
APPENDIX D: AVAILABLE BOREHOLE LOGS FOR OLD BAR BEACH

GPB

DEPARTMENT OF PUBLIC WORKS, NSW

DRAFT REPORT

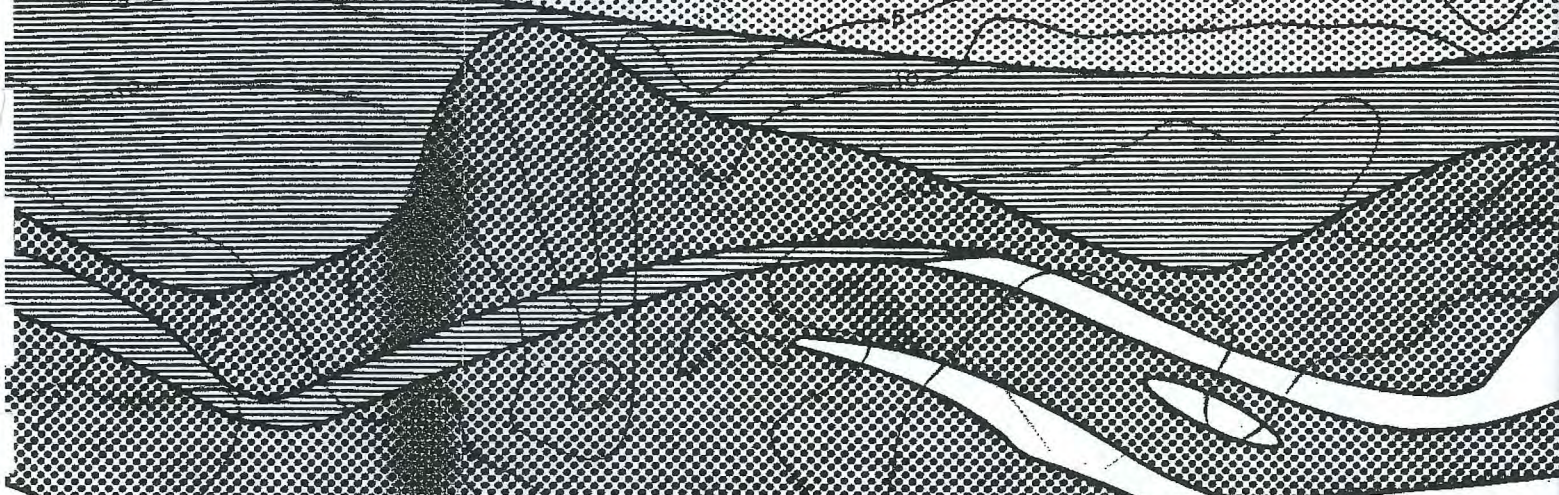
OLD BAR COASTAL EROSION STUDY

NOVEMBER 1981

SINCLAIR KNIGHT & PARTNERS PTY. LTD. CONSULTING ENGINEERS



BH-4 BH-3 BH-11 BH-2 BH-1 BH-9 BH-8 BH-7 BH-6 BH-5



REEF



APPENDIX B.3

TABLE B.3 - FIELD NOTES FROM BEACH AUGERING SITES

Note: Depths are given in metres relative to ISLW and locations are shown on **Figure 14**.

| | |
|---------------------------------|---|
| BH-1 | Old Bar beach, opposite Surf Life Saving Club, mid-tide |
| +2.0 | surface, fawn, fine-medium sand |
| +0.7 | gravel and sand |
| +0.3 | clay, low plasticity, some fine sand |
| -0.7 | gravely clay on top of siltstone, rock refusal to auger bit |
| <hr/> | |
| BH-2 | Old Bar beach, 500 metres south of BH-1 |
| +2.0 | surface, fawn fine-medium sand |
| +0.3 | gravel and sand |
| -2.2 | sandy clay, light grey, low plasticity rock refusal |
| <hr/> | |
| BH-3 | Old Bar beach, 1 000 metres south of BH-1 |
| +2.0 | surface gravel layers and fine-medium sand |
| -3.0 | bands of heavy gravel and sand over clay |
| -5.5 | sandy clay, medium plasticity, fine-coarse sand, refusal |
| <hr/> | |
| BH-4 | Old Bar beach, 1 500 metres south of BH-1 |
| +2.0 | gravel beds on surface of fine-medium sand |
| -2.5 | bands of heavy gravel with soft clay lenses |
| -5.0 | firm dry clay, high plasticity, trace of fine sand, refusal |
| BH-5 | Sand dune north of Old Bar |
| 1.6 metres below ground surface | - sand 0.1-0.3 millimetres, concentrations of humic material |
| 2.2 metres below ground surface | - dark cemented sands, high organic material content, refusal |

continued

Appendix B.3 (continued)

| | |
|------|--|
| BH-6 | Sand dune north of Old Bar |
| | 4.5 metres below ground surface - sandy clay, medium plasticity, light grey, refusal |

| | |
|------|---|
| BH-7 | Sand Dunes north of Old Bar |
| | 3.5 metres below ground surface, sand became yellowy orange in colour, traces of clay |
| | 4.5 metres below ground surface, sandy clay, low plasticity, siltstone pebbles, refusal |

| | |
|------|---|
| BH-8 | Old Bar beach, 500 metres north of BH-1 |
| +2.0 | surface fawn fine-medium sand |
| 0.0 | firm green/grey sandy clay, medium plasticity |
| -4.0 | sandy clay, green, grey and orange mottled clay, high plasticity, very stiff, some shell fragments, refusal |

| | |
|------|--|
| BH-9 | Old Bar beach 250 metres north of BH-1 |
| +2.0 | surface, fawn fine-medium sand |
| 0.0 | gravel and sand |
| -0.5 | gravel and firm green/grey clay |
| -2.0 | siltstone rock, refusal |

| | |
|-------|--|
| BH-10 | Old Bar beach 2.3 kilometres south of BH-1 |
| +2.0 | surface gravel over sand |
| -1.0 | clay and gravel layer firm but with thin layers of softer clay and less gravel |
| -4.0 | firm very stiff grey sandy clay, refusal |

| | |
|-------|---|
| BH-11 | Old Bar beach 750 metres south of BH-1 |
| + → | -2.0 surface fawn fine-medium sand |
| ? → | 0.0 thin gravel layers with coarse sand |
| | -3.0 soft sandy clay |
| | -4.5 firm dry clay, high plasticity, traces of fine sand, refusal |

continued

APPENDIX B.3 (continued)

BH-12 Inland, north of bend in Racecourse Creek

1.0 metres below surface - orange and grey soft damp clay

1.7 metres below surface - red and orange damp clay

2.9 metres below surface - siltstone rock, refusal *

BH-13 Midway along Saltwater beach, in low area on back face of dunes

+3.0 surface brownish grey medium-fine sand

+0.5 bright burnt orange sand

-1.0 dark grey clay, very high plasticity

-2.0 refusal in clay

G.P.B.

PUBLIC WORKS DEPARTMENT.
N.S.W.










**OLD BAR
SEWERAGE**

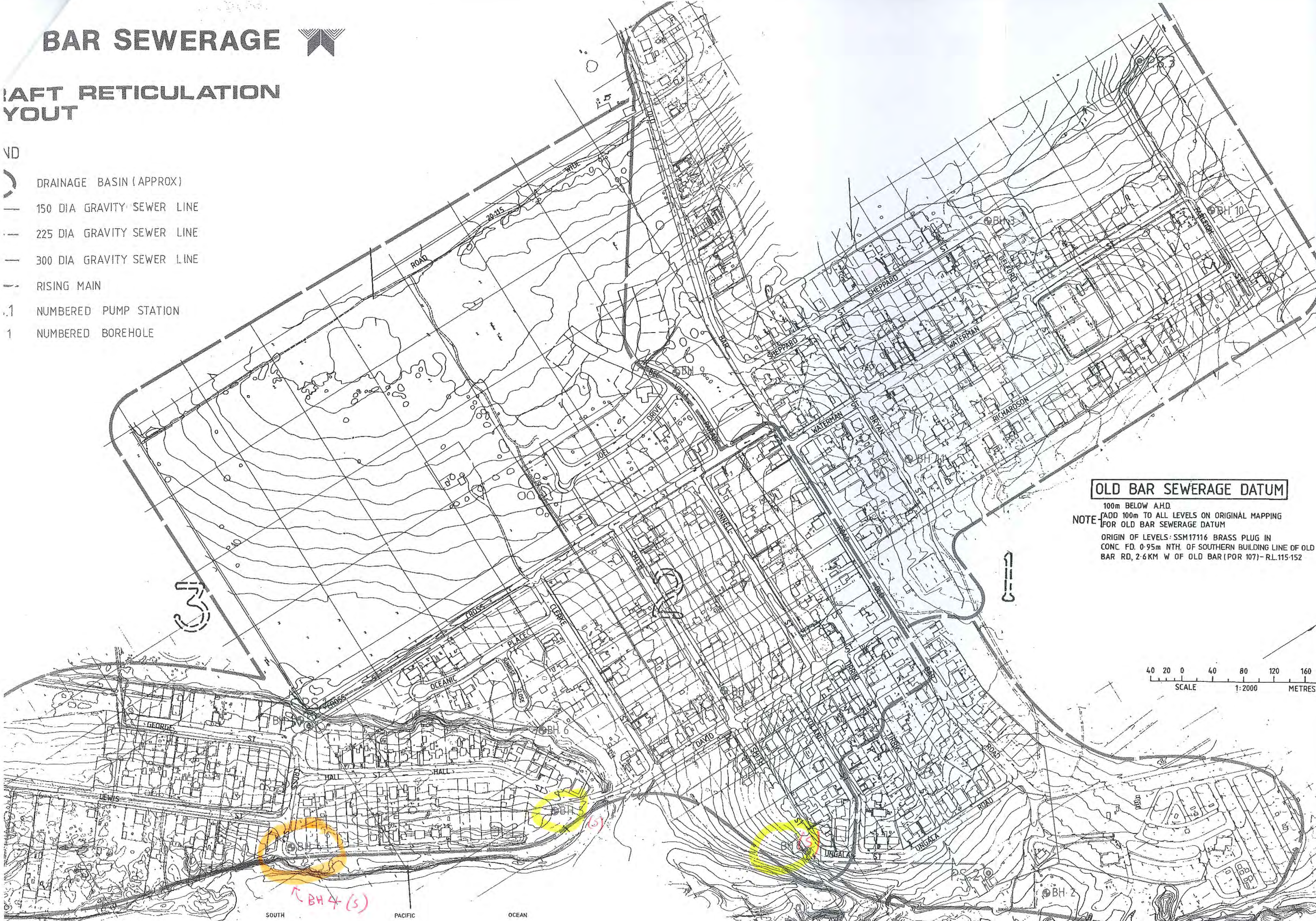
JUNE 1981.

BAR SEWERAGE



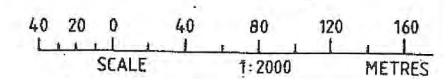
RAFT RETICULATION AYOUT

- ND
-  DRAINAGE BASIN (APPROX)
-  150 DIA GRAVITY SEWER LINE
-  225 DIA GRAVITY SEWER LINE
-  300 DIA GRAVITY SEWER LINE
-  RISING MAIN
-  1 NUMBERED PUMP STATION
-  1 NUMBERED BOREHOLE



OLD BAR SEWERAGE DATUM

100m BELOW A.H.D.
 NOTE: ADD 100m TO ALL LEVELS ON ORIGINAL MAPPING FOR OLD BAR SEWERAGE DATUM
 ORIGIN OF LEVELS: SSM17116 BRASS PLUG IN CONC. FD. 0.95m NTH. OF SOUTHERN BUILDING LINE OF OLD BAR RD, 2.6KM W OF OLD BAR (POR 107)-RL.115-152



SOUTH PACIFIC OCEAN

BH 4 (S)

BH 5

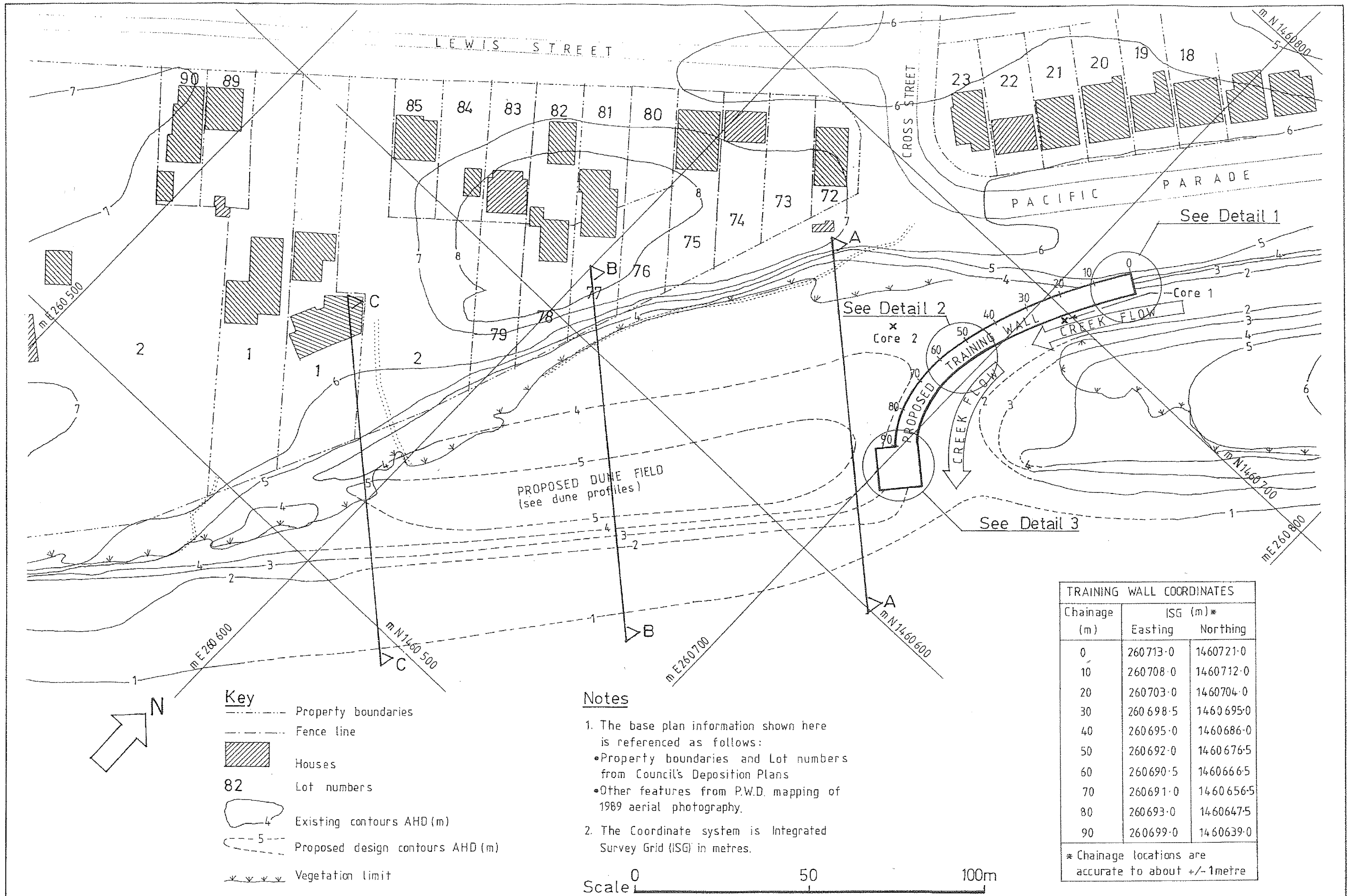
APPENDIX A
BOREHOLE INFORMATION

The following bores were taken during July 1980 using 3½" Gemco Auger at positions shown on the appended drawings. Information obtained forms the basis for scheme costing.

| Bore Hole No. | Depth | Colour | Description | Remarks |
|---------------|---------------|--|-------------------------|-------------------|
| B.H. 1 | Surface | | Grassy block near creek | |
| | 0.5 | Black | Sand | Dry easy |
| | 1.3 | Black | Indurated sand | Wet easy |
| | 3.0 | Grey | Clay | Damp soft |
| | 6.0 | Red & Grey | Clay | Firm dry |
| T.W.L. 0.50 m | | | | |
| B.H. 2 | Surface | On eastern end of Park beside white fence | | |
| | 0.3 | Black | Top soil | Soft |
| | 1.0 | Red & Grey | Clay | Firm dry |
| | 2.5 | Mustard | Silty clay | Wet soft |
| | 6.0 | Red & Grey | Clay | Firm dry |
| T.W.L. 2.40 m | | | | |
| B.H. 3 | Surface | Corner of Belford and Sheppard St., near swamp | | |
| | 0.5 | Black | Loamy soil | Damp soft |
| | 1.3 | Red | Clay | Dry firm |
| | 4.0 | Mustard | Clay | Wet soft |
| | 6.0 | Red | Clay | Hard firm |
| T.W.L. 0.50 m | | | | |
| B.H. 4 | Surface | (R26) | Sandy footpath | Ch 900/130m Dry |
| | 5.0 1.0 | Black | Sand | Dry |
| | 2.5 3.5 | Grey | Clay | Soft wet |
| | 1.5 4.5 | Black | Indurated sand | Soft wet |
| | T.W.L. 3.50 m | | | |
| B.H. 5 | Surface | ← say (R26) | Sandy block | Ch 1200/1000m Dry |
| | 5.5 0.5 | Black | Sand | Dry |
| | 3.0 3.0 | Grey | Coarse sand | Wet soft |
| | 1.5 4.5 | Grey | Clay | Firm dry |
| | T.W.L. 2.50 m | | | |

| Bore Hole No. | Depth | Colour | Description | Remarks |
|--|---------|---------------|-----------------------------|-----------|
| B.H. 6 | Surface | | Dry grassy block near creek | Dry |
| | 0.2 | Black | Top soil | Dry easy |
| | 1.5 | Red & grey | Clay | Dry easy |
| | 3.5 | Grey | Clay | Firm dry |
| | 4.5 | Yellow & grey | Clay | Damp soft |
| T.W.L. 3.5 m | | | | |
| B.H. 7 | Surface | | Grassy footpath | Dry |
| | 0.4 | Black | Top soil | Soft |
| | 1.2 | Grey | Clay | Soft |
| | 2.8 | Yellow & Grey | Clay | Soft |
| | 4.5 | Grey | Shale | Firm dry |
| B.H. 8 | Surface | ← out RL | Grassy footpath | Dry |
| | 0.3 | Brown | Gritty top soil | Dry |
| | 1.0 | Brown | Gritty clay | Dry |
| | 3.0 | Red & Grey | Gritty | Dry firm |
| | 3.75 | Grey | Shale | Dry firm |
| | 4.5 | Yellow & Grey | Clay | Dry firm |
| <i>School near crn Smith + Ungate St</i> | | | | |
| B.H. 9 | Surface | | Grassy block | Dry |
| | 0.2 | Black | Top soil | Dry soft |
| | 3.0 | Red & Grey | Clay | Firm dry |
| B.H. 10 | Surface | | Grassy footpath | Dry |
| | 0.2 | Black | Top soil | Dry soft |
| | 4.5 | Red & Grey | Clay | Firm dry |
| B.H. 11 | Surface | | Dry grassy block | |
| | 0.3 | Black | Top soil | Dry Soft |
| | 4.5 | Red & Grey | Clay | Firm dry |
| <u>SALTWATER</u> | | | | |
| B.H. 12 | Surface | | 15 m behind sand dunes | |
| | 0.5 | Black | Sand | Damp |
| | 4.5 | Red & Grey | Gritty clay | Firm dry |
| | | | Firm to drill | |

100
 200
 300
 400
 500
 600
 700
 800
 900
 1000
 1100
 1200
 1300
 1400
 1500
 1600
 1700
 1800
 1900
 2000
 2100
 2200
 2300
 2400
 2500
 2600
 2700
 2800
 2900
 3000
 3100
 3200
 3300
 3400
 3500
 3600
 3700
 3800
 3900
 4000
 4100
 4200
 4300
 4400
 4500
 4600
 4700
 4800
 4900
 5000
 5100
 5200
 5300
 5400
 5500
 5600
 5700
 5800
 5900
 6000
 6100
 6200
 6300
 6400
 6500
 6600
 6700
 6800
 6900
 7000
 7100
 7200
 7300
 7400
 7500
 7600
 7700
 7800
 7900
 8000
 8100
 8200
 8300
 8400
 8500
 8600
 8700
 8800
 8900
 9000
 9100
 9200
 9300
 9400
 9500
 9600
 9700
 9800
 9900
 10000

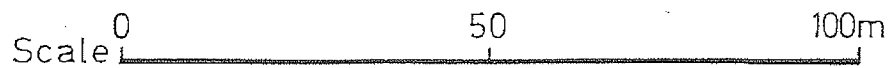


- Key**
- Property boundaries
 - - - Fence line
 - ▨ Houses
 - 82 Lot numbers
 - Existing contours AHD (m)
 - Proposed design contours AHD (m)
 - ~ ~ ~ ~ ~ Vegetation limit

- Notes**
1. The base plan information shown here is referenced as follows:
 - Property boundaries and Lot numbers from Council's Deposition Plans
 - Other features from P.W.D. mapping of 1989 aerial photography.
 2. The Coordinate system is Integrated Survey Grid (ISG) in metres.

| TRAINING WALL COORDINATES | | |
|---------------------------|----------|-----------|
| Chainage (m) | ISG (m)* | |
| | Easting | Northing |
| 0 | 260713.0 | 1460721.0 |
| 10 | 260708.0 | 1460712.0 |
| 20 | 260703.0 | 1460704.0 |
| 30 | 260698.5 | 1460695.0 |
| 40 | 260695.0 | 1460686.0 |
| 50 | 260692.0 | 1460676.5 |
| 60 | 260690.5 | 1460666.5 |
| 70 | 260691.0 | 1460656.5 |
| 80 | 260693.0 | 1460647.5 |
| 90 | 260699.0 | 1460639.0 |

* Chainage locations are accurate to about +/-1metre



2. Design Parameters

2.1 Channel Scour

Selection of the foundation level for the training wall is influenced by entrance channel scour and wall flexibility. The design scour level has been assessed based on site investigations and previous experience.

On-Site Investigations

On 4 July 1991 surveys and hammer cores were carried out at two locations within the entrance area. Core 1 was taken at the head of the creek some 30 m north of Cross Street while Core 2 was taken in a relic scour hole opposite Cross Street (Figure 3).

At the head of the creek the bed level was at 1.3 m AHD. The core was driven 1.3 m below the bed (0.0 m AHD). The strata comprised clean beach sand overlying brown sand. The transition between the two sands was at 0.3 m AHD, indicating that there had been scour to this level during a recent significant flood event. Following this flood event clean beach sand had been re-deposited in the scour channel mainly by the action of uprushing waves moving sand from the beachface into the entrance.

Further south, in the relic scour hole which had not been completely infilled with beach sand, the lowest bed level was 0.3 m AHD. That is, a recent significant flood event had caused scour here to the same level as at the head of the creek. The core at this location was driven 1.0 m below the bed (-0.7 m AHD). The strata comprised 0.2 m of muddy sand overlying clean sand; indicating that earlier historical flood events may have scoured below -0.7 m AHD.

Previous Experience

Previous experience on this matter is available from Dee Why Lagoon and Cockrone Lake, MacMasters Beach. Both these water bodies periodically break through to the ocean and in doing so scour a channel across the beach.

The entrance to Dee Why lagoon has been trained by a gabion rock wall. Pre-construction investigations by the Public Works Department (Gordon, 1979) resulted in the structure being founded at about the maximum expected scour level of -1.2 m AHD.

At Cockrone Lagoon investigations were undertaken by the Public Works Department (Medi, 1988) to assess the maximum historical scour depths in the entrance channel. It was found that the recent flood events had caused the channel to reach a lowest scour level of -1.9 m AHD while the maximum historical scour was estimated to be about 1 m lower at -3 m AHD.

Results
of
hammer
cores →

No actual
logs
reported
in
AWACS
91/11

AMJ.