

# CHERRY AVENUE WELL B-010B

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## SPECIAL EXCEPTION



**PRELIMINARY DEVELOPMENT PACKAGE**

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# Cherry Avenue Well B-010B SCADA Upgrade Special Exception

2745 North Cherry Avenue  
Tucson, Arizona 85719

*Submitted to:*

**City of Tucson**  
**Planning & Development Services Department**  
201 North Stone Avenue  
Tucson, Arizona 85701

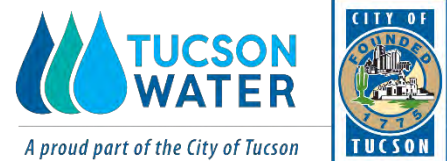
*Prepared for:*

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**February 2021**



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## SPECIAL EXCEPTION



### I. INTRODUCTION

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This document is submitted on behalf of the City of Tucson Water Department (Tucson Water) as a requirement for a special exception and design review board applications for minor technology improvements to the Cherry Avenue Well Site (Well B-010B) located at 2745 North Cherry Avenue. The site is west of North Cherry Avenue, approximately 250' south of East Glenn Street next to Salpointe Catholic High School.

The well site occupies a roughly 0.43-acre parcel, zoned R-2 (Residence), located within Township 13 South, Range 14 East, Section 31, and identified by Assessor Parcel Number (APN) 113-10-0020 (see *Exhibit I: Project Location*). The City of Tucson owns the property.

In accordance with Unified Development Code Section 4.7.4, the proposed utility distribution use is permitted as a special exception use within the R-2 (Residence) zone, upon approval from the Zoning Examiner.

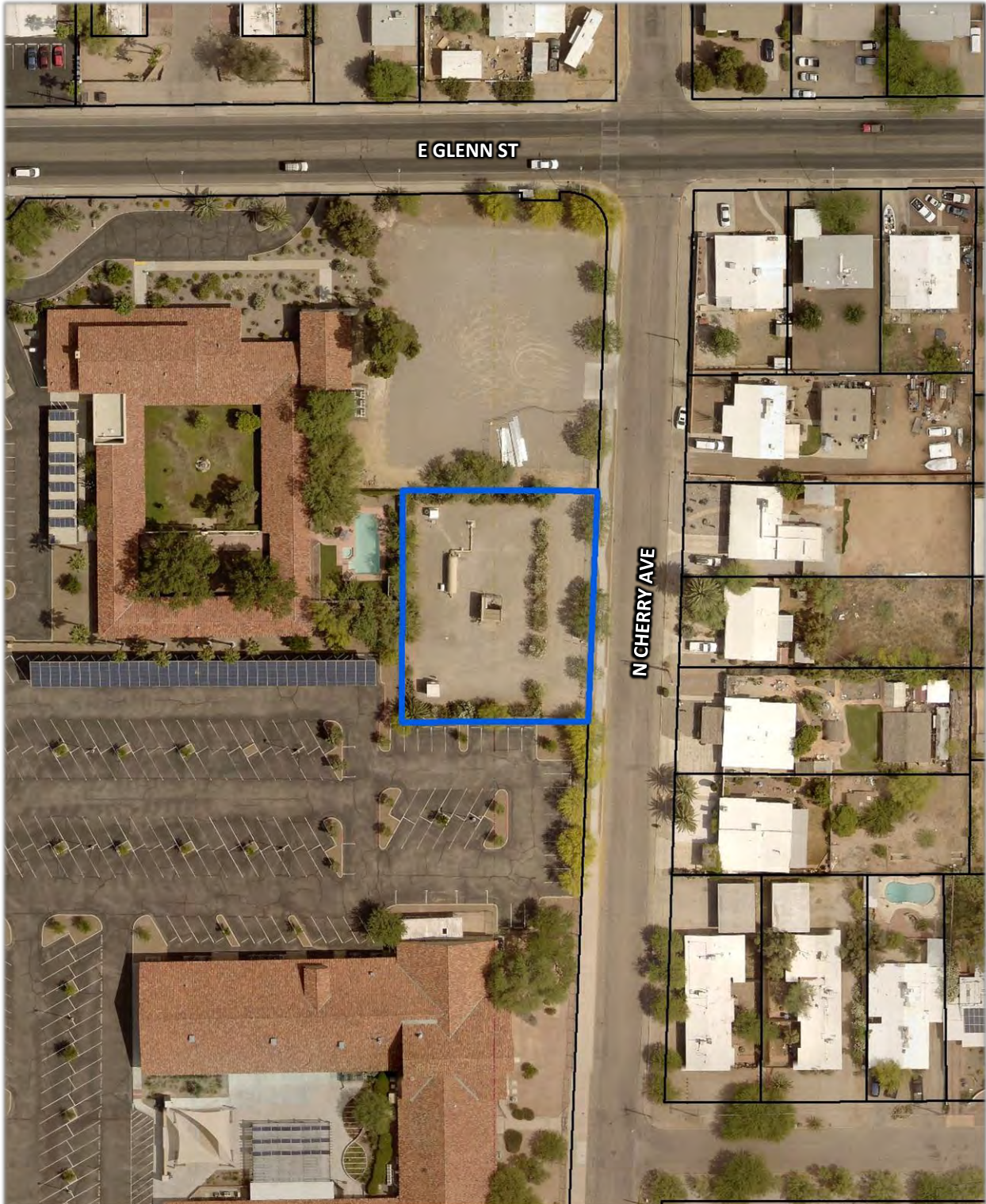
### **A. Background**

As part of a long-term water management strategy to improve water quality and delivery services, Tucson Water's Water Quality and Operations Division has 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 Cherry Avenue Site (Well B-010B) is one of the 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 currently housed in a partially enclosed structure in the central 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 reconfiguring the control structure to house the new technology. Due to the site's existing zoning and the proposed modifications, it was determined that approval of a special exception was necessary. Aside from modifying the control structure, installing a concrete pad and collapsible ladder to access the well pump, replacing the communication antenna, and installing the new SCADA system, no other site modifications are proposed.




Exhibit I: Project Location



**Legend**

 Subject Property (0.43 acres)

 Parcels



0 25 50 100  
1 Inch = 100 feet

File Name: B-010\_location\_6x8  
Source: Pima County GIS 2020



## B. Tucson Water Policy Guidance

Tucson Water has a long-term strategy to improve water system redundancy and upgrade existing infrastructure elements to better 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 in the process 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 the completion of 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 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 *Cragin-Keeling Area Plan*.

### 1. Plan Tucson

The subject property is located within an area designated by *Plan Tucson* as an "Existing Neighborhood." The proposed SCADA upgrade aligns with this designation as it continues to provide 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.*

As part of the improvements, the existing control structure will be modified to accommodate a new shade structure. The existing structure will retain the existing walls. The structure will cover the entire footprint and protect the SCADA system, electrical panels, and communication equipment. These modifications will enhance the functionality and appearance of the utility use.

- *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.*

Existing landscape material will remain in place and continue screening 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.*

## **2. Cragin-Keeling Area Plan**

Mayor and Council adopted the *Cragin-Keeling Area Plan* on March 12, 1990, to guide future development. The plan boundary includes the area bounded by Country Club Road to the east, Grant Road to the south, Stone Avenue to the west, and Fort Lowell Road to the north, except for a section in the northwest corner where Prince Road between Stone Avenue and 1st Avenue constitutes the northern boundary. Grant Road and Country Club Road are the major cross streets nearest to the site (see *Exhibit I.C.2: Location Within Area Plan Boundary*).

The Cragin-Keeling Area Plan intends to establish future land use and development direction sensitive to the existing neighborhoods. Critical to the *Cragin-Keeling Area Plan* is the recognition that a 'one-size, fits all' approach does not always produce meaningful results for the neighborhoods; thus, development flexibility is appropriate so long as the intent of the plan is met, and adverse impact is reduced (refer to page 20 of the area plan).

Tucson Water's SCADA improvements to the existing well site conform to the *Cragin-Keeling Area Plan* by:

- Maintaining the existing screening to minimize the visual impact on neighboring properties;
- Preserving perimeter landscape and fencing;
- Protecting existing view corridors of the mountains; and
- Minimizing impact to the surrounding community by reusing existing structures to house equipment upgrades.

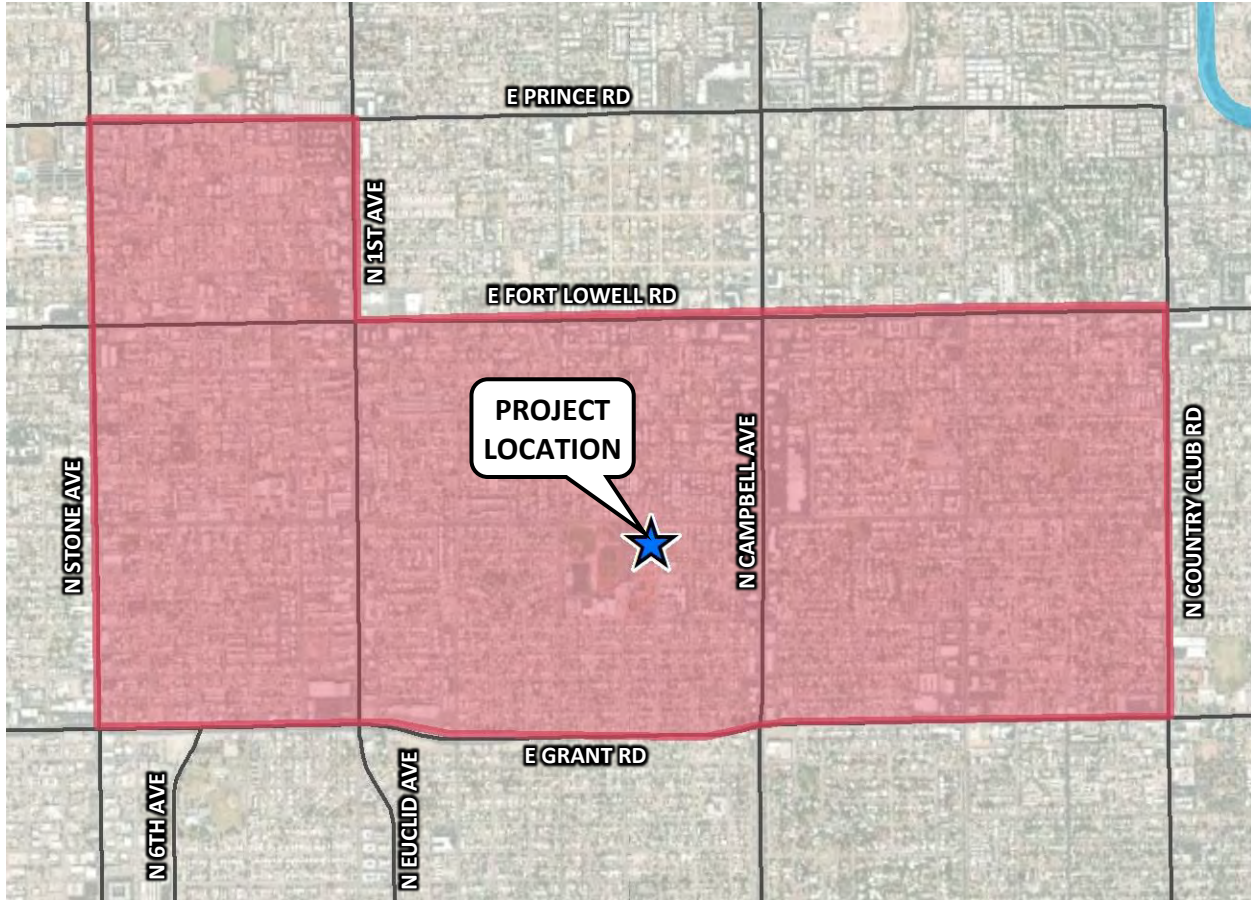
## **D. Conflicts with Adopted City Ordinances or Policy**

The proposed utility use does not conflict with the *Cragin-Keeling 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 Area Plan Boundary



**Legend**

 Project Location

 Major Street

 Cragin-Keeling Area Plan



0 625 1,250 2,500

1 inch = 2,500 feet

File Name: B-010\_area\_plan\_6x8  
Source: Pima County GIS 2020



# CHERRY AVENUE WELL B-010B

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## SPECIAL EXCEPTION



## II. SITE ANALYSIS

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## A. General Information

### 1. Project Location

The area subject to this request is a 0.43-acre property located at 2745 North Cherry Avenue, identified by APN 113-10-0020. The site is west of Cherry Avenue, approximately 250' south of East Glenn Street, next to Salpointe Catholic High School (see *Exhibit I: Project Location*).

### 2. On-site and Adjacent Land Uses

As demonstrated on *Exhibit II.A.2.a: Existing Conditions*, the 0.43-acre site contains the following:

- Two wells (B-010A, decommissioned and capped; B-010B, currently in use)
- Control Structure (to be modified)
- Communication antenna (20' in height)
- Sanitation system
- Environmental monitoring building (not in use)
- A chain-link fence topped with barbed wire
- Piping and other necessary equipment to properly function the well.

Primary ingress/egress the site is from the southeast corner of the property through locked vehicular access gates. The access point will remain in its current configuration.

Salpointe Catholic High School surrounds the north, south, and west property boundaries. A gravel parking lot borders the northern property boundary. The school's monastery is located immediately to the west of the site. A parking lot south of the property serves the monastery, students, and faculty.

The properties east of the site, across North Cherry Avenue, are medium-density single-family homes zoned R-2 (Residence). Further to the north, across East Glenn Street, properties are also zoned R-2 with a mixture of single-family and multi-family residences.

Refer to *Exhibit II.A.2.b: Site Photos* and *Exhibit II.A.3.c: Zoning and Land Uses*.

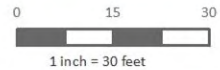


Exhibit II.A.2.a: Existing Conditions



**Legend**

- Subject Property (0.43 acres)
- Existing Structures
- Parcels



File Name: B-010\_location\_6x8  
Source: Pima County GIS 2020



Exhibit II.A.2.b: Site Photos



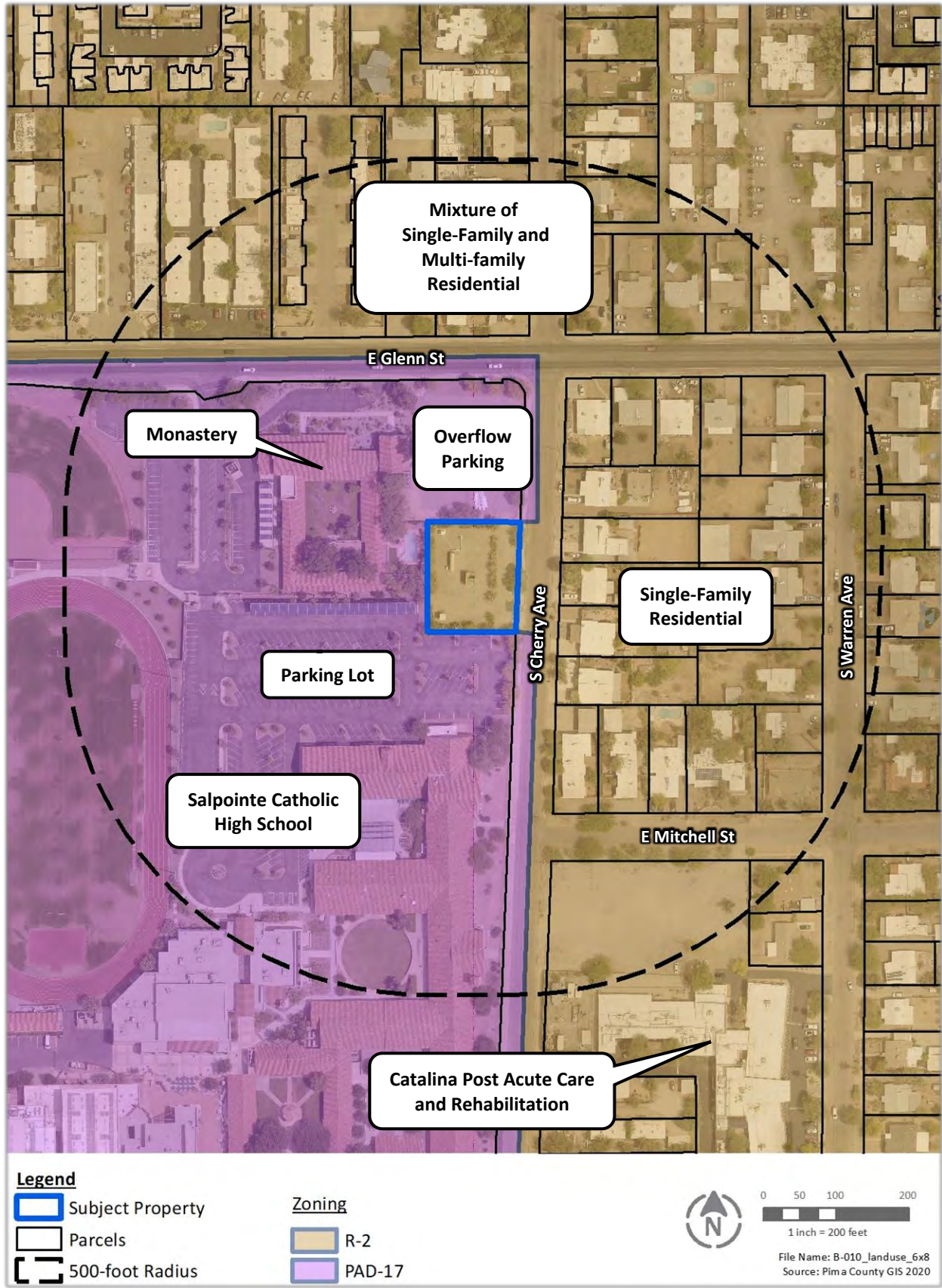
Exhibit II.A.2.b: Site Photos (continued)



Exhibit II.A.2.b: Site Photos (continued)



Exhibit II.A.2.c: Zoning and Land Uses





**B. Circulation & Trips**

Cherry Avenue is a minor local road. It has a right-of-way width of 58' and consists of two travel lanes, one in each direction with on-street parking allowed on the west side. Vertical curbing is present on both sides, but the sidewalk only exists on the street's west side. Landscape trees and decorative rock lay between the sidewalk and the property fence along the western street frontage. The speed limit is twenty-five miles per hour.

City of Tucson Major Streets and Routes (MS&R) Plan identifies Glenn Street as a collector street with a right-of-way width of 64' and consists of two vehicular travel lanes in each direction and a center turn lane. The speed limit is 30 miles per hour. The segment of Glenn Street north of the property has curbs, gutters, sidewalks, and landscaping. Bicycle lanes are on both sides of the street. Pedestrian crossings and ADA ramps are present at the intersection of Glenn Street and Cherry Avenue.

Primary ingress and egress will continue from Cherry Avenue utilizing the existing vehicular access gates at the southeast property corner. Given that the proposed use generates no traffic except for trips generated as a result of routine maintenance, there will be no impact on the surrounding street network.

**C. Cultural Resources**

Given the well site has been used for decades, with numerous improvements and maintenance occurring over time, it is unlikely any cultural resources of significance exist on the site.

**D. Hydrology & Drainage**

The site was entirely graded. A small (24 square-foot) concrete slab supporting new well equipment is the only new impervious surface proposed as part of the SCADA upgrade. The proposed modifications to the existing control structure include a new concrete slab and shade structure. These elements will occupy the same footprint as the current control structure. Therefore, the site's natural drainage conditions will remain as they exist today.

The subject property is outside of a 100-year floodplain. It does not 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 6' chain-link fence runs along the property boundary and encloses the well site. One foot of barb wire tops the fence for security purposes. An existing building, control structure, and communication antenna extend above the height of the perimeter fence. Landscape vegetation, consisting of evergreen shrubs and trees, screen the site from neighboring views.



# CHERRY AVENUE WELL B-010B

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## SPECIAL EXCEPTION



### III. LAND USE PROPOSAL

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**A. Site Layout**

This special exception request is for a 0.43-acre site at the existing Tucson Water Well B-010B located at 2745 North Cherry Avenue. The proposed utility distribution is permitted as a Special Exception use in the existing R-2 (Residence) zone and requires a Zoning Examiner Special Exception Procedure, per Section 3.4.3. of the Unified Development Code.

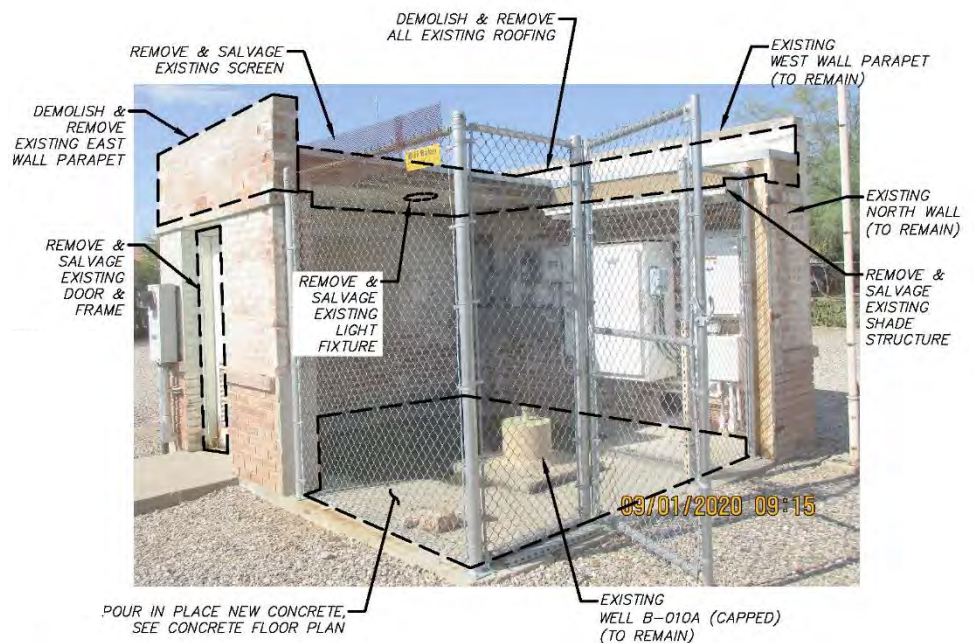
As demonstrated in Exhibit III.A: Preliminary Development Plan (PDP), the proposed improvements consist of equipment upgrades, replacing the communications antenna, and modifying the existing control structure to house an upgraded SCADA system. The control building and antenna are near the center of the site and set back over the required 20' from the eastern property line.

**Communications Antenna**

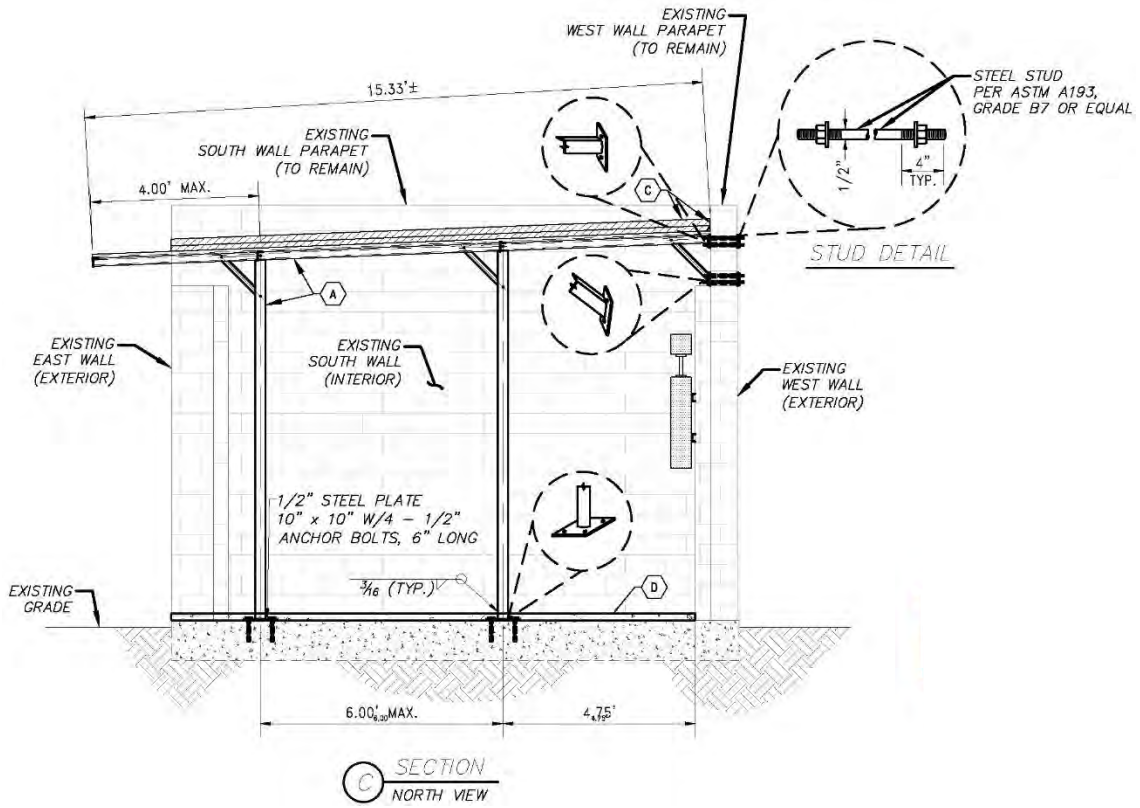
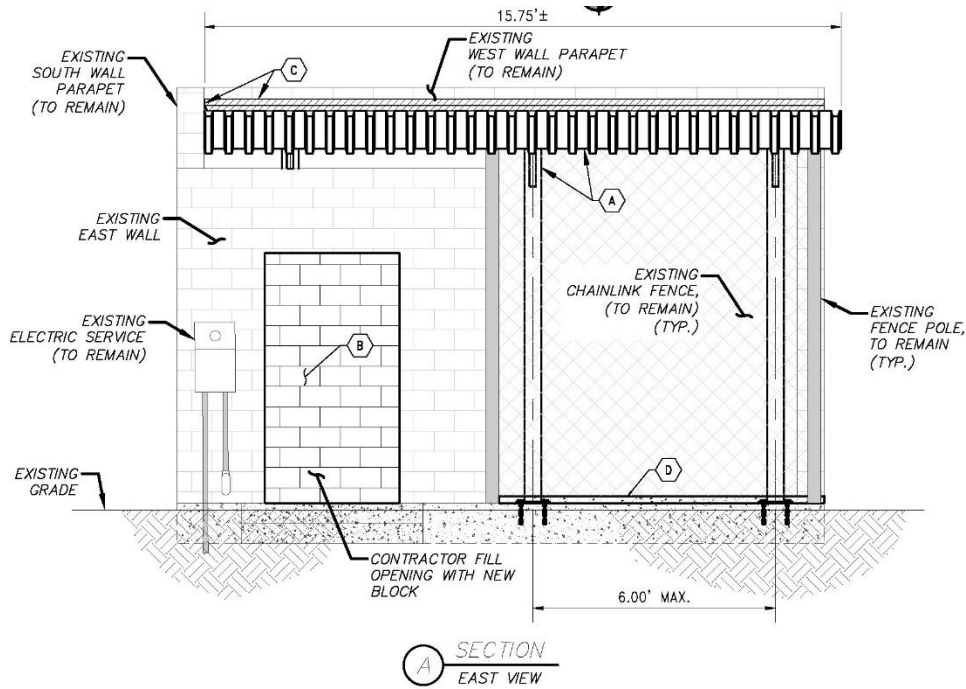
A new antenna will replace the current one and utilize the existing, approximately 20' high antenna mast next to the control structure. The new antenna will be similar in size and form to the current one and will not impact neighbors.

**Control Structure**

Brick walls enclose the structure on three sides, with a chain-link fence and gate on the fourth side. The structure is open to the sky except for a small roof that covers half of it. The proposed modifications will remove the existing roof, reduce the brick parapet wall height, and cover the entire structure with a new metal shade structure, approximately 244 square feet. The new shade structure will protect the well and electrical control equipment from the elements. The photo to the right, from the preliminary construction plans, depicts the current configuration and proposed modifications. The following images detail integrating the new shade structure.



# Cherry Avenue Well B-010B SCADA Upgrade Special Exception



**Screening**

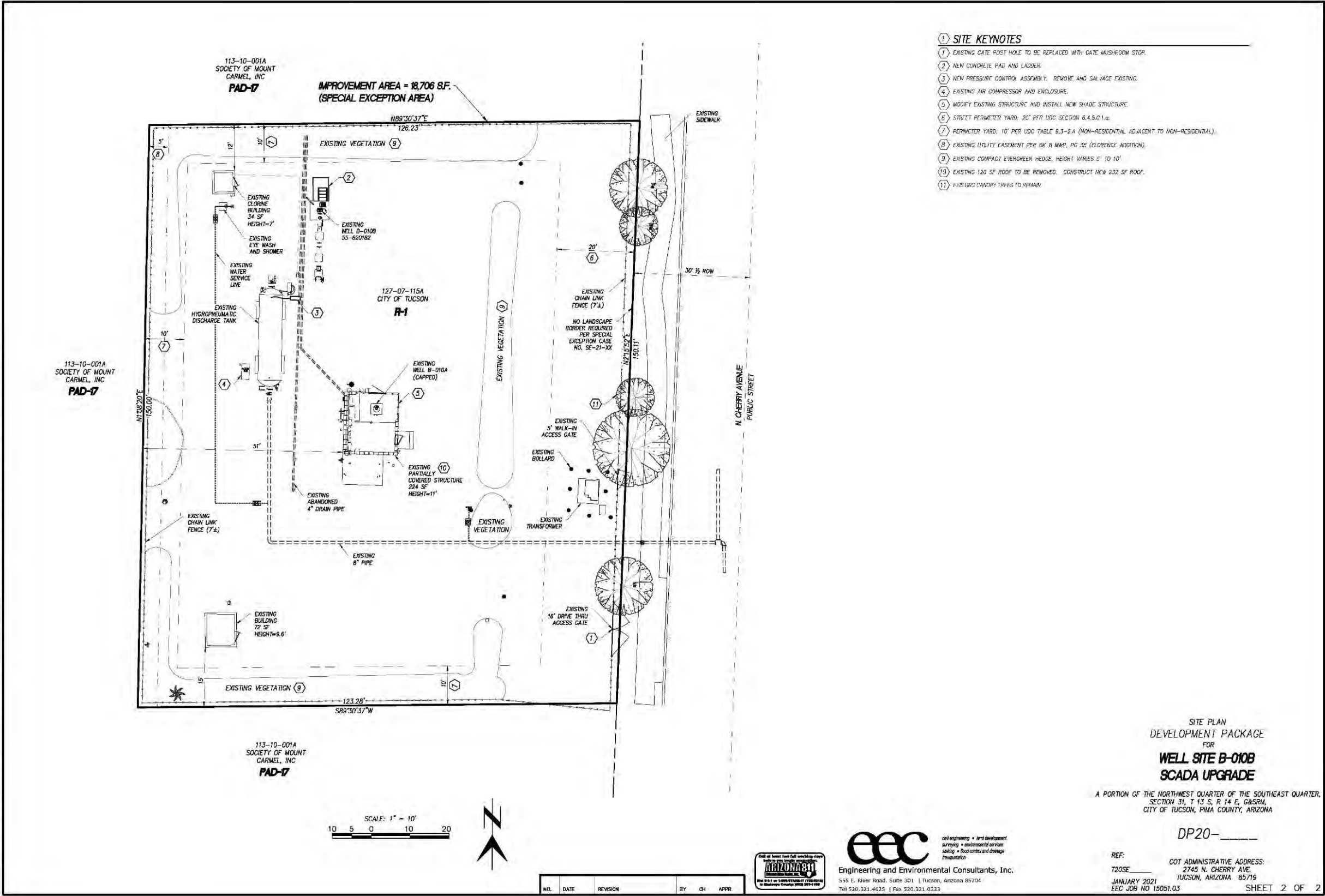
This plan proposes the perimeter fence remain in its current state. With the well site located adjacent to an operating high school, security is a priority. The chain-link fence will remain unaltered to maintain visibility through the site. The existing evergreen shrubs and trees will continue to screen on-site structures and maintenance activities from residences across Cherry Avenue, as shown in the images below.



**Access and Parking**

Tucson Water technicians will continue to enter the site through the existing vehicular gate along Cherry Avenue to service the equipment as necessary. Parking for technicians is provided within the internal yard, thus eliminating the need for on-street parking.





## **B. Design Compatibility**

As previously discussed, this special exception request is for an upgraded SCADA system housed in an existing control structure on site. Besides modifying this structure, other improvements are minor and entail adding or replacing components to existing well equipment.

The overall site remains unchanged with the existing site layout that has been present for decades. Modifying and reusing the existing control structure eliminates the need to construct another building elsewhere and maintains current separation from the neighboring homes. Parking is also provided within the fenced yard removing the potential for on-street parking for maintenance vehicles. Changes to the control structure minimize visual impact to neighbors. Much of the structure's existing walls will remain. The new metal shade structure will protect SCADA equipment underneath. Highly reflective materials are not proposed on this site and shall be avoided when possible. The building will remain in its current location at the center of the property, approximately 150' from the nearest residence. Screening is provided by existing landscaping within the equipment yard and along the site's perimeter.

### **1. Applicable Use-Specific Standards**

The proposed utility distribution system use is appropriate within the R-2 zone when special consideration is given to minimize adverse impacts associated with 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-2 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' from any adjacent residential zone.*

As demonstrated in Exhibit III.A: Preliminary Development Plan, the SCADA control structure is approximately 57' from the eastern property line, exceeding the 20' minimum.

- *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.*

The existing control structure's walls are used for setback purposes.

- *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.*

An application will submitted to the DRB to ensure the SCADA control structure and its overall design are 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.*

As demonstrated in *Exhibit III.A: Preliminary Development Plan*, the SCADA Upgrade will be located within the existing control structure enclosed by masonry walls on the south and west and chain-link on the north and east. The yard's perimeter is mostly screened with an existing 6'+ compact evergreen hedge consisting of olanders, cacti, mesquite trees, and other drought-tolerant species. Additionally, the control structure is setback 50' (well over the minimum 20') from the 6' chain-link perimeter fence. Tucson Water prefers the existing vegetative screening treatment as it maintains visibility through the site and minimizes security concerns for the adjacent school.

- *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**

As shown in *Exhibit III.A: Preliminary Development Plan*, the proposed modifications to the existing control structure are set back over 50' from the eastern property line, well above the required minimum of 20' from any residentially zoned property.

## **3. Transition of Building Heights**

The proposed upgrade to the SCADA system requires modifying the existing control structure that is approximately 11' in height and upgrading the approximate 20' high communication antenna. The upgraded antenna utilizes the same mast pole as the current antenna. It also resembles the existing antenna in form and size. Reusing the existing control structure ensures a sufficient building transition will remain in place, exceeding the minimum 20' building setback from the property line.





**4. Landscaping & Screening**

The existing perimeter fence and vegetative screen will remain unaltered. These elements provide screening for neighbors while maintaining visibility through the site.

**5. Vehicular Use Areas**

The well site already meets the minimum parking standards outlined in UDC Section 7.4.4. The Utilities Use Group requires one (1) parking space per 500 SF of Gross Floor Area (GFA), with a minimum of two (2) parking spaces per facility. As demonstrated on the PDP, the site plan provides two (2) parking spaces within the perimeter chain-link fence.

**C. Post-Development Hydrology**

The proposed SCADA equipment and modifications to the existing control structure produce negligible impacts on the site's hydrology. Impervious surfaces associated with these improvements are minimal. The site's natural drainage condition will remain in its current state.

**D. Utilities**

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

