3.2. Anderson Park Sportsfield Reconstruction and Lighting Upgrade

AUTHOR: David Manson, Manager Parks & Reserves

ENDORSED BY: Rob Emerson, Director Open Space and Environmental Services

ATTACHMENTS:
1. 2245- I-200- Rev C-01 IRRIGATION [**3.2.1** - 1 page]
2. 2245- I-200- Rev C-02 DRAINAGE [**3.2.2** - 1 page]

PURPOSE:
To present information on the Anderson Park Sportsfield Reconstruction and Lighting Upgrade

EXECUTIVE SUMMARY:

This report presents information on the Anderson Park Sportsfield Reconstruction and Lighting Upgrade. In particular the detail on the following

- New lighting
- Drainage
- Irrigation and
- Surface reconstruction

FINANCIAL IMPLICATIONS:

Grant funding of $782,062.50 has been provided through a successful grant application.

North Sydney Council will provide the additional funding of $260,687.50 through capital works reserves

RECOMMENDATION:
1. THAT the report be received

LINK TO COMMUNITY STRATEGIC PLAN

The relationship with the Community Strategic Plan is as follows:

1. Our Living Environment
1.4 Public open space and recreation facilities and services meet community needs

BACKGROUND

A combined significant area Plan of Management/Masterplan was prepared for Anderson Park in response to a resolution made at the Council meeting on 18 April 2016. The new PoM/Masterplan for Anderson Park was completed in February 2019.

The Plan of Management listed key issues identified in relation to Sport and Recreation. The issues listed below relate specifically to the Stage 2 Sportsfield Relocation and Upgrade

Park Maintenance - The sportsfield is highly susceptible to wear due to its use levels (in winter) and the limitations of its soil, drainage, and water table regime. The PoM/Masterplan looks at strategies to improve soil conditions, to provide subsoil drainage, to upgrade irrigation systems and to investigate whether a different turf type would be most effective.

Park Furniture and Lighting - Both pedestrian and sportsfield lighting were identified as issues to be addressed in future. Better lighting at Park entrances and along the path across the foreshore is needed, and, when the playing field is 'shifted' west, away from the foreshore, the sportsfield lighting may require modification.

Organised Sports - The main issue of concern is the poor condition of the sports field in winter, and proposals in the PoM/Masterplan relate to how this can be rectified by upgrading the subsoil, drainage and irrigation, by investigating more appropriate turf species and by using the field for less than the maximum 32 hours a week. The PoM/Masterplan notes that Council has introduced reduced hours per week of field use in winter in an effort to reduce sportsfield wear and tear.

CONSULTATION REQUIREMENTS

Community engagement will be undertaken in accordance with Council's Community Engagement Protocol.

DETAIL

Council staff have spent significant time working on the detailed specification for both the Sportsfield Lighting upgrade and the Sportsfield reconstruction projects at Anderson Park. Both projects tender processes have now been completed and will be assessed in the coming weeks. It is envisaged that both tender evaluations will be reported to the May Council meeting in the hope of awarding the contracts in June 2022

Both contacts are expected to begin at the end of this current Winter season (September 2022). Due to this Council will need to close Anderson throughout the Summer season from September 2022 to April 2023. This allows the new turf to establish properly through the better growing conditions ready for the harsh high impact (winter) season.

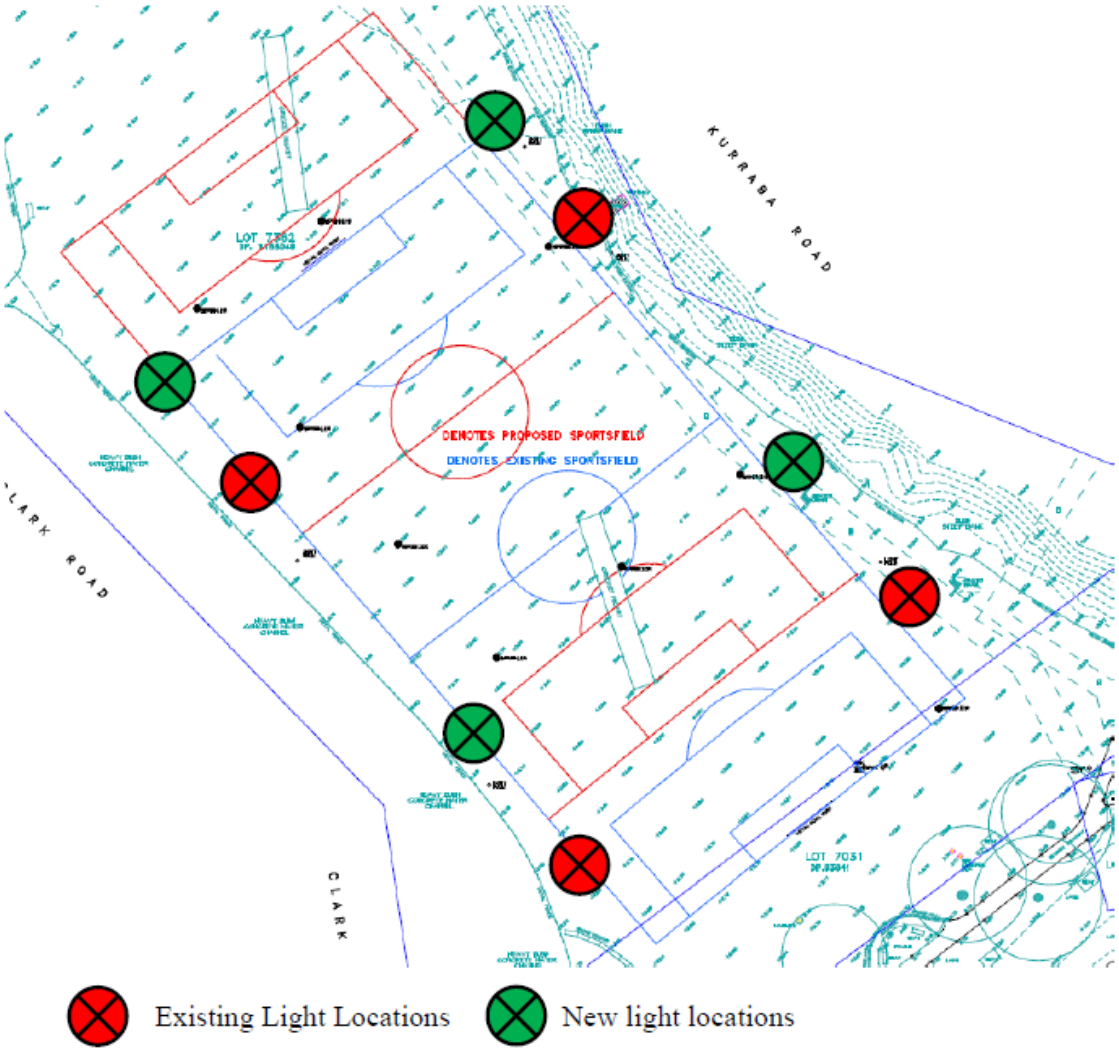
The main hirers of Anderson Park during the summer period are schools as follows

- St Aloysius Junior School– Hour's average 15 per week utilizing both Cricket pitches and the Practice Net. Used in the afternoons during the week 3.15-4.30pm. Also selected Saturdays through the season for all day use
- Loretto - – Hour's average 12.5 per week utilizing both Cricket pitches. Used in the mornings during the week 6.45-8.00am.
- North Sydney Boys - Hour's average 5.5 per week each Wednesday utilizing both Cricket pitches 12.30-3.15pm
- Monte Sant' Angelo - Hour's average 10 per week on selected Saturdays utilizing both Cricket pitches 7.30am-12.30pm

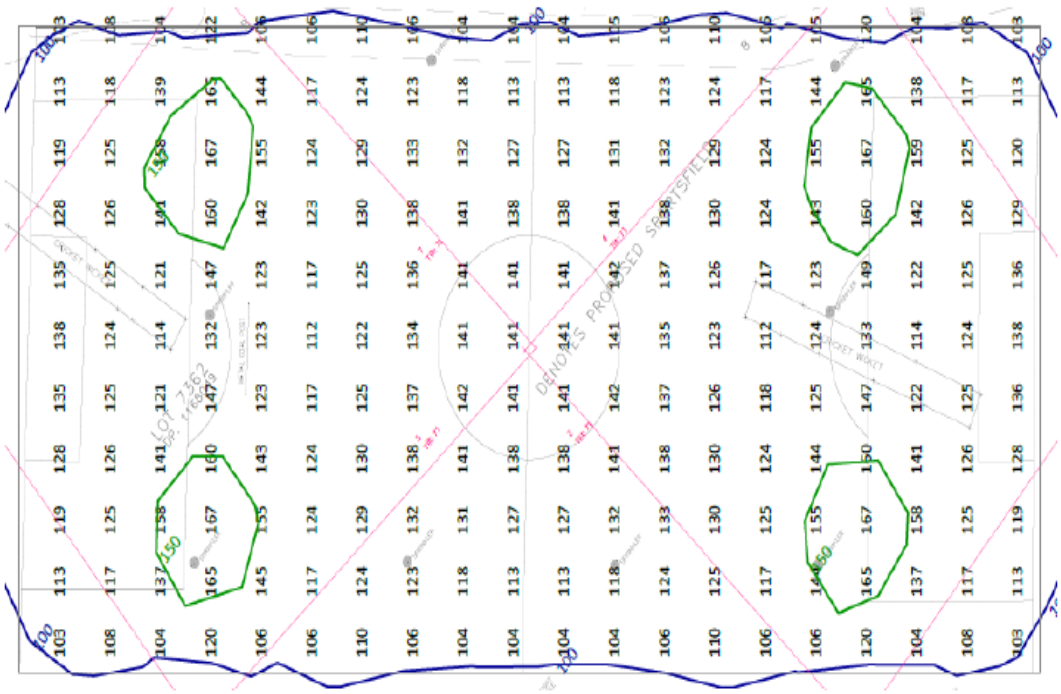
Council will be able to accommodate some of these bookings at Forsyth Park., Primrose Park and Waverton Park however weekend bookings will prove to be difficult as all fields are fully booked through the summer season

Lighting Upgrade

The Anderson Park PoM/Masterplan requires the Sportsfield to be relocated further West towards the Amenities block. This will require the lighting to be moved as well. The below image indicates the proposed location of the new field outlined in Red. The current field is indicated by the blue line. It also indicates the approximate location of the existing and new light locations

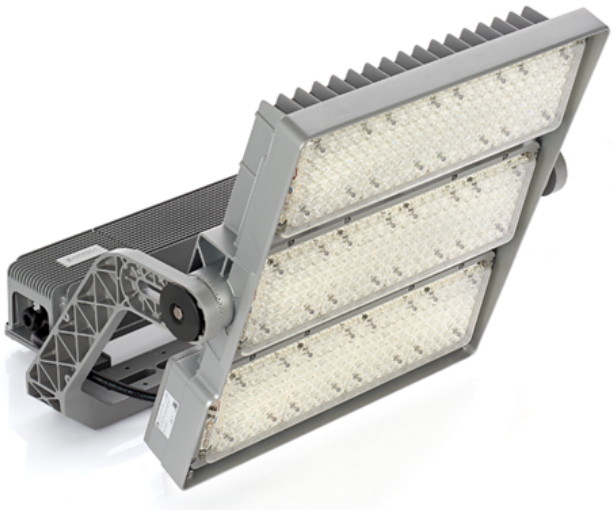


A snapshot from the lighting design below indicates the new lux levels with the installation of the 15 metre poles and new luminaires.

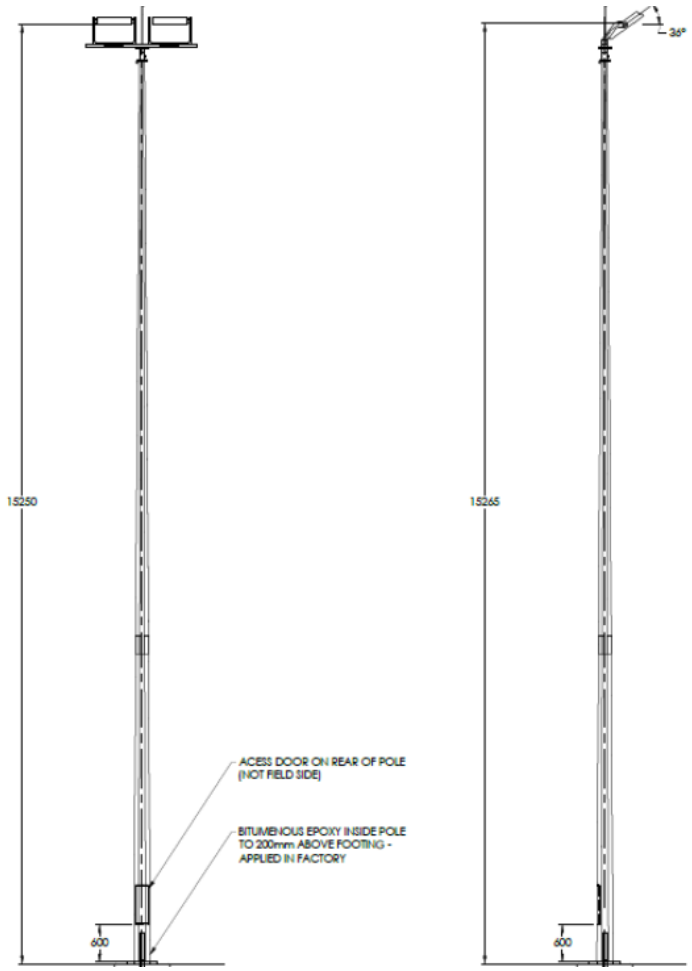


The new design has been developed to meet the current Australian Standards (AS 2560.2:2021). This standard sets the design and performance requirements for the lighting of specific outdoor and indoor sports areas.

The new lighting design will include 2 LED luminaires (OptiVision LED gen3.5) sitting a top of each 15 meter pole of which there are four (4). The Luminaires are tilted downwards to further enhance the light penetration onto the playing field and further reduce light spill. This luminaire meets the highest performance standards, provides outstanding light quality, uniformity and ensures safety and visual comfort. The wide range of optics ensure maximum optical efficiency and enables highly precise light distribution with minimum spill light



The light poles are made 3 metres smaller to limit the penetration into the Trees and improve the light onto the playing field itself. New light poles will be very similar to the existing poles being a tapered, octagonal hot dip galvanised steel pole



Construction Process: The method of installation will require the following process

1. Removal of existing poles, fittings, and footings.
2. Installation of new footings
3. Installation of underground reticulation
4. Supply and install new main Switchboard and property pole
5. Supply and install four (4) new 15 metre poles and light fittings
6. Cabling and connections of each
7. Testing and Commissioning

Sportsfield Reconstruction

Earthworks

- Spray fields 3 times prior to commencement to eliminate existing vegetation.
- Demolish & remove obsolete in ground fixtures (e.g., concrete pitch, irrigation, valve boxes).
- Cultivate ground to pulverise & blend dead & decaying turf.
- Bulk laser grade to achieve specified surface level characteristics.
- Import 750T of topsoil, spread, laser grade & cultivate (to 100mm) & consolidate. The preparation of the finished root zone requires a multistage process that includes the importation of topsoil / organic matter, physical blending by cultivation, laser grading and consolidation, before inclusion of surface soil amendments and preparation for irrigation / drainage.

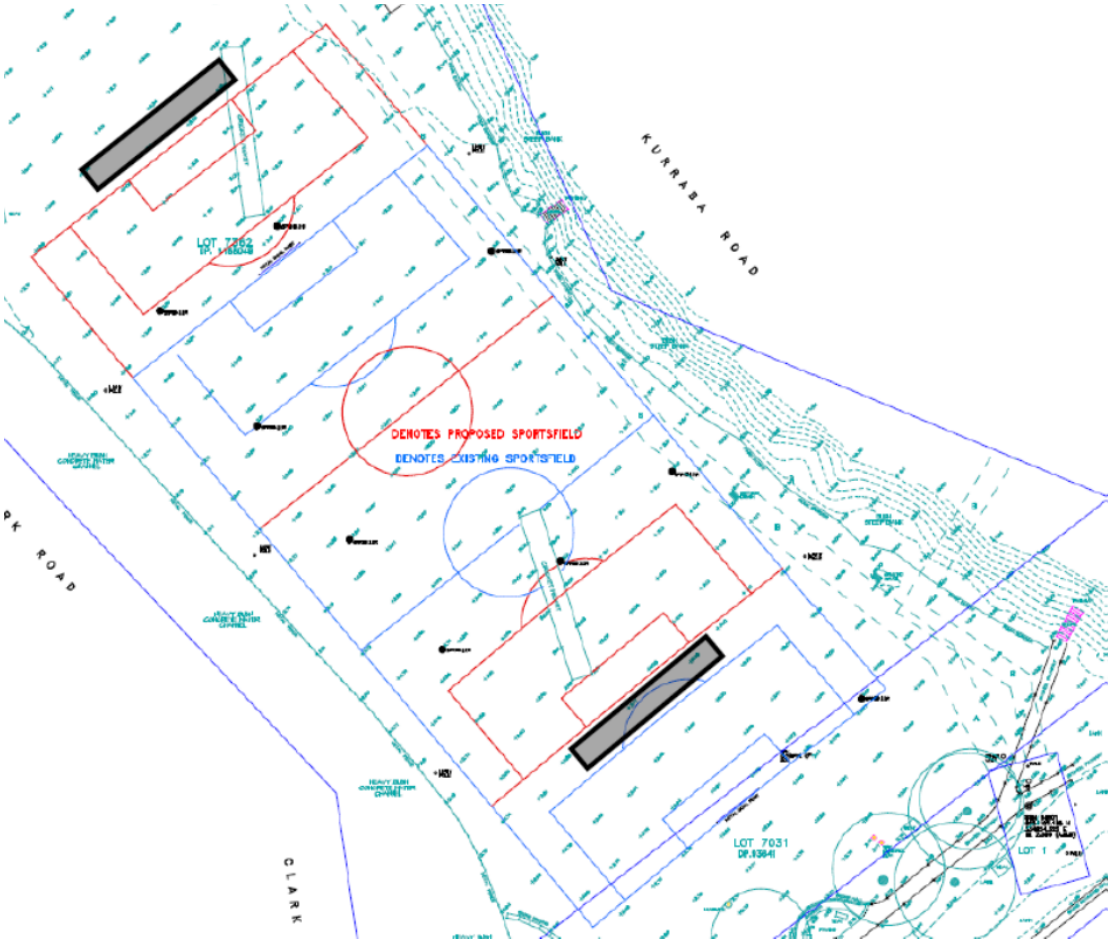
- Import another 750T of topsoil, spread, laser grade & consolidate.
- Screed to ensure final surfaces levels, consolidation, and surface smoothness.

Install synthetic cricket wickets.

During the grading and levelling phase, 2 x new synthetic cricket pitches will be constructed in the location & orientation prescribed by NSC and detailed in the Irrigation and Drainage plans. The synthetic pitches will blend seamlessly with finished surface levels of surrounding turf. The dimensions of the wicket shall be 28m x 2.8m. The finished surface must be laid with competition synthetic turf.

The Cricket wickets are to be relocated behind the goal mouths at each end of the football pitch. This will remove the need for any pitch covering to be undertaken during the Winter season.

The diagram below shows the location of the existing pitches in Red and the new pitches in grey



The locations can also be seen in the attached Irrigation and Drainage plans

Drainage and Irrigation
Irrigation and drainage will be installed simultaneously in the best interest of a fast and efficient project. The drainage is confined to the playing surface and 10 meters either side of the goal mouths only whist Irrigation will be undertaken over the entire site

Drainage

1. Mainline trenching will be 200mm wide to facilitate a 150mm PVC mainline. The mainline drainage trenches will be excavated at uniform grades and have a minimum of 0.5% fall. A sub-main should be installed to match the intended location of the new synthetic cricket pitches.
2. Carrier lines (laterals) will fall from the east to the west, and will be spaced 5m apart, and be 75mm in width to facilitate a 50mm agricultural pipe. This pipe will be laid on a PVC membrane to prevent siltation from underlying clay and the trench backfill must use pea gravel and sand, which is matched to produce a perched water table at their interface to prevent droughting of the trench.
3. Collector lines will be installed prior to turf establishment. These collectors will run in a north / south direction and will be spaced 3m apart, intersecting the 70mm carrier lines. These trenches will be 50mm wide and must be backfilled with pea gravel and sand.

Irrigation
The new irrigation system has engaged computer modelled sprinkler performance data to improve water use and minimize any overuse. The new irrigation system is to connect downstream from the existing Potable water connection located up the embankment on the eastern side of the site. From there a completely new system is to be installed with the exception of retaining the two (2) existing foreshore turfgrass stations

Council investigated the potential to tap into the Stormwater Harvesting system at Forsyth Park and run it down to Anderson through both Council owned and Sydney Water drainage assets. This however was abandoned as was not cost effective

The new system will be hooked up to Council existing IRRInet control system

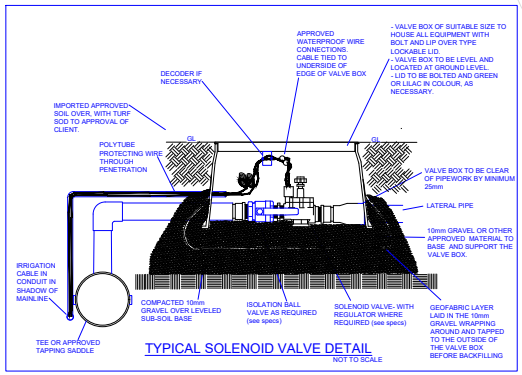
Turf
After drainage and irrigation works are completed the chosen species of Turf will be laid. To best assess what variety of turf will be suited for the reconstruction the OSES sportsfields team are conducting a trial of several different cultivars of turf. They have been installed within a section of the park that is very difficult to maintain a good cover of turf. This will give the team the best chance to choose the best performing turf in the most challenging area of the park
There are 5 types of turf including

- Legend Couch
- Santa Ana Couch
- Tahoma 31 Couch
- Village Green Kikuyu and
- Kikuyu (the existing surface)

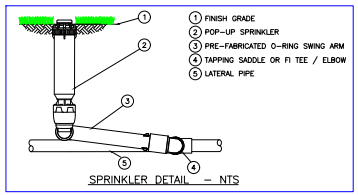
Below is a photo of the 5 types of turf when it was laid a couple of months ago

A detailed 'Turf establishment plan' as seen below will be implemented by Council. This plan is designed to protect and nurture the capital investment NSC have made in this project by establishing turf quickly, to anchor the roots and protect the sward against wear or erosion from early use.

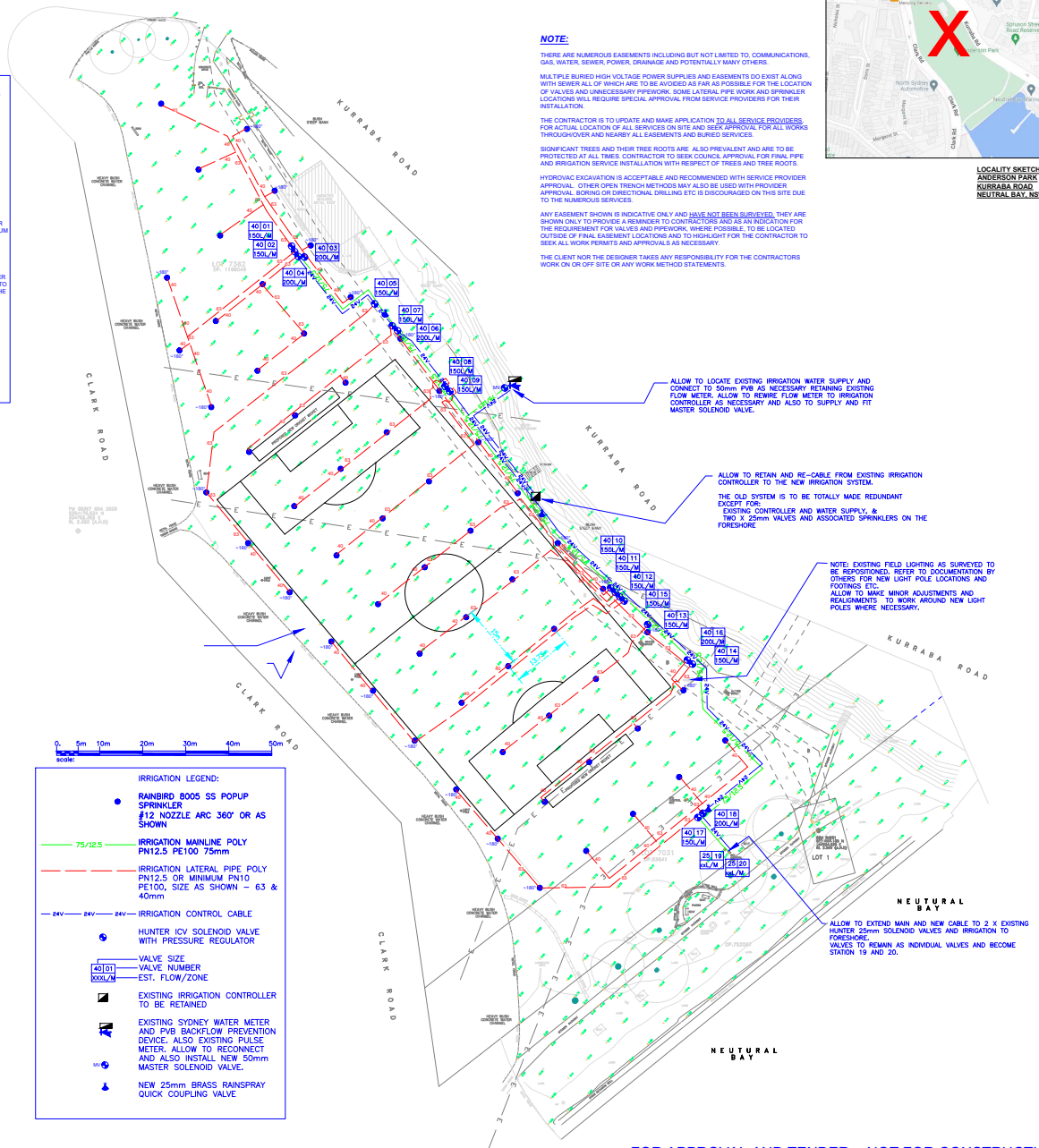
TIMING	DESCRIPTION	COMMENTS	Kg's / Ltr REQ'	UNIT SIZE	UNITS REQ''	RATE / 100 M2
SOIL INCORPORATED						
PRIOR TO CULTIVATION	**Aweganic Matta**	Coir peat fibres for water and nutrient holding enhancement,	**15,000**	1000	15	100
PRE-PLANT						
	MatchPlay Terramaxx	Soil enhancing organics with root stimulating nutrients and water saving crystals	**1,300**	20	65	10
TURF ESTABLISHMENT						
7 days after planting	**MERIDIAN**	Systemic insecticide for protection against turf mites, soil borne and sap sucking insects, along with wetting agent with extra water holding capability.	**2**	1	2	0.013
	THUMPER		**3**	5	1.0	0.02
	PenMag		**3**	20	1.0	0.02
	SENTINEL		**3**	5	1.0	0.025
	MP ROOTS		**78**	20	4	0.6
	Contract spraying				1	
	Turfstarter 14-11-8	Controlled release starter fertiliser.	**325**	22.7	14	2.5
Mowing event 1 & 2						
21 days after planting	**HYGRAN**	Systemic insecticide for longe lived protection against turf mites along with establishment liquid fertiliser.	**1**	1	1	0.005
	MP ROOTS		**78**	20	4	0.6
	Contract spraying		**3**		1	
21 days after planting	**Couchmaster 24-1-10**	Slow release fertiliser for couch establishment	**390**	22.7	17	3
Mowing event 3 & 4						
	Topdress	Smoothing and levelling	**130**	1	130	1
42 Days after planting	**Couchmaster 24-1-10**	Slow release fertiliser for couch establishment	**390**	22.7	17	3



TYPICAL SOLENOID VALVE DETAIL
NOT TO SCALE



SPRINKLER DETAIL – NTS



NOTE:

THERE ARE NUMEROUS EASEMENTS INCLUDING BUT NOT LIMITED TO, COMMUNICATIONS, GAS, WATER, SEWER, POWER, DRAINAGE AND POTENTIALLY MANY OTHERS.

MULTIPLE BURIED HIGH VOLTAGE POWER SUPPLIES AND EASEMENTS DO EXIST ALONG WITH SEWER ALL OF WHICH ARE TO BE AVOIDED AS FAR AS POSSIBLE FOR THE LOCATION OF VALVES AND UNNECESSARY PIPEWORK. SOME LATERAL PIPE WORK AND SPRINKLER LOCATIONS WILL REQUIRE SPECIAL APPROVAL FROM SERVICE PROVIDERS FOR THEIR INSTALLATION.

THE CONTRACTOR IS TO UPDATE AND MAKE APPLICATION TO ALL SERVICE PROVIDERS FOR ACTUAL LOCATION OF ALL SERVICES ON SITE AND SEEK APPROVAL FOR ALL WORKS THROUGH/OVER AND NEARBY ALL EASEMENTS AND BURIED SERVICES.

SIGNIFICANT TREES AND THEIR TREE ROOTS ARE ALSO PREVALENT AND ARE TO BE PROTECTED AT ALL TIMES. CONTRACTOR TO SEEK COUNCIL APPROVAL FOR FINAL PIPE AND IRRIGATION SERVICE INSTALLATION WITH RESPECT OF TREES AND TREE ROOTS.

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IRRIGATION LEGEND:

- RAINBIRD 8005 SS POPUP SPRINKLER #12 NOZZLE ARC 360° OR AS SHOWN
- 75/12.5 — IRRIGATION MAINLINE POLY PN12.5 PE100 75mm
- IRRIGATION LATERAL PIPE POLY PN12.5 OR MINIMUM PN10 PE100, SIZE AS SHOWN – 63 & 40mm
- 24V 24V 24V — IRRIGATION CONTROL CABLE
- HUNTER ICV SOLENOID VALVE WITH PRESSURE REGULATOR
- 40 01 / XXXL/M — VALVE SIZE / VALVE NUMBER / EST. FLOW/ZONE
- EXISTING IRRIGATION CONTROLLER TO BE RETAINED
- EXISTING SYDNEY WATER METER AND PVB BACKFLOW PREVENTION DEVICE. ALSO EXISTING PULSE METER. ALLOW TO RECONNECT AND ALSO INSTALL NEW 50mm MASTER SOLENOID VALVE.
- NEW 25mm BRASS RAINSPRAY QUICK COUPLING VALVE

LOCALITY SKETCH:
ANDERSON PARK
KURRABA ROAD
NEUTRAL BAY, NSW

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- AS BUILT RECORDS ARE TO BE KEPT AND UPDATED DAILY. FINAL AS BUILT PLANS ARE TO BE SUPPLIED & APPROVED PRIOR TO FINAL COMPLETION.

CERTIFIED IRRIGATION DESIGN:
MATTHEW WILSON

TECHNICAL DATA:
SYSTEM DUTY AT POINT OF CONNECTION IS TO BE 200l/min @ 600kPa.
MAXIMUM TOTAL DRAW OFF: 3.3l/sec
IRRIGATED AREA: ~10,000m2
DESIGNED SYSTEM PRESSURE: 600kPa.
DESIGNED SPRINKLER: RAINBIRD 8005 SS #12 NOZZLE AT 480kPa TO FINAL SPRINKLER AT SPACING OF 15m X 13.75m.
DESIGNED DU: 90% CU:92%
DESIGNED SC:1:1 @ 10% OR 1:1 @ 5%
NOMINAL FINAL SYSTEM DUTY UP TO 3.3L/sec@600kPa.
NOMINAL AVERAGE SYSTEM APPLICATION RATE IS 11mm/Hr

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REV	DATE:	AMENDMENT:	BY:
C	09-03-2022	MINOR CHANGE AND ISSUE FOR APPROVAL AND TENDER	MW
B	09-03-2022	FINAL FOR COMMENT, APPROVAL AND TENDER	MW
A	17-09-2021	DRAFT	MW

CLIENT: NORTH SYDNEY COUNCIL

PROJECT: ANDERSON PARK NEUTRAL BAY

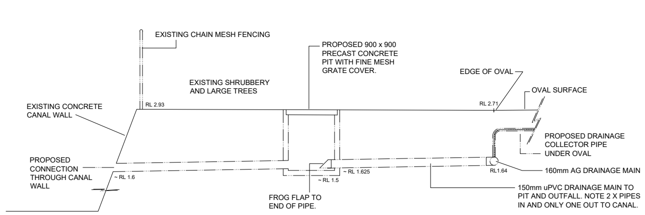
TITLE: PROPOSED IRRIGATION LAYOUT

CAD BY:	DESIGN BY:	CHECKED BY:
M.W.	M.W.	
DATE: 17-09-21	DATE: 17-09-21	DATE:

BASE BY: CLIENT SURVEY DATE: 27-08-2021
SHEET: 01 of 03 SCALE: 1:500 @A1
DRAWING No: 2245-I-200- REV: C SHEET No.: - 01

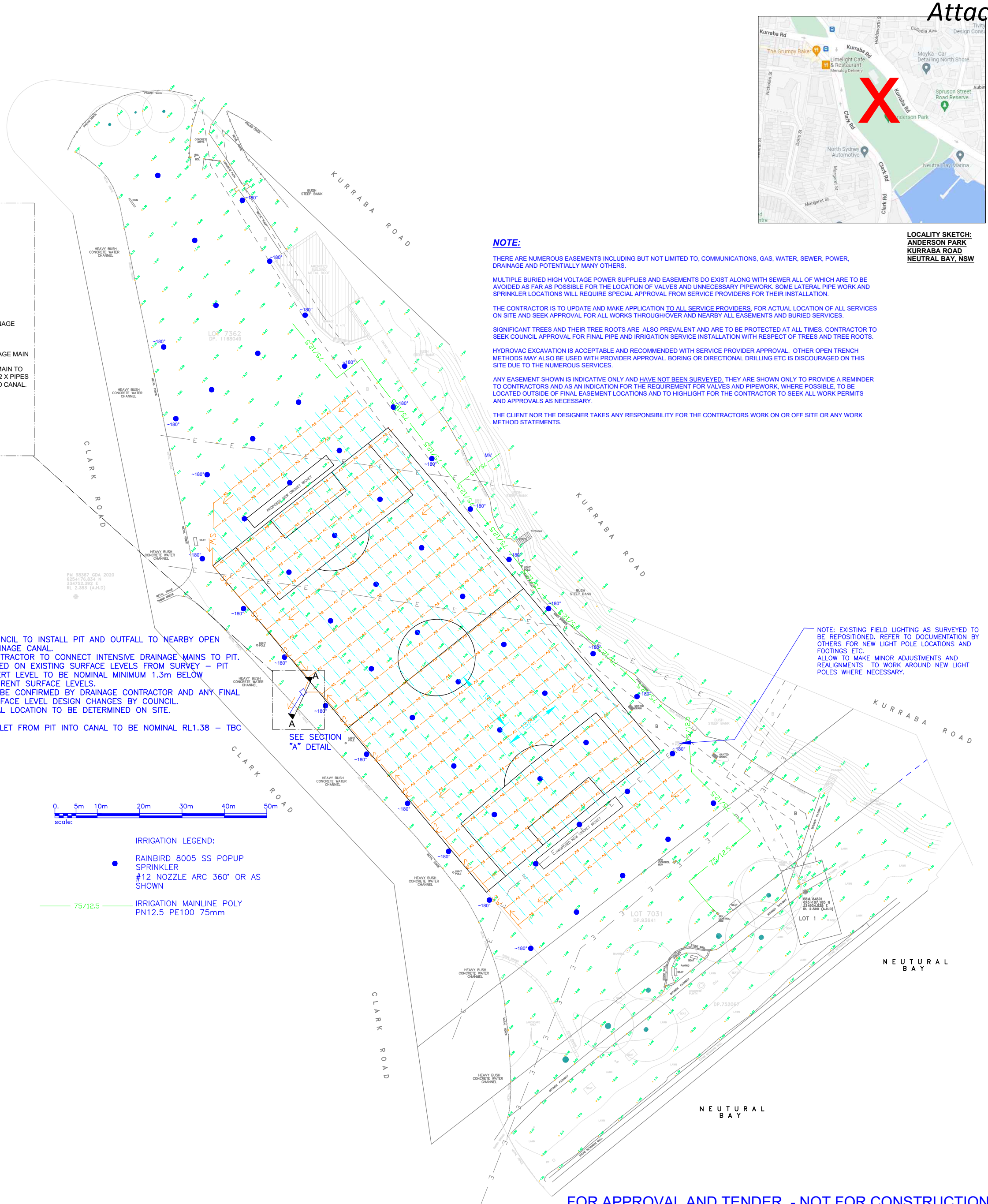
TOTAL IRRIGATION DESIGNERS
TOTAL IRRIGATION DESIGNERS
P.O. BOX 183
NORTH RICHMOND, NSW, 2754
PH 02 4571 3462
FX 02 4571 3463
email: admin@irrigationdesign.com.au

FOR APPROVAL AND TENDER - NOT FOR CONSTRUCTION



PROPOSED TYPICAL THROUGH SECTION "A"
FINAL LEVELS TO BE CONFIRMED BY DRAINAGE CONTRACTOR.

NOTE: ALL RELATIVE LEVELS SHOWN BASED ON CURRENT SURFACE SURVEY. ANY CHANGES TO FINAL SURFACE LEVELS MAY CHANGE RESULTS AND ARE SUBJECT TO CONFIRMATION BY DRAINAGE CONTRACTOR.



COUNCIL TO INSTALL PIT AND OUTFALL TO NEARBY OPEN DRAINAGE CANAL.
CONTRACTOR TO CONNECT INTENSIVE DRAINAGE MAINS TO PIT. BASED ON EXISTING SURFACE LEVELS FROM SURVEY – PIT INVERT LEVEL TO BE NOMINAL MINIMUM 1.3m BELOW CURRENT SURFACE LEVELS.
TO BE CONFIRMED BY DRAINAGE CONTRACTOR AND ANY FINAL SURFACE LEVEL DESIGN CHANGES BY COUNCIL.
FINAL LOCATION TO BE DETERMINED ON SITE.

OUTLET FROM PIT INTO CANAL TO BE NOMINAL RL1.38 – TBC

DRAINAGE LEGEND:

SAND SLIT "COLLECTORS" AT 2.5m SPACING – SEE DETAIL

70mm WIDE "CARRIERS" AT 5m SPACING WITH 50mm POLY PIPE AND MEMBRANE – SEE DETAIL

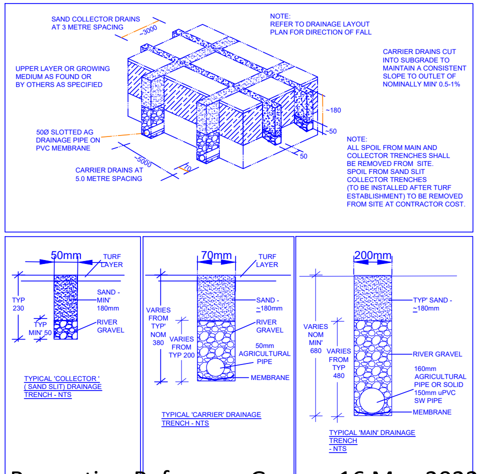
SW — 160mm AG PIPE OR 150uPVC DRAINAGE MAINS

0 5m 10m 20m 30m 40m 50m
scale:

IRRIGATION LEGEND:

RAINBIRD 8005 SS POPUP SPRINKLER #12 NOZZLE ARC 360° OR AS SHOWN

75/12.5 IRRIGATION MAINLINE POLY PN12.5 PE100 75mm



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LOCALITY SKETCH:
ANDERSON PARK
KURRABA ROAD
NEUTRAL BAY, NSW

NOTE: EXISTING FIELD LIGHTING AS SURVEYED TO BE REPOSITIONED. REFER TO DOCUMENTATION BY OTHERS FOR NEW LIGHT POLE LOCATIONS AND FOOTINGS ETC.
ALLOW TO MAKE MINOR ADJUSTMENTS AND REALIGNMENTS TO WORK AROUND NEW LIGHT POLES WHERE NECESSARY.

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CERTIFIED IRRIGATION DESIGN:

MATTHEW WILSON

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REV'	DATE:	AMENDMENT:	BY:
C	09-03-2022	AMEND DRAINAGE AND REISSUE FOR APPROVAL AND TENDER	MW
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A	21-09-2021	DRAFT	MW

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TITLE: PROPOSED DRAINAGE LAYOUT

CAD BY:	DESIGN BY:	CHECKED BY:
M.W.	M.W.	
DATE: 17-09-21	DATE: 17-09-21	DATE:

BASE BY: CLIENT SURVEY DATE: 27-08-2021

SHEET: 02 of 03 SCALE: 1:500 @A1

DRAWING No: 2245-I-200- REV: C SHEET No. - 02

TOTAL irrigation DESIGNERS
TOTAL IRRIGATION DESIGNERS
P.O. BOX 183
NORTH RICHMOND, NSW, 2754
PH 02 4571 3482
FX 02 4571 3483
email: admin@irrigationdesign.com.au

FOR APPROVAL AND TENDER - NOT FOR CONSTRUCTION