ABN 33 118 549 910

20 Walters Dr, Osborne Park, WA 6017
Locked Bag 13, Osborne Park, WA 6017
P +61 8 9329 3600 **F** +61 8 9329 3601

Thursday, January 5, 2023

Shire of Mingenew
21 Victoria Street,
Mingenew, Western Australia 6522

Attention: Maurice Battilana

Dear Maurice,

RE: PLANNING APPLICATION FOR THE RIG SITE CAMP ASSOCIATED WITH THE ENERGY RESOURCES LIMITED LOCKYER-3 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 Lockyer-3 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 2023 although may be delayed until November 2023 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 Burma Road and Strawberry North East 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

ENERGY RESOURCES
A MINERAL RESOURCES BUSINESS

Lockyer Well Locations

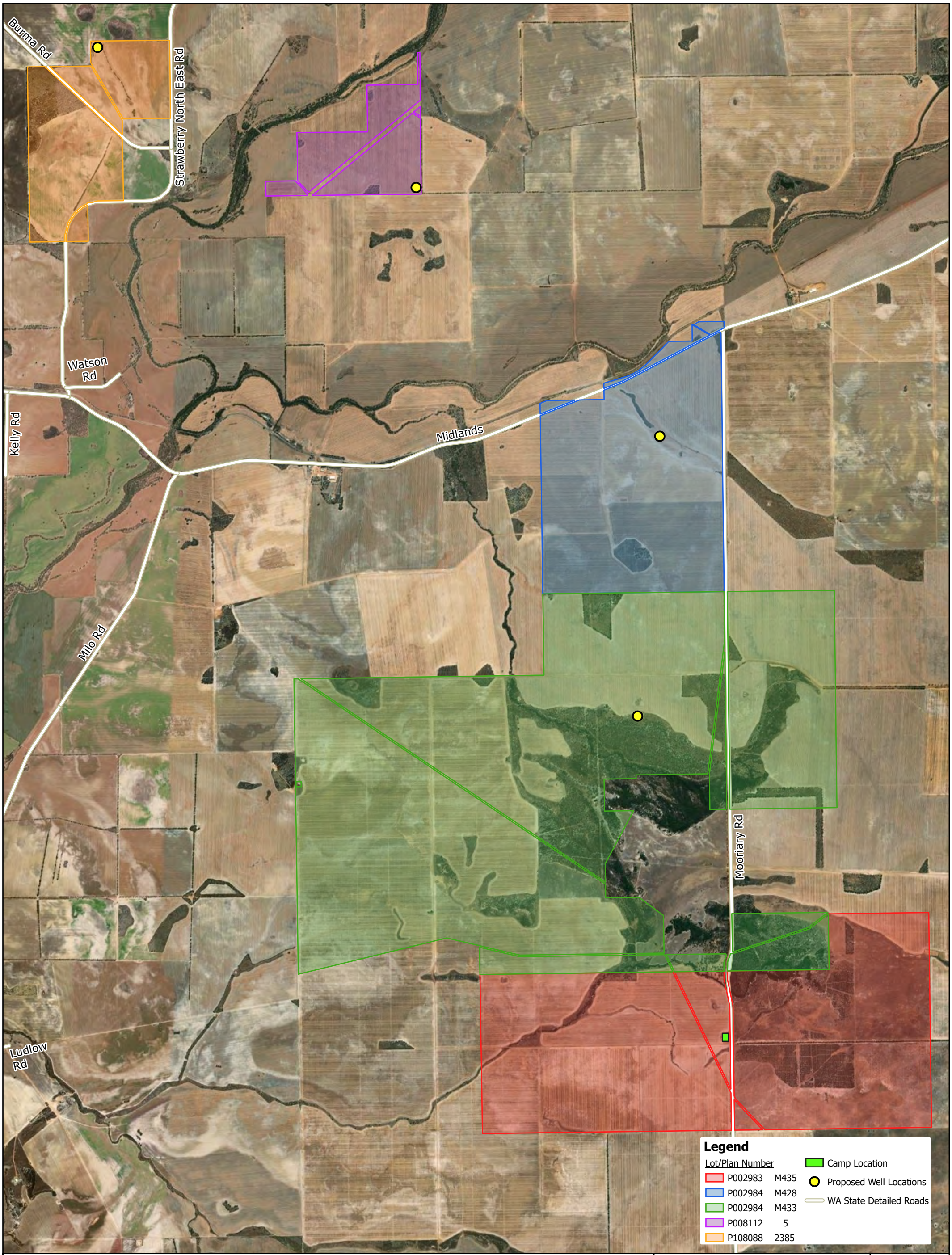
0 1 2
Kilometers

Projection/Datum:
GDA2020 MGA Zone 50

Map Date: 28/09/2022

N


proposed drill camp location
Burma Rd
North-East Strawberry Rd
Watson Rd
DP60561 66
160.3791 ha
DP60561 65
81.9022 ha
DP68476 50
280.8380 ha
P10924 6
1881.2439 ha
DP401124 8
1138.7398 ha
DP68476 51
150.3404 ha
DP68476 52
97.4975 ha
DP246718 1179
39.5332 ha
D54176 8
116.7761 ha
DP246717 1178
43.4811 ha
DP248568 2104
40.5814 ha
DP232348 3561
803.4984 ha
P8112 5
159.0715 ha
DP246861 2105
39.0850 ha
DP246862 1772
40.4776 ha
DP108088 2385
301.6563 ha
DP108095 2404
53.3533 ha
DP246733 1282
39.8345 ha
DP246865 1729
40.5766 ha
DP246737 1281
50.8233 ha
DP232347 3558
1239.6490 ha
DP231557 686
49.9892 ha
DP231557 587
34.1025 ha
DP166837 10022
280.8539 ha
DP46035 100
129.9774 ha
DP248536 2209
40.5025 ha
DP231557 603
0.4km



ENERGY RESOURCES
A MINERAL RESOURCES BUSINESS

SHIRE APPLICATION

0 0.5 1 2
Kilometers

Projection/Datum:
GDA 1994 MGA Zone 50

Map Date: 29/07/2022

N

LOCKYER-3 SITE LAYOUT

Operator	Energy Resources Ltd	**Permit**	EP368	**Location**	Onshore Perth Basin, WA		
Surface Location				**Water Bore**			
Latitude	29° 10' 13.10"S	**Longitude**	115° 15' 33.64"E	**Latitude**	29° 10' 13.68"S	**Longitude**	115° 15' 30.66"E

Revision	Rev C	**Date**	14/11/2022
Drafted	Darrell Girgenti	**Position**	Project Manager
Signed			
Reviewed		**Position**	
Signed			

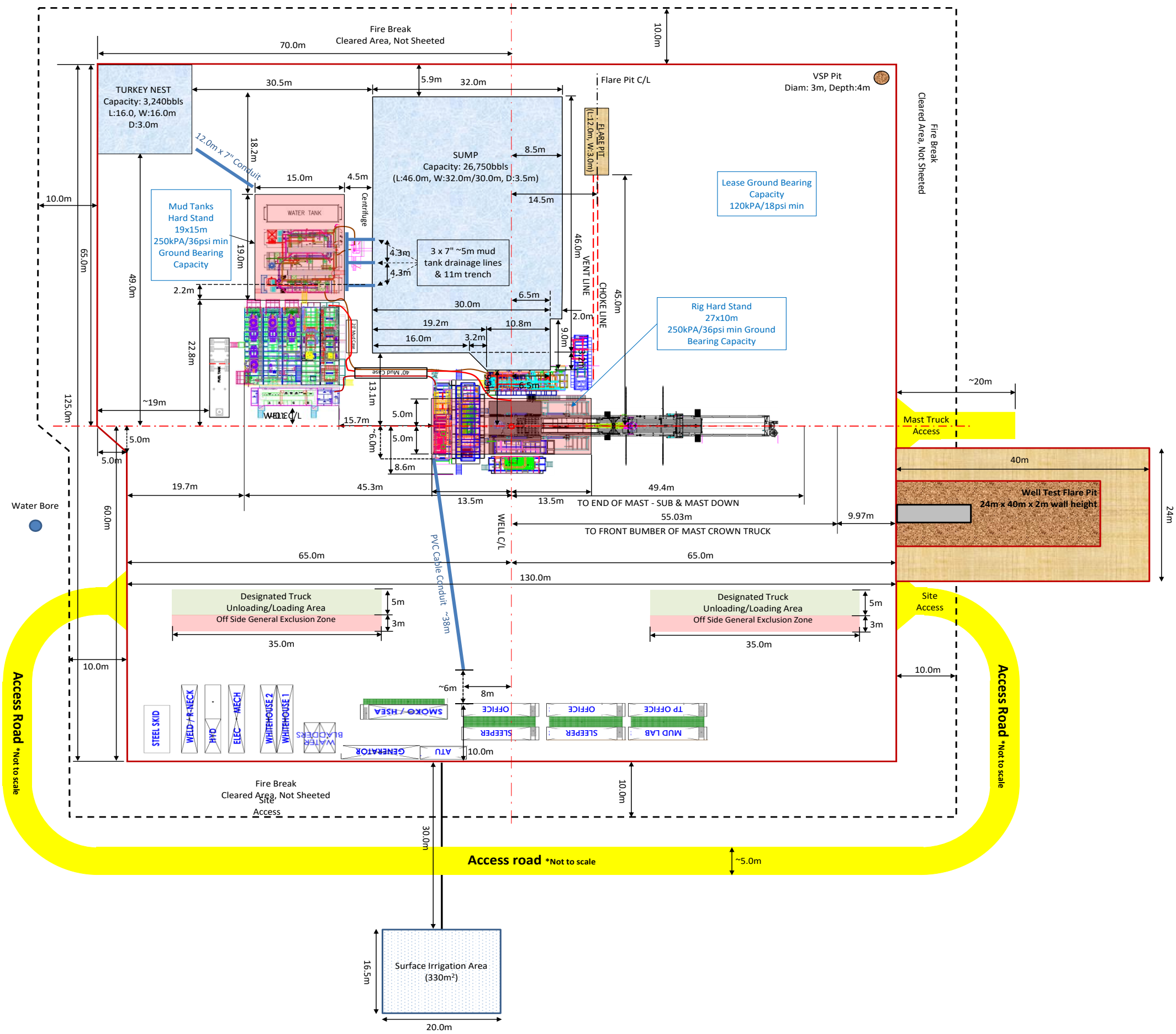
N W E S

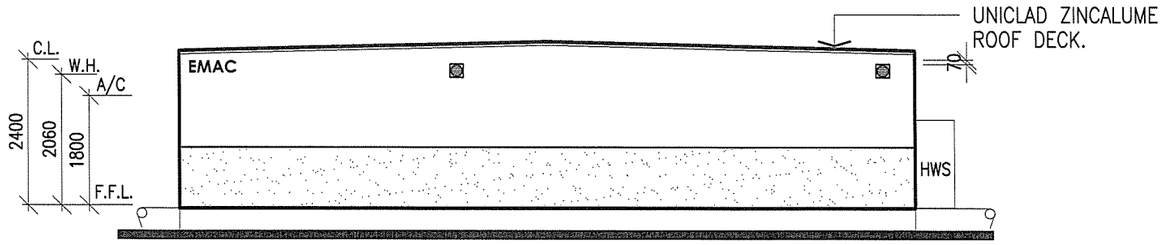
ENERGY RESOURCES

Required Soil Bearing Minimum Capacity (Graded and Compacted Area)

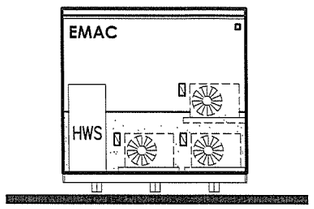
HIGH LOAD BEARING GRADED AND COMPACTED AREA (MIN 250kPA/36psi)

SHEETED, GRADED AND COMPACTED AREA W/ 2% FALL (MIN 120kPA/18psi)

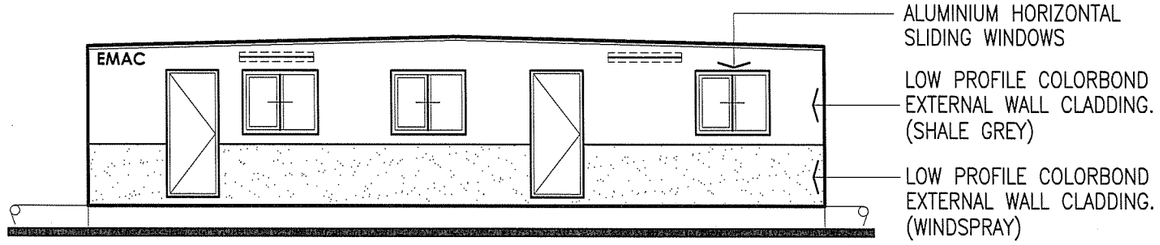




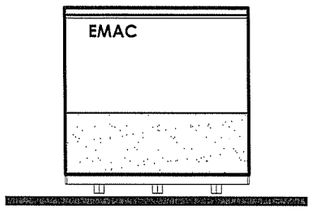
ELEVATION 1



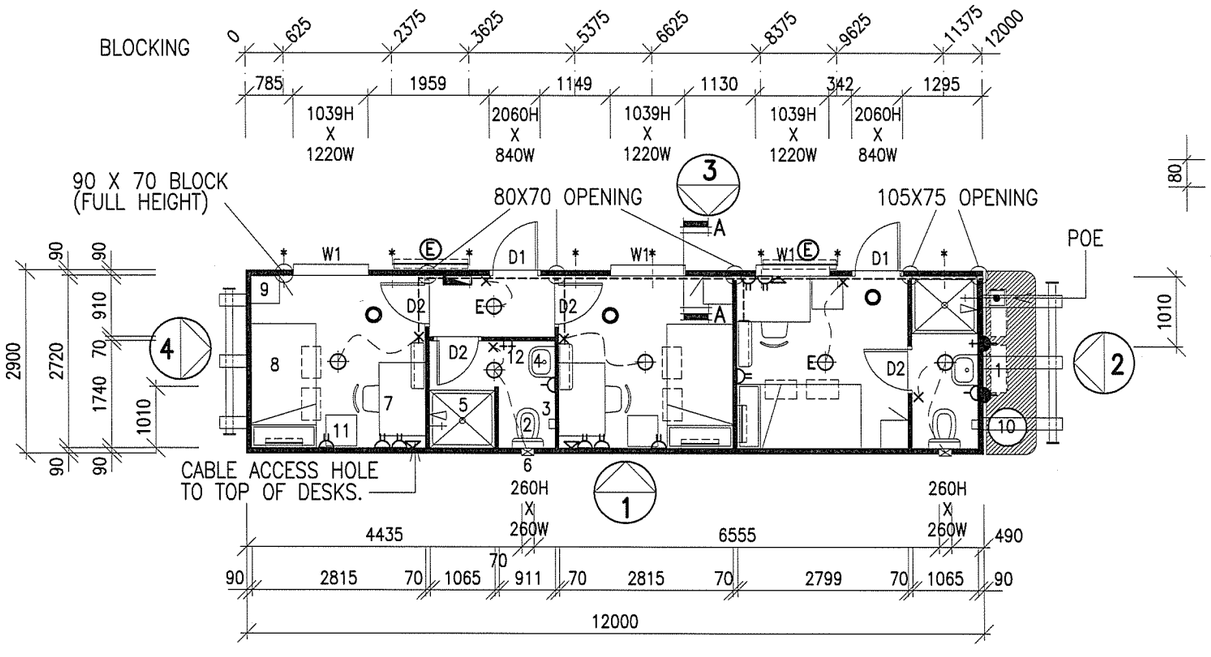
ELEVATION 2



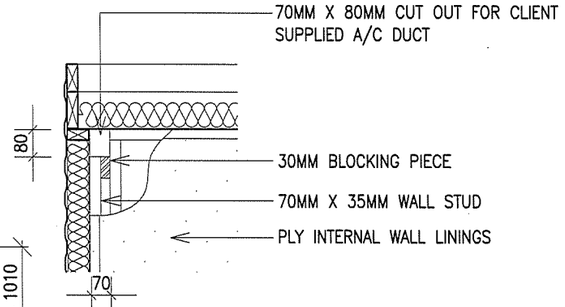
ELEVATION 3



ELEVATION 4

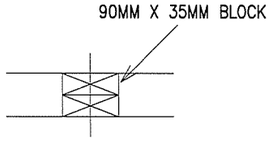


FLOOR PLAN



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)	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.
E	BATTEN CEILING LIGHT C/W BATTERY BACKUP.	2.
(E)	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:

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

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**

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

SITE: **EX PLANT**

SALES ORDER NO: –

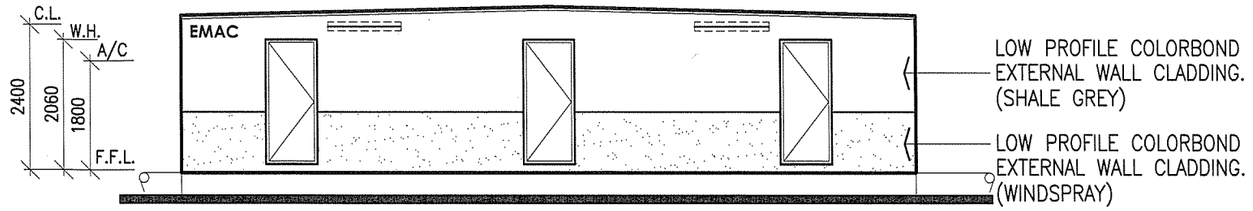
SERIAL NO: –

EMAC SYSTEMS

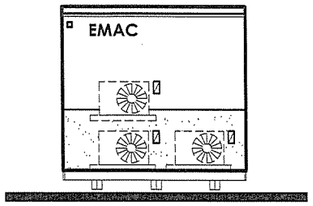
KARYDAV PTY. LTD. A.C.N. 061 115 133
1253 MAIN NORTH ROAD, PARA HILLS WEST,
SOUTH AUSTRALIA 5096
P.O. BOX 46, PARA HILLS
PH: (08) 8260 4866 FAX: (08) 8349 6273

BUILDERS LICENCE NO. GL 102757

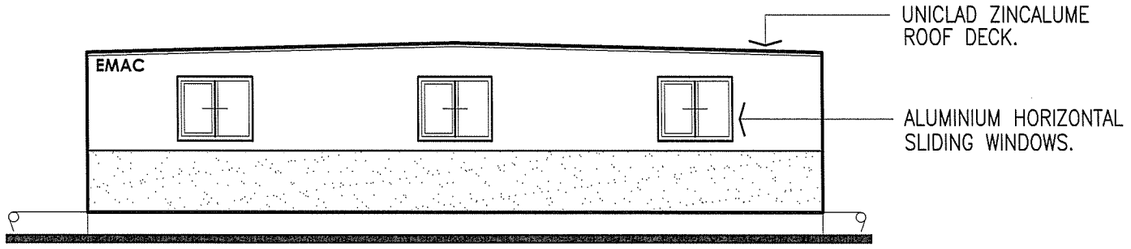
DWG NO: 3 PERS LQ		SHEET: 1 OF 1	
SCALE: 1:100		DATE: 5/03/10	
DRAWN: JR	CHECK: TS	REV	6



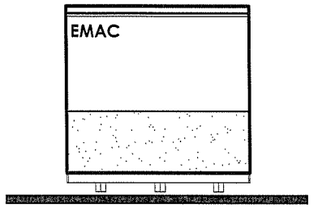
ELEVATION 1



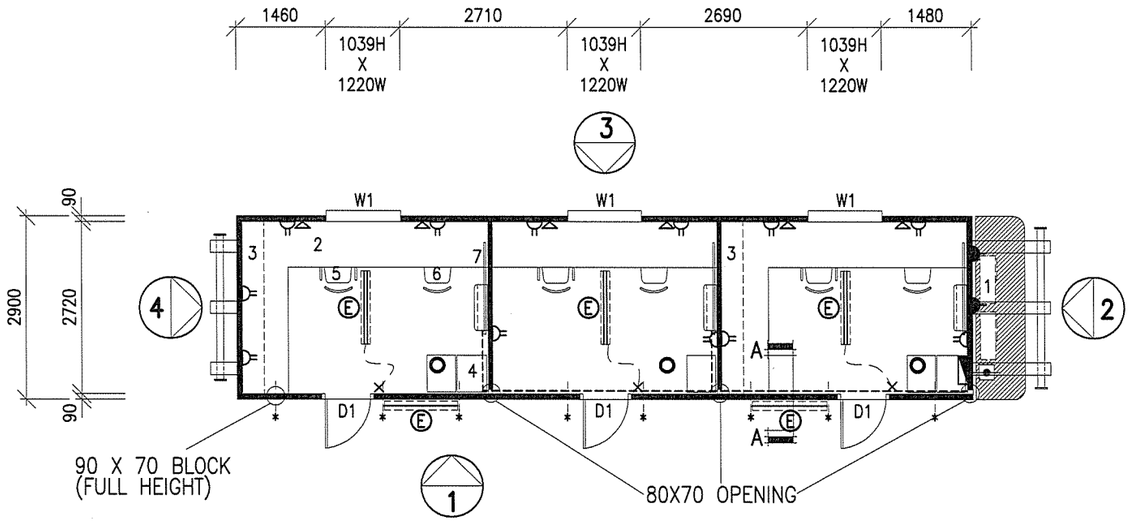
ELEVATION 2



ELEVATION 3



ELEVATION 4

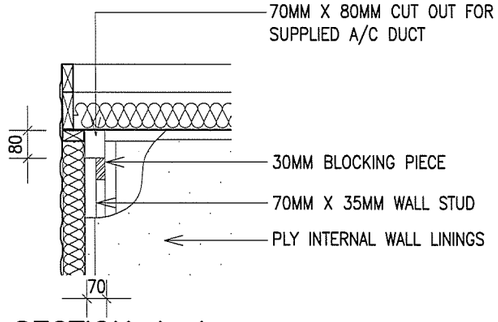


FLOOR PLAN

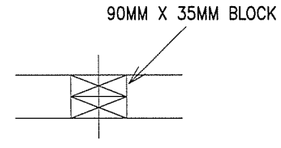
ITEM:	DESCRIPTION:	QTY:
W1.	1029H. X 1210W. HORIZONTAL SLIDING WINDOW (6.38MM LAMINATE – GREY)	3.
D1.	2040H. X 820W. METAL CLAD REBATE EDGE EXTERNAL DOOR C/W SPRING RESTRAINER & EXIT SIGN.	3.
1.	SPLIT R/CYCLE A/C.	3.
2.	FULL WALL 750MM DEEP DESK.	5.
3.	BOOK SHELF OVER DESK C/W BRACKETS UNDER.	2.
4.	4 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.
E	2 X 36W. DIFFUSED FLUORO C/W BATTERY BACKUP.	3.
E	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:

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



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: –

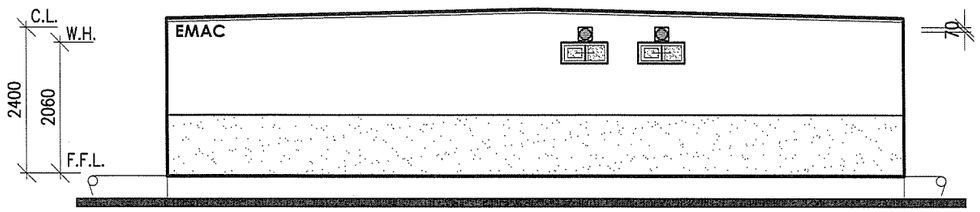
PROJECT: **12.0M X 2.9M 3 ROOM OFFICE**
SERIAL NO: –

SITE: **EX PLANT**

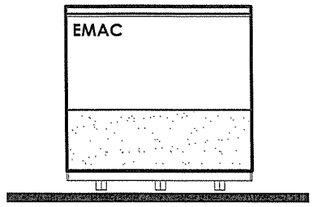
EMAC SYSTEMS

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

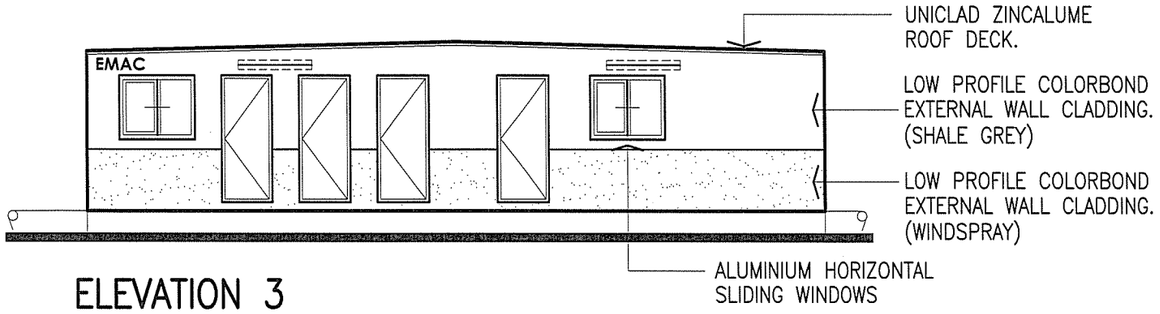
DWG NO: 3 RM OFF		SHEET: 1 OF 1	
SCALE: 1:100		DATE: 5/03/10	
DRAWN: JR	CHECK: TS	REV	0



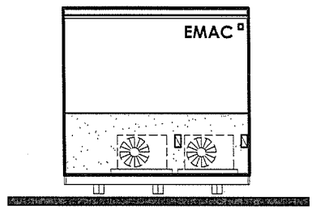
ELEVATION 1



ELEVATION 2



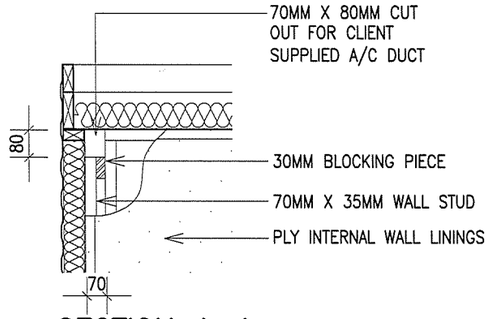
ELEVATION 3



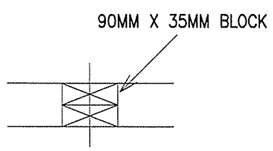
ELEVATION 4

NOTE:

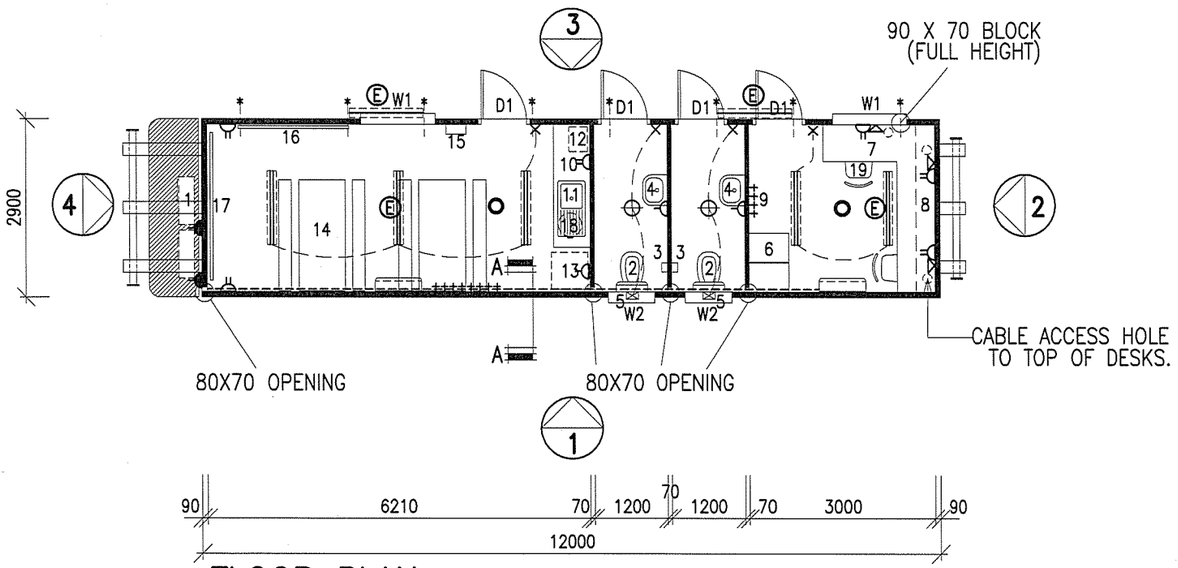
1. ALL EXTERNAL DOORS TO HAVE STICK ON REFLECTIVE EXIT SIGNS ON INSIDE FACE OF DOOR.
2. ALL EXTERNAL LIGHTS TO BE ON SAME P.E. CELL.



SECTION A–A
SCALE 1:20



90 X 70 BLOCK
SCALE 1:10



FLOOR PLAN

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.
E	2 X 36W. DIFFUSED FLUORO C/W BATTERY BACKUP.	2.
E	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**

PROJECT: **12.0M X 2.9M OFFICE/TOILET/LUNCHROOM**

SITE: –

SALES ORDER NO: –

SERIAL NO: –

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: 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

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

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_5)	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

REF: 1235

Suncoast Waste Water Management

Plant Engineering Calculation

Project: Ozzi Kleen SK20A-G

Model	Unit	SK20A-G	Notes
1. Process Design Parameters			
Plant Capacity	EP	20	
Hydraulic flow	l/day	4000	
BOD_5 loading	mg/l	350	
BOD_5 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	
2. Aeration Tank			
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 mimimum. 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
3. Air Flow			
Oxygen demand (kg O_2 / kg BOD_5)	kg/kg	2.4	Ref: SA Dept. of Health
BOD_5 loading	kg/day	1.40	
Actual Oxygen demand required	kg O_2/day	3.4	Ref: SA Dept. of Health
1 kmol of air at STP occupies:	m^3/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^3 of air at STP (dry basis)	kg/m^3	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

CERTIFIED
A.PRESCOTT
RP-16002 REF: 1235

Blower discharge pressure at TWL	mbar	207	
Blower air flow (FAD) - actual	m^3/hr	18	2 Blowers
Blower model	LP150HN		
Number of Elastox-T type B diffusers		4	
Air flow per diffuser (FAD at suction temperature)	m^3/hr	4.50	
Ratio : Actual m^3 (wet basis) per Nm^3 (dry basis)		1.116	
Air flow per diffuser (at STP)	Nm^3/hr	4.03	Recommended for Elastox-T: 2 to 6 Nm^3/h
Elastox-T diffuser Oxygen transfer (from	g O_2/m Nm^3	22	
Diffuser immersion depth at TWL	m	1.545	
Diffuser Oxygen transfer at immersion depth	g O_2/Nm^3	33.99	
Oxygen transfer per diffuser	g O_2/hr	137.06	
Oxygen transfer, all diffusers	kg O_2/hr	0.55	
Oxygen transfer, all diffusers - daily basis at TWL	kg O_2/day	6.6	
Standard Oxygen transfer efficiency (wet basis)	%	12.7	
4. Chlorine Contact Tank			
Decanting flow rate	l/min	16	Based on average flow plus 40% margin
Decanting flow rate	m^3/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	
Chlorine tablet comsuption			
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	
5. Waste Sludge Tank			
Sludge oxidation ratio	40 1	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	
6. Alum Dosing System *(SK20A / A-G ONLY)*			
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^3	133	
Chemical tank volume	litre	80	
Minimum refill period of Alum	days	150	

CERTIFIED
A.PRESCOTT
RP-16002

REF: 1235

Suncoast Waste Water Management

AWTS Process Design Parameters for Power Utilisation

Project: Ozzi Kleen SK20A-G

Design Parameter	EP	20
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
Effluent Pump Flow Rate	l/min	100
Grease Trap Pump Flow Rate *(SK20G / A-G ONLY)*	l/min	200
Dosing Pump Flow Rate *(SK20A / A-G ONLY)*	l/hr	3
Air Blower	m^3/hr	18

Model
Showfou STA-112
Reefe RVS300
Reefe RVS300
Iwaki EJ B16
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
Total Installed Power	*0.00*	*2.19*	kW		6.1
Average Power			kW		*0.25*

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
Total Installed Current	*0.00*	*21.20*	A		0.00	49.69
Average Current			A		*0.00*	*2.07*

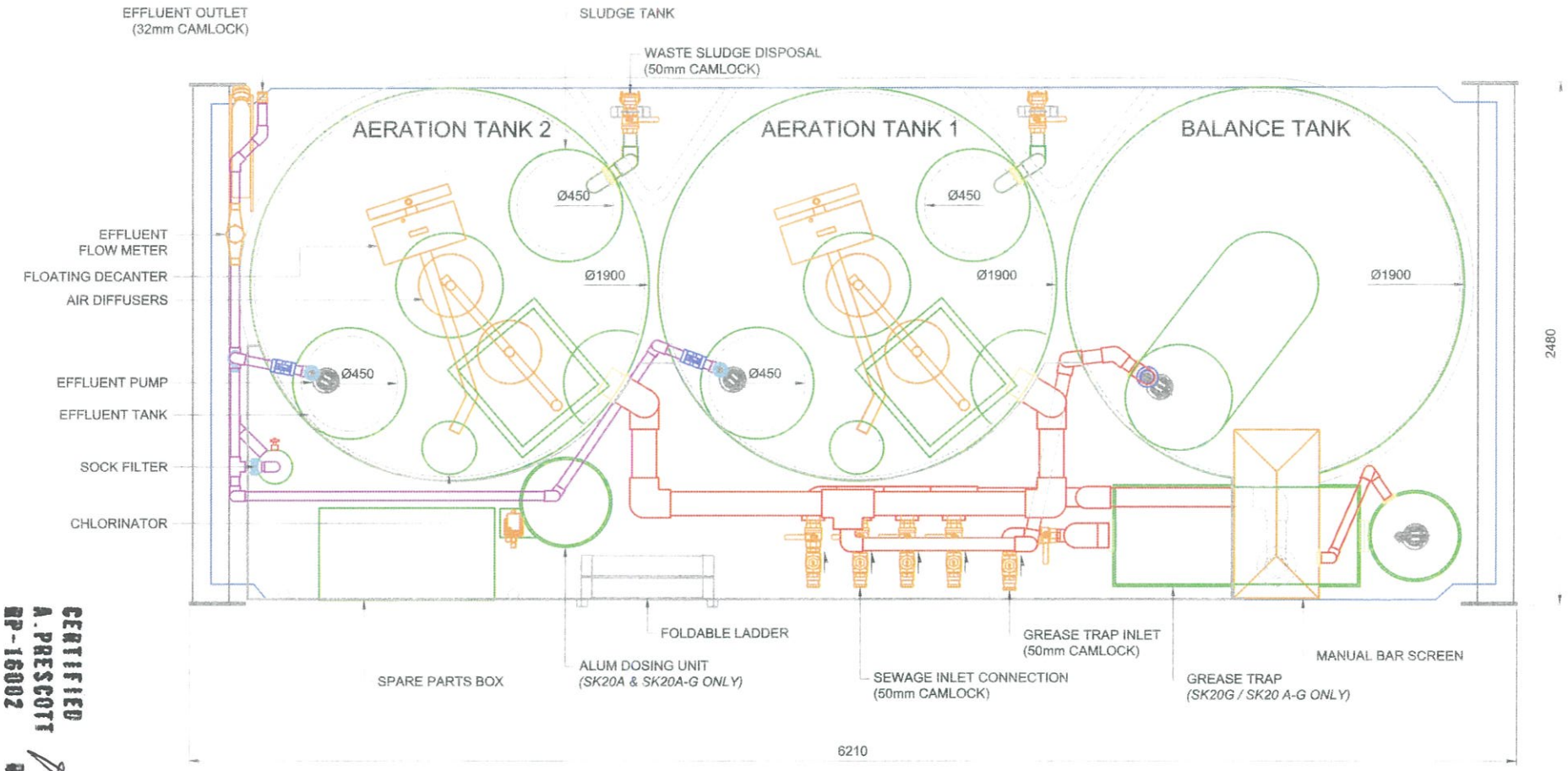
Operating Cost Estimating	unit	unit price	qty/d	qty/yr	$/yr
Power	kW	0.20	6.1	2224	445
Chlorine	kg	12.50	0.04	15	183
Alum	kg	1.50	0.12	44	66
Waste Sludge Disposal	L	0.20	3.50	1278	256
total:	$/year				949

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.

CERTIFIED
A.PRESCOTT
RP-16002

ARP

REF: 1235



PLAN VIEW

CERTIFIED
A.PRESCOTT
BP-16002

Ref: 1255

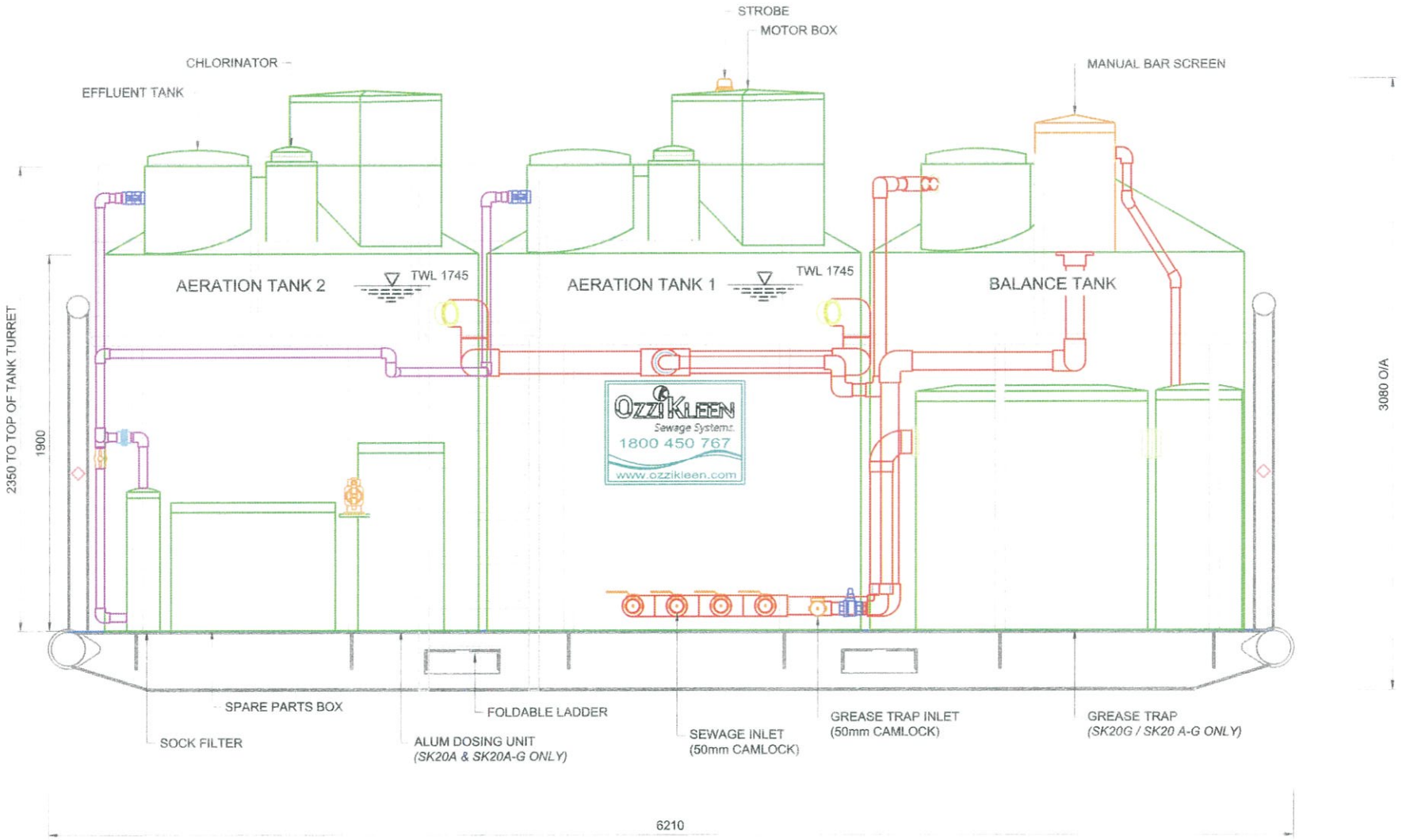
DATE	DESCRIPTION	REV.	BY
17/11/20	TANK DIMENSIONS ADDED	2	YH
26/10/16	GENERAL REVISION	1	YH

OzziKleen Water & Waste Water

Suncoast Waste Water Management

59 INDUSTRIAL AVE
KUNDA PARK
QLD 4556
PH +61 7 5459 4900
FAX +61 7 5456 4677
www.ozzikleen.com

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



ELEVATION

CERTIFIED
A.PRESCOTT
RP-16002

REF: 1235

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

OzziKleen
Water & Waste Water

Suncoast Waste Water Management

59 INDUSTRIAL AVE
KUNDA PARK
QLD 4556
PH +61 7 5459 4900
FAX +61 7 5456 4677
www.ozzikleen.com

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

FLOW
CONSULTING ENGINEERS

ACN: 150 023 868 ABN: 84 683 812 614
158 Chapman Rd, Beresford WA 6530
PO Box 918 Geraldton WA 6531
Phone: (08) 9964 5459
Email: lester.flow@westnet.com.au

31 May 2021

Aztech Well Construction
3/1138 Hay St,
West Perth
WA 6005

Job No: 21FCE026
Your Job:

Att: Mr Darrell Girgenti

Dear Darrell

Project: Temporary Transportable Accommodation Buildings to be Located at the Shire of Mingenew

Building Tie Down Certification

Introduction

Aztech Well Construction (Aztech) plan to install two 3-person sleeper transportable buildings at Energy Resources new drill camp which will be situated in the Shire of Mingenew. Aztech have requested Flow Consulting Engineers (FCE) to design check the tie down requirements for the two buildings being installed in accordance with current relevant Australian Design Standards. Aztech have advised that the camp will be installed for the duration of drilling activities, which at this stage is planned for a maximum of 2 months.

Description of Structures

The 2 transportable buildings are of similar construction and have been manufactured by EMAC Systems in South Australia. The buildings are 12m long x 2.9m wide x 2.6m high. Aztech have advised that the self-weight of each building is 15 Tonnes. A letter from EMAC is provided in Appendix B which says that the transportable buildings have been fabricated for the appropriate wind region for the proposed installation location.

Calculations

In accordance with AS1170.2 the tie down for each transportable accommodation building has been checked for the following requirements:

1. Region B: Mingenew. The Terrain Category at the site has been taken as 2. Importance level 2. Ultimate wind speed 53m/s (190.8km/hr).
2. In accordance with the proposed installation time, the annual probability of exceedance of the wind event has been calculated as 1:250.
3. The self-weight of each transportable accommodation building has been taken 15 Tonnes.
4. The transportable buildings shall be located on a 300mm thick pad of compacted gravel.

5. The static friction coefficient between the accommodation building steel bases and the gravel ground has been taken as μ = 0.35.

Results & Recommendations

Calculations to determine building sliding and overturning under wind load indicate that the buildings shown on Drawing No 3 PERS LQ provided in Appendix A will be stable under their self-weight and will not require additional tie-down.

To ensure that the buildings remain well supported by the compacted gravel surface beneath the buildings, the soil moisture content of the foundation material under the buildings is required to be kept dry. Surface drainage shall be designed and constructed to avoid water ponding against or near buildings. The ground in the immediate vicinity of the building perimeters is recommended to be graded to fall 50 mm minimum away from the building over a distance of 3m and shaped to prevent ponding of water near the buildings.

Trusting that this meets with your requirements, should you have any further queries, please do not hesitate to contact the undersigned on (08) 9964 5459.

Yours faithfully

Lester Smith
Engineering Manager
Attached: Appendix A & B.

Appendix A: Transportable Building Plan.

Appendix B: Building Design Certification.

EMAC modular
General Builders Licence No. BLD 102757

KARYDAV PTY. LTD. A.C.N.061 115 133
HEAD OFFICE: 1253 MAIN NORTH ROAD
PARA HILLS WEST, SOUTH AUSTRALIA
POSTAL ADDRESS: PO BOX 46, PARA HILLS 5096
TEL: (08) 8260 4866 FAX: (08) 8349 6273

MANUFACTURERS OF QUALITY TRANSPORTABLE ACCOMMODATION

1st April 2015

Ensign Australia
15-17 Westport Road
Edinburgh North SA 5113

Mark Tonin,

Re: Rig Camp Buildings

Confirmation that Buildings have been constructed to W41N Classification in accordance with AS4055

Claude Bagnara
Commercial Manager, Design & Construction
EMAC Systembuilt Group
1253 Main North Road
Para Hills West SA 5096
Ph: 1300 073 995
Fax: (08) 8349 6273
M: 0419 826 821
systembuilthomes.com.au
emacmodular.com.au
lowriemodular.com.au

EmacSystembuilt Group
systembuilt designed for living EMAC modular LOWRIE