



Bar Bending & Concreting

Level-II

Learning Guide-#1

**Unit of Competence: Read and Interpret Plans
and Working Drawings**

**Module Title: Reading and Interpreting Plans
and Working Drawings**

LG Code: EIS BBC2 M05 1019 LO3-LG-16

TTLM Code: EIS BBC2 M05 TTLM 0919v1

LO3. Locate and identify key features on a site plan



This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics:

- Identifying building site
- Identifying true north and building orientation
- Identifying key features of the site plan.

This guide will also assist you to attain the learning outcome stated in the cover page.

Specifically, **upon completion of this Learning Guide, you will be able to:**

- The building site is identified from location drawings.
- True north and building orientation are identified from details provided on the site plan.
- The key features of the site plan are identified.

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below 3 to 6.
3. Read the information written in the information “Sheet 1, Sheet 2, and Sheet 3”.
4. Accomplish the “Self-check 1, Self-check t 2, and Self-check 3”
5. Check the answers for your achievement from the answer key



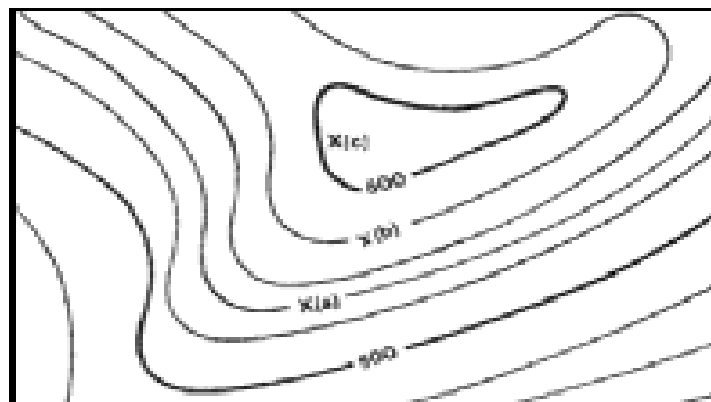
Information Sheet-1 Identifying building site

1.1. Site

The lands and other places, on, under or through which the works are to be executed or carried out, and any other lands or places provided by the 'Company' for the purposes of the 'Contract' together with such other place as may be specially designated in the 'Contract' as forming part of the site.

1.2. Elements of site plan: Site plan must be should show: -

1. Property lines length side direction.
 2. Adjoining building streets sidewalks parking curbs parkways
 3. Existing structure & proposed structure
 4. All utility lines (sewer, Electric Telephone)
 5. Contours existing & new contour elevations
 6. Dimension
 7. Fences structural retaining walls, area ways to property line
 8. North arrow or North star
 9. Drainage lines
 10. All Existing paved ground whether to remain or be removed, new paving, parking lots, platforms, play fields, fountains, etc...
 11. Trees, shrubs if exist.
 12. Legend showing all symbols & material used on the site.
- **Contour lines:** is a line that connects points of equal level on the surface of the earth.





- **Orientation:** when the site and requirements of a house have been finalized. The next step is orientation of the house which means fixing the direction of the building in such a way that it derives maximum benefit from the sun, air and nature. We know that means health and happiness are influenced directly by this environment.
- **Datum:** is a reference surface of constant potential, called as a level surface of the earth's gravity field, for measuring the elevations of the points. One of such surfaces is the mean sea level surface and is considered as a standard datum. Also, an arbitrary surface may be adopted as a datum.
- **Site Plan:** is the top view of a building which show the location of the house on the site together with information on terraces walks driveways, contours, elevation & utilities.

Site plan should show: -

- Streets, sidewalks, parking
- Sewerage, man hole, drainage lines
- contour, trees
- Dimension
- Fences,
- North arrow
- Legend: - showing all symbols & materials used on the site.



Self-Check -1

Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Write at least 7 elements that site plan should show. (3 points)
2. Orientation is an element which be shown in site plan. (5 points)
 - A) True
 - B) False

Note: Satisfactory rating - 3 and 5 points

Unsatisfactory - below 3 and 5 points

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Short Answer Questions



Information Sheet- 2	Identifying true north and building orientation
-----------------------------	--

2.1. North.

A plan was, and still is today, usually arranged so that north was as near as practicable at the top of the sheet. But the precise direction was indicated by a north point.

If the proposed building was just too long in the north-south direction, the convention of putting north at the top might be ignored. If the building was skew to the cardinal points it would still be drawn with its main lines parallel with the sides of the sheet, and then the north point might have had to be rotated up to 45° in either direction. The site plan however might not be orientated in exactly the same way, which make it more important to have a north point on every plan sheet.

North points take many forms from an elaborate design to a simple arrow, and are sometimes so decorative as to be difficult to recognize (there are stories about a north point that was colored red, as for brickwork, so the builder actually constructed it).

2.2. Orientation of Building

The orientation of the building is the term used to define the setting or fixing the direction of the layout plan of building respect to the direction of north. The orientation of building refers to the direction of normal to the normal to the long axis. For example, if the length of building East-West orientation North-South.

Proper orientation means setting or fixing the direction of the directions of the plan of the building which allows the inmates of the house or building to enjoy the almost whatever is good and to avoid whatever is bad in respect of comfort in the elements of nature.

Good orientation means proper placement of room in relation providing convenient access both to the street and back-yard.

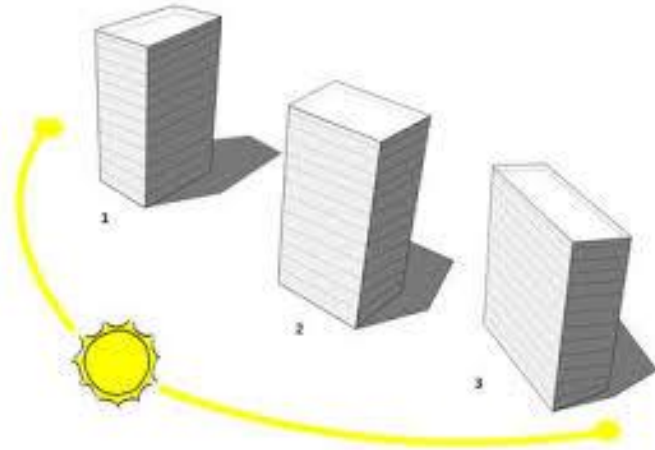


Fig. 2.1: Orientation of building

2.2.1. For optimum orientation

- A building should receive maximum solar radiation in winter and minimum in summer.
- In hot climates, verandahs or chajjas or sun breakers may be provided. Hospital school, drawing office, the library should be located on North Side i.e. long sides of these should face north whereas south side and west side should be protected by verandahs.
- Verandahs should not be provided on north facing.
- To reduce the intensity of sun rays.
- The tall tree is may be planted on the sunny side.
- Walls of the minimum area may be provided on East and Westside.
- Rooms which are occupied through the day are placed on North, whereas bedrooms may be located on West or in direction of prevailing wind.
- For ventilation point of view, the height of a house should not be more than twice the width of the street.
- No part of the building is allowed of the project beyond the setback distance.

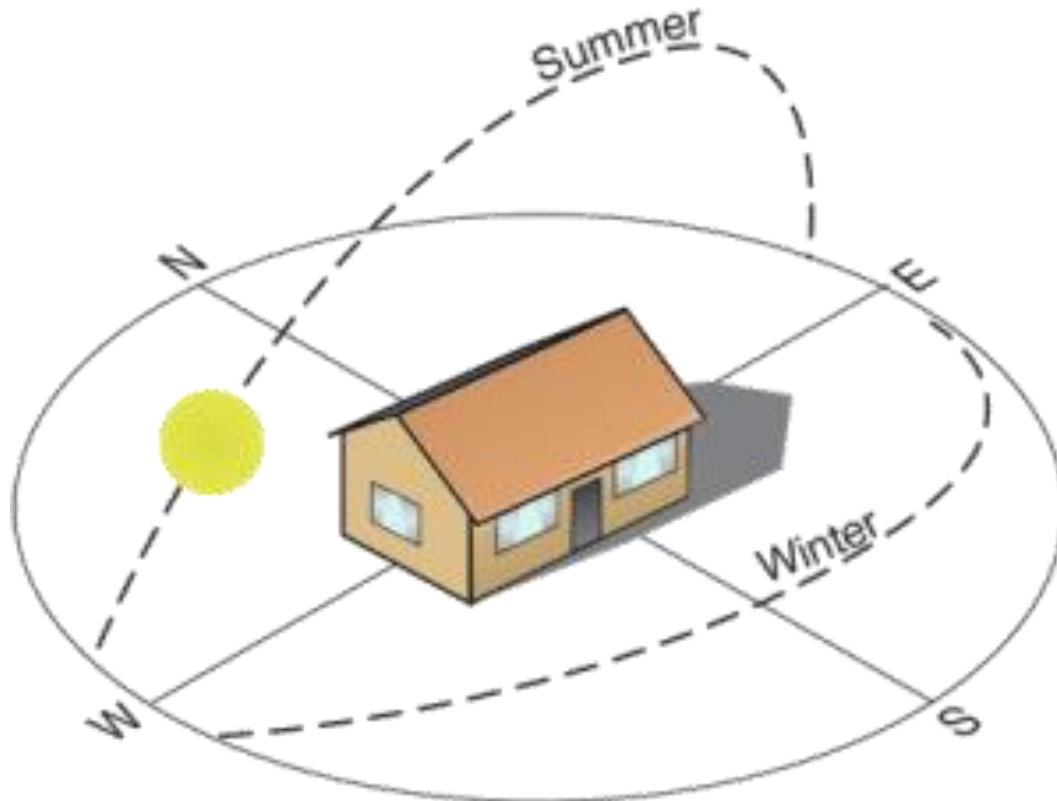


Fig. 2.2: Optimum orientation sun path

**Self-Check -2****Written Test**

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Verandahs should be provided on north facing. (5points)
A) True
B) False

2. No part of the building is allowed of the project beyond the setback distance. (5 points)
A) True
B) False

Note: Satisfactory rating - 5 and 5 points

Unsatisfactory - below 5 and 5 points

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Short Answer Questions



Information Sheet- 3	Identifying key features of the site plan.
-----------------------------	---

3.1. Features of Site Plan

- **Block identification.** When land is subdivided, each block is given a lot number. The street number is allocated later.
- **Boundary.** The boundary is the imaginary line that defines the block of land. At each corner is a small wooden peg with the numbers of the adjacent lots stamped onto a metal plate. If a boundary changes direction, a peg is located at that point too.
- **Road identification.** The name of the road shows where the front of the block is.
- **Verge.** The verge is the area of land between the block and the road. It is not part of the block and must not be built on (apart from a crossover) or damaged in any way. It usually has services running beneath it (water, telephone, etc).
- **North point.** The direction of north is shown to assist in orientating the drawing with the block when on-site.
- **Proposed building.** The location of the proposed house is shown, just as an outline.
- **Finished floor level.** The level of the finished floor of the house is given.
- **Adjacent properties.** The adjacent lot numbers are shown, and sometimes indications of existing structures are given.
- **Existing fences.** Any existing boundary fences should be shown.
- **Easement.** It is a part of the land over which another party has some sort of legal right. So, a strip near the rear of the block is an easement for a council storm water line to be laid. It still belongs to the landowner but the council has the right to lay and maintain a storm water pipe there, so no structure is allowed to be built over this area.
- **Existing trees.** If there are any features on the block that are to be left undisturbed, they are clearly indicated.



- **Contour lines.** These are imaginary level lines that indicate the shape of the land (you might have seen these on maps.) In this site plan, they indicate that the land slopes down from the north corner to the south corner.
- **Contour level.** This indicates the 'reduced level' of the contour (reduced levels are explained in Section 3 *Dimensions* of this guide). In this case, they are shown at one-meter intervals, but this varies depending on the steepness of the land.
- **Datum.** This is a point on or near the block that all heights for the project are measured from. It is explained more fully in Section 3.
- **Angle of boundary intersection.** This indicates at what angle the boundaries meet. It is not always shown, especially if the block has square corners.
- **Location of power connection.** This indicates to the electrician where the electrical connection will be made. In this case, the block has underground power, but if overhead lines pass the block, the nearest power pole may be shown.
- **Boundary length.** This indicates the length of each boundary.
- **Setback.** This is the distance from the front boundary to the nearest part of the building. A minimum distance for this is set by the local authority (council) and varies depending on the zoning of the land.
- **Offset.** Similar to the setback, the offset indicates how far from the side boundary the building is to be. There are by-laws regulating the minimum distance for this, mainly to minimize the spread of fire.
- **Driveway.** This indicates where and how wide the driveway should be.
- **Crossover.** This is the continuation of the driveway across the verge.
- **Path.** Any paving included in the contract is shown.
- **Clothes hoist.** The position of the clothes hoist is indicated.
- **Lot Line.** A lot line is the boundary of that land. Many buildings, constructed for maximum size, are built all the way to their designated lot lines.
- **Zero Lot Line.** A zero-lot-line house is a piece of residential real estate in which the structure comes up to, or very near to, the edge of the property line. Rowhouses,



garden homes, patio homes, and townhomes are all types of properties that may be zero-lot-line homes.

3.2. The difference between a Site Plan and a Location Plan

Most planning applications require both a site plan (also known as a block plan) and location plan and our service have the ability to provide a map bundle containing both.

Site Plan

- Sometimes called a 'block plan', a site plan shows the proposed development in relation to the property boundary
- Site plans are typically submitted at a scale of either 1:200 or 1:500
- Site plans should include the following:
 - ✓ The size and position of the existing building (and any extensions proposed) in relation to the property boundary
 - ✓ The position and use of any other buildings within the property boundary
 - ✓ The position and width of any adjacent streets
- Choose from 2 scales:
 - ✓ 1:200 Site Plan: perfect for a close-up of a small area and areas within 32x32
 - ✓ 1:500 Site Plan: for close-up of particular area and areas within 80 x 80m

Location Plan

- A location plan shows the proposed development in relation to its surrounding properties
- It must be based on an up-to-date map and at an identified standard metric scale (typically 1:1250 or 1:2500)
- The site of the proposed development needs to be outlined in red and any other land owned by the applicant that is close to or adjoining the site needs to be outlined in blue
- Choose from 2 scales:
 1. 1:1250 Location Plan: for urban areas and small properties within 200 x 200m

2. 1:2500 Location Plan: for rural areas and large properties within 400 x 400m

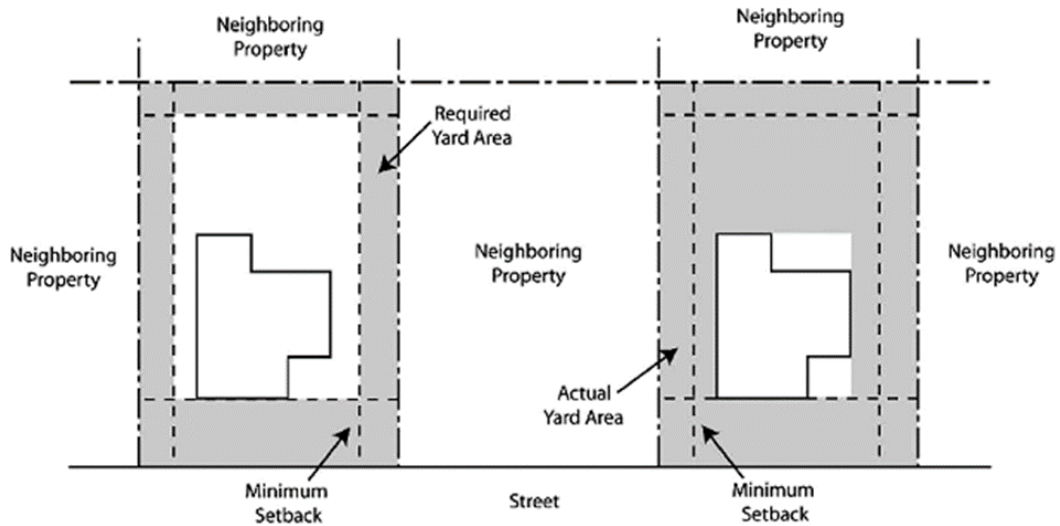


Fig. 3.1: Location plan

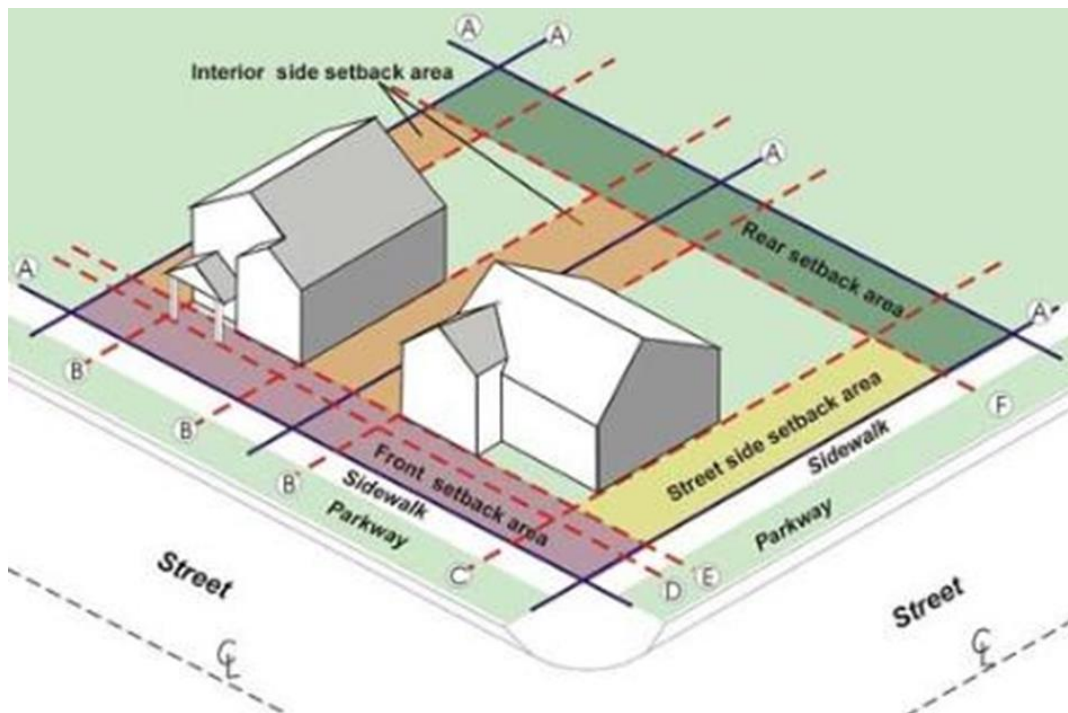


Fig. 3.2: 3D location plan

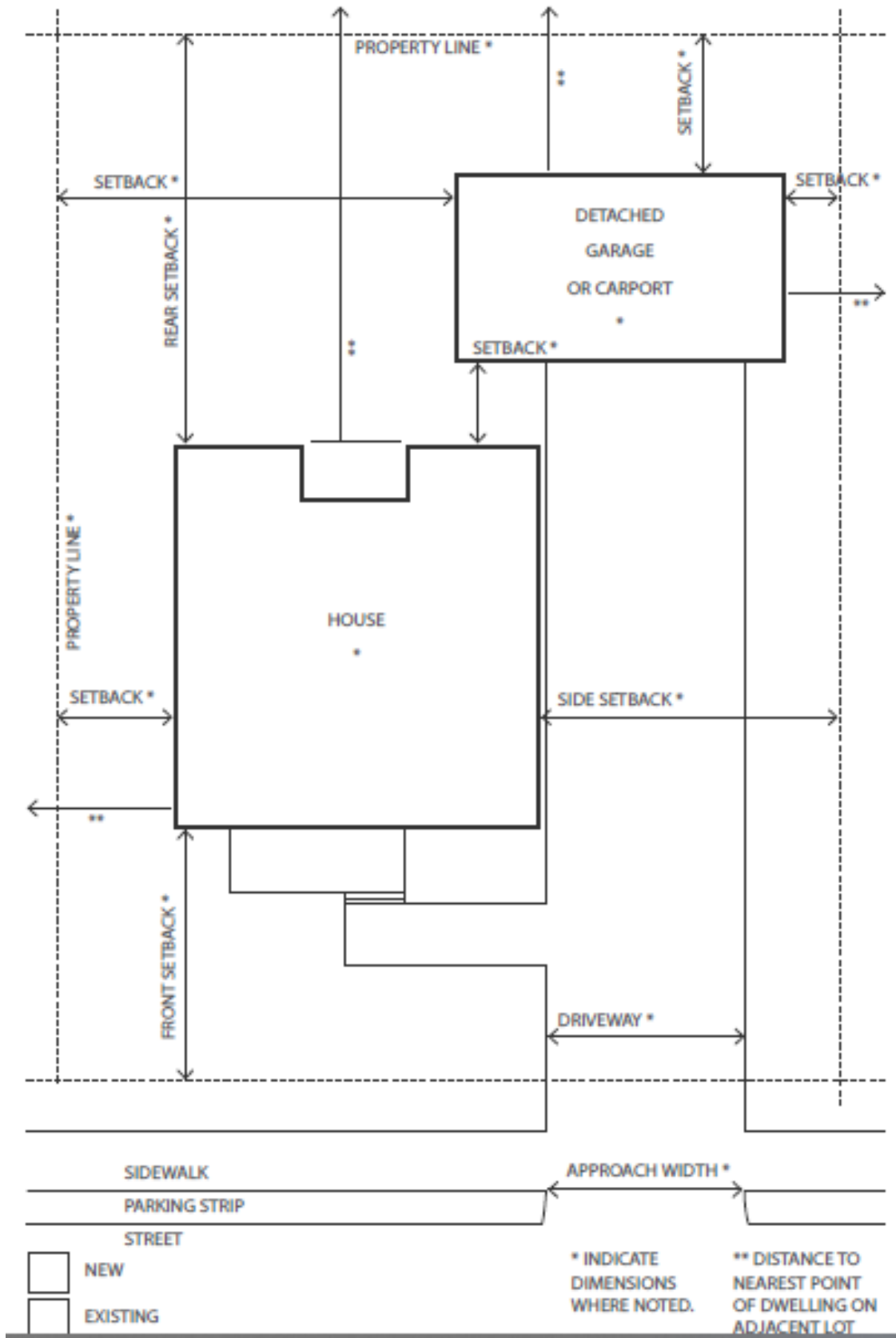


Fig. 3.3: typical site plan

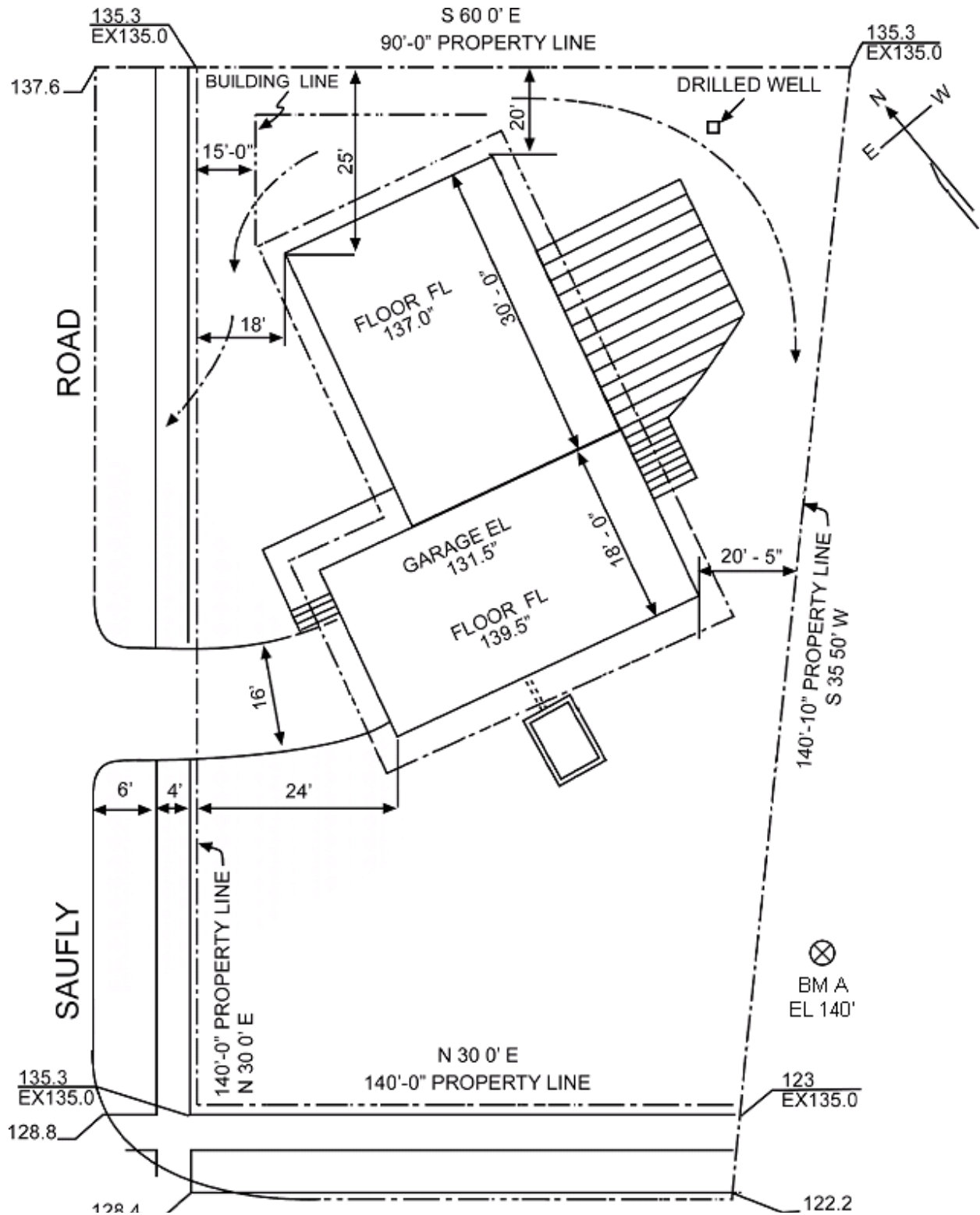


Fig. 3.4: Plot plan.

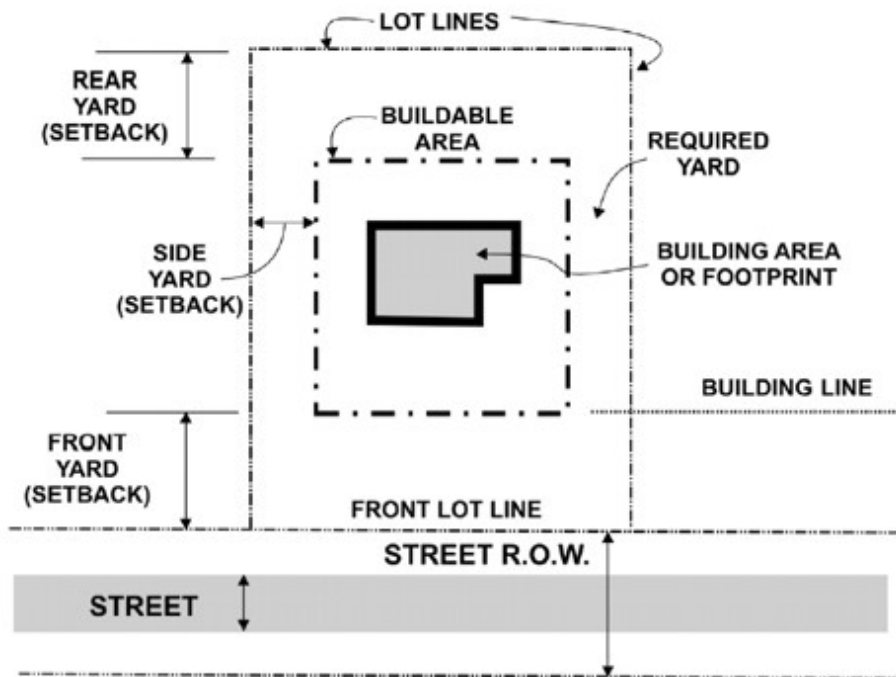


Fig. 3.5: site plan for simple house

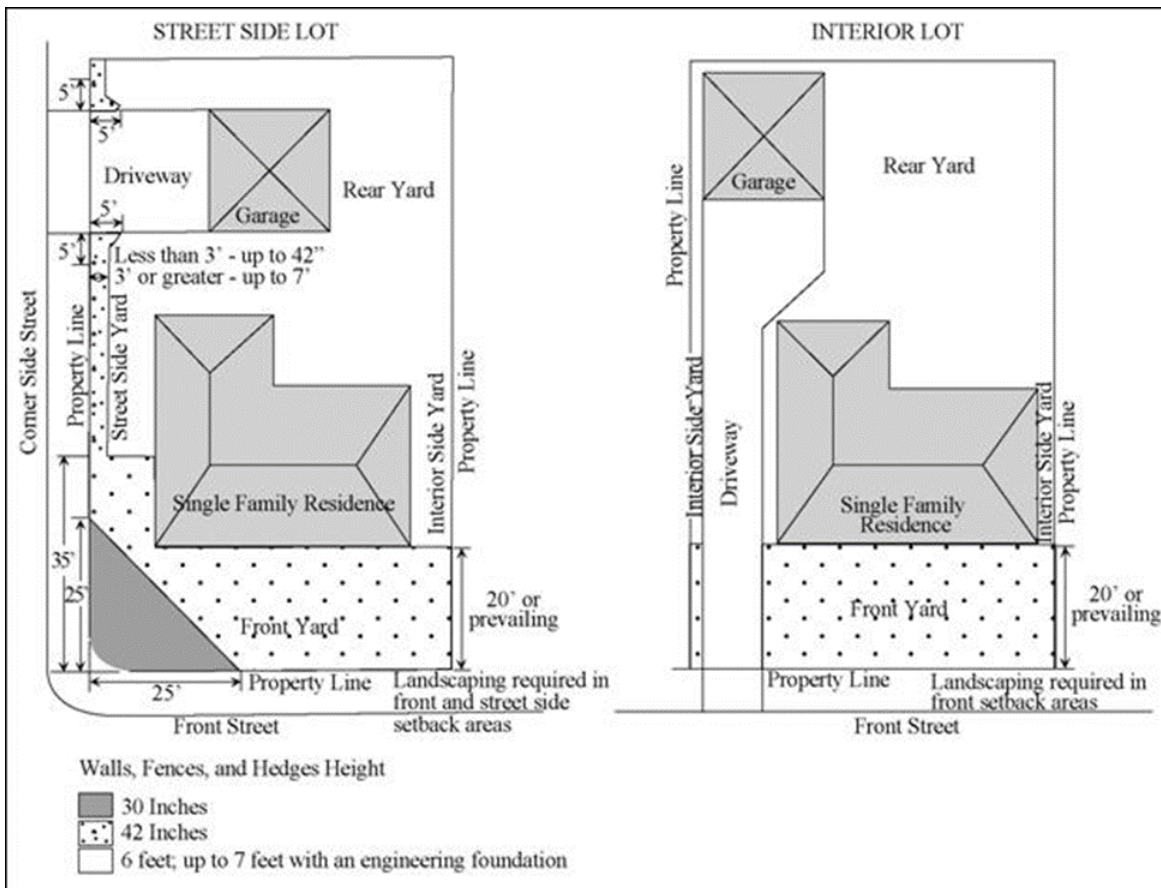


Fig. 3.6: Site Plan with Roof plan

**Self-Check -3****Written Test**

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

- 1) What is the difference between a Site Plan and a Location Plan? (5 points)

- 2) Write at least five features of Site Plan. (5 points)

Note: Satisfactory rating - 5 and 5 points

Unsatisfactory - below 5 and 5 points

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Short Answer Questions



Answer key

Self-Check -1

Question #:

1. **Site plan should show: -**
 - Streets, sidewalks, parking
 - Sewerage, man hole, drainage lines
 - contour, trees
 - Dimension
 - Fences,
 - North arrow
 - Legend

2. A) True

Self-Check -2

Question #:

1. B) False
2. A) True

Self-Check -3

Question #:

1. Sometimes called a 'block plan', a site plan shows the proposed development in relation to the property boundary and is at a scale of either 1: 200 Or 1: 500 Whereas A location plan shows the proposed development in relation to its surrounding properties based on an up-to-date map and at an identified standard metric scale (typically 1:1250 or 1:2500)

2. The answer will be five from:-

Block identification, Boundary, Road identification, Verge, North point, Proposed building, Finished floor level, Adjacent properties, Existing fences, Easement, Existing trees, Contour lines, Contour level, Datum, Angle of boundary intersection, Location of power connection, Boundary length, Setback, Offset., Driveway, Crossover, Path, Clothes hoist, Lot Line, and Zero Lot Line



List of Reference

1. <https://www.polytechnichub.com>
2. www.northbrook.il.us
3. <https://en.wikipedia.org>
4. <https://theconstructor.org>
5. <https://civilseek.com/>
6. <http://www.fao.org/3/x5744e/x5744e08.htm>
7. <https://www.autodesk.com>
8. <https://www.teslaoutsourcingservices.com>
9. Architectural Drawings: a Manual: October 2018
10. Architectural and Building Drawing Practice A.S. No. CA.25 – 1955 (Standards Association of Australia, Sydney 1955)
11. Kicklighter, Clois E., Ronald J. Baird, and Joan C. Kicklighter. Architecture: Residential Drawing and Design. South Holland, IL: Goodheart-Willcox, 1995.
12. Working Drawings Handbook, Fourth Edition, Keith Styles and Andrew Bichard, 2004.
13. Read And Interpret Plans And Specifications, Certificate Ii In Building And Construction (Pathway – Paraprofessional) Cpcccm2001a, Learner’s Guide, 2012.
14. Engineering working drawing basics, Lecture note by: Dr. Ala Hijazi, 2013.
15. https://www.designingbuildings.co.uk/wiki/Technical_drawing
16. Textbook of, Engineering Drawing, Second Edition, K. Venkata Reddy, 2008.



Prepared by: The trainers (who developed this outcome-based curriculum and TTLM)

N0	Name	Qualification	Region	E.mail
1	Tesfaye Assegidew	MSc in CoTM	SNNPR	tesfayeeassegidew@gmail.com
2	Habtamu Wendmagegn	BSc in Civil Engineering	Dire Dawa	Joniyitna9@gmail.com
3	Yazachew Geneti	MSc in CoTM	BGRS	0917858176
4	Gebresilasie Jemal	BSc in Construction Technology	Addis Abeba	Gebrajemal@gmail.com
5	Getachew Mohammed	MSc in CoTM	Amhara	Gerimom07@gmail.com
6	Kibryisfaw Tulema	BSc in Construction Technology	Somalie	kibrutulema@gmail.com

The coordinator (during developing this *outcome-based* curriculum & TTLM)

No	Name	Profession	Mob. no	Region	College
1	Abere Dagne	Cur. Expert	0918 01 41 11	Amhara	
2	Abdulahi Muktar	Health officer	0994 86 11 36	Somalie	
3	Tilahun Tesfaye	Cur. Expert	0940 65 18 23	Amhara	