/2022	1	E433352-N559035	164
L22-469	24/06/2022	2	E433351-N559036	152
L22-469	24/06/2022	3	E433353-N55903	172
L22-469	24/06/2022	4	E433355-N559050	165
L22-469	24/06/2022	5	E433357-N559051	167
L22-469	24/06/2022	6	E433356-N559051	152
L22-469	24/06/2022	7	E433360-N559065	171
L22-469	24/06/2022	8	E433361-N559064	167
L22-469	24/06/2022	9	E433362-N559063	180
L22-469	24/06/2022	10	E433323-N559064	187
L22-469	24/06/2022	11	E433321-N559066	172
L22-469	24/06/2022	12	E433320-N559066	184
L22-469	24/06/2022	13	E433326-N559049	183
L22-469	24/06/2022	14	E433327-N559050	167
L22-469	24/06/2022	15	E433327-N559049	199
L22-469	24/06/2022	16	E433330-N559031	184
L22-469	24/06/2022	17	E433330-N559032	156
L22-469	24/06/2022	18	E4333131-N559031	184
L22-469	24/06/2022	19	E433370-N559032	169
L22-469	24/06/2022	20	E433371-N559031	181
L22-469	24/06/2022	21	E433370-N559034	189
L22-469	24/06/2022	22	E433359-N559025	183
L22-469	24/06/2022	23	E433359-N559025	197
L22-469	24/06/2022	24	E433359-N559025	157
L22-469	24/06/2022	25	E433345-N559021	176
L22-469	24/06/2022	26	E433347-N559022	187
L22-469	24/06/2022	27	E433348-N559023	185
L22-469	24/06/2022	28	E433331-N559014	187
L22-469	24/06/2022	29	E433332-N559016	187
L22-469	24/06/2022	30	E433343-N559071	173
L22-469	24/06/2022	31	E433317-N559011	188
L22-469	24/06/2022	32	E433317-N559010	176
L22-469	24/06/2022	33	E433317-N559012	171
L22-469	24/06/2022	34	TBC	184

Report ref.	Date	Ref. no	Easting/Northing	Shear Stress
L22-474	27/06/2022	1	E433352-N559041	163
L22-474	27/06/2022	2	E433352-N559041	165
L22-474	27/06/2022	3	E433352-N559043	171
L22-474	27/06/2022	4	E433348-N559054	176
L22-474	27/06/2022	5	E433349-N559053	164
L22-474	27/06/2022	6	E433350-N559052	173
L22-474	27/06/2022	7	E433343-N559068	172
L22-474	27/06/2022	8	E433341-N559070	167
L22-474	27/06/2022	9	E433342-N559070	162
L22-474	27/06/2022	10	E433340-N559037	151
L22-474	27/06/2022	11	E433340-N559037	161
L22-474	27/06/2022	12	E433341-N559040	167
L22-474	27/06/2022	13	E433336-N559051	161
L22-474	27/06/2022	14	E433334-N559051	175
L22-474	27/06/2022	15	E433335-N559052	160
L22-474	27/06/2022	16	E433330-N559065	165
L22-474	27/06/2022	17	E433331-N559065	165
L22-474	27/06/2022	18	E433330-N559064	173
L22-474	27/06/2022	19	E433316-N559013	168
L22-474	27/06/2022	20	E433317-N559014	167
L22-474	27/06/2022	21	E433316-N559014	173
L22-474	27/06/2022	22	E433331-N559015	177
L22-474	27/06/2022	23	E433330-N559015	169
L22-474	27/06/2022	24	E433330-N559016	181
L22-478	28/06/2022	1	E433341-N559021	221
L22-478	28/06/2022	2	E433341-N559021	200
L22-478	28/06/2022	3	E433341-N559022	237
L22-478	28/06/2022	4	E433355-N559022	223
L22-478	28/06/2022	5	E433354-N559020	240
L22-478	28/06/2022	6	E433354-N559020	233
L22-478	28/06/2022	7	E433369-N559023	196
L22-478	28/06/2022	8	E433370-N559024	176
L22-478	28/06/2022	9	E433371-N559023	225
L22-478	28/06/2022	10	E433341-N559072	219
L22-478	28/06/2022	11	E433342-N559071	227
L22-478	28/06/2022	12	E433341-N559074	216
L22-478	28/06/2022	13	E433349-N559054	199
L22-478	28/06/2022	14	E433349-N559056	208
L22-478	28/06/2022	15	E433350-N559054	216
L22-478	28/06/2022	16	E433354-N559041	199
L22-478	28/06/2022	17	E433357-N559043	175
L22-478	28/06/2022	18	E433358-N559044	236
L22-478	28/06/2022	19	E433337-N559033	240
L22-478	28/06/2022	20	E433338-N559031	193
L22-478	28/06/2022	21	E433339-N559033	215
L22-478	28/06/2022	22	E433321-N559024	219
L22-478	28/06/2022	23	E433321-N559024	233
L22-478	28/06/2022	24	E433322-N559026	195
L22-484	29/06/2022	1	E433335-N559055	201
L22-484	29/06/2022	2	E433336-N559053	195
L22-484	29/06/2022	3	E433334-N559055	205
L22-484	29/06/2022	4	E433344-N559042	188
L22-484	29/06/2022	5	E433343-N559042	188
L22-484	29/06/2022	6	E433344-N559042	212
L22-484	29/06/2022	7	E433329-N559070	217
L22-484	29/06/2022	8	E433329-N559071	225
L22-484	29/06/2022	9	E433329-N559069	220
L22-484	29/06/2022	10	E433350-N559070	217
L22-484	29/06/2022	11	E433351-N559071	193
L22-484	29/06/2022	12	E433351-N559071	205
L22-484	29/06/2022	13	E433350-N559058	208
L22-484	29/06/2022	14	E433351-N559059	205
L22-484	29/06/2022	15	E433351-N559059	184
L22-484	29/06/2022	16	E433342-N559074	212
L22-484	29/06/2022	17	E433344-N559076	177
L22-484	29/06/2022	18	E433341-N559074	213
L22-487	30/06/2022	1	E4333296-N559084	187
L22-487	30/06/2022	2	E4333297-N559065	203
L22-487	30/06/2022	3	E433295-N559085	229
L22-487	30/06/2022	4	E433305-N559088	220
L22-487	30/06/2022	5	E433307-N559090	228
L22-487	30/06/2022	6	E433306-N559089	236
L22-547	15/07/2022	Z7, L1	433406-558770	240

Report ref.	Date	Ref. no	Easting/Northing	Shear Stress
L22-547	15/07/2022	Z7, L1	433362-558856	240
L22-547	15/07/2022	Z7, L1	433391-558760	227
L22-547	15/07/2022	Z7, L1	433398-558842	240
L22-547	15/07/2022	Z7, L1	433391-558819	240
L22-547	15/07/2022	Z7, L1	433366-558842	240
L22-547	15/07/2022	Z7, L1	433386-558776	240
L22-547	15/07/2022	Z7, L1	433386-558776	224
L22-547	15/07/2022	Z7, L1	433398-558785	240
L22-547	15/07/2022	Z7, L1	433386-558838	240
L22-547	15/07/2022	Z7, L1	433386-558838	227
L22-547	15/07/2022	Z7, L1	433411-558793	220
L22-547	15/07/2022	Z7, L1	4333374-558808	221
L22-548	16/07/2022	Z7, L1	433426-558761	240
L22-548	16/07/2022	Z7, L1	433380-558790	240
L22-548	16/07/2022	Z7, L1	433370-558824	227
L22-548	16/07/2022	Z7, L1	433418-558777	240
L22-548	16/07/2022	Z7, L1	433395-558803	240
L22-548	16/07/2022	Z7, L1	433400-558827	240
L22-548	16/07/2022	Z7, L1	433407-558758	240
L22-548	16/07/2022	Z7, L1	433378-558856	240
L22-548	16/07/2022	Z7, L1	433393-588858	240
L22-548	16/07/2022	Z7, L1	433355-558733	240
L22-548	16/07/2022	Z7, L1	433357-558732	240
L22-559	18/07/2022	Z7, L1	433437-558783	240
L22-559	18/07/2022	Z7, L1	433430-558799	240
L22-559	18/07/2022	Z7, L1	433425-558815	240
L22-559	18/07/2022	Z7, L1	433419-558831	197
L22-559	18/07/2022	Z7, L1	433412-558847	224
L22-559	18/07/2022	Z7, L1	433405-558862	213
L22-559	18/07/2022	Z7, L2	433372-558739	161
L22-559	18/07/2022	Z7, L2	433365-558755	179
L22-559	18/07/2022	Z7, L2	433358-558776	215
L22-559	18/07/2022	Z7, L2	433349-558794	240
L22-559	18/07/2022	Z7, L2	433342-558811	240
L22-559	18/07/2022	Z7, L2	433333-558827	228
L22-559	18/07/2022	Z7, L2	433329-558841	240
L22-559	18/07/2022	Z7, L2	433343-558839	207
L22-559	18/07/2022	Z7, L2	433351-558828	195
L22-559	18/07/2022	Z7, L2	433358-558814	240
L22-559	18/07/2022	Z7, L2	433362-558800	240
L22-559	18/07/2022	Z7, L2	433367-558784	240
L22-559	18/07/2022	Z7, L2	433370-558767	221
L22-559	18/07/2022	Z7, L2	433382-558752	213
L22-559	18/07/2022	Z7, L2	433368-558743	240
L22-559	18/07/2022	Z7, L2	433374-558735	228
L22-559	18/07/2022	Z7, L2	433367-558733	193
L22-561	19/07/2022	Z7, L2	433394-558748	211
L22-561	19/07/2022	Z7, L2	433392-558764	228
L22-561	19/07/2022	Z7, L2	433387-558775	180
L22-561	19/07/2022	Z7, L2	433387-558785	240
L22-561	19/07/2022	Z7, L2	433411-558756	188
L22-561	19/07/2022	Z7, L2	433408-558770	240
L22-561	19/07/2022	Z7, L2	433402-558783	223
L22-561	19/07/2022	Z7, L2	433399-558794	165
L22-561	19/07/2022	Z7, L2	433434-558762	221
L22-561	19/07/2022	Z7, L2	433434-558762	225
L22-561	19/07/2022	Z7, L2	433416-558786	188
L22-561	19/07/2022	Z7, L2	433412-558801	240
L22-561	19/07/2022	Z7, L2	433443-558769	212
L22-561	19/07/2022	Z7, L2	433437-558786	177
L22-561	19/07/2022	Z7, L2	433432-558793	240
L22-561	19/07/2022	Z7, L2	433426-558807	193
L22-564	20/07/2022	Z7, L2	433377-558803	201
L22-564	20/07/2022	Z7, L2	433394-558811	224
L22-564	20/07/2022	Z7, L2	433407-558818	240
L22-564	20/07/2022	Z7, L3	433396-558747	199
L22-564	20/07/2022	Z7, L3	433389-558765	195
L22-564	20/07/2022	Z7, L3	433379-558782	188
L22-564	20/07/2022	Z7, L3	433413-558754	197
L22-564	20/07/2022	Z7, L3	433403-558772	227
L22-564	20/07/2022	Z7, L3	433395-558788	212
L22-564	20/07/2022	Z7, L3	433428-558760	219
L22-564	20/07/2022	Z7, L3	433428-558760	232

Report ref.	Date	Ref. no	Easting/Northing	Shear Stress
L22-564	20/07/2022	Z7, L3	433410-558793	211
L22-564	20/07/2022	Z7, L3	433444-558765	232
L22-564	20/07/2022	Z7, L3	433435-558788	240
L22-564	20/07/2022	Z7, L3	433424-558801	213
L22-564	20/07/2022	Z9, L1	433464-558766	221
L22-564	20/07/2022	Z9, L1	433464-558766	240
L22-564	20/07/2022	Z9, L1	433444-558802	240
L22-564	20/07/2022	Z9, L1	433438-558817	240
L22-574	21/07/2022	Z7, L2	433364-558818	228
L22-574	21/07/2022	Z7, L2	433364-558818	163
L22-574	21/07/2022	Z7, L2	433378-558804	240
L22-574	21/07/2022	Z7, L2	433371-558843	217
L22-574	21/07/2022	Z7, L2	433393-558831	229
L22-574	21/07/2022	Z7, L2	433382-558850	201
L22-574	21/07/2022	Z7, L2	433382-558850	240
L22-574	21/07/2022	Z7, L2	433390-558858	188
L22-574	21/07/2022	Z7, L3	433379-558799	187
L22-574	21/07/2022	Z7, L3	433393-558806	221
L22-586	22/07/2022	Z9, L2	433465-558767	240
L22-586	22/07/2022	Z9, L2	433454-558787	220
L22-586	22/07/2022	Z9, L2	433448-558803	187
L22-586	22/07/2022	Z9, L2	433440-558822	176
L22-586	22/07/2022	Z9, L1	433433-558838	191
L22-586	22/07/2022	Z9, L1	433424-558857	171
L22-586	22/07/2022	Z9, L1	433418-558861	215
L22-586	22/07/2022	Z9, L2	433432-558838	200
L22-586	22/07/2022	Z9, L2	433427-558851	221
L22-586	22/07/2022	Z9, L2	433419-558862	240
L22-586	22/07/2022	Z9, L3	433445-558808	199
L22-586	22/07/2022	Z9, L3	433434-558825	191
L22-586	22/07/2022	Z9, L3	433427-558842	191
L22-586	22/07/2022	Z9, L3	433420-558859	229
L22-604	25/07/2022	Z6, L1	433333-558861	165
L22-604	25/07/2022	Z6, L1	433373-558875	165
L22-604	25/07/2022	Z6, L1	433357-558870	181
L22-604	25/07/2022	Z6, L2	433334-558859	172
L22-604	25/07/2022	Z6, L2	433357-558862	199
L22-604	25/07/2022	Z6, L2	433373-558870	224
L22-604	25/07/2022	Z6, L1	433305-558849	189
L22-604	25/07/2022	Z6, L1	433789-558854	237
L22-621	27/07/2022	Z6, L1	433246-558854	224
L22-621	27/07/2022	Z6, L1	433260-558860	240
L22-621	27/07/2022	Z6, L1	433260-558860	199
L22-621	27/07/2022	Z6, L1	433260-558860	188
L22-621	27/07/2022	Z6, L1	433314-558876	207
L22-624	28/07/2022	Z6, L1	480601-54.923684	188
L22-624	28/07/2022	Z6, L1	480639-54.923795	219
L22-624	28/07/2022	Z6, L1	480639-54.923795-	191
L22-624	28/07/2022	Z6, L1	480881-54.923745-	219
L22-624	28/07/2022	Z6, L1	481039-54.923537-	220
L22-624	28/07/2022	Z6, L1	481082-54.923678-	191
L22-624	28/07/2022	Z6, L1	481082-54.923678-	195
L22-624	28/07/2022	Z6, L1	481082-54.923678-	196
L22-624	28/07/2022	Z6, L1	481450-54.923495-	193
L22-624	28/07/2022	Z6, L1	481537-54.923605-	231
L22-503	04/07/2022	1	E433304-N559102	208
L22-503	04/07/2022	2	E433305-N559103	240
L22-503	04/07/2022	3	E433305-N559103	236
L22-503	04/07/2022	4	E433291-N559097	216
L22-503	04/07/2022	5	E433293-N559099	229
L22-503	04/07/2022	6	E433292-N559098	233
L22-503	04/07/2022	7	E433301-N559074	223
L22-503	04/07/2022	8	E433300-N559074	212
L22-503	04/07/2022	9	E433301-N559074	229
L22-503	04/07/2022	10	E433286-N559069	217
L22-503	04/07/2022	11	E433286-N559068	240
L22-503	04/07/2022	12	E433285-N559068	217
L22-503	04/07/2022	13	E433285-N559045	223
L22-503	04/07/2022	14	E433285-N559046	233
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L22-503	04/07/2022	20	E433291-N559027	191
L22-503	04/07/2022	21	E433292-N559026	216
L22-509	05/07/2022	1	E433373-N559101	207
L22-509	05/07/2022	2	E433371-N559102	215
L22-509	05/07/2022	3	E433379-N559088	195
L22-509	05/07/2022	4	E433377-N559087	181
L22-509	05/07/2022	5	E433383-N559074	207
L22-509	05/07/2022	6	E433383-N559074	171
L22-509	05/07/2022	7	E433347-N559097	225
L22-509	05/07/2022	8	E433347-N559097	203
L22-509	05/07/2022	9	E433347-N559097	197
L22-509	05/07/2022	10	E433359-N559081	212
L22-509	05/07/2022	11	E433367-N559060	193
L22-509	05/07/2022	12	E433367-N559060	215
L22-522	08/07/2022	1	E482201-N54924756	240
L22-522	08/07/2022	2	E482055-N54924970	240
L22-522	08/07/2022	3	E482426-N54925160	236
L22-522	08/07/2022	4	E481157-N54923160	240
L22-522	08/07/2022	5	E482201-N54924756	240
L22-522	08/07/2022	6	E482256-N54924947	237
L22-522	08/07/2022	7	E482267-N54925326	228
L22-522	08/07/2022	8	E41899-N54925036	240
L22-522	08/07/2022	9	E481841-N54925064	240
L22-522	08/07/2022	10	E481731-N5492543	240
L22-522	08/07/2022	11	E481996-N549249929	236
L22-522	08/07/2022	12	E481971-N54925113	240
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L22-522	08/07/2022	18	E482267-N54925326	240
L22-522	08/07/2022	19	E433274-N559069	240
L22-522	08/07/2022	20	E481731-N549255	240
L22-522	08/07/2022	21	E481814-N54924981	240
L22-522	08/07/2022	22	E482126-N54925029	240
L22-522	08/07/2022	23	E481810-N54923245	240
L22-529	12/07/2022	1	E481409-N54922759	227
L22-529	12/07/2022	2	E481642-N54922927	240
L22-529	12/07/2022	3	E481492-N54922644	239
L22-529	12/07/2022	4	E481265-N54922609	223
L22-529	12/07/2022	5	E481512-N54922118	240
L22-529	12/07/2022	6	E481429-N54922156	240
L22-529	12/07/2022	7	E482426-N54923023	237
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L22-529	12/07/2022	9	E481886-N54923139	240
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L22-544	14/07/2022	Z7, L1	433335-558786	231
L22-544	14/07/2022	Z7, L1	433328-558800	240
L22-544	14/07/2022	Z7, L1	433320-558770	240
L22-544	14/07/2022	Z7, L1	433320-558770	240
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L22-634	01/08/2022	Z6-L1	54.924421/1.480857	137
L22-634	01/08/2022	Z6-L1	54.924074/1.481601	152
L22-634	01/08/2022	Z6-L1	54.924275/1.480934	168
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L22-634	01/08/2022	Z6-L1	54.923869/1.480856	183
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L22-634	01/08/2022	Z6-L2	54.924260/1.481050	163
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L22-636	02/08/2022	Z6-L2	433228 /558837	147
L22-636	02/08/2022	Z6-L2	433243/558832	196
L22-636	02/08/2022	Z6-L2	433257 /558836	145
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L22-636	02/08/2022	Z6-L2	433296 /558849	177
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L22-643	03/08/2022	Z6-L3	433382/558902	181
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L22-643	03/08/2022	Z6-L3	433373/558906	177
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L22-643	03/08/2022	Z6-L3	433381/558942	167
L22-651	04/08/2022	Z6-L4	433318/558894	190
L22-651	04/08/2022	Z6-L4	433309/558894	215
L22-651	04/08/2022	Z6-L1	433323/558913	191
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L22-651	04/08/2022	Z6-L1	433351/558924	190
L22-651	04/08/2022	Z6-L3	433321/558906	171
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L22-651	04/08/2022	Z6-L4	4333298/558888	187
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L22-656	06/08/2022	Z6-L2		240
L22-656	06/08/2022	Z6-L2		205
L22-656	06/08/2022	Z6-L4		212
L22-656	06/08/2022	Z6-L4		206
L22-656	06/08/2022	Z6-L4		221
L22-656	06/08/2022	Z6-L4		240
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L22-669	10/08/2022	Z8-L1	CC474	239
L22-669	10/08/2022	Z8-L1	CC475	223
L22-669	10/08/2022	Z8-L1	CC476	240
L22-669	10/08/2022	Z8-L1	CC477	222
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L22-669	10/08/2022	Z8-L1	CC481	240
L22-669	10/08/2022	Z8-L1	CC482	228
L22-671	11/08/2022	Z8-L2	CC489	205

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L22-671	11/08/2022	Z8-L2	CC491	240
L22-671	11/08/2022	Z8-L2	CC492	224
L22-671	11/08/2022	Z8-L2	CC493	189
L22-671	11/08/2022	Z8-L2	CC494	201
L22-671	11/08/2022	Z8-L2	CC495	203
L22-671	11/08/2022	Z8-L2	CC496	237
L22-671	11/08/2022	Z8-L2	CC497	240
L22-671	11/08/2022	Z8-L2	CC498	227
L22-671	11/08/2022	Z8-L2	CC499	240
L22-671	11/08/2022	Z8-L2	CC500	219
L22-671	11/08/2022	Z8-L2	CC501	225
L22-703	12/08/2022	Z8-L2	CC502	221
L22-703	12/08/2022	Z8-L2	CC503	200
L22-703	12/08/2022	Z8-L2	CC504	237
L22-703	12/08/2022	Z8-L2	CC505	227
L22-703	12/08/2022	Z8-L2	CC506	208
L22-703	12/08/2022	Z8-L2	CC507	225
L22-703	12/08/2022	Z8-L2	CC508	219
L22-703	12/08/2022	Z8-L2	CC509	227
L22-703	12/08/2022	Z8-L2	CC510	240
L22-703	12/08/2022	Z8-L2	CC511	199
L22-703	12/08/2022	Z8-L2	CC512	181
L22-703	12/08/2022	Z8-L2	CC513	207
L22-703	12/08/2022	Z8-L2	CC514	207
L22-703	12/08/2022	Z8-L2	CC515	215
L22-703	12/08/2022	Z8-L2	CC516	212
L22-704	15/08/2022	Z8-L1	CC517	229
L22-704	15/08/2022	Z8-L1	CC518	220
L22-704	15/08/2022	Z8-L1	CC519	228
L22-704	15/08/2022	Z8-L1	CC520	227
L22-704	15/08/2022	Z8-L1	CC521	225
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L22-708	17/08/2022	Z8-L2	CC522	227
L22-708	17/08/2022	Z8-L2	CC523	240
L22-708	17/08/2022	Z8-L2	CC524	240
L22-708	17/08/2022	Z8-L2	CC525	229
L22-708	17/08/2022	Z8-L2	CC526	232
L22-708	17/08/2022	Z8-L2	CC527	237
L22-708	17/08/2022	Z8-L2	CC528	240
L22-708	17/08/2022	Z8-L2	CC529	227
L22-708	17/08/2022	Z8-L2	CC530	233
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L22-722	18/08/2022	Z8-L2	CC533	203
L22-722	18/08/2022	Z8-L2	CC534	227
L22-722	18/08/2022	Z8-L3	CC535	231
L22-722	18/08/2022	Z8-L3	CC536	240
L22-722	18/08/2022	Z8-L3	CC537	155
L22-722	18/08/2022	Z8-L3	CC538	213
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L22-728	20/08/2022	Z8-CC540	433396-558642	224
L22-728	21/08/2022	Z8-CC541	433390-558655	211
L22-728	22/08/2022	Z8-CC542	433403-558663	199
L22-733	22/08/2022		CC543	175
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L22-740	24/08/2022	Z4-L2-CC8	CC566	213
L22-740	24/08/2022	Z4-L2-CC9	CC567	221
L22-740	24/08/2022	Z4-L2-CC10	CC568	216
L22-740	24/08/2022	Z4-L2-CC11	CC569	208
L22-740	24/08/2022	Z4-L2-CC12	CC570	228
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L22-746	30/08/2022	Z8-L2-CC4		233
L22-746	30/08/2022	Z4-L2-CC5		229
L22-746	30/08/2022	Z8-L2-CC6		232
L22-746	30/08/2022	Z8-L2-CC7		230
L22-746	30/08/2022	Z8-L2-CC8		227
L22-746	30/08/2022	Z8-L2-CC9		229
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L22-751	31/08/2022	Z8-L2-CC2		212
L22-751	31/08/2022	Z8-L2-CC3		235
L22-751	31/08/2022	Z8-L2-CC4		211
L22-751	31/08/2022	Z4-L2-CC5		214
L22-751	31/08/2022	Z8-L2-CC6		193
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L22-751	31/08/2022	Z8-L2-CC8		212
L22-751	31/08/2022	Z8-L2-CC9		227
L22-751	31/08/2022	Z8-L2-CC10		227
L22-751	31/08/2022	Z8-L2-CC11		240
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L22-755	01/09/2022	Z8-L1-CC6		231
L22-755	01/09/2022	Z8-L1-CC7		235
L22-755	01/09/2022	Z8-L1-CC8		233
L22-755	01/09/2022	Z8-L1-CC9		221
L22-733	02/09/2022	Z4-L1-CC1		225
L22-733	02/09/2022	Z4-L1-CC2		237
L22-733	02/09/2022	Z4-L1-CC3		225
L22-733	02/09/2022	Z4-L1-CC4		223
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L22-733	02/09/2022	Z4-L1-CC7		202
L22-733	02/09/2022	Z4-L1-CC8		227
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L22-780	05/09/2022	Z4-L2-CC4		229

EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557D	Giga One, Envision

Test Position Reference	Test reference	Test No.	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433269-N558719	CC1	CC1	0.00	18/06/22	Brown, Slightly Sandy CLAY	Clear, 16C	CCD	1.96	20	1.64	Zone 2
E433270-N552716	CC2	CC2	0.00	18/06/22	Brown, Slightly Sandy CLAY	Clear, 16C	CCD	2.01	20	1.68	Zone 2
E433270-N558715	CC3	CC3	0.00	18/06/22	Brown, Slightly Sandy CLAY	Clear, 16C	CCD	2.01	19	1.70	Zone 2
E433265-N558731	CC4	CC4	0.00	18/06/22	Brown, Slightly Sandy CLAY	Clear, 16C	CCD	2.00	20	1.66	Zone 2
E433207-N558731	CC5	CC5	0.00	18/06/22	Brown, Slightly Sandy CLAY	Clear, 16C	CCD	2.02	20	1.68	Zone 2
E433265-N558729	CC6	CC6	0.00	18/06/22	Brown, Slightly Sandy CLAY	Clear, 16C	CCD	1.93	21	1.59	Zone 2
E433245-N558727	CC7	CC7	0.00	18/06/22	Brown, Slightly Sandy CLAY	Clear, 16C	CCD	1.93	19	1.63	Zone 2
E433247-N558726	CC8	CC8	0.00	18/06/22	Brown, Slightly Sandy CLAY	Clear, 16C	CCD	1.97	20	1.64	Zone 2
E433248-N558724	CC9	CC9	0.00	18/06/22	Brown, Slightly Sandy CLAY	Clear, 16C	CCD	2.00	21	1.65	Zone 2

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method
BS 1377 : Part 9 : 1990 : In situ density tests, clauses :
SRDS 2.1 Sand replacement method (Small pouring cylinder)
SRDL 2.2 Sand replacement method (Large pouring cylinder)
CCD 2.4 Core cutter method

Approved By

Date
17/07/2022

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Laboratory No. 20632

EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557E	Giga One, Envision, Washington

Test Position Reference	Test reference	Test No.	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E43230 N558799	CC10	CC10	0.00	20/06/22	Brown, Slightly Sandy CLAY	Sunny, 16C	CCD	2.06	17	1.76	Zone 2
E43233 N558800	CC11	CC11	0.00	20/06/22	Brown, Slightly Sandy CLAY	Sunny, 16C	CCD	1.95	18	1.66	Zone 2
E433231 N55803	CC12	CC12	0.00	20/06/22	Brown, Slightly Sandy CLAY	Sunny, 16C	CCD	1.95	17	1.66	Zone 2
E433243 N558773	CC13	CC13	0.00	20/06/22	Brown, Slightly Sandy CLAY	Sunny, 16C	CCD	1.80	14	1.58	Zone 2
E433244 N558776	CC14	CC14	0.00	20/06/22	Brown, Slightly Sandy CLAY	Sunny, 16C	CCD	1.86	16	1.60	Zone 2
E433246 N558776	CC15	CC15	0.00	20/06/22	Brown, Slightly Sandy CLAY	Sunny, 16C	CCD	1.97	19	1.65	Zone 2

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method
BS 1377 : Part 9 : 1990 : In situ density tests, clauses :
SRDS 2.1 Sand replacement method (Small pouring cylinder)
SRDL 2.2 Sand replacement method (Large pouring cylinder)
CCD 2.4 Core cutter method

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EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557F	Giga One, Envision, Washington

Test Position Reference	Test reference	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433232_N 558704	CC16		21/06/22	Clay	Clear	CCD	2.07	18	1.75	Zone 2
E433232 N558700	CC16		21/06/22	Clay	Clear	CCD	1.99	19	1.67	Zone 2
E433230_N 558701	CC18		21/06/22	Clay	Clear	CCD	1.95	18	1.66	Zone 2

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method
BS 1377 : Part 9 : 1990 : In situ density tests, clauses :
SRDS 2.1 Sand replacement method (Small pouring cylinder)
SRDL 2.2 Sand replacement method (Large pouring cylinder)
CCD 2.4 Core cutter method

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EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557G	Giga One, Envision, Washington

Test Position Reference	Test reference	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433194_N 558775	CC19		22/06/22	Clay	Clear	CCD	2.09	20	1.75	Zone 2
E433196_N 558776	CC20		22/06/22	Clay	Clear	CCD	2.08	19	1.75	Zone 2
E433195_N 558773	CC21		22/06/22	Clay	Clear	CCD	2.05	19	1.73	Zone 2
E433225_N 558726	CC22		22/06/22	Clay	Clear	CCD	2.13	19	1.79	Zone 2
E433227_N 558726	CC23		22/06/22	Clay	Clearr	CCD	2.15	20	1.79	Zone 2
E433225_N 558728	CC24		22/06/22	Clay	Clear	CCD	2.14	20	1.79	Zone 2

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method
BS 1377 : Part 9 : 1990 : In situ density tests, clauses :
SRDS 2.1 Sand replacement method (Small pouring cylinder)
SRDL 2.2 Sand replacement method (Large pouring cylinder)
CCD 2.4 Core cutter method

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EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557H	Giga One, Envision, Washington

Test Position Reference	Test reference	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433305_N 559004	CC25		23/06/22	Clay	Clear	CCD	2.00	19	1.69	Road
E433305_N 559005	CC26		23/06/22	Clay	Clear	CCD	2.03	21	1.68	Road
E433307_N 559004	CC27		23/06/22	Clay	Clear	CCD	2.06	21	1.71	Road
E433318_N 559007	CC28		23/06/22	Clay	Clear	CCD	2.09	19	1.76	Road
E433343_N 559071	CC29		23/06/22	Clay	Clear	CCD	1.98	22	1.62	Zone 3
E433319_N 559009	CC30		23/06/22	Dry	Clear	CCD	2.00	23	1.63	Zone 2
E433321_N 559007	CC31		23/06/22	Clay	Clear	CCD	2.03	19	1.71	Road
E433334_N 559012	CC32		23/06/22	Clay	Clear	CCD	2.08	20	1.73	Road
E433333_N 559014	CC33		23/06/22	Clay	Clear	CCD	2.01	21	1.66	Road
E433335_N 559015	CC34		23/06/22	Clay	Clear	CCD	2.07	19	1.74	Road
E433348_N 559021	CC35		23/06/22	Dry	Clear	CCD	2.05	20	1.71	Road
E433348_N 559022	CC36		23/06/22	Clay	Clear	CCD	1.99	23	1.62	Road

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method

BS 1377 : Part 9 : 1990 : In situ density tests, clauses :

SRDS 2.1 Sand replacement method (Small pouring cylinder)

SRDL 2.2 Sand replacement method (Large pouring cylinder)

CCD 2.4 Core cutter method

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EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557H	Giga One, Envision, Washington

Test Position Reference	Test reference	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433348_N 559020	CC37		23/06/22	Clay	Clear	CCD	2.00	22	1.64	Road
E433331_N 559013	CC38		23/06/22	Clay	Clear	CCD	2.02	21	1.67	Road
E433362_N 559025	CC39		23/06/22	Clay	Clear	CCD	2.01	27	1.58	Road
E433361_N 559023	CC40		23/06/22	Clay	Clear	CCD	2.07	24	1.68	Road
E433362_N 559023	CC41		23/06/22	Clay	Clear	CCD	1.97	22	1.62	Road
E433363_N 559022	CC42		23/06/22	Clay	Clear	CCD	1.98	21	1.64	Zone 3
E433347_N 559056	CC43		23/06/22	Clay	Clear	CCD	1.99	21	1.64	CTW - Zone 3
E433349_N 559055	CC44		23/06/22	Clay	Clear	CCD	2.10	22	1.72	CTW - Zone 3
E433349_N 559057	CC45		23/06/22	Clear	Clear	CCD	2.03	24	1.63	CTW - Zone 3
E433342_N 559070	CC46		23/06/22	Clay	Clear	CCD	2.01	23	1.64	CTW - Zone 3
E433342_N 559071	CC47		23/06/22	Clay	Clear	CCD	2.02	22	1.66	CTW - Zone 3
E433341_N 559072	CC48		23/06/22	Clay	Clear	CCD	1.94	20	1.62	Zone 3

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method

BS 1377 : Part 9 : 1990 : In situ density tests, clauses :

SRDS 2.1 Sand replacement method (Small pouring cylinder)

SRDL 2.2 Sand replacement method (Large pouring cylinder)

CCD 2.4 Core cutter method

Approved By

Date

17/07/2022

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EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557H_1	Giga One, Envision, Washington

Test Position Reference	Test reference	Test No.	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433352_N 559035	CC49	CC1		24/06/22	Clay	Clear	CCD	2.01	16	1.73	Zone 3
E433351_N 559036	CC50	CC2		24/06/22	Clay	Clear	CCD	2.02	20	1.69	Road
E433353_N 559035	CC51	CC3		24/06/22	Clay	Clear	CCD	2.05	21	1.70	Road
E433355_N 559050	CC52	CC4		24/06/22	Clay	Clear	CCD	2.09	21	1.73	CTW - Zone 3
E433357_N 559051	CC53	CC5		24/06/22	Clay	Clear	CCD	2.05	20	1.71	CTW - Zone 3
E433356_N 559051	CC54	CC6		24/06/22	Clay	Clear	CCD	2.00	20	1.66	CTW - Zone 3
E433360_N 559065	CC55	CC7		24/06/22	Clay	Clear	CCD	2.01	22	1.65	Zone 3
E433361_N 559064	CC56	CC8		24/06/22	Clay	Clear	CCD	1.99	19	1.68	Zone 3
E433362_N 559063	CC57	CC9		24/06/22	Clay	Clear	CCD	2.04	19	1.71	Zone 3
E433323_N 559064	CC58	CC10		24/06/22	Clay	Clear	CCD	1.99	20	1.65	CTW - Zone 3
E433321_N 559066	CC59	CC11		24/06/22	Clay	Clear	CCD	1.96	20	1.63	CTW - Zone 3
E433320_N 559066	CC60	CC12		24/06/22	Clay	Clear	CCD	1.99	22	1.63	CTW - Zone 3

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method
BS 1377 : Part 9 : 1990 : In situ density tests, clauses :
SRDS 2.1 Sand replacement method (Small pouring cylinder)
SRDL 2.2 Sand replacement method (Large pouring cylinder)
CCD 2.4 Core cutter method

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EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557H_1	Giga One, Envision, Washington

Test Position Reference	Test reference	Test No.	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433326_N 559049	CC61	CC13		24/06/22	Clay	Clear	CCD	2.10	18	1.78	
E433327_N 559050	CC62	CC14		24/06/22	Clay	Clear	CCD	2.01	21	1.67	
E433327_N 559049	CC63	CC15		24/06/22	Clay	Clear	CCD	2.04	21	1.69	
E433330_N 559031	CC64	CC16		24/06/22	Clay	Clear	CCD	1.98	21	1.64	
E433330_N 559032	CC65	CC17		24/06/22	Clay	Clear	CCD	2.09	21	1.72	
E433331_N 559031	CC66	CC18		24/06/22	Clay	Clear	CCD	2.11	21	1.75	
E433370_N 559032	CC67	CC19		24/06/22	Clay	Clear	CCD	2.03	20	1.69	
E433371_N 559031	CC68	CC20		24/06/22	Clay	Clear	CCD	2.07	19	1.74	
E433370_N 559034	CC69	CC21		24/06/22	Dry	Clear	CCD	2.05	20	1.70	
E433359_N 559025	CC70	CC22		24/06/22	Clay	Clear	CCD	2.08	18	1.76	
E433359_N 559025-1	CC71	CC23		24/06/22	Clay	Clear	CCD	2.08	19	1.75	
E433361_N 559026	CC72	CC24		24/06/22	Clay	Clear	CCD	2.04	20	1.70	

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method

BS 1377 : Part 9 : 1990 : In situ density tests, clauses :

SRDS 2.1 Sand replacement method (Small pouring cylinder)

SRDL 2.2 Sand replacement method (Large pouring cylinder)

CCD 2.4 Core cutter method

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27/06/2022

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EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557H_1	Giga One, Envision, Washington

Test Position Reference	Test reference	Test No.	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433361_N 559025	CC73	CC25		24/06/22	Clay	Clear	CCD	2.12	19	1.79	
E433345_N 559021	CC74	CC26		24/06/22	Clay	Clear	CCD	2.11	20	1.76	
E433347_N 559022	CC75	CC27		24/06/22	Clay	Clear	CCD	2.11	20	1.76	
E433348_N 559023	CC76	CC28		24/06/22	Clay	Clear	CCD	2.10	14	1.84	
E433331_N 559014	CC77	CC29		24/06/22	Clay	Clear	CCD	2.03	20	1.69	
E433332_N 559016	CC78	CC30		24/06/22	Dry	Clear	CCD	2.10	22	1.72	
E433330_N 559013	CC79	CC31		24/06/22	Clay	Clear	CCD	2.14	20	1.79	
E433317_N 559011	CC80	CC32		24/06/22	Clay	Clear	CCD	2.10	21	1.74	
E433317_N 559010	CC81	CC33		24/06/22	Clay	Clear	CCD	2.06	21	1.70	
E433317_N 559012	CC82	CC34		24/06/22	Clay	Clear	CCD	2.02	21	1.67	
CC35	CC83	CC35		24/06/22	Clay	Clear	CCD	2.03	22	1.66	
CC36	CC84	CC36		24/06/22	Clay	Clear	CCD	1.96	21	1.62	

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method

BS 1377 : Part 9 : 1990 : In situ density tests, clauses :

SRDS 2.1 Sand replacement method (Small pouring cylinder)

SRDL 2.2 Sand replacement method (Large pouring cylinder)

CCD 2.4 Core cutter method

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EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557H_1	Giga One, Envision, Washington

Test Position Reference	Test reference	Test No.	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
CC37	CC85	CC37		24/06/22	Clay	Clear	CCD	2.09	18	1.78	
CC38	CC86	CC38		24/06/22	Clay	Clear	CCD	2.12	24	1.71	
CC39	CC87	CC39		24/06/22	Clay	Clear	CCD	1.95	24	1.58	

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method
BS 1377 : Part 9 : 1990 : In situ density tests, clauses :
SRDS 2.1 Sand replacement method (Small pouring cylinder)
SRDL 2.2 Sand replacement method (Large pouring cylinder)
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Approved By

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Laboratory No. 20632

EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557H_1	Giga One, Envision, Washington

Test Position Reference	Test reference	Test No.	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433326_N 559049	CC61	CC13		24/06/22	Clay	Clear	CCD	2.10	18	1.78	CTW - Zone 3
E433327_N 559050	CC62	CC14		24/06/22	Clay	Clear	CCD	2.01	21	1.67	CTW - Zone 3
E433327_N 559049	CC63	CC15		24/06/22	Clay	Clear	CCD	2.04	21	1.69	CTW - Zone 3
E433330_N 559031	CC64	CC16		24/06/22	Clay	Clear	CCD	1.98	21	1.64	Zone 3
E433330_N 559032	CC65	CC17		24/06/22	Clay	Clear	CCD	2.09	21	1.72	Zone 3
E433331_N 559031	CC66	CC18		24/06/22	Clay	Clear	CCD	2.11	21	1.75	Zone 3
E433370_N 559032	CC67	CC19		24/06/22	Clay	Clear	CCD	2.03	20	1.69	Road
E433371_N 559031	CC68	CC20		24/06/22	Clay	Clear	CCD	2.07	19	1.74	Road
E433370_N 559034	CC69	CC21		24/06/22	Dry	Clear	CCD	2.05	20	1.70	Road
E433359_N 559025	CC70	CC22		24/06/22	Clay	Clear	CCD	2.08	18	1.76	Road
E433359_N 559025-1	CC71	CC23		24/06/22	Clay	Clear	CCD	2.08	19	1.75	Road
E433361_N 559026	CC72	CC24		24/06/22	Clay	Clear	CCD	2.04	20	1.70	Road

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method

BS 1377 : Part 9 : 1990 : In situ density tests, clauses :

SRDS 2.1 Sand replacement method (Small pouring cylinder)

SRDL 2.2 Sand replacement method (Large pouring cylinder)

CCD 2.4 Core cutter method

Approved By

Date

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EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557H_1	Giga One, Envision, Washington

Test Position Reference	Test reference	Test No.	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433361_N 559025	CC73	CC25		24/06/22	Clay	Clear	CCD	2.12	19	1.79	Zone 3
E433345_N 559021	CC74	CC26		24/06/22	Clay	Clear	CCD	2.11	20	1.76	Road
E433347_N 559022	CC75	CC27		24/06/22	Clay	Clear	CCD	2.11	20	1.76	Road
E433348_N 559023	CC76	CC28		24/06/22	Clay	Clear	CCD	2.10	14	1.84	Road
E433331_N 559014	CC77	CC29		24/06/22	Clay	Clear	CCD	2.03	20	1.69	Road
E433332_N 559016	CC78	CC30		24/06/22	Dry	Clear	CCD	2.10	22	1.72	Road
E433330_N 559013	CC79	CC31		24/06/22	Clay	Clear	CCD	2.14	20	1.79	Road
E433317_N 559011	CC80	CC32		24/06/22	Clay	Clear	CCD	2.10	21	1.74	Road
E433317_N 559010	CC81	CC33		24/06/22	Clay	Clear	CCD	2.06	21	1.70	Road
E433317_N 559012	CC82	CC34		24/06/22	Clay	Clear	CCD	2.02	21	1.67	Road
E433349 N559057 CC45-RT	CC83	CC35		24/06/22	Clay	Clear	CCD	2.03	22	1.66	CTW - Zone 3
E433306 N559090	CC84	CC36		24/06/22	Clay	Clear	CCD	1.96	21	1.62	CTW - Zone 3

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method
BS 1377 : Part 9 : 1990 : In situ density tests, clauses :
SRDS 2.1 Sand replacement method (Small pouring cylinder)
SRDL 2.2 Sand replacement method (Large pouring cylinder)
CCD 2.4 Core cutter method

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EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557H_1	Giga One, Envision, Washington

Test Position Reference	Test reference	Test No.	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433360 N559089	CC85	CC37		24/06/22	Clay	Clear	CCD	2.09	18	1.78	CTW - Zone 3
E433368 N559080	CC86	CC38		24/06/22	Clay	Clear	CCD	2.12	24	1.71	CTW - Zone 3
E433368 N559080	CC87	CC39		24/06/22	Clay	Clear	CCD	1.95	24	1.58	CTW - Zone 3

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method
BS 1377 : Part 9 : 1990 : In situ density tests, clauses :
SRDS 2.1 Sand replacement method (Small pouring cylinder)
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CCD 2.4 Core cutter method

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EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557K	Giga One, Envision, Washington

Test Position Reference	Test reference	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433352_N 559041	CC88		27/06/22	Clay	Clear	CCD	1.98	18	1.67	Zone 3
E433351_N 559041	CC89		27/06/22	Clay	Clear	CCD	1.97	17	1.69	Zone 3
E433352_N 559043	CC90		27/06/22	Clay	Clear	CCD	2.00	16	1.73	Road
E433348_N 559054	CC91		27/06/22	Clay	Clear	CCD	1.82	39	1.31	CTW - Zone 3
E433349_N 559053	CC92		27/06/22	Clay	Clear	CCD	1.94	26	1.54	CTW - Zone 3
E433350_N 559052	CC93		27/06/22	Clay	Clear	CCD	1.82	34	1.36	CTW - Zone 3
E433343_N 559068	CC94		27/06/22	Clay	Clear	CCD	2.03	16	1.75	CTW - Zone 3
E433341_N 559070	CC95		27/06/22	Clay	Clear	CCD	2.06	14	1.81	CTW - Zone 3
E433342_N 559070	CC96		27/06/22	Clay	Clear	CCD	2.01	15	1.75	Zone 3
E433340_N 559037	CC97		27/06/22	Dry	Clear	CCD	1.99	16	1.72	Road
E433342_N 559039	CC98		27/06/22	Clay	Clear	CCD	1.98	15	1.72	Zone 3
E433341_N 559040	CC99		27/06/22	Clay	Clear	CCD	2.03	25	1.63	CTW - Zone 3

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method
BS 1377 : Part 9 : 1990 : In situ density tests, clauses :
SRDS 2.1 Sand replacement method (Small pouring cylinder)
SRDL 2.2 Sand replacement method (Large pouring cylinder)
CCD 2.4 Core cutter method

Approved By

Date 17/07/2022

N Hodson

Materials Director

UKAS Accredited Laboratory No. 20632

EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557K	Giga One, Envision, Washington

Test Position Reference	Test reference	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433336_N 559051	CC100		27/06/22	Clay	Clear	CCD	2.03	16	1.75	
E433334_N 559051	CC101		27/06/22	Clay	Clear	CCD	2.00	16	1.72	
E433335_N 559052	CC102		27/06/22	Clay	Clear	CCD	1.95	16	1.68	
E433330_N 559065	CC103		27/06/22	Clay	Clear	CCD	2.05	18	1.74	
E433331_N 559065	CC104		27/06/22	Clay	Clear	CCD	2.02	17	1.72	
E433330_N 559004	CC105		27/06/22	Clay	Clear	CCD	1.98	17	1.69	
E433316_N 559013	CC106		27/06/22	Clay	Clear	CCD	2.06	19	1.74	
E433317_N 559014	CC107		27/06/22	Clay	Clear	CCD	2.05	17	1.75	
E433316_N 559014	CC108		27/06/22	Clay	Clear	CCD	2.05	18	1.74	
E433331_N 559015	CC109		27/04/22	Clay	Clear	CCD	2.04	18	1.73	
E433330_N 559015	CC110		27/04/22	Clay	Clear	CCD	2.02	16	1.74	
E433330_N 559016	CC111		27/06/22	Clay	Clear	CCD	2.04	22	1.68	

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method

BS 1377 : Part 9 : 1990 : In situ density tests, clauses :

SRDS 2.1 Sand replacement method (Small pouring cylinder)

SRDL 2.2 Sand replacement method (Large pouring cylinder)

CCD 2.4 Core cutter method

Approved By

Date

28/06/2022

N Hodson

Materials Director

UKAS Accredited Laboratory No. 20632

EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557L	Giga One, Envision, Washington

Test Position Reference	Test reference	Test No.	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433341_N 559021	CC112			28/06/22	Clay	Clear	CCD	2.02	16	1.74	Road
E433340_N 559022	CC113			28/06/22	Clay	Clear	CCD	2.02	17	1.72	Road
E433341_N 559022	CC114			28/06/22	Clay	Clear	CCD	2.03	15	1.77	Road
E433355_N 559022	CC115			28/06/22	Clay	Clear	CCD	2.00	19	1.68	Road
E433354_N 559020	CC116			28/06/22	Clay	Clear	CCD	2.01	16	1.73	Road
E433353_N 559021	CC117			28/06/22	Clay	Clear	CCD	2.00	12	1.78	Road
E433369_N 559023	CC118			28/06/22	Clay	Clear	CCD	2.04	20	1.70	Road
E433370_N 559024	CC119			28/06/22	Clay	Clear	CCD	2.05	18	1.73	Road
E433371_N 559023	CC120			28/06/22	Clay	Clear	CCD	2.02	20	1.68	Road
E433341_N 559072	CC121			28/06/22	Clay	Clear	CCD	2.03	17	1.74	CTW - Zone 3
E433342_N 559071	CC122			28/06/22	Clay	Clear	CCD	2.06	17	1.76	CTW - Zone 3
E433341_N 559074	CC123			28/06/22	Clay	Clear	CCD	2.07	13	1.84	CTW - Zone 3

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method
BS 1377 : Part 9 : 1990 : In situ density tests, clauses :
SRDS 2.1 Sand replacement method (Small pouring cylinder)
SRDL 2.2 Sand replacement method (Large pouring cylinder)
CCD 2.4 Core cutter method

Approved By

Date
17/07/2022

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Materials Director

UKAS Accredited Laboratory No. 20632

EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557L	Giga One, Envision, Washington

Test Position Reference	Test reference	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433349_N 559054	CC124		28/06/22	Clay	Clear	CCD	2.02	15	1.75	CTW - Zone 3
E433349_N 559056	CC125		28/06/22	Clay	Clear	CCD	2.03	20	1.69	CTW - Zone 3
E433350_N 559054	CC126		28/06/22	Clay	Clear	CCD	1.98	10	1.80	CTW - Zone 3
E433354_N 559041	CC127		28/06/22	Clay	Clear	CCD	2.05	13	1.81	CTW - Zone 3
E433357_N 559043	CC128		28/06/22	Clay	Clear	CCD	2.04	15	1.77	CTW - Zone 3
E433358_N 559044	CC129		28/06/22	Clay	Clear	CCD	2.05	16	1.76	CTW - Zone 3
E433337_N 559033	CC130		28/06/22	Clay	Clear	CCD	1.99	14	1.75	CTW - Zone 3
E433338_N 559031	CC131		28/06/22	Clay	Clear	CCD	2.02	13	1.79	Zone 3
E433339_N 559033	CC132		28/06/22	Clay	Clear	CCD	1.98	18	1.68	CTW - Zone 3
E433321_N 559024	CC133		28/06/22	Clay	Clear	CCD	2.05	16	1.77	Zone 3
E433321_N 559024	CC134		28/06/22	Clay	Clear	CCD	2.03	11	1.83	Zone 3
E433322_N 559026	CC135		28/06/22	Clay	Clear	CCD	2.03	16	1.75	Zone 3

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method

BS 1377 : Part 9 : 1990 : In situ density tests, clauses :

SRDS 2.1 Sand replacement method (Small pouring cylinder)

SRDL 2.2 Sand replacement method (Large pouring cylinder)

CCD 2.4 Core cutter method

Approved By

N Hodson

Materials Director

Date

17/07/2022

UKAS Accredited Laboratory No. 20632

EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557M	Giga One, Envision, Washington

Test Position Reference	Test reference	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433335_N 559055	CC136		29/06/22	Clay	Clear	CCD	2.04	29	1.59	CTW - Zone 3
E433336_N 559053	CC137		29/06/22	Clay	Clear	CCD	2.00	24	1.62	CTW - Zone 3
E433334_N 559055	CC138		29/05/22	Clay	Clear	CCD	2.01	24	1.62	CTW - Zone 3
E433344_N 559042	CC139		29/06/22	Clay	Clear	CCD	2.00	20	1.66	CTW - Zone 3
E433343_N 559042	CC140		29/06/22	Clay	Clear	CCD	1.99	21	1.65	CTW - Zone 3
E433344_N 559042	CC141		29/06/22	Clay	Clear	CCD	2.03	21	1.68	CTW - Zone 3
E433329_N 559070	CC142		29/06/22	Clay	Clear	CCD	2.00	27	1.57	CTW - Zone 3
E433329_N 559071	CC143		29/06/22	Clay	Clear	CCD	2.02	26	1.61	CTW - Zone 3
E433329_N 559069	CC144		29/06/22	Clay	Clear	CCD	1.98	27	1.56	CTW - Zone 3
E433350_N 559070	CC145		29/06/22	Clay	Clear	CCD	2.06	21	1.70	CTW - Zone 3
E433351_N 559071	CC146		29/06/22	Clay	Clear	CCD	2.05	22	1.69	CTW - Zone 3
E433351_N 559069	CC147		29/06/22	Clay	Clear	CCD	2.02	24	1.63	CTW - Zone 3

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method
BS 1377 : Part 9 : 1990 : In situ density tests, clauses :
SRDS 2.1 Sand replacement method (Small pouring cylinder)
SRDL 2.2 Sand replacement method (Large pouring cylinder)
CCD 2.4 Core cutter method

Approved By

Date
17/07/2022

N Hodson
Materials Director

UKAS Accredited Laboratory No. 20632

EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557M	Giga One, Envision, Washington

Test Position Reference	Test reference	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433350_N 559058	CC148		29/06/22	Clay	Clear	CCD	2.04	20	1.70	CTW - Zone 3
E433351_N 559059	CC149		29/06/22	Clay	Clear	CCD	2.07	20	1.72	CTW - Zone 3
E433348_N 559057	CC150		29/06/22	Clay	Clear	CCD	2.03	24	1.64	CTW - Zone 3
E433342_N 559074	CC151		29/06/22	Clay	Clear	CCD	2.01	24	1.62	CTW - Zone 3
E433344_N 559076	CC152		29/06/22	Clay	Clear	CCD	1.97	25	1.58	CTW - Zone 3
E433341_N 559074	CC153		29/06/22	Clay	Clear	CCD	1.94	23	1.57	CTW - Zone 3

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method
BS 1377 : Part 9 : 1990 : In situ density tests, clauses :
SRDS 2.1 Sand replacement method (Small pouring cylinder)
SRDL 2.2 Sand replacement method (Large pouring cylinder)
CCD 2.4 Core cutter method

Approved By

Date
17/07/2022

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EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557N	Giga One, Washington

Test Position Reference	Test reference	Test No.	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433296-N559084	CC154	CC154	0.00	30/06/22	Brown, Slightly Sandy CLAY	Cloudy, Slight Rain, 17C	CCD	1.96	25	1.57	CTW - Zone 3
E433297-N559065	CC155	CC155	0.00	30/06/22	Brown, Slightly Sandy CLAY	Cloudy, Slight Rain, 17C	CCD	2.00	22	1.64	CTW - Zone 3
E433295-N559085	CC156	CC156	0.00	30/06/22	Brown, Slightly Sandy CLAY	Cloudy, Slight Rain, 17C	CCD	2.00	23	1.63	CTW - Zone 3
E433305-N5590888	CC157	CC157	0.00	30/06/22	Brown, Slightly Sandy CLAY	Cloudy, Slight Rain, 17C	CCD	2.02	18	1.71	CTW - Zone 3
E433307-N559090	CC158	CC158	0.00	30/06/22	Brown, Slightly Sandy CLAY	Cloudy, Slight Rain, 17C	CCD	1.96	18	1.66	CTW - Zone 3
E43306-N559089	CC159	CC159	0.00	30/06/22	Brown, Slightly Sandy CLAY	Cloudy, Slight Rain, 17C	CCD	1.97	19	1.65	CTW - Zone 3

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method
BS 1377 : Part 9 : 1990 : In situ density tests, clauses :
SRDS 2.1 Sand replacement method (Small pouring cylinder)
SRDL 2.2 Sand replacement method (Large pouring cylinder)
CCD 2.4 Core cutter method

Approved By

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EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557Q	Giga One, Envision, Washington

Test Position Reference	Test reference	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433342 N559074 CC151-RT	CC160		02/07/22	Clay	Dry	CCD	2.01	21	1.66	CTW - Zone 3
E433344 N559076 CC152-RT	CC161		02/07/22	Clay	Dry	CCD	2.13	20	1.78	CTW - Zone 3
E433341 N559074 CC153-RT	CC162		02/07/22	Clay	Dry	CCD	2.20	17	1.88	CTW - Zone 3

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method
BS 1377 : Part 9 : 1990 : In situ density tests, clauses :
SRDS 2.1 Sand replacement method (Small pouring cylinder)
SRDL 2.2 Sand replacement method (Large pouring cylinder)
CCD 2.4 Core cutter method

Approved By

Date 17/07/2022

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UKAS Accredited Laboratory No. 20632

EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557R	Giga One, Envision, Washington

Test Position Reference	Test reference	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433304_N 559102	CC163		04/07/22	Clay	Cloudy	CCD	2.05	20	1.71	CTW - Zone 3
E433305_N 559103	CC164		04/07/22	Clay	Cloudy	CCD	2.06	16	1.78	CTW - Zone 3
E433302_N 559103	CC165		04/07/22	Clay	Cloudy	CCD	2.02	14	1.77	CTW - Zone 3
E433291_N 559097	CC166		04/07/22	Clay	Cloudy	CCD	2.01	20	1.67	CTW - Zone 3
E433293_N 559099	CC167		04/07/22	Clay	Cloudy	CCD	2.03	20	1.69	CTW - Zone 3
E433292_N 559098	CC168		04/07/22	Clay	Cloudy	CCD	1.99	20	1.66	CTW - Zone 3
E433301_N 559074	CC169		04/07/22	Clay	Cloudy	CCD	2.04	17	1.74	CTW - Zone 3
E433300_N 559074	CC170		04/07/22	Clay	Cloudy	CCD	2.01	18	1.70	CTW - Zone 3
E433301_N 559074	CC171		04/07/22	Clay	Cloudy	CCD	2.04	18	1.74	CTW - Zone 3
E433286_N 559069	CC172		04/07/22	Clay	Cloudy	CCD	2.05	16	1.77	CTW - Zone 3
E433286_N 559068	CC173		04/07/22	Clay	Cloudy	CCD	2.04	19	1.72	CTW - Zone 3
E433285_N 559068	CC174		04/07/22	Clay	Cloudy	CCD	2.05	18	1.74	CTW - Zone 3

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method

BS 1377 : Part 9 : 1990 : In situ density tests, clauses :

SRDS 2.1 Sand replacement method (Small pouring cylinder)

SRDL 2.2 Sand replacement method (Large pouring cylinder)

CCD 2.4 Core cutter method

Approved By

Date

17/07/2022

N O'Brien

Laboratory Manager

UKAS Accredited Laboratory No. 20632

EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557R	Giga One, Envision, Washington

Test Position Reference	Test reference	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433285_N 559045	CC175		04/07/22	Clay	Cloudy	CCD	1.95	14	1.72	CTW - Zone 3
E433285_N 559046	CC176		04/07/22	Clay	Cloudy	CCD	2.00	18	1.69	CTW - Zone 3
E433285_N 559045	CC177		04/07/22	Clay	Cloudy	CCD	2.11	18	1.79	CTW - Zone 3
E433274_N 559061	CC178		04/07/22	Clay	Cloudy	CCD	2.08	17	1.77	CTW - Zone 3
E433275_N 559063	CC179		04/07/22	Clay	Cloudy	CCD	2.02	10	1.84	CTW - Zone 3
E433274_N 559062	CC180		04/07/22	Clay	Cloudy	CCD	1.99	8.3	1.84	CTW - Zone 3
E433293_N 559027	CC181		04/07/22	Clay	Cloudy	CCD	2.01	18	1.71	CTW - Zone 3
E433291_N 559027	CC182		04/07/22	Clay	Cloudy	CCD	2.03	17	1.73	CTW - Zone 3
E433292_N 559026	CC183		04/07/22	Clay	Cloudy	CCD	2.05	19	1.73	CTW - Zone 3

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method
BS 1377 : Part 9 : 1990 : In situ density tests, clauses :
SRDS 2.1 Sand replacement method (Small pouring cylinder)
SRDL 2.2 Sand replacement method (Large pouring cylinder)
CCD 2.4 Core cutter method

Approved By

Date 17/07/2022

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Laboratory Manager

UKAS Accredited Laboratory No. 20632

EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557R	Giga One, Washington

Test Position Reference	Test reference	Test No.	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433306 N559087 CC159& CC158-RT	SRT1	SRT1	0.00	04/07/22	Brown, Slightly Sandy CLAY	Cloudy, 16C	SRDL	2.05	20	1.71	CTW - Zone 3
E433321 N559024 CC134 & CC135-RT	SRT2	SRT2	0.00	04/07/22	Brown, Slightly Sandy CLAY	Cloudy, 16C	SRDL	2.01	22	1.65	CTW - Zone 3

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method
BS 1377 : Part 9 : 1990 : In situ density tests, clauses :
SRDS 2.1 Sand replacement method (Small pouring cylinder)
SRDL 2.2 Sand replacement method (Large pouring cylinder)
CCD 2.4 Core cutter method

Approved By

Date

17/07/2022

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EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557S	Giga One, Envision, Washington

Test Position Reference	Test reference	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433373_N 559101	CC184		05/07/22	Clay	Cloudy	CCD	2.03	17	1.74	Zone 3
E433371_N 559102	CC185		05/07/22	Clay	Cloudy	CCD	2.05	16	1.77	Zone 3
E433379_N 559088	CC186		05/07/22	Clay	Cloudy	CCD	2.02	18	1.71	Zone 3
E433377_N 559087	CC187		05/07/22	Clay	Cloudy	CCD	2.00	17	1.71	Zone 3
E433383_N 559074	CC188		05/07/22	Clay	Cloudy	CCD	2.03	15	1.76	Zone 3
E433384_N 559076	CC189		05/07/22	Clay	Cloudy	CCD	2.07	16	1.78	Zone 3
E433347_N 559097	CC190		05/07/22	Clay	Cloudy	CCD	2.04	16	1.75	Zone 3
E433348_N 559097	CC191		05/07/22	Clay	Cloudy	CCD	2.04	17	1.74	Zone 3
E433359_N 559080	CC192		05/07/22	Clay	Cloudy	CCD	2.03	28	1.58	Zone 3
E433359_N 559081	CC193		05/07/22	Clay	Cloudy	CCD	2.06	16	1.78	Zone 3
E433367_N 559060	CC194		05/07/22	Clay	Cloudy	CCD	2.03	17	1.74	CTW - Zone 3
E433367_N 559060	CC195		05/07/22	Clay	Cloudy	CCD	2.03	17	1.73	CTW - Zone 3

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method

BS 1377 : Part 9 : 1990 : In situ density tests, clauses :

SRDS 2.1 Sand replacement method (Small pouring cylinder)

SRDL 2.2 Sand replacement method (Large pouring cylinder)

CCD 2.4 Core cutter method

Approved By

Date

17/07/2022

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EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557T	Giga One, Envision, Washington

Test Position Reference	Test reference	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433327_N 559083	CC196		06/07/22	Clay	Cloudy	CCD	2.00	22	1.64	CTW - Zone 3
E433321_N 559101	CC197		06/07/22	Clay	Cloudy	CCD	2.07	19	1.74	CTW - Zone 3
E433318_N 559062	CC198		06/07/22	Clay	Cloudy	CCD	2.00	19	1.69	CTW - Zone 3
E433323_N 559050	CC199		06/07/22	Clay	Cloudy	CCD	1.99	19	1.68	CTW - Zone 3
E433330_N 559034	CC200		06/07/22	Clay	Cloudy	CCD	2.03	18	1.72	CTW - Zone 3
E433313_N 559026	CC201		06/07/22	Clay	Cloudy	CCD	2.02	21	1.68	CTW - Zone 3
E433309_N 559040	CC202		06/07/22	Clay	Cloudy	CCD	2.02	19	1.70	CTW - Zone 3
E433302_N 559053	CC203		06/07/22	Clay	Cloudy	CCD	2.04	18	1.72	CTW - Zone 3
E433296_N 559029	CC204		06/07/22	Clay	Cloudy	CCD	2.04	19	1.72	CTW - Zone 3
E433287_N 559044	CC205		06/07/22	Clay	Cloudy	CCD	2.00	19	1.68	CTW - Zone 3
E433278_N 559056	CC206		06/07/22	Clay	Cloudy	CCD	2.00	18	1.69	CTW - Zone 3
E433291_N 559064	CC207		06/07/22	Clay	Cloudy	CCD	2.03	19	1.71	CTW - Zone 3

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method
BS 1377 : Part 9 : 1990 : In situ density tests, clauses :
SRDS 2.1 Sand replacement method (Small pouring cylinder)
SRDL 2.2 Sand replacement method (Large pouring cylinder)
CCD 2.4 Core cutter method

Approved By

Date
07/07/2022

N Hodson

Materials Director

UKAS Accredited Laboratory No. 20632

EXPLORATION & TESTING ASSOCIATES

Summary of in-situ density test results

Project No.	Project Name
D10557T	Giga One, Envision, Washington

Test Position Reference	Test reference	Depth to top m	Date of test	Soil Description	Site conditions during test	Test Type see below	In-situ Bulk Density Mg/m^3	Moisture Content %	In-situ Dry Density Mg/m^3	Remarks
E433306_N 559070	CC208		06/07/22	Clay	Cloudy	CCD	2.00	19	1.68	CTW - Zone 3
E433296_N 559085	CC209		06/07/22	Clay	Cloudy	CCD	2.03	17	1.74	CTW - Zone 3
E433320_N 559075	CC210		06/07/22	Clay	Cloudy	CCD	2.01	19	1.69	CTW - Zone 3
E433311_N 559090	CC211		06/07/22	Clay	Cloudy	CCD	1.97	18	1.66	CTW - Zone 3
E433283_N 559080	CC212		06/07/22	Clay	Cloudy	CCD	2.00	21	1.65	CTW - Zone 3
E433315_N 559090	CC213		06/07/22	Clay	Cloudy	CCD	2.06	19	1.74	CTW - Zone 3
E433317_N 559077	CC214		06/07/22	Clay	Cloudy	CCD	2.01	18	1.70	CTW - Zone 3
E433349_N 559084	CC215		06/07/22	Clay	Cloudy	CCD	2.06	19	1.73	Road
E433364_N 559040	CC216		06/07/22	Clay	Cloudy	CCD	2.12	19	1.78	Road
E433341_N 559051	CC217		06/07/22	Clay	Cloudy	CCD	2.04	20	1.69	Zone 3
E433356_N 559056	CC218		06/07/22	Clay	Cloudy	CCD	2.04	19	1.72	Zone 3
E433330_N 559066	CC219		06/07/22	Clay	Cloudy	CCD	2.06	20	1.72	Zone 3

Specifications

BS 1377 : Part 2 : 1990 Clause 3 Moisture content by oven drying method

BS 1377 : Part 9 : 1990 : In situ density tests, clauses :

SRDS 2.1 Sand replacement method (Small pouring cylinder)

SRDL 2.2 Sand replacement method (Large pouring cylinder)

CCD 2.4 Core cutter method

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