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SPECIAL EXCEPTION
Preliminary Development Plan
SE- 21- 26 Date 10/26/2021
Planning & Development Services

PALM TREE DRIVE WELL SITE E-004A

Special Exception
Preliminary Development Package

Palm Tree Drive Well E-004A SCADA Upgrade
Special Exception

Tucson, Arizona 85710

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List of Exhibits

PALM TREE DRIVE WELL SITE E-004A

I. Introduction

This document is submitted on behalf of the City of Tucson Water Department (Tucson Water) as a requirement for a Special Exception application for minor technology improvements to Well E-004A. The site is located south of 22nd Street and west of Harrison Road in the alleyway between Palm Tree Drive and Maple Leaf Drive immediately south of the home located at 9102 East Palm Tree Drive.

The well site occupies an approximately 0.04-acre parcel owned by the City of Tucson and is identified by Assessor's Parcel Number (APN) 136-07-0280. See *Exhibit I.A: Project Location*. It is zoned R-1 (Residence Zone) and located within Township 14, Range 15 East, Section 22.

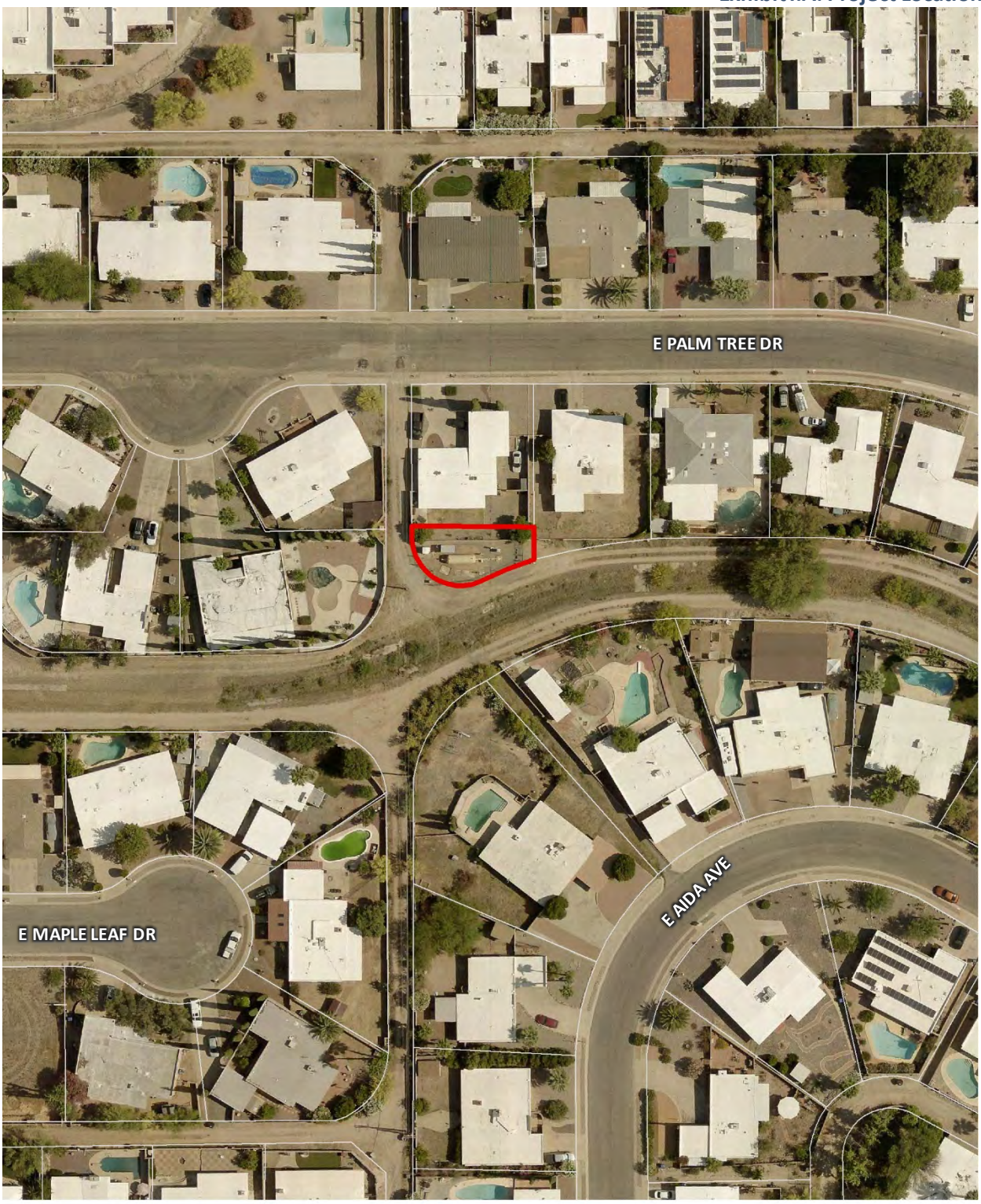
Per the Unified Development Code Section 4.7.4, the proposed utility distribution use is permitted as a special exception use within the R-1 (Residence) zone upon approval from the Zoning Examiner.

A. Background

As part of a long-term water management strategy to improve water quality and delivery services, Tucson Water's Water Quality and Operations Division have been diligently working to install several technology and instrument upgrades to better monitor water service at more than 200 wells, 61 reservoirs, and 266 sampling stations throughout the Tucson Water service area. The Palm Tree Drive Site (Well E-004A) is one of many wells serving as a critical water supply facility within the Tucson Water service area. It requires some upgrades to the existing Supervisory Control and Data Acquisition (SCADA) system which is generally located in the northwestern portion of the site.

The SCADA system is a computerized remote monitoring system that moves water efficiently throughout the community, maintains water pressure, collects water system data, and regulates water monitoring. The upgrades are primarily technology improvements; however, such modifications require adding equipment to the existing well and installing a new shade structure to protect new and existing electrical components. Due to the site's existing zoning and the proposed modifications, it was determined that approval of a special exception was necessary. The new shade structure and the new SCADA system are the only improvements anticipated. No other site modifications are proposed.

Exhibit I.A: Project Location



B. Tucson Water Policy Guidance

Tucson Water has a long-term strategy to improve water system redundancy and upgrade existing infrastructure elements to monitor water service throughout the distribution system. Water supply redundancy is being accomplished by drilling replacement wells within the older Central Well Field System. Substantial capital investment has already been made in replacing the 30-year-old SCADA system. The main central control system hardware and software have already been replaced. The next step involves upgrading the SCADA system capabilities at remote locations, including well sites, booster stations, and reservoirs.

Policy guidance for this work is provided through the (Draft) 2020 Drought Preparedness and Response Plan. Further authorization for completing upgrades to the SCADA system is also provided in the Department's Capital Improvement Plan budgets. In the early 2000s, Tucson Water discontinued pumping non-renewable groundwater resources and converted to renewable Colorado River water resources. This action has been taken to comply with the 1980 Arizona Groundwater Code, which aims to reduce the over-drafting of local aquifers. One of the consequences of over-drafting aquifers is lowering the water table, ultimately rendering older wells inoperable.

C. Conformance with Plan Tucson and Area Plan

The project site is subject to the policies laid forth in the City of Tucson's General and Sustainability Plan, *Plan Tucson,* and the *Pantano East Area Plan*.

1. Plan Tucson

The subject property is within an area designated by *Plan Tucson* as an "Existing Neighborhood." The proposed SCADA upgrade aligns with this designation as it provides a low-impact use in a predominantly residential area. The SCADA system upgrade will allow Tucson Water to continue to provide a safe and sustainable clean drinking water supply for the community. The following policies in *Plan Tucson* support the proposed well site:

- *LT28.1.3 – Improve the appearance of above-ground utilities and structures.*

  A new shade structure will be installed to protect electrical equipment. It will be painted to match the existing shade structure as part of the improvements.

- *LT28.2.12 – Support environmentally sensitive design that protects the integrity of existing neighborhoods, complements adjacent land uses and enhances the overall function and visual quality of the street, adjacent properties, and the community.*

  While the well yard is entirely screened from masonry walls on neighboring properties, the existing chain-link fence that encloses the site will be enhanced with tan vinyl privacy slats to better screen the utility equipment from surrounding neighbors.

Other policies that support the SCADA upgrade include:

- *PI1 – Invest in the highest priority needs to manage and maintain public infrastructure and facilities that are fundamental to economic development and to sustaining and enhancing living conditions in the community;*

- *PI2 – Prioritize major public infrastructure investments in developed areas and for improvements of existing infrastructure; and*

- *PI3 – Expand the use of state-of-the-art, cost-effective technologies, and services for public infrastructure and facilities.*

The proposed improvements to Well Site E-004A conform to the goals and policies outlined in *Plan Tucson* by ensuring that clean water is distributed efficiently and sustainably, and that the equipment is as up-to-date as possible. The SCADA upgrades allow Tucson Water to monitor water pressure and distribution and collect water system data.

2. Pantano East Area Plan

Mayor and Council adopted the *Pantano East Area Plan* on June 28, 1982, to provide policy direction for approximately 11 square miles and 34,000 people on the City's east side. The planning boundary includes all land east of the Pantano Wash to Houghton Road, south of Tanque Verde/Wrightstown Road to Golf Links Road. The subject property is in the south-central portion of the area plan (see *Exhibit I.C.2: Location Within Pantano East Area Plan Boundary*).

The intent of the Pantano East Area Plan is to provide guidelines for future growth while protecting the existing development in the Pantano East Area and determine the effects of new development on existing and future residential areas, the effectiveness of mass transit, the necessity for and timing of infrastructure improvements and capital expenditures, and the development of compatible and viable uses.

Tucson Water's SCADA improvements to the existing well site conform to the *Pantano East Area Plan* through compliance with the following goals and policies:

- *PLAN GOAL: Provide guidelines for future growth while protecting the existing development in the Pantano East Area.*

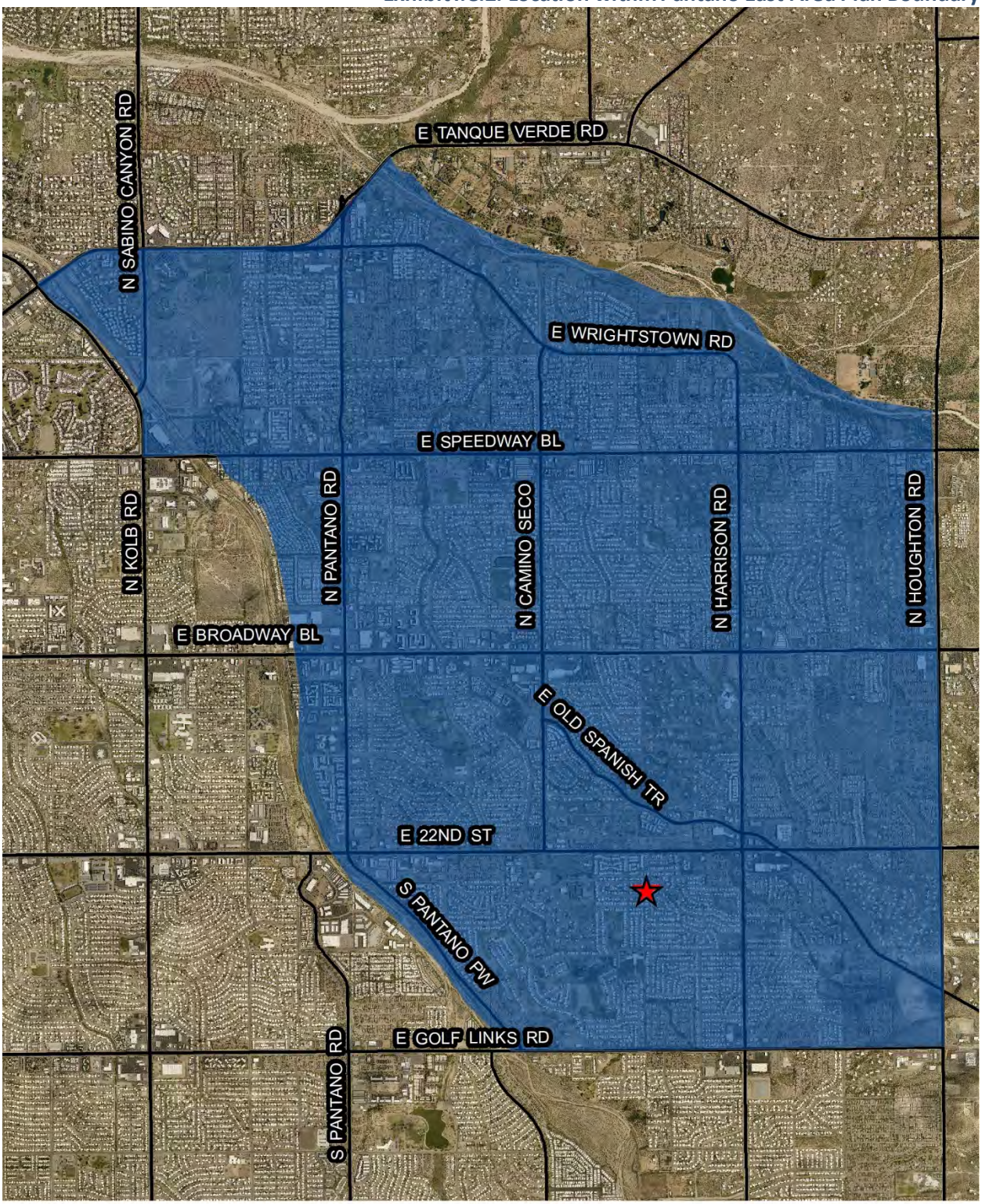
- *Ensure the compatibility of new development with existing land uses.*

Well E-004A has been in use for decades, and its position within the alley south of Palm Tree Drive further minimizes its impacts on surrounding properties. The proposed improvements will not have any impact on surrounding neighbors as the shade structure does not extend beyond the existing masonry walls on the adjacent properties.

D. Conflicts with Adopted City Ordinances or Policy

The proposed utility use does not conflict with the *Pantano East Area Plan* or *Plan Tucson*. The proposed use is permitted by the City of Tucson Unified Development Code pending the approval of the Special Exception application.

Exhibit I.C.2: Location within Pantano East Area Plan Boundary



PALM TREE DRIVE WELL SITE E-004A

II. Site Analysis

A. General Information

1. Project Location

The area subject to this request is a 0.04-acre, city-owned parcel identified by APN 136-070-280. The site is in the Hermosa Highlands neighborhood, south of 22nd Street and west of Harrison Road, in the alleyway between Palm Tree Drive and Maple Leaf Drive (See *Exhibit I.A: Project Location*).

2. On-site and Adjacent Land Uses

As demonstrated on *Exhibit II.A.2.a: Existing Conditions*, the site contains the following:

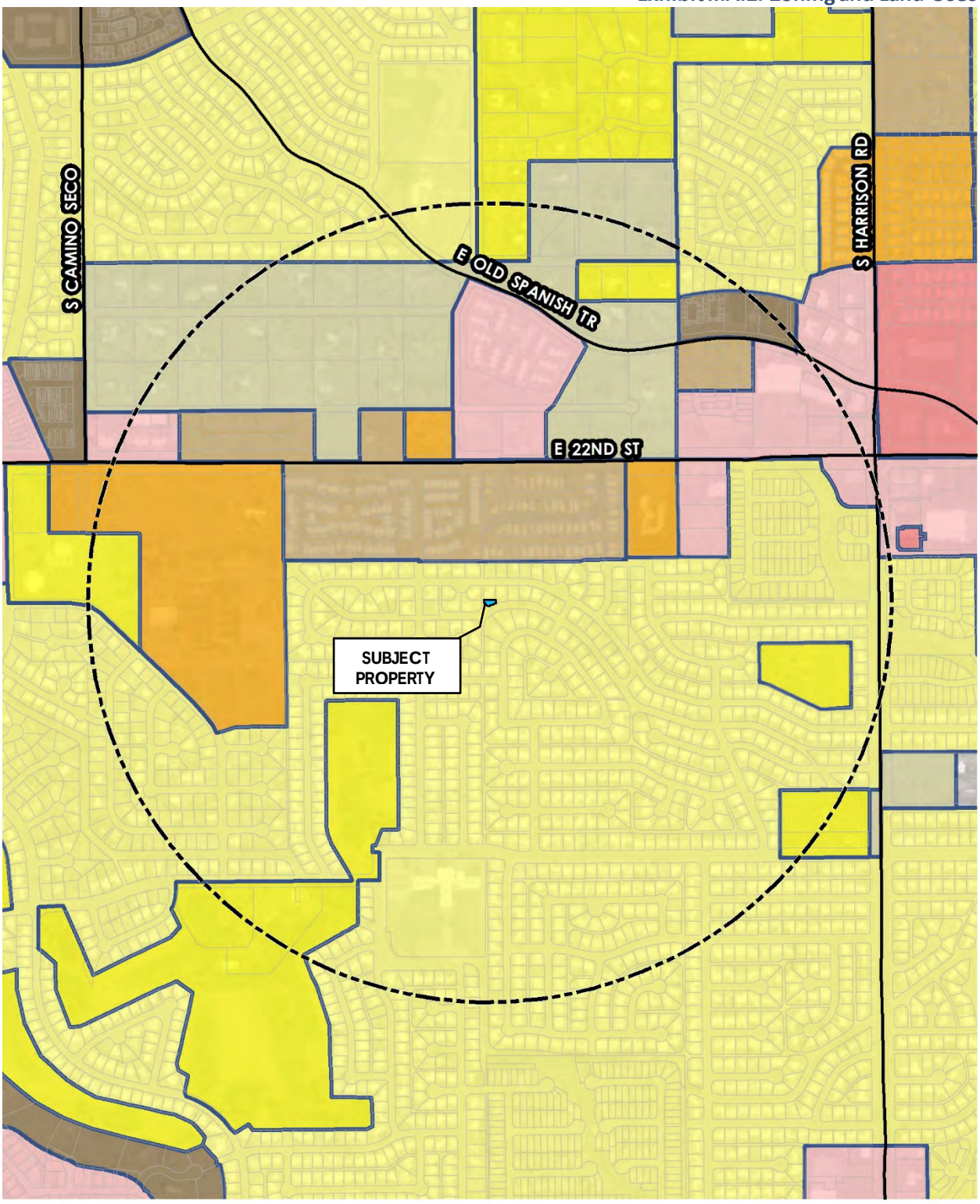
- Well E-004A;
- Electric control components;
- Communication antenna (20 feet in height);
- Shade structure (9 feet in height) about 2 feet from the north property line
- Chlorine building (6 feet in height)
- Chain-link fence with barbed wire (7 feet in height)
- 5000-gallon discharge tank;
- Piping and other necessary equipment to properly function the well.

The site and adjacent properties are zoned R-1 (Residence Zone). Single-family, medium-density homes surround the property. Only one residential parcel directly abuts the well property to the north. A 6-foot masonry wall on the neighboring property screens the well yard.

Refer to *Exhibit II.A.2.a: Existing Conditions*, *Exhibit II.A.2.b: Zoning and Land Uses*, *and Exhibit II.E: Site Photos*.

Exhibit II.A.2.a: Existing Conditions

Exhibit II.A.2: Zoning and Land Uses



B. Circulation & Trips

The site subject to this request is in the alleyway south of East Palm Tree Drive and east of South Oak Park Drive, which are minor local roads. 22nd Street is the nearest arterial street that lies approximately 0.2 miles to the north. Palm Tree Drive and Oak Park Drive are both two-lane roads with right-of-way widths of 50 feet each. Both streets feature sidewalks and do not have curbs or striping.

Primary ingress/egress is from Palm Tree Drive via an existing curb cut and alleyway. Vehicular access to the well yard is provided through a locked 12-foot vehicular access gate on the yard's eastern border. A 3-foot pedestrian gate is also located on the western side of the well site. These access points will remain in their current configuration.

C. Cultural Resources

The well site has been in use for decades, with numerous improvements and maintenance occurring over time. It is unlikely that any significant cultural resources are present on the site.

D. Hydrology & Drainage

The site has been entirely graded, and the internal yard has been covered with gravel to prevent erosion. The subject property is not located within the FEMA 100 year floodplain, nor does it contain any drainageways subject to the Environmental Resource Zone (ERZ) provisions, Watercourse Amenities, Safety, and Habitat (WASH) ordinance, or erosion hazard setback areas.

E. Views

A combination of chain-link fence and block wall (on neighboring property) entirely encloses the well yard. The chain-link fence is 6-foot in height and topped with an additional 1-foot barb wire for security purposes. This fence surrounds three sides of the well yard. The wall on the north side is 6 feet in height and built of 4-inch tan concrete blocks to screen the well yard from the adjacent residence. Additionally, the well yard is situated on the north bank of the Robb Wash within an alleyway south of Palm Tree Drive and will continue to have very little impact on the surrounding views.

Two on-site structures extend above the wall/fence, the communications antenna (approximately 20 feet high) and the shade structure over the electrical control panel (approximately 9 feet high).

The only proposed change to the existing screening is the addition of tan privacy slats in the existing chain-link fence to improve the aesthetic appeal of the well site. With such minimal alterations to the site, the improvements will have little to no view impacts. See *Exhibit II.E: Site Photos*.

Exhibit II.E: Site Photos

Exhibit II.E: Site Photos (continued)

Exhibit II.E: Site Photos (continued)

PALM TREE DRIVE WELL SITE E-004A

III. Plan Proposal

A. Site Layout

As demonstrated in *Exhibit III.A: Preliminary Development Plan (PDP)*, the proposed improvements consist of adding tan privacy slats to the existing chain-link fence, constructing an additional shade structure to protect the existing electrical control panel, repairing or replacing existing equipment, and installing SCADA upgrades.

Shade Structure

A shade structure currently covers one of the two electrical control stations. This plan proposes installing a similar shade structure over the second panel to protect it from the elements. The new shade structure will be 9 feet and designed and setback similar to the existing shade structure.

Screening

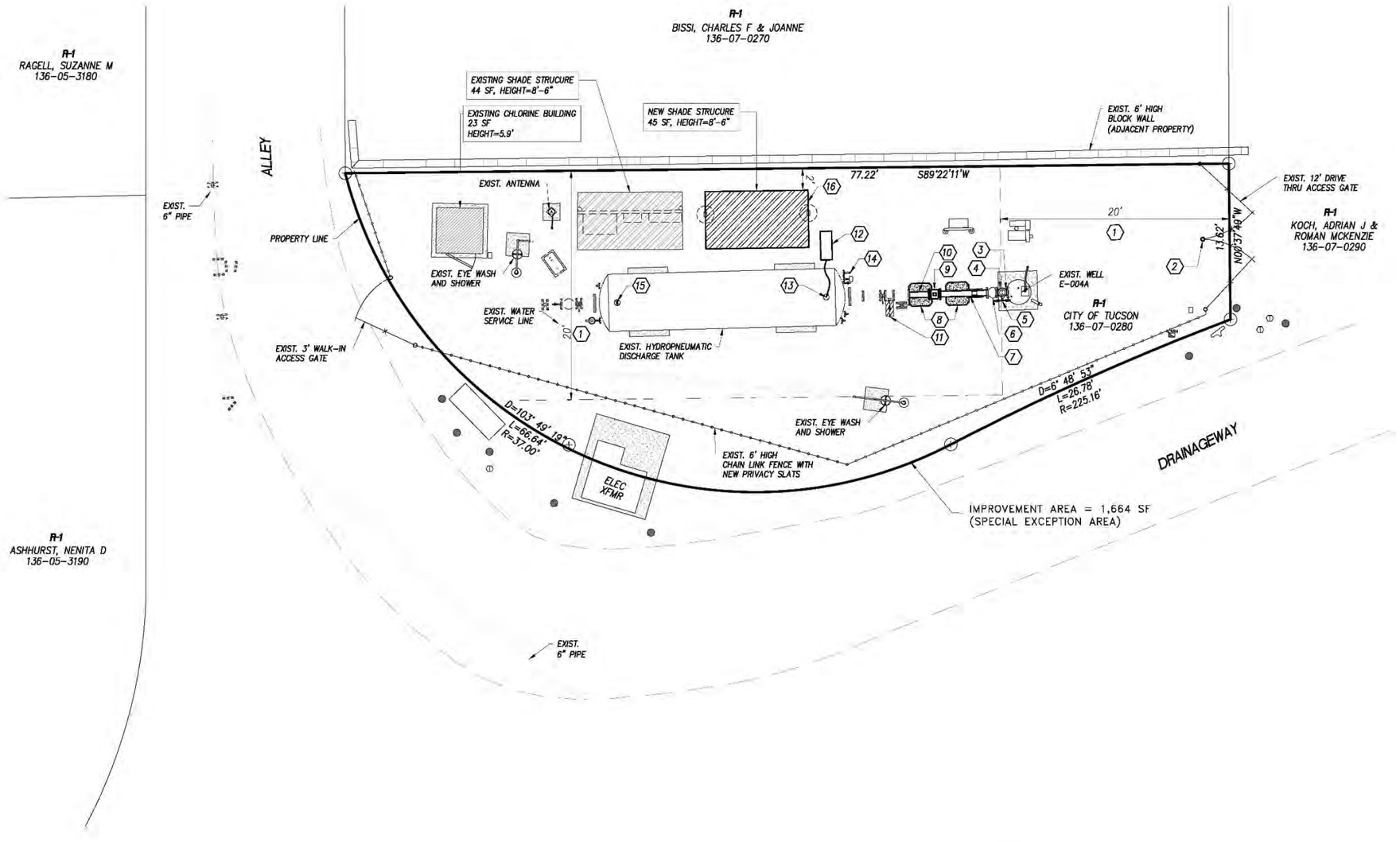
The site is bordered by a combination of chain-link fencing with barbed wire on three sides of the well yard and a 6' block wall exist on the neighboring property line to the north. The existing chain link fence will be refreshed with tan vinyl privacy slats. The block wall and chain-link fencing serve to keep people out of the well yard as well as to screen neighboring views of the well. The well's secluded nature also mitigates visual impacts on neighbors, eliminating the need for additional screening beyond what is currently existing on-site.

Circulation

Tucson Water technicians will enter the site through the existing vehicular gate on the eastern border of the well yard and the pedestrian access gate on the western border of the yard to service the equipment as necessary. On-site parking is provided for technicians, eliminating the need for on-street parking.

Vehicle Access Gate (To Remain)

Exhibit III.A: Preliminary Development Plan



SITE KEYNOTES ⬡

1. PERIMETER YARD: 20' PER UDC SECTION 6.4.5.C.1.a
2. EXISTING GATE POST HOLE TO BE REPLACED WITH GATE MUSHROOM STOP
3. NEW 6" STANDARD STEEL SPOOL PIECE (S.S.S.P.)
4. NEW 2" COMBINATION AIR VALVE FOR HIGH FLOW-NON SLAM
5. NEW 3/4" TEST BIBB AND 3/4" HOSE BIBB W/VACUUM BREAKER ASSEMBLY
6. RE-LOCATED EXISTING 6" CHECK VALVE
7. NEW 6" S.S.S.P., WITH FLEX COUPLING & HARNESS ASSEMBLY
8. NEW PIPE SUPPORT AND CONCRETE BASE
9. NEW 6" MAGNETIC FLOW METER
10. NEW 6" S.S.S.P.
11. NEW CHLORINE INJECTION CONTAINER BOX
12. NEW PRESSURE CONTROL ASSEMBLY
13. NEW HYDRAULIC HOSE CONNECTION
14. NEW SIGHT GLASS ASSEMBLY
15. NEW POP SAFETY PRESSURE RELIEF VALVES
16. NEW SHADE STRUCTURE

SITE
SCALE: 1"=5'
5 0 5 10

SITE PLAN
DEVELOPMENT PACKAGE
FOR
WELL SITE E-004A
SCADA UPGRADE

A PORTION OF THE NORTHEAS QUARTER OF THE NORTHWEST QUARTER
SECTION 22, T 14 S, R 15 E, G&SRM,
CITY OF TUCSON, PIMA COUNTY, ARIZONA

B. Design Compatibility

This Special Exception request upgrades the well's SCADA system and installs a new shade structure to protect an existing electric control panel. While individual well components may be replaced or added, the overall site layout maintains its current configuration and preserves existing screening and configuration of the site. The proposed shade structure is the north-central portion of the well yard next to the existing shade structure and electrical controls. The new shade structure will be constructed of similar materials as the existing shade structure and be similar in size, approximately 9 feet in height and covering 45 square feet.

1. Applicable Use-Specific Standards

The proposed utility distribution system is appropriate within the R-1 zone when special consideration is given to minimize the adverse impacts of the use on adjacent properties. The following lists the applicable use-specific standards as required by the UDC for utility distribution systems in the R-1 zone and demonstrates how the SCADA control building meets the intent of all applicable use-specific standards outlined in UDC Section 4.9.11.A.1, .2, .5, .8, .9, and .11.

- ***Use Specific Standard 4.9.11.A.1****: The setback of the facility, including walls or equipment, shall be 20 feet from any adjacent residential zone*.

  Exhibit III.A: Preliminary Development Plan demonstrates that the new shade structure will be located on the well yard's northern boundary. Due to the well site's configuration and placement within the neighborhood, 20-foot setbacks are not feasible. We respectfully ask for an exemption from Use Specific Standard 4.9.11.A.1. The existing well and associated equipment will remain in the same configuration as they have been for decades though some pieces may be replaced or added onto as part of the SCADA upgrade. The existing fences, and wall will also remain and mitigate the well site's impact on neighbors.

- ***Use-Specific Standard 4.9.11.A.2****: Where a facility is not enclosed within a building, the surrounding screen shall be used as the building wall for the purposes of setbacks.*

  As demonstrated in ***Exhibit III.A: Preliminary Development Plan***, the well yard is enclosed by chain-link fencing and a block masonry wall on the northern border. The SCADA system will be entirely contained within the well yard. Due to the well's current location and the configuration of the associated equipment, the 20-foot setbacks for the wall/fence cannot be met from the northern property line. The well site shares a wall with the neighboring property to the north and has since its initial construction. Both the wall and chain-link fence will remain unaltered by the SCADA Upgrade.

- ***Use-Specific Standard 4.9.11.A.5****: The use shall not have any service or storage yards.*

  No permanent service or storage yards are proposed with this special exception application.

- ***Use-Specific Standard 4.9.11.A.8****: Any building housing such facility shall be in keeping with the character of the zone in which it is located. The Design Review Board (DRB) shall review all applications and make recommendations to the Zoning Examiner. The DRB shall review architectural style, building elevations, materials on exterior facades, color schemes, new mechanical equipment locations, light of outdoor areas, window locations and types, screening, landscaping, vehicular use areas, and other contributing design features.*

  If deemed necessary, a DRB application will be submitted to ensure the shade structure design is compatible with the surrounding neighborhood.

- ***Use-Specific Standard 4.9.11.A.9****: The use shall be located wholly within an enclosed building or within an area enclosed on all sides with a masonry wall or compact evergreen hedge, not less than six feet, nor more than ten feet, in height.*

  Exhibit III.A: Preliminary Development Plan demonstrates that the SCADA Upgrade and new shade structure will be located within the well yard and enclosed by the existing block wall on the neighboring property to the north and chain-link fence.

- ***Use-Specific Standard 4.9.11.A.11****: The use shall be limited to water pumping and storage facilities, telephone exchanges, and power substations with an input voltage no greater than 138 kilovolts.*

  The improvement area and entire well site are solely used for water pumping and distribution facilities. No other uses are proposed.

2. Building Setbacks

Exhibit III.A: Preliminary Development Plan shows that the proposed shade structure will be set back approximately two feet from the property line due to the previous configuration of the site. The existing well equipment and structures will remain in their current configuration. The existing wall and fencing around the well yard will minimize any impacts on the neighbors created by the new structure.

3. Transition of Building Heights

The proposed shade structure will be approximately 9 feet tall and located next to the existing shade structure on the northern side of the well site. The new shade structure will be constructed with similar materials as the existing shade structure on-site. The location and materials of the new shade structure ensure it will blend in with the existing shade structure and minimally impact neighboring views.

4. Landscaping & Screening

The existing perimeter wall will remain unaltered while new tan vinyl privacy slats will be added to the existing chain-link fence. These elements screen neighboring views while maintaining neighborhood character.

5. Vehicular Use Areas

The well site accommodates the minimum parking standards outlined in UDC Section 7.4.4. The Utilities Use Group requires one (1) parking space per 500 square feet of Gross Floor Area (GFA), with a minimum of two (2) parking spaces per facility. The well yard provides space for one parking spot within the enclosed fence. Space adjacent to the well yard within the alley and along Palm Tree Drive may be used for additional parking.

C. Post-Development Hydrology

The new shade structure is the only new impervious surface proposed. Runoff from such a small structure, approximately 45 square feet, will be minimal and contained on-site. The site's natural drainage condition will remain in its current state with no adverse impacts created by the proposed improvements.

D. Utilities

All utilities necessary for the well to properly functionality currently exist on the property.