

## Appendix B

### Summary of where the Government Agency Responses are addressed in the EIS

Requirements	Location in EIS	
	Chapter	Appendix
<b>PlanningNSW</b>		
Refer to <b>Table 11.1, Chapter 11 Government Consultation</b>	11	A
<b>Environment Australia</b>		
Determine the level of impact of construction and dredging of the port facility and associated infrastructure on the Ramsar site to the south (Towra Point).	15	H
Identify mitigation measures to reduce the impact of dredging activities on turbidity, salinity and wave dynamics in Botany Bay.	15, 16	H, J
Determine the potential impacts of the proposed action on migratory waterbirds listed under the EPBC Act, including, but not limited to, the following species: Pacific Golden Plover ( <i>Pluvialis fulva</i> ); Mongolian Plover ( <i>Charadrius mongolus</i> ); Ruddy Turnstone ( <i>Arenaria interpres</i> ); Eastern Curlew ( <i>Numenius mandagascariensis</i> ); Latham's Snipe ( <i>Gallinago hardwickii</i> ); Painted Snipe ( <i>Rostratula benghalensis</i> ); and Determine the level and type of use of the Penrhyn Estuary by listed migratory species.	20	O
Address the impacts relating to light, noise, and dust and potentially increased numbers of birds in the airspace above the airport in addition to changes in wave dynamics from dredging on the breakwaters and shoreline of the third runway.	15, 22, 23, 30	H, Q, R, X, Z
<b>NSW Environment Protection Authority</b>		
Conduct a noise impact assessment in accordance with the NSW Industrial Noise Policy regarding any noise and vibration impacts associated with site activities and increased road and rail traffic serving the development.	22	Q
Assess the potential impacts on the bay from disturbance of potentially contaminated ground water/soil/sediment during dredging and land reclamation.	17, 18, 31	L, AA
Assess impacts to potential changes in the bay wave and current patterns/energy and their significance on the bay.	15	H
Assess potential impacts of the proposal on the whole of bay system in the context of the recent Governments decision on the	10	-

Requirements	Location in EIS	
	Chapter	Appendix
Healthy Rivers Commission's <i>Final Report- Independent Inquiry into the Georges River- Botany Bay System, September 2001.</i>		
Demonstrate adequate management systems for the on-site storage and transport of dangerous goods, including the transfer of dangerous goods between water, road, rail vessels in accordance with the <i>Road and Rail Transport (Dangerous Goods) Act 1997.</i>	28	W
Undertake an effective stakeholder consultation program including an open and transparent community consultation program with public advertisement on the application.	11, 12	C
Obtain an environment protection licence under the Protection of the Environment Operations Act (POEO Act) 1997. Clarify whether the proposed activities on the site will meet or exceed the threshold for any scheduled activity under Schedule 1 of the POEO Act.	9	-
<b>NSW Waterways Authority</b>		
Provide a historical context for the development of Port Botany and justification for the proposed extension. Account for the proposed expansion of the Patrick's Terminal at Port Botany and address potential operational impacts at the Port of Sydney.	1, 2, 3, 4, 5	D
Detail the size, length, beam, gross registered tonnes and the maximum size vessel as well as the range of vessels.	6	-
Provide a full description of works proposed including reclamation, dredging, works on adjacent foreshore land and replacement of the existing public boat ramp.	6, 7, 8	-
Detail any temporary structures, berthing facilities or platforms needed to allow staging of the development works.	8	-
Provide plans and other drawings showing: <ul style="list-style-type: none"> <li>• Location, extent and depth of the proposed dredging.</li> <li>• Location of the toe and top of all battered or retained banks together with an average slope and extent of those banks.</li> <li>• Current depth contours and proposed depth contours of the areas to be affected.</li> <li>• Redistribution of material within the dredged area.</li> <li>• Details of the proposed disposal areas.</li> <li>• Likely birth locations and wharf structures adjacent to the dredged area.</li> <li>• Location of the replacement public boat ramp.</li> <li>• Locations of marine and terrestrial vegetation, aquatic and animal habitats likely to be affected by the proposed works during construction and operation.</li> </ul>	7, 8, 19, 20	E, N, O

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	Chapter	Appendix
Detail of the potential effects on coastal processes/hydrodynamics within Botany Bay.	15	H
Outline the method, timing and staging of construction including dredging rates and contingencies such as range of weather conditions necessitating the temporary cessation of operations.	8	-
Describe the stormwater and water quality controls to be adopted for the operation of the facility to minimise adverse water quality impacts.	16	I, J, K
Describe the effect on existing stormwater drainage into Botany Bay including the Mill Stream Diversion Channel and mitigating measures.	16	I, J, K
Discuss the general impacts on navigation and recreational boating and proposed mitigating/management measure both during construction and operation.	6, 7, 8, 14, 26	-
Consider potential effects on the surrounding area such as structural damage, vibration and noise arising from the proposed dredging.	22	Q
Prepare an Environmental Management Plan for the development including: <ul style="list-style-type: none"> <li>staging of the proposal, site management and sediment and erosion control measures;</li> <li>location, type and scale of associated works;</li> <li>mitigation measures for potential adverse impacts on the environment during and post construction; and</li> <li>contingency plans and emergency response plans.</li> </ul>	37, 38	-
Identify any proposed monitoring and maintenance programme for the dredged channel and bank stability during and post construction and short and long term.	8	-
Describe the vegetation to be removed or impacted by the proposed development and details of any landscaping to be carried out. Landscaping should be of locally indigenous species.	7, 20	E, F, O
<b>NSW Fisheries</b>		
Outline dredging and reclamation work proposed.	8	-
Assess contamination of sediment remobilisation and disposal/use of spoil within reclamation.	18, 31	AA
Assess the impact on water quality, particularly turbidity.	8, 16	J
Assess the impact on marine vegetation, including seagrasses, mangroves, macroalgae and saltmarsh.	19, 20	N, O
Assess the impacts on other aquatic habitats such as rocky reefs and sand flats.	19	N

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	Chapter	Appendix
Assess the impacts on fish and invertebrate populations.	19	N
Assess the impact on fish passage, including in the immediate vicinity, into the Mill ponds and Penrhyn estuary catchment.	19	N
Assess the impact on fishing (recreational and commercial).	19	N
Outline possible methods of compensation for loss of fish habitat.	19	N
Assess stormwater impacts of the proposal.	16	I, K
Determine options/impacts for Penrhyn estuary/catchment.	7, 19, 20	E, N, O
Prepare an environmental management plan	38	-
Maximise the use of rail rather than road transport.	21	P
Assess the impacts of ballast water, hull fouling and the increased risk of introducing noxious species.	19	N
Determine the predicted refraction of wave energy on to other sections of the Bay, particularly Towra Point, and the predicted impacts, including on seagrasses.	15, 19	H, N
Assess the alteration of currents and other coastal processes within the bay.	15	H
Determine the impact of proposed protection works for terrestrial nature reserves, beaches or the built environment, on the aquatic environment.	15, 19, 20	H, N, O
<b>NSW Roads and Traffic Authority</b>		
<p>Prepare a Traffic and Transport Study that takes into account the following:</p> <ul style="list-style-type: none"> <li>The proposed means of vehicular access to/from the site. If vehicular access is sought via Foreshore Road proposed management arrangements such as traffic signal design should be prepared. The assessment must include a cost estimate of work and funding/maintenance responsibilities.</li> <li>Identification of alternative vehicular access arrangements if proposed direct vehicular access or traffic signal construction on Foreshore Road is not viable.</li> <li>An assessment of existing and future level of services on Foreshore Road in the event of traffic signal construction or an alternative traffic management measure for the expansion site. Cumulative impacts of vehicular access should be assessed.</li> <li>Identification of truck storage areas within the site. Design of the road system within the site should include appropriate truck storage areas.</li> <li>Details of the anticipated haulage route of trucks through the metropolitan and local road network.</li> </ul>	21	P

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<ul style="list-style-type: none"> <li>• Identification of likely peak traffic movements generated by the development and any potential increases in the level and type of traffic associated with the proposal. Cumulative traffic generation with surrounding developments should be assessed.</li> <li>• Assessment of likely impacts of truck traffic on nearby residential areas.</li> <li>• Consideration of the need for the preparation of a local area traffic management plan.</li> <li>• Assessment of the potential increase in toxicity levels of loads transported on arterial and local roads and the preparation of an incident management strategy for accidents.</li> <li>• Assessment of employee and visitor car parking provisions.</li> </ul>		
Prepare of a Plan of Management during the construction phase of the Port Botany Expansion site incorporating the traffic and transport issues mentioned above.	21	P
<b>NSW National Park and Wildlife Service</b>		
Assess the impact of the proposal on habitat of species protected under the TSC Act, particularly waders.	19, 20	N, O
Asses the impact of the proposal on Aboriginal archaeological sites and areas of significance to the Aboriginal community.	24	S
Assess the impact of the proposal on Towra Spit and areas of NPWS estate within the southern portion of Botany Bay.	15, 20	H, O
Undertake a hydrological assessment to identify, throughout Botany Bay, the likely impacts caused by the proposed dredging and associated wave refraction.	15	H
Address the regional importance of the Penrhyn Inlet area for threatened species and migratory waders. Consider mitigative strategies and other options for securing equivalent habitat values for effected species if the assessment process identifies that the areas is regionally significant and the proposal will have a significant impact on those values.	20	O
<b>NSW Department of Land and Water Conservation</b>		
Demonstrate how the proposal will meet the requirements of the following Acts and Policies: <ul style="list-style-type: none"> <li>• <i>Rivers and Foreshores Improvement Act 1948</i>;</li> <li>• NSW State Rivers and Estuaries Policy- General;</li> <li>• NSW Wetlands Policy- General;</li> <li>• NSW Estuary Management Policy- General;</li> </ul>	9, 10	-

Requirements	Location in EIS	
	Chapter	Appendix
<ul style="list-style-type: none"> <li>NSW Groundwater Policy Framework Document- General;</li> <li>NSW Biodiversity Strategy;</li> <li>Sydney Regional Coastal Management Strategy;</li> <li>State Government's Coastline Hazard Policy;</li> <li><i>Coastal Protection Act 1979</i>;</li> <li><i>Soil Conservation Act 1938</i>;</li> </ul>		
<p>Address general ground water licence issues as outlined in the <i>Water Act</i>.</p> <p>Details of the proposal required include design, layout, pumping and storage capacities, volumes of water to be extracted all associated earthwork's and infrastructure works etc. Water quality assessments, a hydrological report showing the impacts on the groundwater and other users of the water, a fauna and flora report, a geotechnical report for salinity or acid sulfate soils etc.</p>	15, 16, 17, 18, 20	H, I, J, K, L, M, O
Address General Crown Land matters in addition to any major public authority projects.	2, 9	-
Provide the Consent Authority with a management plan if acid sulfate soils will be disturbed.	18	-
Prepare an integrated site development plan incorporating an Erosion and Sedimentation Control Plan. This plan would cover the life of the proposed site extension, rehabilitation, and closure, and ensure that the site land is stabilised to standards of the <i>Managing Urban Stormwater, Soils and Construction</i> .	16, 18	-
Assess whether Endangered Ecological Communities will be affected by the proposal. Integrate an endemic native revegetation program and a bush regeneration program within the development.	7, 19, 20	F, N, O
<b>NSW Heritage Office</b>		
Assess the heritage significance of the site and any impacts upon this significance. Include natural areas and placed of Aboriginal , historic or archaeological significance. Consider the wider heritage impacts in the area surrounding the site.	24	S
Consult the State Heritage Inventory and lists maintained by NSW NPWS, the National Trust, the Australian Heritage Commission and the local council in order to identify any identified items of heritage significance in the area affected by the proposal.	24	S
Identify non-Aboriginal heritage items within the area affected by the proposal. Undertake a statement of significance and an assessment of the impact of the proposal on the heritage significance of these items in accordance with guidelines in the NSW Heritage Manual.	24	S

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Provide a full Heritage Impact Statement and where necessary a detailed Archaeological Assessment and Research design if items listed on the State Heritage Register are identified and will be impacted by the proposal. An Integrated Development Approval under the <i>NSW Environment Planning and Assessment Act 1979</i> may be required from the Heritage Council.	9, 24	S
Obtain an excavation permit from the Heritage Council prior to commencement of works if disturbance to a site with known relics is proposed. Cease work if unexpected relics are uncovered and obtain excavation permit.	9, 24	S
Obtain approval from the Heritage Council if items or places are listed under the State Heritage Register, or being subject to an Interim Heritage Order.	9, 24	S
Consider any impacts on places, items or relics of significance to Aboriginal people. If the proposal will impact on Aboriginal heritage, community consultation should take place to assess significance and likely impacts and mitigation measures.	24	S
<b>NSW Department of Transport</b>		
Develop an integrated road and rail strategic plan which takes into account container movements and locations.	6, 21	P
Assess the broad impacts of freight movements generated by the port, including air, noise, and amenity.	22, 23, 26	Q, R, U
Develop principles for land use planning to manage container freight transport efficiency and impacts.	-	-
Include a Master Plan that deals with the integrated development of the proposal site, including its relationship with the transport infrastructure of the existing Patrick and P&O terminals.	21	P
Address the impacts arising from the 24 hour, 365-day operation of the terminal (assuming 2.5 to 3 million TEU).	21, 22, 26	P, Q, U
Account for the impact of the growth in vessel size and the subsequent larger number of container transfers per ship in terms of terminal layout and operation.	6	-
Assess the impacts of dredging and land reclamation required for the new berth facility. Assess the impact of increased ship sizes and their movements within Botany Bay.	Part F	G
Account for the findings and recommendations of the Healthy Rivers Commission 'Independent Inquiry onto the Georges River-Botany Bay System'.	10	-

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	Chapter	Appendix
<b><i>Rail Infrastructure Corporation</i></b>		
Reflect the need for a broadly based investigation of other options in addition to balloon loops, that will enable Rail to achieve a 40% share of container traffic.	21	P
<b><i>Healthy Rivers Commission</i></b>		
Assess the loss of public space and amenity.	7, 14, 26	E, U
Assess the loss of Penrhyn Estuary.	7, 20, 26	E, O, U
Assess the loss of foraging area on the sustainability of Little Terns in the bay. Assess the appropriateness of the transplantation of seagrass as a compensation measure.	19, 20	N, O
Assess the need to expand at the port at Botany. Consider alternate locations such as Newcastle and/or Port Kembla.	5	D
Assess changes to wave and current patterns/energy as a result of dredging and reclamation and their impact on sediment/sand transport and resultant shorelines around the entire bay.	15	H
Determine the impact of the above on aquatic and terrestrial ecosystems in and around the bay (benthic organisms, seagrass, saltmarsh, mangroves, fish, migratory birds).	19, 20	N, O
Assess the water quality at the western end of Foreshore Beach where the proposed boat ramp/recreation facilities would be located.	16, 31	J, AA
Assess the safety hazards associated with small recreational vessel passing between the runway and large container ships at the proposed berths.	6	-
Determine changes to the levels and flow patterns of groundwater in the vicinity of the proposed site, and the resultant impacts on stormwater flows, flooding and the potential for contaminated groundwater to reach the surface.	17	L



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<p>Identify trade-offs and offsets in the event that the proposal is approved such as:</p> <ul style="list-style-type: none"> <li>rehabilitation of degraded areas of Rockdale wetland corridor;</li> <li>enhancement of the flow characteristics of the Botany Swamps;</li> <li>enhancement of the wading bird habitat on the southern shores, including Woodlands Bay, habitat to the threatened Taren Point Shorebird Community.</li> </ul> <p>Independent studies on sand movement on the southern shores to inform the best means to protect habitats on Towra Point and Towra Spit Island.</p> <p>Independent studies of sand movement at the mouth of the Georges River and the relationship between the Kurnell/Towra sand bodies, those on Taylors Bay and their interrelationships with Lady Robinsons Beach.</p>	15, 16, 20	H, I, O
<b>Civil Aviation Safety Authority</b>		
<p>Address the issues of:</p> <ul style="list-style-type: none"> <li>hazardous objects, both permanent and transient;</li> <li>bird hazard management;</li> <li>dangerous lights; and</li> <li>interference to navigational aids and radar.</li> </ul>	28, 29, 30	W, X, Y, Z
<b>Airservices Australia</b>		
<p>Assess the impact of the proposed expansion on prescribed airspace as determined in accordance with <i>ICAO Annex 14, ICAO DOC 8168 Procedures for Air Navigation- Operations Vol II</i>, and relevant Commonwealth legislation of the <i>Airport Act 1996</i> and the <i>Airports (Protection of Airspace) Regulations</i>, to the extent that penetration of such airspaces may compromise the independent operation of Sydney Airport and the Long Term Operation Plan. Address the <i>Commonwealth Environment Protection and Biodiversity Act 1999</i>.</p>	9, 30	X, Y, Z
<p>Take into account current and future container shipping that may be able to utilise the port through all modes of operation (berthing and departure procedures; tidal effects; loading/unloading height differentiation; and crane operations).</p>	6, 30	X, Y, Z
<p>Confirm the status of the Rail Infrastructure Corporation expansion of the Sydenham-Botany Railway.</p>	2, 21	P
<p>Assess and report on the expansion or alteration to major roads, bridges and flyovers that may be required or projected to be required as a result of the Port expansion.</p>	21, 30	P, Y

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Assess the impact of the proposal on Airservices electronic navigational equipment, which may be made susceptible to shielding, reflection and interference.	30	Y
Assess the impact of future new generation navigational aids and procedures, which would include the use of ground based augmentation satellite systems.	30	Y
<b>Sydney Airports Corporation Limited (SACL)</b>		
Assess the impact of the proposal on prescribed airspace to ensure that the proposal is fully compatible with safe and efficient operation of Sydney Airport.	30	Y, Z
Clarify Commonwealth aviation legislation/standards ( <i>Airports Act 1996</i> and <i>Airports (Protection of Airspace) Regulations</i> ) regarding the status/definition of transient obstacle arising from shipping operations.	9, 30	Y, Z
Assess the new generation of large container ships, the size/height of the ship, the projected shipping leads into the Port and the extent of intrusion into 16L/34R surfaces.	30	Y
Assess the maximum operational height of the range of proposed crane types, with an emphasis on low height shuttle boom cranes.	6, 30	Y
Reassess the 'transience' of the Sydenham-Botany Railway as more intense use of the railway will increase the incidence of penetration of the Runway 25 approach surfaces.	-	-
Consider the upgrade of the Sydenham-Botany Railway and the Port Expansion holistically.	21	P
Assess the impacts of the proposal on Airservices Australia's Precision Radar Monitor and navigational aids and associated aircraft operations.	30	Y
Assess the impact of the proposal on future, new-generation navigational aids and operational procedures.	30	Y
Research the impacts on airports where there are port facilities in close proximity, and examine opportunities to ensure that the airport is not impacted. Investigate port 'curfew' hours.	30	Y
Assess the risk of bird hazard (bird strike) on Sydney Airport from the proposed Port and boat ramp. Investigate other locations/alternatives or deletion of the boat ramp. Investigate bird attraction/mitigation measures to reduce the incidence of bird attraction to Port Botany.	29	X
Establish current baseline conditions, including an analysis of key intersections and projected performance given current rates of vehicular growth and additional Port Botany traffic, key traffic route	21	P

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	Chapter	Appendix
identification, including an origin-destination study of vehicular traffic.		
Assess traffic generation potential of the proposal and the proposed model split for rail and road container distribution.	21	P
Assess any current RIC and/or RTA road proposals in the vicinity of the subregion, including integration into the existing road networks and capacity enhancement/connection opportunities with concepts such as the Marrickville Truck Tunnel, the St Peters Industrial Route, Foreshore Drive flyover, and General Holmes Drive/Mill Pond Road Intersection.	21	P
Integrate current and future ground access need for Sydney Airport.	21	P
Assess alternative options with lesser potential airport impacts. Analyse options discounted in earlier assessments.	5, 30	Y
Assess the impacts of dredging and hydrodynamic changes in Botany Bay	15	H
Interface with Patrick's current proposal and EIS.	2, 21, 36	P
Meet the Rules and Practices for <i>Aerodromes- Lighting in the Vicinity of Aerodromes, Advice to Designers</i> requirements.	30	Z
Recommend that pre-defined development guidelines are produced which reflect the constraints of the site, as identified by the EIS and included in the DA, to ensure consistence of any future port development by third parties.	-	-
<b>Southern Sydney Regional Organisation of Councils</b>		
Consider alternatives both in Botany Bay and elsewhere (Port Kembla and Newcastle)	5	D
Consider the implications of the port expansion for airport operations, safety, security, hazard and risk.	28, 29, 30, 32	W, X, Y, Z
Consider the cumulative impacts associated with both the port and those generated by additional industrial growth in the immediate locality and increases in airport traffic.	21, 36	P
Evaluate current operations in the context of impacts that were projected when the last major port works were undertaken.	15	H
Assess the management of runoff of stormwater and how pollutants would be handled.	16	I, J, K
Assess whether the proposed design takes into account the possibility of rising sea levels.	-	H
Determine whether the design makes any provision for public access to the foreshore for pedestrians and cyclists.	7	E
Describe sources of landfill with precautions for dealing with possible pollutants.	8	-

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	Chapter	Appendix
Account for concerns raised by the Healthy Rivers Commission at the PFM. Consider acute and chronic effects on ecological communities.	10, 19, 31	N, AA
Assess the potential for introduction of marine pests in ballast water and on the hulls of vessels. Provide management options to ameliorate these impacts.	19	N
Outline compensatory offsets to counter loss, damage or destruction of public waterway surface, public amenities and species loss/damage.	7, 19, 20	E, N, O
Detail construction methods and methods to contain sediment while dredging and during land reclamation, along with consequences of accidental mishap/breaching of retaining walls/bunds during port operations.	8, 15	H
Describe measures for dealing with navigation of freighters and the hazards for recreational users of the bay.	6	G
Assess the impacts of lighting on local residential amenity, the airport and nearby astronomical observatories.	26, 30	U, Z
Assess traffic and transport issues such as noise, vibrations, pollution, pedestrian safety and amenity and long term Council road maintenance costs.	21, 22, 23, 26	P, Q, R, U
Determine whether submarine cables and pipelines across the bay will be affected.	14	-
Assess how the planning and execution of aquatic events and celebrations in the northern sector of the bay will be affected.	26	-
Explain and assess the visual impacts of the proposal from vantage points beyond immediate Council areas (elevated areas or Marrickville and neighbouring Council areas).	25	T
Assess hydrological issues such as pile driving, dredging, sand drift from fill and dredge and effects on the bay floor of vibration associated with construction activities. Account for the issues raised by Fisheries at the PFM with regard to dredging and reclamation.	19, 22	N, Q
Consider the recommendations of the Healthy Rivers Commission report of its Inquiry into the Georges River and Botany Bay system.	10	-
Assess the proposal in the context of the new planning framework announced by Minister Debus on 14 November 2001.	10	-
Assess the proposal taking into account the Marrickville Truck Tunnel proposal and the Cross-City Tunnel proposal.	21, 36	P
Determine whether the proposal will prevent the initiatives of bikeways, Greenweb Sydney and expansion of the CityRail network.	7, 21	E, P
Outline Ports Corporations' plans should further expansion be required after 2025.	4	D

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<b>City of Botany Bay Council</b>		
Reconsider the matters identified for the Patrick Container Terminal EIS.	2, 21, 36	P
Examine options for the location of the Port Expansion within Port Botany.	5	D
Examine the social impact of the loss of a major portion of Foreshore Beach on local residents.	26	U
Consider the effect of the road network on the increase in freight volumes on road transport to and from the port.	21	P
Consider the effect on the flows from Springvale and Floodvale drains.	16	I
Consider the effect on the flows of other minor catchments such as Dent Street and Fremlin Street.	16	I
Consider the effect on surface and stormwater flows.	16	I
Examine the effects on the groundwater contamination plumes at Orica and other relevant areas in Banksmeadow.	17	L
Examine the effects of the proposal on groundwater levels and the level of water in the ponds in the adjacent Sir Joseph Banks Park.	17	L
Review of the current lack of provision of a Hazard Facility at the Port and construction of same included in the project	28	W
Investigate the effect of wind borne sand drift from dredging operations.	23	R
Review the Port Botany Hazard Study and the combined effect on the Botany/Randwick Industrial Area Land Use Safety Study.	28	W
Consider the effects of the noise created from the increased road and rail use on the residential areas adjoining the rail and road networks.	22	Q
Assess the impacts of truck queuing on the road network.	21	P
Consider vibration issues caused by the expanded rail line.	22	Q
Assess the availability of Port related land uses now and in the future.	14	-
Consider the social impacts of the development as well as the impact of the view of the Port as seen from land and water.	25, 26	T, U
Examine the effects on the use and safety of pleasure craft resulting from the relocation of the boat ramp.	6, 26	U
Consider during construction of the facility of noise from traffic, pile driving and dredging.	22	Q
Consider the effects of the proposal on the Acid Sulfate Soils of the area, both local and imported.	18	-
Examine the effects on AV gas pipeline on Foreshore Drive.	14, 28	W

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Assess the ability of the project to meet the requirements and recommendations of the SSROC "Turing Tide" Botany Bay Report.	10	-
Determine the effect of dredging and proposed works on the cleansing action of the existing drainage outlets and the Mill Pond channel.	16	I
Examine the effects of dredging on the bay seagrass and sand movements.	15, 19	H, N
Review of the "public benefit" to be given to the Community from the developers at the Port facility.	7, 26, 27	E, U, V
<b>Randwick City Council</b>		
Identify the economic impacts that the proposal would have specifically on adjoining industrial zoned lands in Randwick City.	14, 27	V
Identify the impact of the expanded port on existing port facilities within Randwick in terms of the expected linkages, spin offs and economics of scale.	27	V
Address how traffic arising from the expanded port will be directed away from streets in residential areas. Identify measures that will be taken to maximise rail usage.	21	P
Identify potential cumulative impacts of the proposal. Identify that there will be no increase in cumulative risk, either societal or individual. Assess the potential risk for expanding towards the airport	28	W
Assess the nature of goods to be handled at the proposed terminal to identify any potential hazard impacts.	28	W
Address ecological issues arising from impacts on Botany Bay (hydrodynamics, biodiversity, acid sulfate soils, dredged material, water quality, groundwater levels and quality and impact on wetland areas).	15, 16, 17, 18, 19, 20, 31	H, J, L, M, N, O, AA
Identify potential noise, odour and pollution impacts.	22, 23	Q, R
Ensure comprehensive community consultation.	12	C
Assess other alternative ports for expansion.	5	D
Address visual impacts.	25	T
Examine the possibility of regional open space being provided to offset the loss of foreshore area.	7	E, F
Show and assess the nature of phasing for the proposed development including the adequacy and timing of various phases in relation to the provision of infrastructure and services.	8	-
Examine the impact of construction on local and regional land uses and local residents.	14, 26	U

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<b>Rockdale City Council</b>		
Determine the effect of further dredging of Botany Bay, and the impacts on the Lady Robinson's Beach shoreline (changes to depth, wave patterns, bay floor vegetation, sand movements and beach stability).	15, 19	H, N
Assess the ongoing effects of maintenance dredging to maintain shipping channel depths.	8	-
Prepare a sub-regional traffic study of land transport impacts, incorporating traffic from all sources including the port: <ul style="list-style-type: none"> <li>Integrated with the growth in air traffic- passengers and freight;</li> <li>Integrated with local development and intensifying land uses;</li> <li>Including sub-regional economy growth generated by the air and sea port growths;</li> <li>Detailing travel and haulage routes, origins and destinations, and traffic quantities;</li> <li>Including routes for dangerous goods;</li> <li>Including traffic and transport of persons employed on the site or servicing the site.</li> </ul>	21, 28	P, W
Prepare a plan to the encouragement of rail transport and discouragement of road transport.	21	P
Prepare a plan of Government initiatives to improve regional air quality and conserve energy.	23, 35	R
Prepare a plan to provide public commuter transport for site based, and other employees in the locality and discouraging the use of private cars for commuting.	21	P
<b>Kogarah City Council</b>		
Demonstrate the need for an additional facility in Sydney.	4, 5	D
Address traffic and transport issues relating to the capacity of the enhanced freight line to cope with both the demands of the current port and the proposed port and the likelihood of modal shift.	21	P
Assess the consistency of the proposal with other reports and plans such as the Health Rivers Commission.	10	-
Include an assessment of alternative sites around the bay itself and in Wollongong and Newcastle.	5	D
Assess the impact of the loss of habitat for wader birds and the loss of recreational uses at Foreshore Beach.	7, 20, 26	E, O, U
Assess the increased contamination from fuel and the introduction of damaging marine pests from ballast water.	19, 32	N

Requirements	Location in EIS	
	Chapter	Appendix
Assess the impact of dredging on groundwater and hydrological impacts.	15, 16, 17	H, I, L
Outline risks to the environment at the operational stage and adequacy of emergency procedures for dealing with these.	28, 32	W
Assess the cumulative environmental impact on the whole bay as well as its immediate environment.	15, 19, 36	H, N
<b>Botany Environment Watch</b>		
Include plans and impacts on the following:		
• drains;	16	I
• dredging, beach loss, boat ramp, wave pattern changes, impact on ecosystems of Botany Bay, loss of breeding habitat, loss of sanctuary for migrating birds, recreational boating, increased shipping;	7, 15, 16, 19, 20, 28	E, H, I, N, O, W
• heritage;	24	S
• pollution, air, noise, water, visual;	16, 22, 23, 25	J, Q, R, T
• transport (rail and road impacts);	21	P
• cumulative new hazard/risk assessment (airplane crash, port expansion, transport, rail, terrorist attacks, submarine access to Botany Bay, Seaport and Airport);	28, 32	W
• Adequate inspection of containers;	6, 28	W
• Port Botany managed by person assigned to that position independent of Sydney Harbour Management;	-	-
• Port Botany administration building in Botany;	-	-
• employment opportunities;	26, 27	U, V
• aesthetics;	25	T
• community loss of amenity and quality of life;	7, 26	E, U
• alternatives (Newcastle and Port Kembla)	5	D



Sydney Ports  
Corporation

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**Port Botany Expansion**

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EIS Advice

ARUP

Sydney Ports Corporation

**Port Botany Expansion**

EIS Advice

External Sewerage and Water Supply  
Sydney Water Corporation Infrastructure

April 2003

**Arup**

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Job number 81808/073

Job title	Port Botany Expansion	Job number
		81808/073

Document title	EIS Advice	File reference
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Document ref

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Issue Document Verification with Document



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QA Rev 1/01 1 November 2001

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<b>3. WATER SUPPLY SYSTEM</b>	<b>2</b>
3.1 Existing System	2
3.2 Proposed System	2

## DRAWINGS

Drawing 1	External Sewerage Sheet 1 of 2
Drawing 2	External Sewerage Sheet 2 of 2
Drawing 3	External Water Supply Sheet 1 of 2
Drawing 4	External Water Supply Sheet 2 of 2

## 1. INTRODUCTION

This report has been prepared to look at options to serve the proposed expansion of the port waterfront at Port Botany with external sewerage and water supply services.

## 2. SEWERAGE SYSTEM

The existing port is currently served by the Sydney Water Corporation sewerage system.

### 2.1 Existing System

The existing port area is currently served by Sydney Water Corporation Sewage Pumping Station No 570 (SPS 570) off Penrhyn Road – refer Drawing No C400 and C401 for details.

The pumping station is a Ø3.0 m wet well, submersible pumping station with a divided wet well. The station currently has a capacity of 40 L/s against 18 m head.

The station has a Ø200 mm rising main which discharges to a Sydney Water Corporation carrier north of Botany Road.

This station has a collecting maintenance hole with numerous inlets. There are two inlets facing the proposed port expansion site to the west; one is a Ø100 mm high inlet and the other is a Ø300 mm low inlet.

The flows received at this station are from an existing private vacuum pumping station on the port area used to collect existing sewerage flows.

The station currently has a Ø300 mm overflow which discharges to the Penrhyn Estuary to the north. This overflow will probably be modified in the current Sydney Water Corporation pumping station upgrades programme. During these upgrades offline storage structures are being constructed to accommodate storm overflows. No details of these upgrades are available at the time of this report.

### 2.2 Proposed System

The proposed system is to utilise Sewerage Pumping Station No 570 off Penrhyn Road – refer Drawing No C401.

Due to the flat level of the terrain and high water table and existing infrastructure in the area it is not practical to serve the proposed port area from this station by gravity and utilise the Ø300 mm low inlet at the collecting maintenance hole at SPS 570.

Therefore, it is proposed to serve the proposed port expansion area via a Ø100 mm common rising main connecting to the Ø100 mm high inlet on the western side of the SPS570 collecting maintenance hole or large diameter if considered necessary and modify the existing inlet. The proposed common rising main would have a valve chamber pit located on the eastern side of the new port area for connection of private rising mains from various points on the site.

To accommodate future flows from ships, pump out points are to be provided along the waterfront and monitored with flow recorders before the flows are pumped from small private pumping stations to the Sydney Water common rising main valve chamber.

The flows from the general port area are at this stage are only expected to be small and from amenities buildings on the site at various locations as the bulk of the area is used for container storage.

A new small pumping station will be required to service the proposed public boat ramp and wharf to the north of the Penrhyn Estuary. The rising main from this station is to be connected to the common rising main valve chamber via a 3.0m wide easement adjacent the proposed water main easement.

Use of on site disposal or on site treatment and disposal has not been considered in this report.

All main sizes will have to be confirmed in size following discussions with Sydney Water Corporation.

### **3. WATER SUPPLY SYSTEM**

The existing port is currently served by a Sydney Water Corporation water supply system for potable and fire water supply.

#### **3.1 Existing System**

The existing port area is currently served by a Ø450 mm main from the eastern end of Penrhyn Road. This main later reduces to a Ø375 mm main in the west for its last 120 metres in Penrhyn Road.

This main is feed as a single ended feed from a Ø500 mm main at the intersection of Foreshore Road, Botany Road and Penrhyn Road east.

#### **3.2 Proposed System**

The proposed system is to extend the existing Sydney Water System – refer Drawing No C500 and C501 for details.

The extension would connect with the existing Ø450 mm main in Penrhyn Road. Then pass through the eastern side of the site from Penrhyn Road as a Ø450 mm water main in a 3.5 wide easement across the proposed causeway at the Penrhyn Estuary to Foreshore Road. The main would then travel in the southern footpath of Foreshore Drive and reconnect to the Ø500 mm water main at the intersection of Foreshore Road, Botany Road and Penrhyn Road, Botany.

This will give a dual point of feed to the water supply into the port in the case of damage to the mains or in the case of fire. This main will provide the port expansion with a water supply for domestic and fire fighting uses. The main will be provided with connection points for fire and metered water supply to each lease area established on the port expansion as required.

To serve the public boat ramp and wharf area at the northeastern corner of the site a Ø150mm main has been provided in the southern footpath of Foreshore Road.

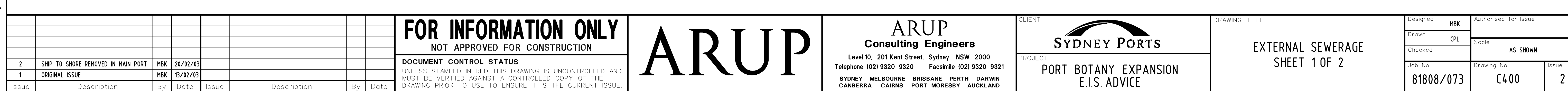
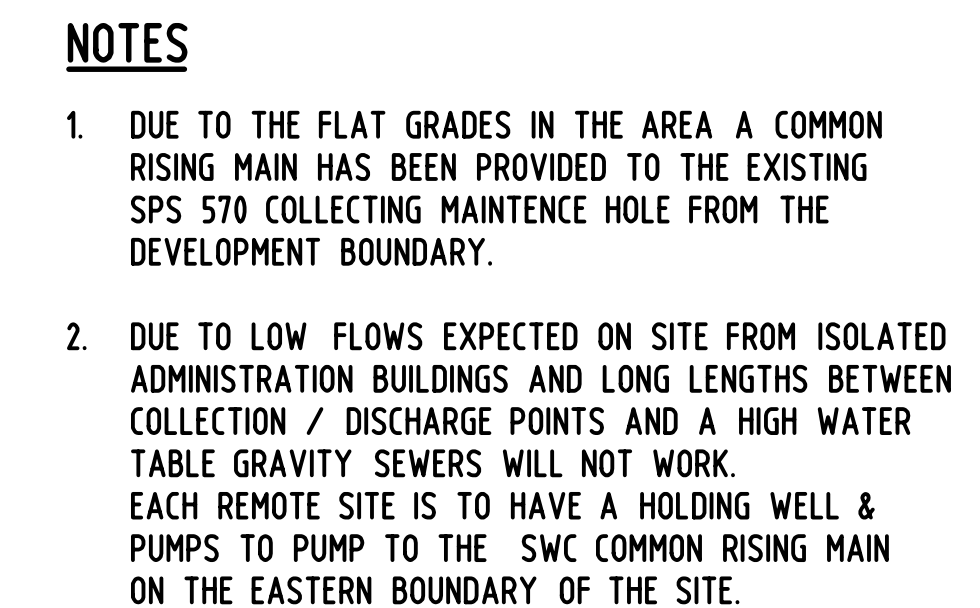
The use of seawater for fire fighting is a possibility but would require a second separate system to that needed for potable water supply. In addition it would need its own pumping stations to provide pressure for fire fighting flows and has not been considered in this report.

All main sizes will have to be confirmed in size following discussions with Sydney Water Corporation.

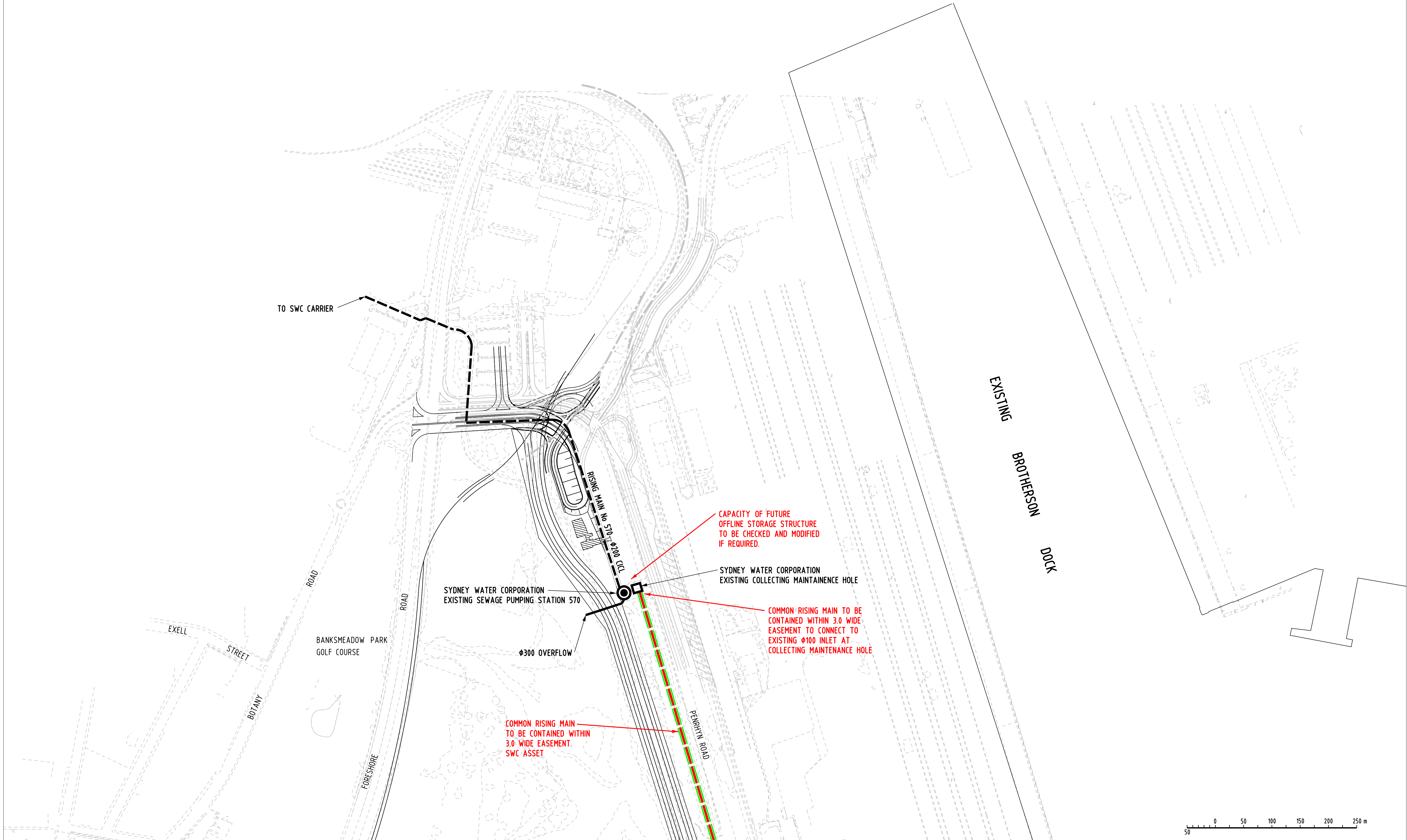
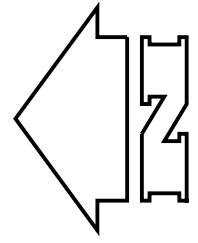
## **DRAWINGS**

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JOINS SHEET 1 OF 2

Issue	Description	By	Date	Issue	Description	By	Date
1	ORIGINAL ISSUE	MBK	13/02/03				

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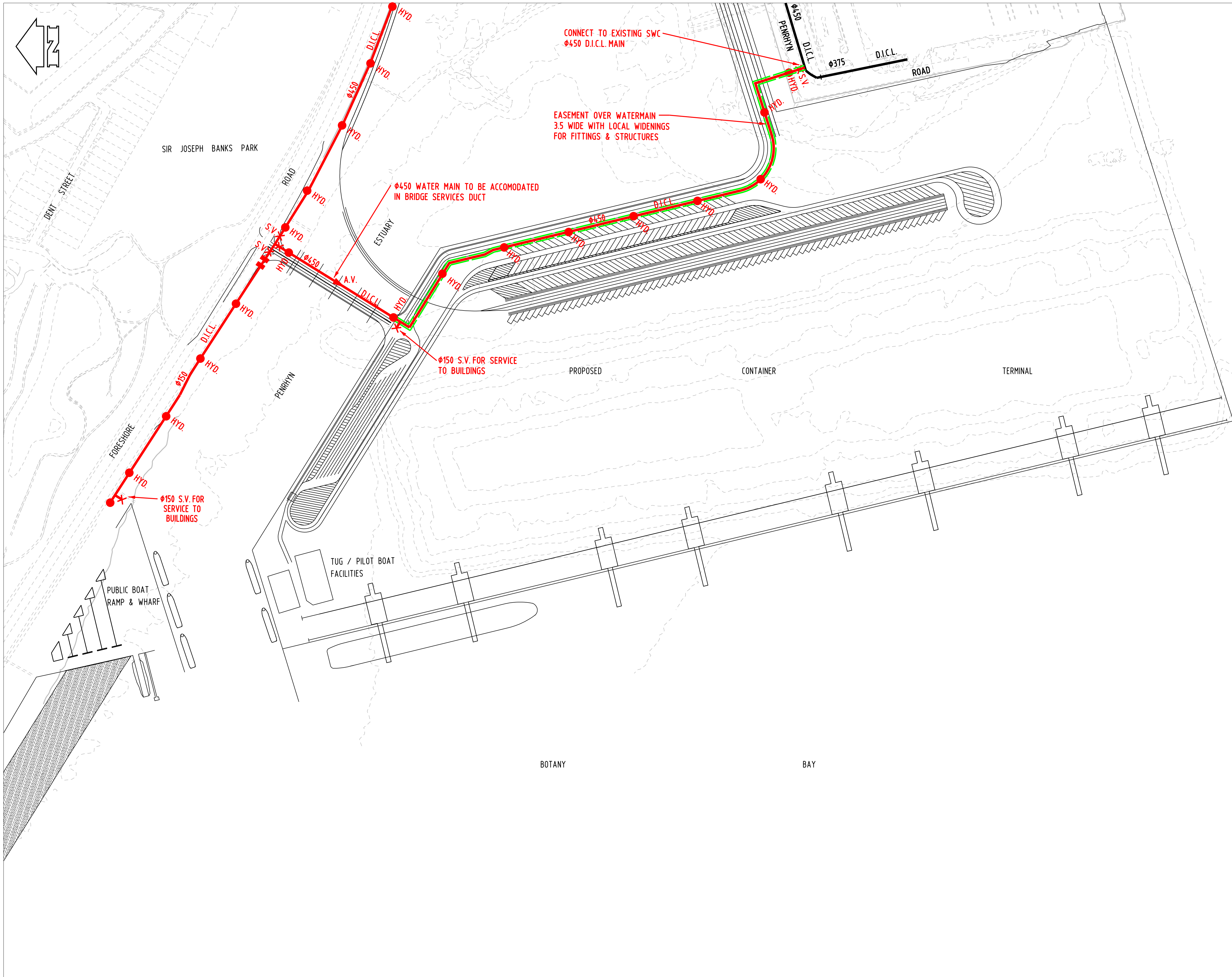
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CANBERRA CAIRNS PORT MORESBY AUCKLAND

CLIENT  
**SYDNEY PORTS**  
PROJECT  
PORT BOTANY EXPANSION  
E.I.S. ADVICE

DRAWING TITLE  
EXTERNAL SEWERAGE  
SHEET 2 OF 2

Designed MBK	Authorised for Issue	
Drawn CPL	Scale AS SHOWN	
Checked	Job No 81808/073	Issue 1
	Drawing No C401	





LEGEND

EXISTING SWC ASSETS

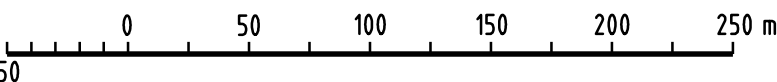
- Ø450 D.I.C.L. EXISTING 450mm DIAMETER DUCTILE IRON/CEMENT LINED SYDNEY WATER CORPORATION POTABLE WATER MAIN
- Ø450 C.I.C.L. EXISTING 450mm DIAMETER CAST IRON/CEMENT LINED SYDNEY WATER CORPORATION POTABLE WATER MAIN

PROPOSED SWC ASSETS

- Ø450 D.I.C.L. PROPOSED 450mm DIAMETER DUCTILE IRON/CEMENT LINED SYDNEY WATER CORPORATION POTABLE WATER MAIN. SUBJECT TO ANALYSIS FOR FINAL SIZING BY SYDNEY WATER CORPORATION
- EASEMENT FOR ACCESS TO SYDNEY WATER MAIN OVER PRIVATE PROPERTY
- S.V. STOP VALVE
- HYD. HYDRANT
- SCOUR SCOUR
- A.V. AIR VALVE
- TAPER TAPER

NOTES

- CONNECTIONS FOR UNMETERED ADDITIONAL FIRE MAINS TO BE LOCATED AS REQUIRED
- CONNECTIONS FOR METERED POTABLE WATER MAINS TO BE LOCATED AS REQUIRED ONE OFF FOR EACH LEASE AREA



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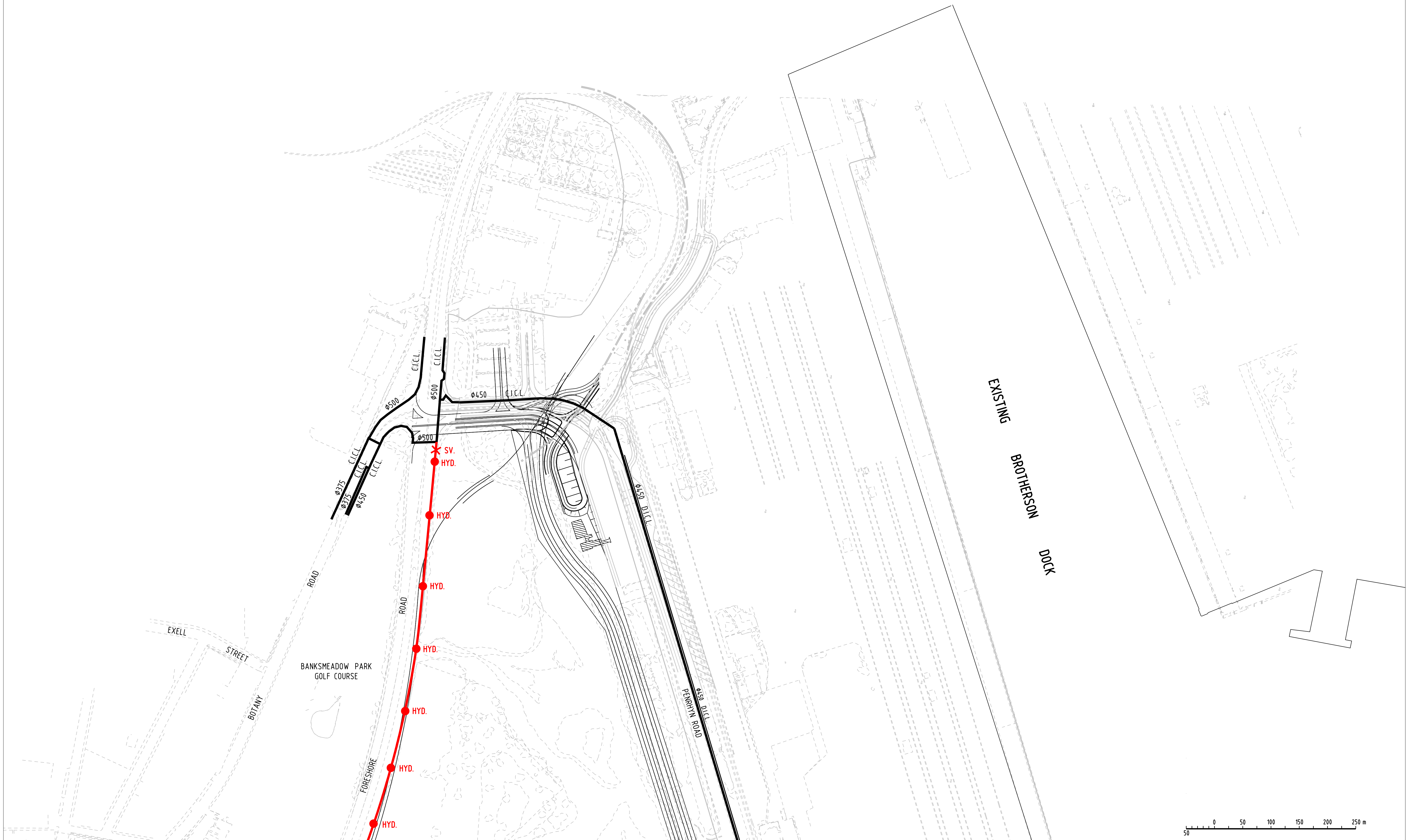
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DRAWING TITLE  
EXTERNAL WATER SUPPLY  
SHEET 1 OF 2

Designed MBK	Authorised for Issue
Drawn CPL	Scale AS SHOWN
Checked	
Job No 81808/073	Drawing No C500
	Issue 1





A number line starting at 50 and ending at 250. Major tick marks are labeled 0, 50, 100, 150, 200, and 250 m. Minor tick marks are present every 10 units. The label 50 is also shown below the line at the starting point.

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