

Wednesday, September 14, 2022

Shire of Mingenew  
21 Victoria Street  
Mingenew WA 6522

Attention: Maurice Battilana

Dear Maurice,

**RE: PLANNING APPLICATION FOR THE RIG SITE CAMP ASSOCIATED WITH THE ENERGY RESOURCES LIMITED NORTH ERREGULA DEEP-1 AND LOCKYER-2 EXPLORATION DRILLING PROGRAM**

Please find attached a planning application for the installation and operation of a rig camp site that will be utilized to support the upcoming North Erregulla Deep-1 and Lockyer-2 exploration drilling program for Energy Resources Limited (ERL) within Petroleum Licence EP368 managed under the *Petroleum and Geothermal Energy Resources Act 1967*. The drilling activities are expected to commence in October 2022 although may be delayed until November 2022 based on potential variations to the current rig schedule.

Once drilling activities have commenced, they will be conducted continuously on 24-hour basis with two crews working back-to-back on 12-hour shifts. The rig site camp is planned to accommodate up to six (6) persons with an option for an additional two (2) persons, that are required on-site at the drilling rig for the duration of the drilling activity. There will be up to 22 additional non-accommodated personnel on site during each 12-hour shift.

The drilling program is temporary in nature and planned to be completed within 60 days for each well, however there may be a requirement (over a period of up to 2 years) for various short-term maintenance or well testing activities to be completed. These activities may require accommodation on site but would also be temporary in nature.

The rig site location map is provided as Attachment 1 and will be accessed via Moorriary Road (off Midlands Road). The rig site camp will be installed within the first five days of the drilling activity and will be conducted in conjunction with the installation of the drilling rig. The rig site equipment layout is provided as Attachment 2. The modular camp units will be transported to the site utilizing semi-trailers or winch trucks. Nine trailer loads will be required to transport the rig camp and associated equipment to the site.

The rig camp location is not within close proximity to any residential dwellings with the distance to the nearest residential dwelling being several kilometres. At the rig site camp, there will be no food preparation facilities (this will be conducted off site at the main camp).

The following information has been provided as attachments to the completed Development Application Form:

- ▶ Attachment 1: Site location showing the exploration well location with regards to the lot boundaries and lot area.

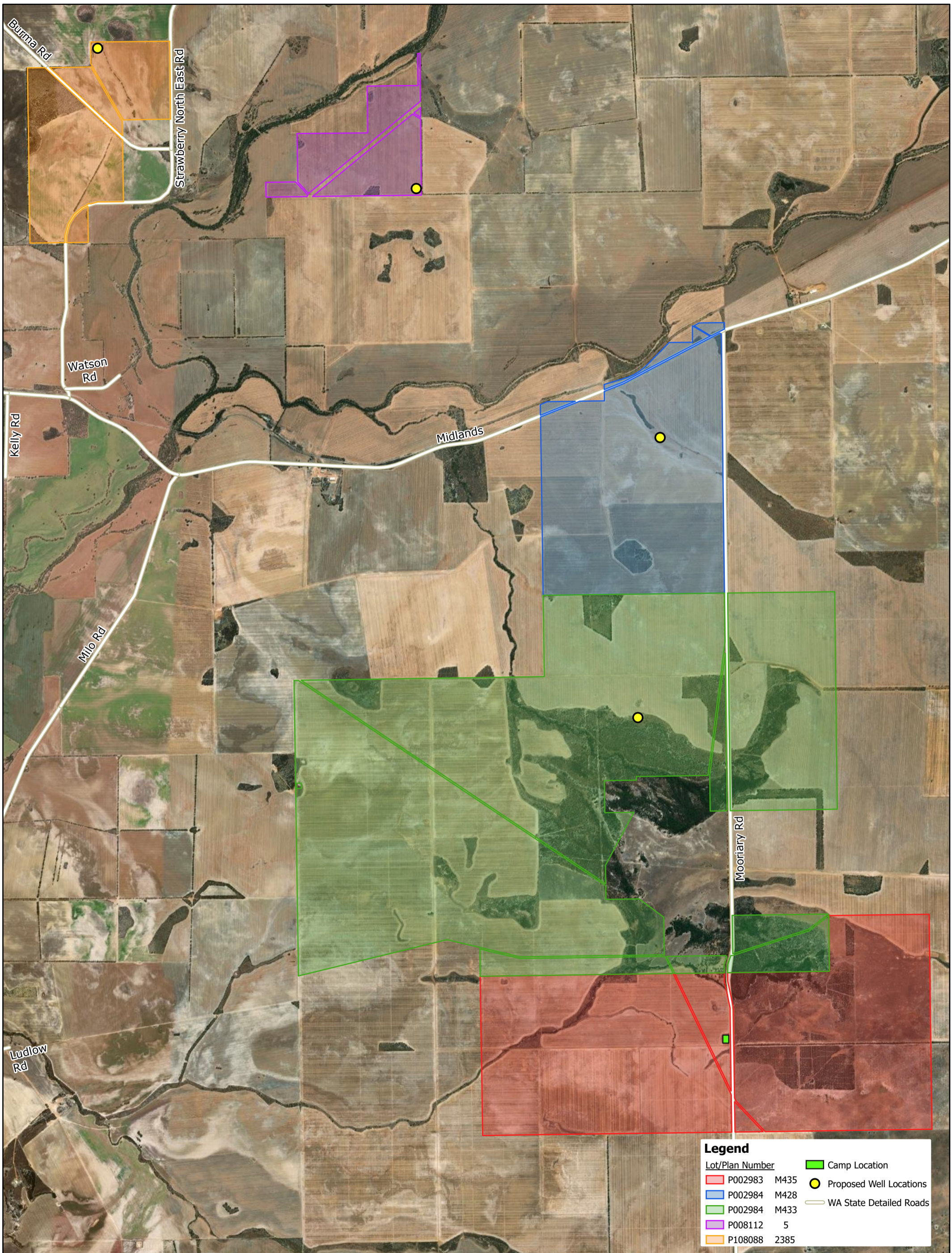
- ▶ Attachment 2: A site layout schematic that provides an indication of where the accommodation units will be situated with regards to additional key drilling rig infrastructure and wellsite boundaries.
- ▶ Attachment 3: A compilation of information regarding the rig site camp with plan views, dimensions and images associated with the temporary building structures.
- ▶ Attachment 4: The completed ATU applications, information and manual associated with the ATU system.

This information has been collated and submitted for and on behalf of Energy Resources Limited.

Yours sincerely,

**Darrell Girgenti**  
*Project Manager*

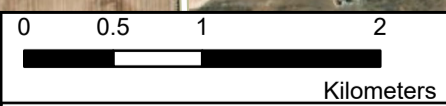
Energy Resources Limited



Legend	
Lot/Plan Number	Camp Location
<span style="color: red;">■</span> P002983 M435	<span style="color: yellow;">●</span> Proposed Well Locations
<span style="color: blue;">■</span> P002984 M428	<span style="color: grey;">—</span> WA State Detailed Roads
<span style="color: green;">■</span> P002984 M433	
<span style="color: purple;">■</span> P008112 5	
<span style="color: orange;">■</span> P108088 2385	



# SHIRE APPLICATION



Projection/Datum:  
GDA 1994 MGA Zone 50

Map Date: 29/07/2022



DP74126 801  
262.0048 ha

DP167185 10504  
186.4998 ha

P2984 M428  
639.4042 ha

P2984 M427  
443.3072 ha

P2984 M429  
758.3999 ha

P2984 M433  
2359.6917 ha

DP248616 1545  
16.2200 ha

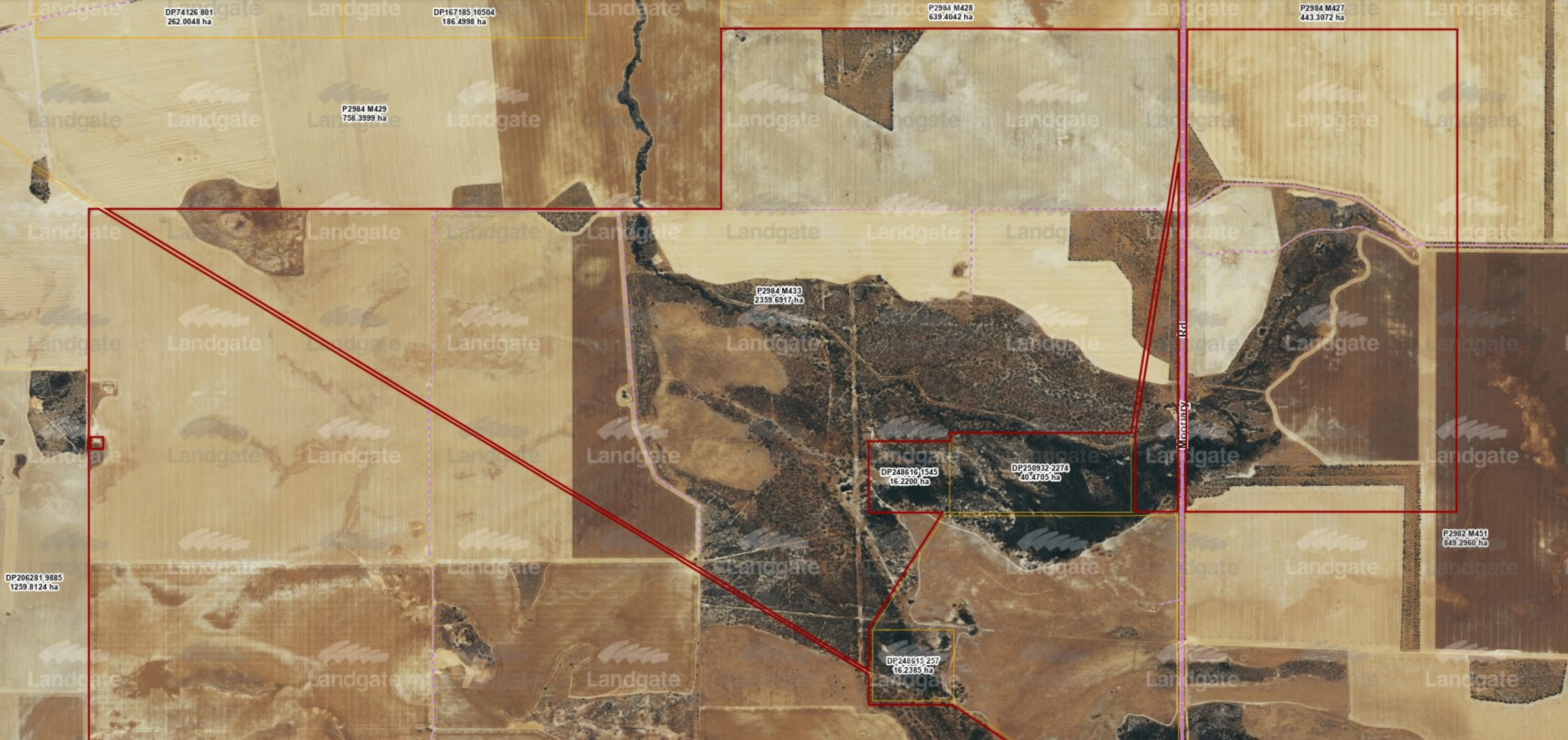
DP250932 2274  
40.4705 ha

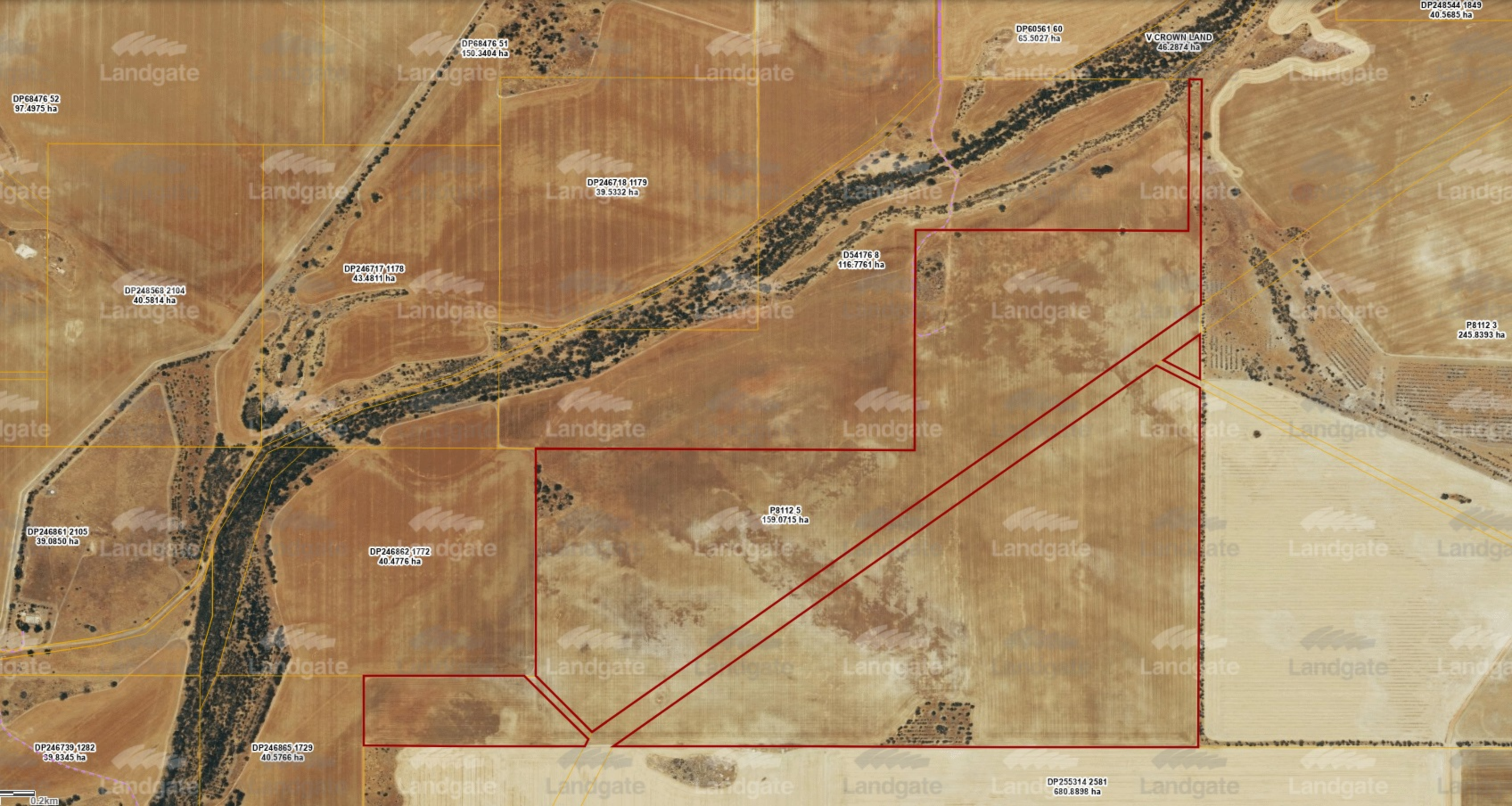
P2982 M451  
849.2960 ha

DP248615 257  
16.2385 ha

DP206281 9885  
1259.8124 ha

Moorriary Rd





DP248544,1849  
40.5685 ha

DP60561,60  
65.5027 ha

V CROWN LAND  
46.2874 ha

Landgate

Landgate

Landgate

Landgate

Landgate

DP68476,52  
97.4975 ha

DP68476,51  
150.3404 ha

DP246718,1179  
39.5332 ha

D54176,8  
116.7761 ha

DP246717,1178  
43.4811 ha

DP248568,2104  
40.5814 ha

Landgate

Landgate

Landgate

Landgate

Landgate

P8112,3  
245.8393 ha

DP246861,2105  
39.0850 ha

DP246862,1772  
40.4776 ha

P8112,5  
159.0715 ha

Landgate

Landgate

Landgate

Landgate

Landgate

Landgate

Landgate

Landgate

DP246739,1282  
39.8345 ha

DP246865,1729  
40.5766 ha

DP255314,2581  
680.8898 ha

Landgate

Landgate

Landgate

Landgate

Landgate

Landgate

Landgate

Landgate

Landgate

0.2km

Attachment 2: Site Layout



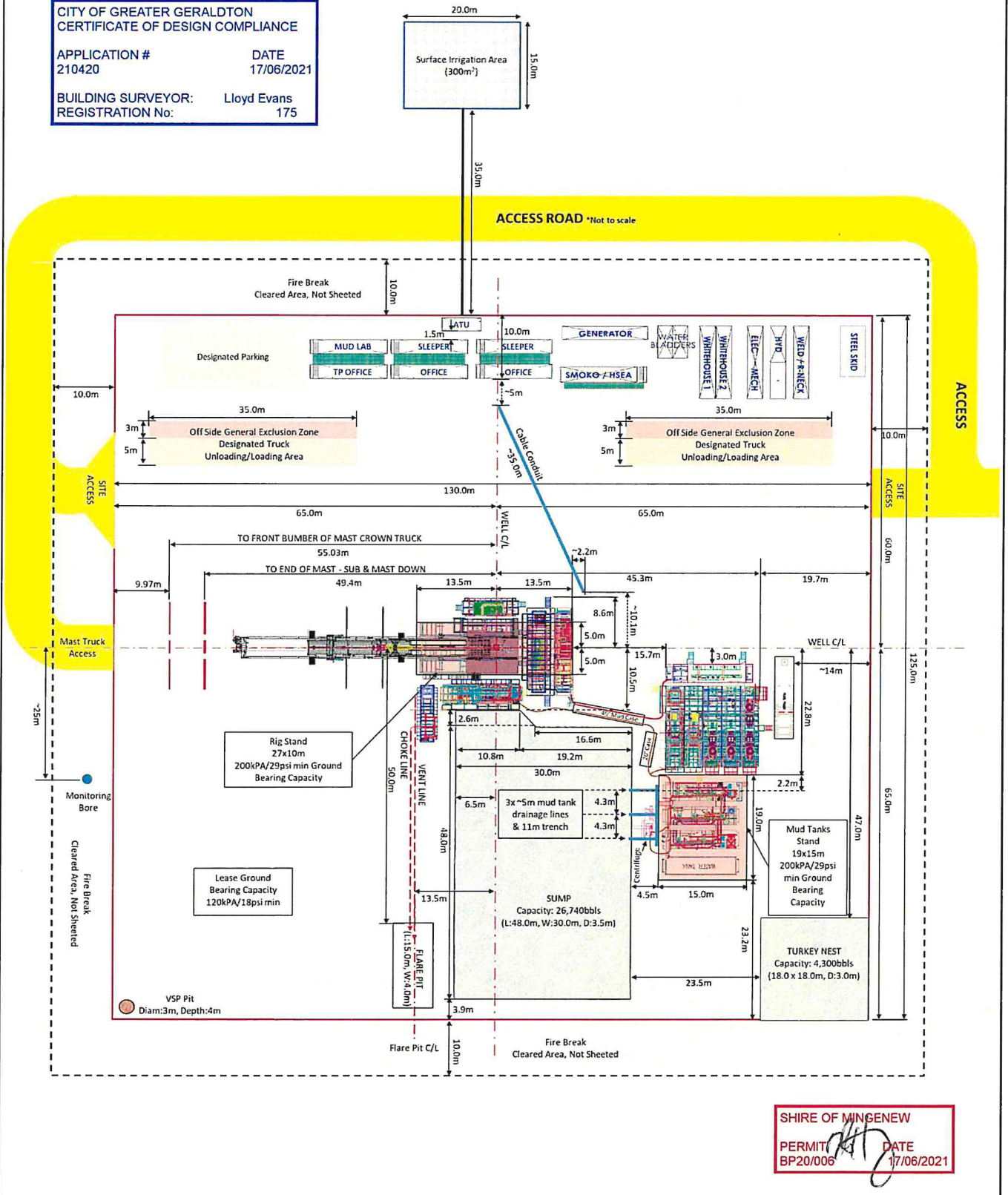
LOCKYER DEEP-1 SITE LAYOUT (Conceptual)

Required Soil Bearing Capacity (Graded and Compacted Area)

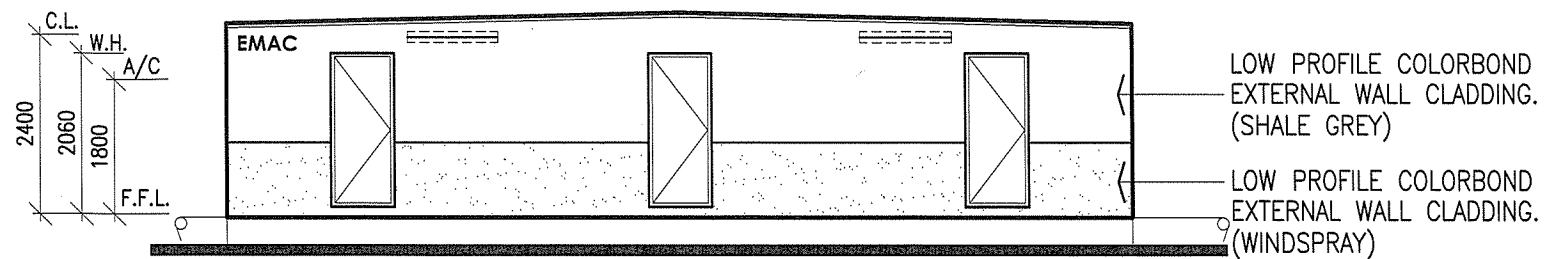
- HIGH LOAD BEARING GRADED AND COMPACTED AREA (MIN 200kPA/29psi)
- SHEETED, GRADED AND COMPACTED AREA W/ 1% FALL (MIN 120kPA/18psi)

Revision	Rev L	Date
		30/3/21

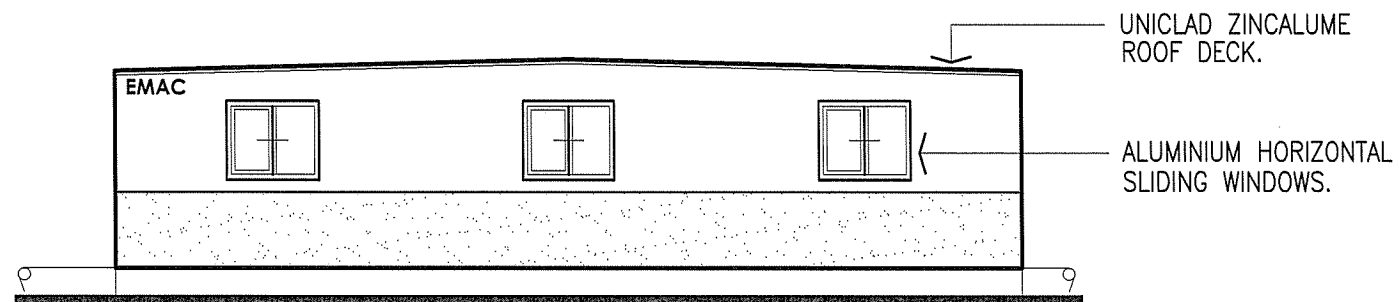
CITY OF GREATER GERALDTON  
 CERTIFICATE OF DESIGN COMPLIANCE  
 APPLICATION # 210420      DATE 17/06/2021  
 BUILDING SURVEYOR: Lloyd Evans  
 REGISTRATION No: 175



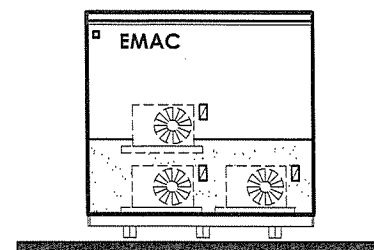
SHIRE OF MINGENEW  
 PERMIT BP20/006      DATE 17/06/2021



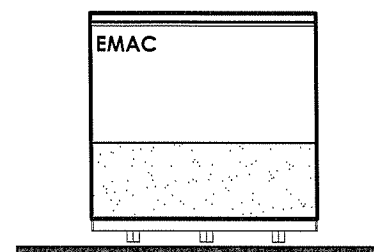
ELEVATION 1



ELEVATION 3



ELEVATION 2

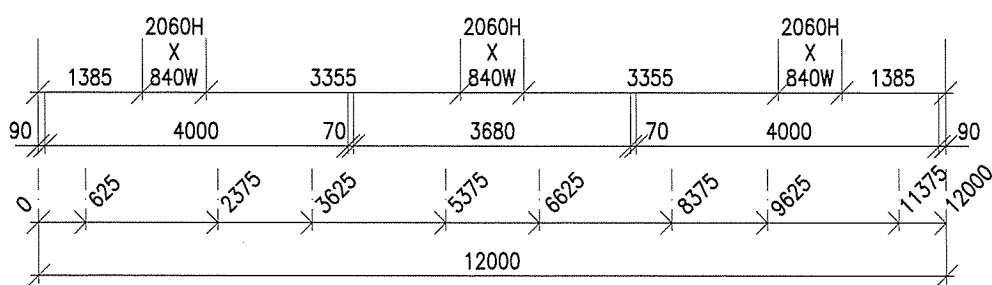
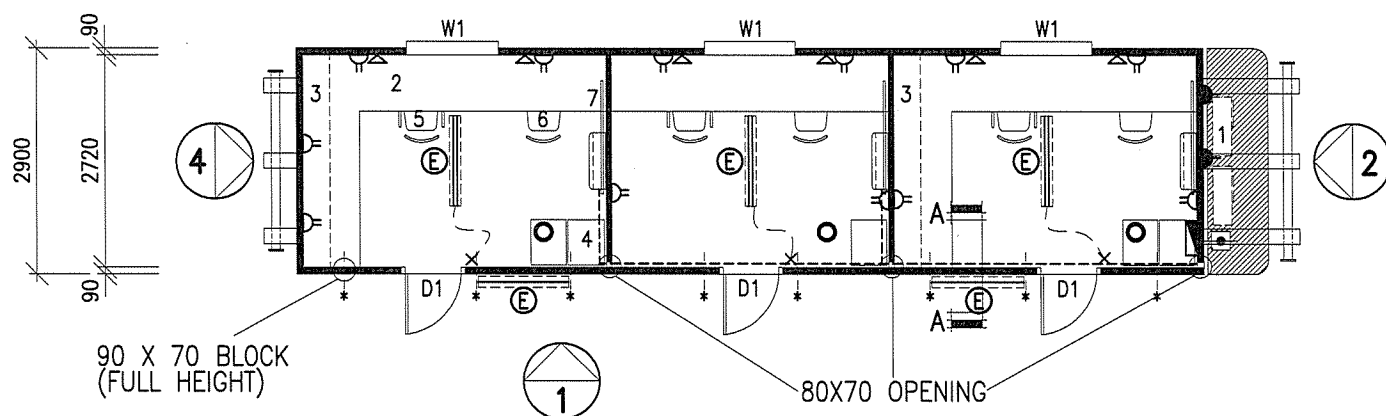
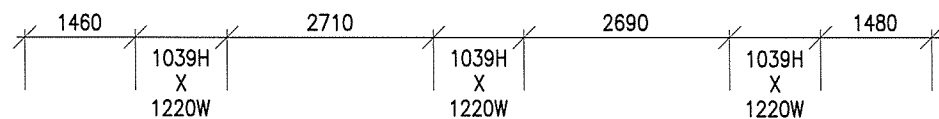


ELEVATION 4

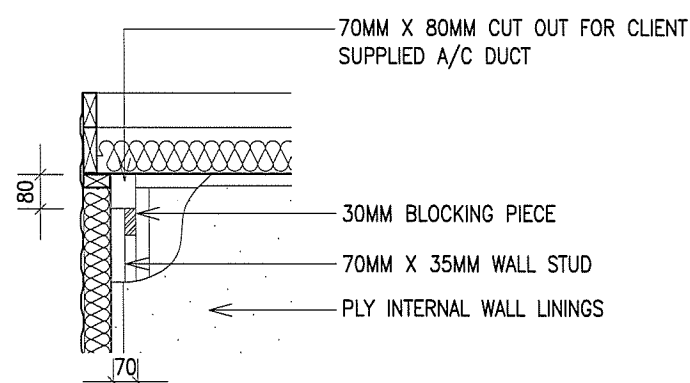
ITEM:	DESCRIPTION:	QTY:
W1.	1029H. X 1210W. HORIZONTAL SLIDING WINDOW (6.38MM LAMINATE - GREY)	3.
D1.	2040H. X 820W. METAL CLAD REBATE EDGE EXTERNAL DOOR C/W SPRING RESTRAINER & EXIT SIGN.	3.
1.	SPLIT R/CYCLE A/C.	3.
2.	FULL WALL 750MM DEEP DESK.	5.
3.	BOOK SHELF OVER DESK C/W BRACKETS UNDER.	2.
4.	4 DRAW FILING CABINET.	5.
5.	TYPIST CHAIR WITH ARMS.	3.
6.	TYPIST CHAIR NO ARMS.	3.
7.	1000H X 1500W WHITEBOARD	3.
▲	15 AMP ISOLATOR.	3.
△	DOUBLE GPO.	12.
×	LIGHT SWITCH.	3.
▽	DATA POINT.	6.
⊞	2 X 36W. DIFFUSED FLUORO C/W BATTERY BACKUP.	3.
⊞	1 X 36W FLOURO. VANDALITE @ 2400 HEIGHT C/W BATTERY BACKUP & PE CELL.	2.
○	SMOKE DETECTOR.	3.
⊞	WILCO 5 PIN MALE PLUG FOR GENERATOR CONNECTION.	1.
⊞	CIRCUIT BREAKER BOARD (3 PHASE).	1.

**NOTE:**

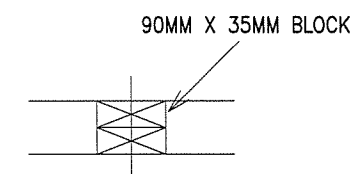
- ALL DOORS TO HAVE STICK ON REFLECTIVE EXIT SIGNS ON INSIDE FACE OF DOOR.
- ALL EXTERNAL LIGHTS TO BE ON SAME P.E. CELL.



FLOOR PLAN



SECTION A-A  
SCALE 1:20



90 X 70 BLOCK  
SCALE 1:10

SUBMITTAL STATUS	INITIAL	DATE
A CONTRACT DRAWINGS		
B BILL OF MATERIALS		
C ISSUE FOR PURCHASING		
D ISSUE FOR PRODUCTION		
E RELEASE FOR DELIVERY		
F APPROVED BY MANAGER		

CLIENT: **ENSIGN INTERNATIONAL**  
SALES ORDER NO: -

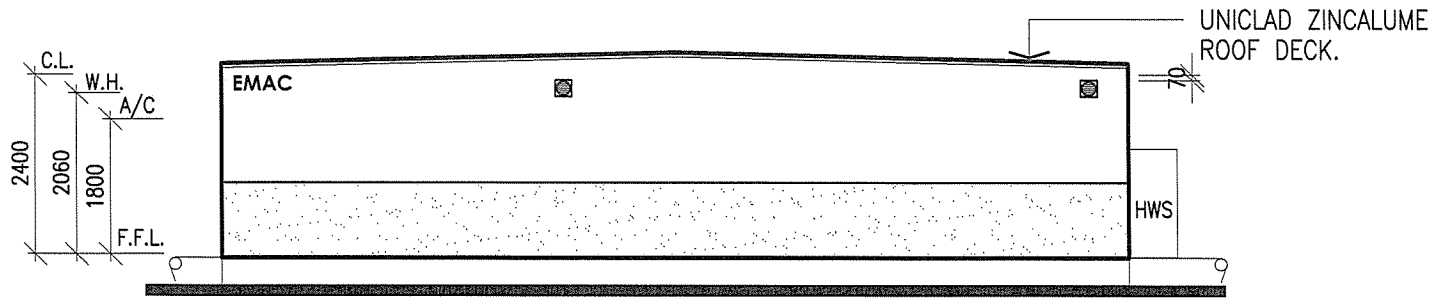
PROJECT: **12.0M X 2.9M 3 ROOM OFFICE**  
SERIAL NO: -

SITE: **EX PLANT**

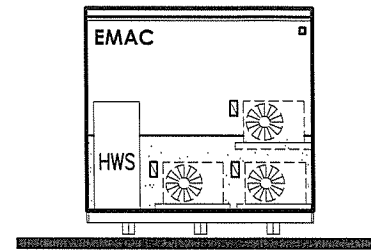
**EMAC**  
S Y S T E M S

KARYDAV PTY. LTD. A.C.N. 061 115 133  
1253 MAIN NORTH ROAD, PARA HILLS WEST,  
SOUTH AUSTRALIA 5096  
P.O. BOX 46, PARA HILLS  
PH: (08) 8260 4866 FAX: (08) 8349 6273  
BUILDERS LICENCE NO. GL 102757

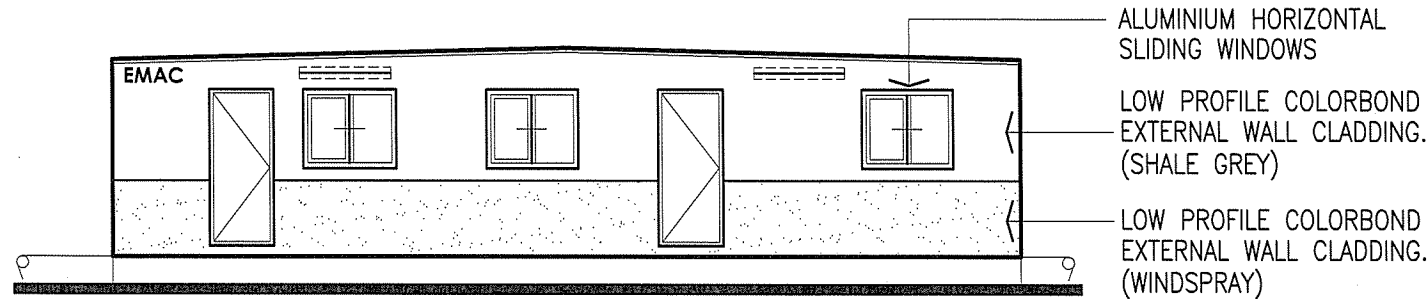
DWG NO: 3 RM OFF	SHEET: 1 OF 1
SCALE: 1:100	DATE: 5/03/10
DRAWN: JR	CHECK: TS
REV	0



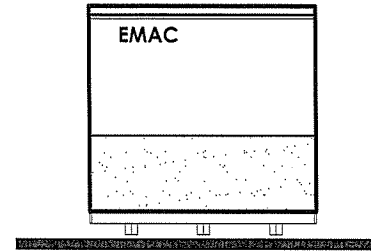
ELEVATION 1



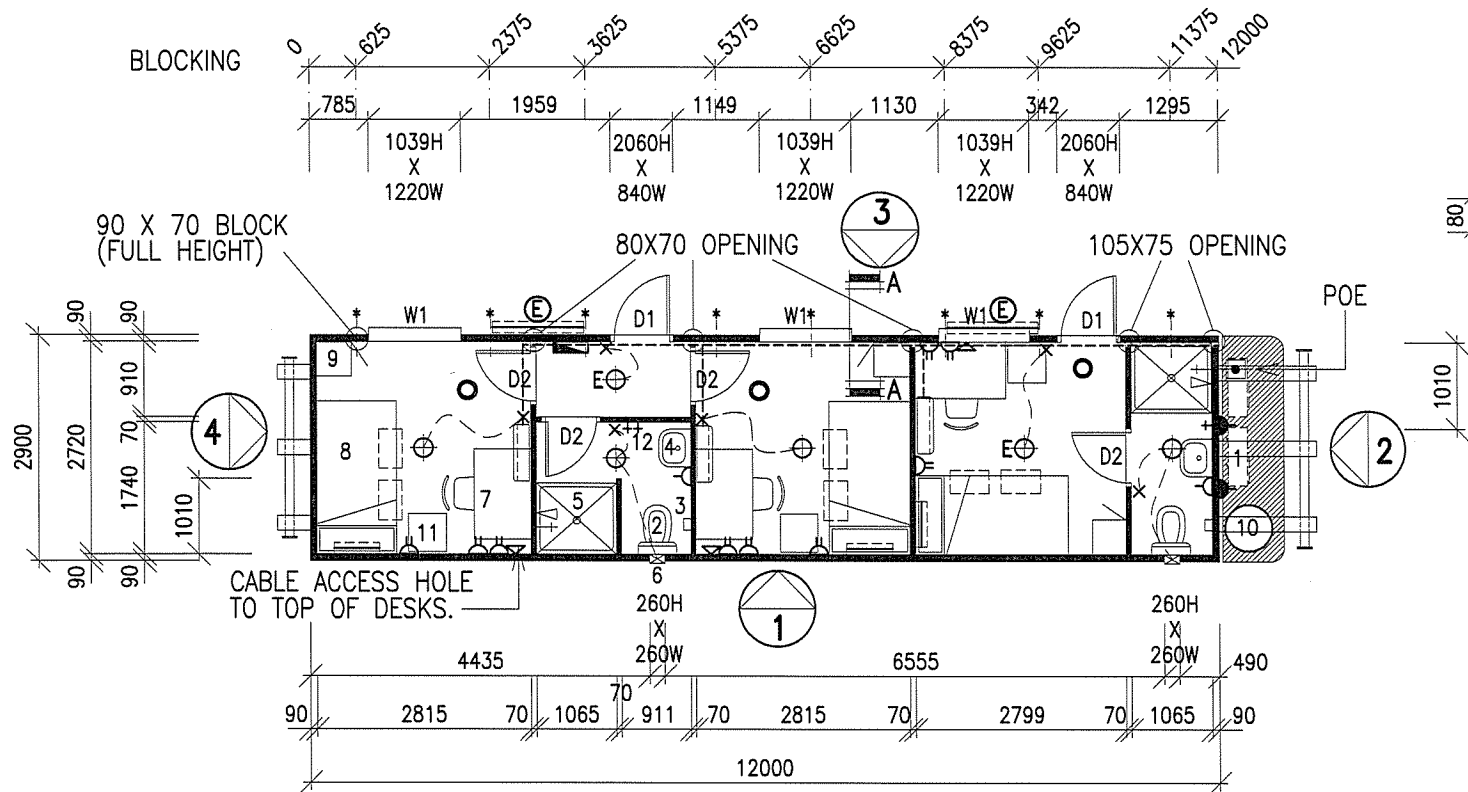
ELEVATION 2



ELEVATION 3



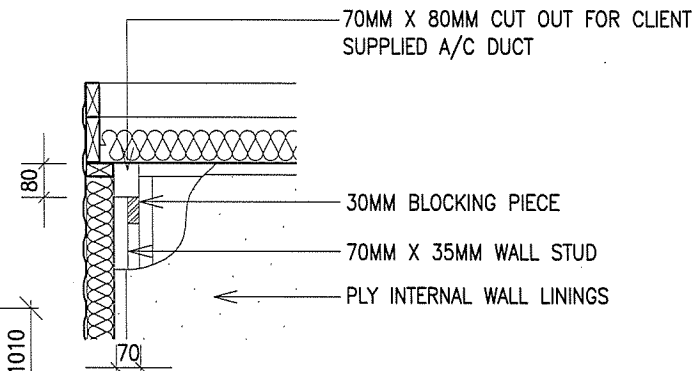
ELEVATION 4



FLOOR PLAN

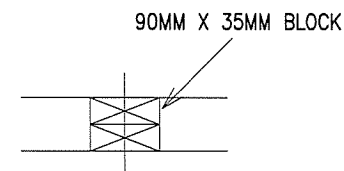
**NOTE:**

- ALL DOORS TO HAVE STICK ON REFLECTIVE EXIT SIGNS ON INSIDE FACE OF DOOR.
- ALL EXTERNAL LIGHTS TO BE ON SAME P.E. CELL.



SECTION A-A

SCALE 1:20



90 X 70 BLOCK

SCALE 1:10

ITEM:	DESCRIPTION:	QTY:
W1.	1029H. X 1210W. HORIZONTAL SLIDING WINDOW (6.38 LAMINATED - GREY)	3.
D1.	2040H. X 820W. METAL CLAD REBATE EDGE EXTERNAL DOOR C/W SPRING RESTRAINER & EXIT SIGN.	2.
D2.	2040H. X 720W. S.P.M. HOLLOW CORE INTERNAL DOOR C/W EXIT SIGN AND DOOR CATCHES TOP AND BOTTOM.	4.
1.	SPLIT R/CYCLE A/C.	3.
2.	TOILET SUITE.	2.
3.	TOILET ROLL HOLDER.	2.
4.	500MM X 400MM HAND BASIN C/W MIRROR OVER.	2.
5.	1055MM X 945MM F/GLASS SHOWER CUBICLE C/W SHOWER CURTAIN.	2.
6.	WALL MOUNTED EXHAUST FAN.	2.
7.	1200MM X 750MM DESK C/W PLASTIC STACK CHAIR.	3.
8.	KING SINGLE BED C/W STORAGE DRAWERS.	3.
9.	LOCKER.	3.
10.	250L ELECTRIC HOT WATER SERVICE.	1.
11.	BAR FRIDGE	3.
12.	COAT HOOKS.	3.
▲	15 AMP ISOLATOR.	3.
△	SINGLE GPO.	2.
⊕	DOUBLE GPO (100 A.F.F.L.)	9.
×	LIGHT SWITCH.	6.
≡	FLUORESCENT BED LIGHT.	3.
▽	DATA POINT.	3.
⊕	BATTEN CEILING LIGHT	4.
⊕	BATTEN CEILING LIGHT C/W BATTERY BACKUP.	2.
⊕	1 X 36W FLOURO. VANDALITE @ 2400 HEIGHT C/W BATTERY BACKUP & PE CELL.	2.
○	SMOKE DETECTOR.	3.
⊕	WILCO 5 PIN MALE PLUG FOR GENERATOR CONNECTION.	1.
■	CIRCUIT BREAKER BOARD (3 PHASE).	1.

SUBMITTAL STATUS	INITIAL	DATE
A CONTRACT DRAWINGS		
B BILL OF MATERIALS		
C ISSUE FOR PURCHASING		
D ISSUE FOR PRODUCTION		
E RELEASE FOR DELIVERY		
F APPROVED BY MANAGER		

CLIENT: **ENSIGN INTERNATIONAL**

SALES ORDER NO: -

PROJECT: **12.0M X 2.9M 3 PERSON LIVING QUARTERS**

SERIAL NO: -

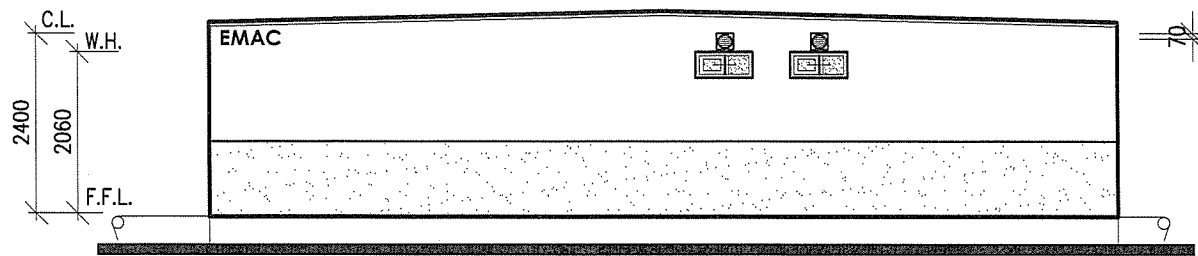
SITE: **EX PLANT**

**EMAC**  
SYSTEMS

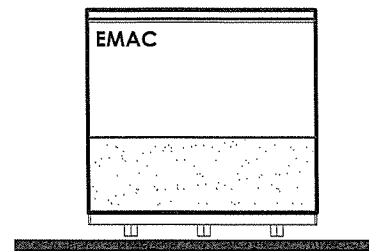
KARYDAV PTY. LTD. A.C.N. 061 115 133  
1253 MAIN NORTH ROAD, PARA HILLS WEST,  
SOUTH AUSTRALIA 5096  
P.O. BOX 46, PARA HILLS  
PH: (08) 8260 4866 FAX: (08) 8349 6273  
BUILDERS LICENCE NO. GL 102757

DWG NO: 3 PERS LQ	SHEET: 1 OF 1
SCALE: 1:100	DATE: 5/03/10
DRAWN: JR	CHECK: TS
REV	6

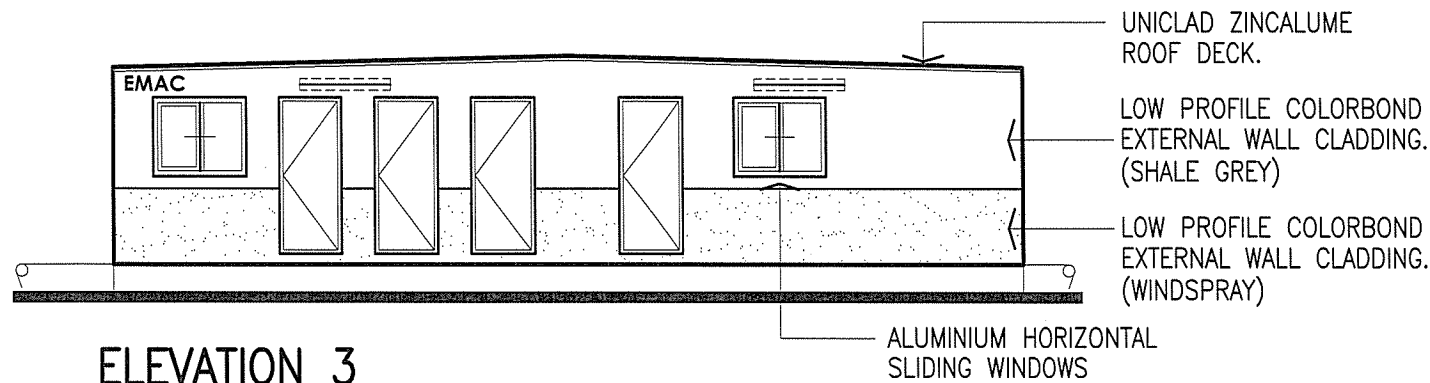




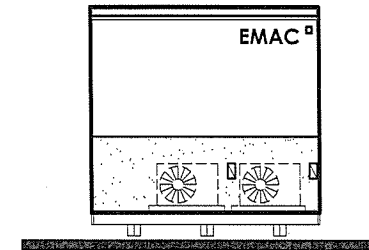
ELEVATION 1



ELEVATION 2

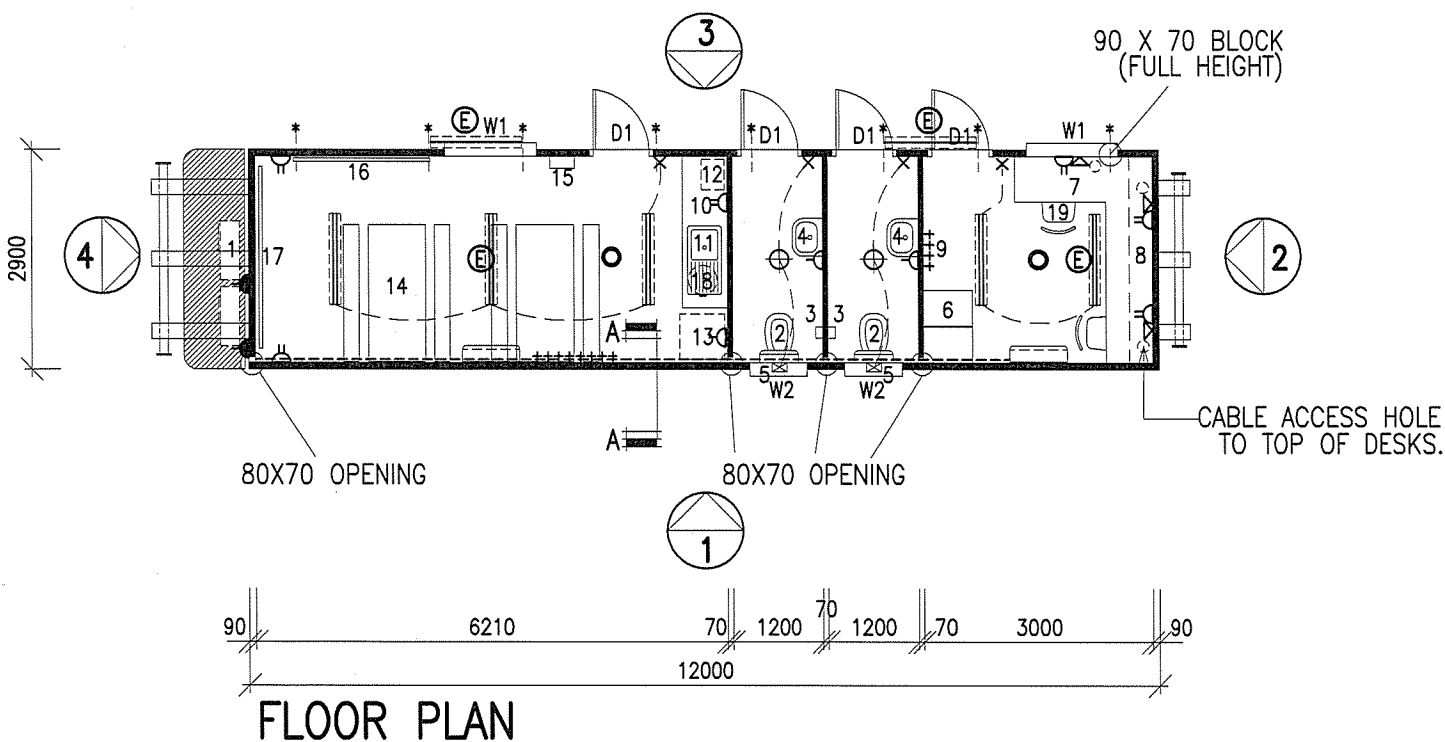


ELEVATION 3

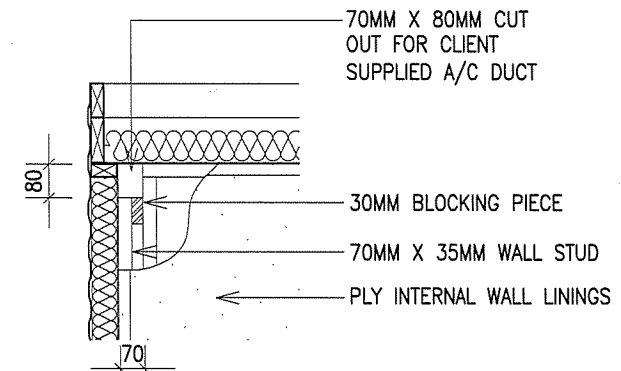


ELEVATION 4

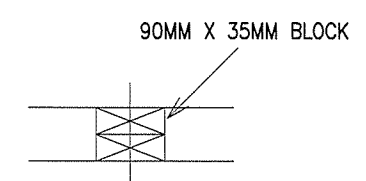
**NOTE:**  
 1. ALL EXTERNAL DOORS TO HAVE STICK ON REFLECTIVE EXIT SIGNS ON INSIDE FACE OF DOOR.  
 2. ALL EXTERNAL LIGHTS TO BE ON SAME P.E. CELL.



FLOOR PLAN



SECTION A-A  
SCALE 1:20



90 X 70 BLOCK  
SCALE 1:10

ITEM:	DESCRIPTION:	QTY:
W1.	1029H. X 1210W. HORIZONTAL SLIDING WINDOW (6.38 LAMINATED - GREY)	2.
W2.	350H. X 750W. ALUMINIUM SLIDING WINDOW. (OBSCURE GLAZING)	2.
D1.	2040H. X 820W. METAL CLAD REBATE EDGE EXTERNAL DOOR C/W SPRING RESTRAINER & EXIT SIGN.	4.
1.	SPLIT R/CYCLE A/C.	2.
2.	TOILET SUITE.	2.
3.	TOILET ROLL HOLDER.	2.
4.	500MM X 400MM HAND BASIN C/W MIRROR OVER.	2.
5.	WALL MOUNTED EXHAUST FAN.	2.
6.	4 DRAW FILING CABINET.	2.
7.	750MM DEEP DESK UNIT C/W CABLE ACCESS HOLES.	1.
8.	SHELVING OVER DESK (AS PER DETAIL).	1.
9.	COAT HOOKS.	12.
10.	LAMINATED CUPBOARD UNIT.	1.
11.	900MM S/STEEL INSET SINGLE BOWL SINK.	1.
12.	CHILLER/BOILER UNIT.	1.
13.	380L FRIDGE.	1.
14.	TABLE AND BENCHES (SCREWED TO FLOOR).	2.
15.	FIRST AID BOX.	1.
16.	1000 X 1800 WHITE BOARD.	1.
17.	1000 X 2400 WHITE BOARD.	1.
18.	50L UNDERBENCH HOT WATER UNIT.	1.
19.	CLERICAL CHAIR.	2.
▲	15 AMP ISOLATOR.	2
△	SINGLE GPO.	3.
△	DOUBLE GPO (100 A.F.F.L.)	6.
×	LIGHT SWITCH.	4.
⊕	BATTEN CEILING LIGHT	2.
=====	2 X 36W. DIFFUSED FLUORO.	3.
=====	2 X 36W. DIFFUSED FLUORO C/W BATTERY BACKUP.	2.
⊕	1 X 36W FLOURO. VANDALITE @ 2400 HEIGHT C/W BATTERY BACKUP & PE CELL.	2.
○	SMOKE DETECTOR.	2.
⊕	ELECTRICAL POINT OF ENTRY (TBA).	1.
⊕	CIRCUIT BREAKER BOARD (3 PHASE).	1.

SUBMITTAL STATUS	INITIAL	DATE
A CONTRACT DRAWINGS		
B BILL OF MATERIALS		
C ISSUE FOR PURCHASING		
D ISSUE FOR PRODUCTION		
E RELEASE FOR DELIVERY		
F APPROVED BY MANAGER		

CLIENT: ENSIGN INTERNATIONAL  
 SALES ORDER NO: -

PROJECT: 12.0M X 2.9M OFFICE/TOILET/LUNCHROOM  
 SERIAL NO: -

SITE: -



KARYDAV PTY. LTD. A.C.N. 061 115 133  
 1253 MAIN NORTH ROAD, PARA HILLS WEST,  
 SOUTH AUSTRALIA 5096  
 P.O. BOX 46, PARA HILLS  
 PH: (08) 8260 4866 FAX: (08) 8349 6273  
 BUILDERS LICENCE NO. GL 102757

DWG NO: OFF/TOI/LNCH	SHEET: 1 OF 1
SCALE: 1:100	DATE: 5/03/10
DRAWN: JR	CHECK: TS
REV	0

CERTIFIED  
A. PRESCOTT  
RP-16002

*A. Prescott*  
REF: 1235

  
**OZZI KLEEN**  
*Waste Water Systems*

Proudly owned, designed and manufactured  
by Suncoast Waste Water Management

---

## Technical Specifications

### OZZI KLEEN Sewage Treatment Systems

#### SK20A-G

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*Efficiency, Reliability, Simplicity*  
[www.ozzikleen.com](http://www.ozzikleen.com)

## 1. DESIGN CAPACITY

The design capacity of the SK20A-G treatment plant is 4,000L per day, producing advanced secondary effluent quality as specified below.

## 2. DESIGN PARAMETERS

The performance of the OZZI KLEEN SK20A-G Sewage Treatment Plant will achieve advanced effluent quality provided the incoming wastewater parameters meet the following characteristics:

### Sewage Inlet

Parameter	Unit	Influent	Advanced
Biological Oxygen Demand (BOD <sub>5</sub> )	mg/L	≤ 350	≤ 10
Total Suspended Solids (TSS)	mg/L	≤ 350	≤ 10
Total Nitrogen	mg/L	≤ 75	≤ 10
Total Phosphorus	mg/L	≤ 15	≤ 5
Faecal Coliforms, FC	cfu/100 mL	-	≤ 10
Chlorine Residual	mg/L	-	0.5 ≤ 2.0
pH		6.0 ≤ 8.5	6.0 ≤ 8.5

## 3. SERVICE LIFE

The Ozzi Kleen SK20A-G was designed for a minimum service life of 15 years

## 4. ENGINEERING CALCULATION AND POE

Description	Document No.	Revision
SK20A-G Design Calculation Sheet	OK-SK20A-G-CS	12/11/2020
SK20A-G Power & Operating Cost Estimate	OK-SK20A-G-POE	12/11/2020
SK20A-G Elevation View Drawing	GD-SK20A-G-H06	17/11/2020
SK20A-G Plan View Drawing	GD-SK20A-G-H05	17/11/2020

CERTIFIED  
A. PRESCOTT  
RP-16002

*AP*  
REF: 1235

## Suncoast Waste Water Management

## Plant Engineering Calculation

Project: Ozzi Kleen SK20A-G

Model	Unit	SK20A-G	Notes
<b>1. Process Design Parameters</b>			
Plant Capacity	EP	20	
Hydraulic flow	l/day	4000	
BOD <sub>5</sub> loading	mg/l	350	
BOD <sub>5</sub> loading	kg/day	1.4	
Suspended solids loading	mg/l	350	
Suspended solids loading	kg/day	1.4	
Mixed Liquor Suspended Solids (MLSS)	mg/l	5000	Typical extended aeration: 2500 to 6000 mg/l
Sludge Age	days	40	Typical extended aeration: > 30 days
Flow hours per day - Hydraulic sizing	hr/day	24	
Blower on time per cycle	min	60	
Settling time per cycle	min	30	
Decant time per cycle	min	30	
Total cycle time	min	120	
Number of cycles per day	cycles	12	
Total decanting time per day	min	360	
Total decanting time per day	hr	6	
Total aeration time per day	min	720	
Total aeration time per day	hr	12	
<b>2. Aeration Tank</b>			
Number of Aeration Tanks		2	Two RP Tanks, SBR operation
Aeration Tank outside diameter	mm	1900	
Shell Thickness	mm	18	
Aeration Tank inside diameter	mm	1864	
Aeration Tank top water level	mm	1745	
Aeration Tank volume - actual, calculated	litre	8,414	Excluding 4 x ø450 OD tubes volume
Aeration Tank volume per EP actual		421	
Maximum decant depth	mm	150	
Aeration Tank max. decant volume	litre	723	
Max. decant volume to daily flow	%	18%	Two cells on same cycling
Aeration Tank minimum working volume	litre	7690	
Max. decant ratio	%	8.6%	
Hydraulic Residence Time based on TWL	hr	50	24 hours minimum: Ref: SA Dept. of Health
Hydraulic Residence Time based on BWL	hr	46	
Food to Microbial Mass ratio (F:M Ratio)	g/g day	0.033	Typical for extended aeration, F:M 0.04 to 0.15
<b>3. Air Flow</b>			
Oxygen demand (kg O <sub>2</sub> / kg BOD <sub>5</sub> )	kg/kg	2.4	Ref: SA Dept. of Health
BOD <sub>5</sub> loading	kg/day	1.40	
Actual Oxygen demand required	kg O <sub>2</sub> /day	3.4	Ref: SA Dept. of Health
1 kmol of air at STP occupies:	m <sup>3</sup> /kmol	22.41	
1 kmol of dry air has mass of:	kg/kmol	28.96	
Gravimetric fraction of Oxygen in dry air	kg/kg	0.2314	
Mass of Oxygen per kmol of air	kg/kmol	6.701	
Mass of Oxygen per m <sup>3</sup> of air at STP (dry basis)	kg/m <sup>3</sup>	0.299	
Inlet air temperature	°C	25	25°C default
Inlet air relative humidity	%	70	
Inlet air temperature	K	298.15	
Standard air temperature	°C	0	
Standard air temperature	K	273.15	
Inlet air pressure	bara	1.013	
Saturated vapour pressure at inlet conditions	bara	0.032	0.03166 for 25°C. 0.04242 for 30°C

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Blower discharge pressure at TWL	mbar	207	
Blower air flow (FAD) - actual	m <sup>3</sup> /hr	18	2 Blowers
Blower model	LP150HN		
Number of Elastox-T type B diffusers		4	
Air flow per diffuser (FAD at suction temperature)	m <sup>3</sup> /hr	4.50	
Ratio : Actual m <sup>3</sup> (wet basis) per Nm <sup>3</sup> (dry basis)		1.116	
Air flow per diffuser (at STP)	Nm <sup>3</sup> /hr	4.03	Recommended for Elastox-T: 2 to 6 Nm <sup>3</sup> /h
Elastox-T diffuser Oxygen transfer (from	g O <sub>2</sub> /m Nm <sup>3</sup>	22	
Diffuser immersion depth at TWL	m	1.545	
Diffuser Oxygen transfer at immersion depth	g O <sub>2</sub> /Nm <sup>3</sup>	33.99	
Oxygen transfer per diffuser	g O <sub>2</sub> /hr	137.06	
Oxygen transfer, all diffusers	kg O <sub>2</sub> /hr	0.55	
Oxygen transfer, all diffusers - daily basis at TWL	kg O <sub>2</sub> /day	6.6	
Standard Oxygen transfer efficiency (wet basis)	%	12.7	
<b>4. Chlorine Contact Tank</b>			
Decanting flow rate	l/min	16	Based on average flow plus 40% margin
Decanting flow rate	m <sup>3</sup> /hr	0.9	
Minimum Cl contact time	min	30	
Minimum Cl contact tank volume required	litre	467	
Number of Contact Tanks		2	
Contact Tank outside diameter	mm	450	
Shell Thickness	mm	10	
Contact Tank inside diameter	mm	430	
Contact Tank top water level	mm	1745	
Contact Tank volume - calculated	litre	507	
Cl contact time - actual	min	33	
<b>Chlorine tablet consumption</b>			
dosage rate	mg/L	10	
daily tablet consumption	kg/d	0.04	
min. storage - 3 months	kg	3.64	
number of tablets (200 g/ea) - 3 months	no.	18	
<b>5. Waste Sludge Tank</b>			
Sludge oxidation ratio	40 t	40	
Sludge D.S. wastage based on SS loading	kg/day	0.035	
Wet sludge solids content in sludge tank	% D.S	1	
Wet sludge mass to be wasted	kg/day	3.5	
Wet sludge volume wasted where SG = 1	l/day	3.5	
Period between tank de-sludging	day	90	
Minimum sludge tank volume required	litre	315	
Number of Sludge Tanks		2	
Sludge Tank outside diameter	mm	450	
Shell Thickness	mm	10	
Sludge Tank inside diameter	mm	430	
Sludge Tank top water level	mm	1900	
Sludge Tank volume - calculated	litre	552	
Period between de-sludging - actual	day	158	
<b>6. Alum Dosing System (SK20A / A-G ONLY)</b>			
Dosage rate	mg/L	30	
Daily alum consumption	kg/d	0.12	
Percentage of alum solution	%	20	
Daily alum consumption at 20% solution:	kg/d	0.6	
Daily alum consumption at 20% solution:	L/d	0.53	
Dosing rate per inflow at 20% solution	ml/m <sup>3</sup>	133	
Chemical tank volume	litre	80	
Minimum refill period of Alum	days	150	

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## Suncoast Waste Water Management

## AWTS Process Design Parameters for Power Utilisation

Project: Ozzi Kleen SK20A-G

Design Parameter	EP	20	Model			
Hydraulic Flow	l/day	4000				
Flow Hours per Day - Hydraulic Sizing	hr/day	24				
Blower ON Time per Cycle	min	60				
Settling Time per Cycle	min	30				
Decant Time per Cycle	min	30				
Total Cycle Time	min	120				
Number of Cycles per Day	cycles	12				
Transfer Pump Flow Rate	l/min	200	Showfou STA-112			
Effluent Pump Flow Rate	l/min	100	Reefe RVS300			
Grease Trap Pump Flow Rate (SK20G / A-G ONLY)	l/min	200	Reefe RVS300			
Dosing Pump Flow Rate (SK20A / A-G ONLY)	l/hr	3	Iwaki EJ B16			
Air Blower	m <sup>3</sup> /hr	18	Thomas LP150HN			
Power Utilisation Based on Rated Power	Installed Power		Unit	Hrs/day	Energy Used	
	3 phase	1 phase		hr	kWh	
Transfer Pump		0.75	kW	0.33	0.25	
Effluent Pump 1		0.40	kW	0.33	0.13	
Effluent Pump 2		0.40	kW	0.33	0.13	
Grease Trap Pump (SK20G / A-G ONLY)		0.18	kW	0.11	0.02	
Dosing Pump (SK20A / A-G ONLY)		0.10	kW	0.37	0.04	
Blower 1		0.13	kW	12.00	1.56	
Blower 2		0.13	kW	12.00	1.56	
Control System		0.10	kW	24.00	2.40	
<b>Total Installed Power</b>	<b>0.00</b>	<b>2.19</b>	kW		<b>6.1</b>	
<b>Average Power</b>			kW		<b>0.25</b>	
Current Draw Based on Full Load Current	Full Load Current		Unit	Hrs/day	Amp-hr Used	
	3 phase	1 phase			3 phase	1 phase
Transfer Pump		6.00	A	0.33		2.00
Effluent Pump 1		4.00	A	0.33		1.33
Effluent Pump 2		4.00	A	0.33		1.33
Grease Trap Pump (SK20G / A-G ONLY)		4.00	A	0.11		0.44
Dosing Pump (SK20A / A-G ONLY)		0.50	A	0.37		0.19
Blower 1		0.85	A	12.00		10.20
Blower 2		0.85	A	12.00		10.20
Control System		1.00	A	24.00		24.00
<b>Total Installed Current</b>	<b>0.00</b>	<b>21.20</b>	A		<b>0.00</b>	<b>49.69</b>
<b>Average Current</b>			A		<b>0.00</b>	<b>2.07</b>

Operating Cost Estimating	unit	unit price	qty/d	qty/yr	\$/yr
Power	kW	0.20	6.1	2224	445
Chlorine	kg	12.50	0.04	15	183
Alum	kg	1.50	0.12	44	66
Waste Sludge Disposal	L	0.20	3.50	1278	256
<b>total:</b>	<b>\$/year</b>				<b>949</b>

Note: All costs are estimated based on the SK20A-G operating for 365 days at full design capacity (4 kL/day), an adjustment should be made when less sewage is treated per year.

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EFFLUENT OUTLET  
(32mm CAMLOCK)

SLUDGE TANK

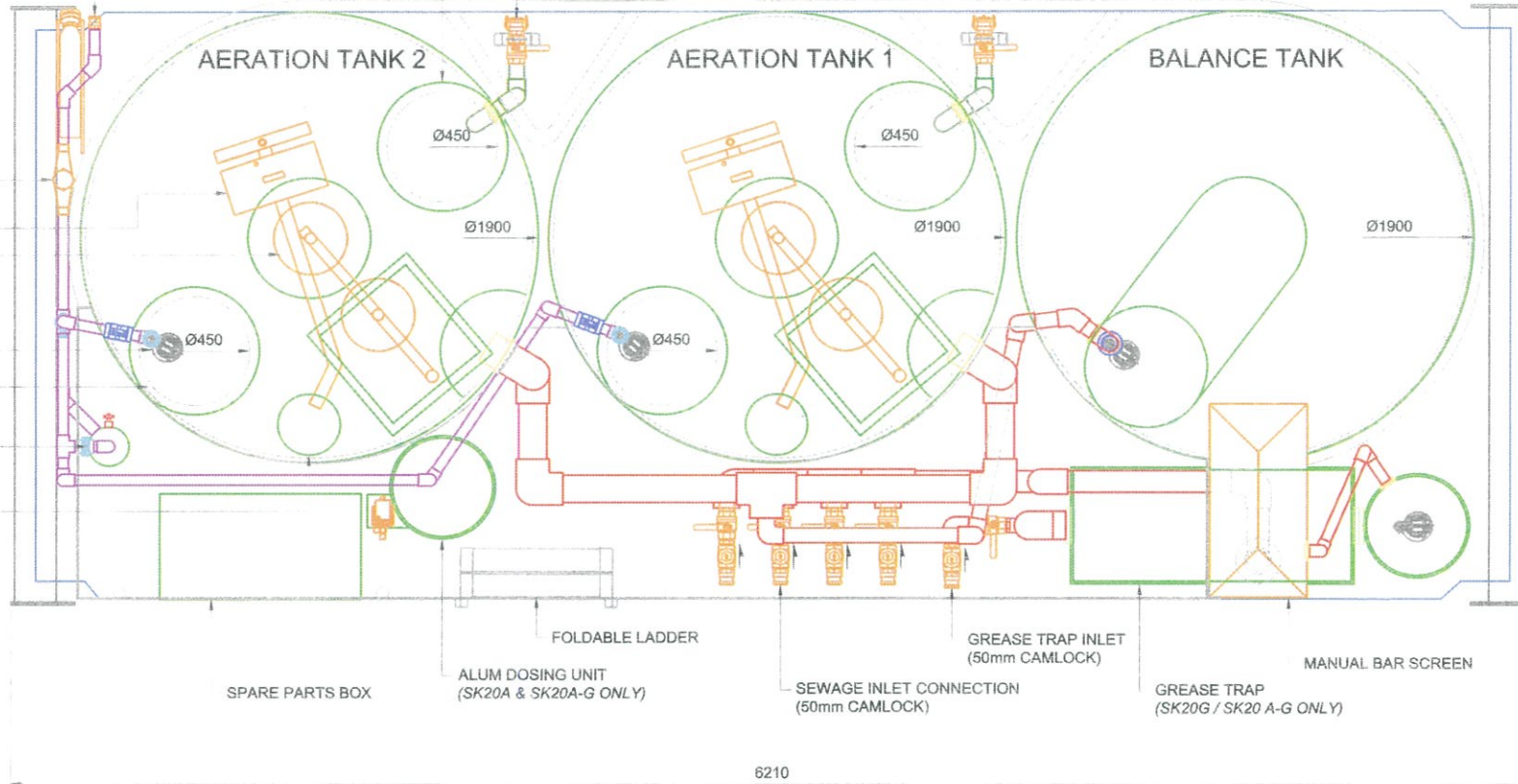
WASTE SLUDGE DISPOSAL  
(50mm CAMLOCK)

AERATION TANK 2

AERATION TANK 1

BALANCE TANK

EFFLUENT FLOW METER  
FLOATING DECANTER  
AIR DIFFUSERS  
EFFLUENT PUMP  
EFFLUENT TANK  
SOCK FILTER  
CHLORINATOR



PLAN VIEW

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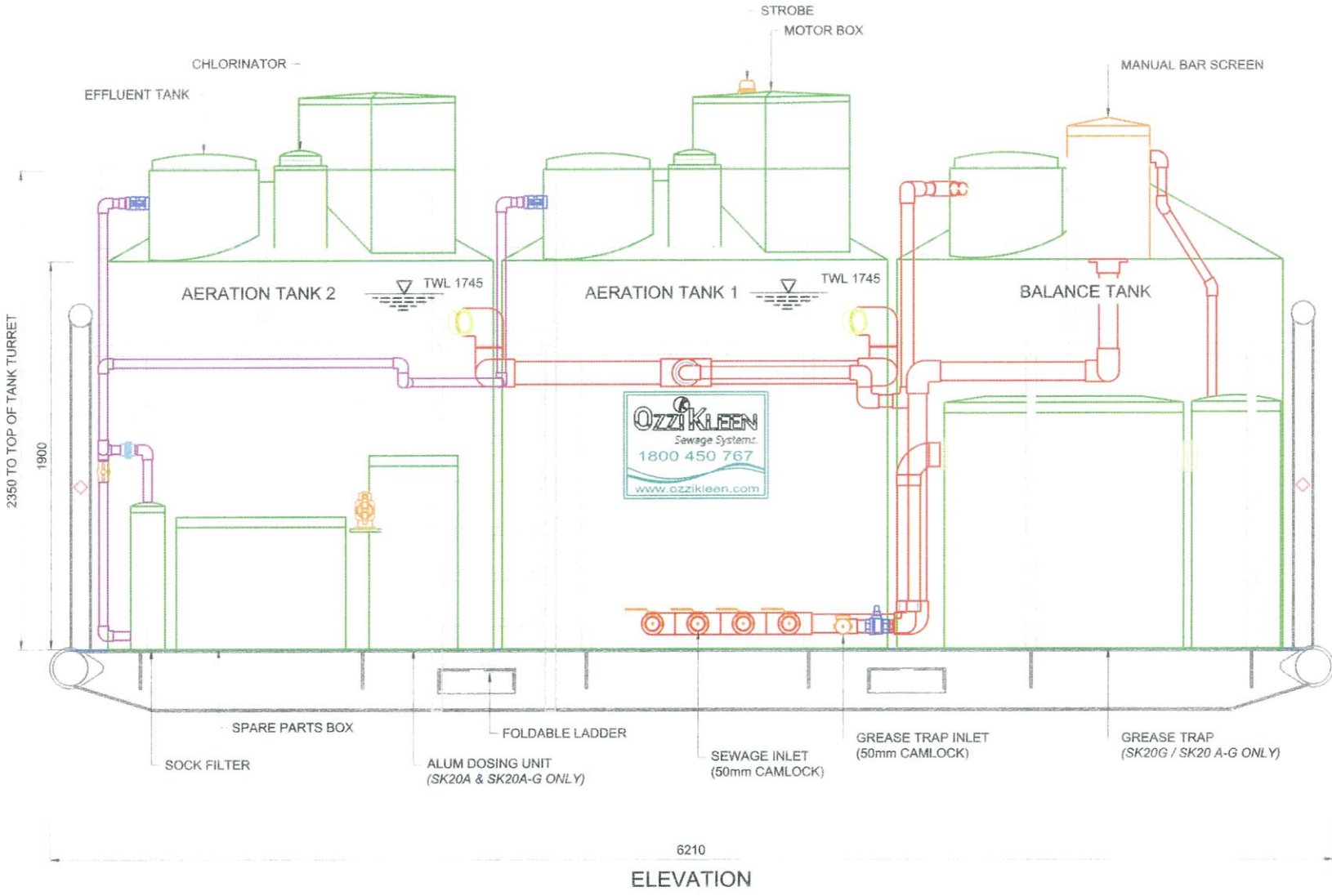
DATE	DESCRIPTION	REV.	BY
17/11/20	TANK DIMENSIONS ADDED	2	YH
26/10/16	GENERAL REVISION	1	YH



Suncoast Waste Water Management

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CLIENT	GENERAL	DESIGN	AP
PROJECT	OZZI KLEEN SK20A-G AWTS	DRAWN	YH
TITLE	PLAN VIEW	CHKD	SB
DWG NO.	GD-SK20A-G-H05	DATE	17/11/20
		SCALE	NTS



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ELEVATION

DATE	DESCRIPTION	REV.	BY
17/11/20	TANK WATER LEVEL INDICATED	2	YH
26/10/16	GENERAL REVISION	1	YH



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CLIENT	GENERAL DRAWING	DESIGN	AP
PROJECT	OZZI KLEEN SK20A-G AWTS	DRAWN	YH
TITLE	ELEVATION VIEW	CHKD	SB
DWG NO.	GD-SK20A-G-H06	DATE	17/11/20
		SCALE	NTS