



Water Study

WATER BASIS OF DESIGN REPORT
FOR
WINERY RESIDENCES OF SCOTTSDALE
SWC GOLDWATER BOULEVARD & 1ST STREET
SCOTTSDALE, ARIZONA

**PRELIMINARY Basis of Design
Report**

☐ ACCEPTED

☒ ACCEPTED AS NOTED

☐ REVISE AND RESUBMIT



Disclaimer: If accepted; the preliminary approval is granted under the condition that a final basis of design report will also be submitted for city review and approval (typically during the DR or PP case). The final report shall incorporate further water or sewer design and analysis requirements as defined in the city design standards and policy manual and address those items noted in the preliminary review comments (both separate and included herein). The final report shall be submitted and approved prior to the plan review submission.

For questions or clarifications contact the Water Resources Planning and Engineering Department at 480-312-5685.

BY Idillon

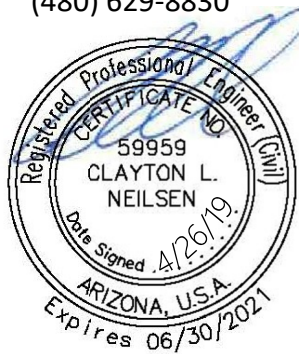
DATE 5/22/2019

Prepared for:
Horizon Pediatric Therapy, Inc.
551 S. Higley Road
Mesa, AZ 85206

Prepared by:

Bowman
CONSULTING

1295 W Washing Street, Suite 108
Tempe, Arizona 85281
(480) 629-8830



February 20, 2019
Bowman Project No. 050609

Requirements:

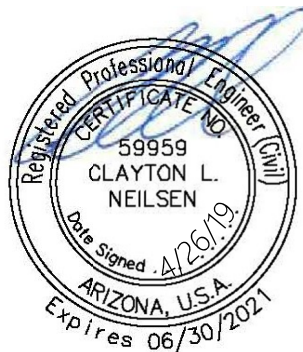
- 1) add the 6-inch waterline on the entire northern street frontage (or pay in lieu), code section 49-219.
- 2) The existing 4-inch waterline would remain where it is but since the 4" alley line will not be in service someday, the proposed development will have to connect all of its proposed domestic services to the existing 6" on Goldwater Blvd (or the new 6" 1st street line)
- 3) New fire service should be served from Goldwater (not existing 4" or new 1st Street 6" line due to lack of current looping)
- 4) The new proposed 12-inch alley sewer line will need to be placed at least 9ft centerline to centerline from the existing 4-inch alley water line to obtain minimum horizontal clearance DS&PM 6-1.402, section 7.c.

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- B. Site Plan, Floor Plans, and Building Elevations (Profiles)
- C. Water Quarter Section Map
- D. Flow Test Results
- E. Preliminary Utility Plan



1.0 Introduction

Winery Residences of Scottsdale is a proposed development located at the southwest corner of Goldwater Boulevard and 1st Street. The development is located within a portion of the northeast quarter of Section 27, Township 2 North, Range 4 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona. The site will consist of 0.39 acres. The site is bounded by 1st Street to the North, Goldwater Boulevard to the East, an alley to the South, and existing properties to the West. A vicinity map is provided in **Appendix A, Figure 1**.

The existing site consists of the LDV Wine Gallery and Tasting Room and Studio B Interior Design; however, these tenants have since moved to new locations, leaving the current parcels occupied by three dwelling units with flexible lease terms. When redeveloped, the site will consist of approximately 1,500 square-feet of ground-floor retail space and 31 dwelling units with flexible leasing terms in a mid-rise building. The Site Plan, Floor Plans, and Elevations (profile) have been provided and can be found in **Appendix B**.

The Winery Residences of Scottsdale is within the jurisdiction of the City of Scottsdale and is designed to comply with the City of Scottsdale policies as outlined in Chapter 6 of the *City of Scottsdale Design Standards & Policies Manual, 2018* (Reference 1).

The purpose of this report is the following:

- Determine the development's potable water demands and fire flow requirements.
- Show compliance with the City of Scottsdale water design standards (Reference 1).

2.0 Projected Water Demands

2.1 Demand Criteria

In accordance with Figure 6-1.2 of the *Design Standards & Policies Manual* (Reference 1), the average day demand (ADD) for Resort Hotel use is 446.3 gallons per day (gpd) per dwelling unit and 0.63 gallons per minute (gpm) per room. The retail space use is 0.8 gallons per day (gpd) per square foot and 1.81E-03 gallons per minute (gpm) per square foot.

To determine the maximum day demand (MDD), a peaking factor of 2.0 is multiplied by the ADD.

To determine the peak hour demand (PHD), a peaking factor of 3.5 is multiplied by the ADD.

2.2 Demand Calculations

Average Day Demand (gallons per day)

Rental

ADD = 446.3 gpd/room x 31 rooms = 13,835 gpd

Retail

ADD = 0.8 gpd/sq. ft. x 1,300 sq. ft. = 1,040 gpd

Total ADD

13,835 gpd + 1,040 gpd = 14,975 gpd

Average Day Demand (gallons per minute)

Rental

ADD = 0.63 gpm/room x 31 rooms = 19.53 gpm

Retail

ADD = 1.11E-03 gpm/sq. ft. x 1,300 sq. ft. = 1.44 gpm

Total ADD

19.53 gpm + 1.44 gpm = 20.97 gpm

Maximum Day Demand (gallons per day)

Total MDD = 14,975 gpd x 2.0 = 29,950 gpd

Maximum Day Demand (gallons per minute)

Total MDD = 20.97 gpm x 2.0 = 41.94 gpm

Peak Hour Demand (gallons per day)

Total PHD = 14,975 gpd x 3.5 = 52,412.5 gpd

Peak Hour Demand (gallons per minute)

Total PHD = 41.94 gpm x 3.5 = **146.79 gpm**

2.3 Fire Flow Requirements

It is anticipated that the building will be Type IIA or IIIA construction and will be approximately 54,000 square feet. According to Table B105.1 (2) of the 2015 International Fire Code (Reference 2), the minimum required fire flow for this building is 3,500 gallons per minute (gpm). When used with fire sprinklers, this amount will be reduced by 75% with a minimum fire flow of 1,500 gpm. The fire flow for this project is 1,500 gpm.

This fire flow was confirmed with Doug Wilson, P.E. from the Fire Department.

3.0 Fire Hydrant Test

To illustrate the water system and the closest fire hydrant to the site the Quarter Section Map has been included in **Appendix C**. Based upon this information a fire hydrant test was conducted by EJ Flow Tests, LLC on Friday February 15, 2019. The results from that hydrant test is provided in **Appendix D**.

4.0 Distribution System

The site will connect to the existing water main in the alley to the south of the property with a 2-inch service (residential) line, meter, and backflow preventer for the individual units. For the commercial portion of the development a 2-inch service (commercial) line, meter, and backflow preventer will be provided. Additionally, there will also be a 1-inch irrigation meter and back flow preventer connection made to the same water line. To further illustrate this the Preliminary Utility Plan can be found in **Appendix E**.

5.0 Conclusion

This project will utilize a 2-inch water (residential) service and a 2-inch service (commercial) to connect to the existing water main in the alley to the south of the property. It is anticipated that the added water demand from the site will not adversely affect the surrounding water infrastructure.

6.0 References

1. City of Scottsdale, Design Standards & Policies Manual. 2018.
2. International Code Council. *2015 International Fire Code*. 2016

Appendix A

Exhibits



Appendix B

Site Plan, Floor Plans, and Building Elevations (Profiles)



Appendix C
Water Quarter Section Map



Appendix D

Flow Test Results

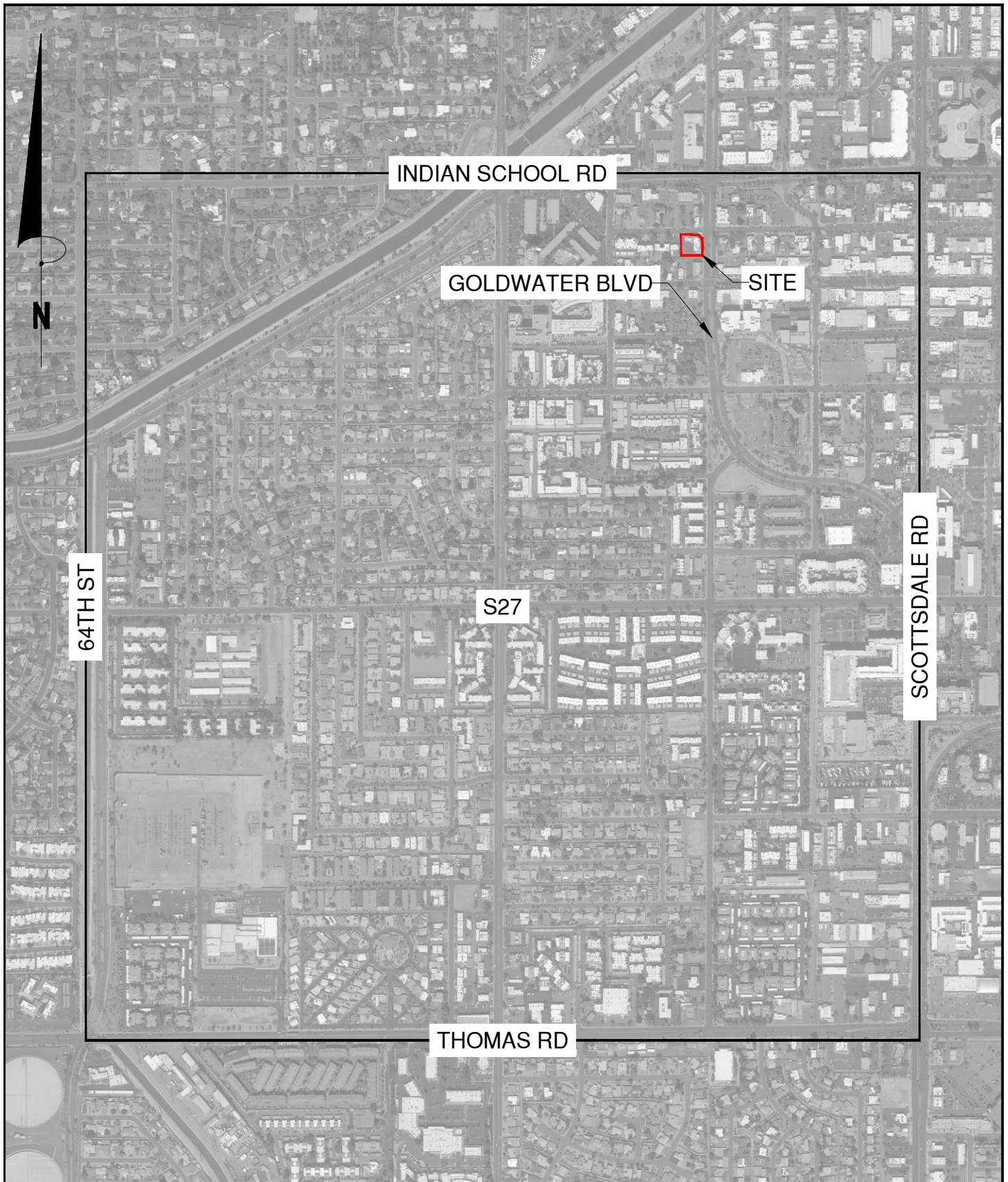
Appendix E
Preliminary Utility Plan



Appendix A

Exhibits





Bowman
CONSULTING

1295 West Washington Ste 108
Tempe, Arizona 85281

Phone: (480) 629-8830
www.bowmanconsulting.com

WINERY SUITES OF SCOTTSDALE

SCOTTSDALE, AZ

VICINITY MAP

JOB # 050609

DATE 11/08/2018

SCALE N.T.S.

DRAWN PS

SHT 1 OF 1

Appendix B

Site Plan, Floor Plans, and Building Elevations (Profiles)



PROJECT DATA

REZONING CLASSIFICATION:
DMU-2: DOWNTOWN MULTIPLE USE TYPE 2 AREA,
SINGLE PARCEL

ALLOWED DENSITY
(WITH TYPE-2 DMU REZONING) 50 DU / ACRE

GROSS LOT AREA 27,034 (0.62 ACRE)

50 DU / ACRE X 0.62 ACRE = 31.03 DU

= 31 DWELLING UNITS

PROPOSED GFAR
(AS DEFINED BY COS ZONING ORDINANCE 3.100):

NONRESIDENTIAL FLOOR AREA(1,645)

GROSS LOT AREA (17,034) = 0.096

BUILDING FLOOR AREA	
(AS DEFINED BY COS ZONING ORDINANCE 3.100):	
STREET LEVEL:	8,045 SF
LEVEL 2:	11,837 SF
LEVEL 3:	11,712 SF
ROOF LEVEL:	4,011 SF
SUBTOTAL:	35,605 SF

UNDERGROUND GARAGE:	16,288 SF
TOTAL:	51,884 SF

AREA OF USE BREAKDOWN:	
WINERY SUITES RETAIL MARKET: (INCLUDES RESTROOMS)	1,645 SF
STREET LEVEL DWELLING UNITS:	4,347 SF
2ND LEVEL DWELLING UNITS:	8,826 SF
3RD LEVEL DWELLING UNITS:	9,015 SF
ROOF LEVEL DWELLING UNITS:	3,086 SF

COMMON AREA USE BREAKDOWN:	
PARKING GARAGE	15,658 SF
STREET LEVEL (LOBBY, STAIRS, ELEVATOR, UTILITY ROOMS)	1,050 SF
2ND LEVEL (STAIRS, ELEVATOR, IDF CLOSET, SHAFT)	1,455 SF
3RD LEVEL (STAIRS, ELEVATOR, IDF CLOSET, SHAFT)	1,455 SF
ROOF LEVEL (POOL DECK, STAIRS, HVAC AREA)	6,520 SF

BUILDING HEIGHT ALLOWED (DMU-2 REZONING): 66'-0"

SETBACKS:	
NORTH GOLDWATER BLVD (FROM CURB):	30'-0"
1ST STREET (FROM CURB):	20'-0"
ALLEY (FROM CENTERLINE):	10'-0"

STEPBACKS:	
30'-0" TO 45'-0" HEIGHT:	1:1 INCLINE STEPBAC
45'-0" AND ABOVE:	2:1 INCLINE STEP BACK

WINERY RESIDENCES OF SCOTTSDALE
6951 / 6961 E 1ST ST. SCOTTSDALE. AZ. 85251



expires 30 june 2019

dpa
DESIGNERS OF
PROGRESSIVE
ARCHITECTURE
2 e indian school rd ste 214
ttsdale, arizona 85251
ephone 480 941 4222
www.dpaarchitects.com

REVISION INFORMATION	
Description:	Date:

Description:	Date:

own by: YTD

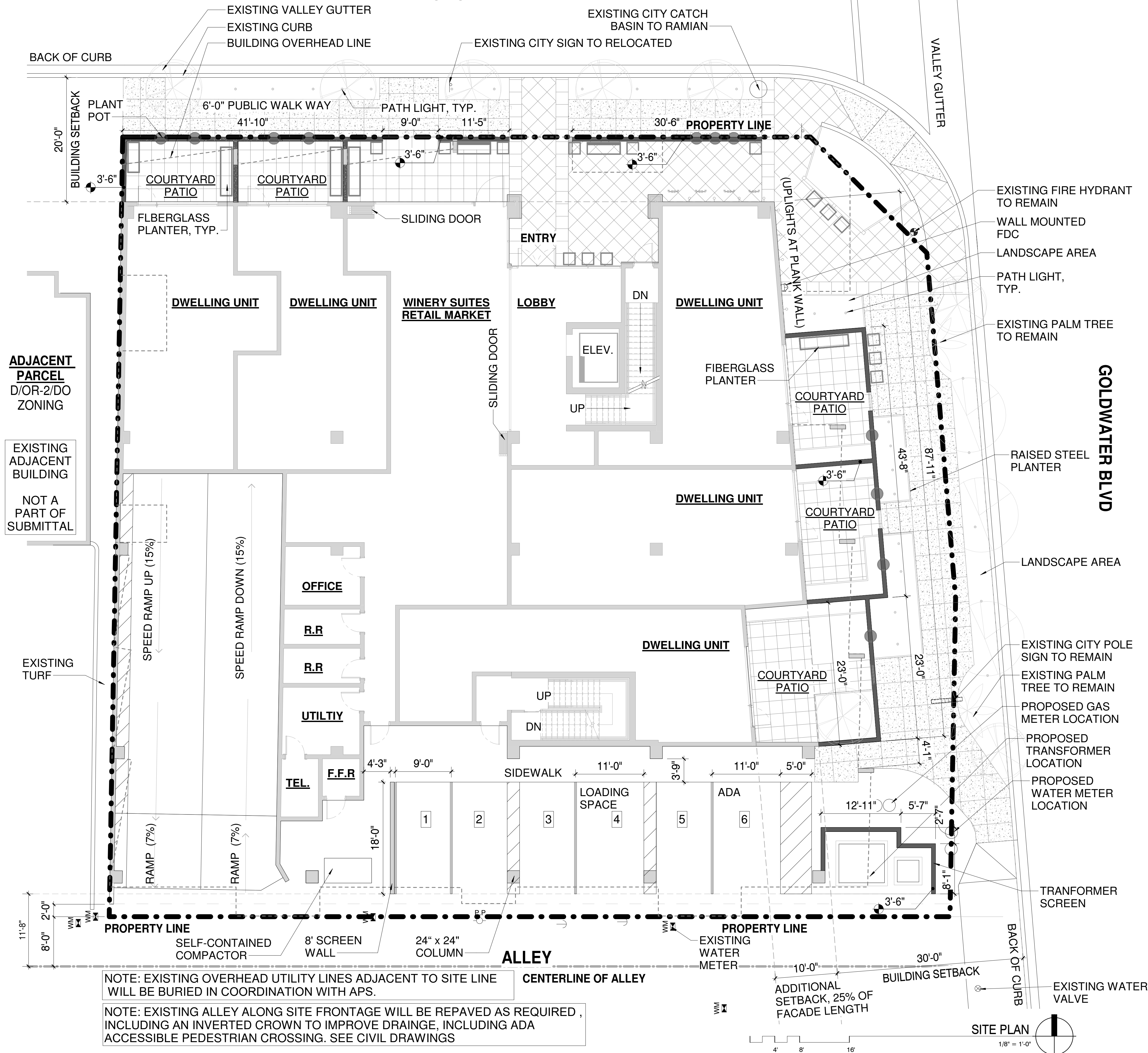
ect no.: 18024

02/18/19

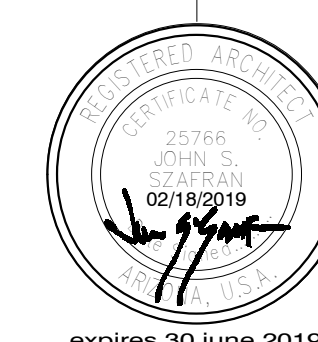
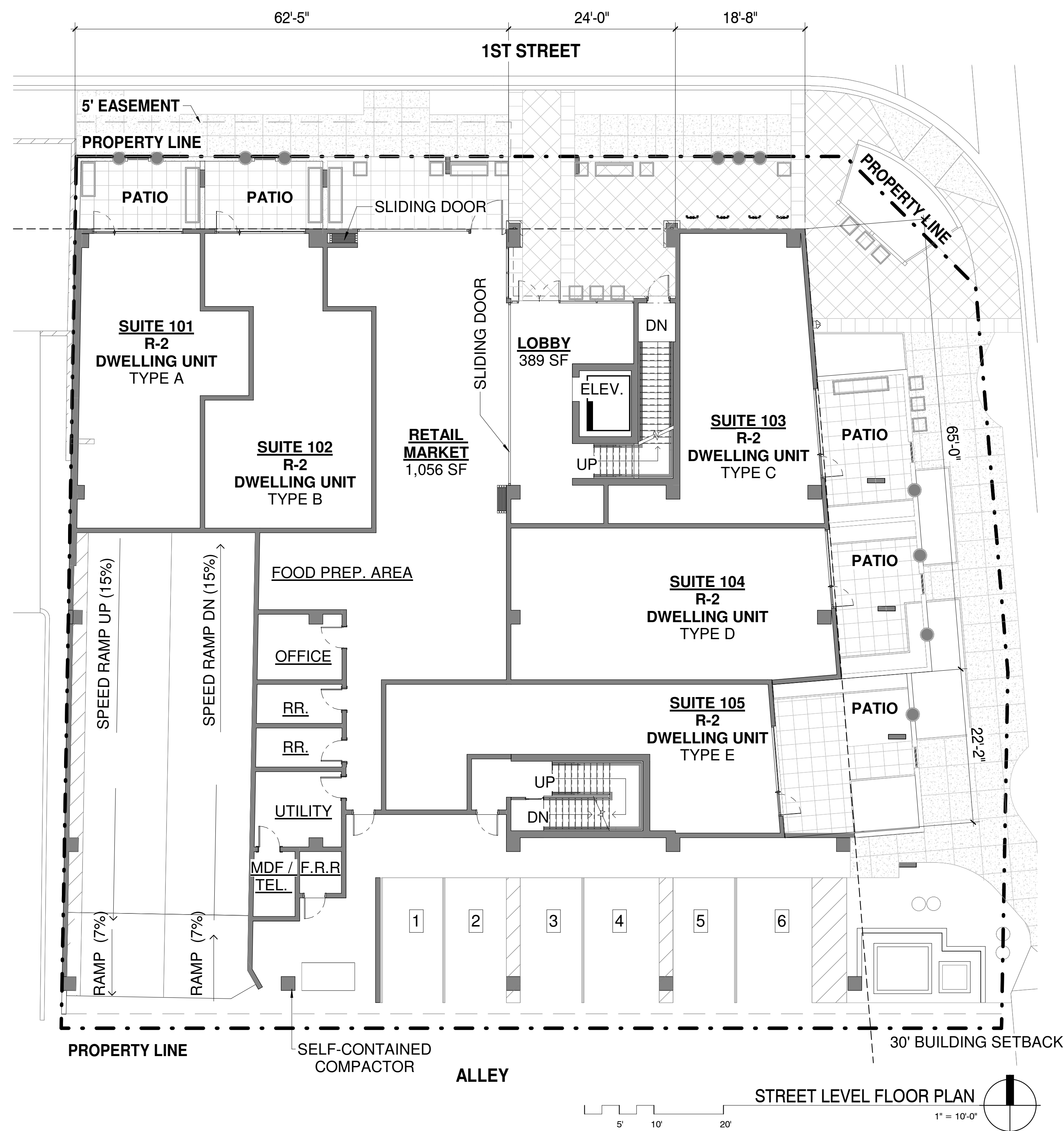
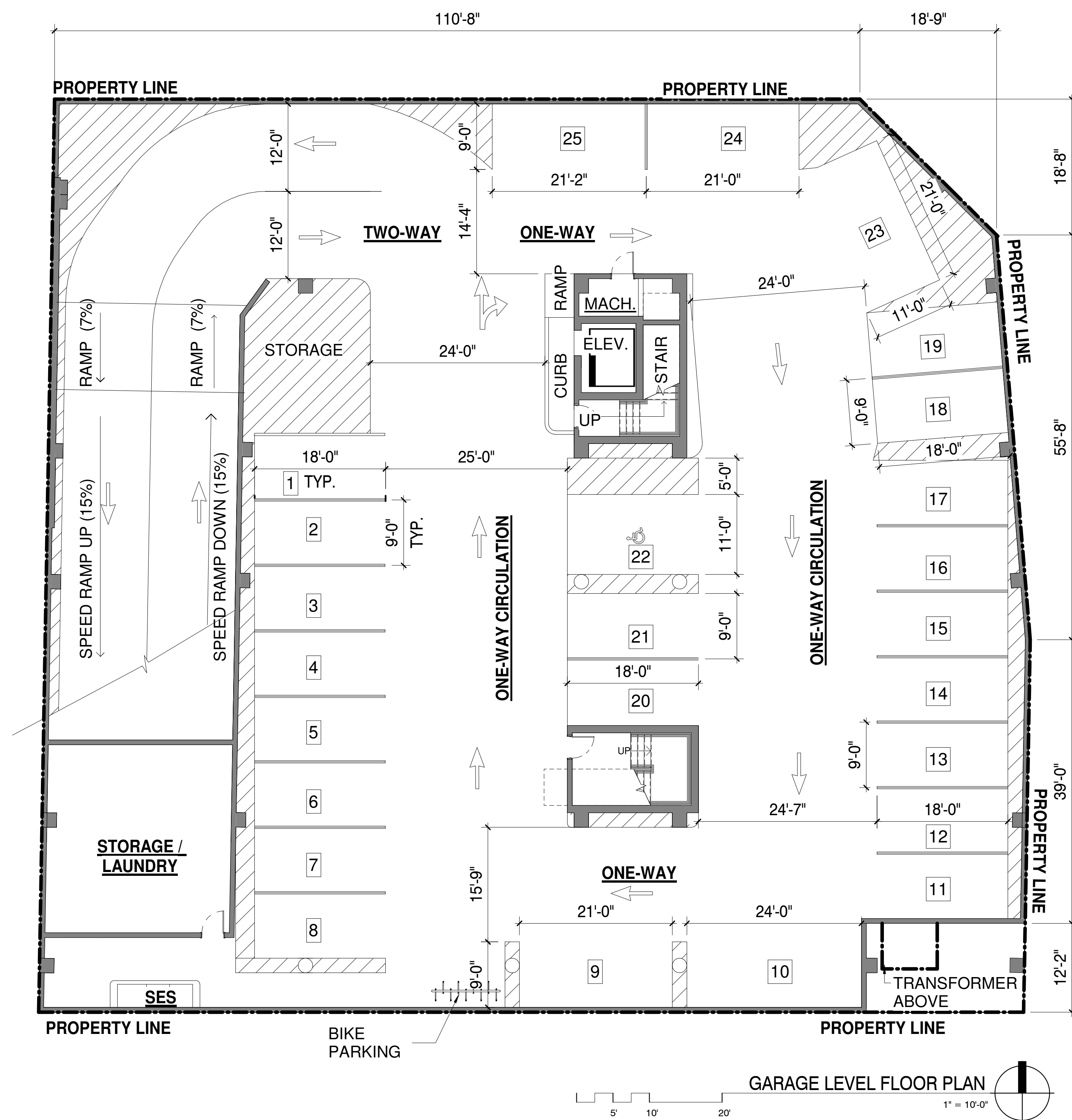
SITE PLAN

CITY OF SCOTTSDALE
REZONING/DR DEVELOPMENT SUBMITTAL
24-ZN-2018 AND 52-DR-2018

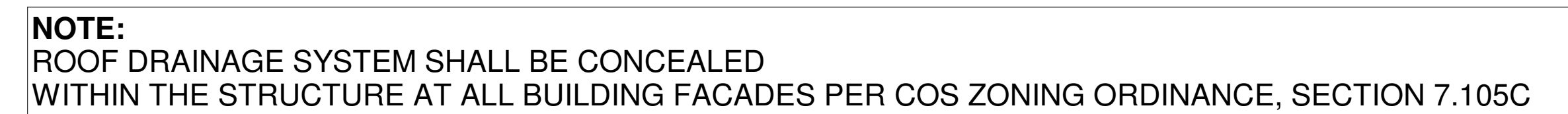
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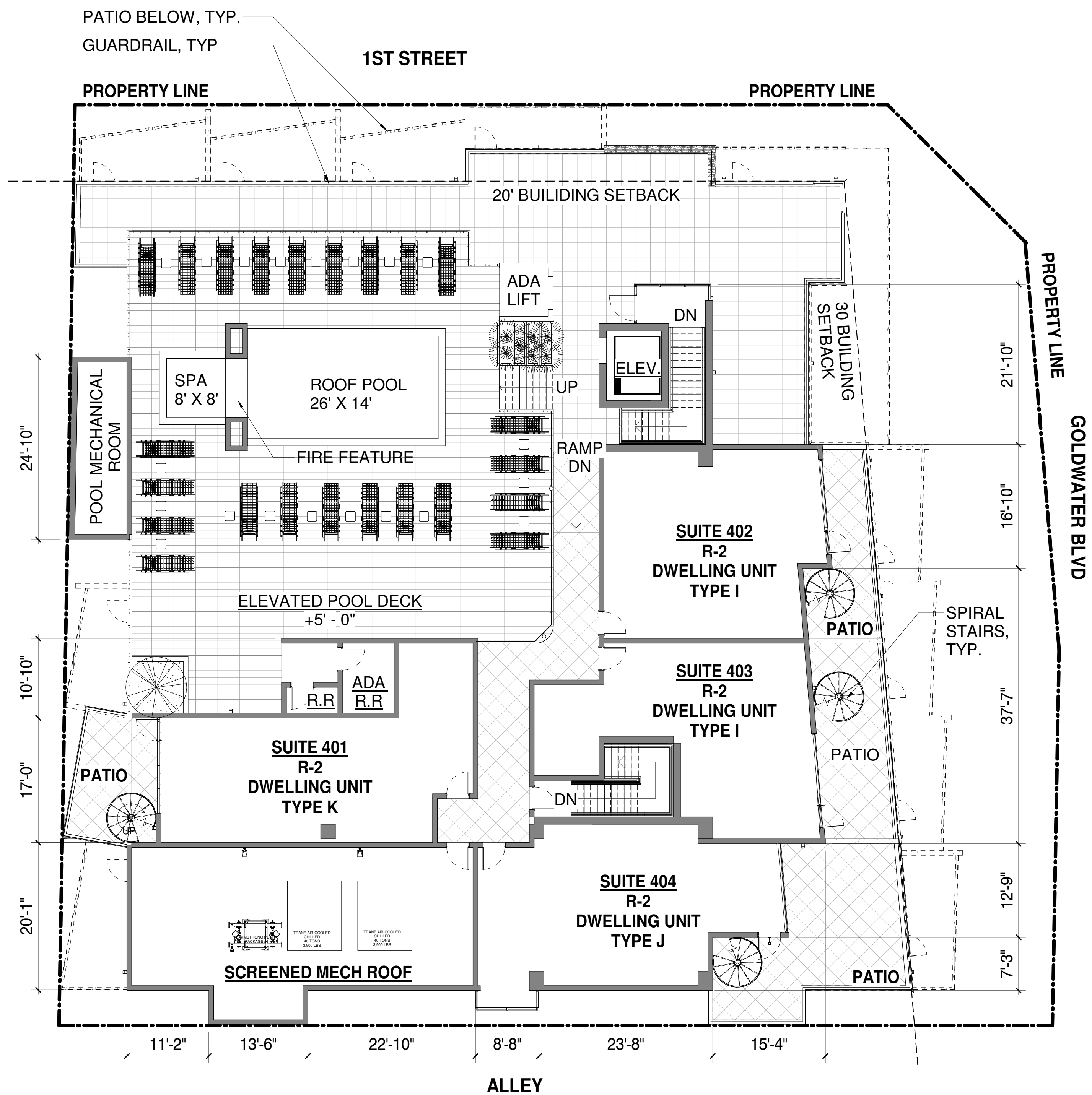


REVISION INFORMATION		
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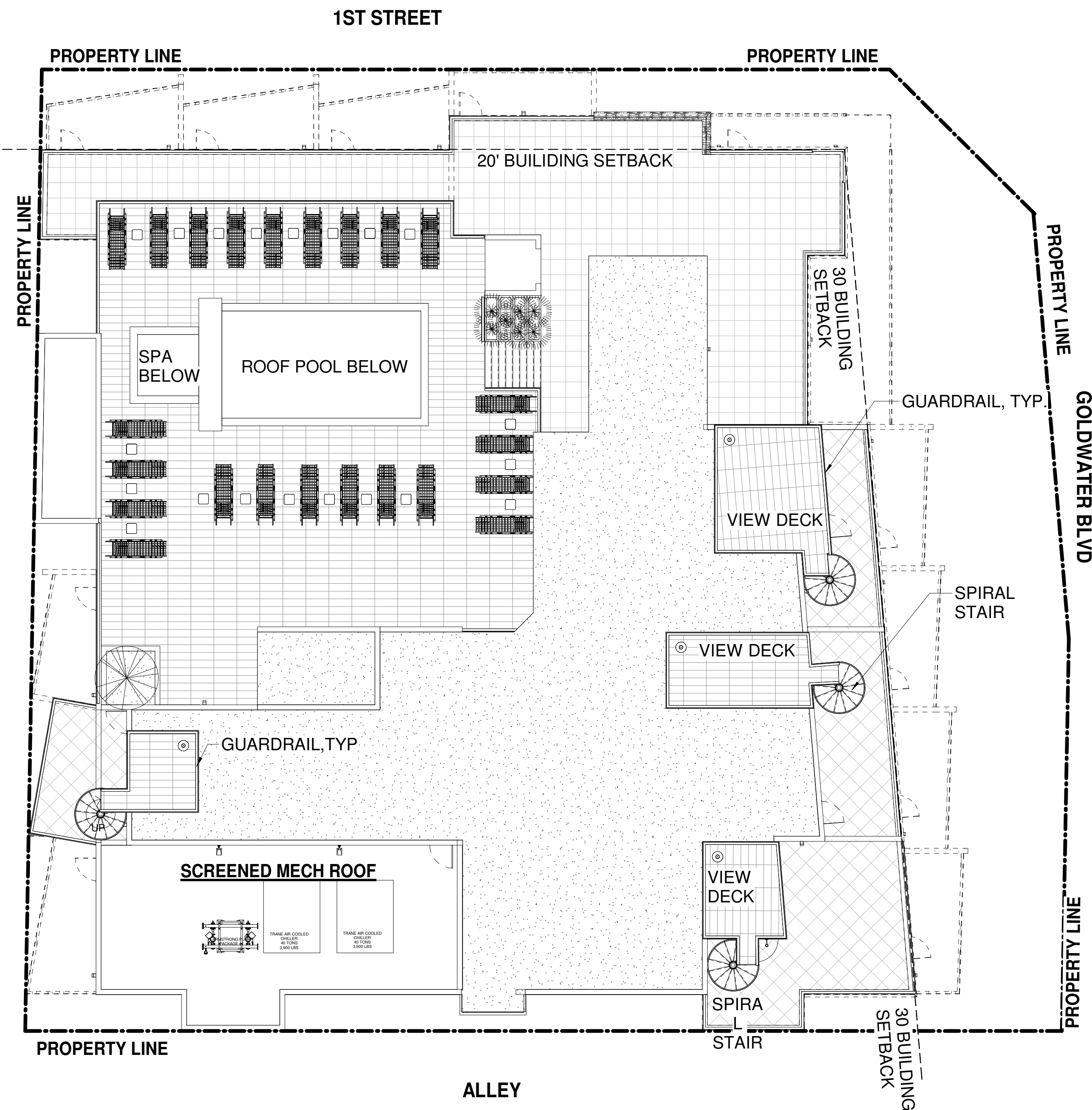


NOTE:
ROOF DRAINAGE SYSTEM SHALL BE CONCEALED
WITHIN THE STRUCTURE AT ALL BUILDING FACADES PER COS ZONING ORDINANCE, SECTION 7.105C



ROOF LEVEL

1" = 10'-0"



NOTE:
ROOF DRAINAGE SYSTEM SHALL BE CONCEALED
WITHIN THE STRUCTURE AT ALL BUILDING FACADES PER COS ZONING ORDINANCE, SECTION 7.105C



PARAPET LEVEL

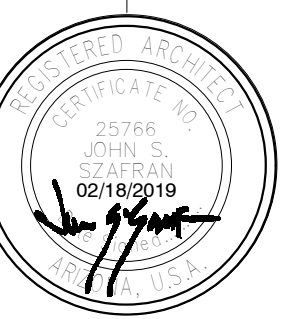
1" = 10'-0"

FLOOR PLANS - ROOF LEVEL / PARAPET LEVEL

CITY OF SCOTTSDALE
REZONING/DR DEVELOPMENT SUBMITTAL
24-ZN-2018 AND 52-DR-2018

PLOT DATE: 2/16/2019 10:24:34 AM

WINERY RESIDENCES OF SCOTTSDALE
6951 / 6961 E 1ST ST. SCOTTSDALE, AZ. 85251



expires 30 June 2019

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ARCHITECTURE
7878 e indian school rd ste 214
scottsdale, arizona 85251
telephone 480 941 4222
www.dpaarchitects.com

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drawn by: YT

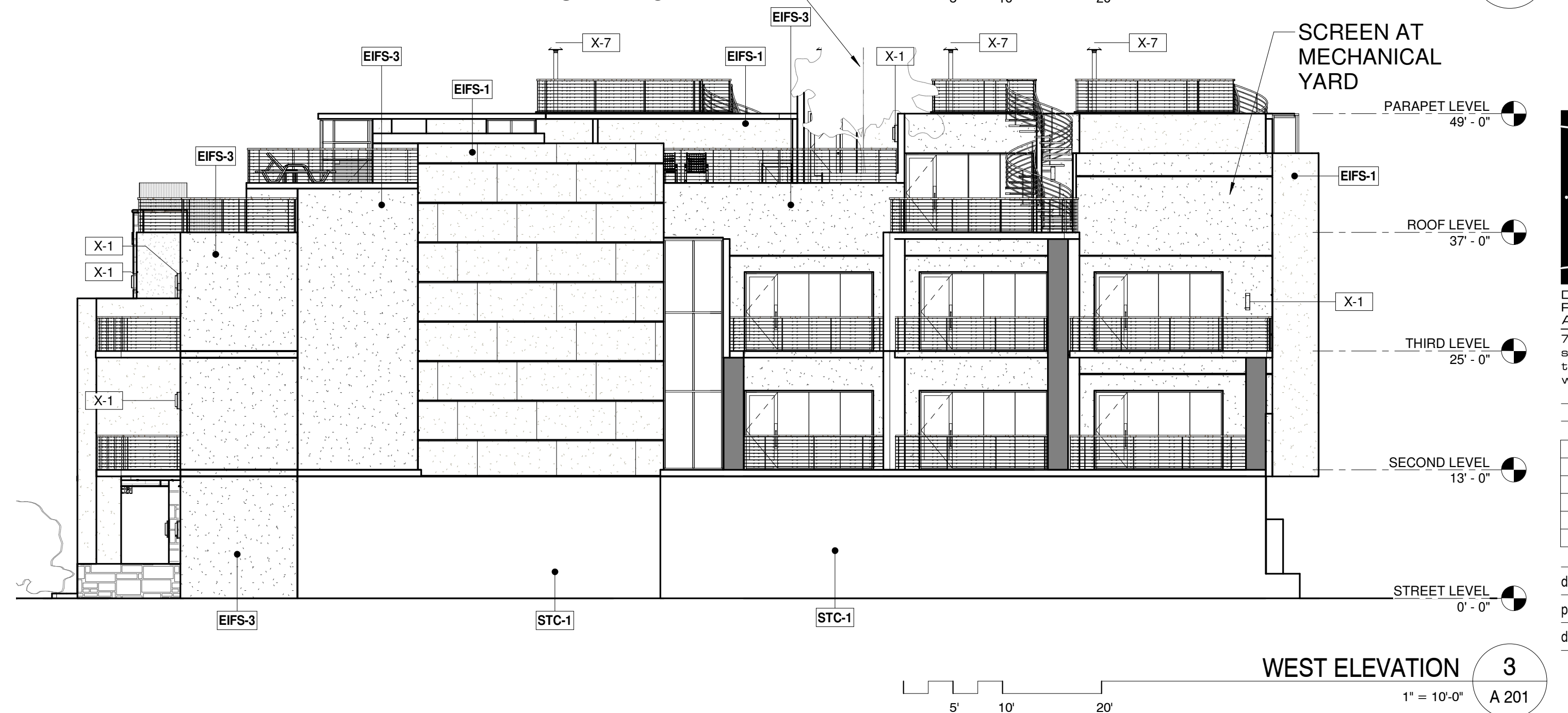
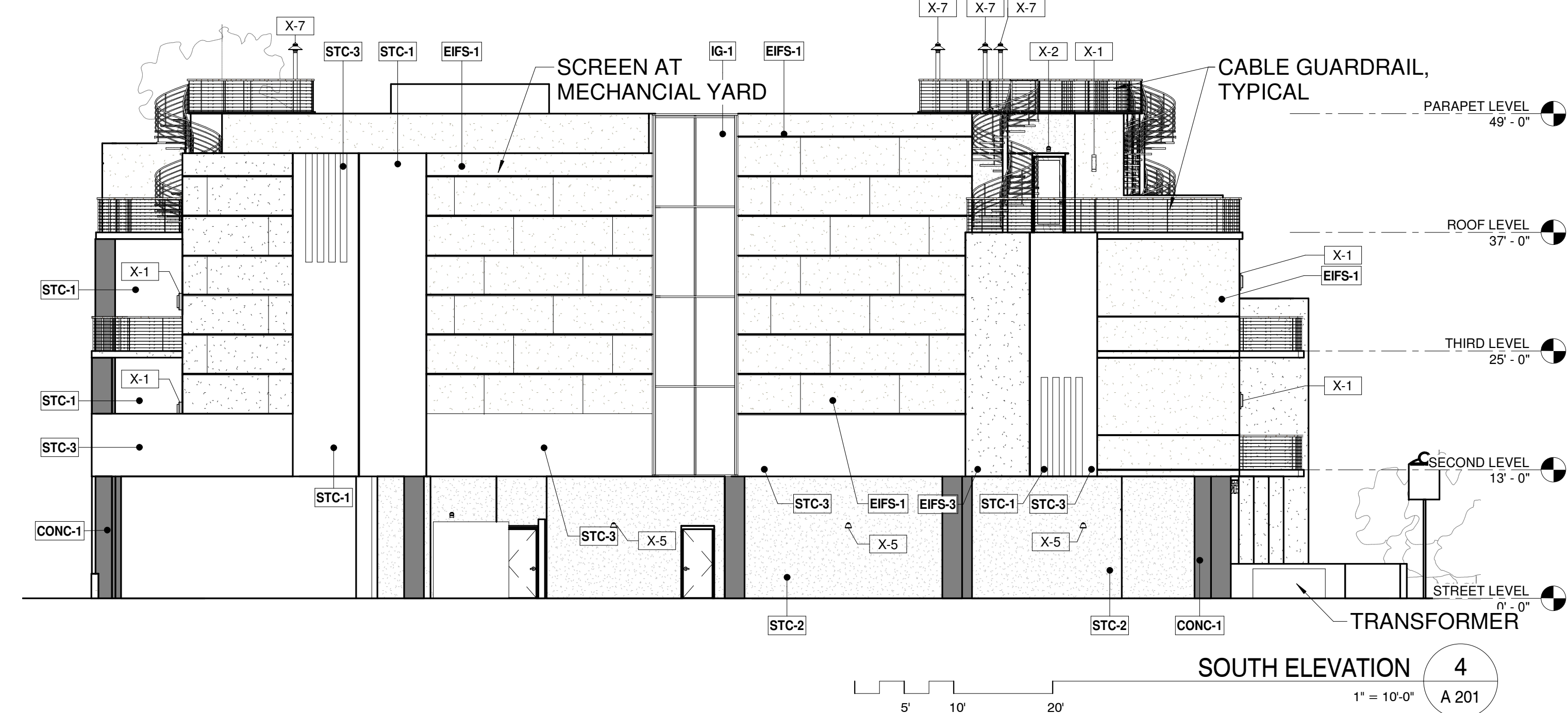
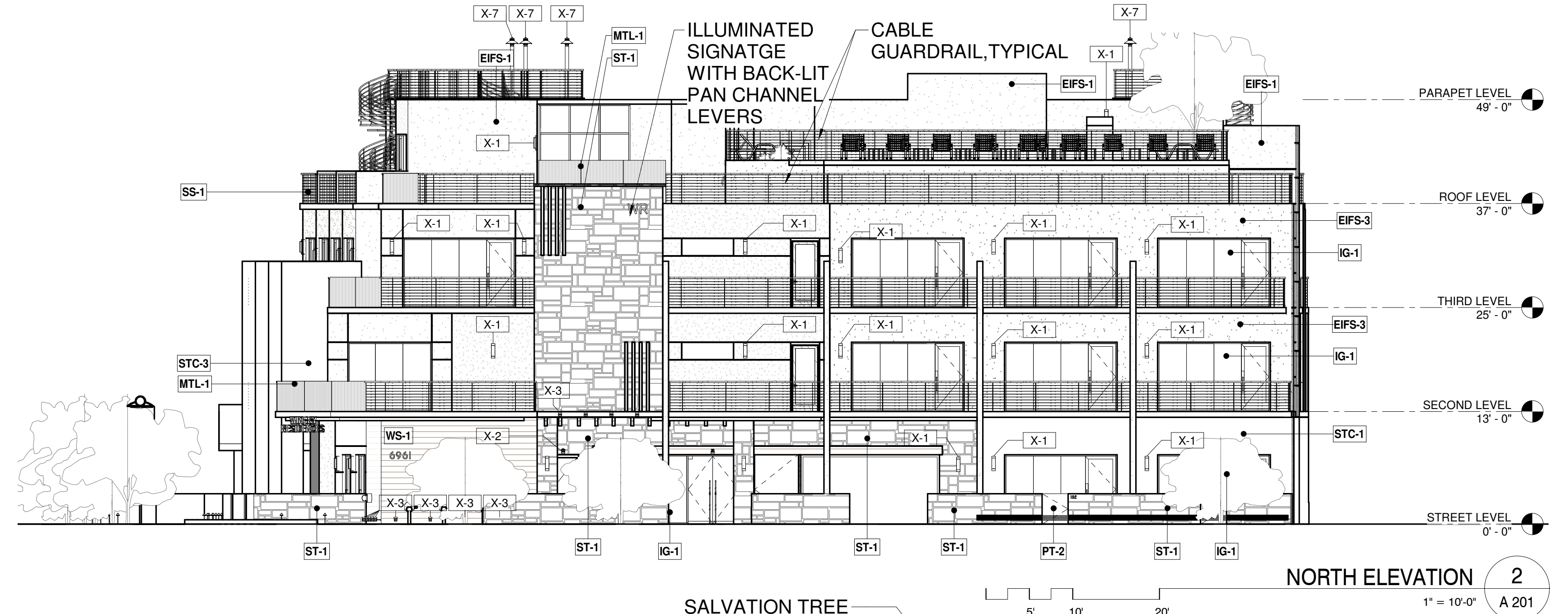
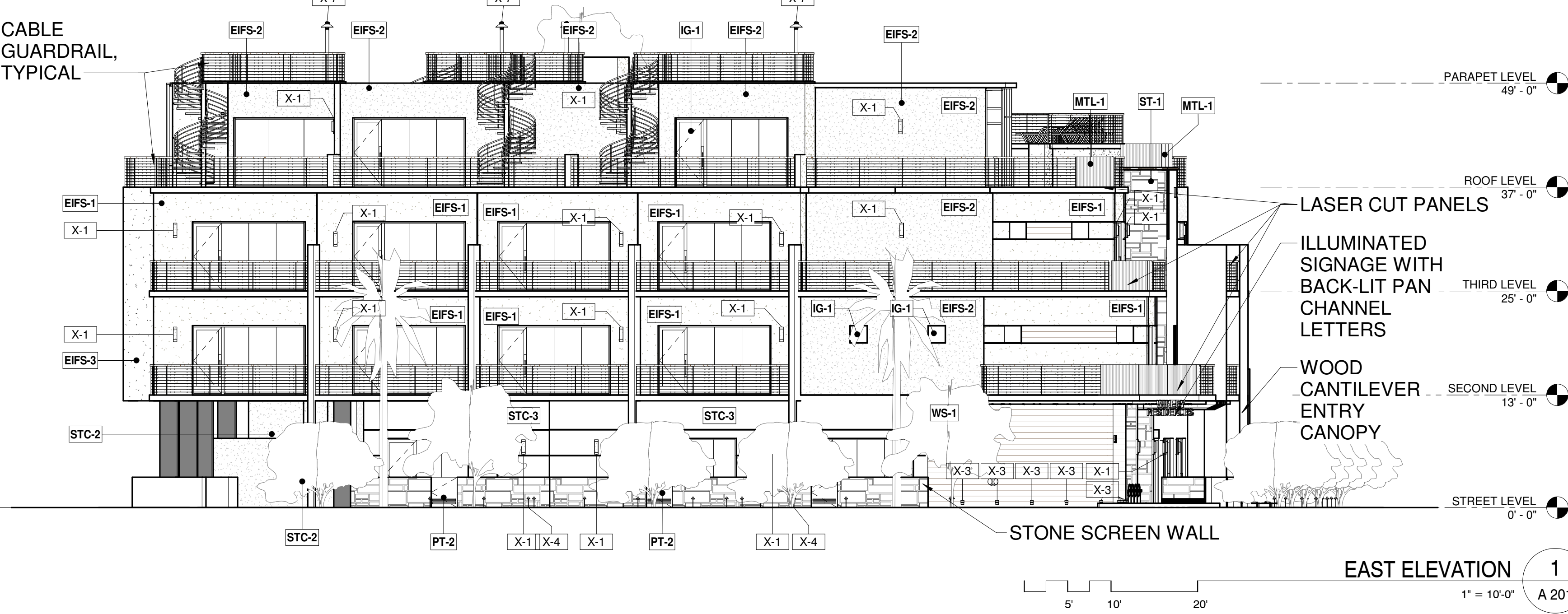
project no.: 18024

date: 02/18/19

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EXTERIOR MATERIOR AND FINISH SCHEDULE

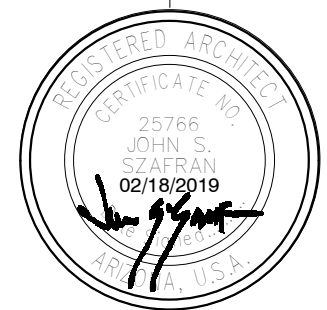
EIFS-1	DESCRIPTION: EIFS LOCATION: EXTERIOR WALLS MANUFACTURER: DUNN EDWARDS COLOR: 'ASH GRAY' DEC 751 FINISH: SAND FINISH	WS-1	DESCRIPTION: SIMULATED WOOD STONE PLANK VENEER LOCATION: EXTERIOR WALL AT STREET LEVEL MANUFACTURER: CORONADO STONE COLOR: ROUGH CUT WOODSTONE CEDAR FINISH: MATTE
EIFS-2	DESCRIPTION: EIFS LOCATION: EXTERIOR WALLS MANUFACTURER: DUNN EDWARDS COLOR: 'BISON BEIGE' DEC 750 FINISH: SAND FINISH	ST-1	DESCRIPTION: SIMULATED WOOD STONE VENEER LOCATION: AT ENTRY TOWER ELEMENT MANUFACTURER: CORONADO STONE COLOR: MIX OF THE FOLLING STONE VENEERS: 60% 'ITALIAN VILLA' PROVO 40% 'ITALIAN VILLA' CANYON GREY TIMBERLAKE/GREY STONE
EIFS-3	DESCRIPTION: EIFS LOCATION: EXTERIOR WALLS MANUFACTURER: DUNN EDWARDS COLOR: 'CRAFT PAPER' SW6125 FINISH: SAND FINISH	PT-1	DESCRIPTION: ACCENT PAINT COLOR LOCATION: WINDOW BOX FRAMES, METAL DOORS AND TRIM MANUFACTURER: SHERWIN WILLIAMS COLOR: 'POINTED ROCK' DE6363
STC-1	DESCRIPTION: STUCCO/PORTLAND CEMENT PLASTER LOCATION: EXTERIOR WALLS MANUFACTURER: DUNN EDWARDS COLOR: 'ASH GRAY' DEC 751 FINISH: SAND FINISH	PT-2	DESCRIPTION: ACCENT PAINT COLOR LOCATION: ENTRY METAL GATE MANUFACTURER: SHERWIN WILLIAMS COLOR: 'POINTED ROCK' DE6363
STC-2	DESCRIPTION: STUCCO/PORTLAND CEMENT PLASTER LOCATION: EXTERIOR WALLS MANUFACTURER: DUNN EDWARDS COLOR: 'BISON BEIGE' DEC 750 FINISH: SAND FINISH	CONC-1	DESCRIPTION: NATURAL FINISH LOCATION: CONCRETE COLUMN MANUFACTURER: N/A COLOR: STANDARD CONCRETE
STC-3	DESCRIPTION: STUCCO/PORTLAND CEMENT PLASTER LOCATION: EXTERIOR WALLS MANUFACTURER: DUNN EDWARDS COLOR: 'CRAFT PAPER' SW6125 FINISH: SAND FINISH	SS-1	DESCRIPTION: STAINLESS STEEL CABLE RAILINGS LOCATION: CUSTOM PER LAYOUT MANUFACTURER: STAINLESS
MTL-1	DESCRIPTION: LASER CUT METAL PANELS LOCATION: EXTERIOR WALL, RAILING ELEMENT MANUFACTURER: CUSTOM PER LAYOUT COLOR: BRONZE ANODIZED	IG-1	DESCRIPTION: LOW - E INSULATED GLAZING UNITS/FRAMES LOCATION: DWELLINGS UNITS & WINERY MARKET WINDOW OPENINGS MANUFACTURER: VITRO/PPG TYPE: SOLARGREY, SOLARBAN 70XL 7% REFLECTIVITY MEDIUM BRONZE ANODIZED
WD-1	DESCRIPTION: SYNTHETIC WOOD PURLINS LOCATION: AT BUILDING ENTRY MANUFACTURER: 'TREX' ENHANCE COLOR: 'BEACH DUNE'		



BUILDING ELEVATIONS-BW

CITY OF SCOTTSDALE
REZONING/DR DEVELOPMENT SUBMITTAL
24-ZN-2018 AND 52-DR-2018

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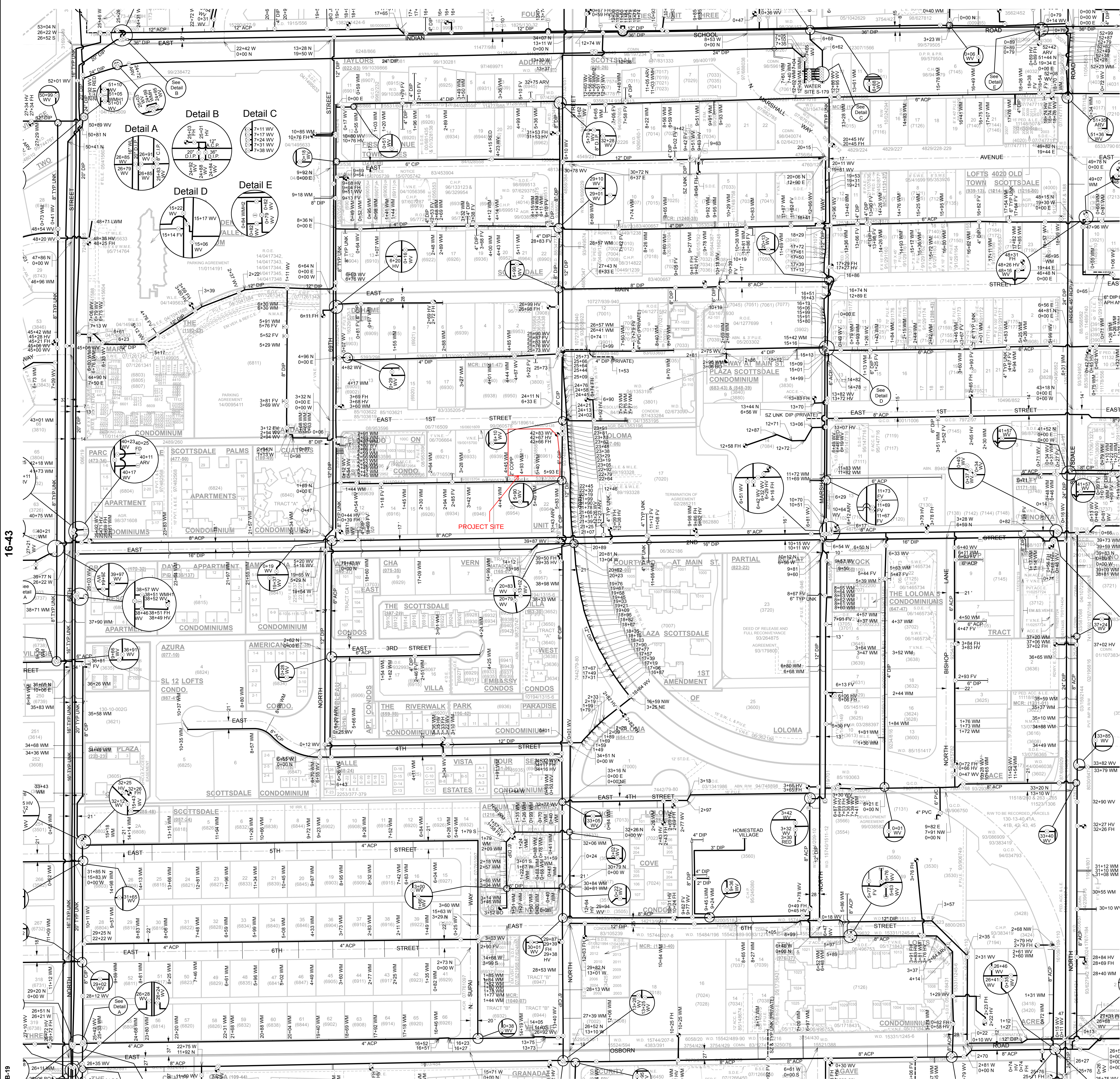
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ARCHITECTURE
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scottsdale, arizona 85251
telephone 480 941 4222
www.dpaarchitects.com

REVISION INFORMATION		
#	Description	Date

drawn by: YT
project no.: 18024
date: 02/18/19

Appendix C
Water Quarter Section Map





GENERAL NOTES:

- THIS IS A COMPUTER GENERATED DRAWING. FOR ANY REVISIONS PLEASE CONTACT THE CITY OF SCOTTSDALE GIS DEPARTMENT AT (480) 312-7792.
- THE SECTION LINE BEARING AND DISTANCES ARE BASED ON THE CITY OF SCOTTSDALE GPS SURVEY OF SEPTEMBER, 1991. BEARINGS ARE NAD 83 GRID AND DISTANCES ARE FLATTENED TO GROUND. WHERE NO CORNER WAS FOUND THE DIMENSIONS ARE GIVEN TO CALCULATED SECTION CORNERS AND ARE NOTED AS "CALCULATED" ON THE MAP.

LEGEND:

Air Release Valve	
Non-potable Air Release Valve	
Blowoff	
Cap	
Cathodic Protection	
Fill Drain	
Fire Hydrant	
Non-GPS Point	
Pressure Reducing Valve	
Pump	
Reducer	
Sample Station	
Water Manhole	
Non-Potable Manhole	
Well	
Valve	
Non-potable Valve	
Vault	
Water Main	
Non-Potable Main	
Fire / Private Main	
Non-Scottsdale Main	

VICINITY MAP

NORTH

SCALE: 1" = 100'

The map scale of 1" = 100' is based on a full size print of 30" x 36"

WATER
QUARTER SECTION MAP
16-44
NE 1/4 SEC. 27 T2N R4E

CITY OF SCOTTSDALE
SCOTTSDALE GEOGRAPHIC INFORMATION SYSTEMS
3629 North Drinkwater Boulevard
Scottsdale, Arizona 85251

NOTICE

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THE CITY OF SCOTTSDALE

Appendix D

Flow Test Results



Flow Test Summary

Project Name: EJFT 19040
Project Address: 6951 E 1st St, Scottsdale, AZ 85251
Date of Flow Test: 2019-02-15
Time of Flow Test: 8:30 AM
Data Reliable Until: 2019-08-15
Conducted By: Eder Cueva & Tayler Lynch (EJ Flow Tests) 602.999.7637
Witnessed By: Ray Padilla (City of Scottsdale) 602.541.0586
City Forces Contacted: City of Scottsdale (602.541.0586)
Permit Number: C57402

Raw Flow Test Data

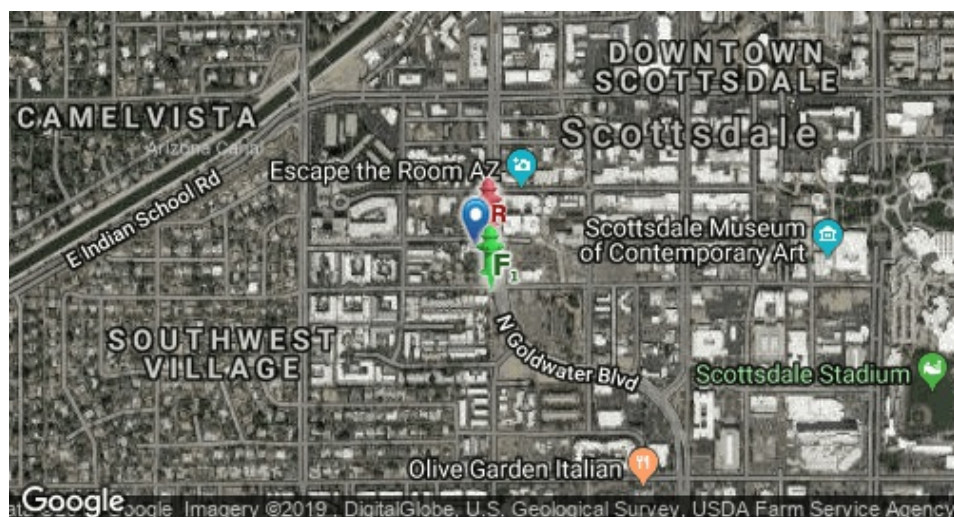
Static Pressure: 80.0 PSI
Residual Pressure: 64.0 PSI
Flowing GPM: 1,986
GPM @ 20 PSI: 4,054

Data with a 10 % Safety Factor

Static Pressure: 72.0 PSI
Residual Pressure: 56.0 PSI
Flowing GPM: 1,986
GPM @ 20 PSI: 3,753

Hydrant F₁

Pitot Pressure (1): 31 PSI
Coefficient of Discharge (1): 0.9
Hydrant Orifice Diameter (1): 4 inches
Additional Coefficient 0.83 on orifice #1



 Project Site

 Static-Residual Hydrant

 Flow Hydrant

Distance Between F₁ and R
326 ft (measured linearly)

Static-Residual Elevation
1260 ft (above sea level)

Flow Hydrant (F₁) Elevation
1258 ft (above sea level)

Elevation & distance values are approximate

EJ Flow Tests, LLC

21505 North 78th Ave. | Suite 130 | Peoria, Arizona 85382 | (602) 999-7637 | www.ejengineering.com
John L. Echeverri | NICET Level IV 078493 SME | C-16 FP Contractor ROC 271705 AZ | NFPA CFPS 1915
www.flowtestsummary.com

Static-Residual Hydrant



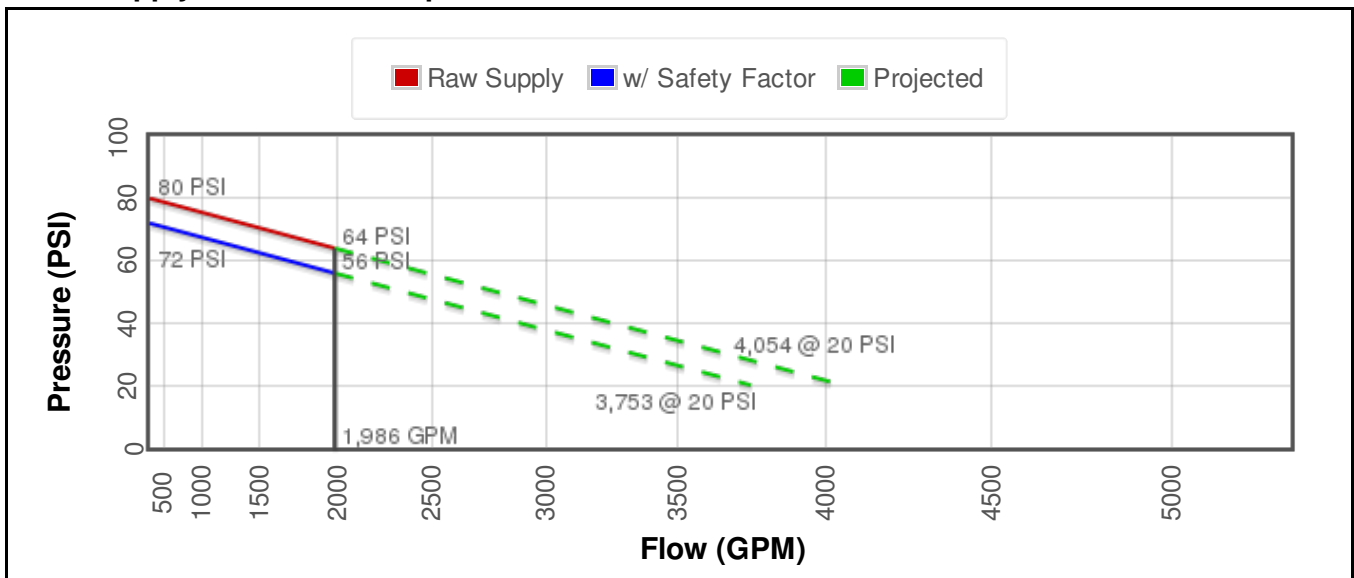
Flow Hydrant (only hydrant F1 shown for clarity)



Approximate Project Site



Water Supply Curve N^{1.85} Graph



Appendix E
Preliminary Utility Plan



