Landscape Barriers

A Senior Project

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Abstract

The purpose of this project is to create a landscape blueprint plan to present to the homeowners in Atascadero, California. The goal was to include landscape barriers that will distract any unwanted noises and views that may be caused by the new development of Eagle Ranch. After conducting research, the most appropriate plants will be selected for implementation by the homeowners. Involving a suitable irrigation system that is efficient and easy to manage.
Table of Contents

Chapter One .......................................................................................................................... 1
  Statement of the Problem .................................................................................................. 1
  The importance of the project ......................................................................................... 2
  Purpose of the Project ..................................................................................................... 2
  Objectives of the Project ................................................................................................. 2
  Definition of Important Terms ....................................................................................... 3
  Summary ......................................................................................................................... 4

Chapter Two ....................................................................................................................... 6
  Importance of Site Selection ............................................................................................ 6
  Importance of Plant Selection ......................................................................................... 13
  Landscape Barriers .......................................................................................................... 15
  Irrigation Practices ......................................................................................................... 15
  AutoCAD ....................................................................................................................... 17
  Summary ......................................................................................................................... 17

Chapter Three .................................................................................................................... 19
  Homeowner Consultation ............................................................................................... 19
  Site Selection .................................................................................................................. 20
  Climate Zone .................................................................................................................. 21
  Plant Selection ............................................................................................................... 21
  Mulch .............................................................................................................................. 23
  Irrigation System ........................................................................................................... 23
  AutoCAD ....................................................................................................................... 24
  Summary ......................................................................................................................... 26

Chapter Four ....................................................................................................................... 27

Chapter Five ........................................................................................................................ 29
  Summary ......................................................................................................................... 29
  Recommendations ......................................................................................................... 29
  Conclusions .................................................................................................................... 30

References .......................................................................................................................... 31

Appendix A .......................................................................................................................... 32
List of Figures

Figure 1. Landscape diagram blueprint................................................................. 28
Chapter One

Introduction

Atascadero, California is a small town Founded in 1913 by a publisher Edward Gardner Lewis that is located between San Luis Obispo and Paso Robles. Atascadero meaning, “a place of much water” in Spanish holds rich history and vast ranch land along with a friendly community. On the southwest end of the city is an existing working cattle ranch consisting of 3,457 acres called Eagle Ranch. Eagle Ranch proposed a site plan to the community eliminating grazing cattle, and adding new residential development, a resort hotel, retail village, a Public Park, equestrian staging, and miles of trails. Next to the site of development sits a 5-acre parcel with an existing home that has been occupied with the same family for 22 years. Along with the new development, the plans include the main entrance to the Eagle Ranch property located 100 feet directly in front of this same house on San Carlos Road (History, 2014).

Statement of the Problem

Atascadero’s historic ranch land, Eagle Ranch, is southwest of town and has new proposed site plans of development. Eagle ranch will attract people all over for the residential homes, resort, and natural environment. The entrance to Eagle Ranch will be designed to travel in front of the Spain’s Family’ home that sits on a 5-acre parcel. Their home is to the northwest of the new proposed development of Eagle Ranch estates and village. The road that is traveled to their home is a dirt road with only two other homes
along the way to the Spain house. The newly paved road will allow constant travel for any residents or visitors into Eagle Ranch. The problem is the traffic flow will cause new-unwanted noise and visual sights that the existing property owners are not familiar experiencing.

**The Importance of the project**

The importance of this project is to provide a landscape design and blueprint for the homeowners that will experience constant traffic flow coming from Eagle Ranch. This project proposal will advance the homeowners with a landscape plan that will include noise and visual barriers by using appropriate plants and trees. By researching and gathering information, the landscape plan will be designed to eradicate any undesirable noise or scenery and creating an attractive view of flourishing vegetation.

**Purpose of the Project**

The purpose of this project is to create a landscape plan and blueprint including visual and noise barriers from any new development from Eagle Ranch, along with appropriate vegetation that will survive the climate in Atascadero. Also, to be cautious of the drought that California is facing.

**Objectives of the Project**

The objectives for this project are as follows:

- Understand and learn about the location site for the plan
• Discuss climate, soil type, and topography

• Research and understand the characteristics of drought tolerant plants and trees

• Research and design an irrigation system

• Design a landscape blueprint plan using a program AutoCAD

• Presenting the blueprint to the homeowners

• Using any other materials that will complete the project (ex: rocks, mulch, bark)

• Consider any pests

Definition of Important Terms

AutoCAD- A program 2-D and 3-D computer-aided drafting software application used in architecture, construction and manufacturing to assist in the preparation of blueprints and other engineering plans (What is AutoCAD, 2015).

Annual Weeds- an annual weed is a plant that completes its lifecycle in one year. After it produces seed in the late summer/fall it dies or is killed by the frost.

Climate zone- a plants performance is governed by the total climate: length of growing season, timing and amount of rainfall, winter lows, summer highs, wind, and humidity. Sunset’s Climate Zones consider temperature as well as other important factors: latitude, elevation, ocean influence, continental air influence, mountains, hills, valleys, and microclimates (Rice, 2011).

Herbicide- A chemical used to control weeds; a “weed killer” (Rice, 2011).

Mulch- Any material used to cover the soil for purposes such as moisture conservation or weed suppression (Rice, 2011).
**Perennial weeds** - a perennial weed is a plant that lives for an indefinite number of years; often refers to herbaceous flowering perennials. These are the hardest to get rid of. They are persistent; perennial weeds are able to produce heavy amounts of seeds and disperse the seeds very easily. Also they can spread by their modified stems if present; some perennial weeds have stolon and or rhizomes that allow vegetative propagation (Rice, 2011).

**Photosynthesis** - a chemical process that includes green plants to manufacture carbohydrates in the presence of light. Usually sunlight, it allows the plant to take in light from the sun and use that energy to convert it to chemical energy that will fuel the plants (Rice, 2011).

**Soil texture triangle** - a graphic representation of the percentage of combinations of the three basic types of soil, which are clay, sand, and silt. The type of soil is the combination of the three basic types of soil (Rice, 2011).

**Topography** - Relates to the configuration of the land surface and is described in terms of differences in elevation, slope, and landscape position (Brady, 2010, p.47).

**Western native plant** - Regional natives are wise to plant in a landscape or garden setting. The plant will be naturally equipped to grow in conditions where the planting will take place (Rice, 2011).

**Summary**

For the Atascadero residents next to the proposed development of Eagle Ranch, a landscape plan will provide an exceptional design for any unwanted views and or noise. Landscape barriers along with heat and drought resistant plants will provide
solutions to the issues caused by the paved main entrance along the front of the house.
The appropriate vegetation will come with easy maintenance. To be able to implement this plan, the correct research will be essential for the success at this site in Atascadero. By using simple software, AutoCAD, it will allow a visual layout for the homeowners to review before implementation.
Chapter Two

Review of Literature

The purpose of this project is to develop a landscape blueprint using a program called AutoCAD, that will involve visual and noise barriers consisting of practical vegetation with a sensible irrigation system. It will provide the Atascadero homeowners, which are located northwest from the new development of Eagle Ranch, a sensible solution. Included in the plans for the Eagle Ranch development, is the front entrance to the village and homes that will run directly in front of the existing home causing new unwanted views and noise. This chapter will provide the background information on the importance of understanding the site selected for planting, appropriate plant selection, an efficient irrigation practice, and the program AutoCAD.

Importance of Site Selection

There are many factors that go in to selecting the appropriate site selection for the landscape plan. Considering that the property owners want to block any unwanted views of the new development on Eagle Ranch, the plans will be prepared on the east side of the five acre piece of land their house sits on. The front of the house is looking directly to the east, so the goal will be to create landscape barriers to the east and southeast that will block all new traffic due to the new development. The plans will consider soil type, topography, climate, microclimate, and pests and diseases.
Soil Type

The soil type is an important factor for plant growth. To plan for healthy long-term plant life, it is crucial to understand soil texture. The soil texture will either include the following three broad groups of soil: sand, silt, and clay. The soil texture is classified by using the soil textural triangle; the soil texture triangle is an illustration of a triangle that leads you to determine your soil texture in regards to the percentage of sand, silt, and or clay.

The following is a description of how to use the graph:

“To use the graph, first find the appropriate clay percentage along the left side of the triangle, then draw a horizontal line from that location across the graph. Next find the sand percentage along the base of the triangle, then draw a line inward going parallel to the triangle side labeled ‘Percent silt’. The small arrows indicate the proper direction in which to draw the lines. The name of the compartment in which these two lines intersect indicates the textural class of the soil sample. Percentages for any two of the three soil separates is all that is required because the percentages for sand, silt, and clay add up to 100% (Brady, 2010, p. 101).”

According to Colorado state university extension, *Estimating Soil Texture*, there are some other simple procedures to determine the soil texture: feel Test, ball squeeze test, and the ribbon test. To perform a feel test rub some moist soil between fingers and feel for gritty, smooth, and sticky soil. The next test is the ball squeeze test; squeeze a moistened ball of soil in the hand. Coarse texture soils like sandy or loamy soils will
break with slight pressure; Sandy loams and silt loams will stay together but change easily; clayey or clayey loam will resist breaking. The last test is the ribbon test; squeeze a moistened ball of soil out between thumb and fingers. If the ribbon is less than 1 inch it is either sandy (gritty) or silt (not gritty); if the ribbon is 1 to 2 inches then it can be either medium (gritty) or fine (not gritty) texture soil; if ribbons are greater than 2 inches, it is a fine texture (clayey) soil (Whiting, 2014). After determining the soil texture, this will lead to a better understanding of the particle size that will result to the general nature of the soil physical properties (Brady, 2010). The plants that require a well-drained soil generally do well in sand or sandy loam. Plants that prefer a more fertile soil may do better in a clay loam; a clay soil will hold water and nutrients more tightly than a sandy soil that is well aerated and does not hold much due to the larger particle size (Davison, E., 2000). It will also be appropriate to survey the compaction of the soil for water penetration, air exchange, and root growth. The compaction of the soil will affect the drainage that will influence the plants.

A pH test of the soil in the area will also be suitable to determine if the soil is more acidic or alkaline. Soil pH will determine which plant species will grow well or even grow at all. The soil’s pH impacts the nutrient availability and the presence of some soil pathogens. On a pH scale, 3.0-5.0 is a very acid soil; 5.1-6.0 is a moderately acid soil; 7.1-8.0 is an alkaline soil. The pH range from 5.5 to 7.0 may provide the most satisfactory plant nutrient levels overall. But, still consider that plants vary due to different plant and soil combinations and their tolerance to acid and or alkaline conditions (Brady, 2010, p. 290). To test the soils pH, an at home test is available at any local nursery.
Climate

Another factor that plays a huge role in the development of a landscape plan is climate. All plants that are grown are influenced by climate related within a geographic area and include seasons: spring, summer, fall, and winter. Plants undergo different growth patterns regulated by seasons. In the spring, the majority of their yearly growth takes place; Summer is the duration where maturation takes place; fall is the period of preparation of dormancy, such as dropping leaves; winter is the phase of suspended growth. Depending on the plant type, there are many different ways a plant behaves during each season (Rice, 2011).

The elements of climate involve temperature, precipitation, humidity, light, and wind. The geographic range primarily determines temperature and the minimum winter temperatures affect where a plant can grow. Plants are either frost tolerant or frost tender. If an area is subjected to a freeze during the winter months, it is better to understand the damage done to frost-tender plants. Some plants and or crops require chilling hours during the winter season to succeed flowering in the spring. While other plants need a certain number of sufficient warm days for appropriate maturity, which is the growing degree-day requirement (Rice, 2011).

Precipitation includes rain, snow, hail, and sleet. In the western states plants have adapted to the drought or are drought resistant plants, so excessive rainfall can be detrimental. But rainfall is highly valued for the plants. Depending on the location precipitation may vary in forms and can have an impact on the plants (Rice, 2011).

Humidity also has an affect on the health of the plant. Higher humidity can enhance the growth of the plant but lower humidity will not severely injure the plant. It is best to understand the humidity levels in the area and consider it when selecting the site.
Light plays a huge role on the growth of plants. The light duration, intensity and quality are factors to consider when choosing a site for the landscape plan. Plants prefer different amounts of light, length of light, and the strength of light daily. Light affects photosynthesis, which is a process that plants have to be subject to everyday to survive (Rice, 2011). When choosing the site, label the area as full sun, partial shade, and or full shade. “When seeking a plant for a particular location around the home, a person must know the approximate amount of light that the area receives in order to choose a plant that will grow healthily” (Rice, 2011, p. 48).

The last climatic element is wind; it has an affect on the plants that could limit growth. If the area is experiencing ocean winds, then the salt spray can brown the plants that will cause easy breakage of plant parts. In drier regions, the winds can increase moisture loss from the soil and plants; this effect will intensify areas that are already experiencing drought conditions. Even in cold conditions, high and excessive winds will have a negative impact on plants. It removes moisture from the plants and is not able to replace the moisture that was lost; this is freeze–drying (Rice, 2011).

**Microclimate**

Microclimates are small areas that have been modified to have different climate characteristics than the surrounding area. These microclimates can be created by naturally occurring terrain and vegetation or man-made by buildings, fences, and or roadways. It is a pocket of land that has allowed the climate characteristics to change windy to less windy, shadier, and or warmer. This may allow different plants to be grown. (Rice, 2011, p. 50).
Climate Zone

Every region is made up of a combination of heat and cold, rainy and dry periods, wind, humidity, and a growing season. The various blends of climate elements are defined by a climate zone that will allow some plants to prosper while others may not. In the Sunset Western Garden book, they have listed all of climate zones of the west and including maps. The inland central coast is where Atascadero is located; it has a climate zone of 7 (Brenzel, 2012).

The description of zone 7 is labeled as Oregon’s Rogue River Valley, The California Gray Pine Belt, and Southern California Mountains: “Hot summers and mild, pronounced winters give Zone 7 sharply defined seasons without severe winter cold or enervating humidity, Gray pines define the zone around California’s Central Valley, but more adaptable incense cedars replace them farther north and south. Typical winter lows range from 35°F to 26°F (2°C to -3°C), with record lows down to 0°F (-18°C). Rainfall averages 34 in. per year” (Brenzel, 2012, p. 19). The growing season begins in March and ends in the beginning of October. The climate zone will assist with plant selection; the climate zone will be listed on the description of a plant (Brenzel, 2012).

Topography

Topography is an important factor to consider when selecting the specific site for implementation. It is the geographical layout of the land and is a factor that modifies climate. In addition, it is the interaction with vegetation, slope aspect, and water drainage in regards to the landscape plans. The interaction with vegetation impacts the soil formation. Slope aspect affects the uptake of solar energy in a landscape.

The north-facing slope is facing away from the sun versus the south-facing slope that receives more direct sunlight. Therefore the north is cooler and moister that the south
facing slope. Lastly, water drainage is an important topographic element when considering a site selection. With steep slopes it is very likely to have water runoff, along with erosion. So, choose a location where it is more level allowing for better water drainage, along with minimizing any erosion. For this project, the topographic layout chosen for the landscape plan is level (Brady, 2010, p. 48).

**Pests and Diseases**

Possible pests and diseases may have an impact on the plants chosen for the landscape plan. Pests would include annual or perennial weeds, minimal insects, and vertebrates. Annual and perennial weeds can and will invade any exposed area that is incorporated in the landscape plan. Weeds have the ability to persist and compete vigorously with the plants installed. Examine the area for any existing weeds to identify and evaluate characteristics. If there is a better understanding of what weeds are present in the area, then it will help generate a better management plan. The UC-IPM website lists a few practices for good site preparation and management applications (Pests in Gardens and Landscapes: Quick Tips, 2014).

First, prepare the site and control any existing weeds by digging out weeds or removing them by hand. Follow up by an irrigation, this will allow any new weed seedlings to emerge for removal. Other site preparation practices include soil solarization, mulch, and herbicide application. Weed management plans include follow-up practices such as weed removal or adding extra mulch to bare areas (Pests in Gardens and Landscapes: Quick Tips, 2014).

To identify insect pests, visit the site and inspect the area. Record and compare to common insects on the UC-IPM website, in the Home, Garden, Turf, and Landscape
pests section. This tool lists the most common landscape pests that may invade your site. The common pests listed are ants, bees and wasps, caterpillars, aphids, scales, thrips, earwigs, snails, caterpillars, and mites. It is accessible to learn about each insect pest and what their special characteristics are; which will make it easier to determine what damage will be done to you plants included in the landscape design (Home, Garden, Turf, and Landscape Pests, 2015).

The more damaging pests include mammals: bats, birds, coyote, deer, gophers, ground squirrels, mice, rabbits, and wild pigs. Considering the houses location, there is an increased population of wild life. Again the UC-IPM website, under the Home, Gardens, Landscape, and turf pests section; It has been made accessible to learn what kind of damage each vertebrates pest can cause. Researching every possible pest will plan for successful site selection along with plant selections (Home, Garden, Turf, and Landscape pests, 2015).

**Importance of Plant Selection**

The next important factor to consider when creating a successful landscape plan, is selecting appropriate plants. As discussed earlier, there are many elements to consider when choosing the site selection, now it is time to apply this information in selecting plants. Typically, the western regions experience dry and warm conditions. Especially in central California, the area has been experiencing a continuous severe drought. The plants selected should be drought tolerant and low maintenance. Also, the plants chosen for implementation should fall under the climate zone 7.

The west experiences a short season of rainfall, and in the past years it has been at
even lower numbers causing a severe drought. It will be wise to choose native drought tolerant plants. Plants that will function best under these harsh conditions: low water, dry, and hot climate. Drought tolerant plants have been used in gardens and landscapes as early as the fifth and sixth century. It is a popular ancient principal that is used today. Drought tolerant trees, shrubs, and groundcovers have characteristics that maintain their aesthetic and functional qualities under less desired conditions. These plants have structures to hold in moisture and reduce water loss by transpiration (Drought Tolerant Plants, 2009). Transpiration is the loss of water from a plant usually through leaves, in vapor form (Rice, 2011). Plants also can be composed of internal mechanisms that enable them to minimize transpiration. Other drought tolerant plants will go dormant during the summer, when conditions are extremely dry, then resume growth during the winter and spring. Another characteristic of drought tolerant plants, these plants can produce widespread or long roots to reach stored groundwater.

To establish drought tolerant plants, train the plants to use less water. Maintain a moist root system but not saturated for the first year so the plants are able to get established. As the plants mature, decreases the rate of water applied and increase the depth of irrigation. Water the plants only when it is necessary to keep the plants healthy. Not only will the plants take on the advantages of drought tolerant characteristics, it will also discourage weed growth and or overgrowth of the plants. For drought tolerant plants, provide enough room for each planting; as the plant matures, it will require having plenty of area for future growth (Drought Tolerant plants, 2009).

The Sunset Western Garden Book has provided a plant finder program to use. Plants for water wise gardens are listed; there are many fine plants that are both attractive
and well suited for the dry summers the west experiences. Some of these plants that can
tolerate the harsh conditions have naturally deep roots that can reach to water reserves
deep unground. Other plants have the characteristics that were already listed. The book
provides an abundance of trees, shrubs, and horticulture plants that hold water wise or
drought tolerant characteristics. Also in each plant description, the climate zone that the
plant will grow successfully in is provided (Brenzel, 2012, p. 74).

**Landscape Barriers**

The landscape plan will include landscape barriers that will involve sound noise
barriers, providing privacy, and a pleasant view for the homeowners. Effective landscape
barriers will minimize any new unwanted traffic coming from the new developed road.
Searching through the topics that are provided in the Sunset Western Garden Book, plants
for hedges was the best choice that would provide plants choices for landscape barriers.
A tall hedge can be used in a landscape design to provide a privacy screen or a form of a
green wall. Use plants that are densely packed with foliage from top to bottom that can
create ideal living fences. Also, it is appropriate to use large shrubs for screens that are
grouped close together. The Sunset Western Garden book, list an abundance of available
plants that play the role of landscape barriers (Brenzel, 2012).

**Irrigation Practices**

In our history there have been many forms of irrigation. The majority of the
irrigation was done by flood or furrow irrigation. Flood irrigation was used to cover a
large area and apply a large volume of water at once. Furrow irrigation is similar but
furrows divided the large area. Flood and furrow irrigation was proficient in our history but it is not an efficient way to irrigate. As technology progressed so did irrigation methods. Sprinkler systems of all sorts were designed to irrigate certain crops while trying to become more efficient in water use. The different systems included big guns, center pivots, hand-move, and linear irrigation. Big guns are sprinklers that can project a high volume of water a certain distance. Center pivots are systems used in crop circle farming that have sprinklers spread throughout the arm of the center pivot system and travels in a circle to water the crop circle. Hand move irrigation involves lateral lines that have sprinklers attached to them being moved from section to section by laborers where they are hooked up to the main line. Linear irrigation is similar to a center pivot except that it moves in a linear line versus a circular line.

Now when looking at irrigation from a landscape perspective in particular there are several options to choose from: flood, hand-move, or big gun style. All of these systems will work but they are not very efficient. In landscaping the entire area does not always require water. So when you use a system such as flood, hand-move, or big gun, there is a lot of water used on areas that do not necessarily need the water. In landscaping the water needs to be focused on the particular plant you are trying to grow.

This is where another irrigation system comes in a plays a very substantial role; micro irrigation. Micro irrigation has two systems, drip and micro sprinkler. Drip systems allow you to be able to simply turn your water on and decipher how much water needs to be put on to grow your plant. The benefit there is that with drip systems the water is being applied to the exact location you want it to be. The micro sprinkler system is relatively the same as the drip but will cover a larger area more efficiently. For
example if the landscape project consists of trees that are trying to establish a root zone, then the micro sprinkler will help get water to the entire root zone. Whereas if you are growing a bush, succulents, flowers, or something with a more concentrated root zone, the drip irrigation is the most efficient way to get water to that particular root zone (Solomon, 2014).

**AutoCAD**

AutoCAD is a program that helps develop Computer Aided Design/Drafting. This program was derived for one purpose, to help design 2 dimensional and 3 dimensional plans. The plans could be of the layout inside of a house, a façade to a skyscraper, floor plan of a factory, as well as many other uses. AutoCAD was a huge jump in modern technology because it allowed designers of all sorts to efficiently try their ideas first without having to go straight to a hard copy. If using a drafting table with drafting equipment, usually a large eraser is needed during the practice drawing. Now with Computer Aided Design/Drafting only the undo button is required. AutoCAD has made designing and drafting a much more efficient practice to design and layout all of the different options before taking it into the production side (What is AutoCAD, 2013).

**Summary**

With the information the author has provided above, it is apparent to conduct research before attaining an appropriate landscape plan that will succeed on the homeowners property. Planning and research will incorporate suitable plants, landscape
barriers, and an efficient irrigation system. There are many key elements to consider when creating a successful landscape plan.
Chapter Three

Methods

In order to successfully complete a landscape blueprint plan, numerous steps were taken to achieve the best possible outcome. The project’s purpose included providing a favorable plan for the property owners to implement in the future. The first step was to visit the site and meet with the property owners Cyndi and Bryan Spain. During the consultation, the situation of the Eagle Ranch Development was discussed and what is in need for completing the project, a landscape plan to provide a visual and noise barrier. After communicating with the homeowners, the next step would be to examine the area and determine soil type, and ph. Then plants will need to be researched to find plants suitable for the property’s climate zone. Following the research, a landscape blueprint plan will be created using AutoCAD. Lastly, the blueprint will be presented to the Spain’s for approval.

Homeowner Consultation

The homeowners explained their problem; they have been residents in their home that sits on 5 acres for more than 20 years. They are displeased with the proposal of Eagle Ranch development. The plan has allowed Eagle ranch to construct a paved four-lane road, replacing the homeowner’s dirt road, which will allow traffic to travel in and out. When driving out to the Spain’s property, only a dirt road is provided to travel to the house. Along the way sits two other homes. The dirt road is 660 feet long and is 200 feet
in front of the house. This Eagle Ranch Plan is alarming to the residents and has given a reason for the creation of this landscape plan.

The goal that the Homeowners have discussed is to include landscape barriers, providing a visual barrier with an attractive view, productive noise barriers, and especially providing privacy. The property owners have also wanted to consider the drought, by including minimal water usage plants and an efficient irrigation plan. The Spain’s are hoping to implement the plans themselves but wanted research done for the best plants for their area that will survive and to work as barriers from Eagle Ranch.

There were a few notes to take when meeting with Mr. and Mrs. Spain. Existing mature oak trees surround the house; if possible native oak trees should be included in the plan. Oaks trees are favorable to the homeowners and the trees have lived a healthful and successful life on their property. Also, to note that wild life can be an issue when planting new plants. Deer, ground squirrels, wild pigs, and coyotes continuously roam the area.

**Site Selection**

The area selected for the landscape plan was measured 10 ft. from the dirt road. The area will be split into two sections that are divided by the property owner’s driveway. The first area on the north end of the site is to be measured as 220 ft. by 50 ft. The second area, south to the driveway was measured to be 50 ft. by 50ft.

Next, five soil samples of the area were taken. By using a shovel I loosened the dirt at each spot and scooped up a handful to perform the feel and ribbon test. There was an average between the five spots. The soil texture was clay loam.
Recording any existing vegetation in the area, the only vegetation that was growing was natural annual grass. The topography of the area is leveled, and relatively leveled from the road to the house. In result, slope was not an issue for site or plant selection. Water drainage and erosion would not cause a problem when creating the blueprint plan. Water accessibility was readily available. This will allow for an easy irrigation system set up and will help choose the best program.

The next steps taken before leaving the premises were to take pictures of the site from all angles. This will allow for easement while projecting a blueprint plan for the homeowners. Visually seeing the area when selecting the most appropriate plants and arranging them in an accepted barrier manner.

**Climate Zone**

The author used, *The Western Garden Book*, as a resource to find the climate zone. The site is located in Atascadero, California, which is in San Luis Obispo County. The book provided a map of central California on page 31. Atascadero is labeled on this detailed map, in zone 7. Next, the book provides a small description of zone 7 on page 19. Retaining the knowledge of the zone the property is in; this will lead to better plant selection. All plants include a climate zone that the plant prefers to grow in.

**Plant Selection**

The author achieved plant selection by using, *The Sunset Western Garden Book*. This resource provided plant categories that fit into the description of the goals for the landscape plan. The first category was plants for beneath oak trees. The property owners
favor the native oak tree. The property already has existing mature oak trees surrounding the backside of the home; it is concluded that this native tree grows well in the area. The author chose Quercus douglasii, blue oak to include in the landscape plan. The trees will be arranged with enough space to provide for good deep root growth.

Next, the author chose a shrub under the category: plants for beneath oaks. After research, the author selected Viburnum tinus, laurustinus. Not only does this plant species grow well beneath oak trees, it fits in the climate zone 7, and is a preferred hedge plant. The plant grows tall from 6-12 ft. and has full foliage from bottom to top. On the north section, 7 Laurustinus will be plants and 3 on the south section.

Another plant selected from the category plants for hedges was Dodonaea viscosa, the hop bush. It falls under the climate zone: 7. This shrub is fast growing that can reach up to 15 ft. high and can be trained as a tree. This will provide the landscape as a barrier. The hop bush also falls under the categories: plants for water wise gardens, western native, and deer-resistant. So, This plant will grow in the property owner’s favor.

The next category to focus on was plants for water wise gardens. Another goal listed by the property owners was to be mindful of the drought California is facing. Lagerstroemia indica, commonly known as crape myrtle, is listed as a water wise plant and was chosen by the author. This tree can grow up to 25 ft. with an attractive trunk and produces a pleasant pink summer flower. These features allow for good appearance all year long.

In the same category, the author selected two shrubs for their appearance and great characteristics. The first shrub selected was Rosmarinus officinalis, regularly known by rosemary. The plant is an evergreen herb that presents itself with appealing
aromas and surviving harsh conditions. Rosemary provides good dense coverage as well as resisting any deer that might come by. Another positive characteristic of this shrub is that rosemary is edible, using the leaves as a seasoning or a garnish with its flowers. The Second shrub selected from the water wise garden plants was Pennisetum setaceum. It is a fountain grass that can be grown as an annual or a perennial. The plant is not listed in the climate zone but will stand the climate in zone 7 as it used in many landscapes on the central coast. It has become a popular plant used in landscapes because it does not need too much water. The plant matures to have plumes that make an attractive sight.

Mulch

The mulch recommended for this project is river rock and bark. The layout will be neat and sturdy. The bark mulch will surround the oak trees and the cape myrtle. While river rock will cover the majority of open space. This will help with erosion along with providing an attractive look to the overall landscape plan.

Irrigation System

The irrigation system that is included in the landscape plan will be a micro irrigation system consisting of drip emitters. Micro irrigation was chosen since it is the most water efficient, as well as cost effective and with ease of operation. A trench will be dug where the main water line will be tied in, then run to the section of landscaping. This is where the lateral lines and drip hose will tie allowing it to run the length of the designated area of landscape. The type of drip line used is based on the proper amount of volume needed to water the vegetation in an efficient matter. For this case ½ gallon per
minute emitters will be recommended. A timer will also be put in place to allow the owners to program when and how much water will be applied.

**AutoCAD**

AutoCAD will be the program used to define the layout of the landscape plan. The program offers a free trial and along with an easy download. The author was able to display the two sections of the landscape plan expressing the length and width. On the plans, it was able to distinguish the newly paved road and the homeowner’s driveway from the landscaping sections. Then, in the landscaping section it displays the plants and irrigation system. Proper labeling is provided on the blueprint.

The V represents Viburnum tinus; designed to be planted along the east end of each section. The plant will grow and mature into a hedge acting as a visual barrier from the road. In the north section, 7 will have places along the edge of the property and 3 in the southern section.

An O will be used as a marker for Quercus douglasii, the native blue oak in the plans. The oak trees are designed for an attractive view and native abilities. The homeowners preferred to include the blue oak in the landscape plans, and 4 have a location for implementation on the blueprint. Three blue oak transplants will be included in the plans for the north section and 1 on the south section.

For the next tree included in the plans, an X will represent Lagerstroemia indica, crepe myrtle. This tree will be adding more density to the landscape and includes an attractive view. In the north section, 4 will have places between and on the outside of the blue oak trees. In the south section, 2 will have a place on the outside of the oak tree.
Three more different bushes were included in the plans to provide for dense coverage and designed to survive in such conditions. An, \textit{R} represents Rosmarinus officinalis, commonly known as rosemary and 3 are included in the north section 1 in the south section. A triangle is marked as the \textit{Dodonaea viscosa}, the hop bush. These bushes are arranged for 3 in the north section and 1 in the south section. The last bush included in the plans is the fountain grass, \textit{Pennisetum setaceum} labeled using a \textit{p}. The plants are placed at the base in the landscape plan on the west end. There are 3 included on the north section and 1 on the south.

The irrigation system is also displayed on the landscape blueprint. Using a thick white line shows the main line that travels west to east. Then, there are the sub-main lines and lateral lines with drip emitters. A drip line was provided for each plant, supplying water in a uniform form. This system will guarantee efficiency and control by the homeowners.

\textbf{Final Homeowner Consultation}

After completing the AutoCAD blueprint it was now appropriate to present the plans to the homeowners. After reviewing the plans and the author was able to explain why each plant was selected. It was sufficient to say that the homeowners were pleased and approved the landscape plans that were created. The final consultation included handing over the plans and exchanging gratitude.
Summary

It is essential to get the approval by the homeowners who will be implementing this landscape plan at their home. It will be important to select the correct plants and arrange them as a barrier deflecting the view of any traffic from Eagle Ranch. By providing research and information on each plant selected, this will allow the homeowners to understand the reasoning behind each plant selected. Creating a blueprint using the program AutoCAD, the author was able to present the plants selected. Lastly, continue with a final consultation for presentation and providing the blueprint that will be eligible for the homeowners to implement in the future.
Chapter Four

Results and Discussion

In this chapter the landscape blueprint plan will be presented to the homeowners that was created with the program, AutoCAD. The blueprint plan produced was able to display the layout of the site selected for the landscape plans. The plans include the structure of the newly paved Eagle Ranch road and entrance, also the homeowner’s driveway. The plans display the plants selected and the order that represent landscape barriers for the homeowners. When the plans were appropriate to present to the homeowners, a blue print plan was unveiled to the homeowners for approval.
Figure 1. Landscape diagram blueprint.
Chapter Five
Summary, Recommendations, and Conclusion

Summary

The intent of this project was to create a landscape blueprint with sufficient landscape barriers that will be proficient for the homeowners in Atascadero, California. The homeowners were displeased to learn about the new Eagle Ranch development planned for the property next to the home. By consulting with the homeowners the goal was to provide a selection of plants appropriate for the area and arranging the plants to act as barriers. Also, incorporating an efficient irrigation system. Through presentation of the blueprint it will help provide the homeowners a start for implementation.

Recommendations

The following recommendations should be made if one is completing a similar project:

1. Consult with landscape designer.
   a. The author experienced some difficulty arranging the plants in the landscape plan. Consulting with a landscape designer may provide increased knowledge on appropriate plant arrangement.

2. Consult with a horticulturist.
a. The *New Sunset Western Garden Book* was a sufficient guide for plant selection. It may allow for better options after consulting with a horticulturist and involving expertise input on selecting plants for the landscape plan.

**Conclusions**

The project has been successfully completed with blueprint presentation by the author to the homeowners. The author has displayed the landscape plans for approval; the homeowners are pleased with the plants selected, plant arrangement, and the irrigation system chosen for the site. The plans will advance the resident’s landscape implementation. The only negative outcome of this blueprint plan was not involving a landscape designer or horticulturist in the project. Though the author met the objectives set at the beginning of the project, the opportunity for improvement is presented by involving credible sources such as a landscape designer and or horticulturist.
References


Davison, E., Begeman, J., & Tipton, J. Plant Selection and Selecting Your Plants. University of Arizona Cooperative Extension


Appendix A

Photos of Homeowner’s Property
Photo1: captured by Tess Gilkey
Photo 2: captured by Tess Gilkey
Photo 3: captured by Tess Gilkey
Photo 4: captured by Tess Gilkey