Labosport
Unit 3 Aerial Way
Hucknall
Nottingham
NG15 6DW

Tel: 07399261794

Email:
craig.parry@labosport.com

TILBURY DOUGLAS

A specification for the construction of natural turf sports surfaces at John Flamsteed School, Derby Rd, Denby Village, Ripley DE5 8NP.

SRP1244-LAB-ZZ-XX-D-0003 P01

3rd November 2026



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TABLE OF CONTENTS

TABLE OF CONTENTS 2
1. PART I: 3
1.1 PROJECT PARTICULARS 3
1.1.1 The Project 3
1.1.2 Employer (Client) 3
1.1.3 Sports pitch designer 3
1.2 FORM OF TENDER 3
2. PART II: DESIGN SPECIFICATION 6
2.1 INTRODUCTION AND SITE INFORMATION 6
2.1.1 Site location and access 6
2.1.2 Arrangements to visit 6
2.2 GENERAL SCOPE 7
DETAILED SPECIFICATION 9
2.3 WORK SCHEDULES 19
2.4 PART C: 19
2.4.1 PERFORMANCE OUTPUT 19
2.5 INDICATIVE WORK PROGRAMME 20
2.6 DESIGNERS ASSESSMENT OF RESIDUAL RISK 21
2.6.1 The project: 21
2.6.2 Nature of work: 21
2.6.3 Timescale for works: 21
2.6.4 Existing drawings: 21
2.6.5 Existing environment: 22
2.6.6 Residual risk to construction workers: 22
2.6.7 Residual maintenance risks: 22
2.6.8 Residual operator risks: 22
2.6.9 Construction materials that are hazardous to health: 22
2.6.10 Site wide elements: 22
2.6.11 Method statements & risk assessments to be provided by contractor: 22
2.7 METHOD STATEMENTS 23
2.8 SUBCONTRACTORS 25
2.9 REFERENCES 26
3. CONFIDENTIALITY 27

Please note: Quantities have been provided in the Work Schedules referred to above however these are indicative only and must be verified by the Contractor. Labosport accepts no liability for these quantities, which must not be relied upon.

1. PART I:

1.1 PROJECT PARTICULARS

1.1.1 The Project

- Name: John Flamsteed School
- Nature: Natural turf sports surface construction
- Location Derby Rd, Denby Village, Ripley DE5 8NP.

1.1.2 Employer (Client)

- Name: Tilbury Douglas
- Address: Registered Office: 30-40 Eastcheap, LONDON, EC3M 1HD
- Contact: Jason Greenfield
- Telephone: 07510 501723
- Email: jason.greenfield@tilburydouglas.co.uk

1.1.3 Sports pitch designer

- Name: Labosport.
- Address: Unit 3 Aerial Way, Hucknall, Nottingham, NG15 6DW
- Contact: Craig Parry
- Telephone: 07399 261794
- Email: craig.parry@labosport.com

1.2 FORM OF TENDER

PROJECT TITLE: **The construction of a sports surface at John Flamsteed School**

We ..... (Tenderer's name to be entered) hereby tender and undertake to perform the whole of the works/services required in and associated with the Project for **Tilbury Douglas** according to the Specification, Work Schedules, Preliminaries and Drawings examined by us for the firm price sum of:

.....(pounds)

.....(pence)

(£ : p) excluding VAT.

Further we are prepared, when called upon to do so, to enter into and sign a contract, the full terms of which we have read, for the due and proper completion of the works/services.

We understand that we are tendering at our own expense and that the Client is not bound to accept the lowest or any tender.

We declare that we are not party to any scheme or agreement under which:

- we inform any other person the amount of our tender; and/or
- we have fixed the amount of any tender in accordance with a price fixing arrangement.

We accept that the Client is entitled to cancel the contract and to recover from us the amount of any loss resulting from such cancellation if it is discovered that there has been any corrupt or fraudulent act or omission by us which in any way induced the Client to enter into the contract.

We declare that all goods materials and workmanship will meet the appropriate British Standard Specification or British Standard Code of Practice issued by the British Standards Institution or equivalent European standard current at the date of the contract.

We undertake in respect of all persons employed by us or with whom we sub-contract to comply with the Equality Act 2010, Disability Discrimination Act 1995, the Commission for Racial Equality's Code of Practice issued under the Race Relations Act 1976 aimed at eliminating discrimination and promoting equality of opportunity and the Council's whistleblowing policy enforced from time to time (which can be provided upon request).

We undertake not to transfer, assign, or sub-let any portion of the contract nor create any lien or charge on premises, goods or equipment connected with or forming part of the contract, without the written consent of the Client or its duly authorised officer.

We agree that if, before acceptance of this tender, an error in computation of the tender is detected in the priced document submitted by us we will be given details of the error and the opportunity of confirming the total tender sum or withdrawing the tender.

We agree that the insertion by us of any qualifications to this tender or any unauthorised alterations to any of the tender documents will not affect the original text but will cause the tender to be liable to rejection.

We agree that this tender will remain open for acceptance by the Client and will not be withdrawn by us for a period of 90 days from the last date fixed for the receipt of tenders or any notified extension thereof.

We certify that this is a bona fide tender.

Tenderer's Name

.....

Address

.....

.....

.....

Telephone

.....

Email .....

Signature*

.....

Name

.....

Date

.....

Witness

.....

Name

.....

Date

.....

* Where the Tenderer is an incorporated association the Company Secretary or a duly authorised Director should sign. In the case of a partnership a Partner should sign. In the case of an individual the Proprietor should sign.

2. PART II: DESIGN SPECIFICATION

2.1 INTRODUCTION AND SITE INFORMATION

2.1.1 Site location and access

Site location:

The geographical location of the site is presented in Figure 1.

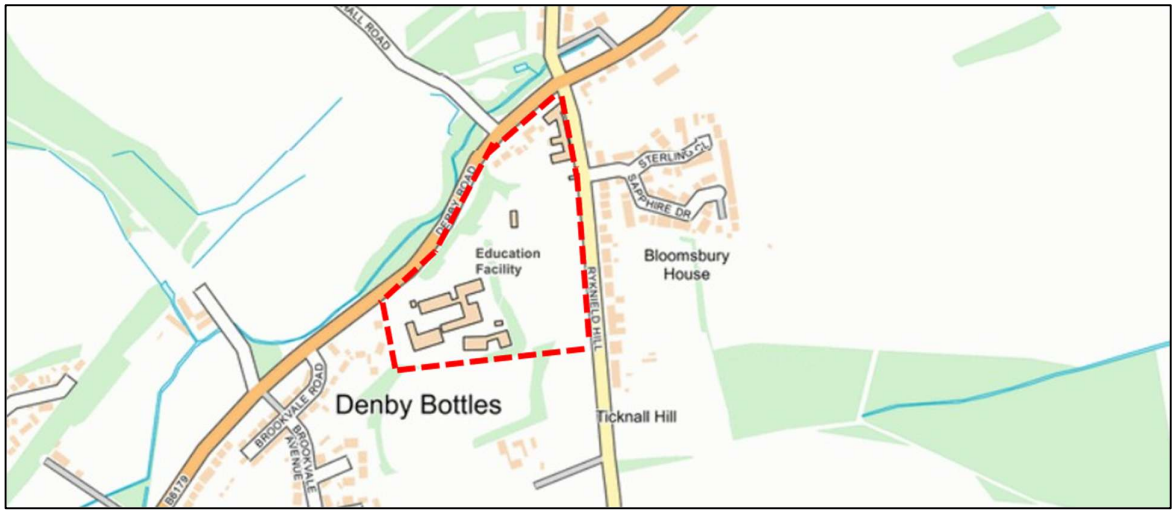


Figure 1. Site location (red dashed line). Location indicative only and not to scale.

The nearest postcode and grid reference for the centre of the site is set out in Table 1 below:

Table 1. Site location information.

Site	Nearest postcode	Grid reference (OSGB)
Derby Rd, Denby Village, Ripley.	DE5 8NP	OS X (Eastings) 438623 OS Y (Northings) 346839

The site can be accessed from Derby Road. The school is bounded by residential dwellings to the west and east, and agricultural fields to the north and south.

2.1.2 Arrangements to visit

Arrangements for visiting the site can be made by contacting:

Contact Name: Jason Greenfield

Position: Senior Design Manager

Organisation: Tilbury Douglas

Contact Number: As per contact details in Section 1.1.2

Email: As per contact details in Section 1.1.2

2.2 GENERAL SCOPE

The work proposed in this specification shall be as follows:

PART A: SOFT PLAY AREA
EARTHWORKS, DRAINAGE AND ESTABLISHMENT (1,950 m^2)
The works by a specialist sports pitch contractor would comprise the following:

- Earthworks (by others)
- BS3882:2015 Topsoil importation (min 200 mm depth)
- In situ stone removal works (if required)
- Installation of a piped drainage scheme @ 3 metre centres.
- Final cultivations
- Fertilisation and seeding
- Reinstatement of damage
- As-built survey, O&M Manual and H&S File

N.B. Earthworks should only be carried out under suitable weather and ground conditions (i.e. soil in a dry and friable state) to avoid structural damage.

PART B: PLAYING FIELD
REINSTATEMENT AND ESTABLISHMENT (745 m^2)
The works by a specialist sports pitch contractor would comprise the following:

The contractor will be required to undertake a comprehensive assessment of the area to be reinstated and determine if point 1-4 (text in red) are required to rectify surface levels.

- Removal of stability mats (by others).
- Spray off vegetation.
- Topsoil cultivation and grading.
- In situ stone removal works (if required).
- Fertilisation and seeding
- Reinstatement of damage
- As-built survey, O&M Manual and H&S File

PART C: BOTH AREAS
AGRONOMIC MAINTENANCE TO HANDOVER (2,695 m^2)

- Mowing
- Fertiliser application
- Selective herbicide application
- Wetting agent application
- Overseeding
- Aeration
- Sand dressing x 3
- Pest and disease control
- Line marking

Please refer to the Schedule of Drawings (Table) for the drainage design.

Table 2 Schedule of Drawings.

Drawing No.	Title
SRP1244	LAB-ZZ-XX-D-0001 P01
SRP1244	LAB-ZZ-XX-D-0002 P01

General Notes

- All drainage and earthworks to be carried out using equipment fully equipped with laser grade control.
- All ancillary equipment to be fitted with low ground pressure tyres.

- The position and layout of the drainage system, as indicated on the attached drawing, may be amended to take account of local factors encountered on site.
- Contractors must be aware: allowance shall be made for topping up trench lines following settlement occurring during the 12-month period following drainage installation, including as a result of natural soil shrinkage in dry weather.
- Diesel or any other deleterious matter shall be prevented from contaminating the site etc. Any such matter allowed to pollute the site shall be removed together with all affected soil and/or plant material and carted to tip at the Contractor's own expense. Any material necessary to make good the soil formation or plant material will be provided by the Contractor and will be of the type and quality of the original material prior to damage and must be approved by the Contract Administrator.
- Stones are a particular safety hazard and are a key component of Performance Quality Standards. The Contractor should note that the imported materials must not include stones or any material outside the specified particle size distribution.
- Provisional sums will not be considered as a compliant bid, and the specification must be achieved for the price stated by the Contractor in the tender return documents.
- It is the Contractor's responsibility to conduct searches to determine the presence of any services and utilities running through, over and/or around the working area. Contractors should conduct site investigations to determine the location of any service or utilities as per good health and safety procedures. All this should be before the commencement of any work on site.
- Prior to start on site, the Contractor shall prepare a photographic Schedule of Condition and agree same with the Contract Administrator.
- The works listed below are not necessarily to be conducted in chronological order. It is the responsibility of the contractor to implement all items specified to the desired standards irrespective of the order that they are presented in this document.

DETAILED SPECIFICATION

PART A: EARTHWORKS, DRAINAGE AND ESTABLISHMENT

Item	Operation
P1	The Contractor shall allow for all necessary fencing and signage in order to secure the working and site compound areas and haulage routes in order to protect members of the public from the works. It is anticipated that Heras fencing shall be used to demarcate the working areas and site compound. Footpath crossing points shall be marked appropriately. The location for deep excavations (e.g. inspection chamber construction) shall be protected with Heras (or similar) fencing.
P2	The Contractor shall allow for compliance with all relevant Health and Safety regulations including the Construction Design and Management regulations (CDM) 2015. This shall include performing the role of Principal Contractor.
P3	The Contractor shall allow for the provision of all welfare facilities for staff.
P4	The Contractor shall allow for the mobilisation and demobilisation of all necessary plant to complete the project.
P5	The Contractor shall allow for compliance with all Conditions of Contract.
P6	The Contractor shall locate and mark the path of the electrical cables in and around the project area. The Contractor will be responsible for making good any damage caused by construction.

IMPORTANT, FOR INFORMATION ONLY:

The layout has been taken from drawing Proposed site layout taken from drawing SRP1244-ONE-ZZ-ZZ-D-L-1002 provided by One Environments. Labosport has no design input for the site wide drainage scheme; this has been approved by others following consultation. Labosport will not be held responsible for the efficacy of outfall or the attenuation characteristics of any site wide drainage scheme designed by others.

Recommended gradients are set out in Labosport document SRP1244 LAB-ZZ-XX-D-0001 P01. These are intended as guidance only: spot levels must be verified and confirmed by the project landscape architect. Should the as-built levels deviate from the recommended gradients, the performance of the drainage design will be compromised. Labosport must therefore be notified of any such deviation so that the necessary design amendments can be made. For the avoidance of doubt, the final gradients are produced by others and remain outside Labosport's scope of responsibility; Labosport accepts no overall liability for gradients delivered by third parties.

Please note: This specification begins with topsoil import following extensive earthworks conducted by others. Labosport will not be held responsible for any contamination issues associated with the earthwork's strategy for the pitches as this risk resides with the consultant/designer and earthworks contractor. Earthwork specifications are not contained within this document.

As part of the reinstatement process, it is imperative that all footings and aggregates, concrete, rubble, tarmac etc. is cleared such that virgin subsoil is encountered or to a depth of 0.70 metres below finished pitch level to accommodate the return of 0.50 metres of subsoil and 0.20 metres of topsoil necessary to provide a sufficient medium for the installation of drainage infrastructure.

A1 Preliminary works and Setting out

A1.1 The Contractor shall set out the working area. Please see drawing **SRP1244-LAB-ZZ-XX-D-0001 P01**for details.

A1.2 The Contractor shall conduct an 'As Built' survey to ascertain the gradients and levels of the sub formation prior to topsoil importation. The 'As Built' levels should be as per the existing / proposed levels (see **SRP1244-LAB-ZZ-XX-D-0002 P01**) prior to the importation of topsoil, assumed to be finished levels minus 200 mm topsoil.

Should 'As Built' levels differ significantly from the proposed levels, the contractor should contact the client for clarification.

A1.3 The sports pitch contractor may wish to trim levels to provide a suitable surface and tolerances for the importation of topsoil. This should be discussed independently with the client.

A2 Topsoil importation

A2.1 Following preliminary earthworks and prior to topsoil import and drainage installation, the contractor should undertake an 'As Built' within the development area. Should the sub formation not comply with specified levels, the contractor shall raise any concerns with Tilbury Douglas.

A2.2 An approved Sandy Loam topsoil shall be imported, placed, and spread within the working area. Imported topsoil depths shall be 200 mm (consolidated).

A2.3 Imported topsoil should be an approved Sandy Loam textured topsoil suitable for sports use and comprising particle sizes in the following range: 75-85% Sand, 0-15% Clay and 0-20% Silt.

A2.4 The chosen topsoil shall be free of stones >15 mm diameter, shall have no glass or other physical contaminants and shall have a minimum saturated hydraulic conductivity of not less than 15 mm h^{-1} when compact (at a test dry bulk density of not less than 1.50 g cm^{-3}).

A2.5 The topsoil shall carry current (within the previous 6 weeks prior to being spread) valid analysis certificates that prove that it conforms to the above specification. In addition, the topsoil must comply with the British Standard for Topsoil (BS3882:2015), be suitable for sports pitch use and be free of all physical, biological and chemical contaminants. All certificates shall be provided by the Contractor for approval by the Contract Administrator or their representative prior to work commencing. All analysis should be undertaken by a laboratory that complies with Good Laboratory Practice and/or is UKAS Accredited ISO 17025:2017 for topsoil analysis.

A2.6 Samples of the delivered topsoil shall be taken by the Contractor at the rate of 1 Nr. 0.50 kg sample / 250 m^3 of topsoil. These shall be retained on site for subsequent analysis. Should these fail to meet the above requirements, the soil material imported and spread will need to be removed and replaced at the Contractor's expense.

A2.7 The topsoil shall be placed in layers of approximately 75-100 mm and lightly consolidated in order to achieve a final dry bulk density of between 1.2 – 1.3 g cm^{-3} and a finished level which matches the proposed levels on-site.

A3 Drainage installation

A3.1 Trench excavation

3.1.1 Please refer to the accompanying Drawing **SRP1244-LAB-ZZ-XX-D-0002 P01** for the layout of the drainage scheme. Drain cross sections are also presented.

3.1.2 The trenches shall be clean cut, with a level base, to the dimensions given in **Item A3.2**.

3.1.3 All trenches shall be excavated with machinery fitted with laser grade control.

3.1.4 Excavation shall begin at the outfall, the profile to be established at the outfall, and carried upstream with adjustments for grade and depth as work proceeds.

3.1.5 Any under drains encountered are to be marked so they can be renovated and connected into the new system if considered viable.

3.1.6 All spoil from this operation shall be disposed of on-site, unless requested otherwise by the Client.

A3.2 Trench dimensions

3.2.1 Lateral drains (80 mm ∅ plastic perforated pipe)

- Depth 0.450 below nominal ground level. Please see cross sections for drainage depths on Drawing **SRP1244-LAB-ZZ-XX-D-0002 P01**
- Grade at engineered fall of finished surface and not less than 0.5% (1:200).
- 3.0 m spacing (solid orange lines)
- Not less than 0.150 m wide.

3.2.2 Collector drain (160 mm ∅ plastic perforated pipe, solid blue line).

- Depth 0.500 m below nominal ground level.
- Grade at engineered fall of finished surface and not less than -0.50% (1:200), please refer to the accompanying Drawing **SRP1244-LAB-ZZ-XX-D-0002 P01**
- Not less than 250 mm wide**.**

3.2.3 Main drain (150 mm solid ∅ plastic solid pipe).

- Not less than 0.500- 0.693 (depth varies) below top of the formation layer.
- Grade at not less than 0.50% (1:200)
- Not less than 0.250 m wide

A3.3 Gravel backfill for lateral, collector drains and linear soakaway drains

3.3.1 The material shall be clean, hard, gravel or chippings (e.g. quartz or quartzite) with dimensions not greater than 6 mm and not less than 2 mm. The calcium carbonate content shall not exceed 10%.

3.3.2 The material shall be free of fines.

3.3.3 The gravel backfill shall be placed immediately and carefully over the pipe to within 200 mm of the surface. Any damage to the pipe shall be made good at the Contractor's expense.

3.3.4 The aggregate shall comply with the following grading:

Particle size (mm)	% Passing
8	90-100
6	80-90
4	15-30
2	0-10
1	0-2

A3.4 Sand backfill material for the lateral and collector drains

3.4.1 The sand shall comply with the following grading:

- V. coarse sand (2.0 – 1.0 mm) <5%
- Coarse sand (1.0 – 0.5 mm) 10 – 20%
- Medium sand (0.5 – 0.25 mm) 55 – 70%

- Fine sand (0.25 – 0.125 mm) 10 – 20%
- V. fine sand (0.125 – 0.05 mm) <5%

3.4.2 The sand shall comply with the following grading (passing):

Particle size (mm)	% Passing
8	100
4	100
2	100
1	95-100
0.5	65-98
0.25	15-55
0.125	0-3
0.063	0-1

3.4.3 The sand shall have a capillary rise of no more than 250 mm when compact (1.65 Mg m^{-3}),

3.4.4 The sand shall have at least 15% air-filled porosity in the top 50 mm of the capillary rise, and

3.4.5 The sand shall have a saturated hydraulic conductivity >300 mm h^{-1} when compact (1.65 Mg m^{-3}).

3.4.6 The sand shall be non-saline (electrical conductivity < 0.75 dS m^{-1}), and contain less than 0.5% (w/w) $CaCO_3$.

3.4.7 The sand shall have a pH in the range of 5.5 – 7.0.

3.4.8 Provision shall be made to top up the drain runs to take account of natural settlement of material within the trenches such that a level playing surface is achieved. Any settlement below stated levels during the first 12-months post installation shall be made good at the Contractor's expense. This includes settlement as a result of natural soil shrinkage due to dry weather.

3.4.9 The sand shall be placed on the gravel and consolidated flush with the surface.

A3.5 Pipe laying

3.5.1 Pipes shall be laid to the correct depth stipulated above and to an even grade.

3.5.2 Drainage depth is to be measured from finished ground levels (unless indicated otherwise).

3.5.3 The pipe shall be corrugated plastic corresponding to EN1401-1:2019. There should be no damage to the pipe. Upper ends of the lateral drain runs shall be plugged to prevent ingress of soil or animals.

A3.6 Junctions and connections

3.6.1 Connection of lateral drains to the collector drain shall be made with purpose made junctions as required (80/160 mm).

3.6.2 The collector drains shall be let into inspection chambers and caulked with a sand/cement mix concrete to make good the pipe/wall seal.

A3.7 Inspection chambers

3.7.1 Inspection chambers to be positioned as indicated on the accompanying plans and detailed in the work schedules.

3.7.2 Chamber can be constructed of brick, concrete or plastic (conforming to BS 7158).

3.7.3 They shall be large enough to permit access for cleaning, jetting and rodding.

3.7.4 A sump of at least 150 mm below the lowest pipe shall be incorporated to act as a silt trap.

3.7.5 The top of the chamber shall be set level with the ground surface.

3.7.6 The cover loading (to BS EN 124) for the inspection chamber on the playing surface shall be Class B125.

3.7.7 Synthetic turf shall be fixed to the inspection chamber covers (in turf areas only).

A3.8 *3.8.1* Connection to the outfall and attenuation scheme as per drawing **SRP1244-LAB-ZZ-XX-D-0002 P01.**

A4 Restoration of levels and stone separation / removal

A4.1 Upon completion of the installation of the primary drainage infrastructure, the topsoil in the development area (i.e. pitches, embankments and surrounds) shall be cultivated and re-graded to restore surface levels. It is acceptable to lightly cultivate over the drain lines to assist with grass plant germination; **a maximum of 50 mm sand/soil cover shall be present over the drain lines as any more soil cover may affect the efficacy of any secondary drainage scheme.**

A4.2 A further stone separation operation shall be undertaken to separate all stones >20 mm in any dimension from at least the upper 50 mm depth of topsoil and all sharps i.e. flints >10 mm from the upper 30 mm depth of topsoil. This shall be undertaken with the appropriate equipment and may involve hand picking. The stones shall be disposed of on-site in an approved location.

A4.3 Surface level uniformity of the finished surfaces shall achieve a tolerance of:

- no more than a 10 mm deviation beneath a 2.0 m straight edge on the playing surfaces and safety margins, and
- no more than 20 mm deviation beneath a 2.0 m straight edge elsewhere.

A5 Disposal of excavation spoil

A5.1 All excess spoil emanating from drain trenching and stone removal shall be disposed of on-site unless specified otherwise by the Client.

A6 Cultivations

A6.1 Upon completion, the surfaces in the development area (i.e. pitches, embankments, surrounds, bunds and pathways) shall be cultivated in order to produce a tilth suitable for the cultivation of fine-leaved grass species.

A6.2 Surface level uniformity of the finished surfaces shall achieve a tolerance of:

- no more than a 10 mm deviation beneath a 2.0 m straight edge on the playing surfaces and safety margins, and
- no more than 20 mm deviation beneath a 2.0 m straight edge elsewhere.

A7 Fertiliser application

A7.1 The cultivated area shall be fertilised with an appropriate pre-germination fertiliser of 10:15:10 formulation at a rate of **70 g m^{-2}** at least 3 days prior to seeding. This should be lightly worked into the seedbed during final cultivations.

A8 Seeding

A8.1 A suitable 80% Perennial Ryegrass and 20% Tall Fescue seed mix shall be drilled @ 50 g m-2 in at least three directions. The seed mix shall be made up from at least four varieties each with a minimum rating for the mean of live ground cover and visual merit of 7.0 as listed in the latest BSPB Turf grass Seed Book, Table S1: Perennial Ryegrass and Table S3 Tall Fescue, Sports Uses.

A8.2 Prior to seeding, mix the seed with a mycorrhizal coating at a rate of 3 kg ha^{-1}.

A8.3 The seed shall have a certified germination of not less than 80% and a certified purity of not less than 90%. Total weed seed content shall not be more than 0.5% and the total content of other crop seeds shall not exceed 1%.

A9 Reinstatement of damage

A9.1 All damage caused by plant and vehicle movement to the playing fields and identified / agreed with the Contract Administrator shall be made good by:

9.1.1 Cultivating the affected area to below the depth of damage using a rotary cultivator or similar equipment. Care must be taken with the timing of this operation to avoid smearing on the base of the cultivation. Any weeds, rubbish and stones over 20 mm gauge must be removed and disposed of on-site as directed by the Contract Administrator.

9.1.2 A seedbed should then be prepared using a power harrow.

9.1.3 Pre-seeding fertiliser (10:15:10) to be applied @ 70 g m^{-2} over the reinstated area a minimum of 5 days prior to seeding.

9.1.4 A suitable Perennial Ryegrass dominated seed mix shall be drilled at a rate of 35 g m^{-2} in two directions. The seed mix shall be made up from at least three varieties each with a minimum rating for the mean of live ground cover and visual merit of 7.0 as listed in the latest BSPB Turf grass Seed Book, Table S1: Perennial Ryegrass, Sports Uses.

9.1.5 The seed shall have a certified germination of not less than 80% and a certified purity of not less than 90%. Total weed seed content shall not be more than 0.5% and the total content of other crop seeds shall not exceed 1%.

9.1.6 The finished levels for seeding shall, unless otherwise indicated on the drawings, be perfect to the surrounding contours and 25 mm above any adjacent hard surfaces.

A10 As-built survey, O&M Manual and H&S File

A10.1 An as-built/laid survey of the construction shall be carried out and provided to the Client in both pdf and dwg formats. The survey should indicate the location and type of all materials used including the drainage and the relevant diameters and depths of the installation.

A10.2 Information on materials and methods used, and the operation and maintenance of all systems. This should be provided to the Contract Administrator for inclusion in the O&M manual and H&S files as per the requirements of CDM 2015.

PART B: PLAYING FIELD REMEDIATION (745 m^2)

Note: The extent of remedial works required will depend directly on the degree of disruption caused to existing surface levels during the MUGA installation, the appointed sports turf contractor should undertake a comprehensive site assessment to determine whether elements B1 through B4 are necessary.

B1 Preliminary works and setting out

B1.1 The Contractor shall set out the working area. Please see drawing **SRP1244-LAB-ZZ-XX-D-0002 P01**

B2 Site clearance and enabling works

B2.1 Spray off the existing vegetation in the working area with an approved, systemic, non-residual total herbicide in accordance with the manufacturer's instructions and an appropriate COSHH assessment by qualified personnel. A period of 14 days shall elapse between spraying and undertaking cultivations to allow sufficient time for the vegetation to senesce. A second application of total herbicide may be required just prior to cultivation to ensure complete vegetation control.

B2.2 All remaining vegetation on the site shall be flail-mowed and all clippings/vegetation removed to disposal off-site.

B3 Topsoil cultivation and stone separation

B3.1 When ground conditions are suitable (topsoil in a dry and friable state), the working area shall be rotary cultivated in order to incorporate any remaining organic matter residue and to provide a suitable tilth for regrading.

B3.2 A stone separation operation shall be undertaken to remove all stones >20 mm in any dimension from at least the upper 100 mm depth of topsoil by stone picking or in-situ stone separation techniques. This shall be undertaken with a modified potato harvester, beach cleaner or other suitable approved equipment and may require multiple passes to achieve the specification. The stones shall be disposed of on-site in an approved location. The contractor should make themselves aware of the stone content prior to the works commencing.

B3.3 There shall be no deleterious material within the upper 50 mm of topsoil including and not limited to glass, ceramics, pottery, metal and building materials. Should sharps e.g. glass and ceramics be prevalent in the material, the contractor should contact the client for further clarification.

B3.4 Following this, the surface shall be cultivated and graded to restore surface levels prior to drainage installation. There should be no surface deviations of >20 mm under a 2-metre straight edge.

B4 Restoration of levels and stone separation / removal

B4.1 Upon completion of the installation of the primary drainage infrastructure, the topsoil in the development area (i.e. pitches, embankments and surrounds) shall be cultivated and re-graded to restore surface levels. It is acceptable to lightly cultivate over the drain lines to assist with grass plant germination; **a maximum of 50 mm sand/soil cover shall be present over the drain lines as any more soil cover may affect the efficacy of the secondary drainage scheme.**

B4.2 A further stone separation operation shall be undertaken to separate all stones >20 mm in any dimension from at least the upper 50 mm depth of topsoil and all sharps i.e. flints >10 mm from the upper 30 mm depth of topsoil. This shall be undertaken with the appropriate equipment and may involve hand picking. The stones shall be disposed of on-site in an approved location.

B5 Fertiliser application

B5.1 The cultivated area shall be fertilised with an appropriate pre-germination fertiliser of 10:15:10 formulation at a rate of **70 g m^{-2}** at least 3 days prior to seeding. This should be lightly worked into the seedbed during final cultivations.

B6 Seeding / overseeding

B6.1 A suitable 100% Perennial Ryegrass seed mix shall be drilled @ **50 g m^{-2}** in at least three directions. The seed mix shall be made up from at least three varieties each with a minimum rating for the mean of live ground cover and visual merit of 7.0 as listed in the latest BSPB Turf grass Seed Book, Table S1: Perennial Ryegrass, Sports Uses.

B6.2 Prior to seeding, mix the seed with a mycorrhizal coating at a rate of 3 kg ha^{-1}.

B6.3 The seed shall have a certified germination of not less than 80% and a certified purity of not less than 90%. Total weed seed content shall not be more than 0.5% and the total content of other crop seeds shall not exceed 1%.

B7 Reinstatement of damage

B7.1 All damage caused by plant and vehicle movement to the playing fields and identified / agreed with the Contract Administrator shall be made good by:

7.1.1 Cultivating the affected area to below the depth of damage using a rotary cultivator or similar equipment. Care must be taken with the timing of this operation to avoid smearing on the base of the cultivation. Any weeds, rubbish and stones over 20 mm gauge must be removed and disposed of on-site as directed by the Contract Administrator.

7.1.2 A seedbed should then be prepared using a power harrow.

7.1.3 Pre-seeding fertiliser (10:15:10) to be applied @ 70 g m^{-2} over the reinstated area a minimum of 5 days prior to seeding.

7.1.4 A suitable Perennial Ryegrass dominated seed mix shall be drilled at a rate of 35 g m^{-2} in two directions. The seed mix shall be made up from at least three varieties each with a minimum rating for the mean of live ground cover and visual merit of 7.0 as listed in the latest BSPB Turf grass Seed Book, Table S1: Perennial Ryegrass, Sports Uses.

7.1.5 The seed shall have a certified germination of not less than 80% and a certified purity of not less than 90%. Total weed seed content shall not be more than 0.5% and the total content of other crop seeds shall not exceed 1%.

7.1.6 The finished levels for seeding shall, unless otherwise indicated on the drawings, be perfect to the surrounding contours and 25 mm above any adjacent hard surfaces.

B8 As-built survey, O&M Manual and H&S File

B8.1 An as-built/laid survey of the construction shall be carried out and provided to the Client in both pdf and dwg formats. The survey should indicate the location and type of all materials used including the drainage and the relevant diameters and depths of the installation.

B8.2 Information on materials and methods used, and the operation and maintenance of all systems. This should be provided to the Contract Administrator for inclusion in the O&M manual and H&S files as per the requirements of CDM 2015.

PART C: 12 MONTHS AGRONOMIC MAINTENANCE to HANDOVER.

Item	Operation
P1	The Contractor shall allow for all necessary fencing and signage in order to secure the working and site compound areas and haulage routes in order to protect members of the public from the works. **It is anticipated that Heras fencing shall be used to demarcate the working areas during the post-construction maintenance period.** The site compound shall be secured with Heras (or similar) fencing. Footpath crossing points shall be marked appropriately. The location for deep excavations (e.g. inspection chamber construction) shall be protected with Heras (or similar) fencing.
P2	The Contractor shall allow for compliance with all relevant Health and Safety regulations including the Construction Design and Management regulations (CDM) 2015.
P3	The Contractor shall allow for the provision of all welfare facilities for staff.
P4	The Contractor shall allow for the mobilisation and demobilisation of all necessary plant to complete the project.
P5	The Contractor shall allow for compliance with all Conditions of Contract.
C1	Mowing. The Contractor shall carry out the first cut with a rotary mower when the grass has reached a height of 60 mm. The first three cuts shall maintain the grass at 40 mm. Checks for stones; hand–picking will be carried out if necessary, before each cut. After the first three cuts, the Contractor shall cut the development area at a height of 35 mm with low ground pressure cylinder mowing equipment for the remainder of the contract period. During this period the grass must never be allowed to exceed a height of 50 mm. It is anticipated that **30 cuts** will be required in total.
C2	Fertiliser. The Contractor shall allow for 4 fertiliser applications to maintain healthy growth and colour throughout the contract period. Plan for the application of fertiliser to commence 4 weeks after grass establishment using the following programme as a guide: Mar 10:5:15 at 350 kg/ha Jun 20:5:15 at 350 kg/ha Aug 15:5:15 at 350 kg/ha Oct 10:5:20 at 250 kg/ha **n.b. The summer fertiliser applications should comprise controlled release products.**
C3	Weed control. The Contractor shall plan for the application of an approved selective herbicide 6 months after establishment at a time TBC by the contract administrator. This shall be applied at least two weeks after any fertiliser treatment and at a time when grass growth is strong and healthy. Do not apply herbicide during periods of potential turf stress i.e. if the weather is hot and dry or if the weather is frosty. Apply herbicide strictly according to the manufacturer's label recommendations.
C4	Wetting agent. The Contractor should allow for 2 long lasting wetting agent applications (Aquatrols Fifty90 or equivalent) to maintain adequate moisture levels through periods of low rainfall and drought conditions (April – October). Wetting

agents shall be applied in anticipation of rainfall if irrigation is not available, to ensure thorough washing into the soil profile.

C5 Overseeding. The development area shall be overseeded using the same seed mixture as that used in the original establishment of the site at a rate of 25 g/m^2.

C6 Decompaction. Verti-drain the development area on two occasions (April and September) when ground conditions are suitable (sufficient water content to allow penetration of Verti-drain tines to full operating depth).

C7 Pest and disease control. Pest and diseases should be controlled using an approved control agent if required.

C8 Sand topdressing. 3 x 8 mm applications. Sand to comply with the following specification:

- V. coarse sand (2.0 – 1.0 mm) <5%
- Coarse sand (1.0 – 0.5 mm) 10 – 20%
- Medium sand (0.5 – 0.25 mm) 55 – 70%
- Fine sand (0.25 – 0.125 mm) 10 – 20%
- V. fine sand (0.125 – 0.05 mm) <5%
- Saturated hydraulic conductivity >300 mm h^{-1}.
- pH 5.5 – 7.0.
- Contain less than 0.5% (w/w) $CaCO_3$.
- Compliant with Tier 1 Classification.

After application, the surface shall either be brushed or drag-matted to work the sand into the surface. Sand shall not be applied if the turf is under stress (e.g. drought conditions).

C9 Marking Out. The Contractor should allow for the initial line marking of the pitches on one occasion prior to handover in white. All lines should be in proprietary approved line marking paint, without the mixing of herbicides or growth regulators. Pitch corners and halfway lines shall be marked using Plifix markers or similar.

2.3 WORK SCHEDULES

Please refer to the accompanying MS Excel spreadsheet:

SRP1244-LAB-ZZ-XX-D-0002 P01.xlsx

2.4 PART D:

2.4.1 PERFORMANCE OUTPUT

Prior to handover to the client, all pitches contained within this specification must be tested against Sport England Performance Quality Standards (PQS) and the pitches must pass all parameters to be deemed fit for purpose. The contractor shall arrange for pitch testing, the costs of which are to be included within the work schedule. Should the pitch not pass all baseline parameters, the contractor will be responsible for any additional works (at their own cost and to include further pitch testing) to bring the pitch up to the required standard.

Please note: Weather conditions must be taken into account, particularly in the absence of irrigation (not instructed by the client) and if drought conditions persist with regards to the potential handover date.

Performance Quality Standards (PQS) provide a recommended minimum quality standard for the construction and maintenance of natural turf pitches.

Sport England has produced a pro forma for summarising the condition of natural turf sports pitches by conducting a Performance Quality Standard assessment and comparing the results for a given site against minimum standards. The parameters of the PQS test and the required standards are summarised below.

ELEMENT	LIMITS	METHOD OF TEST
Ground cover %	>70 for GH 25-30 >80 for GH 30-35	BS 7370: P3 A6
Broad-leaved weeds %	<10	BS 7370: P3 A6
Sward height mm	20-60 GS 20-75 NGS	BS 7370: P3 A3
Thatch depth mm	<5	BS 7370: P3 A7
Hardness in g	35-200	STRI method of test using a 0.5 kg Clegg Impact Hammer from a drop height of 0.55 m
*Water infiltration rate mm h^{-1}	>5	BS 7370: P3 A8
Evenness (2 metre straight edge)	<20 mm	BS 7370: P3 A6
Slope: Direction of play Across play	<1.25% <2.00%	BS 7370: P3 A5
pH value	5.5 – 7.5	ISO 10390
GUIDANCE FOR ROOTZONE LAYER		
Maximum diameter (stones) in upper 50 mm	<20 mm	Particle Size Distribution

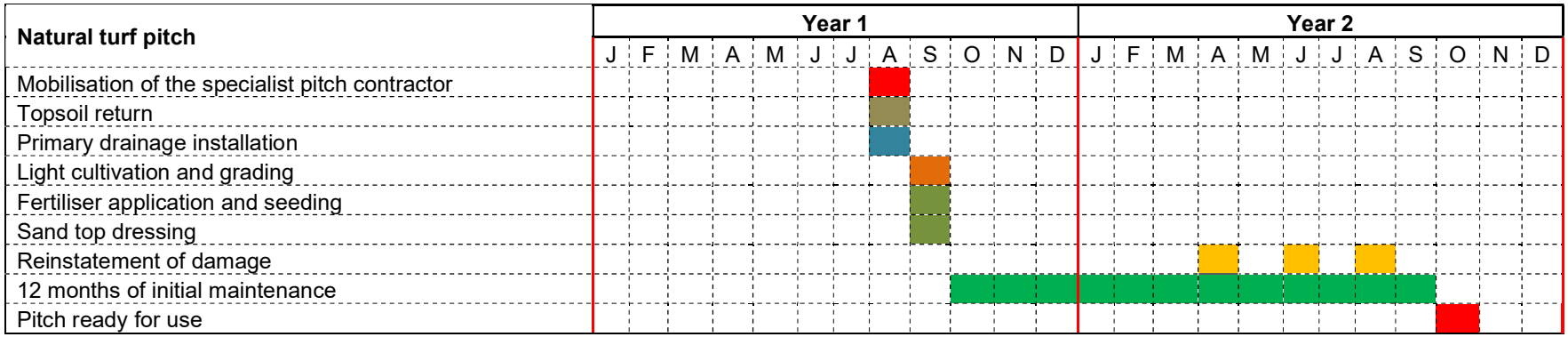
KEY: GH = Grass Height GS = Growing season NGS = non-growing season

2.5 INDICATIVE WORK PROGRAMME

With respect to timescales for completing the project, it is recommended that pitch construction works are only completed under suitable ground and weather conditions to avoid excessive compaction and smear. For the natural turf playing field, grass is ideally sown in spring or early autumn to maximise the balance between moisture and temperature.

The grass must be allowed to establish a healthy and deep root network and mature canopy to resist the stresses applied during play. The date for start of play for the pitch is highly dependent on weather conditions during the construction phase and growing-in period.

An indicative work programme is presented below.



Should handover be time specific then the client may wish to consider commissioning additional temporary irrigation during the summer months so as not to delay handover.

2.6 DESIGNERS ASSESSMENT OF RESIDUAL RISK

2.6.1 The project:

- Name: John Flamsteed School
- Nature: Natural turf sports surface construction
- Location Derby Rd, Denby Village, Ripley DE5 8NP.

2.6.2 Nature of work:

PART A: SOFT PLAY AREA
EARTHWORKS, DRAINAGE AND ESTABLISHMENT (1,950 m^2)
The works by a specialist sports pitch contractor would comprise the following:

- Earthworks (by others)
- BS3882:2015 Topsoil importation (min 200 mm depth)
- In situ stone removal works (if required)
- Installation of a piped drainage scheme @ 3 metre centres.
- Final cultivations
- Fertilisation and seeding
- Reinstatement of damage
- As-built survey, O&M Manual and H&S File

N.B. Earthworks should only be carried out under suitable weather and ground conditions (i.e. soil in a dry and friable state) to avoid structural damage.

PART B: PLAYING FIELD
REINSTATEMENT AND ESTABLISHMENT (745 m^2)
The works by a specialist sports pitch contractor would comprise the following:

The contractor will be required to undertake a comprehensive assessment of the area to be reinstated and determine if point 1-4 (text in red) are required to rectify surface levels.

- Removal of stability mats (by others).
- Spray off vegetation.
- Topsoil cultivation and grading.
- In situ stone removal works (if required).
- Fertilisation and seeding
- Reinstatement of damage
- As-built survey, O&M Manual and H&S File

PART C: BOTH AREAS
AGRONOMIC MAINTENANCE TO HANDOVER (2,695 m^2)

- Mowing
- Fertiliser application
- Selective herbicide application
- Wetting agent application
- Overseeding
- Aeration
- Sand dressing x 3
- Pest and disease control
- Line marking

2.6.3 Timescale for works:

6 weeks + initial agronomic maintenance.

2.6.4 Existing drawings:

See Table 1 above.

2.6.5 Existing environment:

The existing site comprises existing buildings

2.6.6 Residual risk to construction workers:

1. Tetanus.
2. Injury from vehicle movements in and around site.
3. Excavations >0.5 m.
4. Potential fall hazard from exposed trenches prior to backfilling.
5. Fertiliser application.
6. Herbicide application.
7. Materials handling, including bulk materials handling.
8. Existing piped drainage infrastructure
9. Overhead power cables

2.6.7 Residual maintenance risks:

1. Handling, storage and application of pesticides.
2. Handling, storage and application of fertilisers.
3. Dust (soil).
4. Manual handling.
5. Use of machinery including tractors, mowers, rollers and others.
6. Vibration.
7. Confined, deep spaces (maintenance of inspection chambers)

2.6.8 Residual operator risks:

1. Risk of acute and chronic sport injury – this risk has been minimised through the use of industry approved products and systems, material selection, the use of industry best practice design and the use of performance testing. It is the recipient's responsibility to maintain the surfaces following pitch handover so that these performance and safety standards are maintained.
2. The use of sports facilities during the construction phase (this risk is owned by the Contractor and the Client and behaviour; coordination and communication are as important as physical control measures such as fencing and signage).

2.6.9 Construction materials that are hazardous to health:

1. Fertiliser
2. Soil
3. Herbicide
4. Cement

2.6.10 Site wide elements:

The working areas and haul routes shall be fenced with Heras fencing, or similar, to delineate these areas. This fencing shall be maintained until handover to the Client.

2.6.11 Method statements & risk assessments to be provided by contractor:

1. Topsoil import
2. Stone separation
3. Primary drainage installation
4. Herbicide application
5. Wetting agent application
6. Fertiliser application

2.7 METHOD STATEMENTS

ITEM	Brief method statement (Continue on additional sheets if required)	Type / name of equipment you intend to use	Is equipment owned by the contractor?	Is equipment rented?	Will work be sub-contracted?	How many staff will be on site?
1. Topsoil import						
2. Stone separation						
3. Primary drainage installation						
4. Herbicide application						
5. Wetting agent application						

6. Fertiliser application						

2.8 SUBCONTRACTORS

Please specify the names and contact details for any subcontractors that you intend to use during the project (please continue on a separate sheet if necessary):

Name:	Contact Details:	Role:

2.9 REFERENCES

Please provide references from three recent (last 2 years) schemes where you have carried out work of a similar nature and value. Please give name, address and telephone number for the referees.

Name:	Contact Details:	Nature of work / project value (£):

3. CONFIDENTIALITY

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Craig Parry
Associate Senior Consultant
Mob: 07399 261794
Email: craig.parry@labosport.com

Labosport Limited
Unit 3 Aerial Way
Hucknall
Nottingham
NG15 6DW