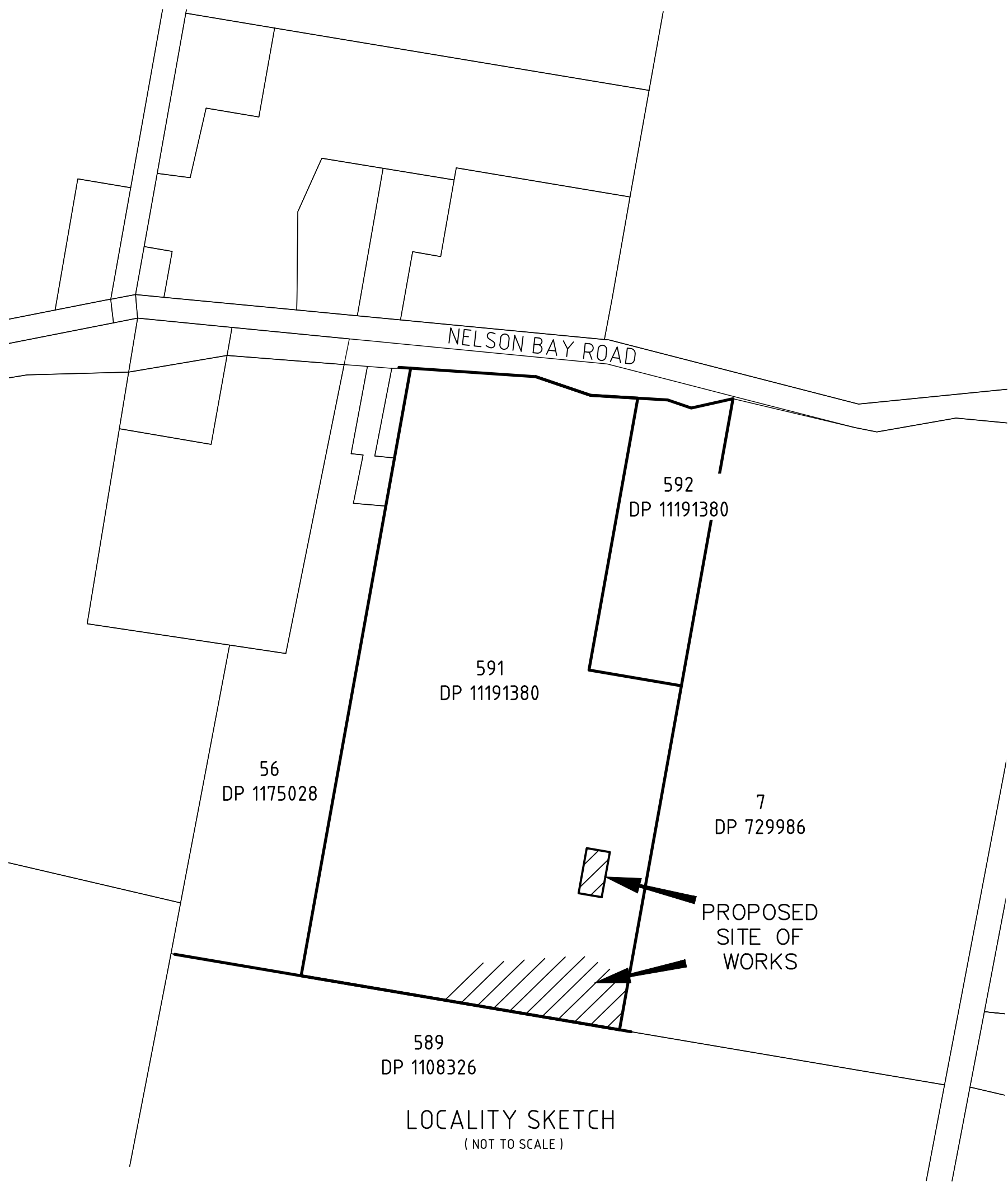


PROPOSED SAND EXTRACTIVE INDUSTRY

INCLUDING MANAGERS
RESIDENCE & SITE OFFICE

LOT 591 DP 1191380

4226 NELSON BAY ROAD, ANNA BAY

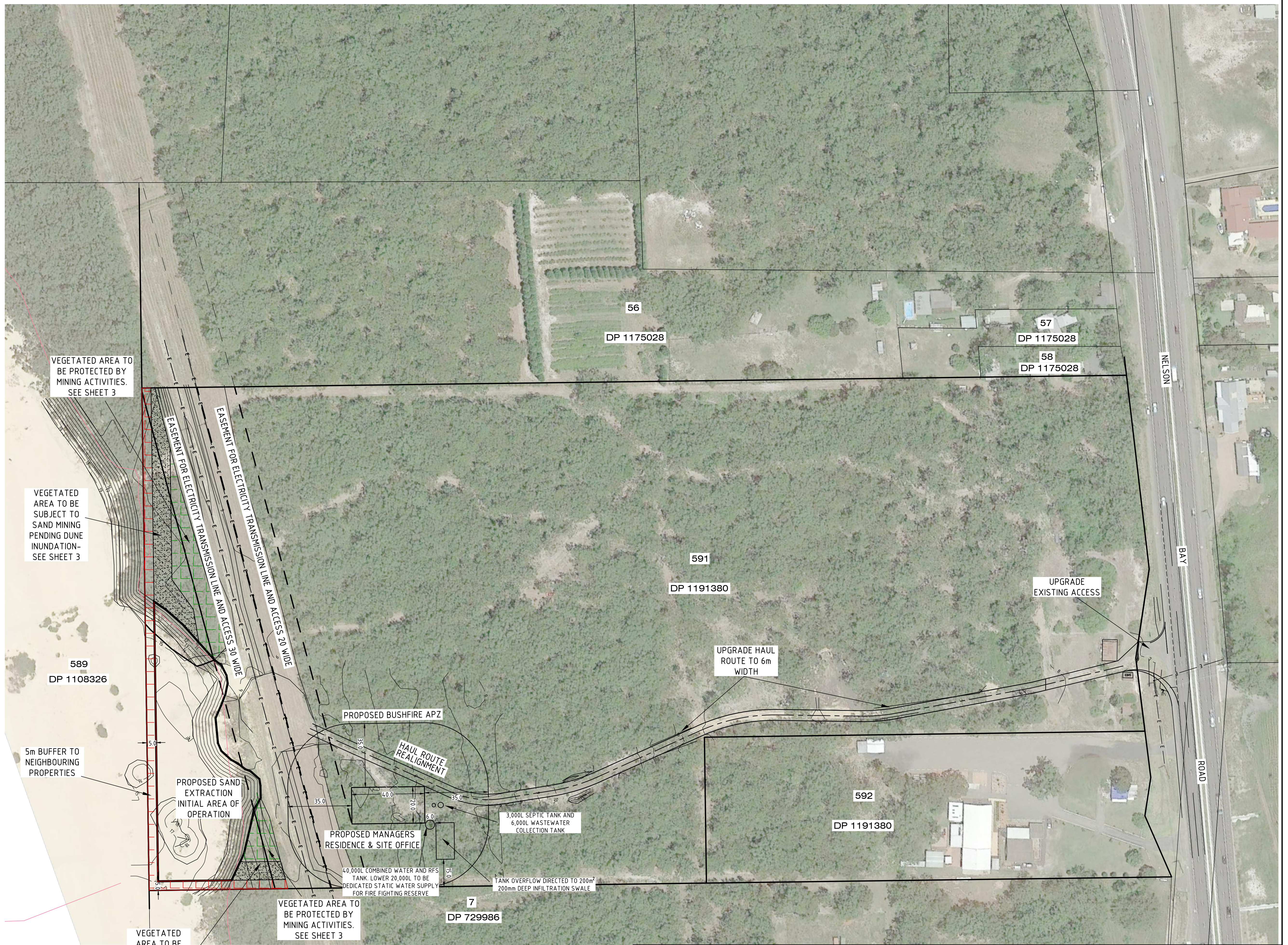
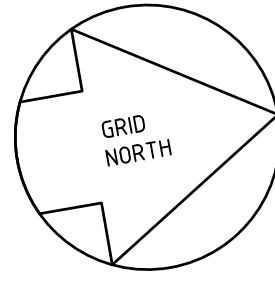


Schedule of Drawings			
Sheet	File Number	Description	Revision
1	21800001	TITLE PAGE, LOCALITY SKETCH & TABLE OF CONTENTS	C
2	21800002	OVERALL LAYOUT	C
3	21800003	STAGING PLAN	C
4	21800004	SITE SECTION	C
5	21800075	MACHINERY SHED & MANAGERS RESIDENCE PLAN & ELEVATIONS	C
6	21800005	ADJOINING MINING OPERATIONS	C
7	21800006	REHABILITATION PLAN	C
8	21801001	STORMWATER MANAGEMENT PLAN	C

Designed By

TATTERSALL LANDER PTY LTD
DEVELOPMENT CONSULTANTS IN ENGINEERING, SURVEYING & PLANNING
PO Box 580 RAYMOND TERRACE Phone (02) 4987 1500





REV	DETAILS OF AMENDMENT	DESIGNED	DRAWN	CHECKED	APPROVED	DATE
C	Revised per Council Comments	DS	DS	AV*	BL*	21/01/20*
B	New Revision	DS	DS	AV*	BL*	06/06/19*
A	Original Issue	DS	DS	-	-	29/08/18*

7

DP 729986

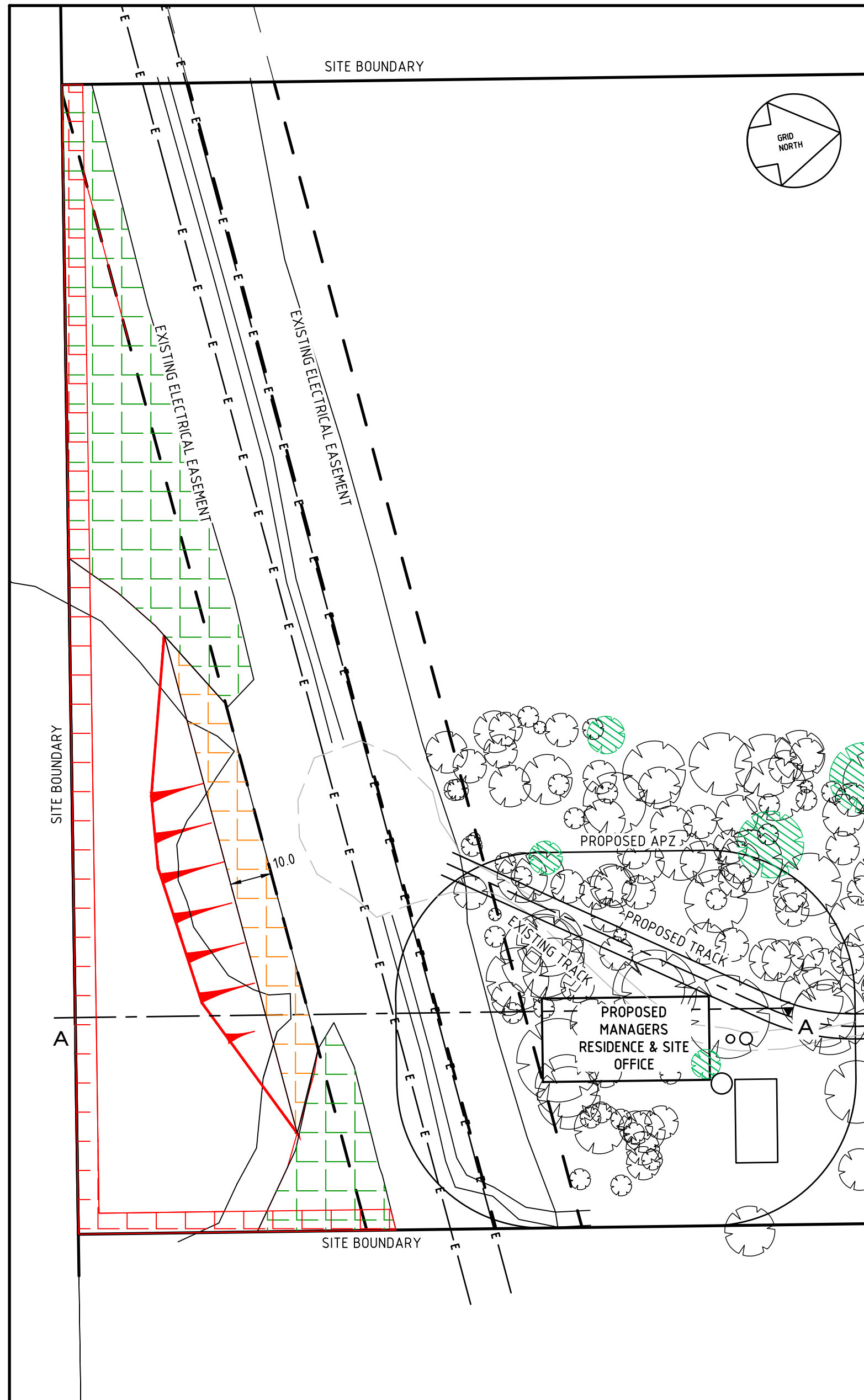
TATTERSALL LANDER PTY LTD
DEVELOPMENT CONSULTANTS
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RAYMOND TERRACE 2324
Fax (02) 49871733 Phone (02) 49871500

OVERALL LAYOUT
PROPOSED SAND EXTRACTIVE INDUSTRY
LOT 591 DP1191380
4226 NELSON BAY RD, ANNA BAY

COUNCIL PSC	REFERENCE 21800002
PARISH	SHEET SIZE A1
SCALE 1:1000 on A1	SHEET No. 2
DATE :	Plotted 21/1/20 12:27PM

CLIENT: HAY ENTERPRISES JOB No.: 217111 COMPUTER FILE : S:\Clients\2017\217111\DWG\217111 - Design.dwg

STAGE 1 - ESTABLISHMENT

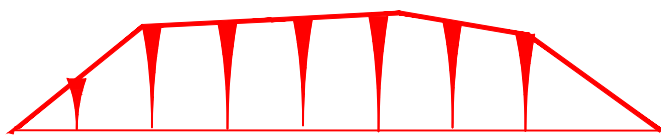


1. PROPOSED APZ: MANAGE/CLEAR AS NECESSARY, CONSISTENT WITH RFS BUSHFIRE PROTECTION GUIDELINES
2. UPGRADE EXISTING HAUL ROUTE TO 6m WIDE
3. ESTABLISH STAGE 1 WORKING AREA 10m WIDE
4. CONSTRUCT MANAGERS RESIDENCE & SITE OFFICE
5. MARK 5m BUFFER ZONE TO NEIGHBOURING PROPERTIES WITH STEEL POSTS AND MARK THE EXISTING LEVELS

EXISTING VEGETATED AREA SOUTH OF THE EASEMENT = 3992m²

LEGEND

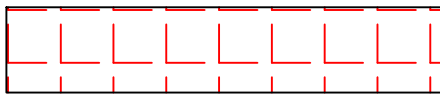
DENOTES PROPOSED BATTER TO EXISTING



DENOTES EXISTING POWER EASEMENT



5m BUFFER TO NEIGHBOURING PROPERTIES



EXTENT OF CURRENT VEGETATION SOUTH OF EASEMENT



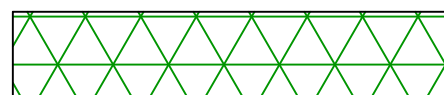
PROPOSED WORKING AREA



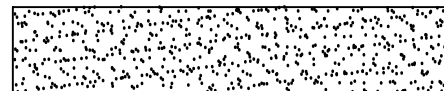
STAGE 2 PROPOSED STOCKPILING AND LOADING AREA



PROPOSED INITIAL REHABILITATION



STAGE 3 PROPOSED MINING AREA PENDING DUNE INUNDATION



CURRENT VEGETATION TO BE PROTECTED FROM INUNDATION



EXISTING TREES WITHIN & IN PROXIMITY TO BUSHFIRE APZ



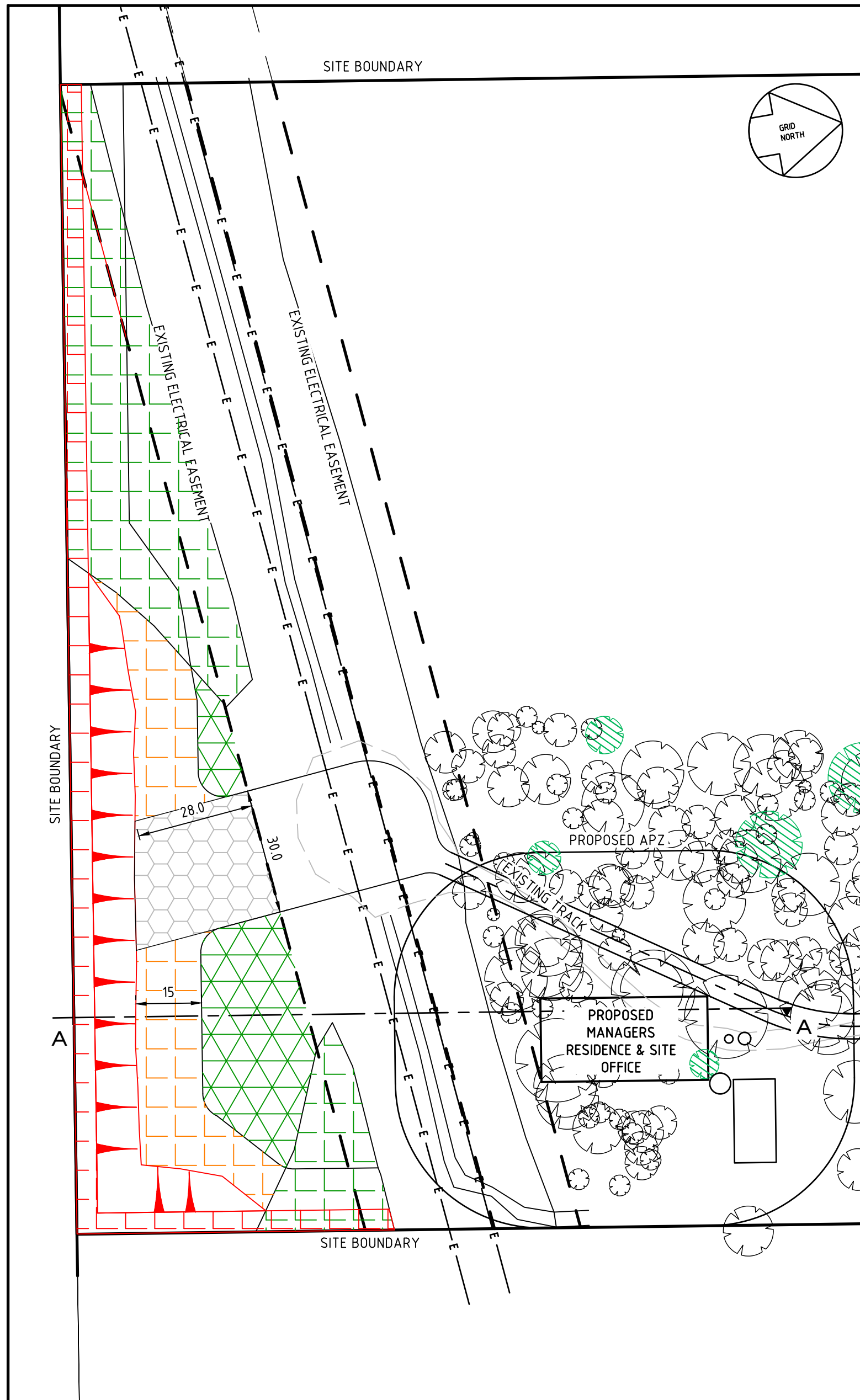
EXISTING HOLLOW BEARING TREES



REV	DETAILS OF AMENDMENT	DESIGNED	DRAWN	CHECKED	APPROVED	DATE
C	Revised per Council Comments	DS	DS	AV*	BL*	21/01/20*
B	New Revision	DS	DS	AV*	BL*	06/06/19*
A	Original Issue	DS	DS	-	-	29/08/18*

* Denote the original signature and date when revision was issued.

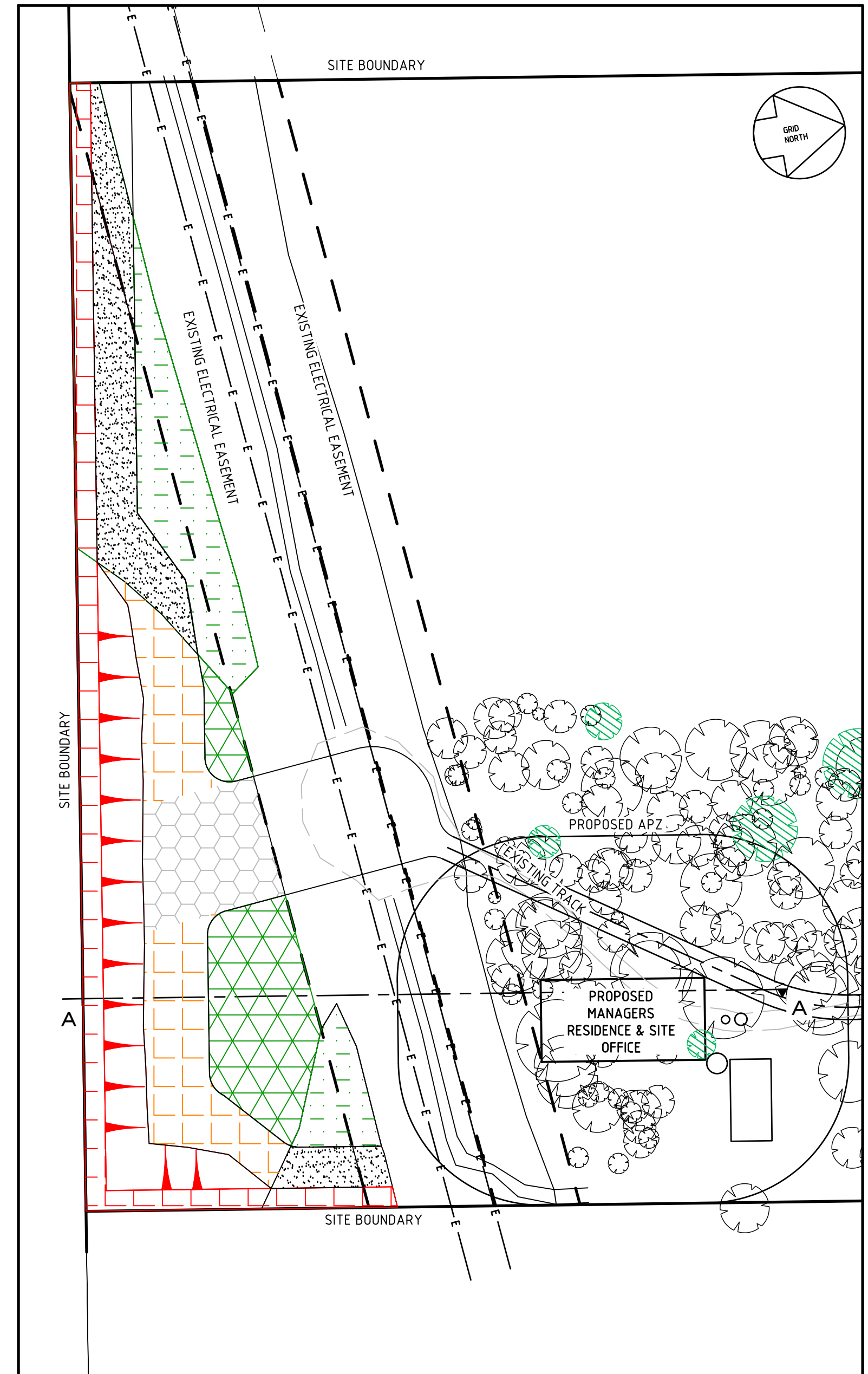
STAGE 2 - EXTRACTION



1. EXCAVATE DUNE TO 9m AHD WITH BATTER TO THE 5m BUFFER AT 1.5H:1V SLOPE
2. ESTABLISH STOCKPILING AND LOADING AREA OUTSIDE AUSGRID EASEMENT
3. ESTABLISH 15m WIDE CORRIDOR TO ALLOW WORKING AREA TO MAINTAIN BATTER TO EXISTING LEVEL AT BUFFER DISTANCE
4. BEGIN REHABILITATION IN DISTURBED AREAS OUTSIDE WORKING CORRIDOR.

ADDITIONAL EXCAVATED AREA = 3180m²
ADDITIONAL AREA OF BATTER = 1710m²
CURRENT AVAILABLE SAND VOLUME = 26,500m³
INITIAL REHABILITATION AREA = 14,70m²
STOCKPILING AND LOADING AREA = 960m²
15m WORKING AREA = 1790m²

STAGE 3 - ONGOING MAINTENANCE



1. ONCE A 10m WIDE CORRIDOR OF VEGETATION HAS BEEN INUNDATED AND DIED FROM DUNE ENCRoACHMENT EXCAVATE TO 9m AHD AND MAINTAIN CORRIDOR PROTECTING REMAINING VEGETATION.
2. CONTINUE TO EXCAVATE FROM ESTABLISHED WORKING AREA AS DUNE ENCRoACHES PAST BUFFER AREA.
3. EXCAVATION TO BE LIMITED TO 9m AHD AT THE TOE AND LEVELS AS MARKED IN STAGE 1 AT THE BUFFER EDGE.

AREA OF VEGETATION PROTECTED FROM FURTHER DUNE ENCRoACHMENT = 1700m²

AREA OF VEGETATION SUBJECT TO MINING AFTER DIEBACK DUE TO DUNE INUNDATION = 1550m²

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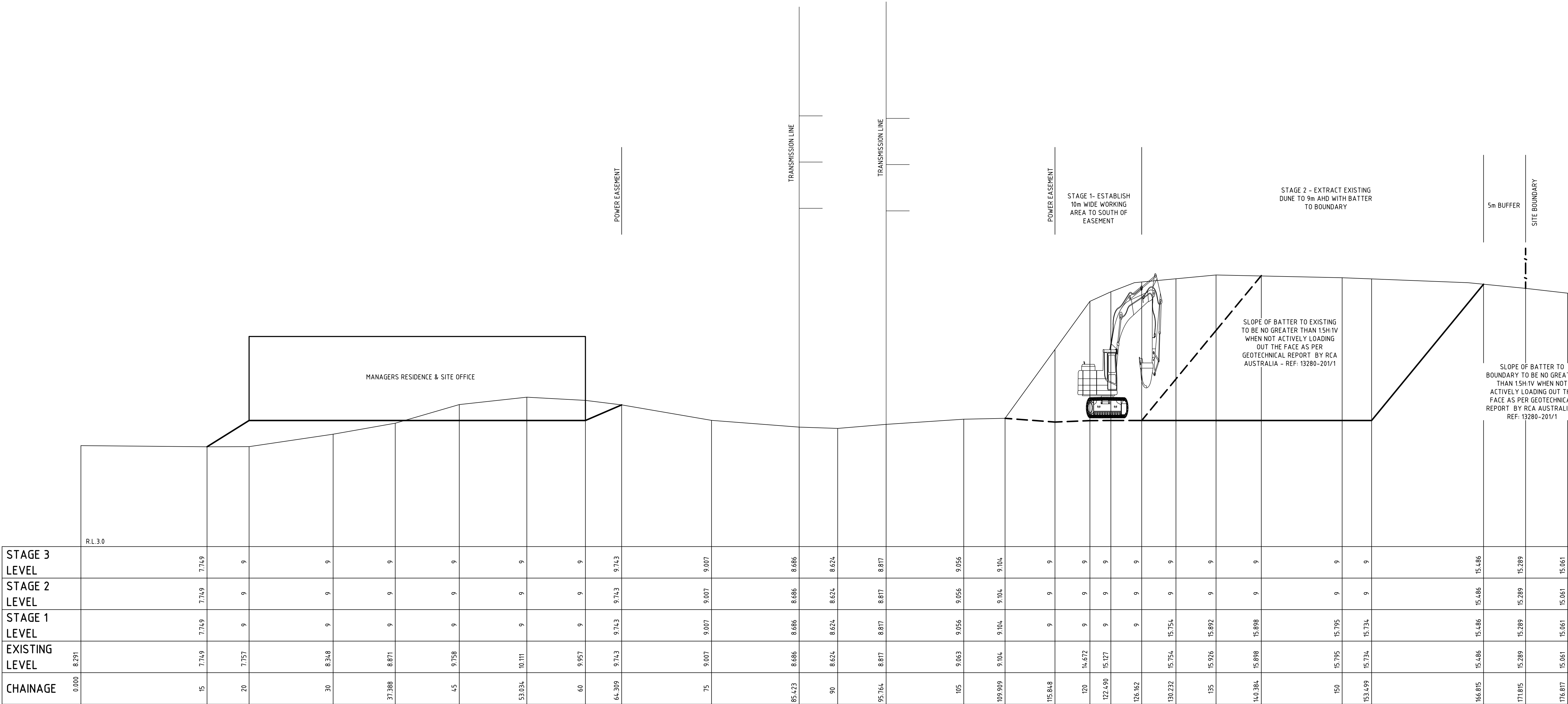
STAGING PLAN
PROPOSED SAND EXTRACTIVE INDUSTRY
LOT 591 DP1191380
4226 NELSON BAY RD, ANNA BAY

CLIENT: HAY ENTERPRISES

JOB No.: 217111

COMPUTER FILE : S:\Clients\2017\217111\Drawg\217111 - Design.dwg

COUNCIL PSC	REFERENCE 21800003
PARISH	SHEET SIZE A1
SCALE 1:1000 on A1	SHEET No. 3
DATE :	Plotted 21/1/20 12:29PM



SECTION A
H=1:250 V=1:100

C	Revised per Council Comments	DS	DS	AV*	BL*	21/01/20*
B	Batter Slope Values Added	DS	DS	AV*	BL*	06/06/19*
A	Original Issue	DS	DS	-	-	09/04/18*
REV	DETAILS OF AMENDMENT	DESIGNED	DRAWN	CHECKED	APPROVED	DATE
* Denote the original signature and date when revision was issued.						

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P.O.Box 580
2324

SITE SECTIONS
PROPOSED SAND EXTRACTIVE INDUSTRY
LOT 591 DP1191380
4226 NELSON BAY RD, ANNA BAY

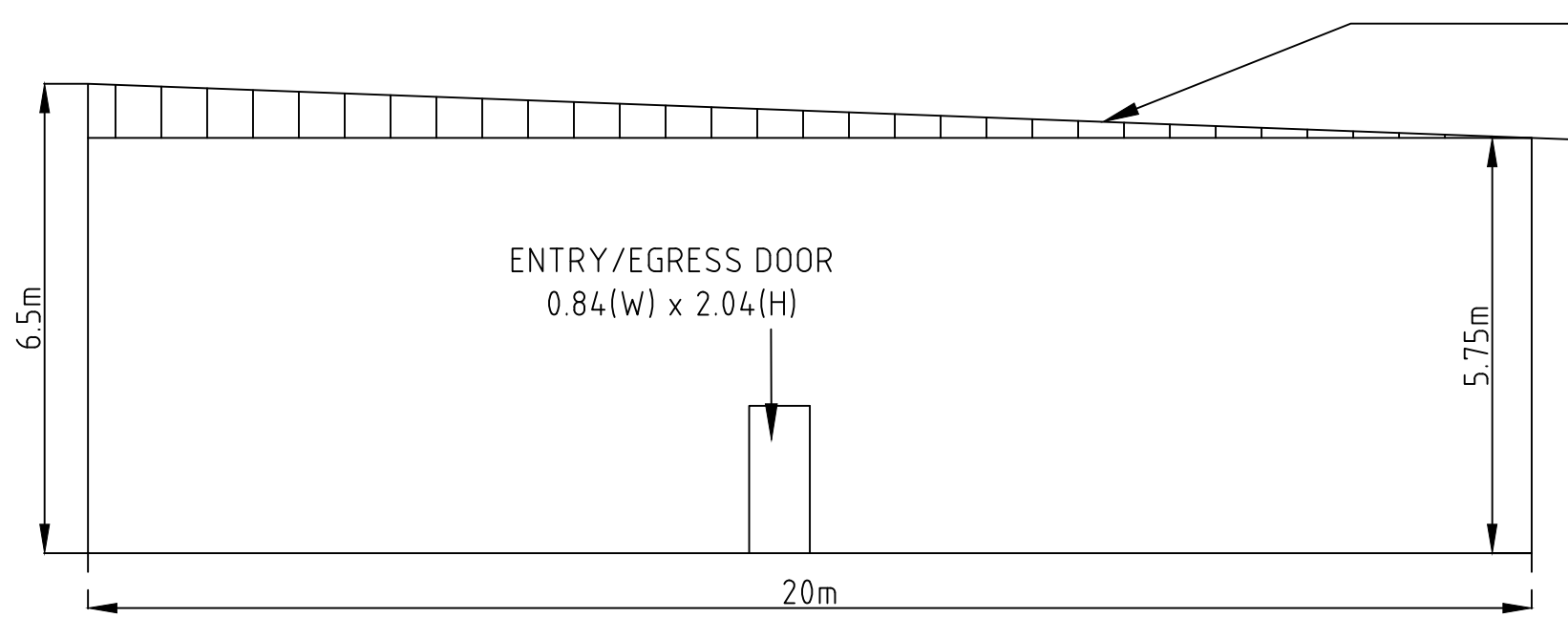
CLIENT: HAY ENTERPRISES

JOB No.: 217111

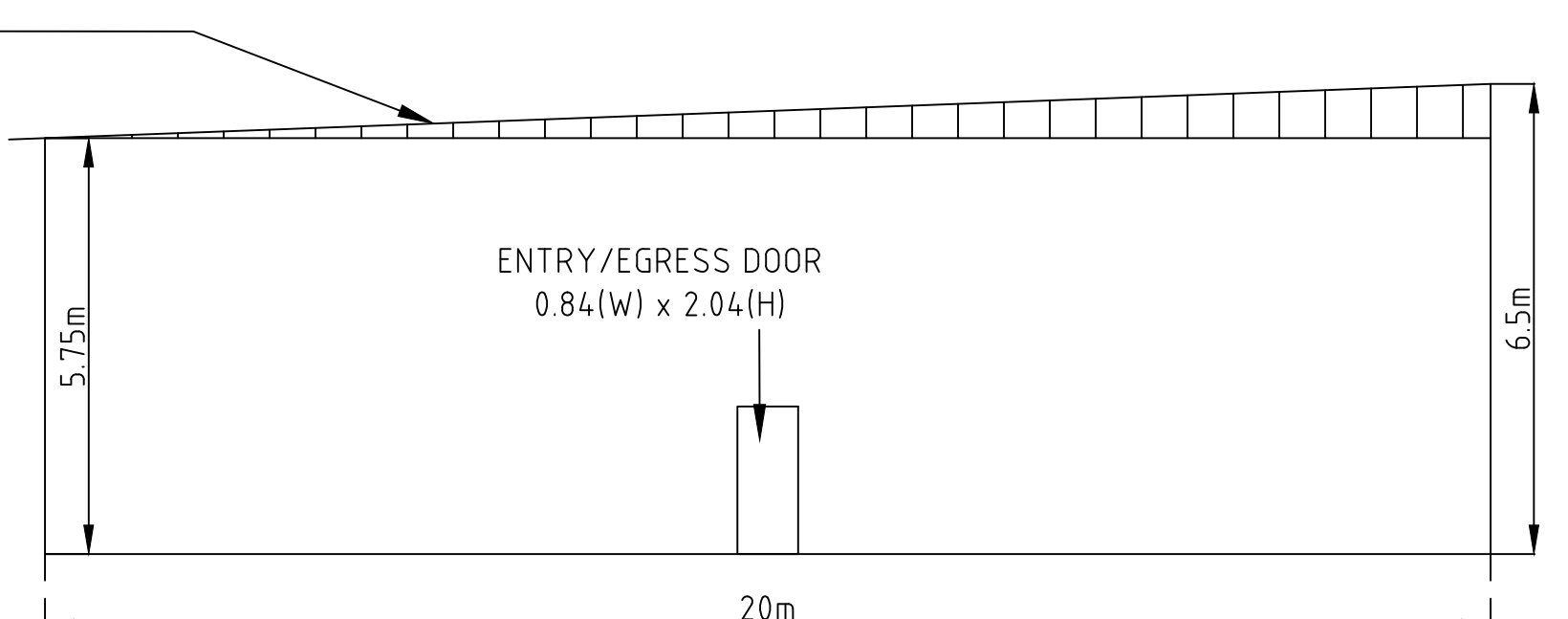
COMPUTER FILE : S:\Clients\2017\217111\DWG\217111 - Design.dwg

COUNCIL PSC	REFERENCE 21800004	
PARISH	SHEET SIZE	A1
SCALE 1:1000 on A1	SHEET No.	4
DATE :	Plotted 21/1/20 12:29PM	

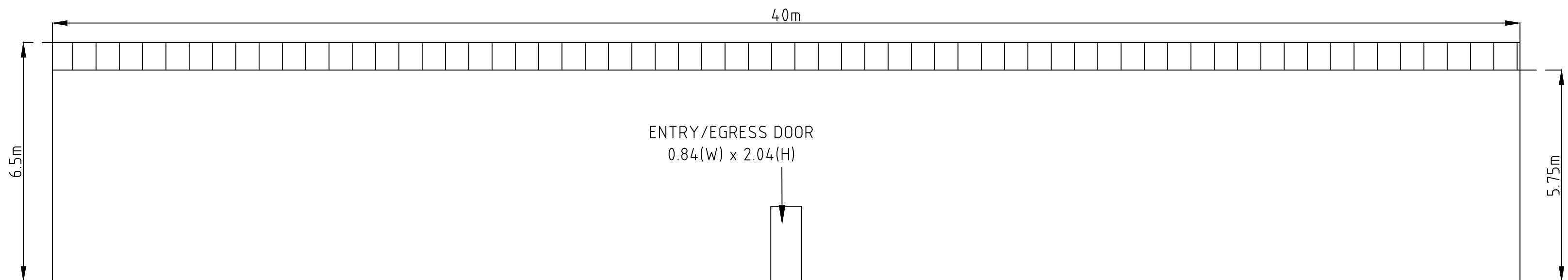
ELEVATION 3 - SOUTH
Typical
Scale 1:200



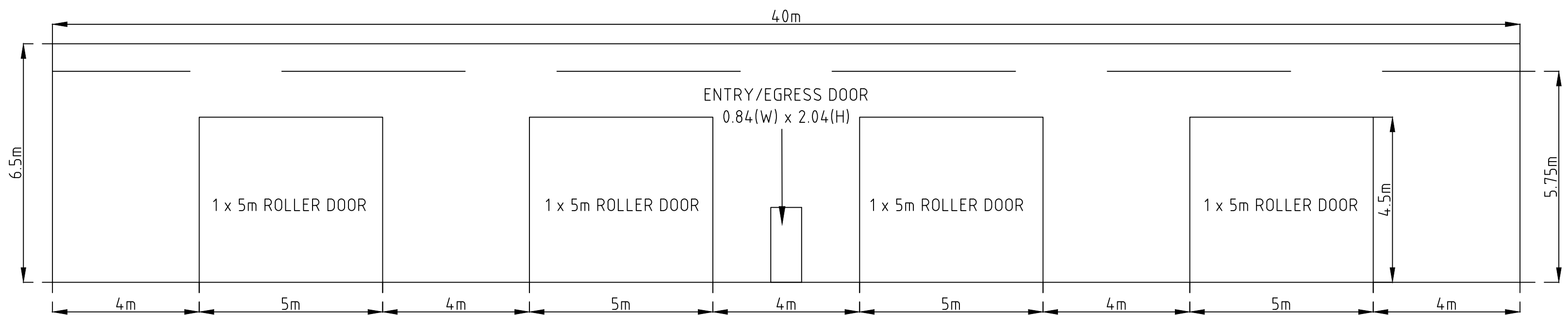
ELEVATION 4 - NORTH
Typical
Scale 1:200



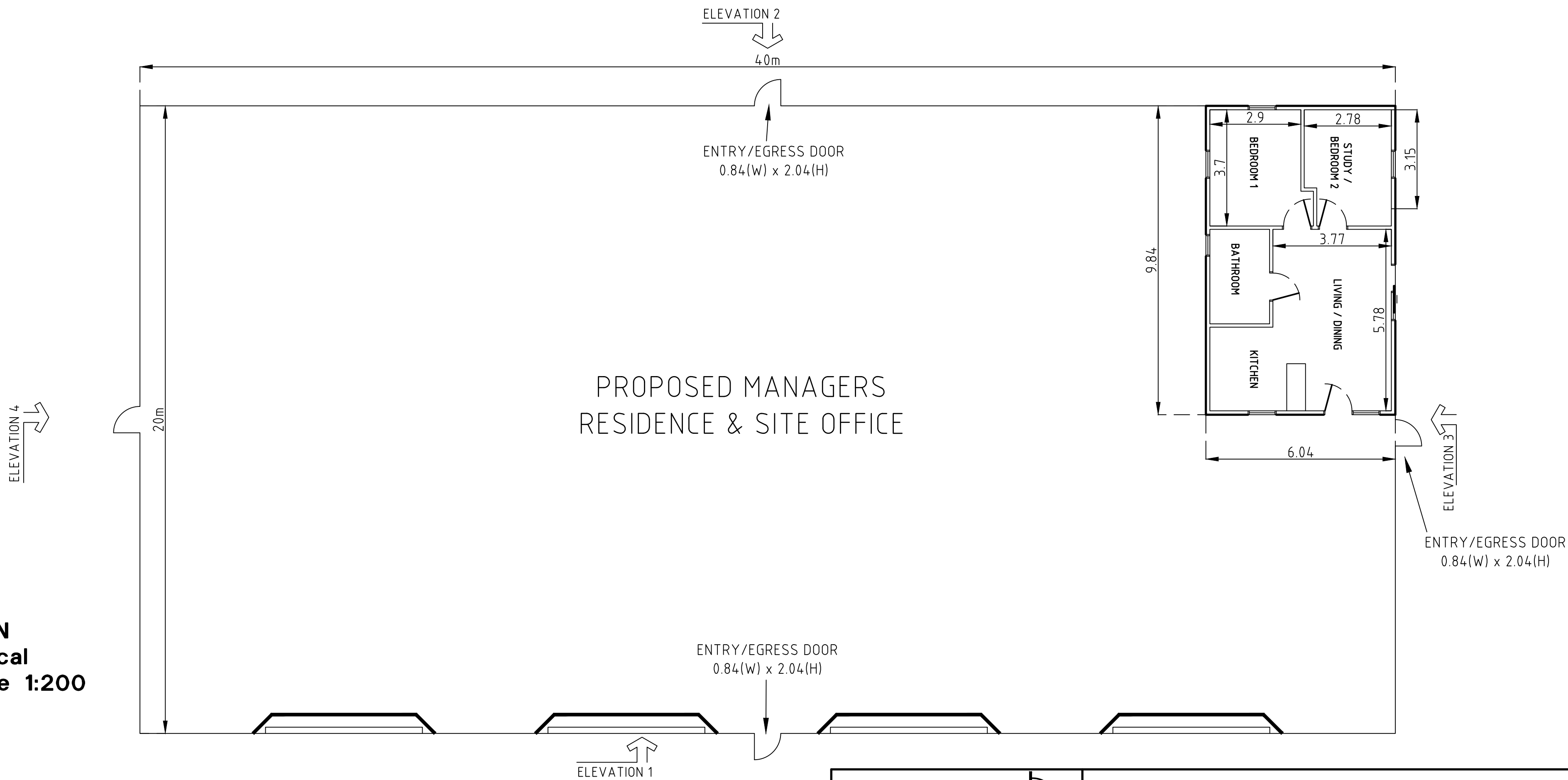
ELEVATION 2 - EAST
Typical
Scale 1:200



ELEVATION 1 - WEST
Typical
Scale 1:200



PLAN
Typical
Scale 1:200



REV	DETAILS OF AMENDMENT	DESIGNED	DRAWN	CHECKED	APPROVED	DATE
C	Revised per Council Comments	DS	DS	AV*	BL*	21/01/20*
B	New Revision	DS	DS	AV*	BL*	06/06/19*
A	Original Issue	DS	DS	-	-	29/08/18*

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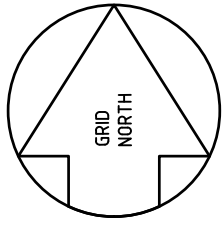
PLAN SHOWING PROPOSED MANAGERS RESIDENCE
AND SITE OFFICE PLAN & ELEVATIONS
LOT 591 DP1191380
4226 NELSON BAY RD, ANNA BAY

CLIENT: HAY ENTERPRISES

JOB No.: 217111

COMPUTER FILE : S:\Clients\2017\217111\DWG\217111 - Design.dwg

COUNCIL PSC	REFERENCE 21800075	
PARISH	SHEET SIZE	A1
SCALE 1:1000 AT A1	SHEET No. 5	
DATE :	Plotted 21/1/20 12:30PM	



C	Revised per Council Comments	DS	DS	AV*	BL*	21/01/20*
B	New Revision	DS	DS	AV*	BL*	06/06/19*
A	Original Issue	DS	DS	-	-	29/08/18*
REV	DETAILS OF AMENDMENT	DESIGNED	DRAWN	CHECKED	APPROVED	DATE
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ADJOINING SAND EXTRACTION OPERATIONS

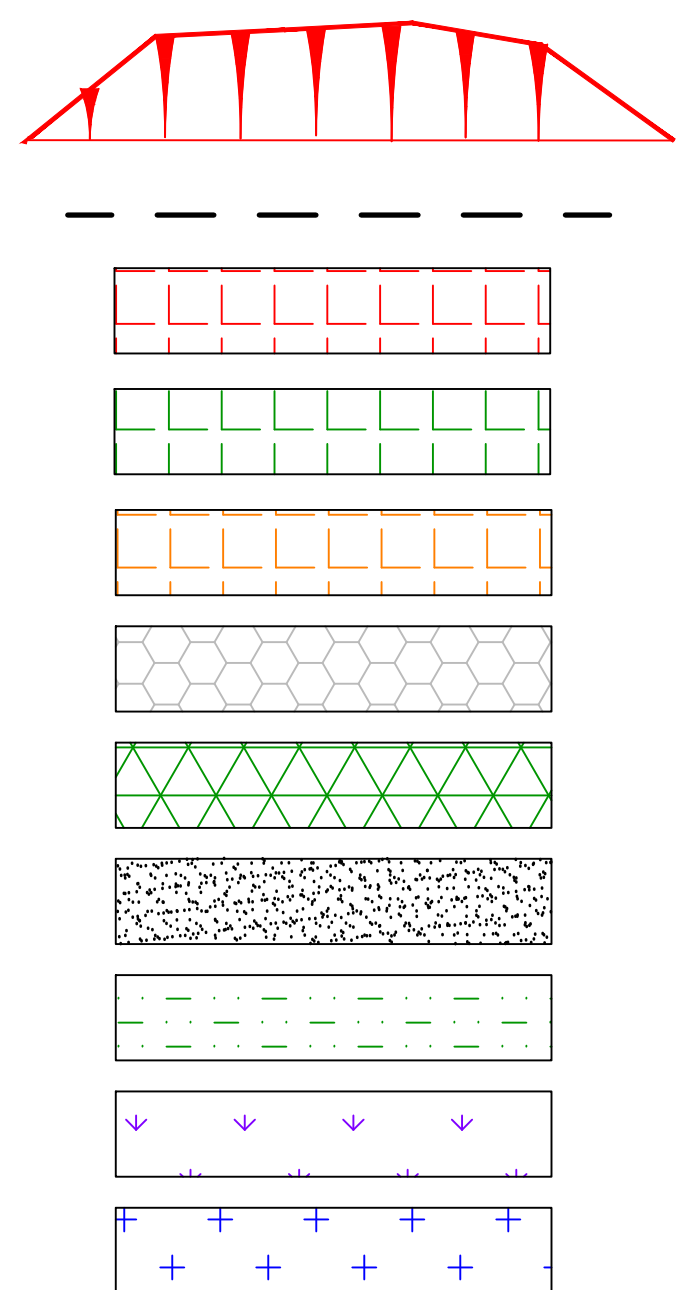
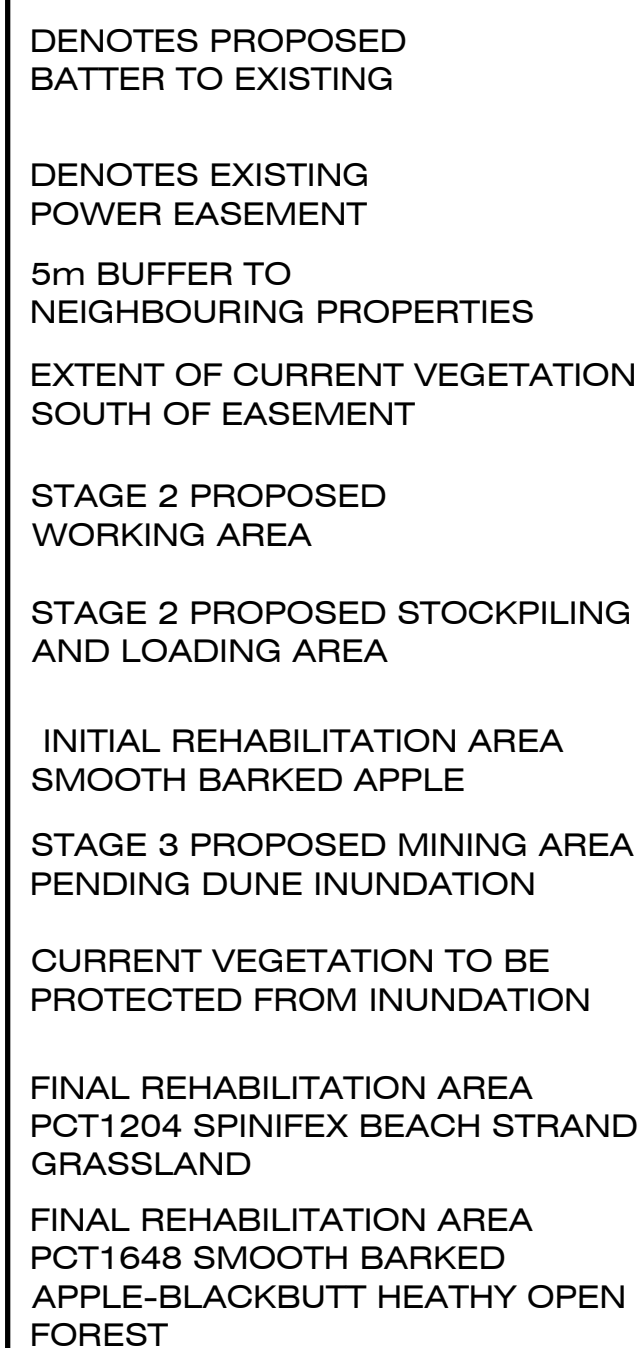
CLIENT: HAY ENTERPRISES

JOB No.: 217111

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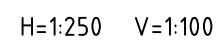
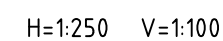
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PARISH		SHEET SIZE	A1
SCALE 1:4000 on A1		SHEET No. 6	
DATE : Plotted 21/1/20 12:30PM			

217111 - Design.dwg



C	Revised per Council Comments	DS	DS	AV*	BL*	21/01/20
B	Buffer Slope Value Added	DS	DS	AV*	BL*	06/06/15
A	Original Issue	DS	DS	-	-	09/04/18
REV	DETAILS OF AMENDMENT	DESIGNED	DRAWN	CHECKED	APPROVED	DATE
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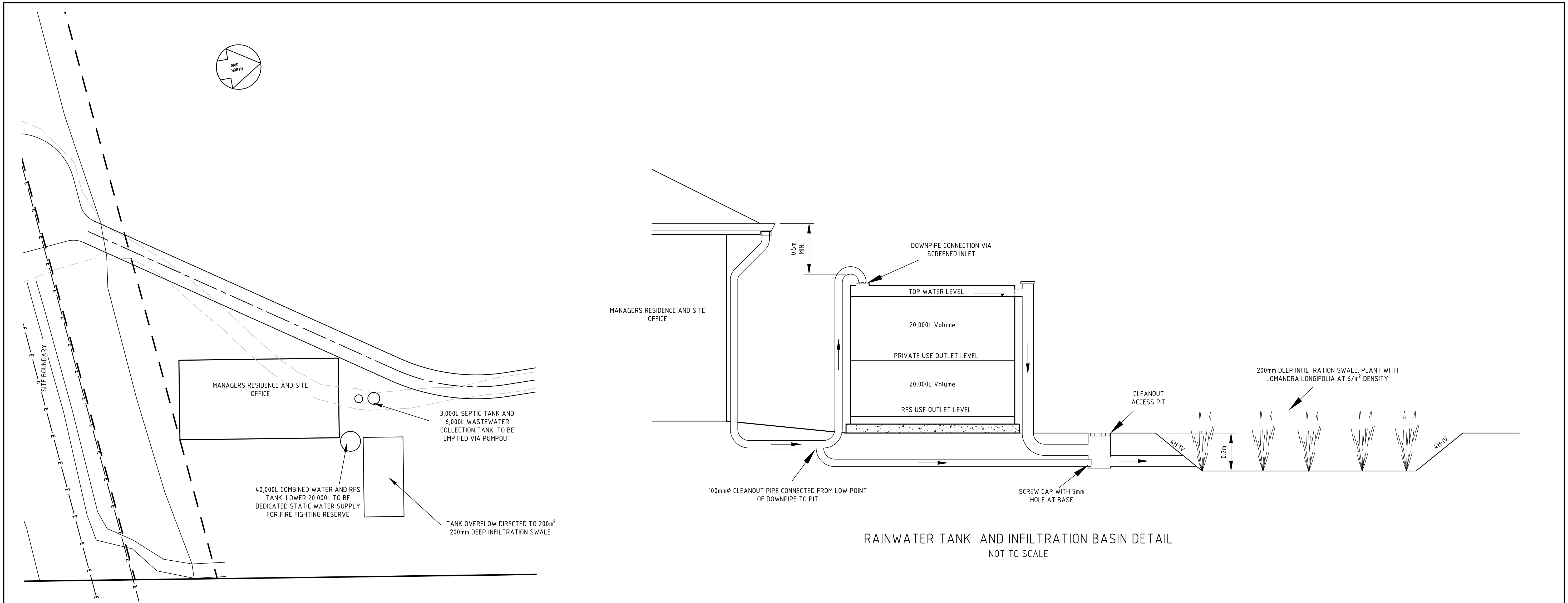
REHABILITATION PLAN
PROPOSED SAND EXTRACTIVE INDUSTRY
LOT 591 DP1191380
4226 NELSON BAY RD, ANNA BAY

COUNCIL PSC	REFERENCE 21800006	
PARISH	SHEET SIZE	A1
SCALE 1:1000 on A1	SHEET No. 7	
DATE : Plotted 21/1/20 12:30PM		

CLIENT: HAY ENTERPRISES

JOB No.: 217111

COMPUTER FILE : S:\Clients\2017\217111\Draw\217111 - Design.dwg



Roof Area	800 m ²
Infiltration Area	200 m ²
Infiltration Rate	0.0004 m/s
Infiltration FOS	5
Design Infiltration Rate	0.00008 m/s
Q _{infiltration}	0.016 m ³ /s

× INFILTRATION RATE FROM GEOTECHNICAL INVESTIGATION BY RCA AUSTRALIA ref 13280-201/2

AEP	%	100	100	100	100	100	100	100	100
Duration	min	1	5	10	20	30	45	60	90
Intensity	mm/hr	485	334	267	194	155	121	101	76.9
Intensity	m/s	1.3E-04	9.3E-05	7.4E-05	5.4E-05	4.3E-05	3.4E-05	2.8E-05	2.1E-05
Q _{inflow}	m ³ /s	0.108	0.074	0.059	0.043	0.034	0.027	0.022	0.017
Vol Runoff	m ³	6.47	22.27	35.60	51.73	62.00	72.60	80.80	92.28
Q _{net} (Q _{inflow} -Q _{infiltration})	m ³ /s	0.092	0.058	0.043	0.027	0.018	0.011	0.006	0.001
Net Volume	m ³	5.51	17.47	26.00	32.53	33.20	29.40	23.20	5.88
Depth Req	mm	28	87	130	163	166	147	116	29

- NOTES:
1. 2016 IFD DATA FROM BOM NEAREST GRID CELL 32.7635(S) 152.0625 (E)
2. RATIONAL METHOD CALCULATIONS IN ACCORDANCE WITH ARR 2019 FIGURE 9.6.1 FOR THE SCALE OF THE DEVELOPMENT. RUNOFF COEFFICIENT C =1

C	Original Issue	DS	DS	AV*	BL*	21/01/20*
B	-	-	-	-	-	-
A	-	-	-	-	-	-
REV	DETAILS OF AMENDMENT	DESIGNED	DRAWN	CHECKED	APPROVED	DATE
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STORMWATER MANAGEMENT PLAN

COUNCIL PSC	REFERENCE 21801001	
PARISH	SHEET SIZE	A1
SCALE 1:500 on A1	SHEET No. 8	
DATE :	Plotted 21/1/20 12:32PM	