Patriot Place Apartment

ENGINEERING REPORT

Owner: PAISANO HOUSING REDEVELOPMENT CORPORATION

Prepared by: Georges Halloul, P.E.

February 2019
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abstract
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.

limitations
This report has been prepared for the exclusive use of Paisano Housing Redevelopment Corporation, and its consultants for evaluation purposes and does not contain information for other parties or other uses. Mr. Robin Vaughn authorized this study on January 2019 by phone.

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. Paisano Housing Redevelopment Corporation.
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.

All persons who have a property interest in this report hereby acknowledge that TDHCA may publish the full report on the TDHCA website, release the report in response to a request for public information and make other use of the report as authorized by law.

Introduction
The Developer is preparing an application for a Tax Credit Development consisting of 7.3 acres, located along Kenworthy Avenue on the northeast side of El Paso Texas. The proposed development will include 110 units with a combination of 1, 2, 3 and 4 bedrooms, and a club house. There are 56 (1-bedroom) units, 36 (2-bedroom) units, and 18 (3-bedroom units). In addition to the units, the developer is building a common center. The development requires 228 parking spaces and the developer is providing 228 parking spaces to include 10 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 C23299900601000.
General Location of the site

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

*Figure 1: General Location of Site*
Site Location
The site is bound by vacant land on the west, east and south side, and Kenworthy Avenue along the northwest and north side. Kenworthy, A Public Street will provide access to the site. There is a drainage channel along the south and east property line.

Figure 2: Site Location
Site Description
  Platting Determination & Physical Boundary
  The site is not subdivided. The legal description is Portion of Lot 2, Block 6, Castner Range, El Paso, El Paso County Texas. There will not be a need to replat the site. The site is owned by the same entity and is already subdivided.

Zoning and Proposed Uses:
  The site is zoned A-O-C, Apartment – Office, which permits such development. There will not be a need to rezone. There is a zoning contract associated with this designation. A Copy of the contract is included in the Appendix Section. The following exhibit is obtained from the City of El Paso Zoning Map.

![Map of the site showing zoning designation](image)

*Figure 3: Zoning Designation*

The zoning contract dated March, 1, 2011, Ordinance No. 017504 requires the following conditions:
An Ordinance Changing The Zoning Of Lot 2, Block 6, Castner Range Unit One, City Of El Paso, El Paso County, Texas From R-4 (Residential) To A-0 (Apartment-Office). The Penalty Is As Provided For In Chapter 20.24 Of The El Paso City Code.

Now Therefore, Be It Ordained By The City Council Of The City Of El Paso:

1. That the zoning of Lot 2, Block 6, Castner Range Unit One, City of El Paso, El Paso County, Texas, be changed from R-4 (Residential) to A-0 (Apartment-Office), within the meaning of the zoning ordinance, and that the zoning map of the City of El Paso be revised accordingly.

2. Further, that the property described above be subject to the following condition which is necessitated by and attributable to the increased density of use generated by the change of zoning in order to protect the health, safety and welfare of the adjacent property owners and to provide adequate and safe access for emergency vehicles and the residents who will reside within the property described above:

   That no building permits shall be issued for the above described property until a roadway bridge has been constructed over the Northgate Outlet Channel and no certificates of occupancy shall be issued for the property described above until Stahala Improvements have been inspected and approved by the City.

3. The effective date of this Ordinance shall be April 26, 2011. Provided however, the City Council retains its legislative authority to amend or repeal this ordinance as provided by law, including the taking of such action prior to the effective date of this Ordinance. passed and approved this 1st day of March, 2011.
PROPERTY Tax Information and millage rates
The site Parcel (Property) Identification Number is C23299900601000, 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 0.0.843332
2. El Paso County 0.447819
3. University Medical Center 0.251943
4. El Paso Community College 0.140273
5. El Paso Independent School District 1.3100000

The millage rates provided above are based on 100 percent assessed valuation and are expressed per $100 of value: The total tax rate is 2.993367

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 247.33 feet along Kenworthy Drive. The site is 7.3 ACRES acres. There are 2 easements associated with the site.

1. A Proposed access easement over the existing bridge to allow access to the site
2. A proposed access easement from the bridge to the site in the east/west direction.
3. A proposed access easement from the existing Stahala Drive to the site in the east/west direction to allow access off Stahala to the site.
   ➢ The Range Dam bearing line is abutting the southern property line of the site.
   ➢ There is a designated State Archeological landmark located south of the property.
Flood zone
The site is located in Flood Zone C, areas determined to be outside the 100 year flood as per FIRM No. 480214 0019 B dated October 15, 1982.

Figure 7 Flood Zone Designation, Source FEMA Firm Maps.
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 Augustin Association, Del Norte Canutio association and the Pajarito Associations. The first two types of soil are located outside the site.

The Pajarito series consists of deep, pinkish-gray, loamy soils that are calcareous and moderately alkaline. These soils developed on alluvial fans or old terraces. They occur just above the Rio
Grande flood plain and on alluvial fans in intermountain basins in the northern and eastern parts of the county.

The surface of these soils is plane in some areas and is concave in others. Slopes range from less than 1 percent to about 3 percent. The soils are well drained and have moderate permeability in their surface layer and subsoil. Fertility and the available moisture capacity are moderate. Soil blowing and water erosion are hazards in unprotected areas. This horizon ranges from loam to fine sandy loam and has a clay content of less than 18 percent. In some places a bed of gravel occurs at a depth of 36 to 40 inches. Pebbles of limestone or igneous rock, or both, make up 0 to 15 percent of the A and B2 horizons, by volume. In most places these pebbles are coated with caliche.

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 is prepared by CDA Architects, El Paso Texas. The plan materially adheres to all applicable zoning, site development, and building code ordinances.

![Proposed Site Plan](image-url)

Figure 6: PROPOSED SITE PLAN, Source: CDA

The proposed development will include 110 units with a combination of 1, 2, 3 and 4 bedrooms, and a club house. There are 56 (1-bedroom) units, 36 (2-bedroom) units, and 18 (3-bedroom units). In addition to the units, the developer is building a common center. The development requires 228 parking spaces and the developer is providing 228 parking spaces to include 10 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.
Ingress and egress requirements
There will be 1 driveways off the existing bridge on Kenworthy and another one off Stahala St. We recommend coordinating the location of the driveways with the Texas Department of Transportation and the City of El Paso traffic and transportation Department.

The City of El Paso might require the extension of Stahala Drive. Otherwise, a Cul-De-Sac will be required at the end of the street before the proposed driveway to the site starts.
Utilities

Domestic Water

There is an existing eight (12) inch diameter water main. This main continues along Kenworthy Dr. in the east and west direction. The El Paso Water Company will require the extension of this water line to the site. This main is available for main extensions. The El Paso Water will require looping the line.

Sanitary Sewer

There is an existing eight (8) inch diameter sewer main. This main runs in the east west direction along Kenworthy drive. This main is available for main extensions.

Service to the subject Property is anticipated by means of a Sewer main or service lines extension to connect the above-mentioned mains. Depending on the depth of the existing sewer line, additional fill might be required and or encasing the proposed service line might be also required.

The following exhibit shows the location of both water and sewer lines.
Figure 7: EXISTING WATER AND SEWER LINES. Source: El Paso Water.
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. Gas line is available for any additional proposed buildings within this site. The developer will be responsible for any cost associated with construction and permitting of the extension necessary to provide the service if needed. Texas Gas Company encourages submitting the request for service six months in advance prior to construction. For further information, call Claudia Villanueva at (915) 680-7242 or by email: ATCVILLANUEVA@TXGAS.COM

Figure 8 : LOCATION OF EXISTING GAS MAIN LINE
Off Site Requirements

The off-site costs consist of constructing sidewalks along Kenworthy and on the proposed driveways, and extending the water, sewer line and gas 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, Sewer and gas Utilities</td>
<td>500</td>
<td>LF</td>
<td>$300</td>
<td>$15,000</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 driveways</td>
<td>334</td>
<td>SY</td>
<td>$30.00</td>
<td>$10,020</td>
</tr>
<tr>
<td>Extend roads for access</td>
<td>1,000</td>
<td>LF</td>
<td>$160</td>
<td>$160,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>$239,000</strong></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.

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 $V=ARC/12$

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 2.6 acre feet. This volume does not include the volume of silt nor the emergency factor.

The volume required for emergency and silt is $0.012 \times \text{area} = 0.11$ acre feet

The total required volume for storage is 2.6876 acre feet.

Using a spreadsheet 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 25000 square feet is needed to retain the developed storm water. The pond dimensions are 119’ x 206’ and 10 feet deep with a 15-foot service road around the perimeter.

The results are tabulated on the following spreadsheet.
### RECTANGULAR POND DESIGN

**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.

#### Required Pond storage

<table>
<thead>
<tr>
<th>Column</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>7.3</td>
</tr>
<tr>
<td>C</td>
<td>0.95</td>
</tr>
<tr>
<td>R</td>
<td>4.25</td>
</tr>
</tbody>
</table>

#### CALCULATIONS

- **A-ft:** 2.456146

#### Pond side slopes

<table>
<thead>
<tr>
<th>H</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>3</td>
</tr>
</tbody>
</table>

- **A bot:** \(x \times y = 3 \times x^2\)

#### Ponding Area Utilized

- **Freeboard:** 1
- **Waterdepth:** 9
- **Depth:** 10

#### Pond Shape Desired

- **Ratio of x to y:** 1
- **Quadratic coef:** 6 \(x^2\)

#### Area of Pond Required

- **A-ft / ft depth:** 0.272905
- **Acres:** 547283.8

#### TERMS OF THE QUADRATIC

- **\(b^2 - 4ac\):** 547283.8
- **\(\sqrt{b^2 - 4ac}\):** 738.7863
- **\(-b\):** -216
- **\(-20859.5\):** -216

#### RESULT

<table>
<thead>
<tr>
<th>(x)'</th>
<th>numerator1</th>
<th>523.7863</th>
</tr>
</thead>
<tbody>
<tr>
<td>(y)'</td>
<td>numerator2</td>
<td>-955.786</td>
</tr>
<tr>
<td>(x_1)</td>
<td>43.64886</td>
<td></td>
</tr>
<tr>
<td>(x_2)</td>
<td>-79.6489</td>
<td></td>
</tr>
</tbody>
</table>

#### Check

- **Vol supplied depth:** 9
- **Area bot:** 5716
- **Area top:** 19791
- **Area avg:** 12754
- **Vol supplied: 114782 ft^3**
- **Vol supplied: 2.6 acre-ft**

**Area needed for ponding:** 24435.33 Ft^2
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:

This 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: ZONING CONTRACT
ORDINANCE NO. 017537

AN ORDINANCE CHANGING THE EFFECTIVE DATE OF ORDINANCE NO. 017504, WHICH WILL CHANGE THE ZONING OF LOT 2, BLOCK 6, CASTNER RANGE UNIT ONE, CITY OF EL PASO, EL PASO COUNTY, TEXAS FROM R-4 (RESIDENTIAL) TO A-O (APARTMENT-OFFICE) FROM APRIL 26, 2011 TO MAY 25, 2011. THE PENALTY IS AS PROVIDED FOR IN CHAPTER 20.24 OF THE EL PASO CITY CODE.

WHEREAS, as March 1, 2011, the E Paso City Council approved, with an effective date of April 26, 2011, the rezoning of Lot 2, Block 6, Castner Range Unit One, City of El Paso, El Paso County, Texas, from R-4 (Residential) to A-O (Apartment-Office) subject to conditions that were necessary and attributable to the change in zoning; and,

WHEREAS, due to the lack of the infrastructure necessary to support the increased intensity of the zoning, and in order to allow the property owner time to provide documentation to ensure that such infrastructure would be provided, the effective date of the ordinance was April 26, 2011; and,

WHEREAS, the property owner needs additional time to secure the necessary documentation;

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF EL PASO:

That the effective date of Ordinance No. 017504, dated March 1, 2011, which will change the zoning of Lot 2, Block 6, Castner Range Unit One, City of El Paso, El Paso County, Texas, from R-4 (Residential) to A-O (Apartment-Office), be changed from April 26, 2011 to May 25, 2011.

PASSED AND APPROVED this 19th day of April, 2011.

THE CITY OF EL PASO

John F. Cook
Mayor

ATTERT:

Richarda Duffy Momsen, City Clerk

APPROVED AS TO FORM:

Lupe Cuellar
Assistant City Attorney

APPROVED AS TO CONTENT:

Mathew S. McElroy, Deputy Director
Planning & Economic Development
ORDINANCE NO. 017504

AN ORDINANCE CHANGING THE ZONING OF LOT 2, BLOCK 6, CASTNER RANGE UNIT ONE, CITY OF EL PASO, EL PASO COUNTY, TEXAS FROM R-4 (RESIDENTIAL) TO A-O (APARTMENT-OFFICE). THE PENALTY IS AS PROVIDED FOR IN CHAPTER 20.24 OF THE EL PASO CITY CODE.

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE
CITY OF EL PASO:

1. That the zoning of Lot 2, Block 6, Castner Range Unit One, City of El Paso, El Paso County, Texas, be changed from R-4 (Residential) to A-O (Apartment-Office), within the meaning of the zoning ordinance, and that the zoning map of the City of El Paso be revised accordingly.

2. Further, that the property described above be subject to the following condition which is necessitated by and attributable to the increased density of use generated by the change of zoning in order to protect the health, safety and welfare of the adjacent property owners and to provide adequate and safe access for emergency vehicles and the residents who will reside within the property described above:

That no building permits shall be issued for the above described property until a roadway bridge has been constructed over the Northgate Outlet Channel and no certificates of occupancy shall be issued for the property described above until Stahala Improvements have been inspected and approved by the City.

3. The effective date of this Ordinance shall be April 26, 2011. Provided however, the City Council retains its legislative authority to amend or repeal this ordinance as provided by law, including the taking of such action prior to the effective date of this Ordinance.

PASSED AND APPROVED this 1st day of March, 2011.

THE CITY OF EL PASO

John F. Cook
Mayor

ATTEST:

Richarda Duffy Monsen, City Clerk

SIGNATURES CONTINUE ON FOLLOWING PAGE

ORDINANCE NO. 017504
Zoning Case No: ZON10-00016

#61495 v1 - Planning/ORD ZON10-00016 Rezoning
Document Author: LCUE
APPROVED AS TO CONTENT:

Mathew S. McElroy, Deputy Director
Planning & Economic Development
APPENDIX B: SURVEY
APPENDIX C: UTILITY MAPS
ONE Gas Map

Legend
- Pipe Assignment/Offset
- Non-Controllable Gas Fitting
  - Other
- Gas Valve
  - Street
- Street
- Regulator Station
- Town Border Station
- Rural Tap
- Locate Station
- GRT Tool Point
- Distribution Main by Material
  - Bare Steel, Anode Protected
  - Bare Steel, Rectifier Protected
  - Bare Steel, Undefined Protected
  - Coated Steel, Anode Protected
  - Coated Steel, Rectifier Protected
  - Coated Steel, Undefined Protected
  - PE
  - ABS
  - Cast Iron
  - Copper
  - PVC
  - Wrought Iron
  - Transmission Main
  - Unknown Status
  - High Pressure Distribution - Active
  - High Pressure Distribution - All other statuses
  - Exceptional Deep Main
- Exceptionally Deep Main
- World Street Map
- World Boundaries and Places

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APPENDIX D: ENGINEERING PLAN
The plan materially adheres to all applicable zoning, site development, and building code ordinances. This engineering plan is in the schematic phase and is subject to changes.