



Havant Thicket Reservoir – Main Pipeline works

HTR-WAB-PI-P2-RP-W-0002_Havant Rugby Pitch Reinstatement Scheme

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For Construction

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Issue and Revision Record

Havant Thicket Reservoir – Main Pipeline Works

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Project Location: Meyrick Road, Havant, PO9 1NR

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1 Introduction

The objective of the Havant Thicket Reservoir Project is to provide a new resource to supply drinking water in the water-stressed Southeast of England while maximising the community and environmental benefits of a new raw water reservoir. Ward and Burke Construction Limited (WBCL) have been appointed by Portsmouth Water Limited (PW) to design, construct, and commission a new pipeline connecting Bedhampton Pumping Station to Havant Thicket Reservoir, including an emergency discharge structure at the Hermitage Stream, culvert upgrades and an Under Track Crossing.

1.1 Works Background

Portsmouth Water has outlined seven strategic drivers for this project to ensure continued focus on meeting the Project's objectives.

These project drivers are:

- **Quality:** Quality in procurement, design and delivery to deliver an exemplary project to serve Customers in the short, medium and long term,
- **Timeliness:** In service and operating by 2029 to support a major bulk transfer to Southern Water,
- **Innovation:** Develop best practices in the largest new reservoir project in the southeast for decades. Capture learning from companies working in partnership to deliver better value for Customers,
- **Flexibility:** Create a project that offers multiple uses and enables Portsmouth Water to be a strategic water supplier for the South over the medium and long term,
- **Responsibility:** Realise and build upon our health, safety and well-being goals,
- **Connectivity:** Positive connection for all stakeholders – Customers, the local community, regulators, staff, contractors, shareholders, commercial partners, environmental groups and individuals with a passion for the environment, and
- **Environment:** A positive contribution to local and internationally important habitats. Direct support for the Government's objective to reduce the damaging abstraction of water from rivers.

1.2 Scope of Document

This document includes the following items:

- Havant Rugby Playing Fields Reinstatement Scheme

1.2.1 Planning Condition/s

This document is required to discharge Condition 15 of permission reference HBC APP/24/00405. The requirements of Condition 15 and where within this document the requirements are addressed are set out in Table 1.1 below.

Table 1.1 – Condition 15 of APP/24/00405

Condition 15 – Playing Field Reinstatement	
<p><i>No works on the playing field shall commence until a scheme for the removal of the works/compound and the reinstatement of the playing field land has been submitted to and approved in writing by the Local Planning Authority in consultation with Sport England. The reinstatement scheme must be in accordance with the agronomist report (report titled: AI-HTR-WAB-PI-P2-RP-W-0001_HAVANT RUGBY CLUB AGRONOMY REPORT) and Sport England guidance "Natural Turf for Sport" (2011). The works/compound must be removed from the site within 3 months of completion of the works on the playing field. Within 3 months of, or in the first planting season following, the removal of the works/compound the playing field land must be reinstated in accordance with and comply with the approved reinstatement scheme and ensure a suitable timeframe for bedding in before use is commenced.</i></p> <p><i>Reason: To ensure the site is restored to a condition and be used for sports recreation in accordance with the NPPF and Sport England Advice.</i></p>	
Detail	Addressed
Reinstatement scheme for playing field land	Appendix A
HRC Agronomy Report	App. A: Section 7.1 Paragraph 1
Removal within 3 months	App. A: Section 7.1 Paragraph 2

1.2.2 Planning Condition Phasing

The relevant phase/s of the condition (listed in Table 1.1) this document revision seeks to address are specified in Table 1.2 below. Previously discharged phases of the condition, as well as those to be discharged in future submissions, are also listed.

Table 1.2 – Phase Submission Checklist

Phase Ref	Elements Covered	Discharge in this Submission
1	Pipeline Section P0 [FUW] (Bedhampton, associated infra.)	
2a	Pipeline Section P0 [WAB] Shaft W1 works (ex. Shaft)	
2b	Pipeline Sections P1/P2 Shafts W2/W3	✓
3	Pipeline Sections P3/P4 Shafts W3/W4/ED	✓
4	Pipeline Sections P5/P6 Shafts ED/W5/W6	
5	Pipeline Sections P7/P8 Shafts W6/W7/W8	
6	Pipeline Section P9	
7	Pipeline Section P10 [FUW] (Reservoir, associated infra.)	
8	Purbrook Way Culvert	
9	Dunsbury Way Culvert	
10	Middle Park Way Culvert	
N/A	Shaft W1 (<i>subject of separate Reserved Matters Application APP/24/00204 linked to original outline planning permission APP/20/00991</i>)	

Appendix A: Havant Rugby Playing Fields Reinstatement Scheme



EUROPEAN TURFGRASS SPECIALISTS

Havant Thicket Reservoir MPW: Havant Rugby Pitches

Prepared for: Ward & Burke Construction Ltd

Date: November 2025

Please note: This reinstatement scheme is confidential and is intended for the sole purpose of the above recipient. We aim to assist and represent our clients on matters concerning sports surfaces. All our recommendations are provided free of bias. We have no commercial connections or obligations to any manufacturer, supplier, or contractor. Whenever specific products, materials or machines are itemised in this reinstatement scheme equivalent alternatives will be accepted if the contractor or employer can provide the same guarantee of standards. These examples will have been included for clarification purposes only.

Contractual documents included:

Reinstatement Scheme

Laboratory analysis (pre-works)

Guideline materials for use on playing field

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1 Roles and definitions:

The Employer:	Ward and Burke Construction Limited
The Engineer:	European Turfgrass Specialists Ltd
The Contractor:	TBD
The Contract:	The General Reinstatement Scheme works combined with the Specific Reinstatement Scheme works make up the original Contract. The Contract can only be amended if all parties (the Employer, the Engineer, and the Contractor) agree in writing and sign off any changes to the original Contract. This change can only be achieved through amendments or protocols. These amendments or protocols are able to be discussed in the first place during key stages (site visits).

2 Conditions of contract:

The conditions of contract shall be based on the Infrastructure Conditions of Contract (ICC)- Minor Works Version (which has been based on the former ICE Conditions) that was published in August 2011 which takes into account new legislation changes that came into effect on 1st October 2011.

Breach of contract

If in the opinion of the Engineer the Contractor;

- (i) has abandoned the Contract; or
- (ii) without reasonable excuse has failed to start work in accordance with the dates specified; or
- (iii) despite previous warning by the Engineer in writing is failing to proceed with

the Works with due diligence or is persistently or fundamentally in breach of their obligations under the Contract:

Then the Employer shall be at liberty to determine the Contract either wholly or in part or to the extent of such breach and to provide for the execution of the Work by other means to make good in regards to;

- (i) the default; or
- (ii) in the event of the contract being wholly determined, the unexecuted work.

The amount by which the cost of providing for the execution of the work by other means exceeds the amount which would have been payable to the Contractor had they executed the Contract or portion thereof within the time or times specified, shall also be payable by the Contractor.

3 Health and Safety:

The Contractor shall carry out all operations associated with the specified works in the Contract in accordance with all current legislation including the Construction (Design and Management) Regulations 2015 (CDM) where applicable.

For the project the Contractor is required to provide a Health and Safety Policy with a Statement demonstrating that due regard has been given to all aspects of Health and Safety relevant to the site and specified works.

For projects within the scope of CDM regulations the Contractor shall submit a Health and Safety Plan to the CDM co-ordinator prior to commencing work.

The Contractor shall ensure that his rates are adequate to meet the cost of making all necessary arrangements for the Health and Safety and welfare of all persons affected by the construction work in the Contract.

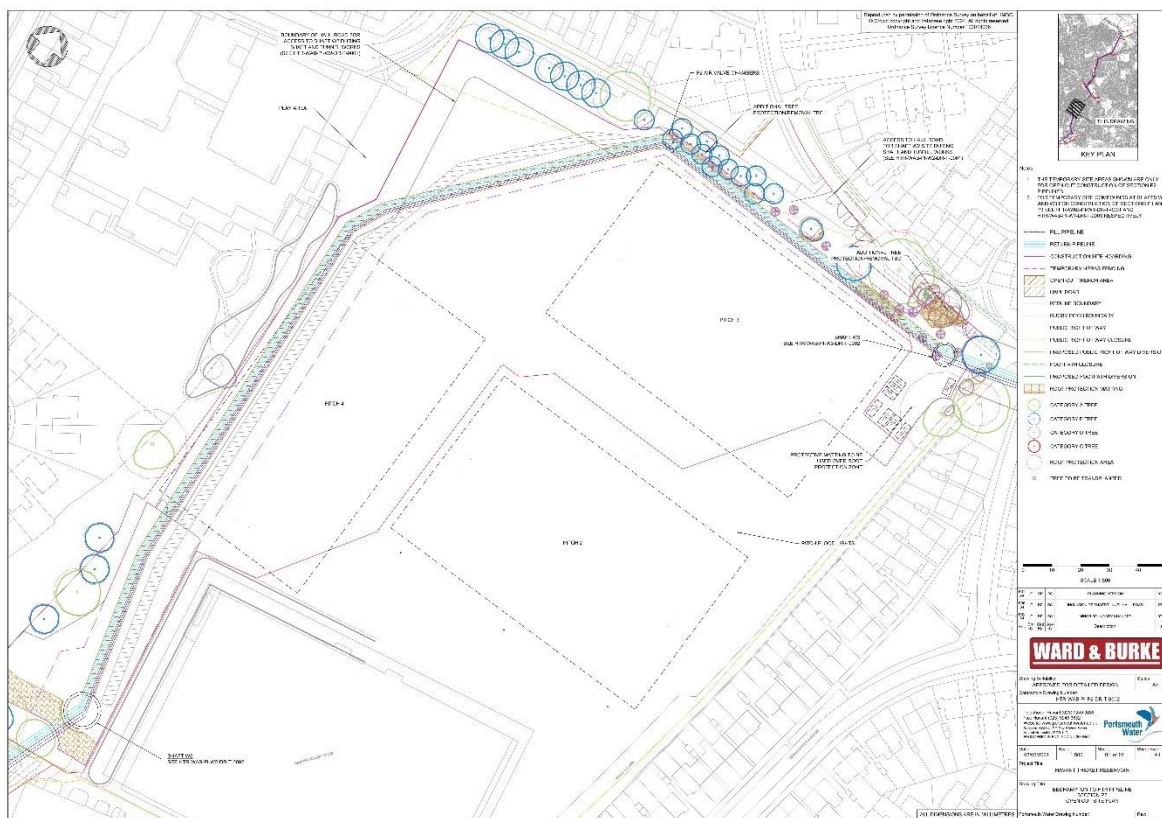
4 Insurances:

It is the Contractor's responsibility to provide the Client with full details of the Insurances required to carry out the specified works, including proof of Public Liability Insurance in the sum of £5,000,000 for any individual incident and unlimited in total.

5 Overview of site:

5.1 Location:

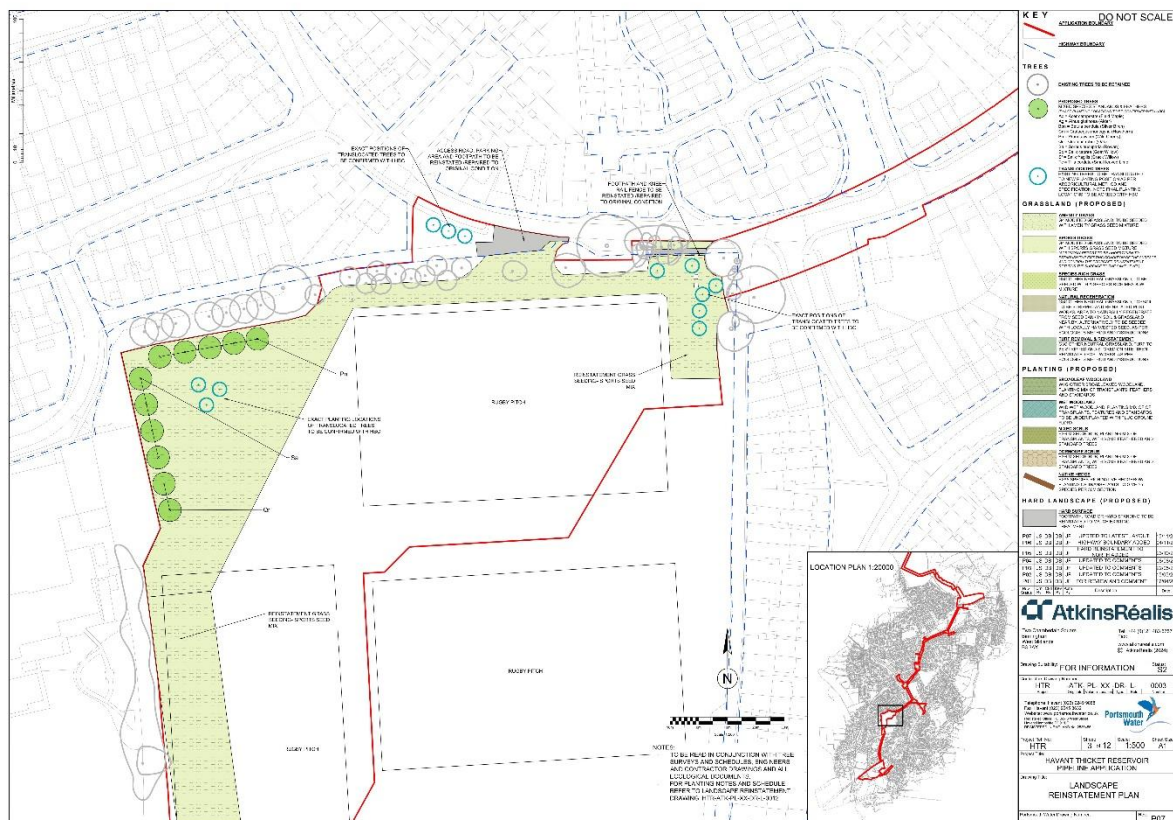
A new pipeline installation in Havant will use the micro-tunnelling method, but in one area, which runs through a section of one of the rugby training ground pitches an open cut installation method will be employed. The following illustration shows the route that this new pipeline installation will follow and the overall layout of the site area that is affected by this work:



Two hard core areas will be created on site, (in the North Eastern part of the site: Shaft 3) and (in the South Western part of the site: Shaft 2) and these areas shall be used to house the compounds. They are shown clearly in Drawing No. HTR-WAB-PI-P2-DR-T-0002.

The following Drawing No. HTR -ATK- PL- XX -DR- L- 0003 details the working area and all the landscaped areas that will need to be re-instated. This re-instatement work will reportedly include trees and grassland. This Reinstatement Scheme focuses particularly on the grassland area, with a particular emphasis on the sports pitches.

A separate Specification exists relating to the pipe installation works. The Contractor is advised to review this separate Specification as well. This separate Specification is entitled Pipe embedment design to BS EN 1295. Embedment and backfilling details shall be in accordance with CESWI 7th and WIS 4-08-02.



5.2 Access:

All staff and visitors are to be inducted on to site and to sign in daily prior to commencing works.

7 Description of works:

7.1 Works summary:

The reinstatement scheme shall match the existing site standards and put the pitch back as it is or better. This will be done in accordance with the RIPTA qualified agronomists feasibility report (report titled: AI-HTR-WAB-PI-P2-RP-W-0001_HAVANT RUGBY CLUB AGRONOMY REPORT) and this Specification of Works.

The works/compound must be removed from the site within 3 months of completion of the works on the playing field. Within 3 months of, or in the first planting season following, the removal of the works/compound the playing field land must be reinstated in accordance with the approved scheme.”

The Contractor is required to remove the top 1200mm of soil safely from the affected working area and to re-instate the landscaped playing fields after the pipework installation works are completed. These works, shall be undertaken in accordance with the Reinstatement Scheme set out in this document and all associated drawings.

The Contractor should also make themselves aware of the required programme for re-construction of the playing fields and re-establishment of the turf playing surface.

It is essential that the delivery of bulk materials and access to the playing fields is co-ordinated with other workers to enable all specialist Sub-Contractors to be able to complete their work within the specified programme.

The scope of the remedial installation works covered in this Reinstatement Scheme relates to the impact of the playing fields work only and this is summarised below: -

- i. Temporary site compound and site management
- ii. Marking out of trench lines and working areas
- iii. Trimming and preparation of formation surface
- iv. Excavation of trenches and storage of spoil (subsoil and topsoil)
- v. Installation of pipework
- vi. Re-introduction of subsoil and topsoil
- vii. Consolidation and preparation of topsoil for seeding or turfing
- viii. Sowing of approved grass seed mixture or re-laying of turf
- ix. Initial maintenance to establish grass cover
- x. Playing field establishment and grow-in
- xi. Production of as built plans

8 Reinstatement Scheme: General requirements

8.1 Assistance to the Engineer

The Contractor shall provide assistance to the Engineer in carrying out his duties throughout this Contract.

8.2 British Standards

Where an appropriate British Standard Specification or British Standard Code of Practice issued by the British Standards Institution is current at the date of the tender all goods and materials used or supplied, and all workmanship, shall either be in accordance with that standard, or any equivalent European Union standard, or that of a higher standard. Where substandard work is identified due to poor workmanship or the use of substandard materials, these will be reinstated at the Contractors expense.

Furthermore, wherever a higher standard of testing is available for use then this can be used instead. For example, BS3882:2015 and BS8601:2013 soil test standards can be replaced automatically for more detailed USGA testing for particle size distribution analysis purposes.

8.3 Testing of materials

No materials shall be supplied for the Works without prior approval from the Engineer.

Upon acceptance of the Tender, the Contractor shall use the materials specified in this Reinstatement Scheme.

Alternatively, the Contractor must submit any alternative samples of selected materials planned to be used during this project to the Engineer. i.e. gravel/stone, sand(s) for pipes drainage material, sand and topsoil for the rootzone amendment. Any alternative materials not mentioned must also have been first tested in an independent Laboratory approved by the Engineer, in order to be used as part of this project. The cost for any additional Laboratory tests that are not included in this report will lie with the Contractor.

Representative samples of all approved materials shall be retained on site throughout the duration of the works.

The type of tests that shall be undertaken on any imported soils shall be based on the British Standards which include BS3882:2015 and BS8601:2013. Furthermore, all imported soils and materials should be tested for contaminants such as heavy metals, hydrocarbons, and asbestos, using SGVs or C4SLs for public open space. This is essential to ensure that the reinstated pitch is safe for public use.

8.4 Services

The Contractor shall be responsible for determining the exact position of any services affected by the works. Any information provided to the Contractor shall be confirmed on site by liaising with the relevant Authority and hand digging where necessary.

8.5 Site conditions

The Contractor's attention is drawn to the need to satisfy themselves as to the conditions on site. Please also read our original referenced within Section 7.1 (***HTR-WAB-PI-P2-RP-W-0001_HAVANT RUGBY CLUB AGRONOMY REPORT***) that was prepared in August 24, prior to the creation of this Reinstatement Scheme. In this report there is a more detailed account of the sites existing conditions. For further information, please ask the Employer or the Engineer.

8.6 Hand work

The Contractor shall allow in his pricing for hand working on certain parts and in conditions where the use of machinery will not produce results to the Engineer's satisfaction even though specific reference is not made to such in the body of the Reinstatement Scheme.

8.7 Procedure

No variation from the sequence and nature of the works detailed in the Reinstatement Scheme will be permitted except with the prior written consent of the Engineer.

8.8 Inclement weather

The Works or any part thereof shall be suspended temporarily by the Engineer when, in his opinion, working conditions are unsuitable due to inclement weather.

Work must cease when ground conditions on site are such that puddling and/or deep rutting of the soil or any other detriment would result.

8.9 Site meetings (KEY STAGES)

The Contractor shall attend periodic meetings on site as required.

8.10 Traffic control and pedestrian safety

The Contractor shall provide and maintain all necessary road signs on public highways as required by the Employer's representative or by the Police.

Vehicular and pedestrian access for the public and residents to all dwellings and services adjoining the site and affected by the Contractor's access needs and works must be maintained at all times in a manner acceptable to the Employer's representative.

The Contractor shall remove from the surface of any public or private road any earth or other materials deposited by vehicles passing to or from the Site.

The Contractor shall take adequate precautions to prevent the spilling of oil, petrol or diesel fuel from vehicles, plant, storage drums or tanks on any access road or the Site in general. Any spillage shall be immediately cleared and the damage made good.

The Contractor shall use the designated haulage routes at all times and arrange for all delivery vehicles to use the agreed haulage route to and from site. Any changes must be done in accordance with Chapter 8 of the Road Traffic Signs Manual. Any such changes must be agreed with the Employer prior to implementation.

8.11 Maintenance of public and private roads, etc

The Contractor shall be responsible for keeping clean all public roads, pavements, verges and other areas and shall allow for all costs incurred by their fellow workers in the maintenance of the same and for making good at their own expense any damage thereto when carrying out the Works.

8.12 Traffic regulations

The Contractor shall be responsible for avoiding any infringements of local traffic regulations.

8.13 Delivery of plant and materials

All off-loading of materials and plant including that belonging to domestic and nominated sub-contractors is to take place within the boundaries of the compound area on site except by specific agreement with the Engineer.

8.14 Site restrictions

The Contractor shall confine his workmen and materials, plant, etc. to the area of the Site allocated for his use. Traffic shall be confined to use designated routes and other purpose built routes in agreement with the Employer. All of these areas will be signed up accordingly and fences will be erected around the perimeter of this work area to prevent children or the public from entering this location.

8.15 Off-site trespass

Allow for all measures and precautions necessary to prevent any trespass upon adjoining land or property, and to preclude any rubbish, materials, etc. from being deposited thereon.

8.16 Boundary protection

The Contractor shall allow for protecting and avoiding all damage to adjoining owners' boundaries and all vegetation/trees on the boundary.

8.17 Restriction of Advertising

The Contractor shall not use nor let the Site or any part thereof for any advertising purposes save only that they may exhibit their own name and address together with those of their sub-contractors and suppliers. The board shall also display the title of the Works. Such name boards shall be approved before erection.

8.18 Timetable of works

A Timetable of works will be prepared by the Employer for the expected works. Progress Charts shall then be prepared by the Contractor and submitted to the Engineer and the Employer for approval prior to the commencement of the Works to show how the Contractor intends to execute the Works within the time stated in the form of tender.

In the event of an Extension of Time being granted in accordance with the Conditions of Contract, the Contractor shall prepare and submit revised progress charts to the Engineer.

8.19 Site instructions

The Foreman-in-Charge shall be supplied by the Contractor with a Site Note Book in which they shall record all Site Queries and all Site Instructions.

8.20 Staff welfare facilities

The Employer and the Engineer, prior to the commencement of works, will identify and confirm the location of the Contractor's temporary site compound or welfare facilities. It is understood that a hard core area located next to the playing fields has currently been earmarked to house a secure compound which will include staff welfare facilities.

It is the Contractors responsibility to provide a secure compound of the storage of all their machinery, plant and materials. It is the Contractors responsibility to provide and maintain

adequate sanitary facilities and sheltered accommodation for the use of all workers. Their siting, maintenance and clearance on completion shall be to the satisfaction of the Engineer.

8.21 Surface and ground water run-off

The Contractor shall make all necessary temporary provision for the run-off of surface and ground water from the areas of excavation during the period between the start of the Works and the grow-in.

All labour, materials and plant necessary for the purpose shall be provided by the Contractor and all costs shall be deemed to be included in their rates.

8.22 Temporary works

The Contractor shall provide and maintain all temporary access roads, sleeper tracks, storage areas or any other temporary works required during the execution of the Contract, remove them as required and make good on the completion of the Works.

The Contractor will be deemed to have taken due account in his Tender of the total cost of all temporary works necessary for the proper execution and completion of the Contract.

8.23 Police regulations

The Contractor shall allow for all costs that they may incur in ascertaining and complying with Police regulations.

8.24 National insurances, etc.

Allow for all payments and costs incurred by the Contractor in connection with National Insurances, contributions, levies, taxes and pensions for workpeople.

Allow for all temporary fencing, planked footways, guard rails, lighting and the like as may be necessary for protecting the public, and for the proper executing of the Works as may be required by the Engineer.

8.25 Clearing site

The Contractor shall, clear up and remove from site on a daily basis, all debris and arisings from the works leaving the area around the works clean and safe. The Contractor shall also upon completion of the Works, clear all plant, unused materials, etc., clean all roads, drains, etc. affected by the Works and leave the whole of the Site in a clean and tidy condition acceptable to the Engineer.

Allowance shall also be made for the full reinstatement to a satisfactory standard of any temporary access/haulage routes used around/within the site during the course of the Contract.

9 Reinstatement Scheme: Specific requirements (Preliminary Off-site preparation work)

9.1 Topsoil

During the initial stages of a project such as this it is important that a back-up topsoil material is organised and made available for use (if necessary) in case any accidents shall arise. For this purpose the following samples shall need to be submitted to the Engineer from the source of supply for testing and approval:

- i. Sandy loam topsoil material: 5kg minimum

Additional samples of the materials shown above shall also need to be kept on site as well throughout the duration of this project for on-site comparison purposes.

The following guidance is provided to help explain what quality of material we are looking for:

- i. A sand material shall be required to top-up any areas that experience shortage of topsoil material. This material may be needed for example to replace materials lost due to contamination or damage in or around the trenches.

Additional design based tests will be carried out by the Engineer to confirm which materials are appropriate or not for use as part of this playing fields re-establishment.

All Laboratory tests carried out at the outset will be used to ensure quality standards occur throughout this project. Any additional Laboratory tests undertaken on samples later on in the project (will be chargeable to the Employer) unless the purpose of this test is caused by a quality issue (then this cost will be covered by the Contractor).

The standards of the materials brought in during the Project must relate back to the original standards obtained in our initial testing (please see the Appendix). Any materials that do not meet the same standards identified during this initial test phase (Tolerance $\pm 10\%$) will not be permitted for use and will be sent back to the Contractor at cost to the Contractor.

If the Contractor wishes to use alternative materials they will need to undertake Laboratory tests on these materials first but only together with the Engineer (in advance of the actual on site works phase).

9.2 Workmanship Standards

One purpose of this Reinstatement Scheme is to clearly outline the works required. The standard of workmanship and materials to be used, which are clearly defined in this Reinstatement Scheme. The reason for this is to enhance all parties understanding of the project, before, during and afterwards. This will help all parties to enhance the quality of their workmanship standards.

The second reason for this Reinstatement Scheme is to specify the standards expected. This will also help to communicate to all parties involved what standard is expected from one another.

The Contractor is required to undertake specific works on this playing field and the associated works that arise.

The works that are illustrated in Section 6.1, shall be undertaken in accordance with the Reinstatement Scheme set out in this document.

The Contractor should make themselves aware of the required time table for the complete installation of the pipework and the re-build of the playing fields.

It is therefore essential that the delivery of bulk materials and access to the playing fields working areas is co-ordinated with other workers to enable all specialist Sub-Contractors to complete their work within the specified programme.

9.3 Tender

The Contractor shall also need to supply the following information with their Tender return to the Employer and Engineer for the works described in this Reinstatement Scheme to enable a full appraisal of their proposals.

9.3.1 Specifications

Specification and performance criteria of materials, equipment and components proposed to be used, to ensure that they meet the design and system requirements, including any necessary drawings.

9.3.2 Method Statement

A detailed method statement shall need to be provided describing the operations and procedures, with any contingency plans necessary to meet the specified programme.

9.3.3 Programme of Work

The Contractor shall submit their own detailed programme of works identifying critical areas or any specific requirements that he/she may have in order to achieve the overall programme. Such requirements may include provision of access, storage areas and services such as water or electricity supplies for the irrigation system.

9.4 Levels

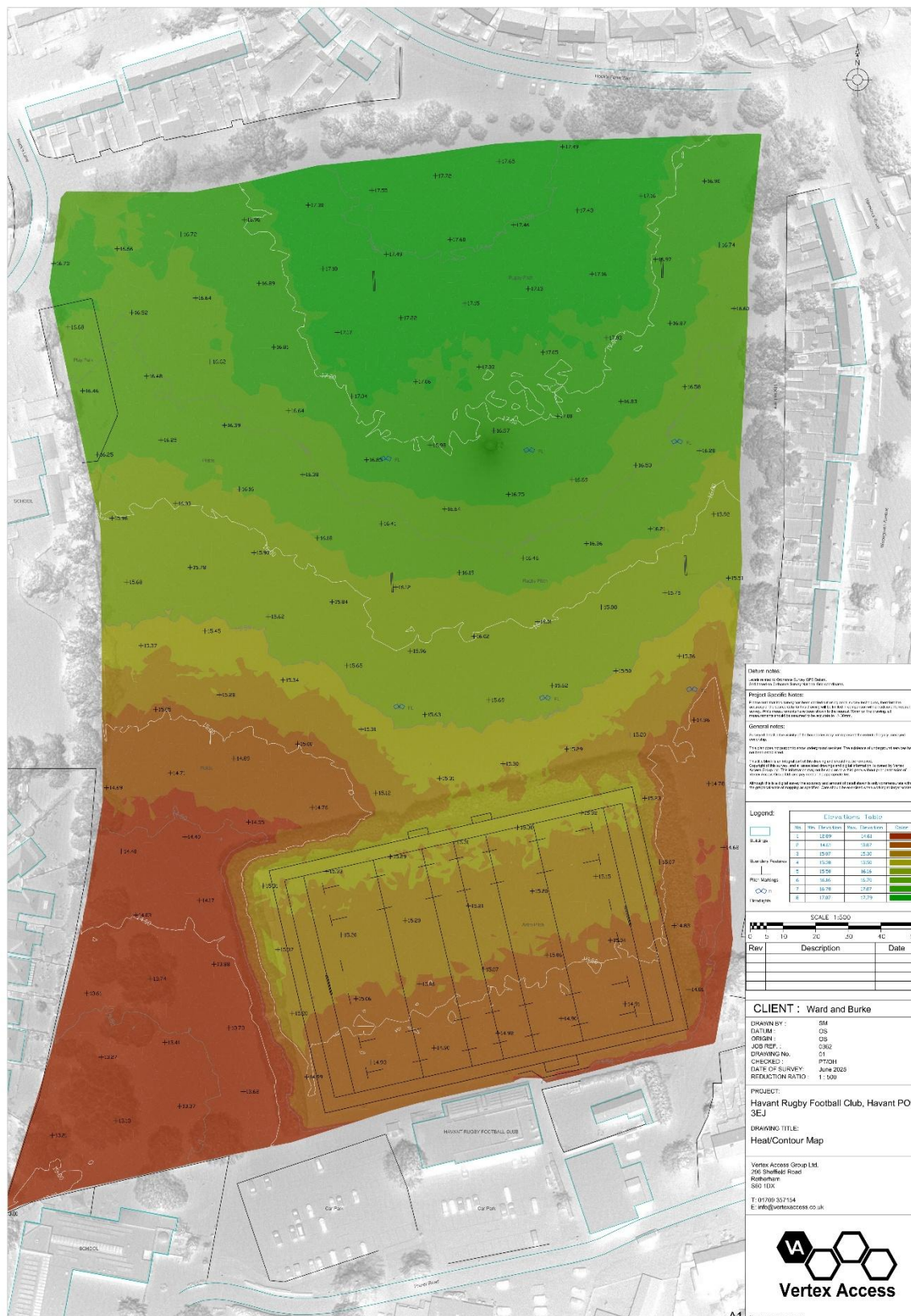
Levels shall be checked by the Engineer using agronomic devices and a 3metre straight edge where necessary.

The finished formation surface shall have the same or better deviation plus or minus 20mm when using a 3metre straight edge.

Tolerance: $\pm 20\text{mm}$ under a 3metre straight edge.

The overall formation surfaces levels should be checked prior to and after installation. Using a laser level device would be deemed ideal. This will need to be done separately by the Employer.

A topography study has been commissioned for the playing fields. The results of this survey are shown clearly on the next page:



10 Reinstatement Scheme: Specific requirements (Site preparation works)

10.1 Access

The Contractor shall prepare and maintain a suitable access throughout the Contract Period for all equipment and materials at the entrance area to the playing fields in line with the Construction Traffic Management Plan (HTR-WAB-PI-W2-PL-W-0001). All necessary traffic and pedestrian management measures including warning signs should be allowed for. The public roads shall be kept clean at all times.

The route from the storage compound area to the playing fields will also be prepared and maintained throughout the duration of the Contract Period. Fencing should also be erected around this access route as well.

Given that two main entrances exist on site, where individual works will take place, each individual area and travel route between each area on site must be signed accordingly and fenced off to the appropriate standard. It is essential that children and adults are aware not to go into these areas, as they are high risk areas.

10.2 Storage compound

The Contractor shall provide and maintain a storage compound for equipment and materials at an agreed location on a hard core service located on/near the playing fields throughout the Contract Period. Allowance shall be made for fencing around the compound for the duration of the works using Heras fencing or other approved fencing.

The topsoil and subsoil material collected during the removal of spoil stages will need to be located in a safe place on site which cannot be accessed. The Engineer will identify this location together with the Contractor and Client during our initial site inspection.

Underneath the hard core service, where the compound and materials will be safely stored, a high quality geotextile membrane should be laid beneath the hard core stone aggregates and above the original subsoil material.

10.3 Pre-works

Prior to any pipework installation works being carried out on the playing fields the playing fields turfgrass must be mown down to 25mm height of cut using a cylinder mower or rotary mower.

10.4 Marking out

Prior to marking out the location of the pipework the Contractor is advised to CAT scan the entire area proposed for installing pipework. Any issues identified through this test should be raised with the Engineer and marked out clearly so that all workers that excavate the area afterwards know where vital services exist. A decision will be made by the Engineer and the Contractor about whether or not to move the position of the trench and pipework. If the same area is kept then the workers will then need to proceed using hand tools here to avoid causing any issues. Obviously, a more sensible decision is that the location of the trench is moved at this point to avoid affecting the service (if possible).

The pipework's actual location and the trenches exact location shall be spray painted and marked out using a spray canister and posts. The spray paint markings will clearly indicate the exact location of the trenches as per the plan shown earlier in this document in Section 6.1.

Furthermore, the working area around the trenches shall also be clearly marked out and fencing erected accordingly.

11 Reinstatement Scheme: Specific requirements (Site works)

11.1 Removal of vegetation

The area marked out using spray paint and/or posts shall be fraise mown down to 2cm/20mm depth using an appropriate fraise mowing machine that removes all the vegetation. This vegetation will be collected and discarded carefully at the same time. A certificate shall be provided by the Contractor afterwards to show that this material has been safely removed off site to an appropriate location.

Please remark out the actual location of the trenches and pipework on the underlying soil surface once the vegetation has been removed. Marker posts or spray paint can be used for this purpose as seen fit.

11.2 Trench excavation works

Once the vegetation located above and around the trenches has been stripped away and removed. Please lay protective boarding down on either side of the proposed trench areas in the areas where it has been marked out.

Once these boards are safely laid down onto the playing fields surface, the removal of topsoil and subsoil material in the trenches can commence down to approximately 1200mm depth.

Beyond this depth, material will be transported away and removed from site and replaced with a gravel material as per the Cross Sectional diagram states.

Excavate the topsoil and subsoil to form each trench to the desirable required depth and shape the trench bed to receive pipes. The spoil shall be loaded as it is excavated and placed carefully on the protective boarding located at the side of the trench.

Alternatively, excess spoil shall be carted away on site as work proceeds to an authorised location where no contamination will occur. This area will need to be agreed upon with the Engineer and it will need to be covered over with a sheet to stop it from becoming contaminated. This area will also need to be added to the reinstatement works area as it will become damaged if spoil is left on this area for long periods.

Excess spoil can be removed to an appropriate tipping site, if the material collected is deemed unusable by the Engineer. A certificate will be required to show how much material has been excavated and tipped.

The topsoil quality (top 10cm/100mm) on site is understood to be of a sufficient standard to be re-used again during these works, so keeping a pile of this topsoil material will suffice.

The topsoil material that is excavated (or spoil if it is deemed unusable) shall be excavated using a tracked machine and a front loader and this material should be placed onto one side of the trench. If any concern is expressed about this material during this process (by the Contractor) due to them locating a different material, please inform the Engineer immediately. Furthermore, if any new material is located, please put this new material onto the other side of the trench for the Engineer to review and advise accordingly.

The Contractor shall allow for any preliminary ripping/cultivation treatments required to move around the soils evenly and smoothly in the trench.

The Contractor shall also allow separately in their rates for the excavation and removal of all arising's to an authorised tip and backfilling with approved materials to specified depths. A separate rate shall be included for the disposal of all the trenches arising's off site if agreed upon by the Engineer.

The Contractor shall inspect the site and satisfy themselves as to the ground conditions prior to putting in an offer.

Prior to laying any pipes into the trenches, different materials are likely to be put around the newly installed pipework. Full details of this material should be supplied to the Engineer and Contractor prior to being spread.

The actual depth of the pipes must also be finalised and they must be installed at least 1000mm depth below the finished playing surface level. Since the size of the pipes are also 1000mm this means that the total depth of material to be removed off site will reach down to beyond 2000mm depth.

Tolerance: $\pm 20\text{mm}$

12 Pipework installation works and pipework laying

The detailed installation works for the actual installation work of each pipe shall need to be completed as per the Contractors Specification details.

All machines used for undertaking the pipework installation work shall need to stay on the protective boarding at all times and the grass areas outside of this marked out area should not be worked upon at any time, to reduce any further potential damage to the playing fields.

A site visit will be undertaken by the Engineer directly after the completion of the pipework installation work to check on the actual condition of the entire playing fields after this installation work is completed. In the event that any extra works are needed, these repair works will be listed in a separate report after this inspection. This additional work will need to be completed as per discussions agreed upon together on site and furthermore, as detailed specifically in the Engineers follow up report.

KEY STAGE

13 Trench backfill

The topsoil material that has been put aside previously (spoil) shall need to be removed off site or spread back into the trenches, after the pipe installation works have been completed. The topsoil shall need to be put back carefully and no additional contamination is allowed for in the trenches.

Settlement below the specified finished ground levels within the first 12 months following certified completion of works will be made good at the Contractor's expense.

Backfilling of the trenches should be first completed up to 200mm from the final surface level using the existing subsoil material or an equivalent standard of subsoil approved by the Engineer and in line with the Civil Engineering Specification for the Water Industry.

This material should then be adequately and evenly firmed down using a whacker plate to prevent settlement and leave the surface flat.

Following this work the Contractor shall spread the remaining (stored) 210mm of topsoil material loosely over the compacted material located in the trench. Since only 100mm of topsoil will be collected and stored on site this means that additional material must be brought in. Unless the Engineer can locate better quality material on site that can also be used for this purpose during their initial inspections.

This topsoil material will need to be adequately and evenly firmed down using a whacker plate to prevent settlement and leave the surface flat.

The trenched area will need to be lightly graded to provide an even surface prior to re-turfing or seeding of this area.

The topsoil material shall be cultivated in order to relieve compaction and produce a good tilth. Allowance shall be made for at least three cultivation passes up and down the trenched areas.

It would make sense to remove the boards around the trenches as well at this time, prior to undertaking this final preparation work on the trenches because then the whole area around the trenches can be worked upon as well at the same time.

Tolerance:

The topsoil material shall not contain any loose impediments or stones within it near the surface 200mm. In the event that any stones and loose impediments (sized above 40mm) are present in this topsoil the Contractor shall need to sieve out the larger aggregates in the topsoil and remove all loose impediments (sized above 40mm) located within the top 100mm (10cm) of the topsoil.

The final levels on the surface shall need to be even and checked using a laser level or 3 metre straight edge prior to laying turf.

Surplus topsoil shall need to be disposed of to an authorised tipping site as for topsoil arising's.

An area on site will need to be identified to hold all arisings and material that is either unwanted or unusable. The Engineer will help the Contractor to identify this area. Ideally, this area should be a hard core surface area whereby no extra damage is created afterwards. Any repair work that is needed will need to be shown to the Engineer during their next site visit. Repair works will be discussed and finalised thereafter.

The finished levels for all playing surfaces shall need to meet the playing fields pre-works topography survey, unless agreement is made with the Rugby Club or Council and the Engineer to state otherwise.

Tolerance: 10%

14 Trench and Playing field re-establishment

KEY STAGE

14.1 Removal of ground protection boards and repair

Allowance shall need to be made for repair works to be carried out to the playing fields surface area that is located beneath and around the protective boards once they have been lifted up. These protective boards are planned to be used throughout this pipework installation.

After removal of the ground protection boards the Engineer will visit site and quantify the remaining repair works to be done. It will depend on the condition of the playing fields at this stage that will decide which works need to be done thereafter.

It is anticipated that the area beneath the boards will need to be lightly graded and renovated, just like the work proposed for the trenches. The Engineer will provide advice accordingly at this stage with the intention of renovating the entire area in the same way that the trench re-establishment works have been described previously.

In summary this renovation work will entail removing the surface vegetation (if not done already), renovating the ground beneath, preparing a new level surface for seeding and fertilisation to take place and releveling the surface using an appropriate topsoil material or sand material (deemed acceptable by the Engineer).

Alternatively, if limited damage is observed and levels are not affected then the opportunity to undertake less invasive routine maintenance tasks will be considered,

1. Namely this work will include strigging the dead material out, and or fraise mowing off the dead vegetation and/or hollow coring works or aeration works, followed by topdressing and overseeding. Each option will be considered by the Engineer at this **KEY STAGE**. Please allow for each possible course of action during the planning stages, each contingency will be agreed upon together with the Employer once the actual site visit is undertaken, after the protective boards have been removed and site fully appraised by the Engineer.

14.2 Pre-seeding works

Carry out a final seedbed preparation to produce a firm, smooth and evenly consolidated surface with no ruts or wheel marks.

Tolerance: $\pm 20\text{mm}$ under a 3m straight edge

The Engineer will check the surface levels at this point in the re-establishment process prior to seeding.

Supply and evenly apply a granular fertiliser containing Endomycorrhizae and *Bacillus subtilis* within it to the entire trench area and area around it using a drop spreader fertiliser machine. An acceptable product or equivalent product can be chosen to be the Maxwell Turf Food Myco 17.2.8.

The Engineer shall decide on whether the Contractors preferred product is acceptable or not. The Contractor shall send through his preferred choice of fertiliser to the Engineer for approval, prior to acquisition and application. The entire trench area and area surrounding it shall be fertilised at a rate of application of 35g/m² and this fertiliser should be lightly worked into the seedbed.

Supply and evenly apply a granular wetting agent to the entire trench bed and area surrounding it prior to seeding. The Contractor shall send through their preferred choice of wetting agent to the Engineer for approval, prior to acquisition and application. The material shall need to be spread at the Manufacturers recommended rates.

14.3 Seeding and overseeding

Supply and evenly apply spread (Barenbrug Smooth Sport) seed or equivalent using a drop spreader machine that enables the seed to be placed into the top 1 to 1,5cm of the trenches surface and area around the trenches that has been renovated and repaired. The rate of application shall be 40g/m². The seed mixture shall comply with the minimum standards set out in the Seed Regulations at the time of sowing and shall be approved by the Engineer prior to commencing the work. The Contractor shall send through their preferred choice of seed to the Engineer for approval, prior to acquisition and application.

Other seeds which would also be deemed acceptable are ones which have been coated with pre-emergent qualities aimed at enhancing the turfgrass establishment. It is crucial that the grass seed mixture contains a blend of ryegrass and fescue.

It is also possible to acquire seed coating on its own (mycorrhizae) which can be mixed together with the seed to help enhance seed establishment.

Seeding shall be carried out during suitable conditions when wind is low. Ideally, in the evening or early morning seeding.

The total quantity of seed shall be divided in half, each half being sown evenly with an approved distributor in opposite directions to provide a total sowing rate of 40 g/m² across the entire area.

Lightly drain harrow or rake the seed into the immediate surface, care being taken not to work the seed into drills or ridges on the surface.

A second overseeding application shall also be undertaken two months after the initial seeding. This second application shall need to be applied at a rate of 20 g/m² over the entire area.

The Engineer will visit site after the seeding of the trenches and identify any additional areas that still need to have seeding undertaken to them.

It is likely that any areas where the topsoil trench arisings have been placed (not hard core) will also need to be carefully prepared, cultivated and overseeded in exactly the same way as the trenches to enable this area to grow and recover successfully as well.

The area around the trenches and under and around the protective boarding will also likely require overseeding too including some preparation works, but this will be checked and organised after the Engineers **KEY STAGE** site visit.

15 Grow-in:

15.1 Watering

The entire playing field area that has been damaged, re-instated and repaired will need to be watered in, on at least two occasions each day for at least five minutes for the first fourteen days after seeding or turfing takes place. The moisture content of the playing fields rootzone material should be kept at between 15 and 30%.

The seeding of the pitch should be undertaken between August and September, which is ideal.

If possible seeding should occur directly prior to rainfall.

In the event of washouts during the watering of the pitch, the Contractor shall correct topsoil moisture levels accordingly and shall fix any other damages associated with any excessive movement of water across the surface.

Plan to hand water all new seed via a hose pipe and syringe or a travelling sprinkler attached to a hose to water. The travelling sprinklers could be set to operate on a timer on two occasions each day.

15.2 Mowing

When the new grass is about 40mm in height, a first cut of the newly seeded or turfed areas should be undertaken using a walk behind rotary mower with boxes attached. Collect the clippings and remove to a safe tip or location provided by the Employer. The Contractor must check the surface prior to mowing for any surface stones or stones that have dimensions of 20mm or more.

Following mowing, carefully roll the site under suitable conditions using a flat roller. Sizes to be determined by the Engineer.

Plan to cut the grass on site using a rotary mower on three further occasions in this manner, together with the rolling works directly afterwards (if necessary).

The grass shall be need to be mown regularly at this height. The grass leaves shall not be allowed to develop to more than 25% higher than 35mm height (i.e. 50mm height). The Contractor will need to adjust the height of cut on the mower or use a different mower, if this is the case. Furthermore, the Contractor shall need to mow the area twice to get the

grass back down to the desired height. Great care should be taken not to take too much grass off in one go. Any grass that dies off due to this reason, shall be re-instated at the Contractors expense.

15.3 Fertiliser

Supply and evenly apply a granular fertilizer using a drop spreader to the trenched area and the rest of the area damaged during the recent installation works. This area shall be examined and determined by the Engineer. The amount of fertiliser that should be applied should be done at a rate of application of 35g/m² four weeks after seeding and/or turfing takes place. The selected fertiliser shall be based on a nutrient analysis taken during the original grow in stages.

KEY STAGE

A soil sample should be collected from the playing fields by the Engineer and analysed from a nutrient perspective.

The granular fertilizer shall need to be applied during a period when rainfall can be expected in the following 24-hour period.

A second fertiliser application should also be allowed for approximately four to six weeks later (eight weeks after seeding takes place) at the same rate of application 35g/m² over the affected part of the playing fields.

15.4 Biology

Supply and evenly apply an organic supply of humic acids to the turfgrass to help feed the mycorrhizae in the soil and to encourage microbial development in the soil.

KEY STAGE

A Bio soil sample should be collected from the playing field during the Grow-in stage and a Bio strategy should be formulated based on the results of this test by the Engineer. No Bio sample is budgeted for in this consultancy analysis currently. Please confirm this as an additional item.

15.5 Herbicide

A herbicide application may need to be carried out in case of weeds arising within the sward cover. Please be prepared for the possibility that a herbicide application may need to be carried out on site on a single basis, under the guidance of the Engineer. Please adhere to the current Code of practice for using plant protection products (January 2006), which was amended to the Plant Protection Products (Sustainable Use) Regulations 2012 (PDF) (S.I.2012/1657), ("the Regulations") came into force on 18 July 2012 and transpose the Sustainable Use Directive, 2009/128/EC, ("the Directive") in relation to the use of pesticides that are plant protection products (PPPs).

15.6 Topdressing

In the first 12 months of the playing fields establishment topdressing should be budgeted to be carried out by the Contractor on two separate occasions as agreed upon by the

Engineer. Topdressing will help to level out the playing surfaces and correct any undulations on site.

The topdressing material shall need to be the correct material based on the Engineers approval and guidance. An appropriate sand topdressing material will for example comprise of an outright sand with the majority of the particles sized between 0,3mm and 1,0mm in size. Please send a Specification sheet to the Engineer which details the quality of topdressing material planned to be used on site before application. The Engineer will approve this material or not accordingly.

15.7 Aeration

It is possible that a single/few hollow core practices will be required or some aeration tasks to offset high spots and correct compaction issues on site.

If this is the case the Engineer will advise the Contractor of the works required during his second or third site inspection.

If the site is deemed to be too compact by the Engineer (after undertaking tests) then additional aeration work will be required.

16 Agronomy review

On completion of the first years maintenance tasks the playing field should be agronomically assessed and reviewed to ensure it functions properly. A long term plan should be put in place including annual agronomic assessments to ensure continuity between the design planning phase and the future maintenance of the playing fields.

A meeting between the Rugby Club, Council, Employer and the Engineer should be organised during our final site inspection together, so that a full understanding of the design principles are provided to all parties that take on this site after these re-instatement works have been completed.

KEY STAGE

17 As built plans

The Contractor shall undertake a topographic survey to form an “as built” record of the playing fields including full details on the invert depths of all newly installed pipework including locations of associated chambers, outfalls etc.

This will also help to verify and confirm the actual levels after the site visit in comparison to before.

18 Handover

The handover shall be undertaken approximately 18 months after seeding takes place.

No usage shall be permitted to occur during the grow in period (unless approved by the Engineer and the Contractor). An effective grow in and maintenance strategy will be embarked upon to ensure that the following standards are achieved at handover.

The standards of the playing fields shall meet the following expectations and tests should be carried out by the Engineer and confirmed in regards to standard performance tests including the following:

19 Playing field performance standards:

Drainage rates:	None are committed to due to the topsoil's poor performance in testing. The FA advise 5 (mm/h).
Thatch:	<4% OM in routine Laboratory analysis. Visually <2cm of thatch in pitches surface.
Nutrient:	Good mixture of nutrients within the soil
Biology:	Good diversity of biology within the soil
Roots:	Root depth to exceed 10cm depth within the soil
Sward cover:	>90% sward cover and good/high density. The FA advise >75% sward cover.
Turfgrass health:	<5% disease issues present on playing surface.
Turfgrass height:	20mm to 50mm height.
Weeds:	<5% weeds present in overall sward cover. The FA advise <10% weeds.
Playing surface:	No standing water during normal weather conditions No stones or loose impediments present on the playing surface

Seasonal variation allowances will need to be allowed for when evaluating the following performance-based tests:

Surface hardness:	Ø pitch >70Gm
Surface evenness:	3 metre straight edge (<25mm)
Soil compaction:	Ø pitch >100mm depth using a Penetrometer @200 psi and Ø pitch >150mm depth using a Penetrometer @ 300 psi
Moisture content:	Dependent on weather conditions at time of testing

20 Appendix 1:

Acceptable standards for materials

20.1 Laboratory test results:

One topsoil sample was tested in an independent Laboratory and **benchmarked** by the Engineer.

Tolerances (for quality purposes) will be set based on this original soil sample test result, any new materials brought onto site must match this standard set or better it (from a sports soil perspective).

Any concerns regarding the quality of any of the materials on site will need to be raised with the Engineer. The Engineer shall collect samples and send off for analysis to verify (their use or not). All costs for these analysis checks are chargeable to the Contractor.

20.1.1 Existing topsoil (accepted equivalent standard)



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21635/5				PARTICLE SIZE DISTRIBUTION
				SAND / SILT / CLAY
				Test Report Number 21635/D Page 1 of 2
100%				Havant RFC: Soil ex. Pit 2
15/08/24				Sample Received Date & Sample Test Date
moist				Sample Moisture (very wet, wet, moist, dry, n/a)
friable				Sample Consistency (hard, friable, plastic, n/a)
medium				Sample Homogeneity (high, medium, low, n/a)
				Particle Size Distribution – ASTM F1632-03 (Reapproved 2018)
SA - SR				Angularity (VA, A, SA, SR, R, WR, n/a)
M				Sphericity (H, M, L, n/a)
% Retained				
-				% Coarse Gravel > 3.4 mm
-				% Fine Gravel 2 to 3.4 mm
0.7				% Very Coarse Sand 1 to 2 mm
4.7				% Coarse Sand 0.5 to 1 mm
15.1				% Medium Sand 0.25 to 0.5 mm
11.9				% Fine Sand 0.15 to 0.25 mm
17.8				% Very Fine Sand 0.05 to 0.15 mm
42.0				% Silt 0.002 to 0.05 mm
7.8				% Clay less than 0.002 mm
0.7				% greater than 1mm
19.8				% Coarse + Medium Sand
11.9				% Fine Sand
67.6				% Fines less than 0.15 mm

Continued on Page 2

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Continued from Page 1

21635/5					PARTICLE SIZE DISTRIBUTION SAND / SILT / CLAY
					Test Report Number 21635/D Page 2 of 2
					Coarse Gravel Criterion
					Fine Gravel / Very Coarse Sand Criterion
					Coarse / Medium Sand Criterion
					Fine Sand Criterion
					Very Fine Sand Criterion
					Total Fines Criterion
					Silt Criterion
					Clay Criterion

Angularity codes: VA, very angular; A, angular; SA, sub-angular; SR, sub-rounded; R, rounded; WR, well rounded.
Sphericity codes: H, high; M, medium; L, low

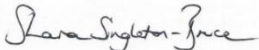
ASTM Method: F1632-03 (Reapproved 2018)

"Particle Size Analysis and Sand Shape Grading of Golf Course Putting Green and Sports Field Root Zone Mixes"

These results refer only to the samples provided. No guarantee is given that they are representative of the bulk material.
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European Turfgrass Specialists Ltd

Beacon Innovation Centre, Beacon Park, Gorleston, Norfolk, NR31 7RA

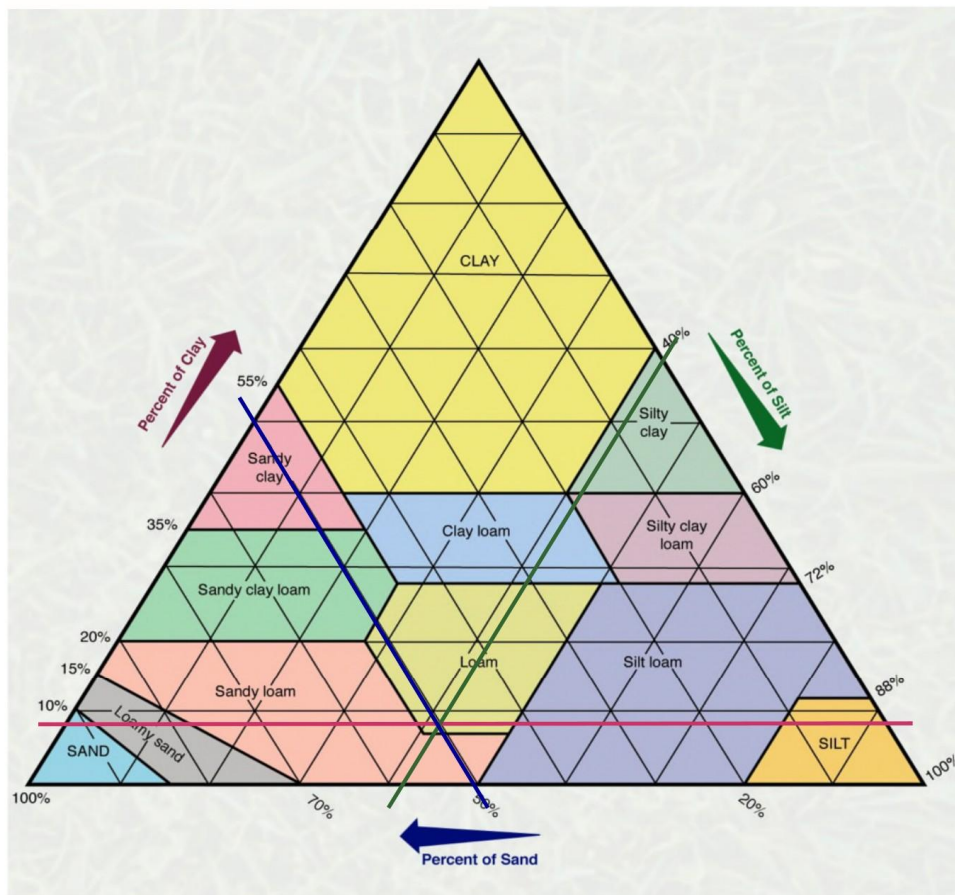
Approved by: 

Date: 20th August 2024

Managing Director, for European Turfgrass Laboratories Ltd

Triangle of Texture : Soil Classification

Date of Issue: May 2011, Revision 2,
Issuing Authority: Sharon Singleton-Bruce



Soil Sample: European Turfgrass Specialists Ltd

Report 21635/D

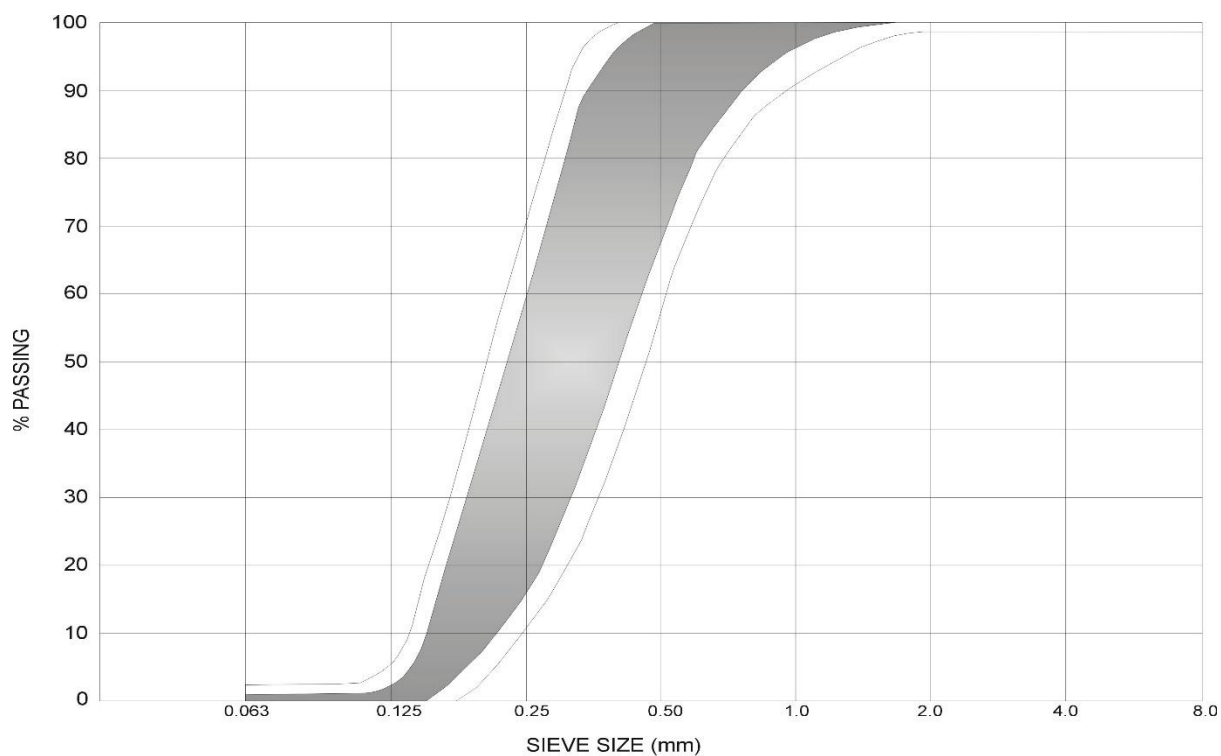
Sample	% Gravel	After removal of gravel			Soil Texture Classification
		% Sand	% Silt	% Clay	
Havant RFC: Soil ex. Pit 2	-	50.2	42.0	7.8	Loam

Signed: *Sharon Singleton-Bruce*

Date: 20th August 2024

for European Turfgrass Laboratories Ltd

20.1.2 Acceptable quality of sand to be used for topdressing purposes



Grading curve defining recommended and acceptable limits of sand size for soil modification and top dressing of winter games pitches.

20.2 Protocols:

Any changes made to the Original Reinstatement Scheme are shown below: