Demolition / Reconstruction Plan Station Beach Boat House Wharf Superstructure and Ancillary Building

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1. Description of works.

The scope of works includes the following.

- Works on a marine structure below the MHWM on Crown Lands leased area. It involves the rebuilding and support of existing superstructure, wave wall construction and sea wall construction under superstructure.
- The building of an ancillary building above MHWM on Crown Land managed by Council and licenced to the owners of the Marine Structure
- Increase landscaping area to enhance and to further protect Norfolk Island Pines,
  and to provide public seating and disabled access to the subject site.

2. Documents referenced in the formulation of this plan

- Aquatic/Ecology report from Cardno 11/02/21
- Arborist report from Urban Forestry, Catriona McKenzie 02/21
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- Ecology and Landscape Report from Ecological Consultants Australia P/L (Kingfisher Urban Ecology and Wetlands) 02/21
- Landscape Plan Selena Hanna 02/21
- Heritage report City Planning 11/02/21
- Coastal Engineering and Risk Assessment Report, 08/02/21 by Cardno Doug Treloar
- Geotech report by Croziers
- Acid Sulphate soil testing Report
- Proposed Structural Engineers Drws by Geoff McKee 04/03/2020
- Hydraulic and Storm water report and plans from ADCAR REV B 02/21
- Access Review and Performance Based Solutions, reports, by Morris Goding Access Consulting, 16/02/21 and 10/02/21
- Bush Fire report by “first field Environment” 04/03/2020
- Architectural Drws by Canvas Architects DA00 TO DA 19
- Surveyors Plan by CMS Surveyors 19/08/2020 and determination from Crown Lands confirming MHWM as per surveyor’s plan.
- BCA report 17/2/21Graham Scheffers
- Fire Report, 17/02/21
- Acoustic report
- Section J, 02/21
- Dangerous Goods 08/02/21
- Contaminated Soil report 09/02/21

3. Marine Environment Protection

As per Aquatic ecology, Geotech, Structural, Ecology and Arborist reports

Section A.

- Marine based activities as per Aquatic report states that a boom would cause more damage to the sea bed and the following is recommended extract from aquatic report

A short-term and localised increase in turbidity during the hammering and installation of the decking piles. Any harm to marine life is predicted to be minimal and temporary, especially if care is taken to ensure that effects are localised during construction. During the installation of the piles by barge,
continuous visual monitoring of turbidity should be conducted and pilling activities adjusted accordingly (e.g. temporary cessation) if water with elevated turbidity reaches seagrass patches.

A pre-clearance survey of the barge works area should be undertaken immediately before the commencement of any water-based activities to determine any seasonal changes to the extent of seagrass. Additional avoidance and precautionary measures (if required) should be considered following the pre-clearance survey.

- The piles will be installed by piling barge this means the works can only be done in calm weather. Easily accommodated in the tide charts as the outer wave wall is at Rl -.110 and related to tides would mean tide being above 1450mm.
  The inner wall due to the design could be done as a land base activity due to a RL .7O0 AHD.
  There is no critical path period for either wall to be install and could be done in any time frame that matches the tide and conditions required, over the duration of the construction.

  The barge is not self-propelled and will be move into position by a large tinny with an out-board motor that can be tilted to suit water depth to avoid prop scouring. Once in position the boat can be move by ropes as described below. RE moving thru the seagrass area, the Aquatic report wants Posidonia marked and the area avoid by the barge.

  The Barge could easily be tided to wharf on 4 sides and over the sand and rest at low tide on the bottom as no sea grass in the immediate vicinity as per the Aquatic report.

Works to be only carried out in calm weather conditions and with appropriate monitoring of turbidity in the water and work to cease if to great. The barge is only installing 7 piers max, by direct hammering into the sand so minimal disturbance to seabed.
The vertical slats can be installed with out the use of the barge at appropriate tide levels and working from the deck above.

Note these works cannot be rushed due the marine environment sensitivity and monitoring must be maintained while works in progress.

Tide periods for the year 2021 we have identified 8 time frames suitable for the works min working height of the tide being 1400 (ISLW)

The Aquatic report has identified a path to bring the barge in please see appendix

Section 3 Section **B.**

- **Peering for the superstructure land-based activities**

The peering is designed to minimise disturbance by using driven piers.
The piers run in GRIDS OF 3 Metres with 8 rows from rl .470 to rl 1.540 below MHWM (MHWM adopted from the Deposit plan, ratified by Crown surveyor and Coastal management act)
The grade as per surveyor's plan is 1:15.4 from the western face to the eastern face as per the peering plan below.

- Acid Soil Testing 26/09/20 as per Croziers Geo Report has revealed no acid sulphate soils for exaction for the sewer tank, grease and for sea reattaining wall. Please see attachment in appendix

- **Extract from Croziers Geotech letter dated 16/4/2020**

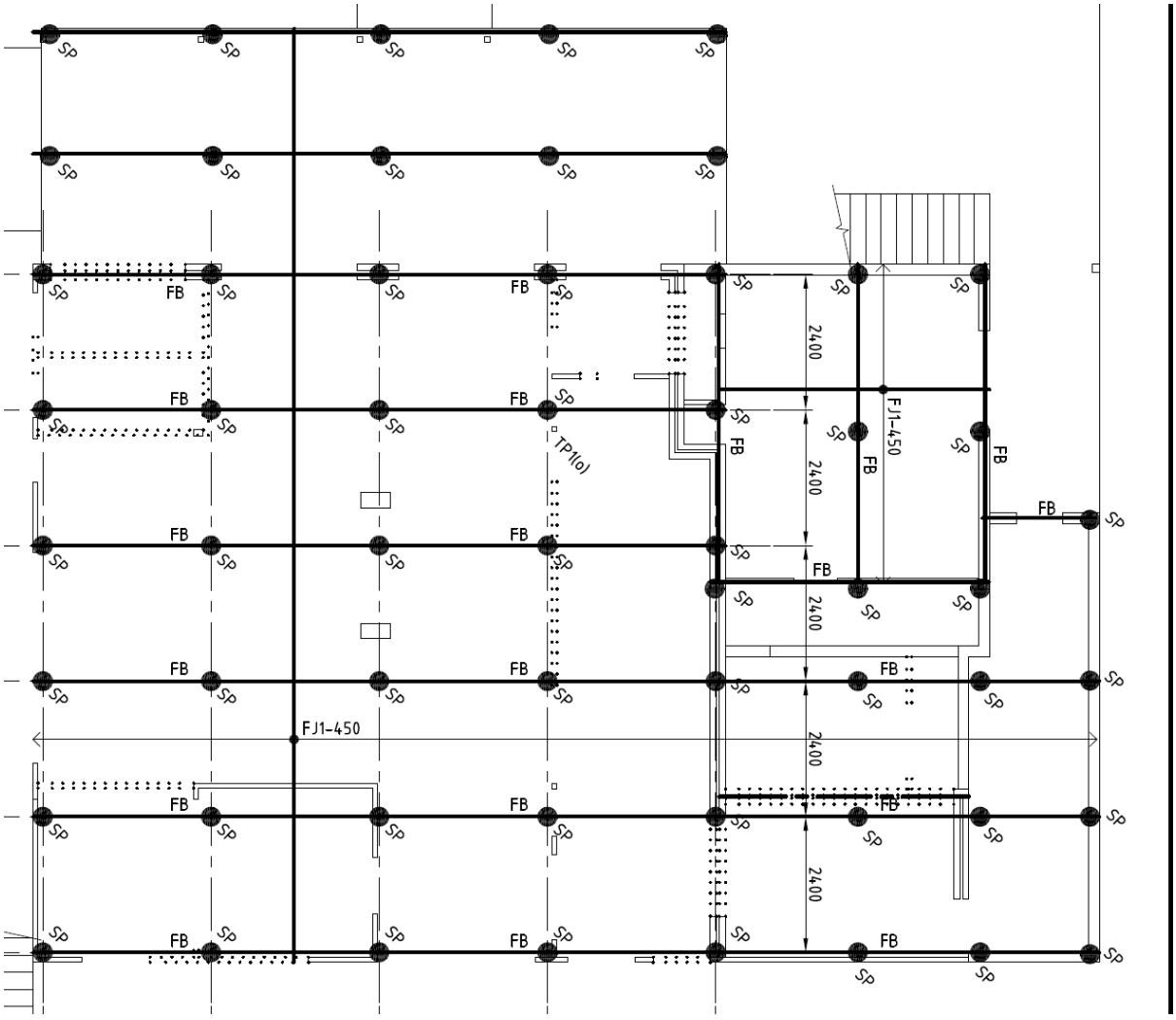
The investigations show that any footings extending from surface to R.L. 0.0 across the site have a 'very low' probability of intersecting Acid or Potential Acid Sulphate Soils. Driven or screw piles/posts/footings will not require any bulk excavation/removal of soils or impact to the water table and therefore activation of Potential Acid Sulphate soils below the water table (R.L. 0.0) will not occur.

The investigation below the water table (R.L. 0.0) has been limited to CPT and DCP testing and nosampling/testing has occurred. The results of this testing indicate that clean sandy soils generally exist from surface to approximate R.L. – 14.0. These soils are located below the water table with interaction due to the due to the highly permeable soil conditions in an area which has formed due to open sea, wave and

dune forming processes, therefore the probability of Acid Sulfate Soils existing within this environment is also 'very low'.

Proposed Peering Plan from Structural Engineer

Western face RL .470



Eastern face below MHWM RL 1.540

Table 3.1 Tides affecting works Below

Tides affecting works taken from May, June period 2020 as an example. Convert the Rls to tide heights for each row of piers running north south starting on the western face at row 1 and eastern face as row 8

Tides affecting piering works for super structure taken from May June period 2020 as an example.

Grade rise pier 1 to 8 WEST TO EAST

grade of 1;15.4 or .065/pm rise

Row W to E	chainage	grade rise	Rl AHD	rl 0- .932 tide height as chart LAT or ISLW	affected	number of tides hours 7 till 4 pm over 2-month period MAY JUNE 2020	affected max duration
			0.065	0.932		Monday to Saturday	hours
1	0	0	0.47	1.402	yes	11	2
2	2.4	0.156	0.626	1.558	yes	6	2
3	4.8	0.312	0.782	1.714	yes	3	1
4	7.2	0.468	0.938	1.87	yes	1	0.5
5	9.6	0.624	1.094	2.026	no	0	0
6	12	0.78	1.25	2.182	no	0	0
7	14.4	0.936	1.406	2.338	no	0	0
8	16.8	1.092	1.562	2.494	no	0	0

Note pier line 1 thru to 3 includes tides from descending numbers upto row 4

Rowes 5,6,7,8, are not affect by the tides

Tides affecting the works between 7am till 4 pm Monday to Friday and Sat 7 till 12 over a 52day period excluding Sundays

Note over a period of 61 days (2month period) there are 223 tides

These works can easily be managed as land-based activities as tides have very little effect on work zone. The method of piering is not invasive. Please refer to sediment control plan in appendix

Section 3.1 B.1

Large wharf deck west of super structure

This will undergo repairs minor and raising the deck by .240mm and can be done as a land-based activity

Section C

- **Licenced land RE1**
  Run off from above MHWM on Crown Land, licenced by council to the Lease Holders would have minimal affect due to conditions imposed by the Arborist to maintain existing bitumen in place during construction, with only very minor disturbances for services and anchoring (both services and anchoring have been reviewed and endorsed by arborist).

  The services electrical, coms, and sewer pump line out will be installed on the southern boundary return just above M.H.W.M. to the superstructure. The arborist has advised will be in general outside the root zone. However, as we approach the road supervision by Arborist is required. Note these services will have to cross the road to connect to power and the pump out line running to beach road. A plan for the pump out line has been obtained from Sydney Water Board which was lodged in 1995 by Pittwater Council showing the boat house connected to it. Its noted that there is no plan lodged for the connection of National Parks connection across The RE1 land done last Nov 2019.

  The soil under bitumen and foundation material is sand so very small chance of fines such as clay polluting the water ways. However, a silt barrier will be installed prior to any excavation for services and anchoring. The silt barrier plan will be provided by the engineer.

  The bitumen between M.H.W.M. and road will be left in tack except where increased land scaping is proposed to prevent scouring of the sand so as to protect the trees during construction and after in storm events as recommended by the arborist.

The decks and ramps to allow access to the building will be built above ground so the natural flow of the water from rain and tidal inundation want be interfered with.

4. Significant Tree Protection
As per Arborist, Geotech, Ecology/landscape, Access, Hydraulic, Structural, Coastal, Reports

- Significant consultation with Arborist in developing the proposal for access to the building as the building is being raised by 300 mm above the surrounding land as per Coastal Management Plan. This is to limit hard surfaces. To satisfy the Arborist and Disabled access consultants, the adoption of a composite mesh system to allow water and air penetration to the soil. Refer to Appendix C in Arborist report for proposed construction details of path and access.
- Any excavation to follow Arborists directions.
- Tree protection by an exclusion fence around the area. Please refer to site storage plan, arborist report and landscape plan
- Services for sewer, water and electrical have been designed under the arborist direction for the layout and installed as to avoid root damage as previous describe in Section C
- If any unforeseen problems discovered, arborist to be advised and direction sort.
- Size of plants for landscaping to be limited to no larger than 200mm pots to limit impact on the tree roots.
- Leave rock mulching in tack just reduce height as directed in arborist report
- Minimal excavation for the ancillary building as the slab will be 200mm max and f/f RL for the building is 2.8. existing ground RL runs from 2.8 on the east to 2.5 on the west. Peering minimal if need to allow for wash out. Need yet to be finalised but assumed for the moment. Arborist consulted and will supervise.

5. Works Carried out Prior to demolition
Reference Arborist and Marine Ecology reports

- Tree protection and zone isolation completed as per arborist report
- Sediment control above MHWM
- Disconnect all power and establish a temp power box.
- Disconnect water and gas supplies
- Establish a temp water supply

- Establish a temp sanitary facilities and site shed
- Full site fence to surround the site were appropriate and the establishment of temporary barriers on the beach side as appropriate along with signage to ensure public exclusion and warning signage for the site.
- Full asbestos survey carried out to identify areas possibly containing asbestos as the building was constructed around 1946 and substantial renovations in 1974/5.
- Establish an asbestos register plan for the entire job.
- Establish a plan to manage workers and general public once areas have been identified and works to comply with Work Safe Works NSW. The use of a licenced contractor to carry out removal of Asbestos
- Height protection and access put in place.

6. Waste management plan

Note this plan will follow through into the construction plan

- Majority of waste will be timber as timber construction.
- Separate timber bricks, concrete and metal and general rubbish
- No spoil from under superstructure is to be removed. All sand remains and only contaminates after sifting by bucket to be removed from prior construction.
- Minor spoil removal from under ancillary building as majority of works is slab on piers. Existing RL from 2.5 to 2.7 and finish slab height of RL 2.8 at thickness of .150mm plus piers.
- All spoil will be sand in nature as per Geotech report
- Removal of all wastes by skip bin to accredited recycle and waste disposal depots.
- All workers to be briefed in safe handling methods and the identification of material and site hazards on a regular basis.

Note waste management plan lodge with DA

7. **Demolition.**

Section A.

Asbestos

Referenced aquatic and arborist reports

- Prior to construction and assessment of all asbestos on site to be done by a qualified accessor
- Asbestos air monitoring system to be establish prior to removal
- Drop sheets if required to be set up on outside of building to protect the sand from small particles of asbestos
- Removal of all accessible asbestos and any new areas discovered later, to be registered and removed by licenced contractor

- All asbestos and contaminated material to be sent to a registered disposal centre
- No work to start without Work Cover given appropriate notification and an appropriate plan in place for OHS.
- Supervision of works and general public by Site foreman during the removal of asbestos from a distance.

Section 7 B.
Demolition of super structure building above wharf once asbestos removed and the side ancillary sheds

Referenced aquatic and arborist reports

- Removal of ancillary site sheds
- Removal of sheet roofing and gutters
- Internal walls braced 1st floor
- Removal of roof frame
- Removal of external cladding and lining on 1st floor
- Removal of 1st floor walls
- Bracing of lower ground floor walls
- Removal of 1st floor flooring and deep joists
- Removal of ground floor cladding and lining
- Removal of ground floor wharf
- Removal of wharf piers supporting superstructure by machine to limit contamination
- Removal immediately any debris underneath the wharf from the above process
- Waste management plan to be addressed in section 8 and Council form will be lodged with the da
- Site safety and general public safety to be considered at all times
- Tree protection measures to be checked throughout the job and any encroachments or damage to exclusion zone fencing to be rectified ASAP.

8. Construction

Wharf Super Structure
Referenced for below is the Aquatic/Ecology, Ecology/landscape, Arborist, Structural, Hydraulic and Coastal Engineers reports

- The building is mainly a timber construction as per proposed engineers plans

- Wharf building to comply to AS4997- 2005, AS 1684/2 and sections of part 2 might apply to wind load advised by engineer, along with all other relevant codes specified by NCC and design team. Not limited to the above.
- Materials handling and storage to be establish in the existing carpark
- Any excavation Aquatic reports procedures.
- All works will cease if the weather and sea conditions change.

- Sheet piling by machine with minor excavation for sea wall
- Any excavation above the MHWM sea retaining wall anchoring, to be discussed with the arborist first. Note Arborist has mentioned the anchoring in report and has discussed the procedure with the engineer. Excavation will only proceed for anchoring with arborist supervision.
- Note at all times beach to be cleaned of any building material.
- Once the piers and floor system established building will follow normal erecting process.
- Critical stage inspections by engineers and certifier t
- Note existing hard surfaces to remain as per Arborist report
- Note please refer to appendix for excavation plan
- Note please see appendix for Acid Sulphate Soil Reoprt.

9. Excavation/Contaminated Soil

Reference, Arborist, Hydraulic Engineer, Structural/Civil, Geo Science (contaminated soil), Ecologist and Geo Teck

- The soils on the site are majority Venm and is suitable for the proposed works Extract from Geo Science report

10.2 Recommendations 10.2.1 Suitability of the Site for the Proposed Development This report is in accordance with: • National Environment Protection (Assessment of Site Contamination) Measure (NEPM), (1999 amended 2013 • State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55) • EPA NSW Guidelines for Consultants Reporting on Contaminated Sites (November 1997), It is the opinion of EBG that with respect to the investigations carried out within this report, the site is suitable for the proposed development: • Re-building the superstructure on the wharf below the mean high water mark • Construction of an amenities and service building along southern boundaries (adjacent golf course boundary fence). The recommendation above is given with the understanding that the 'condition' below is undertaken:

VENM (Virgin Excavated Natural Material): Sub-surface deeper undisturbed orange and grey natural sand located beneath the 'mixed sandy fill' (deeper than 0.1-0.2 metres varying over the site), shall be classified as Virgin Excavated Natural Material (VENM) as per DECC

.

- Soils are silicon base and suitable for reuse on site as required for back fill excepting the top 100=<200mm

Extract from Geo Science report

The top 'yellow/brown road base type material (Borehole 4) and mixed sandy fill (extending down to depth around 0.1-0.2 m). The total concentration analysis confirm that the material fall within the criteria for GENERAL SOLID WASTE classification as per Table 1 of the Waste Classification Guidelines (Part 1 : Classifying Waste – Department of Environment & Climate Change NSW (Nov 2014). NOTE: The classification is for disposal purposes only. Sub-surface deeper undisturbed orange and grey sand is expected to be Virgin Excavated Natural Material (VENM

- There are no clays or acid sulphate soils on site as per Geotech and Geo Science reports

  Extract from Geotech report on acid sulphate

  The soils are sandy and therefore would be considered as Coarse Texture – sands to loamy sands with clay contents ≤5% as per Table 4.4 – Acid Sulphate Soils Management Authority Committee (ASSMAC) – Acid Sulphate Soils Manual. The results of the testing show that the tested soils below the water table (with varying Reduced Levels of R.L. -0.50m and -2.90m) are not considered Acid Sulphate or Potential Acid Sulphate Soils. Previous testing identified the soils above the water table were also not AASS or PASS. As such, in line with the ASSMAC guidelines there is no requirement for an Acid Sulphate Management Plan based on the proposed works (as per the supplied design drawings).

- Storage of excavated material will be on existing bitumen surfaces with appropriate sediment control as per engineers' plan
- Any excavation in areas referred to by the Arborist Report will be supervised by a level 5 Arborist

10. Ancillary building

Referenced here for below is the Aquatic/Ecology, Ecology/landscape Arborist, Structural, Coastal and Hydraulic Engineers reports.

- This is a land-based operation on sand as per Geotech Report
- Any excavation can only take placed after consultation with arborist.
- Protection of Norfolk Island pine in proximity to building so appropriate care to be taken
- AS 1684/2, AS2807, key standards
- along with all other relevant codes specified by NCC and design team. Not limited to the above.
- The correct disposal of left over concrete and clean-up be followed with protection in wash up for trees and estuarine area.
- The normal process for erection of the building to follow once the slab has been installed.

- Note existing bitumen to be left intact outside the building footprint except where extra landscape fro the trees is provide for. This will be fracture only by hand and depending on arborist inspection to whether it stays or is remove due to likelihood of brown roots.
- Note please refer to appendix for excavation plan

11.Services electrical, communications, water, sewer, waste tanks and pump out lines

Referenced Arborist, Hydraulic and Coastal Engineers reports.

- These have been reviewed by the arborist in consultation with Hydraulics engineer and electrician and location of lines and tanks is agreed to cause leased impact. However, before excavation is undertaken on the southern side preliminary excavation by hand to advise arborist.
- The pump out tank and grease have been set at RL 2.9 by the Coastal Engineer of f/l 2.9 AHD and can be raised at later date. The location has been determined in consultation with the Arborist so as to avoid impacting the Norfolk Pines
- All works to be carried out by licenced trades and appropriate standards to apply including the removal of the existing pump out tank and grease trap
- Excavation material for the sewer pumpout tank and grease trap will be store beside on existing concrete and bitumen paved aera to the east on the southern side and used as back fill with the balance removed. Note only clean excavated material to be used for back fill.
- New pump out sewer line to be taken under the road and reconnect to the existing main line in the park. Location has of the line has been established by a plan lodged in 1995 by Pittwater Council to Sydney Water Board showing the connection of two toilet blocks one of which has only ever been built, The Boat House and Palm Beach Surf Club to the mains sewer via a rising line to Beach Rd.
- The sewer line will run from the tank behind the Ancillary building to the front of the licenced land and across the road in a path to the old line which will be replace with a new line to existing connection point. The path avoids impacting any trees. There are electrical mains running .800 underground from the substation 70m to the south thru to the existing turret beneath the power pole. These mains continue up the beside the road and beyond through to the National Park. There is also a private council main that comes from the turret outside the Boat House and goes to the East. Its assumed this has been laid in accordance to AUS Grids standards meaning 90 degrees to the mains.
  Pease see plan attached in appendix for Planned services connections, Sydney Water Board Plan and Aus Grids plan for electrical. Telstra are yet to advise.

- The process will be the same as National Parks and one resident recently connected under the road and thru the park to the north into the council pump out tank near the amenities building to the North in Nov 2020. (Note no plan has been found for this connection at S.W.B.)
- The water supply comes from beach road via council main as not recorded on the water boards plans. Its presumed it runs on the Eastern side of the road running beside the Golf Course. (note the cut off cock is beside the stone entrance on the start of the road on the Eastern side. Exact location and branch line connection to the boat house will have to be advised by council. Note the Boat House is metred by council for its use.

12. Parking and Traffic and Storage of Building Materials

- Local speed limit thru the park is 10 Kph combined with speed humps. This will elevate any issue to pedestrians and traffic.
- Majority of traffic movements will be light vehicles as the job is light weight construction
- Estimate of four concrete pours. There is one major pour for the ancillary building which will involve 3 concrete trucks and a pump and the other three pours would involve 1 concrete truck and a pump each.
- Ample room on site for pump and trucks.
- All large vehicles entering and leaving the site will be controlled by stop and go process.
- Works will be carried out Monday to Friday and if required Sat between 730 and 12pm to avoid increased usage times of the park which are Saturday afternoon and Sunday.
- Parking on site can provide up to 10 spaces which will be ample for the project.
  On the very rare occasion the general parking area may be used, but due to working hours this would not affect the general publics parking requirements which are weekends and public holidays. Parking fees will be paid.
- Storage of materials due to the staged nature of the works will not present a problem. Please see map.
- The existing side sheds will be knocked down first slabs and this area can be used for material storage. Note that once the peering for the superstructure on the wharf is reinstated and floor laid, materials can be stored on it.
- Bitumen areas will remain in tack during the rebuilding of the superstructure on the wharf and new ancillary building. This is consistent with the arborist report to protect the tree roots and also limit any sediment run off. Note re sediment as per Geotech report, it will be sand.
- Sediment control will be established between the interface of the MHWM and RE1 Land. There will also be individual sediment controls in specific areas such as ancillary building and Landscape area when working.

- Traffic Plan will be submitted prior to issuing the Construction Certificate
- Note please see appendix for Storage, bin and parking plan

13. Public Access

- Station Beach has points from Beach Rd at the south, thru the licenced aera at the Boat House Wharf and north all along the beach**.**
- The possibility of allowing a public access through the area during construction has been considered but once a risk analysis is undertaken it is of a high risk to the general public. This added to it being a dog walk beach contributes a further dilemma.
  Problems arise during demolition, peering, storage of material and in construction due to site restrictions and the fencing off of the aera surrounding the Signiant trees as per Arborist report.
- In general, the site will have to be secured to prevent accidental damage to the public and damage to construction works, to and by the public.
- The above means that the southern section of the beach would be a return trip to Beach Rd as no access through the site or under it.

14. General

- Site safety fence to be keep in good repair along with signage.
- Tree protection to be monitored.
- Paved bitumen surfaces to be kept during construction process to protect from run off and compaction and damage to tree roots.
- Waste management plan to be followed.
- Exclusion of general public to the site by signage and bunting and site fence to below MHWM boundary as far as possible without causing problems to environment.
- Site safety and trip and fall issues to be constantly monitored and acted on.
- Building to follow architectural plans and consultant reports as approved.
- Issues if they arise to be resolved with consultants and relevant planning authorities.
- Due to the general light weight timber wharf and building construction the use of heavy machinery and truck movements will be limited.
- Onsite parking is not an issue as ample parking on the boat ramp and existing designated parking.
- Monitor general public issues.
- Any building materials and rubbish to be immediately cleaned up from the beach.

15. Conclusion

The site below and above MHWM is easily managed as the consultants have addressed the issues in their reports. The area of primary concern is the marine environment, land ecology/landscape, and the Significant tree protection by the arborist.

The consultant reports have a level of detail that is normally achieved in the construction certificate stage and not in DA stage. This has resulted in collaborative approach between consultants, pre-empting problems an resolving them now. All aspects of engineering design and construction, have been over seen by the primary consultants above. This has resulted in extremely low risk assessment in damage to the areas of primary concern, due to forward planning from the consultants for the reconstruction of the works below MHWM and Council Managed land The latter includes the following, landscaping, access path to the beach thru the Norfolk pines and the improved toilet block (access to the public), waste storage, sewer upgrade and Cafe food storage. These works have been developed in consultation with various depts in council and their recommendations have been accommodated.

Respectfully

Peter Heber (Manager)

19/02/21

16 Appendix below

16 Appendix

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9. Storge for material, bins and parking

10. Demolition Plan

Appendix 1

6 Marine Environment protection Sections 3 A, B, C,

- Aquatic report for path of barge
- Sediment Control plan from marine ecologist
- Sediment control plan for land based activates
- Tides affecting land base actives

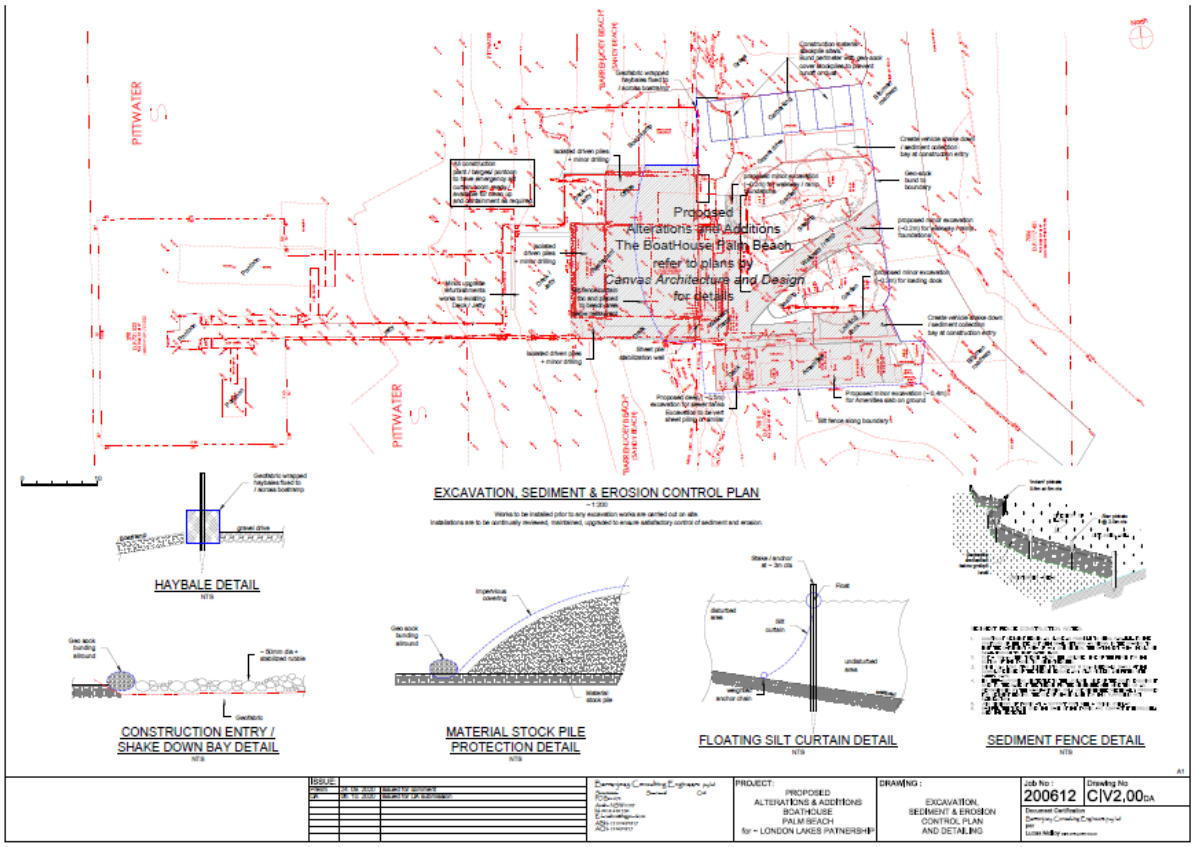
Path of barge entre

Sediment Control Plan extract from Aquatic Report

> A short-term increase in turbidity during the installation of the decking and wave screen piles. Any harm to marine life is predicted to be minimal and temporary, especially if care is taken to ensure that effects are localised during construction. Given that the sediment is largely comprised of sand, disturbed sediment is likely to settle out of the water column locally and rapidly following mobilisation. During the installation of the piles by barge (approx. seven piles), continuous visual monitoring of turbidity should be conducted and pilling activities adjusted accordingly (e.g. temporary cessation) if water with elevated turbidity reaches nearby seagrass patches (*Zostera* and *Halophila*). The remaining vertical slats will be constructed on land at low tide over bare sediment, this involves hand excavation to 0.3 m with slats lowered down from the deck.

Note the barge will only be install 7 Piers by direct hammering similar to what is being done at Coasters Retreat. The installation of a sea boom would cause more damage to the sea bed upon removal due to the amount of vegetation collecting in it. This has been discussed with both Aquatic and Terrestrial ecologists.

- Sediment Control Plan for land based activates and excavation plan



Appendix 2

7 Construction of wharf and super structure Construction of wharf and super structure and ancillary building and services

- Extract fro Geotech report re acid sulphate soils

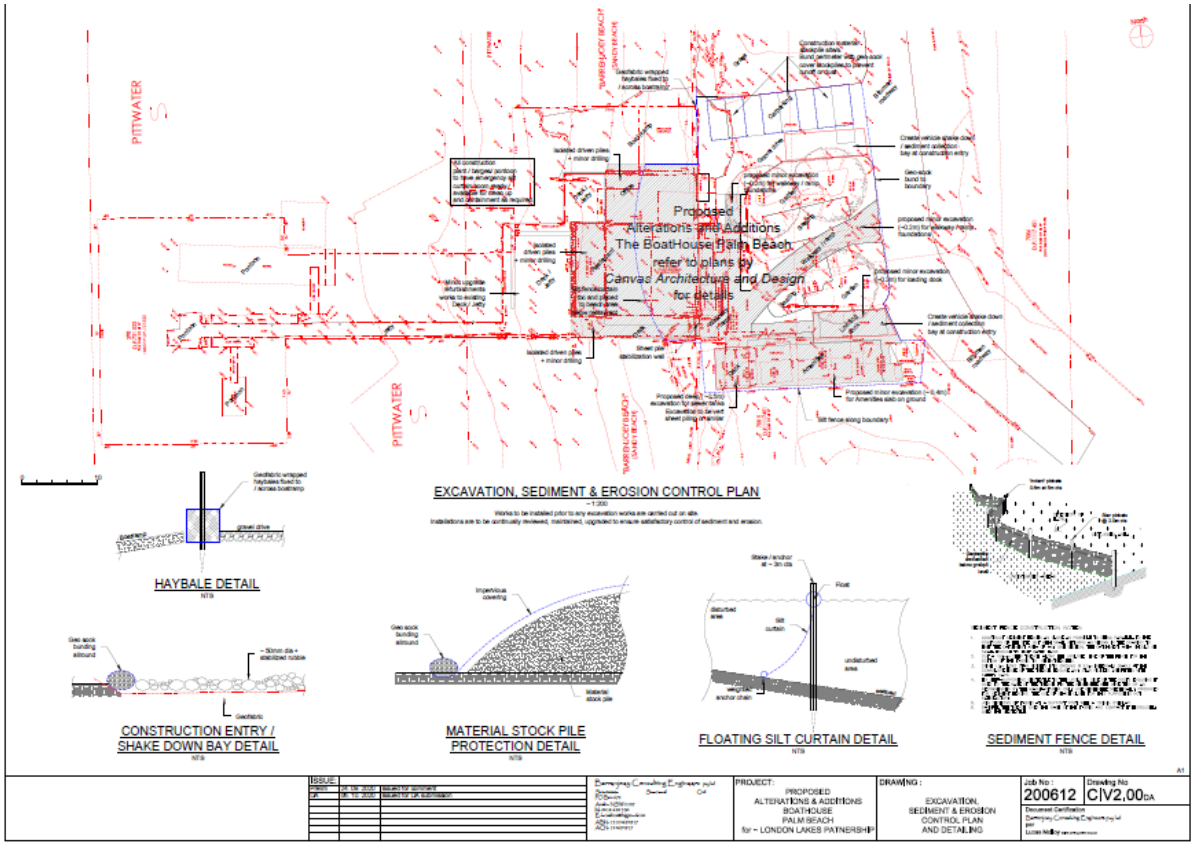
ASSESSMENT AND CONCLUSIONS: 3.1. Acid Sulphate Soils Testing: The soils are sandy and therefore would be considered as Coarse Texture – sands to loamy sands with clay contents ≤5% as per Table 4.4 – Acid Sulphate Soils Management Authority Committee (ASSMAC) – Acid Sulphate Soils Manual. The results of the testing show that the tested soils below the water table (with varying Reduced Levels of R.L. -0.50m and -2.90m) are not considered Acid Sulphate or Potential Acid Sulphate Soils. Previous testing identified the soils above the water table were also not AASS or PASS. As such, in line with the ASSMAC guidelines there is no requirement for an Acid Sulphate Management Plan based on the proposed works (as per the supplied design drawings). 3.2. Corrosion Resistance: The results of the soil chemical testing undertaken on the soil samples were compared against the Australian Standard AS 2159-2009 Pile Design and Installation. The results were compared against Table 6.4.2 (C) Exposure Classification for Concrete Piles – Piles in Soil. The results indicate that the soils are 'non-aggressive' to concrete from pH, chloride and sulphate. The results were also compared against Table 6.5.2 (C) Exposure Classification for Steel Piles – Piles in Soil. The results indicate that the soil is 'non-aggressive' to steel with regard to pH, chloride and sulphate. We hope the above comments meet your present needs, should you require any further advice or clarification then please don't hesitate to contact the undersigned. Prepared By: Reviewed By: Marvin Lujan Troy Crozier Engineer Principal MAIG, RPGeo – Geotechnical and Engineering Registration No.: 10197

- **Contaminated Soil extract**
- Soils are silicon base and suitable for reuse on site as required for back fill excepting the top 100=<200mm

Extract from Geo Science report

VENM (Virgin Excavated Natural Material): Sub-surface deeper undisturbed orange and grey natural sand located beneath the 'mixed sandy fill' (deeper than 0.1-0.2 metres varying over the site), shall be classified as Virgin Excavated Natural Material (VENM) as per DECC

- **Excavation Plan**

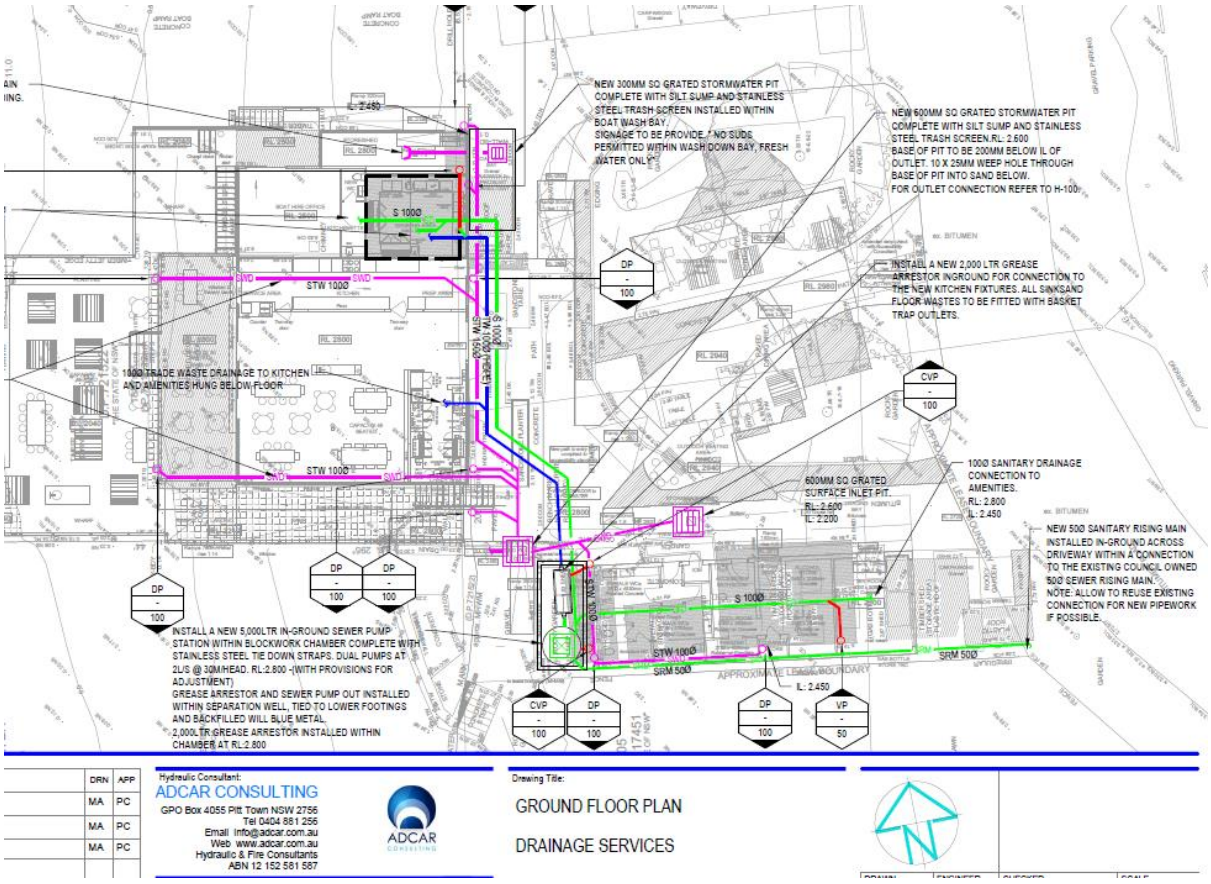


Appendix 3

8 Appendix3 Services coms, water, sewer, waste tanks and pump out line

Services electrical, communications, water, sewer, waste tanks and pump out lines

- Hydraulic Engineers plan for services

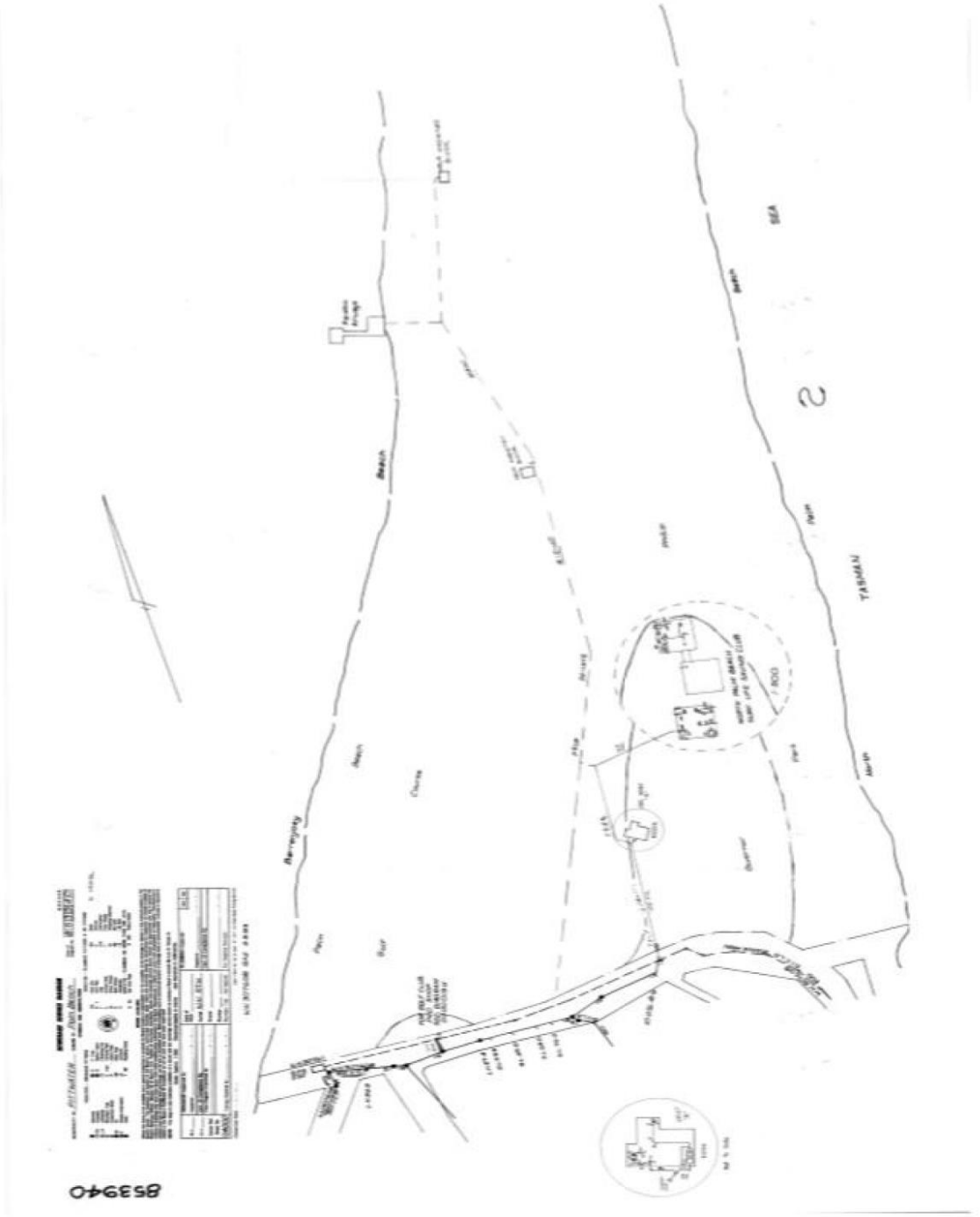


- Sydney Water Board plan from 1995 lodged by Pittwater Council

Sydney WATER

Sewer Service Diagram

Application Number: 910066



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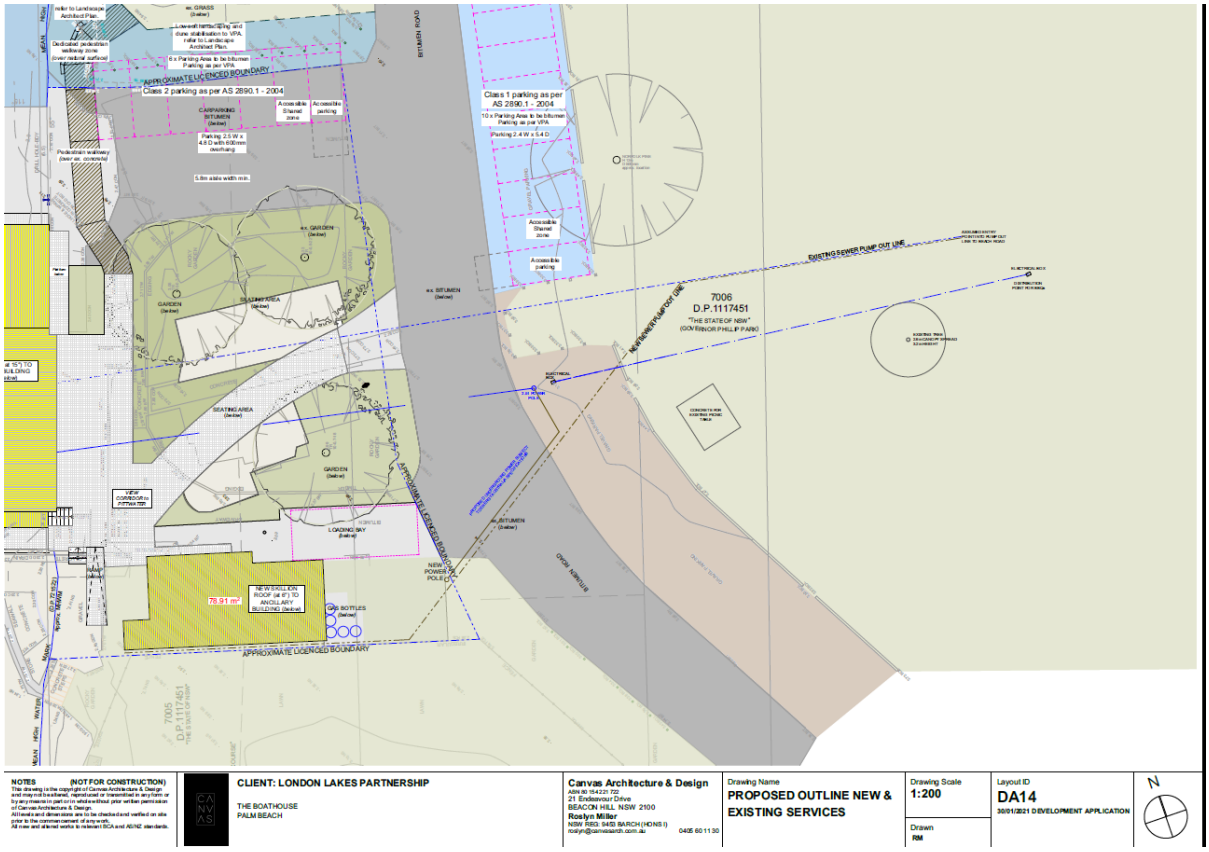
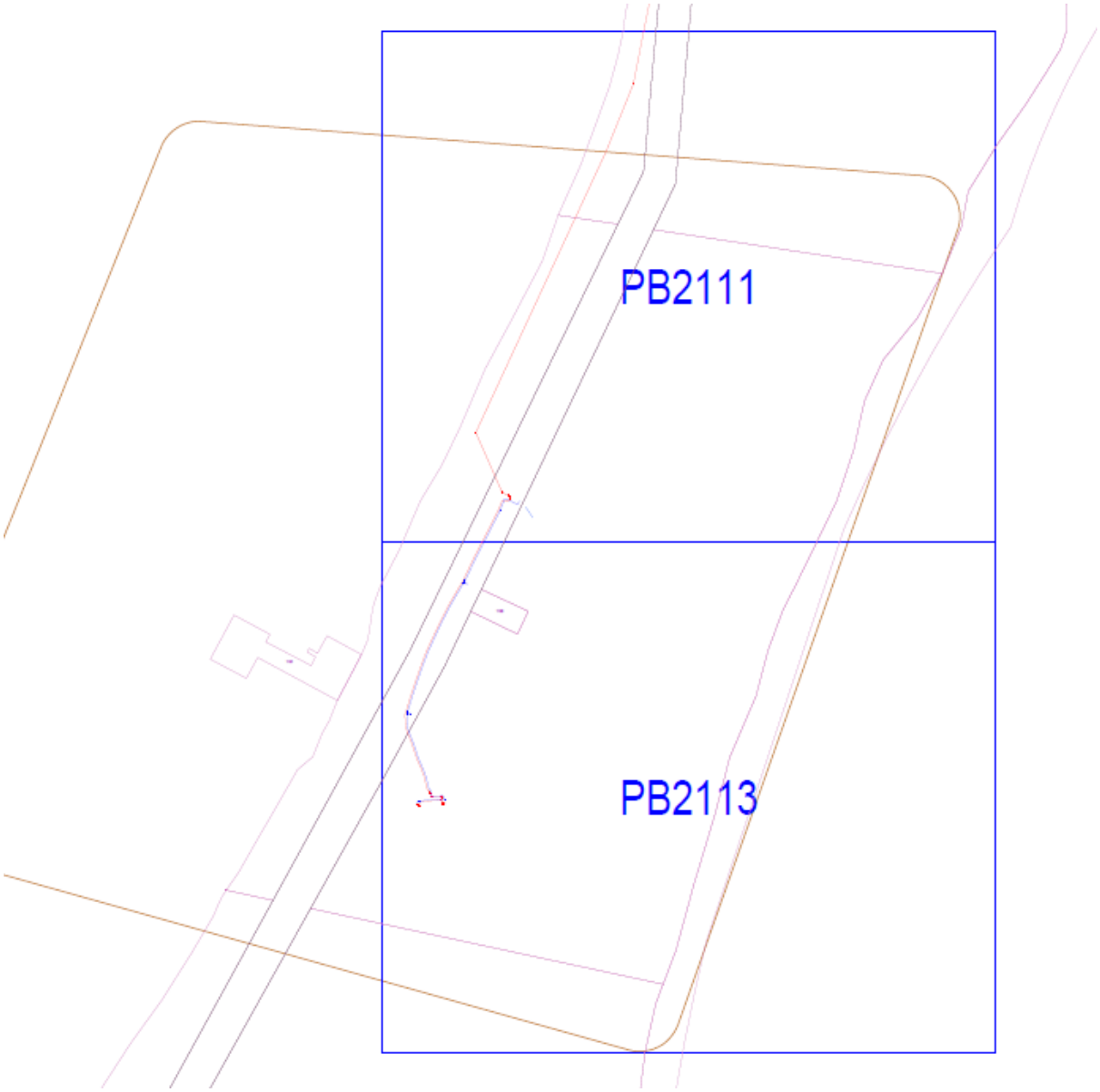
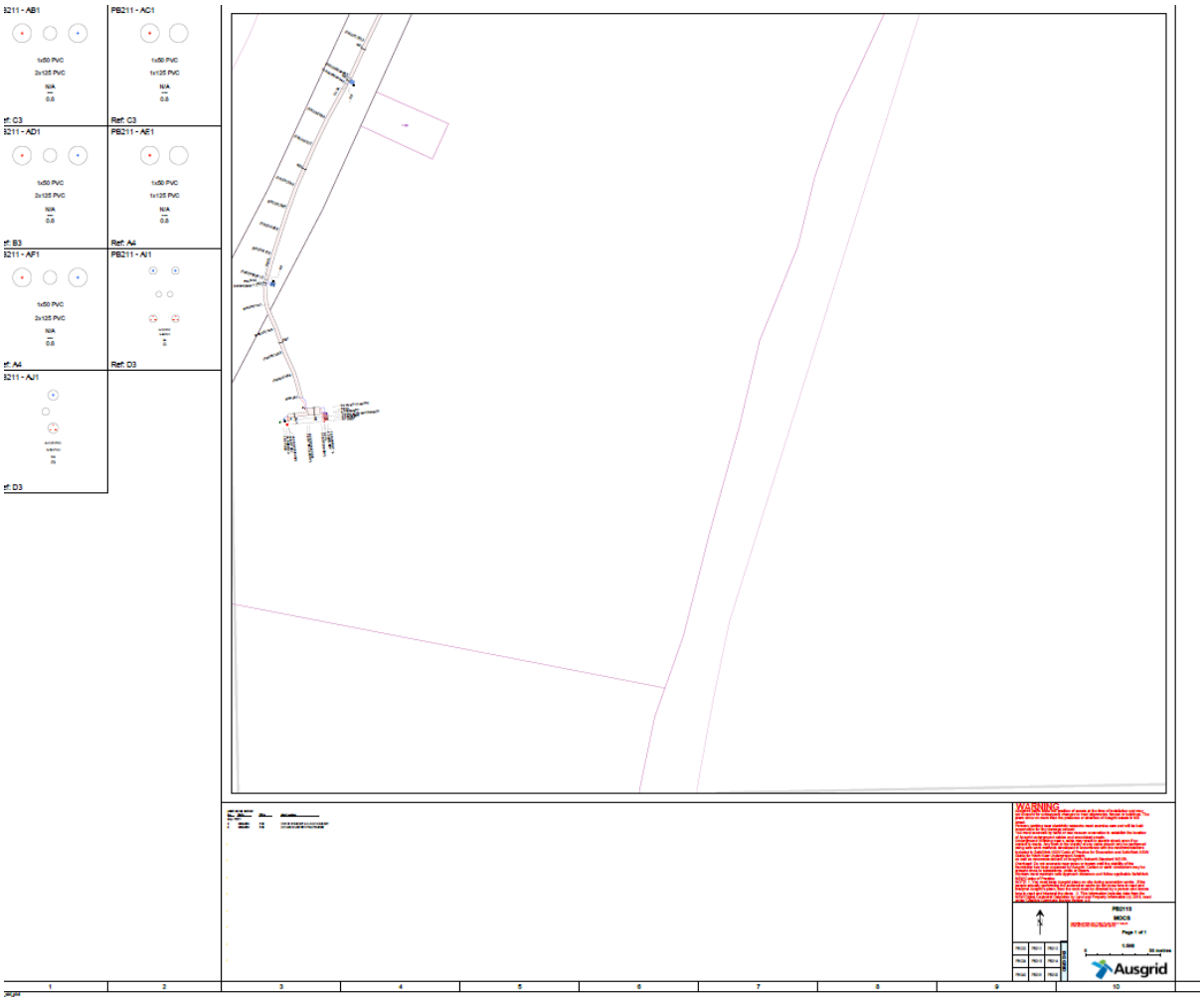
- Plan for service to enter and leave the property



- Ausgrid Plans

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2x125 PVC
N/A
0.8
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PB211 - AC1
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1x125 PVC
N/A
0.8
Ref: C3
PB211 - AD1
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2x125 PVC
N/A
0.8
If: B3
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0.8
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2x125 PVC
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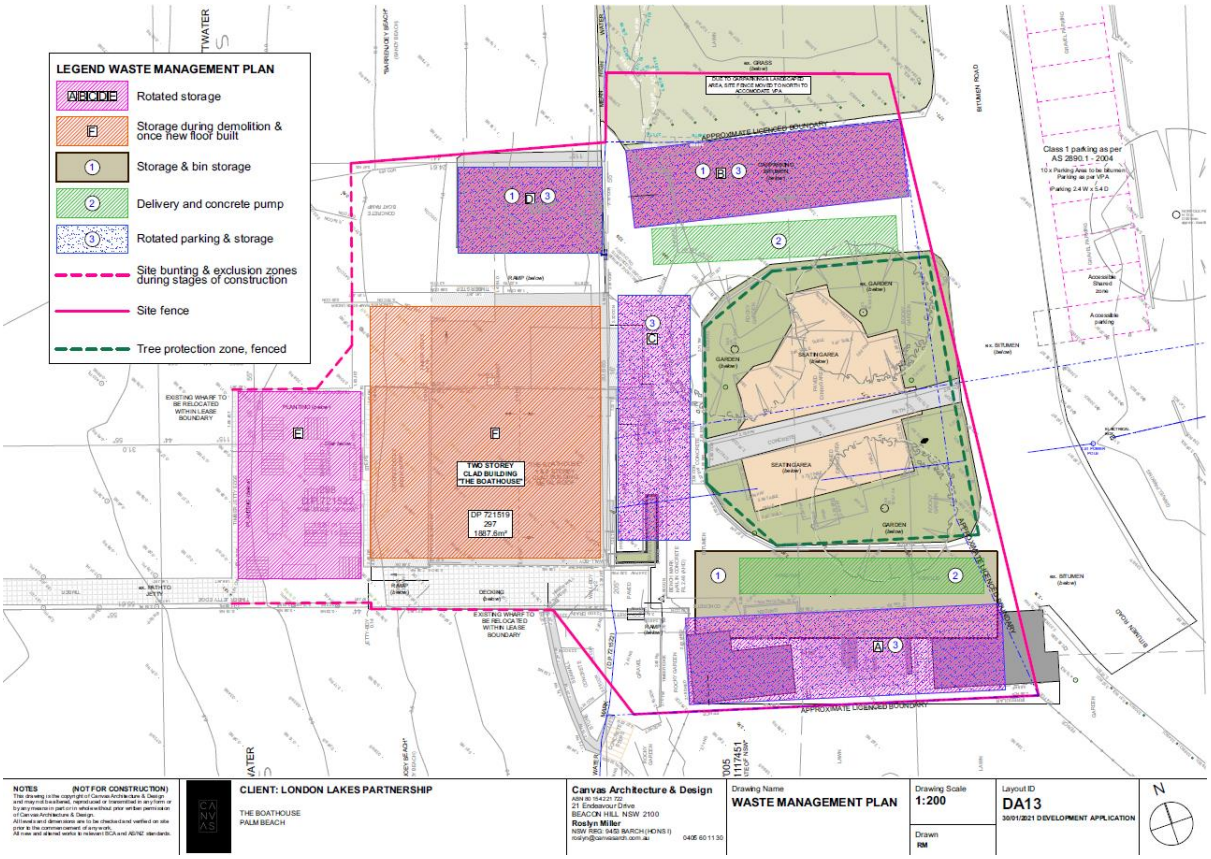
0.8
If: A4
PB211 - AJ1
Ref: D3
PB211 - AJ1
If: D3
WARNING
PB211
MOCS
Page 1 of 1
1:500
Ausgrid

Appendix 4

9 Storge for material, bins and parking during construction



Appendix 5

10 Demolition plan