

FLOOD RISK ASSESSMENT

Coleford Football Pitch
Report Ref: 2053w0001_P2

For and on behalf of Coleford parish Council



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FLOOD RISK ASSESSMENT

Project

2053 Coleford Football Pitch

Site Address

Recreation ground and play park - Playground

Coleford

Radstock

BA3 5NX

Report

Flood Risk Assessment

Report Ref

2053w0001

Client

Coleford Parish Council

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REVISION RECORD Report ref: 2053w0001					
Rev	Description	Date	Originator	Checked	Approved
P1	ISSUED FOR COMMENT	14.11.22	TR	JRC	TR
P2	ISSUED FOR PLANNING	22.11.22	TR	JRC	TR



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1. INTRODUCTION

This report was prepared based upon the appointment by Coleford Parish Council to undertake a Drainage Design Statement to support the Planning Application to reprofile an existing football pitch at Coleford, Somerset

This statement has been prepared in line with the relevant legislation and guidance, as detailed below.

Government policy with respect to development in flood risk areas is set out in the Department for Communities and Local Government National Planning Policy Framework (NPPF) revised July 2021. The Planning Practice Guidance Suite (PPG) updated August 2022, provides guidance on Flood Risk and Coastal Change. This guidance has superseded the Technical Guidance to the NPPF however it follows similar policies.

Statutory Instrument 2006 No. 2375: The Town and Country Planning (General Development Procedure) (Amendment) (No. 2) (England) Order 2006 and updated 2015, made the Environment Agency (EA) a statutory consultee for planning applications where flood risk is a key issue. The EA has published a set of advisory comments and guidance notes on the requirements of a site-specific FRA for applicants and their agents.

In April 2013 and updated June 2014 DEFRA published further guidance with respect to flood risk management and the induction of the Lead Local Flood Authority role with respect to managing flood risk at a local level. The EA has a strategic overview role of all sources of flooding and coastal erosion (as defined within the Flood and Water Management Act) including working with others to prepare and carry out sustainable Catchment Flood Management Plans and Shoreline Management Plans, providing evidence and advice to support others and monitoring and reporting roles. This role links into the Lead Local Flood Authority role held under County Councils and unitary authorities. Under the FWMA this role includes:

- prepare and maintain a strategy for local flood risk management in their areas, coordinating views and activity with other local bodies and communities through public consultation and scrutiny, and delivery planning.
- maintain a register of assets – these are physical features that have a significant effect on flooding in their area
- investigate significant local flooding incidents and publish the results of such investigations
- establish approval bodies for design, building and operation of Sustainable Drainage Systems (SuDS)
- issue consents for altering, removing or replacing certain structures or features on ordinary watercourses
- play a lead role in emergency planning and recovery after flood events

Following the publication of the Flood Risk Assessments: Climate Change Allowances documents updated May 2022 and 'Adapting to Climate Change' produced by the Environment Agency advises on the revised allowances for climate change. Following the publication of the Flood Risk Assessments: Climate Change Allowances documents (dated 19th February 2016) and "Adapting to Climate Change" produced by the Environment Agency advises on the revised allowances for climate change. This advice should be applied to all future appraisals that are started (new) from March 2016 or are to be submitted for approval after 1st September 2016. Work already in progress should, as a minimum, be assessed ensuring that this advice would not lead to different decisions.

The objective of this statement is to assess and substantiate the flood risk to the site in order to show that the proposed development meets the requirements of the NPPF and that the drainage design appropriately considers flood risk.

Initial review of the parameters associated with this development are such that the site is situated completely within Flood Zone 1, however it is over 1 hectare in area and will therefore need a site-specific flood risk assessment is required.

This report has been developed using the latest information from the Environment Agency flood mapping from their website and procured based on providing a Flood Risk Assessment to support the planning application.





2. SITE SITUATION

Location

The site is situated within Highbury, Coleford, Somerset. The site is accessed off Orchard Close, which is a residential close off Radstock Street, in Highbury. The site has the National Grid Reference of ST 69158 49358. A site location plan is provided below.

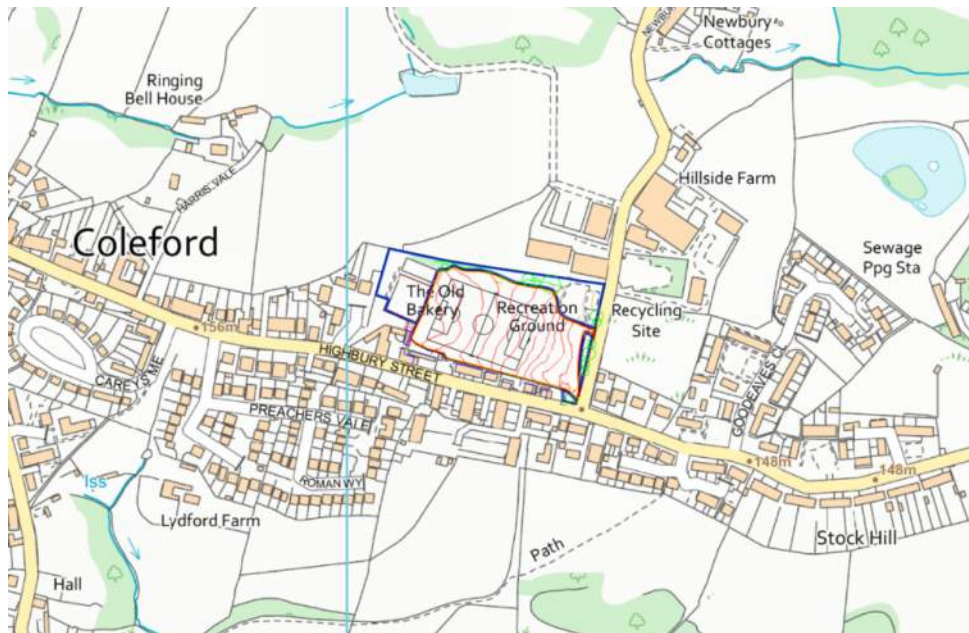


Fig 1

Site location plan – Approximate site location indicated by red boundary

At present, the site comprises of greenfield, and sports/recreation land. There is an existing football pitch on the site with a fairly severe gradient of 1:30 – 1:36 from west to east (lengthways on the pitch). The site is bounded by agricultural land and farm building to the north, and residential properties to all other sides.

The Environment Agency maps indicate that the site falls within the Secondary A aquifer. Secondary A aquifers comprise permeable layers capable of supporting water supplies at a local rather than strategic scale, in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers. Refer to Fig 2:

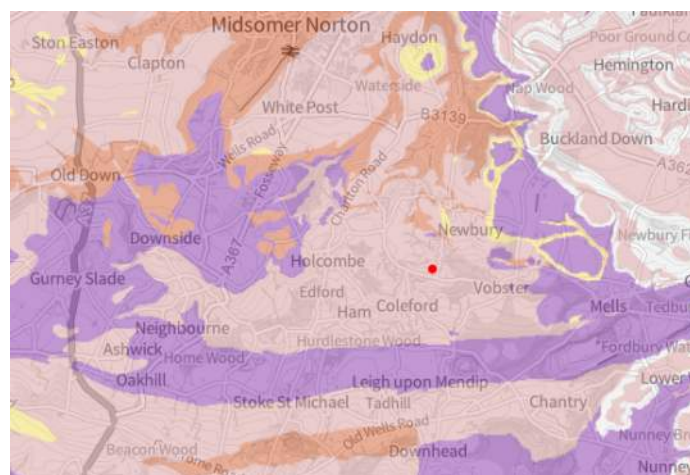


Fig 2

Extract from Environment Agency Aquifer mapping



3. FLOODING HISTORY & SOURCE OF POTENTIAL FLOODING

Initial review of EA mapping shows the site lies circa 400m north of a main river, Mell's Strea, see fig 3 below (site indicated with the red dot):

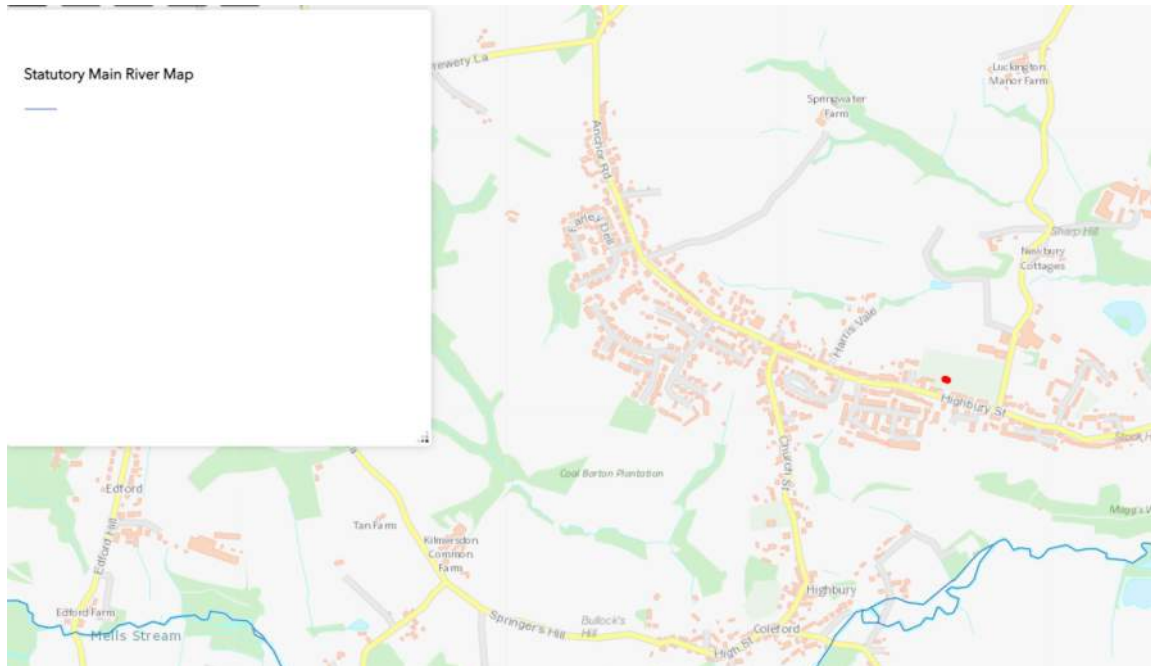


Fig 3

Extract from Environment Agency River mapping

The online Environment Agency information in relation to surface water flooding within the area (Fig 4), shows small pockets of low risk flooding adjacent to this site, on Highbury Street. Low risk means that this area has a chance of flooding of between 0.1% and 1% each year. Flooding from surface water is difficult to predict as rainfall location and volume are difficult to forecast. In addition, local features can greatly affect the chance and severity of flooding. It is likely that this flooding is related to issues with the highways drainage in the area, and is not considered to be a direct threat to the site or its users, as vehicles would be able to safely access and egress the site.

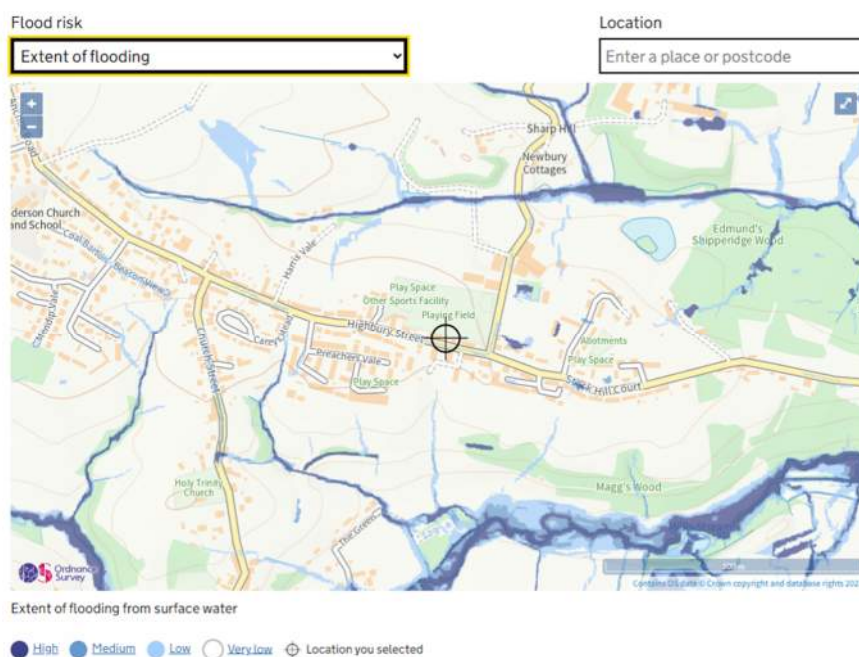


Fig 4

Environment Agency Online Surface Water Flood Mapping



FLOOD RISK ASSESSMENT

The above points are further reinforced by the Environment Agency mapping for fluvial flooding, with flooding concentrated to the main river (Mell's Stream) 400m to the south, see Fig 5 below. The areas directly adjacent to this watercourse are shown as being in Flood Zone 2/3:



Fig 5

(Environment Agency Online Flood Mapping)

RESERVOIR FLOODING

Reservoir flooding is extremely unlikely to happen. This is therefore not discussed further within this report.



4. SEQUENTIAL AND EXCEPTION TEST

The is a greenfield site. The existing topography of the site is relatively flat. As discussed within Section 3 above the majority of the site is classified as being within Flood Zone 1 and within the curtilage of a Village. On this basis, and given the nature of use, the site is deemed appropriate for development.

Sequential Test

Table D.2 “Flood Risk Vulnerability Classification” (Fig 7) under Annex D of PPS 25 Development and Flood Risk (now NPPF) shows that development used for “outdoor sports and recreation” use is classified as a “water-compatible” development. This is subsequently applied to Table D.3 “Flood Risk Vulnerability and Flood Zone Compatibility” (Fig 8) of the same document to determine whether:

- (a) The proposed development is suitable for the flood zone in which it is located and;
- (b) Whether an Exception Test is required.

Given these parameters, this development fulfils the requirements of the Sequential Test and an Exception Test is not required.

Water-compatible development

- Flood control infrastructure.
- Water transmission infrastructure and pumping stations.
- Sewage transmission infrastructure and pumping stations.
- Sand and gravel working.
- Docks, marinas and wharves.
- Navigation facilities.
- Ministry of Defence defence installations.
- Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location.
- Water-based recreation (excluding sleeping accommodation).
- Lifeguard and coastguard stations.
- **Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms.**
- Essential ancillary sleeping or residential accommodation for staff required by uses in this category, *subject to a specific warning and evacuation plan.*

Fig 7

(NPPF – Flood Risk Vulnerability Classification)

Flood Risk Vulnerability classification (see Table D2)		Essential Infrastructure	Water compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Flood Zone (see Table D.1)	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	✓	Exception Test required	✓	✓
	Zone 3a	Exception Test required	✓	x	Exception Test required	✓
	Zone 3b ‘Functional Floodplain’	Exception Test required	✓	x	x	x

Key:
 ✓ Development is appropriate
 x Development should not be permitted

Fig 8

(NPPF – Flood Risk Vulnerability and Flood Zone Compatibility)



5. PRELIMINARY DRAINAGE STRATEGY

At time of writing, no intrusive site investigation has been carried out at the site. Therefore, no infiltration testing data is available. Given the current use and lack of surface water issues in the area, it can be assumed that the soils in the area are reasonably permeable.

The surface water drainage strategy has been procured and informed using a range of information available including Goog Earth imaging, site-specific topographical surveys, cut/fill analysis, flood maps and proposal drawings. Key information can be found in the appendices of this report.

The proposal is to fill the area of the existing football pitch with a permeable inert material to create a more satisfactory longitudinal pitch gradient for play.

The permeability of the infill material will either be achieved through grading of the complete bulk infill to ensure its permeability performance or via an engineered solution, such vertical clean stone filled soakaways or land drains allowing water to pass to an infiltration blanket at the base of fill.

The existing pitch and wider recreational sports area show no signs of ponding water at present, it is assumed the surface water falling on the pitch currently infiltrates directly to the existing subsoils, and or fractures within the rock so may or may not be present at the time of works.

The proposed inert material used for the infill should comply with the Waste Framework Directive (WFD), specifically uncontaminated soil and other naturally occurring material excavated in the course of the construction activities, etc. This will negate the risk of pollution to the principal aquifer underlying the site.

Due to the building up of levels creating low level banking in the area, cut-off drains have been added to the toe of the embankments to mitigate against the unlikely event of surface water runoff affecting adjacent 3rd party land. This will provide capacity within the void ratio of the stone and perforated pipe to store any runoff, from where it will naturally infiltrate into the local strata. A plan and detail of this arrangement have been included within **Appendix B** of this report.

6. EXCEEDANCE EVENTS

Given the gradients of the site, the nature of the development and therefore the intention in terms of drainage solution, it is expected that during the extreme storm events due to blockage or lack of capacity, additional storage means will be provided by the existing sports field to the west. Flow paths will be maintained but mitigated as a consequence of the betterment achieved in terms of storage provision and existing run-off rates.



7. SUMMARY AND CONCLUSION

- The site is designated as being partly located in Flood Zone 1, but is larger in area than 1 Hectare and therefore triggers the requirements for a flood risk assessment
- By default, the site satisfies the Sequential Test given the type of development proposal
- Apart from negligible surface water flooding in the road network outside, the site is considered safe from risk to users. The nearest higher risk of flooding is some 400m + to the south, and is concentrated around a Main River, Mell's Stream. This watercourse also sits approximately 35m lower than the pitch, and therefore cannot be considered a risk.
- The drainage strategy recognizes the importance of water in the Environment and complies with the NPPF.

This report concludes that the development as proposed is appropriate and meets the requirements of the EA Standing Advice and the NPPF.

Yours sincerely,

Tim Rivett EngTech TStructE MICE
JRC Consulting Engineers Ltd



8. LIMITATIONS

JRC Consulting Engineers Ltd has prepared this Report for the sole use of RM Perry (“Client”) in accordance with the Agreement under which our services were performed (Proposal dated October 2022). No other warranty, expressed or implied, is made as to the professional advice included in this Report or any other services provided by JRC Consulting Engineers Ltd. This Report is confidential and may not be disclosed by the Client nor relied upon by any other party without the prior and express written agreement of JRC Consulting Engineers Ltd.

The conclusions and recommendations contained in this Report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested and that such information is accurate. Information obtained by JRC Consulting has not been independently verified by JRC Consulting Engineers Ltd, unless otherwise stated in the Report.

The methodology adopted, and the sources of information used by JRC Consulting Engineers Ltd in providing its services are outlined in this Report. The work described in this Report was undertaken during November 2022 and is based on the conditions encountered and the information available during the said period. The scope of this Report and the services are accordingly factually limited by these circumstances.

Where assessments of works or costs identified in this Report are made, such assessments are based upon the information available at the time and where appropriate are subject to further investigations or information which may become available.

JRC Consulting Engineers Ltd disclaim any undertaking or obligation to advise any person of any change in any matter affecting the Report, which may come or be brought to JRC Consulting Engineers Ltd.’s attention after the date of the Report.

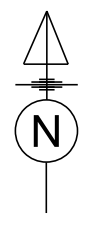
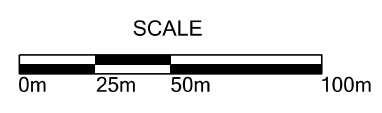
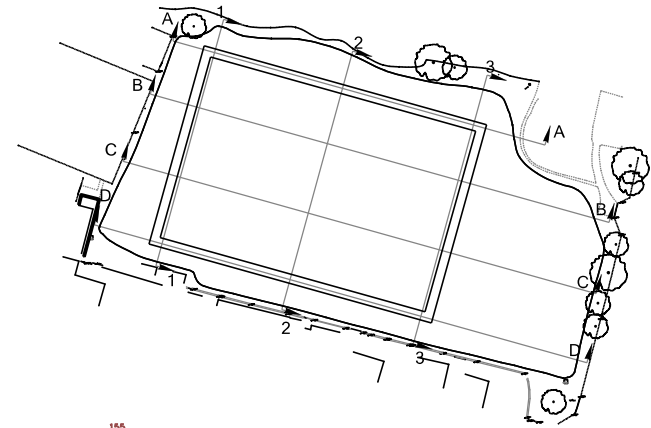
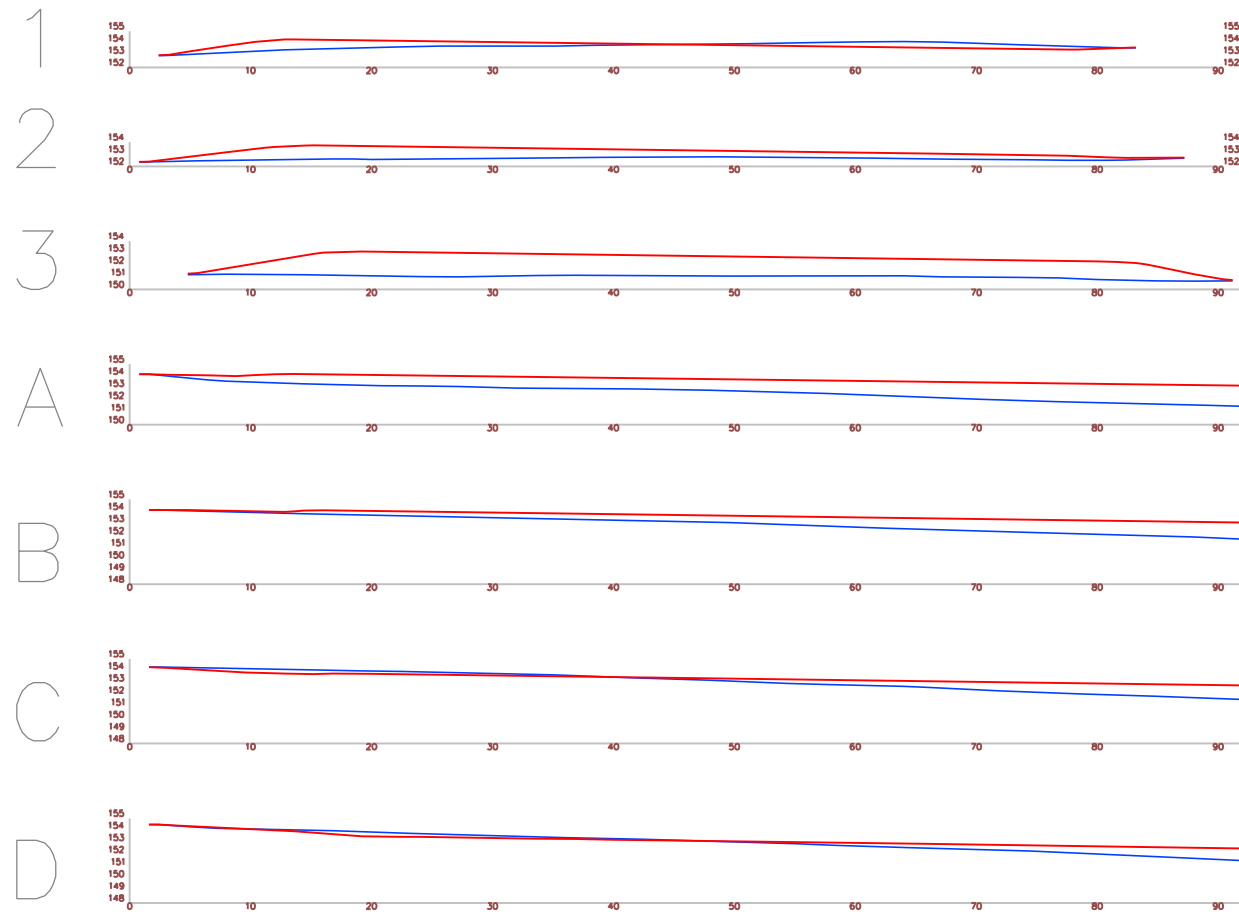
Certain statements made in the Report that are not historical facts may constitute estimates, projections or other forward-looking statements and even though they are based on reasonable assumptions as of the date of the Report, such forward-looking statements by their nature involve risks and uncertainties that could cause actual results to differ materially from the results predicted. JRC Consulting Engineers Ltd specifically does not guarantee or warrant any estimate or projections contained in this Report.

Where field investigations are carried out, these have been restricted to a level of detail required to meet the stated objectives of the services. The results of any measurements taken may vary spatially or with time and further confirmatory measurements should be made after any significant delay in issuing this Report.



APPENDIX A

Proposal information



Grid and Levels to National Grid
Projection OSTN15 and OSGM15

— Proposed Level
— Existing Level

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 UNIT 59, SHRIVENHAM HUNDRED BUSINESS PARK
 WATCHFIELD, SWINDON, WILTSHIRE, SN6 8TY
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 WEB : www.brunelsurveys.com
 Email: admin@brunelsurveys.com

Land and Measured Building Surveyors
 Photogrammetry, 3D Visualisation and
 Underground Utility Surveyors

CLIENT
 Coleford Parish Council

JOB TITLE
 Sections
 Coleford Football Club
 Highbury Street
 Coleford
 Somerset
 BA3 5NT

REVISIONS	
SCALE	A3 Sheet @ 1 to 2500
DATE	14/11/2022
DRAWN BY	JB
CHECKED BY	PAH
DRAWING No. 905-05	

Brunel Surveys Ltd
 UNIT 59, SHREVEHAM HUNDRED BUSINESS PARK
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 TEL: (01793) 784700
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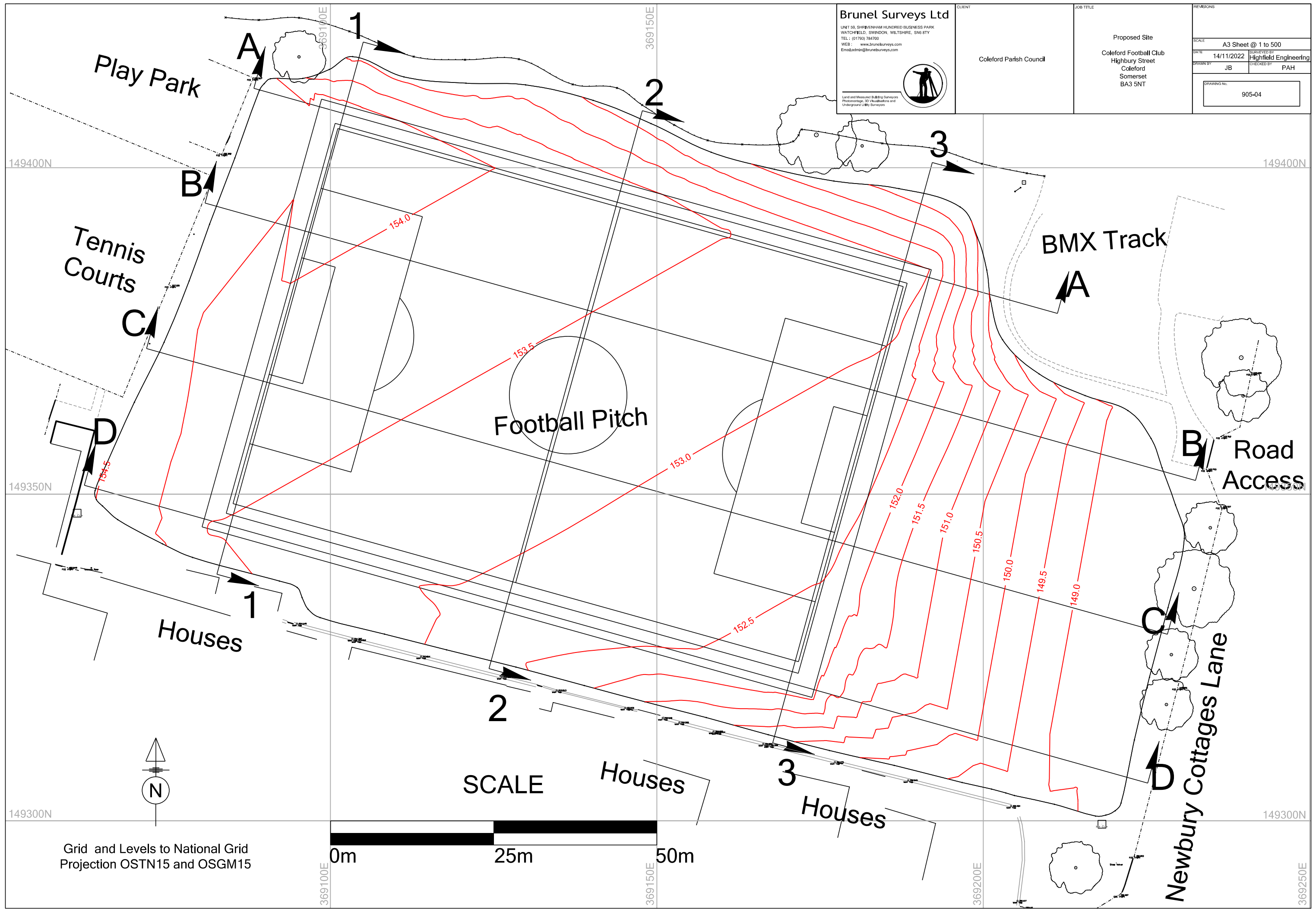


Land and Measured Building Surveys
 Photogrammetry, 3D Visualisation and
 Underground Utility Surveys

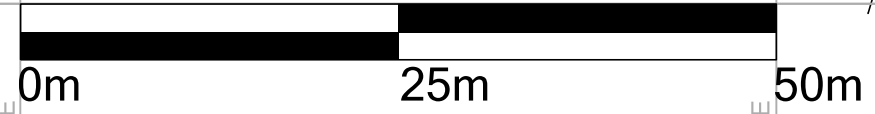
CLIENT
 Coleford Parish Council

JOB TITLE
 Proposed Site
 Coleford Football Club
 Highbury Street
 Coleford
 Somerset
 BA3 5NT

REVISIONS	
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DATE	14/11/2022
DRAWN BY	JB
CHECKED BY	PAH
DRAWING NO. 905-04	



Grid and Levels to National Grid
 Projection OSTN15 and OSGM15

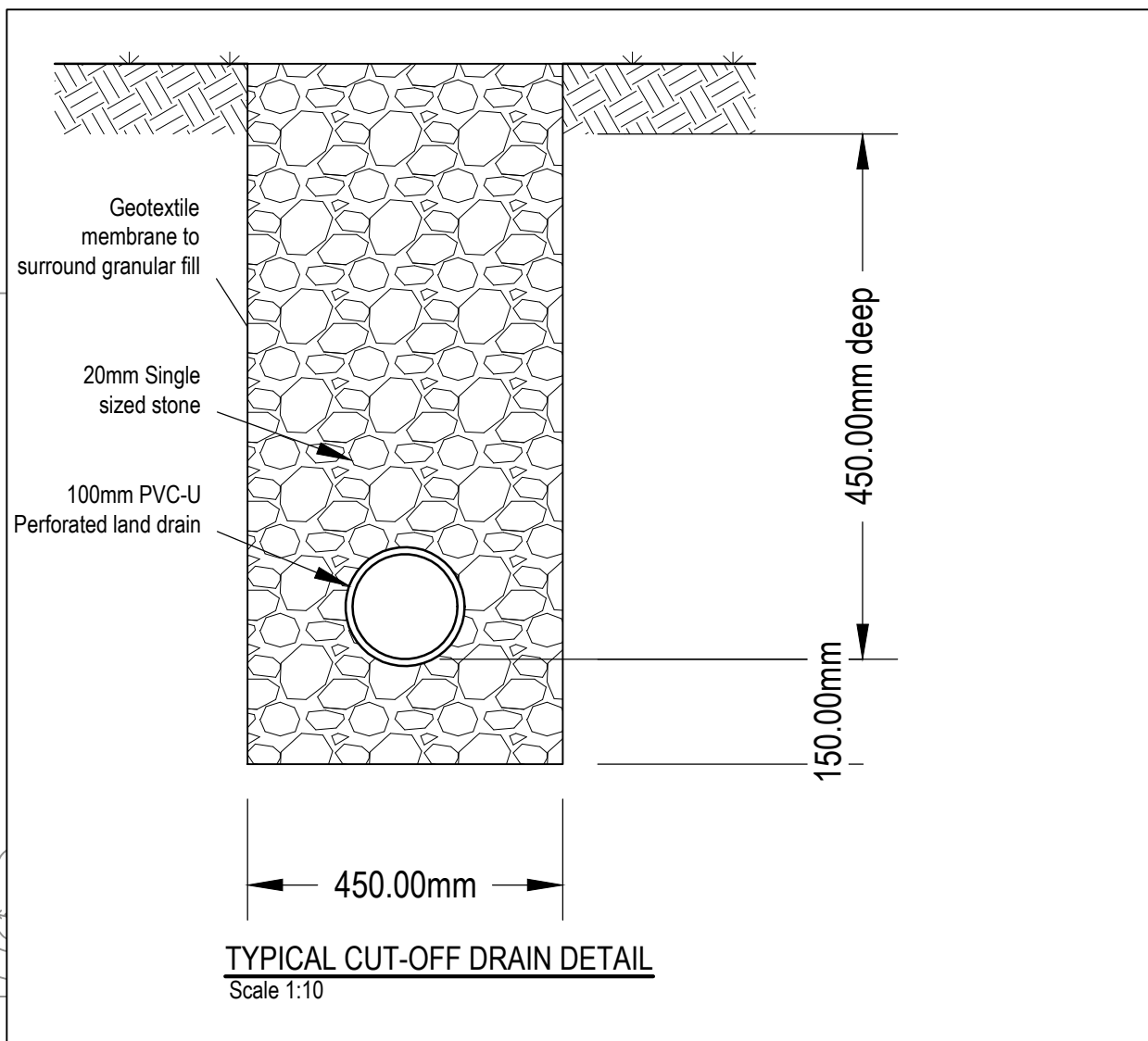
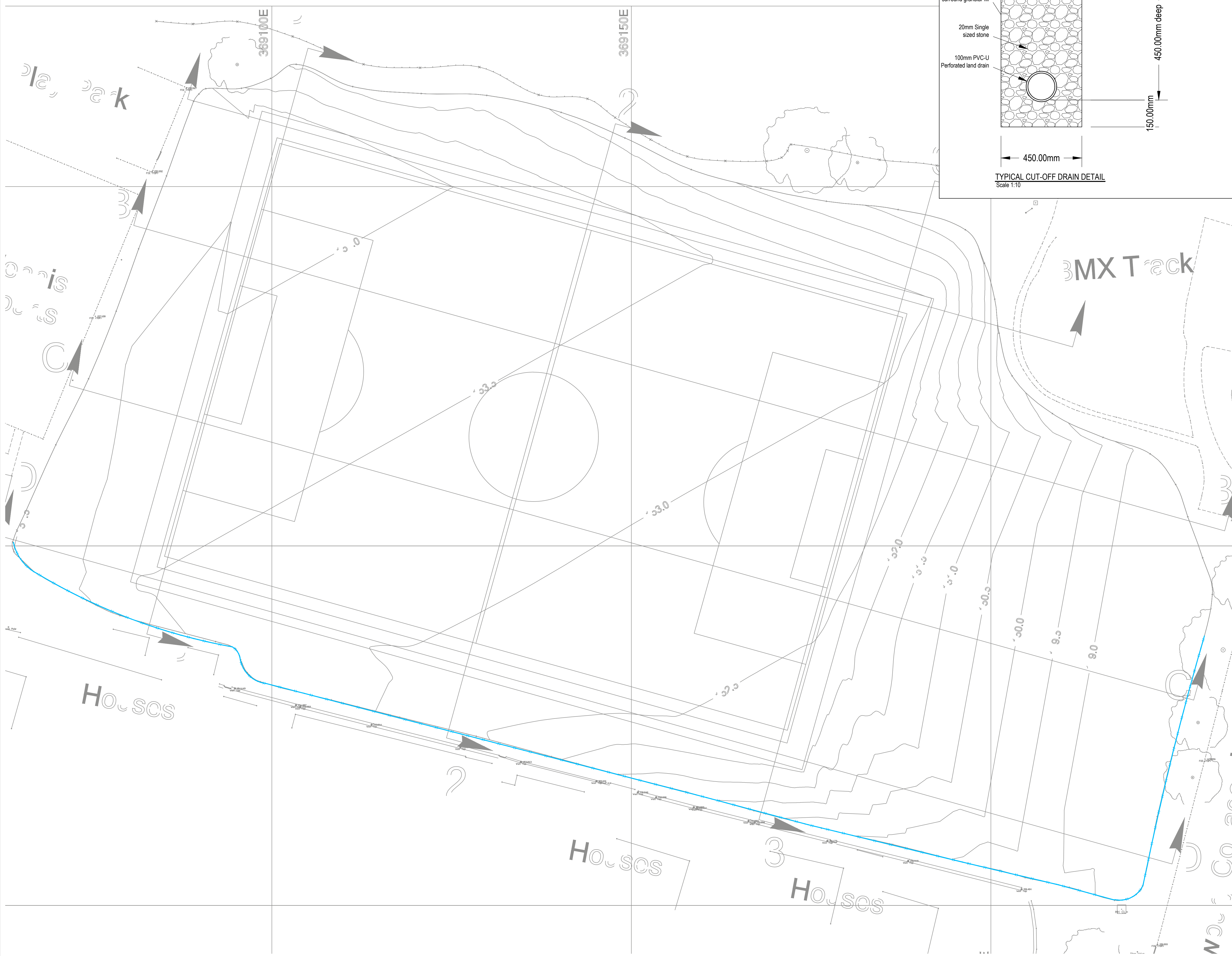
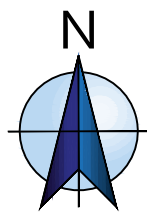


SCALE Houses Houses



APPENDIX B

JRC Cut-off Drain Proposal



CDM: Significant Hazards
Health and Safety hazards are identified by the designer as abnormal in pursuance of the current Construction Design and Management regulations. It is assumed that all works will be carried out by competent & adequately resourced contractor(s) working to safe systems of work.

- General Notes**
- DO NOT SCALE FROM THIS DRAWING FOR CONSTRUCTION. Scaling from this drawing or obtaining dimensions electronically may not provide accurate information and should be avoided, therefore work only from figured dimensions and contact JRC Consulting Engineers.
 - This drawing is to be read in conjunction with all other relevant Architect's, Engineers & Specialist drawings, details, Specification and the relevant Health and Safety Plan (as appropriate to the project). All discrepancies to be reported to the Engineer immediately for verification.

Legend

- Proposed private cut-off drain
- Land drain to discharge into stone surround. Refer to standard detail.

P1	22.11.22	Issued FOR CLIENT REVIEW	EJW	TR
REV.	DATE	DETAILS	BY	CHK.

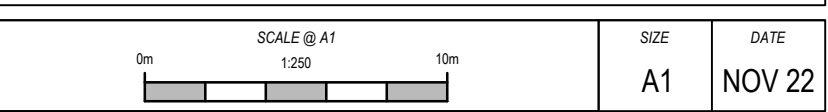


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PROJECT
COLEFORD FOOTBALL CLUB,
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LAND AND MINERAL MANAGEMENT

DRAWING TITLE
DRAINAGE STRATEGY



PROJECT NUMBER	DRAWING NUMBER	REVISION
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