

DENR Administrative Order

No. 98 - 48

June 29, 1998

**SUBJECT : Redefining the Program Thrusts of
the Field Network Survey Parties**

Pursuant to Executive Order No. 45 dated 05 January 1993 and DENR Administrative Order No. 22, series of 1994, the Philippine Reference System of 1992 (PRS 92), shall now be adopted as the common reference of all surveying, mapping and charting in the country. A transition period up to the year 2000 is allowed in order to integrate existing surveys after which the PRS 92 shall be recognized as the sole reference.

The Field Network Survey Parties (FNSP) in each DENR Regional Office are hereby activated and their program thrusts redefined accordingly towards effective planning and execution to achieve the objective of providing accessible PRS 92 controls to all geodetic engineers using the conventional equipment and survey techniques.

Section 1. Redefined Functions of the Field Network Survey Parties (FNSP). The Field Network Survey Parties (FNSP) shall:

1. Connect to PRS 92 GPS stations, all existing control points such as: Bureau of Land Location Monuments (BLLM), Provincial Boundary Monuments (PBM), Municipal Boundary Monuments (MBM), Barrio Boundary Monuments (BBM) of cadastral, public land subdivision and group settlement surveys, including triangulation control points established by the Bureau of Lands (now Lands Management Bureau), the Bureau of Coast and Geodetic Survey (now CBSN/NAMRIA) and the private surveying organization;

2. Densify PRS 92 and the above control points to achieve at least two kilometers density or at least a pair of location monuments shall be established within a barangay such that the tie line of a survey should not exceed one kilometer;
 3. Demarcate the political boundaries of contested areas in cadastral surveys to define the political boundaries of provincial, municipal and cities upon request of the local government units (LGUs) concerned and when the dispute shall have been settled in accordance with Sections 118 and 119 of R.A. 7160 (Local Government Code). Cost of these boundary surveys shall be charged against the funds of the LGUs concerned;
 4. Demarcate boundaries of local government units following the descriptions in the law creating the municipality, city or barangay. The cost shall be borne by the concerned LGU;
 5. Establish project controls of cadastral projects by administration;
 7. Conduct test traverse of project controls of cadastral projects awarded to cadastral contractors;
 8. Verify control of cadastral projects for approval of the Regional Technical Director for Lands; provided that controls established by triangulation method, the preliminary computations shall be done by FNSP and the final adjustment using Crandall or Least Squares Adjustment or other appropriate adjustment methods shall be done with the assistance of the Lands Management Bureau;
8. Upon order of the Regional Executive Director, demarcate the perimeter or boundary of (1) Integrated Social Forestry projects; (2) Buffer Zones as defined in DENR Adm. Order No. 13, s. 1992 (Regulations Governing the Establishment of Buffer Zones within Forest Lands); (3) accepted ancestral land claims as identified by the PENRO/CENRO concerned; (4) all reservations and national parks and other protected areas following the boundary descriptions contained in the proclamations, and (5) other surveys necessary to delimit areas within forest lands for a particular purpose as may be required

by the Regional Executive Director or higher officials of the DENR.

Sec. 2 Strategy of Implementation. The conduct of the above-mentioned surveys is to produce survey maps on the Philippine Plane Coordinate Systems (PPCS)-Transverse Mercator (TM)PRS 92 based on homogenous world standard high precision network controls. It shall be implemented as follows:

1. Connection of existing control points in the Local Plane Coordinate System or the Philippine Plane Coordinate System -TM Grid of 1965 as stated in Section 1, item 1 hereof shall be tied to PRS 92 stations of second or third order accuracy.

1.1 The FNSP shall prepare an inventory of all established BLLMs, PBMs, MBMs, BBMS, CBM. A Provincial or Municipal Control Index Map of appropriate scale shall be prepared and these controls are plotted using the PPCS-TM (1965 Grid Coordinate).

1.2 The recovered control points reported in the Location Monuments Recovery Reports and submitted as part of the survey returns of all isolated surveys shall be properly marked on the Provincial/Municipal Control Index Maps. The established PPCS-TM/PRS 92 stations shall also be plotted in the index maps using their PRS 92 Grid Coordinate. The traverse or triangulation survey design shall be prepared such that all PRS 92 stations within the area shall be used as traverse stations.

1.2.1 For this purpose, the Location Monument Recovery Report shall be required for each isolated survey being submitted pursuant to DENR Adm. Order No. 61, series of 1993 (Requiring the Submittal of the Location Monuments Recovery Report as Part of the Survey Return); mandatory for the tie point used in the survey

and optional for other location monuments within the vicinity of the survey.

1.2.2 The FNSP shall also conduct a field survey of existing location monuments on a municipal or provincial project basis.

1.3 In the establishment of geodetic network, connections must always be made to a network that is higher in accuracy than the one to be established. Connection of old reference points to PRS 92 shall be of the 4th Order accuracy for purposes of adjustment.

1.4 With the results of the interconnections of existing location monuments and PRS 92 GPS stations, the LMB, LMS and CGSD/NAMRIA shall start transforming the geographic coordinates of existing controls to conform with PRS 92.

2. The FNSP may establish additional PRS 92 stations of 3rd Order accuracy from 2nd Order and 3rd Order stations, respectively, by traverse or triangulation method or a combination thereof to achieve the designed two-to-three kilometer density or a pair of PRS 92 stations in each barangay. However, the densification of the First Order PRS 92 National Network which shall be on 2nd and 3rd Order accuracy is the responsibility of the CBSD/NAMRIA using the GPS receivers.

3. Numbering of Stations

3.1 For new stations of the 1st, 2nd and 3rd Order accuracy numbering must follow those established by CGSD/NAMRIA in setting up the PRS 92. Regional Technical Directors for Lands shall coordinate with CGSD/NAMRIA as to the starting number that they will use in a province.

- 3.2 For new stations of lower accuracy, i.e. 4th Order, the Regional Lands Management Services/Lands Management Bureau and CGSD/NAMRIA may design their own set of numbering. The RTDs for Lands shall forward whatever system is adapted to the LMB and the latter shall coordinate with CGSD/NAMRIA for completing the central data bank.
4. In order to place all surveys on maps of the same reference system, upon order of the Regional Executive Director, the perimeter/boundary survey of (1) ISF projects as identified by the CENRO (DENR Adm. Order No. 54, s. 1990); (2) Buffer Zones as defined in DENR Adm. Order No. 13, s. 1992 (Regulations Governing the Establishment of Buffer Zones Within the Forest Lands) as identified by the PENRO or CENRO; (3) ancestral claims as identified by the CENRO/ PENRO; (4) all reservations, national parks and other protected areas shall be demarcated on the ground on an integrated survey approach pursuant to DENR Adm. Order No. 35, s. 1993 (Prescribing Standard Operating Procedures to Strengthen the DENR Integrated Approach to Surveying and Mapping in the Country).
- 4.1 The FNSP through the RTD for Lands shall arrange with CBSD/NAMRIA for the establishment of the position of the survey using the GPS receivers by occupying monumented corners of the area at the prominent turn of the boundary.
- 4.2 The CENRO Surveys Unit or the Land Evaluation Teams shall assist in blazing the boundaries, making the corners with monuments in the manner as prescribed in Section 219 to 232 and 233 to 243 of the Manual for Land Survey of the Philippines (MLSP).

4.3 All boundaries between permanent forests and alienable and disposable lands called by the buffer zones (DENR Adm. Order No. 13, s. 1992) shall be clearly marked and maintained on the ground, with infrastructure or roads, or concrete monuments at intervals of not more than five hundred (500) meters (Sec. 17, P.D. 705). The monuments to mark the boundaries of ISF Projects, Land Classification, National Parks and other Protected Areas, Buffer Zones shall be 15x15x50 cm. (DENR Adm. Order Nos. 72 and 72-1, s. 1990). The boundaries shall then be surveyed in accordance with the provisions of the MLSP.

5. Accuracy Specifications of Surveys:

Specifications of survey precision for each kind of survey shall be as prescribed in DENR Adm. Order No. 22, series of 1994.

6. Prioritization of Survey Area:

6.1 Connections or inter-connections shall be made on the following priorities:

6.1.1 Unsurveyed areas or where there are no cadastral surveys

6.1.2 On going project surveys

6.1.3 Surveyed areas

6.2 As CGSD/NAMRIA continues to connect the old triangulation control points to the PRS 92 stations, LMB and NAMRIA shall set the cut-off dates when the areas have complied with 100 percent application of PRS 92 for all surveys and mapping in the area. The province or municipality may be declared. PRS 92 area wherein all surveys shall now be in PRS 92.

7. Network Maintenance and Funding:

7.1 Regional FNSP of the LMS, LMB and CGSD/NAMRIA shall incorporate in their annual budgetary request, funding for:

7.1.1 the densification of the PRS 92 established under NRMDP;

7.1.2 the physical maintenance of the PRS 92 markers and subsequent controls connected thereto;

7.1.3 equipment repair and maintenance and hardware/software acquisition or upgrading of existing items;

7.1.4 the necessary technical staffing pattern.

7.2 The Regional Executive Directors shall re-align portion of their current appropriations for surveys activities to finance the PRS 92 sub-project and shall, for every year hereafter, provide funds to attain a 100% transformation of all reference system pursuant to E.O. No. 45.

7.3 All records of control stations connected to PRS 92, the new monument books, descriptions and computations shall be submitted by the FNSP to the LMB for incorporation into the National Geodetic Data Bank.

9. The Regional Executive Directors shall be responsible for the preparation/revision of the Field Survey Programs in their respective regions in consultation with the CBSD/ NAMRIA and the LMB as well as the staffing of the FNSP.

9. The Regional Executive Directors may authorize their FNSP to operate in adjoining provinces/regions for purposes of completing the connection or interconnection surveys by the year 2000. Additional survey parties may be created if necessary.

To effectively carry out these functions and to comply with the mandate of Executive Order No. 45, the FNSP shall be under the control and supervision of the Regional Technical Director for Lands with the technical assistance of the LMB.

Sec. 3 Repealing Clause. This Order repeals DENR Adm. Order No. 51, series of 1990. All orders and issuance, which are inconsistent herewith, are amended accordingly.

Sec. 4 Effectivity. This Order takes effect fifteen days after its publication in a newspaper of general circulation.

(Sgd.) VICTOR O. RAMOS
Secretary

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TODAY - July 17, 1998 - page 15