TRAFFIC IMPACT ASSESSMENT

3 OFF - 4.99MW CONNECTED BATTERY ENERGY STORAGE SYSTEM (BESS) ON THE 11kV DISTRIBUTION POWER GRID

LOT 51 DP776564
981 NEW ENGLAND HIGHWAY, ABERDEEN

PREPARED FOR: HIVE BATTERY DEVELOPMENTS PTY LTD

DECEMBER 2023

23/120

TRAFFIC IMPACT ASSESSMENT
HIVE BATTERY DEVELOPMENTS PTY LTD

4.99MW CONNECTED BATTERY ENERGY STORAGE SYSTEM (BESS) ON THE 11kV DISTRIBUTION POWER GRID.

LOT 51 DP776564
981 NEW ENGLAND HIGHWAY, ABERDEEN.

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QUALITY ASSURANCE

This document has been prepared, checked, and released in accordance with the Quality Control Standards established by Intersect Traffic Pty Ltd.

Issue	Date	Description	By
A	02/11/23	Draft	JG
B	03/11/23	Edit	JG
C	19/11/23	Corrections / Final Proof	JG
D	14/12/23	Final Plans / Approved	JG

This document has been authorised by

Date 14th December 2023

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1.0 INTRODUCTION

Intersect Traffic Pty Ltd (Intersect Traffic) has been engaged by Hive Battery Developments Pty Ltd to prepare a traffic impact assessment report for the installation of three (3) separate 4.99MW connected Battery Energy Storage System (BESS) on the 11kV distribution power grid on Lot 51 DP 776564 981 New England Highway Aberdeen.

The proposed development involves installation of three separate BESS, with associated plant, fixtures, buildings, fencing and internal driveways. Vehicular access to the site will be via an existing vehicular driveway to the site off the New England Highway approximately 800 metres south of Gordon Street, Aberdeen that services the existing dwellings and landscape supplies business on the site. The development concept plans are shown in ***Attachment A.***

This report is required to support a development application to Muswellbrook Shire Council and allow the Council to assess the proposal in respect of its impact on the local and state road network.

This report presents the findings of the traffic and parking assessment and includes the following:

1. An outline of the existing situation near the site.
2. Assessment of the additional traffic generated by the proposal.
3. Identifies a preferred delivery route and the additional traffic's impact on the local road network.
4. Review of the adequacy of the proposed vehicular access to the site.
5. Review of the suitability and provision of on-site car parking through assessment against Council and Australian Standards requirements.
6. Presentation of conclusions and recommendations.

2.0 SITE DESCRIPTION

The subject site is shown in ***Figure 1*** below. It is located on the western side of the New England Highway immediately south of the township of Aberdeen. The site currently contains two dwellings, a landscape supplies business and is also used for agricultural purposes. The site lies within the Muswellbrook Local Government Area (LGA) being just within the northern boundary of the LGA. It is approximately 2 km south of the main commercial area of Aberdeen and 8.8 kms north of the Muswellbrook CBD.

The development site is titled Lot 51 DP776564 981 New England Highway, Aberdeen and is zoned RU1 – Primary Production pursuant to the Muswellbrook LEP (2009). The development site has an area of approximately 92.6 ha.

The Project will utilise the existing vehicular access to the site off the New England Highway approximately 800 metres south of Gordon Street, Aberdeen which already caters for heavy vehicles associated with the existing development on the site. As such it has been constructed as a BAR/BAL intersection to allow heavy vehicles to easily enter and exit the site in a forward direction and allow through vehicles to easily pass vehicles propped or slowing down to enter the site. Deliveries to the site will use the New England Highway from the south-east from Sydney and/or Newcastle. ***Photograph 1*** below shows the development site from the New England Highway while ***Photograph 2*** shows the existing vehicular access off the New England Highway.

Figure 1 – Site Location

Photograph 1 – Development site from New England Highway.

Photograph 2 – Existing vehicular access off New England Highway.

3.0 EXISTING ROAD NETWORK

The proposed transport route for delivery of all materials and plant to the development site is via the New England Highway from Newcastle or Sydney to the site. This transportation route is described and assessed as follows.

3.1 New England Highway

The New England Highway is part of the classified State Highway network and is a major arterial road in the region. It is currently under the care and control of Transport for NSW (TfNSW). Near th site the New England Highway is generally a two-lane two-way sealed rural road constructed to highway standards with additional turning lanes at major intersections. The highway has a sealed width of approximately 12 metres with 3.5 metre travel lane widths and sealed shoulders / breakdown lanes 2 to 2.5 metres wide on both sides of the road. Near the site access a 100 km/h speed zoning applies and at the time of inspection, the New England Highway was observed to be in excellent condition as shown in ***Photograph 3*** below.

Photograph 3 – New England Highway near site access.

4.0 ALTERNATIVE TRANSPORT MODES

Osborn Buses runs a public transport (bus) service between Muswellbrook and Scone (Route 414) that includes a stop in Aberdeen on the New England Highway opposite Aberdeen Train Station (near Graeme Street) approximately 1.3 km north of the site. This is not considered convenient enough to service the site particularly as only 1 morning and 1 afternoon service is provided.

As a rural area there are no pedestrian footpaths or on / off road cycleways within the local or state road network. Near the site pedestrians are generally required to utilise the grass verges and road shoulders / pavement while cyclists are required to utilise the road shoulders or share the travel lanes with other vehicles.

5.0 ROAD NETWORK IMPROVEMENTS

There are no known road network improvements planned for near the site that would increase the capacity of the local and state road network. Maintenance of the existing local and state road network near the site would be carried out in accordance with Muswellbrook Shire Council and TfNSW annual works programs.

6.0 DEVELOPMENT PROPOSAL

The proposed development involves the construction of three (3) separate 4.99MW connected Battery Energy Storage System (BESS) on the 11kV distribution power grid & associated infrastructure on Lot 51 DP776564 981 New England Highway, Aberdeen. Vehicular access to the site will be via the existing vehicular access to the site off the New England Highway approximately 800 metres south of Gordon Street, Aberdeen. The development concept plans are shown in ***Attachment A*** with the specific works involved in the development listed below:

Stage 1 – Site development

- Site earthworks including construction of hardstand pad, internal driveways, temporary on-site parking areas, material storage area and fencing.

Stage 2 – BESS Installation

- Installation of battery storage cell and associated plant & structures.
- Site facilities and auxiliary facilities.

Stage 3 – Trade Connections

- Connection of BESS to Ausgrid power grid.

Stage 4 – Commissioning

- Testing of BESS system and connection to power grid.

The development of the three BESS systems concurrently will require a team of up to 26 construction employees for a period of up to 11 weeks working 7 am to 5 pm Monday to Friday and 8 am – 1 pm on Saturdays. The peak traffic movements associated with the development will occur during Week 6 of the construction (also peak construction employee period) when Site 1 is being commissioned, Site 2 is having the BESS installed and Site 3 is undergoing the initial earthworks stage of its construction. Traffic movements generated by the operation of the Project will include a single staff light vehicle movement associated with maintenance inspections approximately twice a month with 2 employees involved in the maintenance inspections.

7.0 TRAFFIC IMPACTS

7.1 – Delivery Route

The delivery route for materials to the site will be as follows noting this would apply for major deliveries from Sydney and Newcastle.

Delivery route – New England Highway from south-east from Newcastle or Sydney.

7.2 – Existing Road Network Traffic Volumes

To determine existing traffic volumes on the road network, Northern Transport Planning and Engineering (NTPE) on behalf of Intersect Traffic undertook a week-long traffic classifier count on the New England Highway along the site frontage from Tuesday 10th October 2023 until Monday 16th October 2023. The summary results of these traffic counts are shown in the data sheets within ***Attachment B***.

The peak existing two-way mid-block traffic volumes for the New England Highway extracted from this data is as shown below and these values have been adopted in this assessment.

AM peak (8 am – 11.am) – 901 vtph; and
PM peak (3 pm – 5 pm) – 1,115 vtph.

It is noted that an average heavy vehicle percentage of 10% was recorded in these counts.

7.3 – Traffic Generation and Trip Distribution

The TfNSW publication "*RTA's Guide to Traffic Generating Developments (2002)*" provides advice on the traffic generating potential of different land uses. However, this document does not cover BESS installations therefore determining traffic generation is reliant on advice from the applicant regarding construction and operation of the development.

Potential traffic generation has been sourced from the client. From an operational perspective traffic generation is expected to be minimal with only regular daily maintenance inspections carried out when necessary. Therefore, based on 1 visit per day per fortnight a peak hour traffic generation of 2 vehicle trips per hour (vtph) has been assumed for this assessment based on inspections taking less than 1 hour and involve 2 personnel in a single vehicle with an inbound and outbound movement to and from the site. There may be times when specific maintenance tasks have to be undertaken but these will be infrequent, short-term, and undertaken under a construction traffic management plan for the work.

Construction traffic estimates for the installation of a single BESS facility are as shown below in ***Table 1*** based on advice from the client.

Table 1 – Construction Traffic – Single BESS facility

Stage Description	Construction Period (weeks)	Heavy Rigid Tippers with trailer	Heavy Rigid Vehicles	19 metre Articulated Vehicles	Franna Crane	Light Vehicle Utilities per day	Maximum Heavy vehicles per day	Total Vehicles per day
Site development, earthworks, Pad construction, fencing and driveway	2	5				4	5	9
BESS installation, Plant work, site facilities & auxilary equipment	2			16 (over 2 weeks)	12 (over 2 weeks)	5	3	8
Trade Connections	1		2			4	2	6
Commissioning	1					4		4

The construction program and construction traffic estimates for the concurrent construction of the 3 BESS facilities within the site is shown below in ***Table 2***.

Table 2 – Construction Schedule and Traffic estimate – Three BESS facilities.

Period	Site 1 vehicles	Site 2 vehicles	Site 3 vehicles	Total	Light vehicles	Heavy vehicles
Week 1 & 2	9			9	4	5
Week 3 & 4	8	9		17	9	8
Week 5	6	8		14	9	5
Week 6	4	8	9	21	13	8
Week 7		6	9	15	8	7
Week 8		4	8	12	9	3
Week 9			8	8	5	3
Week 10			6	6	4	2
Week 11			4	4	4	0

Based on this advice the likely peak hour traffic generation which, will occur during week 6 of the construction period, and involve the AM peak coinciding with employees arriving on site and in the PM peak coinciding with employees leaving the site is calculated below. It is also noted deliveries in Stage 2 involve 2 trips with an inbound trip and an outbound trip with the likelihood of a maximum 1 delivery occurring in the same peak hour as the employee arrival and departure. It is also assumed the Franna Crane arrives and departs in separate peak hours which could coincide with the employee arrivals and departures. Also, it is assumed in the bulk earthworks stages the tipper with trailers deliveries will involve an inbound and outbound movement in the peak hour.

AM peak = 13 inbound light vehicles + 5 x 2 tipper with trailer trips + 1 Franna Crane trip + 1 x 2 deliveries = 26 vtph (19 inbound and 5 outbound).

PM peak = 13 outbound light vehicles + 5 x 2 tipper with trailer trips + 1 Franna crane inbound + 1 x 2 deliveries = 26 vtph (19 outbound and 5 inbound).

It is expected that the distribution of trips will be as follows;

- Construction employees – it is assumed 50% will stay in Aberdeen and Scone to the north while 50% of trips will stay in Muswellbrook to the south; and
- All deliveries of materials and plant as per ***Figure 2*** will have an origin / destination south of Aberdeen from Muswellbrook, Newcastle, or Sydney.

The likely construction traffic trip distribution for the development at the site access is therefore as shown below in ***Figure 2.***

Given the construction will be completed within an 11-week period and the peak operational traffic volume from the site is only 2 vtph there is no need to do a 2033 (10-year horizon period) assessment of this development.

7.4 – Road Capacity

Table 4.5 of the "*RTA's Guide to Traffic Generating Developments"* provides some guidance on likely mid-block capacity of two-lane two-way rural roads for a level of service (C). This table is reproduced below as ***Table 2,*** and it is noted the road operates up to a LoS C until such time as the traffic volume threshold for a LoS D shown in the table is reached. Based on this table and noting the New England Highway at this location as level terrain with 10 % heavy vehicles with a 100 km/h speed zoning the two-way mid-block road capacity of the New England Highway is 1,480 vtph. This road capacity threshold for the New England Highway has been adopted in this assessment.

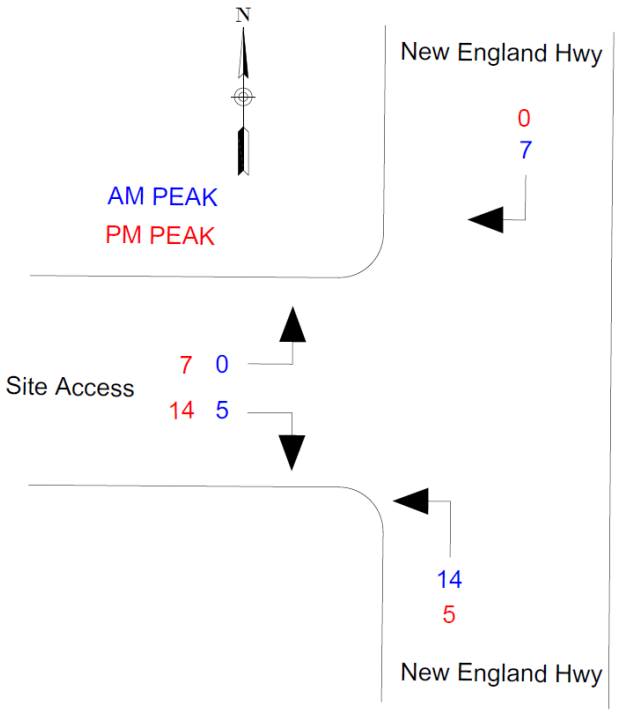


Figure 2 – Construction Traffic Trip Distribution

Table 3 – Rural Road Two-way Mid-Block Capacity Table

Table 4.5
peak hour flow on two-lane rural roads (veh/hr)
(Design speed of 100km/hr)

Terrain	Level of Service	Percent of Heavy Vehicles			
		0	5	10	15
Level	B	630	590	560	530
	C	1030	970	920	870
	D	1630	1550	1480	1410
	E	2630	2500	2390	2290
Rolling	B	500	420	360	310
	C	920	760	650	570
	D	1370	1140	970	700
	E	2420	2000	1720	1510
Mountainous	B	340	230	180	150
	C	600	410	320	260
	D	1050	680	500	400
	E	2160	1400	1040	820

The data for Table 4.5 assumes the following criteria:

- *terrain level* with 20% no overtaking.
- *rolling* with 40% no overtaking.
- *mountainous* with 60% no overtaking.
- 3.7 m traffic lane width with side clearances of at least 2m.
- 60/40 directional split of traffic.

Source: - RTA's Guide to Traffic Generating Developments (2002)

With the two-way mid-block traffic volumes on the New England Highway remaining below the two-way mid-block road capacity of the New England Highway as shown in ***Table 4*** below it is reasonable to conclude the construction of the BESS facilities on the site will not adversely impact on mid-block traffic flow on the New England Highway.

Table 4 –Two-way Mid-block Road Capacity Assessment Table

Road	Section	Capacity vtph	2023		Development traffic	
			AM (vtph)	PM (vtph)	AM	PM
New England Highway	north of site access	1480	908	1158	7	7
New England Highway	south of site access	1480	920	1170	19	19

7.5 – Intersection Capacity

The main 'intersection' impacted by the construction of the development is the site access onto the New England Highway. The site access has been modelled using the Sidra Intersection Modelling Program to demonstrate that the construction of the BESS facilities will not adversely impact on the operation of this access and create additional road safety issues at the access. This software package predicts likely delays, queue lengths and thus levels of service that will occur at intersections. Assessment is then based on the level of service requirements of TfNSW shown below.

Table 4.2
Level of service criteria for intersections

Level of Service	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way & Stop Signs
A	< 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays Roundabouts require other control mode	At capacity, requires other control mode

Source: - RTA's Guide to Traffic Generating Developments (2002

Modelling was undertaken for the 2023 during construction scenario only as the construction peak is only a temporary peak (1 week over a total 11-week construction period. In undertaking this modelling, the following assumptions were made;

- No upgrading of the intersection is proposed.
- Traffic count data was as collected by NTPE in October 2023;
- Development traffic trip distribution was as shown in ***Figure 2***.
- Existing traffic at the access is assumed as 10 vtph directional split 50% north and 50% south and 60% outbound in the AM peak and 60% inbound in the PM peak.

The results of the Sidra modelling are summarised below in ***Table 5*** while the Sidra Intersection movement summary tables are provided in ***Attachment D***.

Table 5 – Sidra summary results – New England Highway Site Access

Scenario	Deg. Satn	Worst Ave. delay (s)	Worst LoS	95 % back of queue (vehicles)
2023 AM + development	0.243	28.9	C	0.2
2023 PM +development	0.352	45.3	D	0.6

These results show satisfactory operation of the access though there is some delay in the afternoon peak. However, afternoon deliveries are very unlikely with most deliveries likely to occur before lunchtime. Therefore, as a short-term construction peak (maximum 11 weeks only) the operation of the access is considered satisfactory as delays and queuing both within the site and on the New England Highway are within the acceptable criteria for intersection operation set by TfNSW.

It is therefore concluded that the construction traffic from the Project will not adversely impact on the safety, efficiency, or effectiveness of the local and state road network.

7.6 Access Assessment

In terms of width, the access to the development providing access to a user class 1 (long term) car parking facility with less than 25 car spaces fronting a local road is required to be a category 1 access (Table 3.1 of the Standard). Table 3.2 of the Standard then specifies a category 1 access facility as a combined entry / exit between 3.0 to 5.5 metres wide. However, the entrance width at the existing combined entry / exit access at the New England Highway is 16 metres wide at the property boundary before splaying to 6 metres wide inside the boundary to cater for the heavy vehicle deliveries associated with the existing Landscape Supplies Business on the site. Therefore, this access would be suitable for use during the construction stage of the BESS Project satisfying the requirements of Australian Standard *AS2890.1-2004 Parking Facilities – Part 1 Off-street car parking* and Australian Standard *AS2890.2-2002 Parking Facilities – Part 2 Off-street commercial vehicle facilities.*

Sight distance at the existing access was observed to be in the order of in excess of 400 metres in each direction therefore not only complying with the requirements of Figure 3.2 of Australian Standard *AS2890.1-2004 Parking Facilities – Part 1 Off-street car parking (160 metres desirable SSD for 100 km/h*) but also with Austroads *Guide to Road Design – Part 4A – Unsignalised and signalised intersections - Table 3.2 (265 metres for 100 km/h)* for safe intersection sight distance.

It is therefore concluded that the existing site access is suitably located and satisfactory for use for the construction of the Project as it complies with the requirements of Australian Standard *AS2890.1-2004 Parking Facilities – Part 1 Off-street car parking,* Australian Standard *AS2890.2-2002 Parking Facilities – Part 2 Off-street commercial vehicle facilities and* Austroads *Guide to Road Design – Part 4A – Unsignalised and signalised intersections.*

8.0 ON-SITE CAR PARKING

On-site car parking for the proposal is required to comply with the Industrial Development controls within Section 16 – Car Parking and Access of Muswellbrook Council's DCP (2009). Adopting the industrial development rates for this project the relevant on-site car parking provision during the operation of the BESS facility is.

- *1 space per 75 m^2 GFA.*

With no building associated with the Project and only 2 employees in 1 light vehicle engaged in the operation of the Project the development is only required to provide 1 on-site car parking space at each BESS site. However, it is the responsibility of the applicant to also provide sufficient on-site car parking for construction employees during the duration of the construction of the Project for the Project to comply with the car parking objectives of the DCP. Construction employee car parking will be provided on the grassed areas around each of the BESS sites with each site large enough to provide suitable construction employee parking around each site. From the data provided by the client each site will at one stage in the construction cater for up 5 light vehicles therefore each site will need to provide a construction employee parking area with a capacity of 5 vehicles. Whilst the plans do not show these areas there is no constraint to the provision of this parking which could be

required by a condition of consent should Council consider it necessary. With significant overflow parking areas around each site, it is considered reasonable to conclude the Project can provide sufficient on-site car parking that complies with the objectives and controls related to car parking required within the Muswellbrook Council DCP (2009).

The employee car parking area would need to comply with the requirements of Australian Standard *AS2890.1-2004 Parking Facilities – Part 1 Off-street car parking* with parking bay sizes 2.4 m x 5.4 m and aisle widths of 5.8 metres. Again, there is sufficient room on-site to ensure compliance with this requirement which could be covered by a suitable condition of consent if Council thought it was necessary. Overall, it is considered suitable on-site car parking can be provided for the Project ensuring all construction and operational vehicles park within the site and vehicle movements to and from the site off the New England Highway will be undertaken in a forward direction.

9.0 ALTERNATE TRANSPORT MODES

The Project will not generate any increase in public transport demand during both the construction and operational phases of the development particularly given the site is not currently serviced by convenient public transport. Therefore, there is no nexus for the provision of new services or improved infrastructure resulting from the Project. Similarly, the Project will not generate any additional pedestrian or bicycle traffic during both the construction and operation phases of the development therefore no nexus exists for the provision of additional pedestrian paths or cycle ways near the site.

10.0 CONCLUSIONS

This traffic and parking assessment for the installation of three (3) separate 4.99MW connected Battery Energy Storage System (BESS) on the 11kV distribution power grid on Lot 51 DP 776564 981 New England Highway Aberdeen have determined the following:

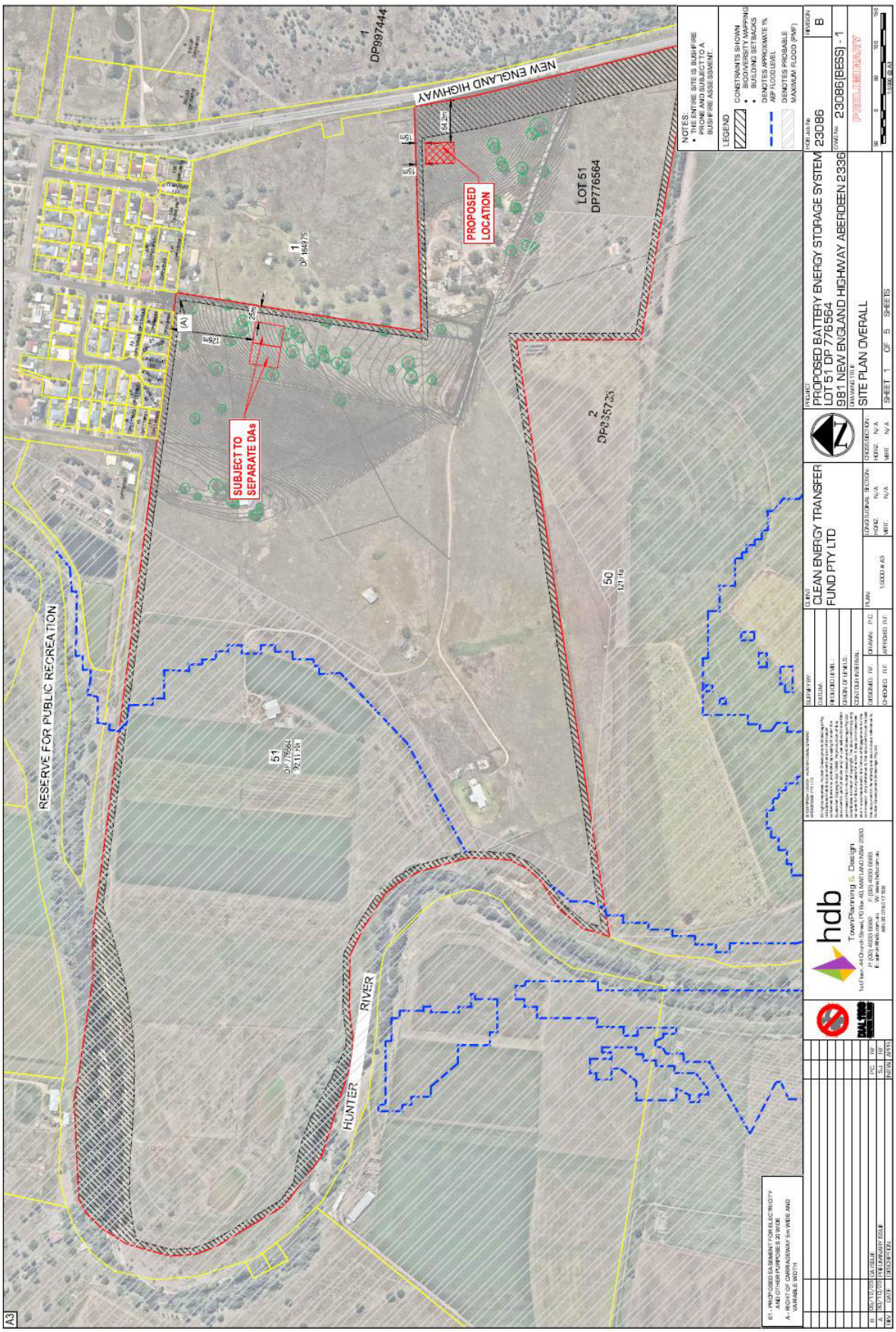
- The development during construction of the Project will generate up to an additional 26 vehicle movements to and from the site during the weekday AM and PM peak periods but only 2 vtph during the operation of the Project. Construction of the BESS sites are expected to take a total of 11 weeks.
- The existing peak hour traffic volumes on the state road network (New England Highway) are below the minimum two-way mid-block capacity threshold of 1,480 vtph for the New England Highway. Traffic volumes on the New England Highway will remain below these thresholds during the construction and operation of the Project therefore the Project will not adversely impact on mid-block traffic flows on the New England Highway.
- Sidra Intersection modelling has demonstrated the site access off the New England Highway will operate satisfactorily during construction and operation of the Project.
- Therefore, the additional construction and operational traffic generated by this development will not adversely impact on the safety, efficiency, or effectiveness of the local and state road network.
- The existing site access is suitable for use for the construction and operation of the Project as it is compliant with Australian Standard and Austroads requirements for the state road environment.
- There is sufficient area on-site to accommodate the expected peak parking demand generated by the Project during both construction and operation with the provision of an AS2890.1-2004 compliant car park within the site adjacent to each BESS site for a minimum 5 car spaces.
- The Project will not generate any increase in public transport demand therefore no nexus exists for the provision of new services or improved infrastructure resulting from the Project. Similarly, the Project will not generate any additional pedestrian or bicycle traffic therefore no nexus exists for the provision of additional pedestrian paths or cycle ways near the site.

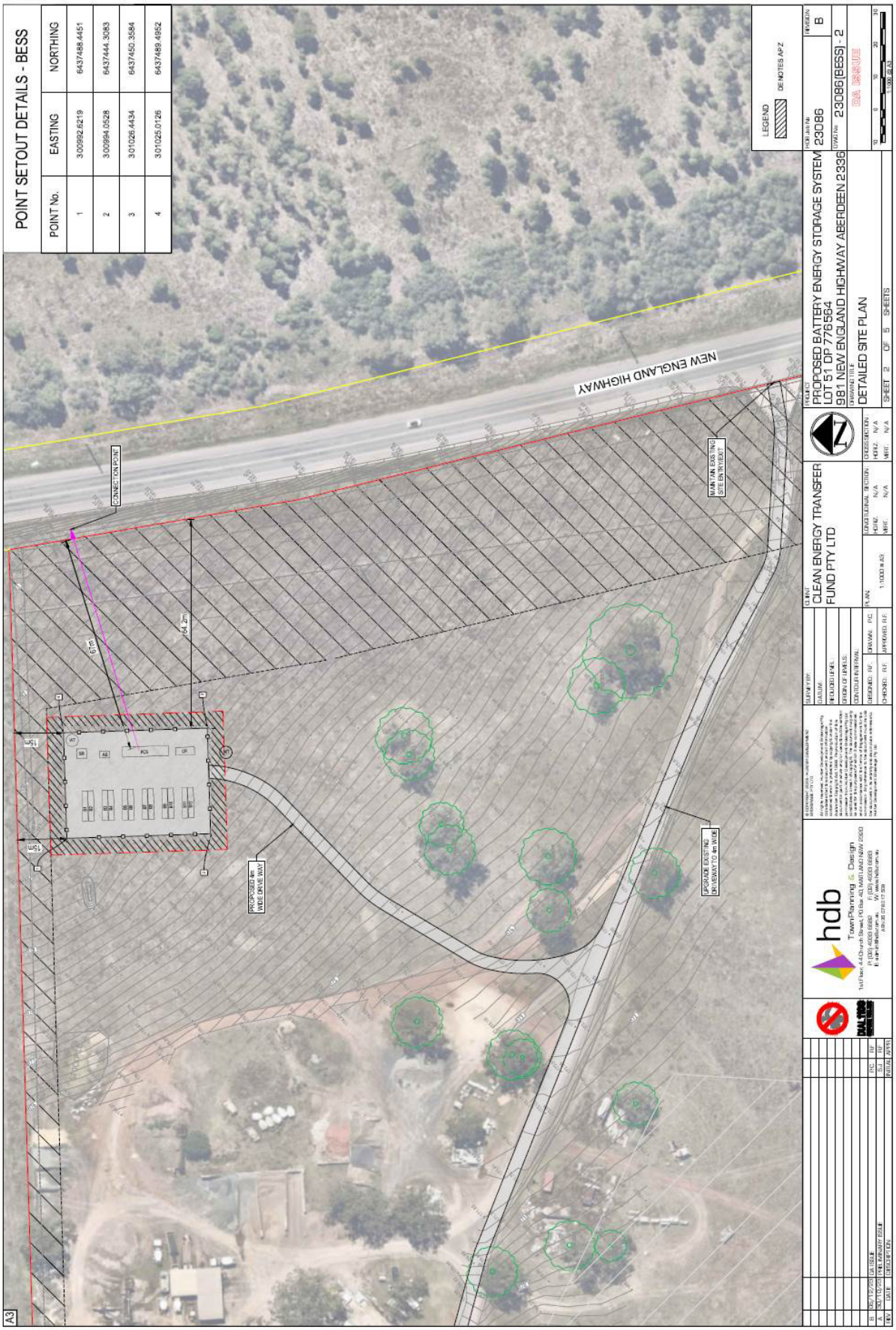
11.0 RECOMMENDATION

Having carried out this traffic and parking assessment for the installation of three (3) separate 4.99MW connected Battery Energy Storage System (BESS) on the 11kV distribution power grid on Lot 51 DP 776564 981 New England Highway Aberdeen, it is recommended that the Project can be supported from a traffic perspective as the development will not adversely impact on the local and state road network and complies with all relevant requirements of Muswellbrook Shire Council, Austroads, Australian Standards and TfNSW.

JR Garry BE (Civil), Masters of Traffic
Director
Intersect Traffic Pty Ltd

ATTACHMENT A
DEVELOPMENT PLANS


NEW ENGLAND HIGHWAY
PROPOSED LOCATION
SUBJECT TO SEPARATE DAs
RESERVE FOR PUBLIC RECREATION
HUNTER RIVER
LOT 51 DP776564
DP997444
DP164975
DP835733
NOTES:
LEGEND
PROPOSED BATTERY ENERGY STORAGE SYSTEM
LOT 51 DP 776564
981 NEW ENGLAND HIGHWAY ABERDEEN 2336
SITE PLAN OVERALL
PRELIMINARY
CLEAN ENERGY TRANSFER FUND PTY LTD
hdb
Town Planning & Design


POINT SETOUT DETAILS - BESS
POINT No. | EASTING | NORTHING
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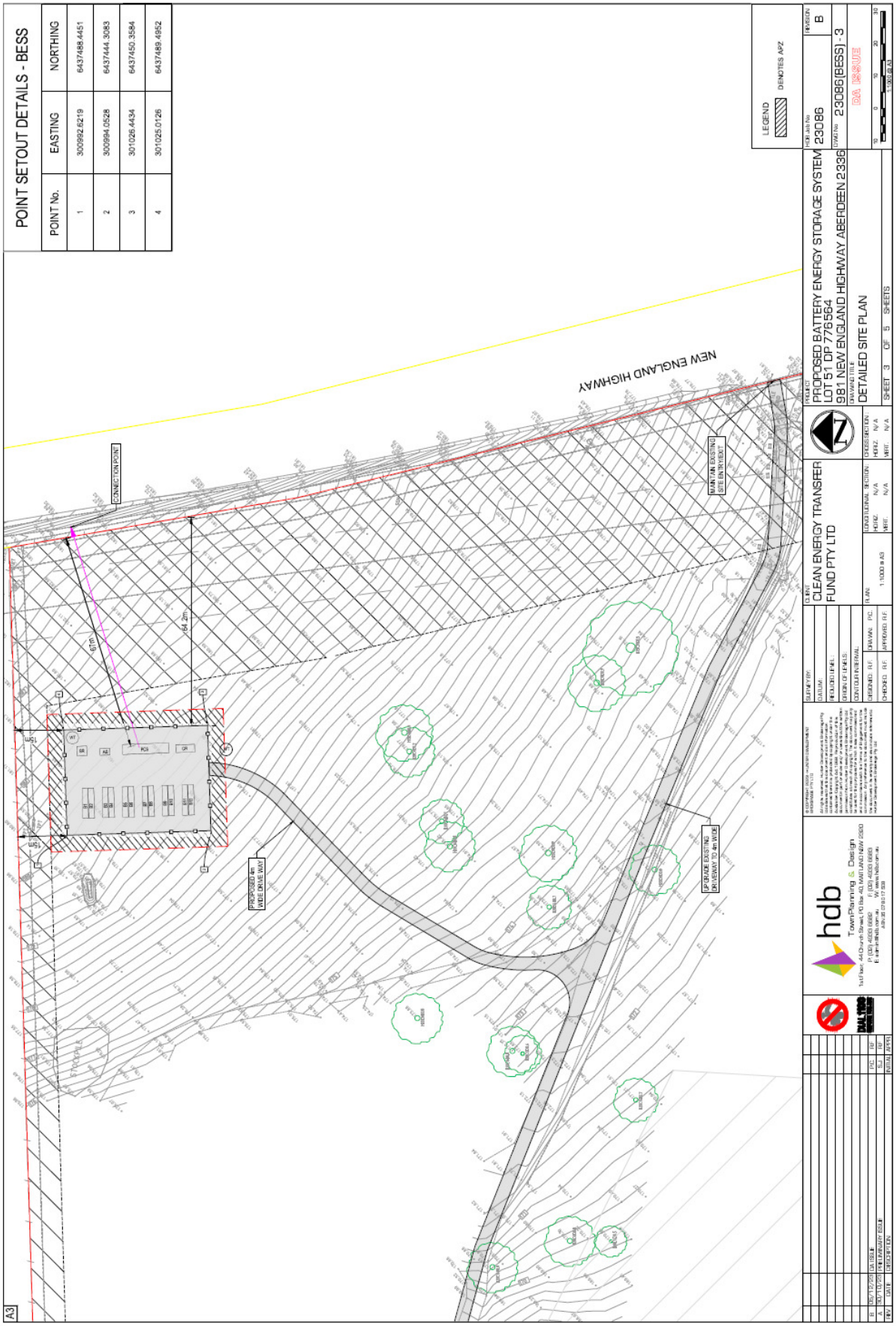
2 | 300994.0528 | 6437444.3083
3 | 301026.4434 | 6437450.3584
4 | 301025.0126 | 6437489.4952
LEGEND
DENOTES A.P.Z
NEW ENGLAND HIGHWAY
CONNECTION POINT
MAIN ENTRY TO EXISTING SITE ON WEST
PROPOSED 4m WIDE DRIVEWAY
UPGRADE EXISTING DRIVEWAY TO 4m WIDE
61m
54.2m
CLIENT
CLEAN ENERGY TRANSFER FUND PTY LTD
PROJECT
PROPOSED BATTERY ENERGY STORAGE SYSTEM
LOT 51 DP 776564
981 NEW ENGLAND HIGHWAY ABERDEEN 2336
DRAWING TITLE
DETAILED SITE PLAN
hdb
Town Planning & Design
SHEET 2 OF 5 SHEETS
A3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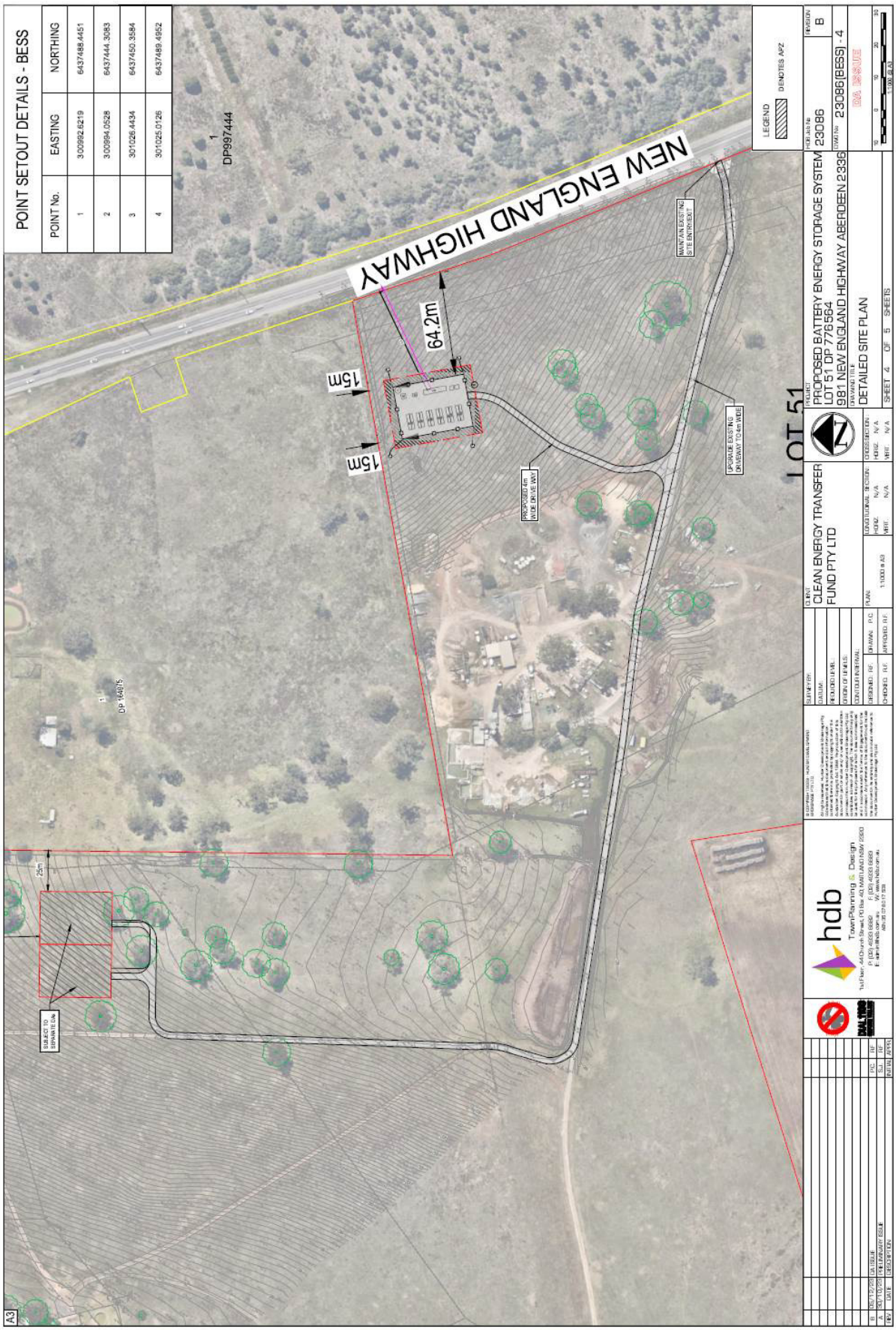
LEGEND
DENOTES APZ
NEW ENGLAND HIGHWAY
CONNECTION POINT
64.2m
PROPOSED 4m WIDE DRIVEWAY
UPGRADE EXISTING DRIVEWAY TO 4m WIDE
MAINTAIN EXISTING SITE ENTRY/EXIT
PROPOSED BATTERY ENERGY STORAGE SYSTEM 23086
LOT 51 DP 776564
981 NEW ENGLAND HIGHWAY ABERDEEN 2336
DRAWING TITLE
DETAILED SITE PLAN
DRAWING No. 23086(BESS) - 3
DA ISSUE
REVISION B
SHEET 3 OF 5 SHEETS
CLEAN ENERGY TRANSFER FUND PTY LTD
hdb
Town Planning & Design
A3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NEW ENGLAND HIGHWAY
LOT 51
DP997444
DP 164875
64.2m
15m
15m
25m
PROPOSED 4m WIDE DRIVE WAY
UPGRADE EXISTING DRIVEWAY TO 4m WIDE
MAINTAIN EXISTING SITE ENTRANCE
SUBJECT TO SEPARATE DA
LEGEND
DENOTES APZ
PROJECT
PROPOSED BATTERY ENERGY STORAGE SYSTEM
LOT 51 DP 776564
981 NEW ENGLAND HIGHWAY ABERDEEN 2336
DRAWING TITLE
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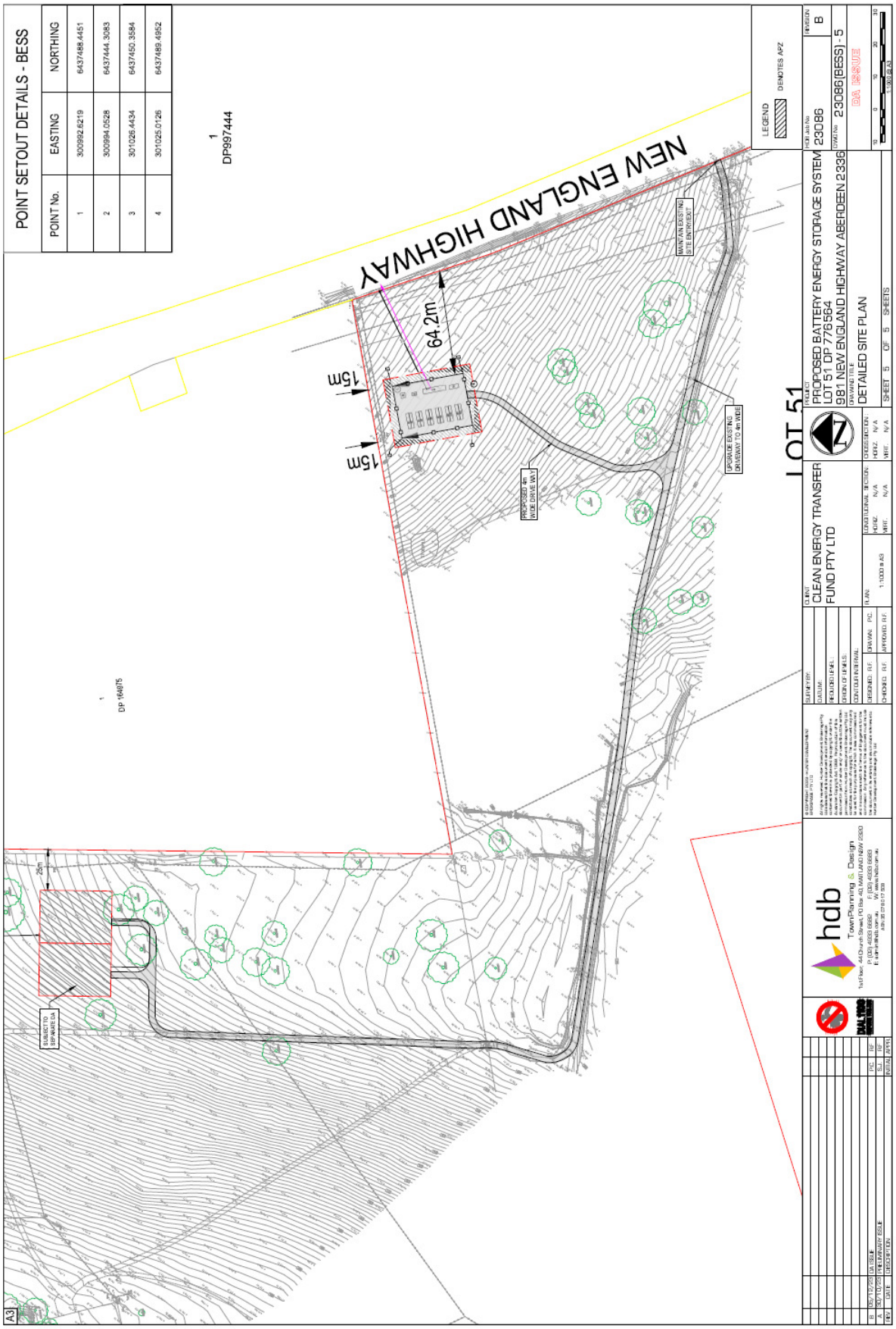
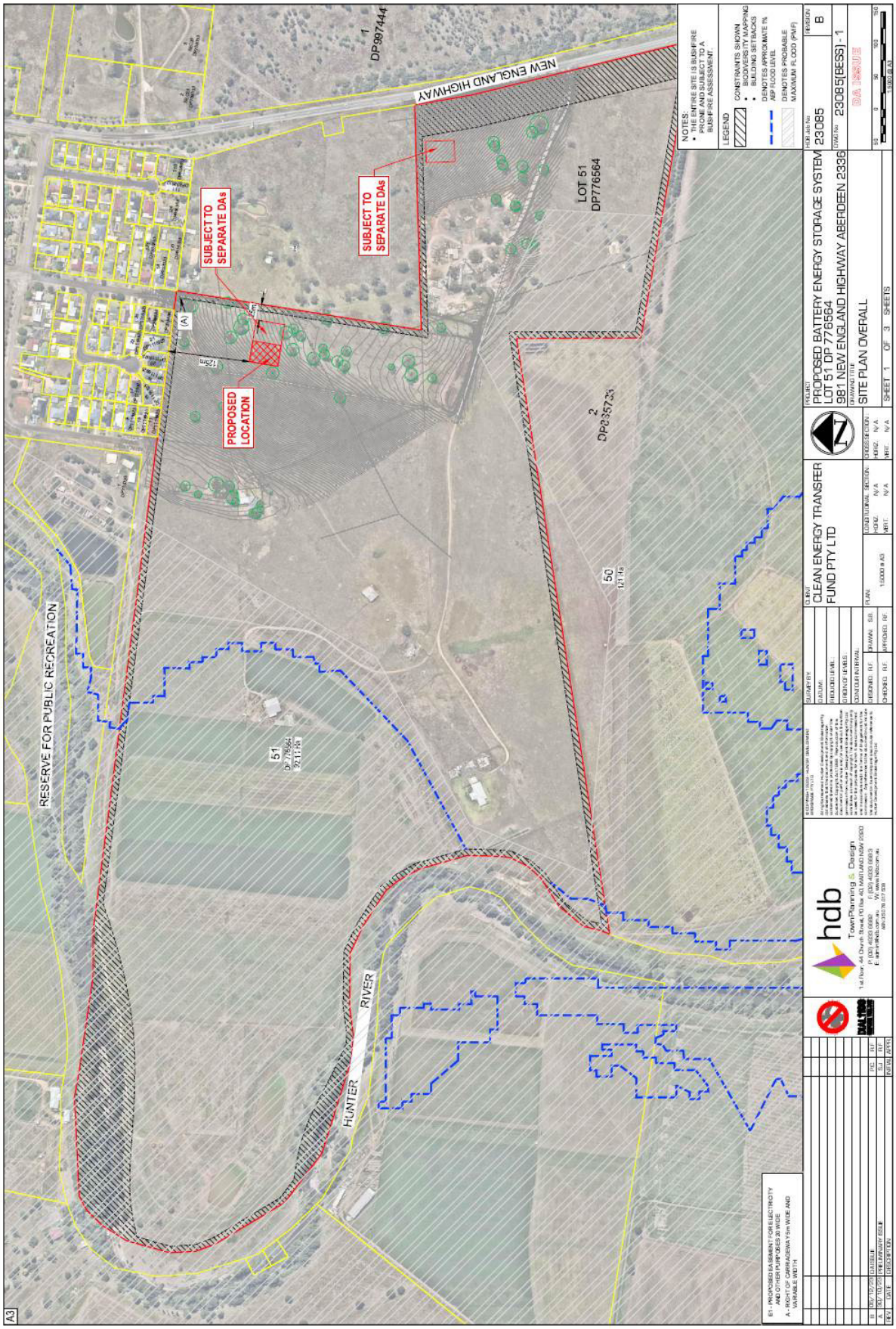
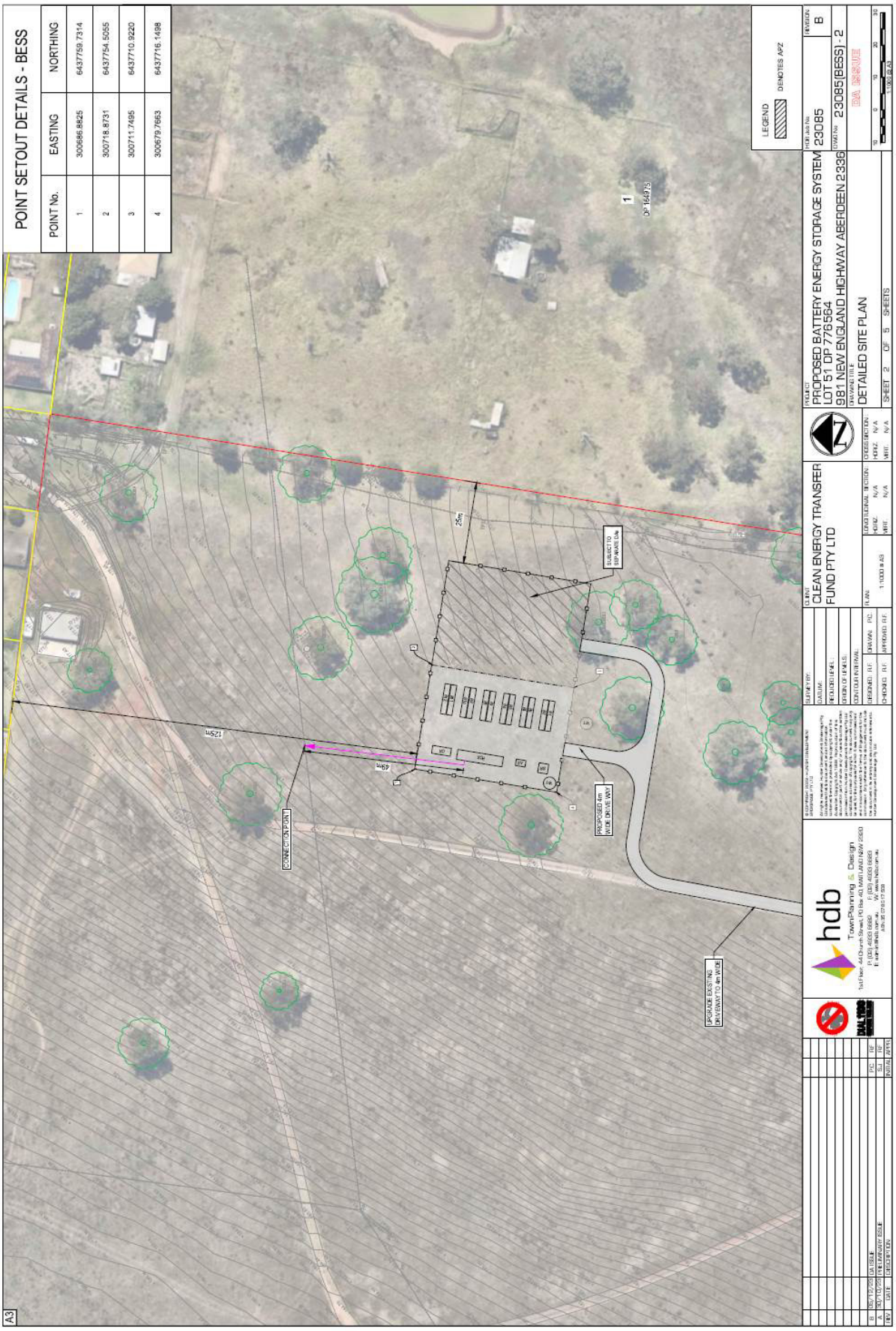
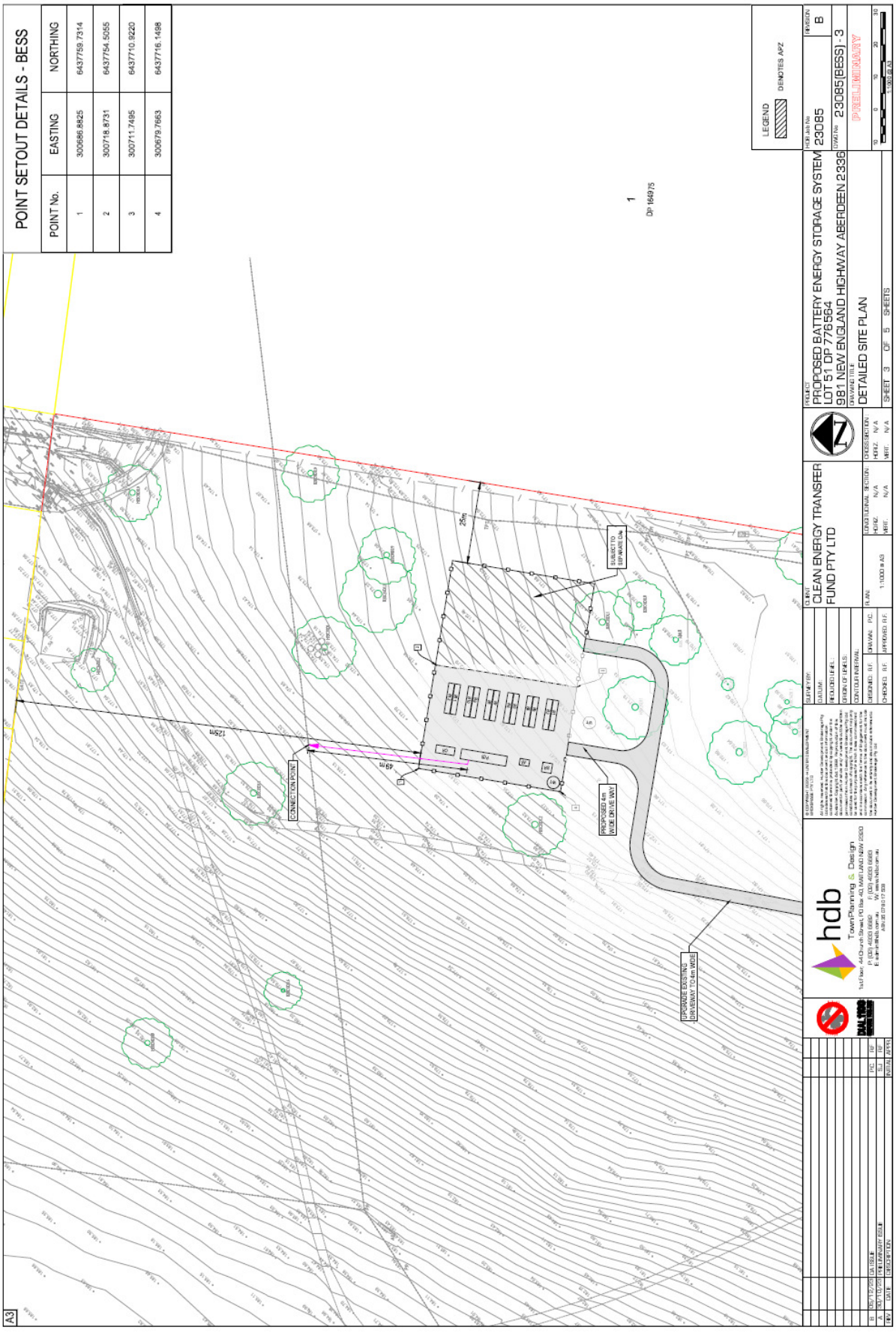
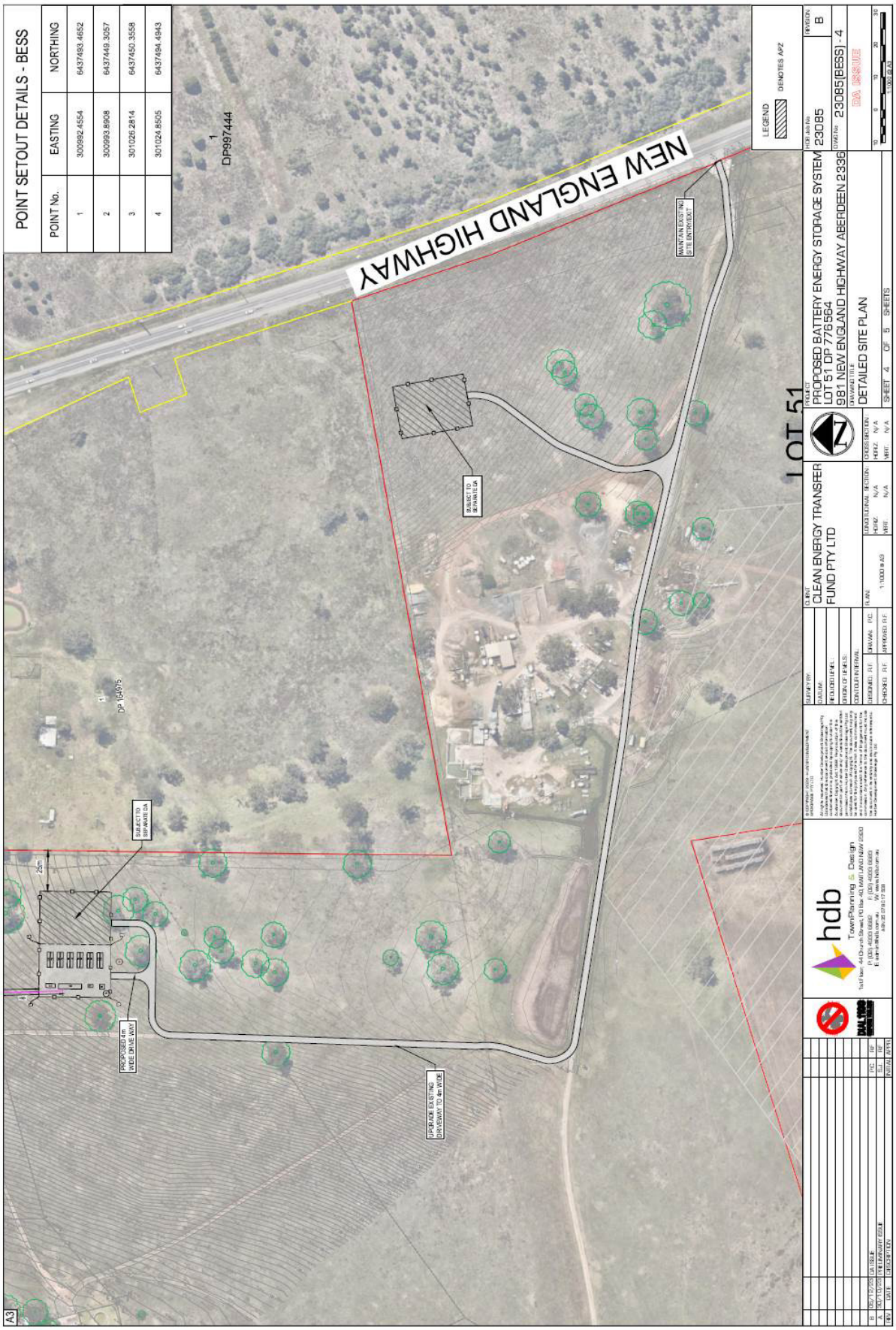
hdb
Town Planning & Design
A3

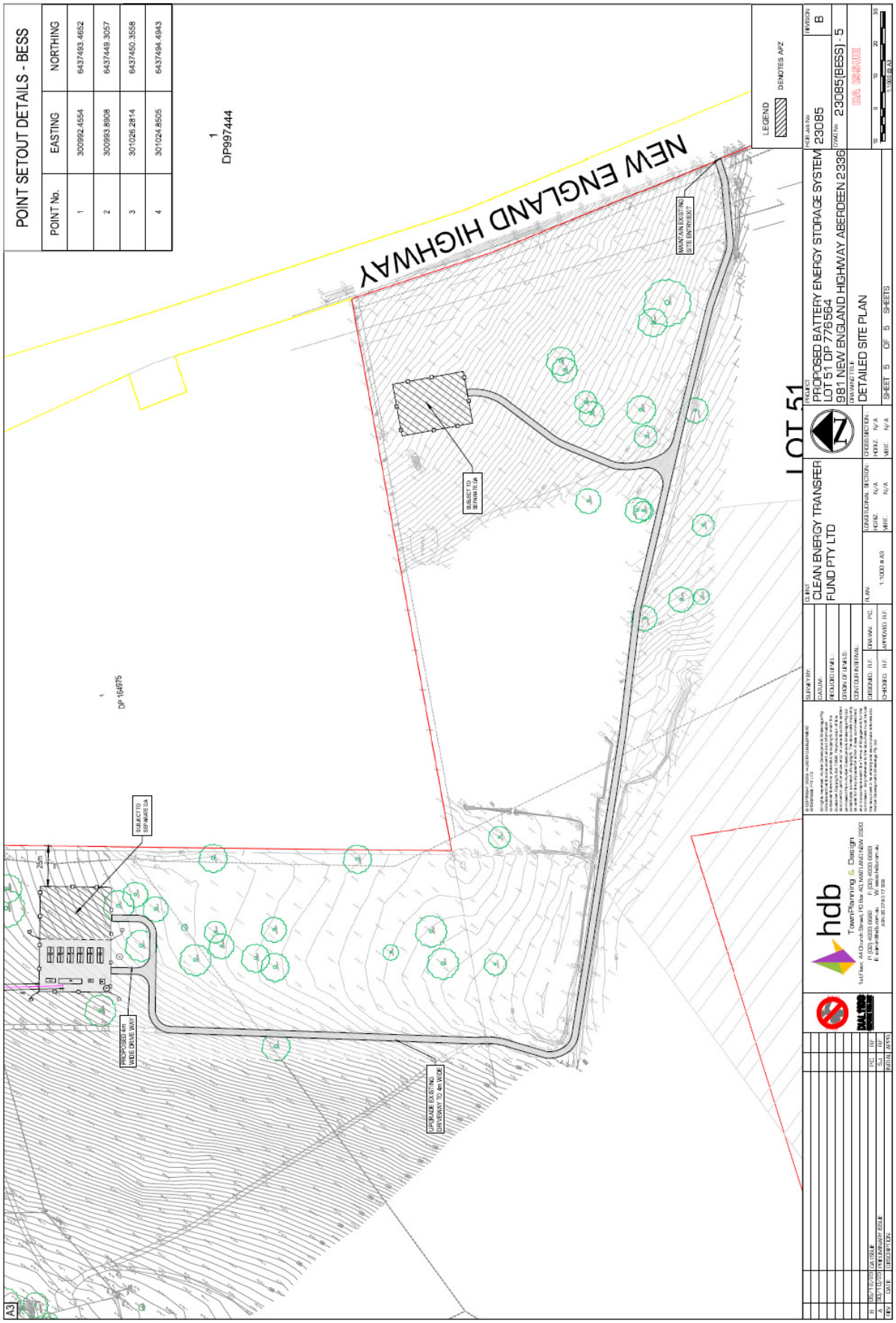

POINT SETOUT DETAILS - BESS
POINT No. | EASTING | NORTHING
1 | 300992.6219 | 6437488.4451
2 | 300994.0528 | 6437444.3083
3 | 301026.4434 | 6437450.3584
4 | 301026.0126 | 6437488.4952
LEGEND
DENOTES APZ
NEW ENGLAND HIGHWAY
LOT 51
DP997444
DP 164975
64.2m
15m
15m
MAINTAIN EXISTING SITE ENTRANCE
UPGRADE EXISTING DRIVEWAY TO 4m WIDE
PROPOSED 4m WIDE DRIVE WAY
25m
SUBJECT TO SEPARATE DA
PROPOSED BATTERY ENERGY STORAGE SYSTEM
LOT 51 DP 776564
981 NEW ENGLAND HIGHWAY ABERDEEN 2336
DETAILED SITE PLAN
CLEAN ENERGY TRANSFER FUND PTY LTD
hdb
Town Planning & Design
DA ISSUE
DA ISSUE
PRELIMINARY ISSUE

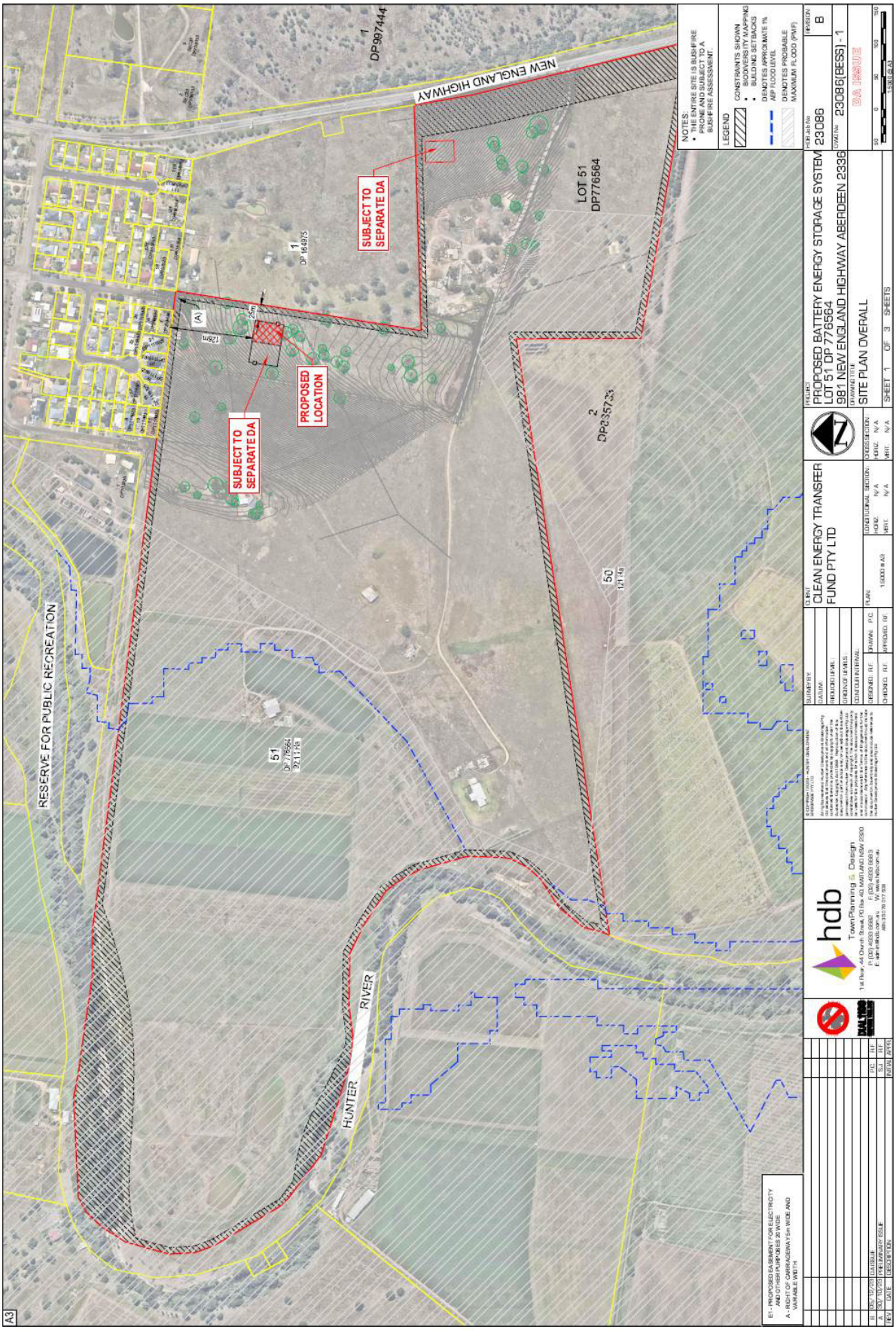

NEW ENGLAND HIGHWAY
SUBJECT TO SEPARATE DAs
SUBJECT TO SEPARATE DAs
PROPOSED LOCATION
LOT 51 DP776564
RESERVE FOR PUBLIC RECREATION
HUNTER RIVER
NOTES
LEGEND
PROJECT
PROPOSED BATTERY ENERGY STORAGE SYSTEM
LOT 51 DP 776564
981 NEW ENGLAND HIGHWAY ABERDEEN 2336
SITE PLAN OVERALL
CLIENT
CLEAN ENERGY TRANSFER FUND PTY LTD
hdb
Town Planning & Design

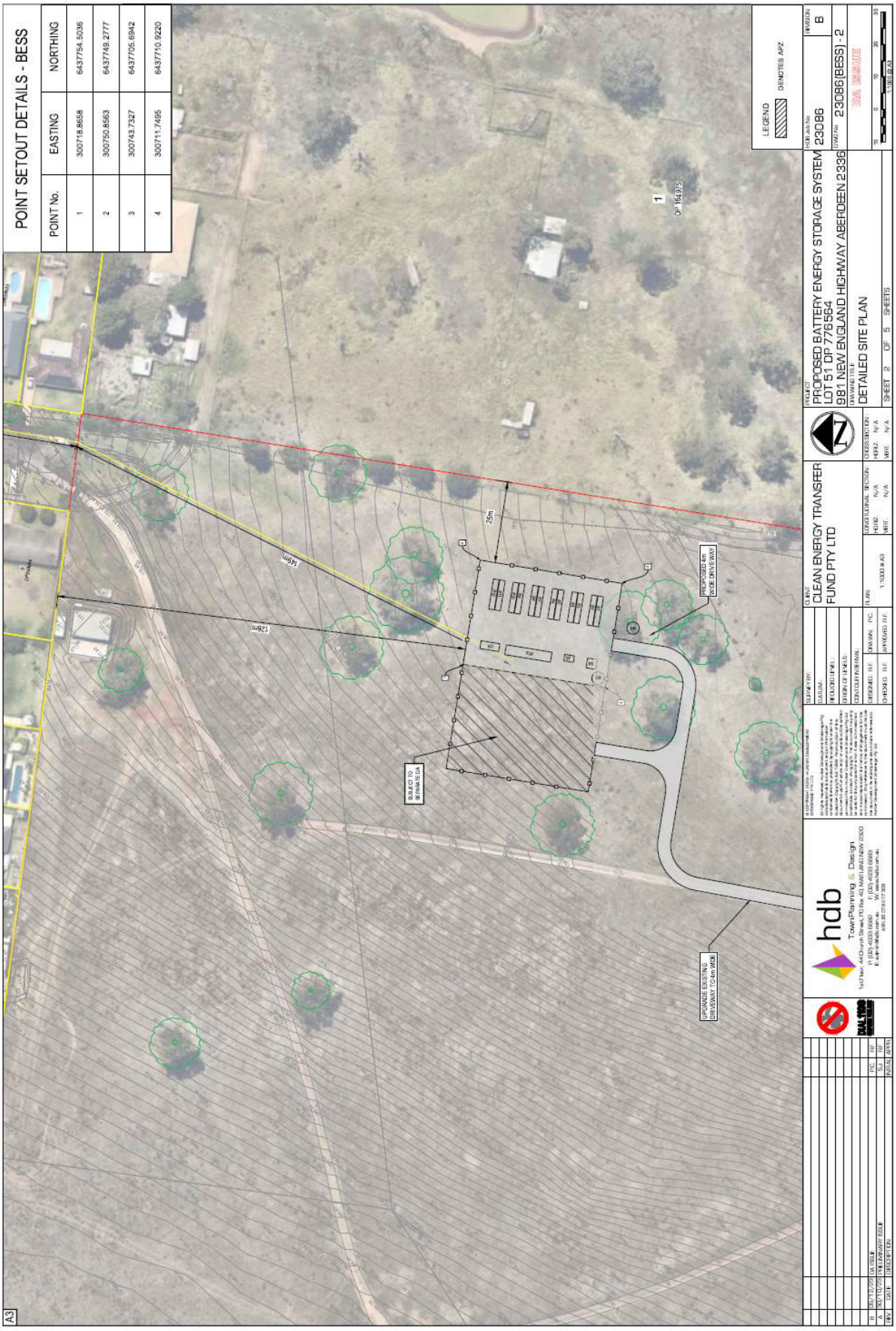

POINT SETOUT DETAILS - BESS
POINT No. | EASTING | NORTHING
1 | 300686.8825 | 6437759.7314
2 | 300718.8731 | 6437754.5055
3 | 300711.7495 | 6437710.9220
4 | 300679.7663 | 6437716.1498
LEGEND
DENOTES APZ
1
DP 164735
25m
SUBJECT TO SEPARATE DA
69m
CONNECTION POINT
PROPOSED 4m WIDE DRIVE WAY
UPGRADE EXISTING DRIVEWAY TO 4m WIDE
CLEAN ENERGY TRANSFER FUND PTY LTD
PROPOSED BATTERY ENERGY STORAGE SYSTEM
LOT 51 DP 776564
981 NEW ENGLAND HIGHWAY ABERDEEN 2336
DETAILED SITE PLAN
23085
23085(BESS) - 2
B
SHEET 2 OF 5 SHEETS
hdb
Town Planning & Design
A3

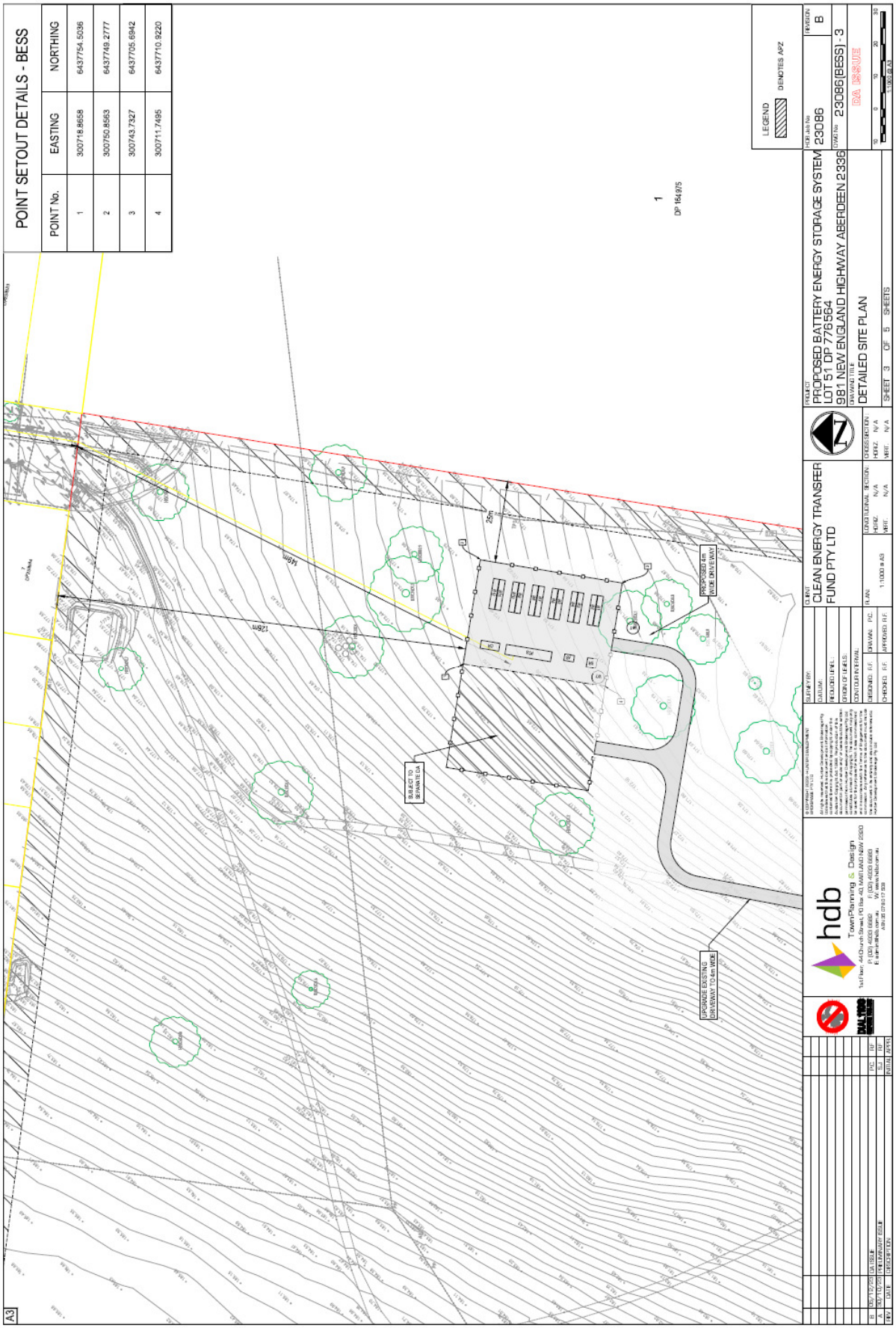

POINT SETOUT DETAILS - BESS
POINT No. | EASTING | NORTHING
1 | 300686.8825 | 6437759.7314
2 | 300718.8731 | 6437754.5055
3 | 300711.7495 | 6437710.9220
4 | 300679.7663 | 6437716.1498
LEGEND
DENOTES APZ
PROPOSED BATTERY ENERGY STORAGE SYSTEM
LOT 51 DP 776564
981 NEW ENGLAND HIGHWAY ABERDEEN 2336
DETAILED SITE PLAN
PRELIMINARY
CLEAN ENERGY TRANSFER FUND PTY LTD
hdb
Town Planning & Design
SUBJECT TO SEPARATE DA
CONNECTION POINT
PROPOSED 4m WIDE DRIVEWAY
UPGRADE EXISTING DRIVEWAY TO 4m WIDE
125m
45m
25m
1 DP 164975

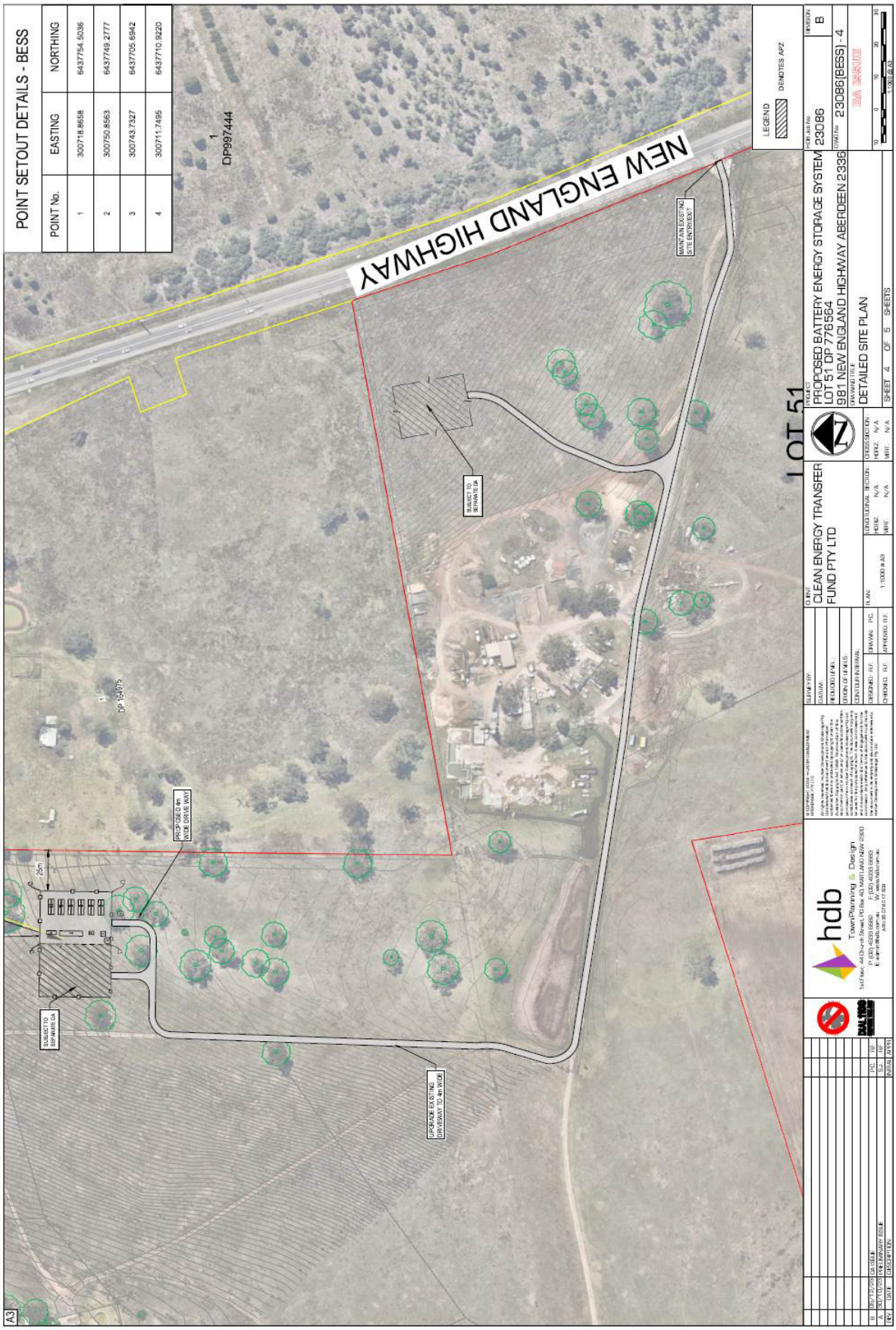

POINT SETOUT DETAILS - BESS
POINT No. | EASTING | NORTHING
1 | 300992.4554 | 6437493.4652
2 | 300993.8908 | 6437449.3057
3 | 301026.2814 | 6437450.3558
4 | 301024.8505 | 6437494.4943
NEW ENGLAND HIGHWAY
LOT 51
DP997444
DP 104975
SUBJECT TO SEPARATE DA
MAINTAIN EXISTING SITE ENTRY/EXIT
PROPOSED 4m WIDE DRIVEWAY
UPGRADE EXISTING DRIVEWAY TO 4m WIDE
25m
LEGEND
DENOTES APZ
PROPOSED BATTERY ENERGY STORAGE SYSTEM
LOT 51 DP 776564
981 NEW ENGLAND HIGHWAY ABERDEEN 2336
DETAILED SITE PLAN
23085
23085[BESS] - 4
B
DA ISSUE
CLEAN ENERGY TRANSFER FUND PTY LTD
hdb
Town Planning & Design
A3

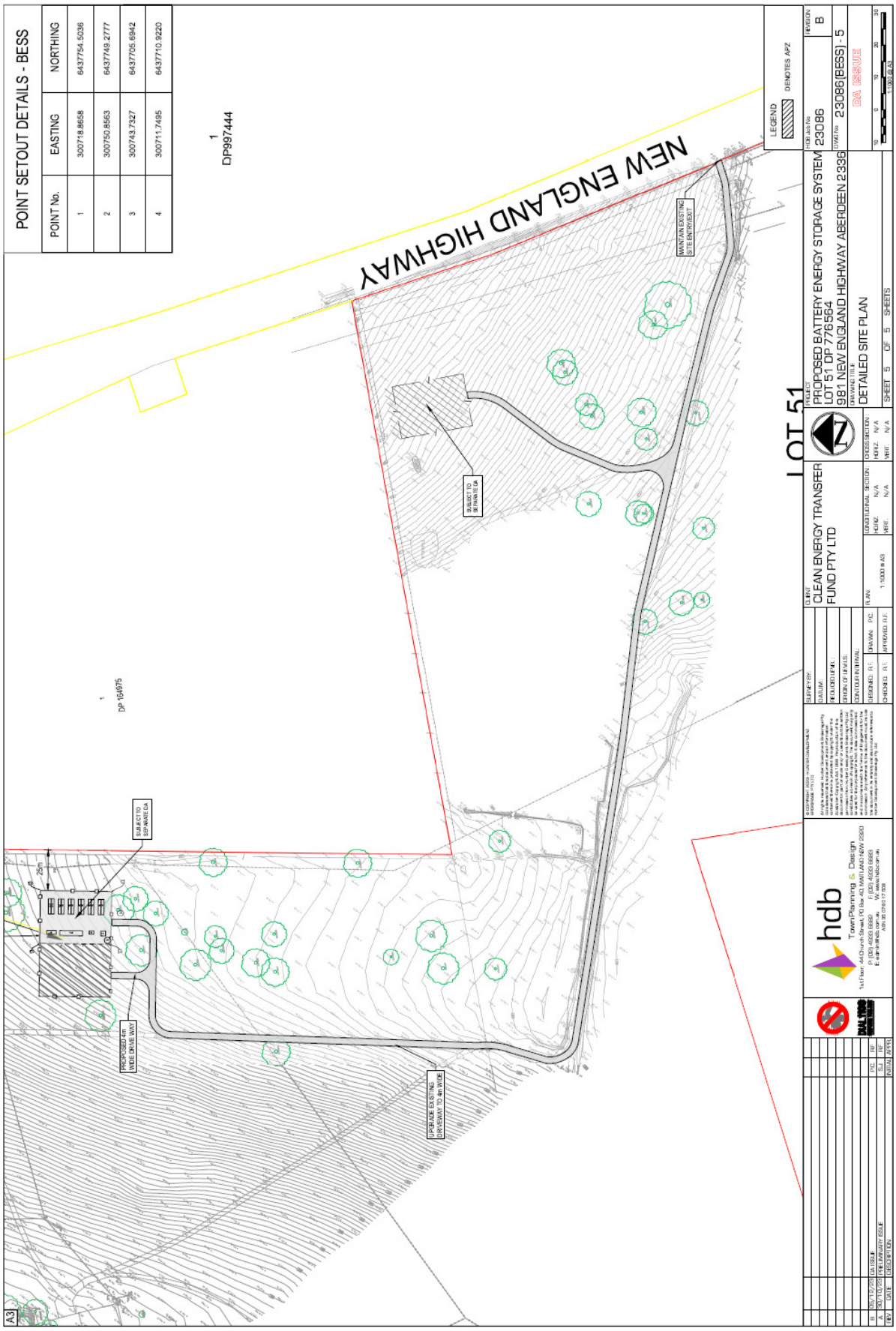

POINT SETOUT DETAILS - BESS
POINT No. | EASTING | NORTHING
1 | 300992.4554 | 6437483.4652
2 | 300993.8908 | 6437449.3057
3 | 301026.2814 | 6437450.3558
4 | 301024.8505 | 6437494.4943
NEW ENGLAND HIGHWAY
LOT 51
DP997444
DP 164975
LEGEND
DENOTES APZ
SUBJECT TO EASEMENT
MAINTAIN EXISTING SITE ENTRANCE
PROPOSED 4m WIDE DRIVEWAY
UPGRADE EXISTING DRIVEWAY TO 4m WIDE
22m
CLIENT
CLEAN ENERGY TRANSFER FUND PTY LTD
PROJECT
PROPOSED BATTERY ENERGY STORAGE SYSTEM
LOT 51 DP 776564
981 NEW ENGLAND HIGHWAY ABERDEEN 2336
DRAWING TITLE
DETAILED SITE PLAN
hdb
Town Planning & Design
SHEET 5 OF 5 SHEETS
A3


NEW ENGLAND HIGHWAY
SUBJECT TO SEPARATE DA
PROPOSED LOCATION
SUBJECT TO SEPARATE DA
LOT 51 DP776564
RESERVE FOR PUBLIC RECREATION
HUNTER RIVER
NOTES:
• THE ENTIRE SITE IS BUSHFIRE PRONE AND SUBJECT TO A BUSHFIRE ASSESSMENT
LEGEND
CONSTRAINTS SHOWN
• BIODIVERSITY MAPPING
• BUILDING SETBACKS
DENOTES APPROXIMATE 1% AEP FLOOD LEVEL
DENOTES PROBABLE MAXIMUM FLOOD (PMF)
PROJECT
PROPOSED BATTERY ENERGY STORAGE SYSTEM
LOT 51 DP 776564
981 NEW ENGLAND HIGHWAY ABERDEEN 2336
DRAWING TITLE
SITE PLAN OVERALL
SHEET 1 OF 3 SHEETS
hdb
Town Planning & Design
CLIENT
CLEAN ENERGY TRANSFER FUND PTY LTD
A3


POINT SETOUT DETAILS - BESS
POINT No. | EASTING | NORTHING
1 | 300718.8658 | 6437754.5036
2 | 300750.8563 | 6437749.2777
3 | 300743.7327 | 6437705.6942
4 | 300711.7485 | 6437710.9220
LEGEND
DENOTES APZ
PROPOSED BATTERY ENERGY STORAGE SYSTEM
LOT 51 DP 776564
981 NEW ENGLAND HIGHWAY ABERDEEN 2336
DETAILED SITE PLAN
CLEAN ENERGY TRANSFER FUND PTY LTD
hdb Town Planning & Design
PROPOSED 40m WIDE DRIVEWAY
SUBJECT TO BIRNAM CA
UPGRADE EXISTING DRIVEWAY TO 9m WIDE
A3


POINT SETOUT DETAILS - BESS
POINT No. | EASTING | NORTHING
1 | 300718.8658 | 6437754.5036
2 | 300750.8563 | 6437749.2777
3 | 300743.7327 | 6437705.6942
4 | 300711.7495 | 6437710.9220
LEGEND
DENOTES APZ
PROPOSED 4m WIDE DRIVEWAY
UPGRADE EXISTING DRIVEWAY TO 4m WIDE
SUBJECT TO REMAINS DA
DP 164975
PROJECT
PROPOSED BATTERY ENERGY STORAGE SYSTEM
LOT 51 DP 776564
981 NEW ENGLAND HIGHWAY ABERDEEN 2336
DRAWING TITLE
DETAILED SITE PLAN
SHEET 3 OF 5 SHEETS
CLIENT
CLEAN ENERGY TRANSFER FUND PTY LTD
hdb
Town Planning & Design

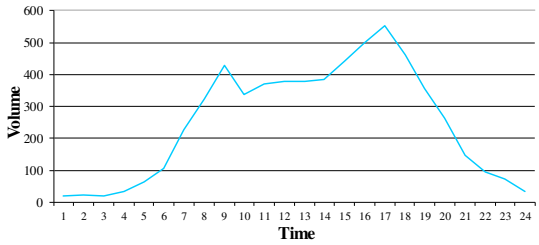

POINT SETOUT DETAILS - BESS
POINT No. | EASTING | NORTHING
1 | 300718.8658 | 6437754.5036
2 | 300750.8563 | 6437748.2777
3 | 300743.7327 | 6437705.6842
4 | 300711.7495 | 6437710.9220
NEW ENGLAND HIGHWAY
LOT 51
DP997444
DP1041075
LEGEND
DENOTES APZ
PROPOSED BATTERY ENERGY STORAGE SYSTEM
LOT 51 DP 776564
981 NEW ENGLAND HIGHWAY ABERDEEN 2336
DETAILED SITE PLAN
23086
23086(BESS) - 4
DA ISSUE
SHEET 4 OF 5 SHEETS
CLEAN ENERGY TRANSFER FUND PTY LTD
hdb
Town Planning & Design
SUBJECT TO SEPARATE DA
PROPOSED 6m WIDE ENTRY
UPGRADE EXISTING DRIVEWAY TO 9m WIDE
MAINTAIN EXISTING SITE ENTRY
A3


POINT SETOUT DETAILS - BESS
POINT No. | EASTING | NORTHING
1 | 300718.8658 | 6437754.5036
2 | 300750.8563 | 6437749.2777
3 | 300743.7327 | 6437705.6942
4 | 300711.7495 | 6437710.9220
LEGEND
DENOTES APZ
NEW ENGLAND HIGHWAY
LOT 51
1 DP997444
1 DP 154975
MAINTAIN EXISTING SITE ENTRANCE
SUBJECT TO SEPARATE DA
SUBJECT TO SEPARATE DA
PROPOSED 6m WIDE ONE WAY
UPGRADE EXISTING DRIVEWAY TO 6m WIDE
25m
PROJECT
PROPOSED BATTERY ENERGY STORAGE SYSTEM
LOT 51 DP 776564
981 NEW ENGLAND HIGHWAY ABERDEEN 2336
DRAWING TITLE
DETAILED SITE PLAN
CLIENT
CLEAN ENERGY TRANSFER FUND PTY LTD
hdb
Town Planning & Design
A3
DA ISSUE

ATTACHMENT B
TRAFFIC COUNT DATA

Site 1 NEW ENGLAND HWY 500M S OF GORDON ST [60] **Northbound**

Day	Tue	Wed	Thu	Fri	Sat	Sun	Mon	W/Day	W/End	7 Day
Time	10/10/23	11/10/2023	12/10/2023	13/10/2023	14/10/2023	15/10/2023	16/10/2023	Ave.	Ave.	Ave
0:00	24	17	20	18	34	29	22	20	32	23
1:00	15	29	24	26	18	30	20	23	24	23
2:00	18	24	22	23	14	22	16	21	18	20
3:00	37	36	34	34	22	14	25	33	18	29
4:00	75	75	55	53	31	17	70	66	24	54
5:00	109	98	113	100	75	39	116	107	57	93
6:00	247	214	221	184	139	96	267	227	118	195
7:00	371	289	334	275	190	123	352	324	157	276
8:00	412	438	394	396	201	149	498	428	175	355
9:00	326	365	323	350	289	200	325	338	245	311
10:00	358	280	398	395	297	279	420	370	288	347
11:00	353	339	373	420	415	363	413	380	389	382
12:00	342	311	383	437	325	410	421	379	368	376
13:00	367	336	377	477	286	404	372	386	345	374
14:00	378	385	417	544	300	399	488	442	350	416
15:00	452	535	432	579	279	397	508	501	338	455
16:00	580	545	592	518	325	363	526	552	344	493
17:00	420	480	455	561	247	302	391	461	275	408
18:00	323	369	354	392	267	286	349	357	277	334
19:00	256	233	312	301	212	243	212	263	228	253
20:00	140	148	135	184	90	120	127	147	105	135
21:00	89	74	98	133	73	76	74	94	75	88
22:00	49	51	96	105	72	62	58	72	67	70
23:00	35	23	41	40	41	21	26	33	31	32
Total	**5776**	**5694**	**6003**	**6545**	**4242**	**4444**	**6096**	**6023**	**4343**	**5543**

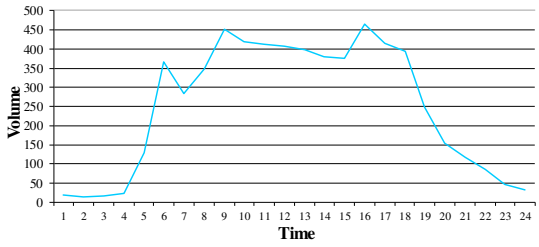


Summary

	from	to	
AM Peak	8:00 AM	9:00 AM	**498**
PM Peak	4:00 PM	5:00 PM	**592**
		Week Day Average	**6023**
		Weekend Day Average	**4343**
		7 Day Average	**5543**

Site 1 NEW ENGLAND HWY 500M S OF GORDON ST [60] **Southbound**

Day	Tue	Wed	Thu	Fri	Sat	Sun	Mon	W/Day	W/End	7 Day
Time	10/10/23	11/10/2023	12/10/2023	13/10/2023	14/10/2023	15/10/2023	16/10/2023	Ave.	Ave.	Ave
0:00	19	25	20	24	20	24	10	20	22	20
1:00	11	25	11	18	17	10	12	15	14	15
2:00	14	20	22	16	21	11	17	18	16	17
3:00	24	27	27	28	18	11	17	25	15	22
4:00	123	144	147	120	62	44	115	130	53	108
5:00	373	385	375	362	161	128	343	368	145	304
6:00	313	291	287	264	149	83	261	283	116	235
7:00	389	350	341	327	201	119	335	348	160	295
8:00	479	446	459	491	302	210	386	452	256	396
9:00	388	406	431	481	356	306	393	420	331	394
10:00	370	367	418	506	401	402	405	413	402	410
11:00	368	366	421	437	361	426	444	407	394	403
12:00	374	387	372	460	316	433	401	399	375	392
13:00	329	351	415	488	294	438	318	380	366	376
14:00	369	337	380	445	275	442	344	375	359	370
15:00	414	461	466	536	237	385	449	465	311	421
16:00	379	390	440	464	229	306	397	414	268	372
17:00	358	383	410	476	243	294	344	394	269	358
18:00	202	233	265	327	172	184	223	250	178	229
19:00	122	161	167	180	111	123	143	155	117	144
20:00	102	105	116	148	109	102	122	119	106	115
21:00	72	80	118	91	74	65	66	85	70	81
22:00	45	30	45	65	49	38	45	46	44	45
23:00	37	31	37	30	37	36	33	34	37	34
Total	**5674**	**5801**	**6190**	**6784**	**4215**	**4620**	**5623**	**6014**	**4418**	**5558**



Summary

	from	to	
AM Peak	10:00 AM	11:00 AM	**506**
PM Peak	3:00 PM	4:00 PM	**536**
		Week Day Average	**6014**
		Weekend Day Average	**4418**
		7 Day Average	**5558**

Weekday Average

Time	Total	1	2	3	4	5	6	7	8	9	10	11	12	13	Mean	85th Percentile
0:00	20	11	1	3	0	0	0	0	0	2	2	0	0	0	71.38	-
1:00	23	11	1	3	0	0	0	0	1	2	5	0	0	0	70.40	87.70
2:00	21	9	0	2	0	0	0	0	0	5	3	1	0	0	69.17	-
3:00	33	14	0	4	0	0	0	0	1	6	5	1	0	0	68.32	80.36
4:00	66	40	1	7	0	0	0	0	0	5	8	2	0	0	69.39	83.43
5:00	107	67	2	16	3	2	0	1	1	6	9	1	0	0	68.94	82.03
6:00	227	151	10	31	6	2	1	4	1	7	9	3	0	0	65.22	76.62
7:00	324	229	12	47	8	3	1	2	3	9	9	1	0	0	64.79	75.33
8:00	428	333	15	47	7	2	1	3	3	9	6	1	0	0	63.55	73.66
9:00	338	249	16	42	6	1	1	4	1	9	8	1	0	0	64.26	75.21
10:00	370	273	26	39	5	2	1	4	2	6	9	2	0	0	63.56	73.52
11:00	380	288	23	39	3	1	0	3	1	8	9	3	0	0	63.38	73.14
12:00	379	297	18	35	5	1	1	3	1	8	9	1	0	0	64.23	73.99
13:00	386	302	18	37	4	1	1	3	1	8	9	1	0	0	64.45	74.91
14:00	442	354	19	41	3	1	1	3	2	7	9	1	0	0	64.46	74.09
15:00	501	403	14	49	4	0	2	3	1	11	13	1	0	0	63.85	74.02
16:00	552	466	14	48	2	0	1	3	1	6	10	1	0	0	65.50	75.17
17:00	461	383	12	37	2	0	0	3	1	13	9	1	0	0	66.04	76.68
18:00	357	301	8	26	2	0	1	2	1	5	10	1	0	0	65.88	76.22
19:00	263	217	6	21	1	0	0	1	0	8	8	1	0	0	65.65	76.65
20:00	147	118	3	10	1	0	0	1	0	6	7	0	0	0	67.57	79.22
21:00	94	66	3	8	1	0	0	0	1	6	8	1	0	0	67.80	81.68
22:00	72	52	2	5	0	0	0	0	0	6	5	1	0	0	68.74	81.22
23:00	33	22	1	3	0	0	0	0	0	2	4	1	0	0	67.24	78.38
Total	**6023**	**4656**	**226**	**600**	**64**	**19**	**15**	**43**	**25**	**161**	**183**	**30**	**0**	**1**	**66.41**	**81.13**

Weekday Average

Time	Total	1	2	3	4	5	6	7	8	9	10	11	12	13	Mean	85th Percentile
0:00	20	8	1	2	0	0	0	0	1	2	6	0	0	0	67.23	-
1:00	15	5	0	3	0	0	0	0	0	3	3	0	0	0	70.50	-
2:00	18	7	1	2	0	0	0	0	1	3	2	1	0	0	73.00	-
3:00	25	15	0	3	0	0	0	0	1	2	4	1	0	0	73.88	83.60
4:00	130	101	1	17	1	0	1	0	0	3	4	1	0	0	70.96	83.01
5:00	368	315	3	33	1	0	0	1	1	5	7	2	0	0	70.95	81.34
6:00	283	225	8	28	4	0	0	1	1	7	9	1	0	0	68.35	78.12
7:00	348	283	8	32	4	1	1	2	2	8	9	0	0	0	67.86	76.06
8:00	452	369	10	43	7	2	1	3	2	6	8	1	0	0	66.61	74.88
9:00	420	330	17	39	4	3	1	2	1	11	10	1	0	0	66.04	74.67
10:00	413	312	21	44	5	2	1	5	2	11	10	1	0	0	65.48	73.04
11:00	407	302	21	43	6	2	1	4	3	11	13	1	0	0	66.13	74.03
12:00	399	297	21	40	5	2	1	4	4	10	14	1	0	0	66.02	74.23
13:00	380	280	19	43	7	2	1	3	3	10	12	1	0	0	65.77	73.90
14:00	375	284	19	40	7	2	2	1	3	8	8	1	0	0	66.11	74.44
15:00	465	362	16	53	3	2	1	4	2	10	12	1	0	0	66.49	75.09
16:00	414	339	12	35	4	0	1	4	1	6	10	1	0	0	67.11	75.86
17:00	394	326	10	37	2	0	1	2	1	6	7	1	0	0	68.45	77.38
18:00	250	201	7	22	1	0	0	3	2	4	8	1	0	0	67.68	77.69
19:00	155	119	4	12	0	0	0	1	1	8	8	2	0	0	67.62	75.76
20:00	119	87	2	9	1	1	0	1	1	8	9	1	0	0	69.30	82.47
21:00	85	61	1	7	0	0	0	0	0	6	9	1	0	0	69.04	81.74
22:00	46	25	1	4	0	0	0	0	0	6	10	0	0	0	68.89	82.34
23:00	34	18	1	2	0	0	0	0	1	4	6	2	0	0	69.99	89.28
Total	**6014**	**4670**	**204**	**591**	**61**	**20**	**14**	**43**	**32**	**159**	**197**	**23**	**0**	**1**	**68.31**	**82.44**

ATTACHMENT C
SIDRA MOVEMENT TABLES

MOVEMENT SUMMARY

▽ Site: 101 [2023 AM with construction peak (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

981 New England Highway Aberdeen site access
October 2023 counts
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: New England Highway															
1	L2	All MCs	18	64.7	18	64.7	0.240	9.5	LOS A	0.0	0.0	0.00	0.03	0.00	62.7
2	T1	All MCs	416	8.9	416	8.9	0.240	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	99.5
Approach			434	11.2	434	11.2	0.240	0.4	NA	0.0	0.0	0.00	0.03	0.00	97.2
North: New England Highway															
8	T1	All MCs	533	9.1	533	9.1	0.243	0.3	LOS A	0.1	1.1	0.03	0.04	0.03	99.2
9	R2	All MCs	11	30.0	11	30.0	0.243	11.3	LOS A	0.1	1.1	0.04	0.05	0.04	63.0
Approach			543	9.5	543	9.5	0.243	0.5	NA	0.1	1.1	0.03	0.04	0.03	98.1
West: 981 NEH site access															
10	L2	All MCs	3	66.7	3	66.7	0.059	8.2	LOS A	0.2	2.3	0.79	0.90	0.79	36.7
12	R2	All MCs	8	87.5	8	87.5	0.059	28.9	LOS C	0.2	2.3	0.79	0.90	0.79	34.4
Approach			12	81.8	12	81.8	0.059	23.3	LOS B	0.2	2.3	0.79	0.90	0.79	35.0
All Vehicles			988	11.1	988	11.1	0.243	0.7	NA	0.2	2.3	0.03	0.04	0.03	95.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [2023 PM with construction peak (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

981 New England Highway Aberdeen site access
October 2023 counts
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: New England Highway															
1	L2	All MCs	17	62.5	17	62.5	0.352	9.5	LOS A	0.0	0.0	0.00	0.02	0.00	63.3
2	T1	All MCs	624	8.9	624	8.9	0.352	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	99.5
Approach			641	10.3	641	10.3	0.352	0.3	NA	0.0	0.0	0.00	0.02	0.00	98.1
North: New England Highway															
8	T1	All MCs	564	8.6	564	8.6	0.252	0.3	LOS A	0.1	0.7	0.02	0.02	0.02	99.6
9	R2	All MCs	3	66.7	3	66.7	0.252	16.1	LOS B	0.1	0.7	0.02	0.02	0.02	62.0
Approach			567	8.9	567	8.9	0.252	0.4	NA	0.1	0.7	0.02	0.02	0.02	99.2
West: 981 NEH site access															
10	L2	All MCs	11	30.0	11	30.0	0.200	10.4	LOS A	0.6	5.9	0.87	0.96	0.92	36.6
12	R2	All MCs	18	64.7	18	64.7	0.200	45.3	LOS D	0.6	5.9	0.87	0.96	0.92	33.4
Approach			28	51.9	28	51.9	0.200	32.4	LOS C	0.6	5.9	0.87	0.96	0.92	34.5
All Vehicles			1237	10.6	1237	10.6	0.352	1.1	NA	0.6	5.9	0.03	0.04	0.03	94.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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