

THE SOUTH AFRICAN COUNCIL FOR PROFESSIONAL AND TECHNICAL SURVEYORS

GENERAL INFORMATION AND PROCEDURE FOR THE REGISTRATION OF PHOTOGRAMMETRIC SURVEYORS AND PHOTOGRAMMETRIC SURVEY TECHNICIANS

These notes attempt to provide details on HOW to apply for registration and WHAT happens once an application has been lodged. Candidates can also obtain advice and assistance from the PLATO Registrar, their Technikon supervisor and representatives from the various Institutes of Surveyors.

Information on registration with PLATO, including relative application forms, fees and details for Trial Surveys, will usually be given to students at first registration at a Technikon.

The importance of maintaining a continuous log book of ALL surveying activities, up to registration as a Photogrammetric Surveyor/Survey Technician, cannot be over emphasized.

1. PHOTOGRAMMETRIC SURVEY TECHNICIAN-IN-TRAINING

1.1 *General*

1.1.1 There are no academic or technical requirements for registration as a Photogrammetric Survey Technician in Training.

1.1.2 It is normal to register as a Photogrammetric Survey Technician in Training when commencing studies at a Technikon and this form of registration is necessary before a Photogrammetric Surveyor or a Professional Photogrammetric Surveyor can employ a candidate in order to provide practical experience.

1.2 *Requirements*

1.2.1 The relevant application form completed before a Commissioner of Oaths.

1.3 *Procedure*

1.3.1 Submit the application form to the Registrar with the prescribed registration fee.

1.3.2 The Registrar will notify the candidate when he or she has been registered.

2. REGISTRATION AS PHOTOGRAMMETRIC SURVEY TECHNICIAN

2.1 General

- 2.1.1 After passing a recognized examination (usually a National Diploma:) and completing a suitable period of training and a trial survey, a candidate may apply to be registered as a Photogrammetric Survey Technician.
- 2.1.2 A Photogrammetric Survey Technician may describe himself or herself as such, use the appropriate letters after his or her name but may only work under the personal supervision of a suitably qualified person.

2.2 Requirements

- 2.2.1 Certified copy of a National Diploma or an equivalent recognized by the Education Advisory Committee.
- 2.2.2 Certificate to the effect that the experiential training by the candidate had been approved by the Technikon and/or certificates from suitably qualified persons covering the required training.
- 2.2.3 Certificate from a Technikon indicating that a trial survey or equivalent practical test has been completed.
- 2.2.4 The relevant application form completed before a Commissioner of Oaths.

2.3 Procedure

- 2.3.1 Submit the application form to the Registrar with the prescribed application fee.
- 2.3.2 Registrar forwards the application to Convenor of Technical Registration Committees.
- 2.3.3 The Convenor or a Technical Registration Committee scrutinizes the application and the Convenor forwards a decision to the Registrar.
- 2.3.4 The Registrar notifies the candidate and, if approved, sends him or her a certificate as soon as the relevant registration fees have been paid.
- 2.3.5 If the application is not successful, the candidate may re-apply but only after the passage of two months. Another application fee will be required.

3. REGISTRATION AS A PHOTOGRAMMETRIC SURVEYOR

3.1 *General*

- 3.1.1 After being registered as a Photogrammetric Survey Technician and acquiring a minimum of 6 years approved practical experience, a candidate may apply to be registered as a Photogrammetric Surveyor.
- 3.1.2 The scrutinizing process that follows will involve a personal interview, a law examination and probably a trial survey.
- 3.1.3 A Photogrammetric Surveyor may describe him or herself as such, use the appropriate letters after his or her name and work unsupervised. He or she may also supervise and certify the work of Photogrammetric Survey Technicians.

3.2 *Requirements.*

- 3.2.1 A copy of a valid Photogrammetric Survey Technician registration certificate or a certified copy of a National Diploma (or an equivalent).
- 3.2.2 A certificate indicating that the Law Examination as prescribed for Photogrammetric Surveyors has been passed.
- 3.2.3 Full details of experience in the form of four certified copies of Photogrammetric Survey Log Books and/or Schedules of Experience.
- 3.2.4 The relevant application form completed before a Commissioner of Oaths.

3.3 *Procedure*

- 3.3.1 Candidate applies to the Registrar (in writing) to sit the next available **Law Examination** for Photogrammetric Surveyors. He or she will be advised of a venue and after the examination sent a notification of success or failure.
- 3.3.2 An application form to register as a Photogrammetric Surveyor may then be submitted to the Registrar with the prescribed fee.
- 3.3.3 The Registrar forwards the application to the Convenor of Technical Registration Committees.
- 3.3.4 The Convenor evaluates the experience and forwards three copies with comments to the Technical Registration Committee closest to the candidate.
- 3.3.5 The candidate will be notified of the date, time and place for an **interview** by the Technical Registration Committee.

This interview will test his or her overall grasp of a broad range of Photogrammetric surveying knowledge and practice and assess the candidates ability to recognize, define and solve practical problems. It will also probe the candidates powers of effective communication and seek an awareness of the role and responsibilities that Photo-grammetric surveyors have in society. Candidates are advised to bring a portfolio of current work to the interview and statements or references from persons who have supervised the candidates work may be requested.

- 3.3.6 Should there be any doubt with regard to the candidate's ability or level of competence, the Technical Registration Committee will set a **Trial Survey** on any one, or a combination of the following surveying aspects:

- Principles of field survey for photo control
- Flight planning and flight checking
- Flying and processing aerial photography
- Aerial triangulation
- Stereo digital map compilation
- Orthophoto processing
- Digital data processing/map data editing
- Cadastral compilation
- Applications programme and systems development
- GIS and/or Special Data Management
- Project Management

Candidates may offer at the interview examples of specific completed projects in lieu of a Trial Survey. A careful perusal of the Notes for Guidance for Photogrammetric Surveyors/Photogrammetric Survey Technicians will give an idea of the standard that is expected.

The candidate will be notified by the Convenor of Technical Registration Committees of the exact task and requirements for a Trial Survey and will be given supporting data and documentation where relevant.

The Trial Survey, which typically takes two weeks to complete, must be finalised within three months and all surveying records, calculations and reports returned to the Convenor for evaluation.

- 3.3.7 If considered necessary, the candidate may be notified of the date, time and place of a second interview for re-evaluation by the Technical Registration Committee.
- 3.3.8 When scrutinizing is complete the Convenor notifies the Registrar of the decision and returns all documents. The Convenor also issues a certificate certifying that the candidate has passed, failed or been exempted from the Trial Survey.
- 3.3.9 The Registrar notifies the candidate of the outcome of the application and, if successful sends the relevant certificate.
- 3.3.10 If the application is not successful, the candidate may re-apply, but only after the passage of six months. New application fees are payable.

NOTES FOR GUIDANCE FOR REGISTRATION AS A PHOTOGRAMMETRIC SURVEYOR OR PHOTOGRAMMETRIC SURVEY TECHNICIAN

1. INTRODUCTION

These notes which have been approved by the South African Council for Professional and Technical Surveyors, have been compiled with a view to assisting students at technikons who intend qualifying for registration as Photogrammetric Surveyors/Photogrammetric Survey Technicians in terms of the Professional and Technical Surveyor's Act, 40/1984. Adherence to the requirements as set out below, will assist materially in avoiding unnecessary delays.

DEFINITION

The "Council" means the South African Council of Professional and Technical Surveyors established in terms of Act 40 of 1984, or such agent acting on its behalf.

2. STATUTORY REQUIREMENTS

- 2.1 A candidate who wishes to register as a Photogrammetric Survey Technician should normally first register in terms of Section 23 of the Act as a Photogrammetric Survey Technician-In-Training, but may, after obtaining a recognised diploma at a South African Technikon, or its equivalent as certified by the Council, apply for registration as a Photogrammetric Survey Technician if he or she has complied with the requirements of Section 22(1)(b)(ii), (iii) and (iv) of the Act.
- 2.2 A candidate who wishes to register as a Photogrammetric Surveyor must normally first register in terms of Section 22(1)(b) of the Act as a Photogrammetric Survey Technician and after completing the training as prescribed in the Rules may apply for registration as a Photogrammetric Surveyor if he or she has complied with the requirements of Section 22(1)(a)(iii) and (iv) of the Act.
- 2.3 A candidate who wishes to qualify for registration as a Photogrammetric Survey Technician and who will be entitled to carry on his calling under the personal supervision of a professional Photogrammetric surveyor, Photogrammetric surveyor or other suitably qualified person, shall undergo the practical training as set out in Paragraph 3 and carry out a trial survey or such practical tests as are determined by the Council.

- 2.4 A candidate who wishes to qualify for registration as a Photogrammetric Surveyor and who will be entitled to carry on his calling without supervision, shall undergo the training as set out in Paragraph 4, successfully pass an examination on the laws concerning Photogrammetric surveying and related matters and complete a trial survey or certain practical tests determined by the Council. Part of the practical test will be an interview or oral examination.
- 2.5 A candidate who wishes to qualify for registration as a Photogrammetric Survey Technician or Surveyor, as the case may be, and who has, prior to the commencement of the Act, undergone training in the form of practical experience contemplated in Paragraphs 3 and 4 must submit an application to the Council in terms of Paragraph 5. Where it is not possible to obtain certificates of employment or submit exact schedules of training and experience an affidavit detailing all such training and experience, may be acceptable.

3. TRAINING FOR REGISTRATION AS A PHOTOGRAMMETRIC SURVEY TECHNICIAN IN THE REGISTER AS PROVIDED FOR BY SECTION 7 (4)(B) OF ACT NO. 40 OF 1984.

3.1 Period of Training

- 3.1.1 The period of practical training required in terms of the Rules is 240 working days (2 semesters) and the nature of such training shall be as set out in Paragraph 3.2 and is controlled by the Council. A training certificate is required. For a diploma issued by a Technikon, such Technikon will normally issue a certificate in respect of the training, provided the candidate is registered as a Photogrammetric Survey Technician-in-Training.
- 3.1.2 In the case of "other" qualifications, approved by the Council, it may be expected of the candidate to undertake a trial survey and/or undergo a personal interview.

3.2 Nature of Training

- 3.2.1 Training must be varied and in addition to conventional photogrammetric work, can include cadastral, engineering, topographical and control surveys, remote sensing, geomatics and cartography. The work must be undertaken under the personal supervision of a Professional P/gram surveyor or Photogrammetric surveyor registered in terms of the Act, or such other person whom the Council considers suitable.

3.2.2 Compulsory Training

80 working days in basic Photogrammetric survey which comprises:

	TYPE OF PHOTOGRAMMETRIC SURVEY	WORKING DAYS
i	POSITION FIXING: This includes horizontal and vertical fixing using different techniques and instrumentation and should include GPS fixing in three dimensions.	10
ii	PHOTOGRAMMETRIC COMPILATION: This includes setting up of stereo models, observing line and area features, verification and editing plus DTMs and contouring. The work should be from more than one photo scale.	25
iii	DIGITAL ORTHOPHOTO PROCESSING: Photo rectification Principles of image processing	10
iv	AERIAL TRIANGULATION AND ADJUSTMENT: This includes tie point selection and observations. Emphasis must be placed on the analysis of results.	15
v	PHOTOGRAMMETRIC JOB PLANNING: This includes: choice of photo scale, accuracy specifications, digital line and orthophoto alternatives, determination of supplies and setting up of GIS structures.	10
vi	PHOTOGRAMMETRIC FIELD WORK Annotation; Design and identification of photo control. Field checks.	10
TOTAL		80

NB!! All these surveys to satisfy the required standards of accuracy as set out in the land survey act and regulations, or as otherwise specified.

3.2.3 Additional Training

Not less than 160 working days in the following types of Photogrammetric survey of which not **less** than 10 days or **more** than 120 days will be acceptable in any five of the following options:

3.2.3.1 **Cadastral Survey by Photogrammetric Methods.**

3.2.3.2 **Photogrammetric Measurements of Structures and Buildings.**

- 3.2.3.3 **Cartographic Map Production.**
- 3.2.3.4 **Project Management.**
- 3.2.3.5 **Aerial Survey Cameras and Darkrooms.**
- 3.2.3.6 **Softcopy Photogrammetry.**
- 3.2.3.7 **Geomatics.**

3.2.4 The following should be noted:

- 3.2.4.1 The number of working days quoted in Paragraphs 3.2.2 and 3.2.3 includes both office and field work.
- 3.2.4.3 A detailed day to day diary of all survey work undertaken during the training period shall be kept and may be called for by the Council.
- 3.2.4.4 Experience in the various fields of survey shall not be one-sided and must include adequate training in all aspects of Photogrammetric work.

3.3 Where training in the form of practical experience has been undertaken prior to the commencement of the Act the provisions of Paragraphs 3.2.2 and 3.2.3 shall be used to assess the practical Photogrammetric survey work performed in terms of Section 22(1) (b)(ii) of the Act by a candidate whose diploma or equivalent qualification has been recognized.

4. TRAINING IN THE FORM OF PRACTICAL EXPERIENCE FOR REGISTRATION AS A PHOTOGRAMMETRIC SURVEYOR IN THE REGISTER PROVIDED FOR BY SECTION 7(4)(B) OF ACT NO. 40 OF 1984.

4.1 The period of training in the form of practical experience as prescribed in the Rules is six years including the period of study and training at a university, technikon or college. The nature of such training and experience is as set out in Paragraphs 4.2, 4.3, 4.4, 4.5, 4.6, 4.7 and 4.8 and is controlled by the Council.

Any candidate wishing to register as a Photogrammetric surveyor would normally be registered as a Photogrammetric survey technician during most of his or her years of practical training.

On completion of the six years practical training it will be expected of the candidate to write an examination on the laws that are related to Photogrammetric surveying and undertake a Trial Survey or practical test to the satisfaction of the Council. This includes an interview or oral examination.

- 4.2 The major proportion of work undertaken during this period must be in at least three of the types of surveys listed in Paragraph 3.2.3 and must include experience in **Project Management**. The results of these surveys will not be readily available to the Council, and the candidate will have to submit a detailed report on each major undertaking, together with his Schedule of Work as required in Paragraph 5.
- 4.3 It is recognized that for all Photogrammetric Surveying and Mapping a certain amount of Field Surveys is required, and this sort of survey work can be included under Field Surveys in the schedule and should also include the use of GPS.
- 4.4 When training in the form of practical experience has been undertaken prior to the commencement of the Act, the provisions of Paragraph 4.2 shall not necessarily apply but shall be used to assess the practical Photogrammetric survey work performed in terms of Section 22(1)(a)(ii) of the Act by a candidate who has completed more than 6 years of training in the form of practical experience and whose diploma or equivalent qualification has been recognized.

5. TRAINING AND/OR EXPERIENCE SCHEDULE FOR CANDIDATES WISHING TO QUALIFY AS PHOTOGRAMMETRIC SURVEY TECHNICIANS AND PHOTOGRAMMETRIC SURVEYORS.

When applying to the Council for registration, the candidate shall supply a Training and/or Experience Schedule as an extract from the diary and prepared in the form of the attached specimen. This schedule must be compiled in chronological order and each page must be signed by the supervisor with whom the candidate has trained, and by the candidate.

6. LAW EXAMINATION FOR PHOTOGRAMMETRIC SURVEYORS

- 6.1 A Photogrammetric Survey Technician wishing to upgrade to registration as a Photogrammetric Surveyor must apply to the Registrar to write a Law Examination.
- 6.2 Law examinations can be written in most centres at least twice a year. Candidates will be notified of the time and venue for each examination accordingly..
- 6.3 The candidate will be expected to have a comprehensive knowledge of the laws relating to registration of surveyors and the survey and registration of land. He or she should also be acquainted with certain aspects of related legislation as set out in the details below.
- 6.4 The law examination consists of a written paper of 3 hours duration. The examination is “open book” and the pass mark is 65%.

The paper will consist of questions on the following Acts :-

The Professional and Technical Surveyors Act (40 of 1984) and Rules,
and any other Act that may be prescribed from time to time.

6.5 The Registrar will notify the candidate of a pass or failure.

7. APPLICATION FOR TRIAL SURVEY FOR CANDIDATES WISHING TO QUALIFY AS PHOTOGRAMMETRIC SURVEY TECHNICIANS AND PHOTOGRAMMETRIC SURVEYORS.

7.1 When the candidate is of opinion that he or she has met the requirements set out in Paragraph 3 or 4, he or she should apply to the Council for registration in the relevant category.

7.2 The application must be accompanied by:

- a) An Application Form and the relevant fee,
- b) The Schedule of Training and/or Experience referred to in Paragraph 5,
- c) A certified copy of his or her degree, diploma, school leaving certificate or other certificate of equivalence, and
- d) A Certificate of Employment as prescribed in the Rules.
A separate Certificate of Employment is required in respect of each supervisor with whom the candidate has served.

"Certified" means certified to be a true copy by a Commissioner of Oaths or a Justice of the Peace.

7.3 The Convenor of the Technical Registration Committees will advise the candidate of the date and time for an interview. Immediately after the interview the candidate will be advised whether further practical tests or a Trial Survey will be required.

8. DETAILS OF TRIAL SURVEYS FOR PHOTOGRAMMETRIC SURVEY TECHNICIANS

8.1 This section is for candidates who wish to register in terms of Section 22(1)(b) of Act No. 40 of 1984.

8.2 The trial survey may consist of:

- 8.2.1 The reconnaissance, observation and computations for a breakdown from tertiary or secondary triangulation to establish three suitably situated photo control points.

- 8.2.2 The capture of a DTM plus breaklines and running of contour interpolation software.
 - 8.2.3 The production of at least three rectified and merged Orthophoto images.
 - 8.2.4 The editing of vector data applying cartographic specifications for the production of hard and softcopy maps.
 - 8.2.5 The orientation in an analogue and analytical stereoplotter of three large scale and three small scale models and capture of a variety of urban and rural detail. All data must be edited and structured in a suitable CAD package relevant to the photo scale.
 - 8.2.6 Pugging and observing of a strip of photography of at least ten models with suitable control ready for input to a Block Adjustment. (Normally a Bundle Block Adjustment)
 - 8.2.7 A full report dealing with all the aspects of the Trial Survey and other relevant information must be submitted.
- 8.3.** This trial survey will normally have been completed at a Technikon by persons who have qualified with a recognised National Diploma. The technikon will have issued a certificate to this effect.

9. DETAILS OF TRIAL SURVEYS FOR PHOTOGRAMMETRIC SURVEYORS

9.1 This section is for candidates who wish to register in terms of Section 22(1)(a) of Act No. 40 of 1984.

9.2 The Trial Survey consists of the completion of a task or tasks to the satisfaction of a Technical Registration Committee. A detailed requirement to this effect will be drawn up and provided to each trial survey candidate on an individual basis arising from the findings of the Technical Registration Committee at the interview.

9.3 A Task that might constitute a typical Trial Survey is as follows:-

Planning a Project based on a request from a local authority for design data for upgrading infrastructure in an urban area.

The planning would include the drawing up of Specifications - including the choice of photo scale and ground control pattern in accordance with the accuracy standards specified. Ground survey logistics and briefing. Flight planning and aircrew briefing and providing Detailed Instructions to a production team who would carry out the aerial triangulation, data capture and produce the final hard and also softcopy data for input into a GIS system.

The candidate must submit a comprehensive written proposal to his/her client containing a production flow chart (using e.g. Microstation Project) and Technical Specification including a Flight Plan and Ground Control Plan(the inclusion of GPS navigation way points and alternative flight planning for Airborne GPS photography would further demonstrate a candidate's knowledge).

A pricing structure must also be included.

A candidate must satisfy the examiner that he/she has a thorough understanding of the tools and techniques available in Photogrammetry to provide data that complies with a Specification. In addition, the candidate is required to analyse and comment on the implications of alternative methods of data presentation e.g. Orthophoto verses Line Maps in respect of meeting the requirements of the Project and to include in the Report an explanation to the client of the implications of these alternatives.

- 9.4 The average candidate will need no more than two to three weeks for completing his or her trial survey. Continuity of the work is essential and a break will only be condoned in exceptional circumstances due to factors beyond the control of the candidate.
- 9.5 Any specific project undertaken by the candidate during his period of training in the form of practical experience which might demonstrate his ability to perform some of the tasks set out in item 3.3.6 of the *General Information and Procedure* notes, may be submitted to the Technical Registration Committee for a decision as to whether it would be accepted as part of the Trial Survey.

10. COMPLETION OF REGISTRATION PROCEDURE

- 10.1 Evaluation of the Trial Survey will take place as soon as possible after completion of the work. The candidate will be informed of the time, date and place of a second interview, if required. The Convenor of Technical Registration Committees will then issue a Trial Survey certificate and forward his decision to the Council in regard to the acceptance, or otherwise, of the application.
- 10.2 The Registrar will notify the candidate that he or she complies with either the requirements of Section 22(1)(a)(i), (ii) and (iii) or Section 22(1)(b)(i), (ii) and (iii) of Act No. 40 for 1984 and will request him or her to make (in terms of Section 22(1)(a)(iv) or Section 22(1)(b)(iv) of the Act) an oath or affirmation in relation to his or her calling. The relevant registration fees will also be required.
- 10.3 When these formalities have been completed the candidate will be registered as a Photogrammetric Surveyor or Photogrammetric Survey Technician, as the case may be, with the Council.

MAY 1997

FORM PHOTOGRAM S1

I certify that before the despondent made the oath/affirmation ★ I asked him/her ★ the following questions and wrote down his/her ★ answers in his/her ★ presence:

(i) *Do you know and understand the contents of this declaration?*

Answer: _____

(ii) *Do you have any objection to taking the prescribed oath/making the prescribed affirmation ★?*

Answer: _____

(iii) *Do you consider the prescribed oath/affirmation ★ to be binding on your conscience?*

Answer: _____

I certify that the despondent has acknowledged that he/she ★ knows and understands the contents of this declaration, which was sworn to/affirmed ★ before me, and that the despondent's signature was placed thereon in my presence.

Commissioner of Oaths: _____

Designation (Rank): _____

Date: _____

★ **Delete whichever is not applicable.**

FORM PHOTOGRAM S2

**APPLICATION FOR REGISTRATION AS A
PHOTOGRAMMETRIC SURVEYOR
IN TERMS OF SECTION 22(1)(a) OF THE
PROFESSIONAL AND TECHNICAL SURVEYORS' ACT,
(ACT 40 OF 1984)**

PERSONAL INFORMATION

- 1. *Full Name(s) of Applicant* _____
- 2. *Postal Address* _____

- 3. *Telephone Numbers* _____ (H) _____ (W)
- 4. *Date of Birth* _____
- 5. *Identity Number* _____
- 6. *Current Employer* _____
- 7. *Present Position* _____
- 8. *Date Appointed* _____
- 9. *Previous Employer(s)* _____

FORM PHOTOGRAM S2

10. *Tertiary Academic Qualifications:*

Qualification	Institute	Date Completed

11. *Summary of Photogrammetric Experience :* _____

(A detailed and certified Schedule of Experience with regard to all Photogrammetric work undertaken since obtaining the National Diploma: Surveying or the old National Higher Diploma: Surveying should be submitted with this application).

12. *Signature of Applicant:* _____ *Date:* _____

FORM PHOTOGRAM ST1

I certify that before the despondent made the oath/affirmation ★ I asked him/her ★ the following questions and wrote down his/her ★ answers in his/her ★ presence:

(i) *Do you know and understand the contents of this declaration?*

Answer: _____

(ii) *Do you have any objection to taking the prescribed oath/making the prescribed affirmation ★?*

Answer: _____

(iii) *Do you consider the prescribed oath/affirmation ★ to be binding on your conscience?*

Answer: _____

I certify that the despondent has acknowledged that he/she ★ knows and understands the contents of this declaration, which was sworn to/affirmed ★ before me, and that the despondent's signature was placed thereon in my presence.

Commissioner of Oaths: _____

Designation (Rank): _____

Date: _____

★ **Delete whichever is not applicable.**

FORM PHOTOGRAM ST2

**APPLICATION FOR REGISTRATION AS A
PHOTOGRAMMETRIC SURVEY TECHNICIAN
IN TERMS OF SECTION 22(1)(a) OF THE
PROFESSIONAL AND TECHNICAL SURVEYORS' ACT,
(ACT 40 OF 1984)**

PERSONAL INFORMATION

- 1. Full Name(s) of Applicant _____
- 2. Postal Address _____

- 3. Telephone Numbers _____ (H) _____ (W)
- 4. Date of Birth _____
- 5. Identity Number _____
- 6. Current Employer _____
- 7. Present Position _____
- 8. Date Appointed _____
- 9. Previous Employer(s) _____

FORM PHOTOGRAM ST2

10. *Tertiary Academic Qualifications:*

Qualification	Institute	Date Completed

11. *Summary of Photogrammetric Experience :* _____

(A detailed and certified Schedule of Experience with regard to all Photogrammetric work undertaken since obtaining the National Diploma: Surveying or the old National Higher Diploma: Surveying should be submitted with this application).

12. *Signature of Applicant:* _____ *Date:* _____

CERTIFICATE OF COMPETENCY

(One copy for each Employer / Supervisor)

Issued in favour of for registration
as a ★Photogrammetric Surveyor / Photogrammetric Survey Technician as contemplated in
Section 22 of Act 40 of 1984.

I, ★Professional Surveyor / Plato registered
Photogrammetric Surveyor, hereby declare that
is a competent ★Photogrammetric Surveyor / Photogrammetric Survey Technician who can
carry out the variety of tasks and procedures within the specified standards of accuracy as
defined in the training requirements in ★paragraph 3 (Photogrammetric Survey Technician) /
paragraphs 3 and 4 (Photogrammetric Surveyor) in the Notes for Guidance for Registration as
a Photogrammetric Surveyor or Photogrammetric Survey Technician.

Signed : Date :

★Delete which is not applicable.

CERTIFICATE OF EMPLOYMENT

(One copy for each Employer / Supervisor)

I, a ★Professional Surveyor /
Photogrammetrist / Plato Registered Photogrammetric Surveyor, practising in the Republic
of South Africa, do hereby certify that
has been engaged in survey work under my personal supervision for the following periods
and performing photogrammetric work in the following categories :

Periods :.....	Category : e.g.	Flight Planning
.....		Aerial Triangulation
.....		Stereo Map Compilation
.....		Cadastral Compilation
.....		Principles of Field Survey for Photo Control
.....		Flying and processing of Aerial Photography

PARTICULARS OF WHICH IN REGARD TO THE TIME AND NATURE OF THE WORK,
ARE ANNEXED.

Dated at on theday of

Signed :

★Professional Surveyor / Photogrammetrist / Photogrammetric Surveyor,

★Delete which is not applicable.

NOTES FOR GUIDANCE FOR REGISTRATION AS A PROFESSIONAL PHOTOGRAMMETRIC SURVEYOR

1. INTRODUCTION

These notes which have been approved by the South African Council for Professional and Technical Surveyors, have been compiled with a view to assisting candidates who intend qualifying for registration as Professional Photogrammetric Surveyors in terms of the Professional and Technical Surveyor's Act, 40/1984. Adherence to the requirements as set out below, will assist materially in avoiding unnecessary delays.

DEFINITION

The "Council" means the South African Council of Professional and Technical Surveyors established in terms of Act 40 of 1984, or such agent acting on its behalf.

2. STATUTORY REQUIREMENTS

- 2.1 A candidate who wishes to register as a Professional Photogrammetric Surveyor must normally first register in terms of Section 21 of the Act as a Professional Photogrammetric Surveyor in Training and after completing the prescribed training may apply for registration as a Professional Photogrammetric Surveyor if he or she has complied with the requirements of Section 20(1)(a)(c)(e) and (f) of the Act.
- 2.2 A candidate who wishes to qualify for registration as a Professional Photogrammetric Surveyor and who has, prior to the commencement of the Act, undergone training in the form of practical experience contemplated in Paragraphs 3 and 4 must submit an application to the Council in terms of Paragraph 5. Where it is not possible to obtain certificates of employment or submit exact schedules of training and experience an affidavit detailing all such training and experience, may be acceptable.

3. DURATION AND NATURE OF TRAINING

3.1 Period of Training

- 3.1.1 The period of practical training required in terms of Section 20(1)(d) is 270 working days and the nature of such training shall be as set out in Paragraph 3.2 and is controlled by the Council. A training certificate is required.

3.2 Nature of Training

3.2.1 Training must be varied and can include cadastral, engineering, topographical, control surveys, and photogrammetric surveys. The work must be undertaken under the personal supervision of a professional photogrammetric surveyor or photogrammetric surveyor registered in terms of the Act, or such other person whom the Council considers suitable.

3.2.2 Compulsory Training

120 working days which comprises:

	TYPE OF SURVEY	WORKING DAYS
i	POSITION FIXING : This includes horizontal and vertical fixing using different techniques and instrumentation and shall include GPS fixing in three dimensions.	20
ii	PHOTOGRAMMETRIC COMPILATION : This includes setting up of Stereo models, observing line and area features, verification and editing, plus DTMs and contouring. The work should be from more than one photo scale.	15
iii	AERIAL TRIANGULATION AND ADJUSTMENT : This includes tie point selection and observations. Emphasis must be placed on the analysis of results.	15
iv	GEOMATICS : This should include spatial data management and specifically the presentation of data to GIS systems.	30
v	PHOTOGRAMMETRIC JOB PLANNING : This includes : choice of photo scale, accuracy specifications, digital line and orthophoto alternatives, determination of supplies and setting up of GIS structures.	20
vi	PHOTOGRAMMETRIC FIELD WORK : Annotation; Design and identification of photo control, field checks.	20
TOTAL		120

3.2.3 Additional Training

Not less than 150 working days in the following types of survey of which not **less** than 10 days or **more** than 100 days will be acceptable in a minimum of five of the following options:

3.2.3.1 Orthophoto Production

3.2.3.2 Cadastral Survey by Photogrammetric Methods

3.2.3.3 Photogrammetric Measurements of Structures and Buildings

3.2.3.4 Cartographic Map Production

3.2.3.5 Project Management

3.2.3.6 Aerial Survey Cameras and Darkrooms

3.2.3.7 Soft Copy Photogrammetry

3.2.5 A detailed day to day diary of all survey work undertaken during the training period shall be kept and may be called for by the Council.

4. STANDARD OF TRAINING

- 4.1 The work undertaken for Photogrammetric compilation and Geomatics should include the cleaning up of data for input to a GIS, polygonising, patterning and preparing sheet surrounds for plotting on a CAD system plus attaching attribute data to the polygons, data structuring and classification and data formatting.
- 4.2 In all the required work categories, the work must not be one sided and must include a variety of work within that category.

5. TRAINING AND/OR EXPERIENCE SCHEDULE

When applying to the Council for registration, the candidate shall supply a Training and/or Experience Schedule as an extract from the diary and prepared in the form of the **attached** specimen. This schedule must be compiled in chronological order and each page must be signed by the supervisor or mentor, with whom the candidate has trained, and the candidate.

6. LAW EXAMINATION FOR PROFESSIONAL SURVEYORS

- 6.1 A person wishing to register as a Professional Photogrammetric Surveyor must apply to the Registrar to write a Law Examination.
- 6.2 Law examinations can be written in most centres at least twice a year. Candidates will be notified of the time and venue for each examination accordingly.
- 6.3 The candidate will be expected to have a comprehensive knowledge of the laws relating to registration of surveyors and the survey and registration of land. He or she should also be acquainted with certain aspects of related legislation as set out in the details below.
- 6.4 The law examination consists of a written paper of 3 hours duration. The examination is "open book" and the pass mark is 65%.

The paper will consist of questions on the following Acts :-

The Professional and Technical Surveyors Act (40 of 1984) and Rules
The Land Survey Act (9 of 1927)
Any other Act that may be prescribed from time to time.

- 6.5 The Registrar will notify the candidate of a pass or failure.

7. APPLICATION FOR A PRACTICAL TEST

- 7.1 When the candidate is of opinion that he or she has met the requirements set out in Paragraph 3 and 4, he or she should apply to the Council for registration in the relevant category.
- 7.2 The application must be accompanied by:
- a) An Application form and the relevant fee,
 - b) The Schedule of Training and/or Experience referred to in Paragraph 5,
 - c) A certified copy of his or her degree, and
 - d) Certificates of Employment as prescribed in the Rules. A separate Certificate of Employment is required in respect of each supervisor with whom the candidate has served.
- "Certified" means certified to be a true copy by a Commissioner of Oaths or a Justice of the Peace.
- 7.3 The Convenor of the Professional Photogrammetric Surveyors Registration Committees will advise the candidate of the date and time for an interview. Immediately after the interview the candidate will be advised whether a practical test will be required.

8. DETAILS OF A PRACTICAL TEST.

- 8.1 The Practical Test consists of the completion of a task or tasks to the satisfaction of the Convenor of the Professional Photogrammetric Surveyors Registration Committees. A detailed requirement to this effect will be drawn up and provided to each practical test candidate on an individual basis arising from the findings from the interview.
- 8.2 Any specific project undertaken by the candidate during his period of training in the form of practical experience which might demonstrate his ability to perform some of the tasks set out in item 2.3.6 of the *General Information and Procedure* notes, may be submitted to the Convenor of the Professional Photogrammetric Surveyors Registration Committee for a decision as to whether it would be accepted as part of the Practical Test.

9. COMPLETION OF REGISTRATION PROCEDURE

- 9.1 Evaluation of the Practical Test will take place as soon as possible after completion of the work. The candidate will be informed of the time, date and place of a second interview, if required. The Convenor of the Professional Photogrammetric Surveyors Registration Committees will then issue a Practical Test certificate and forward his decision to the Council in regard to the acceptance, or otherwise, of the application.
- 9.2 The Registrar will notify the candidate that he or she complies with the requirements of Section 20(1)(b), (c), (d) and (e) of Act No. 40 for 1984 and will request him or her to make (in terms of Section 20(1)(f) of the Act) an oath or affirmation in relation to his or her calling. The relevant registration fees will also be required.
- 9.3 When these formalities have been completed the candidate will be registered with the Council as a Professional Photogrammetric Surveyor.