

DESIGN NOTES
SCHEDULING COEFFICIENT - PERFORMANCE OPTIONS:
 DESIGN SPACING AND PATTERNS ARE MOSTLY DICTATED BY SHAPES AND OBSTACLES TO DETERMINE THE LAYOUT THAT BEST SUITS THE SITE, THEN A PRESSURE IS SELECTED FOR THE RESULTANT LAYOUT TO PROVIDE THE OPTIMUM PERFORMANCE IN TERMS OF DISTRIBUTION UNIFORMITY (%), COEFFICIENT OF UNIFORMITY - CHRISTIANSEN (%) AND SCHEDULING COEFFICIENT. THE PERFORMANCE IS LARGELY RELIANT ON THE PRODUCTS AVAILABLE TO MEET CRITERIA, AND THERE IS NO VALUE IN A SUBSTANDARD HYDRAULIC DESIGN AND STOCK LILAC PIPE IS GENERALLY LIMITED TO PN12.5. IN THIS CASE TWO MANUFACTURERS WITH THE BEST PERFORMANCE DATA TO COMPARE HAVE BEEN SELECTED ACROSS THE RANGE OF SPACINGS BEING USED IN THE DESIGN. IN THIS CASE OPTION 1 HAS THE BEST UNIFORMITY AND SCHEDULING COEFFICIENT (1.1), IN ALL FIELD LAYOUTS AND CAN BE RECOMMENDED FOR THIS APPLICATION. ROTOR COSTS WILL NOT BE SIGNIFICANTLY DIFFERENT IN THE SCALE OF PROJECT. OTHER FACTORS TO CONSIDER FOR SELECTING ROTOR OPTIONS INCLUDE THE CONTROL SYSTEM CAPABILITY, IN THIS CASE FOR A BLOCK SYSTEM THE ROTORS ARE NOT INTEGRAL WITH THE MANUFACTURERS CONTROL SYSTEM & SOFTWARE, HOWEVER A 'PACKAGED SYSTEM' MAY HAVE EXTENDED WARRANTY ADVANTAGES.

CONTROL SYSTEM OPTIONS - OVERVIEW:
 BOTH SYSTEMS HAVE THE CAPABILITY FOR REQUIRED PROGRAMMING WITH SENSOR INPUTS SUCH AS FLOW METERS AND ENVIRONMENTAL SENSORS FOR FLOW MANAGEMENT AND SEASONAL SCHEDULING.

OPTION 1 - RAIN BIRD
 CENTRAL CONTROL SOFTWARE - IQ
 FIELD CONTROLLER, ESP-LX- IVM
 2 WIRE (2.5MM²) CONTROL SYSTEM & GROUNDING

OPTION 2 - TORO
 CENTRAL CONTROL SOFTWARE - SENTINEL
 FIELD CONTROLLER - SENTINEL 2 WIRE DECODER
 2 WIRE (2.5MM²) CONTROL SYSTEM & GROUNDING

RECOMMENDATION
 IN THE EARLY STAGES OF DETAILED DESIGN, OPERATORS RECEIVE A INTERACTIVE DEMONSTRATION OF THE CENTRAL CONTROL SOFTWARE FROM EACH MANUFACTURER OF THE NOMINATED OPTIONS TO ACCESS. SUGGESTED AGENDA 1 HOUR FOR HARDWARE & 1 HOUR FOR SOFTWARE EVALUATION OF EACH OEM CONTROLS. ALTERNATIVELY HYDROPLAN CAN PROVIDE A BRIEF EVALUATION OF THE TWO OPTIONS.

DRAWING TABLE		
DRAWING NUMBER	TITLE	REV
15888-100	BITS SPORTS FIELDS - KEY PLAN	A
15888-101	BITS SOCCER FIELDS - LAYOUT 1	A
15888-102	BITS AFL & CRICKET FIELD - LAYOUT 2	A
15888-103	BITS WATER SUPPLY - LAYOUT 3	A

KEY DESIGN DATA - CONCEPT STAGE
BITS SPORTS

SOCCER
 AREA 2.01 HA
 NOM. FLOW/VALVE: 5 L/S
 FLOW RANGE: 5 TO 10 L/S (UP TO 2 VALVES)

AFL/CRICKET
 AREA 1.78 HA
 NOM. FLOW/VALVE: 5 L/S
 FLOW RANGE: 5 TO 10 L/S (UP TO 2 VALVES)

COMMON - BITS SPORTS COMBINED (EXCLUDES GOLF)
 TOTAL AREA 3.79 HA
 SOIL, TYPICAL LOAM
 PLANT SPORTS TURF - HIGH USE
 PLANT FACTOR 0.8 (OPTIMUM GROWTH)
 WINDOW 8.30PM TO 3.00AM
 IRRIGATION TIME 6.5 HR/DAY
 PEAK DEMAND 34 MM/WK
 PUMP DUTY CAPACITY: Q= 10 L/S @ H=70M (BITS SPORTS)
 EXISTING PS POWER 22KW (40 FLA @ 415V)
 NEW PUMP POWER 11KW (20 FLA @ 415V) VFD
 VALVE GROUP CAPACITY UP TO 2 @ 5 L/S (BITS SPORTS)
 PEAK VOLUME, WEEK 1.3 ML/WK
 AVERAGE VOLUME, YEAR 22 ML/YR
 ASSUMES YEAR ROUND FIELD USAGE & IRRIGATION PROGRAM

KEY DESIGN DATA - CONCEPT STAGE - RW SUPPLY ALL SITES
BITS SPORTS CLUBS, BITS GOLF & DENNIS PARK RL

ALL SITES ESTIMATED DEMAND SUMMARY *
 AREA, TOTAL SITES 19.43 HA
 FLOW PEAK DEMAND 42 L/S
 VOLUME, PEAK WEEK 6.65 ML/WK
 AVERAGE VOLUME, YEAR 112 ML/YR

CURRENT RECYCLED WATER SUPPLY CAPACITY ^
 FLOW, IN/OUT BITS TANKS 30 TO 35 L/S
 FLOW, IN/OUT DENNIS PARK TANKS 13 L/S
 COMBINED FLOW, IN/OUT BITS & DP 43 L/S
 PEAK VOLUME, WEEK ## ML/WK (GRC-TBC)
 AVERAGE VOLUME, YEAR 119 ML/YR (GRC-IMP)

- NOTES:**
- A. (*) BASED ON AVERAGE BOM DATA, CURRENT SITE AREAS INCLUDE PROPOSED SPORTS FIELD EXTENSIONS WHERE SHOWN ON DRAWINGS. DOES NOT INCLUDE POTENTIAL FUTURE 5 GOLF HOLES, WHICH WOULD INCREASE GOLF PUMP STATION FLOW FROM 22 L/S TO 30 L/S AND TOTAL FLOW DEMAND TO 50 L/S.
 - C. (*) BITS TANK IS LIMITED TO 30 L/S WHEN DENNIS PARK IS OPERATING AT THE SAME TIME (8.30PM TO 3AM). GRC WATER OPERATORS ADVISED DENNIS PARK USAGE TIMES ARE SIGNIFICANTLY LOWER THAN BITS, PERHAPS RELATED TO SEASONAL FIELD USAGE, WHICH MAY OFFER SOME ALLOCATION FLEXIBILITY. GOLF HOURS 7PM-4AM.
 - D. (*) IF GOLF COURSE AREAS ARE SIGNIFICANTLY EXTENDED (EG, 5 HOLES - 4.4 HA) IN THE FUTURE THE STP CAPACITY, INCLUDING VOLUME, PUMP/PIPE SIZE, TANKS AND IN FLOWS WILL REQUIRE REVIEW AS THE ESTIMATED GOLF DEMAND WILL INCREASE PROPORTIONALLY BY 38% AND THE SYSTEM DESIGN IS AT OR NEAR CAPACITY WITHIN THE AVAILABLE TIME WINDOWS, BASED ON THE INFORMATION PROVIDED BY GRC TO DATE.
 - E. GRC TO CONFIRM RW SUPPLY CAPACITY TO BITS/DENNIS PARK. STP MAY HAVE ALLOCATION SUPPLY OTHER SITES, EG - RED MUD DAM DURING DAY TIME HOURS

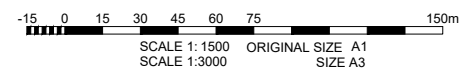


OPTION 1 - RAIN BIRD
MODEL 8005SS-NP

OPTION 2 - TORO
MODEL T7P-SS-52-E

IRR OPTIONS 1&2
2X OEM ROTOR PERFORMANCE

CONCEPTS
FOR COMMENT & APPROVAL



REV	ISSUED	D.DWN	APRVD	REVISION DESCRIPTION	REV	ISSUED	D.DWN	APRVD	REVISION DESCRIPTION
A	30/07/2021	EM	SJ	CONCEPTS - FOR COMMENT & APPROVAL					



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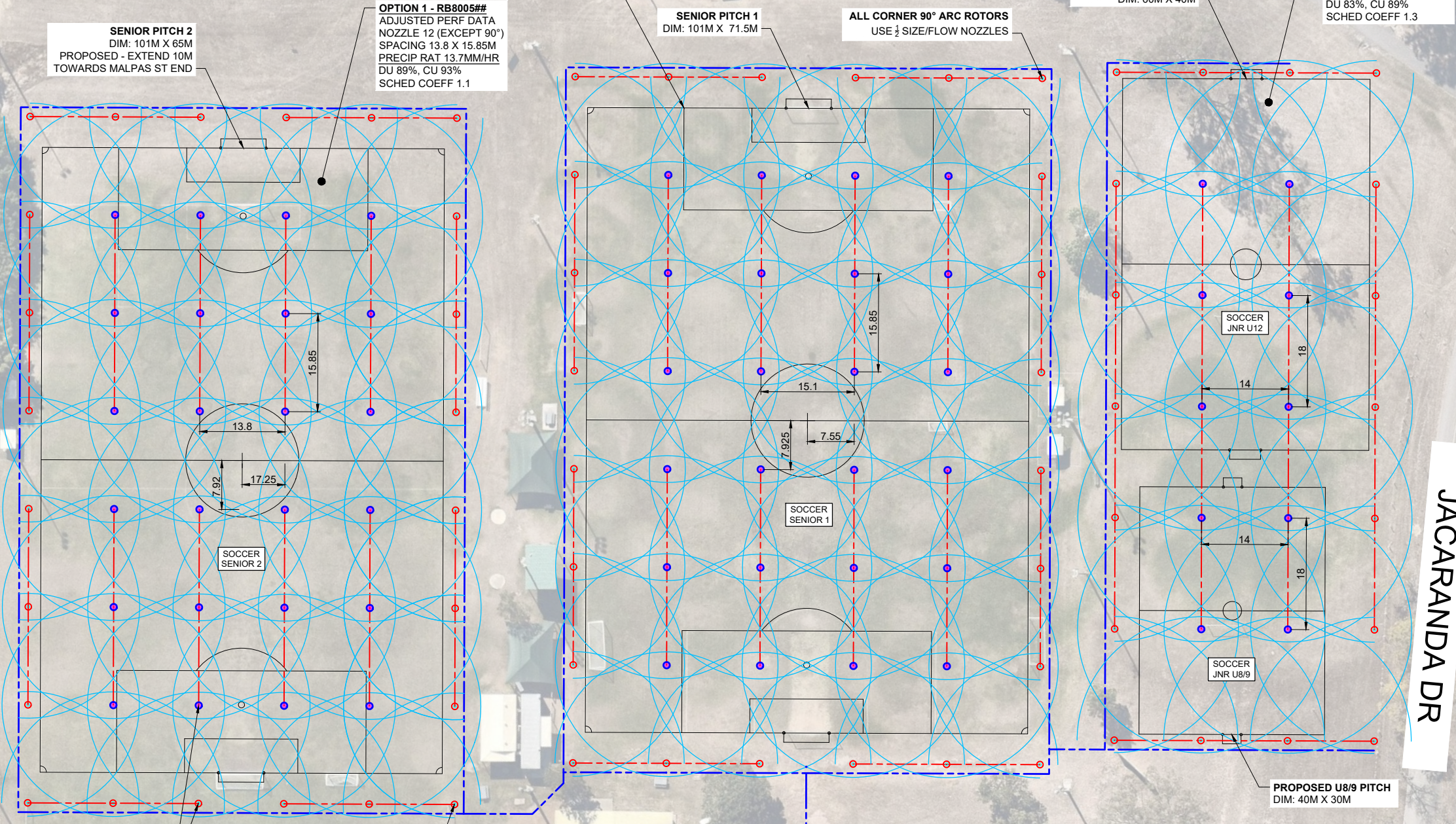
DES/DRAWN: EM
 CHECKED: PH
 APPROVED: SJ
 DATE: 12/05/2021
 DRAFT REF: 4-GRC-d2

CLIENT: GLADESTONE REGIONAL COUNCIL
 182-21 BITS CLUB SITE & DENNIS PARK SPORTS COMPLEX
 PROJECT: DETAILED DESIGN IRRIGATION SYSTEM
 BITS SPORTS FIELDS - KEY PLAN
 DRAWING No. 15888-100
 SHEET 1 OF 4
 REVISION A

Drawing file: D:\Work\ENVC\GCD\15888-100\15888-100-CD-STD1\15888-100-BITS SPORTS - IRRIGATION\GCD.dwg - 30/07/2021 8:22 PM Original Size: ISO FULL BLEED A1 (420.00 x 297.00 MM)

- LEGEND:**
- RECYCLED WATER SIGN, TYPE/SIZE #####
 - PUMP, TYPE/SIZE #####
 - TANK, TYPE/SIZE #####
 - LOW LEVEL SENSOR (NOT SHOWN)
 - BACKFLOW ASSEMBLY, TYPE/SIZE #####
 - IRRIGATION CONTROLLER, TYPE #####
 - WEATHER SENSOR, TYPE #####
 - FLOW METER, TYPE/SIZE #####
 - ISOLATION VALVE (DN## LINE SIZE) C/W 910 VB
 - FILTER AUTO SCREEN, DN###, 200 MICRON
 - DN50 AIR VALVE C/W 910VB (NOT SHOWN)
 - DN25 QCV C/W 910VB (NOT SHOWN)
 - DN## SOLENOID VALVE, TYPE ##### (CONCEPT)
 - DN## SOLENOID VALVE, TYPE #####
 - DN## ROTOR C C/W S/JR, MODEL ##### FULL CIRCLE
 - DN## ROTOR D C/W S/JR, MODEL ##### PART CIRCLE
 - DN### HDPE PN12.5 LILAC MAIN PIPE - A
 - DN### HDPE PN12.5 LILAC MAIN PIPE - B (CONCEPT)
 - DN### HDPE PN12.5 LILAC MAIN PIPE - C
 - DN### HDPE PN12.5 LILAC LAT PIPE - A (CONCEPT)
 - DN### HDPE PN12.5 LILAC LAT PIPE - B
 - DN### HDPE PN12.5 LILAC LAT PIPE - C
 - POWER CABLE & CONDUIT ROUTE (240-415V)
 - CONTROL WIRE ROUTE A, ## (NOT SHOWN)
 - CONTROL WIRE ROUTE B, ## (NOT SHOWN)
- FOR ROTOR MODEL & NOZZLE REFER ROTOR TABLE, BASED ON SPACING

FIELD BOUNDARY NOTES:
 THE FIELD BOUNDARIES PROVIDED IN BASE FILES WERE NOT SYMMETRICAL OR DETAILED WITH FIELD MARKINGS TO REGULAR DIMENSIONS. THE FIELD MARKINGS SHOWN ARE SYMMETRICAL TO GENERATE A SYMMETRICAL DESIGN LAYOUT OFFSET FROM CENTER AXIS WITH FIELD MARKINGS & GOAL POSTS DETAILED. THE MAIN PIPES ARE OFFSET FOR CLARITY HOWEVER THE FINAL SETOUT MAY BE ADJUSTED SLIGHTLY TO 'BEST FIT' IF REQUIRED TO AVOID PERIMETER OBSTACLES OR SERVICES CONFLICT.



OPTION 1 (S1) - ROTOR PERFORMANCE - SOCCER SENIOR FIELD 1

RAIN BIRD		
PARAMETER	UNIT	DATA
MODEL	#	8005-SS-NP
NOZZLE	#	12
BASE PRESSURE	KPA	483
FLOW	LPM	50
RADIUS	M	18
TYPICAL LATERAL SPACING	M	15.1
AVERAGE ROTOR SPACING	M	15.85
TYPICAL GRID PATTERN	REC/TRI/SIN	RECT
MEAN APPLICATION RATE	MM/HR	12.5
DISTRIBUTION UNIFORMITY	%	86
CU (CHRISTIANSEN)	%	91
SCHEDULING COEFFICIENT (10% WINDOW)	FACTOR	1.1

OPTION 2 (S1) - ROTOR PERFORMANCE - SOCCER SENIOR FIELD 1

TORO		
PARAMETER	UNIT	DATA
MODEL	#	T7P SS 52 E
NOZZLE	#	16
BASE PRESSURE	KPA	483
FLOW	LPM	66
RADIUS	M	17.4
TYPICAL LATERAL SPACING	M	15.1
AVERAGE ROTOR SPACING	M	15.85
TYPICAL GRID PATTERN	REC/TRI/SIN	RECT
MEAN APPLICATION RATE	MM/HR	16.6
DISTRIBUTION UNIFORMITY	%	79
CU (CHRISTIANSEN)	%	85
SCHEDULING COEFFICIENT (10% WINDOW)	FACTOR	1.2

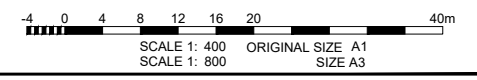
ALL 360° & 180° ARC ROTORS
 USE FULL SIZE NOZZLES
 ON SEPERATE VALVES

ALL CORNER 90° ARC ROTORS
 USE 1/2 SIZE/FLOW NOZZLES

REFER TO DWG 15888-101
 REFER TO DWG 15888-102

IRR OPTIONS 1&2
 2X OEM ROTOR PERFORMANCE

CONCEPTS
 FOR COMMENT & APPROVAL



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CHECKED:	PH
APPROVED:	SJ
DATE:	12/05/2021
DRAFT REF:	4-GRC-d2

CLIENT:	GLADESTONE REGIONAL COUNCIL
PROJECT:	182-21 BITS CLUB SITE & DENNIS PARK SPORTS COMPLEX
PROJECT:	DETAILED DESIGN IRRIGATION SYSTEM BITS SOCCER FIELDS - LAYOUT 1
DRAWING No.	15888-101
SHEET	2 OF 4
REVISION	A

REV	ISSUED	D.DWN	APRVD	REVISION DESCRIPTION
A	30/07/2021	EM	SJ	CONCEPTS - FOR COMMENT & APPROVAL

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REFER TO DWG 15888-101
REFER TO DWG 15888-102

LEGEND:

RECYCLED WATER SIGN, TYPE/SIZE ####
PUMP, TYPE/SIZE ####
TANK, TYPE/SIZE ####
LOW LEVEL SENSOR (NOT SHOWN)
BACKFLOW ASSEMBLY, TYPE/SIZE ####
IRRIGATION CONTROLLER, TYPE/SIZE ####
WEATHER SENSOR, TYPE/SIZE ####
FLOW METER, TYPE/SIZE ####
ISOLATION VALVE (DN## LINE SIZE) C/W 910 VB
FILTER AUTO SCREEN, DN##, 200 MICRON
DN50 AIR VALVE C/W 910VB (NOT SHOWN)
DN25 QCV C/W 910VB (NOT SHOWN)
DN## SOLENOID VALVE, TYPE #### (CONCEPT)
DN## SOLENOID VALVE, TYPE ####
DN## ROTOR C C/W SJR, MODEL #### FULL CIRCLE
DN## ROTOR D C/W SJR, MODEL #### PART CIRCLE
DN### HDPE PN12.5 LILAC MAIN PIPE - A
DN### HDPE PN12.5 LILAC MAIN PIPE - B* (CONCEPT)
DN### HDPE PN12.5 LILAC MAIN PIPE - C
DN### HDPE PN12.5 LILAC LAT PIPE - A* (CONCEPT)
DN### HDPE PN12.5 LILAC LAT PIPE - B
DN### HDPE PN12.5 LILAC LAT PIPE - C
POWER CABLE & CONDUIT ROUTE (240-415V)
CONTROL WIRE ROUTE A, ## (NOT SHOWN)
CONTROL WIRE ROUTE B, ## (NOT SHOWN)

FOR ROTOR MODEL & NOZZLE REFER ROTOR TABLE, BASED ON SPACING

BITS SPORTS FIELDS - OPTION 3 CONTROLS:
SEPARATE IRRIGATION CONTROLLER FOR CRICKET WICKET ONLY, THE 2X VALVES ON POTABLE WATER SUPPLY, IF PREFERRED TO CENTRAL CONTROLLER AT PUMP SHED. CONSIDER WHETHER GRC, GREENSKEEPER, OR BOTH REQUIRE TO CONTROL THESE VALVES. IT IS ALSO POSSIBLE TO LINK A SATELLITE CONTROLLER TO CENTRAL FOR LOCAL AND REMOTE ACCESS. CONFIRM 240V GPO AVAILABLE IN THIS AREA.

POTABLE WATER SUPPLY
UPGRADE POTABLE WATER METERED SUPPLY AND BACKFLOW ASSEMBLY TO DN50 FOR CRICKET WICKET ONLY. NOMINAL DESIGN DUTY, Q= 3.5 L/S AT H= 64M, BASED ON OPERATING PRESSURE AT ROTOR, OPERATING RANGE AT 482kPa.

OVAL BOUNDARY:
DIM: 125M W X 165M L

FIELD BOUNDARY NOTES:
THE FIELD BOUNDARIES PROVIDED IN BASE FILES WERE NOT SYMMETRICAL OR DETAILED WITH FIELD MARKINGS TO REGULAR DIMENSIONS. THE FIELD MARKINGS SHOWN ARE SYMMETRICAL TO GENERATE A SYMMETRICAL DESIGN LAYOUT OFFSET FROM CENTER AXIS WITH FIELD MARKINGS & GOAL POSTS DETAILED. THE MAIN PIPES ARE OFFSET FOR CLARITY HOWEVER THE FINAL SETOUT MAY BE ADJUSTED SLIGHTLY TO "BEST FIT" IF REQUIRED TO AVOID PERIMETER OBSCLES OR SERVICES CONFLICT.

REDUCE NOZZLE TO ~ HALF FLOW (18M RADIUS) IN THIS MIRROR POSITION (4) TO ALL CORNER POCKETS

ALL 360° & 180° ARC ROTORS USE FULL SIZE NOZZLES ON SEPERATE VALVES (EXCEPT CORNER POCKETS)

POTABLE WATER TO WICKET ROTORS

JACARANDA DR

OPTION 1 (AC) - ROTOR PERFORMANCE - AFL/CRICKET OVAL

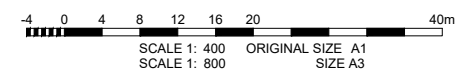
RAIN BIRD		
PARAMETER	UNIT	DATA
MODEL	#	8005-SS-NP
NOZZLE	#	24
BASE PRESSURE	KPA	483
FLOW	LPM	105
RADIUS	M	22.9
TYPICAL LATERAL SPACING	M	18.5
AVERAGE ROTOR SPACING	M	19.4
TYPICAL GRID PATTERN	REC/TRI/SIN	RECT
MEAN APPLICATION RATE	MM/HR	17.5
DISTRIBUTION UNIFORMITY	%	90
CU (CHRISTIANSEN)	%	93
SCHEDULING COEFFICIENT (10% WIND)	FACTOR	1.1

OPTION 2 (AC) - ROTOR PERFORMANCE - AFL/CRICKET OVAL

TORO		
PARAMETER	UNIT	DATA
MODEL	#	T7P SS 52 E
NOZZLE	#	27
BASE PRESSURE	KPA	483
FLOW	LPM	98
RADIUS	M	21
TYPICAL LATERAL SPACING	M	18.5
AVERAGE ROTOR SPACING	M	19.4
TYPICAL GRID PATTERN	REC/TRI/SIN	RECT
MEAN APPLICATION RATE	MM/HR	16.3
DISTRIBUTION UNIFORMITY	%	74
CU (CHRISTIANSEN)	%	85
SCHEDULING COEFFICIENT (10% WIND)	FACTOR	1.2

IRR OPTIONS 1&2
2X OEM ROTOR PERFORMANCE

CONCEPTS
FOR COMMENT & APPROVAL



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REFER TO DWG 15888-102
REFER TO DWG 15888-103



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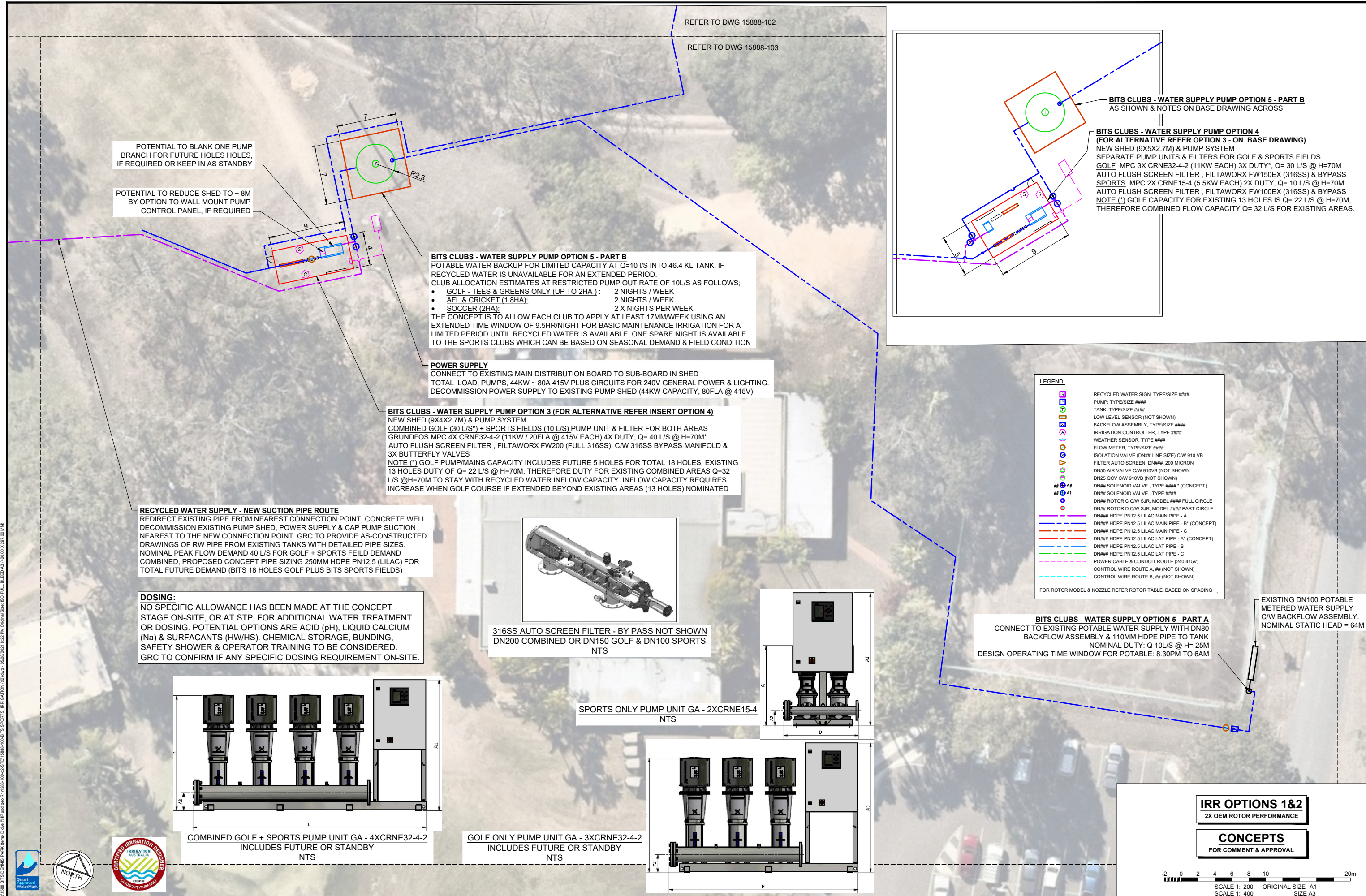
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DATE:	12/05/2021
DRAFT REF:	4-GRC-d2

CLIENT:	GLADESTONE REGIONAL COUNCIL		
	182-21 BITS CLUB SITE & DENNIS PARK SPORTS COMPLEX		
PROJECT:	DETAILED DESIGN IRRIGATION SYSTEM BITS AFL & CRICKET FIELD - LAYOUT 2		
DRAWING No.	15888-102	SHEET	3 OF 4
REVISION			A

REV	ISSUED	D.DWN	APRVD	REVISION DESCRIPTION	REV	ISSUED	D.DWN	APRVD	REVISION DESCRIPTION
A	30/07/2021	EM	SJ	CONCEPTS - FOR COMMENT & APPROVAL					



POTENTIAL TO BLANK ONE PUMP BRANCH FOR FUTURE HOLES, IF REQUIRED OR KEEP IN AS STANDBY

POTENTIAL TO REDUCE SHED TO ~8M BY OPTION TO WALL MOUNT PUMP CONTROL PANEL, IF REQUIRED

BITS CLUBS - WATER SUPPLY PUMP OPTION 5 - PART B
 POTABLE WATER BACKUP FOR LIMITED CAPACITY AT Q=10 L/S INTO 46.4 KL TANK, IF RECYCLED WATER IS UNAVAILABLE FOR AN EXTENDED PERIOD.
 CLUB ALLOCATION ESTIMATES AT RESTRICTED PUMP OUT RATE OF 10L/S AS FOLLOWS:

- GOLF - TEES & GREENS ONLY (UP TO 2HA) : 2 NIGHTS / WEEK
- AFL & CRICKET (1.8HA): 2 NIGHTS / WEEK
- SOCCER (2HA): 2 X NIGHTS PER WEEK

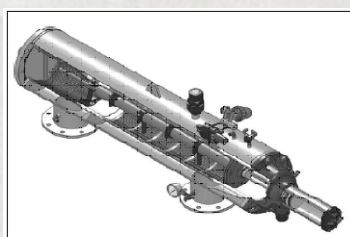
THE CONCEPT IS TO ALLOW EACH CLUB TO APPLY AT LEAST 17MM/WEEK USING AN EXTENDED TIME WINDOW OF 9.5HR/NIGHT FOR BASIC MAINTENANCE IRRIGATION FOR A LIMITED PERIOD UNTIL RECYCLED WATER IS AVAILABLE. ONE SPARE NIGHT IS AVAILABLE TO THE SPORTS CLUBS WHICH CAN BE BASED ON SEASONAL DEMAND & FIELD CONDITION

POWER SUPPLY
 CONNECT TO EXISTING MAIN DISTRIBUTION BOARD TO SUB-BOARD IN SHED
 TOTAL LOAD, PUMPS, 44KW ~ 80A 415V PLUS CIRCUITS FOR 240V GENERAL POWER & LIGHTING.
 DECOMMISSION POWER SUPPLY TO EXISTING PUMP SHED (44KW CAPACITY, 80FLA @ 415V)

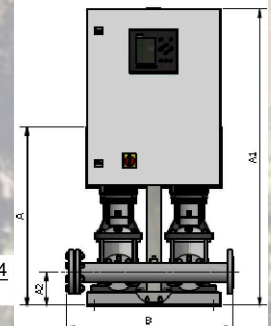
BITS CLUBS - WATER SUPPLY PUMP OPTION 3 (FOR ALTERNATIVE REFER INSERT OPTION 4)
 NEW SHED (9X4X2.7M) & PUMP SYSTEM
 COMBINED GOLF (30 L/S*) + SPORTS FIELDS (10 L/S) PUMP UNIT & FILTER FOR BOTH AREAS
 GRUNDFOS MPC 4X CRNE32-4-2 (11KW / 20FLA @ 415V EACH) 4X DUTY, Q= 40 L/S @ H=70M*
 AUTO FLUSH SCREEN FILTER, FILTAWORX FW200 (FULL 316SS), C/W 316SS BYPASS MANIFOLD & 3X BUTTERFLY VALVES
 NOTE (*) GOLF PUMP/MAINS CAPACITY INCLUDES FUTURE 5 HOLES FOR TOTAL 18 HOLES, EXISTING 13 HOLES DUTY OF Q= 22 L/S @ H=70M, THEREFORE DUTY FOR EXISTING COMBINED AREAS Q=32 L/S @H=70M TO STAY WITH RECYCLED WATER INFLOW CAPACITY. INFLOW CAPACITY REQUIRES INCREASE WHEN GOLF COURSE IF EXTENDED BEYOND EXISTING AREAS (13 HOLES) NOMINATED

RECYCLED WATER SUPPLY - NEW SUCTION PIPE ROUTE
 REDIRECT EXISTING PIPE FROM NEAREST CONNECTION POINT, CONCRETE WELL. DECOMMISSION EXISTING PUMP SHED, POWER SUPPLY & CAP PUMP SUCTION NEAREST TO THE NEW CONNECTION POINT. GRC TO PROVIDE AS-CONSTRUCTED DRAWINGS OF RW PIPE FROM EXISTING TANKS WITH DETAILED PIPE SIZES. NOMINAL PEAK FLOW DEMAND 40 L/S FOR GOLF + SPORTS FEILD DEMAND COMBINED, PROPOSED CONCEPT PIPE SIZING 250MM HDPE PN12.5 (LILAC) FOR TOTAL FUTURE DEMAND (BITS 18 HOLES GOLF PLUS BITS SPORTS FIELDS)

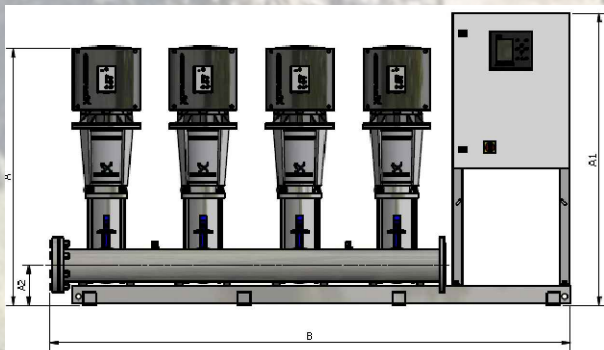
DOSING:
 NO SPECIFIC ALLOWANCE HAS BEEN MADE AT THE CONCEPT STAGE ON-SITE, OR AT STP, FOR ADDITIONAL WATER TREATMENT OR DOSING. POTENTIAL OPTIONS ARE ACID (pH), LIQUID CALCIUM (Na) & SURFACANTS (HW/HS). CHEMICAL STORAGE, BUNDING, SAFETY SHOWER & OPERATOR TRAINING TO BE CONSIDERED. GRC TO CONFIRM IF ANY SPECIFIC DOSING REQUIREMENT ON-SITE.



316SS AUTO SCREEN FILTER - BY PASS NOT SHOWN
 DN200 COMBINED OR DN150 GOLF & DN100 SPORTS
 NTS

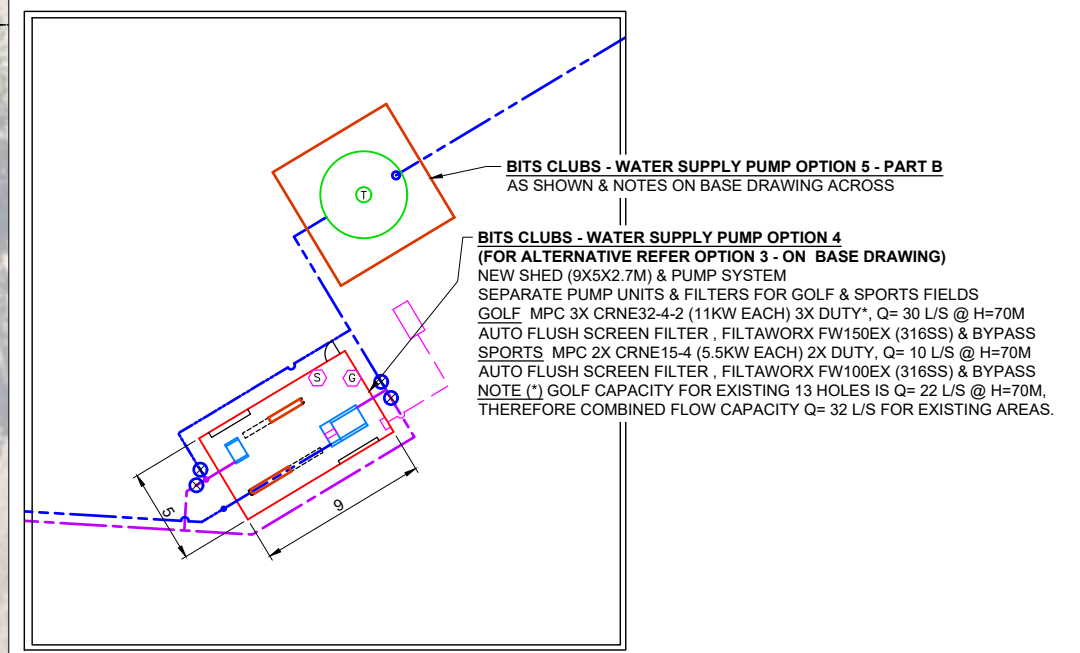


SPORTS ONLY PUMP UNIT GA - 2XCRNE15-4
 NTS



COMBINED GOLF + SPORTS PUMP UNIT GA - 4XCRNE32-4-2
 INCLUDES FUTURE OR STANDBY
 NTS

GOLF ONLY PUMP UNIT GA - 3XCRNE32-4-2
 INCLUDES FUTURE OR STANDBY
 NTS



BITS CLUBS - WATER SUPPLY PUMP OPTION 5 - PART B
 AS SHOWN & NOTES ON BASE DRAWING ACROSS

BITS CLUBS - WATER SUPPLY PUMP OPTION 4 (FOR ALTERNATIVE REFER OPTION 3 - ON BASE DRAWING)
 NEW SHED (9X5X2.7M) & PUMP SYSTEM
 SEPARATE PUMP UNITS & FILTERS FOR GOLF & SPORTS FIELDS
 GOLF MPC 3X CRNE32-4-2 (11KW EACH) 3X DUTY*, Q= 30 L/S @ H=70M
 AUTO FLUSH SCREEN FILTER, FILTAWORX FW150EX (316SS) & BYPASS
 SPORTS MPC 2X CRNE15-4 (5.5KW EACH) 2X DUTY, Q= 10 L/S @ H=70M
 AUTO FLUSH SCREEN FILTER, FILTAWORX FW100EX (316SS) & BYPASS
 NOTE (*) GOLF CAPACITY FOR EXISTING 13 HOLES IS Q= 22 L/S @ H=70M, THEREFORE COMBINED FLOW CAPACITY Q= 32 L/S FOR EXISTING AREAS.

LEGEND:

R	RECYCLED WATER SIGN, TYPE/SIZE ####
P	PUMP, TYPE/SIZE ####
T	TANK, TYPE/SIZE ####
L	LOW LEVEL SENSOR (NOT SHOWN)
B	BACKFLOW ASSEMBLY, TYPE/SIZE ####
A	IRRIGATION CONTROLLER, TYPE ####
W	WEATHER SENSOR, TYPE ####
F	FLOW METER, TYPE/SIZE ####
I	ISOLATION VALVE (DN## LINE SIZE) C/W 910 VB
FS	FILTER AUTO SCREEN, DN##, 200 MICRON
AS	DN50 AIR VALVE C/W 910VB (NOT SHOWN)
QV	DN25 QCV C/W 910VB (NOT SHOWN)
S	DN## SOLENOID VALVE, TYPE #### * (CONCEPT)
SA	DN## SOLENOID VALVE, TYPE ####
RS	DN## ROTOR C C/W SJR, MODEL #### FULL CIRCLE
RD	DN## ROTOR D C/W SJR, MODEL #### PART CIRCLE
HDPE	DN## HDPE PN12.5 LILAC MAIN PIPE - A
HDPE	DN## HDPE PN12.5 LILAC MAIN PIPE - B* (CONCEPT)
HDPE	DN## HDPE PN12.5 LILAC MAIN PIPE - C
HDPE	DN## HDPE PN12.5 LILAC LAT PIPE - A* (CONCEPT)
HDPE	DN## HDPE PN12.5 LILAC LAT PIPE - B
HDPE	DN## HDPE PN12.5 LILAC LAT PIPE - C
PC	POWER CABLE & CONDUIT ROUTE (240-415V)
CR	CONTROL WIRE ROUTE A, # (NOT SHOWN)
CB	CONTROL WIRE ROUTE B, # (NOT SHOWN)

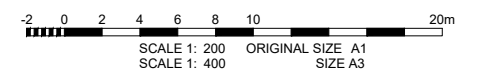
FOR ROTOR MODEL & NOZZLE REFER ROTOR TABLE, BASED ON SPACING

BITS CLUBS - WATER SUPPLY OPTION 5 - PART A
 CONNECT TO EXISTING POTABLE WATER SUPPLY WITH DN80 BACKFLOW ASSEMBLY & 110MM HDPE PIPE TO TANK
 NOMINAL DUTY: Q 10L/S @ H= 25M
 DESIGN OPERATING TIME WINDOW FOR POTABLE: 8.30PM TO 6AM

EXISTING DN100 POTABLE METERED WATER SUPPLY C/W BACKFLOW ASSEMBLY. NOMINAL STATIC HEAD = 64M

IRR OPTIONS 1&2
 2X OEM ROTOR PERFORMANCE

CONCEPTS
 FOR COMMENT & APPROVAL



REV	ISSUED	D.DWN	APRVD	REVISION DESCRIPTION	REV	ISSUED	D.DWN	APRVD	REVISION DESCRIPTION
A	30/07/2021	EM	SJ	CONCEPTS - FOR COMMENT & APPROVAL					



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 The arrangement and general details as shown on this drawing are essentially diagrammatic and must be applied to the circumstances as found on site.

DES/DRAWN: EM
 CHECKED: PH
 APPROVED: SJ
 DATE: 12/05/2021
 DRAFT REF: 4-GRC-d2

CLIENT: GLADESTONE REGIONAL COUNCIL
 182-21 BITS CLUB SITE & DENNIS PARK SPORTS COMPLEX
 PROJECT: DETAILED DESIGN IRRIGATION SYSTEM
 BITS WATER SUPPLY - LAYOUT 3
 DRAWING No. 15888-103
 SHEET 4 OF 4
 REVISION A