RESOURCE (SUBDIVISION/LAND USE) CONSENT REPORT

LIR ANALYSIS COVER SHEET

☐ Land use ☐ PRE-224 ☐ POST-224

COUNCIL REFERENCE INFORMATION

	Map	Type	No. (GEMS Ref)	Hazard / Info Code Extn (Codes for all hazards / info used in rpt)
File Ref. No: (External Ref)	Q24	B	950085	

Old HR Ref. No:	Q24-39		
Scheme Plan / Town Plan # (RFS to RFS LINKS)	RMP-18802 RMP-26635 RMP-20327 RMP-24326		
Additional Report (Y/N):		Date of Original Report:	
Street, Locality (location description):	Report on stormwater management & golf course irrigation requirements (Gulf Harbour Dev.)		

CONSULTANT REPORT INFORMATION (Request Details)

LIR Report Type (Initial Geotech, Earthworks Completion, Effluent)	stormwater management & golf course irrigation		
Prepared by: (1st Contact Person)	Bruce White	Person ID#:	
Reference Number:	1067	REPORT DATE:	Feb 1995

REPORT RECEIVED BY: (receiving officer)		DATE: (date submitted)	
REPORT AUTHORISED BY:		DATE:	
ENTERED ON GEMS BY: (handling officer)	RWB	DATE: (start date)	
REPORT ANALYSED BY: (authorising officer)		DATE:	

☐ **PLEASE HOLD AT LIR - parcel id's have not been assigned** DATE:_____

Please Attach:
- a locality map with the lots affected by the report highlighted
- a copy of the scheme plan (pre-224) or the deposited plan (post 224)
- one copy of the report (the second copy and a copy of this front page to the SP file)

and forward to the Development Engineer

CURRENT LOT DETAILS (LEGAL DESCRIPTION & LAND PARCEL NUMBER): CIRCLE: PARENT/SIBLING

Lot / Allot	DP Number / Parish	Parcel ID Number
100	175624	606123
101	175624	606124
11	127001	7038699
9	~~127001~~ 126998	7038690

WHO IS RESPONSIBLE FOR ENTRY:

***Note:** Headings in (parentheses) refer to GEMS RFS Maintenance Screen fields*

RESOURCE (SUBDIVISION/LAND USE) CONSENT REPORT

LIR ANALYSIS COVER SHEET

LAND INFORMATION TYPE [Sub group Type]	
Land Information Type, LAND INFO or HAZARD CODE *(REFERENCE)*	LIM Code *[Sub Group Type]*
DEVELOPMENT RESTRICTIONS [A]	(✓)
Onerahi Chaos (Known), OCK	B1
Onerahi Chaos (Suspected), OCS	B1
Subsidence, SS	C1
Slippage SP	D1
Inundation, Overland Flow Paths IU1	E1
Inundation, Flood Plains/ Floor Levels IU2	E1
Erosion ER	F1
Falling Debris FD	G1
Potentially Contaminated PC	J1
Consent Notice / Encumbrance CNE	K1
TECHNICAL LAND INFORMATION Q(=Sub Group Type)	(✓)
Tech. Inv. Data TI	R1
Effluent Disposal EF	T1
Certified Fill CF	U1

WHO IS RESPONSIBLE FOR ENTRY:

Technical Officer Building ***Building Engineer*** ***LIR Technical Officer***

Q24-39

GULF HARBOUR DEVELOPMENT

REPORT ON STORMWATER MANAGEMENT AND GOLF COURSE IRRIGATION REQUIREMENTS

Prepared for

Antony Wood
Land Development Consultant

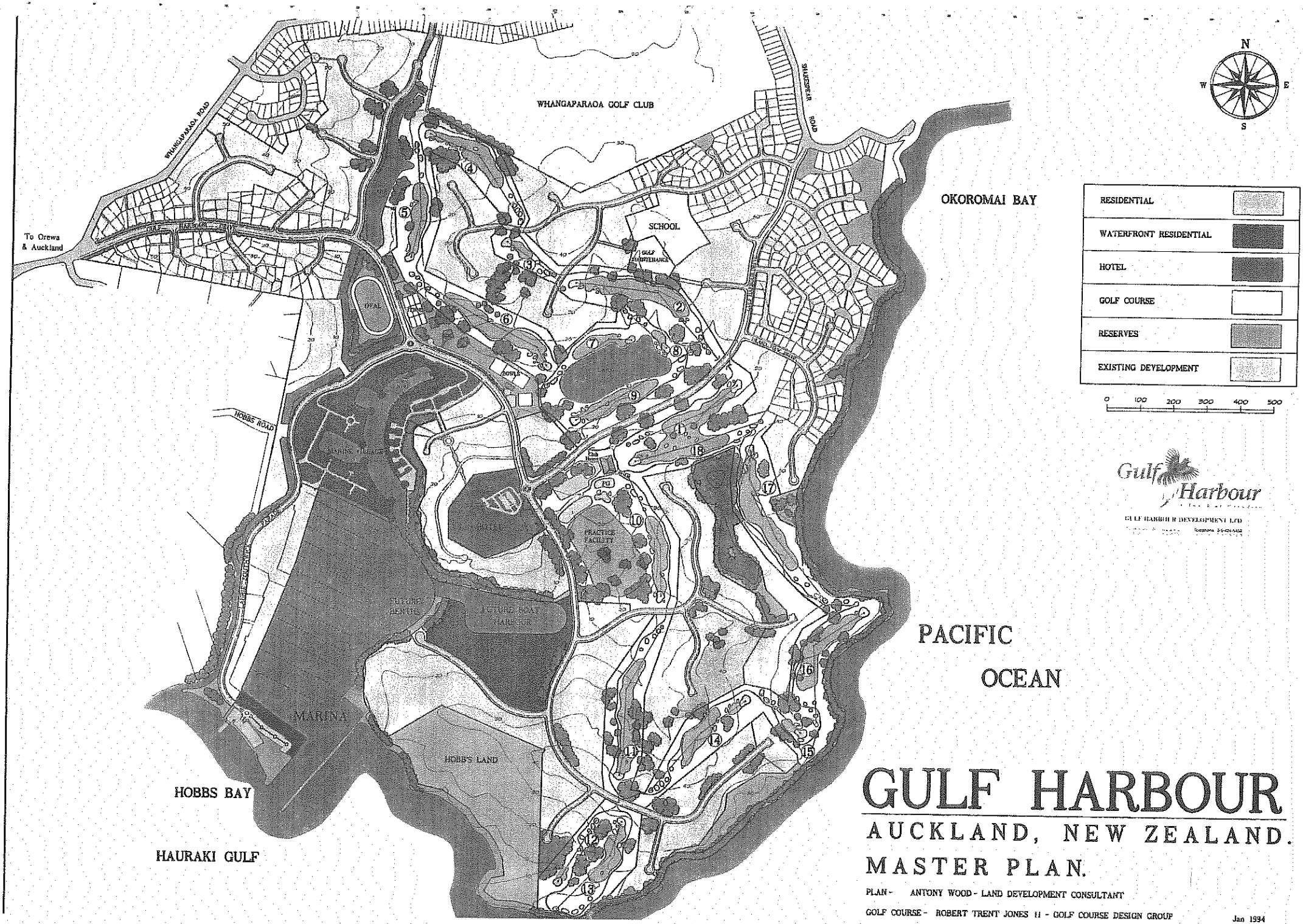
In support of:

APPLICATIONS FOR RESOURCE CONSENTS TO DAM WATER AND TO TAKE OR USE SURFACE WATER

BRUCE WHITE MIPENZ
REGISTERED ENGINEER

72 Grafton Road
Auckland, New Zealand

February 1995



GULF HARBOUR

AUCKLAND, NEW ZEALAND.

MASTER PLAN.

PLAN - ANTONY WOOD - LAND DEVELOPMENT CONSULTANT

GOLF COURSE - ROBERT TRENT JONES II - GOLF COURSE DESIGN GROUP

Jan 1994

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Existing consents related to this proposal.

A: Application to take or use surface water: GOLF COURSE LAKE

B: Application to dam water: GOLF COURSE LAKE

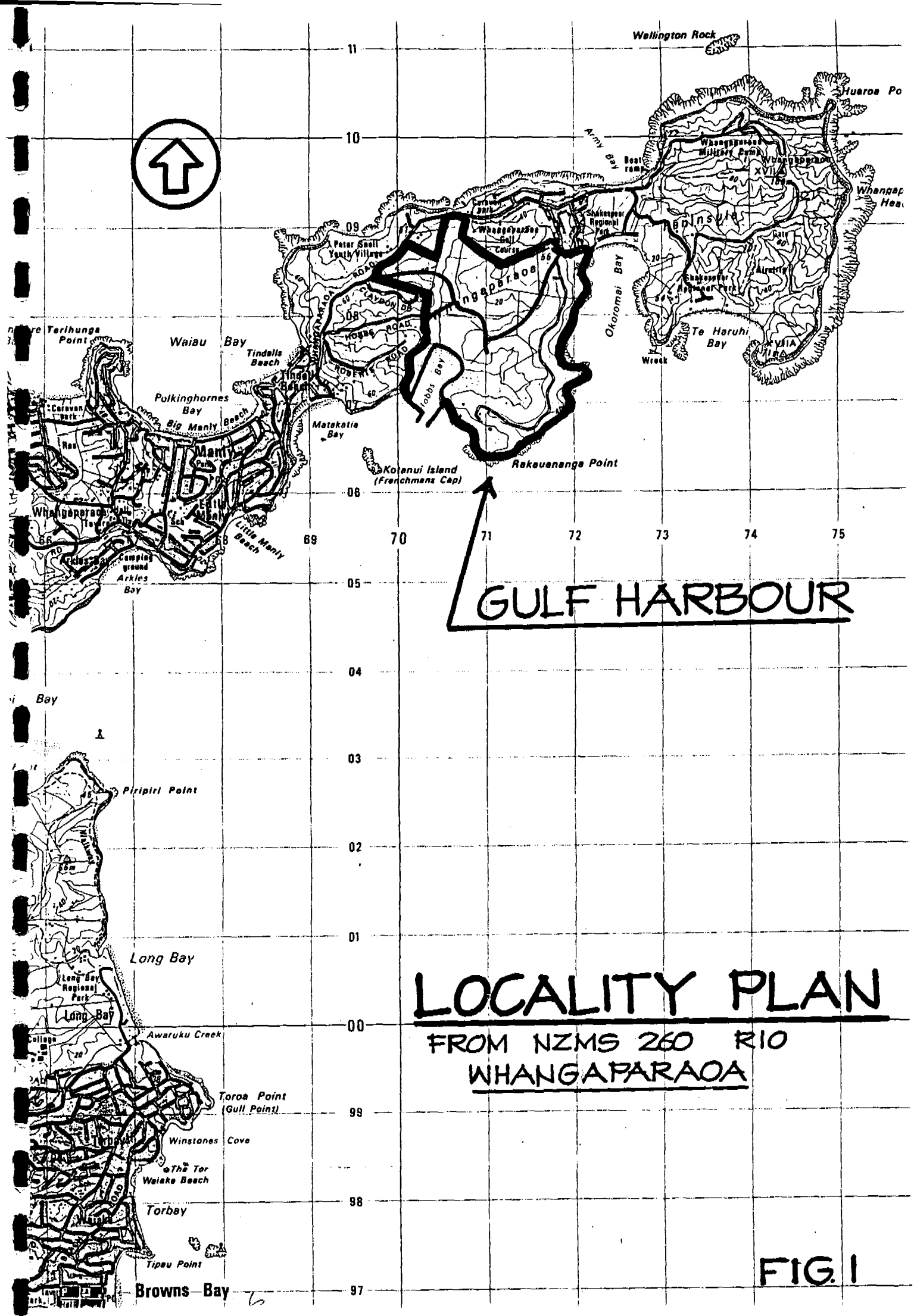
C: Application to dam water: NORTHERN LAKE
Application to take or use surface water: NORTHERN LAKE

D: Application to dam water: SPORTS-OVAL POND
Application to take or use surface water: SPORTS-OVAL POND

E: Application to dam water: COASTAL POND
Application to take or use surface water: COASTAL POND

F: Application to discharge stormwater: Modification to existing Water Right No.854605

5



GULF HARBOUR

LOCALITY PLAN

FROM NZMS 260 R10

WHANGAPARAOA

FIG. 1

REPORT ON GULF HARBOUR STORMWATER MANAGEMENT

1.0 SUMMARY

This report is in support of applications to the Auckland Regional Authority for Resource Consents to damming and ponding of stormwater runoff within the Gulf Harbour development area and the taking of stormwater runoff for irrigation.

Applications supported by this report are

A:	Application to take or use surface water: GOLF COURSE LAKE
B:	Application to dam water: GOLF COURSE LAKE
C:	Application to dam water: NORTHERN LAKE Application to take or use surface water: NORTHERN LAKE
D:	Application to dam water: SPORTS-OVAL POND Application to take or use surface water: SPORTS-OVAL POND
E:	Application to dam water: COASTAL POND Application to take or use surface water: COASTAL POND
F:	Application to discharge stormwater: Modification to existing Water Right No.854605

Gulf Harbour Development Limited propose to develop an 18 hole championship golf course as one of the main features of Gulf Harbour. The golf course will have a heavy requirement for irrigation water to manage greens and fairways and for general landscaping maintenance. The study showed that the golf course could be irrigated from stored stormwater collected from the catchments draining into the Gulf Harbour stormwater system. A total working volume of 75,000 m^3 is recommended as the target design volume. Excess stormwater runoff represents an existing high-quality resource that, if stored and recycled onto the land provides the best option. There are opportunities at Gulf Harbour to utilise and develop the large open stormwater drains and other low lying areas as storage ponds and lakes.

The principal features within the drainage area which will influence storm flow rates and water levels will be:

- The Golf Course Lake forming a central and important feature of the golf course.
- The Northern Lake developed in low lying ground at the northern end of the Hobbs Bay valley.
- The existing three-barrel culvert draining the valley under Gulf Harbour Drive.
- The Sports-Oval Pond to be developed at the northern end of the existing main watercourse.

- The Coastal Pond to be developed from the existing, uncompelled main watercourse.
- The Outfall Weir at the outlet of the Coastal Pond.
- The Tidal Barrier between the Outfall Weir and the sea.

The proposed storage of stormwater runoff will reduce the peak flows to less than that from the present farmland and provide efficient entrapment potential pollutants.

The pond and lake system will have multiple functions.

- Recreation activities and visual enhancement for residential areas.
- Storage for the recycle of stormwater back onto the golf course as irrigation water.
- Attenuation of storm peak flow-rates to that approaching the original bush and forest values.
- Stilling pond action for the capture of sediments.
- Uptake of pollutants through the provision of shallow water planting areas.
- Enhancement of the area wildlife values by attracting ducks and wading birds.
- Provision of feeding and roosting areas for birdlife.

The stormwater system is not sensitive to potential sea level rise. Substantial change in the High Water Level can be tolerated without bank spill. Secondary slow paths to the Marine Canal have been planned to allow for unpredictable combinations of extreme events.

2.0 INTRODUCTION.

This report is in support of applications to the Auckland Regional Authority for Resource Consents to damming and ponding of stormwater runoff within the Gulf Harbour development area and the taking of stormwater runoff for irrigation. Reductions in the anticipated peak flow rates resulting from the proposed ponding and the effects on the environment are also described. These changes are pertinent to the existing stormwater discharge Water Right ref. BM/4605.

3.0 LOCATION DESCRIPTION.

The Gulf Harbour development is located on the southern coast of the Whangaparaoa Peninsula at Hobbs Bay. The total catchment area draining to Hobbs Bay is 450 ha of which 371 ha, including the Marina hard standing area, drain to the existing main watercourse.

The development will include the existing marina within Hobbs Bay, a marine village, residential areas of varying densities and an international-standard golf course.

The land surrounding the bay is gently rolling, grassed farmland rising to the Whangaparaoa Road ridge at 60 metres above sea level, within a kilometre of the bay. The site is adjacent to the coast and stormwater runoff discharge directly to the sea.

Stormwater flows from the surrounding subcatchments to an existing open channel

system. The existing main waterway diverts stormwater around the Marina to Hobbs Bay and is in the form of a tidal canal, between 5 and 10 metres wide and about 1600 metres long.

4.0 PROPOSAL DESCRIPTION

The proposed development will include an 18 hole championship golf course built to international standards. The golf course will have a heavy requirement for irrigation water to manage greens and fairways and for general landscaping maintenance. The total annual irrigation requirements for the golf course would be about 8% of an annual rainfall The capture and use of this resource will impose significant storage requirements due to seasonal variations in the rainfall pattern with the potential for long dry summers.

The irrigation demand of an 18 hole golf course is of the order of 1000 m^3 per day. The only practical supply sources for this quantity would be either to utilise treated sewage effluent or to store stormwater runoff on site. The use of sewage effluent would be an acceptable alternative but it would require a high standard of treatment and considerable energy in pumping the treated effluent to site as well as having aesthetic and cultural concerns. The effluent would not be required during the winter. Excess stormwater runoff represents an existing high-quality resource that, if stored and recycled onto the land provides the best option. There are opportunities at Gulf Harbour to utilise and develop the large open stormwater drains and other low lying areas as storage ponds and lakes.

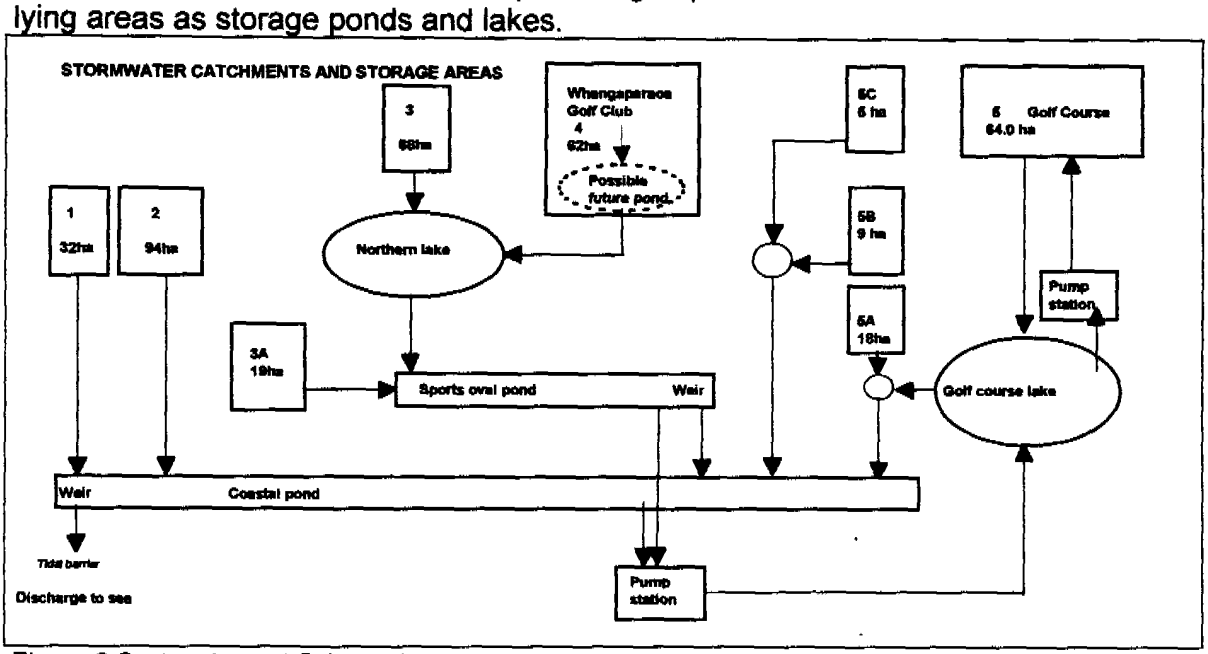


Figure 2 System Layout Schematic

The existing main waterway diverts stormwater around the Marina and is in the form of a relatively wide, tidal canal about 1600 metres long. This waterway can be expanded and modified to store stormwater by providing a weir across its width 100 metres from where it discharges into the sea. Landscaping adjustments to the banks would provide a more natural impression thereby enhancing the visual appearance of these areas.

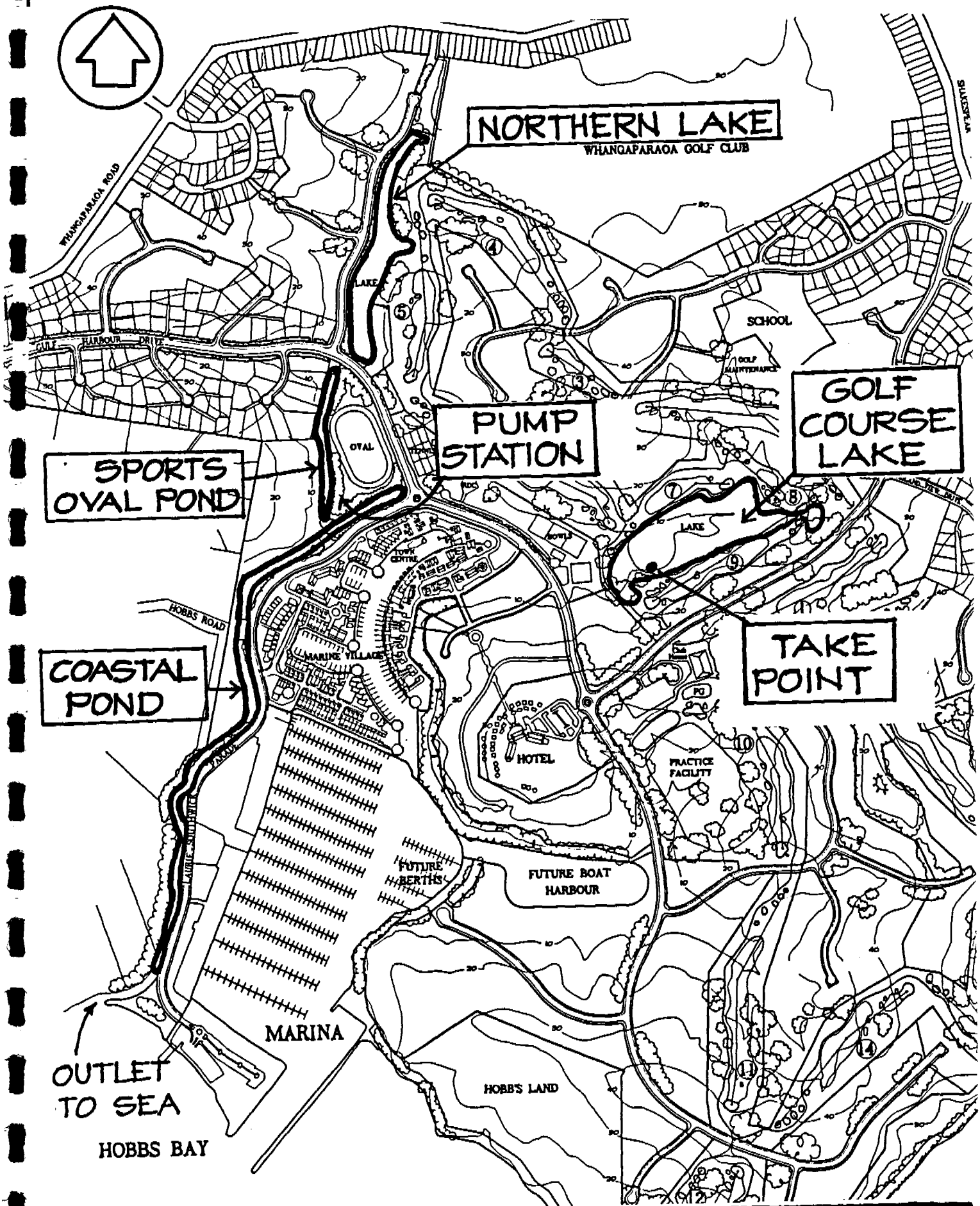

NORTHERN LAKE
WHANGAPARAOA GOLF CLUB
WHANGAPARAOA ROAD
GULF HARBOUR DRIVE
SCHOOL
GOLF MAINTENANCE
GOLF COURSE LAKE
PUMP STATION
OVAL
SPORTS OVAL POND
LAKE
HOBBS ROAD
COASTAL POND
MARINE VILLAGE
TOWN CENTRE
BOWLS
TAKE POINT
HOTEL
PRACTICE FACILITY
FUTURE BERTHS
FUTURE BOAT HARBOUR
MARINA
OUTLET TO SEA
HOBBS BAY
HOBB'S LAND
HAURAKI GULF
SITE PLAN
SCALE 1:10,000

FIG. 3

The topography at the northern end of the main waterway will allow the provision of a relatively large lake with a permanent water level. This lake together with a proposed lake within the golf course would capture almost 50% of the catchment and provide considerable peak flow reduction downstream and improve stormwater quality. Provision was made in the site planning of the Gulf Harbour Master Plan to utilise these opportunities. The area contributing runoff to the proposed storage elements is 309 ha. A further catchment of 62 ha enclosing the Whangaparaoa Golf Club will discharge stormwater into the lower storage ponds. The runoff from this catchment has not been included in the irrigation storage analysis.

The drainage area of 371 ha was subdivided into 5 natural and 4 forced subcatchments. A separate runoff analysis was carried out on each subcatchment for the 100 year and 10 year critical storms.
The principal features within the drainage area which will influence storm flow rates and water levels will be:

- The Golf Course Lake forming a central and important feature of the golf course.
- The Northern Lake developed in low lying ground at the northern end of the Hobbs Bay valley.
- The existing three-barrel culvert draining the valley under Gulf Harbour Drive.
- The Sports-Oval Pond to be developed at the northern end of the existing main watercourse.
- The Coastal Pond to be developed from the existing, uncompelled main watercourse.
- The Outfall Weir at the outlet of the Coastal Pond.
- The Tidal Gates between the Outfall Weir and the sea.

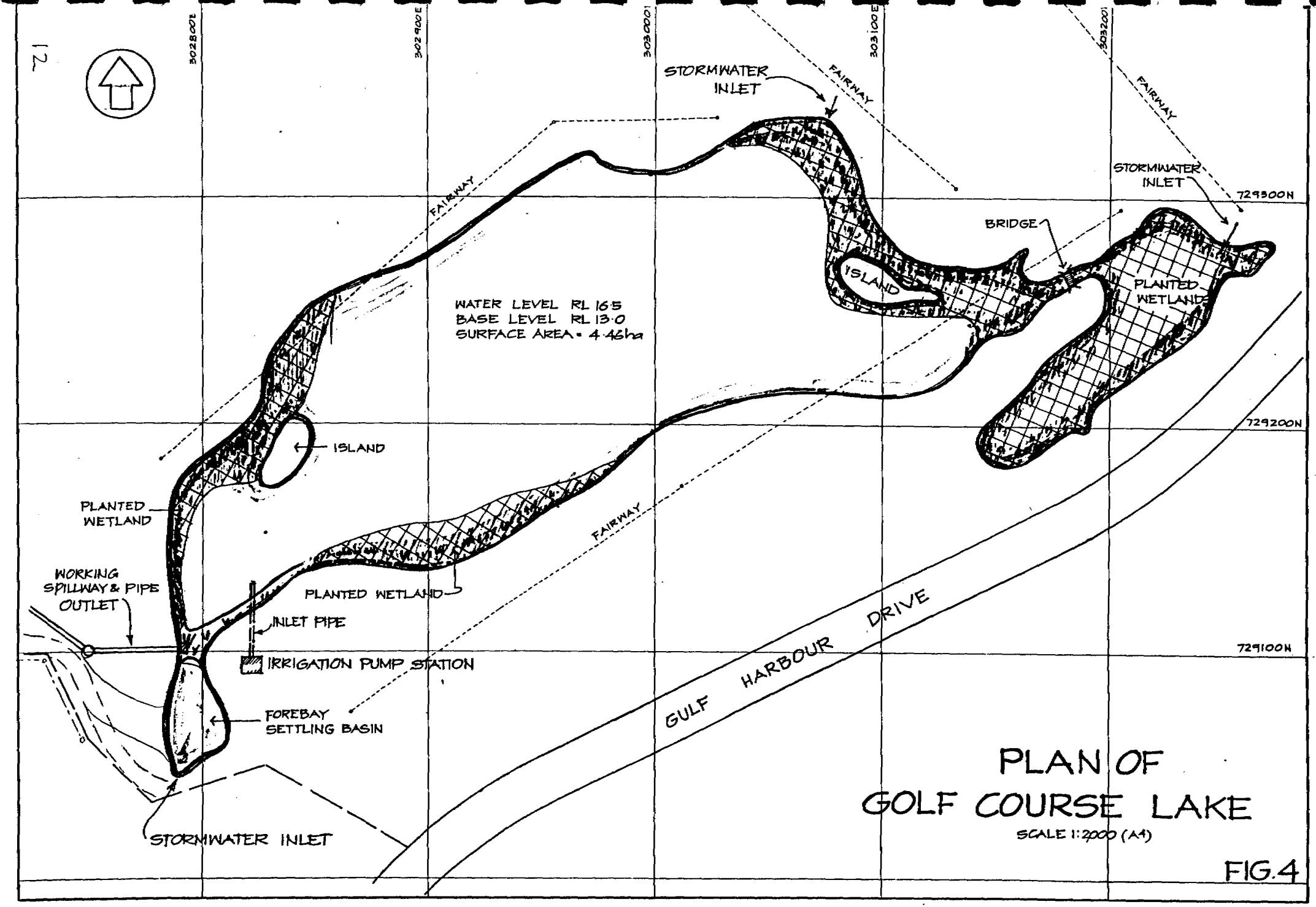
All levels are in terms of DOSLI Datum (MSL approximately RL 0.0).

4.1 Golf Course Lake.

A 4.5 ha lake will form a central part of the golf course. The lake will be located within the golf course bounded by fairways 7, 8, and 9. with a Top Water Level (TWL) of RL 16.5 m above mean sea level and a top surface area of 44,600 m^2.

The lake will be formed by extending the existing earth bund that, at present, contains the large Sediment Pond A described in the Earthworks Consent application. The extended bund will be constructed as a conventional earth embankment across the valley, with its crest centreline on Mt Eden circuit coordinate 302780mE and extending between 729000mN and 729300mN. The top of the embankment will form an access between golf course tees and will vary in width and level to blend in with the natural contours. The embankment will have a minimum crest width of 5 metres at RL+18.0 and a maximum width of 35 metres. The core of the embankment will be extended from the Sandstone bedrock, up to the crest, in control-compacted clay. Upstream slopes will be at a minimum of 2.5h:1.0v and downstream slopes at 3.0h:1.0v. The slopes will be extended and flattened at the shoulders to blend in with the natural contours.

Water levels within the lake will be controlled through a concrete drop-box weir and piped culvert near the southern end of the crest. The culvert and weir will be built



PLAN OF GOLF COURSE LAKE

SCALE 1:2000 (A4)

FIG.4

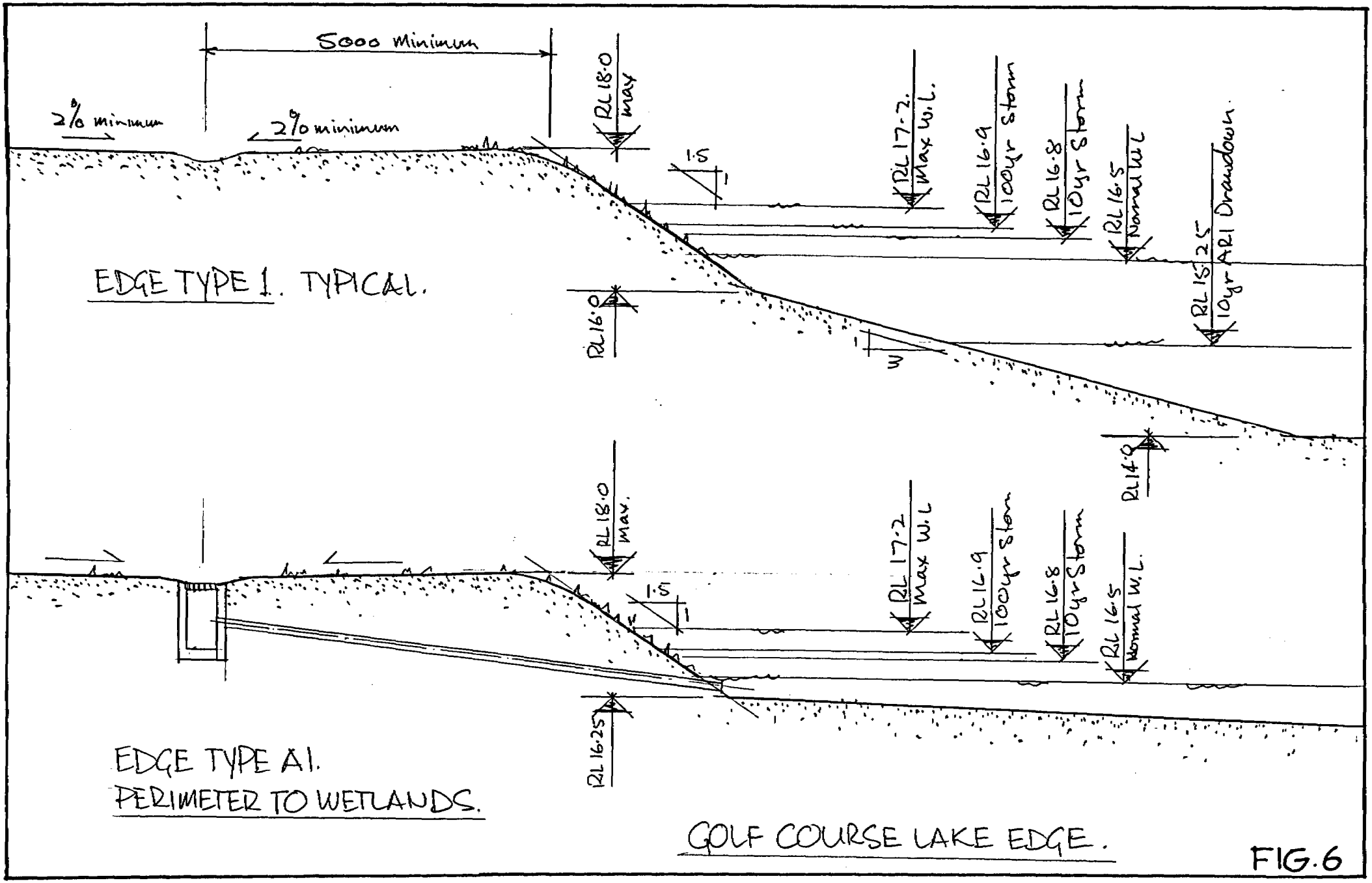

5000 Minimum
2% minimum
2% minimum
RL 18·0 max
RL 17·2 Max W.L.
RL 16·9 100yr Storm
RL 16·8 10yr Storm
RL 16·5 Normal W.L
RL 15·25 10yr ARI Drawdown
RL 16·0
RL 14·0
1:5
W
EDGE TYPE 1. TYPICAL.
RL 18·0 max.
RL 17·2 Max W.L
RL 16·9 100yr Storm
RL 16·8 10yr Storm
RL 16·5 Normal W.L.
RL 16·25
EDGE TYPE A1.
PERIMETER TO WETLANDS.
GOLF COURSE LAKE EDGE.

FIG. 6

through natural ground, clear of the embankment. The box weir and culvert will be designed to take storm flows up to 10 year ARI. Less frequent flows will overflow on a surface spillway clear of the embankment.

This lake will be the source of water for the course irrigation pumping station and under normal operating conditions would be kept full from downstream storage. This lake will be at the outlet to a 64 ha catchment, enclosing a large portion of the golf course. The lake area is relatively large compared to the catchment and this results in very effective reductions to the outlet peak flows. Inflow hydrographs will be attenuated by a temporary rise in the lake surface levels. Peak flow rates will be reduced by the storage across the lake surface due to the temporary rise. The magnitude of the rise and the outflow peak are related to the outlet spillway weir capacity. The surface rise has been kept to a minimum for management purposes but having regard to the effect on downstream flows.

Duration sensitivity of flows into Golf Course Lake;

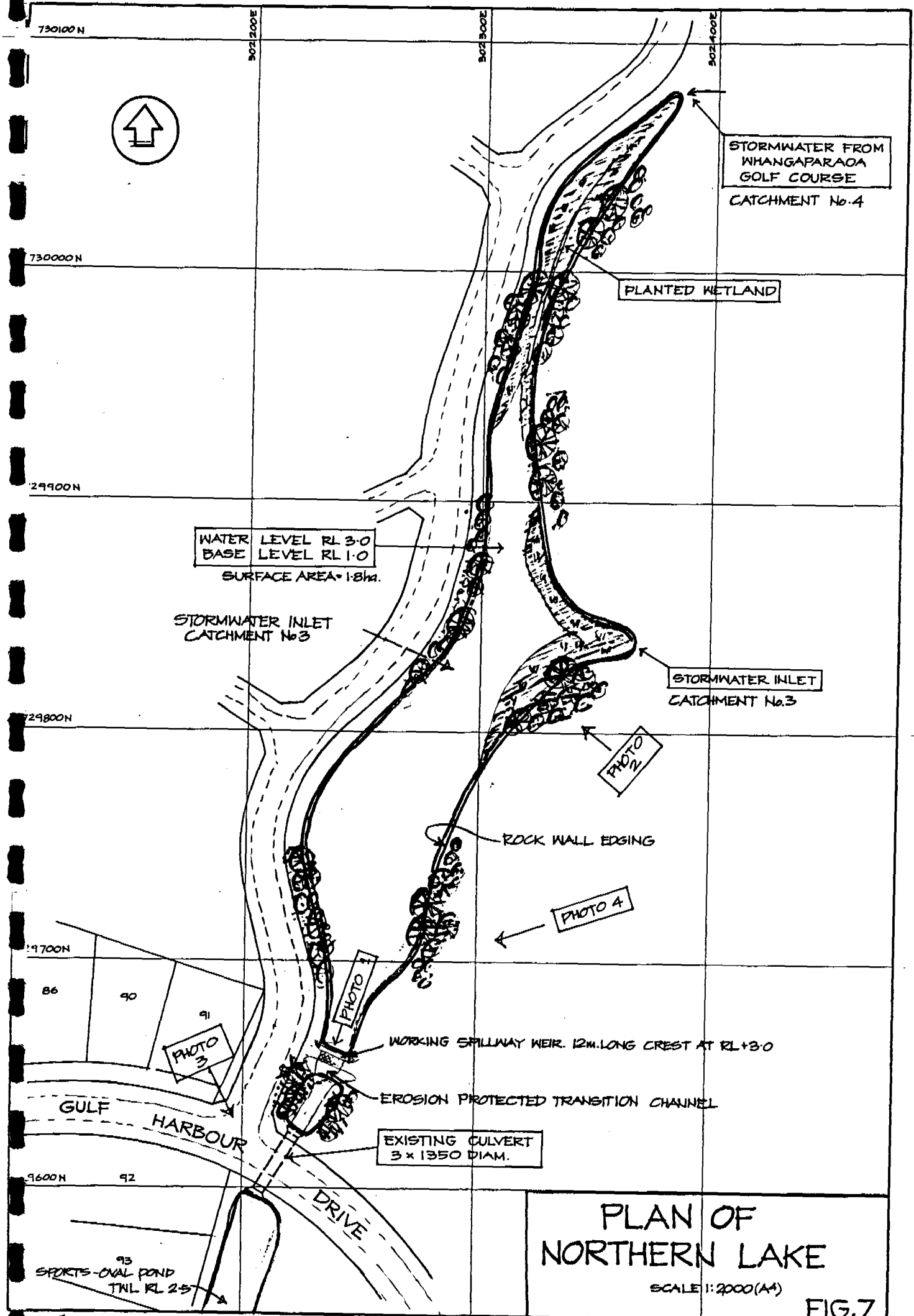
Duration	PMF	100yr	10yr
30 mins.	----	10.1	5.8 m^3/s peak
40	19.5	10.2	5.9
50	19.9	9.7	5.8
60	18.2	-----	----

Design flows and operating levels:

Stillwater level	RL 16.5	
10 year storm, Q_{10yr}^{40min} maximum water level	RL 16.8	
Inflow peak rate at 45 minutes	6.1 m^3/s	from start of rain,
Outflow peak rate at 45 minutes	0.5 m^3/s	piped overflow
Outflow peak rate at 80 minutes	1.2 m^3/s	piped overflow
100 year storm, Q_{100yr}^{40min} maximum water level	RL 16.9	
Inflow peak rate at 45 minutes	10.7 m^3/s	
Outflow peak rate at 45 minutes	1.1m^3/s	piped overflow
Outflow peak rate at 70 minutes	2.7m^3/s	piped overflow and surface spillway
PMP storm, Q_{PMP}^{50min} maximum water level	RL 17.2	
Inflow peak rate	19.9 m^3/s	
Outflow peak rate	10.6 m^3/s	piped overflow and surface spillway
Surface spillway only, maximum water level	RL 17.4	

4.2 Northern Lake.

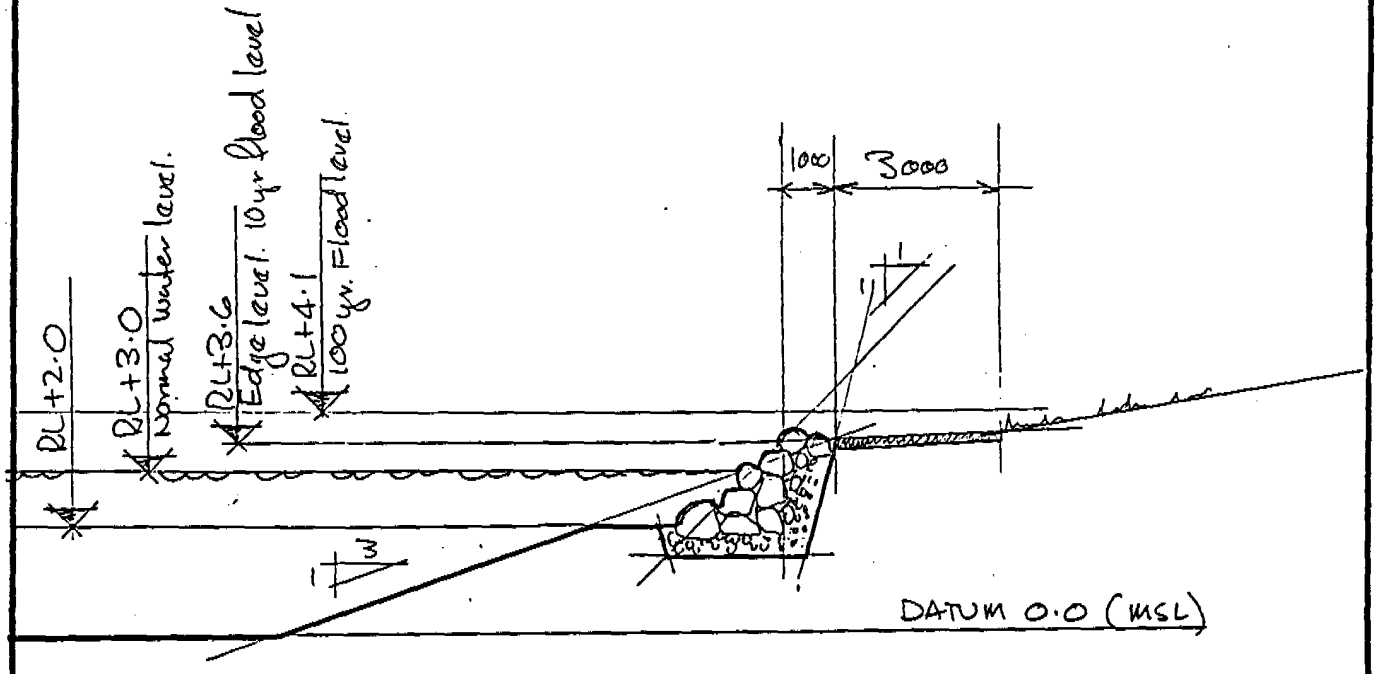
This lake will be located in the valley at the northern end of the development to the north of Gulf Harbour Drive. The surface area will be 18,000 m^2 with a Top Water Level (TWL) of RL 3.0 m. Excess surface water from the 62 ha Catchment 4, enclosing the existing Whangaparaoa Golf course, will flow into this lake from the East. Runoff from the 68 ha residential Catchment 3, will flow into the lake from the West. The lake will be part of the International Golf Course irrigation system and will be used as backup storage to replenish the Golf Course Lake storage as required. Residential properties to the North and West will overlook the lake which will be fully landscaped.



PLAN OF NORTHERN LAKE

SCALE 1:2000 (A4)

FIG.7



NORTHERN LAKE EDGE.

FIG. 8

Design flows and operating levels:

Stillwater level	RL 3.0	
10 year storm, Q_{10yr}^{40min} maximum water level	RL 3.5	
Inflow peak rate at 45 minutes	9.4 m^3/s	
Outflow peak rate at 45 minutes	4.8 m^3/s	surface spillway
Outflow peak rate at 62 minutes	7.3 m^3/s	surface spillway
100 year storm, Q_{100yr}^{40min} maximum water level	RL 3.7	
Inflow peak rate at 45 minutes	16.3 m^3/s	
Outflow peak rate at 45 minutes	10.5m^3/s	surface spillway
Outflow peak rate Q_{100yr}^{40min} at 60 minutes	13.5m^3/s	surface spillway

Outflow from the Northern Lake will be at the southern end, immediately upstream of the Three- barrel Culvert. Discharge will be over a weir and into an erosion protected transition channel, to the culvert. A gated drain pipe will allow stored water to be decanted through the culvert and into the Sports-Oval Pond for pumping to the Golf Course Lake.

4.3 Environmental impact.

The proposed lake and its associated wetlands will provide a more reliable body of fresh water for wild life, than exists at present. The discharge weir length will be proportioned so as to restrict the rise in water level during large storms to about 0.5 metres so as to keep the disturbance to nesting sites to a minimum. A Biological appraisal of the site was prepared by Bioresearches in March 1994 in support of the Application for Resource Consent (Subdivision). Section 6. of this report discussed the lake sites:

"Two lakes are proposed; one in the vicinity of the existing eastern access road and the second in a valley on the northern side of Gulf Harbour Drive.

The former would inundate an area consisting at present of grazed pasture and dredgings from the marina basin. The northern valley is currently dominated by rushes and grasses with gorse being common along the valley edges.

Neither area has any particular ecological value; the valley containing the dredgings would probably provide a suitable roosting area for wading birds during high tide periods, but numbers can be expected to be low, and within a short time weeds and scrub will alter markedly the open nature of this area to the extent that it will become unsuitable for roosting.

Creation of bodies of standing water would enhance the wildlife values of the area, attracting both waterfowl (ducks) and wading birds.

If the area is to be developed to encourage wildlife, consideration should be given to designing the lakes with relatively shallow marginal areas so that (a) rooted aquatic plants can become established and (b) feeding areas are provided for wading birds.

Consideration of measures designed to enhance the wildlife values of both lakes should be included in a separate appraisal once design detail;s have been finalised."

These recommendations have been noted and will be included into the lake edge

design details wherever possible.

4.4 Three-Barrel Culvert.

The existing culvert has 3 concrete pipe barrels, each 1350 mm diameter and 30 metres long. The culvert is 10 years old and was installed with the centre barrel outlet invert at RL +1.15 (MSL RL 0.0). Fall through the culvert is a nominal 100 mm. The two outer barrels were placed 200 mm higher than the centre barrel. The culvert was designed to pass the 50 year ARI storm with the tailwater level at High Water Spring Tide plus the peak flow back water on the main water course channel.

The proposed storage lakes will reduce and delay the storm peaks and allow the culvert to pass the 100 year ARI storm without the use of the secondary flow path across Gulf Harbour Drive.

4.5 Sports Oval Pond.

A short section of the existing drainage channel about 350 m long, located beside the proposed sports oval, will be deepened, widened slightly and landscaped to provide about 4000 m^2 of surface area. This pond will be weired at its outlet end at a level of RL 1.8.

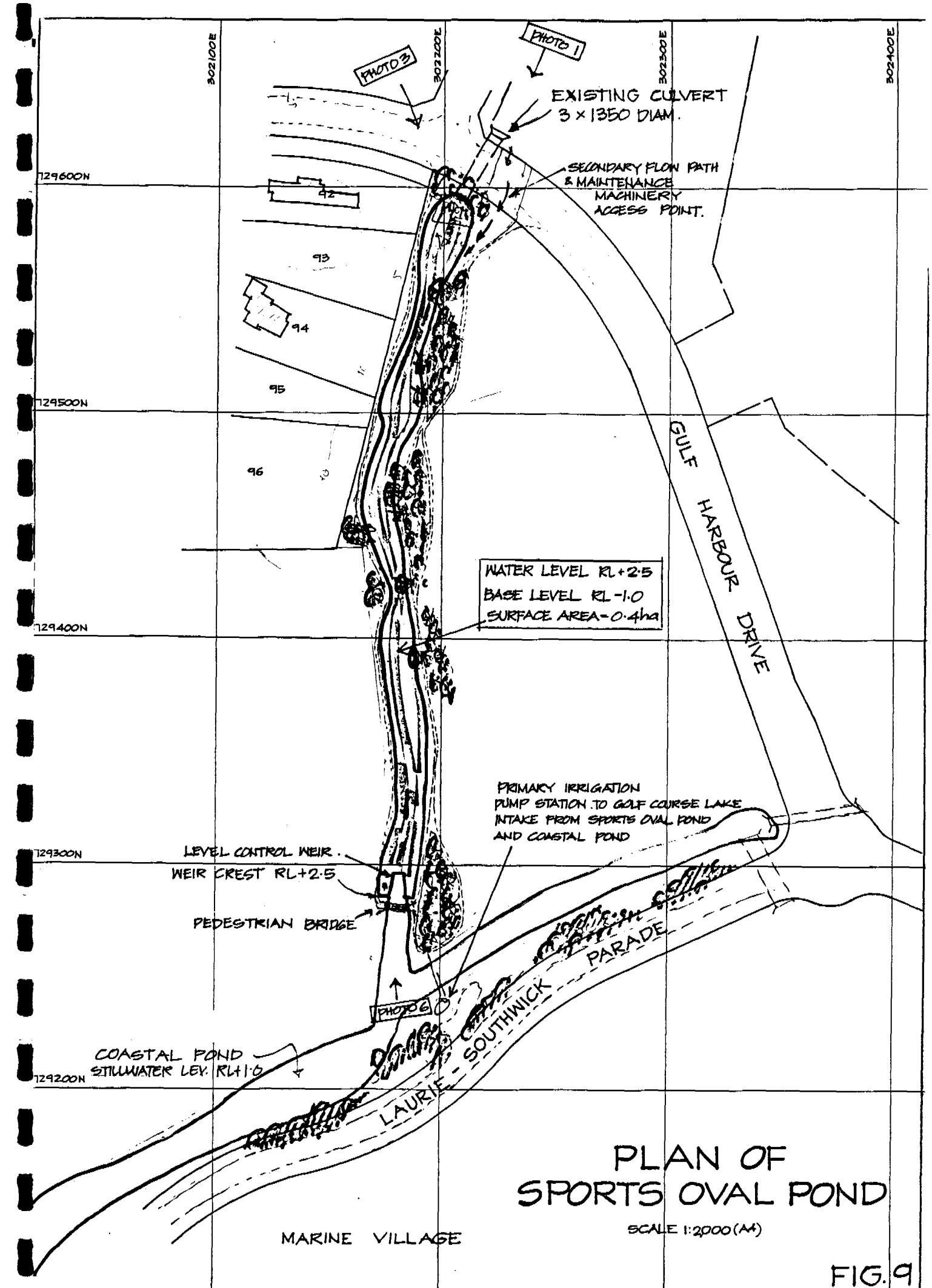
Design flows and operating levels:

Length	300 m
Area	4,000 m^2
Volume	11,000 m^3
Stillwater level	RL 1.8
10 year storm, Q_{10yr}^{40min} maximum water level	RL 2.2
Inflow peak rate at 58 minutes	7.7 m^3/s
Outflow peak rate at 58 minutes	7.7 m^3/s
100 year storm, Q_{100yr}^{40min} maximum water level	RL 2.45
Inflow peak rate at 50 minutes	14.5 m^3/s
Outflow peak rate at 50 minutes	14.5m^3/s

Outflow from this pond will be over a weir with a 20 metre crest length. The discharge will be directly into the Coastal Pond. A low level connection to a pump station will allow stored water to be pumped to the Golf Course Lake for irrigation.

4.6 Coastal pond.

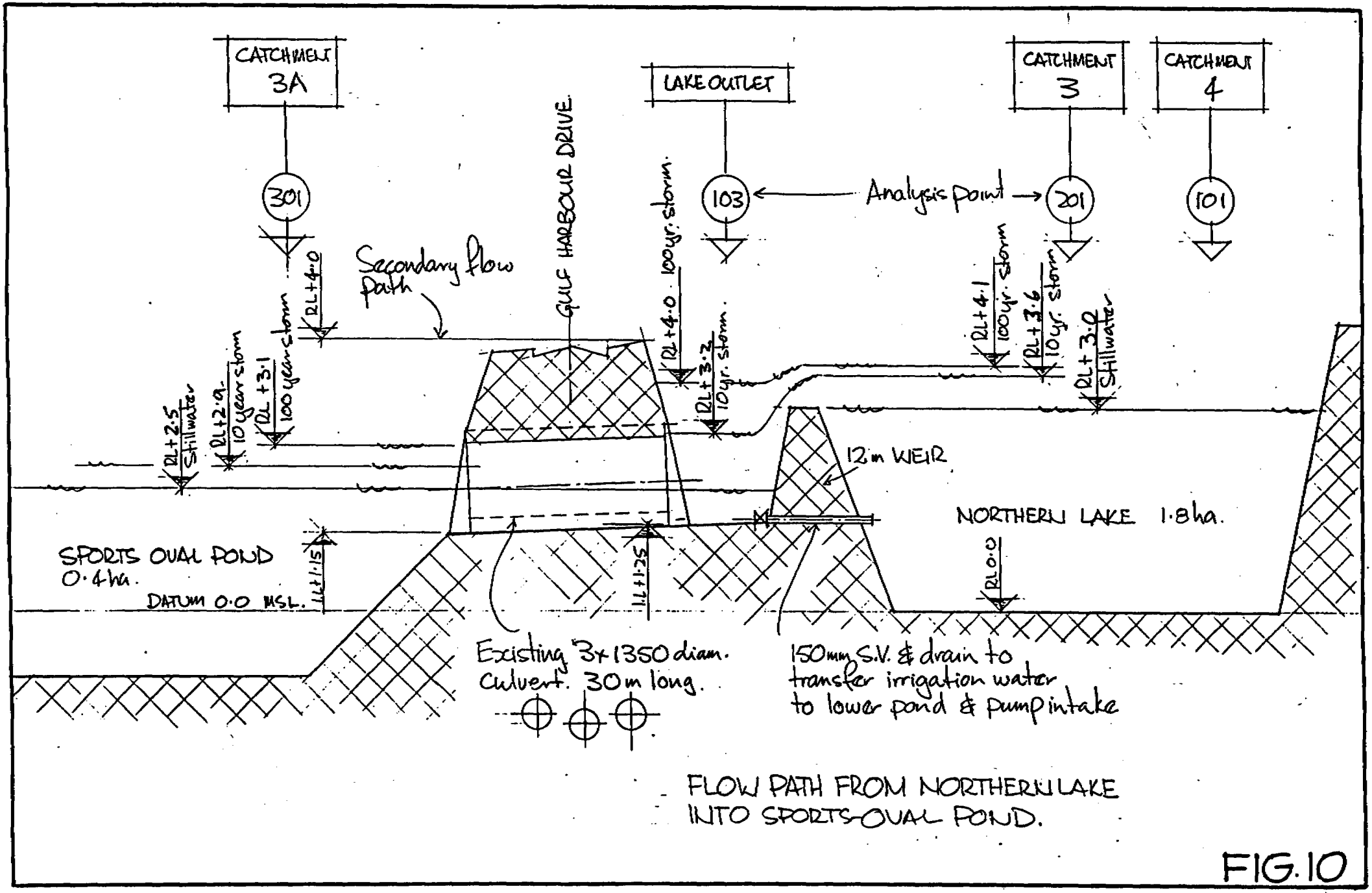
The existing main drainage channel from the coast to the sports oval is 1,400 m long, and flows beside Laurie Southwick Parade, from the sports oval to the sea. This drain was originally designed to divert stormwater clear of the marina. The proposal is to deepened and widened the drain at selected places to provide about 10,000 m^2 of surface area. This drain will be weired at its outlet end to provide a water level of RL+1.0 and a depth of 2 to 2.5 m. The drain will therefore be converted to an elongated, fresh water pond with a permanent water level of RL+1.0 at all times other than during drought or flood. A low level connection at the upper end of the pond to the primary irrigation pump station will allow stored water to be pumped to the Golf Course Lake for irrigation.



PLAN OF SPORTS OVAL POND

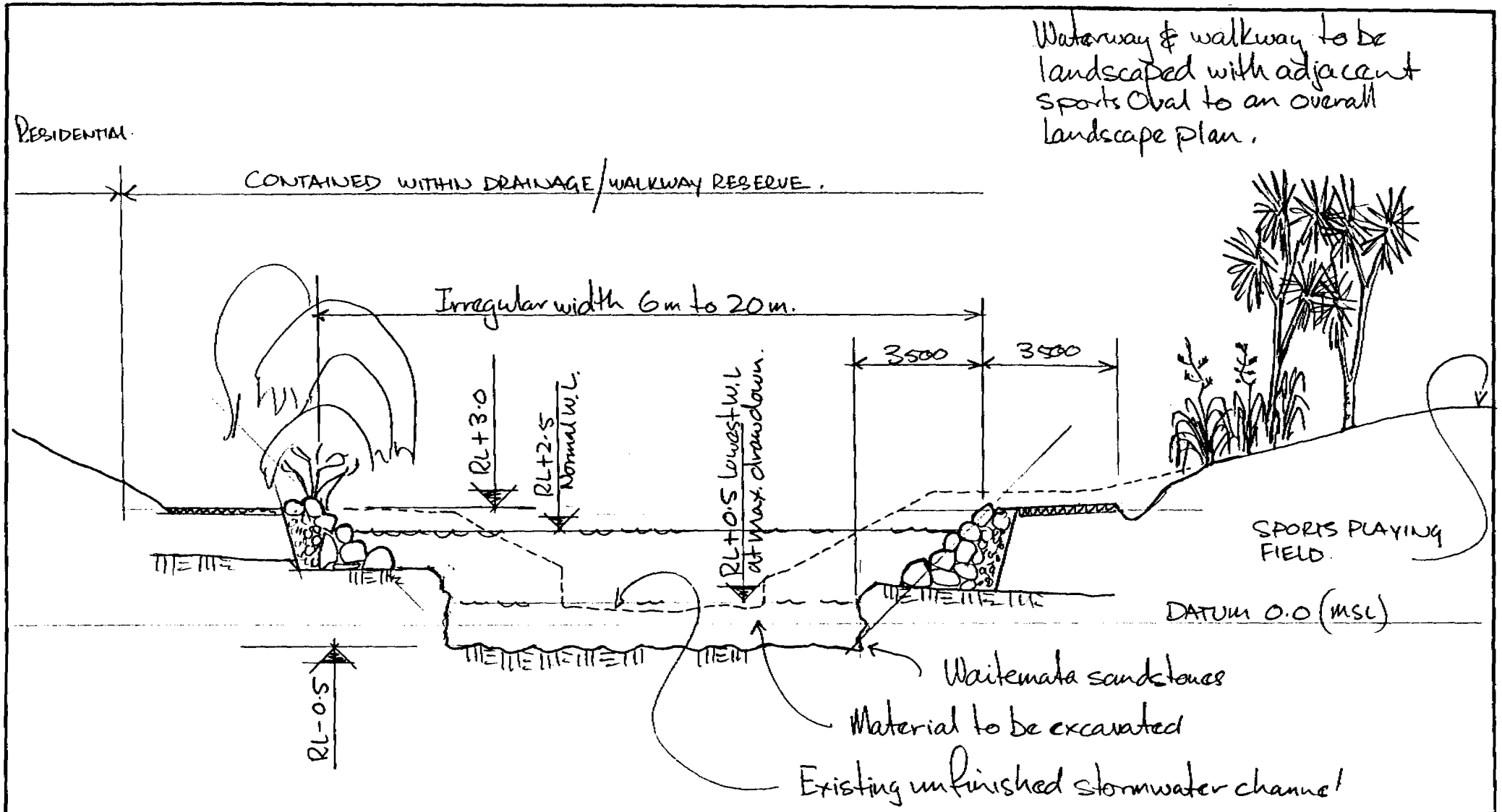
SCALE 1:2000 (A4)

FIG. 9



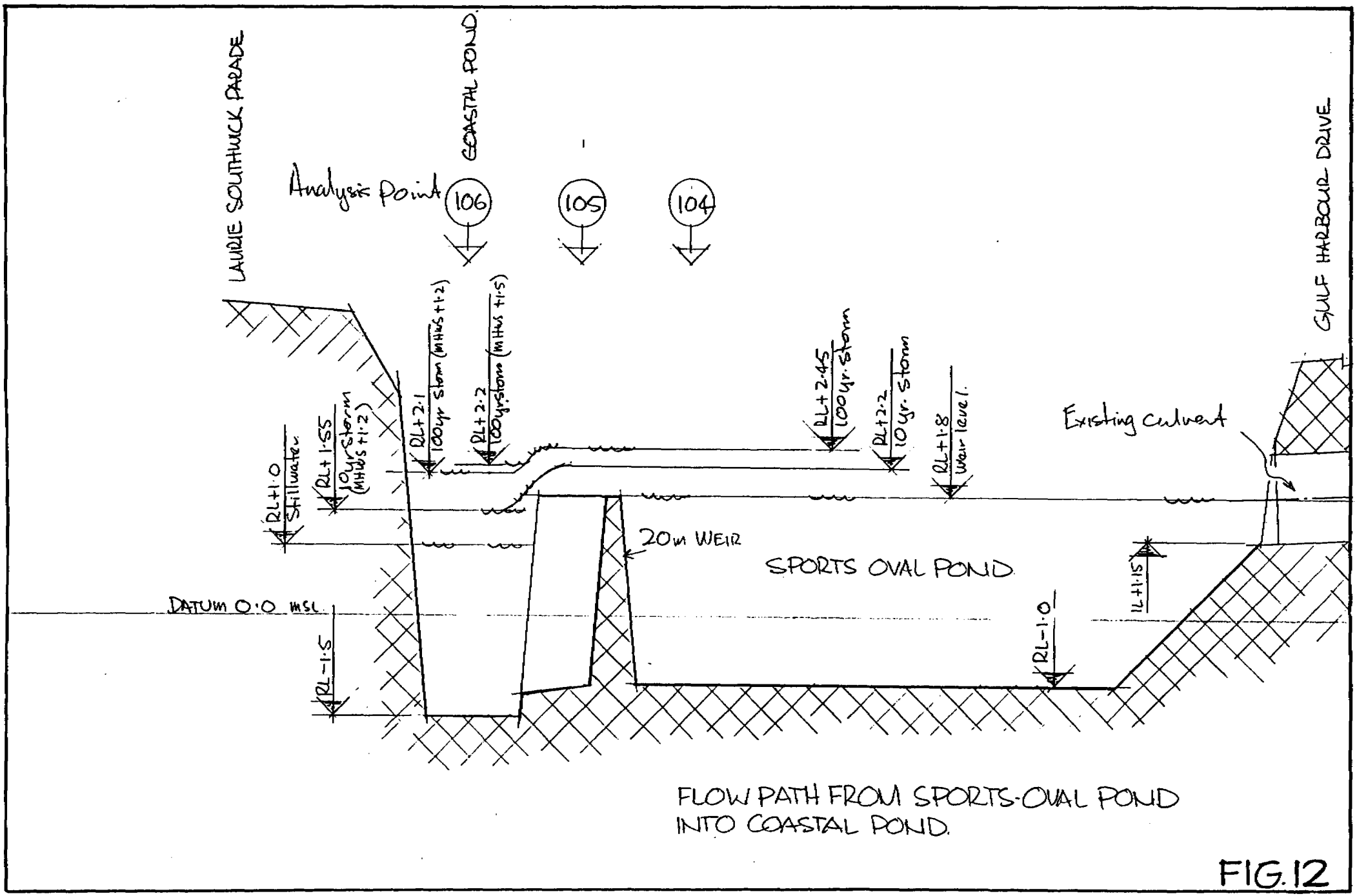
FLOW PATH FROM NORTHERN LAKE INTO SPORTS OVAL POND.

FIG. 10 A



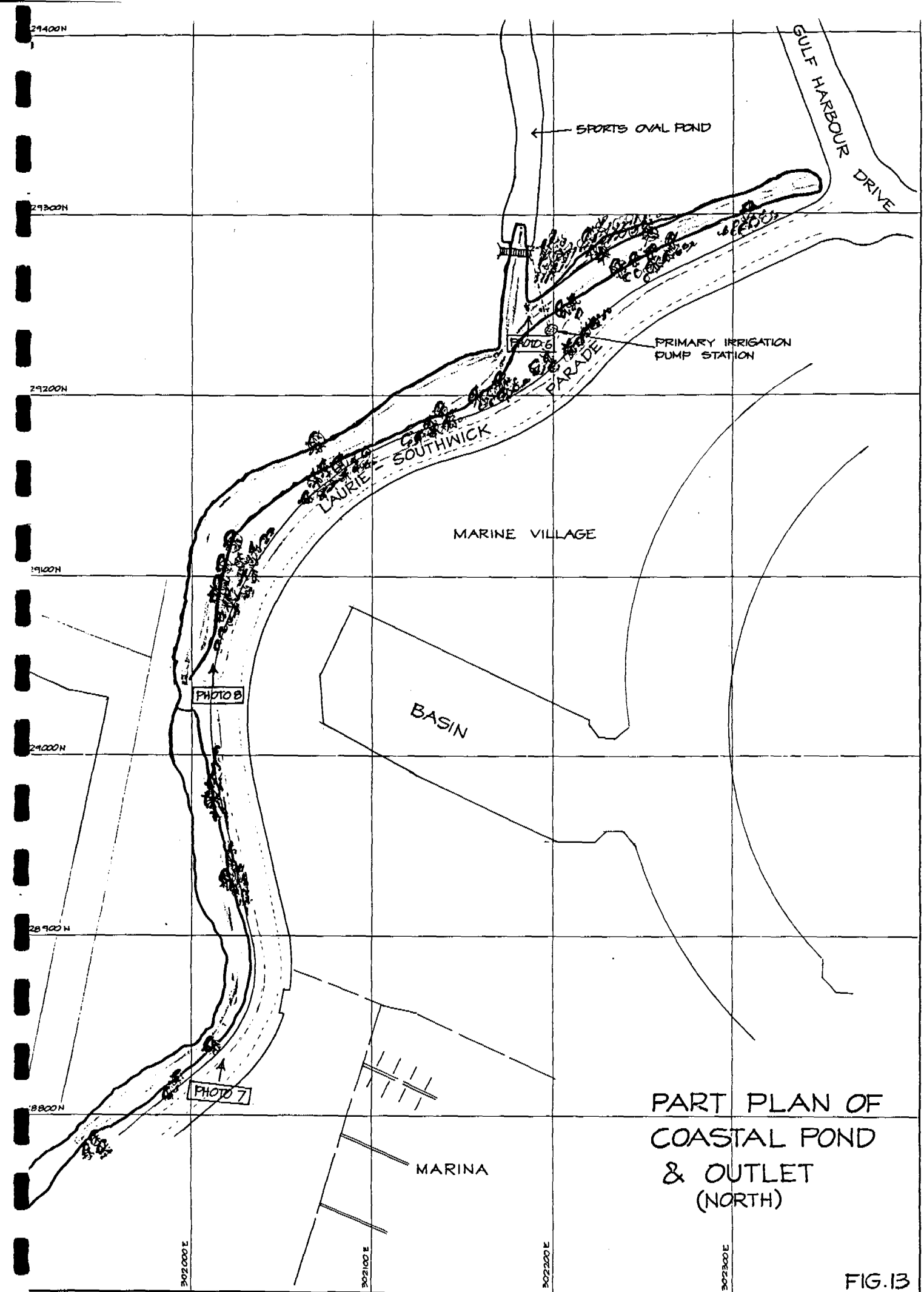
SPORTS-OVAL POND
TYPICAL CROSS SECTION.

FIG. 11



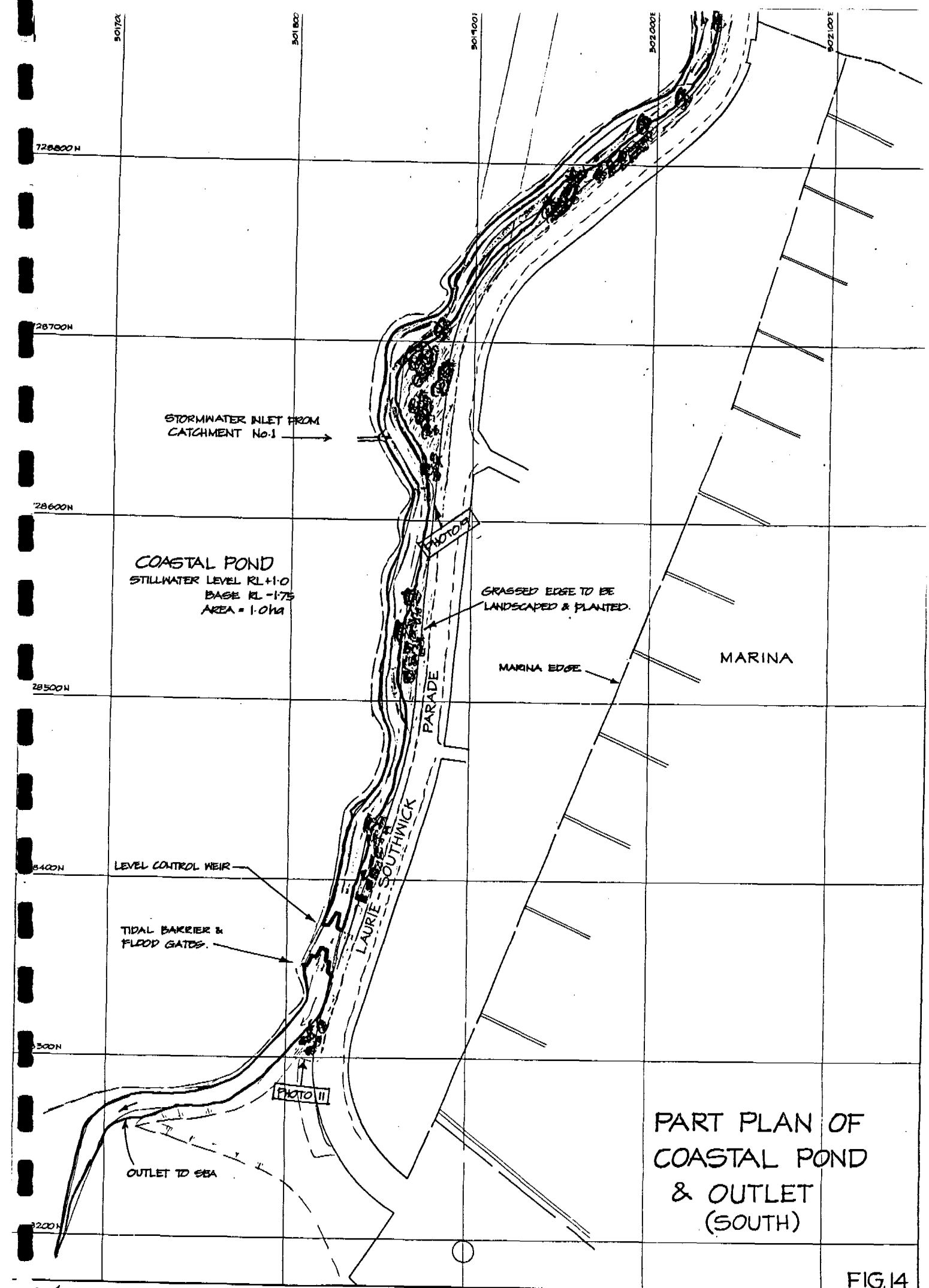
FLOW PATH FROM SPORTS-OVAL POND INTO COASTAL POND.

FIG. 12



PART PLAN OF COASTAL POND & OUTLET (NORTH)

FIG. 13



PART PLAN OF COASTAL POND & OUTLET (SOUTH)

FIG. 14

The pond will vary in width from 10 to 15 metres and will be grassed and landscaped along its full length. This pond, together with the Sports-Oval Pond will therefore provide 1.5 kilometres of public recreation water.

Design flows and operating levels:

Length	1,400 m
Area	10,000 m^2
Volume	22,000 m^3
Stillwater level	RL 1.0
10 year storm, Q_{10yr}^{40min} maximum water level	RL 1.55 at upper end of pond.
Inflow peak rate at 40 minutes	10.06 m^3/s
Outflow peak rate at 100 minutes	10.65 m^3/s
Velocities	0.2 to 0.5 m/s
100 year storm, Q_{100yr}^{40min} maximum water level	RL 2.2 at upper end of pond.
Inflow peak rate at 42 minutes	18.75 m^3/s
Outflow peak rate at 68 minutes	26.21 m^3/s
Velocities	0.3 to 0.6 m/s

4.7 Outfall Weir.

The outlet from the Coastal Pond will be over a weir built across the channel, from beside Laurie Southwick Parade, to the base of the sandstone coastal cliffs. The weir's 20 metre crest length will be set at RL+1.0 and this will set the base level for the various stormwater discharge points along the length of the pond. The discharge will be directly into the sea through tidal gates.

Design flows and operating levels:

Crest level	RL +1.0
Crest length	20 metres

Q_{100yr}^{40min} at 65 minutes from start of rainfall = 26.0 m^3/s at weir. Produces highest TWL at 505.

Q_{100yr}^{40min} at 70 minutes from start of rainfall = 26.2 m^3/s at weir. Highest peak at weir.

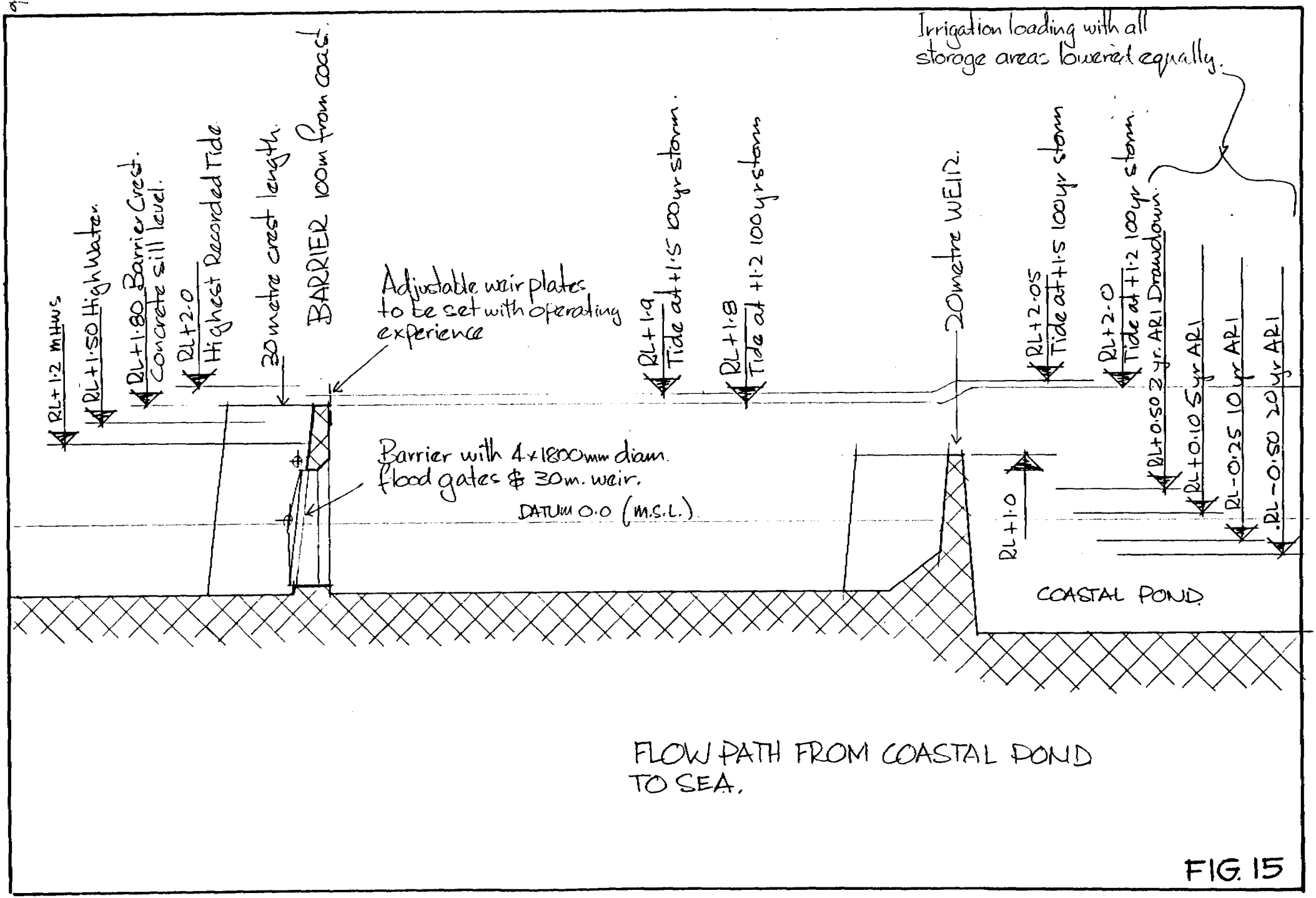
Q_{10yr}^{40min} at 55 minutes from start of rainfall = 4.2 m^3/s at weir. Produces highest TWL at 505.

Q_{10yr}^{40min} at 105 minutes from start of rainfall = 10.64 m^3/s at weir. Highest peak at weir.

4.8 Tidal Gates

The static water level in the Coastal Pond will be set at RL+1.0. It is proposed to build a tidal barrier immediately downstream from the pond outfall weir to prevent or limit the volume of tidal sea water entering the Coastal Pond. The present Mean High Water Springs sea level has been estimated at RL+1.21 and the highest tide, at RL+2.0 (Ref.3). Principal design levels are listed below.

Proposed minimum building floor levels	RL+3.5
Top of wall at marina	RL+2.4
Top of wall at marina village	RL+2.0
Estimated highest tide	RL+2.0 includes storm surge
Predicted highest astronomical tide	RL+1.5



FLOW PATH FROM COASTAL POND TO SEA.

FIG. 15

Mean High Water Springs (MHWS)	RL+1.2
Mean Sea Level (MSL)	RL 0.0 DOSLI Datum
Mean Low Water Springs (MLWS)	RL -1.1

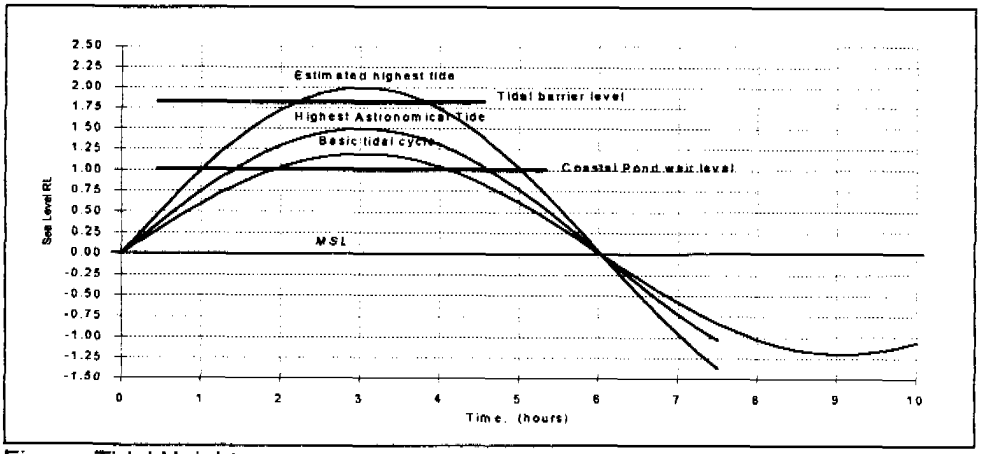


Figure Tidal Heights

The barrier design concept;

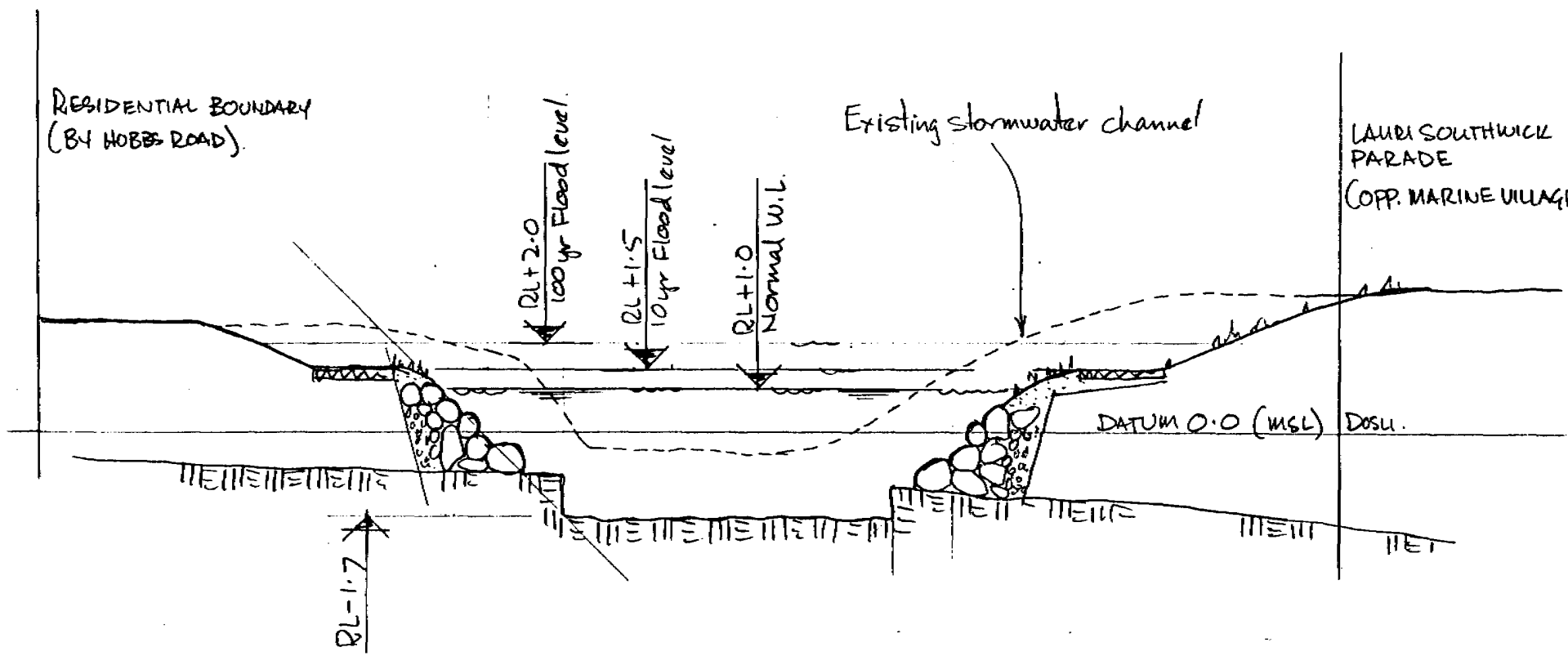
- must be high enough to prevent tidal flow into the pond;
- must allow frequent-storm flows to pass through the barrier gates when sea levels are lower than the storm-flow levels.
- The top of the barrier must be low enough and the gates big enough so as not to induce high water-levels in the upper end of the Coastal Pond.
- The gate capacity, combined with the barrier overflow must be large enough to handle the 100 year ARI storm flow without excessive backwater effects at the upper end of the Coastal Pond.

The proposed barrier will be sited 100 metres upstream from the coast and will provide a crest 30 metres long at an elevation of RL+1.8. Four conventional flood gates through the barrier will allow flood waters to pass.

Design flows and operating levels:

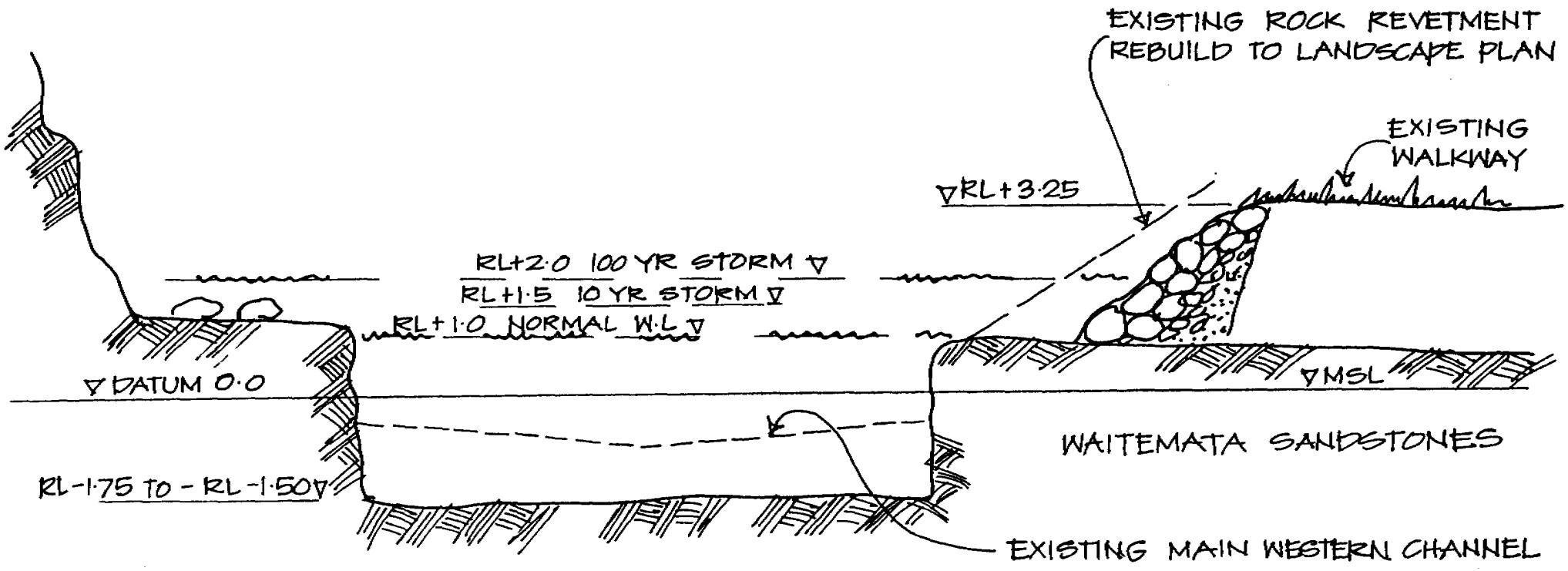
Barrier crest length	30 m
Barrier crest level	RL+1.8 m
Base level, approximately	RL -1.1 m
Flood gates	4 x 1.8 m diam.
Gate Invert level	RL -1.0 m
Q_{10yr}^{40min} Flow rate at 55 minutes	4.2 m^3/s
Barrier water level	RL+1.52 for sea level at RL=1.5.
Q_{10yr}^{40min} Flow peak rate at 100 minutes	10.65 m^3/s
Barrier water level	RL+1.75 for sea level at RL=1.5. RL+1.54 for sea level at RL=1.2
Q_{100yr}^{40min} Flow rate at 68 minutes	26.21 m^3/s
Barrier water level	RL+1.9 for sea level at RL=1.5. RL+1.79 for sea level at RL=1.2

The gates will be secured against interference with the provision of steel safety cages.



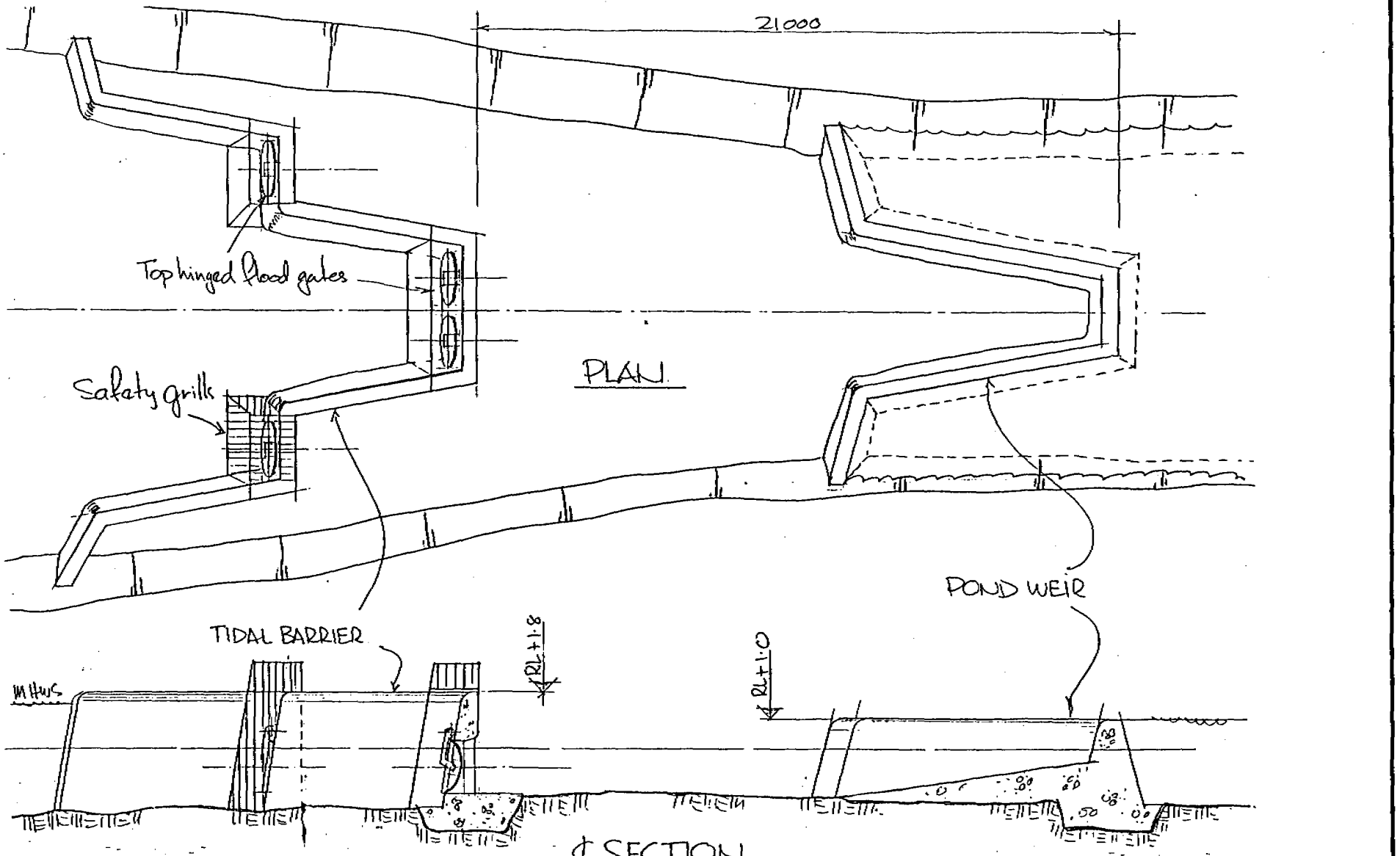
COASTAL POND. TYPICAL SECTION

FIG. 16



COASTAL POND
TYPICAL SECTION

FIG.17



COASTAL BARRIER

FIG.19

5.0 FLOODING.

5.1 Effect of historic land-use changes on flows.

The effects of residential and commercial development, on stormwater flows due to changes in the storage and interception capacity of the land surface are well known. The effect of increased impervious area include the increase in frequency of the higher flow rates and an increase in the total volume of stormwater runoff to the sea.

The original bush-clad valleys would have produced relatively modest runoff rates which would have increased as the valleys were converted to the present grasslands and farms. Conventional residential and commercial development would increase the rates further. The proposed pond and lake system will tend to restore the retention characteristics of the original land cover and lower the runoff rates.

Comparative estimates of past and future peak flows from the 371 ha catchment for historic land-uses and the proposed changes were prepared and are summarised below:

Original Forest and Bush; Q_{10yr}^{140min} = 7 m^3/s into bay, 180 minutes from storm start.

Farmland grass and scrub; Q_{10yr}^{120min} = 13 m^3/s into bay, 150 minutes from storm start.

Gulf Harbour without lakes and ponds; Q_{10yr}^{50min} = 23 m^3/s at coast, 55 minutes from storm start.

Gulf Harbour as proposed; Q_{10yr}^{40min} = 11 m^3/s at coast, 100 minutes from storm start.

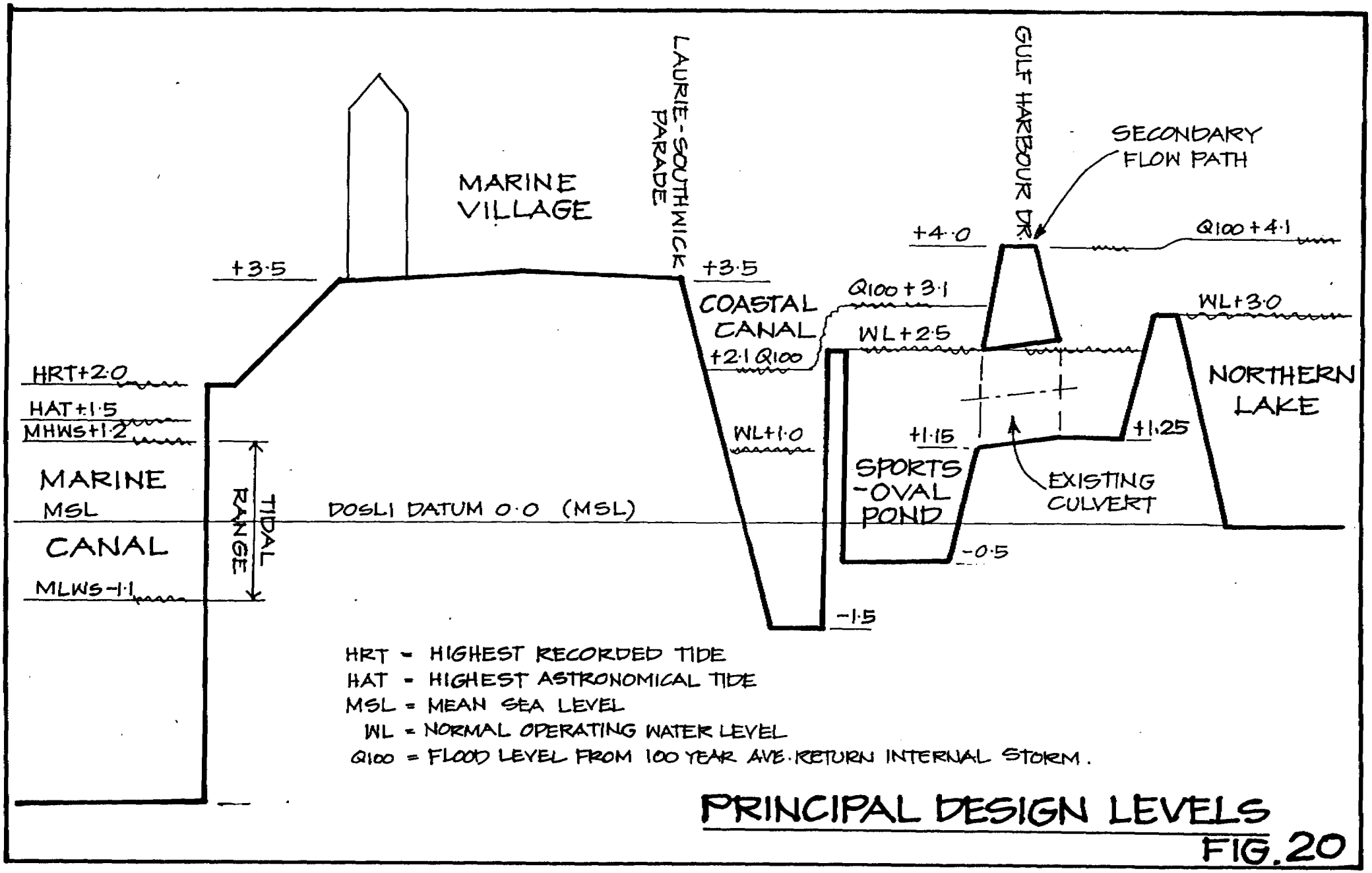
5.2 Sea Level Rise.

The effect of potential greenhouse-climate and sea-level changes on the Marine Canal levels have been considered and commented on in reference 3. Potential secondary flooding resulting from large storms coincident with increasing high tides was also considered for this report.

The magnitude and timing of sea-level rises is still being debated by the specialist community. However, increasing evidence suggests that greenhouse-climate change is now probable on a time-scale of decades. Recent ice-core evidence has linked historical changes in carbon dioxide and methane with planet warming and sea-level rises. Satellite monitoring of average ocean levels indicate a present 3 mm per year rise rate. This rate has doubled over the last 5 years.

The Intergovernmental Panel on Climate Change (IPCC'90,Ref. 7) suggests a "Business as usual" prediction of 300 mm average rise by year 2050 and 660 mm by year 2100.

An increase in the most frequent high tide levels (MHWS) will impact on the large infrequent storm-flows through the tidal barrier. The sensitivity of the 100 year design storm was checked against an increase in MHWS of from RL+1.2 to RL+1.5. this resulted in an increase in the water level at the top of the Coastal Pond of 0.01



PRINCIPAL DESIGN LEVELS

FIG. 20

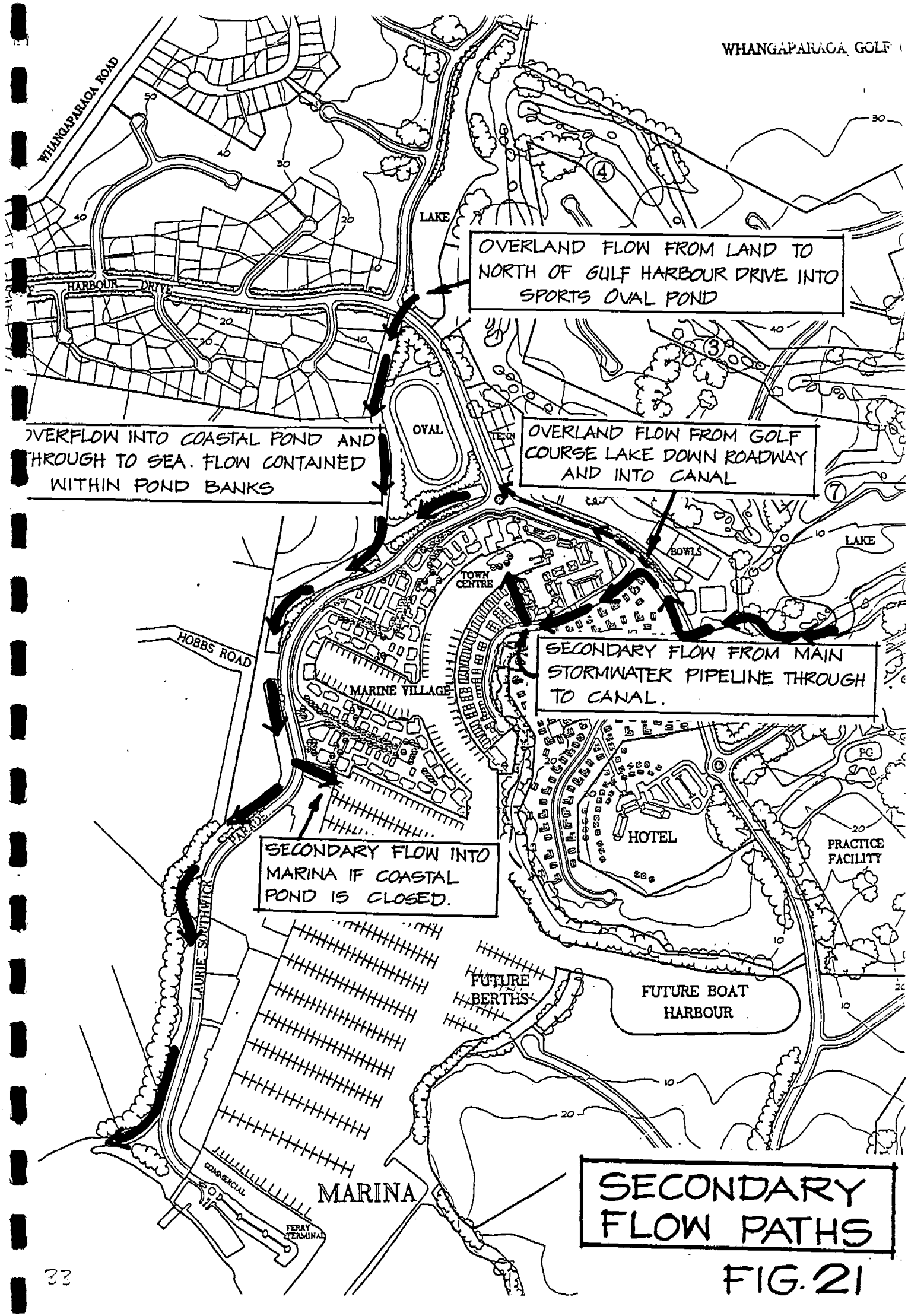

WHANGAPARAOA GOLF
WHANGAPARAOA ROAD
HARBOUR DRIVE
LAKE
OVERLAND FLOW FROM LAND TO NORTH OF GULF HARBOUR DRIVE INTO SPORTS OVAL POND
OVERFLOW INTO COASTAL POND AND THROUGH TO SEA. FLOW CONTAINED WITHIN POND BANKS
OVAL
TENN
OVERLAND FLOW FROM GOLF COURSE LAKE DOWN ROADWAY AND INTO CANAL
BOWLS
LAKE
TOWN CENTRE
HOBBS ROAD
MARINE VILLAGE
SECONDARY FLOW FROM MAIN STORMWATER PIPELINE THROUGH TO CANAL.
PG
HOTEL
PRACTICE FACILITY
SECONDARY FLOW INTO MARINA IF COASTAL POND IS CLOSED.
PARADE
LAURIE SOUTHWICK
FUTURE BERTHS
FUTURE BOAT HARBOUR
COMMERCIAL
FERRY TERMINAL
MARINA
SECONDARY FLOW PATHS

FIG. 21

metres. Flow levels upstream of this point were virtually unaffected.

Flow levels induced by Q_{100} with MHWS RL+1.5 and higher, can be accommodated within the proposed waterway banks. Secondary flow paths discharging overland through designed and designated areas will be able to cope with the future higher tide levels and storm flows.

6.0 SEDIMENTATION AND POLLUTION CONTROL.

Surface activity over the fully developed site will vary; from the managed grassland of the golf courses, through single unit residential development of varying densities, to multi-unit development and marina activities.

Potential pollution from surface runoff can be expected and will include:
- Soil erosion and excess fertiliser from the golf courses and landscaped areas;
- Vehicle waste from the roadways;
- Building material erosion products from the residential and commercial areas;
- Metallic wastes from the marina haulout areas.

The pond and lake system will have multiple functions.

- Recreation activities and visual enhancement for residential areas.
- Storage for the recycle of stormwater back onto the golf course as irrigation water.
- Attenuation of storm peak flow-rates to that approaching the original bush and forest values.
- Stilling pond action for the capture of sediments.
- Uptake of pollutants through the provision of shallow water planting areas.
- Enhancement of the area wildlife values by attracting ducks and wading birds.
- Provision of feeding and roosting areas for birdlife.

6.1 Sediment.

The stormwater network upstream from the ponds and lakes will carry larger runoff volumes and higher peak flows than from the present land use due to the residential development. Open channels will be used mainly within the golf course area and will be designed to convey the new flows, without channel erosion, into the storage areas. Stormwater from the residential areas will be piped; the reticulation designed to convey runoff directly to the storage areas. It is not intended to provide stormwater-quality control structures within these networks.

Sediment loads from these networks are not expected to increase above the present grassland levels. Open channels within the golf course will be closely supervised and maintained to prevent base erosion, while the shorter and denser turf of the fairways will provide less opportunity for surface soil loss. Annual average soil loss from the 64 ha catchment surrounding the golf course lake is estimate to be less than 60 tonnes per year from a mature catchment. Average accumulation within the Golf Course lake (at 1200 kg/m3), would then be at 2 mm per year without coarse-sediment trap allowance.

Increased impervious areas within the residential developments will expose less soil surface to erosion forces. The major catchment outlets that discharge into the two lakes will be provided with coarse-sediment traps at the lake edges. The minor outlets and outlets into the two ponds will not be provided with traps because of space restrictions. Periodic removal of accumulated silt from the ponds will be a relatively simple operation since both ponds can be drained. The total storage volume of the ponds and lakes, as a ratio of the total catchment area, (that is Vol./ area) is 6% which can be compared with the 1% to 2% recommended for earthwork constructions. It is therefore anticipated that a major fraction of sediments from the 371 ha catchment will be captured and retained within the system.

6.2 Pollution.

The proposed increase in the impervious areas is expected to raise the level of pollutants in the stormwater runoff. It is not possible to quantify the total pollution levels other than to assume that they will follow a pattern similar to other developments. The effect of the increased impervious areas alone can be estimated from;

Annual rainfall, 1.2 metres over a 371 ha catchment.

Annual runoff from the whole catchment; at;	30% before development,	$= 1.33 \times 10^6$ m^3
would rise to;	50% after development.	$= 2.23 \times 10^6$ m^3

Assuming a pollutant flow-weighted concentration of, say, phosphorus at 0.2 g/m^3, the increase due to washing the impervious surfaces would be from 260 kg/year before development to 446 kg/year after development.

The base supply of potential pollutants into the area from increased traffic, residential activity and fertiliser application practices will also obviously change the total pollution load.

The hardstanding area set aside for boat maintenance operations on the existing marina will be reorganised and confined to a relatively small zone. The runoff and washings from this area will be contained and passed through a sand filter before discharging to the Coastal Pond.

The primary method of controlling the discharge of pollution to the sea will be through sedimentation within the ponds and lakes. The two lakes will intercept runoff from 52% (194 ha) of the total catchment area. Runoff from the remaining 177 ha will be intercepted by the Sports-Oval Pond and the Coastal Pond.

The processes affecting sediment removal by a pond are complex and include;

- Storm intensity and sediment yield;
- Soil type and particle size distribution;
- Inflow hydrograph and inflow velocity;
- Pond capacity, silt storage and shape;
- Sediment detention and sink velocity;
- Sediment movement through the pond;
- Outlet location and outflow velocity.

The evaluation of all these factors to produce a sediment Trap Efficiency for a particular pond or lake is not possible. However, the proposed storage basins are relative large and it is anticipated that they will be very effective in capturing sediment. An empirical formula, based on the work of Brune (1953) can be used to estimate the relative effectiveness of each of the storage basins. This formula is a simple fitted curve through data scatter on actual pond performances.

The most sensitive indicator was found to be the ratio (Pond Volume/ Annual Inflow = C/I).

Trap Efficiency (TE) was estimated from: $TE = \frac{C/I}{0.012 + 1.02C/I}$

Pond	Annual inflow I.	Pond volume C.	C/I	Efficiency
Golf Course lake	323,000 m^3	80,000 m3	0.248	94%
Northern lake	687,000	36,000	0.052	80%
Sports-Oval Pond	805,000	7,000	0.009	42%
Coastal Pond	2,192,000	25,000	0.011	52%

6.3 Littoral Zone.

Both lakes will have littoral zones comprising about 20% of their surface. These zones will be in 2 sections. The top sections at the inlet points from the catchments in which the normal water depth will be between 0.3 and 0.6 metres which will contain emergent aquatic plants, and the second zone with a depth of between 0.6 and 1.0 metres in which submerged plants are expected to thrive. Removal of excess nutrients and some toxic components from the incoming sediments are expected to be assisted by biological activity within the planted zone.

6.4 Nutrient enrichment.

The lake waters will be monitored for algal population changes once development has been completed and plant cover established. This will provide early detection of increasing algae numbers and give notice of potential operational problems.
Fertiliser mixing operations will be contained and clean-up washings discharged onto the golf course. Washing of machinery, rubbish bins, carts and vehicles will be controlled and wash water disposed of over soil. Lake maintenance will include monitoring, controlling and removing aquatic weed growth. Intensive fertilisation of greens and fairways monitored and minimised.

6.5 Temperature.

Impervious areas will be increased by the residential development and roading, to about 23% of the total area. A typical storm will wash the heat from the impervious areas into the lakes. An estimate of the magnitude of the rise in temperature, assuming complete mixing, can be made from:

$$T_w = \left[\frac{A * f * Ta + Q * T_i}{A * f + Q}\right]$$

where Tw = Lake temperature

A = Lake area

f = 0.5

Ta = Ambient temperature = 20°C
Ti = inflow ave. temperature
Q = inflow rate

Golf Course lake $Q_{10yr}^{40min} = 12{,}000\ m^3/storm$

Assuming a hot day, with the impervious surfaces at 40°C and the grassed surfaces at 25°C, the Golf Course lake temperature would rise from 20°C to 23°C and the Northern lake temperature, from 20°C to 26°C. This could be stressful to aquatic life, however it is doubtful if complete mixing would occur within the relatively short period of the storm. It is more likely that the higher temperatures would stratify at the surface, allowing heat dissipation to the atmosphere or through storm discharge. The Northern lake will be narrow and riparian planting of shade trees would assist the heat loss.

Temperatures in the ponds and lakes will be raised by the heat from the proposed impervious surfaces. High temperatures are not expected to be sustained throughout the water volumes and no existing aquatic life is expected to be displaced.

6.6 Recreational use of lower ponds and lake.

The Northern Lake will be about 360 metres long and 40 metres wide. These dimensions would make it suitable for model boat sailing or canoeing.

The modified main waterway from the Marina up to Gulf Harbour Drive and at present is in the form of a wide, tidal canal. It is frequently used for canoeing and small-boat play. With the provision of a near permanent water level the opportunity for this form of recreation will be increased. Landscaping and edge treatment should provide for launching and retrieval of this type of craft.

7.0 PUBLIC ACCESS TO WATERWAYS.

The storage ponds and lakes will introduce large bodies of fresh water, into public and residential environments. The ponds will have relatively stable water levels during most of the year and will provide unique recreational features.

It is intended to encourage public use of all the storage features except the Golf Course Lake which will be surrounded by fairways and greens.

7.1 Landscaping.

The Coastal Pond will meander parallel to Laurie Soputhwick Parade. The land between the carriageway and the edge of the pond will vary in width to accommodate the freeform pond shape. Landscaping and grassing of this strip will be extended from the present features to comply with an overall concept plan. Access to the water's edge will be encouraged with the formation of a walking or jogging level platform along the full length of the edge. The level of the edge will be kept low and close to the normal water level (RL+1.0). In times of heavy rain the freeboard to the path could, in parts, be close to zero.

PHOTO 13 **LAKE AND POND EDGING** 12 Feb 95 (Western Springs).
Loose rock edging and wall at 1:1 maximum slope for deeper water providing easy egress. Soil and planting rolled into rocks.

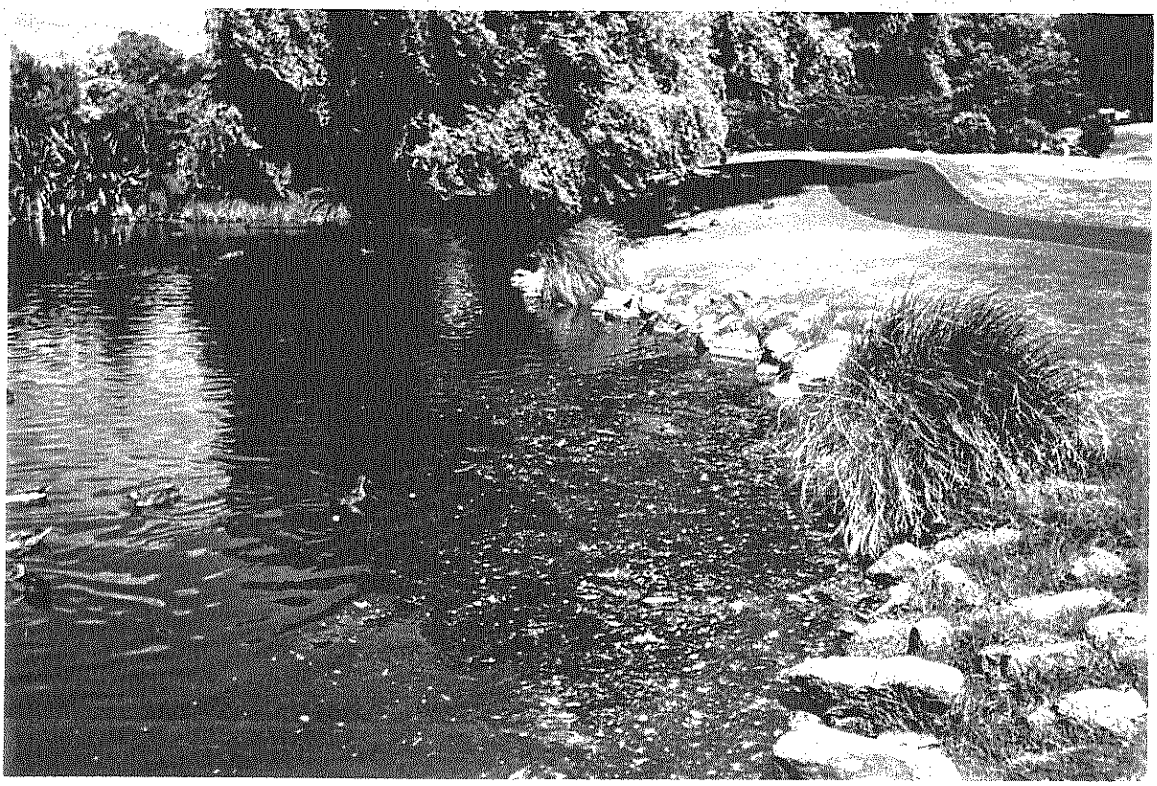


PHOTO 14 **LAKE AND POND EDGING** 12 Feb 95 (Western Springs).
Grouted rock vertical face at selected shallow areas such as some wetland areas not assessed by the Public.

The Sports-Oval Pond will be remote from vehicular traffic but will be provided with public access on both sides. The access will be in the form of a level platform at or near the pond edge. The present drain has parallel sides. It is proposed to vary the width of the pond to produce a series of pools interconnected with narrower sections. This will avoid as much as possible, the drain look. Tree and shrubs will be planted along each side of the pond.

The Northern Lake will form part of the Golf Course and will be in Golf Course ownership. The strip of land along the western shore between the roadway carriageway and the lake edge will be grassed to the lake edge and landscaped. A pedestrial footpath will be placed in sympathy planting and the water.

7.2 Ownership.

The southern end of the Coastal Pond, is vested in the Rodney District Council as a Drainage Reserve (Lot 11 1.09 ha DP127001). This lot extends from the sea, northward to the old high tide mark.

The northern end of the Coastal Pond and the Sports-Oval Pond are to be vested in the Rodney District Council as a Drainage Reserve. A copy of the Resource Consent (Subdivision) Ref. R18584 (Rodney District Council) is appended showing the proposed plan of subdivision of the drainage and recreation reserves.

The Sports-Oval Pond and Coastal Pond are to be vested in Council ownership with public access.

The Golf Course Lake and the Northern Lake are in Golf Course ownership with public access to the Northern Lake from the western shoreline.

8.0 ANALYSIS METHOD.

8.1 Rainfall.

Each catchment's response to rainfall bursts with a 10 year and 100 year Average Recurrence Interval was calculated and the hydrographs combined at selected locations. Rodney District Council stormwater-design rainfall depths were used. Critical points such as the lake spillways were also checked for the flood from a Probable Maximum Precipitation.

10 year ARI RDC DESIGN GRAPH		ave.	100 year ARI RDC DESIGN GRAPH		ave.	PMP	112T^0.55	ave.
Duration	Depth mm	mm/hr	Duration	Depth mm	mm/hr	Duration	Depth mm	mm/hr
10	18	110	10	28	168	10	42	251
20	28	84	20	43	128	20	61	184
30	34	68	30	51	102	30	76	153
40	38	57	40	57	85	40	90	134
50	41	49	50	61	73	50	101	122
60	43	43	60	63	63	60	112	112
120	54	27	120	80	40	120	164	82
360	81	13.5	360	111	18.5	360	300	50

8.2 Rainfall Temporal Patterns.

The rainfall intensity was assumed to vary from the average throughout the duration of the burst. The pattern adopted was produced and described by the Auckland City Council (ACC 1988) and was basically triangular in form. Peak intensity occurred at 2/3 of the duration with a maximum intensity of twice the average. This delay with increasing intensity produced hydrograph peaks later than those produced by uniform rainfall patterns.

8.3 Losses.

Runoff rates from smaller catchments on clay or wet soils are strongly influenced by the temporary storage characteristics of the catchment surface. Delayed losses such as, evaporation and the effect of infiltration and interflow will be small enough to be negligible over the time spans of interest for this study. It is basically only the quickflow component of the total runoff that is of interest. Abstractions from the rainfall will reappear later in the form of a delayed (by hours) discharge from surface storage and ponding.

Losses were taken as 2 mm surface storage from the impervious fraction (IMP) and 10 mm depression storage from the pervious fraction (1-IMP). A volumetric runoff coefficient (Cv), was applied to the pervious areas of 62%, Cv = quickflow / (rain - depression storage).

The Quickflow runoff depth R mm, from a total rainfall depth of P mm was estimated from::

R = IMP(P - 2) + (1-IMP) (P-10) Cv.

The distribution of losses throughout the storm was based on a Variable Proportional loss model (van den Berg, 1976). The loss model has the form:

$Zj = Ze + (Zo - Ze)e^{(-frj)}$ where: Zj = loss fraction at time interval j
Zo = " " " start of storm = 2(1-R/P) max 1.0
Ze = " " " *end of storm* = .5(1-R/P)
rj = rainfall fraction up to time j
f = constant to balance to total R

Surface storage volumes are proportional to the rainfall depth which varies with time. The incremental loss fraction is therefore a function of the total rainfall depth up to the time increment.

This loss distribution formula is similar to the Horton infiltration formula which distributes losses as a function of infiltration time and is therefore unsuitable for small catchments dominated by surface storage effects.

This model does not require field measurement of infiltration parameters and distributes a proportional loss to each rainfall increment, at a rate decreasing through the event.

8.4 Impervious fraction estimates.

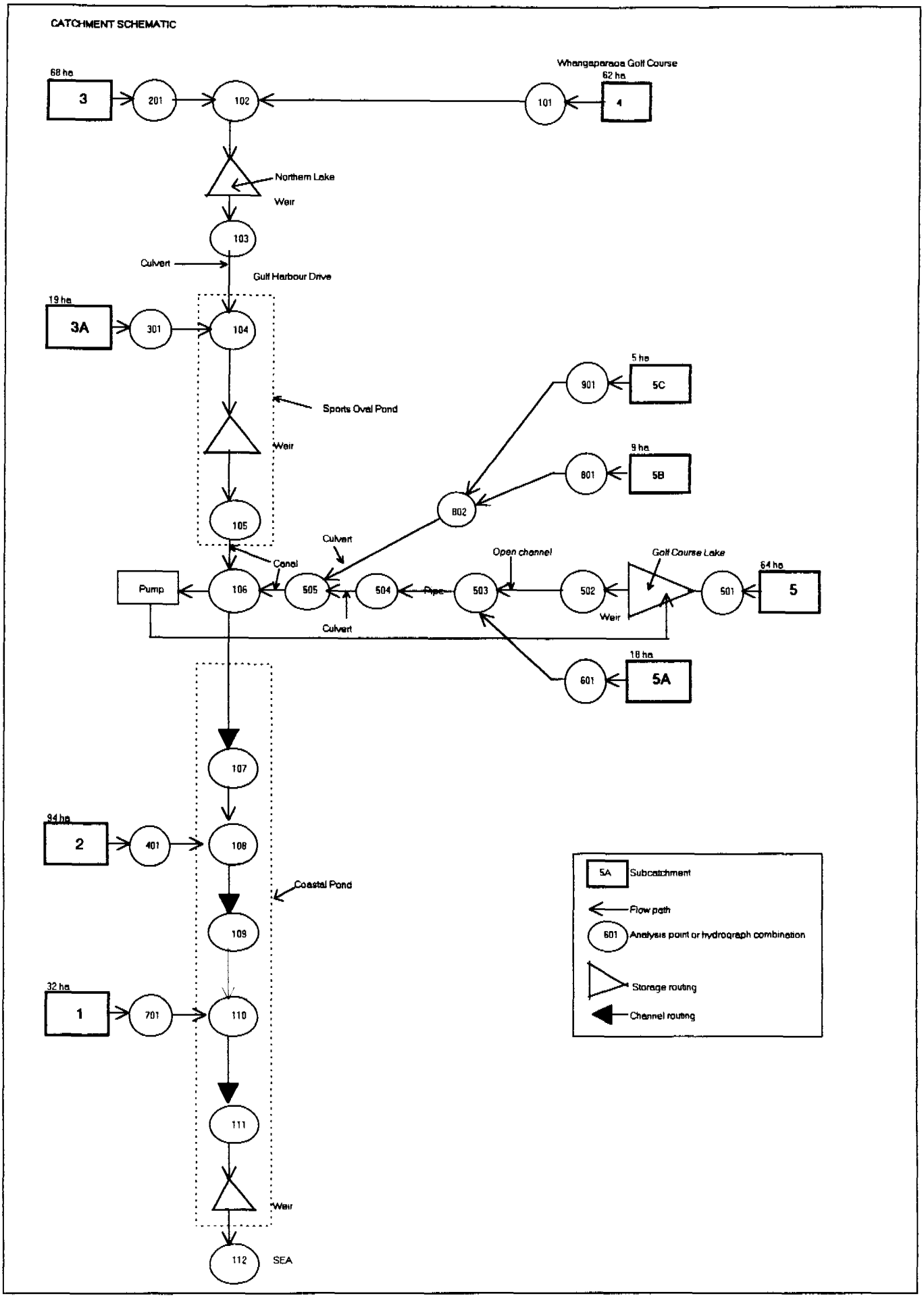
Large Lot development. A sample area of 32.2 ha contained 96 lots at 400 m2 IMP = 38,400 m2
Through Road = 9,600 m2
Cul-de-sacs = 4,480 m2
52,480 m2

Large Lot IMP = 52480 / 232,000 = 0.226

8.5 Catchment descriptions.

Subcatchment >>	**1**	**2**	**3**	**3A**	**4**	**5**	**5A**	**5B**	**5C**
Area ha		32	94	68	19	62	64	18	9
5									
Channel slope m/m	0.112	0.040	0.057	0.119	0.028	0.040	0.020		
Channel length m	550	1200	600	800	1200	650	600		
Impervious fraction IMP	0.580	0..300	0.310	0.310	0.079	0.177	0.128	0.100	0.240
Time of concentration mins.	20	20	20	20	40	20	10	10	8
Outlet node.	701	401	201	301	101	501	601	801	901

41


CATCHMENT SCHEMATIC
68 ha
3
201
102
Whangaparaoa Golf Course
62 ha
101
4
Northern Lake
Weir
103
Culvert
Gulf Harbour Drive
19 ha
3A
301
104
Sports Oval Pond
Weir
105
5 ha
901
5C
9 ha
801
5B
802
Culvert
Canal
Open channel
Golf Course Lake
64 ha
Pump
106
505
504
Pipe
503
502
501
5
Weir
Culvert
18 ha
601
5A
107
94 ha
2
401
108
Coastal Pond
109
32 ha
1
701
110
111
Weir
112
SEA
5A Subcatchment
Flow path
601 Analysis point or hydrograph combination
Storage routing
Channel routing

9.0 REFERENCES.

1. ACC 1988: Model Rainstorms for Stormwater Run-off Analysis. Auckland City Council.

2. ARC 1992: Guidelines for the Estimation of Flood Flows in the Auckland Region. Technical Publication No. 19.

3. BCHF 1994: Gulf Harbour Marine Village. Report on Marine Aspects of the Development. Prepared for Gulf Harbour Development Limited by Beca Carter Hollings and Ferner Ltd.

4. BIORESEARCHES 1994: Biological Appraisal of Specific Areas. Prepared by Bioresearches for Gulf Harbour Management Ltd.

5. ARC 1992: Stormwater Treatment Devices. Design Guideline Manual.

6. BRUNE,G. M. 1953. Trap efficiency of reservoirs. Trans.Am.Geophys.Union, vol.34 ,No.3, pp407--418,

7. INTERNATIONAL PANEL ON CLIMATE CHANGE 1990: Strategies for adaption to sea level rise. Report of the Coastal Zone Management Subgroup. 122p

APPENDIX 1

Listed below are the Title Certificates to the land affected by these proposal and the existing consents.

Title Certificates.

Certificate of Title **96B / 495** 17 Feb. 1995 Copy attached 5 pages.
Certificate of Title **63C / 564** 17 Feb. 1995 Copy attached 3 pages.

Existing Consents

The activities involved in these Applications are either permitted or controlled uses and are in conformity with the Golf Harbour Plan. This Plan is now part of the Rodney District Scheme since Plan-Change 26.

Existing consents related to this proposal.

1 Overall Development Plan (Subdivision) **R18802**. Includes the Golf Course. Copy attached. 3 pages.

2 Drainage Reserves Plan RDC (Subdivision) **R18584** Consent. Copy attached, plus site plan.

3 Rodney District Council Building Consent. **ABA 942121** (Golf Course Lake Embankment) Copy attached. 5 pages.

4 **ARC 14/10/Sc9845** Sept 1994 (Soil Conservation Consent). This covers the main drain, embankment and surroundings. Copy attached. 6 pages.

5 ARA Water Right **No.854605** Main Western Drain. Copy attached. 3 pages.
ARA Water Right **No.854606** Main Eastern Drain

References
Prior C/T 61B/182 & 90D/694

Transfer No.
N/C. Order No. C.634695.3

Land and Deeds 69

96B/495

CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT

This Certificate dated the 29th day of July one thousand nine hundred and ninety four under the seal of the District Land Registrar of the Land Registration District of NORTH AUCKLAND

WITNESSETH that GULF HARBOUR DEVELOPMENT LIMITED at Auckland

is seised of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial underwritten or endorsed hereon) in the land hereinafter described, delineated with bold black lines on the plan hereon, be the several admeasurements a little more or less, that is to say: ~~All that parcel of land containing~~ All those parcels of land together containing 254.6591 hectares more or less being part Lot 1 Deposited Plan 57805 part Lot 2 Deposited Plan 111280 and Lot 2 Deposited Plan 160264 and being parts Allotments 2,3,4,6,221 and 237 Parish of Waiwera

DISTRICT LAND REGISTRAR NORTH AUCKLAND NEW ZEALAND

Assistant Land Registrar

Interests at date of issue:

Subject to Section 241 (2) and Section 242(1) &(2) Resource Management Act 1991

Subject to a right of way over part herein marked A,C and D on Plans 152517,152519 and 152520 appurtenant to Lot 1 Plan 152517 (CT 91A/436) created by Transfer C.492489.18

Subject to a right of way over part herein marked A on Plan 155839 appurtenant to Lot 1 Plan 152517 created by Transfer C.513398.21

The above easement created by Transfer C.492489.18 is subject to Section 243 (a) Resource Management Act 1991

B.346466.1 CAVEAT BY THE RODNEY COUNTY COUNCIL - 6.11.1984 at 9.26 o'c (affects part)

A.L.R.

B.346468.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 - 6.11.1984 at 9.26 o'c (affects part)

B.823823.2 Bond under Part XX Local Government Act 1974 - 6.5.1988 at 1.37 o'c (affects part)

B.823823.3 Bond under Part XX Local Government Act 1974 - 6.5.1988 at 1.37 o'c (affects part)

B.971906.1 Compensation Certificate by the Minister of Lands - 28.3.1989 at 12.19 o'c (affects part) Discharged 15 NOV 1994 A L R

C.095938.1 Encumbrance to The Rodney County Council - 30.1.1990 at 2.51 o'c (affects part)

C.492489.19 Deed of covenant - 24.6.1993 at 2.56 o'c (affects part)

A.L.R.

C.513398.27 Encumbrance to The Rodney District Council - 2.9.1993 at 2.59 o'c (affects part)

C.513398.30 Bond under Part XX Local Government Act 1974 - 2.9.1993 at 2.59 o'c (affects part)

Measurements are Metric

- over -

96B/495

46

CERTIFICATE OF TITLE No. /

C.513398.31 Mortgage to ANZ Banking Group (New Zealand) Limited - 2.9.1993 at 2.59 o'c
(affects part)

A.L.R.

C.680237.1 Certificate of Conditions pursuant to Section 224(c) Resource Management Act 1991 (affects Plan 161880) -15.11.1994 at 10.21 o'c

A.L.R.

C.680237.2 Certificate of Conditions pursuant to Section 224(c) Resource Management Act 1991 (affects Plan 161881 -15.11.1994 at 10.21 o'c

A.L.R.

C.680237.3 Certificate of Conditions pursuant to Section 224(c) Resource Management Act 1991 (affects Plan 161881) -15.11.1994 at 10.21 o'c

A.L.R.

C.680237.4 Resolution pursuant to Section 321(3)(c) Local Government Act 1974 (affects Plan 161880) -15.11.1994 at 10.21 o'c

A.L.R.

C.680237.5 Withdrawal of Caveat B.346466.1 as to the land on Plans 161880, 161881 and 161882 -15.11.1994 at 10.21 o'c

A.L.R.

C.680237.8 Discharge of Bonds B.823823.2, B.823823.3 and C.513398.30 as to the land on Plans 161880, 161881 and 161882 -15.11.1994 at 10.21 o'c

A.L.R.

C.680237.9 Discharge of Compensation Certificate B.346468.1 as to the land on Plans 161880, 161881 and 161882 -15.11.1994 at 10.21 o'c

A.L.R.

C.680237.10 Revocation of Deed of Covenant C.492489.19 as to the land on Plans 161880, 161881 and 161882 -15.11.1994 at 10.21 o'c

A.L.R.

C.680237.11 Transfer merging the right of way created by Transfer C.492489.18 as it traverses the land on Plans 161880, 161881 and 161882 - 15.11.1994 at 10.21 o'c

A.L.R.

Pursuant to Section 238 Resource Management Act 1991 Lot 52 Plan 161880, Lot 52 and 57 Plan 161881 and Lot 52 Plan 161882 are vested in Rodney District Council as road

A.L.R.

Pursuant to Section 238 Resource Management Act 1991 Lot 56 Plan 161882 is vested in Rodney District Council as accessway

A.L.R.

Pursuant to Section 239(a) Resource Management Act 1991 Lot 54 Plan 161880, Lot 55 Plan 161881 and Lot 55 Plan 161882 are vested in Rodney District Council as local purpose (utility) reserve, subject to the Reserves Act 1977

A.L.R.

Pursuant to Section 239(a) Resource Management Act 1991 Lot 51 Plan 161880 is vested in Rodney District Council as recreation reserve, subject to the Reserves Act 1977

A.L.R.

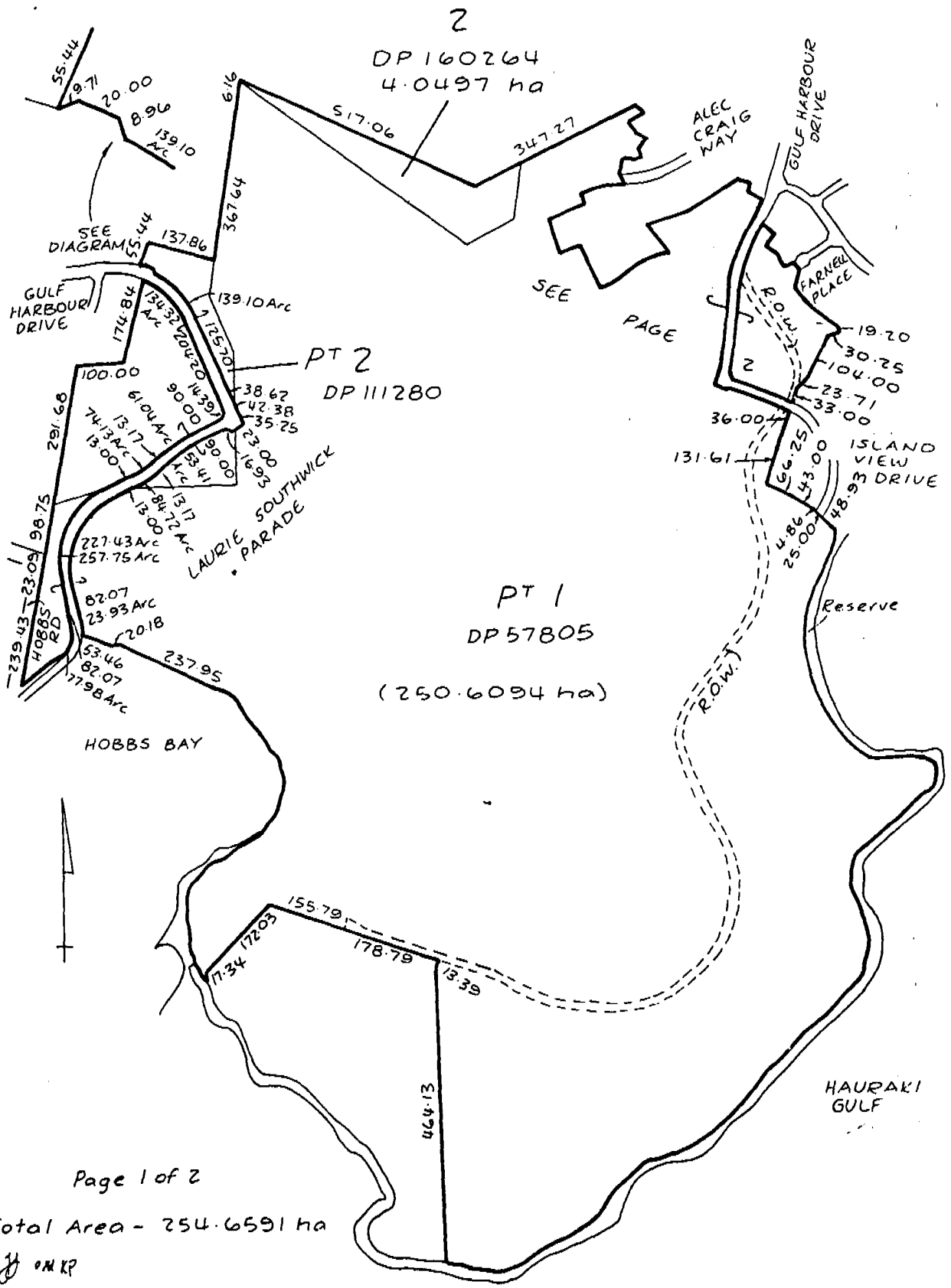
C.680237.12) Cancelled as to Lots on
O.N.C.T.) Plans 161880, 161881 and
15.11.1994) 161882 as follows:

Lot(s)	Plan	CT
1	161880	97C/425
2		97C/426
3-5 together with a 1/6 share each in Lot 53		97C/427 -429
6		97C/430
7-9 together with a 1/6 share each in Lot 53		97C/431 -433
10-12		97C/434 -436
13-21	161881	97C/439 -447
33		97C/448
33-44		97C/449 -455
50		97C/456
22-32	161882	97C/458 -468
45		97C/473
46-48		97C/469 -471

A.L.R.

-over-

RODNEY DISTRICT



Page 1 of 2

Total Area - 254.6591 ha

OM KP

3/5

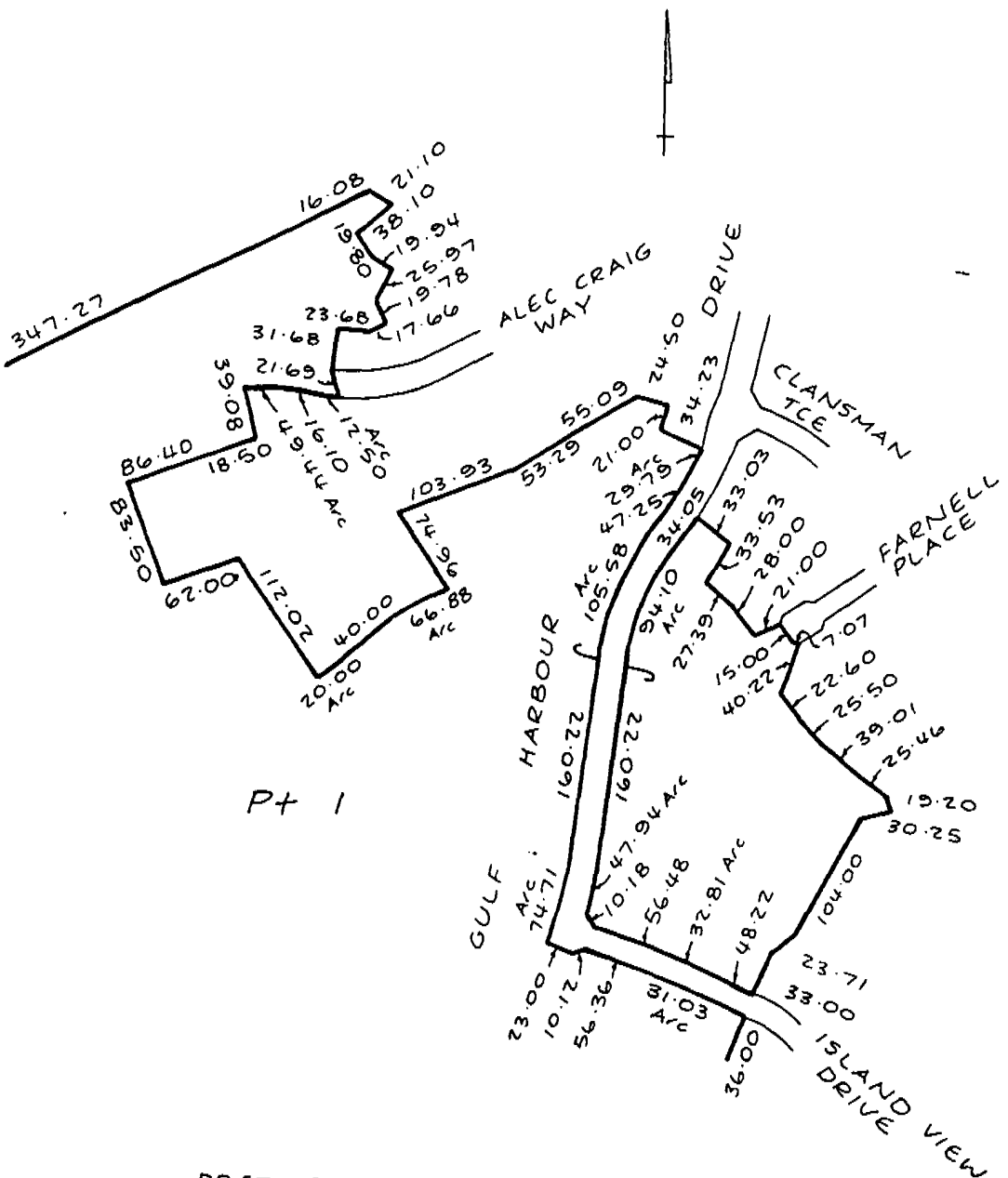
C.680237.13) Cancelled as to the reserves
O.N.C.T.) vested on Plans 161880,
15.11.1994) 161880, 161881 and 161882
) as follows:

Lot(s)	Plan	CT
51)	161880	97C/437
54)		97C/438
55)	161881	97C/457
55	161882	97C/472

A.L.R.

PART CANCELLED

RODNEY DISTRICT



Pt 1

DP 57805

50

5/5

Prior CT 320/692 & 7A/375

Limited As
N/C. Order No. B.604054.1

REGISTER

CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT

This Certificate dated the 25th day of November one thousand nine hundred and eighty six under the seal of the District Land Registrar of the Land Registration District of NORTH AUCKLAND

WITNESSETH that NEIL CONSTRUCTION LIMITED at Auckland

is seised of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial underwritten or endorsed hereon) in the land hereinafter described, delineated with bold black lines on the plan hereon, be the several admeasurements a little more or less, that is to say: All that parcel of land containing 20.1649 hectares more or less being Lot 2 Deposited Plan 113067 and being part Allotments 4 and 6 Parish of Waiwera

Assistant Land Registrar

Fencing covenant in Transfer 630837

A.L.R.

Plan #8706 Lodged 17 JUN 1987 and Deposited

Plan #8707 Lodged 17 JUN 1987 and Deposited

Plan #8708 Lodged 17 JUN 1987 and Deposited

B.747577.1 Certificate of Compliance under Section 306 (1)(f)(i) Local Government Act 1974 (affects Plan 118706) - 3.11.1987 at 2.44 o'c

A.L.R.

B.747577.2 Certificate of Compliance under Section 306 (1) (f) (i) Local Government Act 1974 (affects Plan 118707) - 3.11.1987 at 2.44 o'c

A.L.R.

B.747577.3 Certificate of Compliance under Section 306 (1) (f) (i) Local Government Act 1974 (affects Plan 118708) - 3.11.1987 at 2.44 o'c

A.L.R.

Measurements are Metric

Pursuant to Section 306 (3) of the Local Government Act 1974 Lot 241 Plan 118706 is vested in the Rodney County Council as road

A.L.R.

Pursuant to Section 306 (3) of the Local Government Act 1974 Lot 241 Plan 118707 is vested in the Rodney County Council as road

A.L.R.

Pursuant to Section 306 (3) of the Local Government Act 1974 Lot 240 Plan 118708 is vested in the Rodney County Council as road

A.L.R.

B.747577.4 Resolution under Section 321 (3)(c) Local Government Act 1974 (affects Plans 118706,118707) - 3.11.1987 at 2.44 o'c

A.L.R.

B.747577.5 Transfer of Lot 229 Plan 118708 to Glyn Hazlett Doughty of Auckland panelbeater - 3.11.1987 at 2.44 o'c

A.L.R.

B.747577.6) Cancelled as to Lot 229 Plan
O.N.C.T.) 118708 and a new amalgamated
3.11.1987) C.T.issued:68B/208

A.L.R.

SEE OVER...

63C/564

No. 57

B.747577.7) Cancelled as to the following
O.N.C.T.) and new C'sT issued:
3.11.1987)

(i) Lots 134,135,136 - 138
each withi a 1/3 share
in Lot 242
Lots 139-155 Plan 118706
68B/155-176

(ii) Lots 131-133, 156-164,
167-171, 172 and 173
each with 1/2 share in
Lot 239 Plan 118707
68B/177-195

(iii) Lots 1-10, 165 and 166
Plan 118708 68B/196-207

Corrected. 30.6.1993.

A.L.R.

— PART CANCELLED —
DUPLICATE DESTROYED

C.599089.1 Transfer to Gulf Harbour Development Limited at Auckland - 11.5.1994 at 2.30 o'c

A.L.R.

~~C.599089.2 Mortgage to ANZ Banking Group (New Zealand) Limited - 11.5.1994 at 2.30 o'c~~

ENTERED IN ERROR

~~A.L.R.~~

C.627898.1 Mortgage to ANZ Banking Group (New Zealand) Limited - 19.7.1994 at 2.58 oc

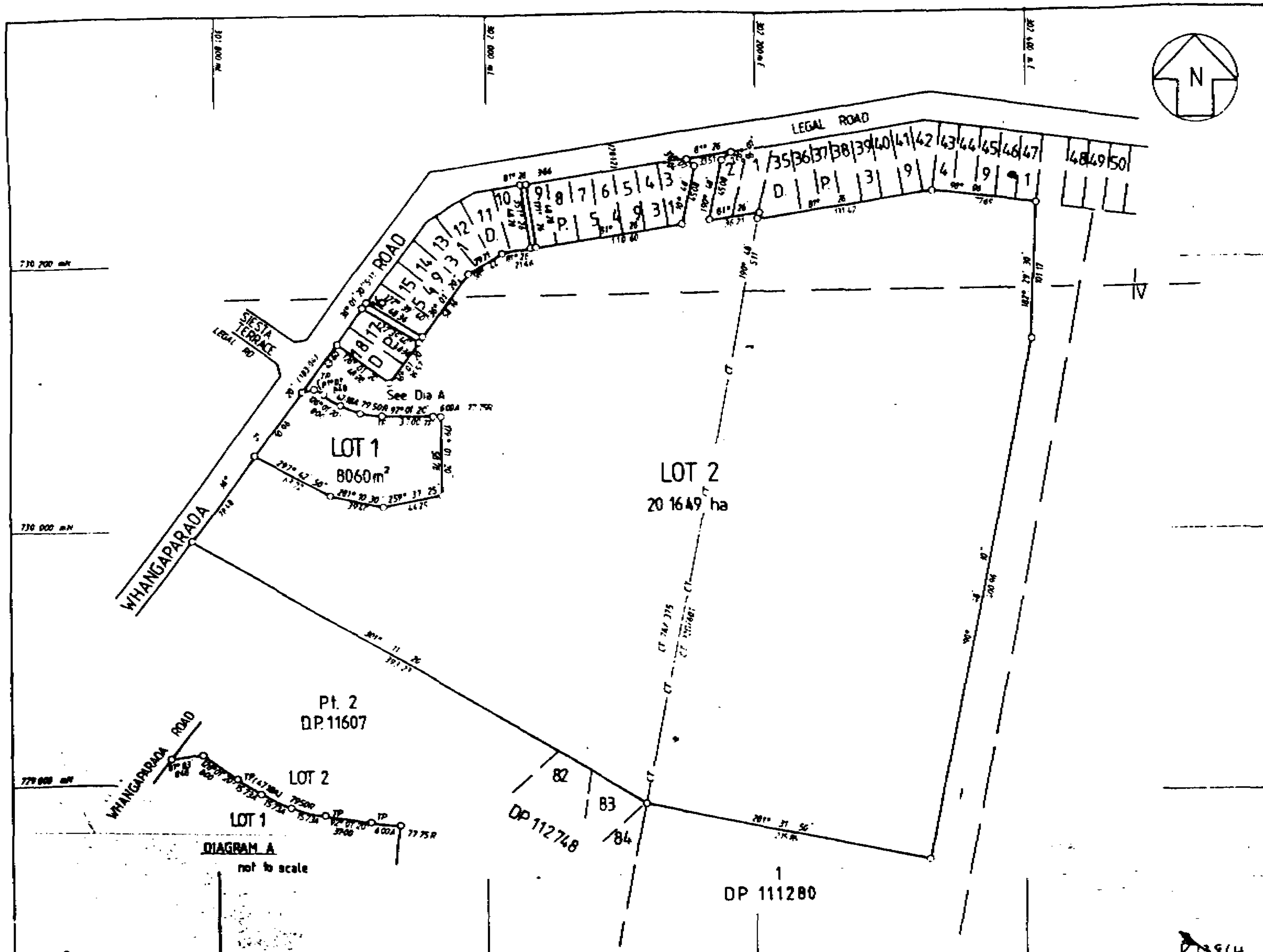
A.L.R.

52

17 FEB 1995

53

CERTIFICATE OF TITLE No.



Approvals

Registered Owner

PURSUANT TO RESOLUTION OF THE RODNEY COUNTY COUNCIL PASSED ON THE 4th DAY OF June PURSUANT TO SECTION 305 OF THE LOCAL GOVERNMENT ACT 1974 THIS SURVEY PLAN AND CERTIFY THAT THIS SURVEY PLAN IS IN ACCORDANCE WITH THE REQUIREMENTS AND PROVISIONS OF THE DISTRICT SCHEME FOR THE AREA TO WHICH THE SURVEY PLANS RELATES THE COMMON SEAL OF THE RODNEY COUNTY COUNCIL WAS AFFIXED IN THE PRESENCE OF

CHAIRMAN

New C'sT Issued

Lot 1 CT 63C / 563
Lot 2 CT 63C / 564

Total Area 20·9709 ha

Comprised in CT 32D/601 ALL, 7…

I, JOHN WILLIAM LOCKE
Registered Surveyor and holder of an annual practising certificate … hereby certify that this plan … from surveys executed by me or under my direction … survey are correct and have been made in accordance with the Survey Regulations 1972

Dated at AUCKLAND this 6th day of JUNE 1986 Signature

Field Book
Reference Plans
Examined
Approved as to Survey
Deposited this 25th day of …
Chief Surveyor
District Land Registrar

LAND DISTRICT NORTH AUCKLAND SURVEY BLK. & DIST. I & IV TIRITIRI NZMS 261 SHT RECORD MAP No	LOTS 1 & 2 BEING SUBDIVISION OF LOT 2 DP 76476 & PT LOT 3 DP 11359	TERRITORIAL AUTHORITY RODNEY COUNTY Surveyed by J.W. LOCKE Scale 1: 2000 Date APRIL 1986

DP 113067

R18802

Rodney
DISTRICT COUNCIL

RESOURCE CONSENT DECISION NO: RMA 18802

Resource Management Act 1991

DECISION BY: RODNEY DISTRICT COUNCIL

DATE: 07/07/1994

APPLICANT

Name: GULF HARBOUR DEVELOPMENTS LTD
Mailing Address: C/- ANTHONY WOOD, PO BOX 74178, MARKET ROAD, AUCKL

APPLICATION LOCATION

Street Address: GULF HARBOUR DRIVE, HOBBS BAY, WHANGAPARAOA
Property Number: 1239305
Valuation Roll Number: 31701 00100
Legal Description: LOT 54 DP 155835 LOT 1 DP
Zone: RES (SEVERAL)
Area of Site:

CONSENT Granted

To the application pursuant to Section 105 of the Resource Management Act 1991 for consent to a controlled activity for the subdivision shown on plan R18802.

The decision is subject to the following :

☑ Conditions as detailed on the attached 1 pages.

☑ The Consent is Granted for the reasons as detailed on the attached 1 pages.

Signed for and on behalf of the Council:

Name: ..... Position: District Planner Date: 7/7/94

54

RODNEY DISTRICT COUNCIL

RESOURCE CONSENT FOR GULF HARBOUR DEVELOPMENTS LTD FILE: R18802

CONDITIONS

(a) (conditions to be shown on survey plan title) BEFORE THE COUNCIL WILL APPROVE THE SURVEY PLAN PURSUANT TO SECTION 223 OF THE ACT, THE OWNER SHALL:

(i) (amendment required) SHOW AS "LOT 15 - LOCAL PURPOSE (UTILITY) RESERVE TO VEST" AN AREA OF LAND AROUND THE HOBBS BAY PUMP STATION. THE EXACT LOCATION AND DIMENSIONS OF THIS LAND SHALL BE TO THE APPROVAL OF COUNCIL'S SENIOR PLANNING ENGINER (SERVICES) AND GENERALLY IN ACCORDANCE WITH THE AGREEMENT BETWEEN COUNCIL AND PARKDALE DEVELOPMENTS LTD.

(i) (easement required) HAVE ENDORSED ON THE SURVEY PLAN UNDER A SCHEDULE OF MEMORANDUM OF EASEMENTS THE RIGHT OF WAY EASEMENTS LABELLED 'A'.

(b) (recreation reserve vesting) LOTS 301, 303 AND 304 SHALL VEST IN THE RODNEY DISTRICT COUNCIL AS RECREATION RESERVE.

(c) (local purpose reserve vesting) LOT 15 SHALL VEST IN THE RODNEY DISTRICT COUNCIL AS LOCAL PURPOSE (UTILITY) RESERVE.

(d) (granting or reserving easements) THAT EASEMENTS OVER PARTS OF LOT 1 DP 57805 REFERRED TO IN THE MEMORANDUM OF EASEMENTS ENDORSED ON THE PLAN AND IN CONDITION (a)(ii), SHALL BE DULY GRANTED OR RESERVED.

(e) (conditions to be carried out by owner) BEFORE THE COUNCIL WILL ISSUE A CERTIFICATE PURSUANT TO SECTION 224(c) OF THE ACT, THE OWNER SHALL:

(i) (development restrictions) NO DEVELOPMENT SHALL BE UNDERTAKEN ON ANY ONE OF LOTS 1 TO 14, 100 AND 101 UNTIL SUCH TIME AS THE FULL INFRASTRUCTURE FOR ROADING AND UTILITY SERVICES TO THE STANDARDS SET OUT IN THE COUNCIL'S ENGIENERING STANDARDS, HAS BEEN PROVIDED TO THAT LOT. PROVISION OF THE INFRASTRUCTURE SHALL TAKE INTO ACCOUNT THE DEVELOPMENT NEEDS OF ALL AFFECTED DEVELOPMENT LOTS WITHIN THE CATCHMENTS APPLICABLE TO THE VARIOUS UTILITIES AND THE ROADING NETWORK.

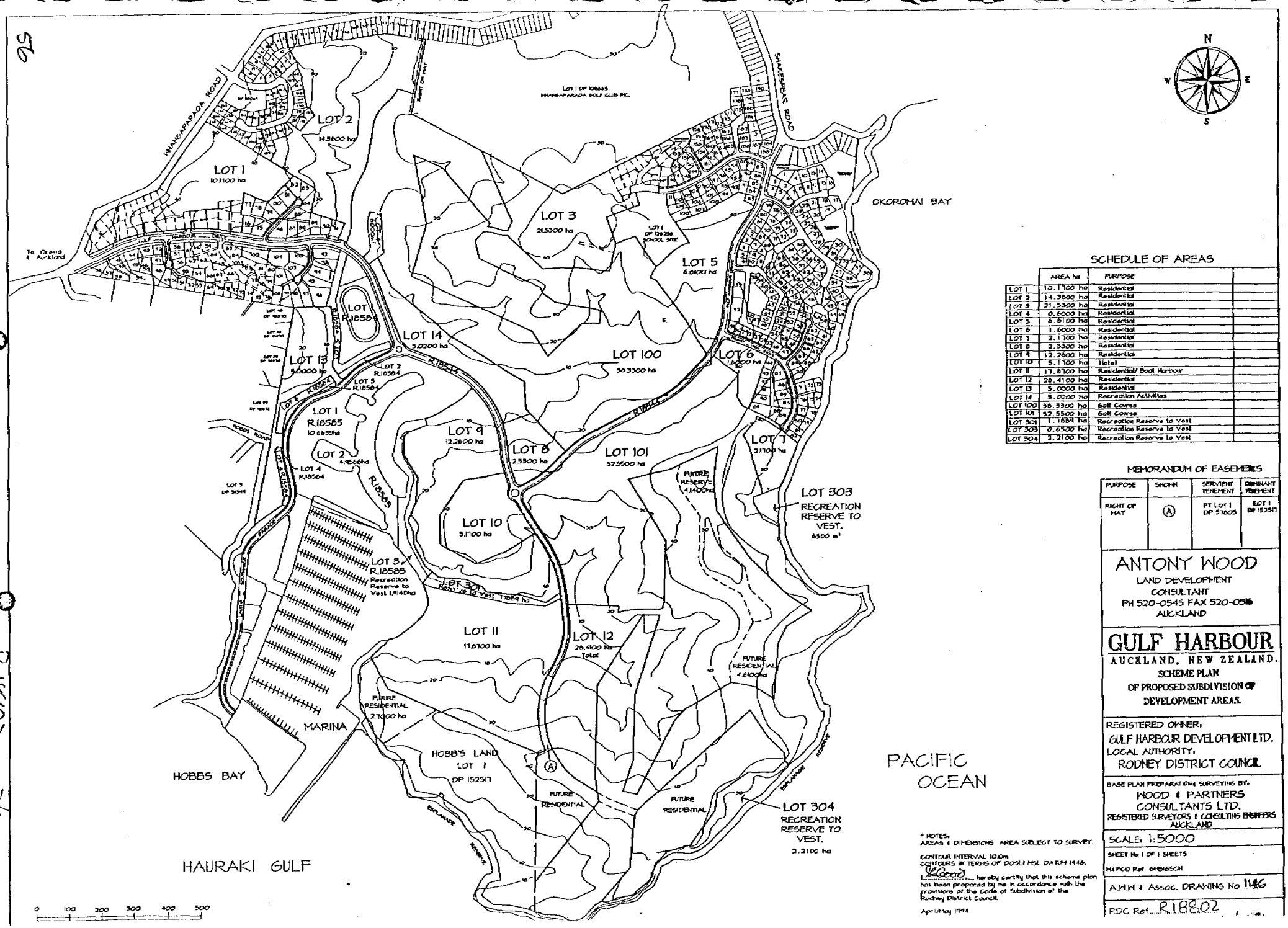
NOTE: THIS CONDITION SHALL BE SATISFIED BY THE REGISTRATION OF A CONSENT NOTICE, PURSUANT TO SECTION 221 AND THE ACT.

(ii) (balance of fees) PAY ANY OUTSTANDING BALANCE DUE TO THE COUNCIL FOR SCHEME PLAN PROCESSING AS ADVISED BY THE DEVELOPMENT ENGINEER.

REASONS

1. THE APPLICATION COMPLIES WITH THE RELEVANT RULES CONTAINED IN THE OPERATIVE DISTRICT PLAN AND IS IN ACCORDANCE WITH THE APPROVED GULF HARBOUR DEVELOPMENT PLAN.

2. IT IS CONSIDERED THAT THE SUBDIVISION WILL NOT HAVE ANY SIGNIFICANT ADVERSE ENVIRONMENTAL EFFECTS.



SCHEDULE OF AREAS

	AREA ha	PURPOSE	
LOT 1	10.1700 ha	Residential	
LOT 2	14.3600 ha	Residential	
LOT 3	21.5300 ha	Residential	
LOT 4	0.6000 ha	Residential	
LOT 5	6.8100 ha	Residential	
LOT 6	1.6000 ha	Residential	
LOT 7	2.1700 ha	Residential	
LOT 8	2.3300 ha	Residential	
LOT 9	12.2600 ha	Residential	
LOT 10	5.1700 ha	Total	
LOT 11	17.8700 ha	Residential/ Boat Harbour	
LOT 12	28.4100 ha	Residential	
LOT 13	5.0000 ha	Residential	
LOT 14	5.0200 ha	Recreation Activities	
LOT 100	38.3300 ha	Golf Course	
LOT 101	52.5500 ha	Golf Course	
LOT 301	1.1884 ha	Recreation Reserve to Vest	
LOT 303	0.6500 ha	Recreation Reserve to Vest	
LOT 304	2.2100 ha	Recreation Reserve to Vest	

MEMORANDUM OF EASEMENTS

PURPOSE	SHOWN	SERVIENT TENEMENT	DOMINANT TENEMENT
RIGHT OF WAY	Ⓐ	PT LOT 1 DP 51605	LOT 1 DP 152517

ANTONY WOOD
LAND DEVELOPMENT CONSULTANT
PH 520-0545 FAX 520-0516
AUCKLAND

GULF HARBOUR

AUCKLAND, NEW ZEALAND.

SCHEME PLAN OF PROPOSED SUBDIVISION OF DEVELOPMENT AREAS.

REGISTERED OWNER:
GULF HARBOUR DEVELOPMENT LTD.

LOCAL AUTHORITY:
RODNEY DISTRICT COUNCIL

BASE PLAN PREPARATION & SURVEYING BY:
WOOD & PARTNERS CONSULTANTS LTD.
REGISTERED SURVEYORS & CONSULTING ENGINEERS AUCKLAND

SCALE: 1:5000

SHEET No 1 OF 1 SHEETS

HEPCO Ref 6486SCH

A.J.W.W & Assoc. DRAWING No 1146

RDC Ref R18802

* NOTES:
AREAS & DIMENSIONS AREA SUBJECT TO SURVEY.

CONTOUR INTERVAL 10.0m
CONTOURS IN TERMS OF DOSLI MSL DATUM 1946.

I ..... hereby certify that this scheme plan has been prepared by me in accordance with the provisions of the Code of Subdivision of the Rodney District Council.

April/May 1994

2083 IZ

RODNEY DISTRICT COUNCIL

RESOURCE CONSENT FOR GULF HARBOUR DEVELOPMENTS LTD FILE: R18584

DRAINAGE RESERVES

CONDITIONS

(a) (conditions to be shown on survey plan title) BEFORE THE COUNCIL WILL APPROVE THE SURVEY PLAN PURSUANT TO SECTION 223 OF THE ACT, THE OWNER SHALL:

(i) (easement required) HAVE ENDORSED ON THE SURVEY PLAN UNDER A SCHEDULE OF MEMORANDUM OF EASEMENTS THE WATER STORAGE AND MANAGEMENT EASEMENTS LABELLED A, B AND C.

(b) (road vesting) LOT 8 SHALL VEST IN THE RODNEY DISTRICT COUNCIL AS ROAD.

(c) (recreation reserve vesting) LOTS 1, 2, 3 AND 4 SHALL VEST IN THE RODNEY DISTRICT COUNCIL AS RECREATION RESERVE.

(d) (local purpose reserve vesting) LOTS 5, 6 AND 7 SHALL VEST IN THE RODNEY DISTRICT COUNCIL AS LOCAL PURPOSE (DRAINAGE) RESERVE.

(e) (conditions to be carried out by owner) BEFORE THE COUNCIL WILL ISSUE A CERTIFICATE PURSUANT TO SECTION 224(c) OF THE ACT, THE OWNER SHALL:

(i) (easement documents) THE LEGAL DOCUMENTS TO CREATE THE WATER STORAGE AND MANAGEMENT EASEMENTS SHALL CONTAIN SPECIFIC PROVISIONS FOR ANY WORKS BY THE DOMINANT TENEMENTS TO BE SUBJECT TO PRIOR APPROVAL BY THE COUNCIL, AND THE REQUIREMENT FOR THE DOMINANT TENEMENT TO BE RESPONSIBLE FOR OBTAINING AND KEEPING CURRENT ANY WATER PERMITS OR OTHER NECESSARY APPROVALS.

(ii) (footpath construction) CONSTRUCT A FOOTPATH ALONG LAURIE SOUTHWICK PARADE AND/OR LOTS 2, 3 AND 4 TO THE COMPLETE SATISFACTION OF THE PARKS OFFICER. THIS WORK IS TO BE CARRIED OUT IN CONJUNCTION WITH THE PROPOSED LANDSCAPING.

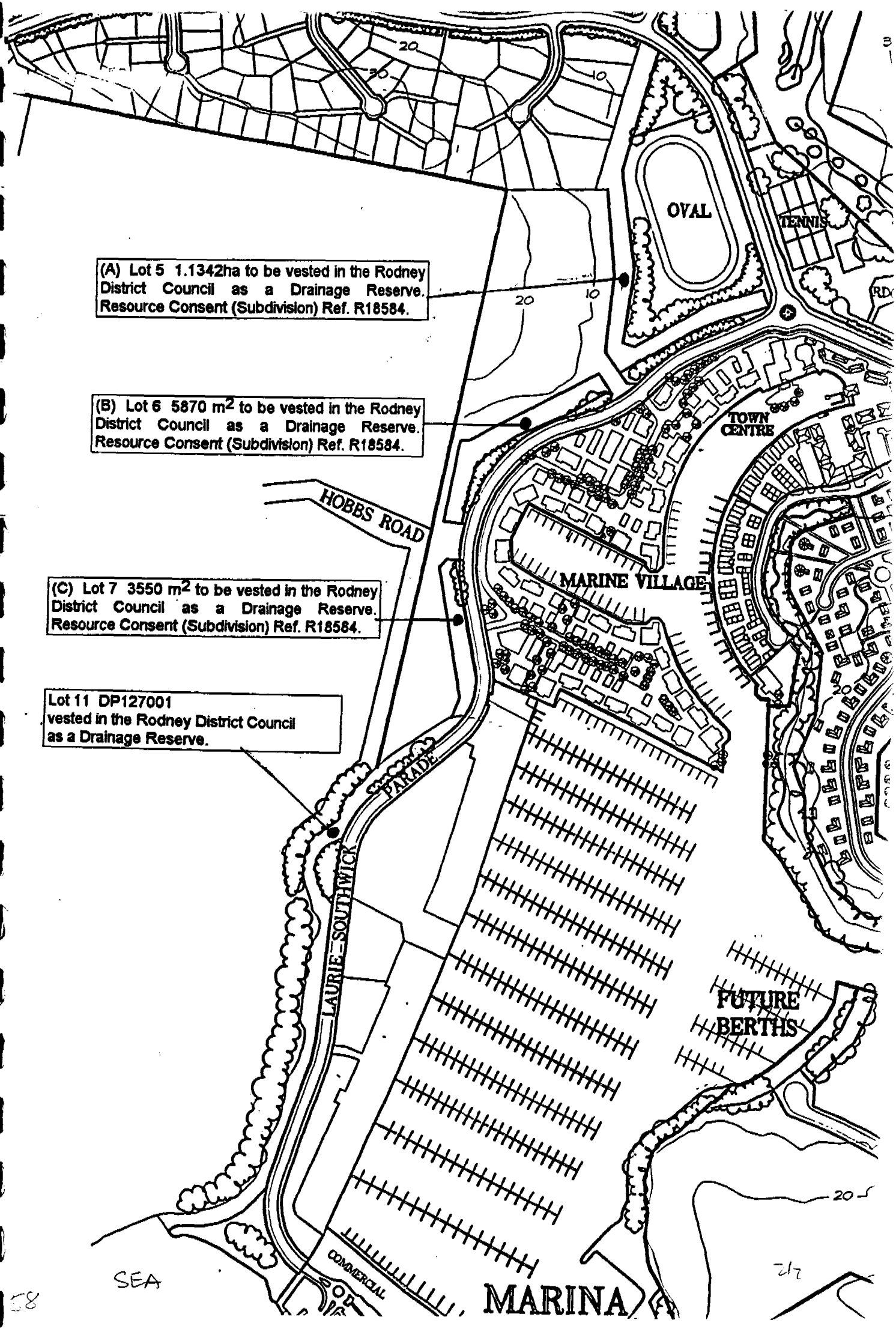
(iii) (balance of fees) PAY ANY OUTSTANDING BALANCE DUE TO THE COUNCIL FOR SCHEME PLAN PROCESSING AS ADVISED BY THE DEVELOPMENT ENGINEER.

NOTE: THE DISTRICT LAND REGISTRAR MAY REQUIRE ONE LOT, OTHER THAN THE LOTS TO VEST IN THE COUNCIL, TO BE INCLUDED ON THE LAND TRANSFER PLAN.

REASONS

1. THE APPLICATION COMPLIES WITH THE RELEVANT RULES CONTAINED IN THE OPERATIVE DISTRICT PLAN AND IS IN ACCORDANCE WITH THE APPROVED GULF HARBOUR MASTER PLAN.

2. IT IS CONSIDERED THAT THE SUBDIVISION WILL NOT HAVE ANY SIGNIFICANT ADVERSE ENVIRONMENTAL EFFECTS.


(A) Lot 5 1.1342ha to be vested in the Rodney District Council as a Drainage Reserve. Resource Consent (Subdivision) Ref. R18584.
(B) Lot 6 5870 m2 to be vested in the Rodney District Council as a Drainage Reserve. Resource Consent (Subdivision) Ref. R18584.
(C) Lot 7 3550 m2 to be vested in the Rodney District Council as a Drainage Reserve. Resource Consent (Subdivision) Ref. R18584.
Lot 11 DP127001 vested in the Rodney District Council as a Drainage Reserve.
OVAL
TENNIS
TOWN CENTRE
HOBBS ROAD
MARINE VILLAGE
PARADE
LAURIE-SOUTHWICK
FUTURE BERTHS
COMMERCIAL
MARINA
SEA

GOLF COURSE LAKE EMBANKMENT

Rodney
DISTRICT COUNCIL

FILE NO.	1110.	
DATE	3 Oct 1994	
	SEEN	ACTION
AWW	✓	
MAC	✓	

BUILDING CONSENT NO: ABA 942121

Project Information Memorandum No: ABA 942121

Copy sent to Roger Thew

Section 35, Building Act 1991

ISSUED BY: RODNEY DISTRICT COUNCIL

(Insert a cross in each applicable box. Attach relevant documents).

APPLICANT

me: GULF HARBOUR DEVELOPMENTS LTD

Mailing Address:
GULF HARBOUR DEVELOPMENTS LTD, PO BOX 205, WHANGAPARAOA

PROJECT LOCATION

Street Address:

GULF HARBOUR DRIVE, HOBBS BAY, WHANGAPARAOA

LEGAL DESCRIPTION

Property Number: 1239305

uation Roll No: 31701 00100

Legal Description:
LOT 54 DP 155835 LOT 1 DP

PROJECT

All ☑

Stage No ..... of an intended .....stages

New Building ☑

Alteration ☐

Intended Use(s) in detail:

DAM

Intended Life:

Indefinite, not less than 50 years ☑

Specified as ..... years

Demolition ☐

Estimated Value: $250000

COUNCIL CHARGES

The balance of Council's charges payable on uplifting of this building consent, in accordance with the tax invoice are:

Total: $

ALL FEES ARE GST INCLUSIVE

Signed for and on behalf of the Council:

Name: D.M. Hayward

Position: for: District Building Inspector

Date: 21/9/94

This building consent is a consent under the Building Act 1991 to undertake building work in accordance with the attached plans and specifications so as to comply with the provisions of the building code. It does not affect any duty or responsibility under any other Act nor permit any breach of any other Act.

This building consent is issued subject to the conditions specified in the attached ..1.. pages headed "Conditions of Building Consent No....." 94 2121

59

1/5

Rodney
DISTRICT COUNCIL

PROJECT INFORMATION MEMORANDUM NO: ABA 942121

Section 31, Building Act 1991

ISSUED BY: RODNEY DISTRICT COUNCIL

(Insert a cross in each applicable box. Attach relevant documents).

APPLICANT

ame: GULF HARBOUR DEVELOPMENTS LTD

ing Address:
ULF HARBOUR DEVELOPMENTS LTD, PO BOX 205, WHANGAPARAOA

PROJECT LOCATION

reet Address:

ULF HARBOUR DRIVE, HOBBS BAY, WHANGAPARAOA

LEGAL DESCRIPTION

operty Number: 1239305

aluation Roll Number: 31701 00100

gal Description:
OT 54 DP 155835 LOT 1 DP

COUNCIL CHARGES

ne balance of Council's charges payable on uplifting this building consent, in accordance with the tax voice are:

otal: $

PROJECT

New or Relocated Building: ☑
Alteration: ☐

Intended Use(s) in detail:
DWELLING

Intended Life:

Indefinite, but not less than 50 years ☑
Demolition ☐
Specified as .....years

This is:

☐ Confirmation that the proposed building work may be undertaken, subject to the provisions of the Building Act 1991 and any requirements of the building consent.

☐ Not yet applied for

☐ No: 942121 attached

☐ Notification that other authorisations must be obtained before a building consent will be issued.

☐ Notification that the proposed building work may not be undertaken because a necessary authorisation has been refused.

his project information memorandum includes (cross each applicable box, attach relevant document, and send a copy any relevant network utility operators and organisations having the power to classify land and buildings):

☐ Information identifying relevant special features of the land concerned.

☐ Information about the land or buildings concerned notified to the Council by any statutory organisation having the power to classify land or buildings.

☐ Details of relevant utility systems.

☐ Details of authorisations which have been granted.

☐ Details of authorisations which must be obtained before a building consent will be issued.

☐ Details of authorisations which have been refused.

igned for and on behalf of the Council:

ame: Dwthaynward Position: for District Building Inspector Date: 21/01/94

60

ABA 942121 2/-

This is:
Confirmation that the proposed building work may be undertaken, subject to the provisions of the Building Act 1991 and any requirements of the attached building consent.

This is:
Notification that the following must be obtained before a building consent will be issued

6 **Project Details**

The Project involves the following details.
(Note: It is the responsibility of the applicant to show that the proposed building complies with the Building Act 1991).

i. The works are to be carried out such that other property is not damaged in terms of the Building Act 1991 S. 6(d) or detrimentally affected in terms of section 36(1)(b),(c), &(d) of the Act.

6.1 *Information Identifying Relevant Special Features of the Land Concerned*

i. The land on which the proposed embankment is to be sited, has been the subject of geotechnical investigations.

ii. Information can be obtained from the relevant investigation report(s) subject to Council policy

iii. The proposed building is located within Wind Region R2 as defined by NZS 3604-1990. It is the designers responsibility to carry out an assessment of the site in
terms of table 2.4 of NZS 3604-1990 to determine the Building Wind Zone. Alternatively the designer may assess the wind speed parameters for specific design based on clause 5.4 of NZS 4203-1992.

6.2 **Information About The Land Or Buildings Concerned Notified To The Council By Any Statutory Organisation Having The Power To Classify Land Or Buildings**

No details of classifications of land and buildings is known by the Council.

6.3 **Details Of Relevant Public Utility Systems**

All building work is to be designed to protect Council services from any damage during construction and for the intended life of the building.

Note: The Rodney District Council is not an agent of any Network Utility Operator under Section 31(2)(d) of the Building Act and thus any authorisations these operators are authorised to refuse or require are not included in this memorandum. Further information related to the availability of supply, authorisations etc. (e.g. electricity or gas) can be obtained from the relevant Network Utility Operator.

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6.4 Details Of Authorisations Which Have Been Granted

Resource Consent R18585 granted.

6.5 Details Of Authorisations Which Must Be Obtained For This Project

This activity is a permitted activity in terms of the Reviewed District Plan.

You must check that your title is not limited to any restrictive covenant to which this consent may need to conform.

6.6 Details Of Authorisations Which Have Been Refused

Council has no record of any authorisations being refused for this project.

BUILDING CONSENT

SPECIAL CONDITIONS:

Compliance with the design assumptions as specified in the Producer Statement-Design by R J Thorburn, dated 2 September 1994.

Full compliance with all the recommendations of the site investigation and design report by Riley Consultants Ltd., Ref. 94147-A , dated July 1994, who, (or other suitably qualified geotechnical engineer who has read the above report) shall be retained by the owner to supervise the complete dam construction, and submit to Council a Producer Statement, as soon as the work is completed, in the format of the NZIA-ACENZ-IPENZ 'Producer Statement- Construction Review' covering covering Clauses B1 of the Building Regulations 1992.

INSPECTIONS by Rodney District Council

NOTE

This building consent includes design work in respect of which the applicant has provided a producer statement which the council has relied upon to accept that compliance with all of the identified building code provisions has been established.

This building consent also includes construction work in respect of which the applicant will provide a producer statement which the council will rely upon to accept that compliance with all of the identified building code provisions has been established.

Prior to the work commencing you must establish from the council that the inspecting engineer (if other than nominated above) is currently accepted by the council to issue producer statements under the relevant clauses of the Building Regulations. A minimum 24 hours notice is to be given to the council's building inspector of the engineering inspection by the issuer of the producer statement, in order that a quality control check(s) of the work can be carried out by the council at its discretion.

Failure to meet these requirements may result in the producer statement being rejected and the council refusing to issue a code compliance certificate.

Auckland Regional Council

ENVIRONMENT

14/10/Sc9845

Anthony Wood
P O Box 74 178
Market Road
AUCKLAND

need 13.9.94

12 September 1994

Dear Sir

RE : APPLICATION FOR RESOURCE CONSENT - RESOURCE MANAGEMENT ACT 1991

APPLICATION

Applicant:	Gulf Harbour Development Limited
Application Number:	14/10/Sc9845
Details of Application:	Soil Conservation Consent, Earthworks Operation
Site Location:	Hobbs Bay, Whangaparaoa

DECISION

The Group Manager, Environmental Management Department considered the above application and resolved to grant the Resource Consent in accordance with the conditions of the attached Consent document.

APPEAL PROCEDURES

You may appeal the Council's decision to the Planning Tribunal under Section 120 and 121 of the Resource Management Act 1991. This must be done within 15 working days of receiving this letter. For further information please contact this office.

Yours faithfully

K E Connolly
Group Manager
ENVIRONMENTAL MANAGEMENT

per: L E Whiley
Senior Soil Conservator
LAND RESOURCES SECTION

R N Stevenson
Consulting Engineer

21 Pitt Street • Private Bag 68912 • Newton • Auckland • New Zealand
Telephone 0-9-379 4420 • Facsimile 0-9-366 2155 • DX1047 AKL Central

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SUBJECT: Application Number Sc9845 by Gulf Harbour Developments Limited for consent to carry out earthworks at Hobbs Bay, Whangaparaoa.

FROM: Soil Conservator
ARC Environment

FILE: 14/10/Sc9845

TO: Group Manager
Environmental Management

DATE: 6 September 1994

(This report is confidential until it has been considered and is not to be construed as Council policy until adopted).

1. APPLICATION

1.1 Applicant: Gulf Harbour Developments Limited

1.2 Location: Hobbs Bay, Whangaparaoa

1.3 Proposal: Marina Village Development

2. NOTIFICATION

This application was not notified

Submissions Nil Submissions were received.

3. REPORT

3.1.1 Introduction

Location	Hobbs Bay, Whangaparaoa
Approximate Map Reference	NZMS 260 R10 705080
Earthworks type	Marina Village
Bare Area	38.8ha
Slope	Flat - Rolling
Proposed Sediment Control	6 Sediment retention ponds and diversion drains

3.1.2 Description of Proposal

The proposal is to develop the Marine Village which is a integrated marina and residential estate on 17ha immediately to the north of the existing marina. The remaining areas being used for borrow or fill areas. The area is generally flat (approximately 70%) with gentle slopes up to the borrow area which is flat.

It is intended that most (90%) of the earthworks will be completed in October 1994 - April 1995 construction season with the balance of work to be completed in October 1995 - April 1996 season.

Work basically revolves around the excavation of the canal and the filling of the marina Village area. Approximately 300,000m^3 will be excavated from the canal of which approximately 50,000m^3 will be suitable for the Marina Village fill area, 150,000m^3 of unsuitable will be disposed of in the fill area which ultimately becomes part of the golf course area, the remaining 100,000m^3 of siltstone sandstone will be used for revetment bunds backfilling of revetment walls and site filling. The canal excavation will be constructed dry using conventional excavators. Once all the works are completed the "cut off" bund between

the excavations and the existing marina will be breached. This breaching work is subject to a separate Coastal Permit. Additional fill material, approximately 160,000m^3 for the Marina Village site will come from two borrow areas. No. 1 the eastern valley floor (Future Boat Harbour) and No. 2 Gulf Harbour Drive (Future Golf Course Club House).

Erosion and Sediment Control measures will consist of a comprehensive system of cleanwater diversion drains and sediment retention ponds.

Work in the canal is generally below mean sea level so will act as a large sediment retention pond in itself. From these water will be pumped into a sediment retention pond in the Marina Village Area. This pond remains operational all through the excavation period of the canal. In addition to the above sediment retention pond two other smaller ponds will be constructed for use during the construction of the Marina Village area. These additional ponds will remain in use until the area is stabilised well after construction of the houses and auxillary buildings. These ponds meet a 2.0% criteria.

The fill deposition area utilises a further two sediment retention ponds, one in the centre of the fill area which ultimately becomes a lake and another adjacent to the fill area. The borrow area 2 (which will later become the Golf Club Building area) has another sediment retention pond. Borrow area 1 will have a clean water diversion drain constructed around it will eventually become a future boat harbour and therefore basically construction will be below MSL and it will act as its own sediment retention pond. During construction water will be pumped out once enough sediment settlement has occurred.

All sediment retention ponds can be manually operated and are monitored regularly on a daily basis.

The consent application was supported with four detailed reports.

1. "Marine Village - Bulk Earthworks. Management Plan for Erosion and Sediment Control", produced by Antony Wood, Land Development Consultant.

2. "Report on the Landscape Recreation and Habitat Value of the proposed Esplanade Reserves for Gulf Harbour", produced by H A Tarbott.

3. "Biological Appraisal of Specific Areas", produced by Bioresearches.

4. "Archaeological Survey of Hobbs Bay, Whangaparaoa", produced by Bioresearches.

3.2 Evaluation

This application is required in accordance with a regional rule in the Proposed Regional Plan for Erosion and Sediment Control. The sediment control measures proposed are over and above those laid out in the Auckland Regional Council Technical Publication No. 2 "Erosion and Sediment Control Guide-lines for Earthworks".

3.3 Assessment of Effects

While the proposed activity has the potential to affect the quality of the water into which the sediment laden runoff from the activity discharges, the applicant proposes appropriate sediment control measures to allow for detention of sediment laden runoff for a sufficient period of time for sediment to settle out of the runoff, prior to it's discharge into the Hobbs Bay. Any sediment discharge will be of a temporary nature.

The development proposals make generous and practical provisions for reserves and esplanade reserves to compensate for the loss of the traditional esplanade reserve by

providing increased public access as well as increased areas of waterways and adjacent plantation reserved thereby encouraging re-establishment of flora and fauna.

The net result of the works will be an increase in the overall ecological value of the general area particularly as regards land birds (amenity planting), waterfowl and wading birds (aquatic habitat). There is also an opportunity to provide an area of typical maritime habitat between the boat harbour and the northern canal entrance.

The development is to be commended for recognising and providing for the archaeological sites and Tangata whenua relationships with these places and the resources of the area.

It is considered that, provided the applicant meets the requirements set out in the Special Conditions proposed for the resource consent, although there will be some discharge of sediment from the site, the operation will have employed the best practical option to minimise sediment discharge from the site.

3.4 Conclusion

A significant amount of detail has been completed regarding the effects of this proposal on the environment and their history of excellent control of sediment control in the past. It is considered that the operation will employ the best practical option to minimise sediment discharge from the site, thus minimising any detrimental effect on the receiving environment.

4. RECOMMENDATIONS

It is recommended that the consent be granted subject to the conditions stated on the consent document appended to this report (including the Council's Standard Conditions).

Signed by Processing Officer: _____ R8605Y2P

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AUCKLAND REGIONAL COUNCIL

RESOURCE CONSENT

Granted Pursuant to the Resource Management Act 1991

SOIL CONSERVATION CONSENT NO : Sc9845

CONSENT HOLDER: **Gulf Harbour Developments Limited**

CONDITIONS OF CONSENT

Date of Expiration of Consent:	30 June 1996
Territorial Authority:	Rodney District Council
Purpose of Consent:	To carry out earthworks associated with site development
Site Location:	Hobbs Bay, Whangaparaoa

STANDARD CONDITIONS OF CONSENT :

1. That the servants or agents of the Auckland Regional Council shall be permitted access to the relevant parts of the property at all reasonable times for the purpose of carrying out inspections, surveys, investigations, tests, measurements or taking samples.

2. That the Auckland Regional Council may at any time on the giving of not less than 3 months notice in writing serve notice on the consent holder of its intention to review any of the conditions of this consent for any of the following purposes :

   i. To deal with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage; or

   ii. To require a discharge permit holder to adopt the best practicable option to remove or reduce any adverse effect on the environment; or

   iii. To deal with any other adverse effect on the environment on which the exercise of the Consent may have an influence.

3. The resource consent holder shall pay to the Auckland Regional Council any administrative charge fixed in accordance with s.36(1) of the Resource Management Act 1991, or any additional charge required pursuant to s.36(6) of the Resource Management Act 1991, payable in respect of this consent.

SPECIAL CONDITIONS OF CONSENT

1. That erosion and sediment control measures shall be carried out in accordance with those outlined in Earthworks Consent Application No. 14/10/Sc9845 and the accompanying Sediment Control Plan, supporting documents and specifications.

2. That erosion and sediment control works shall be carried out and maintained to the satisfaction of the Group Manager, Environmental Management Department.