

Land South of Radwinter Road

Minerals Resource Assessment

Rosconn Strategic Land

July 2021

Prepared on Behalf of Tetra Tech Environment Planning Transport Limited.
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1.0 INTRODUCTION

- 1.0.1 Tetra Tech has been instructed by Rosconn Strategic Land (Rosconn) to prepare a Minerals Resource Assessment to support an outline planning application with all matters reserved apart from access for residential development at Land South of Radwinter Road, Saffron Walden, Essex. The site is currently used as arable agricultural land.
- 1.0.2 A Minerals Resource Assessment is required because the site is partially located within a Minerals Safeguarding Area for chalk as identified by Essex County Council (ECC) on its policies map. ECC has advised Rosconn that a Minerals Resource Assessment is required to be submitted as part of the planning application as the proposed development exceeds the 3 Hectare (ha) threshold of Planning Policy S8 of the Essex Minerals Local Plan (EMLP).
- 1.0.3 The purpose of the report is to provide an assessment of the most suitable and sustainable management of any identified resource at the site taking into account the economic viability of the resource and environmental constraints.

1.1 PROPOSED DEVELOPMENT

- 1.1.1 The proposed development comprises the development up to 233 residential dwellings and associated infrastructure with areas of open public space as shown on the Illustrative Masterplan (Appendix A). A large area of open space is proposed in the south east of the site. Areas of existing trees and hedgerows, which are present around the perimeter and entrance of the site, would be retained as part of the development.

1.2 SITE LOCATION AND SETTING

Location & Description

- 1.2.1 The proposed development site is located to the east of Saffron Walden, the west of the village of Swards End and to the south of Radwinter Road in Essex. The site area is approximately 18 ha and is centred at National Grid Reference (NGR) 555760 238180. The site is predominantly arable agricultural land which is bounded by hedgerows and scattered with trees. An agricultural building is located in the north of the site. A track is located to the north of the existing building and runs from east to west. A drainage ditch runs parallel to the track.

Site Setting

- 1.2.2 The site is in a predominantly agricultural setting, located between Saffron Walden and Swards End. There is agricultural land to the east and south of the site. Radwinter Road (B1053) abuts the northern boundary of the site, beyond which is agricultural land and an area of woodland. A residential housing scheme, which was granted planning permission in 2017 for the development of 216 residential properties, abuts the west of the site. This development is in the process of construction with the properties located in the east of this site completed. Properties are also located to the east of the site with the nearest property located approximately 180m from the site boundary.

Ecology

- 1.2.3 There are no ecologically statutory designated sites within a 2km radius of the site boundary.
- 1.2.4 An area of ancient woodland is located approximately 200m to the north of the site, as shown in the appended Constraints Plan.

Water Environment

- 1.2.5 A drainage ditch is located within the site boundary and extends outside of the site boundary to the east. There are a number of other drainage ditches within the vicinity of the site. The Slade stream is located approximately 320m north of the site at the nearest point. The GOV.UK Flood Map for Planning Service shows that the whole site is located within a Flood Zone 1. A Flood Zone 1 is described as land having a less than 1 in 1,000 annual probability of river or sea flooding.
- 1.2.6 The superficial geology beneath the site is designated as Secondary Undifferentiated aquifer and the bedrock geology as a Principal Aquifer. The Environment Agency defines Principal Aquifers as layers of rock or drift deposits that have high intergranular and/or fracture permeability, meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifer. The site is located within a Source Protection Zone (merged) 3 (Total catchment). This zone is defined as the total area needed to support the abstraction or discharge from the protected groundwater source.

Heritage

- 1.2.7 There are 16 Grade II Listed Buildings within 1km of the site which are located in the village of Swards End to the east of the site and Saffron Walden to the west of the site. The nearest of these heritage assets is located approximately 280m east of the site.

Utilities

- 1.2.8 A series of pipelines pass under the site, as shown in the constraints plan, which is included in Appendix B. An oil pipeline dissects the site from the north west to south east and an abandoned pipeline runs parallel to this pipeline. A second oil pipeline is located beneath the west of the site and extends from the north to the south. A gas pipeline also dissects the site from north to the south. A foul water sewerage pipe is also located beneath the site and almost runs parallel to the track at ground level. It is understood that the oil and sewer pipelines require an easement 6m and the gas pipelines require an easement of 10m.

2.0 GEOLOGICAL SITE SETTING

2.1 BRITISH GEOLOGICAL SURVEY GEOLOGY RECORDS

- 2.1.1 With reference to the British Geological Survey (BGS) Geology of Britain Viewer website, the majority of the site has no recorded superficial deposits. The south east of the site is underlain by the Lowestoft Formation, which comprises Diamicton. These superficial deposits were formed up to two million years ago in the Quaternary Period in a local environment previously dominated by ice age conditions.
- 2.1.2 The BGS show that the bedrock geology at the site is the Lewes Nodular Chalk Formation and Seaford Chalk Formation (undifferentiated). This sedimentary bedrock formed approximately 84 to 94 million years ago in the Cretaceous Period in a local environment previously dominated by warm chalk seas.
- 2.1.3 There are two historic borehole records located in the vicinity of the site. One borehole (reference TL53NE9) was located approximately 20m north west and the second borehole (reference TL53NE15) was approximately 20m north of the site (see Figure 1 below).

Figure 1: British Geological Survey Geology of Britain Viewer Extract

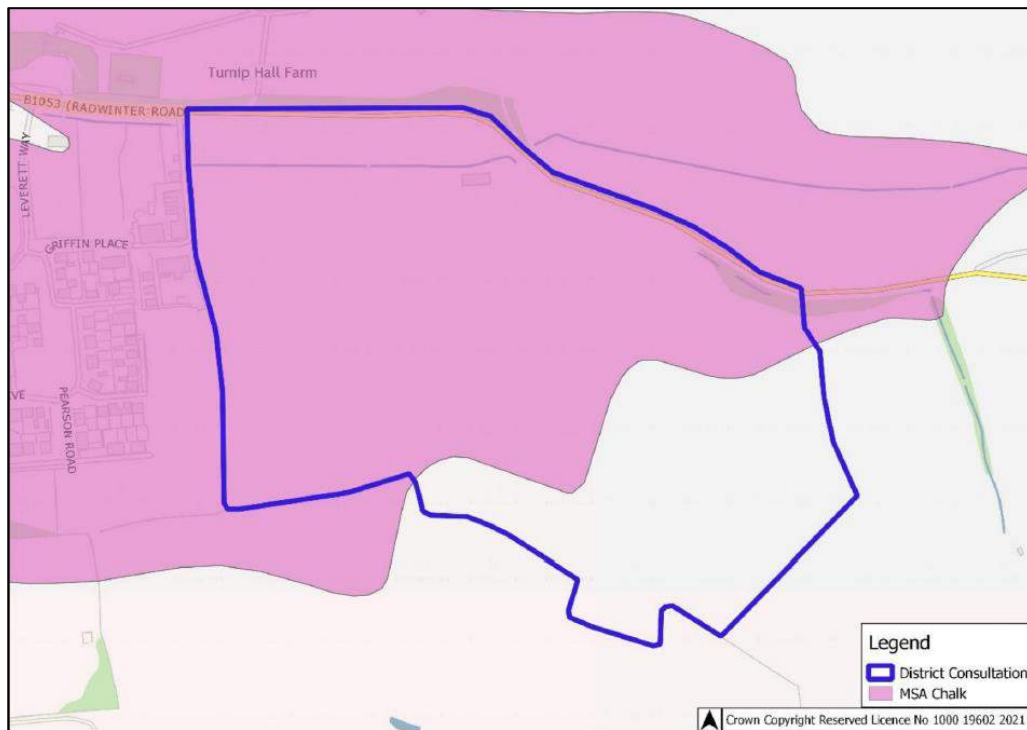


- 2.1.4 Borehole TL53NE9 was drilled in 1934 and recorded chalk with beds of flints to approximately 90m depth. Borehole TL53NE15 was drilled in 1972 which records 0.30m of topsoil, underlain by a stiff sandy clay to a depth of 1.25m. To the base of the borehole is a soft crumbly chalk, with occasional flint to 1.90m.

2.2 ESSEX COUNTY COUNCIL MINERALS SAFEGUARDING AREA

- 2.2.1 Appendix One of the Minerals and Waste Pre-Application Response from ECC shows the extent to which the site is located within the MSA. This is shown in Figure 2 below. With relation to the information provided by the BGS, the area of the site underlain by Diamicton is to the south east and is not included in the MSA.

Figure 2: Extract from Appendix One of ECC Pre-Application Response



3.0 MINERAL SAFEGUARDING POLICY

- 3.0.1 The safeguarding of non-renewable resources, such as minerals, is a key aspect of sustainable development. Paragraph 204 of the National Planning Policy Framework (NPPF), which was last updated in June 2019, obliges Mineral Planning Authorities to define MSAs when preparing local plans.
- 3.0.2 MSAs are produced to define known locations of specific mineral resources of local or national importance and to ensure these resources are not needlessly sterilised by non-mineral development, though MSAs carry no presumption that the resource will be worked.

3.1 ESSEX MINERALS LOCAL PLAN

- 3.1.1 The development site is located within the county of Essex and Essex County Council (ECC) act as the mineral planning authority. ECC's Minerals Local Plan was (EMLP) adopted in July 2014 and provides the planning policies for minerals development in Essex until 2029.

- 3.1.2 The EMLP contains Policy S8 – 'Safeguarding mineral resources and mineral reserves', which states:-

"By applying Mineral Safeguarding Areas (MSAs) and/ or Mineral Consultation Areas (MCAs), the Mineral Planning Authority will safeguard mineral resources of national and local importance from surface development that would sterilise a significant economic resource or prejudice the effective working of a permitted mineral reserve, Preferred or Reserve Site allocation within the Minerals Local Plan...

... Mineral Safeguarding Areas are designated for mineral deposits of sand and gravel, silica sand, chalk, brickearth and brick clay considered to be of national and local importance, as defined on the Policies Map.

The Minerals Planning Authority shall be consulted on:

- a) all planning applications for development on a site located within an MSA that is 5ha or more for sand and gravel, 3ha or more for chalk and greater than 1 dwelling for brickearth or brick clay; and*
- b) any land-use policy, proposal or allocation relating to land within an MSA being considered by the Local Planning Authority for possible development as part of preparing a Local Plan (with regard to the above thresholds).*

Non-mineral proposals that exceed these thresholds shall be supported by a minerals resource assessment to establish the existence or otherwise of a mineral resource of economic importance. If, in the opinion of

the Local Planning Authority, surface development should be permitted, consideration shall be given to the prior extraction of existing minerals.”

- 3.1.3 As described previously in this report, the application site is partially located in an MSA for chalk and is greater than 3ha. The policy threshold of Policy S8 has therefore been met and a Mineral Resource Assessment is required.

3.2 ECONOMIC IMPORTANCE

- 3.2.1 The most recent Authority Monitoring Report (AMR) was completed for the period between 1 April 2017 – 31 March 2018. The purpose of the AMR is to monitor the progress of preparing Local Plans and other planning advice documents, duty to co-operate measures, and to assess the extent to which the objectives of minerals and waste policies were achieved between 1st April 2017 and 31st March 2018.

- 3.2.2 The latest AMR shows chalk had no landbank maintenance requirement because it is extracted as an industrial mineral rather than as an aggregate.

- 3.2.3 The EMLP recognises chalk has relatively few uses in comparison to other minerals and the main use is for agricultural purposes with small quantities used in the pharmaceuticals industry. Paragraph 3.117 of the EMLP states:-

“There is only limited interest in chalk extraction in the County and there is no national policy requirement to maintain a landbank for this type of mineral. The Plan does not make any site-specific proposals for this mineral to be extracted”.

- 3.2.4 There is currently only one permitted chalk extraction site in Essex. The site, Newport Chalk Quarry at Chalk Farm, is located approximately 5.5km southwest of the site. This site has been operating since the 1980s and planning permission was granted in 2017 (reference ESS/32/17/UTT) to extend the timescale of the development for operations to be completed by 2042. This facility would therefore continue to provide a supply of chalk beyond the EMLP period. The EMLP recognises in paragraph 3.118 that:-

“...this existing chalk extraction site in Essex is considered to be sufficient to meet current and future demand. The Plan does not make any site-specific proposals for this mineral to be extracted”.

- 3.2.5 EMLP Policy S7 – Provision of Industrial Minerals relates to the operations at Newport Chalk Quarry. The Policy states:-

“The small-scale extraction of chalk will only be supported for agricultural and pharmaceutical uses at Newport Quarry as identified within the Policies Map. Extraction of chalk for other uses, such as aggregate, fill material or for engineering will not be supported”.

3.3 OTHER POLICY CONSIDERATIONS

- 3.3.1 The extraction of minerals has the potential to cause amenity impact. It is identified in paragraph 5.20 of the EMLP that the local amenity can be protected by minimising work in sensitive areas by creating buffer zones between residential areas and mineral extraction. Paragraph 5.20 states:-

“A minimum of a 100m ‘buffer zone’ from the extraction face to the wall of a residential property would normally be required to minimise the impact of working on local amenity”.

3.4 ANALYSIS

- 3.4.1 This section has identified the planning policy in respect of minerals safeguarding. This policy is designed to ensure that economically viable mineral resources are not unnecessarily sterilised and that where non-mineral development is permitted that due consideration is given to ensuring that appropriate investigations are undertaken to establish if the mineral deposits are of economic importance can be recovered as part of the development process from prior extraction. The EMLP does not provide a framework of the type of prior extraction (i.e. incidental or full extraction).
- 3.4.2 The policy is flexible in allowing effective sterilisation of a resource where the economic viability of extracting the resource is not likely. The Plan also recognises that demand differs between resource type and identifies chalk as having a lower demand. Policy S7 states that small-scale extraction of the chalk resources at the existing Newport Chalk Quarry will only be permitted where the resource will be used for agricultural and pharmaceutical purposes and not for aggregate, fill material or engineering will not be supported by the Mineral Planning Authority.
- 3.4.3 In addition, the Plan recognises the impact of mineral resource extraction on local amenity and there requires a minimum of 100m buffer between the extraction face and the wall of a residential property.

4.0 VIABILITY ASSESSMENT OF FULL PRIOR EXTRACTION

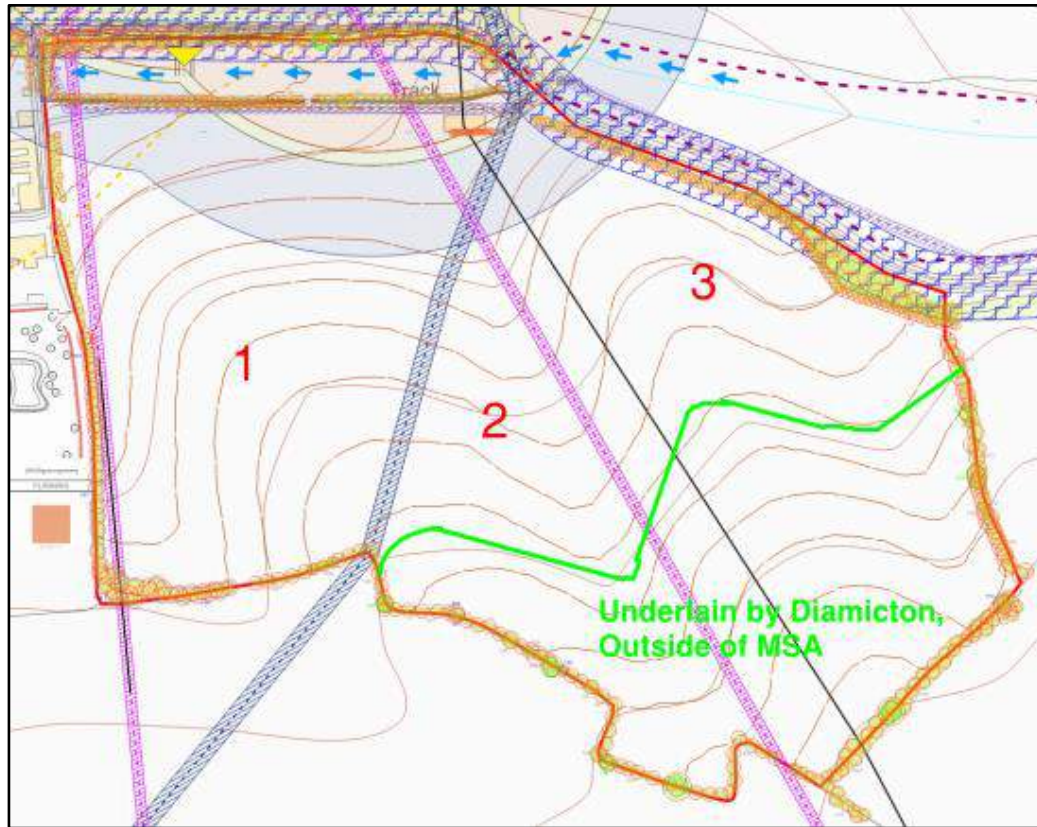
4.1 NEED

- 4.1.1 EMLP Planning Policy S8: 'Safeguarding mineral resources and mineral reserves' places emphasis on the requirement of Minerals Resource Assessments to identify if the site is located on a resource of **economic importance** to prevent the sterilisation of economically important minerals (bold text added for emphasis).
- 4.1.2 The EMLP recognises that there is less demand for chalk in comparison to other minerals resources. Paragraph 3.117 states that there is only limited interest in chalk resources in the County. The chalk quarry located at Newport Chalk Quarry to the south west of the site is anticipated to be sufficient to meet the current and future demand for chalk throughout the remainder and beyond the Plan period with the closure of the site required by 2042.
- 4.1.3 The full prior extraction of the mineral would require a full mineral planning application and subsequent permission. A mineral planning application would be expected to include a robust demonstration of need. It is considered that there is not much in the way of demand for the working of additional chalk reserves in the county. It is not considered that the chalk reserves that underly the site can be considered economically important.

4.2 CONSTRAINTS

- 4.2.1 The environmental setting of the site in respect of surrounding land uses and features, such as the natural and built environment, has the potential to constrain the physical extraction of mineral.
- 4.2.2 The presence of the existing oil, gas and sewer pipelines located beneath the application site, as described in paragraph 1.2.7, would constrain mineral extraction at the site. The Constraints Plan is included in Appendix B of this report and shows the location of the pipelines. The pipelines would complicate any potential extraction at the site and no extraction would be possible within the pipeline and easement areas.
- 4.2.3 The pipelines, in effect, subdivide the workable area of the site into three areas, as shown in Figure 3 below. Approximately half of areas 2 and 3 are shown by the BGS to be underlain by diamicton and in turn are shown by ECC not to be within the chalk MSA.

Figure 3 – Annotated Extract from Constraints Plan



4.2.4 Although quarrying operations are subject to stringent controls in respect of issues such as noise generation and dust management, it would be expected that appropriate stand-offs and buffers would be maintained between mineral working and existing built development.

4.2.5 As highlighted in the planning policy review in the previous section, paragraph 5.20 of the EMLP states:-

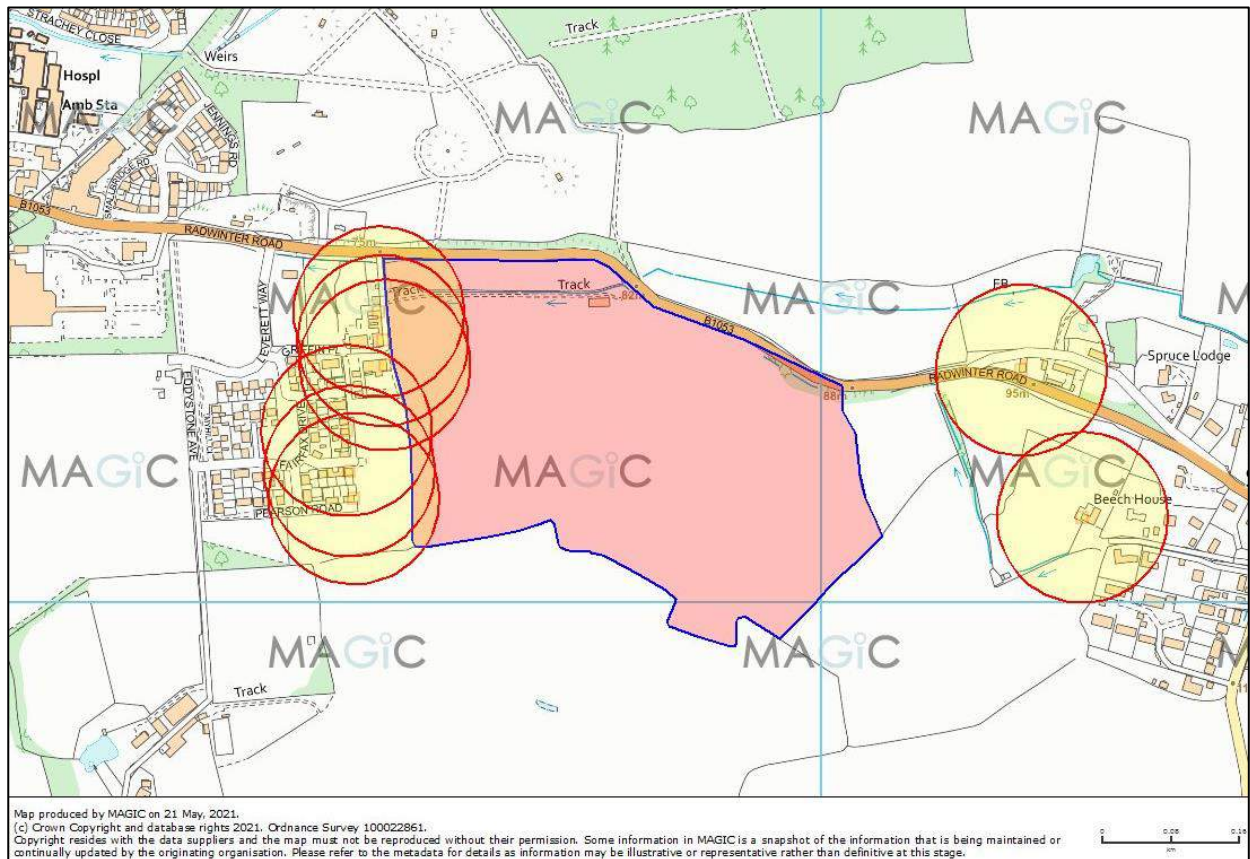
“Local amenity can be protected by minimising work in sensitive areas and creating ‘buffers’ between residential areas and mineral workings. A minimum of a 100m ‘buffer zone’ from the extraction face to the wall of a residential property would normally be required to minimise the impact of working on local amenity.”

4.2.6 Figure 4 shows a map extract from the Magic.gov.uk website of the nearest residential properties and a 100m buffer zone has been applied. It shows that the westernmost part of the site would fall within a 100m buffer zone, which would constrain the workable area of area 1 shown in Figure 3.

4.2.7 Buffer zones could also be required from the trees and hedgerows, both within and on the boundary of the site, for ecological purposes. The extent of these buffer zones would relate the presence of species that use these habitats, which would need to be determined through ecological surveys carried out by suitably

qualified ecologists. Hedgerows and trees would be retained as part of the proposed development, as shown in the appended masterplan. Therefore, it would be important to maintain the protection of these habitats, throughout any mineral workings.

Figure 4: Annotated map of Extract from Magic.gov.uk



- 4.2.8 The extraction of mineral deposits such as chalk, requires the removal of overlying surface soils and vegetation and the winning of mineral deposits can impact on hydrogeological and hydrological water flows. This site is located on a Principal Aquifer which may support water supply and/or river base flow on a strategic scale.

4.3 SUMMARY

- 4.3.1 The analysis provided in this section suggests that there is no identifiable demand for the full prior extraction of the underlying chalk resource at the site. This section of the report has also identified existing constraints from the built and natural environment that would act as an impediment to the extraction of mineral reserves.

5.0 CONCLUSIONS AND RECOMMENDATIONS

- 5.0.1 Tetra Tech has been instructed by Rosconn to prepare a Minerals Resource Assessment to support a planning application for the residential development of up to 233 dwellings at Land South of Radwinter Road, Saffron Walden, Essex.
- 5.0.2 A Minerals Resource Assessment is required because the site is partially located within a Minerals Safeguarding Area (MSA) for chalk.
- 5.0.3 Section 1 of this report provided a review of the site setting and described that there are a series of pipelines underneath the site and a new housing development is located to the west of the site. Section 2 of this report provided a review of the geology that underlies the site.
- 5.0.4 A review of minerals planning policy and supporting policy documents was set out in Section 3, including Policy S8 of the EMLP: 'Safeguarding Mineral Resources and Mineral Reserves'. Paragraph 3.117 of the EMLP states *"There is only limited interest in chalk extraction in the County"* and the EMLP also shows that the uses of chalk are limited.
- 5.0.5 The EMLP states that the one existing chalk quarry located at Newport Chalk Pit in Essex is considered to be sufficient to meet both current and future demand for the mineral. As such the EMLP does not make any site-specific proposals for this mineral to be extracted. The latest AMR for the period between March 2017 and April 2018 states in Paragraph 4.1.5 that chalk has no landbank maintenance requirement.
- 5.0.6 This report has also described how any future mineral extraction at the site would be constrained by existing built development and the natural environment. The oil, gas and sewer pipelines beneath the site would constrain and complicate any future mineral extraction. It is considered that a mineral operator is far less likely to be interested in working a resource, which is complicated by physical constraints beneath the site. Furthermore, a 100m buffer from the surrounding houses would likely constrain the workable area of the western side of the site. Additional buffer zones are also likely to be required around the perimeter of the site to protect the tree lines and hedgerows.
- 5.0.7 Policy S8 states that a Minerals Resource Assessment should establish the existence or otherwise of a mineral resource of economic importance. The demand for chalk reserves is very limited, due the limited uses of the mineral. It is not considered that the reserves can be considered economically important and a full mineral extraction is simply not viable as there is not enough demand for the resource. The identified constraints at the site would reduce the potential mineral yield and would make a prior extraction less

practical and less appealing for a mineral operator. The site also borders new housing and the suitability of the site to be worked for minerals is also highly questionable.

- 5.0.8 Excavation works, as part of the preparatory earthworks, would be required for the construction of the proposed development. This would include the foundations of the houses and works required for building roads and drainage systems. If meaningful quantities of chalk are encountered, excavated and cannot be reused on site (for e.g. in levelling works) it is recommended that the developer manages this resource in the most appropriate and sustainable manner possible. This will likely depend on the amount of surplus material generated (if there is any). This information is not available for this outline application, but would be available as part of the detailed submission.

APPENDICES

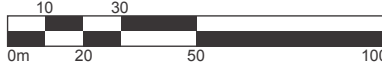
APPENDIX A - MASTERPLAN



LEGEND

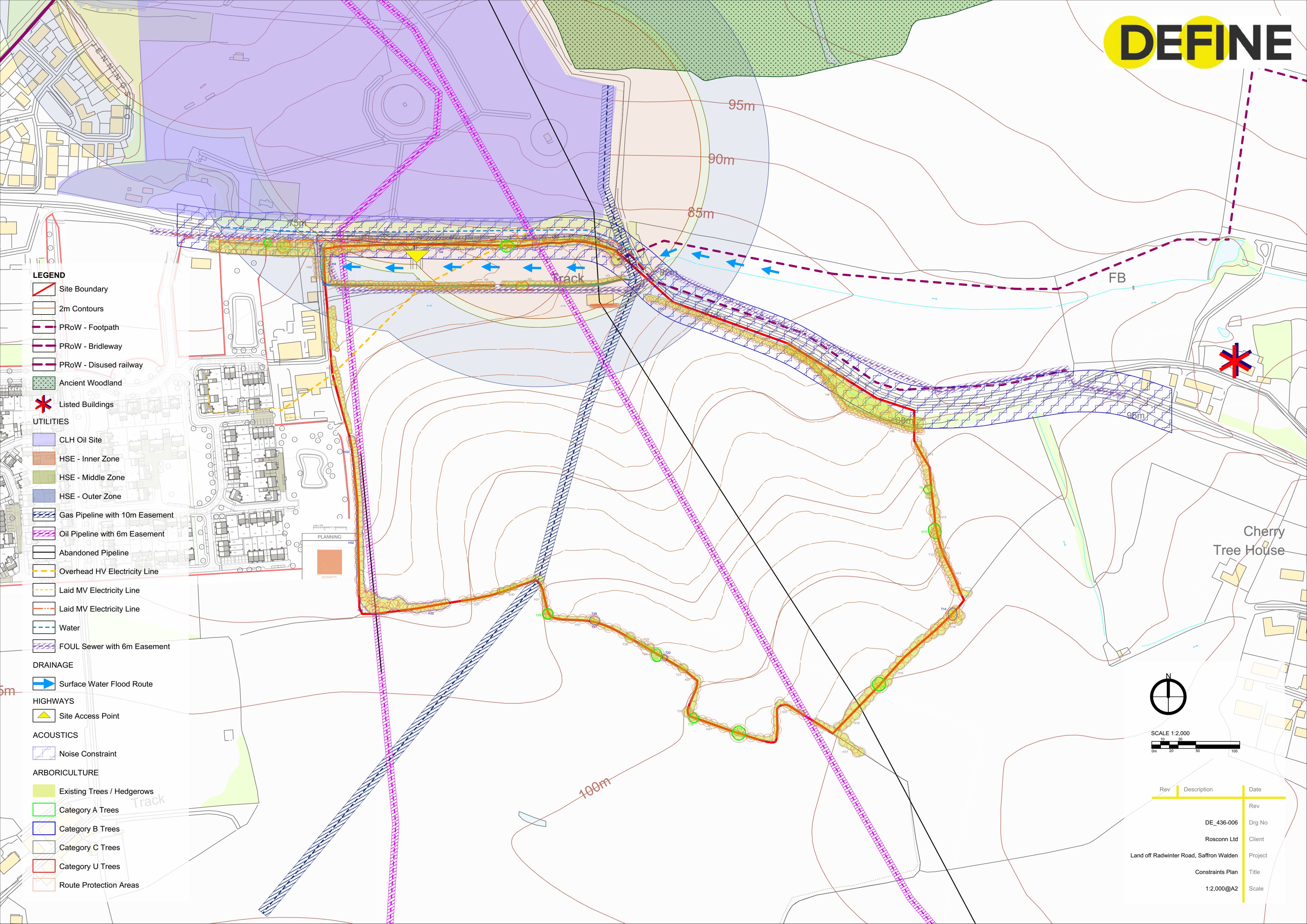
- Site Boundary
- 2M Contours
- Public Open Space
- Wetland
- Parkland
- Semi-natural Green Corridor
- SuDS
- Neighbourhood Greens
- Urban Square
- Green Links
 - Trees along Green Links / Church Corridor
 - Framing Neighbourhood Greens
- Existing Trees / Woodland / Hedgerows
- Proposed Trees / Woodland / Hedgerows
- Street Trees
- Residential
- Development Blocks
- Proposed Pedestrian/Cycle Links
- Existing Public Footpath
- Primary Vehicular Route
- Vehicular Site Access Point
- Retained Agricultural Access
- Agricultural Track
- Play
- Viewing Point

SCALE 1:2,000



	N	Rev
DE_436-005		Drg No
Rosconn Ltd		Client
Saffron Walden		Project
Illustrative Masterplan		Title
1:2,000@A2		Scale

APPENDIX B – CONSTRAINTS PLAN



LEGEND

- Site Boundary
- 2m Contours
- PRoW - Footpath
- PRoW - Bridleway
- PRoW - Disused railway
- Ancient Woodland
- Listed Buildings
- UTILITIES
 - CLH Oil Site
 - HSE - Inner Zone
 - HSE - Middle Zone
 - HSE - Outer Zone
 - Gas Pipeline with 10m Easement
 - Oil Pipeline with 6m Easement
 - Abandoned Pipeline
 - Overhead HV Electricity Line
 - Laid MV Electricity Line
 - Laid MV Electricity Line
 - Water
 - FOUL Sewer with 6m Easement
- DRAINAGE
 - Surface Water Flood Route
- HIGHWAYS
 - Site Access Point
- ACOUSTICS
 - Noise Constraint
- ARBORICULTURE
 - Existing Trees / Hedgerows
 - Category A Trees
 - Category B Trees
 - Category C Trees
 - Category U Trees
 - Route Protection Areas



SCALE 1:2,000
0m 10 20 30 50 100

Rev	Description	Date
Rev		
DE_436-006	Drg No	
Rosconn Ltd	Client	
Land off Radwinter Road, Saffron Walden	Project	
Constraints Plan	Title	
1:2,000@A2	Scale	