
**Coolaney Mullinabreena GAA club
Nace O'Dowd Park
Co Sligo**

Volume A

**Works Requirements for Proposed MUGA and
associated upgrade works**

August 2026



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1 SECTION 1 – CONTRACT OVERVIEW

1.1 General

Coolaney Mullinabreena GAA club Co Sligo requires the services of a competent, experienced Design/Build Contractor/Specialist to construct a new 60m x 30m All Weather Multi Use Games Area (MUGA) at the location of the existing GAA playing pitch at Nace O'Dowd Park including base preparation, drainage, surfacing, fencing, gates and all associated works.

This Contract is being procured under the Public Works Contract for Civil Engineering Works Designed by the Contractor (PW-CF4) in accordance with the Department of Public Expenditure and Reform. This is a **Design and Build contract** and specialist Contractors experienced in the installation of Astro pitch and MUGA surfaces are invited to tender.

This section provides an introduction to the project and an outline of the Works Requirements for this contract.

1.2 Project Location

The site is located at the existing GAA pitch at Nace O'Dowd Park, Co Sligo F56YH93.

Nace O'Dowd Park is located on the N17 approximately 7km north of Tubbercurry and 25km south of Sligo.

1.3 General Description of the Works

1.3.1 General

This contract involves the design, supply, construction, installation and commissioning of a new All Weather Multi Use Games Area (MUGA) including base preparation, drainage, surfacing, fencing, gates, pedestrian rail, floodlighting infrastructure, footpaths, access road and with all associated works.

The proposed MUGA dimensions are 60m x 30m (1800 sqm).

The works required under this contract are to be delivered under a Design and Build contract, with a proposed contract period of 26 Weeks. It is envisaged that works commence in Q1 2027 and be complete before the end of August 2027.

The progression of the contract can be outlined as follows:

- Acceptance of a Tenderer's proposal and signing of a Contract;
- Acceptance of Project Supervisor roles by Tenderer;
- Detailed design of facilities and review of detailed proposals by Employer's Representative;
- Construction of the facilities, including any required tests of materials, equipment, structures, workmanship, etc;
- Testing during the Works;
- Tests before Substantial Completion;
- Substantial Completion Certificate; and
- Release of Retention and Final Payment.

1.3.2 Description of the Works

This contract is for the design, supply, construction, installation and commissioning of an All Weather MUGA to international requirements and relevant ISO specifications.

- **MUGA:** The total area is to be a minimum of 60m x 30m including runoff inside the proposed fence line. The area must accommodate 1 No Soccer Pitch (minimum dimensions 60m x 30m inclusive of runoff area), 4 No Tennis Courts and 4 No Basketball Courts.
- **Markings:** Permanent line markings shall be installed in the MUGA area for soccer, tennis and basketball.
- **Run-Off Area:** Allow 2.0m at each endline and 2.0m at each sideline for runoff.

- **Drainage:** Install lateral and collector drains along the proposed MUGA pitch. Drainage to discharge to existing collector drainage system for the recently upgraded GAA playing pitch which is located adjacent to the proposed MUGA area.
- **Kerbing:** Install 150mm high kerbs to the MUGA perimeter.
- **Fencing:** New 2.4m high perimeter woven wire fencing erected around the MUGA pitch. Include associated foundations, strut supports, etc.
- **Access / Egress Gates:** 1 No. 1.2m wide pedestrian gate and 1 No. 3m vehicle maintenance gate to be consistent with the woven wire mesh fence. Each gate to be secured and lockable with a universal key to open each of the locks;
- **Floodlighting:** Install 4 No lighting column bases and all associated ducting and cabling works.
Supply and install sports floodlighting system, 12m high columns galvanised, with LED fixtures to achieve 250 Lux.
Include associated control panel and fixtures located in the existing changing rooms adjacent to the proposed MUGA area.
- **Associated Site Development Works:**
Include excavation, disposal, sub-base preparation, drainage system, footpaths, ducting, signage, surfacing, reinstatement, landscaping etc.

The services to be provided by the Contractor as part of his obligations under the Works include but are not limited to the following:

- Detailed design proposals of all aspects of the facilities required by the project in accordance with the Employers Requirements;
- Liaison with all relevant utility providers and third parties required to complete the works;
- Preparatory works and construction facilities as required including general clearance, construction of hardstanding areas for site compounds, construction of site and access roads and erection of security fencing;
- Construction of all required facilities at each location, including all temporary works, and any necessary piling, anchoring or other construction techniques;
- Provision of all required equipment necessary to complete the works in accordance with the Work's Requirements;
- Provision of ancillary facilities required to provide for a fully functional facility;
- Provision of Project Supervisor for the Construction Stage (PSCS) services in accordance with the Safety & Health Act and Regulations.

The Contractor shall note that the works are carried out on the grounds of Coolaney Mullinabreena GAA are required to ensure no unnecessary disturbance to the public or existing users is caused.

1.4 Site

The definition of Site within the Conditions of Contract comprises a number of different areas, including lands that will be made available by the Employer, and other places, which the Employer is not responsible for providing. The Employer will make the following lands available to the Contractor:

- (i) Access to the site is via the main entrance to Nace O'Dowd Park and the existing shared access road to changing rooms and buildings.

The Contractor is responsible for the availability of any other areas of the site. In the event that the Contractor necessarily requires the Employer's assistance to obtain access to a part of the site, then the Employer will provide such assistance, in accordance with Clause 4.1 of the Conditions of Contract, including the use of any appropriate statutory powers. However, any such assistance provided by the Employer to the Contractor will not be regarded as either a Delay Event or a Compensation Event.

1.5 Consents

The Employer has obtained the following Consents:

- (i) Development approval in accordance with the Planning and Development Acts and associated Regulations.

The Contractor is responsible for obtaining all other consents. Consents to be obtained by the Contractor are defined as including:

- a) Any permissions, agreements, or similar to be obtained from, or any liaison or other interaction required with Sligo County Council in their role as an authority with public, legal or statutory obligations or duties.
- b) Any permissions, agreements, or similar to be obtained from, or any liaison or other interaction required with, any person or body in their role as an authority with public, legal or statutory obligations or duties.
- c) Any permissions, agreements, or similar to be obtained from, or any liaison or other interaction required with, any public provider of services or utilities, whether in respect of existing services or utilities currently present, or existing or new service or utilities being installed or maintained concurrently with these works.

- d) The Contractor is required to pay any and all fees, taxes, charges or any other costs arising in respect of obtaining any consent required or as a result of any consent obtained.

1.6 Planning Approval

Development approval is in accordance with the Planning and Development Acts and associated Regulations. The Contractor shall design and construct the works in a manner that fully complies with relevant Planning and Development Regulations.

1.7 Background Information

The Contractor is required to provide the works in accordance with the particular instructions detailed within these Work's Requirements and within the framework created by the existing conditions. These existing conditions relate to both the status of the current facilities and factors restricting the proposed scheme.

The Background Information, which describes the existing conditions that constrain the Contractor's activities, is as set out in Instructions to Tenderers.

1.8 Restrictions on Works Interfacing with the Existing Facilities

1.8.1 General

Nace O'Dowd Park is an active GAA pitch and sportsgrounds.

It also comprises a walking track regularly used by members of the public.

The Contractor and any specialist sub-contractors shall at all times be flexible, cooperative and proactive in terms of prevention of disruption or damage to the school. Any damage as a result of construction activities shall be made good by the Contractor, at his expense.

1.8.2 Concurrent Construction Works

There are no known concurrent construction works on site.

1.8.3 ESB Requirements

All Civil Works shall comply with ESB Guidance documents:

- ESB Networks "Code of Practice for Avoiding Danger from Overhead Electricity Lines", and
- ESB Networks "Housing Schemes Electrical Services Standards Guidebook".

1.9 Contractor's Management Staff

The Contractor shall provide the following personnel from first appointment, until after the completion of all Tests after Substantial Completion:

- (a) A Project Manager/Site Manager with qualification in engineering construction or project management and at least 10 years of relevant site experience.

Person (a) above shall be responsible for the day-to-day management of the Contract and shall attend all meetings as required under the Contract. All communications regarding this Contract shall be the responsibility of the person (a) above to the Employer.

1.10 Contractor's Resident Site Staff

The Contractor shall provide the following personnel on site on a full-time basis, from first mobilisation on site, until after the completion of all Tests after Substantial Completion:

- (b) Site Agent who shall be responsible for carrying out the works on site.
- (c) Site Health and Safety Manager; or other person responsible for Health and Safety on site for the duration of construction activities.

The combined expertise of the above staff members must be complementary and cover all of the activities under the contract.

1.11 Contractor's Staff Requirements for Monthly Meetings

The Contractor's staff of Section 1.9 and 1.10 above to attend all monthly management meetings as required under the Contract.

2 SECTION 2 - PERFORMANCE REQUIREMENTS FOR THE WORKS

2.1 General

This section details the performance requirements for the Works to be provided under this Contract. The Contractor is obliged to provide facilities capable of meeting these requirements. In addition, the Works are required to include all of the facilities necessary for the Contractor to meet any other obligations not specifically mentioned under this section and identified elsewhere in the contract documents.

2.1.1 Contractor Design

The Contractor shall design the new Astro/MUGA play area ancillary facilities, such that it conforms to the requirements of relevant international standards and ISO specifications.

In addition, the Contractor's design shall take account of modern practice and proven technology, and shall be such as to facilitate operation, inspection and maintenance of all equipment. All equipment supplied shall have a proven reliability record in similar works.

Without in any way derogating from the generality of the scope of the Contractor's obligations as set out in the Conditions of Contract, the design of the facilities shall comply with all applicable and relevant laws, regulations and administrative provisions including:

2.1.1.1 Standards and Guidelines

The Contractor's Design Proposals shall take into account the following Standards and Guidelines:

- Safety, Health and Welfare at Work Act, 2005 and amendments
- Safety, Health and Welfare at Work (Construction) Regulations, 2013 and amendments.
- Safety, Health and Welfare at Work (General Application) Regulations, 2007 and amendments.

Artificial Grass Surfaces

IS EN 15330-1: Surfaces for sports areas – synthetic turf and needle punched surfaces primarily intended for outdoor use – Part 1 Specification for synthetic turf surfaces. www.nasi.ie

Pitch fencing

Guide to the Construction and Maintenance of Fencing Systems for Sports Facilities

www.sapca.org.uk

2.1.2 Guide to the Care and Maintenance of Synthetic Turf Pitches Design Life

The design life of the Permanent Works shall be not less than:

- 50 years in the case of all building and civil engineering works including sub-base and drainage system.
- 10 years in the case of artificial surfaces / structures.
- 5 years in case of wearing parts other than consumable items.

The Contractor shall provide a list of components and a schedule of maintenance required to achieve the necessary design life. Nothing in this Clause shall remove the Contractor's obligation to replace worn or damaged parts as necessary to keep the equipment in perfect working order during the maintenance period.

2.2 All-Weather Synthetic MUGA

2.2.1 General

The new sports area shall consist of the design, supply, construction, installation and commissioning of the following:

2.2.2 Contract Limits

The limits of the Works at this site are as follows:

- All items contained within the Nace O'Dowd Park site boundary.

2.2.3 Playing Area

The playing area dimensions of the proposed MUGA (inclusive of 2m runoff each side) shall be minimum 60m by 30m. (Playing Area = 1,800 sqm);

2.2.3.1

The installation of the Synthetic Playing pitch must be constructed such that it conforms to the requirements of BS EN 15330-1:2013 Surfaces for sports areas. Synthetic turf and needle-punched surfaces primarily designed for outdoor use - Specification for synthetic turf surfaces for football, rugby union training, tennis and multi-sports use.

The installation shall be a permanent, permeable sand-dressed synthetic turf surface laid on a porous rubber shockpad on a bitumen macadam base.

Shockpad to be laid in situ and consist of porous polyurethane resin bound EPDM or SBR clean rubber particle material laid by hand or powered paver to the nominal thickness of 18mm adjusted as necessary to accommodate surface tolerance in the engineered base. The shockpad surface shall be finished to a tolerance of 6mm under a 3m straight edge and 2mm under a 300mm straight edge laid in any direction.

The Artificial Surface shall be Permeable Sand Ballasted Synthetic Turf Surface Product designation: Permeable sand ballasted synthetic turf surface obtained from a Licensed Manufacturer/Supplier and an Approved Product. The pile shall be a polyethylene texturised monofilament having a nominal height above the backing not less than 18mm giving a non-directional surface.

Joint strength as BS EN 15330 - 1: Clause 4.3 Bonded joints greater than 0.25N/mm. Flatness: 6mm below 3m straight edge, 2mm below 300mm straight edge with no significant localised

bumps, depressions or step-like irregularities over the entire area Permeability: Greater than 100mm/h at practical completion and for the following 12 months.

Sand infill: Well-rounded, lime free, non-abrasive, non-staining, dust-free silica sand in accordance with the Turf Supplier's recommended grading.

2.2.3.2 Sports Surface Installation

Only skilled operatives experienced in the installation of permeable sand ballasted synthetic turf surfaces shall be employed on the installation of the surfaces. The shockpad must be sufficiently cured and volatiles evaporated off and the shockpad clean and dry before installation commences. The Contractor shall submit a joint layout drawing to the Engineer or Employers Representative for their approval. Head joints will not be permitted without the express agreement of the Engineer.

2.2.3.3 Synthetic Turf – Specifics

Specification for the Synthetic Turf Mono Filament Yarn Type:

Materials/properties	Minimum requirements
Ribbon Polymer	Polyethylene texturised monofilament of not less than 6500 Decitex
Colour	Green
UV Stabilized	In accordance with Din 53387: must be UV stabilised
Yarn Tickness	Not less than 80 micron
Stitch Density (stitches/m ²)	Not less than 54500
Face Primary Backing	Polypropylene rot proof high strength material
Secondary Backing	Latex or polyurethane to lock the tuft in place
Shock Pad	In-situ and or prefabricated
Backing Coating	Latex or PU
Ribbon Texture	Non fibrillating texturised mono filament
Ribbon Nominal Denier	Not restricted to be provided by manufacturer
Total Weight	Not less than 2500 gms/m ²
Pile Weight	Not less than 1600 gms/m ²
Backing Weight - Primary	Not less than 180 gms/m ²
Backing Weight - Secondary	Not less than 180 gms/m ²
Coating Weight	Not less than 800 gms/m ²
Pile Height	Not less than 18mm
Quality	Must be a heavy metal free product
Pile turf withdrawal force ISO4919	Not less than 24N
Number of tufts per 10cm of surface	Not less than 25

2.2.3.4 *Markings*

Permanent line markings shall be installed as set out in the requirements. All other line markings (Tennis and Basketball) shall be cut, taped and glued into the carpet. The carpet specification shall be of the exact same carpet as the parent turf system and shall be in accordance with this specification requirement in terms of layout and colour. All line markings which are cut into the turf shall be installed and bonded to the panels of carpet using broad woven backing tape 400mm wide with a 3mm application of glue spread using a box screed onto the backing tape in even, regular wide rips.

The Contractor shall ensure that line markings are accurately set out and installed. The top surface of all line markings shall be within a tolerance of plus/minus 2mm of the adjacent carpet surface when measured under a 300mm straightedge regardless of type and shall be consistently laid so no bumpy irregular seams.

Nibs for goals shall be small white squares 100mm x 100mm and shall be securely fixed to the backing tape and set out so as to be flush with the surrounding turf. All cut in lines shall be fitted prior to adding fill materials.

2.2.3.5 *Seams*

There shall be no head joints or transverse seams in the playing area or within 300mm of a line marking component.

Rolls shall be jointed using plastic film backed cloth geotextile of minimum width 300mm under seams and 400mm under inlaid lines using the correct amount of a suitable polyurethane adhesive to fill the cavities created by the lines of stitching extruding from the carpet backing and form a continuous homogenous surface. The adhesive shall be applied across the full width of the geotextile backing less 50 mm (to prevent possible adherence of the turf to the shockpad to give a seam peel strength not less than 25N/mm when tested as BS EN15330 Clause 4.3.2. Jointing work shall not be carried out when the ground and/or air temperature is below 8°C.

2.2.3.6 *Joints*

The method of seaming used to join the adjacent rolls of synthetic turf materials shall be such that when tested in accordance with BS 7044 sub-section 2.5 (2) the strength of the seam shall be greater than;

a) Peel Strength – 0.30N/mm or

b) Tensile strength – 25N/mm (This is an onerous requirement and requires high grade backing tape) and further - the peel strength will remain unaltered following water immersion.

There shall be no gap between adjacent rolls caused by poor trimming of the carpet. Gaps of greater than 2mm will be checked and may be required to be repaired.

2.2.3.7 *Sand Fill*

The silica sand infill to the turf shall consist of lime free, predominately quartz, non-abrasive, non-staining, rounded, dust-free particles of uniform grading and density, washed and dried to give a sand free from extraneous contaminants and white in colour.

The infill sand shall fully comply with the Turf Supplier's recommendation but, should no such recommendation be given, then 95% of sand (by weight) is to have a uniform particle size distribution between 0.2-0.6 mm, consisting of a minimum of 80% rounded particles. Maximum particle size must not exceed 1.2mm.

The level of sand at completion is to be in accordance with the Turf Supplier's recommendation and be such as to ballast the carpet and support the pile.

The Contractor shall allow for a minimum of two applications of infill sand one to initially brush the carpet in the first four weeks of operation which will include top dressing as necessary to ensure that a) the pitch performs as intended very early in the life of the facility b) to ensure that when tested the pitch meets the FIH requirements.

Also the Contractor shall carry out re-dressing of the whole of the pitch at six months if required. This work should be allowed for in the bid price, it is anticipated that a minimum of 10 tonnes of sand will be required for this operation to top up the pitch.

2.2.3.8 *Quality Control*

The Contractor is to provide assurances in terms of flammability via certification in accordance with BS 5867-1:2004.

Colour must be consistent throughout; there must be no colour variation in the form of streaks or blemishes in any panel; additionally each panel of turf must be consistent in colour when compared to the reference sample and or all adjacent panels. Where colour variations are noted the employer or his representative will determine the acceptability of the variation and whether or not subsequent replacement of a panel or panels of turf is required.

There shall be no loops in the tufts, loose tufts, random long tufts, tears, holes or melted areas, bumps, pile height variations or any such blemish which would otherwise not be expected from a first quality carpet.

There shall be no pronounced patterns imparted into the turf through trafficking i.e. tyre treads or other means such as loading. No tracks, gaps, step like irregularities in any panel or agglomerations in any carpet supplied.

There shall be no delamination in the backing in any component. Loose latex or PU film, all materials shall match the specification requirements and there shall be no alternative materials incorporated into the backing. The backing shall be relatively smooth i.e. not bumpy, there shall be no wrinkles, and the backing shall be fully perforated to allow water through if so designed. Were variations or deviations are noted these will be subject to approval of the employer or his Representative.

A panel of synthetic carpet as refer to in this specification is defined as a full length from kerb to kerb and a full width not less than 3.5m. All panels shall be the same dimensions generally. If replacement is deemed necessary by the employer or his Representative, this will involve full replacement of a length and width of a roll (as designed and manufactured) as no patching whatsoever will be allowed. The carpet shall be loose laid. There shall be no wrinkles in the carpet panels following installation. A wrinkle is defined as a ripple or a fold or a crease in the carpet which exceeds 2mm in height relative to the surrounding carpet. Wrinkles normally occur in numbers as a result of crushing, poor carpet fitting or a manufacturing defect. Cutting such defect out of the carpet is not allowed under this specification.

In all circumstances following installation the surface shall be free from ruts, tracks, and wrinkles, shall be consistent in ball play characteristics for all sports and above all be safe to play on.

Test procedures shall be in accordance with the FIH "Handbook of Performance, Durability and Construction Requirements for Synthetic Turf Hockey Pitches" (The Pitch Handbook) published January 2021 unless otherwise indicated.

Description of Tests to be carried out	Performance
Type of facility	MUGA
Requirement	FIH

Vertical ball rebound	100-400mm (individual tests $\leq \pm 20\%$ of overall mean)
Ball roll	$> 8\text{m}$ (individual tests $\leq \pm 20\%$ of overall mean)
Ball roll deviation	maximum deviation 3
Underfoot friction	Coefficient of friction 0.6 – 1.0 (individual tests $\leq \pm 0.2$ from mean)
Rotational resistance	30-45Nm $\leq \pm 3\%$ of overall mean
Impact response	40-65Nm $\leq \pm 5\%$ of overall mean
Pile pad deformation	Not less than 40%
Colour	Green
Porosity	600mm/per hour
Pitch slope/gradient	No fall in any direction greater than 1:100
Surface regularity	Maximum of 6mm gap below a 3 metre straight-edge no joint or other irregularity greater than 3mm under a 300mm straight edge
Pitch markings:	White

Five years after completion the installation shall still be suitable for playing to National Level and:

- a) Colour of turf must not vary by more than 2 positions on the Methuen Atlas.
- b) Shockpad joint lines must not be evident at the surface and shall not affect playing characteristics.
- c) Pile height in any area must not be less than 80% of the mean pile height determined during the installation period.

The Contractor shall provide with his Tender, a **Written Warranty**, supported by the Manufacturer's Guarantee, that the above requirements shall be met, that repairs under the terms of the warranty shall be carried out promptly to the reasonable satisfaction and convenience of the Employer using the same materials as in the original installation.

2.2.3.9 Accredited Laboratory

The Contractor shall obtain the services of an accredited independent testing station, acceptable to the Engineer.

The laboratory shall be responsible for testing, as directed by the Engineer, materials incorporated into the pitch surfacing system and in situ testing of the pitch within eight weeks

of the surfacing works being completed and again (if directed by the Engineer) eleven months after issue of the Certificate of Practical Completion.

Items for site and laboratory testing shall include for all labour, specialist supervision, materials, plant, specialist tools and all things necessary to obtain, pack, deliver and test samples and for the provision of certified results to the Engineer. The Engineer shall merely direct and superintend the obtaining of samples as he sees fit. Items include for the complete reinstatement of all parts of the Works from which samples are obtained.

Laboratory Testing of Materials

1. After allowing for any necessary period of cure all samples taken or prepared during installation shall be sent to the independent testing station.

2. Samples of shockpad prepared on boards during laying and also cut from the cured in-situ pad repairs, where directed by the Engineer, shall be tested in accordance with BS 7188 for the following:

- a) Tensile strength: to be greater than 0.15MPa.
- b) Elongation at break: to be greater than 30%.
- c) Bulk density: to be between 620 and 690kg/m³.
- d) Binder/rubber by weight: to be not less than stated in the Contract.
- e) Thickness: nominal 18mm.
- f) Porosity: not less than 5 litres/m²/min.

3. Samples of turf shall be taken from ends of carpet rolls and off-cuts and tested in accordance with EN 15330 for:

- a) Colour and colour fastness of pile to DIN 54004: between 7 and 8.
- b) Pile length height: not less than $\pm 5\%$ nominal height.
- c) No. of knots/m²:
- d) No. of ends/m²:
- e) Weight/unit area:
- f) Tuft withdrawal force:
- g) Resistance to abrasion, set, weathering and dimensional stability.

4. Seams and inlaid lines for:

- a) The seam strength by the peel method: to be not less than 0.3N/mm width.

b) The peel seam strength after ageing: to be not less than 0.25N/mm width.

5. In Situ Tests on Completed Pitch Surface System

Within eight weeks of completing the pitch surfacing works and (if directed) again eleven months after issue of the Certificate of Practical Completion of Works the Contractor shall arrange for the independent testing station to carry out a series of field tests all as described in FIH "Handbook of Performance, Durability and Construction Requirements for Synthetic Turf Hockey Pitches" (The Pitch Handbook) published February 2014 Section 7: Performance Requirements and Field Test Procedures of the FIH unless otherwise indicated excluding 7.14 Artificial Lighting as follows:

- compliance with ball/surface and person/surface interaction
- installation standards
- pitch smoothness
- pitch permeability
- colour and gloss

5. Each time the pitch is tested and inspected the independent laboratory shall submit a digital copy plus 4 bound hard copies of the test results direct to the Engineer in the form of a Report which shall include the following:

- 1) Name of facility.
- 2) Date of tests and inspection.
- 3) Weather details during testing.
- 4) All test procedures carried out. Tabulated results against specified values for the FIH Standard Level with diagrams as necessary showing:
 - Test positions and directions.
 - Visual observations giving locations and distinctive features.
 - Principal line marking dimensions checked.
 - Surface irregularities beneath a 3m straightedge.
- 5) Conclusions and discussions with respect to the surface quality.

6. The Defects Correction Certificate will not be issued, and retention monies will not be released until all tests have been successfully completed and the Pitch Test Report accepted by the Engineer.

2.2.3.10 Pitch Maintenance

Prior to the Pitch Testing described in the previous clause the Contractor shall, at a time agreed with the Employer, inspect the pitch and ensure all inlaid markings and seams are properly jointed and then add additional sand or redistribute sand as necessary so that the pitch is in best condition for testing.

Thereafter the Contractor is to arrange and carry out 3 inspections of the pitch, in the company of a representative of the Employer, during the Defects Correction Period at intervals of 5, 8, and 11 months after Practical Completion and carry out such remedial works to the turf surface as the inspection indicates are required, all as follows:

- i. thorough visual examination of the synthetic turf for wrinkles, seams or lines detaching;
- ii. check the sand infill depth;
- iii. perform repairs to the synthetic turf, seams and lines as necessary; and (iv) supply sand and top up sand infill as necessary.

The Contractor shall agree a time period with the Employer when the pitch is not in use and available for carrying out the above inspection and repairs. The Contractor shall confirm in writing to the Engineer the date of each inspection and the date and nature of works carried out, if any; and also confirm whether or not he considers the surface is being properly maintained and, if not, what additional measures are required to achieve proper maintenance.

Maintenance Schedule

One digital copy and four bound copies of a "Schedule of Recommended Aftercare and Maintenance Procedures", prepared by the turf manufacturer/installer and containing the essential maintenance information detailed in EN 15330 Annex F, shall be provided to the Engineer prior to the issue of the Certificate of Practical Completion.

The Contractor shall include in the Schedule a description of all equipment he recommends for the routine maintenance of their surface system. He shall provide the names and contact details of a minimum of four manufacturers of each such item of equipment quoting specific model numbers such that the specific items of equipment are identifiable.

The Contractor shall include in the Schedule a full description of paint types suitable for line marking, both temporarily and "permanently", the surface together with a list of approved paint suppliers.

The Contractor shall include in the Schedule a full description of recommended algaecides and fungicides for use on the surface with a list of suppliers and the recommended periods between applications and rates of application.

Information on additional guarantees, annual inspections, after sales service and instructions for the maintenance and use of the synthetic grass pitch shall be enclosed with the Schedule.

2.2.4 Base Construction & Drainage System

The Contractor is required to design, supply, install and commission a pitch sub-base and drainage system to provide stable and free draining platform on which the artificial grass surface is laid. It shall be capable of supporting and transmitting the loads placed on the surface during normal use and maintenance and provide adequate protection to the sub-grade from penetrating frosts.

The pitch shall have a drainage system designed to remove surface water from the playing surface at a sufficient rate to prevent flooding and to ensure that excess water is not allowed to build-up within the sub-base causing a reduction in its structural integrity. The drainage system should consist of a series of lateral drains laid beneath the pitch at between 5m and 8m centres, depending on site conditions. The lateral drains will connect into collector drains located on the outside of the perimeter edgings that will discharge into the existing 150mm GAA pitch collector drain.

2.2.5 Perimeter Fencing

The Contractor is required to, supply and install perimeter fencing around the MUGA Pitch. Perimeter fencing shall be 2.4m high comprising woven wire mesh. Fencing shall include two pedestrian gates and one double vehicle access gate.

Perimeter Fencing throughout to be 2.4m high 8/6/8 wire mesh with 50mm horizontal spacing and 200mm vertical spacing.

Ball stop netting to comprise 2.6m high above the 2.4m perimeter fence together with all intermediate posts, clips etc

The timber kick-board at the base of the perimeter fence should be minimum 150 x 38mm pressure treated sawn timber. Normal practice would be to use a 200 x 50mm (nominal) section, planed on two faces (i.e. 1 no 200 mm face and 1 no 50 mm face) Tanalith E treated softwood. The end of each board should be secured to each post with a minimum 2 no 8 mm CSH bolts (dome headed).

Single leaf gate frames shall be 2.4m high and 1.2m wide, constructed from a minimum of 42mm circular hollow section or 60 x 40 x 3mm RHS in filled with mesh to suit. The space above the gate should be in filled with a panel to suit.

Single gates should have lockable slide latch/bar. Handles should not protrude into the pitch. Double Leaf Gates should be a minimum of 3m wide x 2.4m high, constructed from a minimum 42mm circular hollow section or 60 x 40 x 3mm rectangular hollow section or other appropriate section. The Gate and the space above should be in filled with a welded mesh panel to match the rest of the fencing system.

Double gates should have lockable slide latch/bar and a lockable drop bolt to each leaf. Handles should not protrude into the pitch. The gates should open through 180 degrees so they close against the back of the fence. All fencing to be installed in accordance with BS 1722-10:2006 and The SAPCA Code of Practice for the Construction and Maintenance of Fencing Systems for Sports Facilities.

Perimeter fencing shall include for all foundations, supports, posts, bracing, fixings, concrete plinths, etc.

2.2.6 Access / Egress Gates:

One gate shall be provided to the facility at suitable locations to be agreed with the Client. 1 No double gate 3m wide by 2.4m high, lockable and 1 No single gate 1.2m wide by 2.4m high single leaf gate lockable. Universal Locks to be provided for both gate entrances with 3 No sets of keys to be provided.

Note: Each Lock to be identical and the one Universal key to open each of the locks. Master card to be provided for future cutting of keys.

2.2.7 Pitch Furniture

Pitch furniture to include all equipment for soccer, tennis and basketball. It shall be of the portable freestanding integrally weighted type suitable for use on an outdoor synthetic turf surface and conform to BS EN 750. The furniture must be obtained from a reputable manufacturer of such equipment and be approved by the Engineer and Employer. The Contractor shall forward such details of the furniture as the Engineer may request to ascertain its acceptability to the Employer.

2.2.8 Floodlighting

The Contractor is required to design, supply, install and commission floodlighting to the All Weather MUGA. The minimum requirement for floodlighting shall be 4 No 12m high lighting columns with 1.5 – 2 kW floodlights on each lighting column capable of maintaining an average horizontal illumination level of **250 LUX**.

There shall be a control switch installed on the lighting column located nearest to the Entrance Gate and a switch also located in the Changing Rooms at Nace O'Dowd Park.

There shall be a control switch on this column and in the Changing Rooms and 3 No sets of keys provided to Client for lockable cabinet within the lighting column. The Surface Illuminance shall be in accordance with FIH Recommendations for a Class 4 Pitch.

2.3 Access to Site by Third Parties

The Contractor shall accommodate all access requirements to and from the grounds and ensure that safe access and egress are provided at all times, including night, weekends, and holidays. The Contractor is required to liaise with the Employer's Personnel undertaking these works and develop methods of working so as to minimise insofar as possible disruption to either party.

2.4 Minimisation of Environmental Impacts

2.4.1 Prevention of Pollution

Works within Nace O'Dowd Park shall be managed so that it will not cause pollution to the surrounding environment. In particular, the Contractor shall undertake his works so as to prevent pollution to the surrounding environment by any of the following potential contaminants:

- Surface water run-off;
- Contamination of surface waters;
- Spillages;
- Light, and
- Noise

2.4.2 Minimisation of Visual Impact

The overall All Weather MUGA shall be designed so that the facility has a minimal negative visual impact on the surrounding environment. Contractor shall see that the aesthetics of the project are in accordance with proper planning.

3 SECTION 3 – TESTING DURING THE WORKS

3.1 General

This section details the requirements for testing of plant, materials, and workmanship during the Works. The purpose of the testing is to certify that the plant and materials supplied and the workmanship carried out are in accordance with the Contract. In particular, the tests are intended to assess the different elements of the Works that cannot be properly assessed by the Tests on Completion. This section covers all plant and materials provided by the Contractor for inclusion in the Works and also includes any individual components not directly purchased by the Contractor but provided as part of a larger item. The tests are to be carried out in accordance with Clause 8.4 of the Conditions of Contract.

3.2 Plant and Materials (Generic Items Controlled by a Standard)

3.2.1 General

This section is intended to cover plant and materials which are of a common design and available from a range of manufacturers.

3.2.2 Standards Incorporating Testing Procedures

The Contractor shall provide certificates for all analyses and tests required to be carried out by the product manufacturer, as part of his required procedures under the particular standard. The certificates provided shall be relevant to the manufacturing period for the order placed by the Contractor with the manufacturer. Certificates shall be provided for each separate order placed by the Contractor.

3.2.3 Standards Not Incorporating Testing Procedures

The Contractor shall discuss the possible testing options with the product manufacturer and shall provide the Employer's Representative with the details of the options and the associated costs for the tests. The Contractor shall provide the information to the Employer's Representative a minimum of 3 weeks in advance of any required notification to proceed with the tests. The Employer's Representative shall decide upon the requirement for the tests for each product on an individual basis. The Contractor shall provide the Employer's Representative with the opportunity for testing any product for each order placed on behalf of the contract.

3.3 Plant and Materials (Proprietary Items Controlled by a Standard)

3.3.1 General

This section is intended to cover plant and materials which differ in their design between different manufacturers but have a common standard that determines the quality and/or performance of the final product.

3.3.2 Standards Incorporating Testing Procedures

The Contractor shall provide certificates for all analyses and tests required to be carried out by the product manufacturer, as part of his required procedures under the particular standard. The certificates provided shall be relevant to the manufacturing period for the order placed by the Contractor with the manufacturer. Certificates shall be provided for each separate order placed by the Contractor.

3.3.3 Standards Not Incorporating Testing Procedures

The Contractor shall discuss the possible testing options with the product manufacturer and shall provide the Employer's Representative with the details of the options and the associated costs for the tests. The Contractor shall provide the information to the Employer's Representative a minimum of 3 weeks in advance of any required notification to proceed with the tests. The Employer's Representative shall decide upon the requirement for the tests for each product on an individual basis. The Contractor shall provide the Employer's Representative with the opportunity for testing any product for each order placed on behalf of the contract.

3.3.4 Testing of Aspects of the Product Not Covered by the Standard

The Contractor shall provide the Employer's Representative with a comprehensive list of proprietary plant and materials and the associated specifications and manufacturers prior to final negotiations. The Employer's Representative shall respond within 5 working days with details of any aspects of the plant and materials, where the option of tests are required.

The Contractor shall discuss the possible testing options for these aspects with the product manufacturer and shall provide the Employer's Representative with the details of the options and the associated costs for the tests. The Contractor shall provide the information to the Employer's Representative a minimum of 3 weeks in advance of any required notification to proceed with the tests. The Employer's Representative shall decide upon the requirement for the tests for each product on an individual basis. The Contractor shall provide the Employer's

Representative with the opportunity for testing any product for each order placed on behalf of the contract.

3.4 Plant & Materials (Proprietary Items Not Controlled by a Standard)

3.4.1 General

This section is intended to cover plant and materials which differ significantly in their design between different manufacturers and do not have a common standard that determines the quality and / or performance of the final product.

3.4.2 Determination of Testing Requirements

The Contractor shall provide the Employer's Representative with a comprehensive list of proprietary plant and materials and the associated specifications and manufacturers prior to final negotiations. The Employer's Representative shall respond within 5 working days with details of any aspects of the plant and materials, where the option of tests are required.

The Contractor shall discuss the possible testing options for these aspects with the product manufacturer and shall provide the Employer's Representative with the details of the options and the associated costs for the tests. The Contractor shall provide the information to the Employer's Representative a minimum of 3 weeks in advance of any required notification to proceed with the tests. The Employer's Representative shall decide upon the requirement for the tests for each product on an individual basis. The Contractor shall provide the Employer's Representative with the opportunity for testing any product for each order placed on behalf of the contract.

3.5 Workmanship

3.5.1 General

This section is intended to cover activities, either manual or automated, whereby the quality of the work has a significant impact on the quality, performance, or aesthetics of the finished product.

3.5.2 Testing Procedures

The Contractor shall notify the Employer's Representative of all activities, requiring good quality workmanship, at least 2 weeks before the programmed commencement of the work. The Employer's Representative shall then agree with the Contractor on the location of a trial area where the quality of the workmanship can be tested and assessed.

4 SECTION 4 - TESTS BEFORE SUBSTANTIAL COMPLETION

4.1 General

This section details the Tests before Substantial Completion. The purpose of the tests described under this section is to provide for a fully functional completed installation that operates in an effective, reliable and efficient manner. The tests will consequently focus on the operation of the individual items, the interaction between the different elements of the facilities and the proving of the overall process, equipment and facilities.

The Tests before Substantial Completion will consist of two separate stages, or phases, as follows:

- Works Inspection; and
- Demonstration of the Works.

The details of the requirements for each of the stages are outlined further below. It should be noted that if the works put forward by the Contractor fail to pass the Works Inspection, being the first stage of the Tests before Substantial Completion, then the works will be considered to have failed the Tests before Substantial Completion and the second stage of the tests will not be progressed. Similarly the Contractor will not be permitted to progress to the third phase or fourth phase of the Tests before Substantial Completion, until after the completion of the second or third phase, as appropriate.

The Contractor will not be entitled to submit part of the Works, or part of a Section of the Works, for testing with the intention of submitting uncompleted items at a later stage, unless such a separation of the testing is necessary for the Contractor's efficient working, and the Contractor's specific requirements have been identified in the Works Proposals.

Any elements of the Works, which will be covered up, or otherwise not easily accessible, when the installation is complete may be submitted for testing in advance of the Tests before Substantial Completion, provided that any such advance testing requirements have been identified in the Works Proposals. In the absence of any such advance tests, the Contractor will be required to uncover any works, as necessary to permit the Tests before Substantial Completion to be carried out.

4.2 Works Inspection

4.2.1 Introduction

The first stage of the Tests before Substantial Completion will comprise an inspection of the installation to check that the construction of the facility is finished and in accordance with the Contract, including the Works Requirements and the Works Proposals. The inspection will comprise of one stage - A visual inspection of the works.

If the works fail to pass the visual inspection then the operating check will not be carried out and the works will be considered to have failed the Tests before Substantial Completion.

4.2.2 Notice

The Contractor is required to provide notice to the Employer's Representative that the Works are ready for the Works Inspection. The minimum notice period to be provided by the Contractor is 10 working days. The Contractor is not entitled to provide notice until after the checklist required for the Visual Inspection has been approved by the Employer's Representative, and a working hard copy of the relevant Safety File and Operating and Maintenance Manual are available on site for the use of the Employer's Representative.

4.2.3 Visual Inspection

4.2.3.1 Introduction

The visual inspection will be carried out by the Employer's Representative and will include all elements of the Works proposed for the Tests before Substantial Completion. The purpose of the visual inspection is to ensure that the Works have been properly constructed and are ready for subsequent tests.

4.2.3.2 Visual Inspection Procedures

The Contractor will provide a checklist to assist the Employer's Representative in carrying out the visual inspection. The Contractor's checklist will be subject to approval by the Employer's Representative and will initially be provided in draft form to allow for comments. The checklist will be specific to the Works being tested and will be provided in adequate time to allow for review and final agreement on the content and form.

The Contractor will provide any facilities, assistance and attendance necessary for the Employer's Representative to carry out the visual inspection. In particular the Contractor will provide any facilities necessary to allow the Employer's Representative to access the facilities.

The Contractor will provide representatives knowledgeable on all aspects of the works who will be available during the visual inspection to answer any queries by the Employer's Representative regarding any element of the works.

The Employer's Representative will issue a report to the Contractor and the Employer within seven working days after the completion of the visual inspection.

4.2.3.3 *Warranty of the Pitch Surface System*

The Contractor shall provide the Employer with a warranty which will guarantee the following for a period of 8 years commencing on the date of issue of the Certificate of Practical Completion:

- a. The suitability of the complete synthetic turf system for the purpose of MUGA.
- b. The durability and resistance to environmental damage of the shockpad repairs and the synthetic turf will be in accordance with the specification and that which would be reasonably expected of a system classified for heavy duty outdoor use for playing when maintained in accordance with the manufacturer's Maintenance Schedule
- c. The durability and overall integrity of the seams jointing carpet rolls and inlaid lines, where applicable.
- d. General freedom from wrinkles of the turf surface.

The warranty shall be deemed to cover all costs and expenses the Contractor may incur for rectification of defects caused by faulty materials or workmanship on the carpet and/or shockpad repairs during the 8 year period. All defects will be notified to the Contractor within 14 days from their detection.

4.2.3.4 *Maintenance Demonstration*

The Contractor shall, at a mutually agreed time within 2 weeks of Practical Completion, provide on-site training of the Employer's representatives in the inspection and maintenance of the synthetic turf surface including brushing/redistribution of the infill to maintain the correct infill level; and removal of debris, litter, weeds, ice and snow. Spraying of the surface to prevent algal and fungal growth.

The Contractor shall also advise of long term maintenance which may involve specialist machinery to rejuvenate the surface and when the necessity for such rejuvenation will manifest. The Contractor should allow a minimum of 3 hours for provision of on-site training.

4.2.3.5 *Sand for Pitch Maintenance*

If directed at the commencement of the Defects Correction Period the Contractor shall provide the Employer with 250kgs of dry infill sand [Specification 16.09(3)] in 25kg sealed plastic bags on a pallet to deal with future localised areas of wear. The sand shall be delivered to the Employer's storage. It should be noted that this sand will not be available to the Contractor for topping up purposes during the Defects Correction Period.

5 SECTION 5 – INFORMATION REQUIREMENTS DURING WORKS

5.1 General

The Works shall be provided by the Contractor in accordance with the Work's Requirements and the proposal accepted by the Employer during the tender process. The Contractor shall submit the detailed design for the works to the Employer's Representative for review. This section provides details of the minimum information requirements considered necessary to allow the review of the Contractor's design and provide a record of the Works for the Employer. The information provided shall also be used to determine that the facilities being provided by the Contractor are compliant with the Work's Requirements. These requirements are additional to any obligations on the Contractor for the supply of information and documents as specified in the Conditions of Contract.

The information shall be provided on a staged basis in accordance with an agreed programme. The Employer's Representative shall require a minimum period of two weeks to review any documentation submitted. The maximum timescale for approval will be dependent upon the amount of information submitted at any one time. In particular the review period will not be limited by the period specified in the event that a number of construction documents are submitted together. The Contractor is consequently required to prepare a detailed programme, at the earliest opportunity, for the staged submission of the required information to ensure that the reviews can be progressed in an expedient manner. The submission of the information in a manner compatible with the structured format indicated below would facilitate the expeditious review of the various documents.

The submission and review of the documentation described under this section is a pre-requisite to issue of a substantial completion certificate for the works. The documentation submitted is required to be a coherent inclusive final document encompassing all sections of the Works.

The review or approval of any documentation by the Employer's Representative does not relieve the Contractor of his obligation to provide a facility compliant with and fit for the purpose described in, the Work's Requirements.

5.2 Contractor's Documents for Review

The Contractor shall submit detailed designs and drawings for acceptance by the Employer's Representative after the Contract is awarded. Details of the form of submission, recipients, programme for submission etc., shall be agreed at the start-up meeting following the contract

award. Although electronic submission is anticipated, the contractor shall provide up to two hard copies of submissions at no extra cost if requested to do so by the Employer's Representative.

The Contractor shall design and fully detail the Works to ensure they are constructed in an efficient and co-ordinated manner. The Contractor shall not commence any construction work until the relevant Contractor's Documents have been submitted to the Employer's Representative for comment and no comments have been given or the time specified for such has expired.

All drawings submitted to the Employer's Representative shall be thoroughly checked by the Contractor before submission. Information submitted by the Contractor shall include the following:

- Layout plans of the proposed works with leading dimensions;
- General arrangement drawings of all principal components of the Works including plans, sections, drainage design and elevations;
- Lighting and ducting layout drawings including light illumination drawing over the playing surface;
- Design calculations;
- Structural drawings showing anchorage of principal fencing components;
- Fabrication drawings of principal components

The Contractor shall continually update the Contractor's Documents throughout the design and construction stages to record all changes and developments in the designs.

5.3 Progress Photographs

The Contractor shall provide a set of digital photographs at monthly intervals to the Employer's Representative. The positions and timing of the progress photographs shall clearly indicate daily progress at all active sites. The photographs shall be given to the Employer's Representative at the monthly progress meeting or at any other time as reasonably requested. Such photographs shall be deemed to be the property of the Employer. The cost of such photography and the compilation of photos shall be included in the Tender. The digital photos must be submitted in email format and be clearly labelled and dated.

5.4 Temporary Works & Pumping

The design, fabrication, and installation of all temporary works, necessary for the Works to be constructed, shall be the responsibility of the Contractor. They shall submit detailed proposals and drawings of such temporary works for the Employer's Representatives review before commencing work. Review of such proposals or drawings shall not relieve the Contractor of his absolute responsibility for the adequacy or safety of such temporary works. The Contractor is required to keep the excavations and all temporary works free from water. All costs are deemed to be included in the Contractor's tender.

5.5 Safety File

The Contractor shall provide a Safety File in accordance with the Contractor's role as Project Supervisor for the Construction Stage under the Safety, Health and Welfare at Work (Construction) Regulations, 2013 for the works. The table of contents for the Safety File shall be as follows:

Item	Information required for the Safety File	Provider
1	The general design criteria adopted	Designers
2	Material and other specifications including all material testing records and records confirming specification compliance	Designers
3	Drawings	Designers
4	Critical factors in safe demolition	Designers
5	The maintenance requirements and procedures for the structure	Designers
6	As built drawings	PSCS
7	Operation and maintenance manuals	PSCS (Specialist contractors or suppliers)
8	Certificates of test and inspection	PSCS (Specialist contractors or suppliers)
9	Details of the equipment and maintenance facilities provided	PSCS (Specialist contractors or suppliers)
10	Details of the location and nature of utilities and services	PSCS (Local Authority / Utility)
11	Details of the location and nature of emergency systems	PSCS (Local Authority / Utility)

5.6 Design File

5.6.1 General

The Contractor is required to produce and maintain a Design File for the Works. The Design File shall be a complete and comprehensive record of the detailed design of the facilities, including any modifications to the design made during the Works. The file shall include separate sections for each of the design stages described below.

The Contractor shall maintain a copy of the file at the site offices, available for inspection, during the Works. This document shall be the basis for the assessment of the Contractor's compliance with the requirement for a Design File as a prerequisite for a Certificate of Substantial Completion. Once the Certificate of Substantial Completion has been issued the Contractor shall make any required modifications to the Design File and issue the master file and a copy to the Employer. The quality of the copy document shall be equivalent to the master copy.

The Design File shall be provided in an appropriate bound format with front and side labels indicating the project and file title and the series number of the Design File and the volume. Each Design File shall include a table of contents which shall list the entire file contents with the contents specific to the volume highlighted.

5.6.2 Executive Summary

The Contractor shall provide an executive summary of the contents of the design file. The executive summary shall provide details of the contents of the individual sections and volumes of the design file.

5.6.3 Site Layout

The Contractor shall provide layout drawings detailing the arrangement of structures, services, and other elements on the site.

5.7 Ancillary Services and Utilities

The Contractor shall provide documentation detailing the ancillary services and utilities required at the facilities as necessary, including electricity, water, heating, and ventilation.

5.8 Detailed Design

The Contractor shall provide full details of his detailed design for the facilities to comply with the Work's Requirements. The following specific items are considered to represent the

minimum level of documentation to be required to allow a full and proper assessment of the Contractor's proposals.

5.8.1 General Arrangement Drawings

The Contractor shall provide general arrangement drawings detailing the layout of the All Weather MUGA to include all individual equipment and other materials to be constructed and installed.

- Design layout drawings;
- Drainage layout drawings;
- Perimeter fencing drawings;
- Line marking drawings;
- Ducting layout drawings;
- Plans, specifications, isometric views;
- Flood lighting Illuminance (Lux) Contour and graphical display.

5.8.2 Detailed Electrical Design

The Contractor shall provide his design calculations and associated drawings and wiring diagrams for all lighting to be provided on the All Weather MUGA.

5.8.3 Schedules of Equipment & Materials

The Contractor shall provide his detailed schedules of equipment and materials.

5.9 Operation and Maintenance Manuals

5.9.1 General

The Contractor is required to produce an Operating & Maintenance (O&M) Manual for the Works (two hardcopies shall be provided). The O&M Manual shall be a complete and comprehensive document describing the procedures and methods for the operation and maintenance of the facility.

The Contractor shall maintain a copy of the manual at the site offices, available for inspection, during the Works. This document shall be the basis for the assessment of the Contractor's compliance with the requirement for an Operating and Maintenance Manual as a prerequisite to issue of a Substantial Completion Certificate. Once the Substantial Completion Certificate has been issued, the Contractor shall make any required modifications to the O&M Manual and issue the master file and a copy to the Employer. The quality of the copy document shall be equivalent to the master copy.

5.9.2 Executive Summary

The Contractor shall provide an executive summary of the contents of the O&M Manual. The executive summary shall provide details of the contents of the individual sections and volumes of the design file.

5.9.3 Manual Contents

The O&M Manual shall contain separate sections detailing the relevant information for the following topics.

- Introduction: Summary of the project history and purpose.
- Health & Safety: General commentary on the Health and Safety duties of the organisation responsible for operating the facility. Advice on specific hazards present on the facility and recommendations for dealing with visitors to the facility
- General description of the equipment installed. Each unit operation shall be described and its purpose as part of the facility detailed.
- As Constructed Drawings: A3 size reduced copies of the final drawings detailing all installed items.
- Equipment Schedule: Detailed list of the equipment provided. Each item of equipment shall be identified complete with the details of the duty, manufacturer, nameplate, and consumables.
- Maintenance Schedule: List of duties required of the operating staff separated into daily, weekly, monthly and yearly duties. This section shall also include details for commissioning, decommissioning and calibrating items of equipment. Model record sheets shall be provided for guidance.
- Manufacturer's Literature: Original literature not photocopies from the equipment manufacturers.

5.10 As Constructed Drawings

The Contractor shall prepare record details, at regular intervals throughout the contract, updating the original drawings in such a way as to show the actual construction with all pertinent levels, measurements, construction details, or details of construction or installation for which he is responsible.

The Contractor shall submit such details to the Employer's Representative who, when satisfied that the drawings conform to the requirements of this Clause, shall arrange for the completion of drawings for final presentation in the form of 'As Constructed Drawings' to the Employer or his Representative. This shall include survey information of the as-built structures and details of services encountered.

The provision of any design file requirements, including As Constructed details, outstanding at the time of any Substantial Completion Certificate shall be listed as, and have the status of, minor works to be completed in accordance with the Conditions of Contract.

5.1 Construction Records

The Contractor is required to produce and maintain the Construction Records for the Works. The Construction Records shall be a complete and comprehensive record of all construction activities during the Works. The monthly progress reports required under Clause 4.10 of the Conditions of Contract shall form the basis for the records.

The Contractor shall maintain the Construction Records at the site offices, available for inspection, during the Works. This document shall be the basis for the assessment of the Contractor's compliance with the requirement for Construction Records as a prerequisite for Substantial Completion Certificate.

The Construction Records shall be provided in an appropriate bound format with front and side labels indicating the project and file title. Records shall include the following, where applicable:

- (a) Pre-construction records - records of services, levels, structures, and other surveys etc.
- (b) Records of progress of the works, details of delays, etc.
- (d) Records of volumes of materials and types of materials excavated.
- (e) Records of the course being of the correct dimensions and layout,
- (f) Safety records.
- (g) Quality control records.
- (h) "As Constructed" Records.
- (i) Records of any testing completed during the works.
- (j) Other recording as the Employer's Representative may see fit, and as may be necessitated by the Contractor's method of working.

The Contractor shall allow the appropriate staffing resources to adequately keep and maintain these records throughout the Contract. The records shall be kept in digital format and appropriate computer software shall be used for storage of records.

Upon completion of the Works, the Contractor shall compile all records into an indexed and referenced "Record of the Works", suitable for handing over to the Employer. The "Record" shall be supplied in paper format (2 number of copies), and in a suitable digital format. These records shall become the sole property of the Employer.

The Contractor shall provide 3 No copies of the Operating and Maintenance Manuals properly bound in durable plastic folders with the name of the project clearly printed on the spine and front cover. The manuals shall be produced in accordance with the recommendations contained in the relevant Standards and shall contain the following information as a minimum:

- An index.
- Comprehensive operating instructions for the whole facility.
- Schedule of routine maintenance for all items of equipment installed.
- Operating instructions for all specialist systems.
- Schedule of routine tests for all equipment installed.
- Copies of all test sheets, records, completion certificates etc.
- Schedule of all equipment installed giving name and manufacturer, reference number etc.
- Manufacturer's catalogue and maintenance guides for all items of equipment installed.
- A list of recommended spares.
- A list of record drawings together with a set of folded paper prints of the drawings enclosed in individual plastic envelopes bound into the manual.

6 SECTION 6 – OTHER CONTRACTUAL REQUIREMENTS

6.1 General

This section provides information that the Tenderer requires to prepare their Tender and that the Contractor requires to fulfil their obligations under the Contract. The information is provided under this section since it does not fit readily into one of the sections detailing the Employer's specific requirements.

The information provided consists of the following:

- Confidentiality and Publicity
- Construction Activities
- Site Facilities

6.2 Water Level Range/Flood Levels

The Contractor should take into consideration, when designing any permanent or temporary works, any effects which varying surface water levels, high rainfall events and dry periods might have on the works. The Contractor shall provide in his rates for fully accommodating the effects of these events on the temporary works, during the construction period and shall provide that such events are considered during the detailed design of the permanent works. The sequence of work must carefully consider varying water level risk in these areas.

6.3 Planning and other Consents Obtained by the Employer

Development approval is in accordance with the Planning and Development Acts, and associated Regulations.

6.4 Consents to be obtained by the Contractor

Any permissions, agreements, or similar to be obtained from, or any liaison or other interaction required with:

- the Employer in their role as an authority with public, legal or statutory obligations OR
- any public provider of services or utilities, whether in respect of existing services or utilities currently present, or existing or new service or utilities being installed or maintained concurrently with the Works OR
- any other person or body in their role as an authority with public, legal or statutory obligations,

Other Consents to be obtained by the Contractor include, but are not limited to the following:

- Permission to connect to or divert utilities

6.5 Reinstatement

6.5.1 General

The Contractor shall be responsible for the restoration of the existing All Weather MUGA and surrounding area in the event that they are damaged as a result of the works.

6.5.2 Roads & Footpaths

The Contractor shall inspect the condition of all kerbing, roads, including footpaths and verges either public or privately owned, which will be used for access to the Site during the Contract Period and shall agree their conditions with the Employer's Representative and the appropriate third party before the Contract commences. Pre-condition surveys (including photos) of existing structures and amenities shall be submitted by the Contractor in advance of works for record purposes. The Contractor, at their own expense, shall repair all such roads, footpaths and verges upon completion of the Contract to a condition at least as good as before the work commenced.

6.5.3 Temporary Works Areas

The Contractor shall reinstate the surfacing of all site compounds and access routes on completion of the Works. The Contractor shall clear the site and remove all site offices and accommodation as soon as is practicable after completion of the Works on that part of the Site. All temporary land take areas affected by compaction arising from construction activity and operations shall be ripped where appropriate using suitable machinery to sufficient depth necessary to alleviate any compaction. Ripping shall be undertaken in advance of reinstatement of topsoil profiles and landscape finishes. Topsoil profiles shall be reinstated to match the profiles as they existed prior to the works. Any boundary walls, planting or vegetation removed or damaged during the construction shall be reinstated to a condition at least as good as before the work commenced.

6.6 Publicity

The Contractor shall erect a sign at the agreed location to publicise the scheme. The sign shall be a minimum 1.2m high by 1.2m wide and shall be of mild steel construction or similar approved. The Contractor is responsible for the supply and erection of the Public Information Board. The exact location shall be agreed on site with the Employer's Representative. The Public Information Board shall be to an agreed detail prior to fabrication.

6.7 Confidential Nature of Contract Documents

The Contractor shall treat the Contract Documents, and everything contained therein as private and confidential. The Contractor shall not publish any information, drawing, or photograph concerning the Works and shall not use the Site for the purpose of advertising except with the written consent of the Client, or as detailed on the Contract Notice Boards.

6.8 Water for the Works

All water required for the construction of the Works or for any other purpose shall be provided by the Contractor, at his own cost. The Contractor shall pay all charges for the connection into the public main, where allowed, and for all water charges during the course of the contract.

6.9 Compounds and Site Access

6.9.1 Access and Site Boundaries

Site Boundaries are as shown on the contract drawings. The Employer shall permit access for the Contractor within the boundaries shown on the Specimen drawings. The Contractor may negotiate separately for additional lands, accesses, and site compound he deems necessary for the construction of the works in accordance with his design and method of works. The Contractor must keep the Employer's Representative informed of all such negotiations and provide details of the negotiated agreement.

6.9.2 Fencing of the Site

Temporary security fencing/barriers to all working areas of the site shall be provided by the Contractor under this contract. The fencing shall comply with the recommendations for works on or adjacent to public roads and appropriate warning signs and lights shall be properly installed and maintained. The Contractor should note the proximity of the site to residential areas and businesses and the necessity of preventing access to the site by the public.

6.10 Spill Event

The Contractor shall make available spill kits at all times for the duration of the contract period. The spill kit shall be of a suitable size to suit the volume of liquid being stored at the site.

6.11 Water Quality

The Contractor must not carry out any operations, which might adversely affect the water quality in watercourses. Such activities would include:

- a) Allowing deleterious materials from excavations, or from use of or cleaning of plant and machinery to infiltrate ground water, water courses etc.

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- b) Allowing “wash out” associated with removing excess grout, lubricant, etc associated with the work to infiltrate ground water, water courses etc.
 - c) Allowing spillages of fuel, cement or other pollutants entering the watercourses or water supply sources.

7 SECTION 7 – GENERAL WORKS SPECIFICATION

7.1 General

This section details general requirements of the Employer, which the Contractor is required to comply with when relevant to the works being undertaken as part of the Contract. The Contractor shall be required to assume complete responsibility for the entire Engineering Works for the Works.

7.2 Engineering Specification

The general civil specification for this contract is the UKWIR Ltd., publication Civil Engineering Specification for the Water Industry 6th Edition. The Contractor's attention is drawn to the general civil specification amendments contained in Section 8 of these Documents. The above is herein after referred to as the General Civil Specification.

7.3 Standards and Specifications for Plant and Materials

The works shall be designed, manufactured, constructed, and operated in accordance with all Irish Statutory Regulations and harmonised European Standards where they exist. Where harmonised European Standards do not exist, Irish Standard Specifications and Codes of Practice or their equivalent in other Member States should be used. Where the design or choice of plant and materials is affected by current relevant Health and Safety legislation the plant and materials shall comply with all the relevant sections of the legislation. If the Contractor offers plant or materials to other standards, these standards should be equal or superior to that specified above, and full details of the difference shall be supplied. The Employer reserves the right to approve or reject plant and materials manufactured to a standard that he, at his sole discretion, deems to be unacceptable.

All works, plant and materials required under this Contract shall be in compliance with the requirements of this Specification and standards therein. Nothing stated in this Specification shall be construed as discriminating against products and materials manufactured in any Member State of the European Community which provides an equivalent guarantee of safety and suitability.

7.4 Compliance with Standards

The equipment and plant supplied shall be of the highest quality, and correspondingly the installation shall be of the highest quality and shall comply with best practice. The design,

construction, installation, materials etc. shall comply with the following standards and regulations: -

- Republic of Ireland Standards and/or Codes of Practice
- Eurocodes and/or Codes of Practice
- International Standards and/or Codes of Practice at least equivalent to those specified.
- Building Regulations
- Regulations for electrical equipment in buildings as published by the Institution of Electrical Engineers
- Regulations of the Electricity Supply Board of the Republic of Ireland for low-voltage power supply installations
- Regulations of the Electricity Supply Board of the Republic of Ireland for medium voltage power supply installations
- All other statutory instruments and regulations relevant to the Contract and current at the date of tender.

7.5 Electrical Design Requirements

The provision of power required by the Contractor during the construction of the works shall be the responsibility of the Contractor. The Contractor shall design the electrical power systems to suit the ratings and load duties of the installed equipment and any standby systems he proposes.

8 SECTION 8 – AMENDMENTS TO GENERAL CIVIL SPECIFICATION
SUBSTITUTE, ADDITIONAL AND DELETED CLAUSES

SECTION 1: GENERAL

1.8 LEVELS AND REFERENCE POINTS

1.8.2A Ordnance Datum, Pre-Contract Levels and Reference Points

1.15 WORKS AFFECTING WATERCOURSES

1.15.4S Approval of Work

1.17 APPARATUS OF STATUTORY UNDERTAKERS, HIGHWAY OR ROADS AUTHORITY AND OTHERS

1.17.4S Compliance with Statutory Undertakers

1.19 EMERGENCY SERVICES

1.19.3A Site Security

1.21 ENVIRONMENT & SUSTAINABILITY

1.21.2A Noise Suppression

1.21.3A Vibration Limits

1.21.4A Prevention of Pollution

1.23 ASSET RECORDS

1.23.1S Details of Works Constructed

1.23.2A As-Constructed Drawings

SECTION 2: MATERIALS

2.54S GRANULAR SUB-BASE MATERIAL

2.54.1S Sub-base grading

2.54.2S Compaction of sub-base

2.54.3 – 2.54.8 These sub-clauses shall be deleted

SPECIFICATION

1. The Specification shall be the "Civil Engineering Specification for the Water Industry, 6th Edition", (CESWI6) published by UK Water Industry Research Ltd in June 2004, augmented by the Supplementary Clauses.
2. CESWI6 is available from: WRc plc, Frankland Road, Blagrove, Swindon, Wiltshire SN5 8YF. Telephone: 0044 793 865138. Web: www.webookshop.com.
3. In so far as any Supplementary Clause may conflict, or be inconsistent, with any provision of the "Civil Engineering Specification for the Water Industry, 6th Edition", the Supplementary Clause shall always prevail.
4. Substitute Clauses are indicated by the suffix "S".
5. Additional Clauses are indicated by the suffix "A".
6. Where a Clause in the Specification relates to work goods or materials which are not required for the Works it shall be deemed not to apply.
7. In so far as any technical standard in this specification may conflict, or be inconsistent with, any provision regarding "Technical Specification" in the European Communities (Award of Public Authorities Contracts) Regulations 2006, or European Communities (Award of Contracts by Utility Undertakings) Regulations 2007, said Regulations shall always prevail.

SECTION 1: GENERAL

1.8 LEVELS AND REFERENCE POINTS

1.8.2A Ordnance Datum, Pre-Contract Levels and Reference Points

The levels in the Works Requirements, and on the Drawings, refer to **Ordnance Datum Malin Head**.

1.8.3A All surveys shall be referenced to the Irish National Grid and to Ordnance Datum Malin Head.

1.15 WORKS AFFECTING WATERCOURSES

1.15.4S Approval shall be obtained for all temporary discharges, crossings or diversions to watercourses from the local authority, environmental protection agency or other appropriate bodies, and the work shall comply in all aspects with their requirements.

1.17 APPARATUS OF STATUTORY UNDERTAKERS, HIGHWAY OR ROADS AUTHORITY AND OTHERS

1.17.4S The HSA Guidance Notes, Statutory Undertakers and private company requirements shall be fully complied with when working in the vicinity of their apparatus.

1.19 EMERGENCY SERVICES

1.19.3A The Contractor shall be responsible for site security.

1.21 ENVIRONMENT AND SUSTAINABILITY

1.21.2A Noise Suppression

The level of noise resulting from the construction of the Works shall not constitute a nuisance. All plant shall be adequately silenced to conform to the requirements of B.S. 5228.

Noise restrictions shall be as follows:-

Normal Working Hours:	Shall not exceed ambient background noise by more than 10 dB(A) or shall not be greater than 65 dB(A) whichever is the lesser, measured at equivalent continuous sound level
Outside Normal Working Hours:	55 dB(A) – equivalent continuous sound level.
Night Time (11.00pm - 7.00am):	40 dB(A) - equivalent continuous sound level.

The noise levels given above shall apply at the fencing surrounding the Work Areas or at adjacent residential properties.

1.21.3A Vibration Limits

Vibrations shall be limited particularly during sheet piling, excavation, rock removal and pumping operations. Resultant ground wave velocities at adjacent structures and services shall be limited to the following:

- (i) 20mm /sec. at existing walls
10mm/sec at any structure or existing service.

1.21.4A Prevention of Pollution

The Contractor shall take adequate measures to prevent pollution of any rivers or streams in the area, by an excess of suspended material resulting from construction work. Pumping of contaminated groundwater from excavations directly or indirectly to any of the said waters shall not be permitted.

General water run-off from the site shall be settled, managed and treated then channelled such that slurry is not washed into any of the rivers or streams outlined above.

The Contractors method of working in these areas and his method for treating and discharging run-off waters shall be subject to the approval of the Employers suspension of operations causing, or threatening to cause pollution to any rivers or streams outlined above.

In such an event, all costs arising from the suspension of operations and consequent delay shall be borne by the Contract and shall not be reimbursed to the Contractor. The Contractor shall prevent spillages of diesels or other oils or chemicals into any of the rivers or streams outlined above.

1.23 ASSET RECORDS

1.23.1S Details of the works constructed, and existing services encountered during construction of the works, shall be submitted to the Contract Administrator.

1.23.2A As-constructed drawings shall be completed by the Contract Administrator and furnished to the Client.

SECTION 2: MATERIALS

2.54S GRANULAR SUB-BASE MATERIAL

2.54.1S Sub-base material shall comply with the requirements of Clause 804 Granular Material Type B of the Specification for Road Works issued by the National Roads Authority. The material shall comply with the grading requirements in Table 8/4, reproduced hereunder, of said specification.

ISO Sieve Size (mm)	Percentage by Mass Passing
63	100
31.5	80 - 99
16	55 - 85
8	35 - 65
4	22 - 50
2	15 - 40
1	10 - 35
0.5	0 - 20
0.063	0 - 7

2.54.2S Compaction of sub-base material shall be carried out by a method specified in Table 8/1 of said specification.

2.54.3 – 2.54.8 These sub-clauses shall be deleted.

APPENDIX 1 – WORKS REQUIREMENTS DRAWINGS

APPENDIX 2 – SITE IMAGES