

## 8 現地調査（土地条件図）

### 8-1 作業の概要

- 1) 土地条件図は防災対策や開発適地の選定など、都市の開発計画に必要な土地に関する地形・地盤高・諸施設の配置などを表示した図として作成する。
- 2) 現地調査は、土地条件図作成に必要な下記の内容について実施した。
  - (1) 地表を構成する各種の微地形区分の確認調査
  - (2) 低地帯の地盤の高低測量（簡易水準測量）
  - (3) ボーリングデータ、洪水氾濫の記録等各種資料の収集

### 8-2 国内作業

現地調査を行うための、国内準備作業を以下のとおり実施した。

#### 1) 地形分類項目・適用基準（案）の作成

空中写真、地形図、収集した資料等を基にして、調査対象地区の土地の性状や生いたち、地盤等より、調査地区に適合した地形分類項目とその適用範囲を検討し、昭和61年10月に予備協議を行った地形分類規程（案）を再検討し、マニラ首都圏の地形に適合するよう修正して、地形分類項目適用基準（案）を作成した。

#### 2) 予察判読作業

前述1)の地形分類項目、適用基準（案）に従って、2倍伸し写真（縮尺約1：16,000）上で予察（地形判読）を行い、分類項目区分するため、現地で確認すべき点、検討すべき問題点等を抽出した。抽出した現地で調査する項目、および確認する内容を体系的に整理して現地調査の手順等を決めた。

#### 3) 簡易水準路線計画

地形図・空中写真および収集資料により、対象地区の土地の性状や生いたち、洪水に対する状況等を分析し検討した結果、低地域を対象として地盤高、および微地形を把握するために、簡易水準測量をマニラ北西部のMalabon からBulacan にかけての低地域、およびマニラ市東部のPasig, Marikina, Taytay 等の低地域について実施する計画（案）を作成した。（図 -1 参照）

#### 4) 資料図の作成

予察作業、現地調査等の作業工程を円滑に進めるため、下記の資料図を作成した。

- (1) 縮尺 1 : 25,000 地形区分図
- (2) " " 水系図
- (3) " " 標高区分図
- (4) " " 氾濫区域区分図
- (5) " " 地形断面図 (サンプル図)
- (6) " " ボーリング地点及び基盤深度
- (7) 地震震源地分布図 ( 1 : 1,000,000 )

5) 以上の作業成果を総合して、現地調査作業計画を作成した。

### 8-3 現地作業準備

#### 1) 概要

作業事前準備のため、本島副団長以下4名は、昭和62年 1月11日日本を出発した。マニラへ到着後、日本大使館、フィリピン JICA 事務所と業務打合せを行い、BCGS 側の受入れ体制を確認するとともに、日本から搬送した携行資機材の受領、車両人夫の手配、銀行口座の確認、宿舎、作業本部の設定、BCGS 側の便宜供与の確認等を行った。

BCGS 側と技術協議の日程、内容等について打合せを行った。作業班は1月15日鎌倉団員以下7名現地へ到着し、作業準備を行った。

#### 2) 本部事務所および宿舎

前回昭和61年10月現地補測の時利用した MANILA MANOR HOTEL に宿舎と本部を設営した。

1660, J. Bocobo st.

MALATE MANILA PHILIPPINES

TEL, 573055-58

宿舎はマニラ首都圏のほぼ中央のマニラ市内に位置し、作業地、BCGSおよび

JICA事務所へ交通の便利な場所であった。

### 3) 通 信

東京～マニラ間の業務連絡は、テレックスおよび電話を利用した。作業地区内の連絡は一般の市内電話を使用した。

### 4) IDカード（身分証明書）

調査団員にはIDカードが発給され、調査団員は常時携帯して行動した。

## 8-4 作業の実施状況

### 1) BCGS側との協議

BCGS側と作業の内容、作業日程、作業方法、作業編成等技術的協議を行い、地形分類基準についてBCGS側の理解と確認を得るとともに、カウンターパートなど便宜供与を確認した。

2) 作業期間中、本部は主として技術的協議と作業進行状況の確認・調整等を行い、作業班は土地条件調査、簡易水準測量、資料収集、聴取り調査等を実施した。

3) 簡易水準測量班は所定の測量を終了した後、土地条件調査、資料収集等を行った。

### 4) 作業班の編成

調査団員、カウンターパート、人夫で1班を編成し、1班1車輛として作業を実施した。

## 8-5 現地調査（細部）

現地調査は地形分類規程（案）および作業細部指示書に基づいて、地形分類の細部調査、簡易水準測量、聴取り調査、および資料収集等カウンターパートの協力を得て実施した。

### 1) 地形分類の細部調査

国内作業で実施した地形分類予察において、現地で調査し確認すべき事項、問題点等を中心に微地形の観察、露頭調査、簡易ボーリング調査等を行って、土地条件図作成に必要なデータを得るため詳細な調査を行い、空中写真上に（地形分類界線および記号を用いて整理した。

## 2) 簡易水準測量

- (1) 国内で作成した水準路線計画(案)に基づき、現地踏査を行い、またBCGS側との確認を求めて簡易水準路線を決定した。
- (2) 簡易水準測量は、海外測量(開発調査用)作業規程に準拠して実施した。
- (3) 簡易水準測量はマニラ市北西部で約115km、マニラ市東部で約50kmについて実施した。
- (4) 簡易水準点は約160mに1点を標準として選定し測定することとしたが、地形の高低差の大きい場合は点間距離にとらわれず測定点を増設した。測定点はその周辺地域を代表する地盤面を選んだ。
- (5) 観測した単点は番号を付け、2倍伸空中写真に刺針して整理した。
- (6) 精度は作業規程に基づき、閉合差 $\pm 5\text{cm}\sqrt{S}$ (Sはkm)内で実施した。

## 3) 聴取り調査

調査対象地区は、マニラ市の北および東に拡がる郊外地区であり、急速に開発が進みつつある地区である。また対象地区の北西地区および東南地区は特に洪水氾濫の災害の多い地域である。

本作業において資料収集と合わせ、BCGSの協力を受け洪水、災害の現地聴取り調査を詳細に行って、水害と地形、地盤高などとの関係を明らかにした。

## 4) 資料収集

現地補測時(昭和61年10月)にBCGS側に依頼しておいた関係資料とともに、細部表示に必要な資料の収集を行った。

- 5) 地形図を基にして各種機関および施設(防災開発担当機関および施設等)の調査を行い、土地条件図上に表示することとした。

## 8-6 BCGS側との技術協議

第2年次地形図の現地補測時(1986年10月)の際、BCGS側と土地条件図の定義、利用方法等予備協議をして、地形分類基準のドラフトを交換しておいたので、これらを基礎資料として、更に細部の技術協議を重ね、地形分類の基準およびその表示、防災・開発担当機関および施設の選定などについて日比双方でほぼ合意を得た。

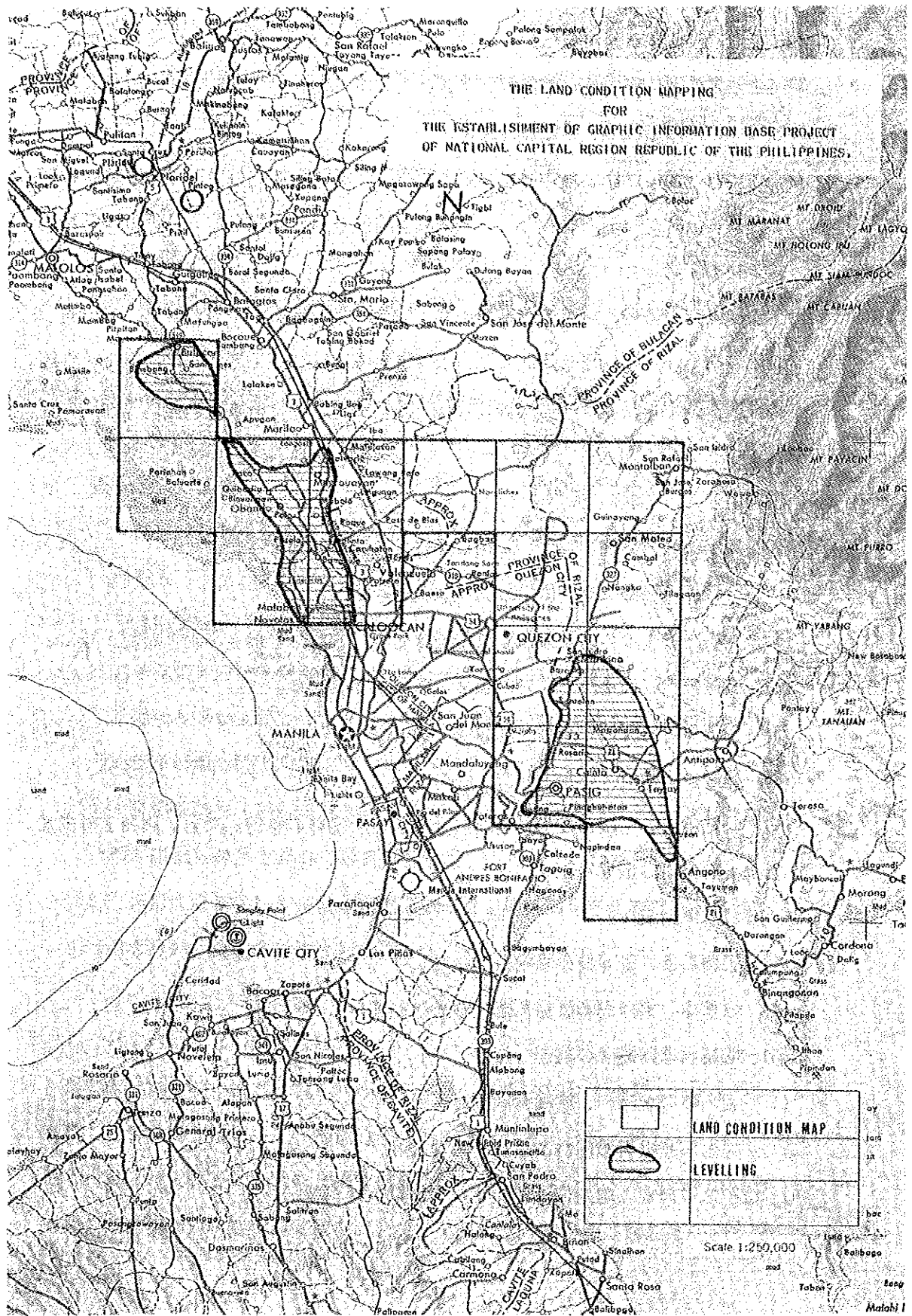
- 1) 土地条件図の定義、利用目的ならびに作成要領その手順について確認し合った。
- 2) 地形分類規程と適用範囲、最小表示基準等について双方協議し確認し合った。
- 3) 土地条件図に表示する関係機関および施設の内容、ならびにそれらの表示方法等についても協議の上確認し合った。
- 4) 土地条件図の色調、整飾等については第3年次現地補測時協議して決定することとした。しかし現地調査符号、編集原稿図については協議の上、その作成要領について確認し合った。
- 5) 土地条件図に係わる技術協議議事録、地形分類項目とその適用基準、最小表示基準、防災・開発担当機関および施設等については、付録の部 現地調査（土地条件図）時議事録および付属書(2),(6)等を示す通りである。

#### 8-7 国内整理

現地調査終了後国内整理として、実施した各作業の整理を行った。

- 1) 地形分類の細部調査、聴取り調査、資料収集
  - (1) 空中写真上での地形分類調査の点検整理（3，2倍伸写真上に整理）した。
  - (2) 露頭調査、簡易ボーリング調査の資料の整理した。
  - (3) 収集した参考図、文献、資料等の整理した。
  - (4) 聴取り調査結果の整理した。
  - (5) 現地調査の総括として、地形区分毎に地形地質の特徴、災害、開発上の問題点等を分析し整理した。
- 2) 簡易水準測量
  - (1) 観測手簿、計算簿の点検整理した。
  - (2) 水準点、単点を刺針した空中写真へ整理した。
  - (3) 簡易水準路線図の整理した。
  - (4) 社内検査を行い、精度管理表を作成した。
- 3) 防災・開発担当機関および施設の選定等
- 4) 沿岸部の海底土地条件等に関する資料の検討

图-1 简易水准测量实施区域图



## 9. 第3年次作業への所見

第3年次作業は、現地では、土地利用図と土地条件図の現地補測調査を、国内では土地利用図と土地条件図の編集、原稿図作成等が予定されている。

- 1) 土地利用図については現地作業の際、土地利用区分の定義と表示対象物の最小表示面積、適用規程等を協議して、日比両国で確認し合っているが、印刷図の色調等については、今後BCGSと協議し決定する必要がある。
- 2) 土地条件図については現地作業の際、BCGSと協議して、図の定義、地形分類基準、表示する機関および施設、表示方法等は既に日比両国で概ね合意しているが、これらの色別による表現等については決定していないので、BCGSと協議の上決定する必要がある。
- 3) このため、土地利用図、土地条件図についても地形図、平面図と同様に、サンプル図を作成し、第3年次現地補測調査時に携行し、BCGSと色調、整飾等を協議し決定することが望ましいと考える。
- 4) 本事業の現地作業は第3年次の現地補測が最終現地作業であるから、BCGSとこれらの主題図の最終仕様、印刷図の色調等について、日比双方で十分に技術協議の上、問題点を残さぬよう確認し合っておくことが肝要であると考ええる。
- 5) 更に、これらの主題図について、その利用方法等を中心に、簡潔な解説書（報告書）の原稿を用意する必要があると考える。

## 10. 第2年次作業の所感

- 1) 第2年次作業はやや過密な作業工程であったが、第2年次本作業着手前に政変後のBCGSと技術協議を行い、諸懸案事項について日比双方の確認、地図作成の仕様の詰め、BCGSの作業協力等についてBCGSの協力を得て作業を進めることができたので、第2年次作業を円滑にかつ確実に実施することができた。
- 2) 第1年次のplantationの分類、道路の舗装区分等の懸案事項は、BCGS側の調査資料の提出を前提として日本側は図上表示を受入れたが、BCGS側はこれらの追加表示事項の資料はもとより、それ以外の地図作成の必要な調査、資料収集等に熱心に協力されたので、今回完成した地形図、平面図は日比一体となって作成した地図と言える。
- 3) 地形図、平面図については、フィリピン政府の要望によって表示事項の豊富な1:10,000地形図、平面図として完成したので、今後マニラ首都圏の都市基本図として、地域の再開発、諸計画の策定等に広く活用され得るものと期待する。
- 4) 地形図の海部についても、使用者である比政府関係機関からの要望を受入れ、等深線、泥土、リーフ、沈船等詳細に表示したので、沿岸部についても、利用度の高い地図であると考えられる。
- 5) 土地条件図の地形分類基準については、I/Aの付属書にて分類の概要については定められているが、<sup>①</sup>基図となる地形図の縮尺が1:10,000であること <sup>②</sup>マニラ首都圏の地形の特徴等を表現する必要があること <sup>③</sup>洪水、氾濫等の防止や今後の開発適地の選定などの計画に役立つこと等を考慮して、現地調査中資料の収集、解析に努力した。



# 付 録

## 1 現地作業の日程

- 1) 現地調査(全般)
- 2) 現地補測(地形図)
- 3) 現地調査(土地条件図)

## 2-1 現地調査(全般)時, 議事録(昭和61年 6月)

## 3-1 現地補測(地形図)時, 作業実施計画書

## 3-2 現地補測(地形図)時, 議事録(昭和61年10月)

## 3-3 付属書 (1) 地形図図式同適用規程

- " (2) 平面図仕様
- " (3) 平面図図式同適用規程
- " (4) 土地利用図仕様
- " (5) 土地利用図図式規程
- " (6) 第二年次作業工程表
- " (7) 土地条件図に必要な資料リスト
- " (8) 土地条件図用収集資料リスト
- " (9) 地形図注記規程
- " (10) 地形図整飾模範版(巻末に収録)
- " (11) 土地条件図地形分類規程(案)

## 4-1 BCGS主任カウンターパート製図印刷点検時議事録

## 4-2 BCGS主任カウンターパート印刷に関する書簡

## 5-1 現地調査(土地条件図)時, 議事録(昭和62年3月)

## 5-2 付属書 (1) 土地条件図作業実施計画書

- " (2) 土地条件図地形分類規程(案)
- " (3) BCGSとの製図印刷点検時の確認事項
- " (4) BCGSの印刷に関する書簡
- " (5) 土地条件図, 収集資料リスト
- " (6) 土地条件図, 防災・開発担当機関・施設等の分類適用規程(案)



## 1. 現地調査の日程

1) 現地調査(全般) 自昭和61年6月16日～至昭和61年6月25日

月日	曜日	行 動 概 況
6/16	月	東京発、マニラ着、JICAマニラ挨拶、打合せ
17	火	BCGS表敬、技術協議、BCGS調査資料点検
18	水	BCGS技術協議
19	木	”
20	金	”
21	土	土地条件図作成地区現地踏査
22	日	団内打合せ、議事録(案)検討
23	月	議事録討議、議事録日比署名
24	火	BCGS調査資料受領、JICAマニラ挨拶
25	水	マニラ発、東京着帰国

2) 現地補測(地形図) 自昭和61年8月18日~至昭和61年10月7日

月日	曜日	行 動 概 況
8/18	月	本島副団長ほか3名マニラ着、大使館、JICA事務所挨拶
19	火	BCGS挨拶、打合せ、作業準備
20	水	BCGS技術協議、鎌倉団員ほか8名マニラ着JICA事務所挨拶
21	木	団内打合せ、作業準備
22	金	” ”
23	土	資料整理、現地補測
24	日	団内打合せ、環境整理
25	月	BCGS技術協議、現地補測
26	火	作業管理 ”
27	水	団内打合せ ”
28	木	BCGS技術協議 ”
29	金	団内打合せ ”
30	土	BCGS調査資料整理、”
31	日	団内打合せ、資料整理
9/ 1	月	団内スベック検討、現地補測
2	火	(颱風) 資料整理
3	水	作業管理 現地補測
4	木	BCGS技術協議 ”
5	金	降雨氾濫地調査 ” 、経年変化地区移写
6	土	補測成果点検 ” ”
7	日	団内打合せ
8	月	BCGS技術協議、資料収集、現地補測、経年変化地区移写
9	火	” 、BCGS調査資料点検 ” ”
10	水	” ” ”
11	木	BCGS局長交代儀式祝賀会参加、 ” ”

9/12	金	BCGS技術協議、現地補測、経年変化地区移写
13	土	団内打合せ " "
14	日	資料点検、資料整理
15	月	補測成果点検、資料収集、現地補測、経年変化地区移写
16	火	BCGS技術協議、実測、現地補測、整理
17	水	作業管理（現地） " " "
18	木	技術協議資料作成 " "
19	金	BCGS技術協議、実測 " "
20	土	団内打合せ
21	日	資料整理
22	月	BCGS技術協議、現地補測、整理
23	火	" " "
24	水	" " "
25	木	団内打合せ " "
26	金	BCGS技術協議 " "
27	土	資料整理 " "
28	日	高崎団長、中野団員マニラ着、団内打合せ
29	月	団内打合せ、作業監理要員マニラ着、大使館、JICA事務所打合せ 現地補測、整理
30	火	BCGS技術協議
10/1	水	土地条件図地区概査、資機材整理
2	木	技術協議、議事録作成 "
3	金	議事録署名、大使館JICA報告、鎌倉団員外8名マニラ出発帰国
4	土	資料まとめ、作業監理要員、中野団員マニラ出発帰国
5	日	残務整理
6	月	" カウンターパート携行資料まとめ
7	火	高崎団長外4名（本部班）マニラ出発帰国

3) 現地調査(土地条件図) 自昭和61年1月11日~至昭和62年3月14日

月日	曜日	行 動 概 況
1/11	日	本島副団長ほか3名マニラ着、マニラホテル
12	月	日本大使館、JICA事務所挨拶、BCGS挨拶打合せ
13	火	BCGS打合せ、設営
14	水	BCGS局長、後発班受入れ準備
15	木	鎌倉団員ほか6名マニラ着、マニラホテル、団内打合せ
16	金	BCGS打合せ、後発班JICA事務所、BCGS挨拶
17	土	JICA打合せ、対象地域概査
18	日	団内打合せ、環境整理
19	月	BCGS協議、資料整理、作業準備
20	火	” 現地調査、水準測量
21	水	” ” ”
22	木	” ” ”
23	金	” ” ”
24	土	” ” ”
25	日	団内打合せ、環境整理
26	月	BCGS協議、現地調査、水準測量
27	火	” ” ”
28	水	” ” ”
29	木	” ” ”
30	金	” ” ”
31	土	資料整理 ” ”
2/ 1	日	団内打合せ
2	月	資料整理、室内作業(比図投票日)
3	火	BCGS打合せ、現地調査、水準測量
4	水	資料収集 ” ”

2/ 5	木	作業管理、	現地調査、	水準測量
6	金	資料収集	"	"
7	土	技術協議事項整理	"	"
8	火	団内打合せ、環境整理		
9	月	BCGS技術協議、現地調査、	水準測量	
10	火	"	"	"
11	水	"	"	"
12	木	"	"	"
13	金	協議事項整理	"	"
14	土	協議事項団内検討、現地調査、水準測量、資料分析		
15	日	団内打合せ、資料整理		
16	月	BCGS技術協議、現地調査、	水準測量計算整理	
17	火	"	"	"
18	水	"	"	"
19	木	協議事項団内検討	"	"
20	金	BCGS技術協議	"	
21	土	協議事項整理	"	
22	日	団内打合せ		
23	月	BCGS技術協議、現地調査		
24	火	"	"	
25	水	作業現地点検	"	
26	木	作業室内点検	"	
27	金	BCGS技術協議	"	
28	土	調査資料整理、	資料分析	
3/ 1	日	団内打合せ		
2	月	作業監理員マニラ到着、BCGS技術協議、現地調査		
3	火	BCGS事前協議、現地調査、団内打合せ		
4	水	現地概査（作業監理員外）、現地調査		

5	木	現地概査（作業監理員外）、高崎団長マニラ着、団内打合せ
6	金	BCGS技術協議、JICA事務所打合せ、残務整理
7	土	団内打合せ、残務整理、JICA山田担当者帰国
8	日	” 鎌倉外6名帰国
9	月	BCGS技術協議（防災、開発担当機関および施設）
10	火	” （ ” ） 、長岡作業監理員帰国
11	水	BCGS技術協議（防災、開発機関と施設等）
12	木	” （地盤高）、現地概査
13	金	BCGS議事録署名、JICAへ報告、携行写真チェック
14	土	高崎団長外4名マニラ発、帰国



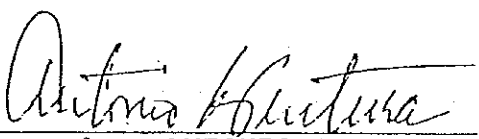
2-1 現地調査(全般)時, 議事録(昭和61年6月)

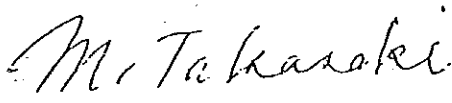
MINUTES OF DISCUSSIONS  
ON  
THE ESTABLISHMENT OF GRAPHIC INFORMATION BASE PROJECT  
FOR THE NATIONAL CAPITAL REGION  
BETWEEN  
THE JAPAN INTERNATIONAL COOPERATION AGENCY  
AND  
THE BUREAU OF COAST AND GEODETIC SURVEY

Dated June 23rd 1986  
in Manila, Philippines

FOR THE BUREAU OF COAST  
AND GEODETIC SURVEY

FOR THE JAPAN INTERNATIONAL  
COOPERATION AGENCY

  
Commodore ANTONIO P. VENTURA  
Director of BCGS

  
Mr. MASAYOSHI TAKASAKI  
Leader of JICA Survey Team

For smooth and effective implementation of the 2nd year work, the meeting was held from June 17 to 24'86 at BCGS, both sides discussed and agreed on the following items:

I. Outline and results of the 1st year work

Carried out by both sides after the completion of the field survey in October 1985.

By JICA Team

- 1) Aerial Triangulation - 123 models
- 2) Stereo Plotting - 1,500 km<sup>2</sup>, 57 sheets
- 3) Sample Maps - contoured map  
- Planimetric map

By BCGS

Field Identification work for the following itmes:

1. Administrative boundary
2. Administrative name
3. Geographical name
4. Name of subdivision
5. Name of road
6. Name of street
7. Road No.
8. Name of railway
9. Name of railway station
10. Name of river

11. Name of bridge
12. CL of pedestrian overpass
  - CL of LRT
  - CL of overpass
13. Rock awash, reef
14. Wreck
15. Lighthouse
16. Sewerage outfall
17. Depth curve

II. Outline of the 2nd year work (Tentative)

JICA Team explained the outline of the 2nd year work. (See Appendix-1)

Compilation	- 1,500 km <sup>2</sup>	- 57 sheets	- June - August '86
Field Completion	- 1,500 km <sup>2</sup>	- 57 sheets	- Aug. - Oct '86
Preparation of			
Original manuscript	- 1,500 km <sup>2</sup>	- 57 sheets	- Oct. - Nov. '86
Drafting (scribe)	- 1,500 km <sup>2</sup>	- 57 sheets	- Oct. '86 - Jan '87
Printing:			
Contoured map		- 57 sheets	- Jan - March '87
Planimetric map		- 57 sheets	- Jan. - March '87
Field Identification (for Land Condition Map)	- 430 km <sup>2</sup>	- 16 sheets	- Jan. - March '87
Leveling	- 150 km		- Jan - March '87

### III. Technical Discussion

1. All the results of the field implementation made by BCGS except data of plantation classification were received by JICA Team.
2. Changes to be incorporated on the maps shall be limited to major changes.
3. Map specifications were confirmed on the sample sheets.

### IV. Others

1. BCGS requested to express the surface classification of main roads on the planimetric maps. JICA team promised to make further studies within the limits of using 2 colors only.
2. BCGS promised to acquire one set of new aerial photography (1986) by early August '86.
3. BCGS will try to provide the following data by mid-September '86
  - 3-1 Results of the plantation classification. In case data can not be made available, plantation shall be classified by stereo interpretation.
  - 3-2 Magnetic, true and grid north values for every map sheet.
  - 3-3 New road numbers



4. BCGS promised to provide necessary counterparts for the field survey work as follows: *c/p*

For Field Completion - 10 persons mid-August-early Oct.'86

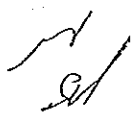
For Field Identification - 6 persons mid-Jan.-early March'87

*Handwritten initials*

Schedule of the 2nd Year Work  
for  
Establishment of Graphic Information Base Project

F. Y. 1986												
Survey Items	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
Compilation (Contoured Map)												
Field Completion (Contoured Map)		6/16*	8/18									
Drafting (Contoured Map)			6/25				10/7					
Printing (Contoured Map & Planimetric Map)										1/11		
Field Identification (Land Contour Map)												2/14

\* : Technical discussion on the 2nd Year work  
 : Field Work  
 : In-door Work



LIST OF ATTENDANTS

BUREAU OF COAST AND GEODETIC SURVEY

---

1. Commodore Antonio P. Ventura  
Director
2. Captain Renato B. Feir  
Chief, Operations Division
3. Mr. Ponciano Ciceron  
Chief, Coastal Mapping and Special  
Projects Division
4. Ms. Feliza M. Nepomuceno  
Acting Chief, Chart and Map  
Production Division

JICA SURVEY COMMITTEE

---

1. Mr. Tadao Dohi  
Technical Advisor
2. Mr. Yoshikazu Yamada  
Advisor

JICA SURVEY TEAM

---

1. Mr. Masayoshi Takasaki  
Leader
2. Mr. Kenzo Motojima  
Deputy Leader
3. Mr. Hiroshi Kimura  
Coordinator
4. Mr. Isao Furukawa  
Chief Surveyor

## 3-1 現地補測(地形図)時, 作業実施計画書

## Plan of Operation

of the 2nd Year Work for the Establishment of Graphic Information Base Project of NCR, the Philippines

## 1. Outline of the 2nd Year Work

In the 2nd year work, the contoured & planimetric maps shall be completed. As for the land condition map, field identification and minor order leveling shall be conducted in the project area. The 2nd year work is summarized as follows:

(see Appendix - 1)

Kind of Map	Item of Work	Coverage of Work
Contoured Map	Compilation	1,500 km <sup>2</sup> (57 sheets)
	Field completion	" "
	Preparation of Original manuscript	" "
	Drafting (scribing)	" "
	Printing	57 sheets x 1,000 copies
Planimetric Map	Printing	57 sheets x 1,000 copies
Land Condition Map	Field identification	429 km <sup>2</sup> (16 sheets)
	Minor order leveling	150 km

## 2. Field Completion

## 2-1 Outline

Compilation manuscripts (blue prints) prepared by JICA team shall be checked and confirmed as follows:

- (1) Items which have been uncertain during the course of the stereo-plotting or compilation work, shall be checked and confirmed.
- (2) Expression of major changes shall be corrected based upon newly acquired photos (1986).

If necessary, supplementary survey will be conducted using transit and plain table.



(3) Survey data to be provided by BCGS shall be incorporated in the compilation manuscripts.

2-2 Formation of Survey Team

(1) Formation of JICA Team

Name of Team Member	August '86	September	October
(Headquarters)			
Masayoshi Takasaki, Leader		28	7
Kenzo Motojima, Deputy Leader	18		
Hiroshi Kimura, Coordinator			
(Field Survey)			
Isao Furukawa, Chief Surveyor			
Tomotaka Kamakura, Surveyor			
Nasumi Ikuno, Surveyor	20		3
Yasuo Furukawa, "			
Tatsujiro Kubo, "			
Shozo Shimoda, "			
Masanobu Ishii, "			
Masataka Miyazaki, "			
Mitsuo Hasegawa, "			
Shingo Niijima, "			
Atsushi Okuizumi, "	18		7
(Specs. on Printing)			
Tomoyuki Nakano, "		28	4

(2) Group Formation of JICA & BCGS

Items of Work	JICA	BCGS	Period
Technical discussion & Confirmation of data	Headquarters 3	Staff 3	Aug. 18-Oct. 7 '86
Field work	Chief Surveyor 1 Surveyors 10	Counterparts 8 (including security)	Aug. 20-Oct. 3 '86
Specs. on Printing	Surveyor 1*	Staff 3	Sep. 28-Oct. 4 '86

\* To be assisted by the Chief Surveyor

2-3 Data and Specifications to be confirmed during the Field Completion

2-3-1 Data to be prepared by BCGS:

- (1) Controlled mosaic photo map of NCR (1/10,000): by mid-August
- (2) Field identification photos (3 & 2 times): "
- (3) Other data: by mid-September
  - a. Classified data of plantation (6 items)  
If no data provided, classification shall be made based on photo-interpretation.
  - b. Magnetic north, true north, grid north for every sheet
  - c. Road No., road name, if necessary, and origin & destination of major roads

2-3-2 Data prepared by JICA team

- (1) Annotation data sheet for contoured map: to be signed by BCGS
- (2) " for planimetric map: "
- (3) " of road destination: "
- (4) Sample planimetric map expressing major road classification
- (5) Sample land use map prepared in color pencil

2-3-3 Specifications to be finalized by the end of the field completion

- (1) Specifications on printing & marginal information of the contoured and planimetric maps
- (2) Specifications of land use map
- (3) Specifications (draft) of land condition map

#### 2-4 Succeeding Work to be conducted in Japan

Original manuscript of the contoured map shall be made by incorporating the field completion data into the compilation manuscripts.

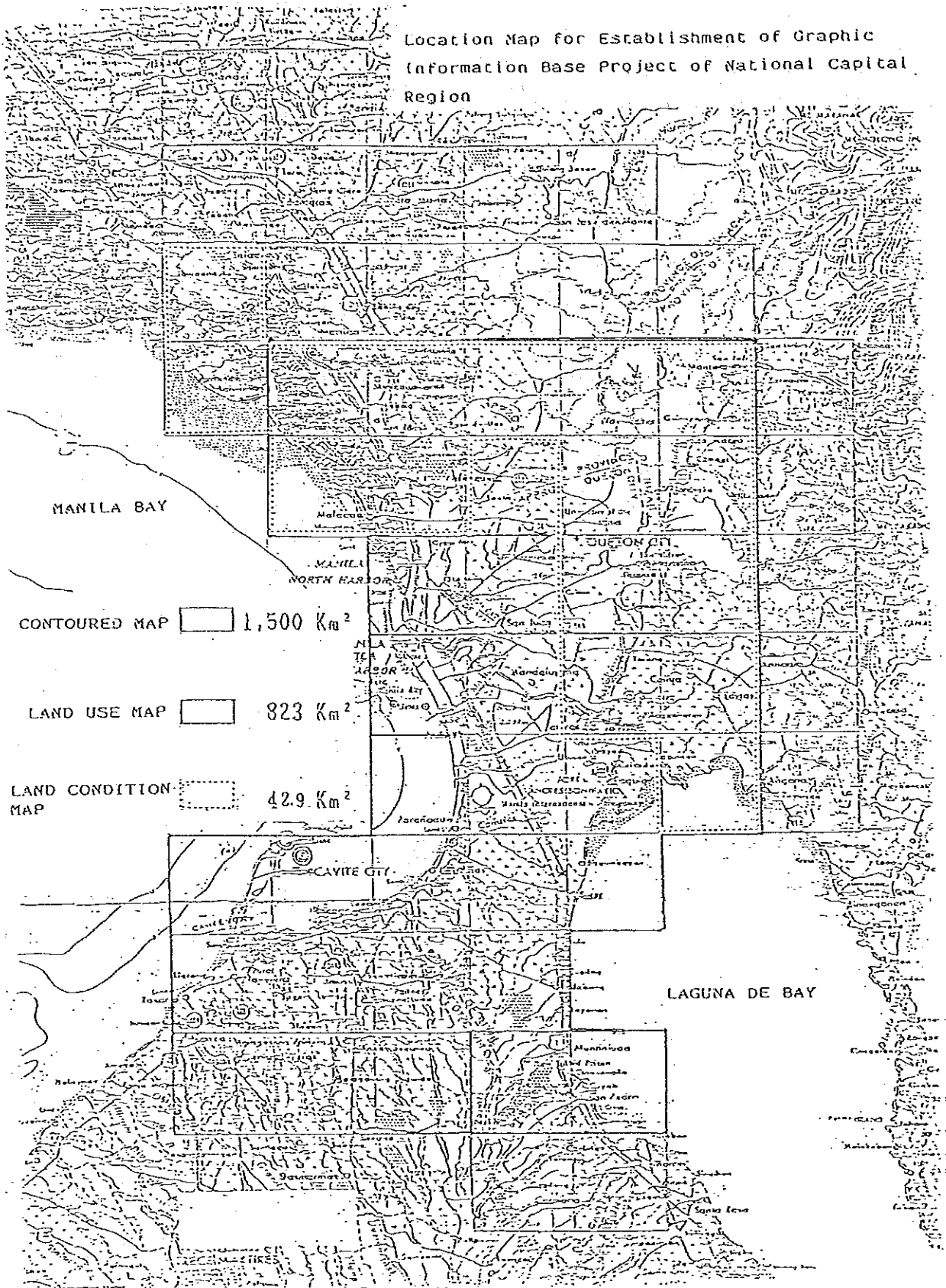
After conducting drafting (scribing) based on the original manuscript, printing of the contoured map (5 colors) and planimetric map (2 colors) shall be made using the scribed sheets.

#### 2-5 Surveys for Land Condition Map

As for the land condition map, field reconnaissance in the project area and preliminary discussions on a draft specifications shall be conducted during the present field completion work.

In the next year, field identification and leveling for the land condition map shall be carried out for about 2 months from January 11 to March 14, 1987.

Location Map for Establishment of Graphic Information Base Project of National Capital Region



Schedule of the 2nd Year Work  
for  
Establishment of Graphic Information Base Project

F. Y. 1985

Survey Items	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
Completion (Contoured Map)												
Field Completion (Contoured Map)			6/16 *		8/18							
Drafting (Contoured Map)			6/25				10/7					
Printing (Contoured Map & Planimetric Map)												
Field Identification (Land Con- dition Map)										1/11		
												3/14

\* : Technical discussion on the 2nd Year Work

▨ : Field work

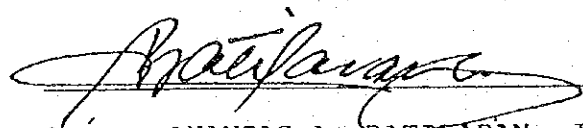
▩ : in-door work

3 - 2 現地補測(地形図)時, 議事録(昭和61年10月)

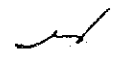
MINUTES OF DISCUSSIONS  
ON  
THE ESTABLISHMENT OF GRAPHIC INFORMATION BASE PROJECT  
FOR THE NATIONAL CAPITAL REGION  
BETWEEN  
THE JAPAN INTERNATIONAL COOPERATION AGENCY  
AND  
THE BUREAU OF COAST AND GEODETIC SURVEY

Dated: October 3rd 1986  
in Manila, Philippines

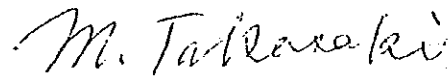
FOR THE BUREAU OF COAST  
AND GEODETIC SURVEY



Commo. ANANIAS A. BATILARAN, Jr.

Director of BCGS 

FOR THE JAPAN INTERNATIONAL  
COOPERATION AGENCY



Mr. MASAYOSHI TAKASAKI

Team Leader of JICA Survey

Team 

Upon completion of the 2nd year field completion work, which has been carried out in joint work of Survey Teams of JICA and BCGS since mid-August 1986, Mr. Masayoshi Takasaki, JICA Team Leader, reported results of survey work and expressed his sincere gratitude to BCGS for its close cooperation.

Both sides discussed about results of the field completion and the succeeding work to be conducted in the 2nd year, and agreed as follows:

#### I. Results of the Field Completion

The following work has been completed by both sides:

By JICA Team

1. All the items (features) to be expressed on the contoured map have been checked and confirmed within the whole project area.
2. Expression of major changes have been supplemented and incorporated based on the new aerial photos and supplementary survey using transit and plain table.
3. Specifications of the contoured, planimetric and land use maps have been discussed and finalized.

By BCGS

1. Check, selection and confirmation of the following data have been completed:
  - (1) Annotation data sheets for the contoured and planimetric map
  - (2) Annotation data sheets of road and railway destination
2. Magnetic north, true north, grid north values for every sheet have been computed.
3. Classification data for plantation (6 items) have been completed.
4. Administrative boundaries have been supplemented and confirmed.
5. Acquisition of new aerial photographs (1986) has been done.

## II. Technical Discussions

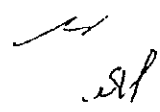
Following specifications and other items have been discussed in detail and agreed by both side:

1. Specifications (1986 Edition) of the contoured map symbols and their application (see Appendix -1).
2. Specifications of planimetric map (see Appendix -2).
3. Definition and application of specifications (except colour scheme) for the land use map (see Appendix -3).
4. Draft specifications of marginal information including letter size and style. (see Appendix 6 & 7)
5. Route number shall be expressed with the existing number.
6. Road surface classification shall be expressed for all roads of 4m or more in width on the contoured and planimetric map.
7. Destination of railway or expressway shall be shown with the name of next station or interchange respectively.
8. Name of map sheet No. 31 "Antipolo" shall be replaced with "Cogeo Village".
9. Printing of the contoured map shall be made in five (5) colours (black, blue, brown, green and blackish blue) as specified in the above specifications of the contoured map symbols and their application.
10. Printing of the planimetric map shall be made in two (2) basic colours (blue and black) as specified in the above specifications of the planimetric map.

## III. Succeeding Work of the 2nd Year (see Appendix 4)

By JICA Team

1. The contoured map and planimetric map shall be completed after drafting (scribing) and printing work as follows:  
Contoured map: 57 sheets x 1,000 copies (5 colours)  
Planimetric map: 57 sheets x 1,000 copies (2 colours)





2. For land condition map, following work shall be conducted:

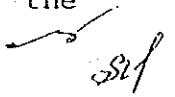
- (1) Preliminary photo-interpretation (429 km<sup>2</sup>, 16 sheets)
- (2) Field identification (429 km<sup>2</sup>, 16 sheets) and minor order leveling (4th order, about 150 km) in the flat area of Metro Manila.

By BCGS

1. BCGS shall provide data necessary for the land condition survey by mid-January '87 which is the commencement of the field identification work. (see Appendix -5)

#### IV. Others

1. On land condition mapping, the preliminary discussions on categorization and definition of the landform and field reconnaissance have been conducted. This shall be for the succeeding preliminary photo-interpretation. (see Appendix 8)
2. BCGS and JICA officials seals shall be shown at the margin.



List of Attendants

BUREAU OF COAST AND  
GEODETIC SURVEY

1. Captain Renato B. Feir  
Chief Counterpart, BCGS-  
JICA NCR Project/Staff  
Officer for Planning/Chief  
Operations Division
2. Captain Manuel M. Calibo  
Staff Officer for Chart & Map  
Production Division/Chief  
Operations Division
3. Mr. Ponciano C. Ciceron  
Chief, Coastal Mapping and  
Special Projects Division
4. Mr. Gavino C. Angeles, Jr.  
Chief, Chart & Map Production  
Division
5. Engr. Felisa M. Nepomuceno  
Chief, Planning Division

JICA SURVEY COMMITTEE

1. Mr. Tadao Dohi  
Technical Adviser
2. Yoshikazu Yamada  
Adviser

JICA SURVEY TEAM

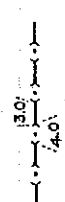
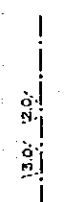

1. Mr. Masayoshi Takasaki  
Leader
2. Mr. Kenzo Motojima  
Deputy Leader
3. Mr. Hiroshi Kimura  
Coordinator
4. Mr. Isao Furukawa  
Chief Surveyor

3-3 付 属 書











(1) 地形図式同適用規程

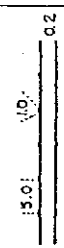

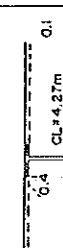
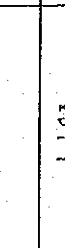
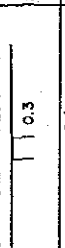
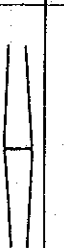

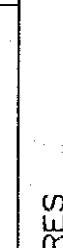
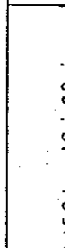
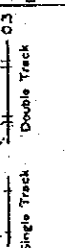
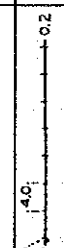
Appendix-1

SPECIFICATIONS AND SYMBOL FOR METRO MANILA CONTOURED MAP 1:10,000  
(1986 Edition)

NO.	NAME	SYMBOL	COLOUR	APPLICATION
<b>CONTROL POINTS</b>				
1	Horizontal Control Station	0.5 △123.4 /20.	E04-24 80 Black	2nd order or higher grade triangulation points and newly established control points monumented in this survey shall be symbolized except points confirmed lost.
2	Vertical Control Station (Identifiable)	0.5 ○356.15 /1.5	E04-24 80 Black	2nd order or higher grade leveling points pricked in this survey shall be symbolized.
3	Spot Height	.659	E06-25 80 Black	Elevation points measured by stereoplotter shall be symbolized.
4	Direct Leveling Point	.917.4	E25-24 80 Black	Elevation of points measured by 3rd or lower order leveling survey shall be symbolized.
<b>BOUNDARIES</b>				
5	Regional Boundary		Black	Regional boundary shall be shown within the neatline without annotation. Annotation shall be indicated below the boundary diagram.
6	Provincial Boundary		Black	Provincial boundary shall be shown within the neatline without annotation. Annotation shall be indicated below the boundary diagram. Where the provincial boundary coincides with regional boundary, symbol shall be that of the latter.
7	City or Municipal Boundary		Black	City or Municipal boundary shall be shown within the neatline without annotation.



NO.	NAME	SYMBOL	COLOUR	APPLICATION
<b>ROADS</b>				
8	Divided Highway/Expressway		0.33-75 40% Blackish Blue	<p>(1) Highway or expressway shall express those with separate zones. Separate zone of 3m or more in width shall be drawn to scale. If width is less than 3m the separate zone shall be shown as a single line.</p> <p>(2) Destination of the divided highway/expressway shall be expressed with the name of next interchange.</p>
9	National/Provincial Road		0.33-75 40% Blackish Blue	<p>(1) National Highway/Provincial Road shall be expressed with the route number.</p> <p>(2) Roads of 4m or more in width shall be drawn to scale.</p>
10			0.33-75 10% Blackish Blue	<p>(3) Roads whose width are between 2-4m shall be shown in 0.4mm double line.</p>
11			Blackish Blue	<p>(4) Roads whose width are between 1-2m shall be shown in 0.25mm single line.</p>
12	City/Municipal Road		0.33-75 40% Blackish Blue	<p>(5) Expression of roads whose length are less than 50m can be deleted.</p>
13			0.33-75 10% Blackish Blue	<p>(6) Double line roads shall be expressed with the road surface classification specified for concrete, asphalt and gravel.</p>
14			Blackish Blue	<p>(7) Roads which are more than 300m in length and 15m in width shall be annotated</p>
15	Trail/Alley		Blackish Blue	<p>(8) Road destination shall be expressed on the following roads: 1) Expressways, 2) National Highways, 3) Provincial roads, and 4) Other important roads.</p>
16	Road Under Construction		Blackish Blue	<p>Trail/Alley whose width is less than 1m and which crosses residential areas and fields shall be expressed on the map if photo-identifiable and of importance.</p>
17	Sidewalk		Blackish Blue	<p>Alley shall be expressed in 0.4mm double line, while trail shall be expressed in 0.25mm broken line.</p>

NO.	NAME	SYMBOL	COLOUR	APPLICATION
18	Grade Separation		Blackish Blue	Roads with grade separation shall be differentiated from the level roads. Road, canal, etc. under overhead shall not be shown.
19	Crossing		Blackish Blue	The symbol specification at the left portion shows overpass and that at the right shows level crossing.
20	Pedestrian Overpass		Blackish Blue	Overpass through which pedestrians, bicycles, etc. cross road or railway shall be shown to scale. In case the width is less than 3m, the overpass shall be symbolized with 3mm width on the map. Clearance shall be indicated.
21	Pedestrian Underpass		Blackish Blue	Underpass used by pedestrians shall be shown. Section which is underground shall not be shown.
22	Toll Gate		Blackish Blue	Gate collecting toll shall be symbolized.
25	Route Marker National/Provincial		Blue	If National Highway/Provincial Road crosses the map neatline, the route number shall be shown close to the neatline, and the road line must not be cut to accommodate the route marker.
<b>RAILWAY FEATURES</b>				
24	National Railway		Black	(1) Government owned railway shall be symbolized. The left side of the symbols shows a single track and the right shows double tracks. Abandoned railway shall be annotated. (2) Railway destination shall be expressed with the name of next station.
25	Private Railway		Black	Railways owned by private enterprise shall be symbolized.
26	Under Construction		Black	Railway under construction shall be shown. Railway nearing completion shall be symbolized as completed railways.
27	Level Crossing		Black	Crossing where railway passes level road or another railway shall be shown.
28	Overpass		Black	Crossing where railway passes over a road shall be shown.



NO.	NAME	SYMBOL	COLOUR	APPLICATION
29	Underpass		Black	Crossing where railway passes under a road (under ground) shall be shown.
30	Railway Station		Black	Railway station for passengers and freight car including platform, overbridge, etc., shall be shown.
31	Light Rail Transit Crossing		Black	Elevated railway of the Light Rail Transit shall be shown together with the stations. Railway clearance above main road intersection shall be shown.
32	Turnplate		Black	Revolving circular platform used for turning locomotive, etc., around shall be symbolized.
<b>BUILDINGS</b>				
33	Prominent Building		0.25 Brown	Important and/or at least 4 storey buildings, shall be shown.
34	Independent Buildings & House		0.1 Brown	Isolated buildings whose short side is more than 1.0mm on the map (including warehouses) are to be shown.
35	Congested Housing Area Slum		More Than 70% Roof Coverage 0/33-46%-20%	Congested housing and slum area surrounded by street whose actual coverage of buildings is more than 70% of the area shall be shown. If there is any prominent building in the area, this shall be symbolized accordingly. Congested area not surrounded by streets shall be shown with actual outline.
36	Ruins		0.15 Brown	Dilapidated buildings, ruins of historical buildings, houses, etc., whose short side is more than 2mm on the map shall be shown.
37	Temporary Housing Areas		0.1 Brown	Congested areas with temporary houses mostly one storey, including those on water and canal shall be shown.
38	Building Minimum		0.1 Brown	Building where its short side is less than 5m shall be shown with the size of 0.5mm x 0.5mm on the map.
<b>PUBLIC BUILDING (Symbol)</b>				
39	Government Building		0.15 Brown	Photo & field identifiable main offices, branch office of National/City/Municipal administrative organization shall in principle be shown with annotation or abbreviation.

2

NO.	NAME	SYMBOL	COLOUR	APPLICATION
40	Police Station	2.0 ⊙	Blue	Photo & field identifiable main and branch offices shall be shown and annotated if space permits.
41	Fire Station	2.0 ⊙	Blue	Photo & field identifiable Fire Station shall be shown. Annotation shall be made if space permits.
42	Post Office	2.0/ ⊙ 1.5	Blue	Photo & field identifiable main and branch offices shall be shown and annotated if space permits.
43	Water Supply & Sewerage	0.5 ..... MWSS	Blue	Water treatment plant and pumping stations shall be shown with annotation.
44	School	2.0 ⊙	Blue	University, College/Institution, Vocational/Trade, High School, Elementary and Preparatory school shall be shown with symbols. Universities, down to the High Schools shall be shown with annotation or abbreviation depending on the space.
45	Hospital	2.0 ⊙	Blue	Hospital, large clinic and medical center shall be shown.
46	Church/Mission	2.0 ⊙	Blue	Church, Mission and Chapel shall be shown. Annotation shall be made if necessary.
47	Mosque	2.0 ⊙	Blue	Mosque shall be shown and annotated if space permits.
48	Embassy	0.5 Name	Blue	Embassy/Legation/Consulate shall be shown and annotated at the indicated point.
49	Health Center	2.0 ⊙	Blue	Health centers shall be shown with annotation, if space permits.
50	Temple	1.5 ⊙	Blue	Photo & field identifiable temples shall be shown.
51	Power Plant and Sub - Station	0.5 ⊙ 1.5 2.0	Blue	Power plants and sub-stations shall be shown. Annotation shall be made if space permits.
52	Bank	2.0 ⊙	Blue	Large banks and credit unions that have their own separate buildings shall be shown and annotated.
53	Hotel/Motel	2.0 ⊙	MORE THAN THREE STAR ANNOTATION Blue	Hotel classified as three(3) or more stars shall be shown with annotation. Hotel/Motel classified as two(2) stars or less with ground area of 1cm x 1cm on the map shall be shown with "H" if space permits.

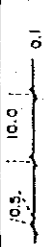

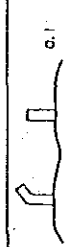

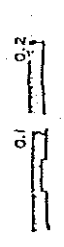

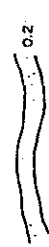
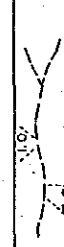
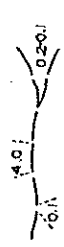

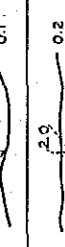
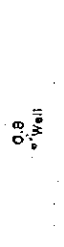

2

NO.	NAME	SYMBOL	COLOUR	APPLICATION
54	Market & Prominent Store	2.0 ⊙	Blue	Public market with building, large supermarket & department stores shall be shown and annotated if space permits.
55	Factory	2.5 ⊙	Blue	Factory and small scale industries shall be shown with annotation if space permits
56	Helipad	2.0 ⊙	Blue	Helipad which are photo & field identifiable and are permanent shall be shown
57	Theater and Cinema (Prominent)	2.0 ⊙	Annotation Blue	Large & prominent theater, cinema and amusement/recreational places shall be shown with annotation if space permits.
58	Airport/Airfield	10.1 ⊙	Annotation Blackish Blue	All airports and airfields shall be drawn to scale and annotated. Airport facilities shall be drawn as isolated buildings.
59	Sports Center	2.0 ⊙	Blue	Centers like gymnasiums, stadiums, etc., shall be annotated if space permits.
<b>MISCELLANEOUS LANDMARK FEATURES</b>				
60	Storage Tank	0.01 ⊙	Blue	Oil tanks that can not be drawn to scale shall be symbolized and annotated. In case dimension of more than 1mm on the map they will be drawn to scale and annotated.
61	Tower, Radio Tower, TV, Stack/Chimney, Flagpole, etc.,	0.2 ⊙	Blue	Tower, Radio/TV Tower, Stack/Chimney, Flagpole, etc., shall be shown and annotated if these can be used as landmarks. Abbreviations can be adopted if necessary.
62	Power Transmission Line	1.0, 0.2 — 10.0	Blackish Blue	Power transmission lines with high towers shall be expressed. Those that have base dimensions of more than 1mm on the map shall be shown to scale. Those with less than 1mm on the map will be symbolized. The part of the lines crossing roads & railways shall be cut 0.2mm from the features.
63	Lighthouse	1.5 ⊙	Brown	The symbol will be applied for fixed lighthouse.
64	Cave	1.0 ⊙	Blue	The symbol will be applied for caves formed naturally.

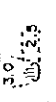
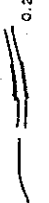
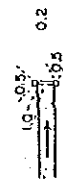

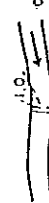






72


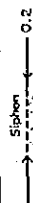
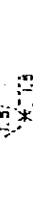
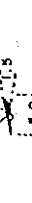

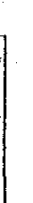

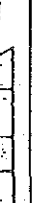

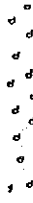

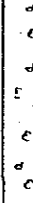


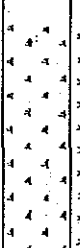
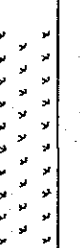
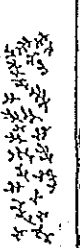
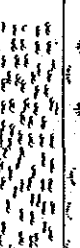
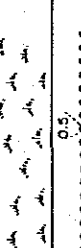
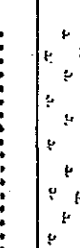
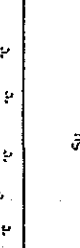
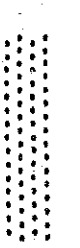
NO.	NAME	SYMBOL	COLOUR	APPLICATION
65	Mine		Blue	Symbol will be applied for mine. The site and kind of mine shall be annotated.
66	Water Tank/ Stand Pipe		Blue	The symbol shall be applied for water tanks and standpipes which are large and prominent. Large water tanks more than 1mm on the map shall be drawn to scale.
67	Monument		Blue	Monuments which are big and used as landmarks shall be shown.
68	Wall/Fence		Blackish Blue	The symbol shall be applied for walls which are photo & field identifiable and made of stone, bricks, concrete or steel mesh.
69	Antiquity		Amber/Black	The coverage shall be delineated and annotated.
70	Park		D120 45° Rizal park-20% Green Black	The coverage shall be delineated and annotated.
71	Windpump		Blue	The symbol shall be applied for facilities which pump up ground water by means of wind force.
72	Gas Station		Blue	Prominent gasoline stations used as transport terminal, specially those situated at crossings shall be symbolized.
73	Bus Terminal		Blue	Terminal of buses connecting city and provinces (including large motor pool) shall be symbolized and annotated if space permits.
74	Aero Beacon		Blue	Beacon that send out signals for the guidance of aircrafts shall be symbolized.
75	Slitway		Black	Inclined platform with rails leading down to water, on which ships are built or repaired shall be symbolized.
76	Memorial Park, Cemetery		0.20, 45 20% Green Black	On the symbol specifications, the left side represents memorial park and the right side cemetery. Limits of memorial park will be delineated and annotated. Cemeteries shall be symbolized if photo & field identifiable.
77	Fort		Black	Famous historic spots, noted places, etc., shall be annotated if space permits. Line width shall be 0.4 & 0.2mm on the map for the inside and outside lines respectively.

NO.	NAME	SYMBOL	COLOUR	APPLICATION
78	Rope Way		Black	Facilities for transporting aggregates from quarry by overhead wire rope shall be symbolized.
79	Military		0120 45° 20% Background Grey/Blue Black/Blue	Area where facilities of the Armed Forces of the Philippines exist. Roads, spot heights and contour lines shall be shown.
<b>WATER and ASSOCIATED FEATURES</b>				
80	Pier - Jetty		Black	Pier or jetty made of iron, concrete, wood, including floating bridge shall be shown to scale or symbolized.
81	Breakwater		Black	Breakwater, groin, etc., shall be drawn to scale.
82	Wharf/Revetment		Black	Photo & field identifiable wharf which has mooring facilities shall be symbolized.
83	River/Stream Single Line		Blue	Revetment which are made of concrete or filled-up solid stones that have a height of more than 2m and length of 100m shall be symbolized.
84	Double Line		0120 45° 20% Blue	Stream which is more than 100m in length and less than 4m in width shall be expressed as single line.
85	Intermittent		Blue	River which is more than 100m in length and more than 4m in width shall be shown as double line. Shoreline of rivers/creeks/canals in congested areas shall be shown as much as possible.
86	Indefinite		Blue	River in which no water flow at the time of an ordinary water level for other rivers shall be symbolized.
87	Flow Arrow		Blue	Waterway whose banks or course can not exactly be determined because of forest cover or other obstruction shall be symbolized.
88	Falls Double Line		Blue	The symbol shall be applied where the flow is certain and for wide and double line rivers.
89	Single Line		Blue	Waterfalls whose height is more than 3m shall be symbolized.
90	Well		Blue	Waterfalls whose height is less than 3m shall be symbolized.

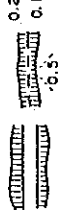
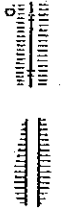


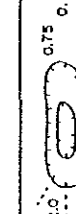
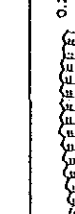




5

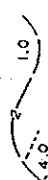
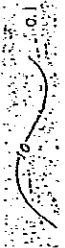
NO.	NAME	SYMBOL	COLOUR	APPLICATION
91	Spring/Hot Spring		Annotation Blue	Spring or hot spring shall be symbolized and annotated if space permits.
92	Channel/Causeway Double Line with Revetment		Blue	Channel or canal(esteros), which is more than 10m in width and 100m in length shall be shown.
93	Flood Gate		Black	Artificial structure for control of water volume for the prevention of adverse flow shall be symbolized, and annotated if space permits.
94	Dam		Black	Dams which are photo & field identifiable shall be drawn to scale, and annotated if space permits.
95	Weir		Black	Artificial structure to control water flow shall be symbolized. Those with length of more than 10m shall be drawn to scale.
96	Lake/Pond Shoreline		D120-45-20% Blue	Lake or pond whose approximate dimensions are more than 20m x 20m shall be shown and annotated if space permits. Shoreline at the time of aerial photography shall be shown
97	Ditch		Blue	Ditch whose dimensions are more than 10m in width and 100m in length shall be shown. Those with smaller dimensions shall also be shown if necessary and space permits.
98	Swamp/Marsh		P16 D120-75 20% Symbol Green Water Blue	Marshy area which is always wet and store water during rainy season with area of more than 50m x 50m shall be symbolized.
99	Tidal Flat		LT 99 Blue	Water areas where sand or earth is exposed at low water and covers at high water with area of more than 50m x 50m shall be symbolized.
100	Reef/Coral		P4 Blue	Coral reef with area of 50m x 50m or more shall be symbolized.
101	Mud		E16-25 60 LT 934 Blue	Tidal flat covered by muddy soil, whose dimensions are more than 50mm x 50mm on the map shall be symbolized.

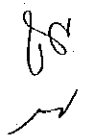
NO.	NAME	SYMBOL	COLOUR	APPLICATION
102	Pipeline/Water Pipeline		E04-24 80 Black	Pipeline used for transporting water, oil, gas, etc., which are photo & field identifiable shall be symbolized. Underground section shall not be expressed.
103	Siphon		E04-24 80 Blue	Siphon which is photo & field identifiable shall be symbolized and annotated "Siphon"
104	Rock Awash		Black	Rock awash which is dangerous to surface navigation shall be symbolized.
105	Wreck		Black	Wrecks showing any portion of hull or always partially submerged shall be symbolized.
106	Sewerage Outfall		Black E08-25 80	Sewerage outfall shall be symbolized and annotated in italic.
107	Marine Pond		E04-24 80 Line - Black Water-Blue D120 45° 20	Photo & field identifiable pond for raising marine species shall be drawn to scale and annotated if space permits.
108	Fishpen		Blue	Drift-net used for fishpen which is located at sea, lake or river shall be drawn to scale if photo & field identifiable.
109	Salt Bed		Line-Blue Water-Screen D120 45° 20	Salt beds shall be drawn to scale.
110	Ferry/Ford		E16-25 80 Blackish Blue	In case of a regular service, ferry shall be annotated as "Ferry" in italic and symbolized. The landing places on both banks of the river shall be linked with broken line. In case of fording, it shall be annotated as "Ford" in italic.
Screen D120 45° 10°				
VEGETATION				
111	Broadleaf		P 5 Green Background 10% Green	Areas where broadleaf tree grows more than 3m high and with more than 5mm x 5mm on the map shall be symbolized.
112	Bushes/Scrub		P 7 Green Background 10% Green	Area where trees of less than 3m high and with less than 5mm x 5mm on the map shall be symbolized.
113	Mixed Scrub & Broadleaf		P 8 Background 10% Green	Areas of mixed scrub and broadleaf trees shall be symbolized.

NO.	NAME	SYMBOL	COLOUR	APPLICATION
114	Rice Fields		P 14- Vegetation Green Background 10% Blue	Areas for rice cultivation whose dimension is more than 50m x 50m shall be symbolized.
115	Cropland Agricultural Land		P 15 Vegetation Green Background 10% Green	Cultivated areas for upland rice or vegetables, whose dimensions are more than 50m x 50m shall be symbolized.
116	Mangrove		Vegetation Green Background 10% Blue	Mangroves which grow densely along river banks/mouths and coastal areas and whose dimensions are more than 50m x 50m shall be symbolized.
117	Nipa		P 10 Vegetation Green Background 10% Blue	Nipa which grows in water edge and whose dimensions are more than 50m x 50m shall be symbolized.
118	Tropical Grass		P 11 Vegetation Green Background 10% Green	Areas with dense tropical grass and whose dimensions are more than 50m x 50m shall be symbolized.
119	Tree Lined Road		Vegetation Green	Roads where trees are planted in a row and are prominent landmarks shall be symbolized.
120	Bamboo		Vegetation Green Background 10% Green	Areas where bamboo tree grows densely of not less than 50m x 50m shall be symbolized.
121	Sugarcane	Su	Vegetation Green Background 10% Green	Plantation for sugarcane shall be symbolized.
122	Pineapple	Pi	Vegetation Green Background 10% Green	Plantation for pineapple shall be symbolized.
123	Banana	Be	Vegetation Green Background 10% Green	Plantation for banana shall be symbolized.
124	Coconut	Cc	Vegetation Green Background 10% Green	Plantation for coconut trees shall be symbolized.
125	Mango	Man	Vegetation Green Background 10% Green	Plantation for mango trees shall be symbolized.
126	Other Plantation		P 17 Vegetation Green Background 10% Green	Plantation for other fruit trees shall be symbolized.



NO.	NAME	SYMBOL	COLOUR	APPLICATION
<b>RELIEF and ASSOCIATED FEATURES</b>				
127	Cutting		Black	Man-made cutting whose dimensions are more than 2m in height and 100m in length and if photo & field identifiable shall be symbolized.
128	Embankment		Black	Man-made embankment whose dimensions are more than 2m in height and 100m in length which are photo & field identifiable shall be symbolized.
129	Slope		Black	Slopes caused by land slide whose dimensions are more than 2m in height and 30m in length which are photo & field identifiable shall be symbolized.
130	Quarry		Black	Quarry for construction materials which is extensive shall be drawn to scale. Small ones shall be symbolized.
131	Depression		Black	Areas where the ground is depressed partly shall be symbolized.
132	Cliff		Black	Steep hilly areas where rock surface is exposed and whose dimensions are more than 2m in height and 50m in length shall be symbolized.
133	Rock outcrop Area		Black	Areas whose surface is rocky, or areas where huge rocks are scattered and which are photo & field identifiable shall be symbolized.
134	Sand/Dunes		Black	Natural sand areas with little or no vegetation, which are photo & field identifiable, shall be symbolized.
<b>CONTOURS</b>				
135	Index Contour		Black	Index contour interval shall be 20m.
136	Intermediate Contour		Black	Contour interval shall be 4m.

NO.	NAME	SYMBOL	COLOUR	APPLICATION
137	Supplementary Contour		Black	Two(2) meter contour line shall be drawn on flat areas. On mountainous areas, it shall be shown if possible to depict land condition.
138	Contour Values	10	E08-25 80 Black	Contour values shall be shown if necessary.
DEPTH CURVES				
139	Depth Curve		E08-25 80 Blue Blue	Depth curves for 1, 5, 10, 20, 50 and 100m depths shall be shown.



## PLANIMETRIC MAP

### Specifications of Planimetric Map

#### I. Basic Concept

1. Planimetric map shall be made showing selected features based on the contoured map.
2. Planimetric map shall be printed only by combination of colour separation plates which are produced in the process of colour separation drafting of the contoured map except road annotation plate.
3. Printing of the planimetric map shall be made in two basic colours, blue and black.

#### II. Definition

Planimetric map shall be a base map showing selected features of the contoured map, except contours, depth curves, spot heights, relief and associated features.

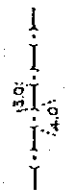
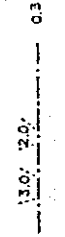
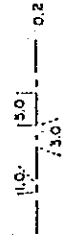
#### III. Detailed Specifications

1. Limits, annotations and function symbols of water features shall be shown in blue and others in black.
2. Roads whose dimensions are more than 4 m in width and 200 m in length shall be annotated.
3. The Universal Transverse Mercator Projection shall be used, with central meridian at Long.  $123^{\circ} 00' 00''$  E. Projection interval shall be 30". Spaces between parallels of latitude shall be identified by letters A, B, C, etc., while spaces between meridians of longitude shall have numbers 1, 2, 3, etc... Letters and numbers shall start from the intersection of Lat.  $14^{\circ} 18' 00''$  N and Long.  $120^{\circ} 51' 00''$  E.
4. Expression of the road surface classification shall be the same as the contoured map.













(3) 平面圖式同適用規程

SPECIFICATIONS AND SYMBOL FOR METRO MANILA PLANIMETRIC MAP 1:10,000.

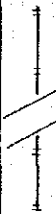





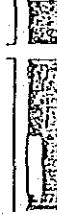


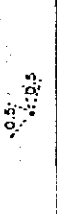
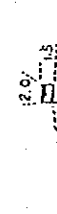
NO.	NAME	SYMBOL	COLOUR	APPLICATION
<b>CONTROL POINTS</b>				
1	Horizontal Control Station	0.5 A123.4 12.0'	E04-24 80 Black	2nd order or higher grade triangulation points except points confirmed lost and newly established control points monumented in this survey shall be symbolized.
2	Vertical Control Station (Identifiable)	0.5 / 0356.15 1.5'	E04-24 80 Black	2nd order or higher grade leveling points pricked in this survey shall be symbolized.
3	Direct Leveling Point	• 917.4	E23-24 80 Black	Elevation of points measured by 3rd or lower order leveling survey shall be symbolized.
<b>BOUNDARIES</b>				
4	Regional Boundary		Black	Regional boundary shall be shown within the neatline without annotation. Annotation shall be indicated below the boundary diagram.
5	Provincial Boundary		Black	Provincial boundary shall be shown within the neatline without annotation. Annotation shall be indicated below the boundary diagram. Where the provincial boundary coincides with regional boundary, symbol shall be that of the latter.
6	City or Municipal Boundary		Black	City or Municipal boundary shall be shown within the neatline without annotation.

*Handwritten signature*

NO.	NAME	SYMBOL	COLOUR	APPLICATION
<b>ROADS</b>				
7	Divided Highway/Expressway		0133-75 40% Black	(1) Highway or expressway shall express those with separate zones. Separate zone of 3m or more in width shall be drawn to scale. If width is less than 3m the separate zone shall be shown as a single line. (2) Destination of the divided highway/expressway shall be expressed with the name of next interchange.
8	National/Provincial Road	 Concrete	0133-75 40% Black	(1) National Highway/Provincial Road shall be expressed with the route number. (2) Roads of 4m or more in width shall be drawn to scale.
9		 Asphalt	0133-75 10% Black	(3) Roads whose width are between 2-4m shall be shown in 0.4mm double line.
10		 Gravel	Black	(4) Roads whose width are between 1-2m shall be shown in 0.25mm single line.
11	City/Municipal Road	 Concrete	0133-75 40% Black	(5) Expression of roads whose length are less than 50m can be deleted. (6) Double line roads shall be expressed with the road surface classification specified for concrete, asphalt and gravel.
12		 Asphalt	0133-75 10% Black	(7) Roads which are more than 200m in length and 4m in width shall be annotated
13		 Gravel	Black	(8) Road destination shall be expressed on the following roads: 1) Expressways, 2) National Highways, 3) Provincial roads, and 4) Other important roads.
14	Trail/Alley	 Trail/Alley	Black	Trail/Alley whose width is less than 1m and which crosses residential areas and fields shall be expressed on the map if photo-identifiable and of importance.
15	Road Under Construction	 Road Under Construction	Black	Alley shall be expressed in 0.4mm double line, while trail shall be expressed in 0.25mm broken line. Road under construction whose width is more than 4m and shape is already clear shall be expressed as completed.
16	Sidewalk	 Sidewalk	Black	Sidewalk for pedestrians or bicycles whose width is 3m or more shall be expressed. Sidewalks located under overhang of buildings shall be symbolized.

NO.	NAME	SYMBOL	COLOUR	APPLICATION
17	Grade Separation		Black	Roads with grade separation shall be differentiated from the level roads. Road, canal, etc. under overhead shall not be shown.
18	Crossing		Blackish Blue	The symbol specification at the left portion shows overpass and that at the right shows level crossing.
19	Pedestrian Overpass		Black	Overpass through which pedestrians, bicycles, etc. cross road or railway shall be shown to scale. In case the width is less than 3m, the overpass shall be symbolized with 3mm width on the map. Clearance shall be indicated.
20	Pedestrian Underpass		Black	Underpass used by pedestrians shall be shown. Section which is underground shall not be shown.
21	Toll Gate		Black	Gate collecting toll shall be symbolized.
22	Route Marker National/Provincial		Blue	If National Highway/Provincial Road crosses the map neatline, the route number shall be shown close to the neatline, and the road line must not be cut to accommodate the route marker.
<b>RAILWAY FEATURES</b>				
23	National Railway		Black	(1) Government owned railway shall be symbolized. The left side of the symbols shows a single track and the right shows double tracks. Abandoned railway shall be annotated. (2) Railway destination shall be expressed with the name of next station.
24	Private Railway		Black	Railways owned by private enterprise shall be symbolized.
25	Under Construction		Black	Railway under construction shall be shown. Railway nearing completion shall be symbolized as completed railways.
26	Level Crossing		Black	Crossing where railway passes level road or another railway shall be shown.
27	Overpass		Black	Crossing where railway passes over a road shall be shown.

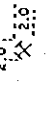

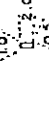
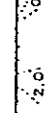
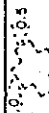
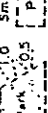
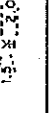

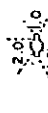
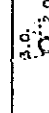

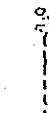
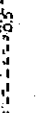
20

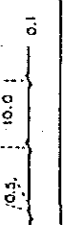

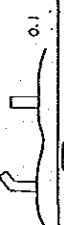
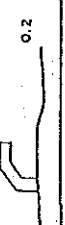
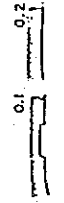

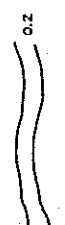

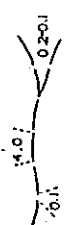
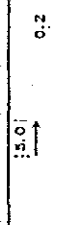

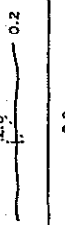
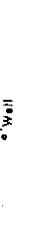
NO.	NAME	SYMBOL	COLOUR	APPLICATION
28	Underpass		Black	Crossing where railway passes under a road (under ground) shall be shown.
29	Railway Station		Black	Railway station for passengers and freight car including platform, overbridge, etc., shall be shown.
30	Light Rail Crossing		Black	Elevated railway of the Light Rail Transit shall be shown together with the stations. Railway clearance above main road intersection shall be shown.
31	Turntable		Black	Revolving circular platform used for turning locomotive, etc., around shall be symbolized.
<b>BUILDINGS</b>				
32	Prominent Building		Black	Important and/or at least 4 storey buildings, shall be shown.
33	Independent Buildings & House		Black	Isolated buildings whose short side is more than 1.0mm on the map (including warehouses) are to be shown.
34	Congested Housing Area Slum		Black	Congested housing and slum area surrounded by street whose actual coverage of buildings is more than 70% of the area shall be shown. If there is any prominent building in the area, this shall be symbolized accordingly. Congested area not surrounded by streets shall be shown with actual outline.
35	Ruins		Black	Dilapidated buildings, ruins of historical buildings, houses, etc., whose short side is more than 2mm on the map shall be shown.
36	Temporary Housing Areas		Black	Congested areas with temporary houses mostly one storey, including those on water and canal shall be shown.
37	Building Minimum		Black	Building where its short side is less than 5m shall be shown with the size of 0.5mm x 0.5mm on the map.
<b>PUBLIC BUILDING (Symbol)</b>				
38	Government Building		Blue	Photo & field identifiable main offices, branch office of National/City/Municipal administrative organization shall in principle be shown with annotation or abbreviation.

NO.	NAME	SYMBOL	COLOUR	APPLICATION
39	Police Station	2.0 ⊙	Blue	Photo & field identifiable main and branch offices shall be shown and annotated if space permits.
40	Fire Station	2.0 ⊙	Blue	Photo & field identifiable Fire Station shall be shown. Annotation shall be made if space permits.
41	Post Office	2.0 ⊙	Blue	Photo & field identifiable main and branch offices shall be shown and annotated if space permits.
42	Water Supply & Sewerage	0.5 ⊙	Blue	Water treatment plant and pumping stations shall be shown with annotation.
43	School	2.0 ⊙	Blue	University, College/Institution, Vocational/Trade, High School, Elementary and Preparatory school shall be shown with symbols. Universities, down to the High Schools shall be shown with annotation or abbreviation depending on the space.
44	Hospital	2.0 ⊙	Blue	Hospital, large clinic and medical center shall be shown.
45	Church/Mission	2.0 ⊙	Blue	Church, Mission and Chapel shall be shown. Annotation shall be made if necessary.
46	Mosque	2.0 ⊙	Blue	Mosque shall be shown and annotated if space permits.
47	Embassy	0.5 ⊙	Blue	Embassy/Legation/Consulate shall be shown and annotated at the indicated point.
48	Health Center	2.0 ⊙	Blue	Health centers shall be shown with annotation, if space permits.
49	Temple	1.5 ⊙	Blue	Photo & field identifiable temples shall be shown.
50	Power Plant and Sub - Station	0.5 ⊙	Blue	Power plants and sub-stations shall be shown. Annotation shall be made if space permits.
51	Bank	2.0 ⊙	Blue	Large banks and credit unions that have their own separate buildings shall be shown and annotated.
52	Hotel/Motel	2.0 ⊙	More Than three stars Annotation Blue	Hotel classified as three(3) or more stars shall be shown with annotation. Hotel/Motel classified as two(2) stars or less with ground area of 1cm x 1cm on the map shall be shown with "H" if space permits.

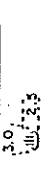

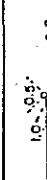


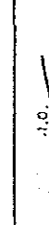





NO.	NAME	SYMBOL	COLOUR	APPLICATION
53	Market & Prominent Store	2.0 ⊙	Blue	Public market with building, large supermarket & department stores shall be shown and annotated if space permits.
54	Factory	2.5 ⊙	Blue	Factory and small scale industries shall be shown with annotation if space permits.
55	Helipod	2.0 ⊙	Blue	Helipad which are photo & field identifiable and are permanent shall be shown.
56	Theater and Cinema (Prominent)	2.0 ⊙	Annotation Blue	Large & prominent theater, cinema and amusement/recreational places shall be shown with annotation if space permits.
57	Airport/Airfield	0.1 [ ]	Annotation Black	All airports and airfields shall be drawn to scale and annotated. Airport facilities shall be drawn as isolated buildings.
58	Sports Center	2.0 ⊙	Blue	Centers like gymnasiums, stadiums, etc., shall be annotated if space permits.
MISCELLANEOUS LANDMARK FEATURES				
59	Storage Tank	0.00 0.2	Blue	Oil tanks that can not be drawn to scale shall be symbolized and annotated. In case dimension of more than 1mm on the map they will be drawn to scale and annotated.
60	Tower, Radio Tower, TV, Stack/Flagpole, Telephone	0.2 ⊙	Blue	Tower, Radio/TV Tower, Stack/Chimney, Flagpole, etc., shall be shown and annotated if these can be used as landmarks. Abbreviations can be adopted if necessary.
61	Power Transmission Line	0.1 [ ]	Black	Power transmission lines with high towers shall be expressed. Those that have base dimensions of more than 1mm on the map shall be shown to scale. Those with less than 1mm on the map will be symbolized. The part of the lines crossing roads & railways shall be cut 0.2mm from the features.
62	Lighthouse	0.15 [ ]	Black	The symbol will be applied for fixed lighthouse.
63	Cave	0.15 [ ]	Blue	The symbol will be applied for caves formed naturally.

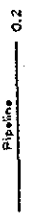
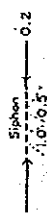
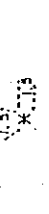
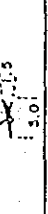
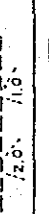
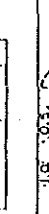
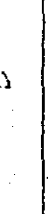

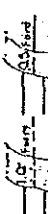


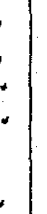
*sd*

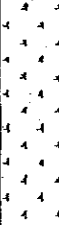

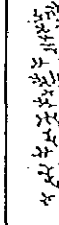
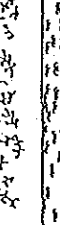
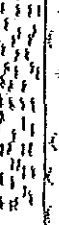



NO.	NAME	SYMBOL	COLOUR	APPLICATION
64	Mine		Blue	Symbol will be applied for mine. The site and kind of mine shall be annotated.
65	Water Tank/ Stand Pipe		Blue	The symbol shall be applied for water tanks and standpipes which are large and prominent. Large water tanks more than 1mm on the map shall be drawn to scale.
66	Monument		Blue	Monuments which are big and used as landmarks shall be shown.
67	Wall/Fence		Black	The symbol shall be applied for walls which are photo & field identifiable and made of stone, bricks, concrete or steel mesh.
68	Antiquity		Annotation Black	The coverage shall be delineated and annotated.
69	Park		Black	The coverage shall be delineated and annotated.
70	Windpump		Blue	The symbol shall be applied for facilities which pump up ground water by means of wind force.
71	Gas Station		Blue	Prominent gasoline stations used as transport terminal, specially those situated at crossings shall be symbolized.
72	Bus Terminal		Blue	Terminal of buses connecting city and provinces (including large motor pool) shall be symbolized and annotated if space permits.
73	Aero Beacon		Blue	Beacon that send out signals for the guidance of aircrafts shall be symbolized.
74	Slipway		Black	Inclined platform with rails leading down to water, on which ships are built or repaired shall be symbolized.
75	Memorial Park, Cemetery		Black	On the symbol specifications, the left side represents memorial park and the right side cemetery. Limits of memorial park will be delineated and annotated. Cemeteries shall be symbolized if photo & field identifiable.
76	Fort		Black	Famous historic spots, noted places, etc., shall be annotated if space permits. Line width shall be 0.4 & 0.2mm on the map for the inside and outside lines respectively.

NO.	NAME	SYMBOL	COLOUR	APPLICATION
77	Rope Way		Black	Facilities for transporting aggregates from quarry by overhead wire rope shall be symbolized.
78	Military			Area where facilities of the Armed Forces of the Philippines exist. Roads, spot heights and contour lines shall be shown.
<b>WATER and ASSOCIATED FEATURES</b>				
79	Pier- Jetty		Black	Pier or jetty made of iron, concrete, wood, including floating bridge shall be shown to scale or symbolized.
80	Breakwater		Black	Breakwater, groin, etc., shall be drawn to scale.
81	Wharf/Revetment		Black	Photo & field identifiable wharf which has mooring facilities shall be symbolized. Revetment which are made of concrete or filled-up solid stones that have a height of more than 2m and length of 100m shall be symbolized.
82	River/Stream Single Line		Blue	Stream which is more than 100m in length and less than 4m in width shall be expressed as single line.
83	Double Line		Blue	River which is more than 100m in length and more than 4m in width shall be shown as double line. Shoreline of rivers/creeks/canals in congested areas shall be shown as much as possible.
84	Intermittent		Blue	River in which no water flow at the time of an ordinary water level for other rivers shall be symbolized.
85	Indefinite		Blue	Waterway whose banks or course can not exactly be determined because of forest cover or other obstruction shall be symbolized.
86	Flow Arrow		Blue	The symbol shall be applied where the flow is certain and for wide and double line rivers.
87	Falls Double Line		Blue	Waterfalls whose height is more than 3m shall be symbolized.
88	Single Line		Blue	Waterfalls whose height is less than 3m shall be symbolized.
89	Well		Blue	Well which is large and prominent shall be symbolized.



NO.	NAME	SYMBOL	COLOUR	APPLICATION
90	Spring/Hot Spring		Annulation Blue	Spring or hot spring shall be symbolized and annotated if space permits.
91	Channel/Causeway Double Line with Abutment		Blue	Channel or canal(esteros), which is more than 10m in width and 100m in length shall be shown.
92	Flood Gate		Black	Artificial structure for control of water volume for the prevention of adverse flow shall be symbolized, and annotated if space permits.
93	Dam		Black	Dams which are photo & field identifiable shall be drawn to scale, and annotated if space permits.
94	Weir		Black	Artificial structure to control water flow shall be symbolized. Those with length of more than 10m shall be drawn to scale.
95	Lake/Pond Shoreline		Blue	Lake or pond whose approximate dimensions are more than 20m x 20m shall be shown and annotated if space permits. Shoreline at the time of aerial photography shall be shown
96	Ditch		Blue	Ditch whose dimensions are more than 10m in width and 100m in length shall be shown. Those with smaller dimensions shall also be shown if necessary and space permits.
97	Swamp/Marsh		P 16 Symbol Water Blue	Marshy area which is always wet and store water during rainy season with area of more than 50m x 50m shall be symbolized.
98	Tidal Flat		LT 88 Blue	Water areas where sand or earth is exposed at low water and covers at high water with area of more than 50m x 50m shall be symbolized.
99	Reef/Coral		P 4 Blue	Coral reef with area of 50m x 50m or more shall be symbolized.
100	Mud		E16-25 80 LT 934 Blue	Tidal flat covered by muddy soil, whose dimensions are more than 50mm x 50mm on the map shall be symbolized.

NO.	NAME	SYMBOL	COLOUR	APPLICATION
101	Pipeline / Water Pipeline	 Pipeline 0.2	E04-24 80 Black	Pipeline used for transporting water, oil, gas, etc., which are photo & field identifiable shall be symbolized. Underground section shall not be expressed.
102	Siphon	 Siphon 0.2	E04-24 80 Blue	Siphon which is photo & field identifiable shall be symbolized and annotated "siphon"
103	Rock Awash	 0.2	Black	Rock awash which is dangerous to surface navigation shall be symbolized.
104	Wreck	 0.2	Black	Wrecks showing any portion of hull or always partially submerged shall be symbolized.
105	Sewerage Outfall	 Sewerage Outfall 0.2	E08-25 80 Blue	Sewerage outfall shall be symbolized and annotated in italic.
106	Marine Pond	 Marine pond 0.2	E04-24 80 Line - Black	Photo & field identifiable pond for raising marine species shall be drawn to scale and annotated if space permits.
107	Fishpen	 0.2	Blue	Drift-net used for fishpen which is located at sea, lake or river shall be drawn to scale if photo & field identifiable.
108	Salt Bed	 0.2	Line - Blue	Salt beds shall be drawn to scale.
109	Ferry/Ford	 0.2	E16-25 80 Black	In case of a regular service, ferry shall be annotated as "Ferry" in italic and symbolized. The landing places on both banks of the river shall be linked with broken line. In case of fording, it shall be annotated as "Ford" in italic.
VEGETATION				
110	Broodleaf		P 5 Black	Areas where broadleaf tree grows more than 3m high and with more than 5mm x 5mm on the map shall be symbolized.
111	Bushes/Scrub		P 7 Black	Area where trees of less than 3m high and with less than 5mm x 5mm on the map shall be symbolized.
112	Mixed Scrub & Broodleaf		P 8 Black	Areas of mixed scrub and broadleaf trees shall be symbolized.

NO.	NAME	SYMBOL	COLOUR	APPLICATION
113	Rice Fields		P 14 Vegetation Black	Areas for rice cultivation whose dimension is more than 50m x 50m shall be symbolized.
114	Cropland Agricultural Land		P 15 Vegetation Black	Cultivated areas for upland rice or vegetables, whose dimensions are more than 50m x 50m shall be symbolized.
115	Mangrove		Vegetation Black	Mangroves which grow densely along river banks/mouths and coastal areas and whose dimensions are more than 50m x 50m shall be symbolized.
116	Nipa		P 16 Vegetation Black	Nipa which grows in water edge and whose dimensions are more than 50m x 50m shall be symbolized.
117	Tropical Grass		P 11 Vegetation Black	Areas with dense tropical grass and whose dimensions are more than 50m x 50m shall be symbolized.
118	Tree Lined Road		Black	Roads where trees are planted in a row and are prominent landmarks shall be symbolized.
119	Bamboo		Vegetation Black	Areas where bamboo tree grows densely of not less than 50m x 50m shall be symbolized.
120	Sugarcane	Su	Vegetation Black	Plantation for sugarcane shall be symbolized.
121	Pineapple	Pl	Vegetation Black	Plantation for pineapple shall be symbolized.
122	Banana	Ba	Vegetation Black	Plantation for banana shall be symbolized.
123	Coconut	Co	Vegetation Black	Plantation for coconut trees shall be symbolized.
124	Mango	Man	Vegetation Black	Plantation for mango trees shall be symbolized.
125	Other Plantation		P 17 Vegetation Black	Plantation for other fruit trees shall be symbolized.

LAND USE MAP

Criteria for Expression

Classification and generalization of features to be expressed on land use map shall be made in accordance with the following criteria:

1. In Urban area, where buildings and their facilities occupy more than 50% of the site in terms of minimum area, land use classification shall be expressed by the general usage of the area.

2. Two(2) storey buildings, where usage by floor is divided for residential and other category, classification shall be under the latter.

3. Area where land use is mixed and classification can not be made properly, as in three(3) or more storey tenanted buildings where usage in each floor is different from others, classification shall be mixed category.

Classification shall be the following 3 categories:

- (1) Mixed commercial-residential
- (2) Mixed industrial-residential
- (3) Mixed business-commercial

4. In commercial or mixed area, building which faces the street and is less than 15m in width, shall be expressed in 1.5mm strip on the map.

(5) 土地利用图式规程

Definition & Application for Land Use Map (1:10,000)

CLASSIFICATION	DEFINITION	APPLICATION	MINIMUM AREA
URBAN AREA			
Residential District			
1 Multi-storey Housing	Four(4) or more storey housing in a compound	Condominium	3 x 3 <small>(area)</small>
2 Residential	One(1) to three(3) storey housing area	Rest house for groups of various organizations, lodging for public servants, subdivisions/villages in suburb that have already existing road system but have sparse houses.	3 x 3 (2x2)
3 Temporal Housing Area	Congested area where mainly one(1) storey temporal housing exist.	Temporal housing fixed on water or along creeks and rivers, and those in slum or squatter areas	3 x 3
Commercial/Business District			
4 Business	Area where enterprises conduct their trade and office work.	Offices of private companies, banks, hotels, TV/Radio/Telephone stations, etc.	3 x 3
5 Commercial	Area which is considered as a general shopping district including those for shops, stores.	Retail store, restaurant, wholesale store, department store, market, auto sales shops, etc.	3 x 3 (1.5)
6 Mixed Commercial-Residential Area	Three(3) or more storey tenanted buildings which have shops or stores on the first floor and upper floors are for residential, and their classification cannot be made properly.		3 x 3 (1.5)

*Handwritten mark*

CLASSIFICATION	DEFINITION	APPLICATION	MINIMUM AREA
7	Three (3) or more storey mixed business/commercial buildings which can not be classified properly.		3 x 3 (1.5)
Industrial District			
8	Area where large scale industries mainly exist.	Such industry occupy an area of at least 5mm x 5mm on the map. The area includes its own office, parking lot, sports ground, etc. Manufacturing industries like textile industry and chemical industry, shipyard, bottling company, quarry with classifying facilities, etc.	5 x 5
9	Area where small factories mainly exist.	Such industry occupies an area of less than 5mm x 5mm on the map. Cinema studio, furniture factory, auto repair shop, etc.	3 x 3
10	Three (3) or more storey buildings with mixed industrial/residential usage which can not be classified properly.		3 x 3 (1.5)
Public & Official District			
11	Area where buildings of National, Regional, Local Government organizations or corporations, etc., mainly exist for carrying on their business.	National or public buildings, police stations, fire stations, embassy or legation, consulate, trade/cooperative union buildings, quasi-public buildings, prison, etc.	3 x 3
12	Area where educational, research and cultural facilities mainly exist.	School, research laboratories, public hall, library, exhibition hall, museum, research institute, astronomical observatory, historical buildings, etc.	3 x 3

URBAN AREA

CLASSIFICATION		DEFINITION	APPLICATION	MINIMUM AREA <sup>sqm</sup>
13	Health & Welfare	Area where health and welfare facilities mainly exist.	Hospital, sanitarium, medical health center, large clinics, rehabilitation center, etc.	3x3
14	Park & Recreational Area	Area where public and recreational facilities mainly exist.	Park, garden, zoological & botanical gardens, picnic ground, theater, cinema, cockpit, casino, horse racing track, resort & beaches, etc.	3x3
15	Religious & Cemetery	Area where religious facilities and cemetery exist.	Church, temple, mosque, memorial park, cemetery, seminary, monastery, photo-identifiable grotto, etc.	3x3
Facilities				
16	Transportation	Area where transportation and bulk fuel facilities exist.	Railway station and terminal including car shed, marshalling yard, airport, bus terminal, parking lot, pier, port facilities, fuel, oil & LPG terminal, cargo shed of the above facilities., etc.	3x3
17	Service	Area where supply and treatment facilities for City & Municipal management exist.	Power station & substation, water treatment & filtering plant, sewerage, crematory, dumping area, etc.	3x3
18	Sports & Athletic	Area where sports facilities exist.	Sports plaza, stadium, shooting range, gymnasium, golf courses, tennis & basketball courts, bowling hall, billiard hall, etc.	3x3
19	Military	Area where military facilities exist	Military camp, depot and establishment	5x5

URBAN AREA

CLASSIFICATION	DEFINITION	APPLICATION	MINIMUM AREA
Agricultural Land			
20	Rice Field Area where irrigated paddies exist.	Rice paddy	5x5
21	Crop Land Area where crops are cultivated.	Corn, upland rice, vegetables, etc.	5x5
22	Plantation Area where plantation exists.	Banana, coconut, mango, sugar cane, pineapple, calamansi and other fruit bearing trees	5x5
23	Agro-Industrial Area where agriculture-related industrial facilities exist.	Rice mill, warehouse for agricultural products, tractor shed, processing factory, sugar factory, animal food factory, stock house, etc.	10x10
Forest			
24	Forest Area covered by trees.	Broadleaf, bushes/scrub, mixed scrub & broadleaf, bamboo	5x5
25	Grass Land Area covered by grass.	Pasture, ranch and other area where tropical grass densely grows	5x5
26	Bare Land Area where little or no vegetation grow.	Rock-outcropped area, barren area and steep slope such as cliff, sand and/or gravel area of river bed and sand dunes	5x5

FOREST & FARM AREA

*Handwritten signature*



CLASSIFICATION	DEFINITION	APPLICATION	MINIMUM AREA
Water Sphere			
27	Natural bodies of water	Sea, lake, river, creek/stream, bay, tidal flat and mud	5 x 5 <sup>m</sup> (2x2)
28	Marine Pond	Fish pond, culturing pond or shelf for raising crab, oyster, shell, etc.	5 x 5
29	Water related vegetation	Vegetation that grows on water.	5 x 5
30	Salt Bed	Field where salt is collected.	5 x 5
Under-Construction			
31	Open Space	Area where artificial land development is in progress.	2 x 2
OTHERS			

(6) 第二年作業工程表

Schedule of the 2nd Year Work  
for  
Establishment of Graphic Information Base Project

Appendix-4

Survey Items	F. Y. 1986												
	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	
Completion (Contoured Map)													
Field Completion (Contoured Map)			6/16		8/18								
Drafting (Contoured Map)			6/25										
Printing (Contoured Map & Planimetric Map)													
Field Identification (Land Condition Map)										1/11			3/14

\* : Preliminary discussion on the 2nd Year Work

■ : Field Work  
□ : In-door Work

Appendix 5

List of Data to be provided for the  
Land Condition Mapping

1. Technical Report on Geological Survey by Boring:
  - Boring Columnar Sectioning and Location Map
  - Geological Profiling

These are supposed to have been collected in relation to construction of roads, ports, bridges, buildings, etc...

  - Boring Data of Low Land (Area of North Manila and Marikina River)
2. Data on Flood Damage Areas and Related Information
  - Data of Principal Flood Damage (Affected persons, Casualty)
  - Data of Principal Flood Peak Discharge (Date, Peak stage, Discharge)
  - Sept. 2, 1986 Flooded Area and Water Level at Peak stage, Submerged period.
3. Survey Report on Earthquake Disaster:
  - Data on Locations of Destroyed Buildings by Earthquakes
4. Survey Report on Ground Subsidence:
  - Subsidence Area Map
  - Data on Amount of Subsidence
5. Data on Ground Water:
  - Manila City
  - Quezon City
  - North Manila (Bulacan-Meycawayan-Obando-Malabon)
  - Marikina River (Montalban-San Mateo-Pasig-Taytay)
6. Basic Data on Land Reclamation and Large Scale Development of Residential Area
7. Institutional Report on Land Forming Process, Geohistory, Volcano-history of the Philippines.
8. Old Aerial Photo of Metro Manila Region before 1968.

List of Data Provided for the  
Land Condition Mapping

1. Boring Data ----- Boring Data of Table Land of Metro Manila  
Boring Data of Low Land (along Manila Bay)
2. Flooded Area ----- 1985 Flooded Areas of Metro Manila  
1985 Flooded Areas of Quezon City (partial  
area)
3. Soil ----- Soil and Land Resources Evaluation Project  
of Metro Manila and Maps (Report, 1/125,000)
4. Geological Map - Manila and Quezon City Quadrangle (1/50,000)  
Montalban Quadrangle (1/50,000)  
Cavite Quadrangle (1/50,000)
5. Geology ----- Geological Map of the Philippines (1/4000,000)
6. Geology ----- Geology and Mineral Resources of Philippines  
(Report)
7. Earthquake ----- Luzon Earthquake of 1 August 1968 (Report)  
Luzon Earthquake of 2 August 1968 (Report)  
1966 - 1985 Lists of Earthquake events.

*Handwritten signature or initials*

(9) 地形图注記規程

Appendix-6

Draft Specifications of Letter Style & Letter Size for Contoured Map

Items	Application	Letter Style	Letter Size (mm)						Colour	Remarks
			3.5	3.0	2.5	2.0	1.8	1.5		
Administrative Areas	Town & City/ Municipal District	E08-24 C	0						Black	
	Barangay & Village/ Subdivision	E08-24 C		0					"	
Buildings & Bridges	Public buildings, Schools, Hospitals, Churches, Factories Bridges, etc.	E08-24 C/L				0			"	
Land Mark Features	Tower, Monument, Cave	E08-24 C/L					0		"	
Airfield, Military Area & Open Space	Large	E05-14 C/L				0			"	more than 8x8 cm. on the map
	Medium	E05-14 C/L					0		"	
	Small	E04-14 C/L						0	"	less than 3x3 cm. on the map
Roads, Railway	National highways, Provincial Roads, Streets	E08-25 C					0	0	"	
	Railways, Railway stations, passes	E08-25 C						0	"	
Destination	Expressway, National highways Provincial roads, Railways and other important roads	E16-25 C						0	"	
Agricultural Land	Large farm land	E05-14 C/L				0			"	
Mountainous Area	Mountains Hills	E16-25 C				0			"	
		E16-25 C					0		"	

Items	Application	Letter Style	Letter Size (mm)							Colours	Remarks
			3.5	3.0	2.5	2.0	1.8	1.5	1.2		
River	Large	E01-25 C		0						Blue	more than 8mm width on the map
	Medium	E01-25 C			0					"	
	Small	E01-25 C						0		"	less than 4 mm width on the map
Bay, Lake, Pond	stream, canal, channel										
		Large	E15-25 C		0					"	more than 10x10 cm. on the map
		Medium	E15-25 C			0				"	
	Small	E15-25 C						0		"	less than 4x4 cm. on the map
	Bay	E01-25 C						0		"	
Shoreline Features	Points	E16-24 C			0					Black	
	Sand & Rocky Beach	E16-24 C						0		"	
	Islands	E19-24 C						0		"	

(10) 地形図整飾模範版

(巻末に収録)

9 Q	1.5mm	E 08-42	ABCDEFGHIJKLMN <strong>OPQRSTUVWXYZ</strong> abcdefghijklmno <strong>pqrstuvwxyz</strong>
20 Q	3.5mm	E 08-24	ABCDEFGHIJKLMN <strong>OPQRSTUVWXYZ</strong> Abcdef Ghijklm Nopqrs Tuvwxyz
16 Q	3.0mm	E 08-24	ABcdef Ghijklm Nopqrstuv Tuvwxyz
14 Q	2.5mm	E 08-24	ABCDEFGHIJKLMN <strong>OPQRSTUVWXYZ</strong> Abcdef Ghijklm Nopqrs Tuvwxyz
9 Q	1.5mm	E 08-24	ABCDEFGHIJKLMN <strong>OPQRSTUVWXYZ</strong> Abcdstghij Ghijklm Nopqrs TUVwxyz
7 Q	1.2mm	E 08-24	ABCDEFGHIJKLMN <strong>OPQRSTUVWXYZ</strong> Abcdef Ghijklm Nopqrs Tuvwxyz
9 Q	1.5mm	E 05-14	ABCDEFGHIJKLMN <strong>OPQRSTUVWXYZ</strong>
8 Q	1.2mm	E 05-14	Abcdef Ghijklm Nopqrs Tuvwxyz
7 Q	1.2mm	E 08-25	ABCDEFGHIJKLMN <strong>OPQRSTUVWXYZ</strong>
8 Q	1.5mm	E 08-25	ABCDEFGHIJKLMN <strong>OPQRSTUVWXYZ</strong>
18 Q	3.0mm	E 16-25	ABCDEFGHIJKLMN <strong>OPQRSTUVWXYZ</strong>
16 Q	2.5mm	E 16-25	ABCDEFGHIJKLMN <strong>OPQRSTUVWXYZ</strong>
16 Q	3.0mm	E 01-25	ABCDEFGHIJKLMN <strong>OPQRSTUVWXYZ</strong>
15 Q	2.8mm	E 01-25	ABCDEFGHIJKLMN <strong>OPQRSTUVWXYZ</strong>
13 Q	2.5mm	E 01-25	ABCDEFGHIJKLMN <strong>OPQRSTUVWXYZ</strong>
8 Q	1.5mm	E 01-25	ABCDEFGHIJKLMN <strong>OPQRSTUVWXYZ</strong>
10 Q	2.0mm	E 01-25	ABCDEFGHIJKLMN <strong>OPQRSTUVWXYZ</strong>
15 Q	2.5mm	E 16-24	ABCDEFGHIJKLMN <strong>OPQRSTUVWXYZ</strong>
13 Q	2.00mm	E 16-24	ABCDEFGHIJKLMN <strong>OPQRSTUVWXYZ</strong>
10 Q	1.5mm	E 16-24	ABCDEFGHIJKLMN <strong>OPQRSTUVWXYZ</strong>
16 Q	3.0mm	E 19-24	ABCDEFGHIJKLMN <strong>OPQRSTUVWXYZ</strong>
14 Q	2.5mm	E 19-24	ABCDEFGHIJKLMN <strong>OPQRSTUVWXYZ</strong>
18 Q	3.0mm	E 42-25	ABCDEFGHIJKLMN <strong>OPQRSTUVWXYZ</strong>
16 Q	2.5mm	E 42-25	ABCDEFGHIJKLMN <strong>OPQRSTUVWXYZ</strong>
13 Q	2.0mm	E 42-25	ABCDEFGHIJKLMN <strong>OPQRSTUVWXYZ</strong>
10 Q	1.5mm	E 42-25	ABCDEFGHIJKLMN <strong>OPQRSTUVWXYZ</strong>



(d) 土地条件图地形分類規程(案)

Appendix-8

Definition for Land Condition Map (Draft)

Category I	Category II	Definition
Mountain slope	Gentle	Slope surfaces of mountains are classified into three grades according to their gradient. The gradient of gentle is less than about 15 degrees, but not accurate because the classification is made by stereoscopic observation.
	Steep	Gradient is more than 15 and less than 35 degrees.
	Very steep	Gradient is more than about 35 degrees.
Hill & table land	Flat	Slope surfaces of hill and table land margins are classified into four grades according to their gradient. Gradient is less than about 5 degrees and surfaces are dissected gently and undulately.
	Gentle	Gradient is less than about 15 degrees.
	Steep	Gradient is more than 15 and less than 35 degrees.
Unstable slopes	Very steep	Gradient is more than about 35 degrees.
	Cliff	Natural or artificial cliff more than 2 m in height and 50 m in length.
	Collapse	Collapse are mostly located on the nick lines dividing upper gentle slopes and lower steep slopes, and clearly recognizable on the latest aerial photos.
Baldness & Bare rock	Baldness & Bare rock	Rocky slopes, river beds and coasts which are not covered by soil and vegetation.
	Landslide	Landslides being creeping at present or having records of occurrence in the past. Those can be recognized stereoscopically.

Category I	Category II	Definition
Terrace	Higher	Surfaces were formed in the oldest period in the area and have been normally dissected well.
	Middle	Surfaces are lower than the above category and normally maintain original flat surfaces in the vast area.
	Lower	Surfaces were formed in the latest period, being not so dissected well.
Piedmont aggraded	Colluvium-like piedmont slope	Relatively gentle slopes, less than about 15 degrees, consisting of debris and soil which are crept down by gravity or transported by overland flow from mountain slopes.
	Talus	Relatively steep slopes, more than about 15 degrees, consisting of bigger grains of debris and soil transported from the upper slope by rockfalls.
	Debris avalanche	Landforms built by debris flows on the valley floors or in the foot of mountain slopes, with tongue-like shapes at their terminals.
Low land, relatively higher & well-drained	Alluvial fan	A fan-shaped body of alluvium built at the base of steep slopes. The alluvium is composed of sand and gravel. The gradient is 2 - 3 to 15 degrees. It was formed by aggradation of sand and gravel transported by flood from the mountain behind.
	Natural levee	Low ridges of fine alluvium distributed along the existing stream channel. Those are usually 0.5 m to 1.0 m higher than the surrounding surfaces and relatively safe from inundations. Those are composed of sand and silt deposited by water spreading out of the channel during floods.

*BR*

Category I	Category II	Definition
	Sand dune	Ridges of sand deposited by the wind. Sand dunes are distributed along coasts and the downstream of large rivers. Those are usually 3.0 to 4.0 m higher than the general surfaces of the lowland.
	Sand bar	Low and elongated ridges of sand and gravel, distributed in parallel with coasts, a few meters higher than the surrounding lowland. Those were originally built offshore by waves and currents.
Erosional forms of Table land, Terrace, etc.	Dent or shallow valley	Located on terraces, alluvial fans and natural levees. Those were formed by the process of running water and ground water. Elevations are a half to few meters lower than surrounding land surfaces.
Low land, general surfaces	Valley plain & Flood plain	Those are alluvial plains formed by the floods. The geological condition of alluvial plain consists of various composites from gravel to clay which are transported from surrounding terrace and mountain by flood. The flood plain is an open plain surface, very gentle and flat, and consists of fine sand and silt.
	Coastal plain & Delta	Coastal plain is former sea-bottoms, emerged by the recent fall of sea level. The area is very low and flat. The deposit consists of sand and silt. Delta is very low and flat land formed in the mouth of river. The geological condition consists of unconsolidated silt and clay which were transported by river and deposited very recently.
	Back marsh	The land which used to be a swamp and has not yet been completely filled with alluvium. Therefore, it is low compared with the surrounding area and poorly drained. Back marsh consists of soft clay, muck and peat with much moisture.

Category I	Category II	Definition
	Former river bed	Abandoned stream channels in valley plain or flood plain or delta, 0.5 m to 1.0 m lower than the general surface and 1 m to 2 m lower than natural levees.
Submersible land surface	High water river bed	Land which is submerged in the river course only at high water level.
	Low water river bed	Land which is submerged in the river course at ordinary water levels.
	Tidal flat	Flat land along coast, submerged during high tide and bares during low tide.
Water sphere	River & Shoreline	The part where water flow usually exists is regarded as river. Boundary between water sphere and land is regarded as shoreline. The surfaces of river, lake, sea, pond, etc. are regarded as water surface.
Artificially deformed land	Cut and rolled surface	Flat or gentle areas artificially made on mountain slopes or terrace margins by cutting and rolling the ground, such as newly reclaimed residential areas and golf courses.
	Banked up surface	More than 0.5 m higher than the original surface.
	Filled up surface	Lands reclaimed by filling marshes, lakes or river beds up to level of the surrounding surface.
	Drainage	Cultivated lands, salt fields and others which were developed by draining tidal flats or shallow lakes.
Boundary line	Under construction area	Land under reclamation in the seaside area, or the areas where artificial land deformation are being made at mountains, hills and terrace by cutting and rolling the ground for business, industrial, commercial, residential areas, quarries, and so forth.
	Indistinct boundary	Boundary which is not clear on landform classification.
	Landform line	Separation boundary and landform classification.

## 4-1 BCGS主任カウンターパート製図印刷点検時議事録

## MINUTES OF MEETING

Meeting on the Establishment of Graphic Information Base Project for the NCR in the Philippines was held by Mr. Masayoshi Takasaki, Leader of JICA Survey Team on December 18, 1986 at IECA with the attendance of Capt. Renato B. Feir and Cmdr. Rodrigo R. Pascua who have visited Japan as BCGS Counterparts for the Project. (see Appendix-1)

As a result of discussions, both sides agreed as follows:

1. Capt. Renato B. Feir, BCGS Counterpart, stated that 10 proof prints and 7 surprints of the contoured map as well as 3 proof prints of the planimetric map had been completely checked, and that printing of these 20 sheets of map would be approved.

As for the remaining sheets of map (contoured map: 40 sheets, planimetric map: 54 sheets), both sides agreed that the checking and approval of printing would be conducted at BCGS, Manila starting at the end of January, 1987.

2. In order to attain clear differentiation of marine pond from river in terms of color balance, Mr. Masayoshi Takasaki, JICA team Leader, proposed to change the screen density of marine pond to 10%, and Capt. Renato B. Feir expressed his full agreement with the proposal.

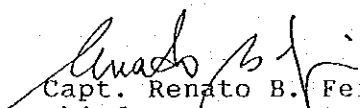
3. Presentation of "GOLF COURSE" was inadvertently missed by both sides, it was then agreed that these shall be presented with "GREEN" background and annotated.

4. It was also agreed by both sides to change the sheet name (Sheet No. 53) "BALUCTOT" to "PAG-ASA" as Baluctot is a very small barangay without houses.


5. Both sides further agreed that quality of the printing paper should conform to the specifications shown in the Appendix-2.

December 18, 1986  
Tokyo, Japan

For the Bureau of Coast  
and Geodetic Survey

  
Capt. Renato B. Feir  
Chief Counterpart  
for the Project

For Japan International  
Cooperation Agency

  
Mr. Masayoshi Takasaki  
Team Leader of JICA  
Survey Team

(1)

(67)

Appendix-1

List of Attendants

BCGS

1. Captain Renato B. Feir  
Chief Counterpart  
the Establishment of  
Graphic Information Base  
Project for the NCR
2. Commander Rodrigo R. Pascua  
Counterpart for the Project

JICA Survey Committee

1. Mr. Yoshikazu Yamada  
Advisor

JICA Survey Team

1. Mr. Masayoshi Takasaki  
Leader
2. Mr. Kenzo Motojima  
Deputy Leader
3. Mr. Hiroshi Kimura  
Coordinator
4. Mr. Isao Furukawa  
Chief Surveyor

IECA

1. Mr. Sho Saito  
Managing Director

Appendix-2

Physical and chemical characteristics  
of printing paper

Item		Average	Maximum	Minimum	
Folding endurance (time)	Machine direction	2,400	3,200	1,900	
Tension/1 kg (MIT type tester)	Cross direction	3,100	4,000	2,600	
Bursting strength (kgf/cm <sup>2</sup> )	Dry	5.53	5.85	5.10	
	Wet	2.81	3.50	2.45	
Tensile breaking strength (kgf)	Dry	Machine direction	11.6	12.1	11.1
		Cross direction	8.93	9.30	8.45
	Wet	Machine direction	3.59	3.80	3.30
		Cross direction	3.31	3.50	3.15
Tearing strength (gf)	Machine direction	92.0	94.0	90.0	
	Cross direction	87.7	90.0	86.0	
Smoothness (sec)	Surface	120	140	100	
	Back	100	120	90	
Expansion (%) (RH 60~80)	Machine direction	0.05	-	-	
	Cross direction	0.10	-	-	
Opacity (%)		90.7	91.0	90.4	
Brightness (%)		89.2	89.3	89.1	
Size condition (sec)		71	77	60	
Thickness (mm)		0.101	0.104	0.099	
Surface strength (A)	Surface	26	26	26	
Weight (g/m <sup>2</sup> )			90.9		
Water content (%)			7.9		
PH			6.3		

Paper material                      Unbleached pulp  
 Flow of fibres                      Good  
 Curling and other defects        None  
 Texture                                Good  
 Difference in quality between  
 surface and back                    Little

NOTE: Wet means the condition in which the specimen has been immersed in water of 20°C and is soaked with superfluous water.

4-2 BCGS主任カウンターパート印刷に関する書簡

Ministry of National Defense  
BUREAU OF COAST & GEODETIC SURVEY  
Manila, Philippines

Mr. Masayoshi Takasaki  
Team Leader  
JICA Survey Team

December 18, 1986

Subject: Establishment of Graphic Information Base Project  
for the NCR

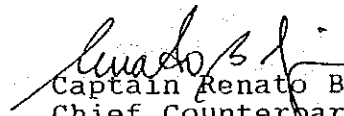
Sir;

The color proofs(20 sheets as per attached Appendix) of the contoured and planimetric maps of the establishment of graphic information base project, prepared under the technical cooperation of the Japanese Government to the Government of the Republic of the Philippines, has been fully checked by me with the assistance of my colleague.

The maps have been found to be completed and conformed to our agreed specifications in respect of the plotting, cartography, color and overall presentation. These maps have also been found to be of high quality and to meet international standards. With these findings, I hereby approve, on behalf of the Philippine Government, the printing of the contoured and planimetric maps.

May I now take this opportunity to express our sincere appreciation to the Japanese Government and Japan International Cooperation Agency for the effective technical cooperation to our Government. Those maps will surely help enhance not only the socio-economic development of the National Capital Region of the Philippines but also establishment of further close relationship between both countries.

Respectfully yours,

  
Captain Renato B. Feir  
Chief Counterpart for  
Establishment of Graphic  
Information Base Project  
for the NCR,  
BCGS



Appendix

1. Contoured Map

Proof Prints: Nos. 1, 2, 9, 14, 21, 24, 26, 38, 51 and 52

(10 sheets)

Surprints: Nos. 4, 13, 32, 37, 43, 53 and 54

(7 sheets)

2. Planimetric Map

Proof Prints: Nos. 2, 21 and 51

(3 sheets)

(20 sheets in total)