

Table of Contents:

- Application
- Proof of Ownership
- Letter of Intent
- Letter of Authorization
- Water Usage & Sanitary
- Traffic Generation Letter
- Will Serve Letters
- Surrounding Land Uses
- Drainage Report

Sincerely,

Luke A. Sefton, P.E.

President/Principle Engineer

Project Application

fillable PDF available online at: www.sedonaaz.gov/projects



City Of Sedona Community Development Department

102 Roadrunner Drive Sedona, AZ 86336 (928) 282-1154 • www.sedonaaz.gov/cd

Application for (check all that app	oly):						
☐ Conc	☐ Conceptual Review		☐ Comprehensive Review		□ Appeal		☐ Time Extension	
□ Comr □ Zone	munity Plan Amer Change	ndment	dment ☐ Development Review ☐ Conditional Use Perm		■ Subdivision □ Variance		☐ Minor Modification	
Project Name Chap			l View Terrace					
	Project Address	10 Sky Line Drive		Parcel I	No. (APN) 401-34-033E		-033B	
Project Information	Primary Contact	Chris Rife		Primary	ry Phone 480-734-3999		4-3999	
	Email	chrisrif	e13@gmail.com	Alt. Pho	one			
	Address	6817 S	S Pinehurst Dr	City/Sta	ate/ZIP	Gilbert	/AZ/85298	
Office Use Only	Application No			Date Re	eceived			
Office Use Only	Received by			Fee Pai	id			
Project Description	' 100 OL 15 LA 5 D 101 L 404 04 0005 LL 140 OL					of State Route 179		

Additional Contact Information: Please complete the following for all companies/people <u>authorized</u> to discuss the project with the City. Please attach additional sheets if necessary.

	Company	Sefton Engineering	Contact Name	David Nicolella
Contact #1	Project Role	Consultant	Primary Phone	928-202-3999
	Email	dn@sefengco.com	Alt. Phone	
	Address	40 Stutz Bearcat	City/State/ZIP	Sedona/AZ/86336
	Company		Contact Name	
Contact #2	Project Role		Primary Phone	
COIIIact #2	Email		Alt. Phone	
	Address		City/State/ZIP	
	Company		Contact Name	
Contact #2	Project Role		Primary Phone	
Contact #3	Email		Alt. Phone	
	Address		City/State/ZIP	

https://sedonaaz.sharepoint.com/sites/cd/documents/form/p&z forms/p&z project app 2018.doc



LETTER OF INTENT

Project Name: Chapel View Terrace Subdivision Preliminary Plat Application
Located within the Northwest ¼ of Section 30, Township 17 North, Range 6 East of the Gila, and Salt
River Base and Meridian.

Applicant: Sefton Engineering Consultants Owner: Passion LLC. Agent: Chris Rife

September 14, 2021

Cari Meyer, Planning Manager Community Development 102 Road Runner Drive Sedona, Arizona. 86366

Purpose: The purpose of this letter of intent is to describe the overall project and explain how this development will be in compliance with requirements for subdivision approval discussed within *Articles 7 and 8 of the Sedona Land Development Code*.

Luke A. Sefton (Sefton Engineering Consultants) Authorized Agent for the Project

Mr. Sefton moved to Sedona in 1987, and for the past 20 years has been the Principal Engineer and President of Sefton Engineering Consultants, Inc., where he is responsible for the day-to-day management of the team of engineers, surveyors, planners, and designers in a multitude of projects in Northern Arizona. Each one of these team members have many years of experience in Sedona and have a vested interest in the future of Sedona, as residents, friends, and neighbors.

Introduction:

The proposed Chapel Vista Terrace Subdivision will be developed by Passion LLC and will consist of six-lots, developed on 3.29-acres, with an average lot size of 0.55-acres (23,500 SQ.FT.). The intent of the development is to provide six lower-density single-family residential building lots that will seamlessly fit into the area in an orderly and harmonious design promoting public health, safety and welfare 8.3.E(5)e. The surrounding residential area, as well as this 3.29-acre site is zoned RS-18:Single-Family Residential, and the six proposed lots are all zoning compliant, in terms of lot size, standards, setbacks, heights, and impervious coverage. It is the developer's intent, among other elements, to protect the natural topography, watercourses, drainage ways, trees and to control erosion. The applicant has provided all necessary plans and these plans provide the level of detailed required for a preliminary plat submittal 8.3.E(5)g.

This subject parcel is adjacent to three roadways, 1. State Route-179 to the east, 2. West Chapel Road to the north, and 3. Sky Line Drive to the south. Access to the subdivision will be from the north side of the 3.29-acres which is adjacent to West Chapel Road. West Chapel Road is a dedicated public right-of-way, that currently provides access to 17 residential lots that are all part of the Mystic Hills subdivision, which is also zoned RS-18. The proposed "Chapel View Court" a private 33-foot-wide easement, will provide access to these six residential lots and will end with a cul-de-sac. Because of the existing adjacent streets, five of these proposed six lots have double street frontages, therefore non-vehicular access easements



(NVAE) have been applied at various locations throughout the subdivision to restrict access of each lot to one street frontage. In addition, this private easement will include utility easements allowing for water lines, sanitary sewer lines, gas lines, and electrical services, etc., as well as the required 5-foot-wide side walk on both sides 5.4.H(1).

The proposed Chapel View Court easement will provide safe access for vehicular, bicycle and pedestrian traffic for the six-lots and be designed to follow the natural topography minimizing cutting and grading 8.3.E(5)g. The property owner is proposing to not dedicate any public right-of-way to the City of Sedona. This proposed private easement will not cause the City to incur fiscal impact and maintenance to the private easement will be the responsibility of the homeowners 8.3-E(5)h,j.

Site Overview:

The planned Chapel View Terrace Subdivision is located on the southwest corner of State Route 179 and West Chapel Road and is addressed as 10 Sky Line Drive. The current Accessor's Parcel Number is: 401-34-033B. This entire 3.29-acre parcel is zoned Single-Family residential (RS-18) and is currently vacant.. As the zoning is consistent with the Community Plan's land use designation, no Community Plan Amendment or zone change is needed for the proposed subdivision. The property is not within a Community Focus Area (CFA), or any other special planning area designated by the City and will comply with all other ordinances and regulations of the City and the Arizona Revised Statues 7.3.A(1) and 8.3.E(5).c.d. In addition, the design and layout of lots are designed to accommodate topography, natural vegetation, soil conditions, drainage, street traffic, and other conditions 7.3.C.

General Project Description:

The proposed average lot size in this six-lot subdivision is 23,500 square feet with the smallest lot planned at approximately 19,900 square feet and the largest lot at 27,800 square feet. The proposed access point for these six-lots is from West Chapel Road which is also the access point for seventeen lots in the Mystic Hills subdivision. West Chapel Road has direct access to the State Route 179 Traffic Circle.





Included with the preliminary plat submittal are written comments from utility agencies that will provide services for the development stating that they do have utility services adjacent to the site and include the City of Sedona Sanitary Sewer Division, the Arizona Water Company, Arizona Public Service Electric (APS), Unisource Gas, Trash and Recycle collection and internet providers 8.3.E(5)i.

40 Stutz Bearcat Dr., Sedona, Arizona 86336 ~Phone: (928) 202-3999 Email: <u>info@sefengco.com</u> ~ <u>www.SeftonEngineeringCompany.com</u> In affiliation with:



Citizen Review Process:

Within thirty (30) days of the date of the preliminary plat submittal, a notification letter will be mailed to all property owners, homeowners' associations and neighborhood associations within 300-feet of the property's boundary in accordance with Section 8.3.D. This letter will describe the request and provide contact information for the applicant with an invitation to contact the applicant to discuss the project via email, zoom meeting, telephone or through regular mail. The applicant shall make a good-faith effort to address concerns of the surrounding property owners in the immediate neighborhood 8.3.E (5).e.

An Affidavit of Mailing will be prepared, notarized and submitted to the City of Sedona Community Development Division. Also, the applicant will post a sign on the southwest corner of State Route 179 and West Chapel Road, along the State Route 179 frontage and at the Sky Line Drive entrance, describing the preliminary plat request and provide the applicant's contact information. Finally, the Affidavit of Notification will include a map of the sign posting sites as well as photos of the sign posting.

Conclusion:

This letter of intent and all the other submitted documentation confirms that the proposed Chapel View Terrace Preliminary Plat will be in compliance with the subdivision requirements described within *Articles 7 and 8 of the Sedona Land Development Code*. The Chapel View Terrace Subdivision will comply with the City of Sedona's Subdivision Regulations as follows:

- Section 8.3.E(5), Approval Criteria
 - o This subdivision will be developed in accordance with the:
 - o The subdivision is compliant with the Sedona Land Development Code and other applicable regulations
 - o This subdivision will be developed in a way that will:
 - Have minimal impacts on Surrounding Property Owners
 - Minimize Adverse Environmental Impacts
 - Minimize Adverse Fiscal Impacts
 - Provide an Adequate Road System
 - Provide Adequate Public Services and Facilities
 - o This request has been reviewed through the pre-application meeting process in accordance with Section 8.3.B, of the Sedona Land Development Code. This project does not have to go through the conceptual review public meeting because it is less that ten lots. This development consists of eight lots.
 - o The subdivision will be orderly and harmonious with the surrounding area
 - o The subdivision will provide safe ingress and egress for vehicular, bicycle, and pedestrian traffic
 - o The subdivisions public infrastructure will have adequate water supply, sewage disposal, electric service, storm drainage and other utilities
 - o The public infrastructure shall be constructed in accordance with the Engineering Standards Manual
 - o This subdivision will comply with all ordinances and regulations of the City and the Arizona Revised Statutes



Should you have any questions, or need any additional information, please contact David Nicolella at (928)-202-3999 Ext. 104 or dn@sefengco.com.

Sincerely

Luke A. Sefton, P.E.

President/Principle Engineer Project No.: 210305

Luke Sefton PE, CFM



Tim Huskett, PE, CFM
Robert Lane, Public Lands
Cheri Baker, Office
Manager

Crockett Saline, E.I.T. Christopher Henry, E.I.T. David Nicolella, Planner Leonard Filner, Planner

Passion LLC 1300 W Waterloo Rd Edmond, OK 73025 Chris Rife

Letter of Authorization

Granted by: Chris Rife

Granted to: Sefton Engineering Consultants

Regarding: Chapel View Terrace. Chris Rife, owner, hereby gives authorization to Sefton Engineering Consultants, to act as agent in the effort of the submittal and approval of the above referenced property

Sincerely,

Passion LLC 1300 W Waterloo Rd

Edmond, OK 73025

Project No.: 210305

~Phone: (928) 202-3999
Email: info@sefengco.com ~
www.SeftonEngineeringCompany.com
In affiliation with:
Heritage Land Surveying & Mapping, Inc. with
office in Sedona, Camp Verde & Colorado



August 16, 2021

Sedona Community Development Department 102 Roadrunner Dr. Bldg. 104 Sedona, AZ 86336

Subject: Subdivision Preliminary Plat – Sanitary Sewage and Water Supply

Project Overview & Location

The purpose of this report is to calculate demand for sanitary sewage and water supply for the proposed Chapel View Terrace subdivision south of West Chapel Rd. in Sedona. It is proposed that six lots be included in the subdivision.

The proposed subdivision is located near existing infrastructure. There is a sanitary line on both West Chapel Road as well as Skyline Dr maintained by the City of Sedona. Water supply will be accessed from West Chapel Rd where an existing 8" line is maintained by the Arizona Water Company. The job site is in the NW ¼ of Section 30, Township 17 North, Range 6 East of the Gila-Salt River Principal Meridian in Yavapai, Arizona. More specifically described as Assessor's Parcel Number 401-34-033B. This parcel contains approximately 3.29 Acres.

Water Demands

For this report total water demand for the development is based on the typical average water usage for each building. If each parcel is assumed to have a future single-family residence, then an average of 2.50 people per household is assumed. According to the *Arizona Department of Water Resources* on average, each Arizona resident uses about **120 gallons per day (gpd)**. This means that there will be approximately 300 gallons per day per household.

The City of Sedona does not publish any peaking factors therefore, the accepted values from Arizona Water Company were used to set Max-Day and Peak-Hour peaking factors. According to the company, the Max-Day Demands have a peaking factor of 2.0 times the Average-Daily Demand. Peak-Hour Demands have a peaking factor of 3.0 times the Average-Daily Demand. Water demands under full build-out conditions were calculated as shown in Table 1.

Table 1: Water Demand Calcs

Water Demand Calcs.						
Given:						
Parcels =	6	parcels				
Residents =	2.5	people/parcel				
Resident Demand =	120	gal/day				
Results:	120	gai/uay				
Household		gal/day per				
Demand =	300	house				
Total						
Demand =	1800	gal/day				
	1.25	GPM				

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Table 2: Water Demand Design Flows

Building ID	Average Daily Water Demand (GPD)	Average Day Water Demand (GPM)	Max Day Peaking Factor	Max Day Water Demand (GPM)	Peak Hour Peaking Factor	Peak Hour Water Demand (GPM)
6 Single Family Residences	1800	1.25	2.00	2.50	3.000	3.75
Total	1800	1.25		2.50		3.75

Total estimated design demands for six future single-family residences are summarized below:

Average Daily Demand: 1800 gallons per day (GPD) or 1.25 gallons per minute (GPM)

Maximum-Day Demand: 2.50 gallons per minute (GPM)
 Peak-Hour Demand: 3.75 gallons per minute (GPM)

Sanitary Sewage

Sewer laterals will be utilized to connect to existing lines on West Chapel Road and Sky Line Drive. Assuming that each residence is on average four bedrooms with more than 28 fixtures then the design flow would be 750 GPD of sanitary sewage wastewater. If all lots are built out to this assumption, then there will be approximately 4500 GPD of wastewater produced from this subdivision to contribute to the City of Sedona Wastewater system. This translates to an estimated 3.125 GPM of wastewater disposal.

Fire Protection

The fire & life safety requirements for the City of Sedona Fire Department require that a fire hydrant be placed so that a structure does not exceed 600 feet. An existing fire hydrant is located near the proposed ingress/egress. If any portion of a structure exceeds 600 ft then an intermediate fire hydrant will be required. The required fire flow for the building shall meet a minimum of 1,500 gallons per minute (GPM) or the available GPM in the water delivery system at 20 psi, whichever is less. From the existing infrastructure, this job will not require an additional fire hydrant to be installed.

Conclusion

After due diligence of the existing infrastructure and some analysis of future development, there will be sufficient services to provide water supply and wastewater disposal on site. No critical issues were identified that would preclude the anticipated development presented in this report. As mentioned above, it is estimated that the subdivision will require a max of 3.75 GPM of water and 3.125 GPM of wastewater disposal.

Sincerely,

Luke Sefton, PE, CFM

TEL: (928) 202-3999, Cell: (928) 646-3494, Email: ls@SefEngCo.com

Prepared By: Christopher Henry, EIT

EXPIRES 3/31/2023

LUKE A

SEFTON



August 12, 2021

Sedona Community Development Department 102 Roadrunner Dr. Bldg. 104 Sedona, AZ 86336

Subject: Subdivision Preliminary Plat – Traffic Impacts

Dear Sedona Community Development Department,

Sefton Engineering has prepared this Traffic Generation Assessment as required by the City of Sedona in accordance with the Community Development Design, Review, Engineering and Administrative Manual for the proposed subdivision preliminary plat of the property located between W Chapel Rd. and Skyline Dr. More specifically described as APN 401-34-033B in Coconino County, Arizona. The property abuts SR-179 to the west. Access for the proposed subdivision will be off W Chapel Rd. approximately 150 feet west of the round-a-bout of SR-179 and Chapel Rd. W Chapel Rd is classified as a Minor Collector Road and SR-179 is classified as a Major Arterial Road and is a divided four-lane highway. The posted speed limit on W Chapel Rd is 25 MPH and the posted speed limit on SR-179 is 35 MPH.

The Institute of Transportation Engineers (ITE) Trip Generation Rates 10th Edition was used to obtain the trip generation rates for the proposed development based on six single-family homes. These estimations were calculated for the Average Weekday, AM Peak Hour and PM Peak Hour using land use Variety Store (ITE Code 210). The results of the calculations are shown below:

	ITE		Average	AM Peak Hour		PM Peak Hour		our	
Land Use	Code	Intensity	Weekday	In	Out	Total	In	Out	Total
Trip Generation Rates									
Single-Family Detached Housing	210	1 du	9.44	25%	75%	0.75	63%	37%	99%
Trip Generation Summary									
			Average	Α	M Peak Ho	our	Р	M Peak H	our
Description		Size	Weekday	In	Out	Total	In	Out	Total
PROPOSED USE									
Single-Family Detached Housing		6	56.64	1.125	3.375	4.50	3.78	2.22	5.94
Proposed Project Trips			56.64	1.125	3.375	4.50	3.78	2.22	5.94

It is shown in the table above that this subdivision will produce approximately 6 total traffic moves during the PM Peak Hour. This subdivision will be a minimal impact on traffic counts.

Sincerely,

Luke Sefton, P.E., CFM TEL: (928) 202-3999 Email: <u>Is@sefengco.com</u>

Prepared by: Christopher Henry, EIT





WILL

SERVE

LETTERS



1250 E. State Route 89A Cottonwood, AZ 86326 July 7, 2021

To: David Nicolella,

Regarding: (APN): 401-34-033B, located on the west side of State Route 179, addressed 10 Sky Line Drive, within Coconino County

The above referenced project is located in Arizona Public Service Company's electric service area. As a matter of fact, this property is already being served by APS. 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. These Schedules are available on-line at aps.com.

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.

Sincerely,

Patty G

Verde Control Desk 928 646 8502 Verdecontroldesk@apsc.com

Our Purpose: As Arizona stewards, we do what is right for the people and prosperity of our state.

Our Vision: Create a sustainable energy future for Arizona.

Our Mission: Serve our customers with clean, reliable and affordable energy.

ARIZONA WATER COMPANY

3805 N. BLACK CANYON HIGHWAY, PHOENIX, AZ 85015-5351 • P.O. BOX 29006, PHOENIX, AZ 85038-9006 PHONE: (602) 240-6860 • FAX: (602) 240-6874 • TOLL FREE: (800) 533-6023 • www.azwater.com

July 16, 2021

Mr. David Nicolella Sefton Engineering Consultants 40 Stutz Bearcat Drive Sedona, AZ 86336

> Re: Domestic Water Service to 10 Sky Line Drive - APN 401-34-033B

Dear Mr. Nicolella:

Arizona Water Company (the "Company") certifies that the above-described property is located within its Sedona Certificate of Convenience and Necessity in Sedona, Arizona, and that it will provide water service to the property in accordance with the Company's tariffs and the Arizona Corporation Commission's rules and regulations. It will be the responsibility of the developer to provide the funds to install the necessary water facilities, and the Company assumes no liability to install those facilities if the funds are not advanced by the developer.

The design of the water distribution system must comply with the Company's standard specifications that are on file at the Yavapai County Development Services. Both preliminary and final water system designs must be approved by the Company.

It will also be the responsibility of the developer to meet all the requirements of regulatory agencies having jurisdiction over Arizona subdivisions and of Arizona statutes applicable to subdivided or unsubdivided land, including, but not limited to, requirements relating to a Certificate of Assured Water Supply, as set forth in the Arizona Groundwater Management Act, A.R.S. §45-576.

Please notify the Company if you will be proceeding with development of the property so the Company can prepare the necessary Agreement.

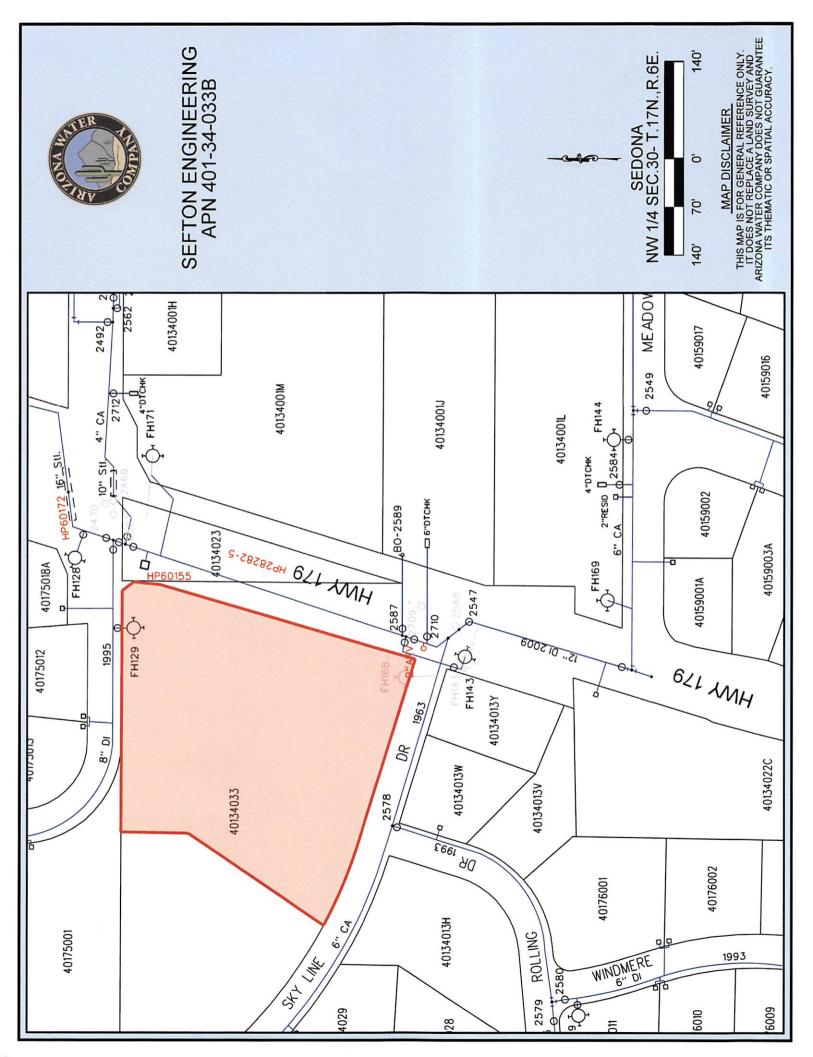
Very truly yours,

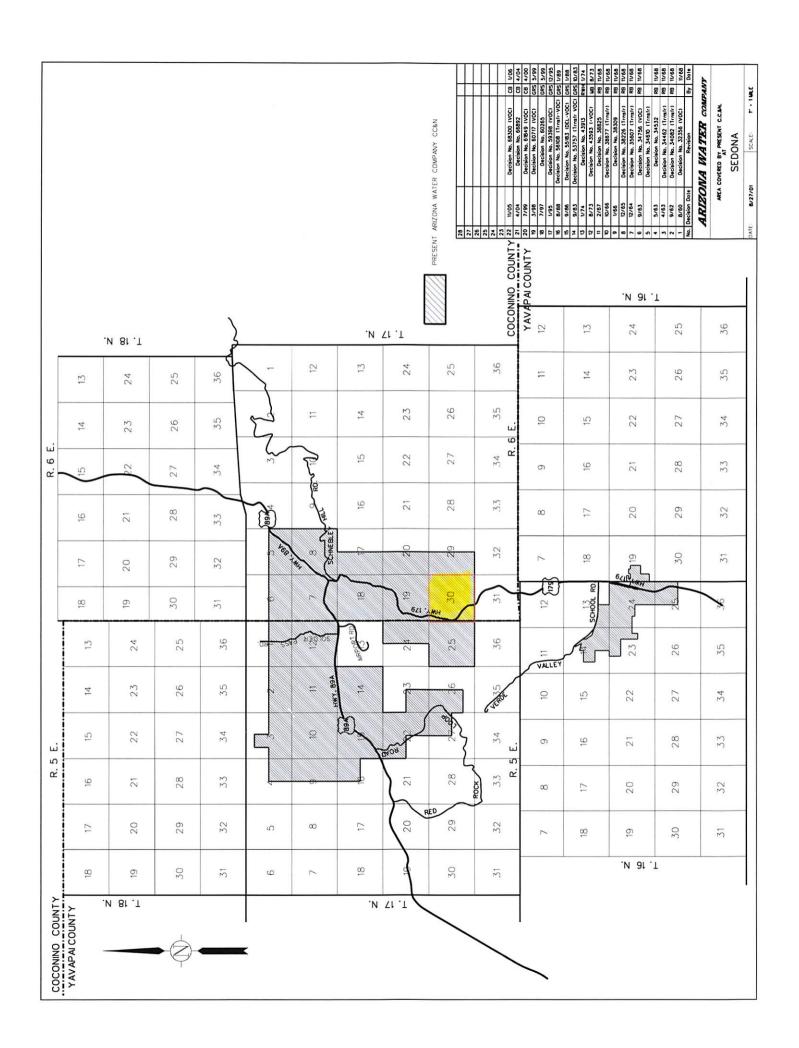
Andrew J. Haas, P.E.

Vice President – Engineering developmentservices@azwater.com

aulen J. Haas

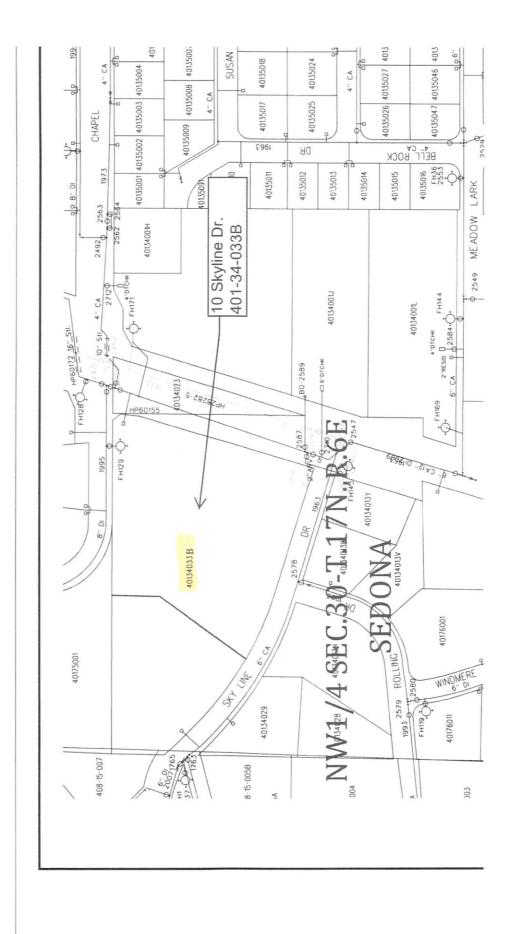
fad





Parcel Viewer Map







CenturyLink Engineering 135 W. Orion St. 1st Floor Tempe, AZ 85283 BICS@Centurylink.com

July 9, 2021

Mr. David Nicolella Sefton Engineering Consultants 40 Stutz Bearcat Drive Sedona, AZ 86336

RE: Chapel Road Subdivision

Mr. Nicolella,

The above mentioned project is located in a parcel of land located in Section 13, Township 16N and Range 5E in Coconino County.

In response to your "Service Availability" request for the above mentioned development located at 10 Skyline Drive in Sedona, Arizona, this letter is to acknowledge that this subject property is within CenturyLink serving territory.

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

Sincerely,

Kathy Hadrich

Kathy Hadrich Sr. Manager Local Network Implementation 5025 N. Black Canyon Hwy Phoenix, AZ 85015 602-630-5480 kathrine.hadrich@centurylink.com



Mail: 102 Roadrunner Dr. Sedona, AZ 86336 Site: 7500 W. SR 89A Sedona, AZ 86336 (928) 204-2234 sedonaaz.gov FAX (928) 204-7137 July 9, 2021

David Nicolella Sefton Engineering Consultants 40 Stutz Bearcat Dr. Sedona, AZ 86336

SUBJECT: WILL SERVE SEWER – 10 SKYLINE DRIVE APN 401-34-033B

This letter is in response to your request regarding sewer service availability for the property referenced above.

The parcel does not currently have sewer availability, as defined in City Code section 13.15, because there is not a sewer main adjacent to the property in Skyline Drive. However, there is a sewer stub extending into Skyline Drive from SR179. As part of the proposed development, if the sewer was extended into Skyline Drive from the existing stub, sewer would be available. Please note that available sewer capacity is on a first come-first served basis, and there are no guarantees of sewer capacity for this property until a development proposal is approved.

The proposed preliminary plat you included in your request shows access to the property off of West Chapel Road. There is currently sewer available in West Chapel Road, adjacent to the parcel. If the plat is approved as shown, this parcel would meet criteria for sewer availability per City Code section 13.15.

In conclusion, sewer service is not currently available on this property as addressed; if adequate capacity is available at the time of development approval and an extension of the existing stub is made, sewer will be served by the city of Sedona. Alternatively, sewer will be served if the parcel is addressed on West Chapel Road. If you have any questions or concerns, please contact me at (928) 203-5069.

Sincerely,

Roxanne Holland, PE Director of Wastewater

rapullat

Enclosure: Proposed Preliminary Plat

RH:ms

cc: J. Andy Dickey, Director of Public Works/City Engineer (e-copy) Sandra Phillips, Assistant Director of Public Works (e-copy)

Hanako Ueda, Assistant Engineer (e-copy)

Sal Valenzuela, Chief Public Works Inspector (e-copy) Marsha Beckwith, Accounting Technician (e-copy)

Streets file: Skyline Dr

SHEET INDEX

2 PRELIMINARY PLAT

PRELIMINARY PLAT COVER SHEET

CHAPEL ROAD SUBDIVISION PRELIMINARY PLAT

A SUBDIVISION OF PARCEL B, AS RECORDED IN INSTRUMENT #3686479 & INSTRUMENT #3807829, COCONINO COUNTY RECORDERS OFFICE LOCATED WITHIN THE NORTHWEST 1/4 OF SECTION 30, TOWNSHIP 17 NORTH, RANGE 6 EAST OF THE

WITHIN THE CITY OF SEDONA, COCONINO COUNTY, ARIZONA

ORIGINAL ASSESSORS PARCEL NUMBER 401-34-033B

GILA AND SALT RIVER BASE,

DECLARATION AND DEDICATION

KNOW ALL MEN BY THESE PRESENTS:

THAT RIFE DEVELOPMENT, LLC, A LIMITED LIABILITY CORPORATION ("TRUSTEE"), HAS SUBDIVIDED UNDER THE NAME OF "CHAPEL ROAD SUBDIVISION", A PORTION OF THE NORTHWEST QUARTER OF SECTION 30, TOWNSHIP 17 NORTH, RANGE 6 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, COCONINO COUNTY ARIZONA, AS SHOWN PLATTED HEREON AND HEREBY PUBLISHES THIS PLAT AS AND FOR THE PLAT OF SAID "CHAPEL ROAD SUBDIVISION" ("THE PLAT"). "TRUSTEE" HEREBY DECLARES THAT "THE PLAT" SETS FORTH THE LOCATION AND GIVES THE DIMENSIONS OF THE LOTS, TRACTS, STREETS, AND EASEMENTS, AND THAT EACH SHALL BE KNOWN BY THE NUMBER, LETTER, OR NAME GIVEN HEREON.

"TRUSTEE" HEREBY DECLARES THAT THE EASEMENTS SHOWN UPON THIS PLAT SHALL BE ESTABLISHED AND RESERVED IN ACCORDANCE WITH THE NOTATION ON SAID PLAT AND SHALI PROVIDE TO THE PUBLIC THE USE THEREOF FOREVER FOR INGRESS. EGRESS PURPOSES AND FOR INSTALLATION, OPERATION, AND MAINTENANCE OF PUBLIC UTILITY LINES AND FACILITIES, INCLUDING WITHOUT LIMITATION, WATER, SANITARY SEWER, ELECTRIC, NATURAL GAS, TELEPHONE, CABLE SERVICES, WATERCOURSES AND/OR DRAINAGE FACILITIES. THE "TRUSTEE" ALSO DECLARES THAT THE STREETS CONSTRUCTED AND LOCATED WITHIN THE SUBJECT EASEMENTS PROVIDING ACCESS TO FROM AND THROUGHOUT THE SUBDIVISION SHALL REMAIN PRIVATE, AND ARE NOT DEDICATED TO THE PUBLIC BUT ARE RESERVED FOR THE USE, ENJOYMENT AND BENEFIT OF THE ADJACENT OWNERS: THE MAINTENANCE OF THE SAID STREET WILL BE THE RESPONSIBILITY OF THE INDIVIDUAL

FURTHER THE "TRUSTEE" HEREBY GRANTS TO THE CITY OF SEDONA. A MUNICIPAL CORPORATION. LICENSE TO ACCESS UPON THE ESTABLISHED EASEMENT AND STREETS PROVIDED AS DESCRIBED HEREON, FOR THE PURPOSE OF PERIODIC INSPECTION AND MAINTENANCE OF THE WATERCOURSES AND/OR DRAINAGE FACILITIES. THE MAINTENANCE OF THE DRAINAGE EASEMENTS AND FACILITIES SHALL BE THE RESPONSIBILITY OF THE INDIVIDUAL LOT OWNERS WITHIN THE SUBDIVISION.

IN WITNESS WHEREOF:

"TRUSTEE" HAS CAUSED THIS PLAT TO BE DULY EXECUTED AS OF THIS _____ DAY OF

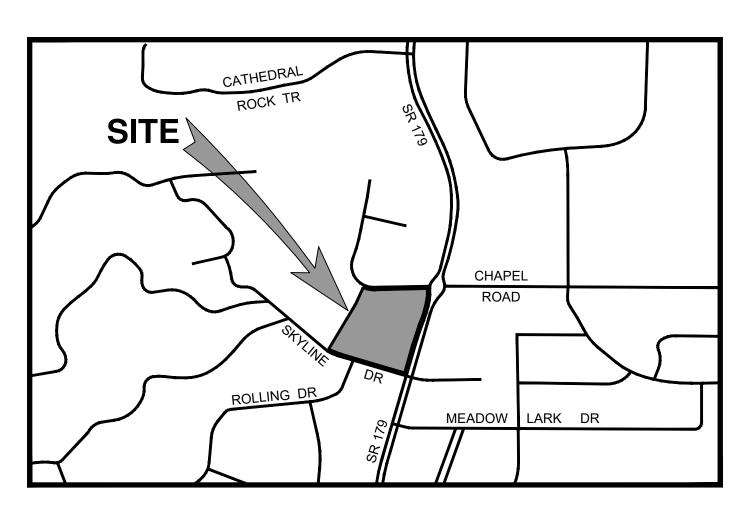
BY: ______ TRUST OFFICER

STATE OF ARIZONA)

COUNTY OF COCONINO)

SUBSCRIBED AND SWORN BEFORE ME ON THIS _____ DAY OF _____, 2021 _____, MY COMMISSION EXPIRES

NOTARY PUBLIC



VICINITY MAP NOT TO SCALE

UTILITY COMPANIES

ELECTRIC: ARIZONA PUBLIC SERVICE COMPANY P.O. BOX 53920, STE. 9996 PHOENIX, ARIZONA 85072-3920

ARIZONA WATER COMPANY 3805 N. BLACK CANYON HIGHWAY PHOENIX, AZ 8505-5351

CITY OF SEDONA PUBLIC WORKS DEPARTMENT 102 ROADRUNNER DRIVE SEDONA, AZ 86336

CABLE/PHONE: CENTURYLINK CENTURYLINK ENGINEERING 500 S. CALVARY WAY

> SUDDENLINK 65 COFFEEPOT DRIVE STE. A SEDONA, ARIZONA 86336

COTTONWOOD, AZ 86326

GAS: UNISOURCE ENERGY SERVICES UNS GAS, INC.

P.O. BOX 80078 PRESCOTT, AZ 86304-8078

COLLECTION: PATRIOT DISPOSAL SOLID WASTE COLLECTION: 211 SMITH ROAD SEDONA, AZ 86336

DEVELOPER **CONTACT INFORMATION**

LEGAL DESCRIPTION

1/2 INCH REBAR TO THE POINT OF BEGINNING

THENCE SOUTH 35 DEGREES, 53 MINUTES, 16 SECONDS EAST, A DISTANCE OF 24.46 FEET

THENCE SOUTH 00 DEGREES, 50 MINUTES, 06 SECONDS WEST, A DISTANCE OF 36.62 FEET

THENCE NORTH 72 DEGREES, 21 MINUTES, 33 SECONDS WEST, A DISTANCE OF 281.70 FEET;

THENCE NORTHWESTERLY THROUGH A CURVE LENGTH OF 126.96 FEET, A RADIUS OF 678.28 FEET THENCE NORTH 34 DEGREES, 06 MINUTES, 06 SECONDS EAST, A DISTANCE OF 238.76 FEET;

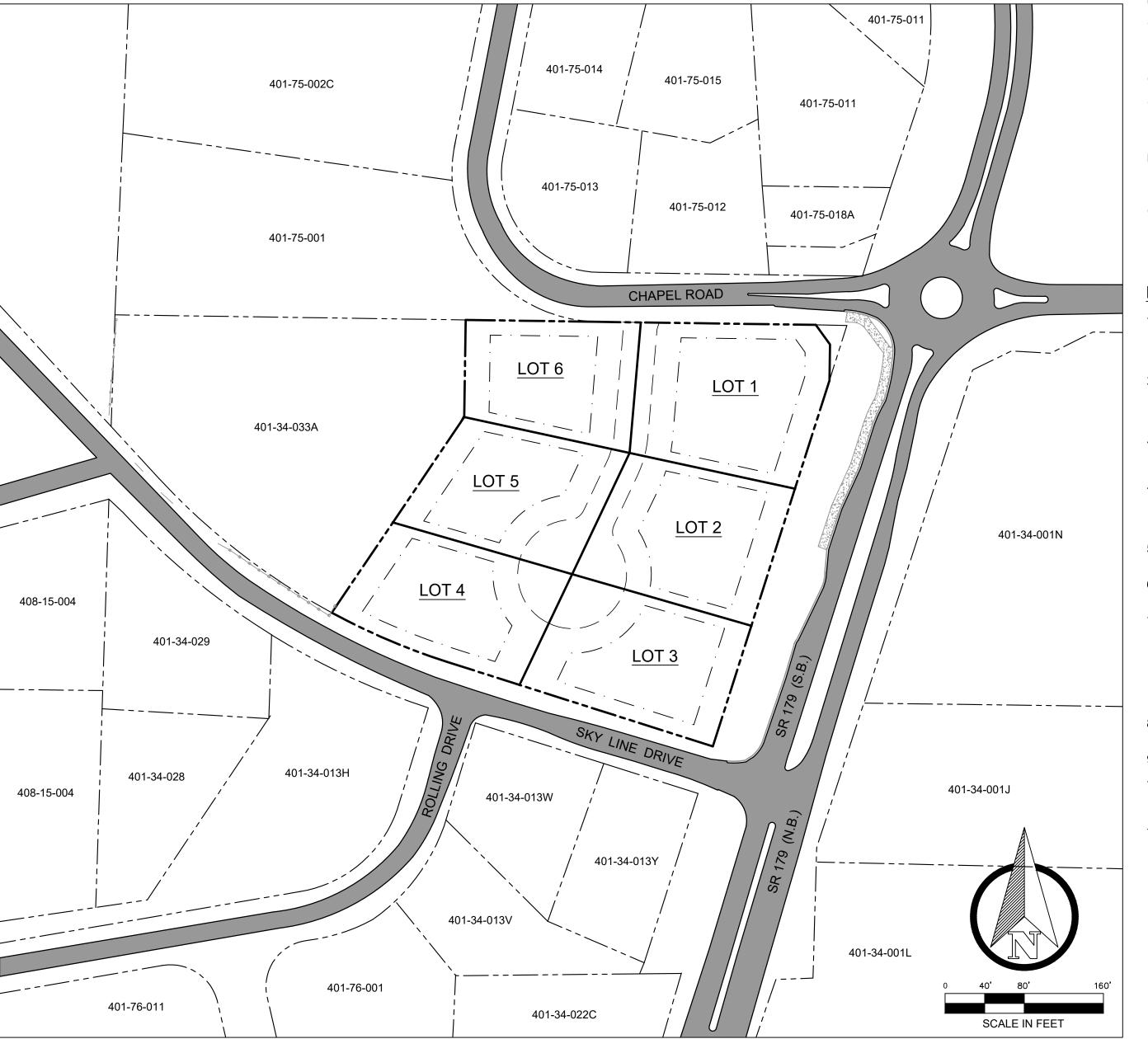
CHRIS RIFE RIFE DEVELOPMENT LLC 6817 S. PINEHURST DRIVE GILBERT, AZ 85298 (480) 734-3999 CHRISRIFE@GMAIL.COM

PARCEL ZONING RS-18

SINGLE FAMILY RESIDENCE MIN LOT SIZE = 18,000 SQ. FT.

LOTS 1 - 6 SMALLEST LOT = 19,900 S.F. (0.46 AC) LARGEST LOT = 27,890 S.F. (0.64 AC)AVERAGE LOT SIZE = 23,890 S.F. (0.55 AC)

CONTAINING ±3.29 ACRES ZONED SINGLE FAMILY RESIDENTIAL (RS-18) CASE NO. (SUB)



PARCEL "B", AS RECORDED IN INSTRUMENT #3686479 & INSTRUMENT #3807829, IN THE RECORDS OF COCONINO COUNTY, ARIZONA LOCATED IN THE

NORTHWEST 1/4 OF SECTION 30, TOWNSHIP 17 NORTH, RANGE 6 EAST OF THE GILA, SALT RIVER BASE AND MERIDIAN, COCONINO COUNTY, ARIZONA;

THENCE SOUTH 89 DEGREES, 10 MINUTES, 00 SECONDS EAST, A DISTANCE OF 133.90 FEET ALONG THE NORTHWEST LINE OF SECTION 30;

THENCE SOUTH 89 DEGREES, 30 MINUTES, 46 SECONDS EAST, A DISTANCE OF 144.16 FEET, TO THE EAST LINE OF SAID TRACT "A"

THE NORTHWEST QUARTER OF SECTION 30, TOWNSHIP 17 NORTH, RANGE 6 EAST AS MONUMENTED BY B.L.M. BRASS CAPPED PIPES.

THENCE NORTH OO DEGREES, 50 MINUTES, 00 SECONDS EAST, A DISTANCE OF 98.18' FEET, TO THE POINT OF BEGINNING.

BEGINNING AT THE NORTHWEST CORNER OF SECTION 30, THENCE SOUTH 89 DEGREES, 10 MINUTES, 00 SECONDS EAST A DISTANCE OF 354.46 FEET TO A

THENCE SOUTH 17 DEGREES, 40 MINUTES, 03 SECONDS WEST, A DISTANCE OF 387.97 FEET, ALONG THE WEST RIGHT-OF-WAY LINE OF STATE ROUTE 179;

THENCE SOUTH 89 DEGREES, 11 MINUTES, 50 SECONDS EAST, A DISTANCE OF 219.87 FEET, ALONG SOUTHERLY RIGHT-OF-WAY LINE OF CHAPEL ROAD;

THE BASIS OF BEARINGS FOR THIS DESCRIPTION IS SOUTH 89 DEGREES, 10 MINUTES, 00 SECONDS EAST (PER B.L.M. PLAT) ALONG THE NORTH LINE OF

CERTIFICATE OF APPROVALS

SEDONA COMMUNITY DEVELOPMENT DEPARTMENT

DIRECTOR	DATE	
SEDONA FIRE DISTRICT		
FIRE MARSHAL	DATE	
SEDONA PUBLIC WORKS DEPARTMENT		
CITY ENGINEER	DATE	
SEDONA CITY COUNCIL		
MAYOR OF SEDONA	DATE	
CITY CLERK	 DATE	

PLAT NOTES

- NO STRUCTURE OF ANY KIND SHALL BE CONSTRUCTED OR PLACED WITHIN OR OVER ANY UTILITY EASEMENT EXCEPT WOOD, WIRE OR REMOVABLE SECTION TYPE FENCING, OR SUITABLE LANDSCAPING THAT DOES NOT INTERFERE WITH THE INTENDED PURPOSE OF THE
- NO STRUCTURE OF ANY KIND SHALL BE CONSTRUCTED OR PLACED WITHIN OR OVER THE DRAINAGE EASEMENT EXCEPT STONE, GRAVEL, OR OTHER DRAINAGE CHANNEL MATERIALS OR SUITABLE LANDSCAPING THAT DOES NOT INTERFERE WITH THE INTENDED PURPOSE OF THE
- 3. ALL STREETS PLATTED HEREON ARE PRIVATE AND SHALL NOT BE MAINTAINED BY THE CITY OF SEDONA. STREET MAINTENANCE SHALL BE THE RESPONSIBILITY OF THE ADJACENT
- 4. VISIBILITY EASEMENTS SHOWN ON THE SUBDIVISION LAND DEVELOPMENT PLANS SHALL BE MAINTAINED BY THE THE ADJACENT PROPERTY OWNERS ON BOTH SIDES OF ENTRANCE ROAD. VEGETATION WITHIN SHALL BE PRUNED AND MAINTAINED AT A HEIGHT LESS THAN 2'. TREE BRANCHES LOWER THAN 6' WITHIN THE TRIANGLES SHALL ALSO BE PRUNED.
- 5. FRONT PROPERTY LINES FOR LOTS 1 6 ARE THE CENTER LINE OF THE INGRESS/EGRESS
- 6. ALL FRONT BUILDING SETBACKS SHALL BE MEASURED FROM THE EDGE OF THE INGRESS/EGRESS EASEMENT.
- 7. LOT CORNERS WITHIN THE SUBDIVISION SHALL BE SET WITHIN 90 DAYS OF THE APPROVAL AND RECORDATION OF THE FINAL PLAT AND WILL BE MONUMENTED IN ACCORDANCE WITH THE ARIZONA BOUNDARY SURVEY MINIMUM STANDARDS BY THE REGISTERED LAND SURVEYOR OF RECORD. THE MONUMENTS SHALL BE 1/2" REBARS SET WITH PLASTIC CAPS INSCRIBED WITH "LS---" AT EACH NEW LOT CORNER OR MISSING CORNER. ADDITIONALLY, LOT CORNERS LOCATED IN THE ROADWAY ASPHALT SHALL BE SET WITH 3" ALUMINUM CAPS INSCRIBED WITH "CITY OF SEDONA - LS----".
- 8. THE FOUND MONUMENTS SHOWN HEREON ARE FROM THE NOTES OF THE ACTUAL FIELD SURVEY CONDUCTED BY _____ RLS #___ ON _____
- 9. ALL RECORDED EASEMENTS ARE SHOWN AS PART OF THESE DOCUMENTS.
- 10. THE WORD "CERTIFICATION", AS SHOWN HEREON, MEANS AN EXPRESSION OF PROFESSIONAL OPINION REGARDING THE FACTS DEPICTED ON THIS PLAT AND DOES NOT CONSTITUTE A WARRANT OR GUARANTEE. EITHER EXPRESSED OR IMPLIED.
- 11. THE LAND BEING SUBDIVIDED HEREON IN NOT WITHIN A SPECIAL FLOOD HAZARD AREA.

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS PLAT IS SOUTH 89 DEGREES, 10 MINUTES, 00 SECONDS, EAST (PER B.L.M. PLAT) ALONG THE NORTH LINE OF THE NORTHWEST QUARTER OF SECTION 30, TOWNSHIP 17 NORTH, RANGE 6 EAST G.&S.R.M., COCONINO COUNTY, ARIZONA

LAND SURVEYOR CERTIFICATION

THIS FINAL PLAT AND SURVEY ON WHICH IT IS BASED WHERE CONDUCTED UNDER MY DIRECT SUPERVISION AND IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF. THIS MAP IS PUBLISHED SUBJECT TO ALL CONDITIONS, RESERVATIONS AND RESTRICTIONS OF THE PUBLIC RECORD ON THIS

 RLS	

SHEET

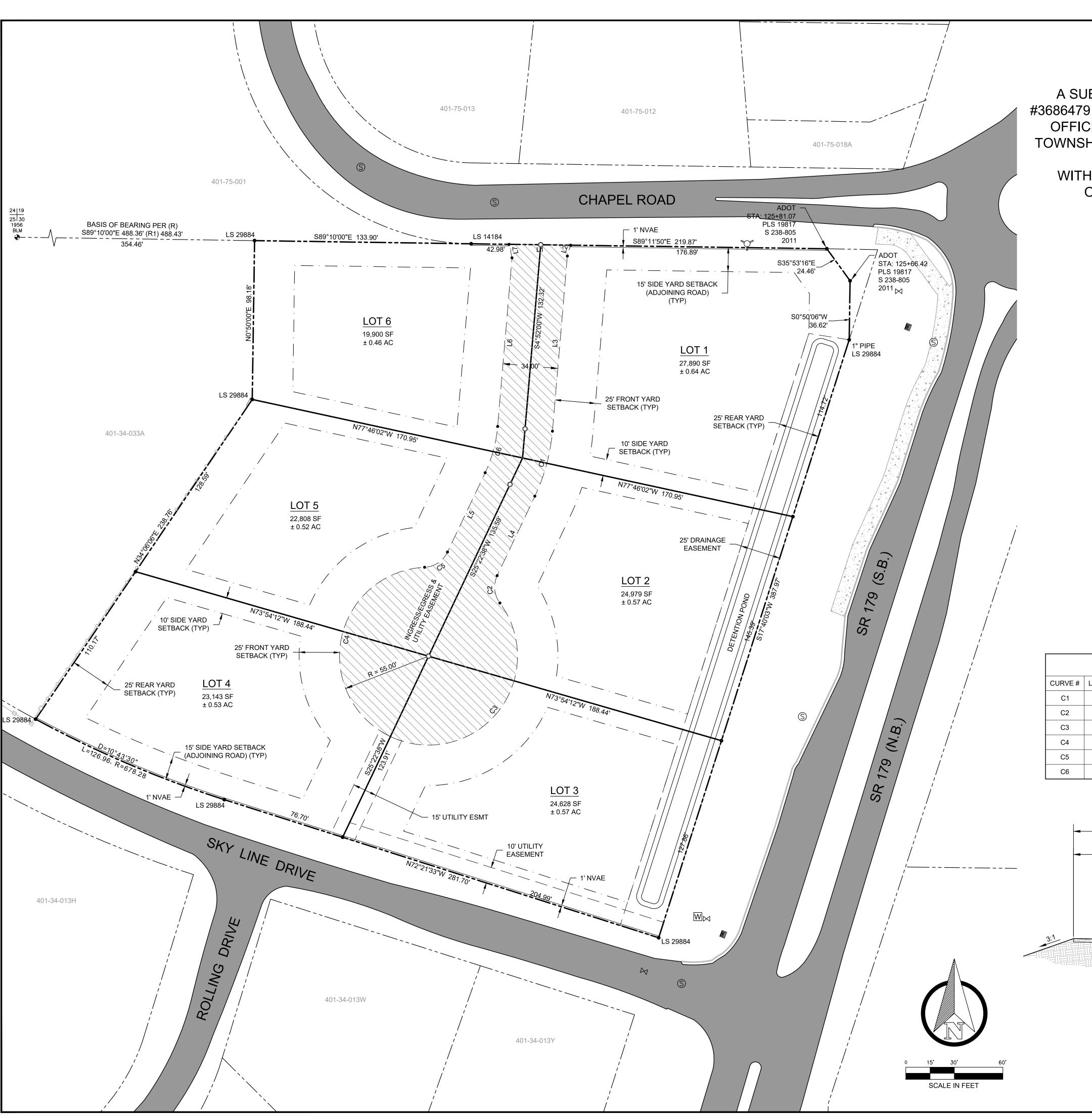
DRAWN BY: RIB

SCALE: AS NOTED

PROJECT NO: HEET NO.

1 OF 2

07/08/2021 210305



CHAPEL ROAD SUBDIVISION PRELIMINARY PLAT

A SUBDIVISION OF PARCEL B, AS RECORDED IN INSTRUMENT #3686479 & INSTRUMENT #3807829, COCONINO COUNTY RECORDERS OFFICE LOCATED WITHIN THE NORTHWEST 1/4 OF SECTION 30, TOWNSHIP 17 NORTH, RANGE 6 EAST OF THE GILA AND SALT RIVER BASE,

WITHIN THE CITY OF SEDONA, COCONINO COUNTY, ARIZONA ORIGINAL ASSESSORS PARCEL NUMBER 401-34-033B CONTAINING ±3.29 ACRES ZONED SINGLE FAMILY RESIDENTIAL (RS-18) CASE NO.

LEGEND

(S) EXISTING SANITARY MANHOLE

EXISTING WATER METER

(G) EXISTING GAS SERVICE Y EXISTING FIRE HYDRANT

A EXISTING APS TRANSFORMER

EASEMENT LINE

SUBDIVISION PERIMETER PROPERTY LINE

INTERIOR LOT LINE

ADJACENT PROPERTY LINE

CALCULATED CORNER

ADOT ALUMINUM CAP • CORNER FOUND AS INDICATED

CORNER SET 1/2" REBAR CAPPED RLS 29884 UNLESS OTHERWISE INDICATED

(R) RECORD PER INSTRUMENT #3686479 COCONINO COUNTY RECORDER

(R1) RECORD PER CASE 5, MAP 49A, COCONINO COUNTY RECORDER

(R2) RECORD PER BOOK 5 OF MAPS & PLATS, MAP 90

(R3) RECORD PER BOOK 24, PAGE 15, COCONINO COUNTY RECORDER

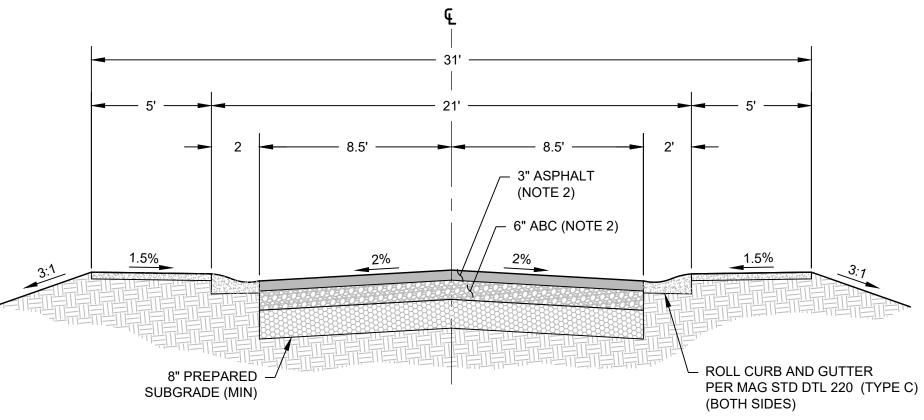
(R4) RECORD PER ADOT DRAWING #D-13-T-457 S.R.179, FEDERAL ID NO. S 238-805 SHEET P-14

(R5) RECORD PER ISTRUMENT #3377032,

(R6) RECORD PER ISTRUMENT #3686479, COCONINO COUNTY RECORDER

EASEMENT CURVE TABLE							
CURVE#	LENGTH	RADIUS	DELTA	CHD BEARING	CHD LEN		
C1	41.88	117.00	20.51	N15° 07' 19"E	41.66		
C2	17.87	16.50	62.06	N5° 39' 11"W	17.01		
C3	145.97	55.00	152.06	N39° 20' 49"E	106.75		
C4	145.97	55.00	152.06	S11° 24' 28"W	106.75		
C5	17.87	16.50	62.06	S56° 24' 28"W	17.01		
C6	29.71	83.00	20.51	S15° 07' 19"W	29.55		

EAS	EASEMENT LINE TABLE					
LINE#	LENGTH	DIRECTION				
L1	38.12	N89° 11' 50.31"W				
L2	7.02	N17° 09' 23.10"E				
L3	108.68	N4° 52' 00.07"E				
L4	54.33	N25° 22' 38.43"E				
L5	54.33	S25° 22' 38.43"W				
L6	104.68	S4° 52' 00.07"W				
L7	8.54	S12° 22' 30.94"E				



NOTES:

1) INSTALLATION, SEPARATION, AND COVER OF UTILITIES IN TRENCHES TO MEET UTILITY COMPANY STANDARDS.

ROAD SECTION

NOT TO SCALE



SEFTON ENGINEE CONSULT

PRELIMINARY

DRAWN BY: SCALE: 1" = 30' 07/08/2021

210305

PROJECT NO:

SHEET NO.

2 OF 2

David Nicolella

From: custserve@patriotdisposal.com
Sent: Tuesday, July 13, 2021 4:25 PM

To: David Nicolella

Subject: RE: Request for Letter/Email of Patriot Disposal Serviceability for Preliminary Plat Chapel Road

Subdivision: 210305

Mr. Nicolella,

To whom it may concern:

Patriot Disposal Inc, can service the Chapel Road Subdivision: 210305 with trash service.

Jim Ritzer Manager 928-775-9000 928-203-9995

From: David Nicolella <DN@sefengco.com> Sent: Tuesday, July 13, 2021 3:21 PM

To: custserve@patriotdisposal.com

Subject: FW: Request for Letter/Email of Patriot Disposal Serviceability for Preliminary Plat Chapel Road Subdivision:

210305

Good Afternoon Patriot Disposal,

Did you respond to this request for a letter of serviceability? If you did, sorry I cannot locate it. Can you respond again please.

Thank you!

From: David Nicolella

Sent: Wednesday, July 7, 2021 5:40 PM **To:** custserve@patriotdisposal.com

Subject: FW: Request for Letter/Email of Patriot Disposal Serviceability for Preliminary Plat Chapel Road Subdivision:

210305

Dear Patriot Disposal,

Sefton Engineering Consultants is planning to submit a Preliminary Plat application to Patriot Disposal for the development of a 6-lot subdivision. As you are aware, a Letter of Serviceability is required from Patriot Disposal with a preliminary plat application. Therefore, at your earliest convenience, will you please provide a Letter of Serviceability confirming that the above referenced project is in the Patriot Disposal service area.

The above referenced request if for Assessor's Parcel Number (APN): 401-34-033B, located on the west side of State Route 179, addressed 10 Sky Line Drive, within Coconino County. A vicinity map is attached.



July 13, 2021

Sefton Engineering Consultants

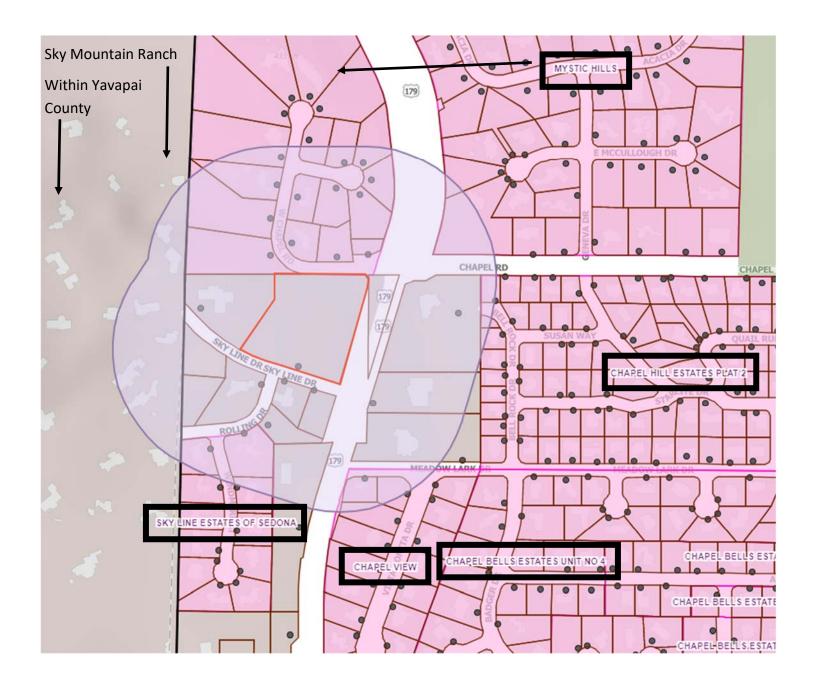
RE: (APN): 401-34-033B

Thank you for your interest in the use of natural gas for the above location. Unisource has a gas main at the north end of this property in Chapel Road that can be used to run a main line extension. When preliminary plans have been finalized contact Unisource and we can develop an estimate and discuss options on providing this project with gas.

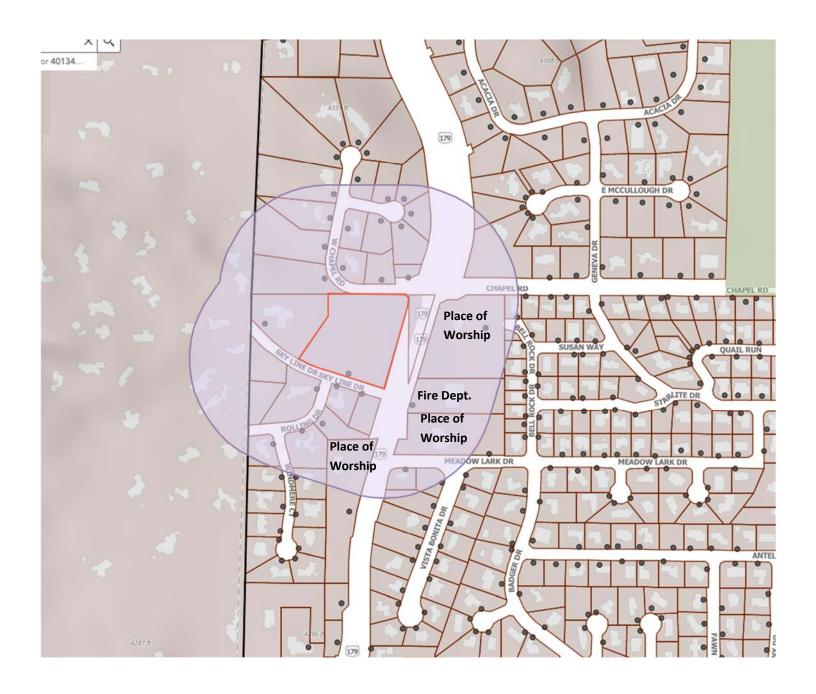
I have also attached a small map that shows location of our gas main in proximity to the project. If you have any more questions please contact me at 928-203-1214.

Thank you, Taylor Mathe Planner

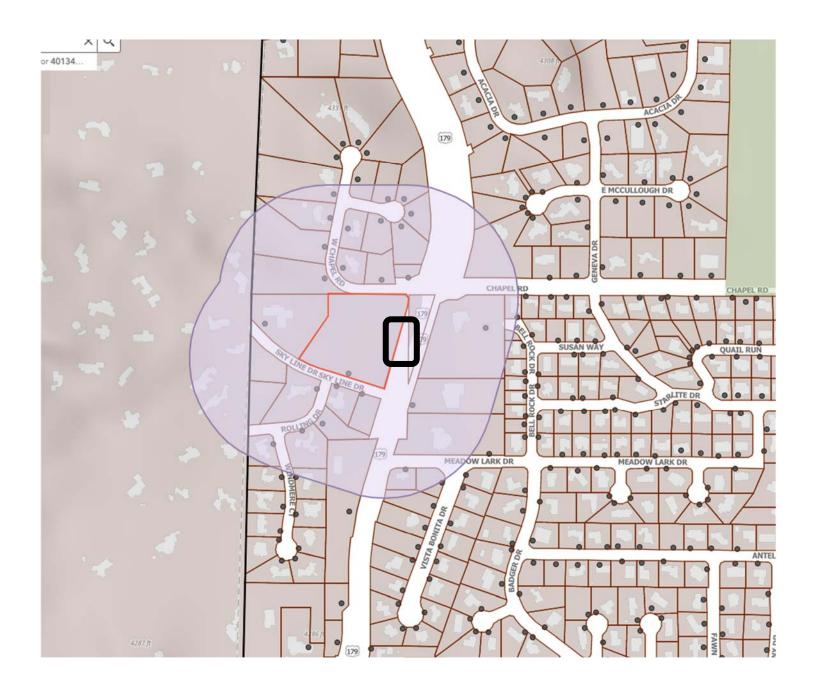
Subdivisions Within 500 Feet



Surrounding Land Uses Within 500 feet



Transit Stop



Sidewalks, Bike Lanes and Crosswalks





Chapel View Terrace Subdivision Coconino County

DRAINAGE REPORT

for APN: 404-01-018D



August 6, 2021

Prepared for:

Coconino County Community Development

2500 N Fort Valley Road, Bldg. 1 Flagstaff, AZ 86001

On Behalf of: Chris Rife, Passion LLC Submitted By;





Project #210305 Prepared By: Christopher Henry, EIT 13189 Reviewed By: Luke Sefton, PE 37322

40 Stutz Bearcat Dr., Sedona, Arizona 86336 ~Phone: (928) 202-3999 Email: info@sefengco.com ~ www.SeftonEngineeringCompany.com In affiliation with:



Table of Contents

I. GENERAL LOCATION AND DESCRIPTION	
	3
DESCRIPTION OF PROPERTY	3
II. DRAINAGE BASINS AND SUB-BASINS	4
SUB-BASIN DESCRIPTION	. 4
III. DRAINAGE DESIGN CRITERIA5 REGULATIONS	5
DEVELOPMENT CRITERIA AND CONSTRAINTS	5
HYDROLOGIC CRITERIA AND RESULTS	5
IV. DRAINAGE FACILITY DESIGN	7
SPECIFIC DETAILS	8
CONCLUSIONS	9
V. REFERENCES: 9 APPENDIX A APPENDIX B APPENDIX C APPENDIX D APPENDIX E APPENDIX F APPENDIX G 37322 LUKE A SEFTON ASSETTON ASSETT	



I. GENERAL LOCATION AND DESCRIPTION

LOCATION

Chapel View Terrace subdivision will be developed by Passion LLC. The current APN number is 401-34-033B. Surrounding roadway of this parcel include SR-179 to the east, W Chapel Rd to the north, and Sky Line Dr to the south.

Per the City of Sedona GIS, there are no drainageways or facilities located on site. Stormwater run off in the immediate area to the north and south are conveyed by roadside drainage paths until they meet the catch basins on the corners of Chapel Rd & SR-179 as well as Skyline Dr & SR-179.

All the surrounding developments are zoned as RS-18. The City of Sedona Land Development Code describes the RS-18 district is intended to accommodate and preserve lower-density to medium-density single-family residential uses with limited community and educational uses and incidental or accessory uses. This district can also serve as a transition between low- and medium-density residential to higher-density residential zoning districts.

Chapel View Terrace will consist of six lots that are on average 0.55 Acres. Access to the subdivision will be on the north side of the property off W Chapel Road. A roadway with an end cul-de-sac will be constructed to provide access to these properties along with a water line, sanitary sewer line, gas line, and electrical services.

DESCRIPTION OF PROPERTY

The entire property is 3.29 Acres. Ground cover is moderately dense and consists of medium to large sized trees and shrubbery. There are no major drainageways that exist through this property. Also, this property is not located in a FEMA floodplain nor a City of Sedona floodplain.

Along the south side of the parcel there is a drainage swale on Sky Line Dr. that drains into a catch basin on the corner of Sky Line Dr. and Hwy-179. On the north side of the parcel on W Chapel Rd there is also a drainage swale along side of the road. Driveways include culverts to allow continuation of flow.

Currently, there is no existing land use for this property. As mentioned before, it is proposed that this land be utilized to provide six lots as RS-18. An extension of the City of Sedona 8" wastewater line will provide residents of a means to dispose of wastewater.



II. DRAINAGE BASINS AND SUB-BASINS

MAJOR BASIN DESCRIPTION

The City of Sedona has a storm water master plan to identify major drainages and focal points to help convey stormwater runoff safely. The subject parcel is located within the major drainage basin of Oak Creek. The Oak Creek drainage basin is one of four major basins within the City of Sedona. This basin has a total drainage area of 21.38 square miles. Due to the significant size of this drainage basin the area was split into four smaller areas (A, B, C, & D). This property is located within the sub-area watershed C.

There are no irrigation facilities within ½ mile of the property boundary, which will influence or be influenced by the local drainage. There are two catch basins in the right-of-way, one at each corner intersection. From the USDA Web Soil Survey, the soil is classified as Sedona soils. The typical profile of this soil type is as follows; extremely channery loam from 0-2 inches, extremely channery silty clay loam from 2-10 inches, extremely flaggy silt loam from 10-18 inches, and then bedrock from 18-60 inches. No detailed soils investigation has been performed.

SUB-BASIN DESCRIPTION

This parcel is situated on the west side of sub-basin K8B. See **Appendix A** for the City of Sedona Oak Creek Basin "C" Drainage Map. Historically this sub-basin flows to the south-west towards Oak Creek. In the immediate area runoff travels towards Hwy-179. A minimal amount of runoff from the single-family residence (SFR) directly to the west will have a small effect on site, but primarily off-site drainage will not impact this parcel as runoff is directed to travel along the roadside drainages nearby. Run off from the neighboring property has been considered for calculations.

The project location has been further broken down into three sub-basins and three concentration points. The design points have been delineated as both catch basins and the detention pond. A map delineating the property sub-basins has been provided in **Appendix B**.

Sub-basin A is approximately 0.68 Acres. This sub-basin includes a portion of West Chapel Rd, a small area of the neighboring property to the west, and a northern portion of the subject parcel to be developed. The land use pre-development contains approximately 0.63 Acres of natural hillslopes and 0.05 Acres of pavement. Post-development land use will contain approximately 0.46 Acres of natural hillslopes and 0.22 acres of pavement and rooftops. Sub-basin A drains alongside West Chapel Rd and into the catch basin at the corner of SR-179.

Sub-basin B is approximately 3.03 Acres. This sub-basin includes the back yard of the SFR and majority of the subject parcel to be developed. The land use pre-development is classified as natural hillslopes. Post-development land use will contain approximately 1.63 Acres of natural hillslopes and 1.4 Acres of pavement and rooftops. This sub-basin



is conveyed as sheet flow towards SR-179. Drainage facilities to help direct water and a detention pond will be designed to reduce the peak flow post-development.

Sub-basin C is approximately 0.45 Acres. This sub-basin includes a small portion of the backyard of the SFR and a sliver of the southern part of the subject parcel. The land use pre-development is classified as natural hillslopes. Post-development land use will contain approximately 0.36 Acres of natural hillslopes and 0.09 Acres of pavement and rooftops. This sub-basin drains alongside Skyline Dr and into the catch basin at the corner of SR-179 and Skyline Dr.

Due to the increase in impervious area from the development stormwater management facilities will be needed. It is proposed to provide a retention pond along the east side of the lot to help mitigate the increase in run off. A retention pond will catch storm water runoff trying to make its way off the property and towards Hwy-179. This pond will outlet into the existing catch basins located at the corners of the parcel.

III. DRAINAGE DESIGN CRITERIA

REGULATIONS

The regulations described within the Coconino County Drainage Design Manual and the City of Sedona Land Development Code were followed while preparing this report. No deviations from the above referenced manuals were requested or anticipated at this time.

DEVELOPMENT CRITERIA AND CONSTRAINTS

The City of Sedona has developed an Area Drainage Study titled City of Sedona Storm Water Master Plan which was prepared by Dibble & Associates dated March 2005. The development falls within the study area of this drainage study. The hydrologic methods used within the previous study are not the same methods used for this study. The hydrologic calculations used within this report will be used for addressing the predevelopment and post-development design conditions for this project only and not intended to override the previous study accepted by the City of Sedona.

It is required that there be no increase in runoff due to development.

HYDROLOGIC CRITERIA AND RESULTS

The hydrologic calculations used within this report will be used for addressing the predevelopment and post-development design conditions for this project only. The City of Sedona RS-18 allows for a maximum impervious coverage of 60%. Of all the six lots each of them was calculated assuming the maximum 60% impervious coverage. The proposed roadway area was also added into the calculations. This reflects the absolute maximum amount of possible developed land in the subdivision. Individual lots will not be required to provide stormwater drainage as the design in this report provides storm water management for a full site build out.



Hydrologic calculations were performed using the Rational Method as outlined within Chapter 3 of the Coconino County Drainage Design Criteria Manual. The Rational Method is based on the equation Q = CIA where Q is the peak flow in cubic feet per second, C is the runoff coefficient, I is the average rainfall intensity in inches per hour and A is the contributing drainage area in Acres. Hydraflow Hydrographs 2007 modeling program based on the Rational Method was used to determine peak flows for the predevelopment and post-development conditions. In the tables below the key data used for the rational method can be found.

Rainfall data was collected using NOAA Atlas 14 Point Precipitation Frequency Estimates. Data can be found in **Appendix C**. Pre-Development and Post-Development hydrographs can be found in **Appendix D**. Below are tables showing the rainfall intensity at the project location as well as the land use characteristics.

Table 1: Rainfall Intensity

Rainfall Intensity, Inches/Hr								
Duration	Frequency, in Years							
Duration	2	10	<i>2</i> 5	100				
5-Minute	3.31	5.42	7.93	9.17				
15-Minute	2.08	3.41	4.27	5.77				
30-Minute	1.4	2.3	2.88	3.88				
60-Minute	0.87	1.42	1.78	2.4				

Table 2: Pre- vs Post- Land Use

	- VS POSI- La								
Pre- vs Post- Land Use									
		Pre-Dev	<u>relopment</u>	Post-Development					
Sub-basin	Land Use	Area	Coefficient	Area	Coefficient				
	Hillslopes,								
Α	Sonoran	0.63	0.6	0.46	0.6				
^	Pavement								
	& Rooftops	0.05	0.95	0.22	0.95				
Composite Coefficient			0.63		0.71				
	Hillslopes,								
В	Sonoran	3.03	0.6	1.63	0.6				
В В	Pavement								
	& Rooftops	-	-	1.4	0.95				
	Composite C	Coefficient	0.6		0.76				
	Hillslopes,								
С	Sonoran	0.45	0.6	0.36	0.6				
	Pavement								
	& Rooftops	-	-	0.09	0.95				
	Composite C	Coefficient	0.6		0.67				



Peak runoff rates have been calculated using the rational method as described above. Hydraflow Hydrograph has been used for the modeling. The above values in the tables have been used for the rational method as well as assuming a time of concentration of ten minutes. Below the results can be found for all site conditions.

Table 3: Peak Runoff Rates

Peak Runoff Rates						
Sub-Basin	Storm Frequency	Pre-Development	Post-Development	Post-Development w/ Detention		
A	2-Yr	1.10	1.23	N/A		
	10-Yr	1.80	2.03	N/A		
	25-Yr	2.26	2.54	N/A		
	100-Yr	3.04	3.43	N/A		
В	2-Yr	4.65	5.89	0.03		
	10-Yr	7.64	9.68	2.06		
	25-Yr	9.57	12.12	3.57		
	100-Yr	12.90	16.33	5.62		
С	2-Yr	0.69	0.77	N/A		
	10-Yr	1.13	1.27	N/A		
	25-Yr	1.42	1.59	N/A		
	100-Yr	1.92	2.14	N/A		

The site in pre-development conditions drained entirely into the two catch basins on SR-179. These results show that with the proposed drainage design there will be a significant reduction of peak discharge into those catch basins. Detailed discussion of the facility design will be included in the following section.

IV. DRAINAGE FACILITY DESIGN

GENERAL CONCEPT

Existing drainage patterns of the undeveloped site sheet flow to the east towards Hwy-179.

A series of drainage swales and culverts will be used to help convey water down into the retention pond. These drainage swales will also provide homes with a means to place runoff collected from rooftops. Two culverts will be located at each end of the retention pond to disperse stormwater into both catch basins. Any stormwater that is part of subbasin A or C will follow historical drainage patterns into the respected catch basin. As shown in *Table 3* the increase in run off into the catch basins from sub-basins A and C do not increase post-development more than 0.39 cfs. This increase in runoff is negligible and supported with the significant decrease in sub-basin B.



As mentioned in the previous section, the detention pond is designed to accommodate the increase in runoff when all sites are fully developed. This pond will be located on the east side of the property and span across the majority length of the property line.

Water quality concerns can arise when impervious area is added to previously undeveloped sites. Runoff from impervious areas often contains suspended solids and heavy metals along with other contaminants. Storm water quality will be addressed by implementing a first flush policy. First flush is defined by the county as, the delivery of a disproportionately large load of pollutants during short storms or the early part of storms due to the rapid runoff of accumulated pollutants. The county's policy is that subdivisions shall retain and/or treat the first 0.5" of runoff from developed areas. Below is the calculated volume of water that must be retained for first flush. The pond that has been designed will retain the first flush volume.

V_{FF} = C (P _{FF} / 12)A					
C = Runoff Coefficent (Set = 1)	1				
$P_{FF} = 0.5$ Inches of Direct Runoff	0.5				
A = Area of Project Site (Impervious Area), in Acres	1.71				
V_{FF} = First Flush Volume, in Ac-Ft	0.07125				
V _{FF =} = First Flush Volume, in Cubic Feet	3103.65				

SPECIFIC DETAILS

There are no drainage problems encountered that require any unique solutions. To accommodate the necessary storms the pond must be sized as the following:

- Bottom Length = 350.00 ft
- Bottom Width = 3.00 ft
- Side Slope = 4:1
- Depth = 3.00 ft

The outlet of the pond is specified to be a 12" diameter corrugated metal pipe. There will be two outlets at each end, totaling four culverts. It is important that the invert elevation of this pipe should be 1.2' above the bottom of the pond. By placing the outlet 1.2' above the bottom of the pond the required first flush volume is accommodated. These outlets will encourage water to utilize the city catch basin at each corner of the property once flowing. The design of this pond provides 1 foot of freeboard to the top of pond. See **Appendix E** for the detention pond profile.

Drainage swales along the interior property lines will be used to help convey stormwater to the pond. An additional swale on the west side of the subdivision road will be utilized to connect those swales and move water towards West Chapel Road. Refer to **Appendix B** for the exact locations. The swales have been sized to accommodate the peak discharge of 16.33 cfs for the 100-yr storm.



These swales shall be constructed with rip rap embankments. From the National Engineering Handbook, the U.S. Bureau of Reclamation method was used to size the riprap. The formula for the U.S. Geological Survey method $D_{50} = 0.01V^{2.44}$. Hydraflow Express was used to analyze whether the swale could handle the 100-yr storm event. The Hydraflow report can be found in **Appendix F**. Below is how the swales should be constructed:

- Bottom Width = 0 ft
- Side Slope = 2:1
- Total Depth = 2.50 ft
- Slope = 2.5% Min
- D_{50} Stone Size = 6 in

Upon construction, culverts will be needed underneath all driveways to continue positive drainage on site. Analysis has been completed using the peak discharge of 16.33 cfs that these structures will encounter. The results show that a 15-inch culvert will adequately handle the peak discharge. The City of Sedona prefers a 14-gauge corrugated metal pipe with a minimum length of 20 ft and maximum length of 30 ft. One foot of clear cover will be provided for the culverts. Results can be found in **Appendix G**.

- Culvert Span = 15.0 in
- Slope = 1.5% Minimum
- Culvert Type = Corrugated Metal Pipe
- Culvert Entrance = Mitered to Slope
- Length = 20 ft Minimum, 30 ft Maximum

CONCLUSIONS

It is the engineer's opinion that the site can be constructed as described in the report and shown in the construction plans. The plan will satisfy the conditions for design while maintaining cost effective, low maintenance facilities. The facilities will reduce the peak discharge as compared to the discharge pre-development. The project complies with the City of Sedona criteria and regulations as well as the Coconino County criteria and regulations.

V. REFERENCES:

Coconino County (August 2020), Coconino County Drainage Design Criteria Manual

The City of Sedona (January 26, 2021), Sedona Land Development Code

National Engineering Handbook (August 2007), Technical Supplement 14C, Stone Sizing Criteria



APPENDIX A



APPENDIX B



APPENDIX C



APPENDIX D



APPENDIX E



APPENDIX F



APPENDIX G