Alan Lewis Ltd

Sports Surface Consultant and Groundstaff Mentor

Performance Specification for

Recreation Ground Primary and Secondary Drainage and Surface Renovation and New Exercise Track Installation

For

Gaskell Recreation Ground Management Board.

Specification Details

Specification type.

This specification is performance quality standard (PQS) based document. The standard of surface and material performance at set and maintained by The Institute of Groundsmanship (IOG) and endorsed by many sporting bodies. Full standards can is seen on IOG web site www.iog.org

The standards used for the surface in this project are in the appendices.

Specification and Project Standards.

There are 3 standard set in PQS, High, Standard and Basic**.** For this project, the contractor must achieve High standard. Surface performance or material that does not reach this standard must be brought up to standard or replaced.

In some circumstances a lower standard will be accepted but only with written agreement of the client and Alan Lewis Ltd.

Standard Testing.

All the surface and material testing will be done using British and European test Methods.

The specification will set out time in the project when a surface test is required or when the contractor is required to supply a sample of material.

For these test Alan Lewis, Ltd will work with the contractor so were possible the project is not held up waiting for test results.

Practical Completion

A Practical Completion Certificate is issued when the contractor has completed all the items in the specification. The issuing of a Practical Completion Certificate start the 12-month default period.

Project Completion

A Project Completion Certificate is issued after the 12 default period and the surface is to standard set out in the specification. The surface test is usual completed after the contractor's period of maintenance. Then retention is paid

Site Details

Site Details	Gaskell Recreation Ground
Site Address:	3 Station Road Much Wenlock Shropshire TF13 6JE
Site Contact	Kate Southan Chair Gaskell Recreation Ground Management Board Much Wenlock The Corn Exchange High Street Much Wenlock Shropshire TF13 6AE
Specification issued by:	Alan Lewis MSc, NDT F Inst G Alan Lewis Ltd 1A Crowmeole Lane Shrewsbury Shropshire SY3 8AX Mobile 07484 074904 Email alanlewisltd@btconnect.com
Date of Issue:	September 2018

Project Health and Safety

The contractor shall carry out all operations concerned with the project and the specified works in accordance with all current and future legislation and the Construction (Design and Management) Regulations 20015 (CDM) where applicable.

The contractor will have on site, always, all necessary documentation to comply with health and safety legislation i.e.

A Health and Safety Policy

Risk Assessments Method Statements

COSHH Assessments The Provision of Work Equipment Act.

If this project is within the scope of the CDM Regulations, the contractor shall submit a Health and Safety Plan to the Planning Supervisor prior to being on site and work commencing.

The contractor shall ensure that his insurances and rate are adequate to meet the cost of making all necessary arrangements for Health and Safety and welfare of all persons affected by the works and omissions.

Project.

Alan Lewis Ltd have been invited by GaskellL Recreation Ground Management Board to provide specifications for the primary and secondary drainage of Gaskell Recreation Ground plus sport surface renovation. And the installation of a exercise track this document sets out the standards requirement for the operation in the project.

Important site information.

1. The site is open to the public; safe working practices must be followed always to ensure all members of the public are kept safe always. Even though no major excavation is to take place the site is to be signed under all present Health and Safety legislation for the period of the project.

2. The site is next to a school so machinery movement and deliveries must be limited at school start and finish times and controlled by a banks man.

3. The site has many mature trees and all excavations must take place outside the canopy of the trees.

4. Specific Exclusions from Overall Scope of works

In the play area there is a fresh water BOREHOLE that currently exists on site. Access to this area is to be excluded from this project. Under no circumstances must any heavy vehicular traffic pass over this area for fear of collapse of the concrete cap fitted over this particular area.

This point is made merely for safety's sake. There is no need for any vehicle to pass over this area – no work is planned around this specific point. The area will be confirmed at the pre-start area

Project Outline

1. Sports Ground Primary Pipe Drainage
2. Sports Ground Secondary drained (Sand Grooved).
3. Sport Ground renovations with sand top dressing, aeration, fertilised and over sown.
4. Install Exercise Track.
5. **All waste to remain on site.**

Dimensions for the Project

	Description	Measurement
Sports Ground	Primary Pipe Drainage	410m Main 5,040m Lateral
Sport Ground	Secondary Drainage	17.000m^2
Sport Ground	Surface renovation	17.000m^2
Track	Exercise Track Installation	As Provisional Item Document

The specification constitutes a general technical proposal, which includes recommended construction and performance standards for the development of the required facilities. The Contractor should assume that any necessary earthworks and grading will have been undertaken by their company.

The sport ground drainage should be improved by the installation of a primary pipe system, secondary drainage system and surface renovation work.

The contractor is to agree a programme for the works with the GaskellL Recreation Groundand Alan Lewis Ltd at the prestart meeting to suit the needs of the end user as far as is practicable. The contractor will be expected to be pro – active in this regard and be prepared to revise and modify the programme to suit any changing conditions in agreement with the Client and consultant.

The client and Alan Lewis Ltd reserve the right to add or remove any item from the specification at any time. The site is accessible for the contractor via the access road off **Station Rd, Much Wenlock, Shropshire TF13 6JE**

The Contractor shall be deemed to have examined the site and its surrounds and to have satisfied himself as to the full extent and character of the operations, the form and nature of the site, the means of access, local conditions, supply of labour and materials, and to have obtained all the necessary information about any risks or circumstances affecting his tender. No claims on the grounds of lack of knowledge in any such respects will be considered.

The site may be inspected by prior appointment by contacting **Kate Southan, Chair**
Gaskell Recreation Ground Much Wenlock
The Corn Exchange
High Street
Much Wenlock
Shropshire
TF13 6AE

This document includes:

- Performance design specifications
- Site Plans
- Material specifications

The proposed start date will be **October 2018**. All designs comply with the Institute of Groundsmanship (IOG) Performance Quality Standards (PQS) and are compliant with WRU/Sport Wales guidelines.

Project Plan

Not to Scale.

Project Preliminaries

for

Gaskell Recreation Ground

PROJECT PRELIMINARIES

1. Introduction

Project description

The Primary Pipe drainage. secondary drainage Gaskell Recreation Ground with sand grooving and surface renovation of the sports surfaces. Plus, the installation of a Exercise Track

Names of Parties

The work is to be carried out for Gaskell Recreation Ground Management Board

The Supervising Officer will be a consultant from Alan Lewis Ltd.

1.2 General Requirements

- **Form of Contract**

  Terms and conditions laid out in this specification form the contract or if required a JCT or minor works contract is used.

- **Drawings and Specifications**

  The accompanying drawings and specifications are intended to convey an accurate description of the nature, extent and standard of work to be performed by the contractor. The contractor must visit the site, to make himself fully acquainted with what is required, and quote accordingly. Should the contractor be in any doubt regarding the true meaning and intent of any of the clauses in the conditions of contract, specifications or details shown in the drawings, he should be invited to have these fully resolved before submitting his tender. No extras will be allowed for, including any loss or expense involved through a misunderstanding arising from the contractor failure to comply with the requirements.

  The tender must include for carrying out the work strictly in accordance with the true intent and meaning of the drawings and specifications. Minor works not specifically mentioned but obviously necessary and customary in the trade will be deemed to be allowed for in the contractor's price.

- **Programme**

  The contractor shall, before being given possession of the site, prepare and submit the proposed programme for the execution of the works, for comment by the employer. Thereafter, the contractor shall amend and revise the programme as required by the Conditions of Contract or as requested by the employer. The contractor shall supply a Gantt chart illustrating each primary stage of the

project; it shall show the level of detail appropriate to each stage of the Works and all activities and restraints, each of which shall be given a short title. All events shall be numbered and annotated with earliest and latest event dates.

- **Method Statement**

  The contractor shall provide, prior to contract, a statement describing their proposed general and detailed arrangements, and methods for carrying out the works. The statement shall include details of how all stages of the works will be executed. This should include the detail of procedures to ensure the specified performance parameters are attained and the appropriate climatic conditions required for surface installation. It shall also highlight the appropriate health and safety requirements and any specialist training the site personnel will require before working on the site.

- **Sub-contracting**

  The contractor shall not sub-let any part of the works without the written consent of the client's representative. Any intention to sub-contract any part of the works shall be notified to the client's representative when the tender is submitted and full details of the sub-contractor/s shall be provided, e.g. name and address and the phase/s of the work they are to undertake.

- **Method Statement**

  The contractor shall provide, prior to contract, a statement describing their proposed general and detailed arrangements, and methods for carrying out the works.

- **Supervision**

  The contractor shall ensure adequate managerial supervision of the site and shall provide in his tender for a competent foreman to be continuously employed on the site while work is in progress and for him, as the contractor's representative, to receive and carry out any instructions given him by the client's representative.

- **Documents**

  The contractor shall keep at the site of the works copies of the contract drawings and specification; these to be available at all times to his foreman and the client's representative.

- **Procedure**

  No variation from the sequence and nature of the works detailed in this Specification will be permitted except with the prior written consent of the client's representative.

- **Site Meetings**

  The Contractor will attend periodic meetings on site as required.

- **Insurance**

  The tender and rates shown in the Bill of Quantities shall be deemed to cover all insurance, in particular the following:

  - Employer's Liability
  - Fatal Accidents
  - National Insurance
  - Third Party Risks

  and to indemnify the client against all claims and losses. The contractor will not be allowed to take possession of the site until the insurance policies required under the General Specification have been examined and approved. The contractor is to forward the insurance policies suitably endorsed to the client as soon as possible after the acceptance of the tender and before entering the site.

- **Standard of Work**

  Any works shall be subject to inspection and approval by the client's representative, before the contractor completes operations

- **Approval of Work**

  No work shall be proceeded with until any previous operations thereby likely to be concealed have been inspected and approved.

- **Warranty**

  The contractor shall provide a written warranty in respect of the manufacture, installation and performance of those materials selected by them and placed in the permanent works. The warranty will be such that the contractor will indemnify the client for all aspects of the works whether sub-contracted or not.

- **Private and Publicly Owned Services**

  The information in the Contract as to the whereabouts of existing services and mains is believed to be correct but it shall be the responsibility of the Contractor to verify the completeness and accuracy of the information prior to the commencement of any works.

  Any services affected by the works must be temporarily supported or protected by the Contractor who must take all measures required by the various bodies to protect their services and property during the progress of the works.

- **Payments**

  Payments shall be made on completion to the extent of 90% of the estimated value of the work completed to date. The balance is to be paid 5% on certified completion of the work and the remaining 5% at the end of the defects liability period provided all the conditions in respect of rectification of defects have been complied with.

  In valuation for interim certificates 80% of the value of any materials delivered on site but not used may be taken into account.

  Interim certificates will not normally be issued where the total value of the amount of any payment would be less than £500.

  The contractor shall pay sub-contractors for works completed by them within twenty-one days following payment to the contractor of interim certificates. The client's representative must receive a receipt from the sub-contractors verifying that payment has been made to them before further interim payments can be made.

- **Police Regulations**

  The contractor shall allow for all costs incurred by him in ascertaining and complying with any police regulations.

- **1.2 Working Practices and Materials**

  Labour, plant etc.

  The contractor shall supply all labour, approved tools, plant and equipment necessary to the efficient execution of the work. He shall comply with all statutory regulations and shall provide such storage sheds, canteens, latrines and shelters as may be required, maintaining same during the contract in a thoroughly sanitary and hygienic manner and clear away on completion to the satisfaction of the client's representative. All temporary accommodation shall comply with the Offices, Shops and Railway Premises Act 1963 and shall meet the British Standard or other appropriate specifications and Health and Safety requirements current during the period of the Contract.

  All off loading of materials and plant, including that belonging to sub contractors, is to take place WITHIN the boundaries of the site, except by specific agreement with the client's representative.

- **Machinery**

  All traffic shall be confined to approved routes within the site. The use or passage of heavy earth moving equipment will not be allowed on site following the return of the top-soil. Only recognised construction machinery of an approved type shall then be used to complete the specified works unless otherwise agreed by the client's representative.

- **Provision of Materials**

  An approved list of material suppliers will be submitted to the Contractor by the clients' representative. Exceptions will be considered as long as costs and specifications are the same. Any material samples or intermediate stages of the work, when tested, be found by the employer or their agent to be unsatisfactory or likely to produce unsound work, will be rejected. This will include the whole consignment which the sample represents which shall be removed and the contractor shall take suitable corrective action. All rejected materials shall be removed and replaced at the contractors own expense.

  Any delays caused by the rejection of the sample/work shall not, in any way, relieve the contractor from his responsibility with regard to completion within the contract period.

- **Control of Dust**

  The contractor shall conduct his operations so that as far as possible any dust settles within the site and is not carried beyond the immediate working area.

  The contractor shall also undertake a daily visual inspection of vehicles (if any) parked in the site compound areas and adjacent the areas of working for the presence of any settled dust.

  The contractor shall adjust the location of any excavation, regarding or filling operations giving consideration to wind direction and speed.

  Any stockpiles of material subject to wind whipping shall be damped down and covered to ensure satisfactory dust control

  The contractor shall ensure that airborne dust is kept to a minimum by the regular use of water bowsers during periods of dry weather. The contractor shall also deploy other water spraying equipment as required to control dust emissions whenever significant fugitive dust emissions are created or are likely to be generated by site operations.

- **Control of Noise and Vibration**

  The contractor shall employ practical means to minimise noise and vibration produced by his operations and shall have regard to the recommendations in BS 5228 Noise Control on Construction and Open Sites, the Noise Abatement Act 1960, and all amendments thereto, and the Department of the Environment advisory leaflet No.72 Noise Control and Building Sites and all subsequent Acts and publications

- **Inclement Weather**

  The works or any part there of shall be suspended temporarily by the client's representative when, in his opinion, working conditions are unsuitable due to inclement weather. Work must cease when conditions are such that puddling and/or deep rutting of the soil or any other detriment could result.

- **Handwork**

  The contractor shall allow in his pricing for the hand working on parts and conditions where the use of machinery will not produce results to the satisfaction of the client's representative even though specific reference is not made to such in the body of this specification.

- **Aggregates Tax**

  Allowance shall be deemed to be included within the tender for all costs accruing from the Aggregates Tax, which was introduced on 1st April 2002. No claim arising from allowance or more or less tax than is actually required will be considered.

- **Water for Working**

  The Contractor shall be permitted to use the Client's water supply free of charge for the purpose of the works but must supply the necessary hose or temporary piping, etc. and exercise due care in the use thereof to avoid waste.

- **Defects Liability Period**

  The contractor shall be responsible for correcting any faults arising from poor work or faulty materials for twelve months after the completion date.

- **1.3 Site Specific Information**

- **Site Restrictions**

  The contractor shall confine his work men and material, plant etc. to the area of the working site and agreed designated storage area and access routes.

- **Surface and Ground Water Run Off**

  The contractor shall make all necessary temporary provision for the surface and ground water run off from the working areas, during the period between the start of the works and the final connection to a drainage outfall.

- **Storage of Equipment and Materials**

  All equipment and materials shall be stored on areas as shown on the drawings or otherwise as agreed. The Contractor shall be responsible for reinstating any such areas at his cost unless otherwise allowed for in the Bill of Quantities

- **Maintenance of Public Roads Etc**.

  The Contractor shall be responsible for keeping clean all public roads, pavements, verges and other areas and for making good at his own expense any

damage thereto when carrying out the works. The contractor shall be responsible for avoiding any infringements of local traffic regulations.

- **Parking**

  The parking of the contractor's and employees' vehicles will be restricted to his compound. The surrounding roads may not be used for the parking of vehicles that are related to the activities of the works or those employed on or visiting the site.

- **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.

- **Boundary Protection**

  The contractor should allow for protecting and avoiding all damage to adjoining owners' boundaries.

- **Restriction of Advertising**

  The contractor shall not use, nor let, the site or any part there of, for the advertising purposes save only that he may exhibit his own name and address together with those of his suppliers. The board shall also display the title of the works and such boards shall be approved before erection.

- **Tidiness and Clearance**

  At all times the site shall be kept in a tidy condition, all surplus earth and rubbish being cleared as work proceeds. The contractor shall clear away all surplus materials on completion and leave the site in a clean and tidy condition right to contract boundaries to the satisfaction of the client's representative.

- **Protection of Trees and Shrubs**

  The contractor shall carefully preserve and protect all trees and shrubs on the site from damage, until completion of the works. Individual trees maybe protected in accordance with client's representative's instructions.

Project Specification

for

Gaskell Recreation Ground

1.0 Mobilisation

Install site signage.

The access to the site is through the contractor road off **Station Road, Much Wenlock, Shropshire TF13 6JE**

Materials and equipment shall be stored within the boundary of the proposed compound. The site of the compound will be in the fenced area off Station Road agreed at the pre-start meeting.

The sit compound area will be primary pipe drained as part of the reinstatement.

1.2 Services

The contractor must investigate and scan the area for services and under obstructions and mark the position on the ground.

1.3 Scope of works

Install a primary pipe system and surface renovation an area of 17,000m^2. Please view suggested drainage design

Scope of works will include:

- Install primary drainage system, including square perimeter drain.
- Connect to outfall
- Secondary drainage
- Sand areolation
- Aeration
- Application of fertiliser
- Over sowing of seed
  Track construction.

2.0 Drainage system.

Install a drainage system. Work with the fall on site to maximise drainage fall and outfall into the adjoining chamber. A fall of 1:150 should be the aim.

2.1 Main Drainage drain

- Excavate main and perimeter drainage trenches to an invert of 600 mm.
- Either the use a trencher which leaves a clean trench bed or lay a bed of 3 mm to 6 mm gravel to a depth of 25 mm in the base of the drainage trench.
- Lay a main / perimeter drainage pipe in the centre of the excavated trench, on the material used for the trench base.
- Surmount the drainage pipe with 3 mm to 6 mm gravel to within 125 mm from the surface.
- Lay a sandy soil to a firmed depth of 125 mm over the gravel. Surmount the sandy soil over the trench with a further 25 mm of sandy soil to allow for post-construction settlement.
- The outfall for the drainage system shall be an existing outfall ditch.

Manholes / Inspection Pits, Silt Traps

The Contractor shall allow for connecting into this structure and making good the necessary reinstatement of the structure to ensure the outfall is fully functional and flows freely. A silt trap will be installed every 100m.

Lateral Drainage Trenches

- Excavate lateral drainage trenches at 4 m centres and invert of 450 mm.
- Either the use a trencher which leaves a clean trench bed or lay a bed of 3 mm to 6 mm gravel to a depth of 25 mm in the base of the drainage trench.
- Surmount the drainage pipe with 3 mm to 6 mm gravel to within 125 mm from the surface.
- Lay a sandy soil to a firmed depth of 125 mm over the gravel. Surmount

the sandy soil over the trench with a further 25 mm of sandy soil to allow for post-construction settlement.

Outfall

Construct the main drain into the existing chamber by Station Road Much Wenlock.

Spoil will be stockpile on site the contractor should allow for levelling and seeding of soil stockpiles.

2.2 Sand Grooving

The sand grooves shall be installed into an established pitch surface.

Using a Blec Vibra-Sandmaster, or similar equipment sand grooves shall be cut through the surface at approximately a 90o angle to the lateral drains and should intercept with the permeable backfill in these drains. The sand grooves shall be approximately 20 mm wide x 200 mm deep and shall be spaced at approximately 260 mm centres depending on the machine used.

2.3 Sand top dressing

Import and apply evenly a dressing of medium course sports sand and work into the surface, apply at 15kg per meter squared.

2.4 Aeration

Aerate the area with a solid tine cam action aerator to a minimum depth of 250mm with 25 mm tines, the aerator should also apply some heave or lift action on the soil.

2.5 Apply pre- seed fertiliser

Supply spread evenly and work in to the seedbed a granular fertiliser with analysis 9:6:9 at a rate of 70 g/m2.

2.6 Apply grass seed

Supply and sow a 100% perennial ryegrass seed mix using cultivars selected from Turfgrass Seed 2017 produced jointly by The British Society of Plant Breeders Ltd and STRI. Sow at 35 g/m2.

The seed mix must contain 50% Tetraploid Rye grasses

The seed shall comply with the minimum standards set out in the Seed Regulations. Details of the proposed seed mixture shall be submitted for approval prior to commencing work.

The seed shall be sown evenly with an approved distributor at a rate of 35 g/m2.

The seed shall be lightly raked into the surface taking care to avoid creating ridges in the prepared surface or shall be sown using an approved slit seeder with a minimum of 3 passes in different directions.

2.7 Brush the surface

Brush the surface in two opposite directions to work the sand, seed into the surface.

3.0 Provisional Sum Items

Full details of the track construction are in the attached document **Gaskel Recreation Ground - running track.**

The contractor should mark out the track fully for the client approval prior to construction start.

Proposed makeup of the exercise track: -

Base layer = is to be a Geotextile type membrane with a suitable Geogrid on top of the Geotextile membrane. Initial solids layer is to be a suitable type/size to infill the Geogrid and be vibra-roller compacted. Secondary layer is to be a smaller type/size and vibra-roller compacted into place. The final fines layer must be of a type that does not return to dust but does fill and level the surface. There should be no high spots or dips along the base layer surface. Check the level of the surface at regular intervals along the base layer for a consistent even surface, which should have a maximum gap of 10mm under a 3m straight edge laid along the compacted surface. Any area of the base layer surface deviating from the required level should be raked off or topped up with extra material and re-compacted to the correct levels

The final compacted base layer surface should be ‘closed tight’ with no exposed surface voids. If necessary, fill any openness with fines. The secondary compacted surface

should also be free of ruts, dips, potholes and roller marks, before the surface layer is laid The highest point of the paths finished surface is to be 1inch below the top surface of grass (top of the camber).

4.0 Material Specifications

Within 14 days of the contract being awarded, the Contractor shall submit to the Alan Lewis Ltd, a list of the suppliers from whom they propose to purchase the material necessary for the execution of the works. Each supplier must be willing to admit the Alan Lewis Ltd to their premises during ordinary working hours for the purpose of obtaining samples of the materials in question. Alternatively, the Contractor shall deliver the samples of material to the Alan Lewis Ltd, if requested. Sample sizes shall be in accordance with the relevant British Standard where applicable, or shall be of a reasonable size as requested by the Alan Lewis Ltd. Materials subsequently supplied shall conform with any specified tolerances to the quality of samples, which have been approved by the Alan Lewis Ltd.

The information regarding the names of the suppliers may be submitted at different times, although in accordance with the above. No source of supply shall be changed without the Alan Lewis Ltd' prior approval. When any material or article is required to comply with the relevant British Standard, such materials or article, or its container, shall bear the stamp of the registered certification trademark of the British Standards Institute. Alternatively, the Contractor shall submit to the Alan Lewis Ltd test certificates furnished by the supplier or manufacturer of the material or article, indicating compliance with the relevant British Standard.

All such materials liable to deterioration or damage shall be stored in such a way that they shall be in accordance with the specification at the time of use, and will not deteriorate in use.

Particulate Materials

All particulate materials used in the drainage system and the contract as a whole, will conform to the appropriate standard as indicated in this specification. The Contractor will ensure that all materials used, other than soil, achieve the following:

a. Resist the effects of frost or drought,
b. Will not change their structure,
c. Retain their shape,
d. Will provide a stable structure,
e. Will not break down as a result of weathering, or activities on the surface,
f. Will not fuse together,
g. Will not affect the performance of the installation outside the parameters indicated within this specification.

Standard of Particulate Material for use in the Drainage Trenches:

Type/Name of Material: Gravel

Main Range of Particles: 6 mm to 3 mm

Breakdown of Particle Range:

Particles between 10 mm and 6 mm not to exceed 5% of total

Particles between 6 mm and 3 mm up to 100% of total

Particles between 3 mm and 2 mm not to exceed 10% of total

Particle Shape:Rounded to sub-rounded

% of Particles in Required Shape: 95%

Minimum Hydraulic Conductivity: 30,000 mm per hour

Standard of Particulate Material for use in the Sandy Soil Layer in the Drainage Trenches:

Type/Name of Material: Sandy Soil

Main Range of Particles: 0.500 mm to 0.125 mm

Breakdown of Particle Range:

Particles between 2 mm and 1 mm not to exceed 5% of total

Particles between 1 mm and 0.5 mm to be 5% to 15% of total

Particles between 0.5 mm and 0.25 mm to be 25% to 50% of total

Particles between 0.25 mm and 0.125 mm to be 25% to 40% of total

Particles between 0.125 mm and 0.053 mm to be 5% to 10% of total

Particles below 0.053 mm to be 10% to 20% of total

Particle Shape: Rounded to Sub-rounded

Minimum Hydraulic Conductivity: 200 mm per hour

Drainage Pipes

All drainage pipes shall be UPVC flexible, perforated, corrugated drainage pipe in accordance with BS 4962.

The diameter of the drainage pipes shall be:

- Lateral: 80 mm internal diameter / 80 mm external diameter;

- Main / Catchment: 160 mm diameter.

Or as determined by the Contractor

Pipes used for drainage shall be strictly in accordance with the appropriate section of this specification. Only one type of pipe and only one size of pipe shall be used within any individual drain length between manholes / inspection pits or silt traps, except at the connections to the stated structures.

Connections to Manholes / Inspection Pits, Silt Traps and Outlets

Suitable sized rigid drainage UPVC pipe in accordance with BS 4660.

Drainage Pipe Connections / Junctions

All joints between drainage pipes and runs must be made with approved purpose made connections in accordance with BS 4962.

Manholes / Inspection Pits and Silt Traps

Manholes etc shall be constructed from pre-cast concrete sections all complying with BS 5911: Part 1 and Section 507 of the Department of Transport's Specification for Highways Works. Concrete shall be grading CP0P as defined in Clause 60 of the Department of Transport's Specification for Highways Works.

Manholes etc to have HB 600 x 450 mm. Cast iron covers and frames grade B in accordance BS 497.

Where appropriate, manholes etc to have galvanised malleable iron steps to BS 147 at 300 mm vertical centres, staggered 300 mm horizontally with the lowest step 300 mm above the base and the top step 450 mm below the top cover, positioned in direct view of the access.

Frames shall be securely bedded on an appropriate depth of no more than 5 mm of cement mortar. On two courses of Class B engineering bricks, the covers and frames shall be left 5 mm below the adjacent finished surface unless otherwise indicated.

Concrete

All concrete used to be in accordance with COP as indicated in the Department of Transport's Specification for Highway Works Section 60. Where appropriate all concrete used shall be subject to the following conditions:

a) Ready mixed concrete shall be in accordance with BS 538. The use of non-agitating equipment for its transport will not be permitted; truck mixer units and their mixing and discharge performance shall comply with the requirements of BS 451. When truck mixed concrete is used, water shall be added under supervision either at the site or at the central batching plant as agreed by the designer and in no circumstances shall water be added in transit.

b) Concrete shall not be mixed when the air temperature in the shade has fallen to 3° C (38° F). No frozen materials or materials containing ice shall be used.

c) During hot weather the constituent materials of the concrete must be kept sufficiently cool to prevent the concrete from stiffening in the interval between its discharge from the mixer and compaction in its final position.

d) The method of transporting and placing concrete shall be to the approval of the designer. Concrete shall be so transported that contamination, segregation or loss of a constituent material does not occur.

e) No concrete shall be placed until the client or client representative approval has been given.

f) All form work and reinforcement contained in it shall be clean and free from standing water, snow or ice, immediately before the placing of the concrete.

g) No concrete shall be placed in flowing water.

h) Concrete when deposited shall have a temperature of no less than 5° C (41° F) and not more than 30° C (90° F). It shall be compacted in its final position within 30 minutes of discharge from the mixer unless carried in a purpose made agitator, operating continuously, when the time shall be within two hours of the introduction of cement into the mix and within 30 minutes of discharge of the agitator.

i) Where appropriate all concrete shall be compacted to produce a dense homogenous mass. Freshly compacted concrete shall not be subjected to vibration from internal or external sources for at least 4 hours following compaction.

j) Immediately after compaction and for seven days thereafter, concrete shall be protected against harmful effects of the weather, including rain, rapid temperature changes, frost and from drying out. The methods of protection used shall be subject to the approval of Alan Lewis Ltd.

Grass Seed

All seed will be certified (OECD Green or Blue Label Certification). Purity, germination, harvest and origin of each mixture component must be indicated on the tender document and attached to each bag.

The contractor will supply the details of the proposed mixture and cultivars.

Only approved cultivars, which comply with the following criteria, shall be acceptable.

Grass seed for sport pitch:

- The seed mix must contain 50% Tetraploid Rye grasses
- Mixture to be composed of 100% perennial ryegrass; a minimum of three

different cultivars of Perennial Ryegrass to be used in the mixture.

- Cultivar criteria in accordance with the Turfgrass Seed 2018, produced jointly by The British Society of Plant Breeders Ltd and STRI.

Due to the changing nature of turfgrass research and development, different mixtures based on the above may be permitted, subject to the prior approval of the client.

Fertiliser

A Certificate for Nutrient Analysis Content shall be provided for each type of fertiliser used. Each fertiliser shall consist of an approved compound containing the specified nutrients and the fertiliser shall be evenly applied at the manufacturer's recommended rate.

All fertiliser material shall comply, where applicable, with the Fertilisers Regulations 1990 and all subsequent Amendments.

Autumn Fertiliser: [The Nitrogen content will depend upon at what time during the Autumn period any fertiliser is applied, e.g. a low Nitrogen content will be given during the late Autumn]

Nitrogen	4% to 11%
Phosphate (P2O5)	2% to 6%
Potash (K2O)	4% to 10%

Spring / Summer Fertiliser: [To be in a ratio of 2:1:1 unless otherwise approved]

Nitrogen	10% to 20%
Phosphate (P2O5)	5% to 10%
Potash (K2O)	5% to 10%

Pre-Seeding Fertiliser: [To be in a ratio of 1:1:1 unless otherwise approved]

Nitrogen	6% to 10%
Phosphate (P2O5)	9% to 15%
Potash (K2O)	6% to 10%

5.0 Aftercare

The contractor shall allow for 3 months maintenance to include the following maintenance operation to ensure that the grass is properly established.

Mowing.

The grass shall be cut when it has reached a height of 65mm removing no more than 25mm of the leaf blade, using a well sharpened rotary mower.

Maintain the grass height at 35mm to 40mm

Fertiliser application

Apply a fertiliser application 4 weeks after germination.

Over seed if needed to thicken the sward and bring the surface to standard.

Topping up of drainage trenches.

Bill of Quantity

Item	Item Description	Quantity	Unit	Cost (£)
	Gaskell Recreation Ground			
	Site Preparation			
1.1	Mobilisation/Compound cost Including reinstatement and drainage		Item	
1.2	Scan for services	17,000	m^2	
2	**Drainage and Surface Establishment**			
2.1	Main drain and Cricket Square perimeter drain.	410	m	
	Lateral drain	5,040	m	
	Outfall Connection	1	item	
	Silt Trap	3	item	
2.2	Sand Grooving	17,000	m^2	
2.3	Import and spread sand top dressing	260	tons	
2.4	Aeration	17,000	m^2	
2.5	Supply and apply pre-seed fertiliser	1,200	kg	
2.6	Supply and apply seed	600	kg	
2.7	Brush the surface	17,000	m^2	
	Spoil on site		item	
	Total Carried Forward			

Bill of Quantity (Continued)

	Total Brought Forward			
3	**Provisonal Sum Items**			
	Exercise Track		item	
5	**Maintenance**			**Cost (£)**
	3 Month	17,000	m^2	
		Total		
		Contingency 5%		
		Sub Total		
		VAT (20%)		
		Grand Total		

Project Appendices

for

Gaskell Recreation Ground

Appendix 1: Schedule of Information to be Included with the Contractors Proposals

	Document	Included
1	Detailed method statement, giving the methods and sequence of construction operations. This should include a programme of events in the form of a Gantt chart.	□
2	Specifications of all proposed materials comply with WRFU/FA/ECB standards and BS 7044	□
4	List of sub-contractors	□
5	List of suppliers	□
6	Contractors warranty	□

Appendix 5: The Performance Quality Standard Tables - Football

The following table highlights the performance quality standards set out by the Institute of Groundsmanship. The specified sports surface shall qualify to all performance criteria.

Structural Quality

Performance Standard	Method of Test	Quality Standard		
		High	**Standard**	**Basic**
A. Herbage				
i) Length of herbage: during the growing season	1	to be between 25 to 50 mm	to be between 25 to 65 mm	to be between 25 to 65 mm
during the non-growing season	1	to be between 25 to 65 mm	to be between 25 to 75 mm	to be between 25 to 75 mm
ii) Bare area.	3	Max. 20%	Max. 25%	Max. 30%
iii) Total ground cover	3	Min. 80%	Min. 75%	Min. 70%
iv) Desirable grass	3	Min. 75%	Min. 60%	Min. 50%
v) *Poa annua*	3	Max. 10%	Max. 20%	Max. 30%
vi) Other undesirable grass species	3	Nil	Max. 10%	Max. 20%
vii) Weeds - Large-	3	Nil	Max. 5%	Max. 10%
viii) Weeds - Small-	3	Max. 2%	Max. 10%	Max. 15%
ix) Moss	3	Nil	Nil	Max. 2%
x) Algae and Lichen	3	Nil	Nil	Nil
B. Pests and Diseases				
i) Diseases	3	Nil	Max. 2%	Max. 2%
ii) Earthworms	3	Max. 3%	Max. 8%	Max. 10%
iii) Pests	3	Nil	Max. 1%	Max. 2%
C. Profile				
i) Root depth	4	Min. 150 mm	Min. 100 mm	Min. 75 mm
ii) Thatch depth	4	Max. 5 mm	Max. 10 mm	Max. 15 mm
iii) Rootzone medium	4	Min. 200 mm	Min. 150 mm	Min. 100 mm

iv) Rootzone silt & clay content	14	Max. 6%	Max. 17%	Max. 25%
v) Infiltration rate	5	Min. 10 mm per hour	Min. 5 mm per hour	Min. 2 mm per hour
vi) Evenness: 2m straight edge, or 0.5m straight edge	2	Max. variation 15mm 8mm	Max. variation 18mm 10mm	Max. variation 25mm 12mm
vii) Soil pH	15	6.0 - 7.0	5.8 - 7.5	5.8 - 7.5
viii) Soil nutrient level : P_2O_5	11	Index 2	Index 2	Index 2
ix) Soil nutrient level:	12	Index 2	Index 2	Index 2
x) Gradient: Length ways Across the pitch	16	> 1:200 1:150 - 1:100	1:200 - 1:100 1:100 - 1:80	1:100 - 1:80 1:80 - 1:50

Presentational Quality

Performance Standard	Method of Test	Quality Standard		
		High	**Standard**	**Basic**
i) Appearance	Visual	100% uniform texture	Min. 90% uniform texture	Min. 70% uniform texture
ii) Goal posts	13	(a) Uprights are to be at right angles to the surface of the pitch (taking into account the gradient of the pitch).		
iii) Pitch line markings	Visual	Visible from a min. 60m	Visible from a min. 45m	Visible from a min. 30m
iv) Surface debris	Visual	Nil	Nil	Nil
v) Sward colour	Visual	100% uniform	90% uniform	70% uniform

Playing Quality

Performance Standard	Method of Test	Quality Standard		
		High	**Standard**	**Basic**
i) Hardness	10	to be between 65 to 120	to be between 55 to 160	to be between 40 to 180
ii) Traction	9	Min. 45 Nm	Min. 40 Nm	Min. 30 Nm
iii) Vertical ball bounce	7	to be between 25 to 45%	to be between 25 to 50%	to be between 15 to 55%