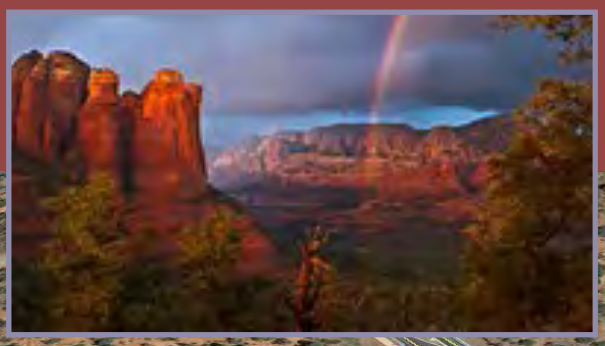
East Sedona Water Storage Tank, Booster Pump Station and Related Appurtenances

Conditional Use Permit Package
January 2017



ARIZONA WATER COMPANY

Project Application

City Of Sedona
Community Development Department
102 Roadrunner Drive Sedona, AZ 86336
(928) 282-1154 • Fax: (928) 204-7124

The following application is for:

☒ Conceptual Review ☐ Final Review ☐ Appeal ☐ Time Extension

☐ Development Review ☐ Subdivision ☒ Variance
☒ Conditional Use Permit ☐ Zone Change ☐ Major Community Plan Amendment
☐ Minor Community Plan Amendment

PROJECT CONTACT:	John Matta, PE	Phone:	480-661-1742	App. #:	
Address:	7580 N Dobson Rd, Suite 200	Cell Phone:	480-313-3501	Date Rec'd:	
E-mail:	johnm@wwengineers.com	Fax:	N/A	Rec'd by:	
PROJECT NAME:	East Sedona Water Storage Tank and Booster Pump Station	Parcel #:	40133031	Fee Pd:	
Project Address/ Location:	55 Bell Rock Trail, City of Sedona	Acres:	1.05	Zoning:	RS 18b

Project Description:	Project includes a water storage tank, booster station, chemical feed system and associated piping, electrical, landscaping and general site improvements

OWNER NAME:	Arizona Water Company	**APPLICANT NAME:**	Frederick K. Schneider
Address:	3805 N Black Canyon Hwy, Phoenix, AZ 85015	Company Name:	Arizona Water Company
Phone:		Address:	3805 N Black Canyon Hwy, Phoenix, AZ 85015
Cell Phone:		Phone:	602-240-6860
E-mail:		Cell Phone:	602-240-6860
		E-mail:	fschneider@azwater.com
ARCHITECT/ ENGINEER:	John Matta, PE	**AUTHORIZED AGENT/OTHER:**	Frederick K. Schneider
Company Name:	Water Works Engineers, LLC	Company Name:	Arizona Water Company
Address:	7580 N Dobson, Suite 200 Scottsdale, AZ 85256	Address:	3805 N Black Canyon Hwy. Phoenix, AZ 85015
E-mail:	johnm@wwengineers.com	E-mail:	fschneider@azwater.com
Phone:	480-661-1742	Phone:	602-240-6860
Cell Phone:	480-313-3501	Cell Phone:	602-240-6860
ID #/Exp. Date:			
City Business License #:			

LETTER OF INTENT

City of Sedona
Planning and Zoning Commission

Project: Arizona Water Company - East Sedona Water Storage Tank and Booster Pump Station Project
55 Bell Rock Trail, City of Sedona
APN 401-33-031 (029T, 029V, 029W and 029Y)

Dear Planning and Zoning Commission

Arizona Water Company (Company) has established the need to provide a water storage and pumping facility in the east Sedona area to support adequate water supply and fire protection.

The Company is sensitive to the neighborhood, environmental and site planning issues highlighted in the City planning and design guidelines. The Company has adopted a project approach that will minimize the visual impact and protect the existing site features.

The details associated with this approach are outlined based on the City Site Planning ordinance and are detailed in the attached application packet

The Company is also committed to an open and collaborative communication process as detailed in our Citizen Communication Plan.

Water Works Engineers, LLC

John H Matta, PE
Principal

CITIZEN PARTICIPATION PLAN

Arizona Water Company has a keen appreciation for the importance of public involvement in important public decisions. In fact, the project we hereby submit to the residents and City of Sedona has been very strongly influenced by previous efforts to build a storage reservoir to serve this part of our system.

Our goal has been to discuss this project early, even before it was submitted, and often, so that all key stakeholders can weigh in.

Arizona Water Company will undertake all the steps related to the citizen participation process as described in the city's Project Application Instructions:

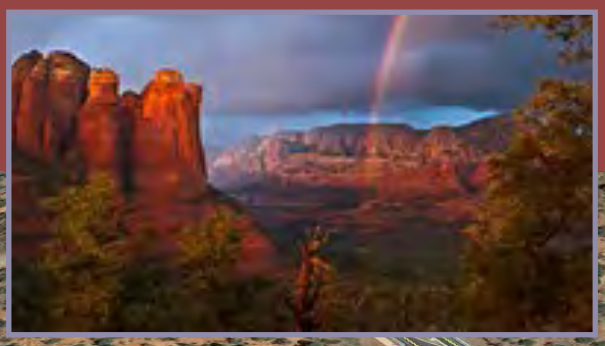
1. We will contact neighboring property owners (typically within 500 feet of the project site) and any affected Homeowner's Associations. Based on the size and scope of the project, a larger notification radius by be required.
2. Arizona Water Company will hand deliver a letter to introduce ourselves, describe the project, and provide property owners with a way to contact us directly.
3. A community meeting/open house will be scheduled after we have been able to discuss the best time and location with members of the community and city staff. We will find a location for the meeting, set a date that works for the largest possible group of stakeholders. At the community meeting, we will provide visual materials, answer questions, document the discussion, and obtain the names of those in attendance.
4. During the City's deliberation process, Arizona Water Company will keep track of all contacts with neighboring property owners and other stakeholders, including name, date, and item of concern.
5. Before the first public hearing, we will present a report to City Staff documenting comments received though the public involvement process, with emphasis on comments related to significant changes in the application.
6. We understand that Citizen Participation Report is required to be submitted prior to scheduling a public hearing.

In addition to the required activities, Arizona Water Company will be very responsive to the needs of residents, stakeholders and city decision-makers if additional information, materials or community meetings are deemed necessary.

We are committed to working with the nearby residents from the beginning of the planning process until the last day of construction. And of course, Arizona Water Company encourages all of its customers to reach out to us about any water system-related issue at any time.

East Sedona Water Storage Tank, Booster Pump Station and Related Appurtenances

Conceptual Design Report
January 2017



ARIZONA WATER COMPANY

Table of Contents

Contents

List of Tables

List of Figure

List of Appendices

1 INTRODUCTION

Arizona Water Company recently completed a water masterplan for the east Sedona area to address water demands, water supply sources, storage, and booster pump station requirements. The masterplan recommended the East Sedona Water Facility to provide water storage and pumping facility. The selected site is located at the intersection of W Mallard Dr and Hwy 179 as shown in Figure 1 below.

Figure 1 Vicinity Map

The site will include the following major facilities:

- Water storage tank with 1.0 to 1.5 million gallon (Mgal) capacity
- Booster station with pumping flow ranging between 350 and 3000 gallon per minute (gpm)
- Ancillary Facilities

2 SITE DESIGN

The East Sedona Water facility site layout was planned with careful attention to the City of Sedona requirements for open space, integration with the surrounding properties and preserving the

delicate nature in Sedona. Refer to Appendix A for the conceptual design drawings depicting the overall site layout, elevations and landscaping drawings.

As stated in the City of Sedona site planning guidelines, the proposed layout is developed to preserve the physical characteristics of the site and the contextual influences of the surrounding area as much as possible. Key physical site attributes that were identified, analyzed, and considered in the planning process include:

- Topography, existing landforms and significant rock outcrops, with areas of slope over 25% highlighted.
- Existing vegetation and trees, especially areas that have been minimally disturbed.
- Soil properties and depth to bedrock.
- Existing watercourses, floodway and flood plain areas, and drainage patterns.
- Important site features that are either potential amenities or hazards.
- View corridors and prominent views from points surrounding the site as well as from the site.

Key contextual influences that were identified, analyzed, and considered in the planning process include:

- Land use and site organization in relation to building form, character and scale of existing and proposed development.
- Sensitivity and nature of adjoining land uses.
- Location of property boundaries and setbacks.
- Location of adjacent roads, driveways, off-street vehicular connections, pedestrian ways, access points and easements.
- Existing structures and other built improvements.
- Other features of the site and/or surrounding area that may be impacted by or may impact the proposed development.

2.1 Site Design and Planning Principles

As indicated by the City guide manual, the principal goal of site design and planning is to sensitively fit the built environment into the natural environment with minimal disturbance to the natural ecosystem.

- The proposed design will locate the tank below the finished grade and restore the site to its pre-construction conditions except for the superstructure which will include the pump room, electrical room and chemical area. The superstructure concept is developed to blend with the surrounding residential, rural aspect of the area.
- Site grading is developed to maintain the existing contours as much as possible including the existing drainage ways while keeping the top of the tank below grade or 2 to 3 ft above

grade. Finished floor elevations of buildings and parking areas will transition with the grades of the site.

- Existing vegetation and mature trees will be restored to pre-existing conditions where applicable.
- The tank is located below grade and top of tank and Buildings are sited to take advantage of the natural topography of the site so that the apparent mass and bulk of large structures can be reduced.
- Site design will be influenced and guided by significant site features, such as rock outcrops, washes and prominent views enjoyed by key locations within the public realm.
- The existing disturbed easement and access roads were kept and their use maximized.
- Natural features and vegetation are preserved wherever possible, rather than removed and replaced.

2.2 Arrangement of Spaces

Successful site planning requires the arrangement of outdoor spaces and buildings in ways intended to create attractive and functional spaces for people's relaxation, business or pleasure. As stated in the City's guidelines, site designs should respond to local contextual influences and to the design and layout of adjoining developments. Applicable elements that were coordinated with adjacent sites include:

- Shared driveways for accessing adjoining streets – the proposed design uses the existing driveway to access the site.
- Linkages/continuation of open space systems – A perimeter wall will not be provided to allow for the landscaped areas and natural areas to integrate with the surrounding landscape.
- Perimeter open space and landscape buffer zones – to blend in with the surrounding properties.
- Areas and access for refuse collection – will be coordinated with the access driveway.
- Drainage and detention facilities – will be designed to take advantage of the site natural drainage.
- Shared utility easements.

The site arrangement also took into consideration the setback requirements stated in Table 1.

Table 1 Minimum Setback Requirements

Description	Value
Front	25 feet
Side	25 feet
Rear	25 feet

2.3 VIEWSHED ANALYSIS

Due to the value and importance of scenic beauty in the Sedona area, one of the project essential goals is to preserve where feasible existing views important to neighboring properties. The project also considered the probable impact of the proposed superstructure on future potential buildings and developments. The project team evaluated the views from the site and into the site as stated below:

- Views from within the site are not critical due to the function of the site. The design identified open views to surrounding landscape and red rock formations.
- Views into the site were considered more critical and identified the area corridors from which the new development could be seen. The site plan is developed to minimize visual impact and identify possible mitigating measures such as locating the tank below grade.

2.4 SENSITIVITY TO HISTORICAL SITES, STRUCTURES AND ROADWAYS

This criterion is not applicable to this site. The existing lot does not contain any historical structures or buildings.

2.5 COMMUNITY CONTEXT

The proposed building is consistent with the profile and architecture encouraged by the City which avoids flat surfaces and uses "projected" shapes to enhance the architecture character of the proposed building.

2.6 DRAINAGE WAY DESIGN

The tank and building are located to preserve the existing drainage courses in their natural pre-construction conditions. Specific consideration was given to the following:

2.6.1 FLOOD ZONE

The Water Facility Site is located outside of the 100-year flood zone. Refer to Appendix B showing FEMA flood zone map of the area.

2.6.2 DRAINAGE WAYS

The drainage design within the site will be based on the City of Sedona drainage requirements. The existing site grade slopes to the northwest corner. This flow pattern will be preserved. Soil stabilization, when needed, will be performed using native rocks from the excavation performed at the site. The rocks will be laid in naturally shaped areas where the drainages are most prone to erosion along the northwest area of the site. The site area will be stabilized by preserving

vegetative cover with permanent landscaping should be installed in a timely manner to prevent rapid runoff, erosion, and downstream siltation.

2.6.3 *Storm Water Detention Basins*

The proposed site grading elevations will be similar to the existing site grading. The site grade will generally slope from the east to the northwest corner with storm water managed via surface runoff. An onsite retention basin will not be provided.

2.6.4 *Soil Erosion and Sedimentation Control*

The proper control of sedimentation and management of soil erosion on construction sites is very important in Sedona. Recommended erosion and sedimentation control practices will be specified to manage soil erosion and control sedimentation during construction:

- Preservation of existing trees and natural vegetation on the site where feasible.
- Installation of perimeter fencing using for example, silt fences that are trenched in and backfilled.
- Rock dams or straw bales are suggested in concentrated flow locations such as ditches or swales.
- Erosion control blankets
- Straw mulch
- Temporary or permanent seeding with native grasses or wild flowers
- Rip rap on steep slopes
- Placement of crushed rock or gravel on job site access driveways to control mud and dirt on public roads.

2.6.5 *Geotechnical Investigation*

Reference Appendix C for the site's geotechnical investigation.

2.7 Building Placement and Orientation

2.7.1 *Proposed Building And Structures*

The building will be planned to blend with the surrounding residential properties. The building will include a pump room, a chlorine storage and feed room and an electrical room.

2.7.2 *Architectural Character and Building Form*

Texture of the blocks and integral color requirements will be selected to match, to the greatest extent possible, the theme of the adjacent properties. Preliminary selection includes:

1. Floor: sealed concrete slab

2. Exterior building walls: 8" concrete masonry unit with foam block filler, painted at interior, 3/4" stucco over vapor barrier over 1" rigid insulation
3. Interior walls: 8" concrete masonry unit with foam block filler, painted both sides
4. Roof: foam roof on 1/2" exterior board on metal deck on steel bar joists with batt insulation and scrim.
5. Doors: painted hollow metal doors + frames
6. Windows: painted hollow metal frames with 1" insulted glass
7. Louvers: painted hollow metal frames with metal blades
8. Overhead doors: painted insulated steel doors
9. Landscape walls: stacked rock salvaged from the site

2.7.2.1 Pump Room

The pump room will house four pumps, hydropneumatics tank and associated piping. Roof hatches will be provided above each pump to facilitate pump removal. Refer to the conceptual design drawing for the pump room layout.

2.7.2.2 Chemical Room

The chemical storage and feed system will be housed indoor and will include a spill containment area. Table 2 presents the onsite chemical storage design criteria.

Table 2 Chemical Facility Design Criteria

Parameter	Value
Design Code	2012 IBC and 2012 IFC as adopted and amended by the City of Sedona
Use and Occupancy Classification	Factory Group, F-1
Sodium Hypochlorite	12.5% (Liquid)
Storage Location	Shade Structure

Refer to the conceptual design drawing for chemical storage and feed facility layout.

2.7.2.3 Electrical Building

The electrical equipment (e.g. 2500A main switch board, VFDs and motor starters) for the booster pump station, and ancillary equipment will be housed in an air conditioned electrical building. Table 3 presents the electrical building design criteria. Refer to the design drawings for electrical room layout.

Table 3 Electrical Building Design Criteria

Parameter	Value
Design Code	2012 IBC, 2006 IFC and 2011 NEC as adopted and amended by the City of Sedona
IBC Use and Occupancy Classification	Factory Group, F-1
NEC Clearance Requirement for Electrical Panel	4 feet minimum
Construction Type	CMU Construction rate as 4-hour fire walls

Site electrical service will be provided by Arizona Public Service (APS) company. The three phase service entrance will feed the booster pumps and support sytems. The SES line up, located in the electrical room will include a metering section, a transfer switch, and a distribution section. The main switchboard (SWBD) will provide feeders (LSI Breakers etc.) to four Booster Pumps standalone VFD, redundant air compressors, air conditioning units, lighting panel (LP) and separate instrument power panel (IP). All booster pumps will be VFD operated. Each Booster Pump will be provided with a standalone drive panel located in the electrical room.

In addition, a lightening protection system of air terminals, down conductors and buried grid bonding cabling shall be included in the design per NFPA 780 (2011 Edition).

The Water Facility will be controlled by an onsite Ethernet PLC/HMI based control system (Master Control Panel, MCP-001) with local and remote monitoring by the City of Sedona SCADA system.

3 Relationship to Adjacent Developments

The proposed building is developed to show that the contextual influences of neighboring properties have been considered. The various building segments are configured to break up the "urban strip-like" character of Sedona's commercial corridors. The proposed building is located to minimize impact on existing roadways and reduce visual impact. The drawings and models developed show the neighboring buildings and site features. Specific consideration is given to the following:

- Aligned circulation
- Building placement will allow for interconnected access driveways.
- The open spaces and landscaped areas will connect visually with the adjacent sites.

3.1 Relationship to the Public Realm

The proposed building will follow the surrounding pattern which is residential properties and will preserve the "no fence" arrangement. Specific consideration is given to the following:

3.1.1 *Site Access*

The existing driveway accessing the site from the south will be the main site access. Table 1 presents the site access requirements and design criteria.

Table 4 Site Access Requirements and Design Criteria

Parameter	Value
Design Code	2012 IFC as adopted and amended by the City of Sedona
Design Vehicle (Fire Truck)	WB-50
Access Driveway Width	20 feet minimum
Site Access Road Construction	Match existing drive

3.1.2 *Traffic Study*

The East Sedona Water Facility will mostly be remotely operated. The traffic to the water facility will be limited to Company operation staff and delivery vehicles. Estimated number of trips to the site by the operation staff could be up to one trip per week. Estimated number of trips for delivery vehicles (e.g. sodium hypochlorite delivery) is approximately once per month.

3.1.3 *Building Entries*

Building entries are easily identifiable and are visible from the public realm. The building entries are placed to accommodate automobile or pedestrian approaches as well. The building will be recessed to allow for vehicular parking and avoid obstructing the access driveway.

3.1.4 *Public Space*

The building is situated to provide a strong visual and pedestrian relationship. Parking is provided in front of the building, adjacent to the landscaped area.

3.1.5 *Parking*

Building use and occupancy is limited to one or two operators performing routine weekly inspection. The parking space provided will be able to accommodate up to three vehicles which exceeds the normal daily needs.

3.1.6 *Parking Area Design and Landscaping*

The parking area is designed to integrate with the proposed landscaping. The parking spaces are nestled within the landscaping retaining walls.

3.1.7 *Exterior Lighting*

Facility area lighting will be provided for site security and safety with minimal impact on surrounding properties. Lighting criteria for the site are as follows:

10. Specific lighting levels (indoors and outdoors) shall be per the latest published version of the Illuminating Engineering Society (IES) of North America Handbook.
11. Interior lighting will utilize fluorescent, compact fluorescent, metal halide, high intensity discharge and be high efficiency rated.
12. Exterior lighting will be "Dark Sky Compliant with photometric control, motion control and/or hand/off/auto switches. The facility will utilize High Pressure Sodium HID or Metal, Halide HID lamps. Lamps to be high efficiency rated.
13. Switch-controlled local task lighting will be provided in critical operations areas, and where night time maintenance or repairs may be necessary.
14. Lighting for building entrances will be wall-mounted lighting fixtures.
15. Emergency lighting will either be in the form of separate, wall-mounted fixtures, or by the use of emergency battery packs and ballasts in-ceiling or wall-mounted lighting fixtures.

3.1.8 SIGNAGE

The site will have limited signage with the exception of address signs and chemical decal posted at the facility doors.

3.1.9 SERVICE AREAS, LOADING ZONES AND REFUSE ENCLOSURES, MECHANICAL AND ELECTRICAL EQUIPMENT

Service areas are not needed for this facility since the equipment is provided indoor with adequate accessibility. It is expected that the amount of refuse generated will be less than a typical residential property, hence residential refuse bins will be located indoor and will follow the routine residential refuse collection schedule.

The electrical service entrance will be located indoor with the transformer located along the eastern boundary of the property. The building mechanical equipment will be located at grade and will be screened by the landscaping. In case roof, mounted equipment is used, it will be screened by the building parapet.

3.1.10 FENCES AND WALLS

The site design will not include property perimeter fencing.

4 Architectural Character and Building Form

Texture of the blocks and integral color requirements will be selected to match, to the greatest extent possible, the theme of the adjacent properties. Preliminary selection includes:

16. Floor: sealed concrete slab
17. Exterior building walls: 8" concrete masonry unit with foam block filler, painted at interior, 3/4" stucco over vapor barrier over 1" rigid insulation
18. Interior walls: 8" concrete masonry unit with foam block filler, painted both sides
19. Roof: foam roof on 1/2" exterior board on metal deck on steel bar joists with batt insulation and scrim.
20. Doors: painted hollow metal doors + frames
21. Windows: painted hollow metal frames with 1" insulted glass
22. Louvers: painted hollow metal frames with metal blades
23. Overhead doors: painted insulated steel doors
24. Landscape walls: stacked rock salvaged from the site

The building has been located on the site to screen activity, and minimize neighborhood interference once constructed. Similarly, roof equipment will be screened by parapet walls.

Following Sedona's Arch. guidelines, the building mass is broken up as much as possible to minimize the scale of the building, while recessing into the revegetated greenery of the site.

Simple construction methods are used to define the enclosure for the pump equipment, and have been chosen to balance function with a varied, but reserved expression.

The preliminary building materials are chosen to complement adjacent housing and to respect Sedona's natural character.

Refer to attached drawings for additional information.

5 Landscape

The landscape and site design for the East Sedona Water Storage Tank, Booster Pump Station and Related Appurtenances project meets and exceeds the Development Standards found in Article 9 of the SLDC, and the approval criteria listed in Section 401.06 of the Land Development Code. Proposed improvements meet the following specific standards and criteria:

The proposed development is carefully integrated into the natural environment through site placement and orientation, the selection of materials and the massing and heights of structures. Disturbance to view corridors is minimal and existing vegetation is preserved to the greatest extent possible. The natural topography of the site will be maintained through the careful placement of structural stone retaining walls intended to blend into the landscape. Drainage, known wildlife habitat and natural features are preserved and protected to the greatest extent possible.

The proposed landscaping for the development is intended to restore the existing landscape to an enhanced natural condition that is indistinguishable from the surrounding landscape in form, color, species etc. The landscape will be enhanced in the sense that species endemic to the area will be planted in locations and massings to provide maximum screening. Exterior lighting will be reserved to that necessary for operations and life safety- no decorative or ornamental lighting will be used. Pedestrian and vehicular circulation is designed to work with the topography and disturb as little of the site as possible.

Vehicular ingress, egress, internal traffic circulation, off street Parking facilities, loading and service areas and solid waste collection facilities are designed to promote public safety and convenience.

The proposed development has been located on the site to minimize removal of existing trees. Removal of trees required for building and infrastructure will be performed in accordance with all guidelines and requirements outlined in section 909- TREES.

Trees that are to be preserved in place will be protected during construction and construction limits will be strictly adhered to and enforced.

All trees that are designated to remain in place on site that are removed or damaged for any reason during construction will be replaced with like species in accordance with requirements.

Trees will be used throughout the site to soften the lines of the building and structures, and to blend it with the surrounding natural terrain. The proposed tree plan will meet or exceed all requirements outlined in section 909-F.

The proposed landscape for the development will restore the site to and enhanced natural condition through a careful and deliberate revegetation process. The landscape will:

1. Preserve and enhance the natural environment and aesthetic qualities of the city by restoring the site with native vegetation.
2. Preserve and enhance the appearance, character and value of surrounding properties by not intruding on them visually or competing with view corridors.

3. Minimize the visual impacts of developed parking areas by screening with native vegetation.
4. Minimize the negative impacts of erosion and prevent runoff of eroded material into the storm system through careful grading and the use of swales and berms to encourage passive water harvesting and storm water management.
5. Minimize noise and air pollution through screening using native trees.
6. Promote water conservation through the exclusive use of native and low water-use plant species

Native vegetation will be used to

1. Separate vehicular and pedestrian areas;
2. Screen site lighting
3. Soften building mass
4. Provide continuity in the landscape between adjacent development and undisturbed areas
5. Complement the visual effect of the building
6. Provide continuity in the landscape from the street
7. Promote energy conservation through shade and cooling of the building
8. Minimize heat island effect through the use pf permeable surfaces

Site Grading will be used to reduce noise pollution and surface runoff through the use of depressed landscaped areas such as bio-swales and vegetated swales for passive rainwater harvesting.

A Plant Palette list is included in Appendix D.

6 Design Standards and Permitting

6.1 Design Standards

The design will follow the City of Sedona design requirements in addition to complying with ADEQ and Coconino County requirements. The following lists the design standards and codes applicable to the project.

1. Arizona Department of Environmental Quality Bulletin 10
2. 2012 Building Code (2012 IBC) as adopted and amended by the City of Sedona
3. 2012 Fire Code (2012 IFC) as adopted and amended by the City of Sedona

4. 2012 Mechanical Code (2012 IMC) as adopted and amended by the City of Sedona
5. 2011 National Electric Code (2011 NEC) as adopted and amended by the City of Sedona
6. American Water Works Association (AWWA) Standards
7. Hydraulic Institute (HI) Standards

6.2 Regulatory Permit Coordination

Table 5 lists the permits required for the facility:

Table 5 List of Permits

Agency	Permit
City of Sedona	Building Permit
	Fire Permit
	Site Plan and Landscaping permit
	Civil Grading and Drainage Permit
ADEQ	Approval to Construct for: Water Booster Station Storage Tank Disinfection System
	Approval of Construction and Certificate of Construction

6.3 Agency Coordination

The site will require services from the City of Sedona and various agencies and private companies as listed below. The design will be coordinated with these organizations to incorporate their design standards, required permits and services. "Will Serve" letters have been received and are attached in Appendix E.

1. Electrical – Arizona Public Service (APS)
2. Water – Arizona Water Company
3. Sewer – Not needed
4. Storm Drain – City of Sedona
5. Fire – Sedona Fire District
6. Police – City of Sedona

7 WATER SYSTEM COMPONENTS

7.1 WELL WATER SUPPLY

The primary water supply will be from groundwater wells including wells xx and xx. The wells are connected to the distribution system which will be used to fill and draw from the proposed tank.

7.2 TANK

The proposed tank will be constructed mostly below grade to eliminate any visual impact. The tank details are summarized Table 6.

Table 6 Tank Design Criteria

Parameter	Value
Tank Type	Pre-stressed, circular
Diameter Range	85 to 113 ft
Height Range	15 to 24 ft
Active Depth	20 ft
Maintenance/Dead Zone	2 ft
Freeboard	2 ft
Overflow Elevation	
Hatches	2

7.3 BOOSTER PUMP STATION

The booster pump station will be sized based on the maximum day demand plus fire flow or peak hour demand, whichever is larger. Table 7 presents the governing minimum firm capacity of the East Sedona Water Facility booster pump station.

Table 7 Booster Pump Station Sizing

Parameter	Value (gpm)
Governing Flow	3,000
Booster Pump 1	1,000
Booste Pump 2	1,000
Booster Pump 3	1,000
Booster Pump 4	1,000
Firm Capacity	3,000
Total Capacity	4,000

The estimated booster pump station operating pressure range was determined based on system modeling results and field observations. The operating pressure is expected to range between 100 and 150 psi. Table 8 presents the design criteria for the booster pumps.

Table 8 Booster Pump Design Criteria

Parameter	Low Pressure Zone
Pump Type	Vertical Turbine Pumps
Pump Size	1,000 gpm/TDH of 230 to 350 ft
Drive Type	Variable Frequency Drive (VFD)
Motor Size/Power	125 HP/460V/3 PH/ 60Hz
Pump Can Diameter	20 inches

7.3.1 Surge Mitigation

A hydropneumatic tank will maintain the distribution system pressures and minimize the pump start/stop frequency. The hydropneumatic tank will be designed to absorb surge pressures experienced at the booster pump station. In addition, a surge anticipator valve on the booster pump station discharge will relief surge pressures from the booster pump station discharge header. Table 9 presents the hydropneumatic tank design criteria.

Table 9 Hydropneumatic Tank Design Criteria

Parameter	Values
Design Standards	ASME Section VIII, Division 1
Design	Horizontal Above grade
Number of Hydropneumatic Tanks	1
Tank Volume	10,000 gallons
Tank Diameter	12 ft
Tank Length - (Shell length only)	12 feet
Pressure Class/Design Pressure Rating	200 psi
Air Recharge	Air Compressor
Pressure Relief and Surge Anticipator	Cla Val 52-01 or Equal

An air compressor system will recharge the air in the hydropneumatic tank and supply air for maintenance tools.

7.4 Sodium Hypochlorite Storage and Feed Facility

Sodium hypochlorite (NaOCl) will be used for disinfection and to maintain a chlorine residual in the tank. A single feed point will be located at the tank fill line. The NaOCl storage tote or drum will be

located indoor with a spill containment sized for the tote plus water volume produced by the fire sprinkler system. Table 10 presents the sodium hypochlorite storage and feed design criteria.

Table 10 Chemical Storage Design Criteria

Parameter	Values
Sodium Hypochlorite Target Dose	2 mg/l as Cl_2
Concentration	12.5% liquid NaOCl
Tank Construction	Tote - HDPE
Storage	30 Days
Number of Tanks	1
NaOCl Volume	55 to 400 gallons

Table 11 presents the chemical metering pumps design criteria.

Table 11 Chemical Feed Design Criteria

Parameter	Value
Metering Pump	Grundfos or equal
Power	120V/60Hz
Maximum Pump Turn Down	800:1
Maximum Pressure	30 psig
Flow Range	.06 gph – 2.4 gph

.

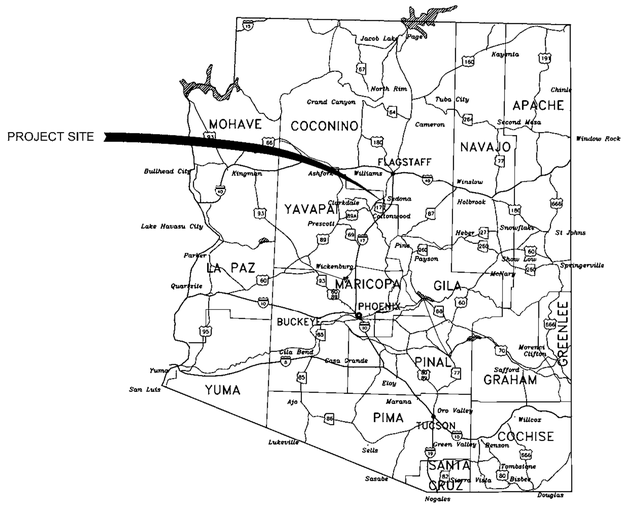
Appendix A Conceptual Drawings

CONCEPTUAL DESIGN & COMMUNITY OUTREACH
EAST SEDONA
WATER STORAGE TANK

55 BELL ROCK TRAIL, SEDONA, ARIZONA 86336

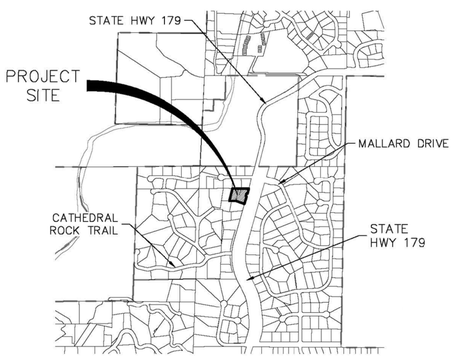
VOLUME 3
CONCEPTUAL DESIGN

JANUARY 2017



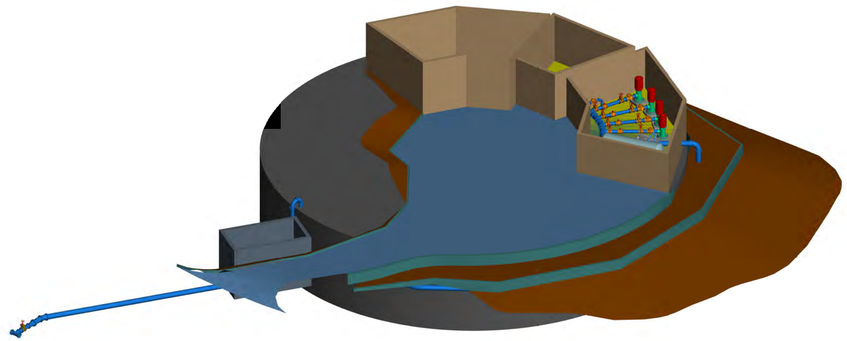
VICINITY MAP

NTS



LOCATION MAP

NTS



DRAWINGS INDEX

PROJECT SUMMARY

TOTAL ACREAGE:	1.05 ACRES
PERCENT LOT COVERAGE	5.2%
FLOOR AREA RATIO	2400 SF
PARKING SPACES:	2 REQUIRED, 3 PROVIDED
LANDSCAPED AREA	75%
OPEN AREA	8.5%
ROADWAYS	11.3%

PREPARED BY:

WATERWORKS ENGINEERS

CONTACT:

JOHN H MATTA, P.E.
PROJECT MANAGER
7500 N DOBSON RD, SUITE 200
SCOTTSDALE, AZ 85256
PHONE: (628) 231-2621x511
EMAIL: johnm@wwengineers.com

HOLLY STREET STUDIO ARCHITECTS

CONTACT:

MICHAEL E JACOBS, AIA
PROJECT ARCHITECT
822 N. CENTRAL AVENUE
PHOENIX, AZ 85004
PHONE: (602) 258-8555
EMAIL: michael@hollystreetstudio.com

Contact Arizona 811 at least two full working days before you begin excavation

Call 811 or click Arizona811.com

NOT FOR CONSTRUCTION

Expires 3-31-14

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

DESIGN	DRAWN	CHECKED	APPROVED
SAR	SAR	JHM	JHM

WATERWORKS ENGINEERS
7500 N. Dobson Rd. Suite 200 • Scottsdale, AZ • 480-481-1142

HOLLY STREET STUDIO ARCHITECTS
822 N. Central Avenue
Phoenix, AZ 85004-2003
602 258 8555 tel
602 307 5677 fax
HollyStreetStudio.com

CONCEPTUAL DESIGN & COMMUNITY OUTREACH
EAST SEDONA
WATER STORAGE TANK

GENERAL
COVER SHEET

DATE	JAN 2017
PROJECT NUMBER	16-029
DRAWING NUMBER	G-01
SHEET	1 OF -

FILENAME: S:\CAD\Projects\16-029 Sedona Water Storage Tank\Project Files\Deliverables\1629D-G001.DGN PLOT DATE: 1/13/2017 PLOT TIME: 10:53:46 AM SCALE: 0:1.0000 ':" / in.

PLOTTED: Nov 21, 2012-12:19pm

LEGEND

———	SUBJECT PARCEL BOUNDARY
- - - - - -	SUBJECT PARCEL EASEMENT
———	ADJOINER LINE
- - - - - -	BOUNDARY TIE
I,E & U	INGRESS, EGRESS & UTILITIES
#XXXXXXX	INDICATES INSTRUMENT NUMBER OF OFFICIAL RECORDS
XXXX/XXX	INDICATES DOCKET/PAGE OF OFFICIAL RECORDS
XXX-XX-XXXX	INDICATES COCONINO COUNTY ASSESSOR'S PARCEL NUMBER
"ALTA ITEM"	REFERS TO SCHEDULE B ITEMS FROM TITLE REPORT

ZONED: RS-18B SINGLE FAMILY RESIDENTIAL

SETBACK LIMITS:
FRONT – 25'
SIDE (INTERIOR) – 10'
SIDE (EXTERIOR) – 15'
REAR – 25'

HEIGHT AND FLOOR AREA REQUIREMENTS:
VARIABLE DEPENDING ON STRUCTURE AND SLOPE OF THE LAND.

(1) (NOTE: ZONING INFORMATION TAKEN FROM CITY OF SEDONA GIS WEBSITE)

MYSTIC HILLS LOT 118 CASE 5, MAP 49

MYSTIC HILLS LOT 119 CASE 5, MAP 49 BRACKIN, KEVIN & DESIREE

MYSTIC HILLS LOT 120 CASE 5, MAP 49 McGOWAN, MARK J.

MYSTIC HILLS LOT 121 CASE 5, MAP 49 SMITH, JOHN & SHARON

FOUND 1/2" REBAR WITH PLASTIC CAP STAMPED "LANDMARK RLS 14184"

S 89°54'16" E 130.51'

NORTHEAST CORNER OF TRACT 31 YAVAPINO ESTATES (1)

FOUND 1/2" REBAR WITH PLASTIC CAP STAMPED "LANDMARK RLS 14184"

S 89°49'28" E 84.91'

N 89°58'25" E 240.07' (R)(R1)
S 89°54'31" E 240.08'

FOUND 1/2" REBAR WITH ALUMINUM CAP STAMPED "SHEPHARD-WESNITZER RLS 40640"

S 89°57'57" E 46.33'

FOUND 1/2" REBAR WITH PLASTIC CAP STAMPED "LANDMARK RLS 14184"

S 89°57'00" E 108.82'

FOUND 1/2" REBAR WITH PLASTIC CAP STAMPED "LANDMARK RLS 14184"

S 15°54'22" W 80.18' (R)(R1)
S 15°43'40" W 79.95'

FOUND 3" ALUMINUM CAP STAMPED "ADOT ROW 2011 10136 149+17.44 RLS 19817 S-238 805"

FOUND 3" ALUMINUM CAP STAMPED "ADOT ROW 2011 10135 149+17.41 RLS 19817 S-238 805"

(1) ALTA ITEMS 11 & 17
20' INGRESS-EGRESS EASEMENT

(1) NOTE:
ALTA ITEMS 11 & 17 FALLS ONLY ON SUBJECT PARCEL.

NOTE:
PARCEL 1 IS THE OVERALL SUBJECT PARCEL.

N 74°05'28" W 14.00' (R)(R1)
N 74°11'49" W 13.97'

S 74°05'38" E 14.00' (R)(R1)
S 74°09'34" E 14.04'

S 15°54'22" W 40.00' (R)(R1)
S 16°01'53" W 39.98'

FOUND 3" ALUMINUM CAP STAMPED "ADOT ROW 2011 10138 148+77.44 RLS 19817 S-238 805"

FOUND 3" ALUMINUM CAP STAMPED "ADOT ROW 2011 10137 148+77.44 RLS 19817 S-238 805"

S 15°54'22" W 106.26' (R)(R1)
S 16°11'34" W 106.37'

SCALE: 1" = 20'
0 20 40

APN: 401-33-029N
TOWNSON, JOSHUA & WENDYLYNN (1)

NO BUILDINGS EXISTING ON THE SURVEYED PROPERTY

(1) SITUS ADDRESS: 55 BELL ROCK TRAIL (PER CITY OF SEDONA GIS WEBSITE)

(1) EAST LINE OF YAVAPINO ESTATES

YAVAPINO ESTATES
CASE 2, MAP 41
APN: 401-33-008C

N 12°50'27" W 187.36' (R)(R1)
N 12°53'58" E 187.29'

S 89°59'25" W 98.88' (R)(R1)
S 89°26'03" E 98.80'

S 89°56'11" W 31.96'

N 89°08'00" W 66.85'

FOUND 1/2" REBAR WITH ALUMINUM WASHER STAMPED "CORNERSTONE RLS 32224"

FOUND 1/2" REBAR WITH PLASTIC CAP STAMPED "SHEPHARD-WESNITZER RLS 40640"

FOUND 1/2" REBAR WITH PLASTIC CAP STAMPED "SHEPHARD-WESNITZER RLS 40640"

N 74°05'38" W 125.62' (R)(R1)
N 74°06'03" W 125.57'

POINT 'A'

HWY 179

PARCEL 5
20' I,E & U EASEMENT

PARCEL 4 & ALTA ITEMS 17 & 19
15' I,E & U EASEMENT

FOUND 1/2" REBAR WITH ALUMINUM WASHER STAMPED "RLS 32224 CORNERSTONE"

200' ROW

108.27'
S 15°58'14" W

APN: 401-33-029G
PACE-CAMPBELL, NANCY ANN

APN: 401-33-029R
WINBORNE, CHARLES & SANDRA

BELL ROCK TRAIL

PARCEL NO.2
I,E & U EASEMENT

PARCEL NO.3 & ALTA ITEMS 17 & 19
I,E & U EASEMENT

POINT 'B'

NOTE:
PARCEL 4 EXTENDS FROM POINT 'A' TO POINT 'B'.

PARCEL 4 & ALTA ITEMS 17 & 19
15' I,E & U EASEMENT

FOUND 5/8" REBAR WITH PLASTIC CAP STAMPED "SEC RLS 13015"

Contact Arizona 811 at least two full working days before you begin excavation
Call 811 or click Arizona811.com

No.
FILED AND RECORDED AT REQUEST OF
Shephard-Wesnitzer, Inc.
A.D.
AT O'CLOCK M
BOOK
PAGE
RECORDED IN COCONINO COUNTY, ARIZONA
County Recorder
Deputy Recorder

REGISTERED LAND SURVEYOR CERTIFICATE NO. 13015 PATRICK W. NAVILLE 11/21/12 Date Signed ARIZONA, U.S.A. Expires 9/30/13

CALL TWO WORKING DAYS BEFORE YOU DIG
1-800-STAKE-IT

NO.	DESCRIPTION	DATE	BY
1	ADD/REVISE INFORMATION	11/15/12	PN
2	REVISED FOR NEW TITLE REPORT	11/19/12	PN
3	REVISED TO MAKE CORRECTIONS	11/20/12	PN

SWI Shephard Wesnitzer, Inc.

75 Kallof Place
Sedona, AZ 86336
928.282.1061
928.282.2058 fax
www.swiaz.com

JOB NO:	12273 .002
DATE:	NOV. 2012
SCALE:	AS SHOWN
DRAWN:	MWJ
DESIGN:	N/A
CHECKED:	PWN

APN: 401-33-029T, 029V, 029W & 029Y
COCONINO COUNTY ARIZONA

ALTA/ACSM LAND TITLE SURVEY
BOUNDARY GEOMETRY

DRAWING NO. AA2
SHT NO. 2 OF 4

FILE: P:\2012\12273\Survey\Drawings\COV\ALTA\12273 ALTA.dwg MWJ-C3D12

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY.

DESIGN SAR
DRAWN SAR
CHECKED JHM
APPROVED JHM

WATERWORKS ENGINEERS
7280 N. Dobson Rd. Suite 200 • Scottsdale, AZ • 480/451-1742

HOLLY STREET STUDIO ARCHITECTS
822 N. Central Avenue
Phoenix, AZ 85004-2003
602 258 8555 tel
602 307 5677 fax
HollyStreetStudio.com

CONCEPTUAL DESIGN & COMMUNITY OUTREACH
EAST SEDONA WATER STORAGE TANK

GENERAL
ALTA SURVEY

DATE JAN 2017
PROJECT NUMBER 16-029
DRAWING NUMBER G-100
SHEET 1 OF -

FILENAME: S:\CAD\Projects\16-029 Sedona Water Storage Tank\Project Files\Deliverables\1629D-G100.DGN PLOT DATE: 1/11/2017 PLOT TIME: 7:03:02 AM SCALE: 0:1.0000 '=' / in.

Contact Arizona 811 at least two full working days before you begin excavation

ARIZONA811

Call 811 or click Arizona811.com

NORTH

20 0 20 40 FEET

SCALE 1"=20'

NOT FOR CONSTRUCTION

Expires 3-31-17

NO.	DATE	REVISION	BY	APVD
-	-	-	-	-

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DESIGN JHM

DRAWN SAR

CHECKED JHM

APPROVED JHM

WATERWORKS ENGINEERS

HOLLY STREET STUDIO ARCHITECTS

822 N. Central Avenue
Phoenix, AZ 85004-2003
602 258 8555 tel
602 307 5677 fax
HollyStreetStudio.com

CONCEPTUAL DESIGN & COMMUNITY OUTREACH EAST SEDONA WATER STORAGE TANK

GENERAL SITE PLAN

DATE JAN 2017

PROJECT NUMBER 16-029

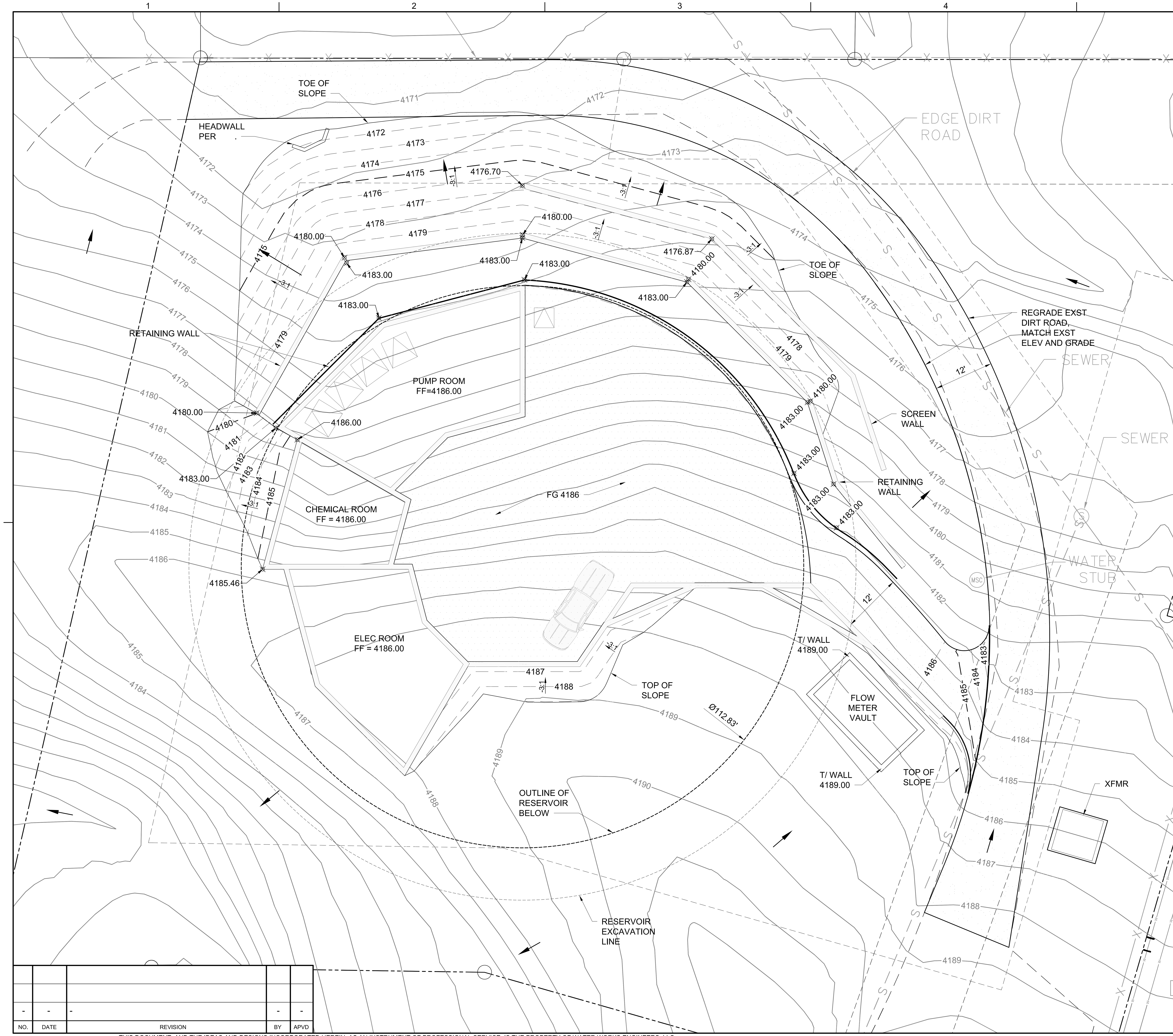
DRAWING NUMBER G-101

SHEET - OF -

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF WATER WORKS ENGINEERS, LLC. AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF WATER WORKS ENGINEERS, LLC.

FILENAME: S:\CAD\PROJECTS\16-029 SEDONA WATER STORAGE TANK\PROJECT FILES\DELIVERABLES\1629D-G101.DWG

PLOT DATE: 1/11/2017 PLOT TIME: 7:07 AM SCALE: 1" = .08'



Contact Arizona 811 at least two full working days before you begin excavation

ARIZONA811

Call 811 or click Arizona811.com

NORTH

20 0 20 40 FEET

SCALE 1"=20'

NOT FOR CONSTRUCTION

Expires 3-31-17

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DESIGN	JHM
DRAWN	SAR
CHECKED	JHM
APPROVED	JHM

WATERWORKS ENGINEERS

7580 N. Dobson Rd, Suite 200 • Scottsdale, AZ • 480-661-1742

HOLLY STREET STUDIO ARCHITECTS

822 N. Central Avenue
Phoenix, AZ 85004-2003

602 258 8555 tel
602 307 5677 fax

HollyStreetStudio.com

CONCEPTUAL DESIGN & COMMUNITY OUTREACH EAST SEDONA WATER STORAGE TANK

GRADING PLAN

DATE JAN 2017

PROJECT NUMBER 16-029

DRAWING NUMBER C-100

SHEET - OF -

SCALE: 1" = .08'

FILENAME: S:\CAD\PROJECTS\16-029 SEDONA WATER STORAGE TANK\PROJECT FILES\DELIVERABLES\1629D-C100.DWG

PLOT DATE: 1/11/2017 PLOT TIME: 7:08 AM

chris winters & associates + Arc Studios
820 N 3rd Street
Phoenix, Arizona 85004
t 602.955.8088 f 602.253.3606
landscape architecture urban design

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DESIGN CW | DRAWN CW | CHECKED CW | APPROVED JHM

WATERWORKS ENGINEERS
7580 N. Dobson Rd., Suite 200 • Scottsdale, AZ • 480.661.1742

HOLLY STREET STUDIO ARCHITECTS
822 N. Central Avenue
Phoenix, AZ 85004-2003
602 258 8555 tel
602 307 5677 fax
HollyStreetStudio.com

CONCEPTUAL DESIGN & COMMUNITY OUTREACH
EAST SEDONA WATER STORAGE TANK

Landscape Plan

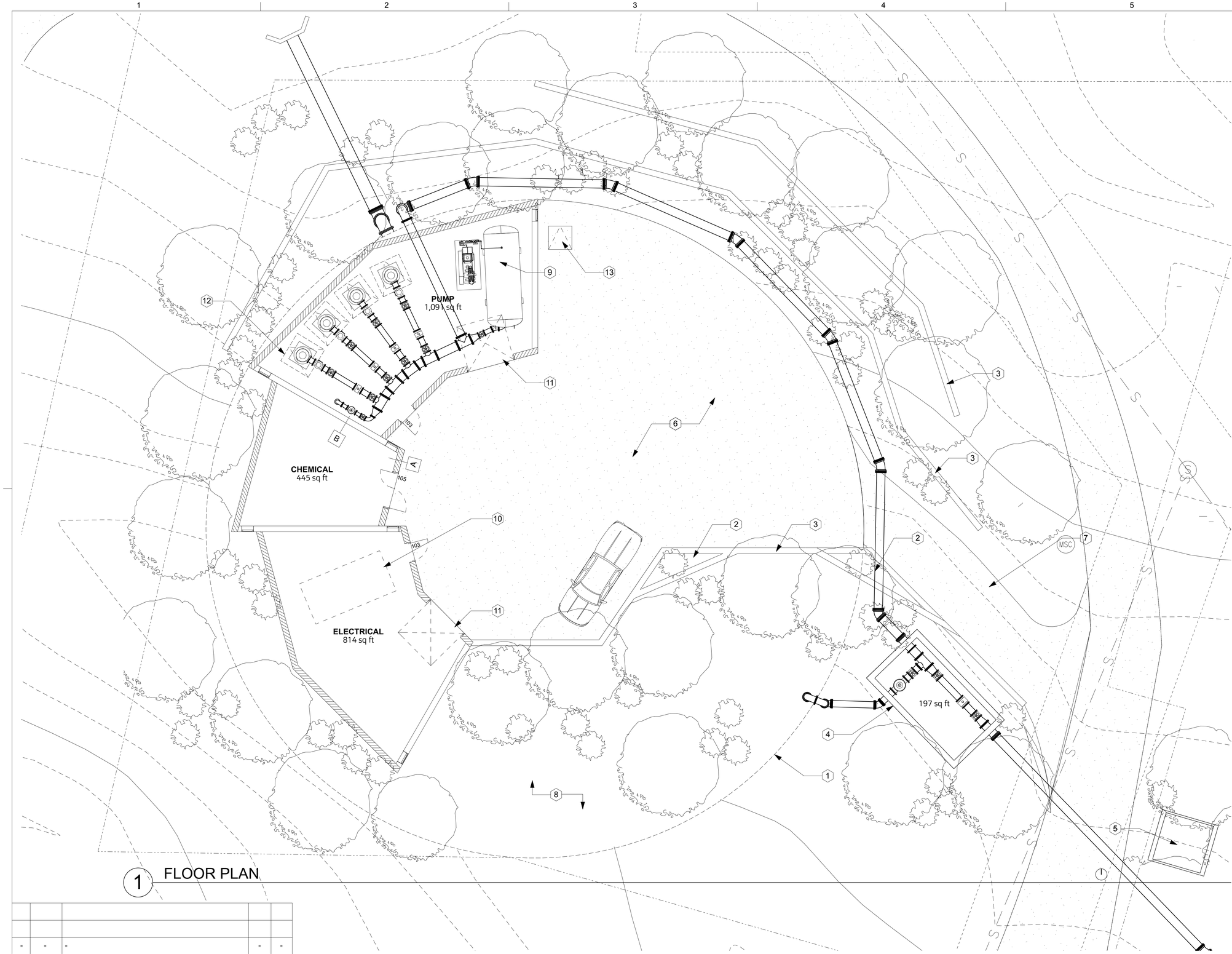
Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811 BLUE STAKE, INC.
Call 811 or click Arizona811.com

REGISTERED ARCHITECT — CERTIFICATE NO. 22984 — JAMES H. MORRIS — Signed — ARIZONA U.S.A.
NOT FOR CONSTRUCTION
expiration : 09.30.2019

NO.	DATE	REVISION	BY	APVD
-	-	-	-	-

DATE JAN 2017
PROJECT NUMBER 16-029
DRAWING NUMBER L-100
SHEET 5 OF 9

FILENAME: - PLOT DATE: - PLOT TIME: - SCALE: 1" = 20'



Descriptive Notes

1. Line of tank below.
2. Planter integrated into retaining wall.
3. Retaining wall.
4. Valve vault.
5. Transformer.
6. D.G. parking surface.
7. Regraded access road.
8. Area to be regraded.
9. Pump system.
10. Electrical.
11. Overhead door.
12. Roof access hatch above (typ, 4).
13. Tank access hatch.

1 FLOOR PLAN

NO.	DATE	REVISION	BY	APVD
-	-	-	-	-

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DESIGN NSL | DRAWN NSL | CHECKED MEJ | APPROVED JHM

WATERWORKS ENGINEERS
7580 N. Dobson Rd., Suite 200 • Scottsdale, AZ • 480-661-1742

HOLLY STREET STUDIO ARCHITECTS
822 N. Central Avenue
Phoenix, AZ 85004-2003
602 258 8555 tel
602 307 5677 fax
HollyStreetStudio.com

CONCEPTUAL DESIGN & COMMUNITY OUTREACH
EAST SEDONA WATER STORAGE TANK

Architectural

FLOOR PLAN

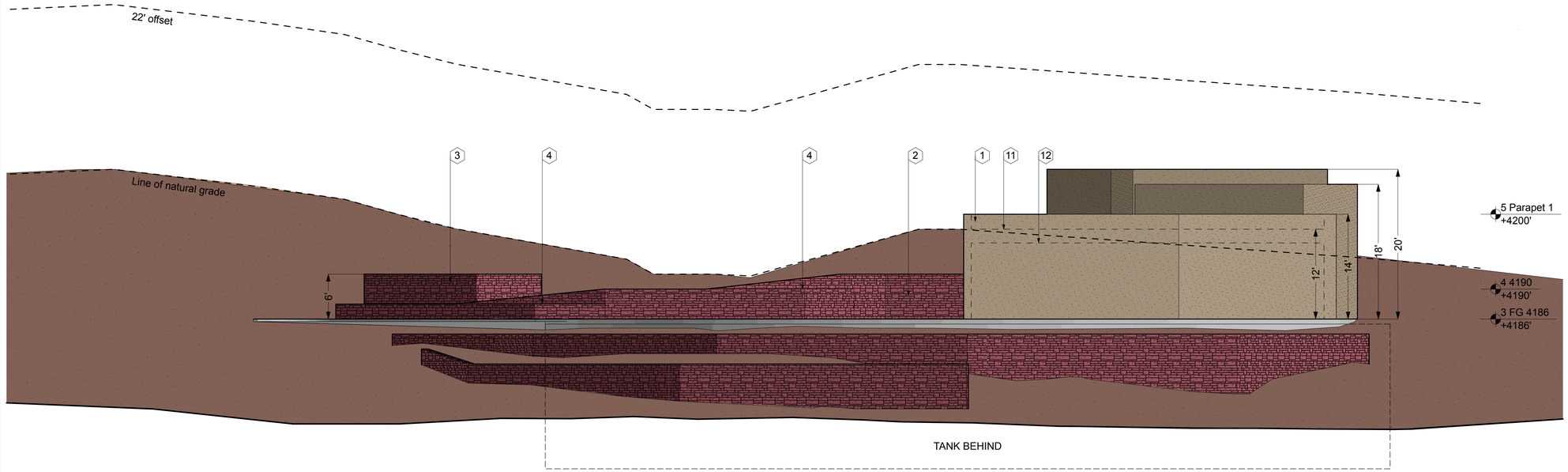
Contact Arizona 811 at least two full working days before you begin excavation
Call 811 or click Arizona811.com

REGISTERED ARCHITECT CERTIFICATE NO. 22064 MICHAEL JAMES JACOBS Signed ARIZONA, U.S.A. expiration : 09.30.2019

NOT FOR CONSTRUCTION

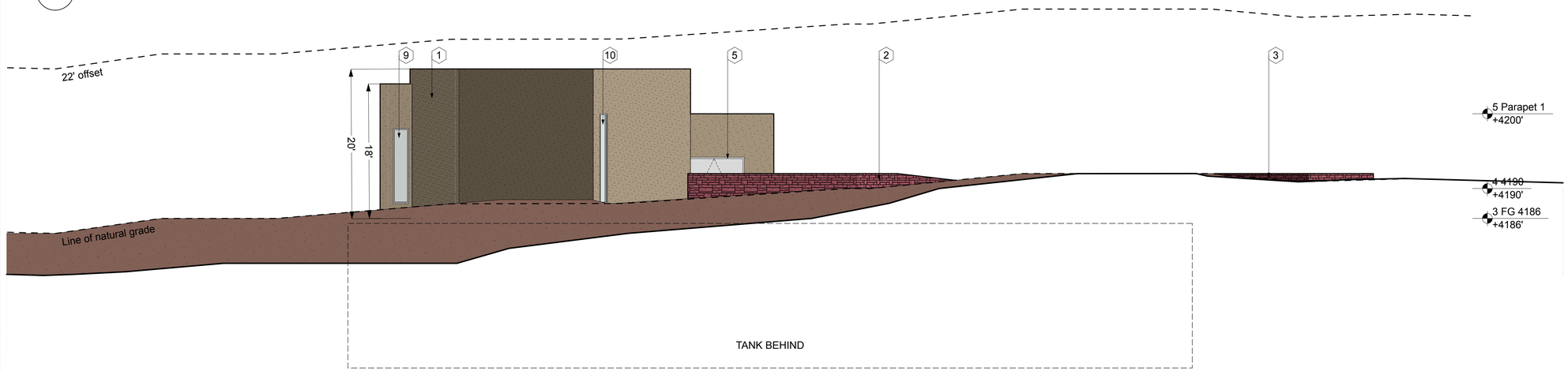
DATE JAN 2017
PROJECT NUMBER 16-029
DRAWING NUMBER A-100
SHEET 6 OF 9

FILENAME: /Volumes/1 work/3 projects/91 ww american water sedona/91 dwgs/91 3d/91 fp.pln PLOT DATE: 1/9/2017 PLOT TIME: 11:51 AM SCALE: 1/8" = 1'-0"



1 NORTH ELEVATION

SCALE: 1/8" = 1'-0"



2 SOUTH ELEVATION

SCALE: 1/8" = 1'-0"

Descriptive Notes

1. Stucco finish over CMU wall.
2. Salvaged site rock retaining wall.
3. Screen wall.
4. Integrated planter.
5. 8' x 8' overhead door.
6. 3' x 8' man door.
7. 6' x 8' double door
8. 2' x 8' window
9. 2' x 10' window
10. 2' x 12' window
11. Line of parapet beyond.
12. Bottom of structure beyond.

Contact Arizona 811 at least two full working days before you begin excavation

Call 811 or click Arizona811.com

NO.	DATE	REVISION	BY	APVD
-	-	-	-	-

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF WATER WORKS ENGINEERS, LLC. AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF WATER WORKS ENGINEERS, LLC.

FILENAME: /Volumes/1 work/3 projects/91 ww american water sedona/91 dwgs/91 3d/91 fp.pln PLOT DATE: 1/9/2017 PLOT TIME: 11:51 AM SCALE: 1/8" = 1'-0"

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

DESIGN NSL | DRAWN NSL | CHECKED MEJ | APPROVED JHM

WATERWORKS ENGINEERS
7580 N. Dobson Rd., Suite 200 • Scottsdale, AZ • 480.661-1742

HOLLY STREET STUDIO ARCHITECTS
822 N. Central Avenue
Phoenix, AZ 85004-2003
602 258 8555 tel
602 307 5677 fax
HollyStreetStudio.com

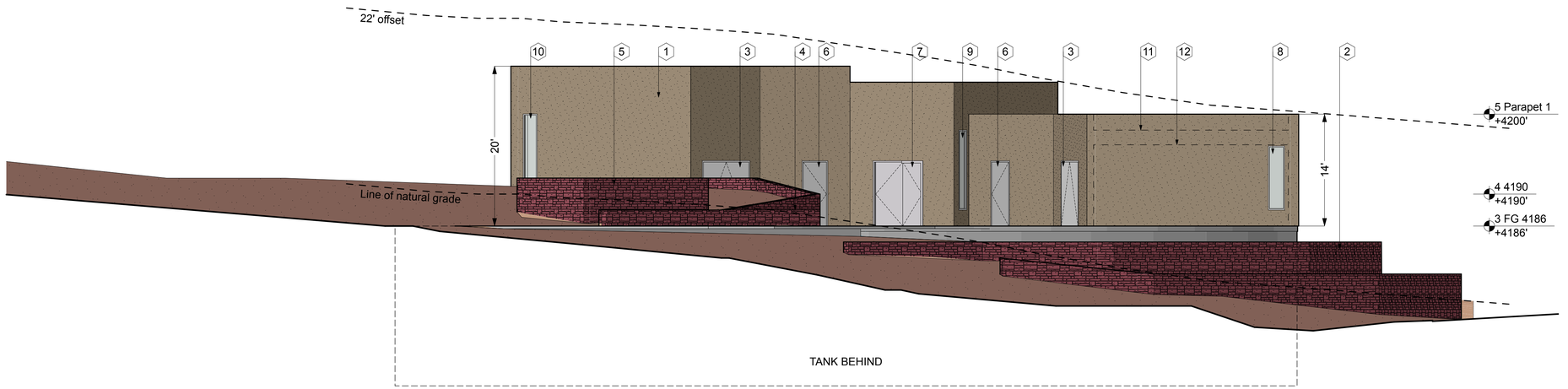
CONCEPTUAL DESIGN & COMMUNITY OUTREACH
EAST SEDONA WATER STORAGE TANK

Architectural

ELEVATIONS 1

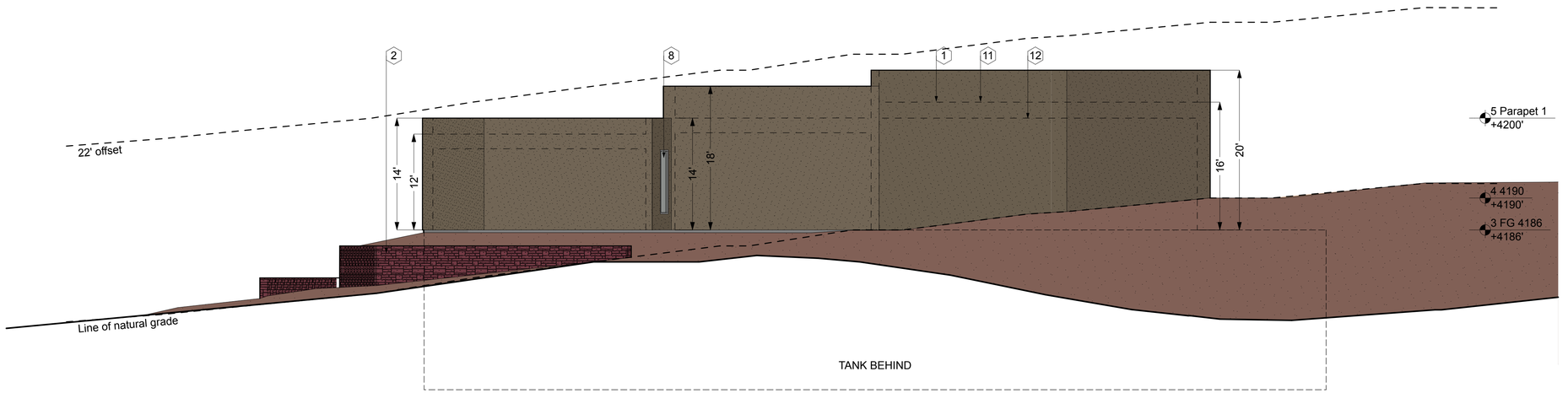
REGISTERED ARCHITECT CERTIFICATE NO. 32994 JAMES HOPKINS Signed ARIZONA U.S.A.
NOT FOR CONSTRUCTION
expiration : 09.30.2019

DATE JAN 2017
PROJECT NUMBER 16-029
DRAWING NUMBER A-401
SHEET 7 OF 9



1 EAST ELEVATION

SCALE: 1/8" = 1'-0"



2 WEST ELEVATION

SCALE: 1/8" = 1'-0"

Descriptive Notes

1. Stucco finish over CMU wall.
2. Salvaged site rock retaining wall.
3. Screen wall.
4. Integrated planter.
5. 8' x 8' overhead door.
6. 3' x 8' man door.
7. 6' x 8' double door
8. 2' x 8' window
9. 2' x 10' window
10. 2' x 12' window
11. Line of parapet beyond.
12. Bottom of structure beyond.

Contact Arizona 811 at least two full working days before you begin excavation

Call 811 or click Arizona811.com

NO.	DATE	REVISION	BY	APVD
-	-	-	-	-

FILENAME: /Volumes/1 work/3 projects/91 ww american water sedona/91 dwgs/91 3d/91 fp.pln PLOT DATE: 1/9/2017 PLOT TIME: 11:51 AM SCALE: 1/8" = 1'-0"

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
0 1"

DESIGN NSL
DRAWN NSL
CHECKED MEJ
APPROVED JHM

WATERWORKS ENGINEERS
7580 N. Dobson Rd., Suite 200 • Scottsdale, AZ • 480.661-1742

HOLLY STREET STUDIO ARCHITECTS
822 N. Central Avenue
Phoenix, AZ 85004-2003
602 258 8555 tel
602 307 5677 fax
HollyStreetStudio.com

CONCEPTUAL DESIGN & COMMUNITY OUTREACH
EAST SEDONA WATER STORAGE TANK

Architectural

ELEVATIONS 2

DATE JAN 2017
PROJECT NUMBER 16-029
DRAWING NUMBER A-402
SHEET 8 OF 9

REGISTERED ARCHITECT CERTIFICATE NO. 22984 JOHN M. JONES Signed ARIZONA, U.S.A. expiration : 09.30.2019

NOT FOR CONSTRUCTION

1 View from Corner of Mallard Dr and HWY 179

2 View from Sidewalk along 179

Contact Arizona 811 at least two full working days before you begin excavation

ARIZONA811 BLUE STAKE, INC.

Call 811 or click Arizona811.com

REGISTERED ARCHITECT CERTIFICATE NO. 23184 JOHN M. HOLLY Signed ARIZONA U.S.A. expiration : 09.30.2019

NOT FOR CONSTRUCTION

NO.	DATE	REVISION	BY	APVD
-	-	-	-	-

FILENAME: /Volumes/1 work/3 projects/91 ww american water sedona/91 dwgs/91 3d/91 fp.pln PLOT DATE: 1/9/2017 PLOT TIME: 11:51 AM SCALE:

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.
0 1"

DESIGN NSL | DRAWN NSL | CHECKED MEJ | APPROVED JHM

WATERWORKS ENGINEERS
7580 N. Dobson Rd., Suite 200 • Scottsdale, AZ • 480-661-1742

HOLLY STREET STUDIO ARCHITECTS
822 N. Central Avenue
Phoenix, AZ 85004-2003
602 258 8555 tel
602 307 5677 fax
HollyStreetStudio.com

CONCEPTUAL DESIGN & COMMUNITY OUTREACH
EAST SEDONA
WATER STORAGE TANK

Architectural

RENDERED PERSPECTIVES

DATE JAN 2017
PROJECT NUMBER 16-029
DRAWING NUMBER A-402
SHEET 9 OF 9

Appendix B FEMA Flood Insurance Rate Map (FIRM)

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) Zone 12N. The **horizontal datum** was NAD 83, GRS80. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench**

MAP SCALE 1" = 500'

250 0 500 1000

FEET

METER

NFIP

PANEL 7659G

FIRM

FLOOD INSURANCE RATE MAP

COCONINO COUNTY, ARIZONA
AND INCORPORATED AREAS

PANEL 7659 OF 8475

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
COCONINO COUNTY	040019	7659	G
SEDONA, CITY OF	040130	7659	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
04005C7659G

EFFECTIVE DATE
SEPTEMBER 3, 2010

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM

Appendix C Geotechnical Reports

Appendix D Plant Palette

EAST SEDONA WATER STORAGE TANK AND BOOSTER STATION

Proposed Plant Palette
November 21, 2016

Chris Winters & Associates + **ARC** studios

820 north 3rd street : phx arizona 85004
tel 602 955 8088: fax 602 253 3606
email cw@cwadesign.com

landscape architecture urban design

EAST SEDONA WATER STORAGE TANK AND BOOSTER STATION

Plant Palette

Supply and install the following plant material. Landscape architect to field verify location prior to planting. All plant material to meet ANA specifications and be of sound health and appearance.

Tree	Size
Alnus oblongifolia	Standard
Arizona alder	24" box
Acer grandidentatum	Standard
Bigtooth Maple	24" box
Acer negundo	Standard
Box Elder	24" box
Acacia greggii	Standard
Catclaw acacia	24" box
Canotia holocantha	Standard
Crucifuxion thorn	24" box
Celtis reticulata	Standard
Netleaf hackerry	24" box
Chilopsis linearis	Standard
Desert willow	24" box
Cupressus arizonica	Standard
Arizona Cypress	24" box
Juglans major	Standard
Arizona Walnut	24" box
Juniperus deppeana	Standard
Alligator Juniper	24" box
Juniperus monosperma	Standard
One-seed Juniper	24" box
Juniperus osteosperma	Standard
Utah Juniper	24" box
Fraxinus velutina	Standard
Arizona Ash	24" box
Parkinsonia florida	Standard/ Multi
Blue Palo Verde	24" box
Platanus wrightii	Standard
Arizona Sycamore	24" box
Populus fremontii	Standard
Fremont Cottonwood	24" box
Prosopis veluntia	Standard
Vetvet Mesquite	24" box
Prunus virginiana	Standard
Common Chokecherry	24" box
Pinus edulis	Standard
Pinyon Pine	24" box
Pinus monophylla	Standard
Single leaf Pinyon	24" box

Pinus ponderosa	Standard
Ponderosa pine	24" box
Quercus arizonica	Standard
Arizona White Oak	24" box
Quercus emoryi	Standard
Emory Oak	24" box
Quercus gambelii	Standard
Gambel Oak	24" box
Quercus palmeri	Standard
Palmer (Dunn) Oak	24" box
Salix gooddingii	Standard
Goodding Willow	24" box
Sapindus saponaria	Standard
Western Soapberry	24" box

Plant Palette Continued

Shrubs	**Size**
Arctostaphylos pungens	
Pointleaf manzanita	5 gallon
Atriplex canescens	
Four-wing Saltbush	5 gallon
Calliandra sp..	
Fairy Duster	5 gallon
Berberis fremontii	
Algerita	5 gallon
Cercocarpus montanus var. paucidentatus	
Hairy Mountain Mohogany	5 gallon
Cowania mexicana	
Cliffrose	5 gallon
Dalea formosa	
Feather Dalea	5 gallon
Eurotia lanata	
Winter-fat	5 gallon
Ephedra sp.	
Mormon Tea	5 gallon
Eschscholtzia mexicana	
Mexican Gold Poppy	5 gallon
Guara coccinea	
Scarlet Gaura	5 gallon
Krameria parvifolia	
Ranger Ratany	5 gallon
Larrea tridentata	
Creosote Bush	5 gallon
Minosa biuncifera	
Wait-a-Minute Bush	5 gallon
Parthenium incanum	
Mariola	5 gallon
Penstemon eatoni	
Eatoni Penstemon	5 gallon
Purshia subintegra	
Arizona Cliffrose	5 gallon
Quercus turbinella	
Shrub Live Oak	5 gallon
Sphaeralcea ambigua	
Globe mallow mixed color	5 gallon
Tequilia (Coldenia) canescens	
Shrubby Coldenia	5 gallon
Viguiera parishii (Deltoidea)	
Goldeneye	5 gallon

Ziziphus obtusifolia var. canescens Graythorn	5 gallon

Accents	**Size**
Agave parryi Century plant	5 gallon
Agave delumeteri Tonto basin agave	5 gallon
Dasylirion wheeleri Desert Spoon	5 gallon
Fouquieria splendens Ocotillo	Seed grown 24" box
Nolina microcarpa Bear Grass	5 gallon
Opuntia leptocaulis Christmas Cactus cholla	5 gallon
Opuntia phaeacanthia Desert Prickly Pear	5 gallon
Yucca baccata Banana Yucca	5 gallon
Yucca elata Soaptree Yucca	Specimen plant 24" box

Vines	**Size**
Vitis arizonica Arizona Grape	5 gallon

Appendix E "Will Serve" Letters

Darin Begay

From: Sandra.Finley@aps.com
Sent: Monday, December 5, 2016 11:44 AM
To: Darin Begay
Cc: Sandra.Finley@aps.com
Subject: 55 Bell Rock Tr - Will Serve

December 5, 2016

Darin Begay
Water Works Engineers
7580 N. Dobson Road #200
Scottsdale, AZ 85256

Re: 55 Bell Rock Tr, Sedona

Dear Mr. Begay,

The above referenced project is located in Arizona Public Service Company's electric service area. The Company extends its lines in accordance with the "Conditions Governing Extensions of Electric Distribution Lines and Services," Schedule 3, and the "Terms and Conditions for the Sale of Electric Service," Schedule 1, on file with the Arizona Corporation Commission at the time we begin installation of the electric facilities.

Application for the Company's electric service often involves construction of new facilities for various distances and costs depending upon customer's location, load size and load characteristics. With such variations, it is necessary to establish conditions under which Arizona Public Service will extend its facilities.

The enclosed policy governs the extension of overhead and underground electric facilities to customers whose requirements are deemed by Arizona Public Service to be usual and reasonable in nature.

Please give me a call at 928-646-8463 so that we may set up an appointment to discuss the details necessary for your project.

Thank you,

Sandy Finley
Sr. Customer Project Manager, Verde District
1250 E. State Route 89A, Cottonwood, AZ 86326 M.S. 4718
Tel (928)646-8463
sandra.finley@aps.com **aps.com**

CenturyLink™

CenturyLink Engineering
500 S Calvary Way
Cottonwood, AZ 86326

December 5, 2016

Darin Begay
WW Engineers
Scottsdale, AZ

RE: 55 Bell Rock Trail, Sedona, AZ 86351

Darin,

The above mentioned property is located in a parcel located in Section 19, Township 17N and Range 6E in Coconino County.

In response to your "Service Availability" request for the above mentioned property, this letter is to acknowledge, the property is within the CenturyLink serving territory.

The tariff Rates and Regulations prescribed for service for this location are on file with your State Utilities Commission, and may be examined at your CenturyLink Business Office.

Sincerely,

Armen McNerlin

Armen McNerlin
CenturyLink Engineer
500 S Calvary Way
Cottonwood, AZ 86326
office 928.634.2102
cell 928.821.4609