

19.0 Appendix One

Information obtained from SSL pertaining to the specification of the all weather pitch or ATP (Artificial Turf Pitch).

Documents include:

- SSL 1982 - Front Lawn Rec - ATP Technical Information for Planning
- SSL 1982 T1 - Topographical Survey
- SSL1982 01 - Proposed ATP Site Plan
- SSL1982 02 - Proposed ATP Plan
- SSL1982 03 - ATP Isometric View
- SSL 1982 04 - ATP Elevation

Alterations and Extension to Front Lawn Sports Pavilion for Havant Borough Council
Design and Access Statement



Front Lawn Recreation Ground
High Lawn Way
Havant
Hampshire
PO9 5AN



Construction of an external 3G Artificial Turf Pitch (ATP) with fencing, floodlighting and a storage container.

Artificial Turf Pitch Technical Information for Planning to Assist the Overall Application

Client	Front Lawn Recreation Ground High Lawn Way Havant Hampshire PO9 5AN			
Project	Construction of an external 3G Artificial Turf Pitch (ATP) with fencing, floodlighting, and a storage container.			
SSL project code	SSL1982			
Document title	Artificial Turf Pitch Technical Information for Planning to Assist the Overall Application			
Document control	Revision	By	Checked	Date
	First Issue	WB		02.10.15



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Drawings

SSL1982 T1 - Topographical Survey

SSL1982 01 - Proposed ATP Site Plan

SSL1982 02 – Proposed ATP Plan

SSL1982 03 – ATP Isometric View

SSL1982 04 – ATP Elevation

SSL1982 05 - Floodlighting Scheme



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1. Introduction

- 1.1 Surfacing Standard Ltd has been appointed by Havant Borough Council to consider and develop technical information for the proposed new external Artificial Turf Pitch (ATP) with floodlights, ball-stop fencing, storage container and clean access and natural bunding and reinstatement works at:

Front Lawn Recreation Ground
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- 1.2 This information aims to be beneficial in the decision making process with respect to gaining planning permission for the proposed development.



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2. Design & Access Statement Principles

- 2.1. The National Planning Policy Framework sets out the Government's planning policies for England and how these are expected to be applied.

It sets out the Government's requirements for the planning system only to the extent that it is relevant, proportionate and necessary to do so.

It provides a framework within which local people and their accountable councils can produce their own distinctive local and neighbourhood plans, which reflect the needs and priorities of their communities.

- 2.2 Guidance on information requirements and validation, published by the Town and Country Planning (Development Management Procedure) (England) Order 2015 recommends that a design and access statement is a short report accompanying and supporting a planning application to illustrate the process that has led to the development proposal, and to explain the proposal in a structured way. The level of detail required in a design and access statement depends on the scale and complexity of the application, and the length of the statement varies accordingly. Statements must be proportionate to the complexity of the application, but need not be long. Further published recommendations are:

- Design and access statements help to ensure that development proposals are based on a thoughtful design process and a sustainable approach to access.
- Statements should improve the quality of proposals: in preparing the design and access statement, developers need to consider and subsequently explain the merit of the design and how it relates to the existing setting.
- Design and access statements enable local planning authorities to better understand the analysis which has underpinned the design and how it has led to the development of the scheme. This helps negotiations and decision-making and should lead to an improvement in the quality, sustainability and inclusiveness of the development.
- Design and access statements allow local communities, access groups, amenity groups and other stakeholders to involve themselves more directly in the planning process without needing to interpret plans that can be technical and confusing. This helps to increase certainty for people affected by development and improve trust between communities, developers and planners. It also enables the design rationale for the proposal to be more transparent to stakeholders and the local planning authority.

2.3 What Is Required: The Design Component

The design and access statement should cover both the design principles and concepts that have been applied to the proposed development and how issues relating to access to the development have been dealt with. Statements should evolve throughout the design and development process.

A design and access statement for a planning application should explain the design principles and concepts that have been applied to particular aspects of the proposal. These are:

- **Scale:** Scale is the height, width and length of a building or buildings in relation to its surroundings.
- **Amount:** The amount of development is how much development is proposed. For residential development, this means the number of proposed units for residential use and for all other development, this means the proposed floor space for each proposed use.
- **Layout:** The layout is the way in which buildings, routes and open spaces (both private and public) are provided, placed and orientated in relation to each other and buildings and spaces surrounding the development.
- **Landscaping:** Landscaping is the treatment of private and public spaces to enhance or protect the amenities of the site and the area in which it is situated through hard and soft landscaping measures. Statements should also explain the function of the landscaping, for instance for sustainable drainage purposes, providing shading or other climate change adaptation purposes, and explain how it will be maintained.



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- **Appearance:** Appearance is the aspect of a place or building that determines the visual impression it makes, including the external built form of the development, its architecture, materials, decoration, lighting, colour and texture.

2.4 What Is Required: The Access Component

It is important to note that the requirement for the access component of the statement relates only to 'access to the development' and therefore does not extend to internal aspects of individual buildings.

Statements should explain how access arrangements will ensure that all users will have equal and convenient access to buildings and spaces and the public transport network.

The statement should address the need for flexibility of the development and how it may adapt to changing needs.



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3. Technical Information for Planning

Use

The proposed development will include the construction of a new Artificial Turf Pitch (ATP) with perimeter ball-stop fencing, floodlights and clean access with outdoor storage for maintenance equipment.

The provision of the new external 3G Artificial Turf Pitch (ATP) will provide increased usage in comparison to the existing grassed areas for the benefit of Front Lawn Recreation Ground and its partner organisations and community groups during the daytime and evenings. This extended use is possible because the proposed 3G Artificial Turf Pitch (ATP) is more resilient during winter weather conditions.

The new 3G Artificial Turf Pitch (ATP) will offer a variety of football pitches and training areas within the same enclosed playing space to support development plans into grassroots football.

In accordance with FA technical guidance, the intention is to introduce multiple pitch markings to gain the maximum football developmental outcomes.

Age grouping	Type	Pitch size	Quantity
Youth U17 / U18 & Over 18 (Senior Ages)	11v11	100 x 64m	1
Youth U11 / U12*	9v9*	64 x 46m	2
Mini Soccer U9 / U10	7v7	55 x 37m	2
Mini Soccer U7 / U8	5v5	37 x 27m	4

The pitch will also be able to be used recreationally for other sports that can also form curricular or extracurricular activities for any surrounding schools/colleges.

The ATP will be designed and must be constructed to conform to the playing relevant requirements stipulated by:

- The Football Association (FA) Guide to Artificial Grass Pitches, Second Edition, January 2010
- Federation Internationale de Football Association (FIFA), Quality Concept – January 2012 – the Handbook of Test Methods for Football Turf (FIFA*1 certification required) or equivalent IATS standard

The aspirations for the project are to:

- Offer improved modern facilities suitable for 21st century use.
- Increase community and school participation.
- Encourage intergenerational work through the provision of safe and secure facilities.
- Develop opportunities for local employment, coaching qualification opportunities and enhanced coaching standards.
- Further integrate the school into the community as a centre of sports excellence.

Amount

- | | |
|--|---------|
| • New Artificial Turf Pitch (ATP) Area | 7420sqm |
| • Macadam Pathways and Areas | 711sqm |
| • Total Development Areas | 8131sqm |



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Layout

The proposed Artificial Turf Pitch (ATP) will replace part of the natural grassed field of Front Lawn Recreation Ground.

Scale

Perimeter ball-stop fencing is required around all sides and ends of the ATP to provide ball-stop and to offer a degree of security. The proposed open steel mesh fencing is 4.50m high to exterior boundaries of the ATP and enclosed pathway. The interior fencing within the enclosed macadam pathway reduces to 1.2m high and rises to 2m high behind the two goal storage alcoves for additional ball retention and safety of spectators. Synthetic rubber inserts shall be installed to all fencing mesh panels and all post fixings; to reduce noise, rattle and vibration from ball impacts.

It is proposed that floodlights are built around the ATP to facilitate use during evenings and throughout the winter months, thereby enabling the facility to be used to its full potential by local community sporting and recreational groups. The proposed 6no. (six) floodlight columns to serve the artificial grass pitch are 15m high.

Landscaping

The areas around the ATP and associated pathways shall be reinstated to grass (soft landscaping) by naturally grading back to existing levels as necessary to tie the new pitch into the surrounding ground.

It is proposed to use the topsoil from the excavation works to form a bund to the north end of the pitch to allow a more aesthetically pleasing view over the area and mitigate any potential sight and noise disturbance from the pitch to the residential properties to the north.

All natural reinstatement works shall be implemented in accordance with BS 4428 Code of Practice for General Landscape Operations.

Appearance

The installed appearance of the Artificial Grass Pitch (AGP) will be green coloured artificial grass playing surface with white and blue coloured line markings for football.



Example of artificial grass



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The installed appearance of the perimeter ball-stop fencing to the ATP will be steel open mesh fencing polyester powder coated Dark Green RAL6005. Synthetic rubber inserts shall be installed to all fencing mesh panels and all post fixings; to reduce noise, rattle and vibration from ball impacts.



Example of pitch perimeter barrier



Example of ball-stop fencing

The installed appearance of the floodlighting system will include galvanised (brushed silver coloured) steel columns / masts, electrical cubicles and distribution pillar, finished polyester powder coated grey.



Example of 12m high floodlight



Example of floodlighting

The installed appearance of the clean access will be grey / black coloured macadam. The storage container to be situated within the enclosed ATP pathway will be utilised for the storage of maintenance equipment (small tractor and attachments) along with sports equipment.



Example of clean access



Example of storage container



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Inclusive access

The access to and from the facility shall be maintained. All pedestrian paths introduced to the facility shall be compliant with Disability Discrimination Act (DDA) regulations and Sport England's Technical Design Guidance Notes to include 'Access for Disabled People 2002'. Disabled access has been carefully considered throughout the design process and applied where possible.

The proposed playing surface to the ATP shall replicate the qualities of a good natural grass football pitch.

Flood risk

The Envirocheck report and following a search on the Environment Agency website, we have established the presice development area is not not located within a fluvial or tidal flood plain and is considered to be located within a Category 1 flood zone, which is described as low risk with a 0.5% (1 in 200) chance of flooding in any year.

Hatched areas benefit from flood defenses
(in the event of a river flood with a 1% (1 in 100) chance of happening each year, or a flood from the sea with a 0.5% (1 in 200) chance of happening each year. If the defenses were not there, these areas would be flooded)



Flood defences



Flooding from rivers or seas without defenses
Extent of extreme flood



Proposed site of works



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The Flood Map is a multi-layered map that provides information on flooding from rivers and the sea. The Flood Map also has information on areas benefiting from flood defenses.

The key for the Flood Map consists of the following layers of information:

- Flooding from rivers or sea without defenses - the natural flood plain area, which could be affected in the event of flooding from rivers and the sea.
- For flooding from rivers the map indicates the extent of a flood with a 1% (1 in 100) or greater chance of happening each year.
- For flooding from the sea the map shows the extent of a flood with a 0.5% (1 in 200) or greater chance of happening each year.
- Extent of extreme flood - the extent of a flood with a 0.1% (1 in 1000) or greater chance of happening each year.
- Flood defenses - flood defenses such as embankments and walls, and flood storage areas (which are areas of land designed and operated to store flood water).
- Areas benefiting from flood defenses - where possible we show the areas that benefit from the flood defenses shown, in the event of a river flood with a 1% (1 in 100) chance of happening each year, or a flood from the sea with a 0.5% (1 in 200) chance of happening each year. If the defenses were not there, these areas would flood. Note that we do not show all areas that benefit from flood defenses.

Flood Risk assessment

The information below provides an indication of the likelihood of flooding in the proposed site. This came from a national flood risk assessment completed in 2005, which used ground levels, predicted flood levels, information on flood defenses, and our local knowledge. The likelihood is described in one of three categories, low, moderate, or significant, as used by the insurance industry.

The likelihood of flooding from the rivers or the sea for the development area at Winsford Academy is low. The location is in an area that is unlikely to flood except in extreme conditions. The chance of flooding each year is 0.5% (1 in 200) or less. This takes into account the effect of any flood defenses that may be in this area, whether or not these are currently illustrated on the Flood Map. Flood defenses reduce but do not completely remove the likelihood of flooding and can be over topped or fail in extreme weather conditions.

A further search on the Environment Agency Flood Map website, shows that the development area falls outside areas where Environment Agency warns residents when floods are likely to occur.

Flood warning areas
Proposed site of works



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Following a search on the Environment Agency Floodmap website, we have established that the precise development area is classified as a Flood Risk Category 1 site.

Surface Water Drainage Strategy

The surface of the ATP shall be permeable with the underlying stone sub base acting as an attenuation/storage area for surface water. The stone base will act as a soakaway system with surface water dissipating through the underlying formation level. This is combined with a perforated drainage system underneath the pitch base that connects into the existing surface water drainage system. As the project progresses then drainage calculations shall be produced to ascertain the optimum drainage design to meet the necessary stipulated requirements.

Details of the new perforated perimeter and lateral drains underneath the pitch that shall collect and direct percolating rainfall away from the pitch area and into the existing surface water drainage system:

- 160mm diameter perforated UPVC perimeter drainage pipes laid within gravel-filled trenches connected together with proprietary, purpose made junctions. All trenches are to be constructed with gradients that are no shallower than 1:200 (5%).
- 80mm diameter perforated UPVC drainage lateral pipes laid within gravel-filled trenches connected to perimeter pipes with proprietary, purpose made junctions.
- All trenches are to be constructed with gradients that are no shallower than 1:200 (5%). Drain spacing's to suit sub-soil permeability conditions (10m centres).
- Steel rodding-eyes to all ends of the perimeter pipes at centres to allow access to all parts of the perimeter drain installation for maintenance purposes.
- 225mm diameter rigid twin-walled UPVC outfall drain connecting from a new silt trap/inspection chamber to connect into the existing surface water drainage system.



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4. Lighting Impact Statement

In designing a suitable floodlighting solution for the proposed new Artificial Turf Pitch (ATP), several key specification issues had to be considered. These included the illuminance (Lux) level required, the environmental zone category for the site, the minimum mast height, the number & type of floodlights.

The task of designing the optimum floodlighting and external lighting design was undertaken by the specialist provider Philips Lighting and details of how these issues were resolved are as follows:

(Lux level, is the intensity of light as measured on a given surface taking into account the area over which the luminous flux is spread. For example, 1000 lumens, the output of a give light source concentrated into an area of one square metre, would illuminate that square metre to 1000lux. The same 1000 lumens light source spread over ten square metres, produces a dimmer illuminance of only 100Lux.)

To ascertain the illuminance level required we referred to British & European Standard BS EN 12193 – Sports Lighting. This gives details of the minimum safe illuminance levels for various sports.

Football ATP

Front Lawn Recreation Ground will use the pitch for competitive football for FA chartered clubs as well as football training and small-sided football. The lighting system will therefore have to have flexible switching facilities allowing for the following:

Property	Requirement
Maintained average illuminance	> 200Lux
Uniformity (Min / Ave)	> 0.6
Glare rating	≤ 50
Lamp colour temperature (Tk)	> 4000 K
Lamp colour rendering	≥ 65

For coaching, training, and cross-pitch play; pitches should be lit to the following minimum standards:

Property	Property	Requirement
Training and non competitive usage	Maintained average illuminance	120Lux
	Uniformity (Min / Ave)	> 0.6

To clarify the above lighting levels state that the facility is available to be used with a higher lux level (200lux), which will only be used for any form of competition match. There is also switching within the lighting system for lower lighting levels (120lux or below), which will be the predominant usage for recreational, training, and cross-court small-sided football.

Tennis Courts

Front Lawn Recreation Ground will use the tennis courts for competitive use as well recreational and training purposes. The lighting system will therefore have to have flexible switching facilities allowing for the following:

Floodlight performance	Maintained average illuminance on PPA Uniformity within PPA Emin/Eav	500Lux minimum > 0.7
	Maintained average illuminance on TPA Uniformity within TPA Emin/Eav	400Lux minimum > 0.6



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The mast height was calculated using the method detailed in the CIBSE guide LG4 "Sports Lighting". This uses angles projected from the centre of the pitch & the touch line to produce a head frame location zone. When applied to this project the optimum mast height ranged from 6m to 10m for the tennis courts and 12m to 18m for the ATP football pitch.

A 15m mounting height was chosen for the artificial grass pitch and 8m was chosen for the Tennis Courts, as it would allow the floodlights to be mounted horizontally. This will result in low vertical overspill & good uniformity on the playing surface, without compromising cost. The 8m and 15m masts will offer a slimline profile, which will minimise daytime impact. If the mounting height was reduced the floodlights would be elevated above the horizontal significantly increasing overspill.

In order to meet the requirements of The Institution of Lighting Professionals: Guidance Notes for The Reduction of Obtrusive Light GN01:2011, the floodlight chosen as being suitable will be OptiVision MVP507 is an asymmetric down lighting luminaire that combines compact dimensions with very high efficiency. Available with narrow, medium and wide beams for flexibility in application, it provides excellent control of spill light, glare and upward leakage of light. OptiVision MVP507 can accommodate metal halide lamps for good colour rendering or high pressure sodium lamps for economical operation. The floodlighting system includes the features highlighted below:

Benefits

- Breakthrough asymmetrical down lighting luminaire combines compact dimensions with high efficiency
- Available with narrow, medium and wide beams for flexibility in use; sharp beam cut-off for excellent control of spill light and limitation of glare and upward light leakage
- Can be used with metal-halide lamps for good colour rendering or high-pressure sodium lamps for economical operation

Features

- Compact dimensions
- High efficiency
- Can be used with metal-halide lamps or high-pressure sodium lamps
- Choice of narrow, medium and wide beams
- Control of spill light, glare and upward light leakage

Application

- Sports facilities
- Industrial areas
- Car parks

By using such technology, overspill & upward light is therefore reduced in the surrounding environment.

The floodlighting proposals are detailed on the drawing 'SSL1982 05 – Floodlighting Scheme' and this drawing shows the mast locations, floodlight orientations, illuminance levels on the pitch & projected overspill values at the worst case scenario.

To explain this a little further it means that the design is currently showing the lighting levels for the first 100 hours of usage whilst not including any natural mitigating matters, such as trees, bushes, fencing, buildings, structures etc.



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The maintained illuminance values are calculated using a maintenance factor of 0.8. This takes into account light losses due to dirt accumulation on the floodlight front glass & lamp lumen depreciation, ensuring that the minimum requirements for safe play are achieved.

With the inclusion of a maintenance value; the illuminance value will bring the lighting levels for the ATP down to 206ave/lux at 0.64 uniformity and for the tennis courts down to 587ave/lux at 0.73 uniformity (both meet the requirements of BS EN 12193).

To put this into context, I researched and found the following illuminance examples:

Lux	Example
10-5	Light from Sirius, the brightest star in the night sky
10-4	Total starlight, overcast sky
0.002	Moonless clear night sky with airglow
0.01	Quarter moon
0.27	Full moon on a clear night
1	Full moon overhead at tropical latitudes
3-4	Dark limit of civil twilight under a clear sky
50	Family living room
80	Hallway/toilet
100	Very dark overcast day
320-500	Office lighting
400	Sunrise or sunset on a clear day.
1,000	Overcast day; typical TV studio lighting
10,000-25,000	Full daylight (not direct sun)
32,000-130,000	Direct sunlight
Lux is the intensity of light as measured on a given surface taking into account the area over which the luminous flux is spread. For example, 1000 lumens, the output of a give light source concentrated into an area of one square metre, would illuminate that square metre to 1000Lux. The same 1000 lumens light source spread over ten square metres, produces a dimmer illuminance of only 100Lux.	

The environmental category was established by referring to The Institution of Lighting Professionals: Guidance Notes for The Reduction of Obtrusive Light GN01:2011. This document categorises the environment into five zones ranging from E0 (Protected) to E4 (City Centres).

The site would fall into Zone E2 for a Low district brightness areas, Rural, small village, or relatively dark urban locations requiring less than 2.5% upward light & less than 5Lux vertical illuminance into residential property windows.

The ILP design guidance for this environmental zone is as follows:

Table 2: Obtrusive Light Limitations for Exterior Lighting Installations – General Observers					
Sky Glow ULR [Max %]	Light Intrusion (into Windows) Ev [lux]		Luminaire Intensity I [candelas]		Building Luminance Pre-curfew Average, L [cd/m2]
	Pre curfew	Post curfew	Pre curfew	Post curfew	
2.5	5	1	7500	500	5

The use of the floodlights ensures that horizontal & vertical overspill containment is excellent. As less than 2 Lux vertical illuminance will be projected towards any residential property the system will exceed the requirements for an environmental zone E2 location. Upward waste light will also be



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minimised & at the floodlight elevations used 1.5% will be projected into the atmosphere. This will meet the recommendations of The Campaign For Dark Skies, an organisation who lobby for low light pollution systems & recommend such lighting systems.

An Observer was placed to the closest residential property to the west of the tennis courts to ensure that they are under the stipulate threshold of luminaire Intensity 7500 I (candelas). The locations of the observer can be seen on drawing SSL1982 05 - ATP Floodlighting Scheme. The result was as follows:

- *Residential House 1*
Observer to nearest eastern residential property showing the intensity rating to be 1267 I.max cd with the threshold for the environmental zone being 7500 I.max cd.

All design calculations have been undertaken using an open, unobstructed site, the values of overspill will be further reduced any existing mature trees, adjacent buildings, or natural screening.

Conclusion:

The proposed system would be suitable for installing in an environmental zone E2, meeting the most stringent of light control parameters whilst maintaining the specified illuminance levels for the sports pitch.

The floodlighting design shown on drawing, SSL1982 05 – Floodlighting Scheme, does not take into account any mitigating factors for aiding the reduction of overspill such as the change in levels, bunding, existing tree lines, buildings/structures etc. There will be no overspill values into gardens or windows before curfew higher than the values recommended by the ILP. Daytime visual impact will also be minimised by using slimline masts & light grey floodlights, which do not stand out against the skyline.

An example of additional technical details for the floodlighting to be provided can be viewed from documents:

Appendix A_Floodlighting Performance Results

Appendix B_MHN-FC 2000W

Appendix C_Optivision

Appendix D_ILP 2011



Example of floodlighting from the end of a full sized artificial sports pitch at night with an average 286lux floodlighting system from 50m away without screening.



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Example of floodlighting from the end of a full sized artificial sports pitch at night with an average 286lux floodlighting system from 60m away with 3no. 6m high trees screening the facility. Street lighting adjacent to residential property in perspective of the sports pitch lighting from 60m away .



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5. Photographs and Photomontages



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Published by	Wesley Bugg, Design Consultant
Signature	
Issued	02.10.15

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Front Lawn Recreation Ground

Artificial Turf Pitch

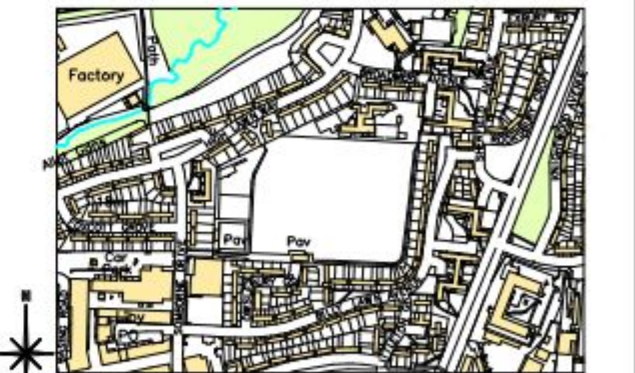
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NOTES

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REV	DESCRIPTION	BY	CHK DATE



KEY PLAN



AUTHOR

Wesley Bugg

TITLE

Front Lawn Recreation Ground
Artificial Turf Pitch
Topographical Survey

PROJECT	SCALE	SIZE
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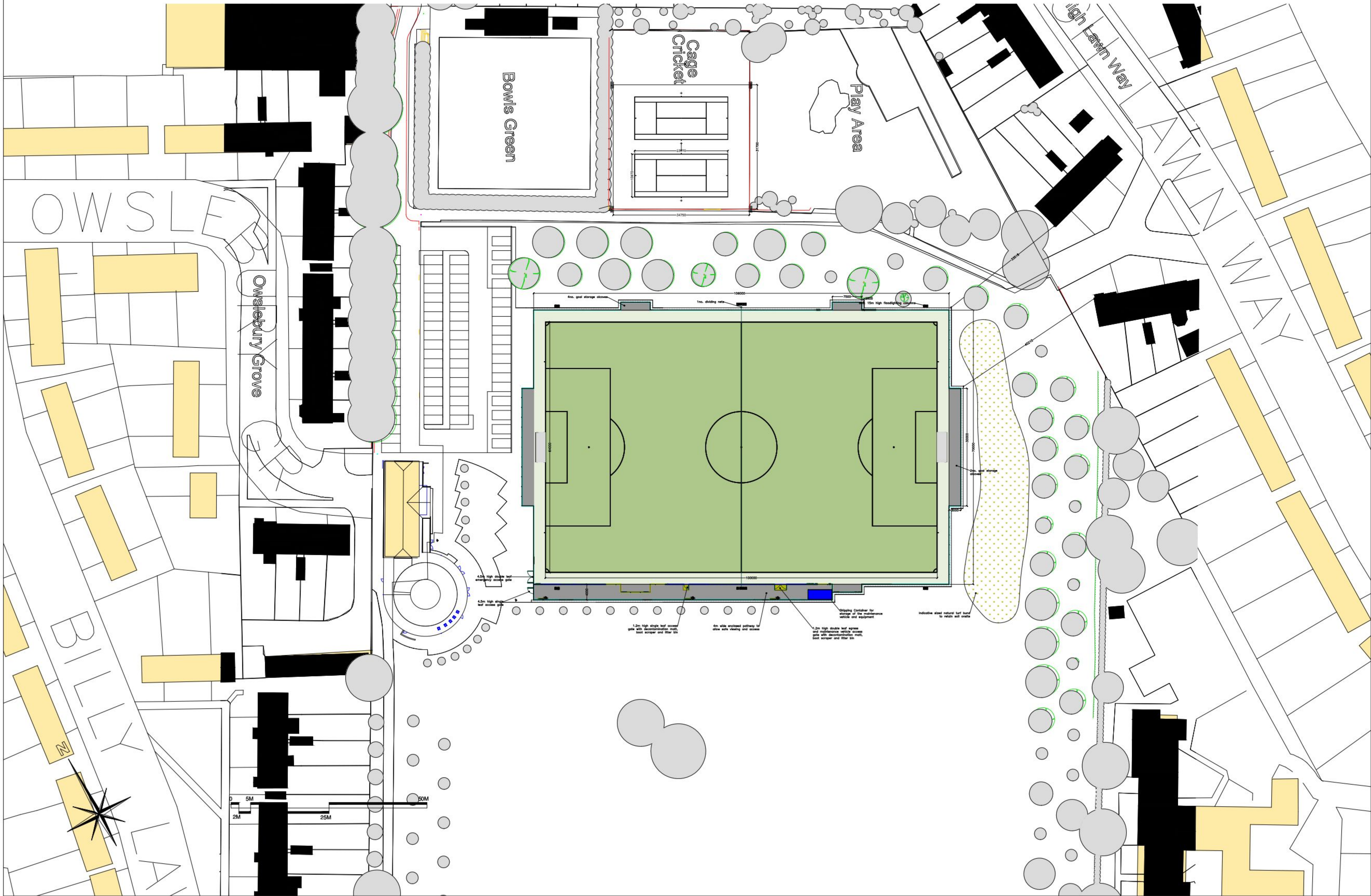
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T1	00

Front Lawn Recreation Ground

Artificial Turf Pitch

Potential Pitch Markings:

- Full Sized Football - 100m x 64m (white)
- 2no. 9v9 Football Pitches - 64m x 46m (blue)
- 2no. 7v7 Football Pitches - 55m x 37m (yellow)
- 4no. 5v5 Football Pitches - 37m x 27m (red)



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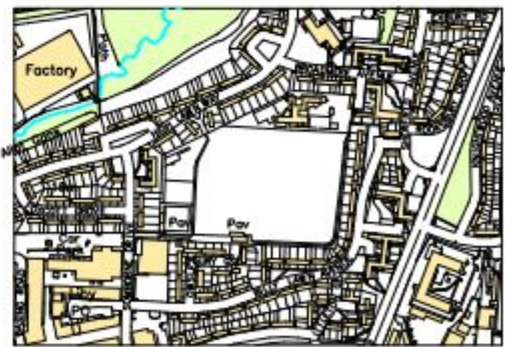
NOTES

- 3G Artificial Turf Playing Area
- 3G Artificial Turf Run Off Area
- Macadam Pathway and Goal Storage Areas
- Maintenance Storage Container
- 4.5m High Fence Line
- 2m High Fence Line
- 1.2m High Spectator Fence Line

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REV	DESCRIPTION	BY	CHK



KEY PLAN



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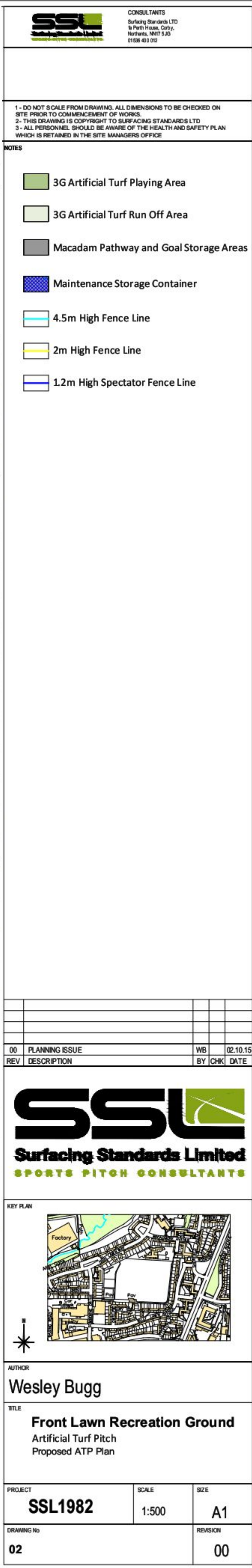
Wesley Bugg

TITLE

Front Lawn Recreation Ground
Artificial Turf Pitch
Proposed ATP Site Plan

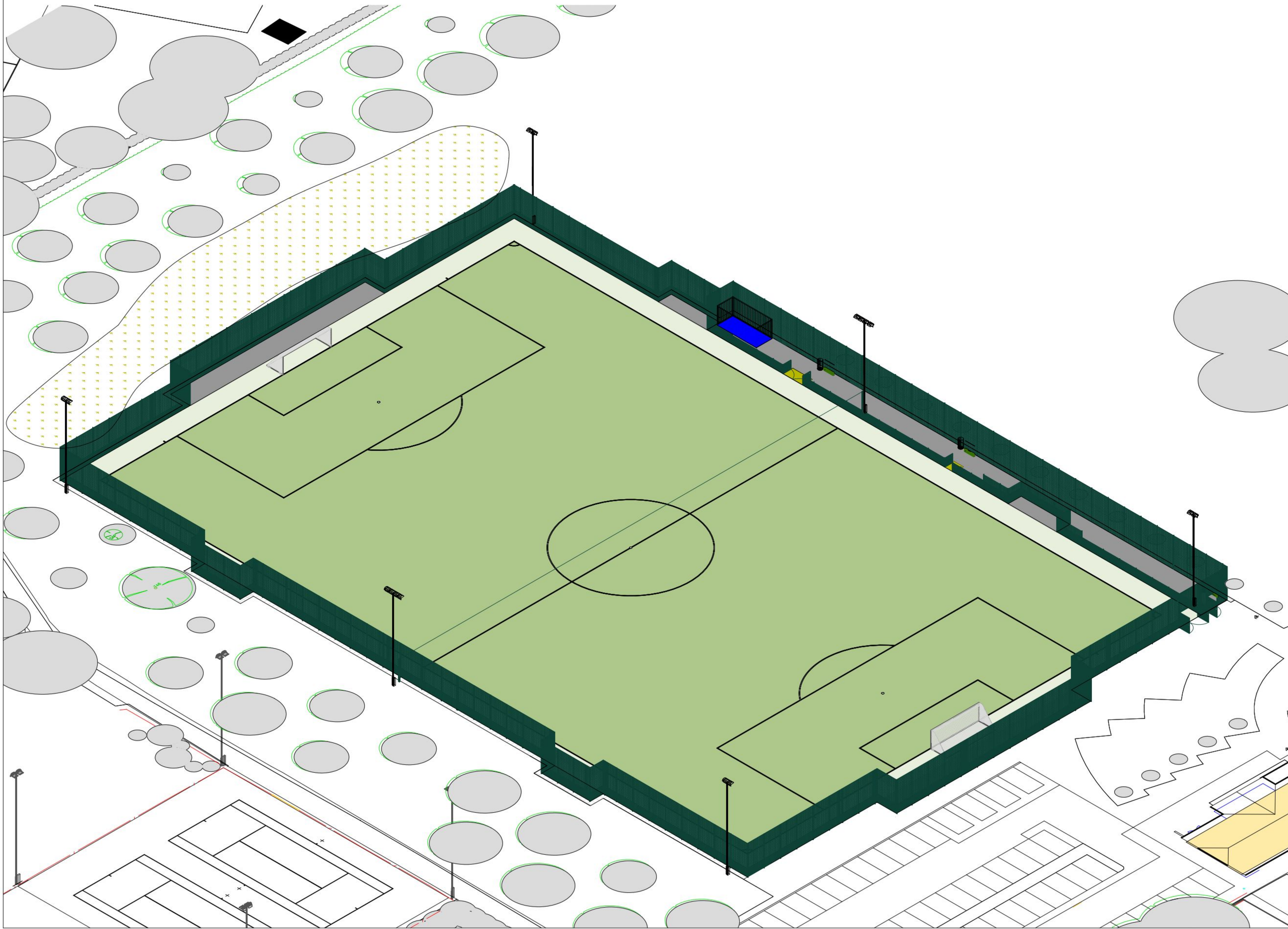
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Artificial Turf Pitch



Front Lawn Recreation Ground

Artificial Turf Pitch





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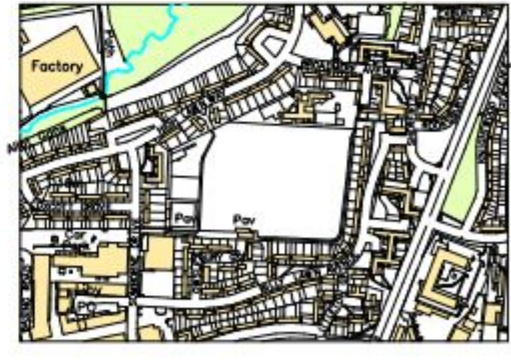
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KEY PLAN



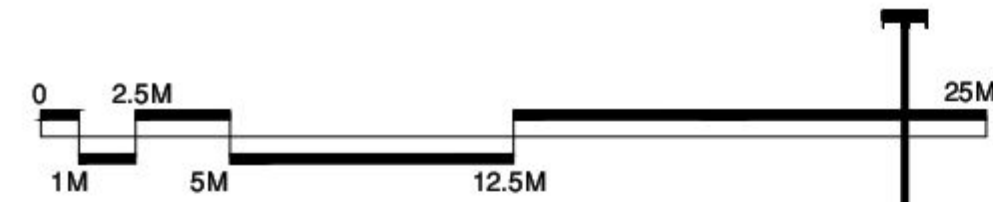
AUTHOR

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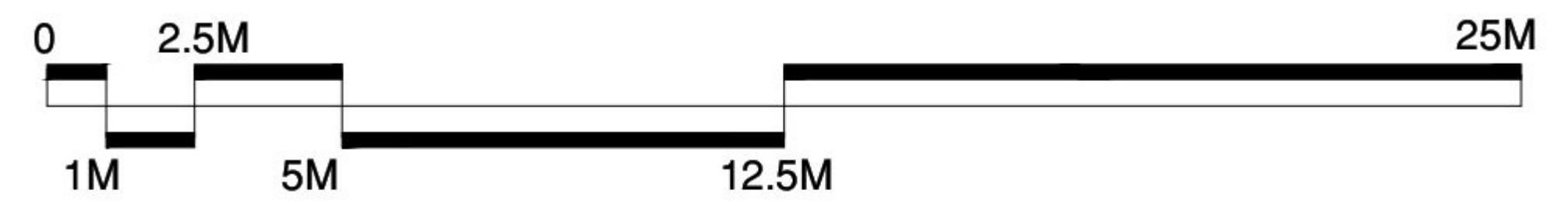
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Front Lawn Recreation Ground
Artificial Turf Pitch
ATP Isometric View

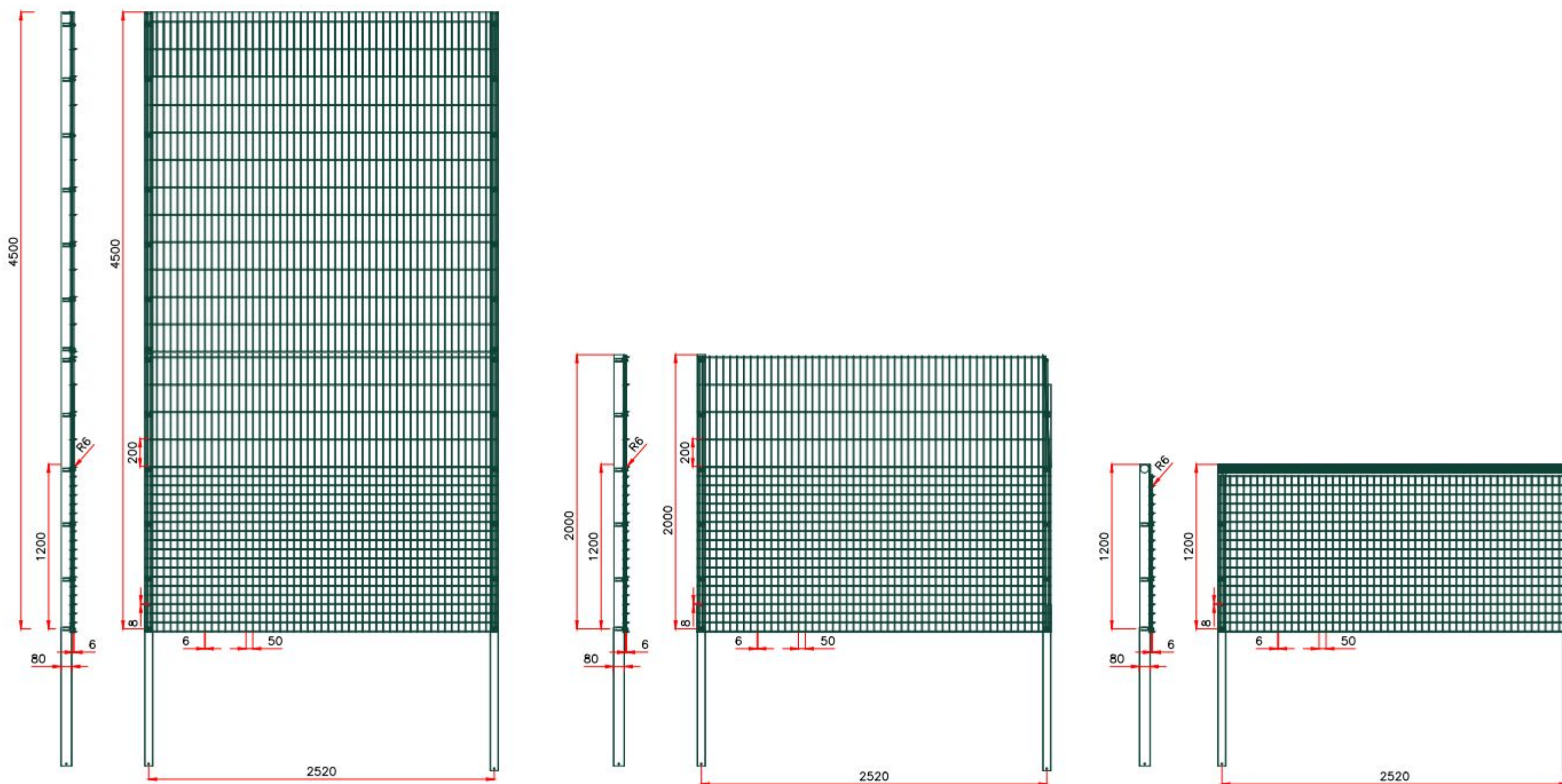
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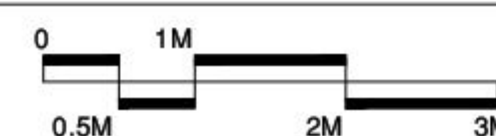
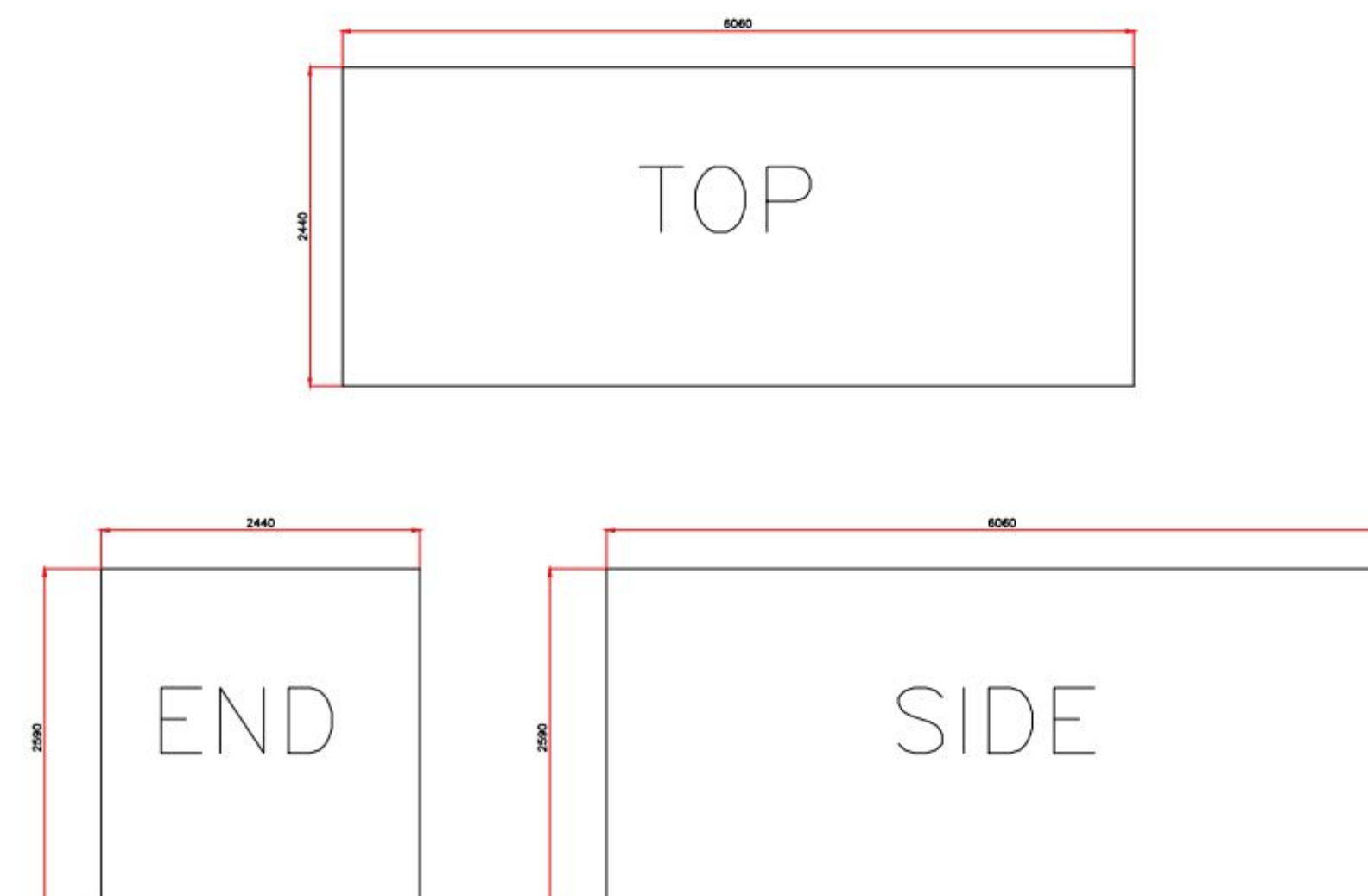
Elevation Viewpoint from West to East - Scale 1:200



Elevation Viewpoint from South to North - Scale 1:100

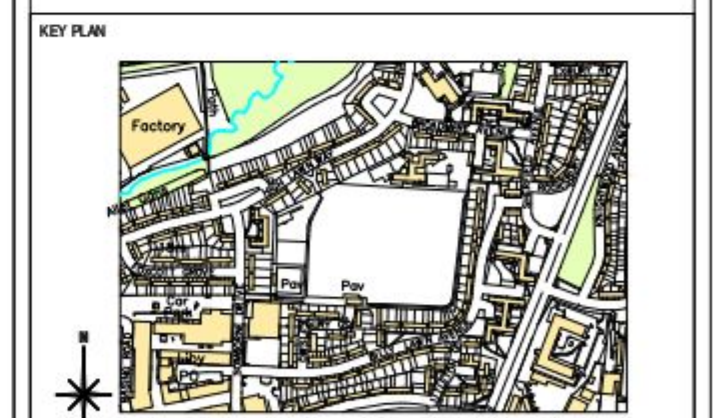


Fencing Elevation Section - NTS



Storage Container Dimensions - Scale 1:50

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AUTHOR
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TITLE
Front Lawn Recreation Ground
Artificial Turf Pitch
ATP Elevation

PROJECT	SCALE	SIZE
SSL1982	As Stated	A1
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06		00