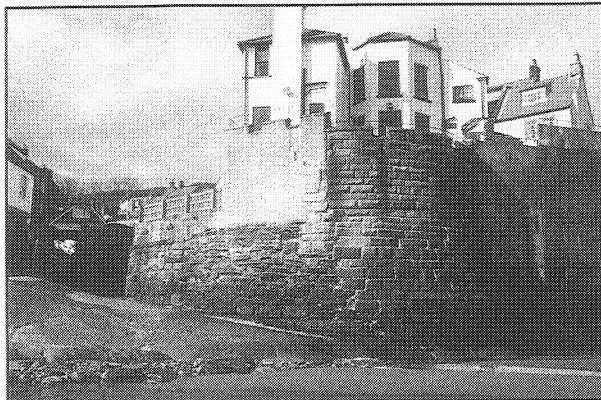
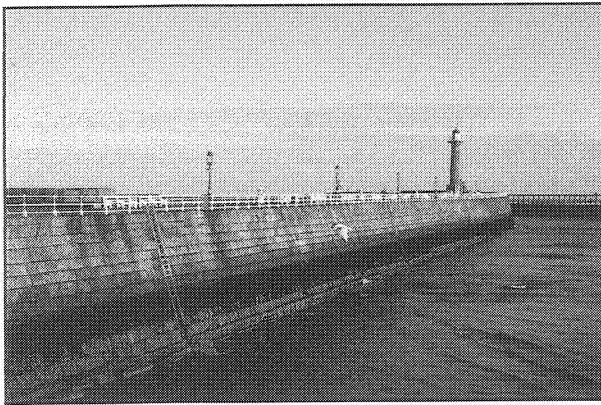


SCARBOROUGH BOROUGH COUNCIL

Scarborough Strategic Coastal Monitoring (Staithes to Scarborough)

Defence Condition Surveys - Volume 1



MAY 2002

capital management • engineering certainty

1540/R/1

CONTROL SHEET

Client: Scarborough Borough Council
Project: Scarborough Strategic Coastal Monitoring
 (Staithes to Scarborough)
Topic: Defence Condition Surveys
Document Number: 1540/1

Record of Status and Approval

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| 2 | Final | | MK 24/5/02 <i>[Signature]</i> | NJM | ARC |
| 1 | Draft | For client review. | MK 25Mar02 | NJM 25Mar02 | ARC 25Mar02 |
| Issue No. | Status | Description of Amendments | Prepared by. Sign & Date | Proj. Mgr. Sign and Date | Proj. Dir. Sign and Date |

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Scarborough Strategic Coastal Monitoring – Structure Inspection

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1. INTRODUCTION

Periodic inspection of the built coastal defences forms part of the Strategic Coastal Defence Strategy Scheme undertaken by Scarborough Borough Council (SBC).

High-Point Rendel (HPR) has been appointed by SBC to carry out a visual inspection of coastal structures to produce:

- A condition assessment and inventory of coast protection assets
- A defects inspection report

The terms of reference for the above work are defined by

- SBC's request for a proposal in letter reference CJM/jh/19/7/31/TLH00025 dated 9th November 2001
- HPR's proposal dated 21st December 2001
- SCB letter referenced CJM/EM TLE02395 19/7/31 dated 11th January 2002
- HPR's letter referenced EP 2851/NJM dated 23rd January 2002

The condition assessment and inventory covered all structures on the coastline from Staithes in the North to Scarborough in the South, namely the following areas:

1. Staithes Harbour
2. Port Mulgrave
3. Runswick Bay
4. Sandsend
5. Whitby
6. Robin Hood's Bay
7. Scarborough Northbay
8. Scarborough Harbour
9. Scarborough Southbay

It is noted that Port Mulgrave is privately owned and, although included in the inventory, is not included in the defects inspection report.

Scarborough Strategic Coastal Monitoring – Structure Inspection

A number of areas have not been inspected and these are listed in the table below:

| Area | Location or Structure | Defence Code | Reason for not being inspected |
|-------------|------------------------------|---------------------|---|
| Scarborough | Royal Albert Drive South | 6546 |) |
| Northbay | Marine Drive | 6547 |) New works imminent |
| | East Pier | 6548 |) |
| Whitby | East Pier - Outer Breakwater | 6529 | Not accessible due to removal of access bridge. Note that this structure was previously inspected in March/April and July 2000 as part of the Whitby Coastal Strategy Study |

The inspection was based on the data provided by SBC, which are listed below:

1. SBC Inventory of Coast Protection Assets (Database in Microsoft Word format)
2. Defects Inspection Report Proforma
3. SBC Sea Defence Asset Codes Map Book
4. Coast Protection Survey of England – Survey Report dated March 1994
5. Coast Protection Survey of England – 1995 Update Report
6. The Environment Agency's National Sea & River Defence Surveys - Condition Assessment Manual

The inspection was undertaken between 21st February and 5th March 2002. A description of what we did and how we did it is given in Section 2 of this report.

A brief description of how the results have been presented is given in Section 3.

In Section 4, we give comments that may be of assistance in future inspections.

2. THE INSPECTION

2.1. Methodology

The inspection was carried out from land at low water. It is noted that a number of structures are never fully exposed even at low water (e.g. Scarborough Harbour Vincent Pier, Defence Code 6574). In these circumstances, inspections were made from the top of the structure and from adjacent structures where possible, using binoculars if necessary.

The equipment used to assist with verification of data and recording were an electronic Global Positioning System and a digital camera.

2.2. Recording of Observations

2.2.1. Defects Inspection Report

For each structure identified in the Sea Defence Asset Code Book, a separate Defects Inspection Report Proforma Sheet was filled in with the following data:

- Location /Asset Code of element (which includes a Defence Code identifier)
- Weather Conditions
- Foreshore type and condition
- Notes on the structure's condition and details where applicable. If the structure comprised more than one element this was noted and where applicable the condition of each element was assessed separately.
- Overall categorisation of the structure's condition using one of the Condition Codes (see Section 2.5)
- Overall categorisation of the action with regard to repairs that need to be taken using one of the Defect Action Category Codes (see Section 2.6)
- Record of photograph(s) taken.

2.2.2. Condition Assessment and Inventory

For each Defence Code Area an overall categorisation with respect to Condition, Defect Action, its function and material was made and noted on the Sea Defence Asset Codes Map Book. This assessment was based on the individual elements as these were assessed during the process of completing the Defect Inspection Reports. This information was used to update the Coastal Structures Inventory.

In addition, a GPS reading (rounded to 1m), its location and its accuracy were taken at the end of each Defence Code area and noted in the Sea Defence Asset Codes Map Book. The limit(s) of Defence Code areas was marked in the Book.

2.3. Photographs

An overall photograph of the structure including the foreshore was taken for each element inspected. Where appropriate photograph(s) of features of special interest (e.g. defects) were taken.

At the end of each working day all photographs were downloaded to a portable computer. The camera field reference numbers were changed to computer file numbers and these were recorded on the report sheets.

2.4. Grid References

The Global Positioning System (GPS) was used to verify the National Grid Co-ordinates given in SBC's Inventory of Coast Protection Assets. The stated accuracy of the GPS was generally of the order of +/- 6m. The intention was to:

- Verify the original co-ordinates of existing structures
- find new co-ordinates where new structures have been built.

2.5. Condition Codes

It was a requirement of the inspection that a Condition Code was assigned to each Defence Code area. In addition, a Condition Code was also generally assigned to each Sea Defence Asset (as defined in SBC's Sea Defence Asset Code Map Book)

The condition of the structures was assessed using a scale of 1 to 5 in accordance with the National Sea & River Defence Surveys, Condition Assessment Manual published by the Environment Agency - see Appendix E.

In cases where Defence Codes span over several Asset Codes, an assessment was made of the overall (average) condition. For example while individual parts may be Condition Code 3 or 4, the overall condition may be Condition Code 2.

It is noted that the assessment of condition as given in the Coast Protection Survey of England was based on a scale of 1 to 4, the definitions of which are given in the Coast Protection Survey of England and reproduced below:

Class 1: condition as built.

Class 2: some signs of wear, needs to be kept under observation; returnable to condition as built with simple maintenance, i.e. work advisable in order to prevent undue deterioration

Class 3: moderate works required; probably limited to a maintenance operation to return to satisfactory condition, i.e. work necessary to sustain adequate performance.

Class 4: significant works needed; capital works probably required within 5 years.

It should be noted that these definitions relate to the work required to be done to the defence structure and are to some extent subjective, depending on the experience of the inspector.

By contrast, the new defence code definitions used in this survey relate to the actual physical condition of the structure and are more objective.

Scarborough Strategic Coastal Monitoring – Structure Inspection

We understand that, when preparing its Inventory of Coast Protection Assets, SBC converted the Condition Code given in the Coast Protection Survey of England (scale of 1 to 4) to a new code in the range 1 to 5 as follows:

| Condition Code given in Coast Protection Survey of England | Condition Code inserted in SBC's Inventory of Coast Protection Assets |
|---|--|
| 1 | 1 |
| 2 | 3 |
| 3 | 3 |
| 4 | 5 |

The exceptions were when recent knowledge of a particular structure suggested that Condition Codes 2 or 4 were more appropriate than Condition Code 3.

We found that we identified a number of Defence Codes in this survey as Condition Code 2 that were previously categorised in the SBC's Inventory of Coast Protection Assets as Condition Code 3. We believe that our survey has corrected the bias towards Condition Code 3 that occurred in SBC's conversion from the original system to the Environment Agency system.

2.6. Defect Action Codes

Recommendations for repairs were also made and a Defect Action Code was assigned, on the basis of SBC's letter dated 11 January 2002.

These are:

| Code | Description |
|-------------|---------------------------------------|
| 1 | Critical - Repairs within 4 weeks |
| 2 | Urgent - Repairs within 4 months |
| 3 | Non urgent - Repairs within 12 months |
| 4 | Monitor - Inspect annually |

3. INSPECTION RESULTS

3.1. General

The results of the inspection are recorded in various formats, namely:

- Notes on the original SBC Sea Defence Asset Codes Map Book
- Coastal Structures Inventory – Full Version
- Coastal Structures Inventory – DEFRA Version
- Photographic Record
- Structures Inspection

These formats are described in the following sections.

3.2. SBC Sea Defence Asset Codes Map Book

On a copy of SBC's Sea Defence Asset Code Map Book, we have marked the location of the GPS readings, a brief description of the location of each reading, the actual GPS reading (in metres) and the accuracy. In addition, the North Point has been (approximately) indicated.

This marked-up book is presented in Appendix A.

3.3. Coastal Structures Inventory – Full Version

This is a Microsoft Excel spreadsheet based on the data in SBC's Inventory of Coast Protection Assets but extended to give more description of the structures and details from recent coastal strategy studies. The Grid References are given rounded to the nearest 10m and the last zero omitted from the number (this is the same format as used in the Coast Protection Survey of England and in SBC's Inventory of Coast Protection Assets). This spreadsheet has been reviewed and updated using inspection data.

If the difference between the original co-ordinates and the GPS co-ordinates was less than twice the accuracy of the GPS readings, then no change was made to the original co-ordinates.

This spreadsheet is presented in Appendix B and an electronic version is given in the CD-ROM that accompanies this report (Appendix G).

3.4. Coastal Structures Inventory – DEFRA Version

This is the same spreadsheet as the full version described above, but certain columns have been hidden to give the format required for presentation to DEFRA.

This spreadsheet is presented in Appendix C.

3.5. Photographic Record

All photos are stored in *.jpg format on the CD-ROM that accompanies this report (Appendix G). Subdirectories on the CD correspond to the 9 areas listed in the Introduction. A list of photographs and the contents of each directory are given in Appendix F.

3.6. Structures Inspection

The primary structure inspection is given in the Defects Inspection Reports in the format required by SBC. There were a total of 233 sheets completed and these are presented in Appendix H.

The sheets show the camera field numbers for the photographs crossed out and replaced with the assigned photograph file number as given on the CD (Appendix G). The assigned photograph file number refers to a filename bearing this number, e.g. Photograph 561 corresponds to filename Dcb_0561.jpg

4. COMMENTS

4.1. Revised Inspection Sheet Proforma

In the course of the inspection, it became clear that a number of minor revisions to the Defects Inspection Report Proforma would assist in increasing the efficiency and accuracy of future inspections. A suggested revised Proforma is given in Appendix D.

4.2. Additional Defect Action Codes

In the course of the inspection, there were often occasions when an additional Defect Action Code between Code 3 (Non urgent Repairs within 12 months) and Code 4 (Monitor annually) would have been appropriate.

We suggest that the existing Code 4 could become a new Code 5, with a new Code 4 added as below:

Code 4: Monitor closely (i.e. post-storm or at 6-monthly intervals)

Code 5 (= current Code 4): Monitor annually

4.3. Orientation of Site on Sea Defence Asset Codes Map Book

During the course of the inspection it became apparent that some indication of orientation (such as the North Point) on SBC's Sea Defence Asset Codes Map Book would help greatly in describing the elements. This information was added on the Sea Defence Asset Codes Map Book given in Appendix A.

4.4. Amendments to Asset Codes

During the inspection, it became apparent that some of the Asset Codes in SBC's Sea Defence Asset Codes Map Book needed amendment, primarily because the assets were in a different Defence Code area than the area indicated by the first two digits of the Asset Code.

Scarborough Strategic Coastal Monitoring – Structure Inspection


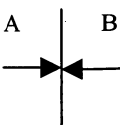

The table below details the amendments required. The page numbers refer to the numbered pages of the Sea Defence Asset Code Book that is presented in Appendix A.

| Page | Area | Comment |
|-------------|----------------------|---|
| Page 1 | Staithes Harbour | Boundary between 6504 and 6503 should move west with respect to the point shown on the map and be at the intersecting point between New Concrete Wall and Old Concrete Wall |
| Page 4 | Runswick Bay | Asset Code 07-07A-03 is in Defence Code 6508 |
| Page 5 | Runswick Bay | Asset Codes 10-07B-01 and 10-07B-02 are in Defence Code 6511 Asset Codes 54-22B-03 and 54-22B-04 are in Defence Code 6555 |
| Page 8 | Sandsend | Asset Codes 15-09B-03 to 15-09B-07 are in Defence Code 6516 Asset Codes 16-09C-03 to 16-09C-05 are in Defence Code 6517 |
| Page 14 | Whitby | Asset code 23-11B-01 added for Spa Area |
| Page 15 | Whitby | Asset code 24-11B-01 is assumed to relate to all masonry encasements Asset code 25-11B-03 is in Defence Code 6526 Asset code 27-11B-01 is in Management Unit 12 |
| Page 15 | Whitby | No map provided by SBC for East Pier. Asset code 240-65-30-12- -01 allocated to East Pier. This may need amending on Asset Code sheets if different code already allocated. |
| Page 16 | Robin Hood's Bay | Asset code 33-16A-01 should be incorporated into Defence Code 6532 |
| Page 18 | Robin Hood's Bay | Asset Codes 36-16B-02 and 36-16B-03 are in Defence Code 6537 |
| Page 25 | Scarborough Northbay | Asset Code 6544 should extend to the south (with respect to how it is shown on the Map) to the lower edge of the slipway. A GPS reading was taken at the point that is the suggested location of the boundary between elements 6544 and 6545 |
| Page 30 | Scarborough Southbay | Suggested additional code 50-?-01 |
| Page 35 | Scarborough Southbay | Asset Code 56-22B-05 is in Defence Code 6557 |
| Page 36 | Scarborough Southbay | Asset Codes 56-22B-06, 56-22B-07 and 56-22B-06 are in Defence Code 6557 |

Appendix A
Scarborough Borough Council
Sea Defence Asset Codes

Scarborough Strategic Coastal Monitoring – Structure Inspection

KEY

1.  Location of GPS reading
2.  Boundary between Defence Code areas A and B (where A and B are Defence Code numbers)
3.  End of boundary of area with Defence Code number A
4. 74-?-02 Question mark indicates no Defence Code unit was provided



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Scarborough Borough Council

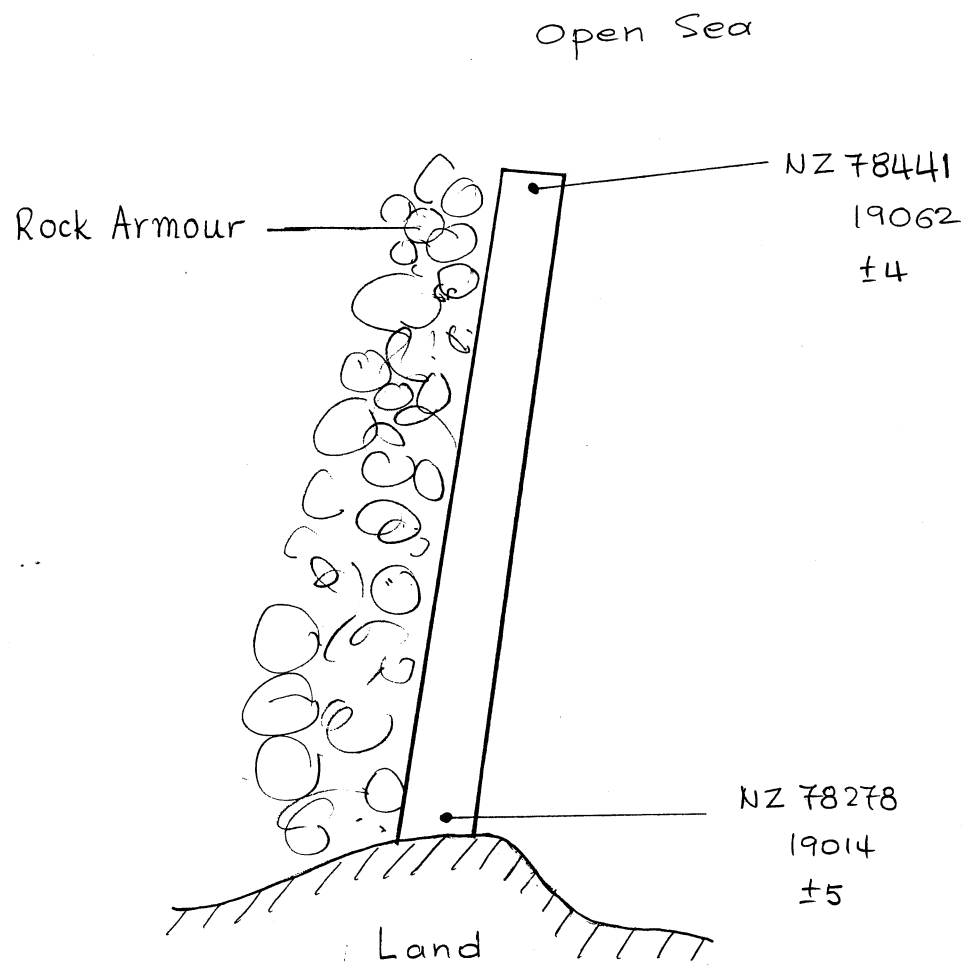
Sea Defence

Asset Codes

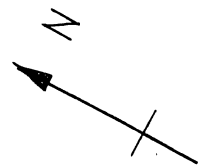
Capital Strategy and Procurement Unit
Town Hall
St Nicholas Street
Scarborough
Tel 01723 232470

Staithe Harbour Northon Breakwater

Not shown on Defence Asset Codes Map



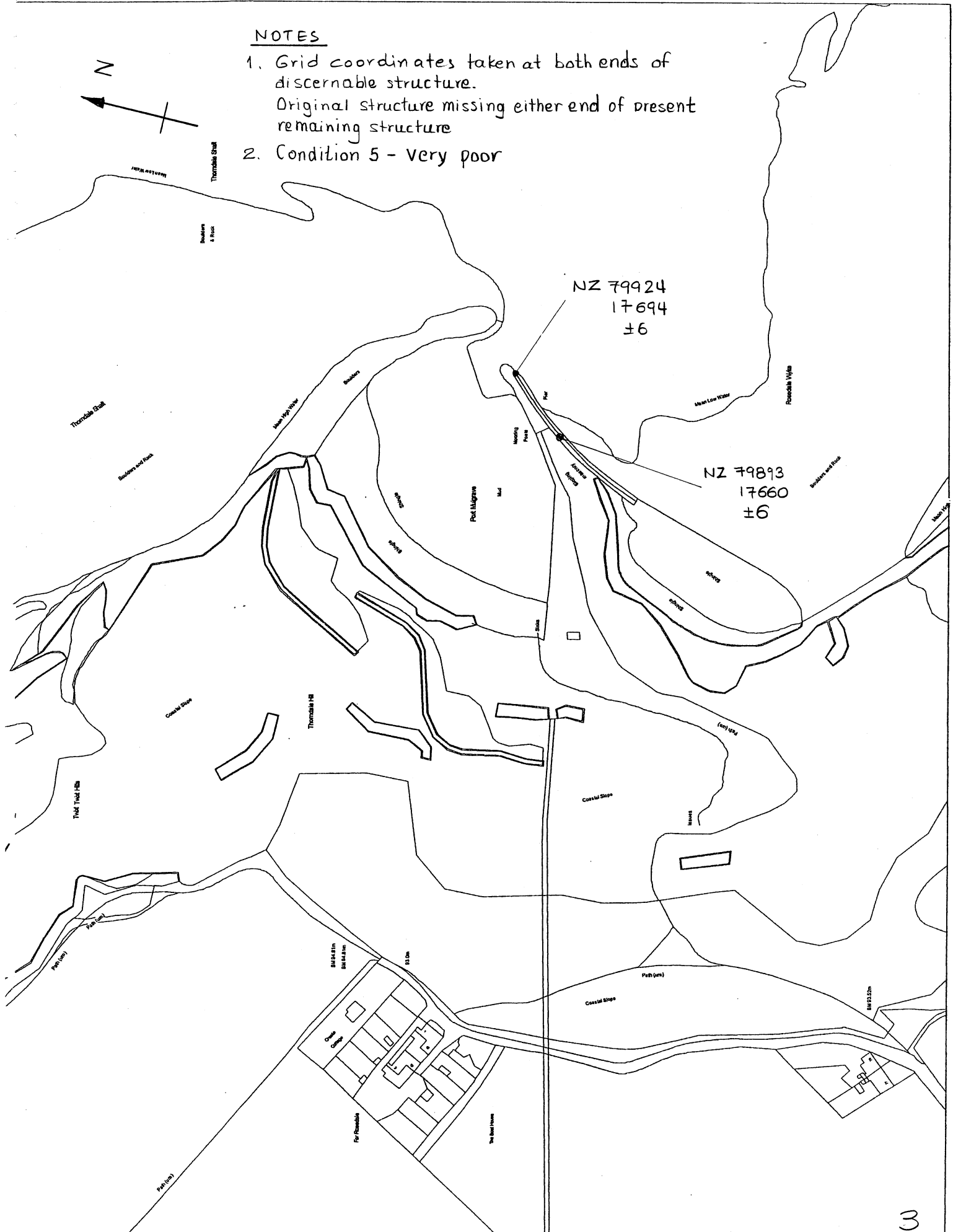
Defence Code 6501 — GPS Readings

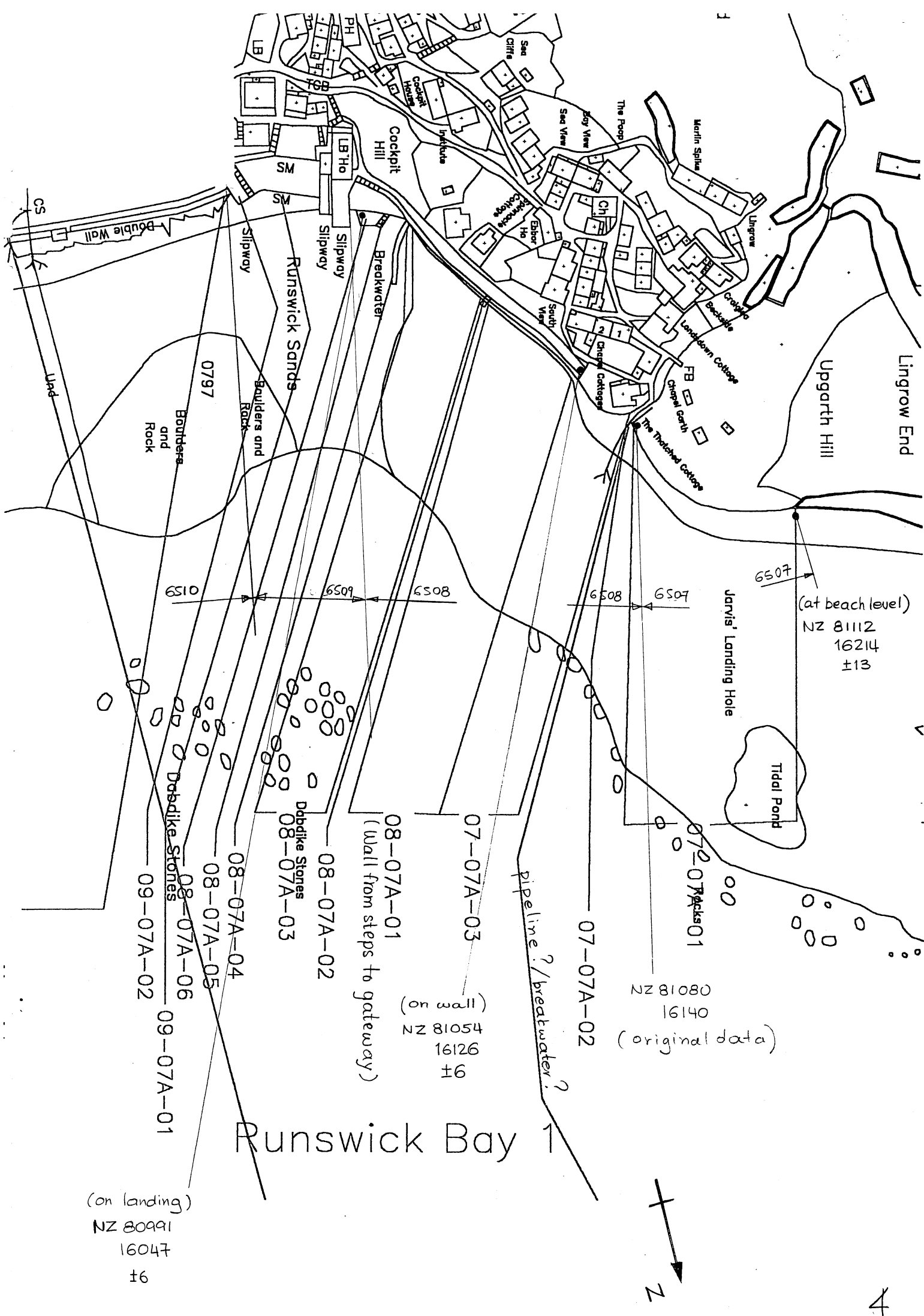


PORT MULGRAVE

NOTES

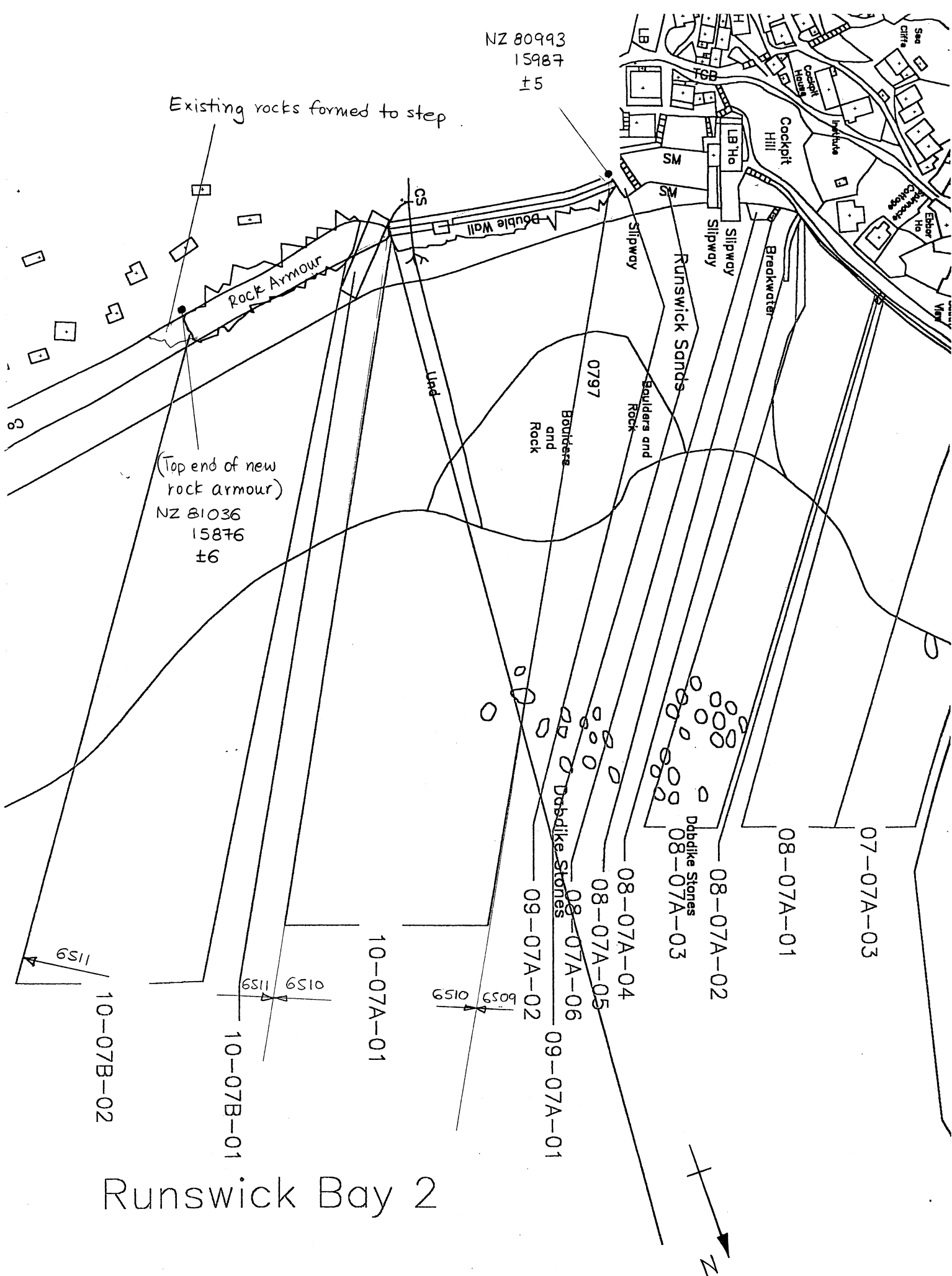
1. Grid coordinates taken at both ends of discernable structure.
Original structure missing either end of present remaining structure
2. Condition 5 - Very poor



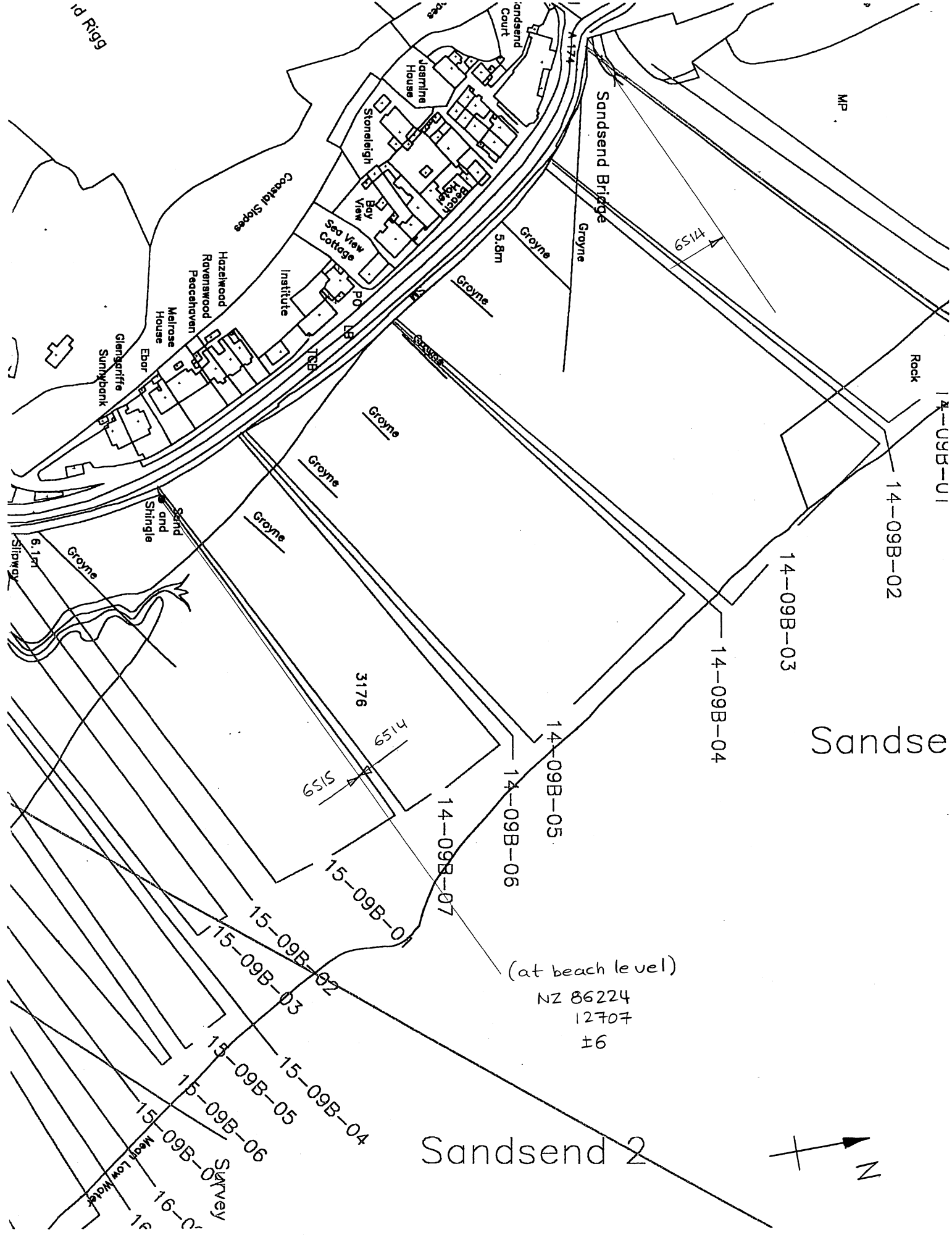


NZ 80993
15987
±5

Existing rocks formed to step

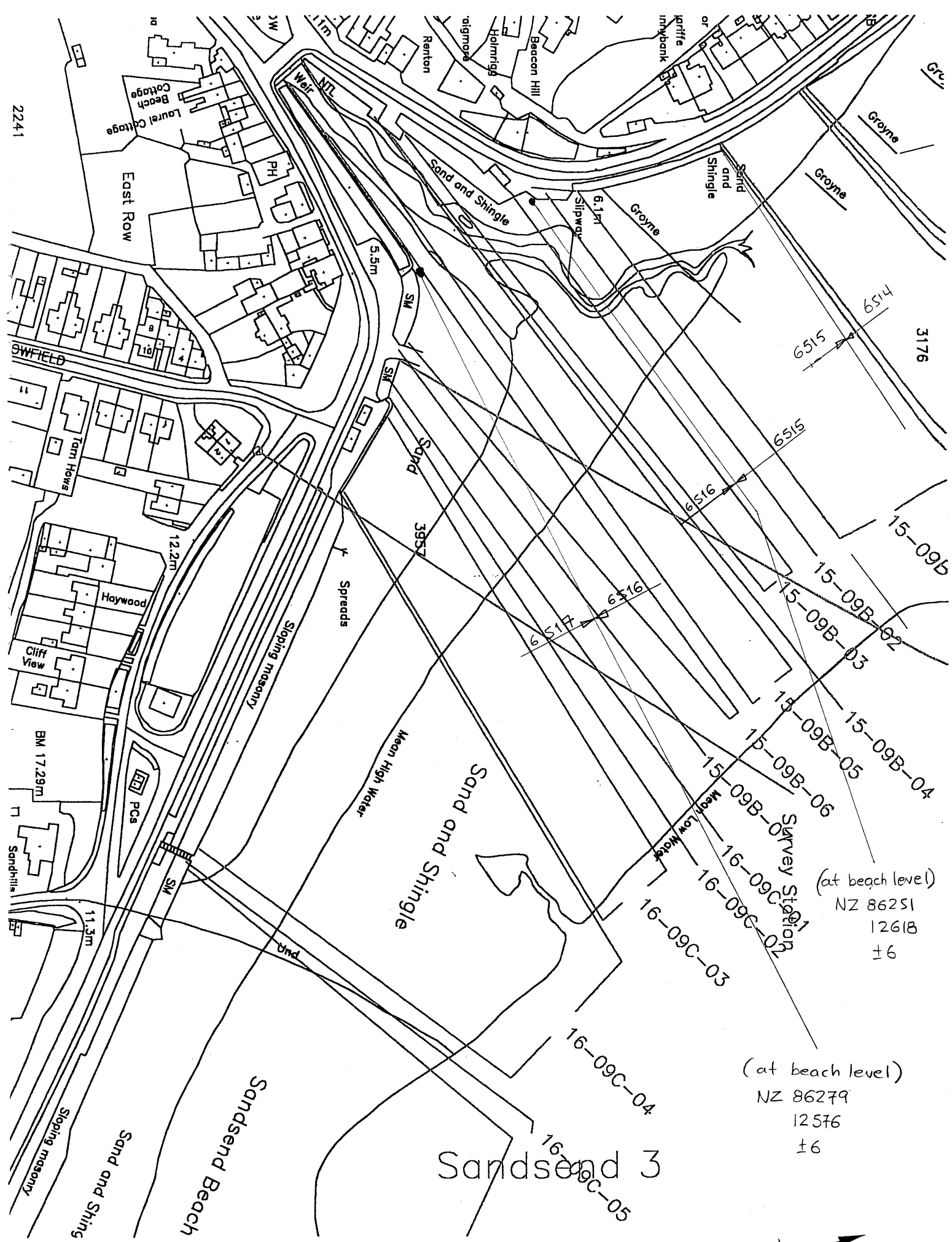


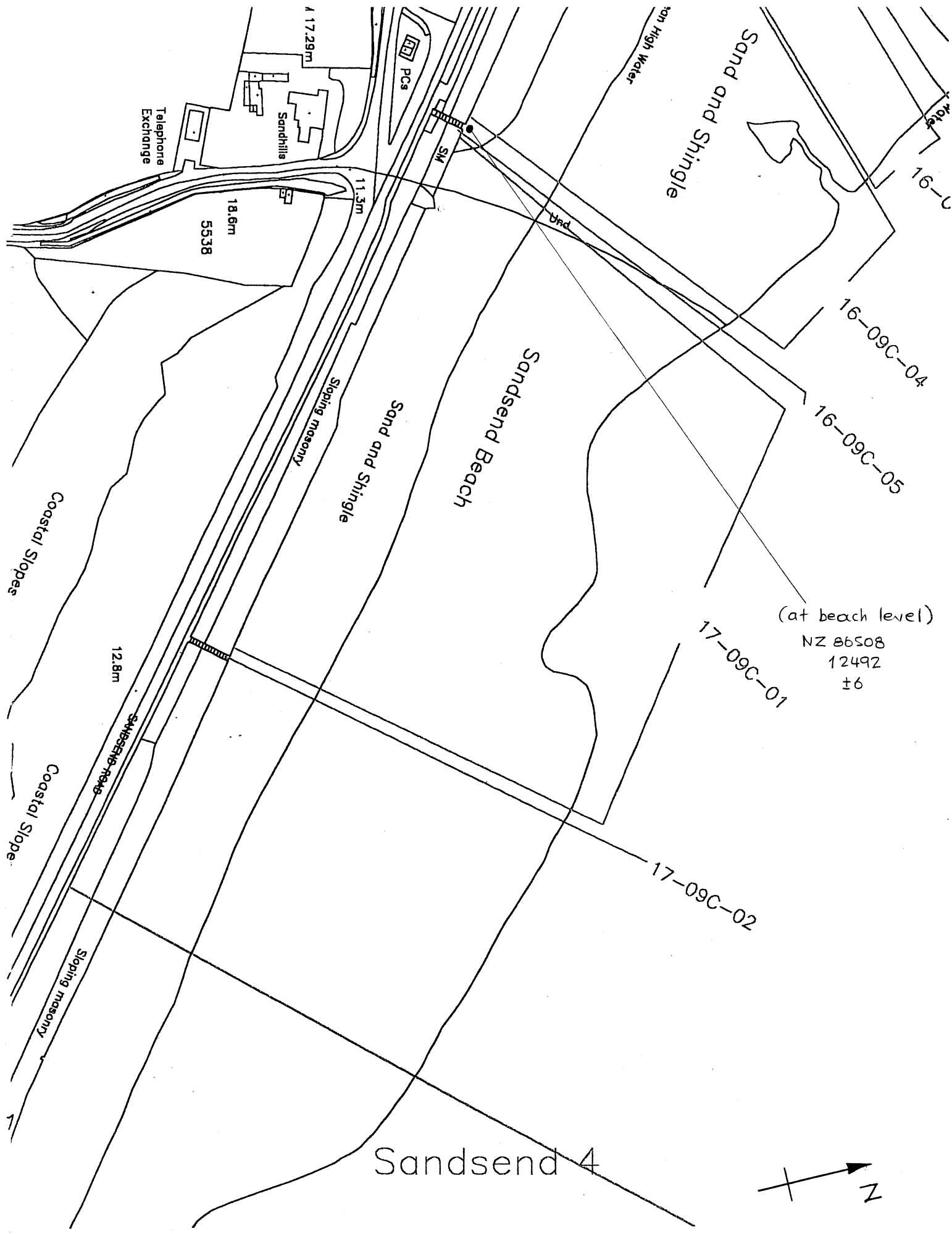
Runswick Bay 2



Sandsend 2

Sandse





Sandsend Wyke

Sandsend Wyke

17-10-01

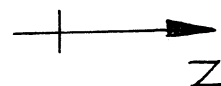
17-10-02

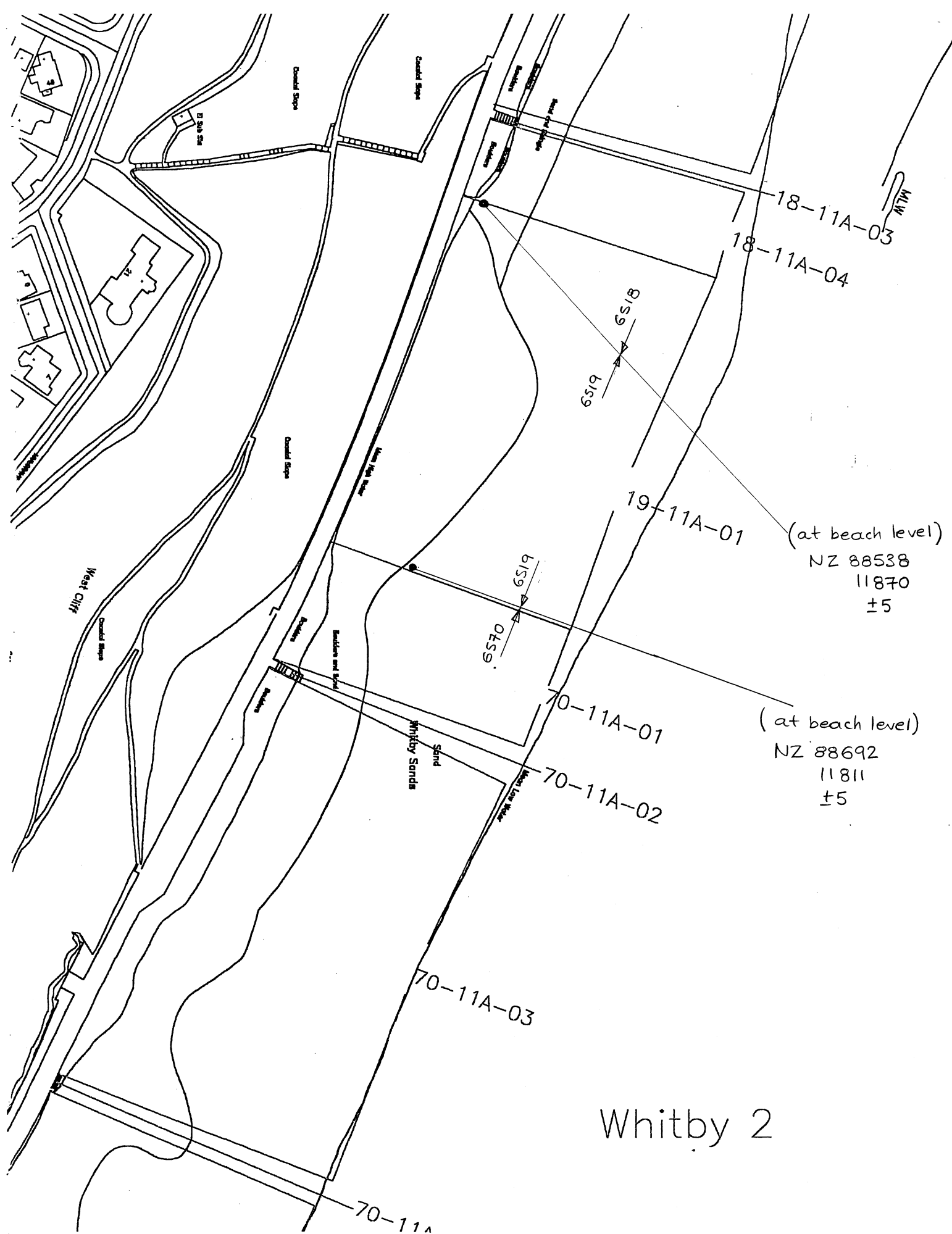


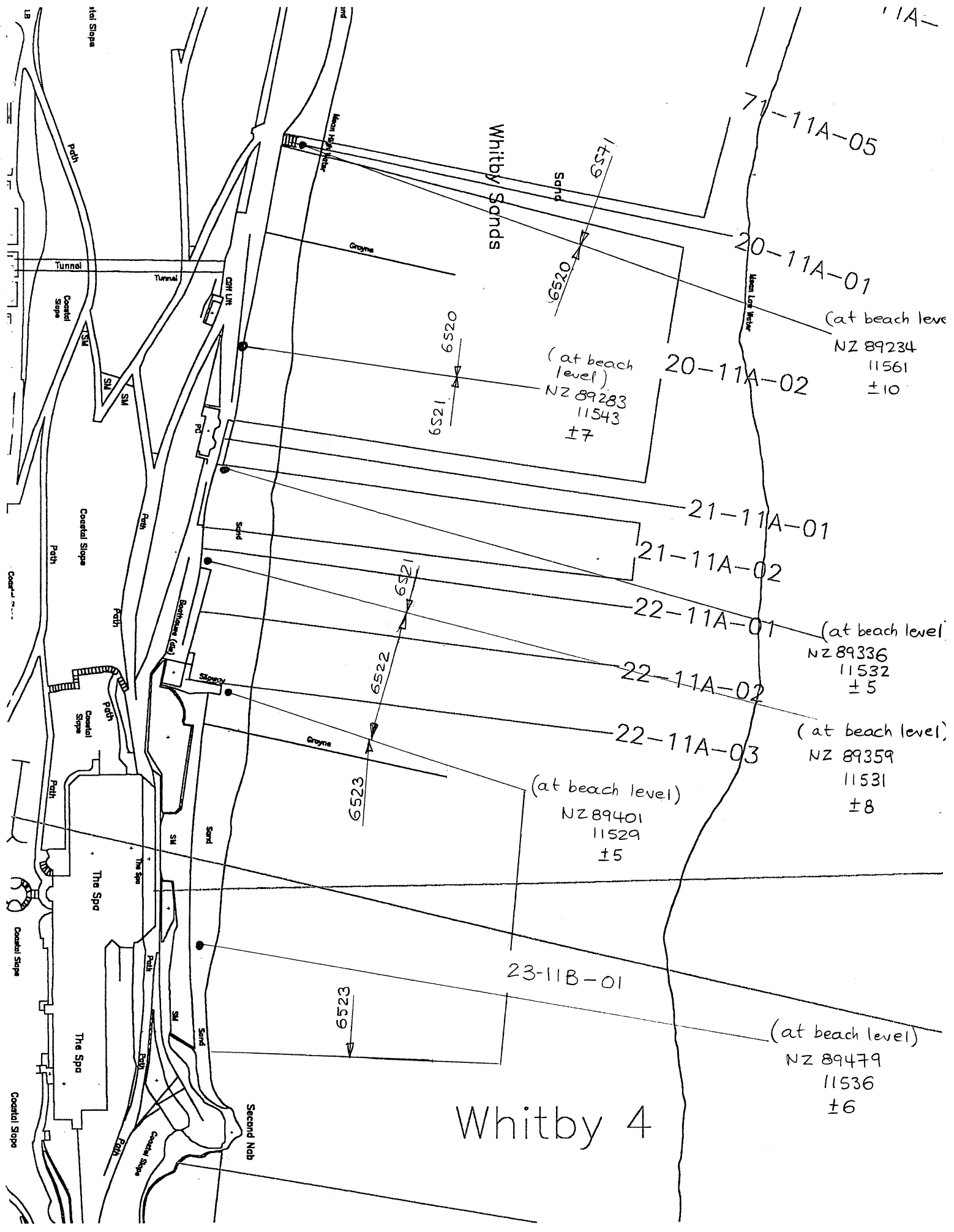
Sandsend 5

(at beach level)
NZ 87104
12193
±5









11A-

71-11A-05

20-11A-01

(at beach level)
NZ 89234
11561
±10

20-11A-02

(at beach level)
NZ 89283
11543
±7

21-11A-01

21-11A-02

22-11A-01

(at beach level)
NZ 89336
11532
±5

22-11A-02

22-11A-03

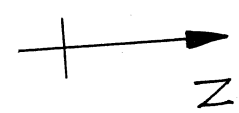
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NZ 89359
11531
±8

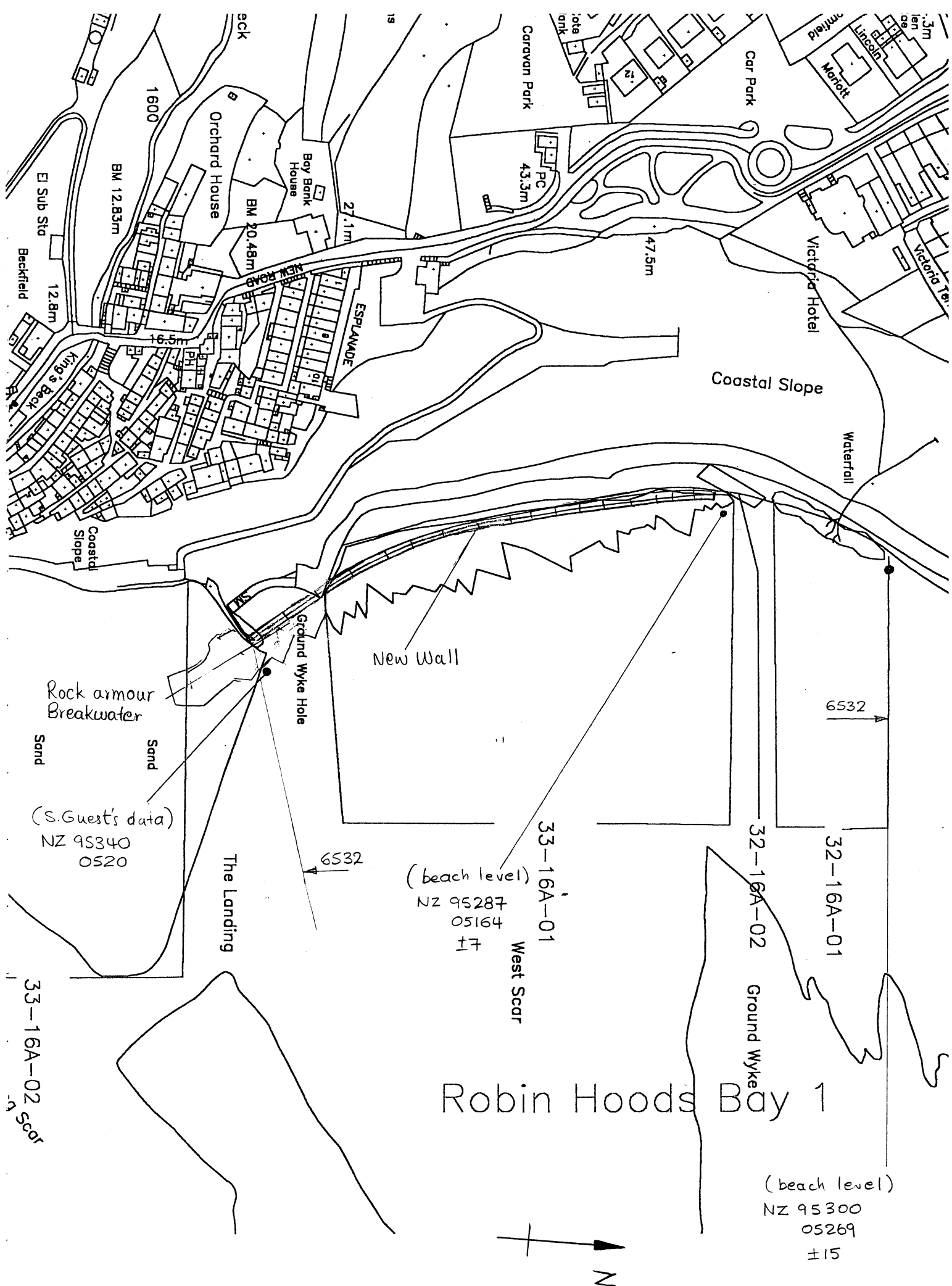
(at beach level)
NZ 89401
11529
±5

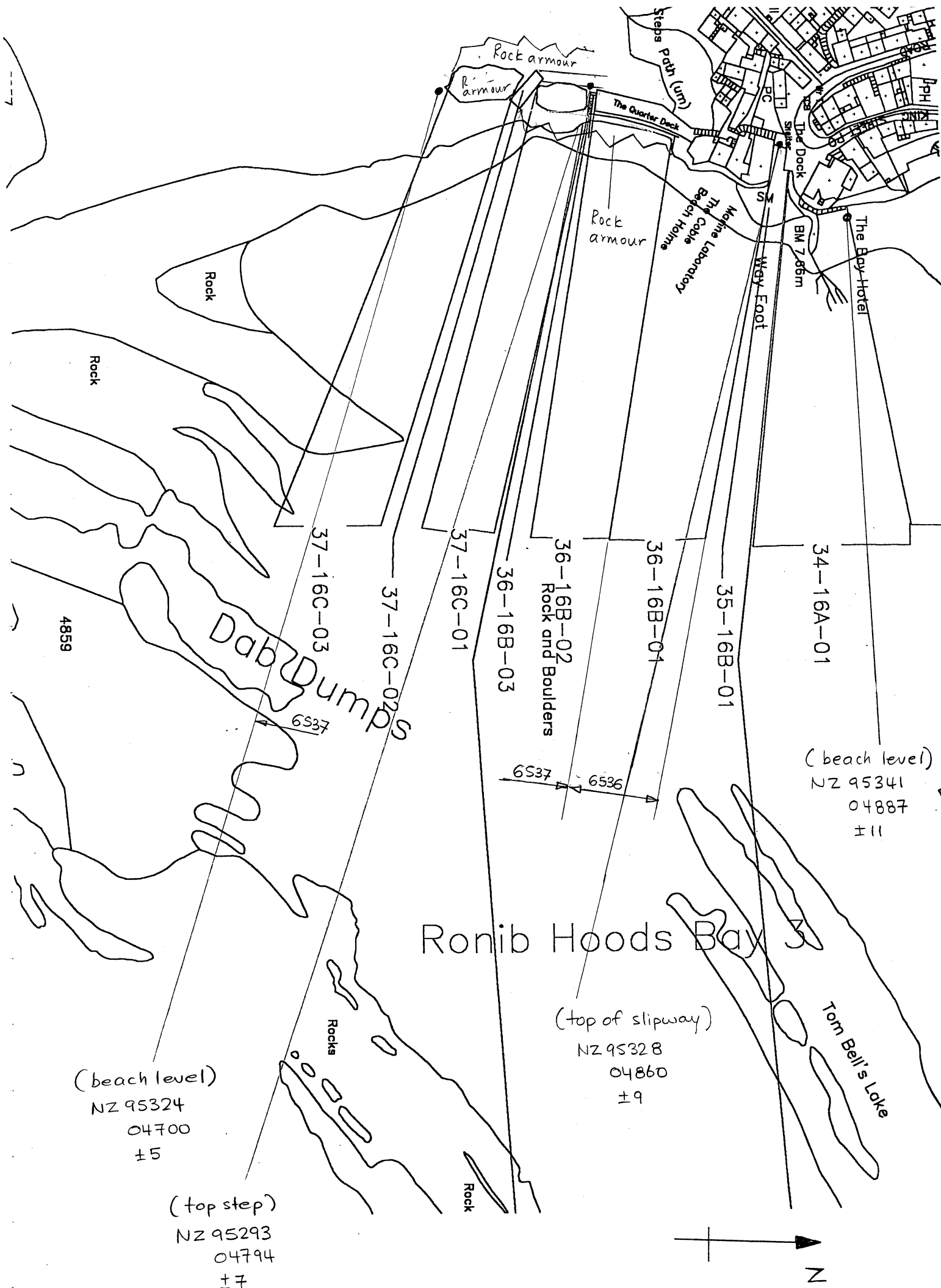
23-11B-01

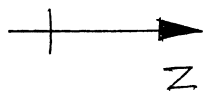
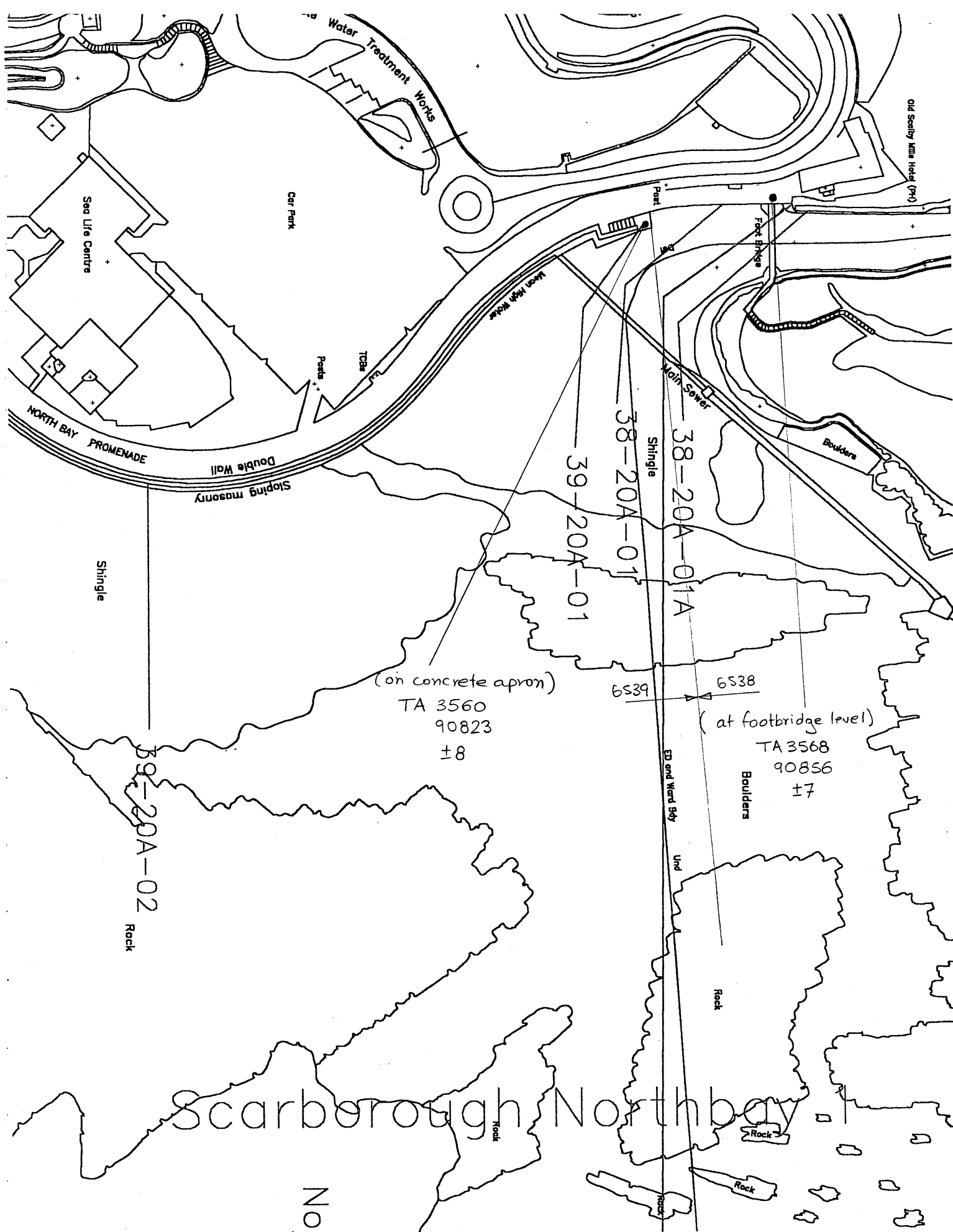
(at beach level)
NZ 89479
11536
±6

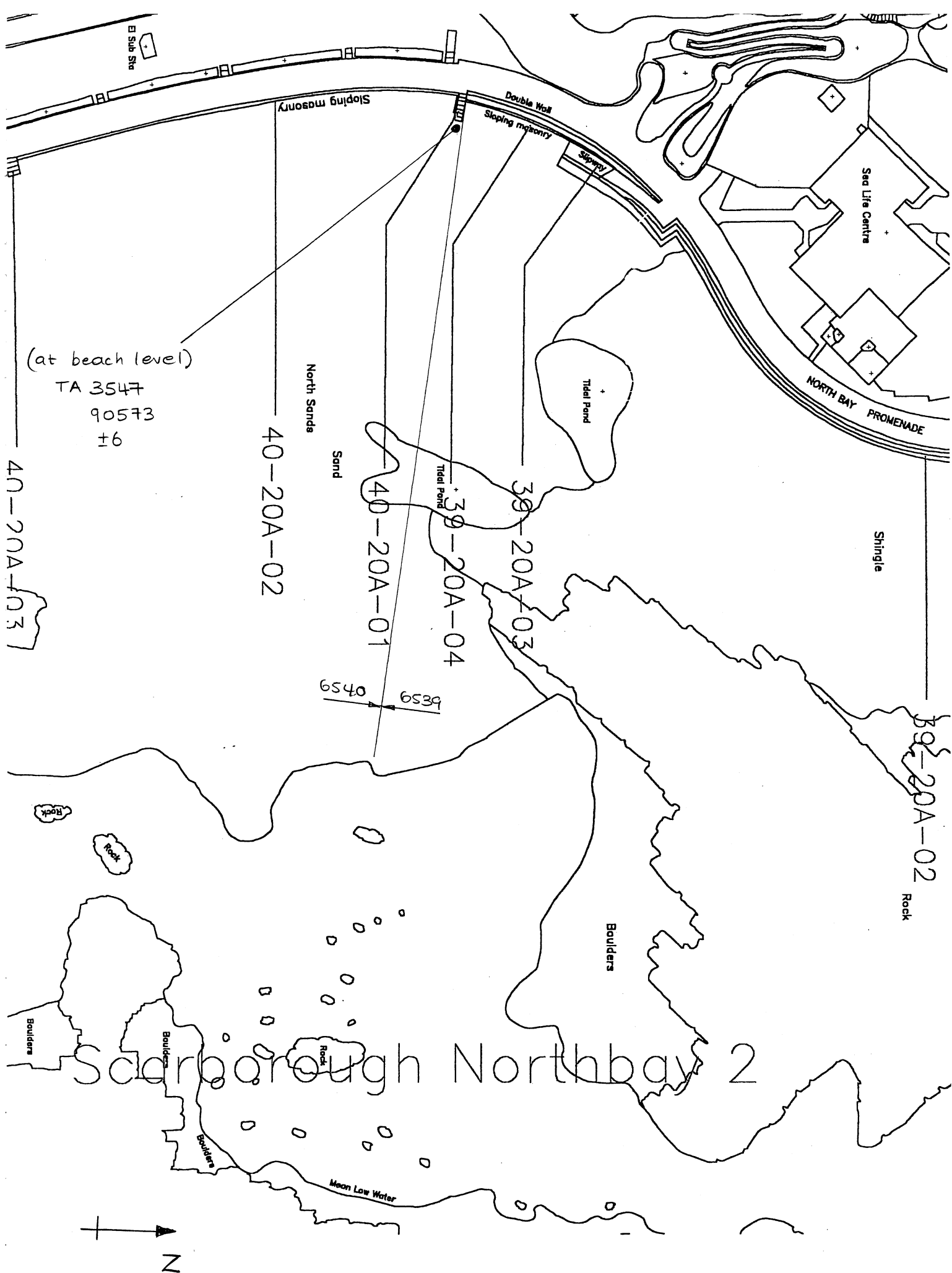
Whitby 4

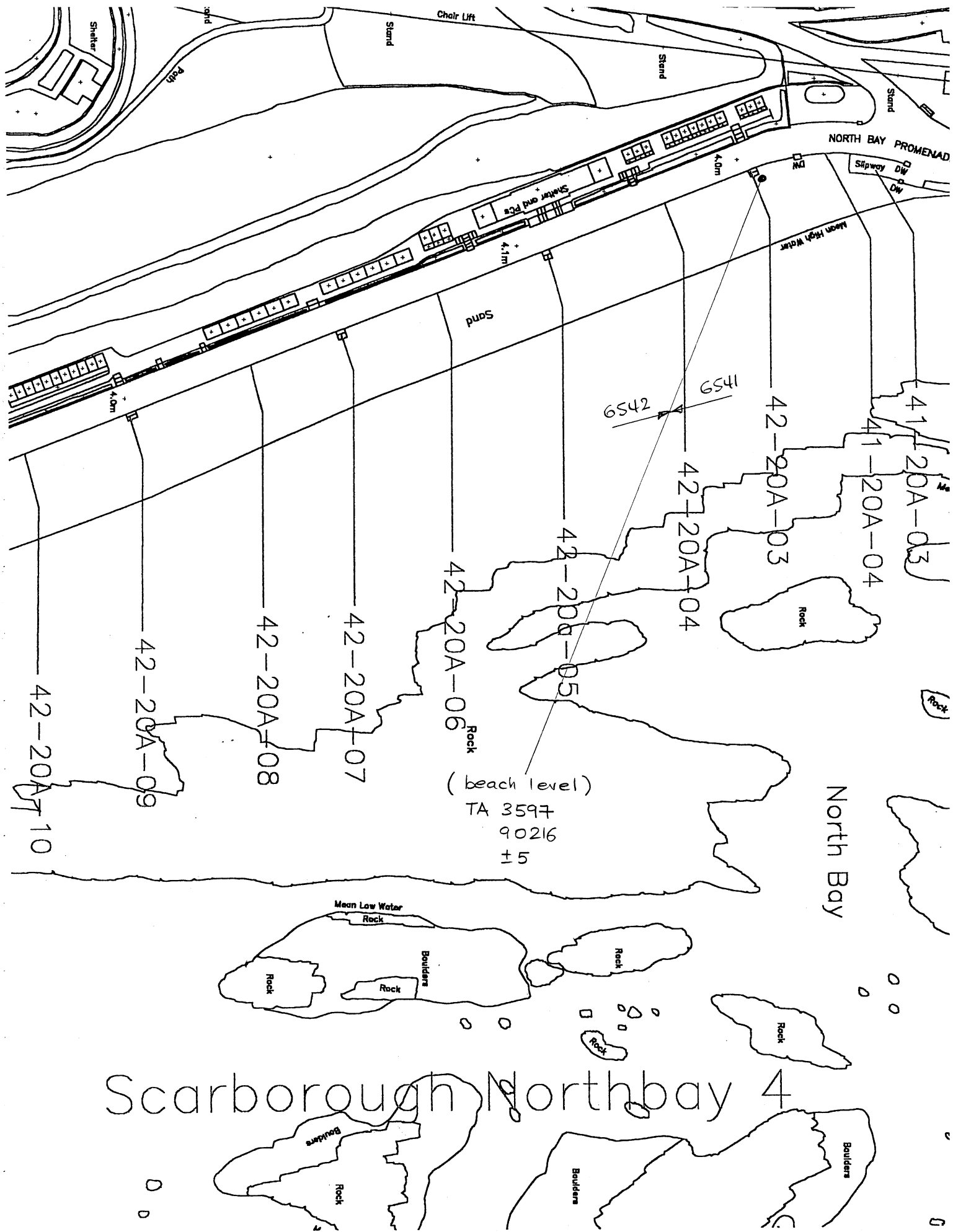




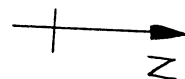


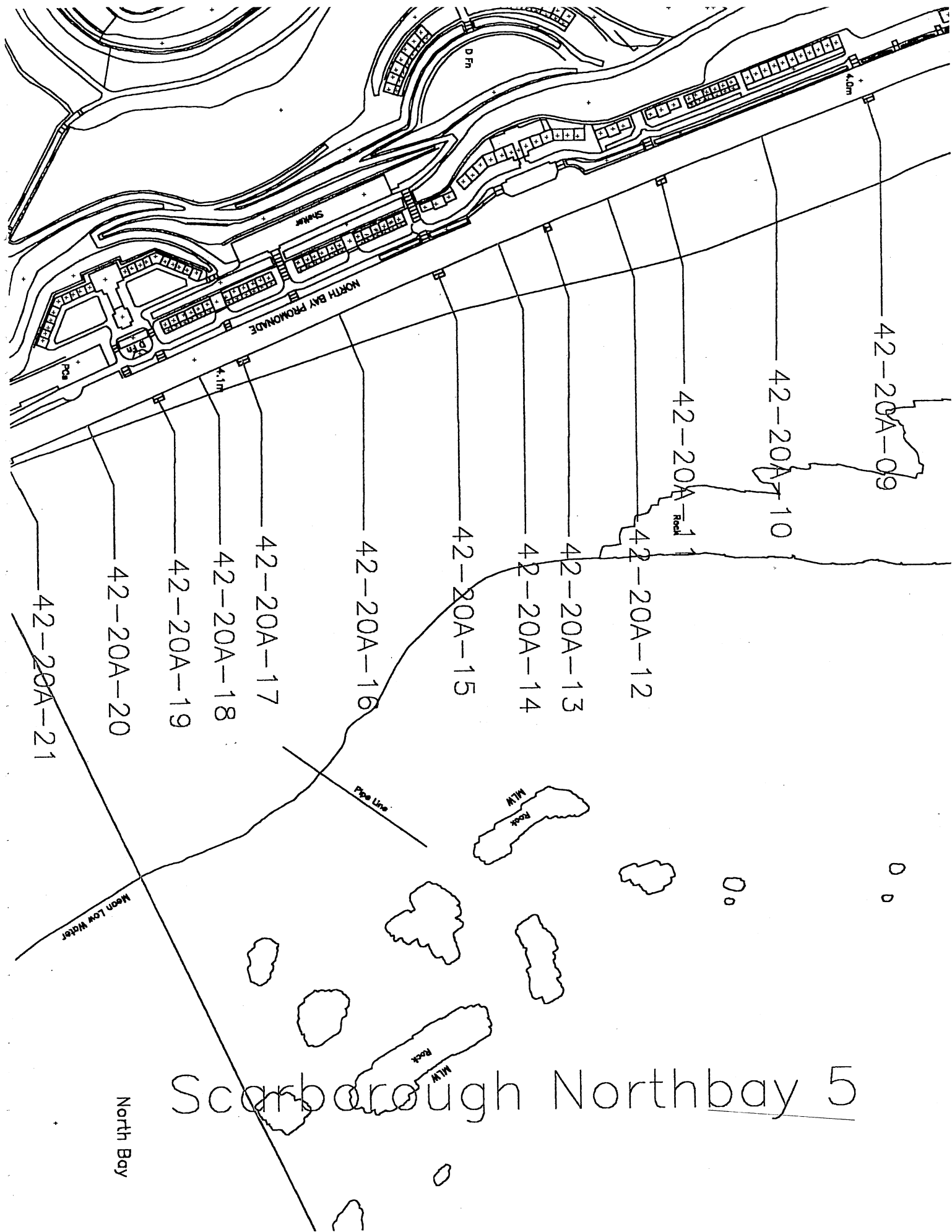




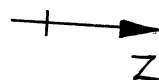


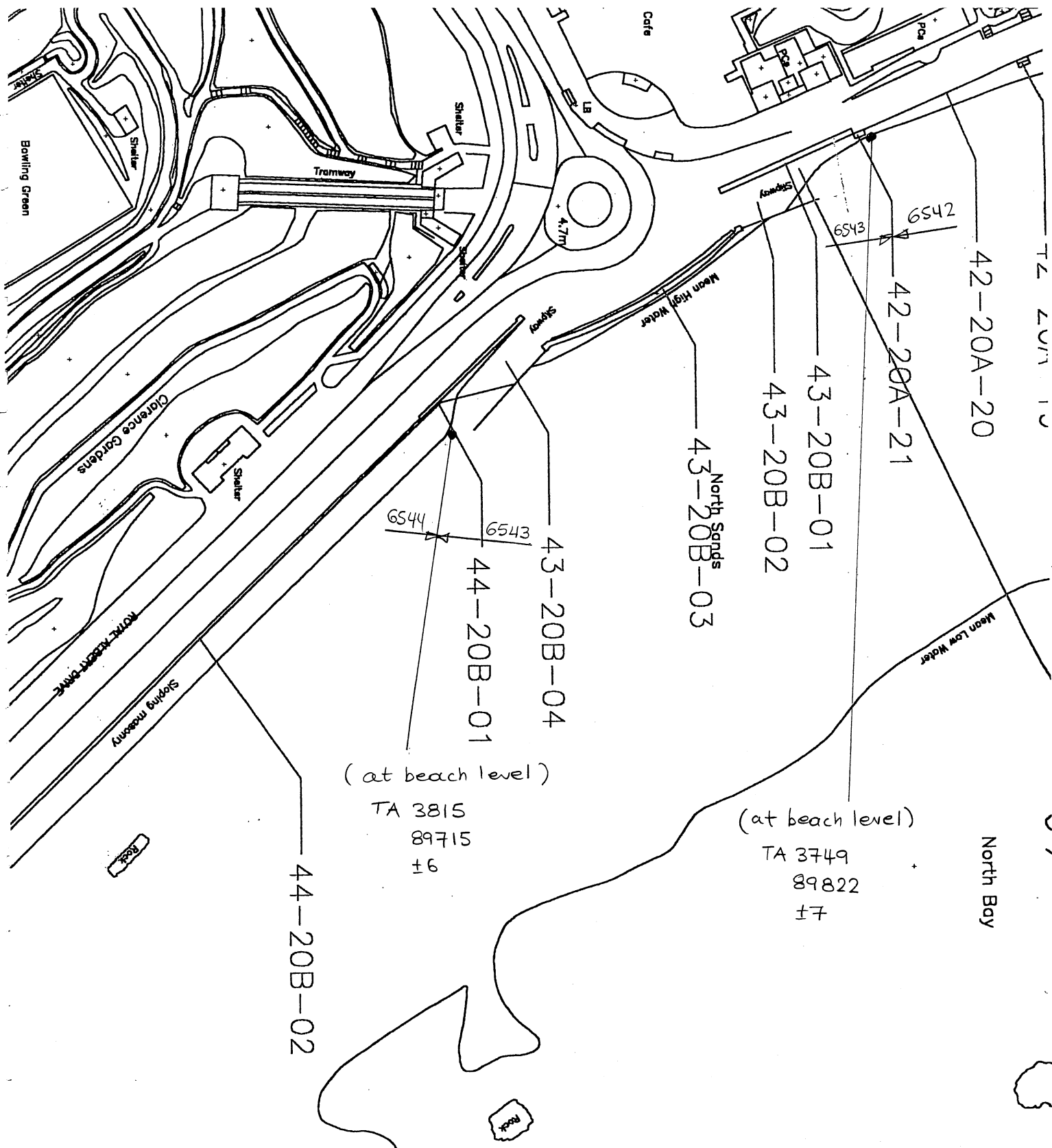
Scarborough Northbay 4



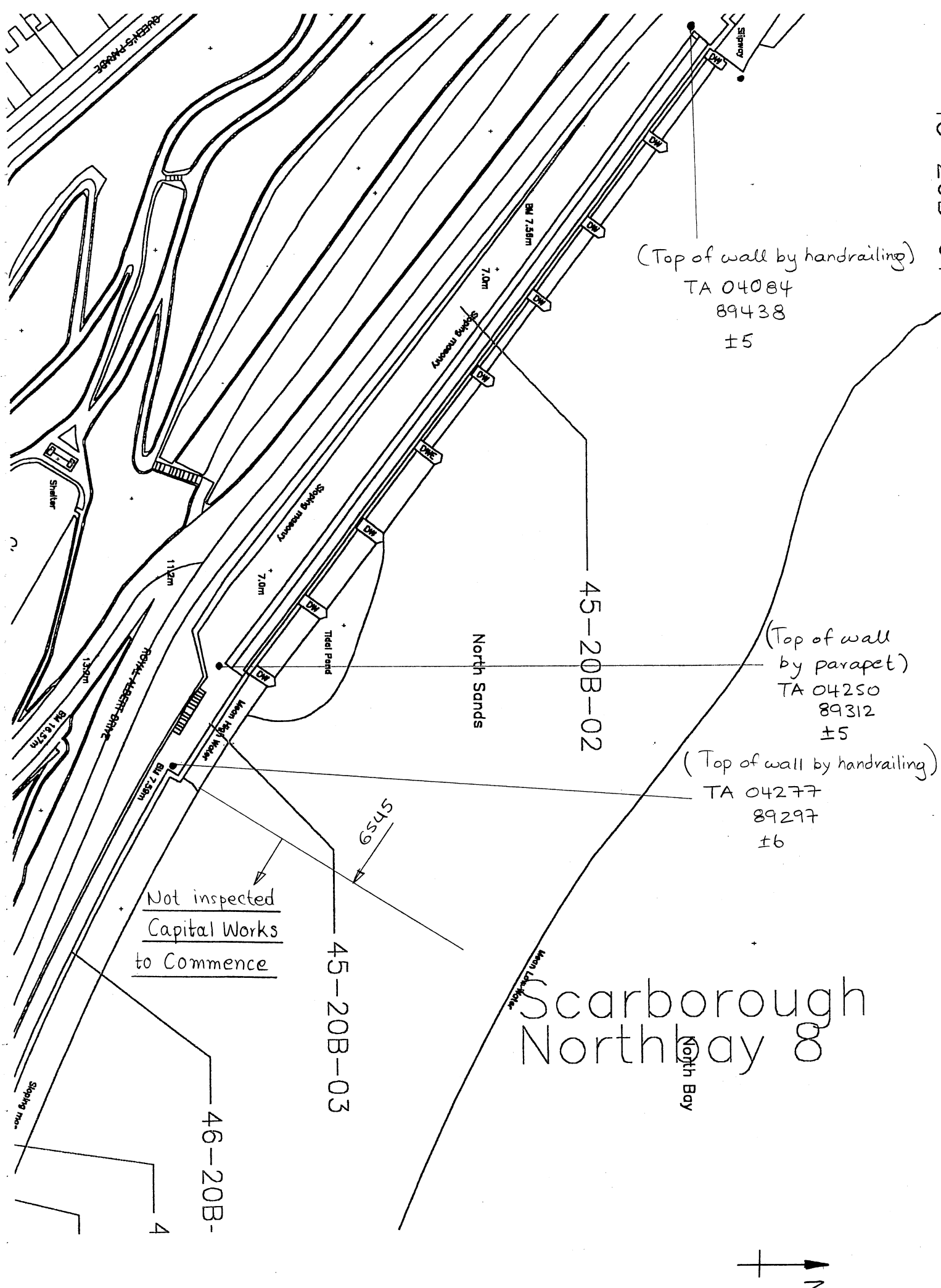


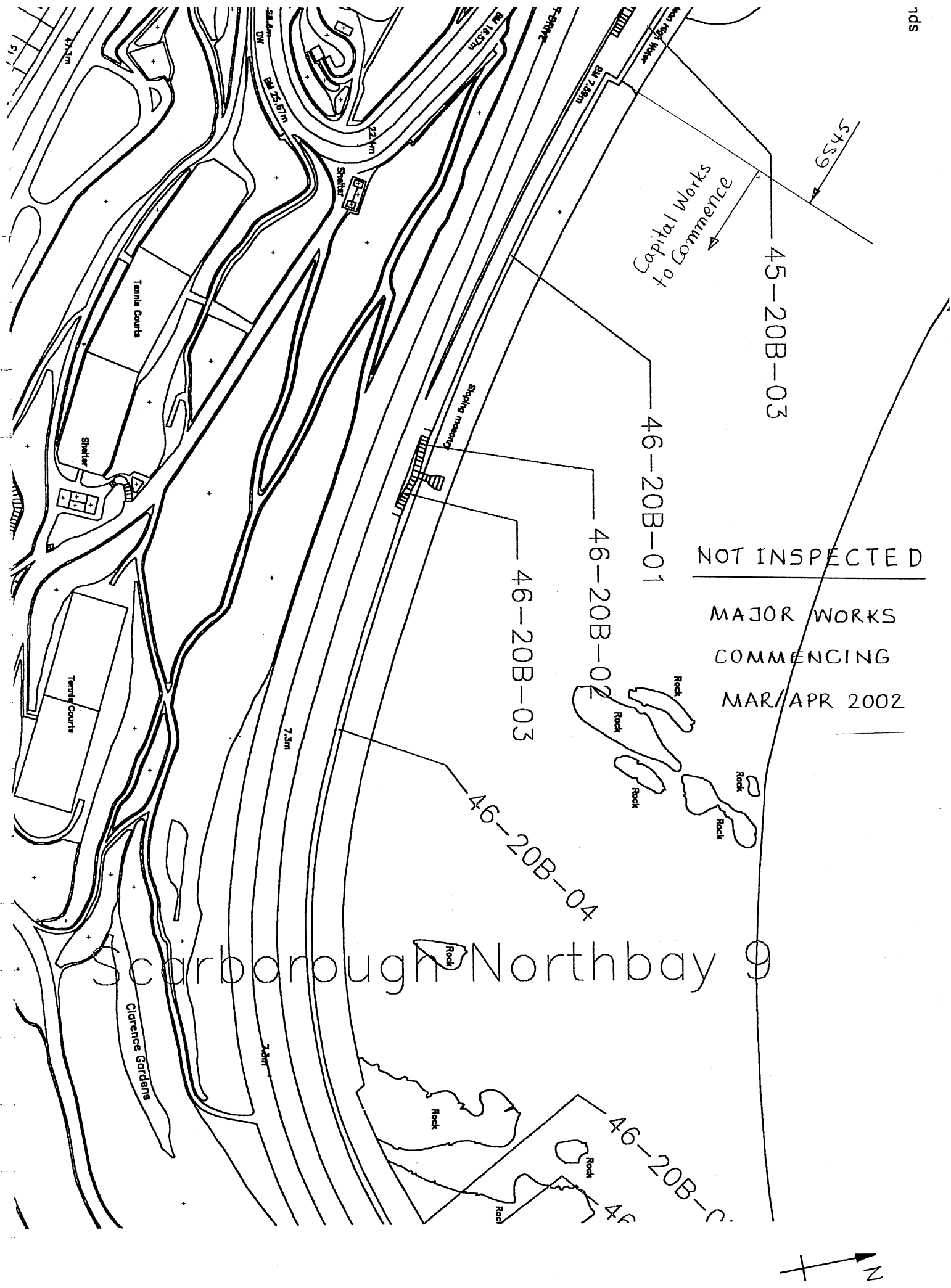
Scarborough Northbay 5

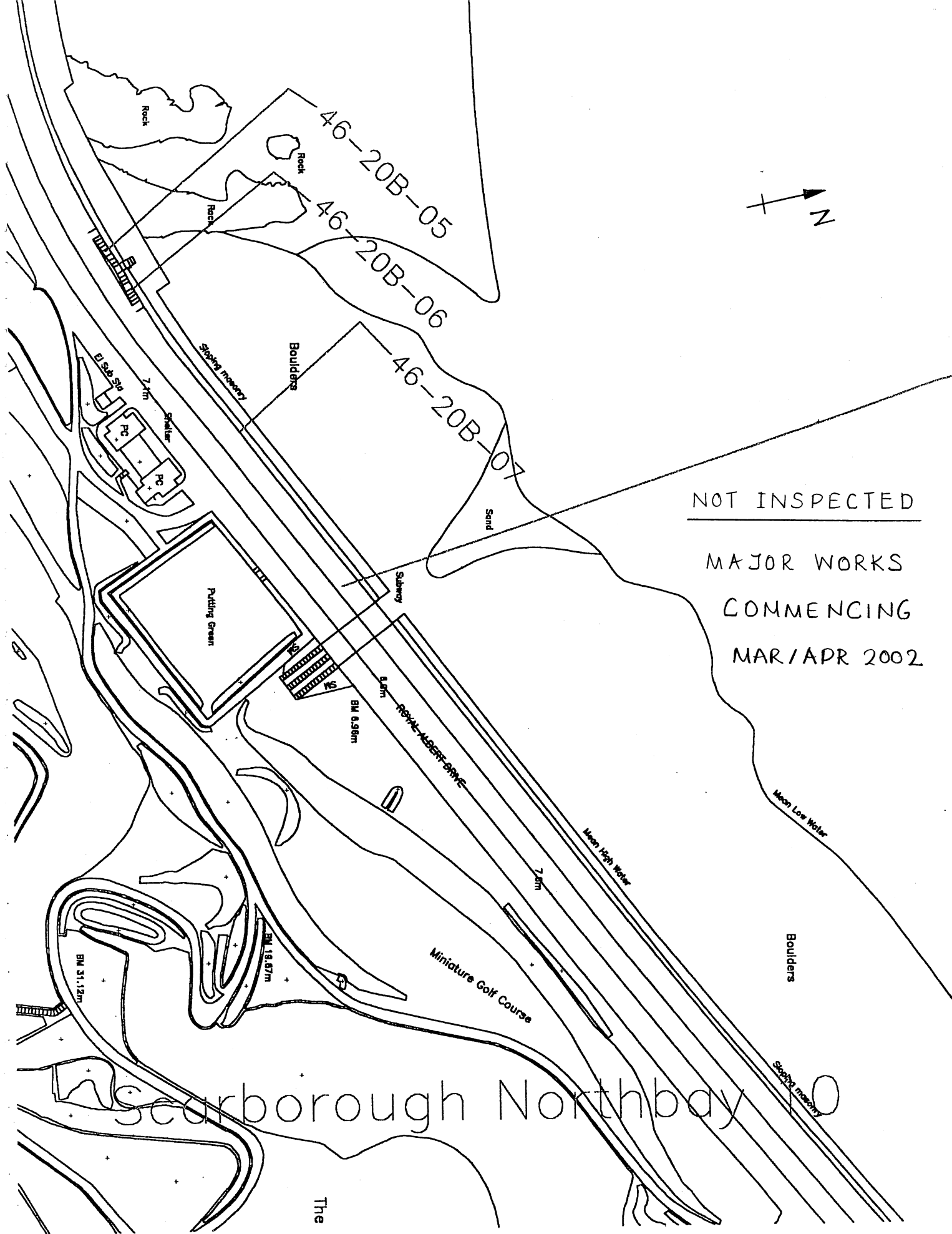




Scarborough Northbay 6



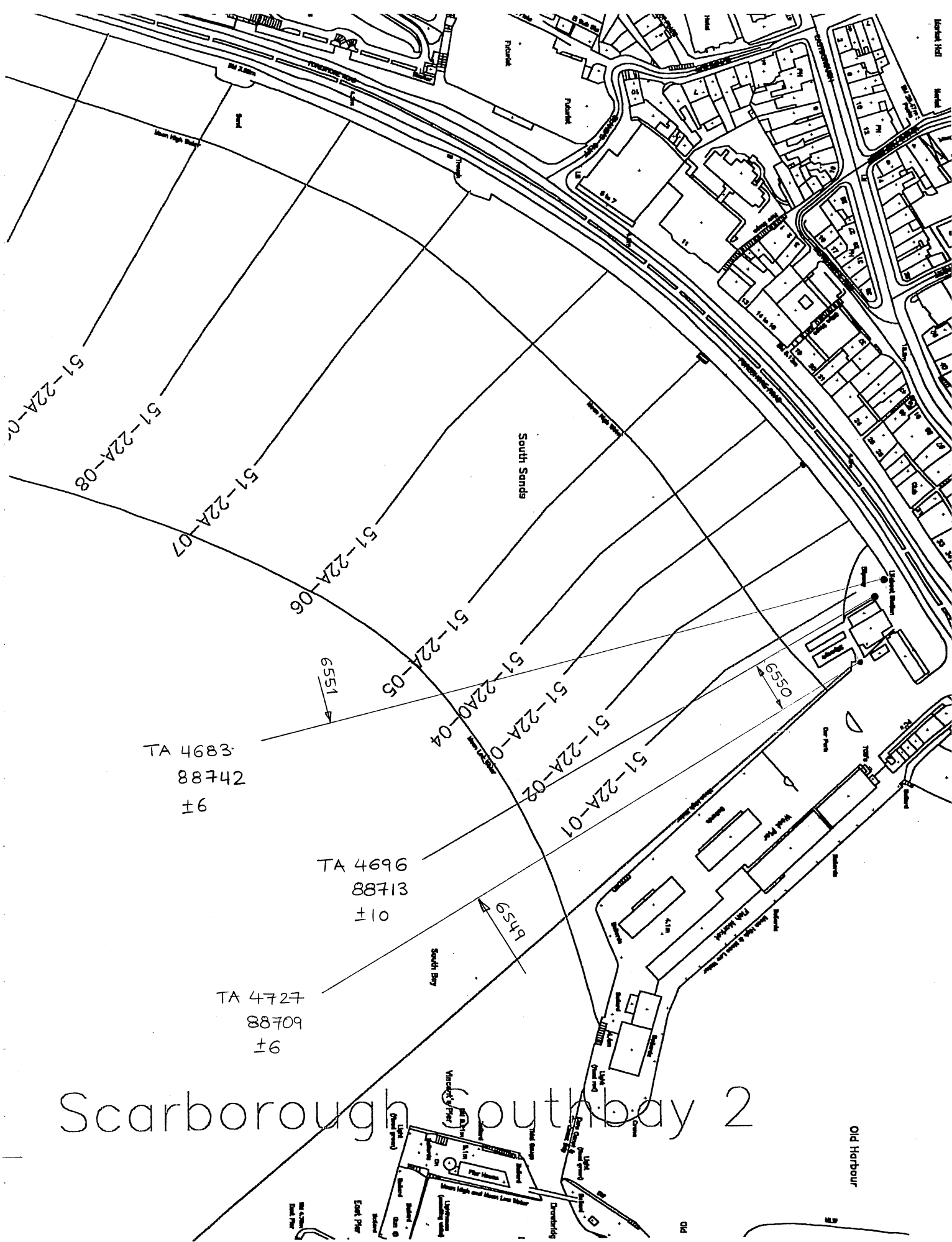


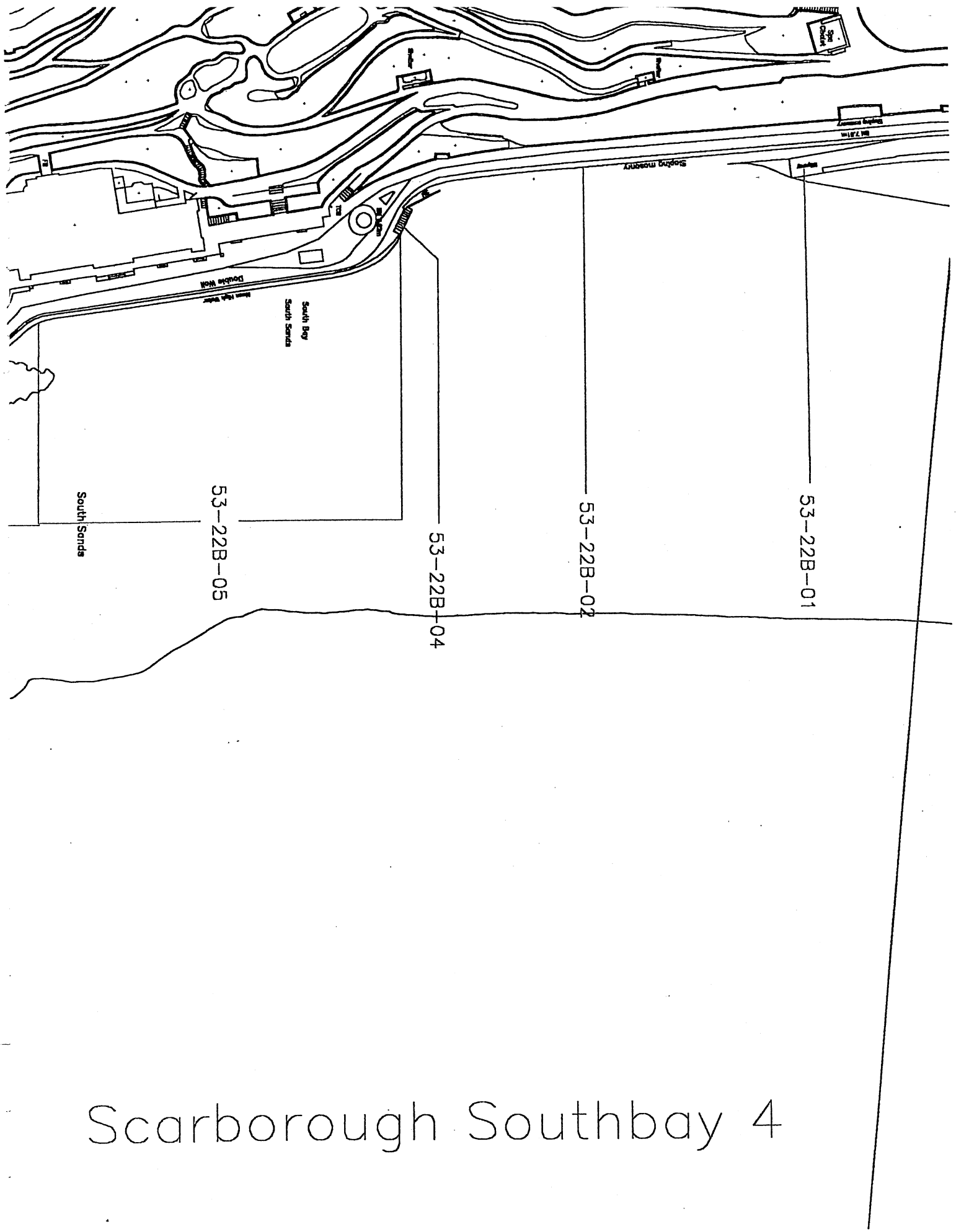


NOT INSPECTED
MAJOR WORKS
COMMENCING
MAR/APR 2002

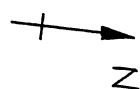
Scarborough Northbay

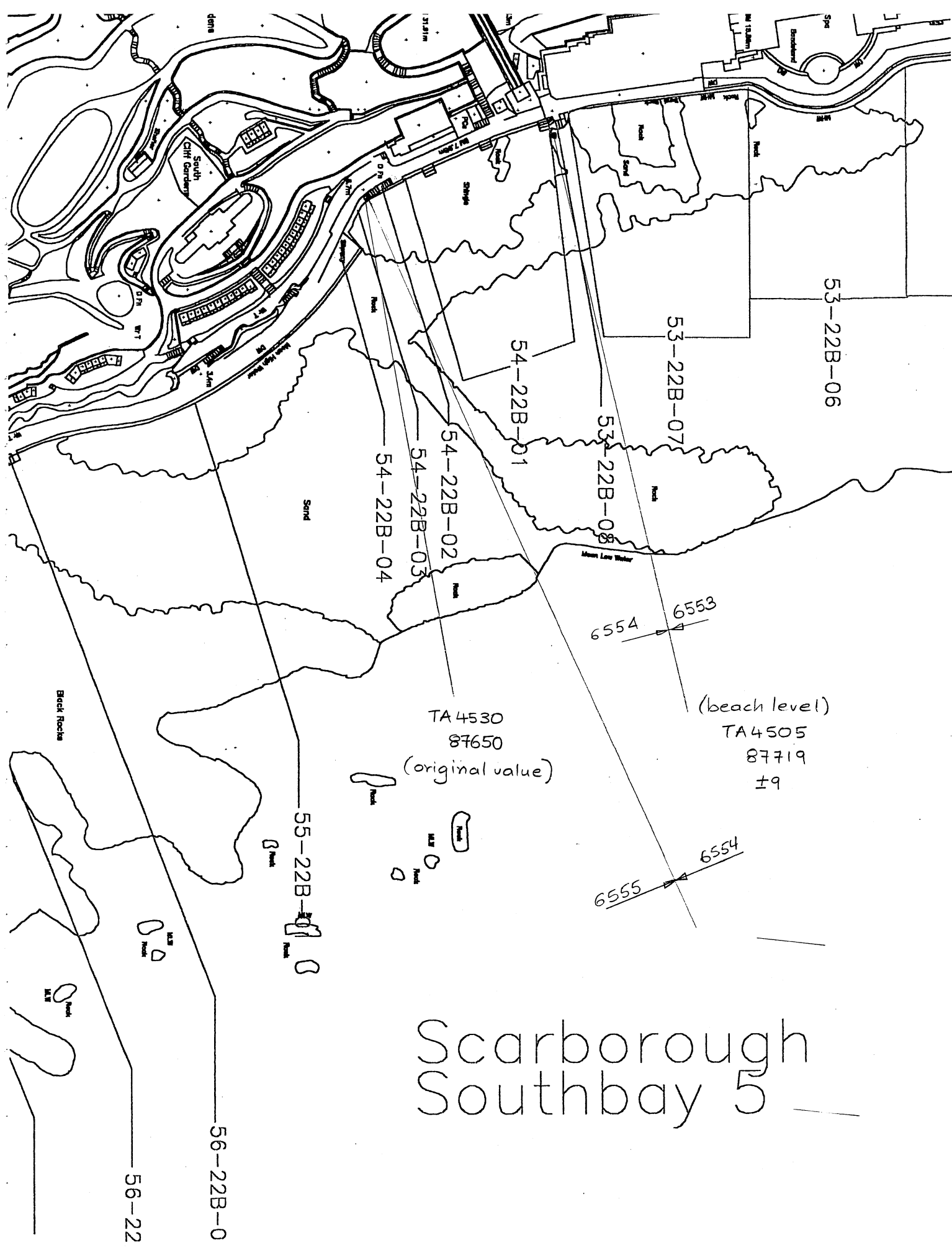
The



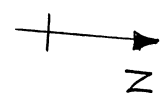


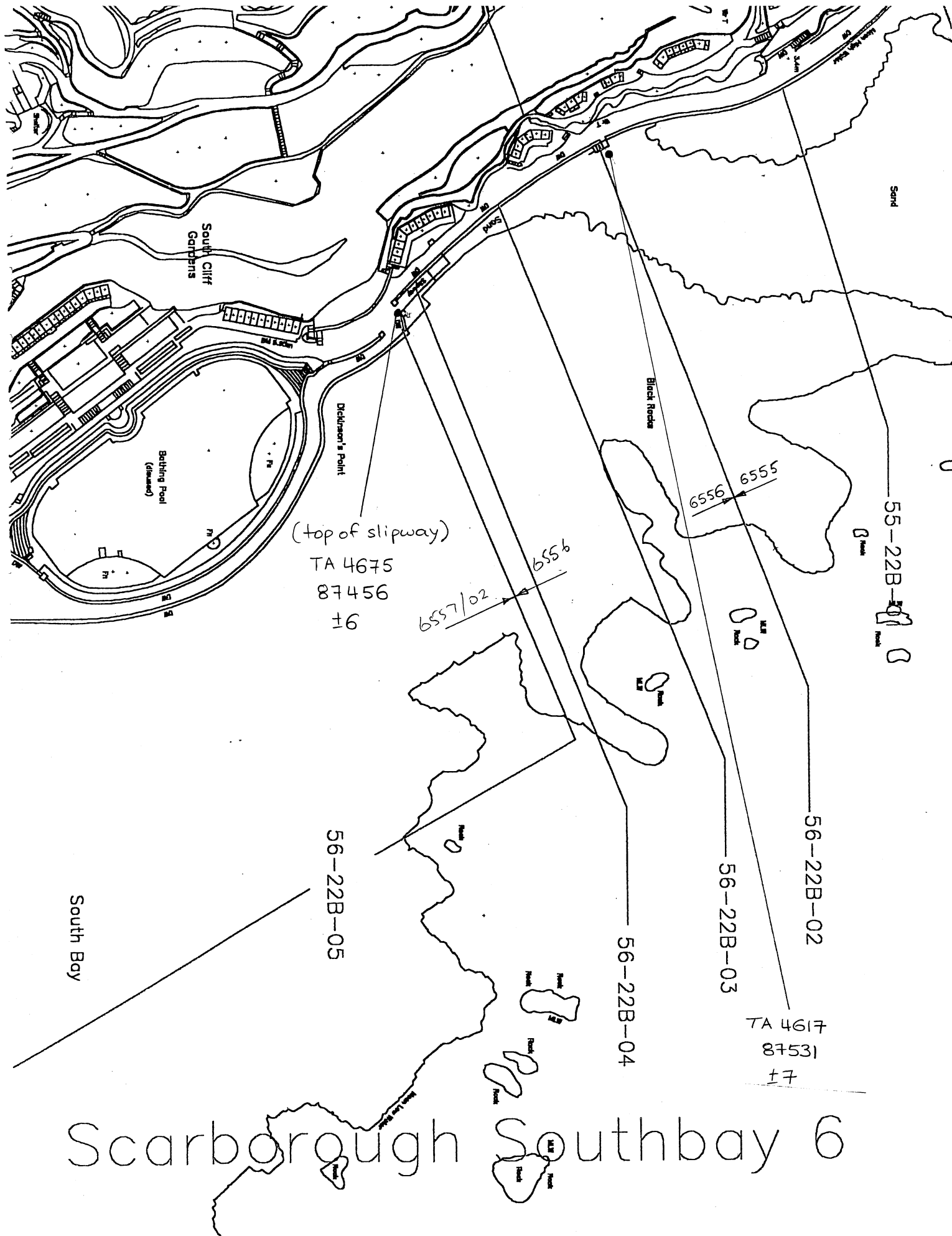
Scarborough Southbay 4



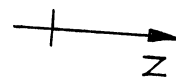


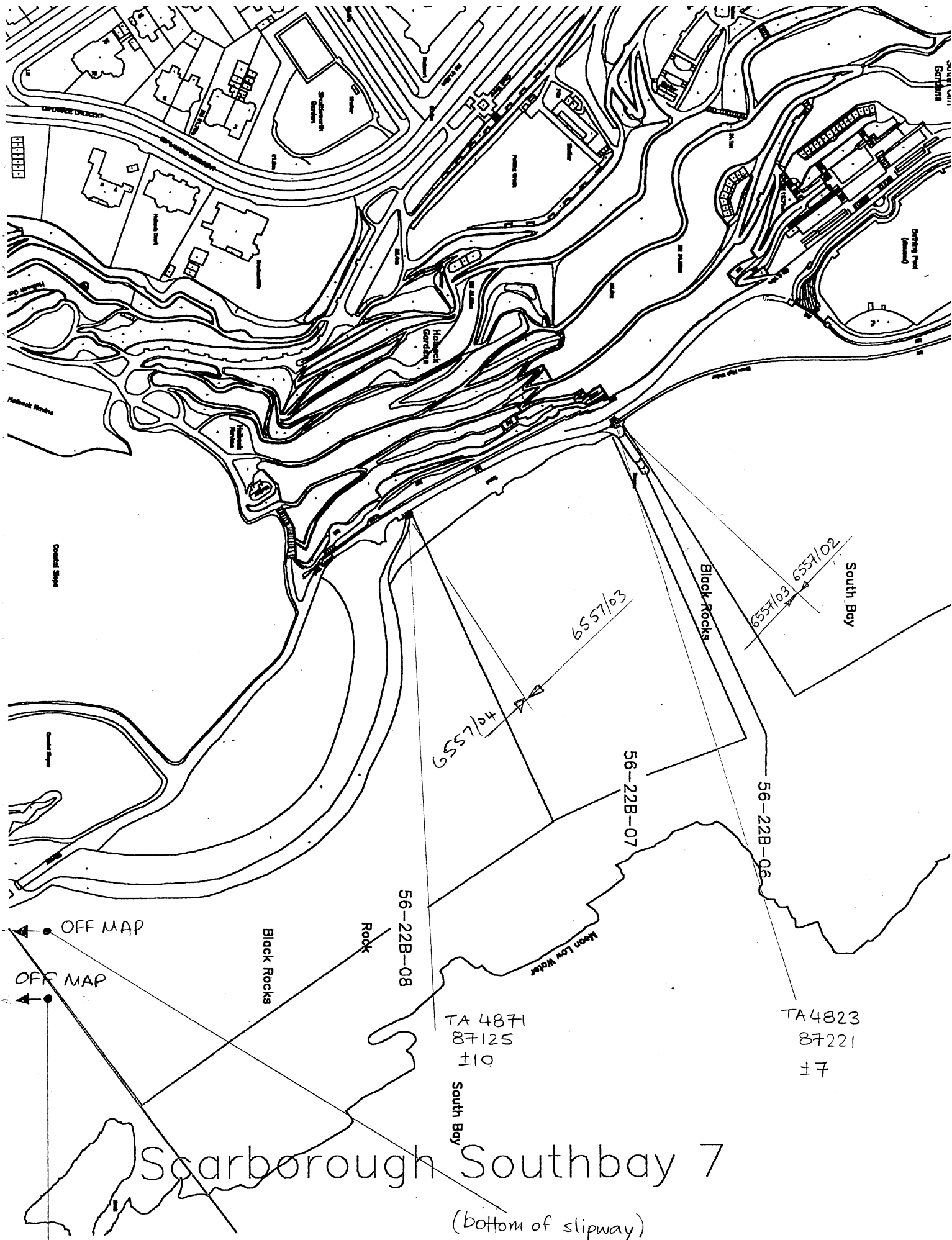
Scarborough Southbay 5





Scarborough Southbay 6





Scarborough Southbay 7

(bottom of slipway)

TA 5032
86946
±5

(bottom of cliff at end rock armour)

TA 5029
86923
±11

Appendix B
Coastal Structures Inventory – Full Version

| Defence Code | | Mngmt Unit | Strtgy Ref | Description | Sub Unit | Description | Description | Sub Description | National Grid Ref Start | | National Grid Ref End | | Short Length | | | Length | Material | Condition | | Residual Life (years) | Ownership | | | | |
|----------------------|-------------------------------|------------|------------|-------------------------------|----------|---------------------------------------|-------------|-----------------|-------------------------|------|-----------------------|----|--------------|---------|----|--------|----------|----------------|----------------|-----------------------|-----------|---------|-----|--|--|
| | | | | | | | | | E | N | E | N | Delta E | Delta N | m | | | Previous (?) | Present (2002) | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| Staithes | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6501/1 | North breakwater | 4 | | North breakwater | | | BW | | NZ | 7828 | 1902 | NZ | 7844 | 1906 | 16 | 4 | 165 | 180 | C | 3 | 2 | >10 | SBC | | |
| 6501/2 | Rock armour | 4 | | Rock armour | | | BW | AL | NZ | 7828 | 1902 | NZ | 7844 | 1906 | 16 | 4 | 165 | 180 | R | 1 | 1 | >10 | SBC | | |
| 6502/1 | Concrete/masonry walls | 4 | | Concrete/masonry walls | | | SW | | NZ | 7827 | 1889 | NZ | 7831 | 1886 | 4 | -3 | 50 | 50 | M | 3 | 2/3 | >10 | SBC | | |
| 6502/2 | | 4 | | | | | SW | | NZ | 7827 | 1889 | NZ | 7831 | 1886 | 4 | -3 | 50 | 50 | C | 3 | 2/3 | >10 | SBC | | |
| 6503/1 | Concrete wall | 4 | | Concrete wall | | | SW | | NZ | 7831 | 1887 | NZ | 7834 | 1884 | 3 | -3 | 42 | 90 | C | 3 | 2 | >10 | SBC | | |
| 6503/2 | Apron | 4 | | Apron | | | SW | | NZ | 7831 | 1887 | NZ | 7834 | 1884 | 3 | -3 | 42 | 90 | C | 3 | 2 | >10 | SBC | | |
| 6504/1 | Concrete wall | 4 | | Concrete wall | | | SW | | NZ | 7834 | 1884 | NZ | 7843 | 1880 | 9 | -4 | 98 | 80 | C | 3 | 2 | >10 | SBC | | |
| 6504/2 | | 4 | | | | | GR | | NZ | 7834 | 1884 | NZ | 7843 | 1880 | 9 | -4 | 98 | 80 | W | 3 | 2 | 6-10 | SBC | | |
| 6505/1 | Boat access | 4 | | Boat access | | | SW | RV | NZ | 7843 | 1880 | NZ | 7843 | 1881 | 0 | 1 | 10 | 10 | C | 3 | 2 | >10 | SBC | | |
| 6506/1 | Rock armour | 4 | | Rock armour | | | AL | | NZ | 7848 | 1889 | NZ | 7844 | 1900 | -4 | 11 | 117 | 140 | R | 1 | 1 | >10 | SBC | | |
| 6506/2 | Concrete breakwater | 4 | | Concrete breakwater | | | BW | | NZ | 7848 | 1889 | NZ | 7844 | 1900 | -4 | 11 | 117 | 120 | C | 3 | 2 | >10 | SBC | | |
| 6506/4 | New breakwater | | | New breakwater | | | BW | | NZ | 7847 | 1885 | NZ | 7844 | 1886 | -3 | 1 | 32 | 35 | C | N/A | 1 | >10 | SBC | | |
| Port Mulgrave | | | | | | | | | | | | | | | | | | | | | | | | | |
| - | Cliffs | | | | | | CL | | ? | ? | | ? | ? | | | | | | | | | | | | |
| - | Derelict Breakwater | | | | | | BW | | ? | ? | | ? | ? | | | | | ? | - | 5 | 0 | Private | | | |
| Runswick Bay | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6507/1 | Concrete wall | 7A | | Concrete wall | | | SW | | NZ | 8111 | 1620 | NZ | 8108 | 1614 | -3 | -6 | 67 | 70 | C | 2 | 3 | >10 | SBC | | |
| 6508/1 | Masonry/concrete walls | 7A | | Masonry/concrete walls | | | SW | | NZ | 8108 | 1614 | NZ | 8100 | 1606 | -8 | -8 | 113 | 140 | M | 3 | 2/3 | >10 | SBC | | |
| 6508/2 | Concrete toe | 7A | | Concrete toe | | | SW | | NZ | 8108 | 1614 | NZ | 8100 | 1606 | -8 | -8 | 113 | 140 | C | 2 | 2/3 | >10 | SBC | | |
| 6508/3 | | 7A | | | | | SW | | NZ | 8108 | 1614 | NZ | 8100 | 1606 | -8 | -8 | 113 | 140 | C | 2 | 2/3 | >10 | SBC | | |
| 6508/4 | New masonry wall | 7A | | New masonry wall | | | SW | | NZ | 8100 | 1606 | NZ | 8100 | 1604 | 0 | -2 | 20 | 20 | M | 1 | 2/3 | >10 | SBC | | |
| 6509/1 | Boat ramp | 7A | | Boat ramp | | | SW | RV | NZ | 8100 | 1604 | NZ | 8100 | 1600 | 0 | -4 | 40 | 40 | C | 3 | 1 | >10 | SBC | | |
| 6510/1 | Rock Armour Revetment | 7A/7B | | Rock Armour Revetment | | Steve Guest Grid Ref. | RV | AL | NZ | 8103 | 1602 | NZ | 8108 | 1589 | 5 | -13 | 139 | 137 | R | 1 | 1 | >10 | SBC | | |
| 6511/1 | Rock Armour Revetment/Slipway | | | Rock Armour Revetment/Slipway | | Steve Guest Grid Ref. | RV | AL | NZ | 8102 | 1593 | NZ | 8107 | 1584 | 5 | -9 | 103 | 185 | R/C | 3 | 2 | >10 | SBC | | |
| | Clay cliff | | | Clay cliff | | Steve Guest Grid Ref. - Not inspected | CL | N | NZ | 8107 | 1584 | NZ | 8117 | 1567 | 10 | -17 | 197 | 700 | V | 3 | | | SBC | | |
| Sandsend | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6512/1 | Cliff | 9A | 1 | Sendsend Cliffs | None | Not inspected | CL | N | NZ | 8594 | 1353 | NZ | 8600 | 1300 | 6 | -53 | 533 | 600 | R | 3 | | 11-20 | SBC | | |
| 6513/1 | Sloping concrete wall | 9A | 2 | Sendsend car park | 2A | Sloping concrete wall | SW | C | NZ | 8600 | 1300 | NZ | 8607 | 1286 | 7 | -14 | 157 | 130 | C | 1 | 2 | >10 | SBC | | |
| 6513/2 | Low masonry wall | 9A | 2 | Sendsend car park | 2B | Slipway | SW | | NZ | 8608 | 1289 | NZ | 8607 | 1286 | -1 | -3 | 32 | 32 | M | 3 | 2 | 6-10 | SBC | | |
| --- | | 9A | 2 | Sendsend car park | 2C | Sendsend bridge | | | | | | | | | | | | | | | | SBC | | | |
| 6514/1 | Concrete wall |) | 9B | Sendsend frontage | 3A | Concrete wall | (| SW | NZ | 8607 | 1286 | NZ | 8622 | 1271 | 15 | -15 | 212 | 270 | C | 3 | 3 | >10 | SBC | | |
| 6514/2 | Timber toe works |) | | | | | (| SW | NZ | 8607 | 1286 | NZ | 8622 | 1271 | 15 | -15 | 212 | 270 | W | 3 | 5 | 6-10 | SBC | | |
| 6514/3 | Timber groynes |) | | | | | (| GR | NZ | 8607 | 1286 | NZ | 8622 | 1271 | 15 | -15 | 212 | 270 | W | 3 | 5 | 6-10 | SBC | | |
| 6515/1 | Masonry wall | | 9B | Sendsend frontage | 3B | Cantilever footpath | SW | | NZ | 8622 | 1271 | NZ | 8626 | 1264 | 4 | -7 | 81 | 100 | M | 3 | 1 | >10 | SBC | | |
| 6515/2 | Concrete apron | | 9B | Sendsend frontage | 3B | Cantilever footpath | SW | | NZ | 8622 | 1271 | NZ | 8626 | 1264 | 4 | -7 | 81 | 100 | C | 3 | 2 | >10 | SBC | | |
| --- | | | 9B | Sendsend frontage | 3C | Slipway | SW | | NZ | 8626 | 1264 | NZ | 8625 | 1262 | -1 | -2 | 22 | 22 | C | | 2 | >10 | SBC | | |
| 6516/1 | Low masonry wall | | 9C | Sendsend valley | 4A | East Row Beck | SW | | NZ | 8625 | 1262 | NZ | 8628 | 1258 | 3 | -4 | 50 | 220 | M | 3 | 2 | >10 | SBC | | |
| 6517/1 | Concrete revetment | | | | | | SW | RV | NZ | 8628 | 1258 | NZ | 8710 | 1219 | 82 | -39 | 908 | 908 | C | | 2/3 | >10 | SBC | | |
| | | (| 9C | Sendsend valley | 4B | Slipway | SW | RV | | | | | | | | | | | C | | 2 | >10 | SBC | | |
| | | (| 9C | Sendsend valley | 4C | Gabions | SW | RV | | | | | | | | | | | G | | 1 | >10 | SBC | | |
| | | (| 9C | Sendsend valley | 4D | Concrete sloping wall west | SW | RV | | | | | | | | | | | C | 4 | 2 | >10 | SBC | | |
| | | (| 9C | Sendsend road A174 | 5A | Concrete sloping wall east | SW | RV | | | | | | | | | | | C | | 2/3 | >10 | SBC | | |
| | | (| 9C | Sendsend road A174 | 5B | Timber piling | SW | RV | | | | | | | | | | | H | | 5 | N/A | SBC | | |
| Whitby | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6518/1 | Concrete wall |) | 11A | West cliff west | | | (| SW | NZ | 8817 | 1196 | NZ | 8854 | 1187 | 37 | -9 | 381 | 420 | C | 1 | 2 | >10 | SBC | | |
| 6518/2 | Rock Armour |) | | | | | (| SW | NZ | 8817 | 1196 | NZ | 8854 | 1187 | 37 | -9 | 381 | 420 | R | 1 | 2 | >10 | SBC | | |
| 6519/1 | Old concrete wall | | 11A | West cliff seawall | | | SW | | NZ | 8854 | 1187 | NZ | 8869 | 1181 | 15 | -6 | 162 | 150 | C | 3 | 2/3 | >10 | SBC | | |
| | | | 11A | West cliff metropole | 12A | Metropole west seawall | | | | | | | | | | | | | | | | | | | |
| 6520/1 | Concrete wall |) | 11A | West cliff metropole | 12B | Metropole east seawall | (| SW | NZ | 8924 | 1155 | NZ | 8929 | 1154 | 5 | -1 | 51 | 60 | C | 3 | 2 | >10 | SBC | | |

| Defence Code | | Mngmt Unit | Strtg Ref | Description | Sub Unit | Description | Description | Sub Description | National Grid Ref Start | | National Grid Ref End | | Short Length | | Length | Material | Condition | | Residual Life (years) | Ownership | | | | |
|------------------|-------------------------------|------------|-----------|-------------|---|-------------------------------|---|-----------------|-------------------------|------|-----------------------|------|--------------|---------|--------|----------|----------------|----------------|-----------------------|-----------|------|------|-----|-----|
| | | | | | | | | | E | N | E | N | Delta E | Delta N | | | Previous (?) | Present (2002) | | | | | | |
| 6520/2 | Concrete toe to wall |) | | | | (| SW | NZ | 8924 | 1155 | NZ | 8929 | 1154 | 5 | -1 | 51 | 60 | C | 3 | 2 | >10 | SBC | | |
| 6521/1 | Masonry wall |) | | | | (| SW | NZ | 8929 | 1154 | NZ | 8936 | 1152 | 7 | -2 | 73 | 70 | M | 4 | 2 | 6-10 | SBC | | |
| 6522/1 | Masonry wall & slipway |) | | | | (| SW | NZ | 8936 | 1152 | NZ | 8941 | 1152 | 5 | 0 | 50 | 50 | M | 3 | 2 | >10 | SBC | | |
| 6523/1 | Concrete toe wall |) | 11B | 13 | West cliff spa | (| SW | NZ | 8941 | 1152 | NZ | 8952 | 1152 | 11 | 0 | 110 | 120 | C | 3 | 2/3 | 6-10 | SBC | | |
| 6523/2 | Conc bermed revetment |) | | | | (| SW | RV | NZ | 8941 | 1152 | NZ | 8948 | 1152 | 7 | 0 | 70 | 80 | C | 3 | 2/3 | 6-10 | SBC | |
| 6523/3 | Timber rock-filled breastwork |) | | | | (| SW | BR | NZ | 8948 | 1152 | NZ | 8952 | 1152 | 4 | 0 | 40 | 40 | W | 3 | 2 | >10 | SBC | |
| 6523/4 | |) | | | | (| SW | SW | NZ | 8941 | 1152 | NZ | 8952 | 1152 | 11 | 0 | 110 | 120 | M | 3 | | >10 | SBC | |
| 6523/5 | Concrete apron |) | | | | (| SW | | NZ | 8941 | 1152 | NZ | 8952 | 1152 | 11 | 0 | 110 | 120 | C | 3 | 2 | 6-10 | SBC | |
| 6524/1 | Masonry encasements | | 11B | 14 | West cliff blockwork wall | | SW | | NZ | 8955 | 1154 | NZ | 8965 | 1151 | 10 | -3 | 104 | 100 | M | 3 | 2/3 | >10 | SBC | |
| --- | | | 11B | 15 | West cliff rock outcrop | | | | | | | | | | | | | | | | | | | |
| 6525/1 | Concrete return wall | | 11B | 15 | West cliff rock outcrop | | SW | | NZ | 8978 | 1148 | NZ | 8979 | 1150 | 1 | 2 | 22 | 20 | C | 3 | 2 | >10 | SBC | |
| 6526/1 | Battery Parade | | 11B | 16 | Battery wall | | SW | | NZ | 8979 | 1150 | NZ | 8985 | 1149 | 6 | -1 | 61 | 70 | M | 3 | 3 | >10 | SBC | |
| 6527/1 | West Pier | | 12 | 17 | Harbour West Pier | 17A | Main arm | BW | NZ | 8986 | 1149 | NZ | 8992 | 1173 | 6 | 24 | 247 | 250 | M | 3 | 3 | >10 | SBC | |
| 6528/1 | Outer breakwater | | 12 | 17 | Harbour West Pier | 17B | Outer arm - <i>Not inspected</i> | BW | NZ | 8992 | 1173 | NZ | 8992 | 1188 | 0 | 15 | 150 | 150 | C | 3 | | >10 | SBC | |
| 6529/1 | Outer pier | | 12 | 18 | Harbour East Pier | 18B | Outer Arm - <i>Not inspected</i> | BW | NZ | 8999 | 1187 | NZ | 9005 | 1172 | 6 | -15 | 162 | 150 | C | 3 | | >10 | SBC | |
| 6530/1 | East pier | | 12 | 18 | Harbour East Pier | 18A | Main Arm | BW | NZ | 9000 | 1173 | NZ | 9016 | 1150 | 16 | -23 | 280 | 300 | M | 3 | 1/2 | >10 | SBC | |
| (6530/2) | | | 12 | 19 | Haggerlythe - Rock armour b/w crest supporting mass concrete slipway. | 19A | Steve Guest Grid Ref values - <i>Unable to check</i> | | NZ | 9016 | 1149 | NZ | 9016 | 1145 | 0 | -4 | 40 | 40 | R/C | | 1/2 | | SBC | |
| (6530/3) | | | 12 | 19 | Haggerlythe - Rock fill buttress clad with 3-6 t rock. | 19A | Steve Guest Grid Ref values - <i>Unable to check</i> | | NZ | 9005 | 1135 | NZ | 9016 | 1145 | 11 | 10 | 149 | 150 | R | | 3 | | SBC | |
| ??? | | | 12 | 19 | Haggerlythe - Southern section | 19B | | | | | | | | | | | | | | | | | | |
| 6531/1 | Eroding cliffs |) | 12 | 20 | Abbey cliff - Eroding cliffs. | | Steve Guest Grid Ref values - <i>Not inspected. Unable to check</i> | CL | N | NZ | 9012 | 1134 | NZ | 9016 | 1145 | 4 | 11 | 117 | | 3 | | | SBC | |
| | |) | | | Rock armour revetment. | | Steve Guest Grid Ref values - <i>Not inspected. Unable to check</i> | SW | RV | NZ | 9016 | 1145 | NZ | 9045 | 1144 | 29 | -1 | 290 | 306 | R | 3 | 1 | >10 | SBC |
| | |) | | | Eroding cliffs. | | Steve Guest Grid Ref values - <i>Unable to check</i> | CL | N | NZ | 9045 | 1144 | NZ | 9047 | 1140 | 2 | -4 | 45 | | 3 | | | SBC | |
| 6569/1 | Eroding cliff | | | | <i>Golf course.</i> | | <i>Not inspected</i> | CL | N | NZ | 8724 | 1216 | NZ | 8823 | 1196 | 99 | -20 | 1,010 | 1000 | | 3 | | | |
| 6570/1 | Concrete wall | | 11A | 11 | West cliff east | | SW | | NZ | 8869 | 1180 | NZ | 8887 | 1171 | 18 | -9 | 201 | 210 | C | 1 | 2/3 | >10 | SBC | |
| 6570/2 | Rock armour | | | | | | SW | AL | NZ | 8869 | 1180 | NZ | 8887 | 1171 | 18 | -9 | 201 | 210 | R | 1 | 2/3 | >10 | SBC | |
| 6571/1 | Concrete wall |) | 11A | 10 | West cliff seawall | (| SW | | NZ | 8887 | 1171 | NZ | 8924 | 1155 | 37 | -16 | 403 | 410 | C | 3 | 2 | 6-10 | SBC | |
| 6571/2 | Concrete toe |) | | | | (| SW | AL | NZ | 8887 | 1171 | NZ | 8901 | 1162 | 14 | -9 | 166 | 170 | C | 5 | 2/3 | 6-10 | SBC | |
| 6571/3 | Concrete toe |) | | | | (| SW | | NZ | 8901 | 1162 | NZ | 8924 | 1155 | 23 | -7 | 240 | 240 | C | 5 | 2/3 | 6-10 | SBC | |
| Robin Hood's Bay | | | | | | | | | | | | | | | | | | | | | | | | |
| 6532/1 | Eroding cliff | | 16A | | Eroding cliff | <i>Superseded</i> | CL | N | NZ | 9533 | 547 | NZ | 9531 | 529 | -2 | -18 | 181 | 200 | | 3 | | | SBC | |
| 6532/2 | | | 16A | | | <i>Superseded</i> | SW | RV | NZ | 9531 | 529 | NZ | 9535 | 504 | 4 | -25 | 253 | 260 | | 1 | | >10 | SBC | |
| 6532/3 | | | 16A | | | <i>Superseded</i> | SW | | NZ | 9528 | 520 | NZ | 9535 | 504 | 7 | -16 | 175 | 140 | C/R | 1 | | >10 | SBC | |
| 6532/4 | | | 16A | | | <i>Superseded</i> | CL | N | NZ | 9535 | 504 | NZ | 9531 | 503 | -4 | -1 | 41 | 30 | | 3 | | | | |
| 6532/1 | | | 16A | | <i>Rock armour revetment</i> | <i>Steve Guest data</i> | | | NZ | 9529 | 528 | NZ | 9529 | 517 | 0 | -11 | 110 | 104 | R | N/A | 1 | >10 | SBC | |
| 6532/2 | | | 16A | | <i>Rock armour revetment fronting reinforced rock fill wall with mass concrete facing</i> | <i>Steve Guest data</i> | | | NZ | 9529 | 517 | NZ | 9534 | 505 | 5 | -12 | 130 | 125 | C | N/A | 1 | >10 | SBC | |
| 6532/3 | | | 16A | | <i>Steve Guest data</i> | <i>Rock armour breakwater</i> | | | NZ | 9534 | 505 | NZ | 9534 | 502 | 0 | -3 | 30 | 28 | R | - | 1 | | | |
| 6533/1 | Concrete wall | | 16A | | | | SW | | NZ | 9531 | 503 | NZ | 9534 | 488 | 3 | -15 | 153 | 160 | C | 2 | 1 | >10 | SBC | |
| 6533/2 | Masonry splash wall | | 16A | | | | SW | SW | NZ | 9531 | 503 | NZ | 9534 | 488 | 3 | -15 | 153 | 160 | M | 3 | 1 | >10 | SBC | |
| 6534/1 | Masonry walls | | 16A | | | | SW | | NZ | 9534 | 488 | NZ | 9532 | 486 | -2 | -2 | 28 | 30 | M | 2 | 3 | >10 | SBC | |
| 6535/1 | Masonry slip | | 16B | | | | SW | | NZ | 9532 | 486 | NZ | 9532 | 485 | 0 | -1 | 10 | 10 | M | 2 | 2 | >10 | SBC | |
| 6536/1 | Masonry wall | | 16B | | | | SW | | NZ | 9532 | 485 | NZ | 9531 | 482 | -1 | -3 | 32 | 40 | M | 2 | 2/3 | >10 | SBC | |
| 6536/2 | Concrete toe | | 16B | | | | SW | | NZ | 9532 | 485 | NZ | 9531 | 482 | -1 | -3 | 32 | 40 | C | 3 | 2/3 | >10 | SBC | |

| Defence Code | | Mngmt Unit | Strtgy Ref | Description | Sub Unit | Description | Description | Sub Description | National Grid Ref Start | | National Grid Ref End | | Short Length | | Length | Material | Condition | | Residual Life (years) | Ownership | | | |
|--------------|--|------------|------------|---------------------------------|----------|--|-------------|-----------------|-------------------------|------|-----------------------|----|--------------|---------|--------|----------|----------------|----------------|-----------------------|-----------|-----|-------|-----|
| | | | | | | | | | E | N | E | N | Delta E | Delta N | m | m | Previous (?) | Present (2002) | | | | | |
| 6537/1 | Concrete wall, rock armour apron to toe of Quarterdeck sea wall and Concrete steps | 16B | | | | Steve Guest data | SW | | NZ | 9532 | 483 | NZ | 9531 | 479 | -1 | -4 | 41 | 35 | C/R | 2 | 2 | >10 | SBC |
| 6537/2 | Rock armour revetment | 16B | | | | Steve Guest data | SW | RV | NZ | 9531 | 479 | NZ | 9531 | 471 | 0 | -8 | 80 | 78 | R | 1 | 1 | >10 | SBC |
| Scarborough | | | | | | | | | | | | | | | | | | | | | | | |
| 6538/1 | Concrete block wall | 20A | | Scalby Beck | | Old Scalby Mills to main sewer steps | SW | | TA | 357 | 9087 | TA | 356 | 9082 | -1 | -5 | 51 | 51 | C | 3 | 2 | >10 | SBC |
| 6539/1 | Concrete wall | 20A | | Sea Life Centre | | Main sewer steps to N Bay prom | SW | | TA | 356 | 9082 | TA | 355 | 9057 | -1 | -25 | 250 | 260 | C | 3 | 2 | >10 | SBC |
| 6539/2 | Concrete stepped toe | 20A | | | | | SW | AL | TA | 356 | 9082 | TA | 355 | 9057 | -1 | -25 | 250 | 260 | C | 3 | 2 | 6-10 | SBC |
| 6539/3 | Splash wall | 20A | | | | | SW | SW | TA | 356 | 9082 | TA | 355 | 9057 | -1 | -25 | 250 | 260 | C | 3 | 2 | >10 | SBC |
| 6540/1 | Concrete wall | 20A | | N Bay Prom North | | Sea Life Centre to Chair Lift North Slipway | SW | | TA | 355 | 9057 | TA | 359 | 9032 | 4 | -25 | 253 | 260 | C | 3 | 2/3 | >10 | SBC |
| 6540/2 | Stepped toe | 20A | | | | | SW | AL | TA | 355 | 9057 | TA | 359 | 9032 | 4 | -25 | 253 | 260 | C | 3 | 2/3 | >10 | SBC |
| 6541/1 | Concrete wall | 20A | | Chair Lift | | North slipway to south slipway | SW | | TA | 359 | 9032 | TA | 361 | 9022 | 2 | -10 | 102 | 120 | C | 3 | 3/4 | | SBC |
| 6542/1 | Concrete block wall | 20A | | North Bay Promenade south | | Chair lift south slipway to Peasholm gap north slipway | SW | | TA | 361 | 9022 | TA | 375 | 8981 | 14 | -41 | 433 | 470 | C | 3 | 2/3 | >10 | SBC |
| 6542/2 | Grouted rubble revetment | 20A | | | | | SW | SW | TA | 361 | 9022 | TA | 375 | 8981 | 14 | -41 | 433 | 470 | M | 3 | 2/3 | >10 | SBC |
| 6543/1 | Concrete block wall | 20B | | Peasholm Gap | | North slipway to south slipway | SW | | TA | 375 | 8981 | TA | 381 | 8972 | 6 | -9 | 108 | 120 | C | 3 | 2/3 | >10 | SBC |
| 6544/1 | Concrete block wall | 20B | | Royal Albert Drive North | | | SW | | TA | 381 | 8972 | TA | 409 | 8946 | 28 | -26 | 382 | 410 | C | 3 | 2/3 | >10 | SBC |
| 6544/2 | Masonry apron | 20B | | | | | SW | AL | TA | 381 | 8972 | TA | 409 | 8946 | 28 | -26 | 382 | 410 | M | 3 | 2 | >10 | SBC |
| 6545/1 | Concrete stepped wall | 20B | | Royal Albert Drive (Buttressed) | | North Buttress to South Buttress | SW | | TA | 409 | 8946 | TA | 428 | 8930 | 19 | -16 | 248 | 248 | C | 4 | 2 | 6-10 | SBC |
| 6545/2 | Concrete apron | 20B | | | | Not inspected | SW | AL | TA | 409 | 8944 | TA | 428 | 8930 | 19 | -14 | 236 | 240 | C | 4 | 2 | 6-10 | SBC |
| 6545/3 | Masonry bastions | 20B | | | | | SW | BS | TA | 409 | 8944 | TA | 428 | 8930 | 19 | -14 | 236 | 240 | M | 4 | 2 | 6-10 | SBC |
| 6546/1 | Concrete block wall | 20B | | Royal Albert Drive South | | South bittress to Castle Cliff - Not inspected | SW | | TA | 428 | 8930 | TA | 492 | 8950 | 64 | 20 | 671 | 780 | C | 4 | NI | 6-10 | SBC |
| 6546/2 | Masonry toe | 20B | | | | | SW | AL | TA | 428 | 8930 | TA | 492 | 8950 | 64 | 20 | 671 | 780 | M | 5 | NI | 1-5 | SBC |
| 6547/1 | Concrete wall | | | Marine Drive | | Castle Cliff to South Toll House - Not inspected | SW | | TA | 492 | 8950 | TA | 516 | 8879 | 24 | -71 | 749 | 980 | C | 3 | NI | 11-20 | SBC |
| 6547/2 | Apron | | | | | | SW | AL | TA | 492 | 8950 | TA | 516 | 8879 | 24 | -71 | 749 | 980 | C | 5 | NI | 1-5 | SBC |
| 6548/1 | Masonry breakwater | | | East Pier | | South Toll House to East Pier Light - Not inspected | BW | | TA | 516 | 8879 | TA | 495 | 8850 | -21 | -29 | 358 | 400 | M | 3 | NI | >10 | SBC |
| 6548/2 | Concrete toe apron | | | | | Not inspected | SW | AL | TA | 516 | 8879 | TA | 495 | 8850 | -21 | -29 | 358 | 400 | C | 3 | NI | >10 | SBC |
| 6549/1 | Concrete encasement to pier | 21B | | West Pier | | Roundhead to Lifeboat Station | BR | | TA | 473 | 8872 | TA | 491 | 8862 | 18 | -10 | 206 | 230 | C | 3 | 2/3 | >10 | SBC |
| 6550/1 | Masonry wall @ RNLI | | | Lifeboat Station | | West Pier to Foreshore road slipway | SW | | TA | 473 | 8872 | TA | 470 | 8871 | -3 | -1 | 32 | 20 | M | 1 | 2 | >10 | SBC |
| 6551/1 | Masonry wall to promenade | 22A | | Foreshore Road | | Lifeboat Station to Grand Hotel tramway | SW | | TA | 468 | 8874 | TA | 443 | 8829 | -25 | -45 | 515 | 510 | M | 2 | 2 | >10 | SBC |
| 6552/1 | Masonry wall | 22A | | Cliff Bridge | | Grand Hotel tramway to Spa access road | SW | | TA | 443 | 8829 | TA | 441 | 8821 | -2 | -8 | 82 | 90 | M | 2 | 2 | >10 | SBC |
| 6553/1 | Masonry wall to Spa | 22B | | The Spa | | Cliff bridge to Cliff railway | SW | | TA | 441 | 8821 | TA | 451 | 8771 | 10 | -50 | 510 | 510 | M | 3 | 2/3 | | SBC |
| 6553/2 | Sheetpiles with concrete toe | 22B | | | | | SW | PG | TA | 445 | 8798 | TA | 448 | 8788 | 3 | -10 | 104 | 120 | PS | 3 | 2/3 | | SBC |
| 6553/3 | Concrete apron | 22B | | | | | SW | AL | TA | 445 | 8798 | TA | 450 | 8786 | 5 | -12 | 130 | 120 | C | 3 | 2 | >10 | SBC |
| 6554/1 | Low masonry wall | 22B | | Spa Colonnade | | | SW | | TA | 451 | 8771 | TA | 453 | 8765 | 2 | -6 | 63 | 70 | M | 3 | 2/3 | >10 | SBC |
| 6554/2 | Promenade wall | 22B | | | | | SW | SW | TA | 451 | 8771 | TA | 453 | 8765 | 2 | -6 | 63 | 70 | C | 3 | 2/3 | >10 | SBC |
| 6555/1 | Masonry wall | 22B | | South Cliff Gardens | | | SW | | TA | 453 | 8765 | TA | 462 | 8753 | 9 | -12 | 150 | 170 | M | 4 | 3 | 6-10 | SBC |
| 6555/2 | Masonry wall | 22B | | | | | SW | SW | TA | 453 | 8765 | TA | 462 | 8753 | 9 | -12 | 150 | 170 | M | 4 | 3 | 6-10 | SBC |
| 6555/3 | Stepped masonry apron | 22B | | | | | SW | AL | TA | 453 | 8765 | TA | 462 | 8753 | 9 | -12 | 150 | 170 | M | 3 | 3 | >10 | SBC |
| 6556/1 | Concrete wall | 22B | | Rosary Chalets | | | SW | | TA | 462 | 8753 | TA | 468 | 8745 | 6 | -8 | 100 | 100 | C | 3 | 2/3 | >10 | SBC |
| 6557/1 | Concrete wall | | | Bathing Pool & Holbeck Gardens | | | SW | | TA | 468 | 8745 | TA | 480 | 8713 | 12 | -32 | 342 | 400 | C | 3 | 2 | >10 | SBC |
| 6557/2 | Splash wall @ bathing pool | | | | | | SW | SW | TA | 468 | 8745 | TA | 482 | 8723 | 14 | -22 | 261 | 261 | C | 4 | 2/3 | 6-10 | SBC |
| 6557/3 | Concrete bastion groynes | | | | | | SW | BS | TA | 482 | 8723 | TA | 487 | 8713 | 5 | -10 | 112 | 125 | C | 2 | 2 | >10 | SBC |
| 6557/4 | Holbeck Hall Coast Protection | | | | | | RV | AL | TA | 487 | 8713 | TA | 503 | 8694 | 16 | -19 | 248 | 320 | R | 1 | 2 | >10 | SBC |

| Defence Code | Mngmt Unit | Strtgy Ref | Description | Sub Unit | Description | Description | Sub Description | National Grid Ref Start | | National Grid Ref End | | Short Length | | | Length | Material | Condition | | Residual Life (years) | Ownership | | |
|--------------|----------------------------------|------------|-------------------------------------|----------|--------------------------------------|-------------|-----------------|-------------------------|------|-----------------------|-----|--------------|---------|-----|--------|----------|-----------|----------------|-----------------------|-------------------|----------------|-----|
| | | | | | | | | E | N | E | N | Delta E | Delta N | m | | | m | Previous (?) | | | Present (2002) | |
| | | | | | | | | | | | | | | | | | | | | | | |
| 6572/1 | Masonry wall | | Amusement Park | | South Toll House to Central Pier | SW | TA | 515 | 8875 | TA | 511 | 8876 | -4 | 1 | 41 | 40 | M | 3 | 2 | >10 | SBC | |
| 6573/1 | Masonry breakwater in harbour | | Central Pier | | Sandside to Drawbridge | BW | TA | 511 | 8878 | TA | 493 | 8859 | -18 | -19 | 262 | 230 | M | 3 | 2/3 | >10 | SBC | |
| 6574/1 | B'water to fish harbour (fhouse) | | Vincent's Pier | | Drawbridge to East Harbour Entrance | BW | TA | 494 | 8858 | TA | 496 | 8852 | 2 | -6 | 63 | 100 | M | 3 | 2/3 | >10 | SBC | |
| 6575/1 | Masonry quay wall - recesses | | Vaulted Quay | | Central Pier to East Quay | SW | TA | 509 | 8878 | TA | 504 | 8879 | -5 | 1 | 51 | 51 | M | 3 | 2 | >10 | SBC | |
| 6576/1 | Mass concrete fishing quay | | East Quay - <i>Reconstructed</i> | | Vaulted Quay to Central Quay | SW | TA | 504 | 8877 | TA | 500 | 8876 | -4 | -1 | 41 | 50 | C | 3 | | >10 | SBC | |
| 6576/2 | Concrete apron | | <i>Reconstructed</i> | | | SW | AL | TA | 504 | 8877 | TA | 500 | 8876 | -4 | -1 | 41 | 50 | C | 3 | | >10 | SBC |
| N1 | <i>New sheet piled wall</i> | | | | | SW | TA | 504 | 8879 | TA | 496 | 8876 | -8 | -3 | 85 | 85 | PS | - | 2/3 | >10 | SBC | |
| N2 | <i>Masonry wall</i> | | | | | SW | TA | 498 | 8878 | TA | 494 | 8877 | -4 | -1 | 41 | 45 | M | - | 2 | >10 | SBC | |
| 6577/1 | Sheetpiled quay | | Central Quay - <i>Reconstructed</i> | | <i>See Def.Codes N1 and N2 above</i> | SW | PG | TA | 500 | 8876 | TA | 494 | 8876 | -6 | 0 | 60 | 50 | PS | 3 | <i>see N1, N2</i> | >10 | SBC |
| 6578/1 | Masonry quay wall | | West Quay | | | SW | TA | 494 | 8876 | TA | 479 | 8876 | -15 | 0 | 150 | 160 | M | 3 | 1/2 | >10 | SBC | |
| 6579/1 | Masonry revetted slipway | | West Slipway | | West Quay to Fish Quay | SW | RV | TA | 479 | 8876 | TA | 476 | 8874 | -3 | -2 | 36 | 30 | M | 3 | 2 | >10 | SBC |
| 6580/1 | Fish dock | | Fish Quay | | Foreshore road to roundhead | SW | PG | TA | 476 | 8874 | TA | 491 | 8862 | 15 | -12 | 192 | 210 | PS | 3 | 2 | >10 | SBC |
| 6580/2 | Concrete capping beam | | | | | SW | TA | 486 | 8863 | TA | 491 | 8862 | 5 | -1 | 51 | 60 | C | 3 | 2 | >10 | SBC | |

Notes
 NI means Not Inspected due to imminent major construction works in these areas

Appendix C
Coastal Structures Inventory – DEFRA Version

| Defence Code | Mngmt Unit | Strtgy Ref | Description | Description | Sub Description | National Grid Ref Start | | National Grid Ref End | | Length | Material | Condition | | Residual Life (years) | Ownership | | |
|---------------|------------|------------|-------------------------------|-------------|-----------------|-------------------------|------|-----------------------|----|--------|----------|----------------|----------------|-----------------------|-----------|-------|---------|
| | | | | | | E | N | E | N | | | Previous (?) | Present (2002) | | | | |
| Staithes | | | | | | | | | | | | | | | | | |
| 6501/1 | 4 | | North breakwater | BW | AL | NZ | 7828 | 1902 | NZ | 7844 | 1906 | 180 | C | 3 | 2 | >10 | SBC |
| 6501/2 | 4 | | Rock armour | BW | | NZ | 7828 | 1902 | NZ | 7844 | 1906 | 180 | R | 1 | 1 | >10 | SBC |
| 6502/1 | 4 | | Concrete/masonry walls | SW | | NZ | 7827 | 1889 | NZ | 7831 | 1886 | 50 | M | 3 | 2/3 | >10 | SBC |
| 6502/2 | 4 | | | SW | | NZ | 7827 | 1889 | NZ | 7831 | 1886 | 50 | C | 3 | 2/3 | >10 | SBC |
| 6503/1 | 4 | | Concrete wall | SW | | NZ | 7831 | 1887 | NZ | 7834 | 1884 | 90 | C | 3 | 2 | >10 | SBC |
| 6503/2 | 4 | | Apron | SW | | NZ | 7831 | 1887 | NZ | 7834 | 1884 | 90 | C | 3 | 2 | >10 | SBC |
| 6504/1 | 4 | | Concrete wall | SW | | NZ | 7834 | 1884 | NZ | 7843 | 1880 | 80 | C | 3 | 2 | >10 | SBC |
| 6504/2 | 4 | | | GR | | NZ | 7834 | 1884 | NZ | 7843 | 1880 | 80 | W | 3 | 2 | 6-10 | SBC |
| 6505/1 | 4 | | Boat access | SW | RV | NZ | 7843 | 1880 | NZ | 7843 | 1881 | 10 | C | 3 | 2 | >10 | SBC |
| 6506/1 | 4 | | Rock armour | AL | | NZ | 7848 | 1889 | NZ | 7844 | 1900 | 140 | R | 1 | 1 | >10 | SBC |
| 6506/2 | 4 | | Concrete breakwater | BW | | NZ | 7848 | 1889 | NZ | 7844 | 1900 | 120 | C | 3 | 2 | >10 | SBC |
| 6506/4 | | | New breakwater | BW | | NZ | 7847 | 1885 | NZ | 7844 | 1886 | 35 | C | N/A | 1 | >10 | SBC |
| Port Mulgrave | | | | CL | | | ? | ? | | ? | ? | | | | | | |
| - | | | | BW | | | ? | ? | | ? | ? | | ? | - | 5 | 0 | Private |
| - | | | | | | | | | | | | | | | | | |
| Runswick Bay | | | | | | | | | | | | | | | | | |
| 6507/1 | 7A | | Concrete wall | SW | | NZ | 8111 | 1620 | NZ | 8108 | 1614 | 70 | C | 2 | 3 | >10 | SBC |
| 6508/1 | 7A | | Masonry/concrete walls | SW | | NZ | 8108 | 1614 | NZ | 8100 | 1606 | 140 | M | 3 | 2/3 | >10 | SBC |
| 6508/2 | 7A | | Concrete toe | SW | | NZ | 8108 | 1614 | NZ | 8100 | 1606 | 140 | C | 2 | 2/3 | >10 | SBC |
| 6508/3 | 7A | | New masonry wall | SW | | NZ | 8108 | 1614 | NZ | 8100 | 1606 | 140 | C | 2 | 2/3 | >10 | SBC |
| 6508/4 | 7A | | | SW | | NZ | 8100 | 1606 | NZ | 8100 | 1604 | 20 | M | 1 | 2/3 | >10 | SBC |
| 6509/1 | 7A | | Boat ramp | SW | RV | NZ | 8100 | 1604 | NZ | 8100 | 1600 | 40 | C | 3 | 1 | >10 | SBC |
| 6510/1 | 7A/7B | | Rock Armour Revetment | RV | AL | NZ | 8103 | 1602 | NZ | 8108 | 1589 | 137 | R | 1 | 1 | >10 | SBC |
| 6511/1 | | | Rock Armour Revetment/Slipway | RV | AL | NZ | 8102 | 1593 | NZ | 8107 | 1584 | 185 | R/C | 3 | 2 | >10 | SBC |
| | | | Clay cliff | CL | N | NZ | 8107 | 1584 | NZ | 8117 | 1567 | 700 | V | 3 | | | SBC |
| Sandsend | | | | | | | | | | | | | | | | | |
| 6512/1 | 9A | 1 | Sandsend Cliffs | CL | N | NZ | 8594 | 1353 | NZ | 8600 | 1300 | 600 | R | 3 | | 11-20 | SBC |
| 6513/1 | 9A | 2 | Sandsend car park | SW | C | NZ | 8600 | 1300 | NZ | 8607 | 1286 | 130 | C | 1 | 2 | >10 | SBC |
| 6513/2 | 9A | 2 | Sandsend car park | SW | | NZ | 8608 | 1289 | NZ | 8607 | 1286 | 32 | M | 3 | 2 | 6-10 | SBC |
| --- | 9A | 2 | Sandsend car park | | | | | | | | | | | | | | SBC |
| 6514/1 |) 9B | 3 | Sandsend frontage | (| RV | NZ | 8607 | 1286 | NZ | 8622 | 1271 | 270 | C | 3 | 3 | >10 | SBC |
| 6514/2 | | | | (| | NZ | 8607 | 1286 | NZ | 8622 | 1271 | 270 | W | 3 | 5 | 6-10 | SBC |
| 6514/3 | | | | (| | NZ | 8607 | 1286 | NZ | 8622 | 1271 | 270 | W | 3 | 5 | 6-10 | SBC |
| | | | | | | | | | | | | | | | | | |
| 6515/1 | 9B | 3 | Sandsend frontage | SW | | NZ | 8622 | 1271 | NZ | 8626 | 1264 | 100 | M | 3 | 1 | >10 | SBC |
| 6515/2 | 9B | 3 | Sandsend frontage | SW | | NZ | 8622 | 1271 | NZ | 8626 | 1264 | 100 | C | 3 | 2 | >10 | SBC |
| --- | 9B | 3 | Sandsend frontage | SW | | NZ | 8626 | 1264 | NZ | 8625 | 1262 | 22 | C | | 2 | >10 | SBC |
| 6516/1 | 9C | 4 | Sandsend valley | SW | | NZ | 8625 | 1262 | NZ | 8628 | 1258 | 220 | M | 3 | 2 | >10 | SBC |

| Defence Code | Mngmt Unit | Strtg Ref | Description | Description | Sub Description | National Grid Ref Start | | National Grid Ref End | | Length | Material | Condition | | Residual Life (years) | Ownership |
|---------------|------------|-----------|--------------------|---|-----------------|-------------------------|------|-----------------------|------|--------|----------|----------------|----------------|-----------------------|-----------|
| | | | | | | E | N | E | N | | | Previous (?) | Present (2002) | | |
| 6517/1 | | | | SW | RV | NZ | 8628 | NZ | 8710 | 908 | C | | 2/3 | >10 | SBC |
| (| 9C | 4 | Sandsend valley | SW | RV | | | | | | C | | 2 | >10 | SBC |
| (| 9C | 4 | Sandsend valley | SW | RV | | | | | | G | | 1 | >10 | SBC |
| (| 9C | 4 | Sandsend valley |) | RV | | | | | | C | 4 | 2 | >10 | SBC |
| (| 9C | 5 | Sandsend road A174 |) | RV | | | | | | C | | 2/3 | >10 | SBC |
| (| 9C | 5 | Sandsend road A174 |) | RV | | | | | | H | | 5 | N/A | SBC |
| Whitby | | | | | | | | | | | | | | | |
| 6518/1 |) | 11A | 9 | West cliff west | (| SW | NZ | 8817 | 1196 | 420 | C | 1 | 2 | >10 | SBC |
| 6518/2 |) | | | SW | (| SW | NZ | 8817 | 1196 | 420 | R | 1 | 2 | >10 | SBC |
| 6519/1 | | 11A | 10 | West cliff seawall | | SW | NZ | 8854 | 1187 | 150 | C | 3 | 2/3 | >10 | SBC |
| | | 11A | 12 | West cliff metropole | | | | | | | | | | | |
| 6520/1 |) | 11A | 12 | West cliff metropole | (| SW | NZ | 8924 | 1155 | 60 | C | 3 | 2 | >10 | SBC |
| 6520/2 |) | | | SW | (| SW | NZ | 8924 | 1155 | 60 | C | 3 | 2 | >10 | SBC |
| |) | | | | (| | | | | | | | | | |
| 6521/1 |) | | | SW | (| SW | NZ | 8929 | 1154 | 70 | M | 4 | 2 | 6-10 | SBC |
| |) | | | | (| | | | | | | | | | |
| 6522/1 |) | | | SW | (| SW | NZ | 8936 | 1152 | 50 | M | 3 | 2 | >10 | SBC |
| 6523/1 |) | 11B | 13 | West cliff spa | (| SW | NZ | 8941 | 1152 | 120 | C | 3 | 2/3 | 6-10 | SBC |
| 6523/2 |) | | | SW | (| SW | NZ | 8941 | 1152 | 80 | C | 3 | 2/3 | 6-10 | SBC |
| 6523/3 |) | | | SW | (| SW | NZ | 8948 | 1152 | 40 | W | 3 | 2 | >10 | SBC |
| 6523/4 |) | | | SW | (| SW | NZ | 8941 | 1152 | 120 | M | 3 | | >10 | SBC |
| 6523/5 |) | | | SW | (| SW | NZ | 8941 | 1152 | 120 | C | 3 | 2 | 6-10 | SBC |
| 6524/1 | | 11B | 14 | West cliff blockwork wall | | SW | NZ | 8955 | 1154 | 100 | M | 3 | 2/3 | >10 | SBC |
| --- | | 11B | 15 | West cliff rock outcrop | | | | | | | | | | | |
| 6525/1 | | 11B | 15 | West cliff rock outcrop | | SW | NZ | 8978 | 1148 | 20 | C | 3 | 2 | >10 | SBC |
| 6526/1 | | 11B | 16 | Battery wall | | SW | NZ | 8979 | 1150 | 70 | M | 3 | 3 | >10 | SBC |
| 6527/1 | | 12 | 17 | Harbour West Pier | | BW | NZ | 8986 | 1149 | 250 | M | 3 | 3 | >10 | SBC |
| 6528/1 | | 12 | 17 | Harbour West Pier | | BW | NZ | 8992 | 1173 | 150 | C | 3 | | >10 | SBC |
| 6529/1 | | 12 | 18 | Harbour East Pier | | BW | NZ | 8999 | 1187 | 150 | C | 3 | | >10 | SBC |
| 6530/1 | | 12 | 18 | Harbour East Pier | | BW | NZ | 9000 | 1173 | 300 | M | 3 | 1/2 | >10 | SBC |
| (6530/2) | | 12 | 19 | Haggerlythe - Rock armour b/w crest supporting mass concrete slipway. | | | NZ | 9016 | 1149 | 40 | R/C | | 1/2 | | SBC |
| (6530/3) | | 12 | 19 | Haggerlythe - Rock fill butress clad with 3-6 t rock. | | | NZ | 9005 | 1135 | 150 | R | | 3 | | SBC |
| ??? | | 12 | 19 | Haggerlythe - Southern section | | | | | | | | | | | |
| 6531/1 |) | 12 | 20 | Abbey cliff - Eroding cliffs. | N | CL | NZ | 9012 | 1134 | | | 3 | | | SBC |
| |) | | | Rock armour revetment. | RV | SW | NZ | 9016 | 1145 | 306 | R | 3 | 1 | >10 | SBC |
| |) | | | Eroding cliffs. | N | CL | NZ | 9045 | 1144 | | | 3 | | | SBC |
| 6569/1 | | | | Golf course. | N | CL | NZ | 8724 | 1216 | 1000 | | 3 | | | |
| 6570/1 | 11A | 11 | West cliff east | SW | | SW | NZ | 8869 | 1180 | 210 | C | 1 | 2/3 | >10 | SBC |
| 6570/2 | | | | SW | AL | SW | NZ | 8869 | 1180 | 210 | R | 1 | 2/3 | >10 | SBC |

| Defence Code | Mngmt Unit | Strtgy Ref | Description | Description | Sub Description | National Grid Ref Start | | National Grid Ref End | | Length m | Material | Condition | | Residual Life (years) | Ownership | | | |
|--------------------------------------|--------------------------|------------|---|----------------------|------------------|-------------------------|------------------------------|--------------------------|----------------------|------------------------------|--------------------------|-------------------------|-------------------|-----------------------|-------------|-----------------|----------------------|-------------------|
| | | | | | | E | N | E | N | | | Previous (?) | Present (2002) | | | | | |
| 6571/1) 6571/2) 6571/3) | 11A | 10 | West cliff seawall | (((| SW SW SW | AL | NZ NZ NZ | 8887 8887 8901 | 1171 1171 1162 | NZ NZ NZ | 8924 8901 8924 | 1155 1162 1155 | 410 170 240 | C C C | 3 5 5 | 2 2/3 2/3 | 6-10 6-10 6-10 | SBC SBC SBC |
| Robin Hood's Bay | | | | | | | | | | | | | | | | | | |
| 6532/1 6532/2 6532/3 6532/4 | 16A 16A 16A 16A | | Eroding cliff | CL SW SW CL | N RV N | NZ NZ NZ NZ | 9533 9531 9528 9535 | 547 529 520 504 | NZ NZ NZ NZ | 9531 9535 9535 9531 | 529 504 504 503 | 200 260 140 30 | R C/R 3 | 3 1 1 3 | | | >10 >10 | SBC SBC SBC |
| 6532/1 6532/2 | 16A 16A | | Rock armour revetment Rock armour revetment fronting reinforced rock fill wall with mass concrete facing | | | NZ NZ | 9529 9529 | 528 517 | NZ NZ | 9529 9534 | 517 505 | 104 125 | R C | N/A N/A | 1 1 | | >10 >10 | SBC SBC |
| 6532/3 | 16A | | Steve Guest data | | | NZ | 9534 | 505 | NZ | 9534 | 502 | 28 | R | - | 1 | | | |
| 6533/1 6533/2 | 16A 16A | | | SW SW | | NZ NZ | 9531 9531 | 503 503 | NZ NZ | 9534 9534 | 488 488 | 160 160 | C M | 2 3 | 1 1 | | >10 >10 | SBC SBC |
| 6534/1 | 16A | | | SW | | NZ | 9534 | 488 | NZ | 9532 | 486 | 30 | M | 2 | 3 | | >10 | SBC |
| 6535/1 | 16B | | | SW | | NZ | 9532 | 486 | NZ | 9532 | 485 | 10 | M | 2 | 2 | | >10 | SBC |
| 6536/1 6536/2 | 16B 16B | | | SW SW | | NZ NZ | 9532 9532 | 485 485 | NZ NZ | 9531 9531 | 482 482 | 40 40 | M C | 2 3 | 2/3 2/3 | | >10 >10 | SBC SBC |
| 6537/1 6537/2 | 16B 16B | | | SW SW | | NZ NZ | 9532 9531 | 483 479 | NZ NZ | 9531 9531 | 479 471 | 35 78 | C/R R | 2 1 | 2 1 | | >10 >10 | SBC SBC |
| Scarborough | | | | | | | | | | | | | | | | | | |
| 6538/1 | 20A | | Scalby Beck | SW | | TA | 357 | 9087 | TA | 356 | 9082 | 51 | C | 3 | 2 | | >10 | SBC |
| 6539/1 6539/2 6539/3 | 20A 20A 20A | | Sea Life Centre | SW SW SW | | TA TA TA | 356 356 356 | 9082 9082 9082 | TA TA TA | 355 355 355 | 9057 9057 9057 | 260 260 260 | C C C | 3 3 3 | 2 2 2 | | >10 6-10 >10 | SBC SBC SBC |
| 6540/1 6540/2 | 20A 20A | | N Bay Prom North | SW SW | | TA TA | 355 355 | 9057 9057 | TA TA | 359 359 | 9032 9032 | 260 260 | C C | 3 3 | 2/3 2/3 | | >10 >10 | SBC SBC |
| 6541/1 | 20A | | Chair Lift | SW | | TA | 359 | 9032 | TA | 361 | 9022 | 120 | C | 3 | 3/4 | | | SBC |
| 6542/1 6542/2 | 20A 20A | | North Bay Promenade south | SW SW | | TA TA | 361 361 | 9022 9022 | TA TA | 375 375 | 8981 8981 | 470 470 | C M | 3 3 | 2/3 2/3 | | >10 >10 | SBC SBC |
| 6543/1 | 20B | | Peasholm Gap | SW | | TA | 375 | 8981 | TA | 381 | 8972 | 120 | C | 3 | 2/3 | | >10 | SBC |
| 6544/1 6544/2 | 20B 20B | | Royal Albert Drive North | SW SW | | TA TA | 381 381 | 8972 8972 | TA TA | 409 409 | 8946 8946 | 410 410 | C M | 3 3 | 2/3 2 | | >10 >10 | SBC SBC |
| 6545/1 6545/2 6545/3 | 20B 20B 20B | | Royal Albert Drive (Buttressed) | SW SW SW | | TA TA TA | 409 409 409 | 8946 8944 8944 | TA TA TA | 428 428 428 | 8930 8930 8930 | 248 240 240 | C C M | 4 4 4 | 2 2 2 | | 6-10 6-10 6-10 | SBC SBC SBC |
| 6546/1 6546/2 | 20B 20B | | Royal Albert Drive South | SW SW | | TA TA | 428 428 | 8930 8930 | TA TA | 492 492 | 8950 8950 | 780 780 | C M | 4 5 | N/ N/ | | 6-10 1-5 | SBC SBC |
| 6547/1 | | | Marine Drive | SW | | TA | 492 | 8950 | TA | 516 | 8879 | 980 | C | 3 | N/ | | 11-20 | SBC |

| Defence Code | Mngmt Unit | Strtg Ref | Description | Description | Sub Description | National Grid Ref Start | | National Grid Ref End | | Length | Material | Condition | | Residual Life (years) | Ownership |
|--------------|------------|-----------|-------------------------------------|-------------|-----------------|-------------------------|----------|-----------------------|----------|--------|----------|----------------|----------------|-----------------------|-----------|
| | | | | | | E | N | E | N | | | Previous (?) | Present (2002) | | |
| 6547/2 | | | | SW | AL | TA | 492 8950 | TA | 516 8879 | 980 | C | 5 | NI | 1-5 | SBC |
| 6548/1 | | | East Pier | BW | | TA | 516 8879 | TA | 495 8850 | 400 | M | 3 | NI | >10 | SBC |
| 6548/2 | | | | SW | AL | TA | 516 8879 | TA | 495 8850 | 400 | C | 3 | NI | >10 | SBC |
| 6549/1 | 21B | | West Pier | BR | | TA | 473 8872 | TA | 491 8862 | 230 | C | 3 | 2/3 | >10 | SBC |
| 6550/1 | | | Lifeboat Station | SW | | TA | 473 8872 | TA | 470 8871 | 20 | M | 1 | 2 | >10 | SBC |
| 6551/1 | 22A | | Foreshore Road | SW | | TA | 468 8874 | TA | 443 8829 | 510 | M | 2 | 2 | >10 | SBC |
| 6552/1 | 22A | | Cliff Bridge | SW | | TA | 443 8829 | TA | 441 8821 | 90 | M | 2 | 2 | >10 | SBC |
| 6553/1 | 22B | | The Spa | SW | | TA | 441 8821 | TA | 451 8771 | 510 | M | 3 | 2/3 | | SBC |
| 6553/2 | 22B | | | SW | PG | TA | 445 8798 | TA | 448 8788 | 120 | PS | 3 | 2/3 | | SBC |
| 6553/3 | 22B | | | SW | AL | TA | 445 8798 | TA | 450 8786 | 120 | C | 3 | 2 | >10 | SBC |
| 6554/1 | 22B | | Spa Colonnade | SW | | TA | 451 8771 | TA | 453 8765 | 70 | M | 3 | 2/3 | >10 | SBC |
| 6554/2 | 22B | | | SW | SW | TA | 451 8771 | TA | 453 8765 | 70 | C | 3 | 2/3 | >10 | SBC |
| 6555/1 | 22B | | South Cliff Gardens | SW | | TA | 453 8765 | TA | 462 8753 | 170 | M | 4 | 3 | 6-10 | SBC |
| 6555/2 | 22B | | | SW | SW | TA | 453 8765 | TA | 462 8753 | 170 | M | 4 | 3 | 6-10 | SBC |
| 6555/3 | 22B | | | SW | AL | TA | 453 8765 | TA | 462 8753 | 170 | M | 3 | 3 | >10 | SBC |
| 6556/1 | 22B | | Rosary Chalets | SW | | TA | 462 8753 | TA | 468 8745 | 100 | C | 3 | 2/3 | >10 | SBC |
| 6557/1 | | | Bathing Pool & Holbeck Gardens | SW | | TA | 468 8745 | TA | 480 8713 | 400 | C | 3 | 2 | >10 | SBC |
| 6557/2 | | | | SW | SW | TA | 468 8745 | TA | 482 8723 | 261 | C | 4 | 2/3 | 6-10 | SBC |
| 6557/3 | | | | SW | BS | TA | 482 8723 | TA | 487 8713 | 125 | C | 2 | 2 | >10 | SBC |
| 6557/4 | | | | RV | AL | TA | 487 8713 | TA | 503 8694 | 320 | R | 1 | 2 | >10 | SBC |
| 6572/1 | | | Amusement Park | SW | | TA | 515 8875 | TA | 511 8876 | 40 | M | 3 | 2 | >10 | SBC |
| 6573/1 | | | Central Pier | BW | | TA | 511 8878 | TA | 493 8859 | 230 | M | 3 | 2/3 | >10 | SBC |
| 6574/1 | | | Vincent's Pier | BW | | TA | 494 8858 | TA | 496 8852 | 100 | M | 3 | 2/3 | >10 | SBC |
| 6575/1 | | | Vaulted Quay | SW | | TA | 509 8878 | TA | 504 8879 | 51 | M | 3 | 2 | >10 | SBC |
| 6576/1 | | | East Quay - <i>Reconstructed</i> | SW | | TA | 504 8877 | TA | 500 8876 | 50 | C | 3 | | >10 | SBC |
| 6576/2 | | | | SW | AL | TA | 504 8877 | TA | 500 8876 | 50 | C | 3 | | >10 | SBC |
| N1 | | | | SW | | TA | 504 8879 | TA | 496 8876 | 85 | PS | - | 2/3 | >10 | SBC |
| N2 | | | | SW | | TA | 498 8878 | TA | 494 8877 | 45 | M | - | 2 | >10 | SBC |
| 6577/1 | | | Central Quay - <i>Reconstructed</i> | SW | PG | TA | 500 8876 | TA | 494 8876 | 50 | PS | 3 | see N1, N2 | >10 | SBC |
| 6578/1 | | | West Quay | SW | | TA | 494 8876 | TA | 479 8876 | 160 | M | 3 | 1/2 | >10 | SBC |
| 6579/1 | | | West Slipway | SW | RV | TA | 479 8876 | TA | 476 8874 | 30 | M | 3 | 2 | >10 | SBC |
| 6580/1 | | | Fish Quay | SW | PG | TA | 476 8874 | TA | 491 8862 | 210 | PS | 3 | 2 | >10 | SBC |
| 6580/2 | | | | SW | | TA | 486 8863 | TA | 491 8862 | 60 | C | 3 | 2 | >10 | SBC |

Notes

NI means Not Inspected due to imminent major construction works in these areas

Appendix D
Revised Defects Inspection Report Proforma

SCARBOROUGH BOROUGH COUNCIL**Coastal Defence Structures, Defects Inspection Report****Inspection number:**

| | | | | | | | | | |
|--|--|--|--|--|--|--|------|--|--|
| | | | | | | | ---- | | |
|--|--|--|--|--|--|--|------|--|--|

Location:..... **Sheet**.....**of**.....**Defence Code:**

| | | | | | | | | | | | | | | | | |
|---|---|---|-----|---|---|-----|--|--|-----|--|--|-----|--|-----|--|--|
| 2 | 4 | 0 | --- | 6 | 5 | --- | | | --- | | | --- | | --- | | |
|---|---|---|-----|---|---|-----|--|--|-----|--|--|-----|--|-----|--|--|

Inspecting Officer:**Date:****Entered Keyshore by:****Date:****Weather:****Foreshore type:**

Sand

Clay

Shingle

Rock

Foreshore condition:

Good

(Even covering of base material)

Light scour

(Majority of base material still present)

Heavy scour

(Greater than 50% of base material lost)

Poor

*(Near 100% depletion of base material)***Reason for Inspection**

Routine

Accident

Complaint

Post storm

Residual life**Last insp:****This insp:**

| General Condition | Condition Code | Photos (Field) | Photos (File) |
|-------------------|----------------|----------------|---------------|
| | | | |

Condition Codes: 1, Very Good; 2, Good; 3, Fair; 4, Poor; 5, Very Poor

| Damage/Defects | Defect Action | Photos (Field) | Photos (File) |
|----------------|---------------|----------------|---------------|
| | | | |

| | | | | | | |
|---------------|---|-----------|-----------------|---|-------------|------------------|
| Defect Action | 1 | Critical: | Within 4 weeks | 3 | Non Urgent: | Within 12 months |
| Category | 2 | Urgent: | Within 4 months | 4 | Monitor: | Inspect annually |

Appendix E
Condition Codes

Scarborough Strategic Coastal Monitoring – Structure Inspection

Condition Assessment Grading

Assessment Criteria as given in “National Sea & River Defence Surveys, Condition Assessment Manual”, published by the Environment Agency.

General Assessment

| Grade | Rating | Description |
|--------------|---------------|---|
| 1 | Very Good | In good condition, fully serviceable, no remedial work required Maintenance to continue as present No significant defect |
| 2 | Good | Minor defects, non-urgent Minor routine maintenance work required In reasonable condition, some increase in maintenance needed, probably not more than 5% affected with slight defect |
| 3 | Fair | Some cause for concern, requires careful monitoring Significant maintenance works required Average condition, some minor repairs needed & moderate 5% to 20% affected |
| 4 | Poor | Structurally unsound now or in the near future Major remedial works required or replacement (1 to 5 years) Extensive repair required in the short term Extensive defects 20% to 50% affected |
| 5 | Very Poor | Completely failed or derelict, requires complete reconstruction Major urgent repairs or replacement needed without delay to avoid failure probably beyond repair Extensive defects >50% |

Scarborough Strategic Coastal Monitoring – Structure Inspection

Concrete Assessment

| Grade | Rating | Description |
|--------------|---------------|---|
| 1 | Very Good | No significant visible defects Hairline cracks are permitted |
| 2 | Good | Cracks <0.5mm wide or sealant loss (no leakage) or localised honeycombing or flaking |
| 3 | Fair | Rust staining or localised spalling or lack of cover or lengthy cracking and some movement or extensive honeycombing |
| 4 | Poor | Extensive spalling or exposed rebar or leakage staining or sealant loss (leakage) or damage likely to affect structural integrity or extensive movement |
| 5 | Very Poor | Completely derelict or structural failure or beyond repair |

Brick and Masonry Assessment

| Grade | Rating | Brick & Masonry Assessment |
|--------------|---------------|---|
| 1 | Very Good | No visible defects |
| 2 | Good | Minor cracks, surface defects, mortar loss no brick loss |
| 3 | Fair | Displaced bricks/blocks or total mortar loss or surface spalling or larger cracks or signs of small movements |
| 4 | Poor | Extensive loss of bricks/blocks or substantial cracking or movement or severe damage |
| 5 | Very Poor | Completely derelict or structural failure or beyond repair |

High-Point Rendel

Scarborough Strategic Coastal Monitoring – Structure Inspection

Steel Structure Assessment

| Grade | Rating | |
|-------|-----------|--|
| | | |
| 1 | Very Good | No visible defects |
| 2 | Good | Localised surface erosion with slight loss of thickness No physical deformation |
| 3 | Fair | More significant corrosion or impact damage or some minor movement |
| 4 | Poor | Loss of thickness due to corrosion threatening integrity or severe impact damage or extensive movement or inoperative |
| 5 | Very Poor | Completely derelict or structural failure beyond repair |

Rock and Stone Structure Assessment

| Grade | Rating | Brick & Masonry Assessment |
|-------|-----------|--|
| | | |
| 1 | Very Good | No visible defects |
| 2 | Good | Minor movement |
| 3 | Fair | Displaced blocks or minor deformation or minor erosion of supporting material or loss of fines through structure or erosion/corrosion of stone gabions |
| 4 | Poor | Extensive loss of blocks or major deformation/movement or major erosion of supporting material or significant loss of fines through the structure |
| 5 | Very Poor | Completely derelict or structural failure or beyond repair |

Appendix F
List of Photographs

Scarborough Strategic Coastal Monitoring – Structure Inspection

| Item Nr | Area | Dates | Directory Name | Photo Numbers |
|---------|----------------------|---------------------------------|----------------------|--|
| 1 | Staithes Port | 3/2/02 | Staithes Port | 1077 - 1103 |
| 2 | Port Mulgrave | 3/2/02 | Port Mulgrave | 1065 - 1076 |
| 3 | Runswick Bay | 3/2/02 | Runswick Bay | 1041 - 1064 |
| 4 | Sandsend | 1, 5/3/02 | Sandsend | 936, 939 - 1033, 1166 |
| 5 | Whitby | 27, 28/2/02 and 1, 3, 5/3/02 | Whitby | 791 - 828, 829 - 934, 1104 - 1126 |
| 6 | Robin Hood's Bay | 3/4/02 | Robin Hood Bay | 1128 - 1163 |
| 7 | Scarborough Northbay | 22, 25, 26/2/02 and 5/3/02 | Scarborough Northbay | 524 - 570, 734 - 741, 744 - 750, 752, 754 - 756, 768 - 788, 1167 - 1175 |
| 8 | Scarborough Harbour | 23, 24/2/02 and 5/3/02 | Scarborough Harbour | 592 - 616, 643 - 713, 717, 718, 721, 722, 726 - 729, 1176 - 1181 |
| 9 | Scarborough Southbay | 21, 22, 24/2/02 | Scarborough Southbay | 462 - 522, 571 - 588, 624 - 642 |

Note:

Photo numbers refer to a filename bearing this number,
e.g. Photo Nr 561 corresponds to filename Dcb_0561.jpg

Appendix G
CD ROM Defence Condition Surveys - May 2002