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This study is intended to assist the owner/developer in meeting the 2019 HTC requirements for an engineering Analysis of the proposed development. The study will assess the existing conditions of the site.

This report has been prepared for the exclusive use of Investment Builders, Inc., and its consultants for evaluation purposes and does not contain information for other parties or other uses. Mr. Ike Monty authorized this study on January 2019 during our regular weekly meetings.

The results submitted in this report are based on data obtained from the following sources:

1. SLI Engineering, Inc.
2. The EL Paso County
3. Texas Department of Transportation
4. Investment Builders, Inc.
5. Field data collected during the study

If the project information described in this report is incorrect or altered, or if new information is available, we should be retained to review and modify the results of this study.

Introduction

Investment Builders Inc. is preparing an application for a Tax Credit Development consisting of 272,057 square feet, and a commercial center consisting of 110,399.8 square feet, located along Montana Avenue on the east side of El Paso Texas. The proposed development will include 104 units with a combination of 1, 2, 3 and 4 bedrooms, and a club house. There are 12 (1-bedroom) units, 44 (2-bedroom) units, 44 (3-bedroom units) and 4 (4-bedroom) units. In addition to the units, the developer is building a common center consisting of 1,262 square feet. The development requires 196 parking spaces and the developer is providing 204 parking spaces to include 15 accessible parking spaces.. The site does not appear to have any onerous development requirements. It is fronting an arterial street, with utilities nearby, the soil condition is acceptable, and access is available and no problematic visible issues. The site identification number is X580999236A0700
General Location of the site

The proposed site consists of a parcel of land located East El Paso, El Paso County, Texas. The parcel is shown on the following exhibit.

Figure 2: General Location of Site
Site Location
The site is bound by vacant commercial land along the east boundary, residential along the southern and western boundary, and Montana Avenue along the northern boundary.

Figure 2: Site Location
Site Description

Platting Determination & Physical Boundary

The site is not subdivided. The legal description is Tract 3, Block 80, Section 36, Township 2, Texas and Pacific Railway Company Surveys, El Paso, El Paso County Texas.

Zoning and Proposed Uses:

The site is zoned SD, Special District that permits the development. The following exhibit is obtained from the City of El Paso Zoning Map.

PROPERTY Tax Information and millage rates

The site Parcel (Property) Identification Number is X580999236A0700, as assigned by the Central Appraisal District.

As per the Consolidated Tax Office, City of El Paso, the proposed site is subject to property-tax levies from a total of five taxing entities:

1. City of El Paso 0.843332
2. El Paso County 0.447819  
3. University Medical Center 0.251943  
4. El Paso Community College 0.140273  
5. Ysletta Independent School District 1.455000  
The millage rates provided above are based on 100 percent assessed valuation and are expressed per $100 of value:

DEVELOPMENT ORDINANCES  
The site will be developed as per the “City of El Paso – Subdivision and Development Plats Ordinance”.

FIRE DEPARTMENT REQUIREMENTS  
It appears that there are not any off-site Fire Department requirements. The site will be developed as per “2015 International Fire Code”.

Survey  
The survey prepared by SLI engineering, Inc. shows a frontage of 528.88 feet along Montana Avenue. The site is 8.7847 acres. There are several easements associated with the site:  

➢ El Paso Electric Easement. This easement is 100 feet wide and it is used to extend overhead lines across the site. The easement is located along the eastern property line. Parking is allowed within the easement.  

➢ 16.6 feet Fiber Optic Easement. This easement crosses the site from in the east west direction. Pavement is allowed within the easement.
Flood zone
The site is located in Flood Zone C, areas determined to be outside the 100 year flood as per FIRM No. 480214 0036 B dated October 15, 1982.

Figure 4: Flood Zone Designation, Source, FEMA
Geotechnical review
The General Soil Map for El Paso County issued by the U. S. Department of Agriculture Soil Conservation Service classifies the site in the Hueco Wink Association (HW), 100%

This soil is Nearly level and gently sloping soils that have a fine sandy loam subsoil and are moderately deep over caliche; in the Hueco Bolson.

This association occupies a large area consisting mainly of nearly level and gently sloping soils in the Hueco Bolson. The Hueco soils typically have a brown loamy fine sand surface layer, about 4 inches thick, that is mildly alkaline and noncalcareous. The subsoil is brown and yellowish-brown, calcareous fine sandy loam about 22 inches thick. At a depth of 26 inches, there is a layer of indurated caliche about 32 inches thick. This soil is suitable for the development

A site-specific soils test using samples from on site would be required to obtain more specific and/or detailed information.
Proposed development

The following exhibit is the proposed site plan showing the proposed layout of the buildings. The plan materially adheres to all applicable zoning, site development, and building code ordinances.

Figure 4: proposed site plan

Ingress and egress requirements
There will be 2 driveways off Montana Avenue. We recommend coordinating the location of the driveways with the Texas Department of Transportation.
Utilities

Domestic Water

Within the Oasis Ranch Subdivision along Dandelion Way, there is an existing eight (8) inch diameter water main. This main transects Lot "D" Oasis Ranch Subdivision and continues along Montana Avenue towards the east and dead-ends approximately at the boundary line common to both Oasis Ranch Subdivision and the subject Property. This main is available for main extensions. From the intersection of Montana Avenue and Wooster Lane along Montana Avenue towards the west there is an existing eight (8) inch diameter water main. This main dead-ends at approximately the western boundary line of Tract 4B, Section 36, Block 80, Township 2, identified as 11100 Montana Avenue. This main is available for main extensions. Service to the subject Property is anticipated by means of a water main extension to connect the above-mentioned mains.

Figure 5: Domestic Water Main Line Location, Source El Paso Water
Sanitary Sewer Service
Within the eastern portion of Oasis Ranch Subdivision, within Block 2, along a twenty (20) foot wide PSB and City Drainage Right-of-Way there is an existing twelve (12) inch diameter sanitary sewer main stub-out. This stub-out dead-ends approximately at the boundary line common to both Oasis Ranch Subdivision and the subject Property. This main is approximately five (5) feet deep and it is available for main extensions.

Service to the subject Property is anticipated by means of sanitary sewer main extensions from the described main stub-out. The connection might require a special design in order to accommodate the depth of the existing sewer line. The design might require encasing the proposed line with concrete or steel at depth shallower than 4 feet. Easements will be required to accommodate the proposed main extensions.
There is electric overhead line located along the easterly property line. This line will be used to extend electrical service line to the proposed development. Electric Service will be provided by the El Paso Electric Company.

Telephone service will be provided to the site along with the electric service. The Service is provided by Southwestern Bell.

Gas service is also available nearby the site.

Off Site Requirements

The off-site costs consist of constructing sidewalks along Montana Avenue, and extending the water and sewer line and 2 additional fire hydrants. Our opinion of the cost is shown in the following table:

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extend Water Line</td>
<td>700</td>
<td>LF</td>
<td>$135</td>
<td>$94,500</td>
</tr>
<tr>
<td>Extend Sewer Line</td>
<td>300</td>
<td>LF</td>
<td>$90.00</td>
<td>$27,000</td>
</tr>
<tr>
<td>Install Fire Hydrant</td>
<td>2</td>
<td>Ea</td>
<td>$27,000</td>
<td>$54,000</td>
</tr>
<tr>
<td>Side walks along Montana</td>
<td>78</td>
<td>SY</td>
<td>$30.00</td>
<td>$2,340</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td>$177,840</td>
</tr>
</tbody>
</table>

*Table 1: Off-Site Opinion of Cost*

On-site requirements

The onsite requirements are typical of any development.
Drainage and detention /retention requirements

Proposed Drainage

As of today, all storm water is to be retained on site. The site is not included within the master drainage plan. Therefore, we need to retain all storm water generated on site due to the proposed development.

The primary method that is used to determine peak runoff rate is the Rational Method. The Rational equation is given as:

\[ Q = C \times I \times A \]

Where:
- \( Q \) = Estimated design discharge (cfs)
- \( C \) = Composite runoff coefficient (unitless) for the watershed
- \( I \) = Rainfall intensity (in/hr.) for the designated design storm in the geographic region of interest.
- \( A \) = Watershed area (ac)

The composite runoff coefficient reflects the surface characteristics of the contributing watershed. The range of runoff coefficient values varies from 0 – 1.0, with higher values corresponding to greater runoff rate potential. The runoff coefficient is determined by estimating the area of different land uses within each drainage area.

Per the Rational runoff coefficients (ASCE, 1975; Viessman, et al., 1996; and Malcom, 1999, the Surface Rational Runoff Coefficients, \( C \) for Unimproved Areas is 0.45; for Asphalt is .95, and for Concrete is 0.95.

The peak runoff for the 8.78 acres as developed is calculated as follows:

- \( A = 8.78 \) acres
- \( C = 0.95 \) for undeveloped land
- \( I = 6.1 \) inches per hour as calculated using a calculated time of concentration of 6.6 minutes.

The peak runoff for developed land is 50 cfs using a \( C \) value of 0.95.

A pond must be designed to store the developed and the undeveloped storm water runoff.

The volume of storm water runoff generated by the site is calculated by the formula

\[ V = A R C / 12 \]
Where:

➢ V is the volume of storm water runoff
➢ A is the area of the site
➢ R is the amount of rainfall in 3 hours = 4 inches per 3 hours.
➢ C= 0.95 for undeveloped land

The volume of storm water runoff to be stored is 2.78 acre feet. This volume does not include the volume of silt nor the emergency factor.
The volume required for emergency and silt is .012 x area = .11 acre feet
The total required volume for storage is 2.89 acre feet.

Using a spread sheet to calculate the area needed for a pond using 3/1 slopes and 15-foot service road along the perimeter of the pond.
The results show that a pond of approximately 28,000 square feet is needed to retain the developed storm water. The pond dimensions are 125’ x 225’ and 10 feet deep with a 15-foot bench around the perimeter.
The results are tabulated on the following spread sheet.
**RECTANGULAR**

**POND DESIGN**

<table>
<thead>
<tr>
<th>Required Pond storage</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>8.78</td>
</tr>
<tr>
<td>C</td>
<td>0.95</td>
</tr>
<tr>
<td>R</td>
<td>4.25</td>
</tr>
<tr>
<td>A-ft</td>
<td>2.954104</td>
</tr>
</tbody>
</table>

**Pond side slopes**

| H | 1 |
| to V | 3 |

**Ponding Area Utilized**

| freeboard | 1 |
| waterdepth | 9 |
| d, totaldepth | 10 |

**Pond Shape Desired**

| ratio of x | 1 |
| to y | 3 |

**Area of Pond Required**

| A-ft / ft depth | 0.328234 |
|亩 | 0.3282 |

**RESULT**

| x | 50 |
| y | 150 |
| x' | 110 |
| y' | 210 |
| X with road | 125 |
| y with Road | 225 |
| Road Width | 15 |

**Check**

| Vol supplied depth | 9 |
| Area bot | 7456 |
| Area top | 23020 |
| Area avg | 15238 |
| Vol supplied | 137143 ft³ |
| Vol supplied | 3.1 acre-ft |

**Area needed for ponding**

| 28036.53 Ft² |

**INTRODUCTION**

The spreadsheet yields a pond dimension "x", which is the short side of the bottom of the pond.

**TASK**: How big does my pond need to be if I know the required storage, estimated depth, and the shape I am looking for?

**DIRECTIONS**: Enter the numbers in column B. For cell B25, choose the result of the quadratic equation from cell G27 or G28.

**CALCULATIONS**

A bot

\[ x' \cdot y' = \frac{x^2}{3} \]

A top

\[ x'(x+2V(d-2))(y+2V(d-2)) \]

**TERMS OF THE QUADRATIC**

| b² - 4ac | 662969.5 |
| sqrt of G21 | 814.2294 |
| -b | -216 |
| 2a | 12 |
| numerator1 | 598.2294 |
| numerator2 | -1030.23 |

\[ x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \]
Required approvals
The site is already a portion of a legal subdivision. There will not be a need to subdivide.

A building permit has to be obtained from the City after their review. This process might take 21 working days plus or minus depending on the amount of details needed.

Other necessary fees
The City of El Paso Engineering and Construction Department has an established Building Permit process and also has a Customize Plan Review process to expedite the permit in cases where this is desired. The Building Permit Fee for the standard process will depend on the scope and value as follows:

For Structural repair work costing over five hundred dollars ($500.00) and less than fifteen thousand dollars ($15,000.00), all repair work, new work and remodeling with a valuation up to and not including fifteen thousand dollars and requiring plans and plan review, the fee shall be one hundred sixty dollars and forty-nine cents ($160.49) plus plan review fee and applicable technology fee.

For a valuation from fifteen thousand dollars and including one hundred thousand dollars, the fee shall be one hundred sixty-one dollars and twelve cents ($161.12) for the first fifteen thousand dollars plus eight dollars and forty-eight cents ($8.48) per thousand for each additional thousand or fraction thereof by which the valuation exceeds fifteen thousand dollars plus plan review fee and applicable technology fee.

For a valuation over one hundred thousand dollars up to and including five hundred thousand dollars, the fee shall be eight hundred thirty-seven dollars and forty cents ($837.40) for the first one hundred thousand dollars, plus six dollars and thirty-six cents ($6.36) for each one thousand dollars or fraction thereof by which the valuation exceeds one hundred thousand dollars plus plan review fee and applicable technology fee.

For a valuation over five hundred thousand dollars up to and including one million dollars, the fee shall be three thousand one hundred twelve dollars and seventy-two cents ($3,112.72) for the first five hundred thousand dollars plus three dollars and twenty eight cents ($3.28) for each one thousand dollars of fraction thereof by which the valuation exceeds five hundred thousand dollars plus plan review fee and applicable technology fee.

For a valuation over one million dollars, the fee shall be four thousand seven hundred fifty-eight dollars and thirty-four cents ($4,758.34) for the first one million dollars plus two dollars and twelve
cents ($2.12) for each one thousand dollars of fraction thereof by which the valuation exceeds one million thousand dollars plus plan review fee and applicable technology fee

Building Design Codes and Ordinances:
The Ridgestone Estates Apartment Complex design will comply with all of the current and adopted building codes and local ordinances. The City of El Paso has adopted and is currently using the following codes and ordinances:
2015 International Building Code
2015 International Plumbing Code
2015 International Mechanical Code
2015 International Fire Code
2015 National Electric Code
2015 International Energy Conservation Code
Texas Accessibility Code
Uniform Federal Accessibility Standards
City of El Paso Ordinance No. 017413
City of El Paso Landscape Ordinance 18.46
APPENDIX A: SURVEY
APPENDIX B: SITE PLAN
RIDGESTONE ESTATES

OWNER

NOT FOR REGULATORY APPROVAL, PERMITTING, OR CONSTRUCTION

SITE LEGENDS

- Existing Residential Development
- Existing Commercial Development
- Recreational Property Limits
- Accessible Property Limits
- Accessible Parking

TOTAL REQUIRED: 107,172 SF

TOTAL SHOWN: 104,655 SF

CONTACT DOCUMENTS COORDINATION

These contact documents shall be taken together as a single construction contract document and any division by trade or other designation is coincidental. General contractor and all sub-contractors shall remain responsible for the completion of the entire project.

PER 5 DWELLING UNITS

1 BICYCLE PARKING SPACE

THE USE OF THIS SEAL IS AUTHORIZED BY THE ARCHITECT WHOSE NAME APPEARS. ANY UNAUTHORIZED USE, MISUSE, OR MISREPRESENTATION OF THIS SEAL WILL VOID ANY LIABILITY, DIRECT OR INDIRECT, WHICH MAY RESULT FROM ITS USE. NO PERSON MAY MAKE ANY MODIFICATION TO THIS ELECTRONIC DRAWING FILE WITHOUT THE ARCHITECT'S APPROVAL.