KWARA STATE POLYTECHNIC, ILORIN

INSTITUTE OF ENVIRONMENTAL STUDIES

DEPARTMENT OF SURVEYING AND GEO-INFORMATICS

A PROJECT REPORT ON :

CADASTRAL LAYOUT SURVEY

OF

OLD INSTITUTE OF ENVIRONMENTAL STUDIES (IES) AND VILLAGE, KWARA STATE POLYTECHNIC ILORIN ALONG OLD JEBBA ROAD, MORO LOCAL GOVERNMENT AREA, KWARA STATE.

SUBMITTED BY: IBRAHIM ADENIKE JANET

MATRICULATION: ND/23/SGI/FT/0083

SUPERVISOR IN CHARGE: SURV. R. O. ASONIBARE & MRS. S. O. ADEOTI

INSTITUTION: INSTITUTE OF ENVIRONMENTAL STUDIES

DATE: JULY, 2025

CERTIFICATE

I, IBRAHIM ADENIKE JANET with Matric Number ND/23/SGI/FT/0083 hereby certify that the information contained in this project report were obtained as a result of observations and movements taken by me and the Topographical Survey was done in accordance to Surveying rules and regulations and Departmental instructions.

Signature of student: ______________________________

Name of student: ______________________________

Date of completion: ______________________________

Matric Number: ND/23/SGI/FT/0083

CERTIFICATION

This is to certify that IBRAHIM ADENIKE JANET with Matric number ND/23/SGI/FT/0083 carried out this project and has been approved as meeting the requirement for the award of National Diploma (ND) in Surveying and Geo-informatics in the Department of Surveying and Geo-informatics of the Institute of Environmental Studies, Kwara state polytechnic, Ilorin.

MRS. S. O. ADEOTI	…………………………
Project supervisor	DATE AND SIGN
SURV. ASONIBARE	………………………….
Project supervisor	DATE AND SIGN
SURV. R.S AWOLEYE	………………………..
Project Coordinator	DATE AND SIGN
SURV. AMBIMBOLA ISAU	……………………….
Head of Department	DATE AND SIGN
External Moderator	…………………….......
	DATE AND SIGN

DEDICATION

This project is dedicated to Almighty God, the creator of heaven and earth, ancient of days, and it is Also dedicated to my Love parents MR & MRS IBRAHIM.

ACKNOWLEDGMENT

First and foremost, I return all the glory, honor and adoration to the most high God, for his faithfulness and constant love over my life throughout the journey of these two years, may his name be praise forever (Amen)

I want to sincerely appreciate my wonderful and amazing parents, thanks for your love, care, attention, support and prayers towards me. For making these two years journey a reality, I pray you will live long in sound health and eat the fruit of your labour (Amen)

I can't do without showing heart of gratitude to my able project supervisors (Surveyor Ashonibare R.O & Mrs. Adeoti). I really appreciate your effort and support, may the Lord almighty grant your heart desires (Amen)

My appreciation also goes to my loving siblings: Mr. & Mrs. Kolawole, pastor & Mrs. Adekunle, and prince Adefikayo. I'm grateful for everything you done, I pray the Lord will perfect everything that concern you (Amen)

I can't forget to say a big thanks to my family, friends, lovers, and everyone who had supported me in one way or the other. I pray the Lord will continue to bless you (Amen)

To my great department (Surveying & Geo-Informatics), all my lecturers, my fellow students and the entire Institute of Environmental Studies (IES). I sincerely appreciate your assistance, heavenly God will continue lift us higher and higher (Amen).

And I also appreciate my supervisors MRS ADEOTI and SURV. ASONIBARE for their support on this project. And my appreciation also goes to all my lecturers Surv. Ayuba, Surv. Awoleye, Surv. Kazeem, Surv. Diran, Surv. Banji. Surv. Kazeem, may Almighty Allah continue to bless you all and help you.

ABSTRACT

The overall intent of this project report is to show the Layout Survey of part of at K wara State Polytechnic (Old IES institute, village), Moro local government area, Kwara State. A total station was used in acquiring data (x, y,) coordinates within the study area, with ground survey method. The data acquired were processed. The use of some software like AUTOCAD, Microsoft excel, notepad, and Microsoft. The end result was the production of the location plan of different kinds of plan and maps all at suitable scale both in soft and hardcopy formats. Finally, a project report was written.

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CHAPTER ONE

1.0 INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Since time of creation, man has been known to have sense of living in a comfortable environment, it Is imperative that form part of human existence, meanwhile the need to manage the land is vital that is why human struggle is to acquire certain portion of land to support their existence, hence, the issue of ownership land tenure arose. In doing this, the concept of estate surveying cannot be overemphasized,

Surveying is a geographical mathematical aspect of science and profession, which is use to determine and delineate the jurisdiction and the portion of features on, above or beneath the surface of the earth. Survey also controls major construction work such as bridge, railways and road. Hence surveying can be defined as an act, science and technology of making measurement of relatives positions of point above or beneath the earth surface and plotting of these measurement to some suitable scale to form map of plan (Dorsett, 2007). Maity, S. K. (2021) opined that surveying as an act to determine the relative position of point on, above or beneath the survey of the earth, with respect to each other, by measurement of horizontal and vertical distances, angles and direction.

Surveying is defined as the measurement of dimensional relationship, as a horizontal distance, direction, and angles on the earth especially for use in locating property boundaries, construction layout, and map making (Houlton, 2012)

Surveying is a means of taking general view by observation and measurement to determine the boundary, size, position, quality, conditional value of land, estates, building, farm, mines and plotting of all these measurements to some suitable scale to form a map or plan. (Wilson ,2001).

The American Congress on Surveying and Mapping (ACSM) define surveying as the science and art the of making all essential measurements to determine the relevance position of points, physical and cultural details, above, on, or beneath the earth surface and depict them in a visible form, or to establish the positions of points or details.

Surveying consists of different operations and techniques but the following basic principles provide unity and disciplines to the subject.

(a)Working from whole to parts: -This means that for any particular survey operations, whether it is for an entire country or an area of small extent. st must be connected to the main

frame works of higher accuracy that could be made once the frames work has been established.

(b) Choosing the method of surveying: - This is adopted in order to meet the desired and required accuracy which the more refined techniques and instrument employed, the greater the accuracy that will be obtained.

(c) Provision of adequate check: - This is an important aspect of surveying exercise as it will show the possibility of detecting error and how it will be handle. Therefore, survey as well as estate survey involves stages such as planning, data acquisition processing, and information presentation.

Survey can be divided into two main types.

(a)Plane surveying: - This is referred to as surveying dealing with an area of limited extent of country land and it is always assured that the earth surface is planes, hence neglecting the earth curvature.

(b) Geodetic surveying: - This is defined as the science of determining the size, shape of the earth and its gravity fields. For this observation to be of any value, it must be of the highest accuracy by putting the earth curvature into consideration. Furthermore, surveying can be subdivided into some other branches which include:

1. Topographic surveying
2. Hydrographic surveying
3. Engineering surveying
4. Aerial photograph and remote sensing.
5. Mining surveying
6. Cadastral surveying
7. Photogrammetric surveying

TOPOGRAPHICAL SURVEYING: - This IS the surveying made for the production of the topographical maps that show natural and man-made features that are presents on a pieces of land and it, shows both the contour lines to illustrate the height or the terrain of the land.

HYDROGRAPHICAL SURVEYING: - These are surveys of water bodies particularly the sea, made for the purpose of showing depth of water, points, the nature of the bottom, amounts, of store homes where edge of water merges with dry land nor earth light and house beacons.

ENGINEERING SURVEYING: - It involves the preparation of a topographical map generally on it is large scale and such maps from the basis for the design of engineering works such as roads, dams, factories, it is also coming out with the special object of supplying particular

information for engineering projects usually at large scale than that used for the normal

topographic map.

AERIAL AND REMOTE SENSING SURVEYING: - It is defined as the science and art of obtaining information about object area or phenomenon through the analysis of data acquired by a device that is not in contact with the object, area or phenomenon under investigation.

MINING SURVEYING: - This consists of the specialized techniques required determine the position of underground resources.

CADASTRAL SURVEYING: - This is the survey made for the purpose of producing plan showing property boundaries or plan on which area necessary for assessment of property or land taxes may av be computed.

PHOTOGRAMMETRY SURVEYING: - This is the art, science and technology of obtaining reliable information about physical object and environment through the process of recording, representation of energy pattern derived from non-contact sensor systems.

For The purpose of the project assignment cadastral layout survey will be treated as a subject in this project given

Cadastral layout survey is the actual survey operation carried out in marking on ground and marking all necessary measurement to obtain coordinate of layout plots and all details in a layout plan. In other word it could seen as the setting out of layout plan.

Therefore, cadastral layout surveying can be defined as an aspect of proportion survey carried out on a large area of land owned by an individual, authority or cooperated bodies for the purpose of utilizing it for a specific purpose (Chandra, 2006).

cadastral survey plan showing landed property and boundary together with details in it, accurately defined by a survey points permanently marked on the ground. In this case the survey has a legal force. (Basal, 2005).

1.2 STATEMENT OF PROBLEM

The landed property is always a subject of dispute. For this reason, government, individuals, firms, association or corporate bodies need to know the extent of their property. This brought about this project which is the cadastral layout survey which could be served as base map for the future planning and development of the site.

1.3 STUDY AREA

The site of the project is The part of the Ilorin south local government area, HIPDC landed property situated at Kangile area, ilorin, kwara state.

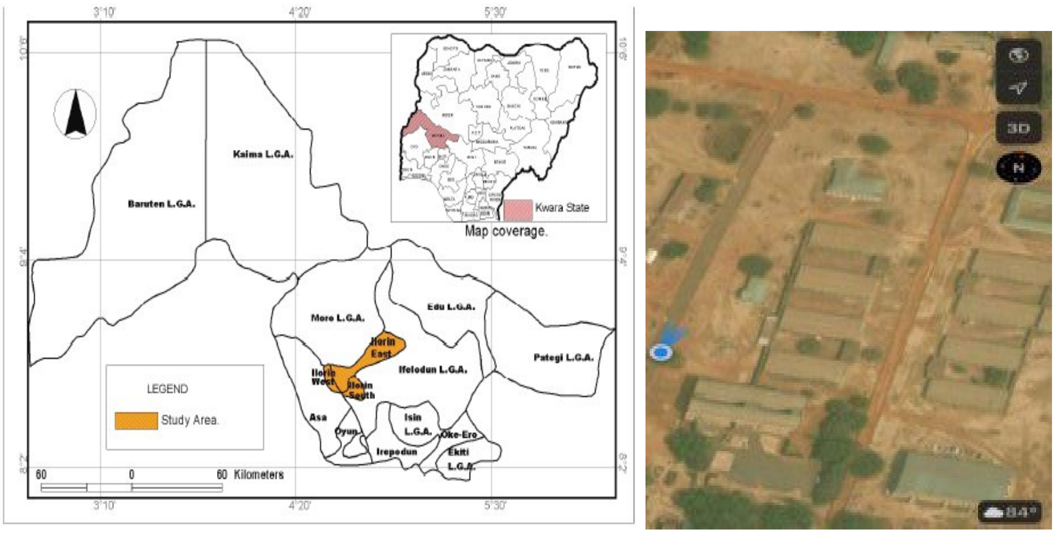

fig 1. Image showing study area

1.4 AIM AND OBJECTIVES

1.4.1 AIM

The project is aimed at carrying out cadastral layout survey of The part of the Ilorin south local government area, HIPDC landed property situated at Kangile area, ilorin, kwara state.

1.4.2 OBJECTIVES OF THE STUDY

These are the step-by-step activities carried out in order to achieve the aim. The objectives of the project exercise include

1. Third order theodolite traverse
2. Perimeter leveling
3. Detailing by tacheometry.
4. Computation
5. Plan production
6. Report writing

1.5 SIGNIFICANCE OF THE STUDY

Cadastral survey provides a foundation for effective land management and administration, ensuring accurate property boundaries, facilitating land transactions, and resolving ownership disputes. It clarifies ownership rights, improves land use planning, and enables the creation of a reliable land information system

1.5 SCOPE OF THE PROJECT

The scope or the project assignment covered the following

• Reconnaissance

2. Control check

3. Test of instrument

4. Selection of station

5. Third order survey

6. Detailing by chain survey

7. Data processing or computation

8. Data presentation

9. Subdivision of plot

PERSONNEL

The under listed names are the member of the group who participate immensely in project given

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CHAPER TWO

2.0 LITERATURE REVIEW

A cadastral survey is fundamentally defined as a systematic process of mapping land parcels and their boundaries, often resulting in a cadastral map that provides essential information for land ownership, taxation, and development. According to Smith (2020), the primary goal of cadastral surveys is to establish clear and definitive property boundaries to prevent disputes and ensure transparent land transactions. The information generated by these surveys is indispensable for government authorities, property owners, and prospective buyers as it lays the groundwork for legal documentation and land use planning.

Cadastral layout surveys are foundational to land administration, providing the necessary framework for managing land resources, legal ownership, and spatial data required for urban planning and development. This literature review synthesizes key themes and findings from various scholarly articles, reports, and research related to cadastral surveys, highlighting technological advancements, legal frameworks, social implications, and emerging trends.

The evolution of cadastral systems can be traced to ancient civilizations that recognized the necessity of land management. As documented by authors like Blaschke (2010), historical cadastral systems were often tied to taxation and governance, integrating land ownership records with administrative functions. Over time, modern legislation and standardized practices emerged, formalizing how surveys are conducted. Significant studies, such as those by Williamson et al. (2010), provide insights into the evolution of land administration systems globally and the shifts in methodologies over the decades.

In contemporary practice, the use of remote sensing technologies, such as LiDAR and aerial photogrammetry, has enhanced the efficiency and accuracy of surveying processes. LiDAR, for instance, allows surveyors to collect high-density elevation data over large areas rapidly, which is especially beneficial in complex terrains where traditional survey methods may be impractical (Green et al., 2022).

Recent advancements in technology have dramatically transformed cadastral surveying practices. The integration of Geographic Information Systems (GIS), Global Positioning System (GPS) technology, and remote sensing techniques, such as aerial photogrammetry and LiDAR, have enhanced the accuracy and efficiency of surveys. Research by Horrell (2015) emphasizes the impact of digital technologies on cadastral mapping, highlighting their ability to provide multidimensional views of spatial data. Furthermore, Gupta et al. (2018) discuss the benefits of drone technology in achieving rapid and precise land assessments, which are especially relevant in dynamic urban environments.

The legal basis for cadastral surveys varies significantly across jurisdictions and is crucial for the enforcement of land rights. Studies by de Vries (2017) outline the need for clear legal frameworks to ensure the integrity and registration of property boundaries. Many countries are reforming their land administration systems to enhance efficiency and reduce disputes. A comparative analysis by Gefen et al. (2019) demonstrates how different countries implement cadastral systems within their respective legal contexts, indicating the importance of tailor-made solutions that cater to local socio-economic conditions.

Accurate cadastral surveys have profound socio-economic effects. According to Quashigah (2020), these surveys promote equitable resource allocation, influence investment decisions, and support local economic development. The ability to accurately define property rights fosters a stable environment for investment, as demonstrated in research by Lokken (2018). Additionally, community engagement in cadastral processes has been shown to enhance transparency and build trust between authorities and citizens, as evidenced by case studies in developing countries (Chirisa et al., 2010

The connection between cadastral surveys and environmental management is increasingly acknowledged in the literature. Cadastral data helps identify areas for conservation, land-use planning, and sustainable development. Research by Veldhuis et al. (2021) explores how cadastral information can support environmental governance by facilitating land suitability assessments and enhancing resilience to climate change. The inclusion of environmental data in cadastral systems promotes informed decision-making processes that consider ecological impact.

According to Jones (2019), the introduction of the metes-and-bounds system and later, the rectangular survey system in the United States, laid the groundwork for modern cadastral surveys, which now rely heavily on precise measurements and advanced surveying techniques.

According to Zandbergen (2020) highlights the role of cadastral surveys in formalizing land tenure systems, which is crucial for economic development, particularly in developing nations where land disputes can hinder investment.

The methodologies employed in cadastral layout surveys typically involve a combination of fieldwork, data collection, and processing. Traditional methods primarily include the use of total stations, theodolites, and GPS technology to accurately measure distances and angles between points. Recent advancements have integrated digital tools such as Geographic Information Systems (GIS) for data analysis and visualization (Brown, 2021). These tools enable surveyors to create detailed maps that not only represent legal boundaries but also incorporate geographical features, zoning information, and land use classifications.

Additionally, According to miller 2023, effective cadastral systems contribute to sustainable land management by providing essential data for urban planning and environmental conservation (Miller, 2023).

SUMMARY

The literature on cadastral layout surveys highlights the multifaceted nature of land administration, encompassing historical, technological, legal, social, and environmental dimensions. The ongoing evolution of these surveys, driven by technological advancements and changing societal needs, underscores their critical importance in achieving effective land governance and sustainable development. Future research and practice should continue to explore innovative approaches, enhance accessibility of cadastral data, and foster community engagement, ensuring that cadastral systems remain relevant in the face of global challenges.

CHAPTER THREE

3.0. METHODOLOGY

A digital integrated cadastre was selected as a development route for both cases. Stakeholders want digital data for both ownership records and maps. A digital cadastre also provides transparency and facilitates verification of the cadastre data. (Kaufmann, Steudler, 1998)

The principles of FIG Cadastre 2014 are implemented by step-by-step approach

taking into consideration local capacity and resources.

3.1. PLANNING

This involves preparation for the successful execution of any project, the following issues were considered during planning.

The purpose of the survey

The required accuracy

The method of data acquisition

3.2. RECONNAISSANCE

The preliminary stage of any survey work is referred to as reconnaissance. During this stage, the general view of the project site was done to have a full and overall picture of the entire

prolect area hefore actual measurement or survey takes place

Reconnaissance connotes one's description to ensure successful execution of the project. It is carried out in two stages namely

(a) Office planning

(b) Field reconnaissance

3.2.1 FIELD RECONNAISSANCE

In the process of obtaining field reconnaissance, the site was visited, Recce diagram was carried out in order to decide on how best to do the job of the approved layout, the map covering the project site which was prepared by Ministry of Lands and Survey as a guide. The existing control points were located and the values were collected from the survey that did the part of the control to be use lather checking will be done for the in-situ.

3.2.2 OFFICE PLANNING

The relevant maps in the department were checked in order to get information's about the site. The coordinates of the nearby control points were also obtained from the Ministry of lands and survey Department. These are the information of the controls within the project site.

Table 2.1 Coordinates of the boundaries

PILLAR NO	NORTHING	EASTERN
PILLAR 1	946917.784	678924.506
PILLAR 2	946908.475	679052.529
PILLAR 3	946759.687	679030.412
PILLAR 4	946768.996	678902.389

3.3. INSTRUMENT TEST

All instrument used in carrying out the project were tested before the field operation was carried out in order to obtain a desired result that will comply with the planning so as to obtain the required accuracy.

3.4. TEST OF TOTAL STATION COLLIMINATION TEST

The following test was carried out to test the workability of the equipment before the data capturing process. The tests are of two types which are

i. Temporary Adjustment

ii. Permanent Adjustment

TEMPORARY ADJUSTMENTS: These are the ones that are carried out on every station before observation. They are;

i. Centering of instrument

ii. Removal of parallax

PERMANENT ADJUSTMENTS: The permanent adjustment are the following

1. Collimation adjustment
2. Vertical Index adjustment

3.5.1 PROCEDURE FOR COLLIMATION AND VERTICAL INDEX ADJUSTMENT

The instrument was set up on station which is pillar 1 and all necessary temporary adjustments were done. A target was set up at Pillar 1 to the line of site. It was aimed and bisected. The instrument was switch on and program which is on-board of the instrument was switch to the collimation program. Then, horizontal collimation and vertical index were in sequence recorded and stored in the memory of the instrument. The telescope was transited and the same target bisected. Both the new vertical index and collimation were recorded and stored accordingly. It was transited to the same target with both horizontal and vertical readings recorded to check the instrument's accuracy.

3.5.2 CONTROL CHECK

Before embarking on angular measurement, control check and observation was carried out on the control pillars. The total station was set on PILLAR 2 and all the necessary temporary station adjustment were carried out. Targets were also set up on PILLAR 1 and PILLAR 3 respectively.

Target on PILLAR 1 was back sight to obtain the horizontal circle reading on face left and reading were recorded, the theodolite was transited to face right and the horizontal circle reading was obtained. Also, target on PILLAR 3 was focused and bisected on foresight, the same process is repeated, but in this case the horizontal and vertical circle reading was taken both on face left and face right. All readings taken were booked in the field book

3.5.3 observed controls

PILLAR NO	NORTHING (m)	EASTING (m)
Pillar 1	946917.784	678924.506
Pillar 2	946808.475	679052.529
Pillar 3	946759.687	679030.412

3.5.4 show the results of our control check

PILLAR NO	REMARK	NORTHING	EASTING
Pillar 1	Given	946917.784	678924.506
	Observed	946917.782	678924.502
	Difference	0.002	0.004
Pillar 2	Given	946808.475	679052.529
	Observed	946808.471	679052.527
	Difference	0.004	0.002
	Given	946759.687	679030.412
	Observed	946759.685	679030.410
	Difference	0.002	0.001

3.6. FIELD OBSERVATION

This are the measurement and observation made on site. These include the following :

Angular measurement

Linear measurement

3.6.1 ANGULAR MEASUREMENTS (PERIMETER TRAVERSING)

This is to establish a boundary points on the surface of the earth by taking the bearing or angles between successive lines and their distances so as to detine the points with coordinates value on a plane form.

The angles were observed on two zeros as this was the specification for a third order traverse. Having set the theodolite on and targets were set on as back station and PEG as fore station. All temporary adjustments were carried out i.e. (centering, leveling, and focusing). The back station was observed on a face left and the horizontal circle was read and recorded, the instrument was rotated clock wisely to fore station on face left, the horizontal circle and vertical circle was read and recorded. The instrument base was changed by locking the horizontal screw and turned it 90 degree and unlocked the horizontal circle reading screw, the base was been changed on every station in order to make the readings independent of each other.

The instrument was then transited to face right and bisected the fore station where both the horizontal and vertical circle readings were taken and recorded. It was tumed clock wisely to the back station, and the horizontal circle reading was read and recorded, this gave a complete set of readings and observation. The process was repeated on other stations until it got to the last of the boundary line and close back on one of the controls.

3.6.2 LINEAR MEASUREMENT

The linear measurement was carried out with use of ranging poles placed in between the theodolite and the target station (ie traverse line) at the tape length and those poles was properly aligned with the instrument in order to have perfect straight line before taken the measurement with the steel tape. These direct measurement was taken and recorded in the filed book.

The process continued at every instrument station until the last travers line was measure

Hence, all the measurement recorded were later corrected with the slope correction to obtain the horizontal distance

3.7 SCHEDULE OF FIELD WORK

Having completed the reconnaissance, the schedule of field work was designed as follows:

- Perimeter traverse
- Traversing
- Setting out of boundary beacons
- Pillar Numbering
- Layout design
- Report writing

3.8 DATA ACQUISITION

In acquiring data, the following surveying procedure were adopted

Checks on control

Traversing

Test of instriment

3.8.1 EQUIPMENT USED

The equipment used in the execution of the project is listed below

- Total station with its tripod
- Reflector
- Target with their Tripods
- Plumb Bob
- Linen Tape (100m)
- Nails, with Bottle Corks and pegs
- Field book and pen

3.9. MONUMENTATION

This is the production of pillars for the selected points before being coordinated and this was carried out along the boundary of the area to be surveyed for precise demarcation.

Monumentation is the art of defining any elected station of spot with structure like pillaring stone or pegging during the execution of any survey work or project.

The dimension and length driven into the ground are shown below

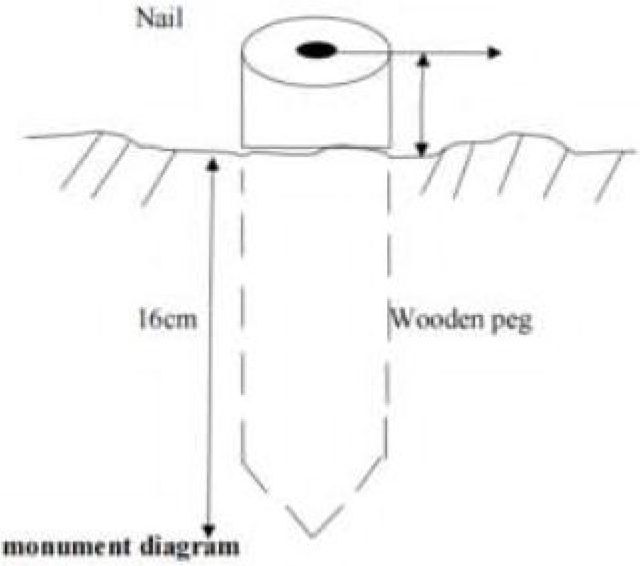


Fig 3.2 typical monument diagram

3.10. TRAVERSING

Total station was set up on the control, switched on and all temporary adjustments were carried out. Then, “Job” was set in the instrument, height of instrument and reflectors were measured with steel tape and stored in the instrument’s memory, and coordinates of the control stations were recalled from the instruments’ memory, it was bisected for orientation, and Total station was instructed to compute the bearing between the two stations which was confirmed with a prismatic compass. One of the reflectors was taken to pillar, the reflector’s cross hair was bisected with that of the telescope eye piece of the total station and “All” key was pressed so as to measure and record observation in the memory of the instrument. The above stated processes were carried out to coordinate the entire boundary points in X, Y, Z. The above process was repeated for other blocks shown on the plan including subsidiary traverses

CHAPTER FOUR

4.0 DATA DOWNLOADING AND PROCESSING

The coordinates of the observed boundary were downloaded into the computer and were compiled in Microsoft excel for further processing. A script file of boundary points of individual plot was prepared in note pad using Polyline command. These script file was run in AutoCAD and the area information of each plots as well the bearing and distances of each consecutive lines were obtained.

4.1 DATA PROCESSING & ANALYSIS

The acquired field data was downloaded to the computer in the office. This was done using a NTS software. The following procedure was followed:

i. Connecting the SET and host computer, using communication cable.

ii. Selecting "JOB" in Memory Mode.

iii. Selecting "comms" output to display the JOB list.

iv. Pressing OK.

v. Selecting the output formation

vi. At the end of the downloading, the data was displaced in the following format, Point No., Easting and Northing.

The data was then copied to other software such as Microsoft Excel for further processing. Here, the data was arranged and stored as formatted Text (space delimited), ready for plotting. The observed data were reduced and corrected, Master Survey programmer software was used to process the data.

4.2 PLOTTING AND PLAN PRODUCTION

Auto-CAD 2007 software was used for plotting all the set out pillars. The plotting procedure was as follows,

STEP ONE:

- Launch software (Auto- CAD 2007)
- Go to format
- Set unit, point style and text style
- Then, click on unit.
- Under unit, set the following: type, precise, unit of scale, direction control.
- Then click clock wise
- Click OK

STEP TWO:

- Go back to format.
- Click point style.
- Then click on point scale e.g 1 : 500 - 1.2, 1 : 1000 - 2.4.

STEP THREE

- Go back to format
- Then, click text style
- Font name - Times New Roman
- Font style - Regular
- Height - it depends on the scale you use.
- Then click APPLY.
- Then Close.

STEP FOUR

- Select tool from the menu bar and highlight run script.
- Open the saved formatted Text from Microsoft Excel.
- Zoom extents, by pressing Z enter and E enter.

All the coordinated points are plotted and displayed on the screen and with the help of the Recce diagram; all the boundary points were joined for individual plots to produce the boundary lines and the existing features such as Roads.

The final Layout plan was plotted at scale of 1: 2,000

4.3 PROJECT STATISTICS

1.	Total number of boundary beacons	4
2.	Coordinate Properties	UTM

4.4 TRAVERSE FIELD BOOK REDUCTION

Angular measurement made on the field were reduced thus: the face left observation taken to the back station was deducted from the left reading taken to the fore station, so as to obtain the angle between the line on face left. The face right reading taken to the back station was deducted from the face right observation taken to the fore station, so as to obtain the angle between the line on face right. If the reduced angle on face left or face right is greater than 360°. then 360° were subtracted from the reduced angle, the mean of the angle was obtained to give the angle at that station. The difference between the reduced angles are always negligible since angles measured on each face were measured in different zeros. The vertical circle reading was reduced by subtracting 90° or 270° from face left or face right of the vertical circle reading on which is close in magnitude to the measured vertical reading.

4.4.1 LINEAR MEASUREMENT

The distance was measured using tape for measured distance with the vertical (slope) angle taken simultaneously. The corrected horizontal distance was obtained having applied the slope correction.

$H = -L (1 - \cos 0)$

Where H=

Corrected distance

L=

Measured distance

0 = Slope angle observed.

4.4.2 BACK COMPUTATIONS

The backward computation were done to the coordinates of the boundary pillar as show in the tables below;

Tab: 4.4. Back computation of the control used

STATION FROM	BEARING	DISTANCE	ΔN	ΔE	NORTHING	EASTING	STATION TO
					946917.784	678924.506	Pil 1
Pil 1	170°22°48	127..08	-9.309	128.023	946908.475	679052.529	Pil 2
Pil 2	00°35°14	150.42	- 148.788	-22.117	946759.687	679030.412	Pil 3
Pil 3	170°22°43	128.36	9.309	- 128.023	946768.996	678902.389	Pil 4
Pil 4	04°03°66	150.42	148.788	22.117	946917.784	678924.506	Pil 1

4.5. AREA COMPUTATION

Area computation using double latitude and departure:

128.023

128.023. X -9.309. =. -1191.766107

256.046

-22.117

233.929

-22.117. X. -148.788. =. 13290.7444196

211.812

-128.023

83.789

-128.023. X. 9.309. =. -1191.766107

-44.234

22.117

-22.117

22.117. X. 148.788. = 3290.7444196

0.00

Sum of (+) - Sum of (-) ÷. 2

$$\frac{6581.488392 - 2383.532214}{2} = 4197.936178 \div 2$$

$$\frac{2098.97809}{465.165} = 4.5127 \text{ hectares}$$

LINEAR ACCURACY

The linear accuracy was computed using:

Starting Northing = 946321.8072

Closing Northing = 946321.8070

Misclosure in Northing = 0.002

Starting Easting = 679689.6697

Closing Easting = 679689.6696

Misclosure in Easting = 0.001

Total distance =556.280m

Linear Accuracy = 1

$\sqrt{\Delta E^2 + \Delta N^2}$

Total distance

Linear Accuracy = $1 \div \sqrt{(0.002^2 + 0.001^2)} \div (556.280)$

Linear Accuracy = $1 \div \sqrt{0.000004 \times 0.000001} \div 556.280$

Linear Accuracy = 1 x 556.280/0.00224

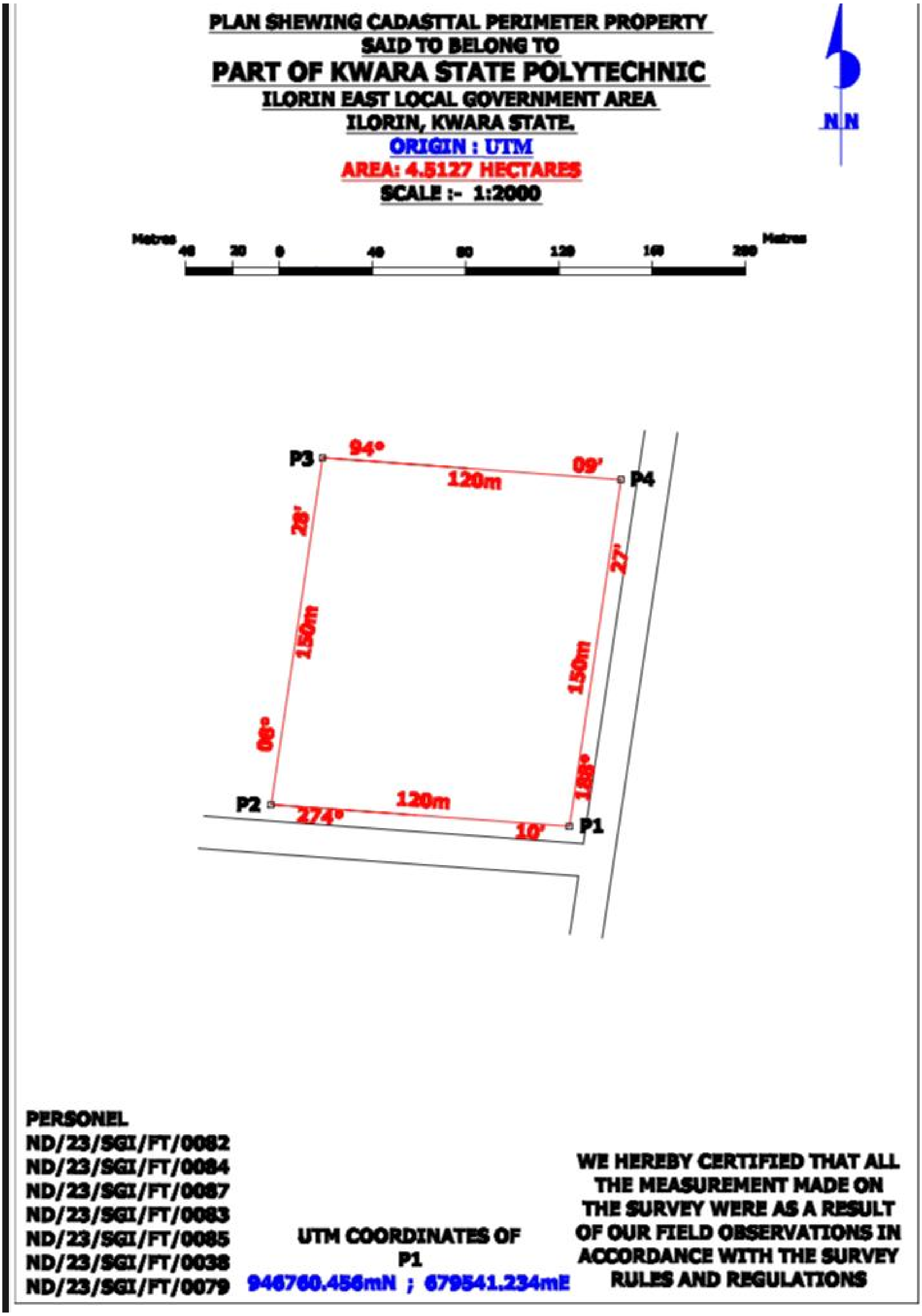
Linear Accuracy = 1: 248,348

4.6. DISCUSSION OF THE RESULT

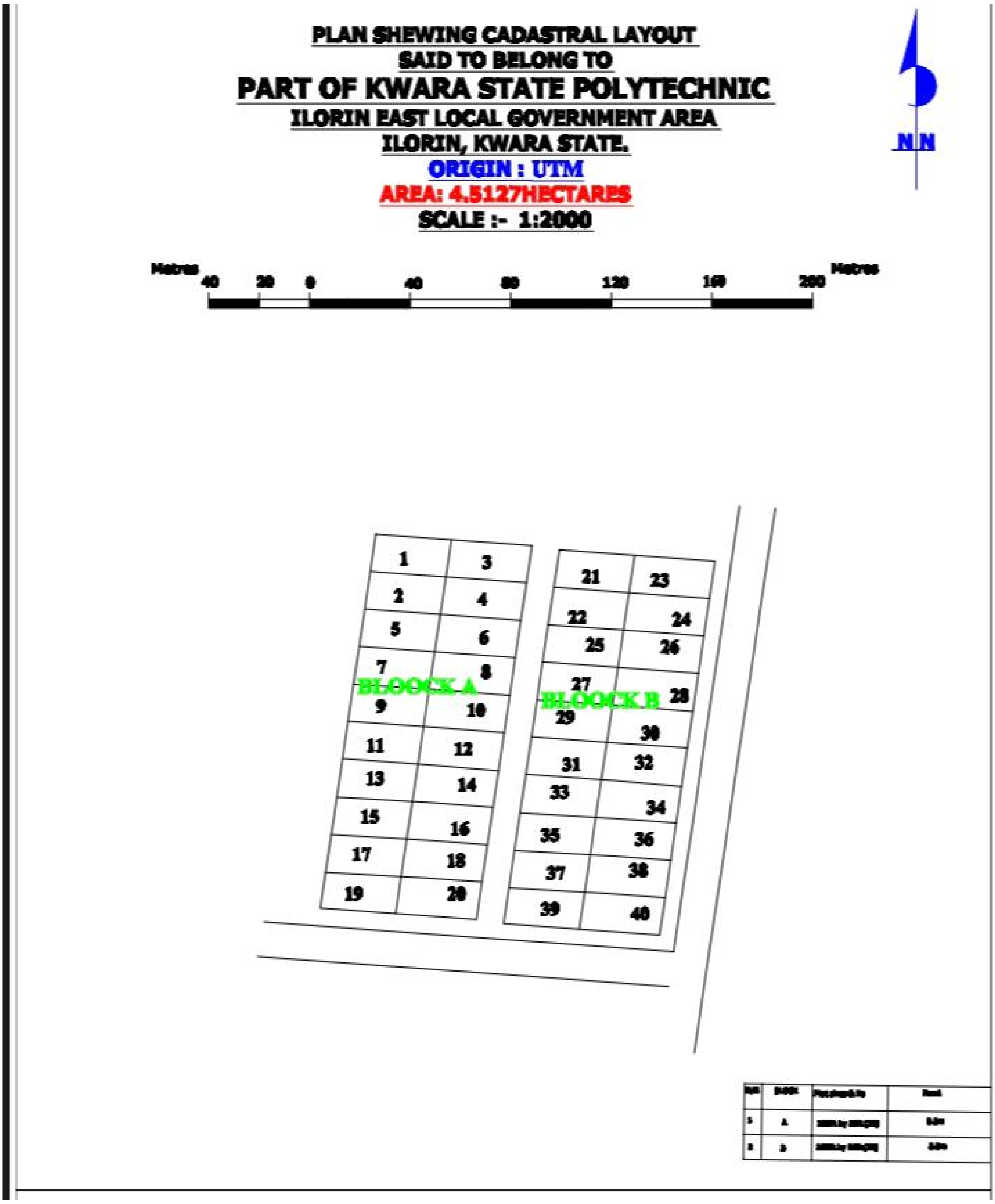
The following were the results obtained at the end of the project exercise, they are:

- Perimeter Survey plan.
- Design plan
- Layout

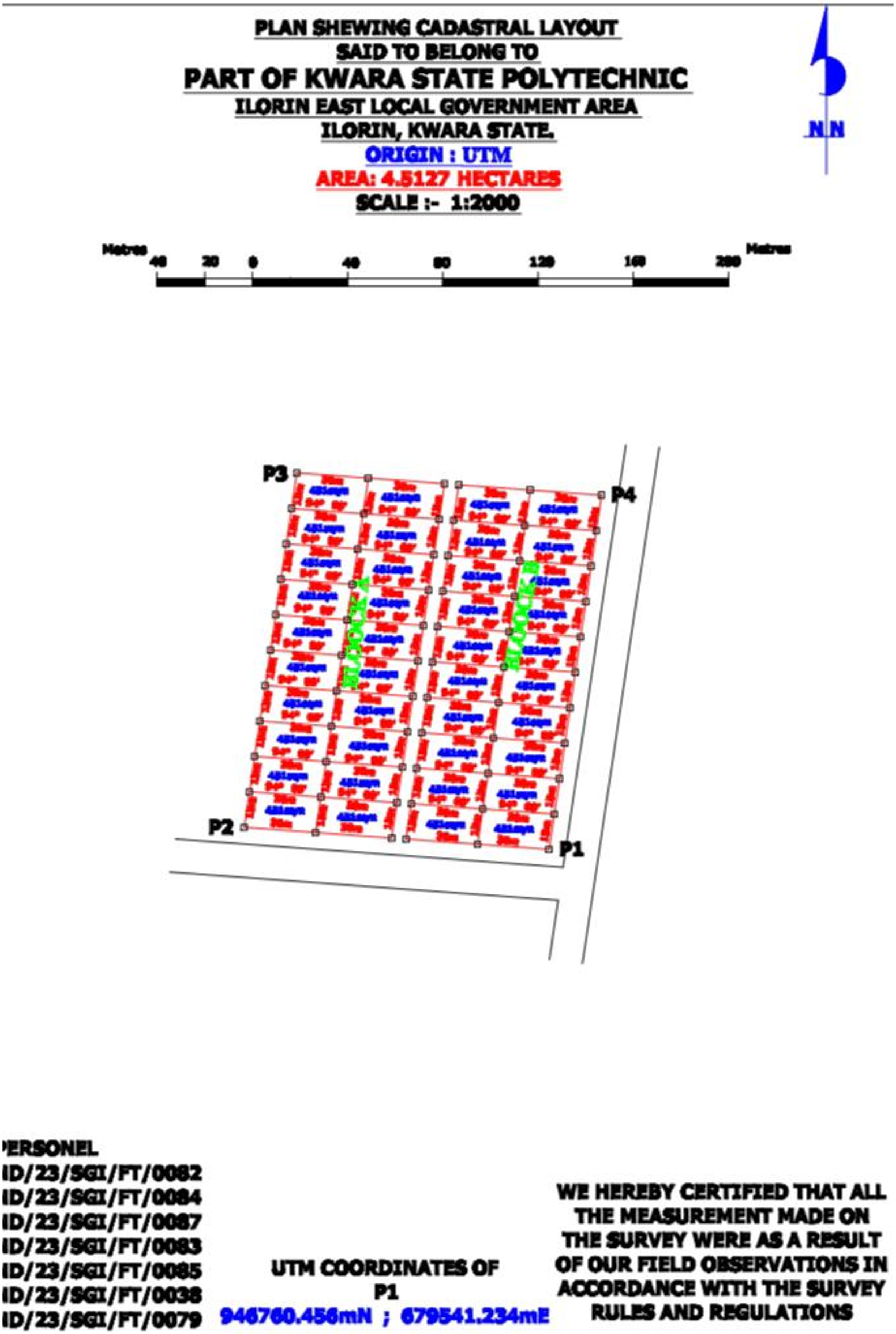
4.6.1 PERIMETER SURVEY PLAN



4.6.2 DESIGN PLAN



4.6.3 LAYOUT PLAN



4.7 INFORMATION PRESENTATION IN GRAPHICAL FORM

This is the graphical presentation of all the processed information with a suitable scale using appropriate conventional signs and symbols.

This also involves preparation of plan showing all the features in their proper position with a suitable scale, and use the appropriate symbols to depict such information on the plan.

This was done atter obtaining the final adjusted coordinate of each point, then the coordinate method was used to draw the plan.

The plan was produced in two forms namely

Analogue

Digital

4.7.1 ANALOGUE PLAN PRODUCTION

PREPARATION OF THE PLOTTING SURFACE

The material used was a cardboard, which was placed on a drawing table with the use of paper tape so as to enhance the stability of the plotting.

GRIDING OF THE SHEET

Based on the method of plotting used (coordinate method), and scale used, the sheet was gridded at an equal interval of 50m, along the northings and eastings axis. Searching for the highest and the lowest nothing coordinate as well as the highest and lowest casting coordinate so as to determine the extent of the grid that will contain the plotting of the gridding. Il

PLOTTING OF THE TRAVERSE POINTS

Coordinate system of plotting was adopted and plotting of the traverse point. The position of each point were plotted in their appropriate position on the grid

4.7.2. DIGITAL PLAN PRODUCTION

The digital plan was produced using AUTOCAD 2007 software, the under listed procedures were carried out

I The computer was switched on to allow boot

iiThe start menu was clicked on

iiiPrograms was clicked whereby notepad was selected

IV After the notepad was launched, a script file was prepared i.e_Pline, then the eastern and northern coordinate were inputed accordingly.

V The file was saved with an extension i.e. ser

VI AutoCAD was launched

Vii The file menu was clicked and “new was selected

Vill Format was clicked and the necessary settings were set

IX Tools was selected and “run script was clicked on

X The file save with an extension on notepad was then clicked on

Xi Escape key, was clicked. “Z” enter and “E” enter was pressed and the diagram was displayed

XII Then all the necessary details were fixed on the plan

The plan was then printed with the aid of a plotter or printer

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 SUMMARY

This CADASTRAL LAYOUT SURVEY' was carried out at part of Kwara state polytechnic, old institute of environmental studies (ies) and village, located in Moro local government area Ilorin,

The reconnaissance survey aspect was carried out properly and effectively in the office and the field, this is done purposely for proper planning of the operation by locating initial control that is within the project site for effective orientation the instrument to be used, and this plan is done using AutoCAD2007 and Surfer 10 respectively. The plan was drawn at a scale of 1: 2,000, and the hectares is 1.952

5.2 CONCLUSION

In conclusion the project task and exercise has been successfully excited since the result of the above operation agreed with the requirements and accuracy of third order job. Plan of the study were produced. The survey was executed. In the accordance and respect with the survey rules and the departments instructions in carrying out the project topics. And conclusively the report writing was done on how the entire project was executed both field and office work.

5.3 RECOMMENDATIONS

I hereby recommend this particular project practical's to be done often to update the infrastructure features in the society for the development of that particular area. Also it should be carried out in school for the next development in the school premises, more over it is necessary for every surveying and Geo-Informatics students to be able to carried out this particular practical’s.

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APPENDIX

EASTING	NORTHING	
679435.094	946918.097	0.000
679465.100	946915.915	0.000
679497.105	946913.588	0.000
679432.883	946903.218	0.000
679463.221	946901.012	0.000
679494.894	946898.709	0.000
679430.671	946888.339	0.000
679460.798	946886.148	0.000
679492.682	946883.830	0.000
679428.459	946873.460	0.000
679458.784	946871.692	0.000
679490.470	946868.951	0.000
679426.248	946858.581	0.000
679456.253	946856.400	0.000
679488.259	946854.073	0.000
679424.036	946843.703	0.000
679453.841	946841.535	0.000

679486.047	946839.194	0.000
679421.824	946828.824	0.000
679451.829	946826.642	0.000
679483.835	946824.315	0.000
679419.612	946813.945	0.000
679449.618	946811.763	0.000
679481.623	946809.436	0.000
679417.401	946799.066	0.000
679447.406	946796.885	0.000
679479.412	946794.557	0.000
679415.189	946784.188	0.000
679445.194	946782.006	0.000
679477.200	946779.679	0.000
679412.977	946769.309	0.000
679442.983	946767.127	0.000
679474.988	946764.800	0.000
679503.106	946913.151	0.000
679533.112	946910.970	0.000
679563.117	946908.788	0.000

679500.895	946898.273	0.000
679530.838	946896.095	0.000
679560.905	946893.909	0.000
679498.683	946883.394	0.000
679528.688	946881.212	0.000
679558.694	946879.030	0.000
679496.471	946868.515	0.000
679526.477	946866.333	0.000
679556.482	946864.151	0.000
679494.260	946853.636	0.000
679524.265	946851.454	0.000
679554.270	946849.273	0.000
679492.048	946838.757	0.000
679521.984	946836.581	0.000
679552.059	946834.394	0.000
679489.836	946823.879	0.000
679519.842	946821.697	0.000
679549.847	946819.515	0.000

679487.624	946809.000	0.000
679517.630	946806.818	0.000
679547.635	946804.636	0.000
679485.413	946794.121	0.000
679515.418	946791.939	0.000
679545.423	946789.758	0.000
679483.201	946779.242	0.000
679513.206	946777.061	0.000
679543.212	946774.879	0.000
679480.989	946764.363	0.000
679510.995	946762.182	0.000
679541.000	946760.000	0.000