2. チュニジア側との協議文書

2－(3) 作業完了時の協議議事録 (60年12月)

MINUTES OF THE MEETINGS

BETWEEN THE JAPANESE STUDY TEAM AND

THE DIRECTION GENERALE DE L'AMENAGEMENT DU TERRITOIRE (DGAT)

9th December, 1985

Chief of Project

Sho Saito

Sho SAITO

Chief of Project

Youssef HAMDI

Meetings were held from 31st August to 9th December, 1985. The Japanese Study Team explained on the 1st year work and tentative plan of the 2nd year work. After the exchange of greetings, meetings were held in an open and friendly atmosphere from beginning to end.

Main items as follows agreed by both parties.

1. The Japanese Study Team explained to DGAT the 1st year work in addition to remaining works.

   (1) Aerial photography
   Area : Approx. 150.000 Km²
   Scale : 1/80.000
   Number of courses : 60 courses
   Number of sheets : 2005 sheets

   (2) Pricking
   Traverse point : 30 points
   Bench mark : Approx. 2100 Km
   (130 points)
   New controlpoint : 1 point

   (3) Field identification : Approx. 83.000 Km²

   (4) Remaining works
   Computation and adjustment
   Report making

2. The Japanese Study Team explained to DGAT about the tentative plan of 2nd year work.

   Tentative items of work are as follows:
   (1) Aerial Triangulation
   (2) Plotting and compilation
   (3) Field compilation

3. Data shall be sent by DGAT until end of July, 1986.

   Items of data are as follows:
   (1) Magnetic Deflection
   (2) Sample of marginary information

..../

4. Japanese Study Team and DGAT agreed with the symbols and the regulation of map symbols.

(See: Appd. 1 and 2)

5. DGAT requested to have a part of results of 1st year work to make a plan of land development.
   In response to the DGAT's request, the Japan International Cooperation Agency presented them as a part of final results.

(See: Appd. 3)

6. Tunisian government shall be kept 8 vehicles until next field completion.
   Inspection and maintenance shall be done by Tunisian government.

List of the results :

(1) Original negatives	13 rolls
(2) Photo index	1 sheet
(3) Landsat imagery	2 scenes

ANNEXE 1

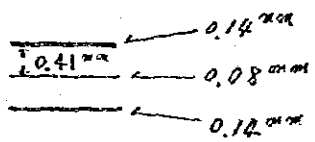
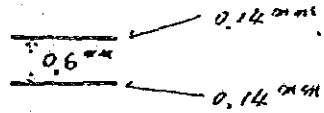
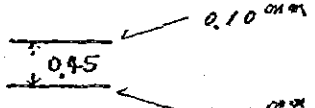
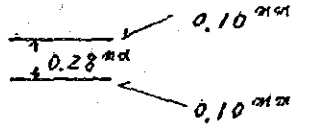
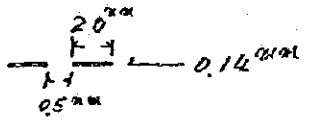
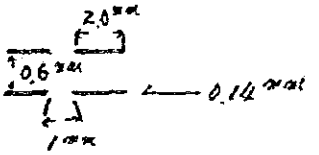
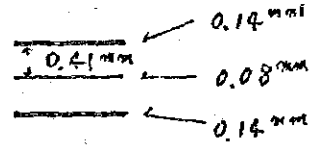
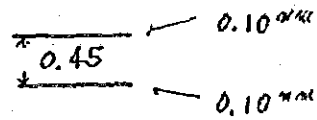
No.

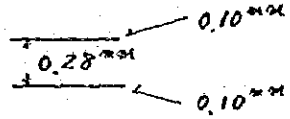
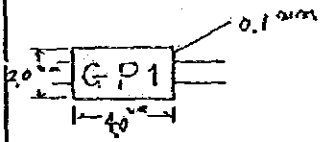
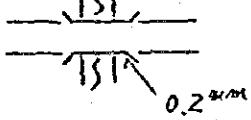
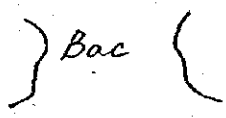
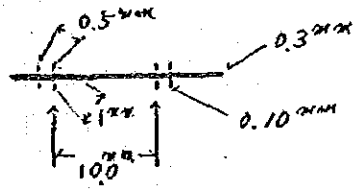
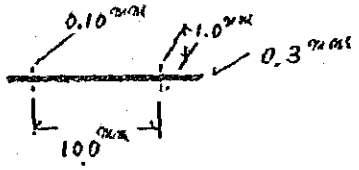
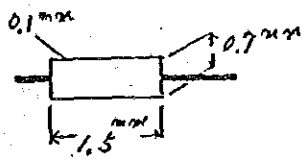
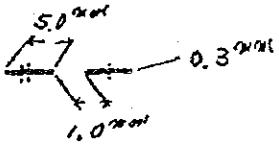
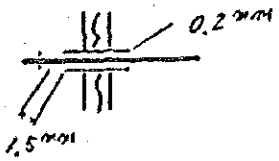
図式規程

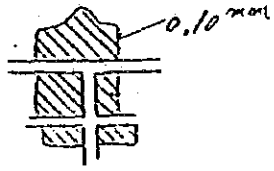
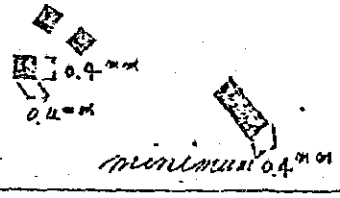
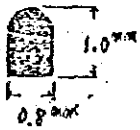
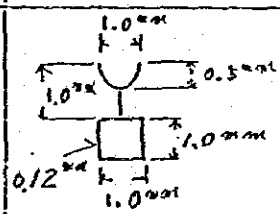
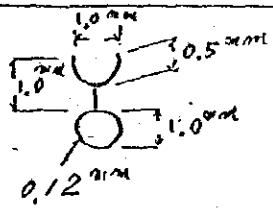
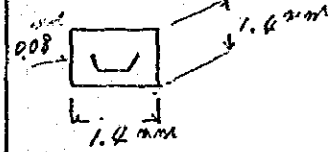
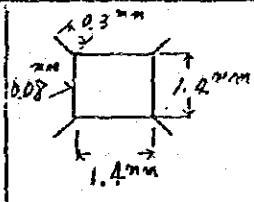
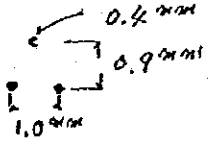
Signes Conventionnels de la Carte de Tunis

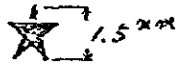
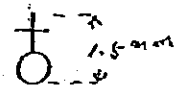
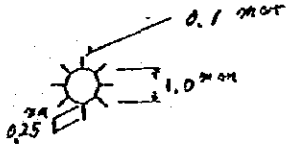
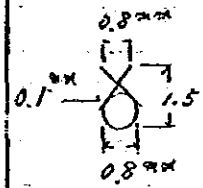
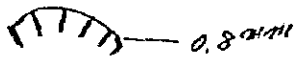
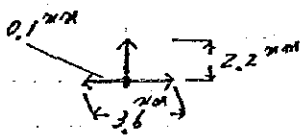
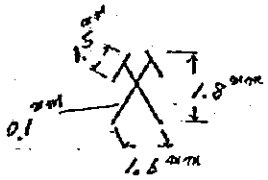
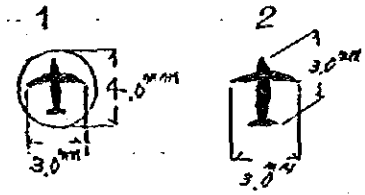
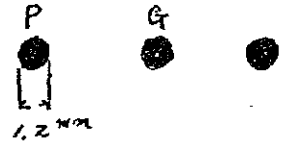
Au 1/2 000

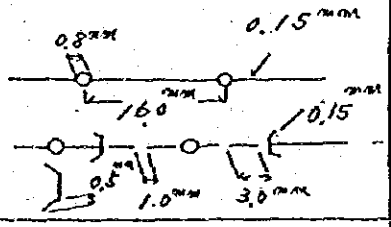
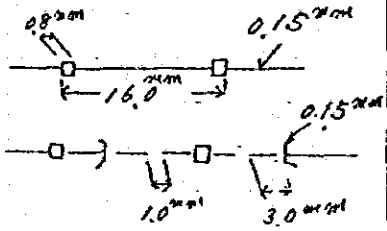
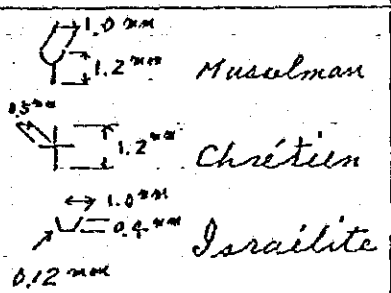
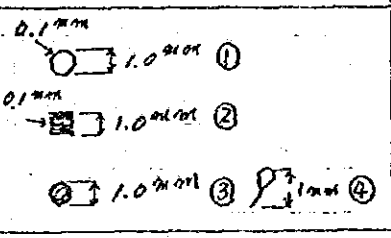
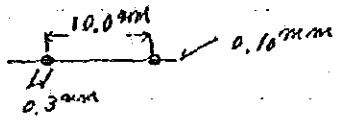
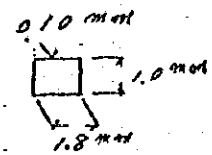
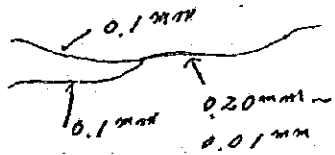
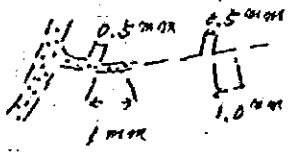
図式規程

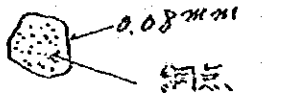
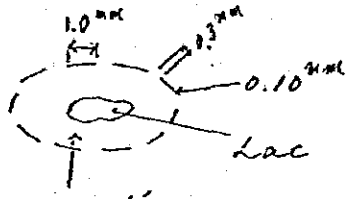
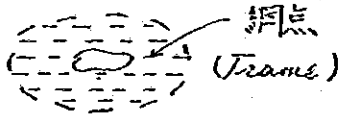
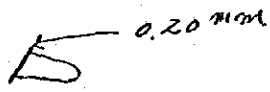
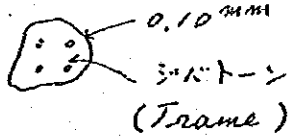
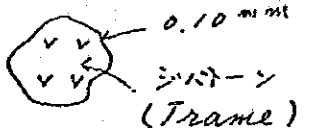
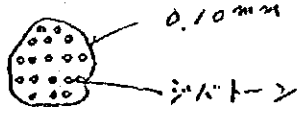
種　類	記　号	備　考
中央分離帯のある自動車道（高速道路） Autoroute et route à 2 chaussées séparées		黒 noir
管理している5m以上の舗装道路 Route revêtue de plus de 5 mètres.		黒 noir
管理している5m以下の舗装道路 Route revêtue de moins de 5 mètres		黒 noir
管理している5m以上の未舗装道路 Piste stabilisée et entretenue de plus de 5 mètres		黒 noir
その他5m以下の開道路（季節により通行制 Chemin d'exploitation de moins de 5 mètres		黒 noir
小道 Sentier		黒 noir
建設中の道路 Routes en construction		黒 noir
市街地内道路（高速道路） Autoroute à l'intérieur de la ville		黒 noir
市街地内道路 Route principale à l'intérieur de la ville.		黒 noir

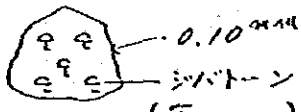
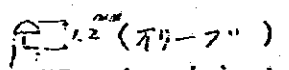
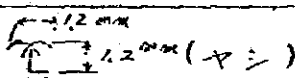
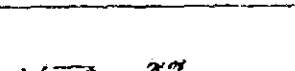
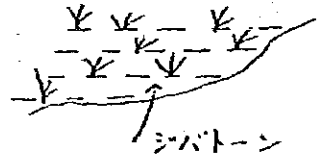
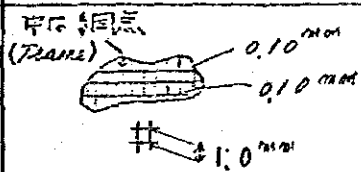
	種　　類	記　　号	備　　考
	市街地内道路 Autres routes dans la ville		黒 noir
	道路名称 Appellation	 GP1	黒 noir
	橋　　Pont		黒 noir
	渡船場　　Bac		黒 noir
	鉄道（複線） Chemin de fer à 2 voies.		黒 noir
	鉄道（単線） Chemin de fer à 1 voie		黒 noir
	駅 Gare station		黒 noir
	建設中の鉄道 Chemin de fer en construction		黒 noir
	鉄橋　Pont de chemin de fer		黒 noir

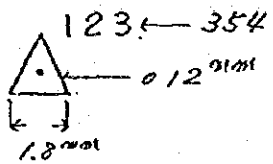
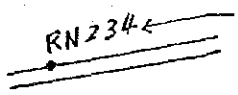
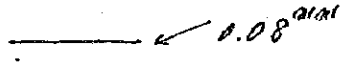
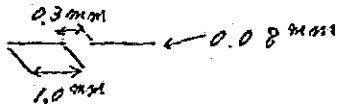
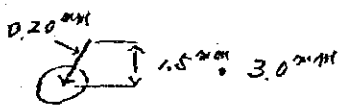
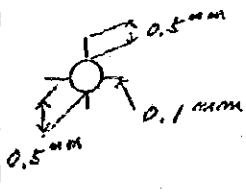
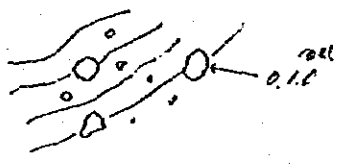
	種類	記号	備考
	密集建物 Noyau urbain		図上面積一辺 5 mm × 5 mm 以上 黒、 noir
	独立建物 Constructions isolées		図上で 0.4 mm 以上 の実形表示 黒、 noir
	穴居住地 Habitations troglody- -tiques		黒、 noir
	モスク Mosquée		黒、 noir
	クバ Koubba		黒、 noir
	エダヤ教寺院 Synagogue		黒、 noir
	ボルジュ Borj		黒、 noir
	遺跡 Ruines		黒、 noir

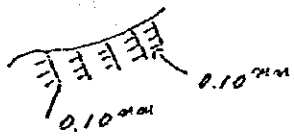
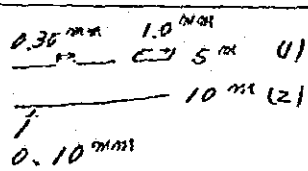
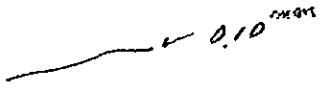
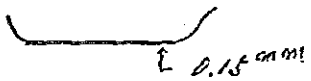
	灯台 *Phare*		黒 *noir*
	キリスト教寺院 *Eglise*		黒 *noir*
	工場 *Usine*		黒 *noir*
	風力ポンプ *Eolienne*		黒 *noir*
	採石場 *Carrières*		黒 *noir*
	放送局 *Emetteur*		黒 *noir*
	鉱山 *mine*		黒 *noir*
	飛行場 1 国際空港 *Aérodrome international* 2. その他の空港 *terrain d'aviation*		黒 *noir*
	石油. ガス 採掘井 *Puits de pétrole ou de gaz sondage*		黒 *noir*

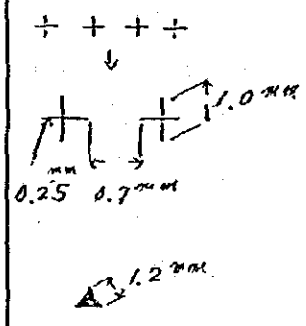
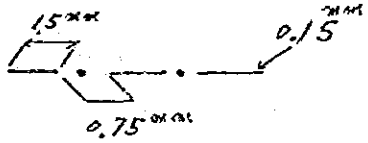
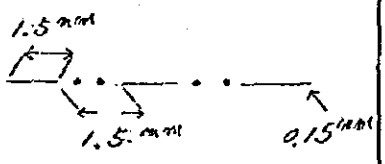
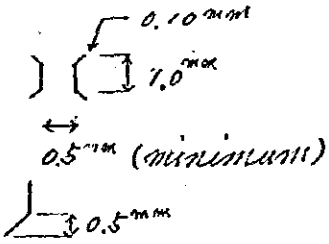
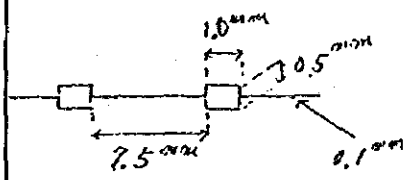
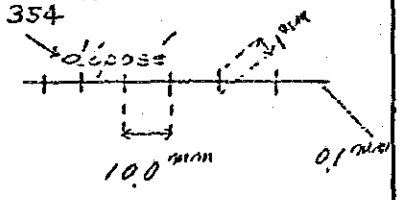
	送油管 Oleoduc.		黒 noir
	送ガス管 Gazoduc		黒 noir
	墓地 Cimetières		黒, noir
	井戸 ① puits ③ réservoir ② chateau d'eau ④ source captée		青 bleu
	送電線 Ligne à haute tension		黒, noir
	発電所 Central électrique		黒 noir
	常水河川 Eaux permanentes		青 bleu
	季節的に水のある河川 Lit d'oued		青 bleu

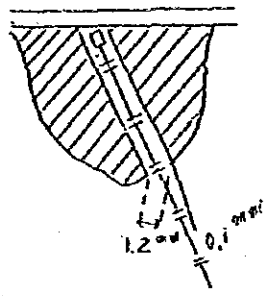
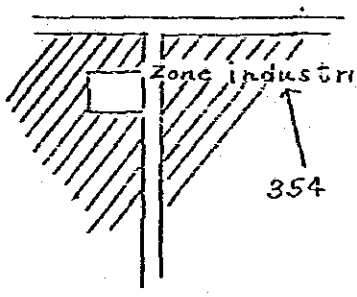
	湖 沈 Lac		青 bleu
	湿 地（季節的に水のある） Zone d'eau non permanente	 	青 bleu
	ダム Barrage		黒 noir
	用排水路 Canal d'irrigation		青 bleu
	森 林 Bois		緑 Vert
	かん木 Broussailles		緑 Vert
	果樹園 Autres plantations		緑 Vert

	オリーブ園 Oliviers		緑 Vert
	四上6mm×6mm以下植物 Plantations peu denses.		緑 Vert
			緑 Vert
			緑 Ver
	湿地および海中に生息する植物 Végétation aquatique		青 bleu
	川辺の植物 Oued bordé d'arbres		緑 Vert
	塩田 Salines		青 bleu
	温泉 Station thermale	Korbos 354 (station thermale)	黒 noir

	三角点 *Point géodésique*		黒 *noir*
	水準点 *Repère de nivellement*		黒 *noir*
	独標点 *Cotation*		黒 *noir*
	計曲線 *Courbe maitresse*		茶 *bistre*
	主曲線 *Courbe normale*		茶 *bistre*
	補助曲線 *Courbe de niveau intercalaire*		茶 *bistre*
	凹地 *Cuvette*		茶 *bistre*
	凸地 *Piton*		茶 *bistre*
	露岩 *Grands rochers*		黒 *noir*

	断崖 Falaise		黒 noir
	がけ（岩） Talus : rocheux		黒 noir
	がけ（土） Talus non rocheux		茶 bistre
	等深線 Courbes bathymétriques (1) intercalaire (2) normale		青 bleu
	海岸線 ligne côtière		青 bleu
	岸壁 Port		黒 noir
	防波堤 Digue		黒 noir

	国境界 *Limite d'état*		黒 *noir*
	州境界 *Limite de gouvernorat*		黒 *noir*
	市境界 *Limite de délégation*		黒 *noir*
	洞口，隧洞．トンネル *Tunnel.*		黒 *noir*
	鉱山用ケーブル *Cable de transport des minerais* (ベルトコンベアを含む)		黒 *noir*
	廃止鉄道（廃線） *Chemin de fer déposé*		黒 *noir*

	密集建物(市街地)地内の鉄道 *Chemin de fer dans les zone urbaines*		黒 *noir*
	工場地帯 *Zone industrielle*		黒 *noir*

REGULATION OF MAP SYMBOLS

1. Standards of Surveying

1) The ellipsoid by Clarke 1880 shall be used al

2) The mapping projection shall be Universal Transverce Mercator projection (U.T.M.)

3) The sheet dimension of neatline shall be one by one degree in geographical longitude and latitude.

4) The mapping scale shall be at 1/200 000.

5) The surveying shall be carried out based on "Specification of Geodetic and Photogrammetric Surveying for Oversea", March 1983, of Japan International Cooperation Ageincy.

6) Map symbols shall be based upon the Tunisian specification and, of which detailed application shall be decided by mutual agreemen: between Tunisian counterpart and JICA survey team.

7) Contour interval shall be 50 meter for intermediate contour, and each 200 meter for index contour.
Supplementary coutour of 25 meter shall be drawn only for the area where index and intermediate contours is not sufficient to show terrain .

8) The control point to be newly established shall be surveyed by means of 3rd order traversing.

9) Sample of marginal information shall be prepared and provided by Tunisian side.

10) The necessary annotation shall be noted and provided by Tunisian side on the enlarged aerial photography at the scale of 1/40 000, etc.
The method of annotation shall be decided by seperate meeting.

11) Magnetic note shall be draw based on information provided by Tunisian side.

12) Sheet names and numbers shall be provided by the end of November 1985.

.../...

13) Elimination

14) Shading shall be done mainly by vanishing and supplementally orthographed to adjust the tone contrast.
Shading is to be done using pencil on polyester base.

15) Depth Contour

Depth contours shall be for 5 meter, 10 meter, 20 meter, 50 meter and 100 meter, and shall be transferred from topomap of 1/200,000 provided by Tunisian side.

16) Arabic letter annotation

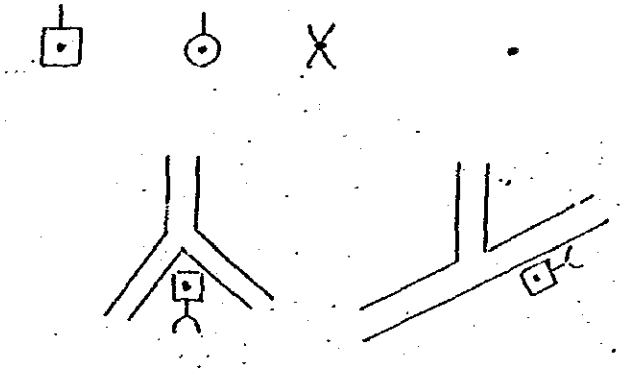
1- Japanese side will provide Franch letter overlay manuscripts to Tunisian side at the time of supplementary survey.

2- Tunisian side will prepare Arabic letter overlays referring to Franch letter overlays on each sheet of polyester bases supplied with punching holes.

3- Original marginal information overlay shall be prepared by Tunisian side on polyester film base and provided to Japanese side.

17) Isolated Symbols

Small symbols to indicate positions and categories such as control point, Mosque and airport etc, shall be drawn perpendicular to lower neatline as a rule, neglecting rules above, but position of control point excepting benchmark shall be plotted on the exact position as shown below.



18) Military facilities

Military facilities shall be plotted, cartographed and printed, but no annotation shall be indicated.

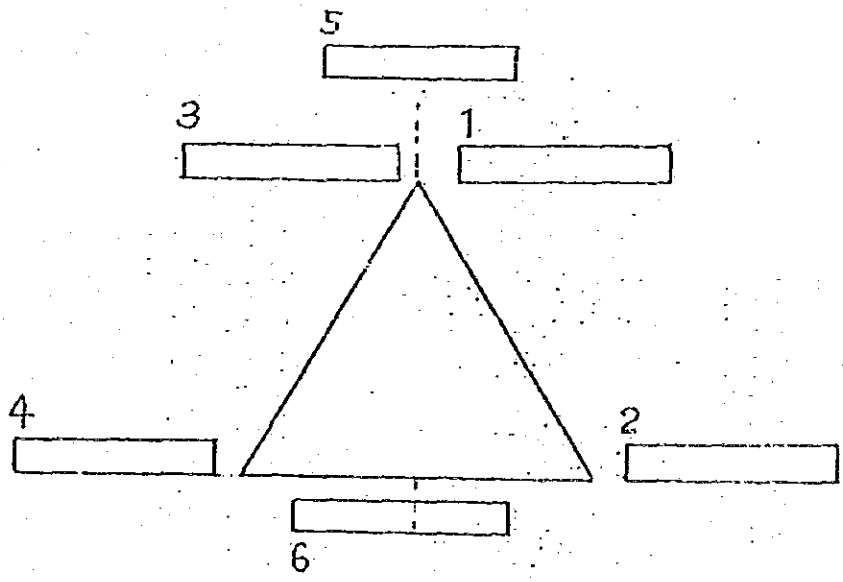
19) Each kind of zip-a-tones for final printing shall be provided by Tunisian side in the form of either negative or positive films.

20) Each symbol is also provided in the form of negative or positive films.

21) Entry method of annotation

Entry position of annotation shall be given No 1 priority. (see the following figure)

The order of priority shall be prior to higher ranked figures. (Entry of liner symbol and planimetrie feature refer to Appendix - 3).



22) Destination annotation

1- Road

Destination annotation of road shall be principal road which is indicated double line among them.
Data of destination name of place shall be provided by Tunisian side.

2- Rail rood

Destination annotation of rail road shall be applied the terminal station or the storting station.
Data of destination name of station shall be provided by Tunisian side.

23) Six colours shall be used for printing.

Symbol Specification

1. Road

1) Pavement portion shall be considered as road width.

2) Road shall be classified in 7 categories as follows.

a- Motorway (highway) with dividing strip

b- Paved road over 5 meter width, controlled.

c- Paved road less 5 meter width, controlled.

d- Other road, controlled (over 5 meter width).

e- Road, seagonal intermittent (less 5 meter width).

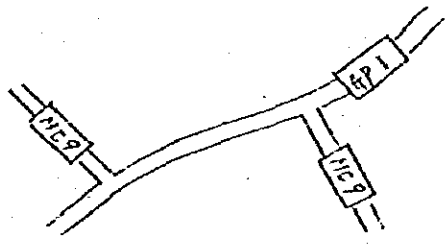
f- Track.

g- Road under construction.

3) Interchange is to be shown in actual form.

4) Roads in builtup area shall be shown as attachment 2.

5) Road numbering shall be as follows.



The numbering shall be layout able to understand routing and terminals at junction and close to neatline, but shall

be omitted in builtup area.

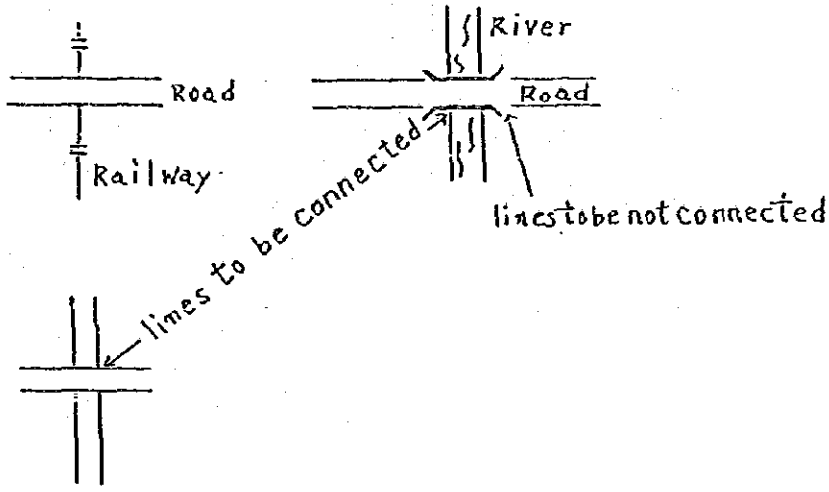
6) Road under construction shall be shonw only for road with length more than 4 kilometer of G.P. and M.C. roads.

7) Track defines for :

a. Route connecting settlements,

b. Route connecting to main motorway and also indicate route when considered necessary.

8) Intersections are compiled as follows ;



9) Bridges shall be indicated for the one which has more than double line stream .

10) Banking and outting more than 10 meter high and 600 meter long shall be indicated by symbol of cliff.

2. Railroads

1) Railroad shall be classified in five categories as follows ;

a) single track

b) double track

.../...

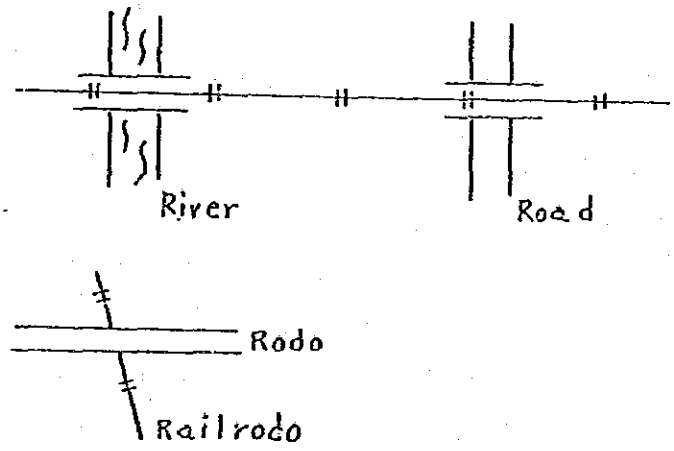
c) Track under construction

d) Mine private Ropeway.

e) Abandonment railroad.

2) Railroad station shall be indicated on an enlarged aerial photography in red circle by Tunisian side and shall be compiled in standard symbol.

3) Railroad overpass on river and road shall be indicated as follows ;



3. Boundary

1) All boundaries shall be transferred from the existing 1/50 000 topomap which should be supplied by the end of November 1985.

2) Boundary classification is as follows ;

a. National boundary

b. State boundary

c. Local administrative boundary

3) Symbol of boundary shall be indicated accurate route.
En the case of arossing river which is indicated double line, boundary shall be indicated duplication with boundary of river.
En the case of center of river, line symbol shall be indicated to make liner narrower provided that case of duplication of river.

4. *Settlements*

1) *Settlement shall be classified and indicated in block symbol with road for builtup area and black symbol for small houses.*

2) *Block symbol shall be applied for builtup ares exceeding 5 mm by 5 mm on map.*

3) *Small house indication shall be applied for not only densed houses but also necessary building such as a house at road junction, isolated sightseeing facility, and tipical product site.*
Other settlement shall be indicated properly without aisturbing area of cettlement spread density.

5. *Control point*

Triangulation point, Bench mark minor control shall be indicated.

a. *Only first order triangulation shall be indicated and plotted by field identification on photo or coordinato plot from Tunisian control tabulation, and indicated with the unit of meter.*

b. *Out of benchmarks field identified, the only benchmark considered necessary to show from view point of local out look shall be plotted and indicated with the unit of meter*

c. *Spot heights considered necessary from area out look shall be plotted with a standard of one point per 5 Cm by 5 Cm on map with the unit of meter.*

6. Elimination

.../...

7.Stream

1) Stream shall be classified as perennial and intermet-tent from supplied stream information map and photo identification.

2) Stream exceeding 1.0 mm in width on map shall be drawn by double line stream symbol.

3) Perennial stream

Stream identified on original photo with water and extending 2 Cm long on map shall be drawn in blue solid line.

4) Stream intermittent

Stream with shallow fissure scattered on dry terrain and seasonal intermittent with water exceeding 4 Cm long on map shall be shown in blue dots and broken lines by photo interpretation and related materials. Stream exceeding 1 mm in width on map shall be drawn in broken double lines with blue dots, and stream not exceeding 1 mm in width on map shall be drawn in broke: single line.

8. Coastline

1) Coastline shall be drawn along the shoreline identi-fiable on aerial photography.

2) Coastline shall be drawn precisely and superior to other natural features in drawing.

3) Islands and rocky reef shall be drawn as much as possible.

Where small reefs are densed and difficult to draw independently, the main reef shall be selected and drawn its outline.

4) Coastiline shall be drawn in blue and the cultural features such as break water and quay etc. exceeding 2 mm long on map shall be drawn in black.

5) Harbour shall be indicated in annotation.

9. Airport

1) Airport is classified, as follows ,

a) International Airport
b) Local Airport

2) Airport classification shall be decided on the supplied materials.

10. Coastal marsh

The outline of coastal marsh shall be drawn by photo interpretation.

11. Swamp

The washed area shall be drawn by photo interpretation.

12. Distorted surface area

1) The symbol shall be used for terrain not suitable and difficult in contour drawing by the following criter in :

Small depression
Small convex
Outcrop
Cliff
Rocky cliff
Earth cliff

a) Small depression

Small depression considered necessary shall be indicated even exaggerating outlook in the following symbol.

b) Small convex

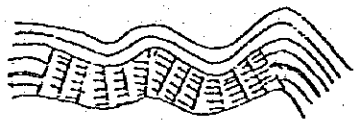
Same as depression, following symbol shall be applied.

c) Outcrop

Where the outcrops out the contour lines, outcrop shall be drawn in black indeterminate circle by cutting contour lines to show outlook.

d) Cliff

Cliff means steep terrain occurred by a larger size of landslide and shall be drawn in black parallel lines as follows :



e) Rocky cliff

Rocky cliff is sharp slope caused by rocky slide and shall be drawn in black short line along maximum slope.

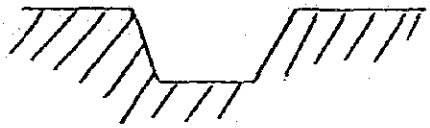
f) Earth cliff

Earth cliff is sharp slope caused by sand slide and shall be drawn in brown short line along maximum slope.

.../...

13. Irrigation ditch

Large scale of ditch shall be drawn in blue solid line, but small size shall also be drawn if it is usefull in local.



14. Lake or pond

Perennial lake or pond shall be outlined by photo interpretation. Minimum area to be drawn is 1 mm by 1 mm on map.

15. Vegetation

1) Vegetation is claffified for forest, shrub, orchard, olives, marsh, palms and alfa.
2) Vegetation exceeding 5 mm by 5 mm on map shall be shown by symbol and outline, but olives, palms and alfa shall be indicated by symbols for local outlock even if area is small.

16. Destert

Destert shall be classfied in 8 categories as follows.

a) En sablement important
b) En sablement leger
c) Vaguelttes
d) Aklé
e) erg à anvattes sablenses
f) erg à agroud
g) erg à barknes
h) Dunes à crete vive.

17. Factory

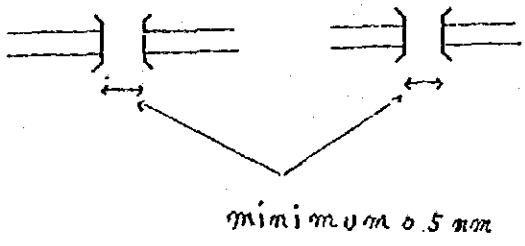
The factory shall be bifined fixed structures including housing area standards of indication are as follows.

1) Important factory and housing area shall be indicated by symbol.

2) Factory and housing area in factory zone which is exceeding 2 Km x 2 Km at one side shall be indicated by annotation.

18. Tunnel

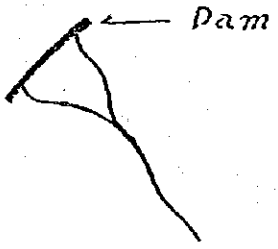
All tunnel of road and all tunnel of rail road shall be indicated by symbol of entrance to tunnel at scale of 0.5 mm. Tunnel which shall be not indicated separately becouse of many tunnel continuoeusly shall be indicated in a lump.



.../...

19. Dam

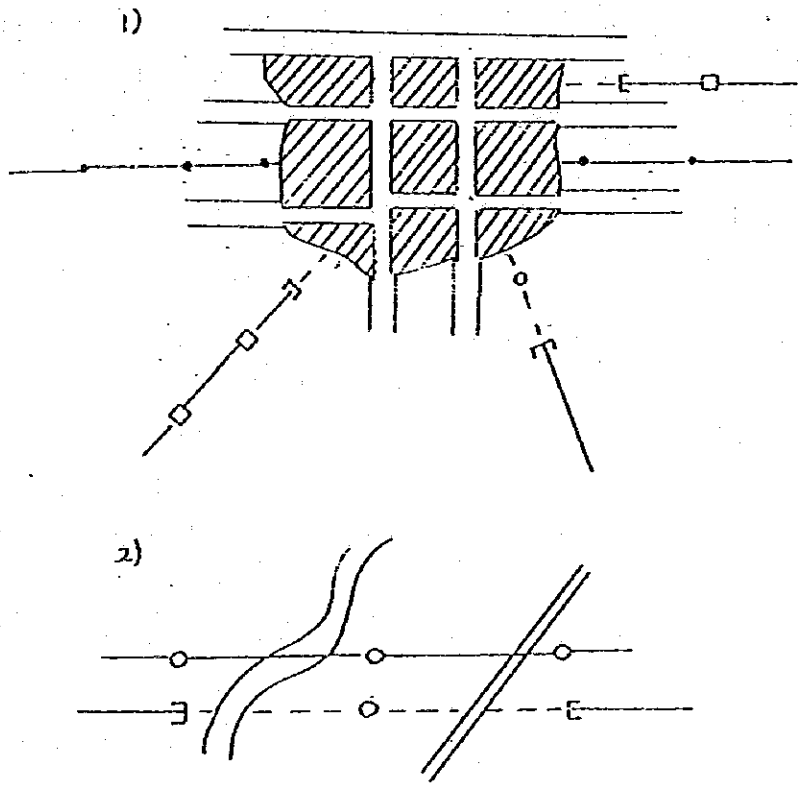
Dam shall be defined as structure which is constructed to accurate for various kind of water and shall be indicated at scale of 0.5 mm even if small scall. Surface of water which dam up by dum shall be indicated the actual figure.



20- Indication of powertransmission line, oil pipe line and gas pipe line.

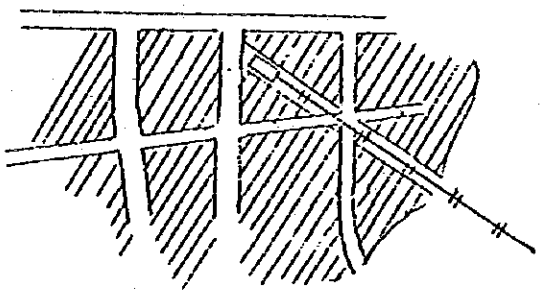
1) Is not indicated in area of town.

2) In a case of cross the double line road or double line river, shall be cross the lower port.



21- Rail road

Rail road in area town shall be indicated as follows.

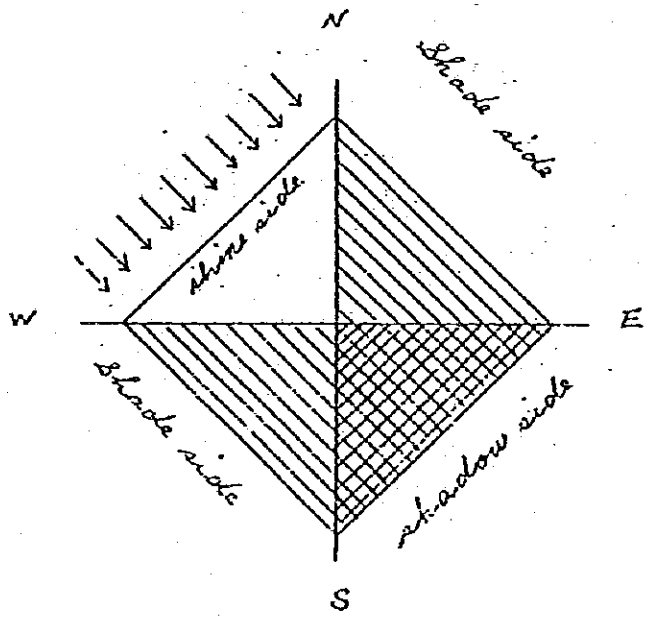


Standards of oblique illmination on light and shade.

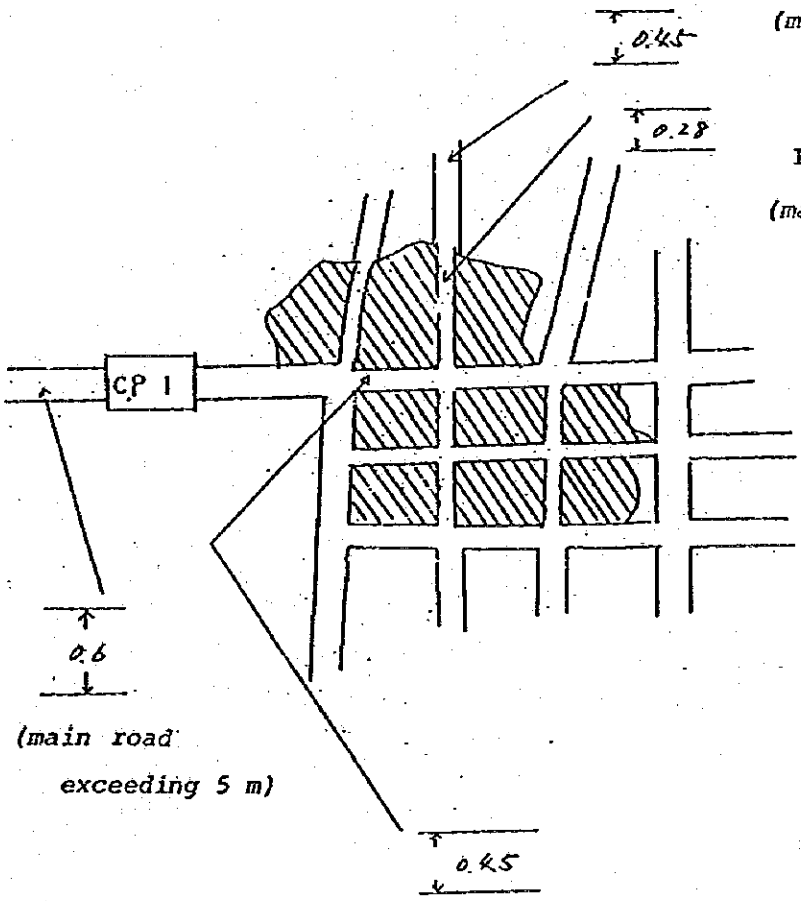
Slope angle		Rate of colour tone		
		shine side (northwest)	shade side (northeast, southeast)	shadow side (southeast)
0°	5°	0 (white colour) ( )	0 (white colour) ( )	0 (white colour) ( )
5°	15°	0.5.	1.0.	15
15°	25°	1.0	2.0	30
25°	35°	2.0	4.0	60
35°	45°	4.0	8.0	12.0

Standands of Vertical illimination

Slope angle	0°	5°	5°	15°	15°	25°	25°	35°	35°	45°
Rate of colour tone	0 white colour		1		2		4		8	



Road in a builtup area.



(main road below 5 m)

In a builtup area.

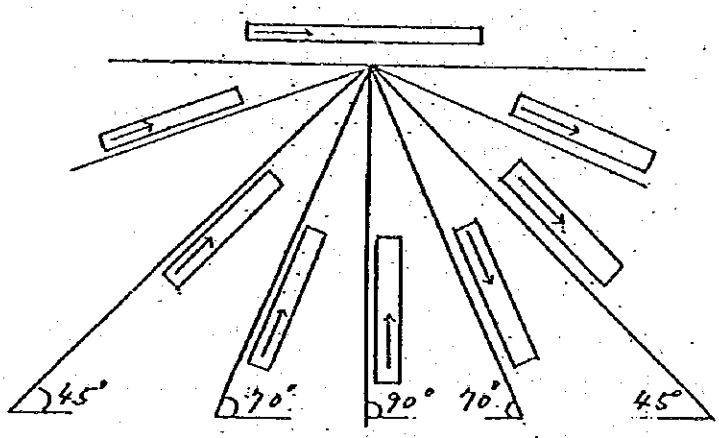
(main Road *below 5 m)*

(main road exceeding 5 m)

(In a builtup *area main road exceeding 5 m).*

Annotation of lineament

As a general rule lineament shall be indicated as follows.



←——— Direction order of letter

Name of natural area which is mountain area, hill plateau table land sand hill uncultiwated plain, waste land shall be applied annotation of lineament.

3. 撮　影　契　約　書

EXHIBIT A

SPECIFICATIONS FOR AERIAL PHOTOGRAPHY OF TUNISIA

1. General

Aerial photography shall be carried out by Contractor for the topographic mapping project of Tunisia, of which the survey and mapping have been entrusted to the International Engineering Consultants Association (IECA) by the Japan International Cooperation Agency (JICA).

2. Flight Plan

The flight plan is attached as Appendix 1, and has been prepared on the best available map of the area at a scale of 1/500,000. Landsat scenes at scale of 1/500,000 will also be made available covering the area to be photographed. The flight plan shows the runs to be flown and the required coverage beyond the boundaries of the area to be mapped. The directions of the flight runs are shown as such on the flight plan.

3. Equipments to be used

a) Aircraft

A Lear Jet LR 35A, capable of the high altitude flying specified in Paragraph 4 of these specifications, shall be used.

b) Aerial Camera

A Wild RC-10 camera with a wide-angle lens-cone shall be used for aerial photography.

Hemet shall submit the calibration report for the camera and lens tested within the past three years. The calibration report should include:

a) camera number and lens number
b) position of principal point relative to fiducial marks (in 0.01mm)
c) calibrated focal length (in 0.01 mm)
d) radial distortion
e) observer's name and number of report

JH　A. A.

c) Navigation Instruments

Aircraft shall be equipped with the proper navigation aids, such as ADF (Automatic Direction Finder), VOR (Voice Omni Rotating Beacon), VOR/ILS, VLF and flight director, which are essential for accurate navigation.

d) Film

Kodak double x Panchromatic Aerographic type 2405 distortion free film shall be used.

e) Printing Paper

Ilford 24M paper shall be used for the reproduction of contact prints which will be used for checking purposes in Tunisia.

f) List of Equipment and personnel to be engaged

A list of all equipment and a list of personnel to be engaged, with their experience, shall be submitted to IECA for the acceptance before commencement of the work.

4. Requirement of Photographic Flying

a) Aerial photography shall be performed to cover the whole area of Tunisia. The part of the country above latitude 34° will however be given first priority.

b) Photo Scale, Altitude and Flight Direction.

The aerial photography shall be taken at an average scale of 1/80,000, that is, the flying altitude shall be about 12,000 meters above. M. G. L. (mean Ground Level) and shall not exceed 13,500 meters above M. G. L. Flight runs will not be broken for changes in terrain elevation.

c) Tolerable shifting Error

The Tolerable shifting error of a flight runs shall not exceed ±10% of designated flight altitude.

JH A. A.

d) Overlaps

The forward overlap between sucessive exposures in each run shall be between 55 and 65 percent except where specified otherwise. The lateral overlap between adjacent runs shall be between 10 and 30 percent. Where a run crosses a shore-line the forward overlap shall be increased to a nominal 80 percent. The increase in overlap shall include at least three photo-centres on lands.

e) Crab

Crab shall not exceed 10° when measured between the base line and a line parallel to the frame of the negative nor be such that stereoscopic gaps in the photography result from it.

f) Tip

Tip and Tilt shall not exceed 5°.

g) Haze, Mist and Smoke

Photography shall only be flown when haze, mist or smoke, etc, does not substantially impair the tone reproduction of the negatives.

h) Tolerable volume of cloud and haze

Although cloud free photographs shall be required, in the case of bad weather, the tolerable volume of cloud shall not exceed 5% of the total area of a print. However, on the effective stereoscopic photographs, the important areas for mapping such as villages and cultivated lands, control points and principal point of the photographs shall not be covered with cloud.

In the southern block a reasonable amount of haze and airborne sand will be accepted.

i) Dividing of Strip

If a designated run is divided into two or more runs for any reason, the overlap for the runs shall consist of at least three photographs.

j) Altitude of Sun

Photographic flying shall be carried only when the altitude of the sun is 30° or more.

JH A. A.

k) Another Requirement

1. Two extra photographs shall be taken to cover areas outside of the boundary before the run starts and after it ends in order not to miss some of the required area.

2. Anppoximately one meter at both ends of the roll of film shall be left unexposed.

5. Photographic Processing

1) The film shall be developed to ensure homogeneous tone and clear contrast in the negatives.

2) Fixing shall be done with sufficient time to thoroughly remove unexposed emulsion.

3) Washing shall also be done with sufficient time to thoroughly removing any remaining fixing solution.

4) Drying shall be carefully done for avoiding film distortion caused by rapid heating, etc.

6. Negative Numbering

The following annotation shall be recorded on the negative films by Contractor.

1) The name of Job.
2) JICA
3) Date of photography
4) Scale of photography
5) Strip Number
6) The serial number of camera, magazine and the lens
7) Photo Number
8) Flight altitude

J# A.A.

All information shall be recorded on photographs of both ends of each run. But on the other photographs only run number and photo number shall be recorded. Sample of annotation shall be provided by IECA to Contractor before commencement of WORK.

7. Line Index.

A line index should be prepared for all line flights on the existing maps at the scale of 1/500, 000.

8. Final Materials to be Delivered.

The following materials shall be delivered to IECA in Tunisia. Contractor shall submit to IECA the delivery note (or list) showing contents and quantity at each delivery.

a. One (1) set of original photo negatives.

b. One (1) set of contact prints which have the necessary annotation as specified in Article 6, Negative Numbering.

c. One (1) set of original line Index Map. (scale 1/500, 000)

d. Two (2) sets of copy of line Index Map.

e. Flight records.

f. Weekly progress report on flying.

JH A.A.

WORK CONTRACT FOR AERIAL PHOTOGRAPHY OF TUNISIA

This contract made and entered upon on the 26 June 1985 between International Engineering Consultants Association, a judicial person established in accordance with the laws of Japan with its principal office at New Kojimachi Bldg., 3-23 Kojimachi 5-chome, Chiyoda-ku, Tokyo, Japan (hereinafter referred to as "IECA") and Hemet Exploration a company established in accordance with the laws of France with its principal office at 21, Av., Clement Ader, 31170 Colomiers, France (hereinafter referred to as " Hemet "). IECA and Hemet are sometimes referred to herein together as the parties.

WITNESSETH

WHEREAS, the Government of Japan has agreed to perform the aerial photography of whole area of Tunisia (hereinafter referred to as "WORK") as a part of the Topographic Mapping Project in Tunisia, in accordance with the Scope of Work agreed between the Governments of Japan and Tunisia.

WHEREAS, the Government of Japan entrusted the above-mentioned WORK to IECA through the Japan International Cooperation Agency (hereinafter referred to as "JICA").

WHEREAS, IECA desires to sublet WORK to be done by Hemet, and whereas, Hemet is willing to do so.

Now, THEREFORE, the parties hereby agree as follow:-

JH A.A.

ARTICLE 1. Work

Hemet shall perform aerial photography covering the whole area of Tunisia, approx. 164,000 sq km at an approximate scale of 1/80,000 according to Flight plan as shown on Appendix 1 of Specification, Exhibit A.
For security reasons no flying should be done for the Eastern border area if the approvals of the adjacent country are not available for the overflight of the border area, and then flight lines shall be modified by mutual Agreement.

ARTICLE 2. Specifications

WORK shall be performed in accordance with the attached Specifications, Exhibit A., which is considered to be a part of this contract.

ARTICLE 3. Preparation for the Work

Hemet shall provide all the necessary skilled and well-trained personnel for taking the aerial photographs and developing the aerial film as well as the required materials and portable developer for the performance of the work.
IECA will arrange OTCA's facilities and contact printer to be used by Hemet and will be responsible for supplying Hemet with flight plans prepared on the best available map of the area to be photographed, at a scale of 1:500;000.
The flight plan will show the runs to be flown and the required coverage beyond the boudaries of the area to be mapped. Landsat scenes at a scale of 1:500,000 covering the same area as the line maps will also be provided. This material should be available at Hemet's office in Trouse, 4 days before mobilization of the aircraft and crew.

ARTICLE 4. Commencement of the Work

Hemet shall mobilize their aircraft, crew and necessary equipments to Tunis Airport unless hindered by force majeure, after the receipt of instruction of WORK commencement from IECA and shall commence the Work as soon as possible upon arrival to Tunis Airport. At least three days prior to the mobilization IECA wil confirm in writing that Landing and Flight permission over Tunisian territory has been obtained.

JH A.A.

ARTICLE 5. Work Period

Hemet shall complete all aerial photography and laboratory work within 3 months after the mobilization to Tunis airport.
However, if aerial photography can not be completed due to bad weather within the tendered period of 40 days from the date of arrival at Tunis Airport, it shall be extended as per the Article 12 , Contract Price.

ARTICLE 6. Representative of IECA on Site

IECA will send its personnel to Tunisia as its representative during the flying period in order to coordinate with the crew and promote the flight of Hemet.
Representative will have the following claims and obligations: -

1) Inspection and check of the progress and final results of aerial photography.
2) Instruction of reflight and re-print when the results are out of Specifications.

ARTICLE 7. Inspection of Results

When each roll of film has been photographed and photo processing has been conducted thereafter, Hemet shall give a notice of completion to IECA's representative in Tunis.
Hemet shall submit one set of contact prints and flight index to IECA's representative immediately upon completion of each photo processing for the inspection and approval.
If and when such results are not accepted by IECA's representative because of nonconformance with the attached Specifications, Hemet shall perform reflights and submit the results to IECA for its approval.

ARTICLE 8. Reporting

Hemet shall submit a written weekly report of WORK in English to IECA (or IECA's Representative), as well as the flight record.
Flight record paper shall be provided by IECA.

JH A.A.

ARTICLE 9. Liability

IECA shall be exempted from or kept harmless against any claim, damage, loss and/or accident incurred on or arisen on the third party in connection with any activity of Hemet during the period of WORK.

ARTICLE 10. Insurance.

Hemet shall be held liable for injuries to third parties resulting from Hemet's negligence. Hemet shall be responsible for holding negotiations with injured parties and implementing all necessary steps which will insure the settlement of the matter.

ARTICLE 11. Undertakings of IECA

IECA will do the followings for Hemet in cooperation with Tunisian Government.

a) To obtain flight permission for the aerial photography of Tunisia.
b) To obtain approval from the adjacent countries for the flight of border area.
c) Duty free import and export of aircraft, equipments, materials, necessary for WORK.
d) Tax exemption on the personnel income and company income.
e) Payment for flight permission and licence, if any.

Landing, parking, fuel and any other fees concerning actual flying shall be borne by Hemet.

ARTICLE 12. Contract Price

Total contract price including all domestic mob/demob charges and the first international mob/demob shall be U. S. Dollars 310,000 (Say Three hundred ten thousand only). This price is valid until the end of November , 1985. If a second mobilization to Tunisia is required an extra charge of 10,000 USD will be charged. The tendered price from Hemet presupposes that the aerial photography completed within 40 days after commencement of the WORK.

H A.A.

(Article 4.) Hemet is , however, prepared to remain in Tunisia on payment of a daily availability fee of 3, 575 USD excluding operational costs of 950 USD per hour. IECA will ensure that no additional royalties are charged.

ARTICLE 13. Payment Conditions

Payment shall be made as follows;

a) 20 percent of contract price within 30 days after mobilization (meanning mob/demob charges) of aircraft and crew to Tunisia.

b) 50 percent of contract price and within 30 days after the completion of aerial photography and photo processing and the acceptance of results by IECA's representative.

c) 30 percent of contract price immediately after the acceptance of result's and payment by JICA.

In case that all the aerial photography and processing could not be completed due to the reason not responsible to Hemet , payment shall be made on a pro rata basis plus Mob. /Demob. fee for the WORK completed.

$$\frac{TA}{TF} \times (\text{Total contract price minus mob/demob charges})$$

Note: TA is the total line kilometers of accepable flight runs and TF is the total extended line kilometers of flight courses shown in the attached flight plan, Appendix 1 of Exhibit A.

Payment shall be made to Hemet's account against the invoice countersigned by IECA's representative, with free of any taxes or deductions.

JH S.S.

ARTICLE 14. Force Majeure

a. Any failure by Hemet to carry out any of its obligations under this Contract shall not be deemed a breach of Contract if such failure is caused by force majeure or reasons beyond such party's reasonable control. For purposes of this Contract force majeure shall include wars, insurrections, civil disturbances, blockages, embargos, strikes and other labor conflicts, riots, earthquakes, epidemics, storms, floods, explosions, fires, lightening, orders or directions of any government or instrumentality or sub-division thereof, acts of God or the public enemy, and any other causes (whether or not the kind herinabove described) over which Hemet has no reasonable control and which is of such a nature as to make timely compliance with its obligations under this Contract impossible.

b. In this event, Hemet shall notify IECA thereof in writing, stating the cause, and Hemet and IECA shall do all reasonably within their power to remove such cause; provided however that neither party shall be obligated to resolve or terminate any disagreement with third parties, including labor disputes, except under conditions acceptable to it or pursuant to the final decision of any arbitral, judicial or statutory agencies having jurisdiction to finally resolve the disagreement.

c. If Hemet is by force majeure rendered unable, wholly or in part, to perform its obligations and meet its responsibilities of Hemet under this Contract, then Hemet shall be suspended to the extent of its inability to perform them, and for as long as such inability continues.

d The crew is subordinated flight captain who has the final responsibility for the safety of the aircraft and crew and also has the responsibility to carry the air photo operations according to regulations.

ARTICLE 15. Property

All materials, survey results and informations which will be obtained by and furnished to Hemet under this contract shall remain the property of IECA (and will be transferred to the Tunisian Government by the Japanese Government) and Hemet shall not disclose them to others in whole or in part for any other purpose.

JH A.A.

ARTICLE 16. Replacement of Crew and Materials.

Hemet shall provide replacements for the aircraft, the aerial camera or any other piece of equipment when such equipment is rendered unusable for any reason. Hemet shall also provide replacements for the flight crew and necessary laboratory technician, if for any reason, they are not able to carry out their assigned work. Costs for all replacements shall be borne by Hemet.

ARTICLE 17. Assignment and/or Subcontractor

Without written consent of IECA, Hemet shall not assign part or all of this contract to the third party or subcontract any portion of the work.

ARTICLE 18. Termination of Contract

IECA has the right to terminate this contract without any payment in the following cases except item C.

a. Except as provided in Article 14, force majeure, if Hemet shall not mobilize the aircraft to Tunis after the instruction by IECA or fail to commence or suspend the work for a certain period without justified reasons.

b. If WORK is not fully performed by Hemet in accordance with this Contract and Specifications and not rectified it without justified reason.

c. If air photography cannot be carried out as a result of factors beyond Hemet's control, other than FORCE MAJEURE, such as lack of fuel, withdrawn permission, lack of permission, Hemet shall be entitled to payment of 3,575.- USD for each day that the aircraft is grounded.
IECA may terminate this contract when they judge it's necessary, by giving Hemet a written notice which will be delivered at least 7 days before date of termination. In this event, payment shall be made on a pro rata basis, which specified in an Artile 13, Payment conditions.

JH A.A.

ARTICLE 19. Arbitration

All disputes arising in connection with this Contract shall be finally decided under the Rules of Conciliation and Arbitration of the International Chamber of Commerce by one or more arbitrators appointed in accordance with the Rules.

ARTICLE 20. Changes in WORK Program

IECA has the right to change the content of WORK at any time, if necessary, subject to agreement with Hemet.

ARTICLE 21. Effective Date of this Contract

This contract shall become effective on the date when the contract is duly executed and signed by both parties.

ARTICLE 22. Fairness, Doubt or Items not specified

In entering into this contract, the parties recognize that it is impracticable to make provision for every contingency that may arise in the the course of WORK. Accordingly, the parties hereby confirm it to be their intention that this contract shall operate between them with fairness .
Any doubt in connection with this contract or any item not specified in this contract shall be determined amicably by mutual agreement of the parties.

IN WITNESS THEREOF, the parties have executed this contract by their duly authorized representative in Tunis, Tunisia, as of the date first written above.

INTERNATIONAL ENGINEERING
CONSULTANTS ASSOCIATION
(IECA)

Attested: Akio Saito

HEMET EXPLORATION
(HEMET)

Attested:

4. 撮影作業日程

日順	月日	作業内容	飛行状況	天候	作業実施状況等
1	6/26			晴/曇	HEMET社とチュニスで撮影契約締結
2～10	6/27～7/6	準備作業			
〃	7/7	撮影機現地進入		晴	ストックホルム―チュニス・カルタージュ空港
12～15	7/8～7/11	準備作業		晴	撮影機材等の通関，同点検整備
16	7/12	テストフライト撮影作業	10:45～13:30 2h:35m	晴	撮影：L-1，2/3，4，5，6，7，9
17～23	7/13～7/19	フイルム検査		曇/晴	フイルム現像：G 1 検査：L-1，2/3，4，5，6，7，9
24	7/20	撮影作業	14:42～16:50 2h:08m	晴	撮影：L―8，11，12 フイルム現像：G 2
25	7/21	撮影作業	08:45～12:13 3h:34m	晴	撮影：L-10,13,14,15,16,17 検査：L-8，11
26	7/22	撮影作業	09:09～12:43 3h:34m 14:40～17:12 2h:32m	晴	撮影：L-18,19,20,21,22,23,24,25,26 フイルム現像：G 3
27	7/23	撮影作業	08:58～11:52 2h:54m 13:31～16:16 3h:02m	晴	撮影：L-27,28,29,30,31,32,33,34,35 検査：L-10,15,17 フイルム現像：G 4
28	7/24	撮影作業	09:03～12:05 3h:02m 14:07～16:30 1h:35m	晴	撮影：L-38,41,36,36,38,40,42,43 再撮影：L-19 検査：L-16,17,18,20 フイルム現像：G 5
29	7/25	フイルム検査		晴	検査：L-19，21，22 フイルム現像：G 6
30	7/26	撮影作業	10:41～12:16 1h:35m	晴	再撮影：L-8，11，フイルム現像：G 7 検査：L-23
31	7/27	撮影作業	09:56～12:49 2h:53m 12:49～14:14 0h:36m	晴	撮影：L-44 再撮影：L-39，40,41,42 検査：L-8，11，19，36,38,40 フイルム現像：G 8
32～37	7/28～8/2	フイルム検査		晴/曇	検査：L-24，25，26,27，31,32，33，34，35，36，38，40，36，42，43，12，13，14，39，44，41，42，
38	8/3	撮影作業	10:45～14:00 3h:22m 15:21～16:18 0h:57m	曇	撮影：L-37，再撮影：L-27，28，40，42，43，15
39～43	8/4～8/8	フイルム検査		晴	検査：L-15，37，40，42，43，27，28，フイルム現像：G 9
44	8/9	撮影作業	09:31～10:59 1h:28m	晴	ヘイズのため撮影中止
45～46	8/10～8/11	待期		晴	現地曇のため撮影中止
47	8/12	撮影作業	10:32～12:18 1h:46m	晴	再撮影：L-42 砂嵐のため撮影中止

日順	月日	作業内容	飛行状況	天候	作業実施状況等
48	8/13	撮影作業	09:10～12:15 3h:05m 13:30～17:05 3 :35	晴	撮影：L-45, 46, 47, 48, 49, 50, 51, 52, 53, フイルム現像：L-42 検査：L-42
49	8/14	撮影作業	09:10～12:22 3h:12m 13:40～16:11 2 :31	晴	撮影L-56, 57, 58, 59, 60, 61, 54, 55, 56 再撮影：L-42 検査L-45, 46, 47, 48, 49, 50 フイルム現像：G 12
50	8/15	フイルム検査		晴	検査：L-51, 52, 53, 54, 55, 56, 57
51	8/16	撮影作業	12:26～15:44 3h:18m	晴	再撮影：L-45, 46, 48, 42 検査：L-58, 59, 66, 61, 42 フイルム現像：G 13
52	8/17			晴	検査：L-45, 46, 48, 42 以上で全ての撮影作業終了
53～56	8/18～8/21	整理作業		晴	密着写真検査 標定図検査
57	8/22	成果受領		晴	HEMET社より撮影成果を受領