Reference Frame in Practice

Manila, Philippines 21-22 June 2013

- GOOD DAY TO YOU ALL.

STATUS OF GEODETIC INFRASTRUCTURE OR GNSS CORS NETWORK IN FIJI

GENERAL DESCRIPTION.

Short History of the development of Geodetic Infrastructure or GNSS CORS network in the country.

Its primary purpose / function / role

what has been achieved or completed to date.

What were the other drivers to establish or maintain the infrastructure? What is the need? What is the business case.

ORGANISATION

What organisation is responsible for the infrastructure or network in Fiji. Private versus Government agencies OR combination of both regarding building, running and maintaining the infrastructure.

Who owns the geodetic infrastructure network?

What is the data or information distribution system? What is the data policy?

If any, are there business / maintenance / operation / partnership model?

TYPE OF INFRASTRUCTURE,EQUIPMENT, DESCRIPTION OF A TYPICAL GNSS CORS

- Describe the country's geodetic infrastructure?
- Does it consist of ground marks, passive or active network?
- Describe a typical survey control mark or how a GNSS CORS is monumented.
- What type of equipment (receiver, antenna, software, pillars / roof mounted)?
- Manufacturer(s)? Back-up system?

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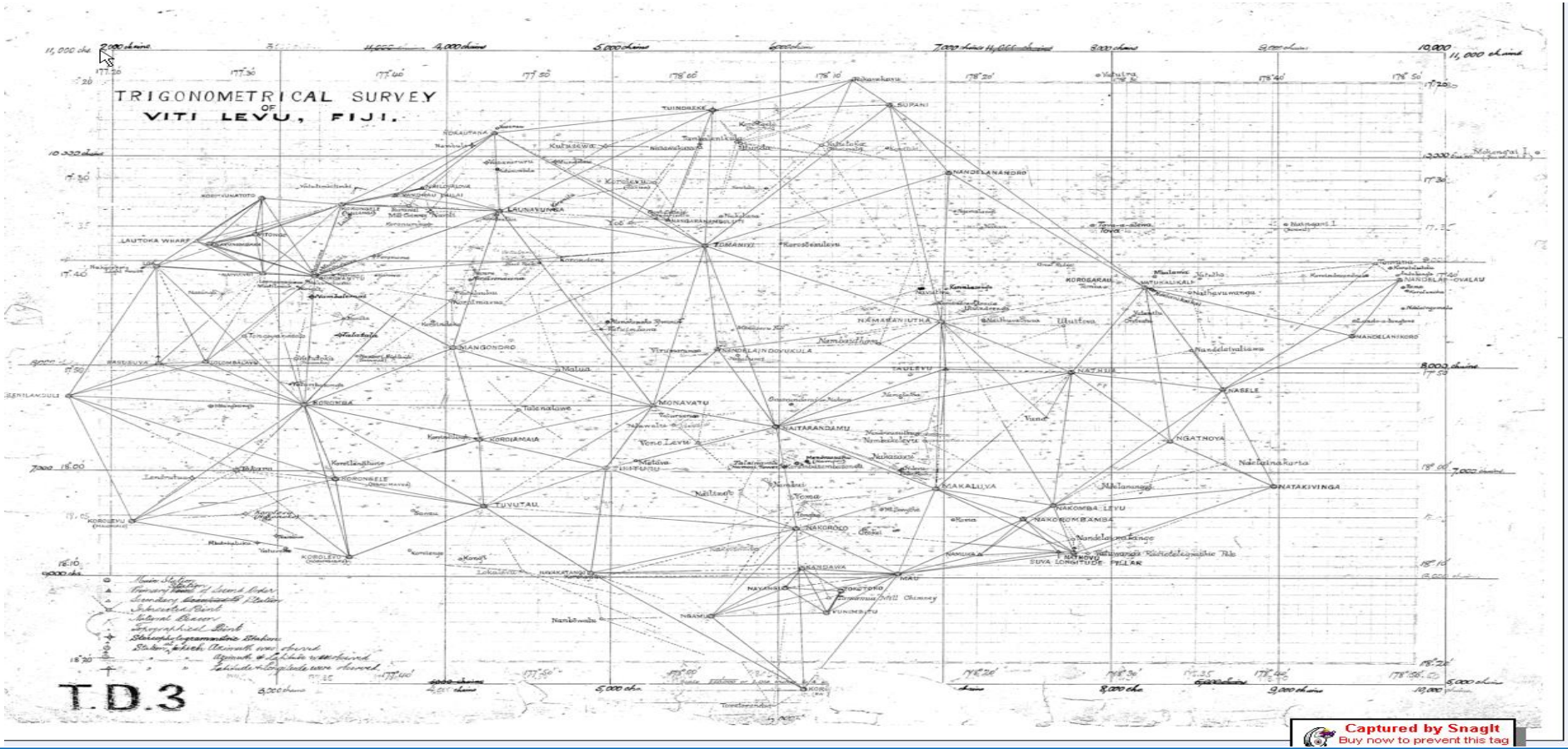
First Order Trigonometrical Station



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Base Stations

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Namosi Mines














High Res High Res High Res






High Res High Res High Res

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Namosi Mines


High Res


High Res


High Res


High Res


High Res


High Res


High Res


High Res


High Res


High Res

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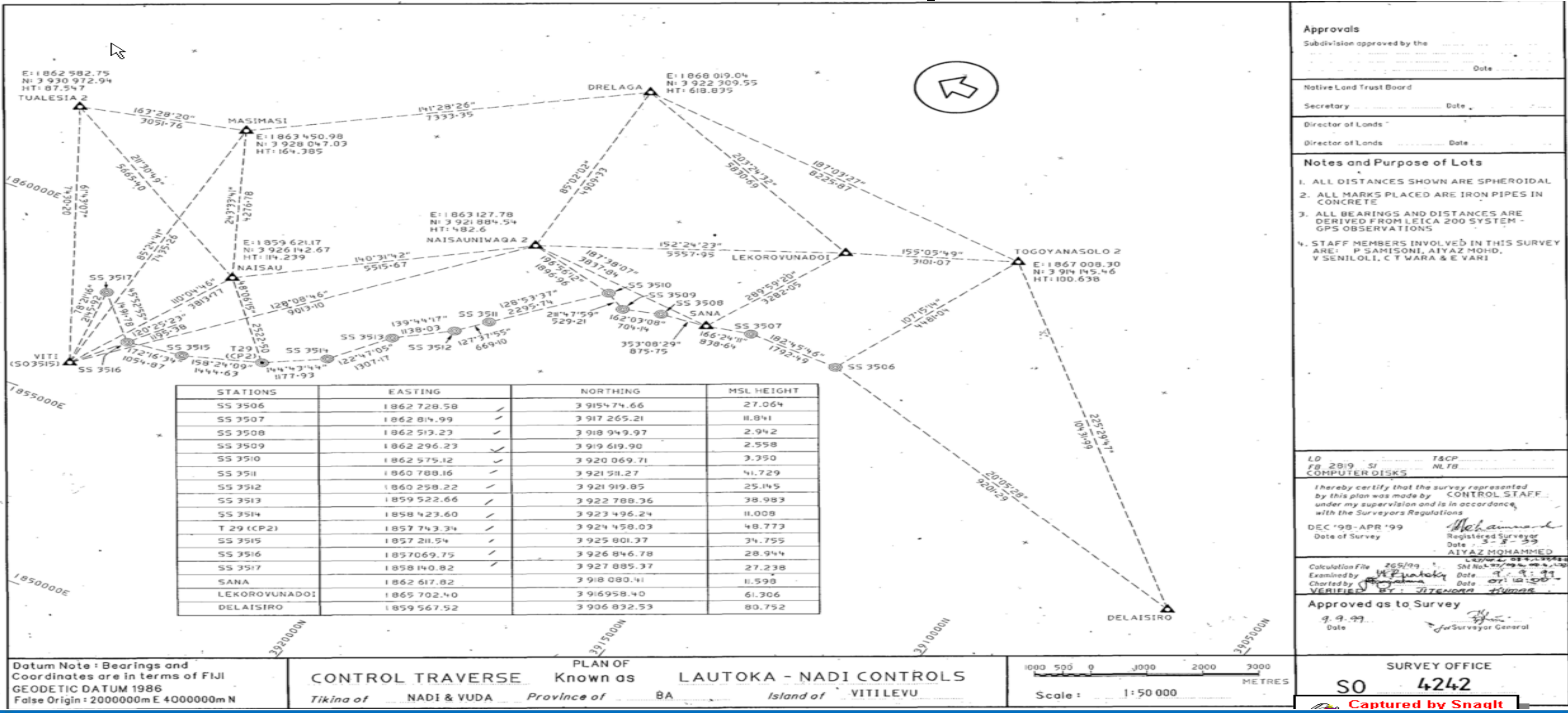
Standard Survey Marks



STATIONS	EASTING	NORTHING	MSL HEIGHT
SS 3506	1 862 728.58	3 915 474.66	27.064
SS 3507	1 862 814.99	3 917 265.21	11.841
SS 3508	1 862 513.23	3 918 949.97	2.942
SS 3509	1 862 296.23	3 919 619.90	2.558
SS 3510	1 862 575.12	3 920 069.71	3.350
SS 3511	1 860 788.16	3 921 511.27	41.729
SS 3512	1 860 258.22	3 921 919.85	25.145
SS 3513	1 859 522.66	3 922 788.36	38.983
SS 3514	1 858 423.60	3 923 496.24	11.008
T 29 (CP2)	1 857 743.34	3 924 458.03	48.773
SS 3515	1 857 211.54	3 925 801.37	34.755
SS 3516	1 857069.75	3 926 846.78	28.944
SS 3517	1 858 140.82	3 927 885.37	27.238
SANA	1 862 617.82	3 918 080.41	11.598
LEKOROVUNADOI	1 865 702.40	3 916958.40	61.306
DELAISIRO	1 859 567.52	3 906 832.53	80.752

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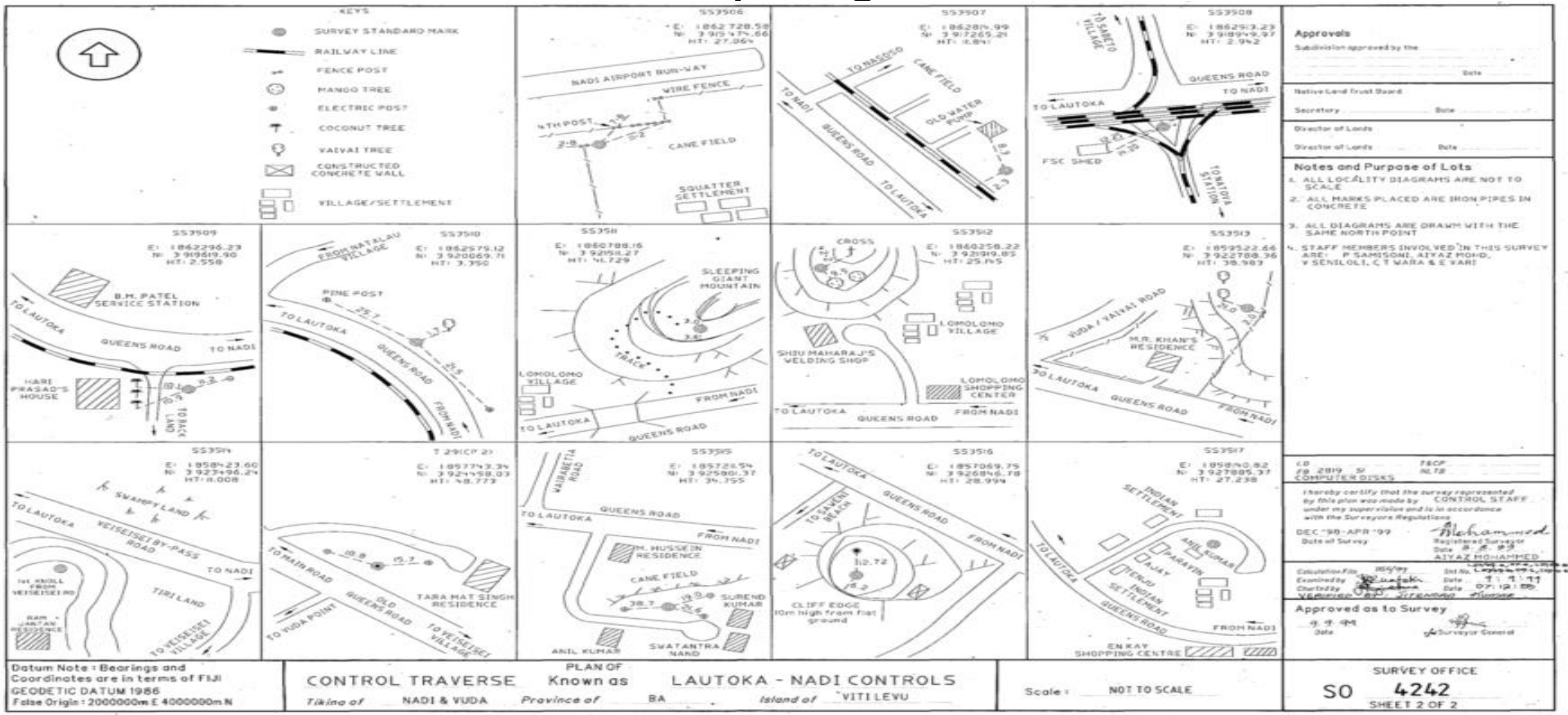
Locality Diagram



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- **Geodetic Service**

- Is it used to assist with maintenance of geodetic datum – both horizontal and vertical?
- Is it used to as the primary source for control surveys – cadastral, control, engineering, topographic, mapping, deformation?
- Is there an on line geodetic database?
- GNSS CORS services? Real time or Post-processing? DGPS? Network-RTK? Automatic Processing Services? What are the accuracy levels? How is the correction data acquired by users - by wireless, mobile phones, internet, etc network solution? Established by FKP, VRS or master-auxiliary concept?
- Services based on GPS only versus GPS/GLONASS / multi GNSS

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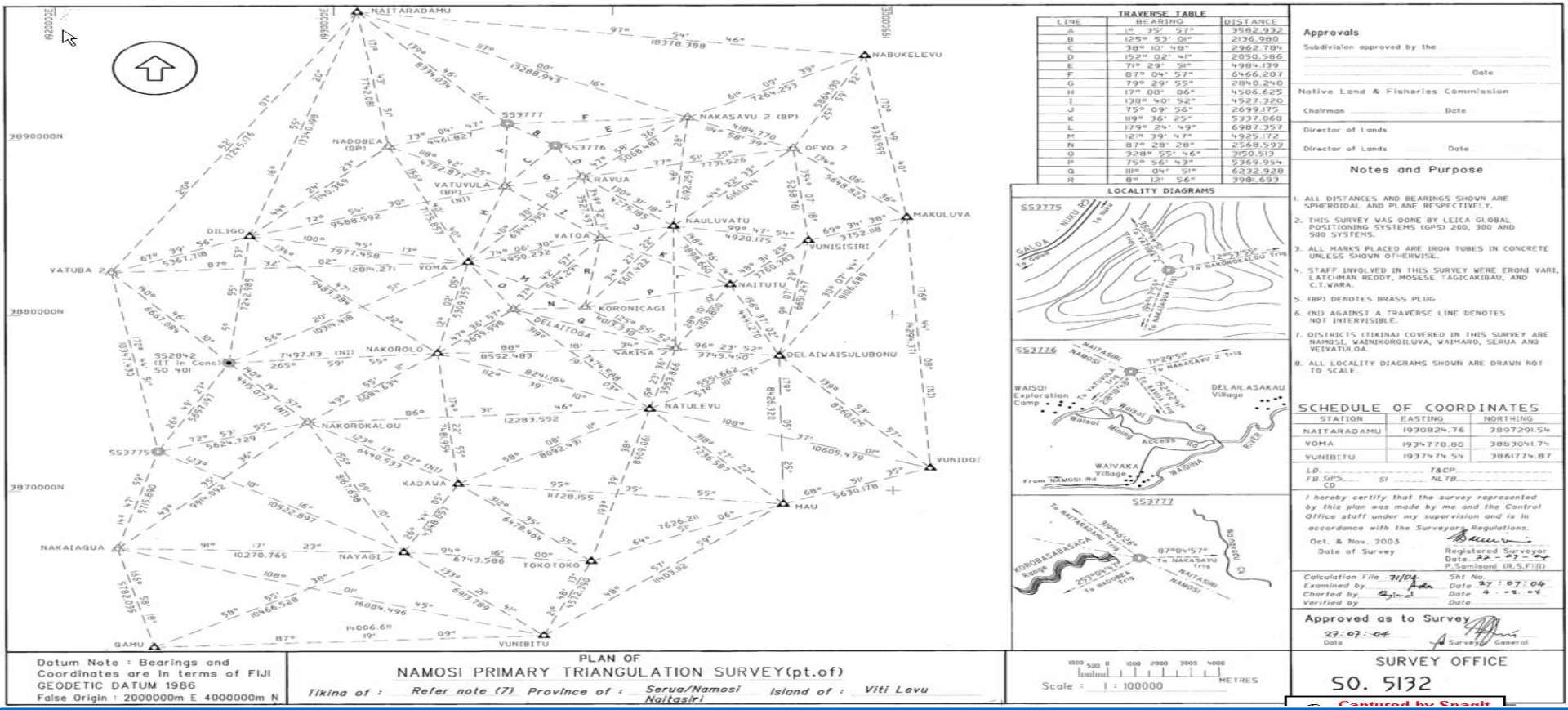
Primary Network – Global Positioning Systems



TRAVERSE TABLE		
LINE	BEARING	DISTANCE
A	1° 35' 57"	3582.932
B	125° 53' 01"	2136.980
C	38° 10' 48"	2962.784
D	152° 02' 41"	2050.586
E	71° 29' 51"	498.139
F	87° 04' 57"	6466.287
G	79° 29' 55"	2840.240
H	17° 08' 06"	4506.625
I	130° 40' 52"	4527.320
J	75° 09' 56"	2699.175
K	119° 36' 25"	5337.060
L	179° 24' 49"	6987.357
M	121° 39' 47"	4925.172
N	87° 28' 28"	2568.593
O	328° 55' 46"	2150.513
P	75° 56' 53"	5369.954
Q	111° 04' 51"	6232.928
R	8° 12' 56"	3981.693

Approvals

Subdivision approved by the ..... Date .....

Native Land & Fisheries Commission

Chairman ..... Date .....

Director of Lands

Director of Lands ..... Date .....

Notes and Purpose

1. ALL DISTANCES AND BEARINGS SHOWN ARE SPHEROIDAL AND PLANE RESPECTIVELY.
2. THIS SURVEY WAS DONE BY LEICA GLOBAL POSITIONING SYSTEMS (GPS) 200, 300 AND 500 SYSTEMS.
3. ALL MARKS PLACED ARE IRON TUBES IN CONCRETE UNLESS SHOWN OTHERWISE.
4. STAFF INVOLVED IN THIS SURVEY WERE ERONI VARI, LATCHMAN REDDY, MOSESE TAGICAKIBAU, AND C.T.WARA.
5. (BP) DENOTES BRASS PLUG
6. (NI) AGAINST A TRAVERSE LINE DENOTES NOT INTERVISIBLE.
7. DISTRICTS (TIKINA) COVERED IN THIS SURVEY ARE NAMOSI, WAINIKOROILUVA, WAIMARO, SERUA AND VEIVATULOA.
8. ALL LOCALITY DIAGRAMS SHOWN ARE DRAWN NOT TO SCALE.

SCHEDULE OF COORDINATES		
STATION	EASTING	NORTHING
NAITARADAMU	1930824.76	3897291.54
VOMA	1934778.80	3883041.74
VUNIBITU	1937474.54	3861774.87

LD ..... T&CP .....
FB SPS ..... SI ..... NLTB .....
CD

I hereby certify that the survey represented by this plan was made by me and the Control Office staff under my supervision and is in accordance with the Surveyors Regulations.

Oct. & Nov. 2003 — Date of Survey

Registered Surveyor
Date 22-07-04
P.Samisoni (R.S.F.I.I)

Calculation File 71/04 — Sht No. .....
Examined by ..... Date 27:07:04
Charted by ..... Date 4-8-04
Verified by ..... Date .....

Approved as to Survey
27:07:04 — Date — Surveyor General

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- **Future plans and AFREF**

- What are the future plans for the geodetic infrastructure or GNSS CORS networks?
- Is involvement in AFREF a possibility?

- Contact information

- Details of the organisation or person(s) involved with the geodetic infrastructure or GNSS CORS networks